# Introduction

The **OMNI SBCS** Installation and Maintenance Student Workbook Manual is a reference source to aid you in understanding and performing OMNI SBCS installation and maintenance procedures.

This workbook is designed to provide the student with basic installation and maintenance information in a logical and easy to understand format. The content of the workbook was taken from the OMNI SBCS GTEP Manual and other reference sources. This workbook is divided into the following major sections:

- **System Installation**

- **System Data Base**

- **System Maintenance**

- **Package B/SVR 1.5.X.X Enhancements**

- **Package C/SVR 2.0.X.X Enhancements**

Classroom laboratory activities and review exercises are included in the workbook to provide reinforcement for all subject areas stressed.

i

# Student Performance Report

**GTE**

*GTE OMNI SBCS*

Name: _____SAMPLE_____     Course: _____GTE OMI SBCS I & M_____

Dates: _____01-06-86 to 01-17-86_____

### OBJECTIVES

### ACTUAL PERFORMANCE

| | In Classroom | | On Equipment | | |
|---|---|---|---|---|---|
| | OBJECTIVE MET | NOT MET | OBJECTIVE MET | NOT MET | NOT MEASURED |

**ENABLING OBJECTIVE 1.1**

**GIVEN:**

- GTE OMNI SBCS
- GTE OMNI SBCS PERIPHERALS
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- REVIEW EXERCISE

**ACTION:**

- IDENTIFY AND DESCRIBE GTE OMNI SBCS SYSTEM ARCHITECTURE AND INTERFACES

**CRITERIA:**

- REVIEW EXERCISE QUESTIONS WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION

| In Classroom — OBJECTIVE MET | In Classroom — NOT MET | On Equipment — OBJECTIVE MET | On Equipment — NOT MET | NOT MEASURED |
|---|---|---|---|---|
| ☑ | ☐ | ☐ | ☐ | ☐ |

# Student Performance Report

**GTE**

*GTE OMNI SBCS*

Name: _____ SAMPLE _____

Course: _____ GTE OMNI SBCS I & M _____

Dates: _____ 01-06-86 to 01-17-86 _____

**OBJECTIVES**

**ACTUAL PERFORMANCE**

| | In Classroom | | On Equipment | | |
|---|---|---|---|---|---|
| | OBJECTIVE MET | NOT MET | OBJECTIVE MET | NOT MET | NOT MEASURED |

**TERMINAL OBJECTIVE 1.0**

**GIVEN:**
- GTE OMNI SBCS
- GTE OMNI SBCS PERIPHERALS
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- ASSORTED GAUGE WIRE, REQUIRED CABLES, AND HARDWARE
- STANDARD INSTALLATION TOOLS
- TEST EQUIPMENT
- WRITTEN TEST

**ACTION:**
- INSTALL, INITIALIZE, AND VERIFY OPERATION OF THE GTE OMNI SBCS AND ASSOCIATED PERIPHERALS
- COMPLETE WRITTEN TEST

**CRITERIA:**

| Criteria | Classroom Obj Met | Classroom Not Met | Equip Obj Met | Equip Not Met | Not Measured |
|---|---|---|---|---|---|
| SYSTEM WILL BE INSTALLED, INITIALIZED AND OPERATIONAL IN ACCORDANCE WITH GTE OMNI SBCS GTEP MANUAL | ☐ | ☐ | ☑ | ☐ | ☐ |
| WRITTEN TEST WILL BE COMPLETED IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION | ☑ | ☐ | ☐ | ☐ | ☐ |

# Installation and Maintenance
# Course Outline

**GTE**

*GTE OMNI SBCS*

- **MODULE I — SYSTEM INSTALLATION**
  - System Overview
  - Cabinet Installation
  - Peripheral Installation
  - Start-up and Initialization

- **MODULE II — SYSTEM DATA BASE ADMINISTRATION**
  - Data Base Overview
  - Data Base Modification
  - Implementation Forms Package

- **MODULE III — SYSTEM MAINTENANCE**
  - Maintenance Overview
  - Maintenance Data Base Commands
  - Troubleshooting
  - Diagnostics

- **MODULE IV — PACKAGE B/SVR 1.5.X.X ENHANCEMENTS**
  - Package B Overview
  - Installation (Package B)
  - Data Base Administration (Package B)
  - Maintenance (Package B)

- **MODULE V — PACKAGE C/SVR 2.0.X.X ENHANCEMENTS**
  - Package C Overview
  - Installation (Package C)
  - Data Base Administration (Package C)
  - Maintenance (Package C)

**GTE**

*GTE OMNI SBCS*

# MODULE I
# SYSTEM INSTALLATION

# Table of Contents/System Installation

**GTE**

*GTE OMNI SBCS*

# Table of Contents/System Installation (Continued)

**GTE**

*GTE OMNI SBCS*

# 1.0 Terminal Objective/ System Installation

GIVEN:
- GTE OMNI SBCS
- GTE OMNI SBCS PERIPHERALS
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- ASSORTED GAUGE WIRE, REQUIRED CABLES, AND HARDWARE
- STANDARD INSTALLATION TOOLS
- TEST EQUIPMENT
- WRITTEN TEST

ACTION:
- INSTALL, INITIALIZE, AND VERIFY OPERATION OF THE GTE OMNI SBCS AND ASSOCIATED PERIPHERALS.
- COMPLETE WRITTEN TEST.

CRITERIA:
- SYSTEM WILL BE INSTALLED, INITIALIZED, AND OPERATIONAL IN ACCORDANCE WITH THE GTE OMNI SBCS GTEP MANUAL.
- WRITTEN TEST WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

# SYSTEM INSTALLATION
## Introduction

# 1.1 Enabling Objective/
# System Overview

GIVEN:
- GTE OMNI SBCS
- GTE OMNI SBCS PERIPHERALS
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- REVIEW EXERCISE

ACTION:
- IDENTIFY AND DESCRIBE GTE OMNI SBCS SYSTEM ARCHITECTURE AND INTERFACES.

CRITERIA:
- REVIEW EXERCISE QUESTIONS WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

# GTE

## GTE OMNI SBCS

FLOPPY DISKETTE DRIVE

STATION
MESSAGE
DETAIL
RECORDING

NIGHT
BELL

MUSIC
SOURCE

EXTERNAL
PAGING*

SINGLE LINE
TELEPHONE

TERMINAL
DEVICE*

PORTABLE
MAINTENANCE
PANEL

CSD*

BLF/DSS

BEHIND
PABX OR CENTREX

PROPRIETARY
ELECTRONIC
TERMINALS

CS-20

TELEPHONE
NETWORK

TIE LINES

CENTRAL OFFICE
WATS
FX
CENTREX
DID/DISA**

OPX

CS-10

DATA
INTERFACE
UNIT**

*Package B/Phase 1.5 Availability
**Package C/Phase 2.0 Availability

ATTENDANT CONSOLE**

1.4
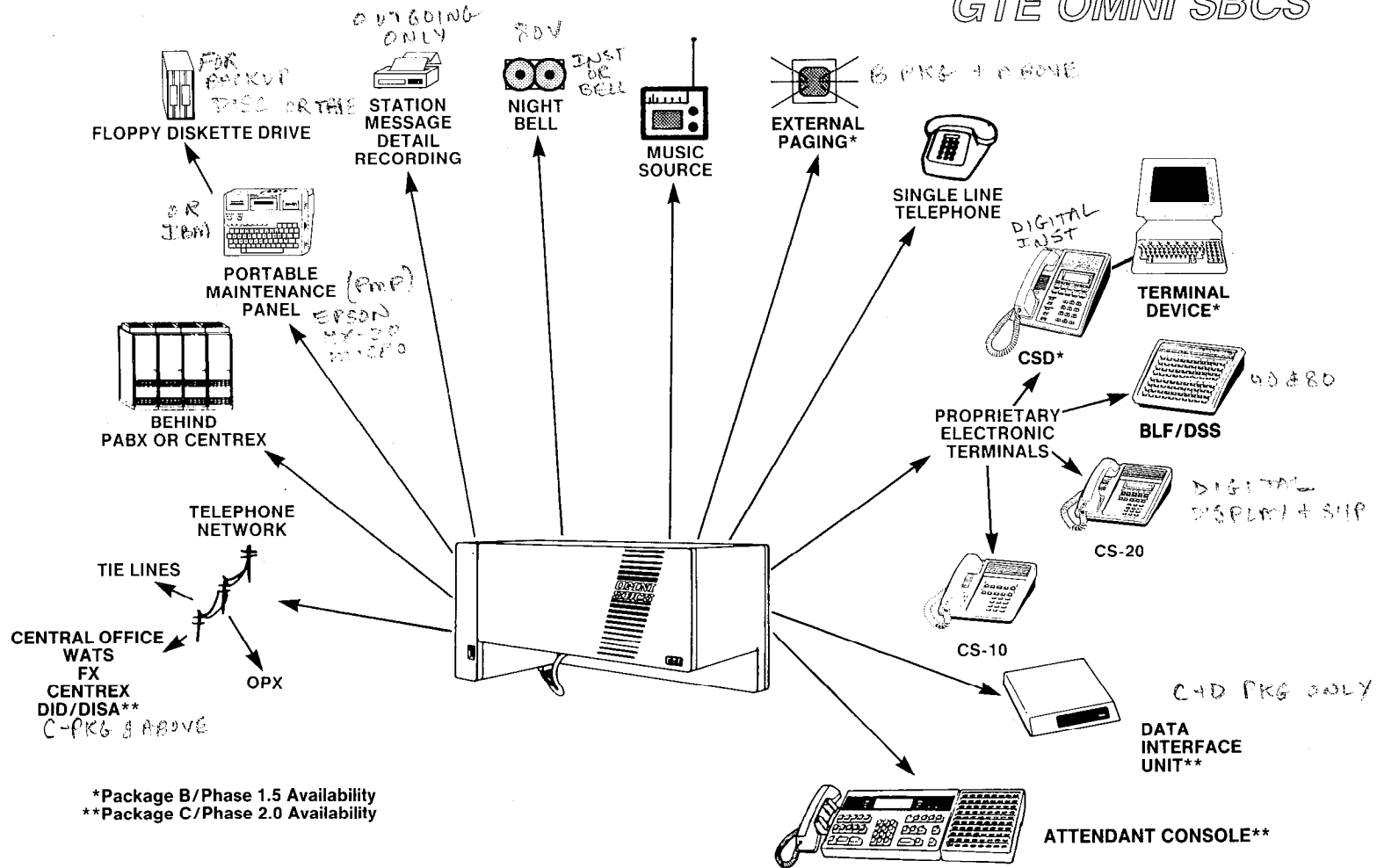
# System Applications

- KEY TELEPHONE SYSTEM WITH INTERCOM** *No common hold for A or B - Pkg only exclusive C Pkg & above common hold*

- PABX (PRIVATE AUTOMATIC BRANCH EXCHANGE) *C-Pkg -Att console*

- CIRCUIT SWITCHED DATA COMMUNICATIONS* *Internal data only 30 CSD's with CSD + DIV Inst. CTA per system*

- SATELLITE TO A PABX *Trunk Interface*

- SPECIALIZED HOTEL/HEALTH CARE**

*Package B/Phase 1.5 availability
**Package C/Phase 2.0 availability

1.5

# Equipment Cabinet

**GTE**

- **SINGLE CABINET**

- **34" x 14.6" x 16"**

- **WEIGHT — 121 LBS.**

- **WALL MOUNTED**

- **CUTOUTS AND LOUVERS FOR COOLING**

POWER
SUPPLY
UNIT

OMNI
SBCS

GTE

$\dfrac{11.26"}{286mm}$

$\dfrac{16"}{486.4mm}$

$\dfrac{4"}{101mm}$

$\dfrac{34"}{863.6mm}$

$\dfrac{14.6"}{371mm}$

1.6
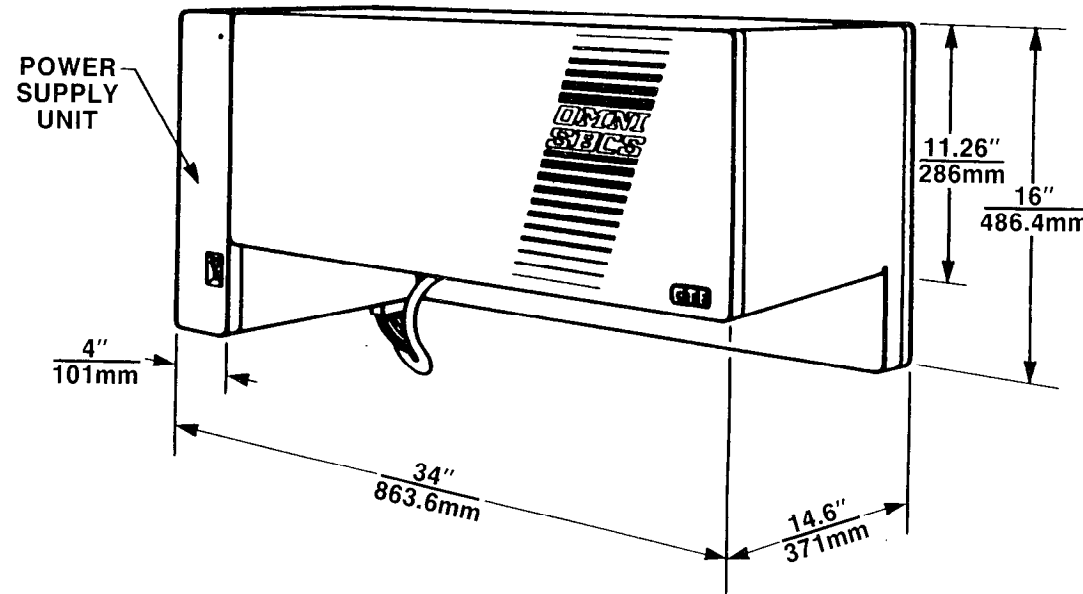
# Major Hardware Components

GTE OMNI SBCS

- **POWER SUPPLY** *5 or 10 AMP FUSE INSIDE*
  - 110 VAC INPUT
  - SEALED UNIT

- **BATTERY** *3 BATTERIES (5 YR LIFESPAN)*
  - BACKS UP SYSTEM MEMORY
  - TWO WEEK MEMORY RETENTION

- **CABINET/POWER SUPPLY CABLE**

- **CABINET**
  - HOUSES SYSTEM PRINTED CIRCUIT BOARDS
  - PROVIDES INTERFACE TO AMPHENOL CONNECTORS

1.7
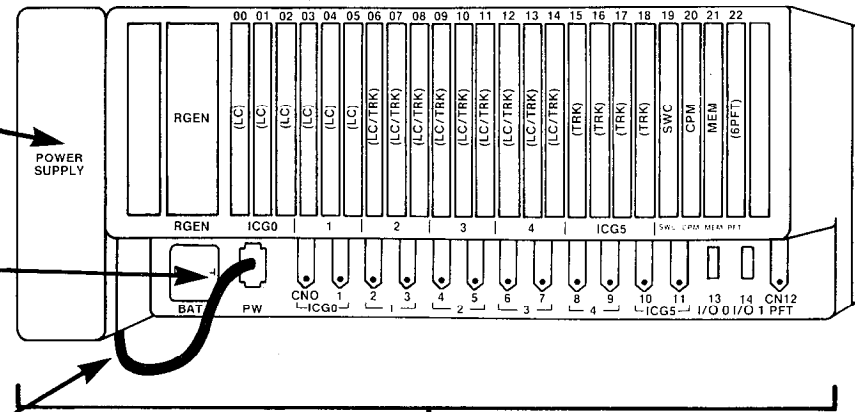
# Major Software Components

- OPERATING SYSTEM

  — RESIDENT IN SYSTEM MEMORY (EPROM) – *ROM CHIP* – *D- PKG 1.2 m6 BYTES*

  — CONTAINS AND MONITORS ALL ADMINISTRATIVE, CALL
    PROCESSING, MAINTENANCE AND SMDR PROGRAMS


- DEFAULT STANDARD DATA BASE *~ EVERYTHING WIRED IN AND INSTALLED*

  — RESIDENT IN SYSTEM MEMORY (ROM)

  — CONTAINS ALL SYSTEM FEATURE AND SERVICE PARAMETERS

  — DATA BASE CONTENTS ARE SITE DEPENDENT AND
    PROGRAMMABLE

# Minimum System Configuration

*GTE OMNI SBCS*

*EVERY SYSTEM HAS TO HAVE THESE COMPONENTS*

- **POWER SUPPLY**

- **CABINET**

- **BATTERY**

- **CABINET AND POWER SUPPLY CABLE**

- **CPM CARD** - CPU

- **SWC CARD** - SWITCH WEEKLY CONTROL

- **MEM CARD** - MEMORY



1.9
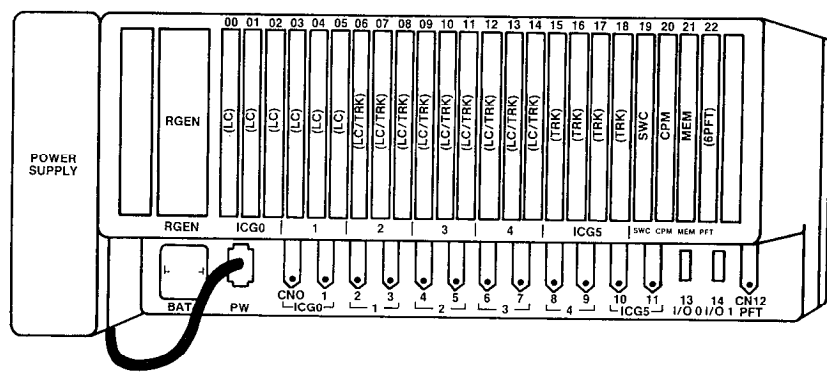
# Maximum System Configuration

GTE

*GTE OMNI SBCS*

- POWER SUPPLY
- CABINET
- BATTERY
- CABINET AND POWER SUPPLY CABLE
- CPM CARD
- SWC CARD
- MEM CARD
- RGEN CARD ~ RING GEN
- 6PFT CARD ~ POWER FAIL X-FER
- 4DMR CARD ~ DTMF RCVR
- 120 STATIONS/40 TRUNKS*
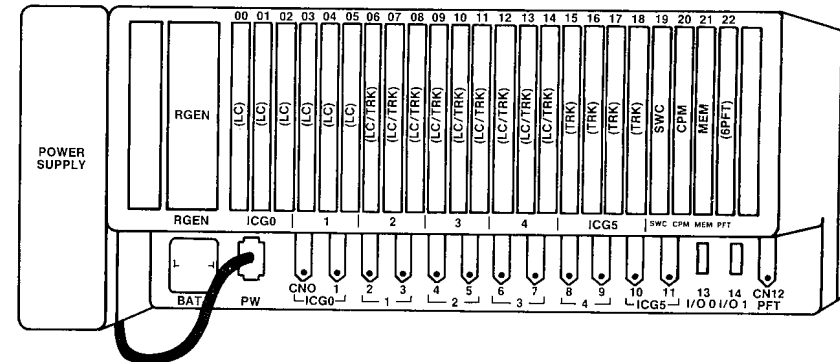


*THIS MAXIMUM CONFIGURATION CANNOT BE REACHED
 SIMULTANEOUSLY.

# Trunk-Station Line Combinations

*(common configuration)*

**GTE OMNI SBCS**

| C.O. TRUNKS | 0 | 4 | 8 | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STATION LINES | 120 | 120 | 120 | 120 | 120 | 112 | 104 | 96 | 88 | 80 | 72 | 64 | 56 | 48 | 40 | 32 | 24 | 16 | 8 | 0 |

- **STATION AND TRUNK MAXIMUMS CANNOT BE REACHED SIMULTANEOUSLY DUE TO CAPACITY OF UNIVERSAL CARD SLOTS.**

- **CHART ASSUMES THAT ONLY ELECTRONIC SETS WITH NO BLF/DSS INSTRUMENTS HAVE BEEN INSTALLED.**

- **CHART ASSUMES THAT ALL TRUNKS USE 4BWC CARDS.**

## (CARD SLOTS CAPACITY)

| CARD | RGEN (OPTIONAL) | CARD SLOT NUMBER | | | | | | | | | | | | | | | | | | | | | | | SWC | CPM | MEM | 6PFT (OPTIONAL) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | | | | |
| 8SLC | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8EKC | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4DMR[1] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4BWC[2] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2TTL[3] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2TTE[3] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

[1] 2 MAXIMUMS
[2] 10 MAXIMUMS
[3] COMBINED MAXIMUMS OF 6

00→05 STA. ONLY

15→18 TRUNKS ONLY

06→14 LINE OR TRUNK CARD

19→22 COMMON CONTROL CARDS

22 PFT

ANY SLOT 0→14

# Frame Image

GTE OMNI SBCS
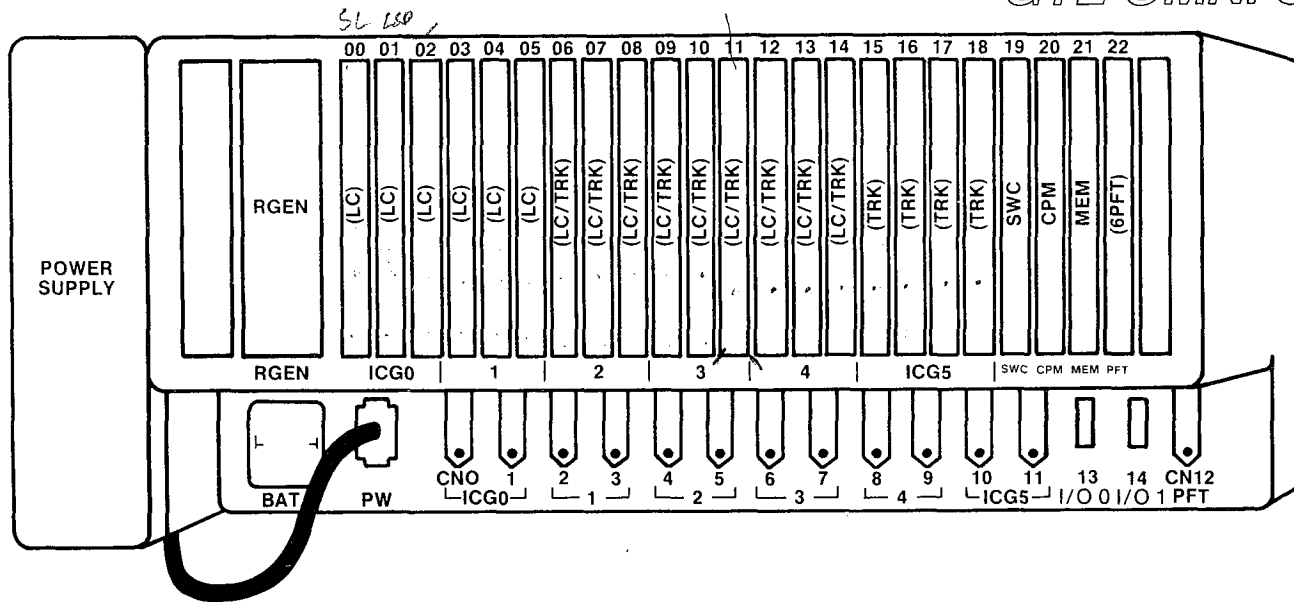


- CARD SLOTS 00 THROUGH 05 CAN CONTAIN ONLY LINE CARDS.

- CARD SLOTS 15 THROUGH 18 CAN CONTAIN ONLY TRUNK CARDS.

- CARD SLOTS 06 THROUGH 14 CAN CONTAIN ANY TYPE OF CARD.

- CARD SLOTS 19, 20, AND 21 ARE RESERVED FOR COMMON CONTROL CARDS: SWC, CPM, AND MEM.

- CARD SLOT 22 IS RESERVED FOR 6PFT CARD.

1.12

# CPM Card (Central Processing Unit and Basic Memory Card)

*GTE OMNI SBCS*
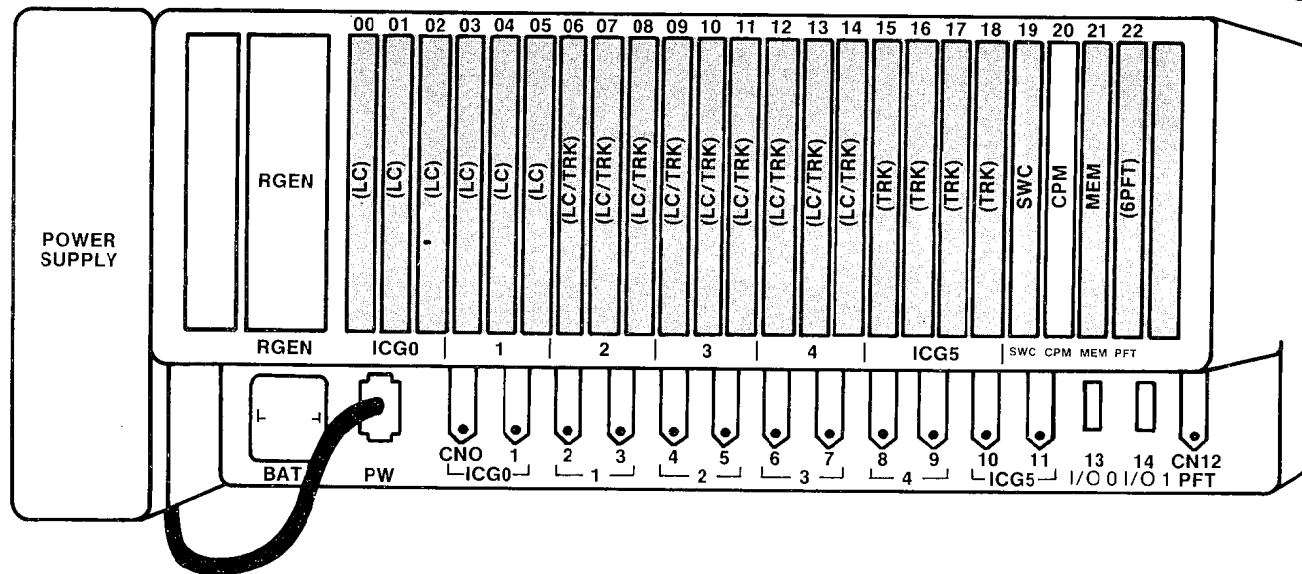


*CONTROLS EVERYTHING*

- 16 BIT MICROPROCESSOR (INTEL 8086 COMPATIBLE)
- TWO RS-232-C PORTS:
  - PMP
  - SMDR
- ROM FOR OPERATING SYSTEM SOFTWARE AND DEFAULT STANDARD DATA BASE
- RAM FOR CUSTOMIZED DATA BASE (REMAINDER OF RAM RESIDES IN MEM CARD)
- REAL TIME CLOCK — RTS (REAL TIME SOURCE)

1.13

# MEM Card (Memory Card)
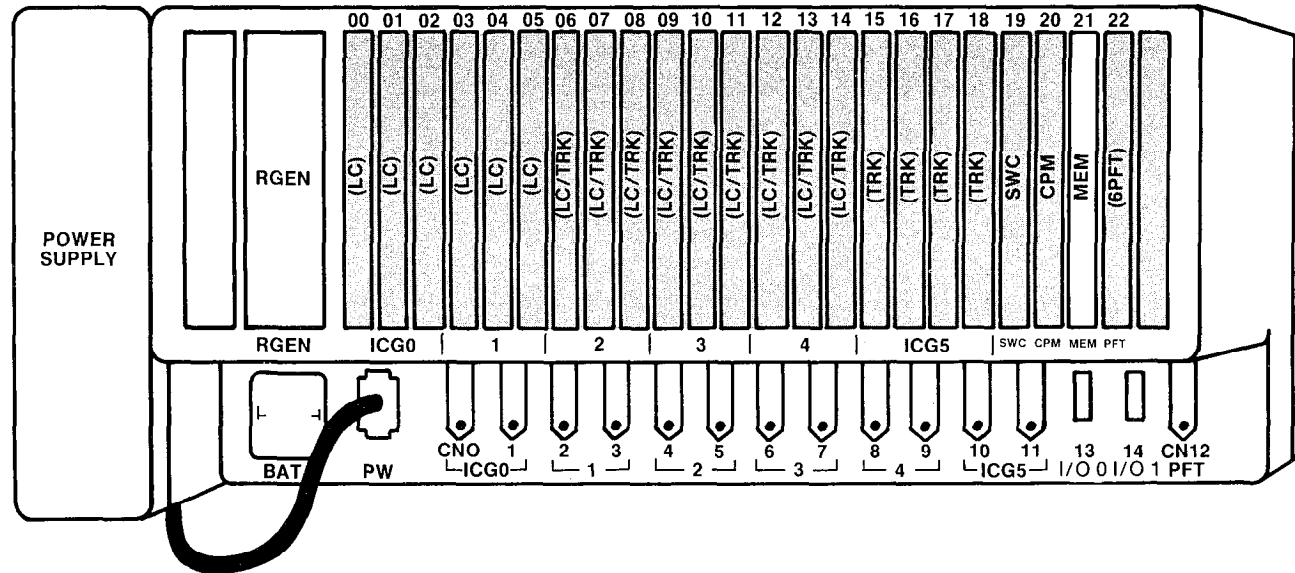
- **ACTS AS EXTENSION OF CPM CARD** — NOT ENOUGH MEM ON CPM CARD → THUS CENTRALIZED BATTERY BACKUP (IE NOT ON CARD)

- **ROM FOR OPERATING SYSTEM SOFTWARE AND DEFAULT STANDARD DATA BASE**

- **RAM FOR CUSTOMIZED DATA BASE (ALSO RESIDES IN CPM CARD)**

YOU LOSE MEMORY IF YOU PULL CPM OR MEM CARD.

1.14

TO WRITE TO TAPE TAKES 2½ HRS → IF AT 1200 BAUD CALL PROCESSING UNAFFECTED
IF OVER 1200 BAUD " " GOES DOWN

# SWC Card (Switch Control Card)

## GTE

### GTE OMNI SBCS
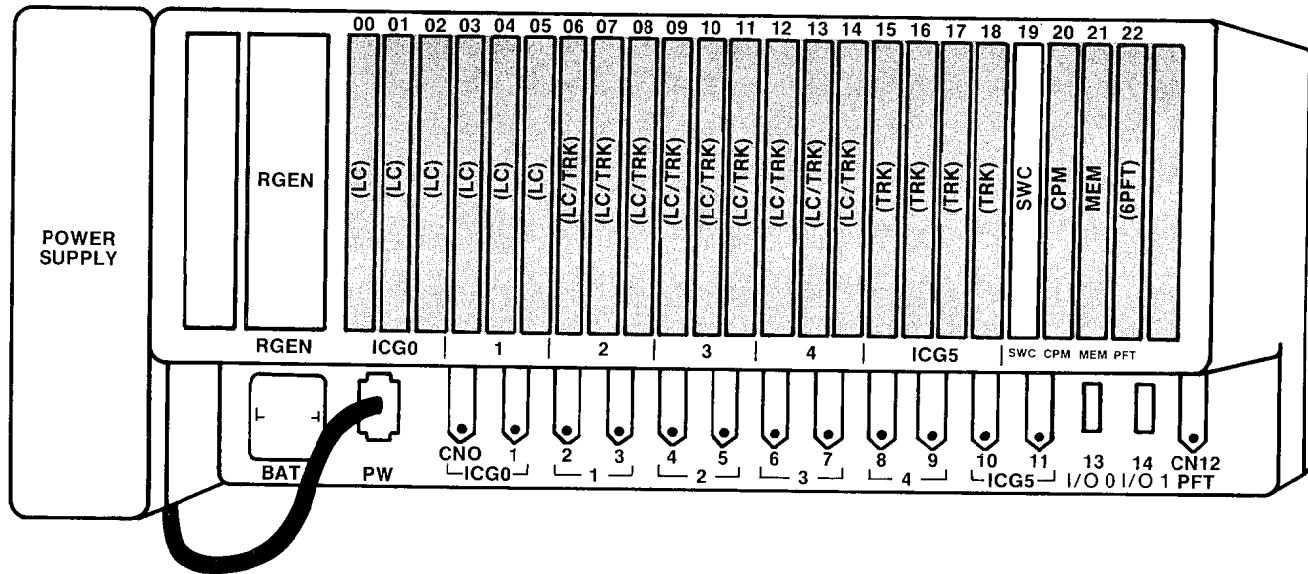


Handwritten notes:
RS 232 PORTS DO NOT GO THRU THIS CARD, EVERYTHING ELSE DOES SWITCH MATRIX

SWCA - ANY PKG (40 TRUNKS)

SWBA - IF YOU ADD EXPANSION CAB, OR SINGLE CAB, FOR (52 TRUNKS) C PKG OR ABOVE.

- CONTAINS PCM TIME DIVISION SWITCHING CIRCUITRY
- TONE SOURCE
- MIXING CIRCUITS
- MULTIPLEXER/DEMULTIPLEXER CIRCUITS
- PADDING CIRCUITS
- ACTS AS INTERFACE BETWEEN LINE/TRUNK CARDS AND CPM CARD

# Line Cards: 8EKC (Electronic Key Telephone Card) and 8SLC (Single Line Telephone Card)

*INDICATES NUMBER OF PORTS*

**GTE**

*GTE OMNI SBCS*
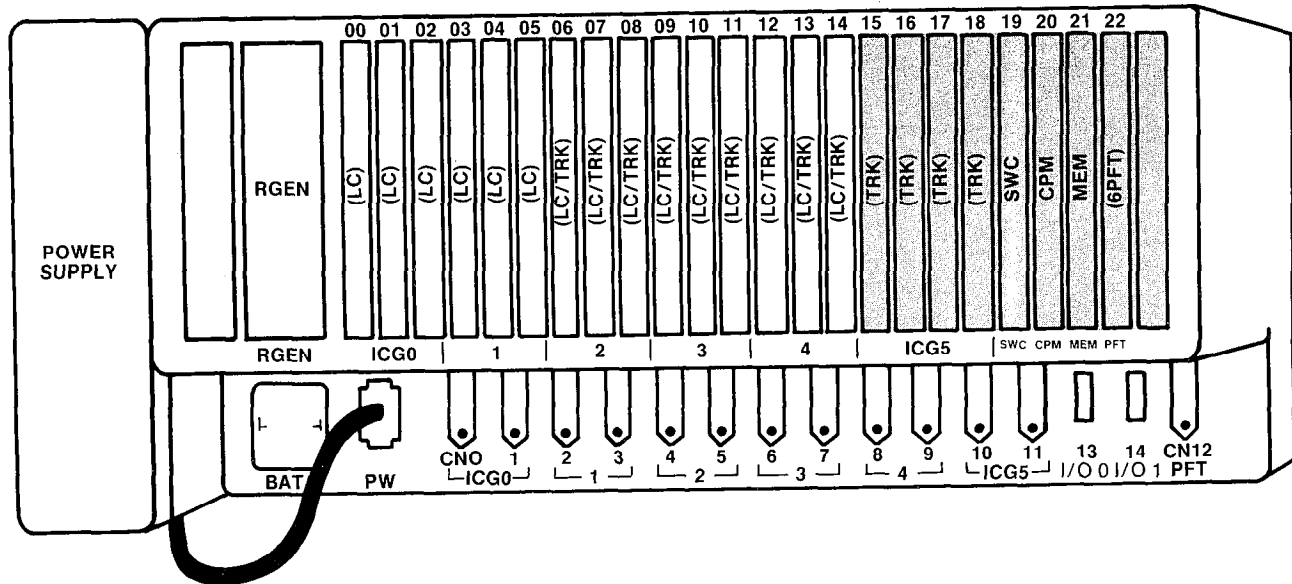


- **8EKC AND 8SLC CARDS CAN BE INSERTED SLOTS 00 THROUGH 14.**
- **8SLC:** — POTS PHONES
  - **8 CIRCUITS PER CARD**
  - **600 Ω LOOP LIMIT/2000 FEET**
  - **SUPPORTS DTMF (WITH 4DMR CARD) AND ROTARY DIAL SETS**
  - **NIGHT BELL INTERFACE**
  - **POWER FAIL TRANSFER INTERFACE**
  - **REQUIRES OPTIONAL RGEN CARD (RING GENERATOR)**

  } 1 PAIR T&R

- **8EKC:** — CS-10, CS-20, DSS, BLF
  - **8 CIRCUITS PER CARD**
  - **2000 FEET LOOP LIMIT**
  - **SUPPORTS CS-10, CS-20 AND BLF/DSS**

  } 2 PAIR   T&R      POLARITY
            DATA/POWER   SENSITIVE

1.16

# 8DTC Card (CSD Telephone/Digital Interface Card)*

**GTE**

*GTE OMNI SBCS*
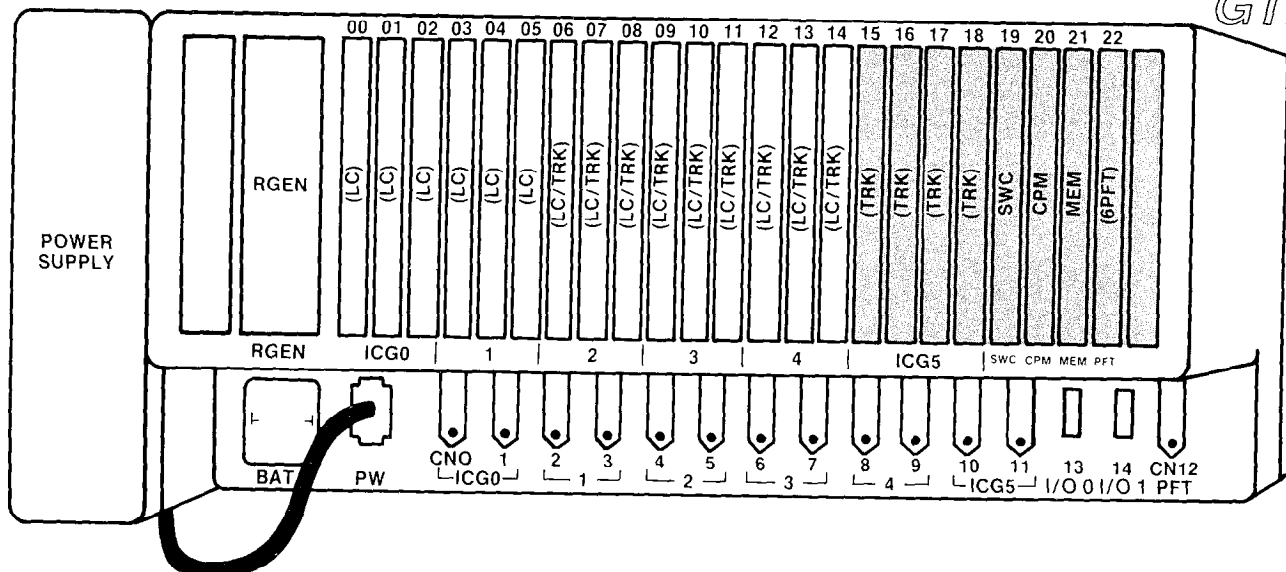


Handwritten notes (right side):
DIGITAL CARD
FOR CSD PHONES
OR DIU
1 PAIR (DIGITAL TIP)
NOT POLARITY SENSITIVE
INTERNAL DATA ONLY
OTHERWISE YOU NEED A
MODEM.

- 8DTC CARDS CAN BE INSERTED IN SLOTS 00 THROUGH 14 (IF CSD TELEPHONES EQUIPPED WITH DATA TERMINAL ADAPTER (DTA) ARE INSTALLED, ONLY SLOTS 00, 03, 06, 09, AND 12 MAY BE USED). *ONLY 1st 6 PORTS OF THESE CARDS*

- SYSTEM CAPACITY OF FIVE 8DTC CARDS FOR VOICE/DATA OR 15 8DTC CARD FOR VOICE ONLY APPLICATION.

- 8DTC SPECIFICATIONS:
  - EIGHT CIRCUITS PER CARD (ONLY SIX IF CSD TELEPHONES ARE USED FOR DATA TRANSMISSION)
  - PROVIDES SIMULTANEOUS VOICE/DATA TRANSMISSION CONTROL DATA TRANSMISSION, CONTROL DATA TRANSMISSION, AND POWER FEEDING (-24V) OVER A SINGLE PAIR OF WIRES
  - SUPPORTS CSD DIGITAL TELEPHONES OR CSD TELEPHONES WITH DATA TERMINAL INTERFACES VIA DATA TERMINAL ADAPTER OR DATA INTERFACE UNITS**
  - 2000 FEET LOOP LIMIT
  - CHANNEL CAPACITY = 64 KBPS FOR VOICE AND DATA, 8 KBPS FOR TELEPHONE CONTROL
  - LINE BIT RATE = 384 KBPS

*PACKAGE B/PHASE 1.5 AVAILABILITY
**PACKAGE C/PHASE 2.0 AVAILABILITY

1.17

# Trunk Cards: 4BWC (Bothway Trunk Card), 2TTE (E & M Tie Trunk Card), 2TTL (Loop Dial Tie Trunk Card)

**GTE**

*GTE OMNI SBCS*
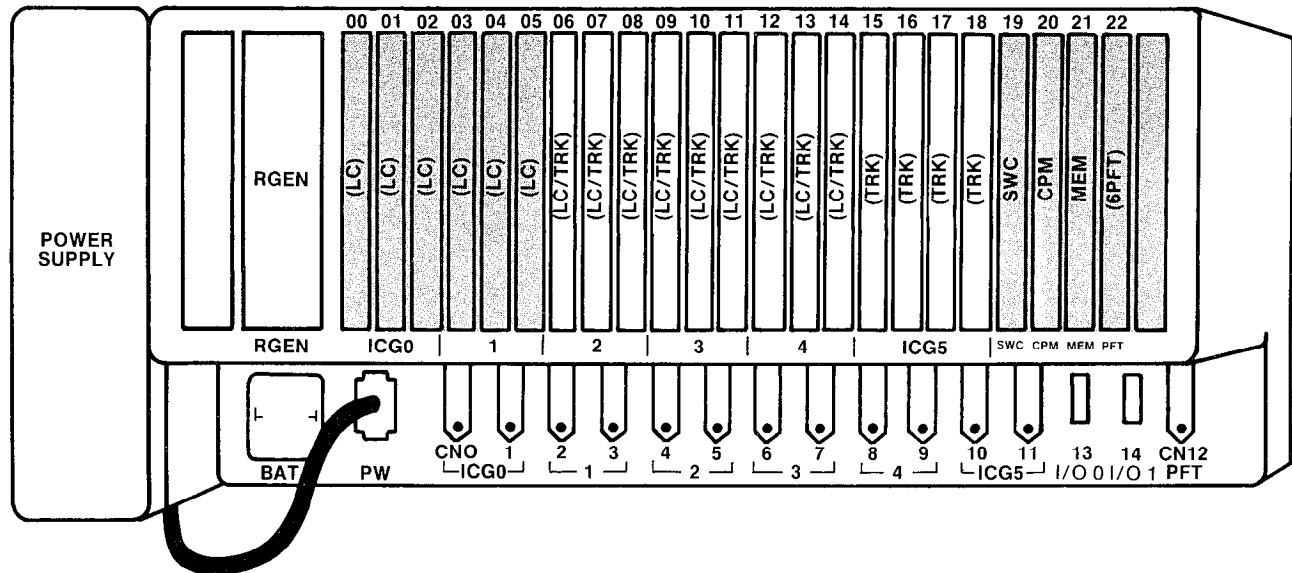
*TIE TRUNK CARDS*
*SUPPORT*
*DID*
*TRUNKS*

POWER SUPPLY

RGEN

00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22

(LC) (LC) (LC) (LC) (LC) (LC) (LC/TRK) (LC/TRK) (LC/TRK) (LC/TRK) (LC/TRK) (LC/TRK) (LC/TRK) (LC/TRK) (TRK) (TRK) (TRK) (TRK) SWC CPM MEM (6PFT)

RGEN   ICG0   1   2   3   4   ICG5   SWC CPM MEM PFT

BAT   PW   CNO 1   2   3   4   5   6   7   8   9   10   11   13   14   CN12
└ICG0┘  └ 1 ┘  └ 2 ┘  └ 3 ┘  └ 4 ┘  └ICG5┘ I/O 0 I/O 1 PFT

*SWCA CARD PROVIDES*
*MAX 10 BWC CARDS*
*= 40 TRUNKS*

*SWCB = 13 BWC CARDS*
*= 52 TRUNKS*

- 4BWC, 2TTE, AND 2TTL CARDS CAN BE INSERTED IN SLOTS 06 THROUGH 18.
- MAXIMUM OF 10 4BWC, MAXIMUM OF 6 2TTE OR 6 2TTL (PACKAGES A AND B).
- 4BWC:
  - 4 CIRCUITS PER CARD
  - LOOP START OR GROUND START
  - MUSIC-ON-HOLD INTERFACE
  - EXTERNAL PAGING INTERFACE
  - POWER FAIL TRANSFER INTERFACE
- 2TTE:
  - 2 CIRCUITS PER CARD
  - 2 WIRE
  - SUPPORTS TYPE I AND TYPE II E & M SIGNALING
- 2TTL:
  - 2 CIRCUITS PER CARD
  - TIP AND RING LOOP START

*MAX 6 PER SYSTEM*

*NO 4 WIRE E&M TRUNKS*

1.18

# 4DMR Cards (Dual Tone Multi-Frequency Receiver Card)

GTE OMNI SBCS
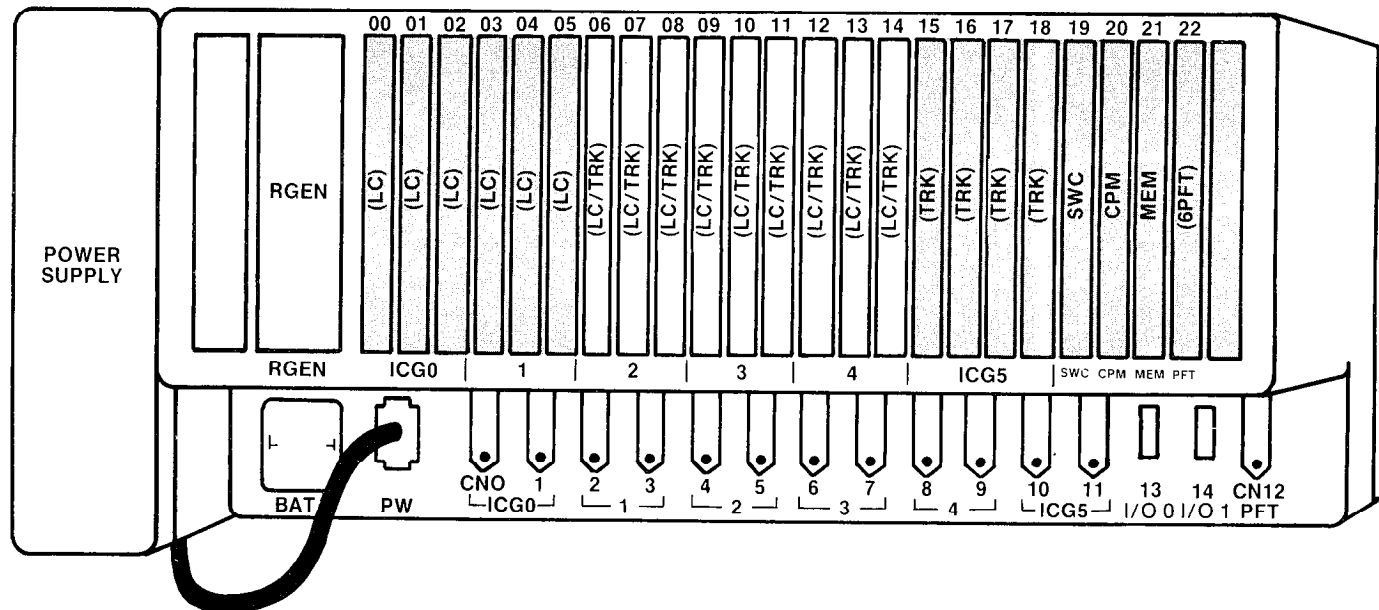


*(Handwritten notes: MAX 2 PER CAB. USUALLY NEED ONLY ONE)*

- RECEIVES DTMF TONES FROM PUSHBUTTON TELEPHONE INSTRUMENT AND CONVERTS THEM INTO DIALED NUMBERS.

- 4DMR CARDS CAN BE INSERTED IN SLOTS 06 THROUGH 14.

- 4DMR:

  - 4 CIRCUITS

  - REQUIRED ONLY WHEN DTMF INSTRUMENTS OR RECEIVERS (I.E. DTMF TIE TRUNKS) ARE USED

  - MAXIMUM OF TWO CARDS/SYSTEM

1.19

# Optional RGEN Card (Ring Generator)

**GTE**

**GTE OMNI SBCS**
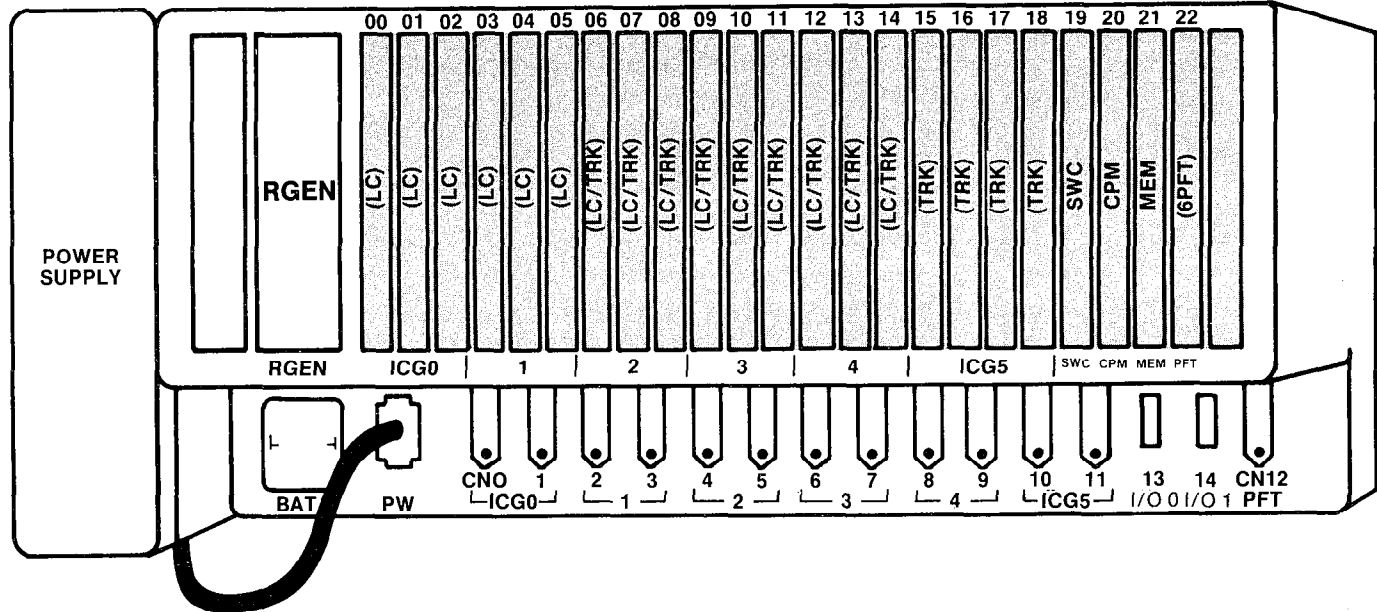


- RGEN INSERTED IN MOUNTING SLOT LEFT OF CARD SLOT 00.
- GENERATES RINGING TONE FOR SINGLE LINE TELEPHONE INSTRUMENTS.
- SUPPLIES POWER TO MESSAGE WAITING FEATURE FOR SLT INSTRUMENTS WITH MESSAGE WAITING LAMP.*
- MESSAGE WAITING FEATURE FOR SLT IS ACTIVATED THROUGH A STRAPPING OPTION ON RGEN CARD. (STRAPPING OPTION IS DESCRIBED IN OMNI SBCS GTEP MANUAL).*
- RINGING:
  - FREQUENCY:      20± 2 Hz
  - VOLTAGE:      80 V RMS (NOMINAL)
- MESSAGE WAITING:
  - VOLTAGE:      -100V DC
  - ON/OFF INTERVAL:      1 SECOND ON, 3 SECONDS OFF
- REQUIRED FOR OPERATION OF OPTIONAL CUSTOMER SUPPLIED NIGHT BELL.

*PACKAGE B/PHASE 1.5 AVAILABILITY            1.20

# Optional 6PFT Card: (Power Fail Transfer)
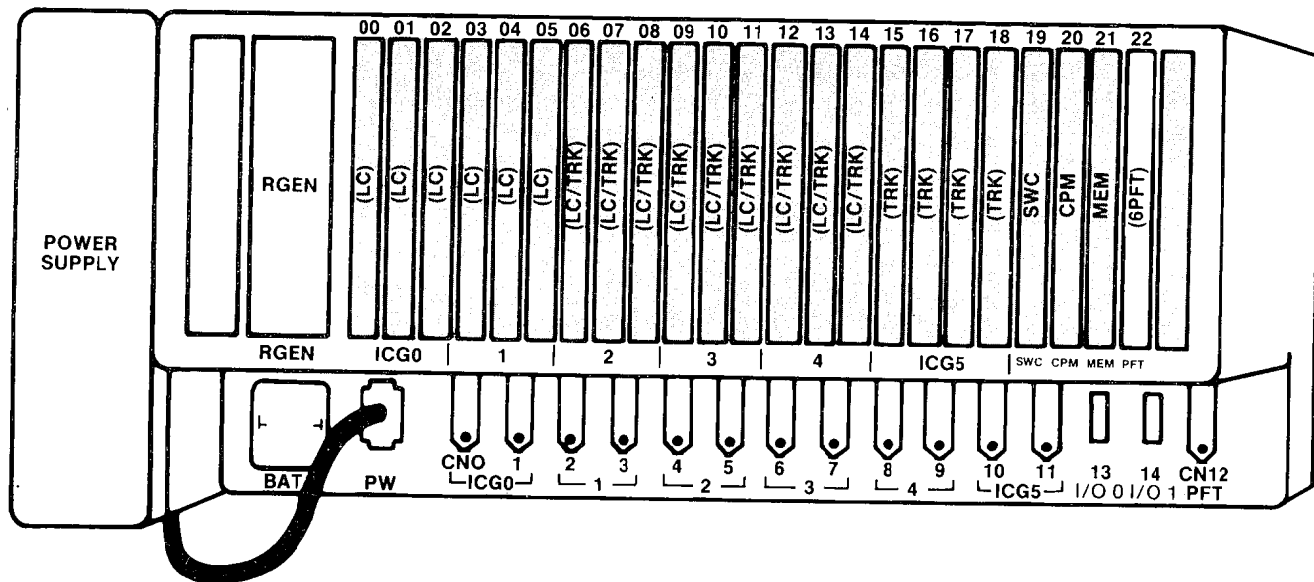
- 6PFT CARD CAN BE INSERTED IN SLOT 22.

- 6PFT:

    - SIX CIRCUITS CAN BE DESIGNATED FOR POWER FAIL TRANSFER
    - AUTOMATIC OPERATION
    - MANUAL TESTING — FLIP SWITCH TO TEST
    - INTERFACES WITH 8SLC AND 4BWC CARD

1.21

# Maximum Number of Cards

**GTE OMNI SBCS**

| TYPE OF CARD | INTERFACE FUNCTION | CAPACITY |
|---|---|---|
| ● 8SLC | SINGLE LINE TELEPHONE CARD | 15 |
| ● 8EKC | ELECTRONIC KEY TELEPHONE CARD | 15 |
| ● 8DTC* | CSD TELEPHONE/DIGITAL INTERFACE CARD | 5 |
| ● 4DMR | DUAL TONE MULTI-FREQUENCY RECEIVER CARD | 2 |
| ● 4BWC | BOTHWAY TRUNK CARD | 10 |
| ● 2TTE, 2TTL | E&M AND LOOP DIAL TIE TRUNK CARDS | 6 (TOTAL) |
| ● 4CHT** | CHARACTER TRUNK CARD | 2 |
| ● 6PFT | POWER FAIL TRANSFER CARD | 1 |
| ● RGEN | RING GENERATOR | 1 |

*(handwritten next to 8SLC capacity: 1 SLOT NEEDED FOR DMR CARD IF TOUCHTONE)*

*(handwritten next to 4CHT**: HOTEL MOTEL PRINTER)*

 *PACKAGE B/PHASE 1.5 AVAILABILITY
**PACKAGE C/PHASE 2.0 AVAILABILITY

# CS-10 Electronic Key Telephone

**GTE**

*GTE OMNI SBCS*

- **10 PROGRAMMABLE BUTTONS**

- **100% MODULAR**

- **HANDS-FREE DIALING**

- **MONITOR CAPABILITIES**

- **INTERFACE THROUGH 8EKC CARD**

- **4 WIRE:**

    - **2 ANALOG TIP AND RING**
    - **2 DATA/POWER LEADS**

- **2000 FEET LOOP LIMIT**

# CS-20 Electronic Key Telephone

**GTE**

*GTE OMNI SBCS*

- **10 PROGRAMMABLE BUTTONS**

- **100% MODULAR**

- **SPEAKERPHONE**

- **20 CHARACTER X 1 LINE LCD DISPLAY**

- **INTERFACE THROUGH 8EKC CARD**

- **4 WIRE**
  - **2 ANALOG TIP AND RING**
  - **2 DATA/POWER LEADS**

- **2000 FEET LOOP LIMIT**
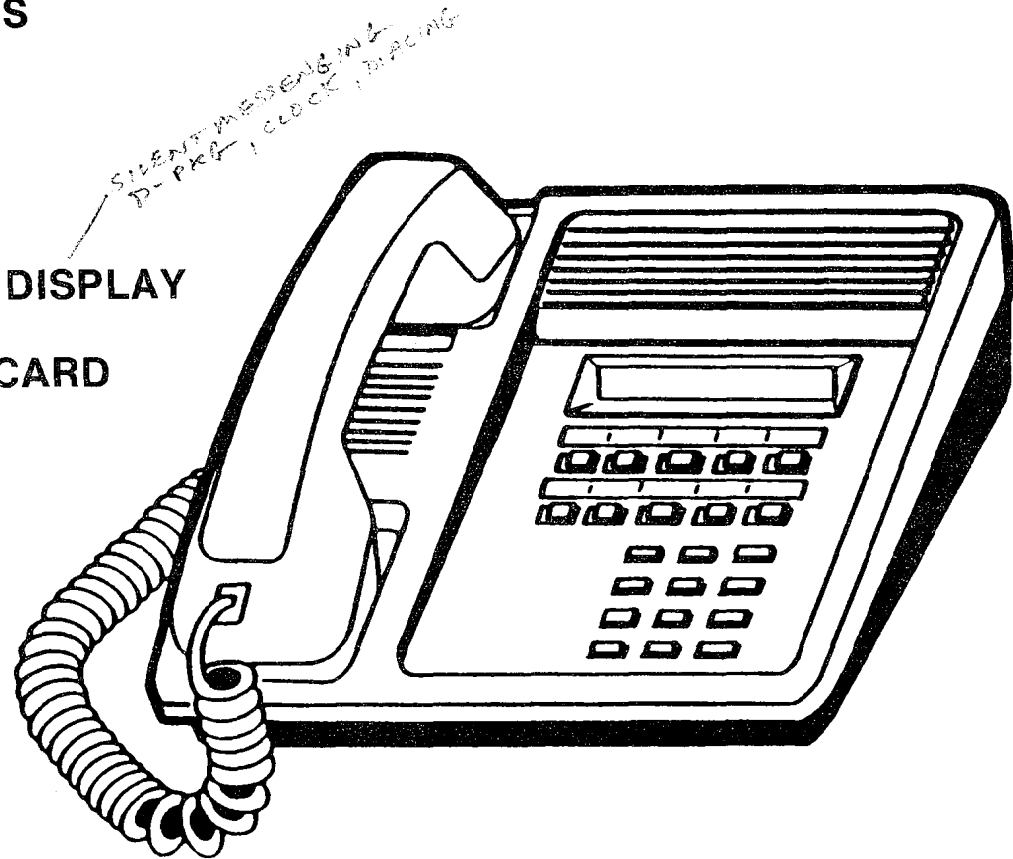
# Busy Lamp Field/Direct Station Selection Module

GTE

*GTE OMNI SBCS*
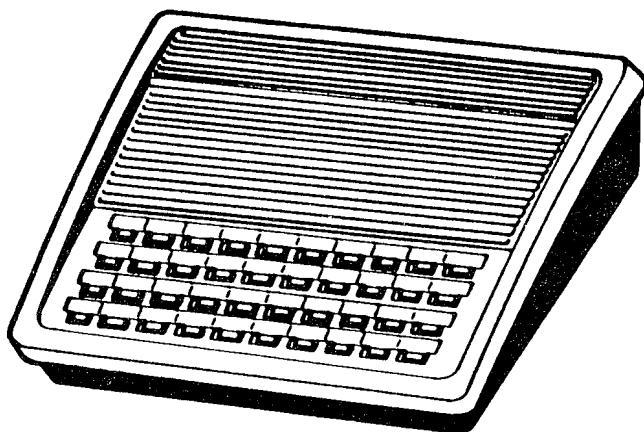
**40 BUTTON MODULE**
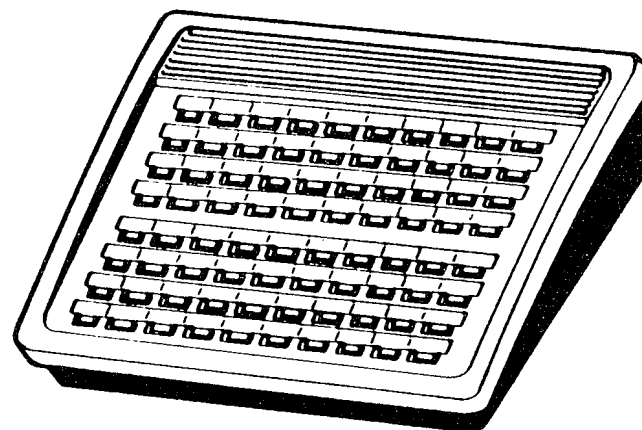
**80 BUTTON MODULE**

*DON'T REALLY NEED 1 AR PAIR, ONLY DATA PAIR NEEDED*

- MAXIMUM OF: 9

    — SIX 40 BUTTON MODULES
    — TWO 80 BUTTON MODULES

- INTERFACE THROUGH 8EKC CARD

- ONE MODULE PER PHONE *(2 WITH ATT → PKG C)*

- 2000 FEET LOOP LIMIT

# CSD Digital Telephone

**GTE**

GTE OMNI SBCS

- TEN PROGRAMMABLE FEATURE BUTTONS (TWO PREPROGRAMMED DATA COMMUNICATION BUTTONS: DATA CALL AND VOICE/DATA MODE)

- FOUR FIXED FEATURE BUTTONS: SPEAKERPHONE, MUTE, TRANSFER, AND HOLD

- SPEAKERPHONE

- FOUR LINE, 20 CHARACTER LCD DISPLAY

- INTERFACE THROUGH 8DTC CARD

- LINE POWERED

- TWO WIRE:
  - 2 DIGITAL TIP AND RING

- 2000 FEET LOOP LIMIT

- MAY BE CONNECTED TO BLF/DSS MODULE (SOFTWARE CONNECTION)

- OPTIONAL DATA TERMINAL ADAPTER (DTA) INSTALLED WITHIN CSD PROVIDES RS-232-C INTERFACE TO CUSTOMER-SUPPLIED DATA TERMINAL

- SYSTEM CAPACITY OF 40 CSD TELEPHONES INTERFACE (8 CIRCUITS X 5 CARDS) OR 30 CSD TELEPHONES WITH DTA INTERFACE (6 CIRCUITS X 5 CARDS)

C PKG - 80

# Portable Maintenance Panel

**GTE**

MICRO PRINTER — LCD DISPLAY
RS-232-C INTERFACE — MICRO CASSETE DRIVE
EPSON HX-20
TAPE EJECT
PRINTER ON OFF — PAPER FEED
PAUSE MENU BREAK PF1 PF2 PF3 PF4 PF5
CASSETTE COPY
SCREEN VIEW ANGLE
ON/OFF SWITCH
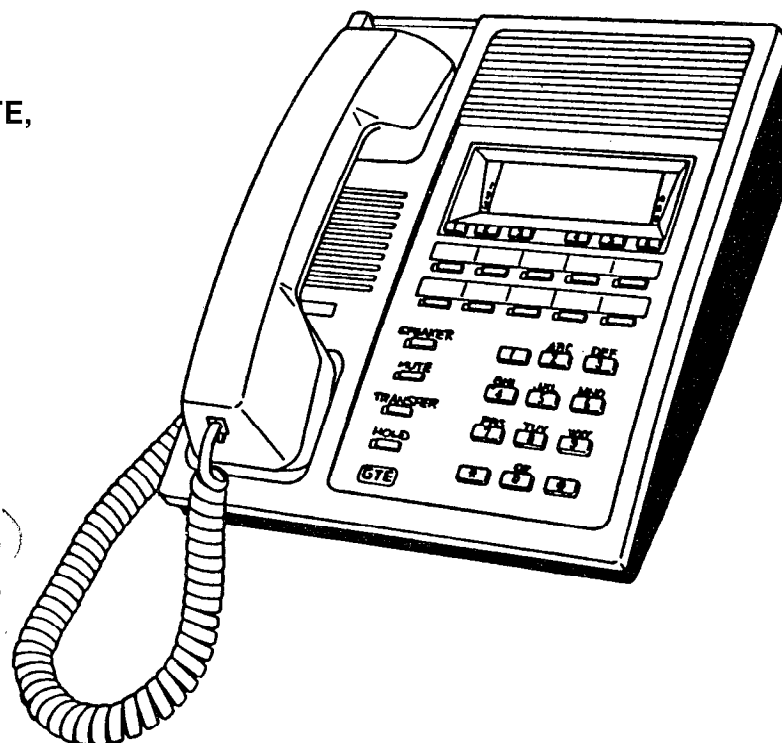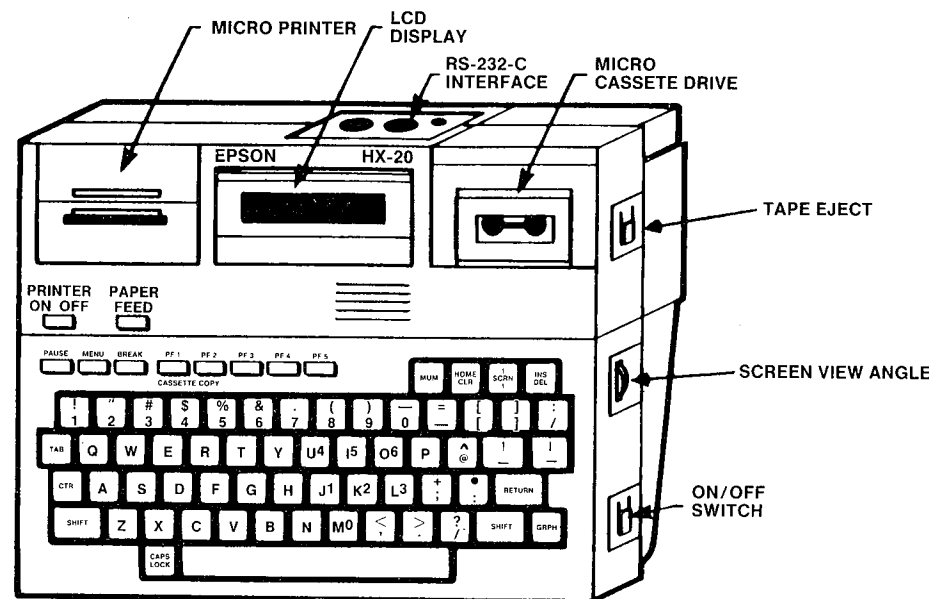
*NEED TO INITIALIZE TO TALK W/ SYSTEM*

*PMP CONTROL PROGRAM*

- BATTERY POWERED WITH AC RECHARGER *(LEAVE IN ALL THE TIME)*

- CABLE CONNECTED TO I/O PORT 0 (DEFAULT SETTING)

- 1200 BAUD (DEFAULT SETTING)

- OPTIONAL FLOPPY DISKETTE DRIVE UNIT (REQUIRES EXPANSION RAM FOR PMP)

# Optional Floppy Diskette Drive
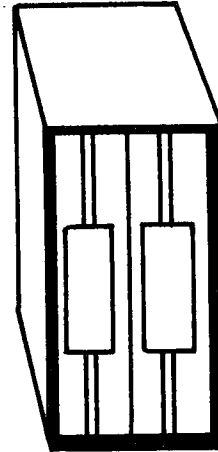
- EPSON TF-20 FLOPPY DISKETTE DRIVE UNIT MAY BE USED FOR SAVING AND LOADING INSTEAD OF PMP'S BUILT-IN MICROCASSETTE TAPE DRIVE.

- PMP REQUIRES INSTALLATION OF EXPANSION RAM (EXPANSION UNIT H20 EU) FOR DISKETTE DRIVE OPERATION.

# Station Message Detail Recording
# (SMDR or MDR) Printer

GTE

NO INCOMMING CALLS

- SUPPORTS THE RECORDING OF
  SYSTEM CALL RECORDS
  PERTAINING TO OUTGOING TRUNK
  CALLS AND TRUNK-TO-TRUNK
  CALLS. ONLY

- TRANSFERS DATA AT RATES OF
  110, 150, 300, 600, 1200, 2400, OR
  4800 BAUD AS DETERMINED IN THE
  SYSTEM DATA BASE.

- INTERFACES WITH THE SYSTEM
  MICROPROCESSOR VIA THE RS-232-C
  PORT 1 (DEFAULT SETTING).
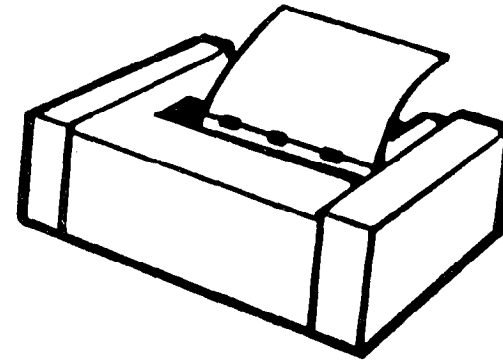
NOTE:   SMDR OUTPUT MAY INTERFACE TO A MINI-COMPUTER, DISK
        DRIVE OR OTHER MASS STORAGE DEVICES.

# Night Bell

- ALLOWS INCOMING CALLS TO BE DIVERTED TO A NIGHT BELL ATTACHED TO A STATION EQUIPMENT NUMBER WHICH HAS BEEN DESIGNATED AS A NIGHT ANSWER STATION.

- NIGHT BELL INTERFACES TO THE SYSTEM THROUGH THE 8 SLC AND RGEN CARDS.

- NIGHT BELLS ARE CUSTOMER FURNISHED.

# Music-On-Hold

GTE

*GTE OMNI SBCS*

MUSIC SOURCE:

- FM RADIO
- PACKAGED MUSIC
- ETC. ...

- PROVIDES MUSIC TO CALLNG PARTIES FOR THE DURATION OF TIME THE CALL IS PLACED IN THE HOLD QUEUE.

- MUSIC SOURCE INTERFACES TO THE SYSTEM VIA A UNIVERSAL SLOT. MUSIC SOURCE IS COUPLED THROUGH 4BWC CARD.

- MUSIC SOURCE MUST BE 600 $\Omega$ IMPEDENCE.

NOTE:   NO LIMITATION EXISTS FOR THE NUMBER OF LINES OR TRUNKS THAT CAN BE CONNECTED TO THE MUSIC-ON-HOLD FEATURE.

# The SBCS Configuration

GTE OMNI SBCS

| | |
|---|---|
| ICG | INTERFACE CARD GROUP |
| SWC | SWITCH CONTROL CARD |
| EKI | ELECTRONIC KEY INSTRUMENT INTERFACE |
| DTI | DIGITAL TELEPHONE INTERFACE |
| SLI | SINGLE LINE INSTRUMENT INTERFACE |
| PFT | POWER FAILURE TRANSFER |
| BWT | BOTHWAY TRUNK INTERFACE |
| ETT | E&M TIE TRUNK INTERFACE |
| LTT | LOOP TIE TRUNK INTERFACE |
| DTMFR | DTMF RECEIVER |
| SCI | SERIAL COMMUNICATION INTERFACE |
| CPU | CENTRAL PROCESSOR UNIT |
| BMEM | BASIC MEMORY |
| MEM | MEMORY |
| CPM | CENTRAL PROCESSING AND MEMORY CARD |
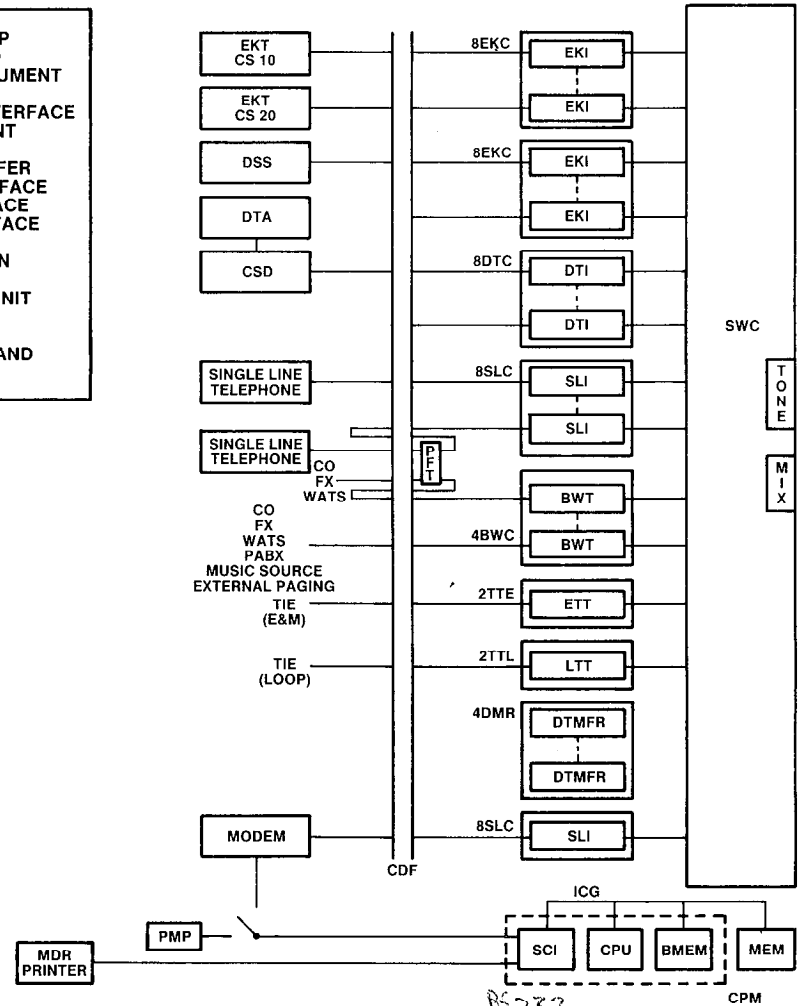


1.32

# Student Notes

# Review Exercise (1.1) — Installation Overview

INSTRUCTIONS: THE FOLLOWING EXERCISE CONSISTS OF MULTIPLE CHOICE, FILL IN THE BLANK OR MATCHING TYPE QUESTIONS. ALL AVAILABLE RESOURCES (I.E. STUDENT WORKBOOK, NOTES, AND GTEP MANUAL) MAY BE USED AS REFERENCES. SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

1. (TRUE OR FALSE) _____ THE OMNI SBCS SYSTEM REQUIRES ADDITIONAL COOLING.

2. (TRUE OR FALSE) _____ THE OMNI SBCS POWER SUPPLY WILL ACCEPT EITHER 110 VAC, 220 VAC, OR 48 VDC AS ITS INPUT POWER SOURCE.

3. THE SYSTEM BACKUP BATTERY WILL MAINTAIN THE SYSTEM MEMORY FOR A PERIOD OF APPROXIMATELY:

      A. 2 DAYS      B. 5 DAYS      C. 1 WEEK      D. 2 WEEKS      _____

4. (TRUE OR FALSE) _____ THE DEFAULT STANDARD DATA BASE MUST BE LOADED FROM TAPE OR FLOPPY DISKETTE AT TIME OF SYSTEM INSTALLATION.

5. THE COMMON CONTROL CARDS REQUIRED FOR A MINIMUM SYSTEM CONFIGURATION CONSIST OF:

      A. CPM, SWC, AND RGEN CARDS
      B. CMC, MEM, AND RGEN CARDS
      C. CPM, 4DMR, AND 6PFT CARDS
      D. CPM, SWC, AND MEM CARDS

      _____

6. THE MAXIMUM NUMBER OF STATIONS SUPPORTED BY THE SYSTEM IS _____ AND THE MAXIMUM NUMBER OF TRUNKS SUPPORTED BY THE SYSTEM IS _____ , ALTHOUGH THESE CAPACITIES CANNOT BE ACHIEVED SIMULTANEOUSLY.

# Review Exercise (1.1) — Installation Overview (Continued)

7. (TRUE OR FALSE) _____ CARD SLOTS 06 THROUGH 18 CAN CONTAIN LINE OR TRUNK CARDS.

8. (TRUE OR FALSE) _____ CARD SLOTS 19, 20, AND 21 ARE RESERVED FOR COMMON CONTROL CARDS.

9. THE TWO RS-232-C PORTS AVAILABLE ON THE SYSTEM CABINET FOR THE PORTABLE MAINTENANCE PANEL OR THE SMDR PRINTER ARE _____ OR _____ .

MATCH THE FOLLOWING CARDS WITH THE CORRECT DESCRIPTION:

10. _____ CPM CARD

11. _____ MEM CARD

12. _____ SWC CARD

13. _____ RGEN CARD

14. _____ 8EKC CARD

15. _____ 8SLC CARD

16. _____ 4BWC CARD

17. _____ 2TTE CARD

18. _____ 2TTL CARD

19. _____ 4DMR CARD

20. _____ 6PFT CARD

21. _____ 8DTC CARD

A. 2 CIRCUIT E&M TIE LINE TRUNK CARD SUPPORTING TYPE I AND TYPE II SIGNALING

B. 8 CIRCUIT LINE CARD SUPPORTING ELECTRONIC KEY TELEPHONES

C. CONTANS PCM TIME DIVISION MULTIPLEXOR/DEMULTIPLEXOR CIRCUITS

D. INTERFACES WITH 8SLC AND 4BWC CARD TO PROVIDE SIX POWER FAIL TRANSFER STATIONS

E. 8 CIRCUIT DIGITAL INTERFACE CARD SUPPORTING CSD TELEPHONES AND DATA INTERFACE UNITS

F. 4 CIRCUIT CO TRUNK CARD WHICH CAN ALSO PROVIDE MUSIC-ON-HOLD, EXTERNAL PAGING, AND POWER FAILURE TRANSFER INTERFACES

G. 8 CIRCUIT LINE CARD SUPPORTING DTMF AND ROTARY DIAL SINGLE LINE TELEPHONES

H. 2 CIRCUIT LOOP START TIE LINE TRUNK CARD

I. CONTAINS ADDITIONAL MEMORY AS EXTENSION OF CPM CARD WITH ROM FOR OPERATING SYSTEM SOFTWARE AND RAM FOR CUSTOMIZED DATA BASE

J. 4 CIRCUIT CARD PROVIDING TONES IF TELEPHONES REQUIRING DUAL TONE MULTI-FREQUENCY ARE INSTALLED

K. GENERATES RINGING TONES FOR SINGLE LINE TELEPHONES OR POWER TO MESSAGE WAITING FEATURE ON SINGLE LINE TELEPHONES WITH MESSAGE WAITING LAMP

L. CONTAINS 16 BIT MICROPROCESSOR FOR SYSTEM OPERATION, REAL TIME CLOCK, AND ROM FOR OPERATING SYSTEM SOFTWARE AND RAM FOR CUSTOMIZED DATA BASE

MATCH THE FOLLOWING COMPONENTS WITH THE CORRECT DESCRIPTION:

22. _____ CS-10

23. _____ CS-20

24. _____ CSD

25. _____ BLF/DSS

26. _____ PMP

27. _____ SMDR

28. _____ MUSIC-ON-HOLD

29. _____ SLT

30. _____ FLOPPY DISKETTE DRIVE

A. DTMF OR DIAL PULSE (ROTARY) TELEPHONE INSTRUMENT

B. ELECTRONIC KEY TELEPHONE WITH 10 PROGRAMMABLE BUTTONS AND MONITOR CAPABILITIES

C. MICROCOMPUTER USED FOR SYSTEM DATA BASE ADMINISTRATION AND MAINTENANCE

D. OPTIONAL UNIT USED TO DECREASE TIME ASSOCIATED WITH SAVING OR LOADING THE CUSTOMIZED DATA BASE

E. PROVIDES MUSIC TO CALLING PARTIES BY MUSIC SOURCE INTERFACED THROUGH A 4BWC CARD

F. ELECTRONIC KEY TELEPHONE WITH 10 PROGRAMMABLE BUTTONS, SPEAKERPHONE, AND 20 CHARACTER LCD DISPLAY

G. 40 OR 80 BUTTON EXPANSION MODULE USED TO PROVIDE VISUAL INDICATORS FOR STATUS OF LINES IN SYSTEM

H. PRINTER USED TO PROVIDE HARD COPY RECORDS OF SYSTEM CALLS

I. DIGITAL TELEPHONE WHICH CAN PROVIDE INTERFACE TO DATA TERMINAL IF EQUIPPED WITH DATA TERMINAL ADAPTER (DTA)

31. (TRUE OR FALSE) _____ ONLY SIX ELECTRONIC KEY TELEPHONES MAY BE DESIGNATED AS POWER FAIL TRANSFER STATIONS.

# Student Notes

# SYSTEM INSTALLATION

## Cabinet Installation

# 1.2 Enabling Objective/
## Cabinet Installation

**GTE**

*GTE OMNI SBCS*

GIVEN:
- GTE OMNI SBCS WITH MOUNTING BRACKET, CABINET, AND POWER SUPPLY
- GTE OMNI SBCS PCB CARDS
- #6 AWG CABLE, POWER SUPPLY CABLE, AND HARDWARE
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- STANDARD INSTALLATION TOOLS
- REVIEW EXERCISE

ACTION:
- MOUNT AND INSTALL SYSTEM CABINET AND POWER SUPPLY.
- CONNECT POWER SUPPLY CABLE.
- GROUND WIRE TERMINALS TO COLD WATER GROUND AND CONNECT SIGNAL WIRE GROUND.
- INSERT AND SEAT COMMON CONTROL, LINE, TRUNK, AND RING GENERATOR CARDS IN CORRECT CARD SLOTS.
- COMPLETE REVIEW EXERCISE.

CRITERIA:
- CABINET AND POWER SUPPLY WILL BE INSTALLED AND GROUNDED IN ACCORDANCE WITH GTE OMNI SBCS GTEP MANUAL. CARDS WILL BE INSERTED AND SEATED CORRECTLY IN DESIGNATED CARD SLOTS.
- REVIEW EXERCISE QUESTIONS WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

# Basic Installation Sequence

**GTE**

(1)  INSTALL MOUNTING BRACKET.

(2)  MOUNT AND INSTALL CABINET AND POWER SUPPLY. (NOTE: DO NOT POWER ON SYSTEM UNTIL CARDS AND PERIPHERALS HAVE BEEN INSTALLED).

(3)  GROUND POWER SUPPLY AND CABINET.

(4)  INSTALL COMMON CONTROL CARDS, LINE CARDS, AND TRUNK CARDS.

(5)  INSTALL CABLES FROM CABINET AND RECEPTACLES TO CDF CROSS CONNECTION BLOCKS.

(6)  WIRE ALL STATION AND TRUNK CROSS CONNECTIONS.

(7)  INSTALL PERIPHERAL INSTRUMENTS (E.G., STATION INSTRUMENTS, BLF/DSS CONSOLES, SMDR, PMP, ETC.).

(8)  POWER SYSTEM ON.

(9)  COLD RESTART SYSTEM TO ESTABLISH DEFAULT STANDARD DATA BASE.

(10)  VERIFY SYSTEM/FEATURE OPERATION.

(11)  DRESS AND TIE CABLES AS REQUIRED. CLEAR INSTALLATION SITE.

(12)  MODIFY DEFAULT STANDARD DATA BASE TO MEET CUSTOMER'S REQUIREMENTS.

# Mounting Bracket

32"

24"
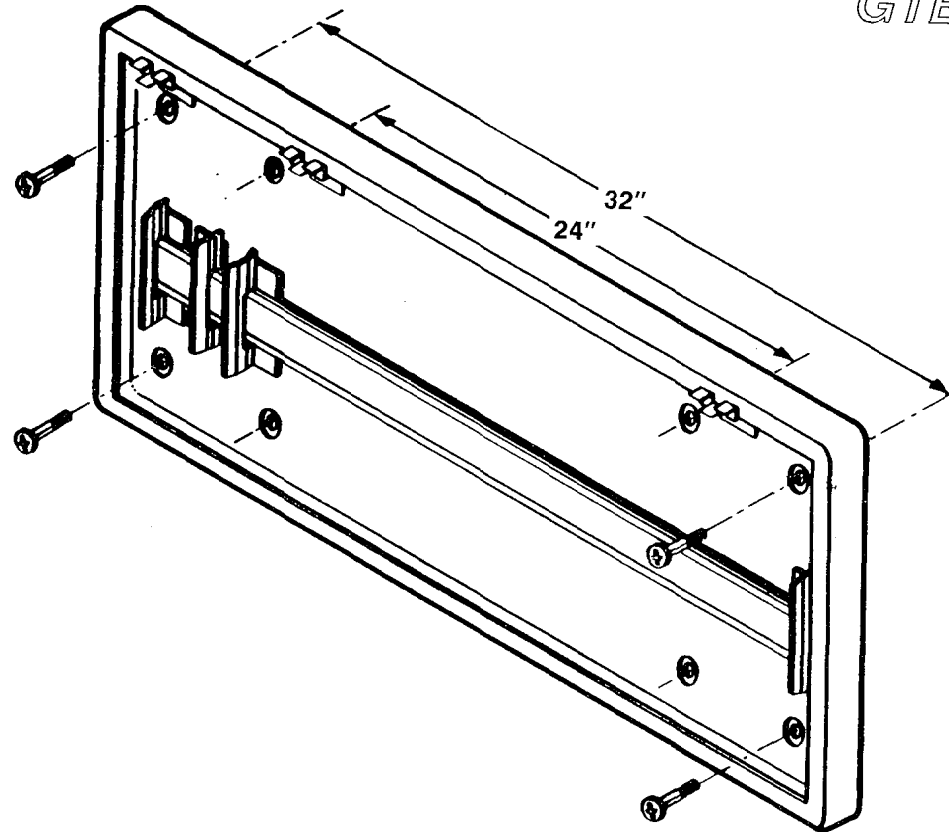
- **MOUNT BRACKET EITHER DIRECTLY TO WALL OR TO PLYWOOD.**

- **ENSURE THAT BRACKET IS SECURELY MOUNTED TO WALL.**

# Mounting Procedure

MOUNTING BRACKET

MOUNTING BRACKET

EQUIPMENT CABINET

EQUIPMENT CABINET

(SIDE VIEW)
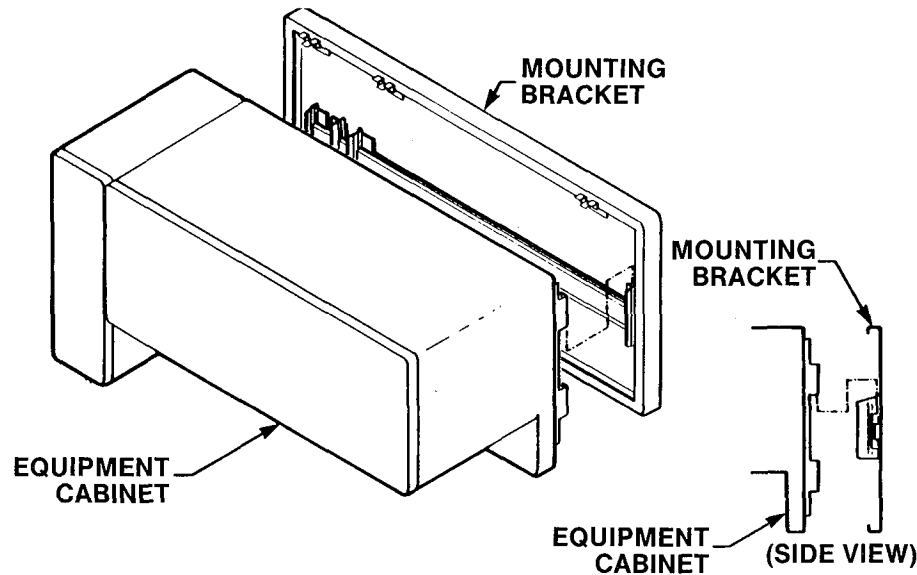
(1) MOUNT EQUIPMENT CABINET TO THE MOUNTING BRACKET BY LOWERING THE CABINET ONTO THE BRACKETS.

(2) AFTER CABINET IS SECURELY MOUNTED, THEN INSTALL THE POWER SUPPLY.

(3) SECURE BOTH CABINET AND POWER SUPPLY WITH THE SCREWS PROVIDED.

1.42

# Cabinet — Power Supply Cable

**GTE**

*GTE OMNI SBCS*



TO POWER SUPPLY UNIT

TO EQUIPMENT CABINET

SAFETY KEY

SAFETY KEY
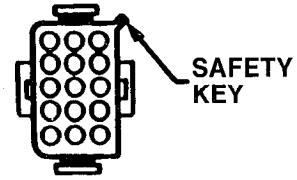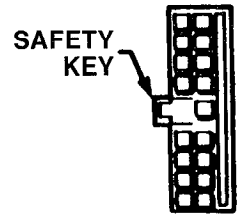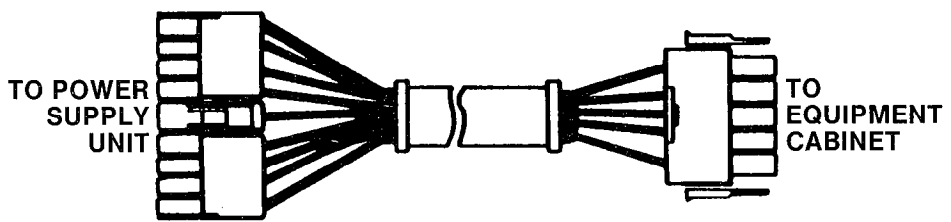
FRONT VIEW OF CONNECTORS

CABLE FOR
CABINET-POWER SUPPLY CONNECTION

POWER SUPPLY

RGEN
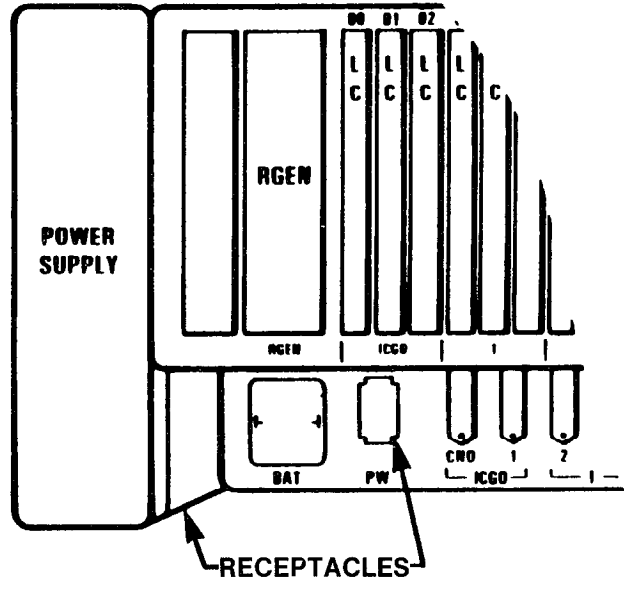
RECEPTACLES

LOCATION OF RECEPTACLES

**NOTE: CONNECT POWER SUPPLY CABLE TO EQUIPMENT CABINET ONLY WHEN SYSTEM INSTALLATION PROCEDURE HAS BEEN COMPLETED.**

# Ground Wire Terminals

EQUIPMENT CABINET

POWER
SUPPLY
UNIT

SIGNAL GROUND TERMINAL

FRAME GROUND
TERMINAL

FRAME GROUND TERMINAL
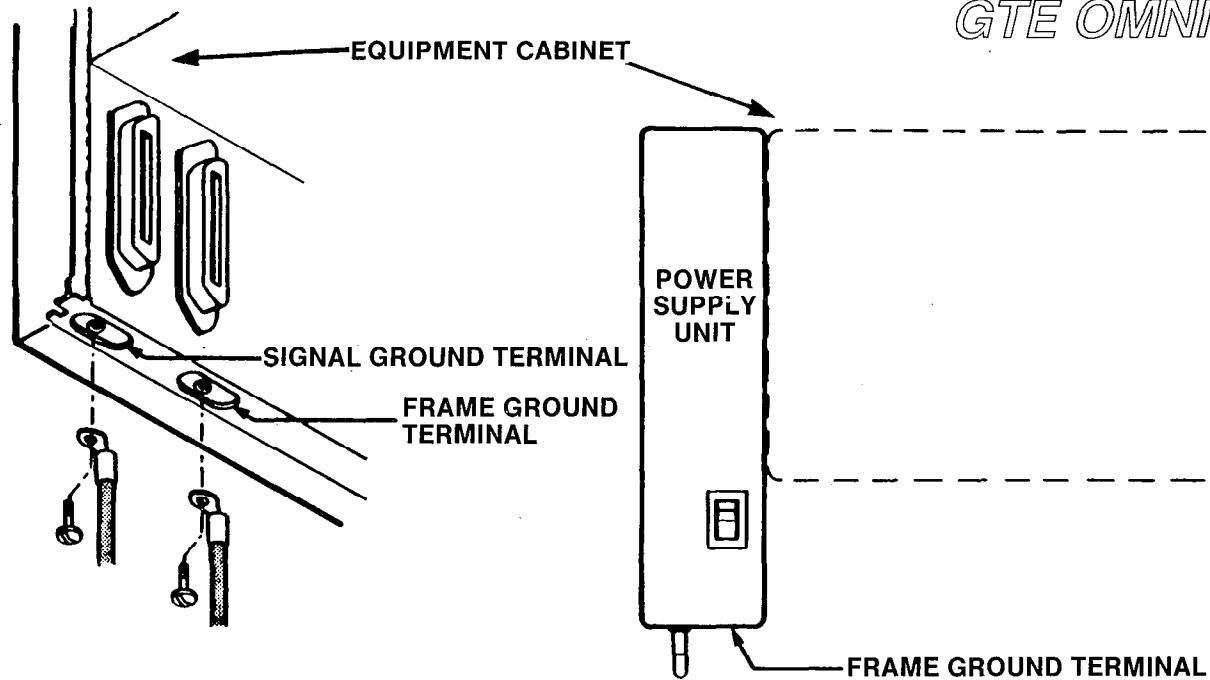
(1)  GROUND BOTH FRAME GROUND TERMINALS (FOR EQUIPMENT
     CABINET AND POWER SUPPLY UNIT) TO AN APPROVED EARTH
     GROUND.

(2)  RUN SEPARATE GROUND WIRE FOR THE SIGNAL GROUND.

(3)  USE #6 AWG STANDARD CABLE.

START TRUNK CARDS FROM SLOT 18 (WORK DOWN)

START LINE CARDS FROM SLOT 00 & WORK UP

THIS WAY UNIVERSAL CARD SLOTS STAY FREE.

# Card Placement Procedure

GTE

GTE OMNI SBCS

(1) ENSURE THAT PROPER ELECTROSTATIC GROUNDING PROCEDURES ARE FOLLOWED PRIOR TO HANDLING PCB CARDS.  FAILURE TO DO SO WILL RESULT IN CARD FAILURES.

(2) INSTALL COMMON CONTROL CARDS: SWC IN SLOT 19, CPM CARD IN SLOT 20, AND MEM CARD IN SLOT 21.

(3) INSTALL LINE CARDS:

- STARTING FROM SLOT 00, INSTALL ALL 8EKC CARDS IN DESIGNATED CARD SLOTS.
- AFTER INSTALLING 8EKC CARDS, INSTALL ALL 8SLC CARDS IN DESIGNATED CARD SLOTS.

(4) INSTALL TRUNK CARDS:

- STARTING FROM SLOT 18, INSTALL ALL 4BWC CARDS IN DESIGNATED CARD SLOTS.
- AFTER INSTALLING 4BWC CARDS, INSTALL ALL 2TTE AND 2TTL CARDS IN DESIGNATED CARD SLOTS.

(5) INSTALL OPTIONAL 4DMR, RGEN, AND 6PFT CARDS AS REQUIRED IN APPROPRIATE CARD SLOTS.

NOTE:  ENSURE THAT CARDS HAVE BEEN PROPERLY SEATED:

- CARD EDGE CONNECTORS TOWARD BACKPLANE.
- CARD EDGES RIDE ON TRACKS (TOP AND BOTTOM).
- SLIDE EACH CARD IN SLOT UNTIL IT STOPS WITH GENTLE PRESSURE.
- SIMULTANEOUSLY PUSH ON TOP AND BOTTOM EJECTOR LEVERS TO SEAT CARD.

# Laboratory Activity (1.2) — Cabinet Installation

**GTE**

*GTE OMNI SBCS*

PERFORM THE INSTALLATION TASKS IN THE SEQUENCE OUTLINED BELOW, IN ACCORDANCE WITH THE GTE OMNI SBCS GTEP MANUAL. COMPLETE THE REVIEW EXERCISE QUESTIONS PERTAINING TO CABINET INSTALLATION UPON COMPLETION OF THIS LABORATORY ACTIVITY.

(1) MOUNT CABINET AND POWER SUPPLY TO MOUNTING BRACKET.
   (A) REFER TO GTEP MANUAL OR STUDENT WORKBOOK FOR MOUNTING BRACKET REQUIREMENTS.
   (B) MOUNT THE BRACKET TO A SOLID SURFACE OR TO A STUD IN THE WALL. USE 24" CENTERS.
   (C) ENSURE THAT MOUNTING BRACKET IS LEVEL.
   (D) MOUNT THE POWER SUPPLY MOUNTING BRACKET TO LEFT OF SYSTEM CABINET.

(2) WIRE SYSTEM GROUNDING.
   (A) REFER TO GTEP MANUAL OR STUDENT WORKBOOK FOR CORRECT GROUNDING PROCEDURES.
   (B) GROUND THE SYSTEM USING #6 AWG WIRING.
   (C) ENSURE THAT THE FRAME GROUND IS CONNECTED TO THE POWER SUPPLY AND TO AN APPROVED GROUND POINT.
   (D) ENSURE THAT THE SYSTEM GROUND IS CONNECTED TO THE CORRECT POINT ON THE CABINET AND FROM THERE TO AN APPROVED EARTH GROUND.

(3) CONNECT POWER SUPPLY CABLE TO THE POWER SUPPLY ONLY. DO NOT CONNECT CABLE TO SYSTEM CABINET UNTIL INSTRUCTED TO POWER ON THE SYSTEM AT A LATER TIME.

---

LAB MILESTONE:

- VERIFY THAT MOUNTING BRACKET, CABINET, AND POWER SUPPLY ARE INSTALLED CORRECTLY. THE SYSTEM SHOULD BE GROUNDED AND THE POWER SUPPLY CABLE SHOULD BE HANGING FROM THE POWER SUPPLY.
- ASK INSTRUCTOR TO INSPECT INSTALLATION.
- TURN TO REVIEW EXERCISE 1.2 AND ANSWER QUESTIONS 1-5.

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# Laboratory Activity (1.2) — Cabinet Installation (Continued)

(4) ENSURE THAT SYSTEM IS GROUNDED AND THAT YOU ARE WEARING A GROUNDED ANTI-STATIC WRIST STRAP DEVICE.

(5) REMOVE HINGED CABINET DOOR AND TEMPORARILY STORE IT OUT OF THE WAY.

(6) BEGIN INSTALLING THE DESIGNATED PRINTED CIRCUIT BOARDS (IN THE SEQUENCE OUTLINED BELOW), FROM LEFT TO RIGHT IN THE SYSTEM CABINET:

    (A) INSTALL THE RING GENERATOR IN THE MARKED SLOT TO THE FAR LEFT. ENSURE THAT COMPONENTS FOR THIS CARD ARE ON THE RIGHT SIDE OF THE BOARD.

        NOTE: FOR INSTALLATION OF ALL OTHER PCB CARDS, THE CARD COMPONENTS WILL BE ON LEFT SIDE OF THE BOARDS.

    (B) INSERT AND SEAT AN ELECTRONIC KEY TELEPHONE (8EKC) CARD IN SLOT 01.

    (C) INSERT AND SEAT A SINGLE LINE TELEPHONE (8SLC) CARD IN SLOT 02.

    (D) INSERT AND SEAT A DIGITAL TELEPHONE (8DTC) CARD IN SLOT 00.

    (E) INSERT AND SEAT A DTMF RECEIVER (4DMR) CARD IN SLOT 06.

    (F) INSERT AND SEAT A BOTHWAY CO TRUNK (4BWC) CARD IN SLOT 18.

    (G) INSERT AND SEAT A TIE LINE LOOP TRUNK (2TTL) CARD IN SLOT 16.

    (H) INSERT AND SEAT A TIE LINE E&M TRUNK (2TTE) CARD IN SLOT 17.

    (I) INSERT AND SEAT THE SWITCH (SWC) CARD IN SLOT 19.

    (J) INSERT AND SEAT THE CONTROL PROCESSOR MEMORY (CPM) CARD IN SLOT 20.

    (K) INSERT AND SEAT THE MEMORY (MEM) CARD IN SLOT 21.

    (L) INSERT AND SEAT THE POWER FAIL TRANSFER (6PFT) CARD IN SLOT 22.

---

**LAB MILESTONE:**

- VERIFY THAT PCB CARDS ARE INSTALLED AND SEATED CORRECTLY.
- ASK INSTRUCTOR TO INSPECT INSTALLATION OF CARDS.
- TURN TO REVIEW EXERCISE 1.2 AND ANSWER QUESTIONS 6-14. SUBMIT YOUR COMPLETED REVIEW EXERCISE TO THE INSTRUCTOR FOR GRADING.
- YOU HAVE NOW COMPLETED THE CABINET INSTALLATION LABORATORY ACTIVITY.

# Review Exercise (1.2) — Cabinet Installation

**GTE**

*GTE OMNI SBCS*

**INSTRUCTIONS:** THE FOLLOWING EXERCISE CONSISTS OF MULTIPLE CHOICE, FILL IN THE BLANK OR MATCHING TYPE QUESTIONS. ALL AVAILABLE RESOURCES (I.E. STUDENT WORKBOOK, NOTES, AND GTEP MANUAL) MAY BE USED AS REFERENCES. SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

1.  THE MOUNTING BRACKET IS DESIGNED TO PERMIT MOUNTING ON _____ OR _____ INCH CENTERS.

2.  (TRUE OR FALSE) _____ THE POWER SUPPLY IS MOUNTED TO THE RIGHT OF THE SYSTEM CABINET.

3.  THREE GROUND WIRES ARE REQUIRED FOR SYSTEM OPERATION _____, _____ , AND _____ .

4.  WHERE DOES THE GROUND ORIGINATE FOR GROUND START TRUNKS? _____

5.  WHAT PREVENTS INCORRECT INSTALLATION OF THE POWER SUPPLY CABLE?

    _____

6.  TO PROTECT AGAINST ELECTROSTATIC DISCHARGE, A GROUNDED _____ SHOULD ALWAYS BE WORN WHEN INSERTING OR REMOVING PCB CARDS.

# Review Exercise (1.2) — Cabinet Installation (Continued)

GTE

*GTE OMNI SBCS*

7. COMPLETE THE OMNI SBCS FRAME IMAGE BELOW, BY IDENTIFYING WHAT TYPE OF CARDS WERE INSTALLED IN EACH CARD SLOT DURING THE LAB ACTIVITY.
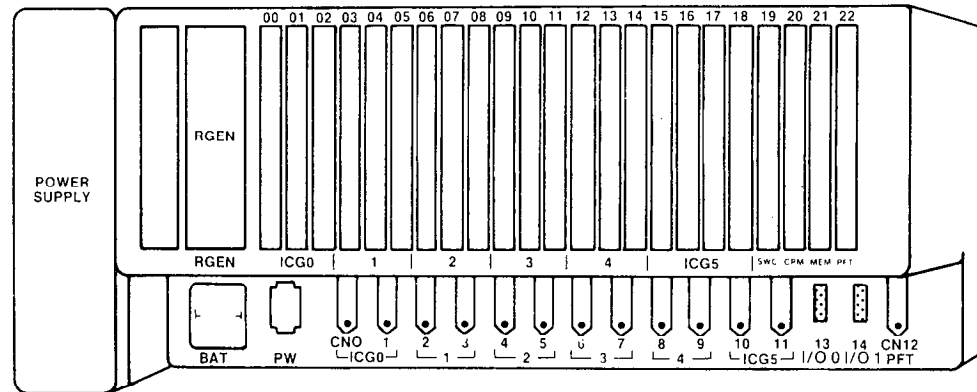


8. WHICH CARD IS INSERTED WITH COMPONENTS FACING THE RIGHT SIDE OF THE CABINET WHEN INSTALLED CORRECTLY? _____

9. OTHER THAN LINE OR TRUNK CARDS, WHICH THREE TYPES OF CARDS ARE CONSIDERED TO BE OPTIONAL? _____ , _____ , AND _____

10. HOW MANY CIRCUITS CAN BE ASSIGNED AS POWER FAIL TRANSFER CIRCUITS?

_____

11. HOW MANY OMNI SBCS SLOTS CAN BE DEDICATED TO LINE CARDS? _____

12. HOW MANY OMNI SBCS SLOTS CAN BE DEDICATED TO TRUNK CARDS? _____

13. HOW MANY OMNI SBCS SLOTS CAN CONTAIN EITHER LINE OR TRUNK CARDS? _____

14. WHAT THREE CARDS ARE REFERRED TO AS COMMON CONTROL CARDS?
_____ , _____ , AND _____

1.49

FEATURE ACCESS CODE ASSIGNMENTS
PACKAGE C          (Continued)

CMC 100

| Feature Name | Feature Number P1 | Default Access Code | Enter New Access Code P2 |
|---|---|---|---|
| Station speed calling | 48 | *0 | _____ |
| Station Prefix | 2 | NONE | _____ |
| Subordinate data call setup (2.0) | 160 | 67 | _____ |
| System speed calling | 49 | ## | _____ |
| Trunk camp-on (activate) | 151 | *7 | _____ |
| Trunk camp-on (cancel) | 91 | #7 | _____ |
| Trunk access - direct trunk access | 130 | 61* | _____ |
| Wake-up other (activate) (2.0) | 70 | NONE | _____ |
| Wake-up self (activate) (2.0) | 78 | NONE | _____ |
| Wake-up self (cancel) (2.0) | 79 | NONE | _____ |

**GTE**

*GTE OMNI SBCS*

# SYSTEM INSTALLATION
## Peripheral
## Installation

# 1.3 Enabling Objective/ Peripheral Installation

GTE OMNI SBCS

GIVEN:
- GTE OMNI SBCS
- GTE OMNI SBCS PERIPHERALS
- ASSORTED GAUGE WIRE, AMP CONNECTOR CABLES, CDF BLOCKS, MODULAR TELEPHONE JACKS, AND HARDWARE
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- STANDARD INSTALLATION TOOLS
- REVIEW EXERCISE

ACTION:
- CONNECT AND FASTEN AMP CONNECTOR CABLES FROM OMNI SBCS TO CDF BLOCKS.
- INSTALL PERIPHERAL DEVICES BY MAKING CORRECT CROSS CONNECTIONS FROM MODULAR TELEPHONE JACKS TO CDF BLOCKS.
- WIRE POWER FAIL TRANSFER CROSS CONNECTIONS.
- INSTALL CO AND TIE LINE TRUNKS BY MAKING CORRECT CROSS CONNECTIONS.
- WIRE NIGHT BELL AND MUSIC-ON-HOLD CROSS CONNECTIONS.
- CONNECT AND INSTALL SMDR PRINTER, PORTABLE MAINTENANCE PANEL, AND FLOPPY DISKETTE DRIVE UNIT.
- COMPLETE REVIEW EXERCISE.

CRITERIA:
- PERIPHERALS WILL BE INSTALLED IN ACCORDANCE WITH GTE OMNI SBCS GTEP MANUAL.
- REVIEW EXERCISE QUESTIONS WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

# AMP Connector Number Receptacles
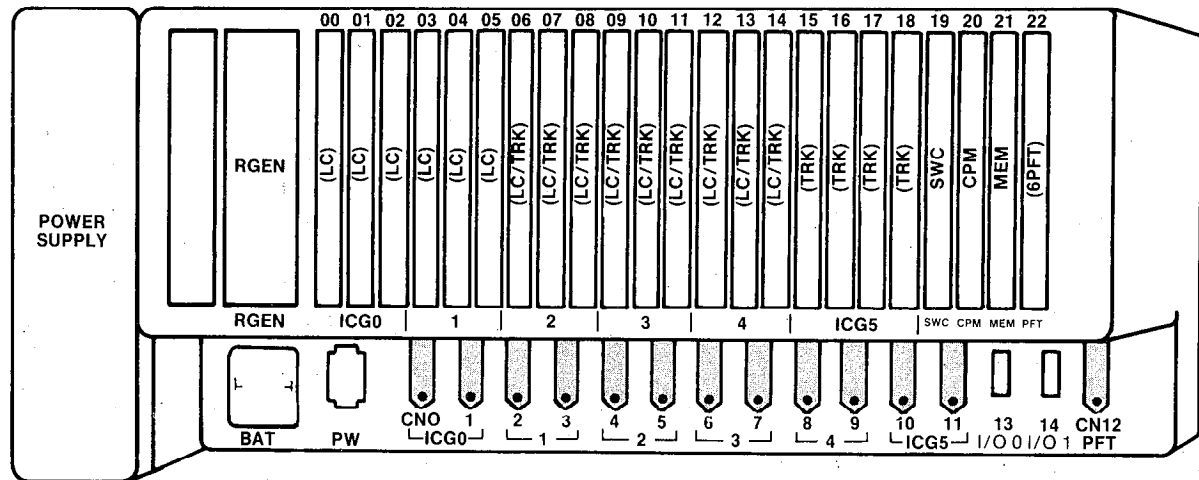
(1)  AFTER CARDS HAVE BEEN INSTALLED, DETERMINE WHICH INTERFACE CARD GROUP (ICG) WILL REQUIRE CABLES.

(2)  INSTALL MALE ENDED 25 PAIR AMP CABLES TO CONNECTOR NUMBER RECEPTACLES WHICH MATCH THE ICG OF THE INSTALLED CARDS.

(3)  ENSURE THAT AMP CONNECTORS ARE SECURED FIRMLY TO THE AMP CONNECTOR NUMBER RECEPTACLES USING THE SCREWS PROVIDED.

(4)  ATTACH THE CABLE TO THE WALL USING TIE WRAPS OR SIMILAR DEVICES TO PREVENT THE CONNECTOR FROM WORKING LOOSE.

# Relationship of Card Slots and Circuits to Cables and AMP Connector Pins

*GTE OMNI SBCS*

Handwritten notes (top right):
ICG — INTERFACE CARD GROUPS
6 PER SYSTEM
= GROUP OF CKTS
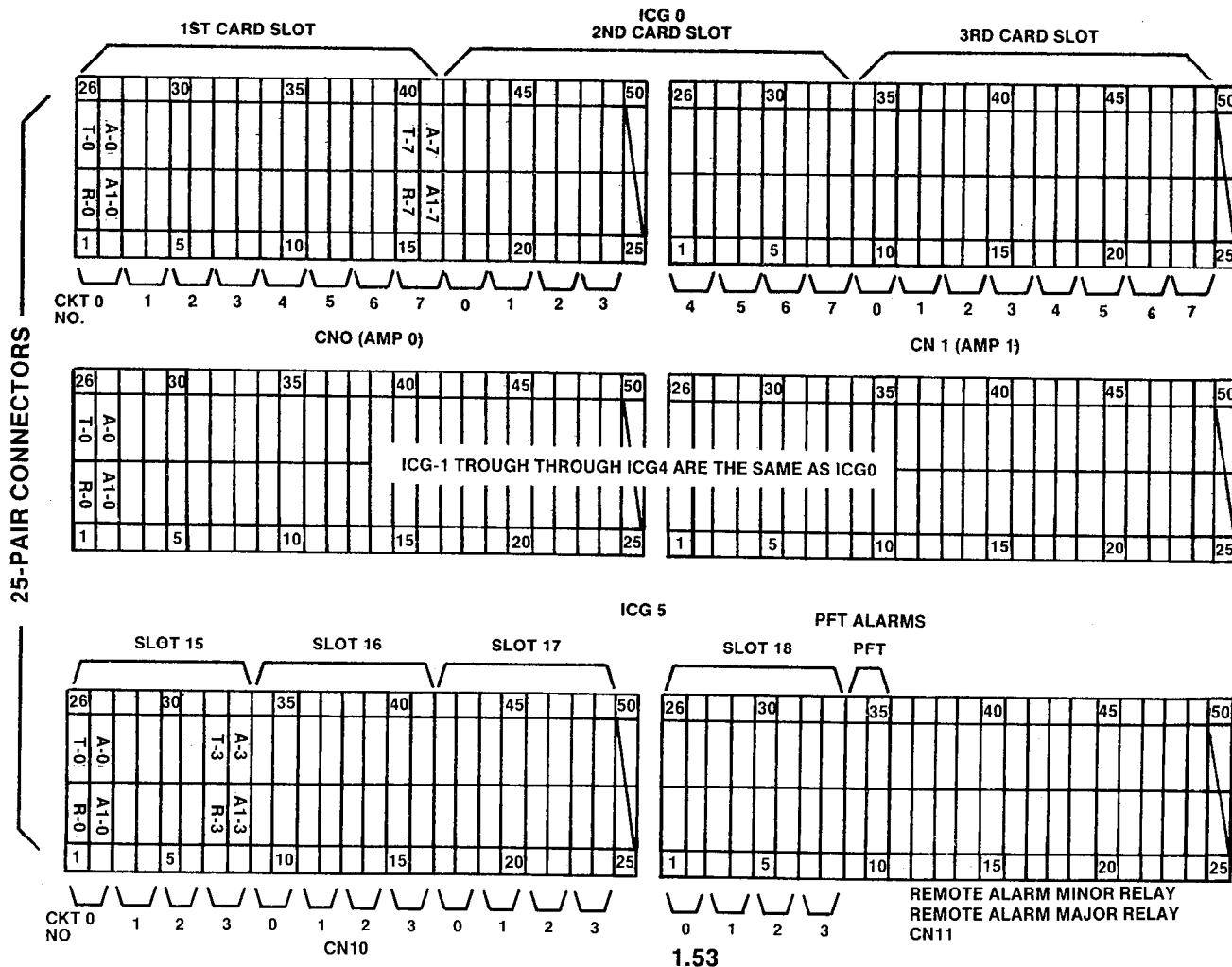
Handwritten notes (right):
ICG 0 → 4 ARE THE SAME
(3 SLOTS)

ICG 5 DIFFERENT
SLOTS 15, 16, 17, 18
(TRUNKS)



ICG 0

1ST CARD SLOT | 2ND CARD SLOT | 3RD CARD SLOT

CKT NO. — CNO (AMP 0)
CN 1 (AMP 1)

ICG-1 TROUGH THROUGH ICG4 ARE THE SAME AS ICG0

25-PAIR CONNECTORS

ICG 5

SLOT 15 | SLOT 16 | SLOT 17 | SLOT 18 | PFT ALARMS | PFT

CKT NO — CN10

CN11

REMOTE ALARM MINOR RELAY
REMOTE ALARM MAJOR RELAY

1.53

# CS-10, CS-20, or BLF/DSS Installation

**GTE**

**GTE OMNI SBCS**

- DIAGRAM REPRESENTS A TYPICAL EXAMPLE OF CROSS CONNECTIONS FOR A CS-10 OR CS-20 ELECTRONIC TELEPHONE.

- EACH CS-10 AND CS-20 TELEPHONE WILL REQUIRE TWO PAIRS OF WIRES. ONE PAIR IS FOR TIP AND RING, THE OTHER FOR DATA/POWER. DATA PAIRS MUST BE INSTALLED PROPERLY FOR TELEPHONE TO WORK. BLF/DSS REQUIRES ONLY ONE PAIR OF WIRES (DATA/POWER) FOR OPERATION.

- EXAMPLE ILLUSTRATES CDF CROSS CONNECTION FOR AN 8EKC INTERFACE CARD IN SLOT 01, USING CABLE NUMBER (CN) 1. CONNECTOR BLOCK SHOWN WOULD HANDLE THE LAST FOUR CIRCUITS FOR THE CARD SLOT IDENTIFIED ABOVE.

- REFER TO CDF CROSS CONNECT REFERENCE CHART IN STUDENT WORKBOOK FOR CROSS CONNECTION INSTRUCTIONS FOR OTHER CARD AND EQUIPMENT CONFIGURATIONS.

25 PAIR CDF BLOCK

TIP
RING
DATA
DATA

MODULAR JACK

BLACK TIP
GREEN
RED
YELLOW RING

PALARITY SENSITIVE

2 PAIR MODULAR CABLE

CS-10 AND CS-20 TYPICAL CROSS CONNECTION

POWER SUPPLY

RGEN

25 PAIR CABLE

1.54
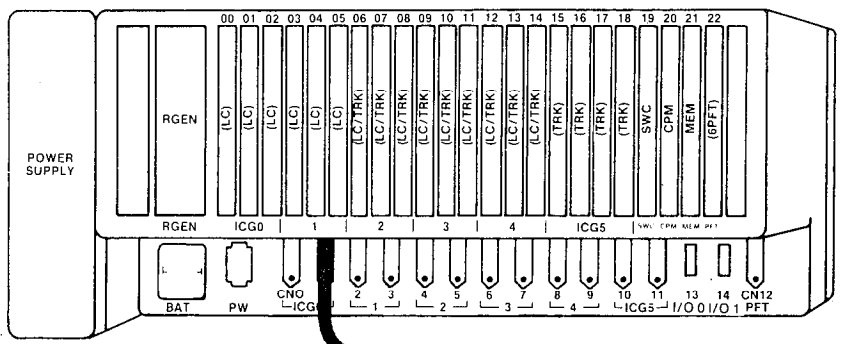
BLF/DSS - DON'T REALLY NEED T&R ONLY DATA, BUT RUN BOTH

3 PR JACKS

*A

IF ATT MORE THAN 300' FROM SWITCH, MUST USE ANOTHER DATA PAIR FROM ANOTHER PORT FROM 8EKC CARD, ADDS COPPER LESSENS RESISTANCE TIE ON 3RD PAIR OF MOD. JACK

# Single Line Telephone Installation

GTE OMNI SBCS

- DIAGRAM REPRESENTS A TYPICAL EXAMPLE OF CROSS CONNECTIONS FOR A SINGLE LINE TELEPHONE.

- EACH SINGLE LINE TELEPHONE REQUIRES ONLY ONE PAIR OF WIRES FOR TIP AND RING. ON THE CDF TERMINAL BLOCK, ONLY EVERY OTHER PAIR OF WIRES IS USED.

- EXAMPLE ILLUSTRATES CDF CROSS CONNECTION FOR AN 8SLC INTERFACE CARD IN SLOT 02, USING CABLE NUMBER (CN) 1. CONNECTOR BLOCK SHOWN WOULD HANDLE ALL EIGHT CIRCUITS FOR THE CARD SLOT IDENTIFIED ABOVE.

- REFER TO CDF CROSS CONNECT REFERENCE CHART IN STUDENT WORKBOOK FOR CROSS CONNECTION INSTRUCTIONS FOR OTHER CARD AND EQUIPMENT CONFIGURATIONS.



25 PAIR CDF BLOCK

MODULAR JACK

TIP

RING

GREEN

RED

MODULAR CABLE

25 PAIR CABLE

TYPICAL SINGLE LINE TELEPHONE CROSS CONNECTION

1.55

# CSD Telephone Installation

DIU – 8DTC CARD
SINGLE PAIR

- DIAGRAM REPRESENTS A TYPICAL EXAMPLE OF CROSS CONNECTIONS FOR A CSD TELEPHONE.

- EACH CSD TELEPHONE REQUIRES ONLY ONE PAIR OF WIRES FOR TIP AND RING (SIMILAR TO SLT CROSS CONNECTIONS). ON THE CDF TERMINAL BLOCK, ONLY EVERY OTHER PAIR OF WIRES IS USED.

- EXAMPLE ILLUSTRATES CDF CROSS CONNECTION FOR AN 8DTC INTERFACE CARD IN SLOT 00, USING CABLE NUMBER (CN) 0. CONNECTOR BLOCK SHOWN WOULD HANDLE ALL EIGHT CIRCUITS FOR THE CARD SLOT IDENTIFIED ABOVE.

- REFER TO CDF CROSS CONNECT REFERENCE CHART IN OF STUDENT WORKBOOK, INSTALLATION MODULE FOR CROSS CONNECTION INSTRUCTIONS FOR OTHER CARD AND EQUIPMENT CONFIGURATIONS.

25 PAIR CDF BLOCK

TIP
RING

MODULAR JACK

GREEN
RED

MODULAR CABLE

POWER SUPPLY

RGEN

RGEN ICG0 1 2 3 4 ICG5 SWC CPM MEM PFT

BAT PW CG0 1 2 3 4 5 6 7 8 9 10 11 13 14 CN12
ICG5 I/O 0 I/O 1 PFT

25 PAIR CABLE

TYPICAL CSD CROSS CONNECTION

1.56

# CO Trunk Installation

- DIAGRAM REPRESENTS A TYPICAL EXAMPLE OF CROSS CONNECTIONS FOR A CO TRUNK.

- EACH CO TRUNK FROM A 4BWC CARD REQUIRES ONLY ONE PAIR OF WIRES FOR TIP AND RING. EACH 4BWC CARD HAS FOUR CIRCUITS AND ON THE CDF TERMINAL BLOCK, ONLY EVERY OTHER PAIR OF WIRES IS USED.

- EXAMPLE ILLUSTRATES CDF CROSS CONNECTION FOR A 4BWC INTERFACE CARD IN SLOT 06, USING CABLE NUMBER (CN) 4. CONNECTOR BLOCK SHOWN WOULD HANDLE ALL FOUR CIRCUITS FOR THE CARD SLOT IDENTIFIED ABOVE, USING 26/1, 28/3, 30/5, AND 32/7 FOR EACH CIRCUIT.

- REFER TO CDF CROSS CONNECT REFERENCE CHART IN STUDENT WORKBOOK FOR CROSS CONNECTION INSTRUCTIONS FOR OTHER CARD AND EQUIPMENT CONFIGURATIONS.



25 PAIR CDF BLOCK

TIP

RING

TO CENTRAL OFFICE TRUNKS

MODULAR CORD

MODULAR JACK

GREEN

RED

POWER SUPPLY

25 PAIR CABLE

1.57

# Loop Tie Trunk Installation

*GTE OMNI SBCS*

- DIAGRAM REPRESENTS A TYPICAL EXAMPLE OF CROSS CONNECTIONS FOR A LOOP TIE TRUNK.

- EACH LOOP TIE TRUNK FROM A 2TTL CARD REQUIRES ONLY ONE PAIR OF WIRES FOR TIP AND RING. EACH 2TTL CARD HAS TWO CIRCUITS.

- EXAMPLE ILLUSTRATES CDF CROSS CONNECTION FOR A 2TTL INTERFACE CARD IN SLOT 08, USING CABLE NUMBER (CN) 5. CONNECTOR BLOCK SHOWN WOULD HANDLE BOTH CIRCUITS FOR THE CARD SLOT IDENTIFIED ABOVE, USING PINS 34/9 FOR THE FIRST CIRCUIT AND 36/11 FOR THE SECOND CIRCUIT.

- REFER TO CDF CROSS CONNECT REFERENCE CHART IN STUDENT WORKBOOK FOR CROSS CONNECTION INSTRUCTIONS FOR OTHER CARD AND EQUIPMENT CONFIGURATIONS.

# E&M (Type I) Tie Trunk
# Installation

GTE OMNI SBCS

- DIAGRAM REPRESENTS A TYPICAL EXAMPLE OF CROSS CONNECTIONS FOR A E&M (TYPE I) TIE TRUNK.

- EACH TYPE I E&M TRUNK FROM A 2TTE CARD REQUIRES TWO PAIR OF WIRES. ONE PAIR FOR TIP AND RING, THE OTHER PAIR FOR E (RECEIVE) AND M (TRANSMIT). EACH 2TTE CARD HAS TWO CIRCUITS.

- EXAMPLE ILLUSTRATES CDF CROSS CONNECTION FOR A 2TTE INTERFACE CARD IN SLOT 08, USING CABLE NUMBER (CN) 5. CONNECTOR BLOCK SHOWN WOULD HANDLE BOTH CIRCUITS FOR THE CARD SLOT IDENTIFIED ABOVE, USING PINS 34/9, 35/10 FOR THE FIRST CIRCUIT AND 38/13, 39/14 FOR THE SECOND CIRCUIT.

- REFER TO CDF CROSS CONNECT REFERENCE CHART IN STUDENT WORKBOOK FOR CROSS CONNECTION INSTRUCTIONS FOR OTHER CARD AND EQUIPMENT CONFIGURATIONS.



25 PAIR CDF BLOCK



1.59
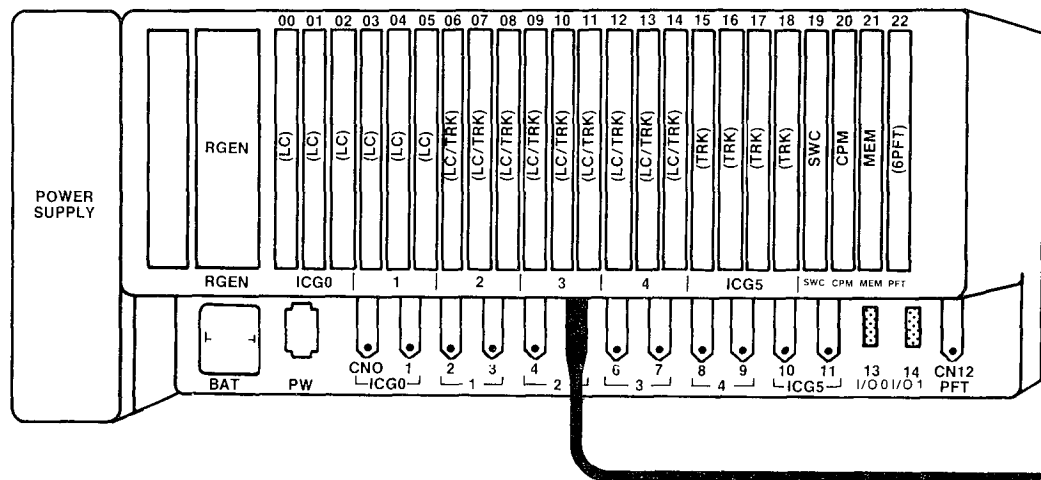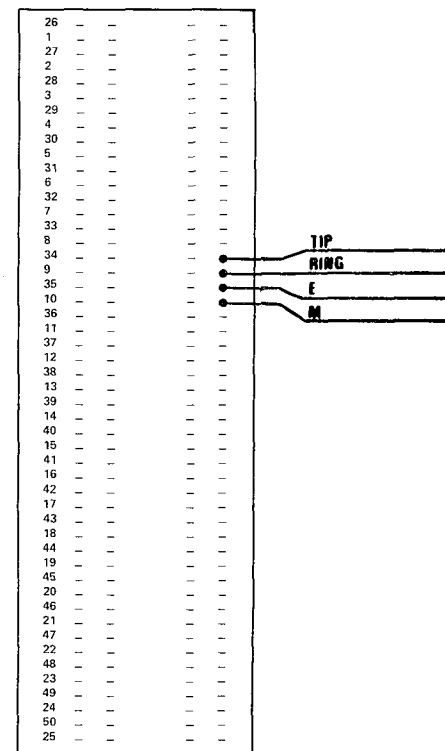
# E&M (Type II) Tie Trunk Installation

**GTE**

**GTE OMNI SBCS**

- DIAGRAM REPRESENTS A TYPICAL EXAMPLE OF CROSS CONNECTIONS FOR A E&M (TYPE II) TIE TRUNK.

- EACH TYPE II E&M TRUNK FROM A 2TTE CARD REQUIRES THREE PAIR OF WIRES. ONE PAIR FOR TIP AND RING, THE OTHER FOUR WIRES FOR SIGNAL GROUND, E (RECEIVE), M (TRANSMIT), AND SIGNAL BATTERY. EACH 2TTE CARD HAS TWO CIRCUITS.

- EXAMPLE ILLUSTRATES CDF CROSS CONNECTION FOR A 2TTE INTERFACE CARD IN SLOT 06, USING CABLE NUMBER (CN) 4. CONNECTOR BLOCK SHOWN WOULD HANDLE BOTH CIRCUITS FOR THE CARD SLOT IDENTIFIED ABOVE, USING PINS 26/1, 28/3, 29/4 FOR THE FIRST CIRCUIT AND 30/5, 32/7, AND 33/8 FOR THE SECOND CIRCUIT.

- REFER TO CDF CROSS CONNECT REFERENCE CHART IN STUDENT WORKBOOK FOR CROSS CONNECTION INSTRUCTIONS FOR OTHER CARD AND EQUIPMENT CONFIGURATIONS.

25 PAIR CDF BLOCK

TIP
RING
SG●
E●
M
SB●

25 PAIR CABLE

1.60
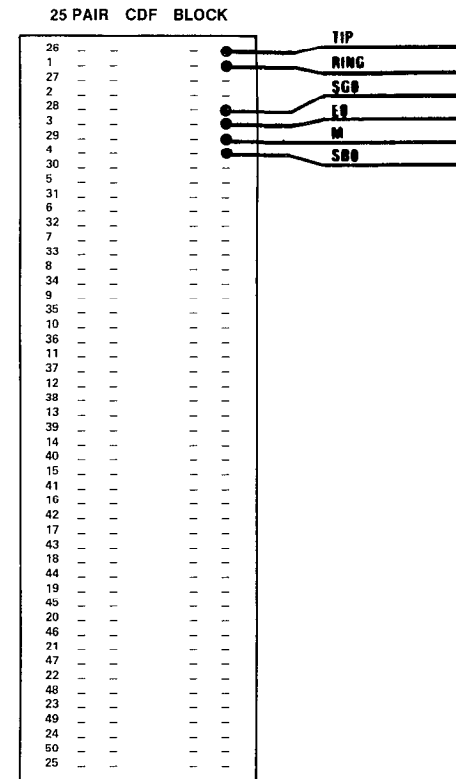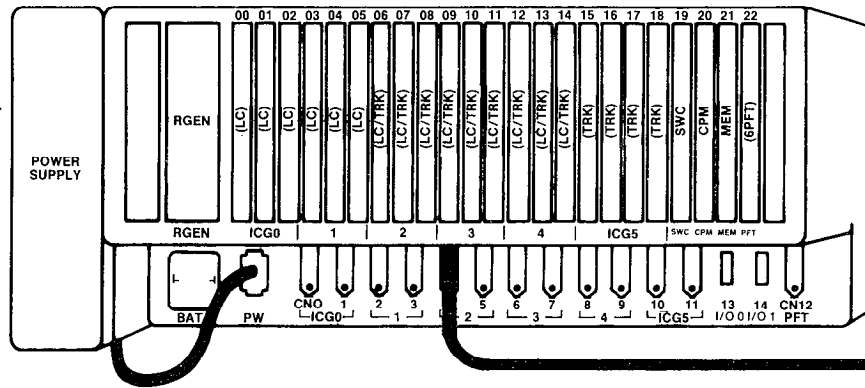
# CDF Cross Connect
# Reference Chart

### GTE OMNI SBCS

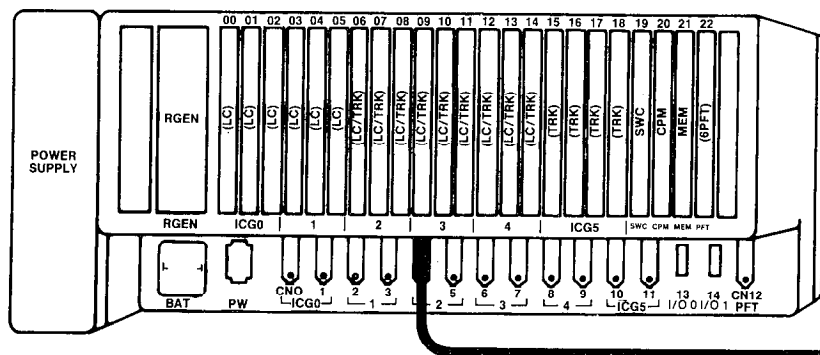| CARD SLOT | CABLE NUMBER | CIRCUIT NUMBER | AMP CONN | CDF CABLE COLOR | 8SLC | 8EKC | 8DTC | 4BWC | 2TTE (TYPE I) | 2TTE (TYPE II) | 2TTL | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 26 | WHT-BLU | TIP 0 | TIP 0 | TIP 0 | TIP 0 | TIP 0 | TIP 0 | TIP 0 | • 8SLC, 8EKC, AND 8DTC CARDS |
| | | | 1 | BLU-WHT | RING 0 | RING 0 | RING 0 | RING 0 | RING 0 | RING 0 | RING 0 | CANNOT BE INSERTED IN SLOTS |
| | | | 27 | WHT-ORN | | DATA | | | M | | | 15, 16, 17, AND 18. |
| | | | 2 | ORN-WHT | | DATA | | | E | | | |
| | | 1 | 28 | WHT-GRN | TIP 1 | TIP 1 | TIP 1 | TIP 1 | | SG | TIP 1 | • 8DTC ONLY CAN BE INSERTED IN SLOTS 00, |
| | | | 3 | GRN-WHT | RING 1 | RING 1 | RING 1 | RING 1 | | E | RING 1 | 03, 06, 09, AND 12 WHEN USED FOR |
| | | | 29 | WHT-BRN | | DATA | | | | M | | VOICE/DATA (DTA OPTION). |
| | | | 4 | BRN-WHT | | DATA | | | | SB | | |
| | | 2 | 30 | WHT-SL | TIP 2 | TIP 2 | TIP 2 | TIP 2 | TIP 1 | TIP 1 | | • 4BWC, 2TTE, AND 2TTL CANNOT BE INSERTED |
| 00 | 0 | | 5 | SL-WHT | RING 2 | RING 2 | RING 2 | RING 2 | RING 1 | RING 1 | | IN SLOTS 00, 01, 02, 03, 04, OR 05. |
| 03 | 2 | | 31 | RED-BLU | | DATA | | | M | | | |
| 06 | 4 | | 6 | BLU-RED | | DATA | | | E | | | • MAXIMUM NUMBER OF TIE TRUNKS IN SYSTEM IS 12. |
| 09 | 6 | 3 | 32 | RED-ORN | TIP 3 | TIP 3 | TIP 3 | TIP 3 | | SG | ----- | |
| 12 | 8 | | 7 | ORN-RED | RING 3 | RING 3 | RING 3 | RING 3 | | E | | |
| | | | 33 | RED-GRN | | DATA | | | | M | | |
| | | | 8 | GRN-RED | | DATA | | | | SB | | |
| | | 4 | 34 | RED-BRN | TIP 4 | TIP 4 | TIP 4 | ----- | ----- | ----- | ----- | |
| | | | 9 | BRN-RED | RING 4 | RING 4 | RING 4 | | | | | |
| | | | 35 | RED-SL | | DATA | | | | | | |
| | | | 10 | SL-RED | | DATA | | | | | | |
| | | 5 | 36 | BLK-BLU | TIP 5 | TIP 5 | TIP 5 | ----- | ----- | ----- | ----- | |
| | | | 11 | BLU-BLK | RING 5 | RING 5 | RING 5 | | | | | |
| | | | 37 | BLK-ORN | | DATA | | | | | | |
| | | | 12 | ORN-BLK | | DATA | | | | | | |
| | | 6 | 38 | BLK-GRN | TIP 6 | TIP 6 | TIP 6 | ----- | ----- | ----- | ----- | |
| | | | 13 | GRN-BLK | RING 6 | RING 6 | RING 6 | | | | | |
| | | | 39 | BLK-BRN | | DATA | | | | | | |
| | | | 14 | BRN-BLK | | DATA | | | | | | |
| | | 7 | 40 | BLK-SL | TIP 7 | TIP 7 | TIP 7 | ----- | ----- | ----- | ----- | |
| | | | 15 | SL-BLK | RING 7 | RING 7 | RING 7 | | | | | |
| | | | 41 | YEL-BLU | | DATA | | | | | | |
| | | | 16 | BLU-YEL | | DATA | | | | | | |
| | | 0 | 42 | YEL-ORN | TIP 0 | TIP 0 | ----- | TIP 0 | TIP 0 | TIP 0 | TIP 0 | |
| | | | 17 | ORN-YEL | RING 0 | RING 0 | | RING 0 | RING 0 | RING 0 | RING 0 | |
| | | | 43 | YEL-GRN | | DATA | | | M | | | |
| | | | 18 | GRN-YEL | | DATA | | | E | | | |
| | | 1 | 44 | YEL-BRN | TIP 1 | TIP 1 | ----- | TIP 1 | | SG | TIP 1 | |
| 01 | 0 | | 19 | BRN-YEL | RING 1 | RING 1 | | RING 1 | | E | RING 1 | |
| 04 | 2 | | 45 | YEL-SL | | DATA | | | | M | | |
| 07 | 4 | | 20 | SL-YEL | | DATA | | | | SB | | |
| 10 | 6 | 2 | 46 | VIO-BLU | TIP 2 | TIP 2 | ----- | TIP 2 | TIP 1 | TIP 1 | | |
| 13 | 8 | | 21 | BLU-VIO | RING 2 | RING 2 | | RING 2 | RING 1 | RING 1 | | |
| | | | 47 | VIO-ORN | | DATA | | | M | | | |
| | | | 22 | ORN-VIO | | DATA | | | E | | | |
| | | 3 | 48 | VIO-GRN | TIP 3 | TIP 3 | ----- | TIP 3 | | SG | ----- | |
| | | | 23 | GRN-VIO | RING 3 | RING 3 | | RING 3 | | E | | |
| | | | 49 | VIO-BRN | | DATA | | | | M | | |
| | | | 24 | BRN-VIO | | DATA | | | | SB | | |
| | | | 50 | VIO-SL | | | | | | | | |
| | | | 25 | SL-VIO | | | | | | | | |

# CDF Cross Connect Reference Chart (Continued)

GTE

GTE OMNI SBCS

| CARD SLOT | CABLE NUMBER | CIRCUIT NUMBER | AMP CONN | CDF CABLE COLOR | 8SLC | 8EKC | 8DTC | 4BWC | 2TTE (TYPE I) | 2TTE (TYPE II) | 2TTL | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 4 | 26 | WHT-BLU | TIP 4 | TIP 4 | TIP4 | ----- | ----- | ----- | ----- | • 8SLC, 8EKC, AND 8DTC CARDS |
| | | | 1 | BLU-WHT | RING 4 | RING 4 | RING 4 | | | | | CANNOT BE INSERTED IN SLOTS |
| | | | 27 | WHT-ORN | | DATA | | | | | | 15, 16, 17, AND 18. |
| | | | 2 | ORN-WHT | | DATA | | | | | | |
| 01 | 1 | 5 | 28 | WHT-GRN | TIP 5 | TIP 5 | TIP 5 | ----- | ----- | ----- | ----- | • 8DTC ONLY CAN BE INSERTED IN SLOTS 00, |
| 04 | 3 | | 3 | GRN-WHT | RING 5 | RING 5 | RING 5 | | | | | 03, 06, 09, AND 12 WHEN USED FOR |
| 07 | 5 | | 29 | WHT-BRN | | DATA | | | | | | VOICE/DATA (DTA OPTION). |
| 10 | 7 | | 4 | BRN-WHT | | DATA | | | | | | |
| 13 | 9 | 6 | 30 | WHT-SL | TIP 6 | TIP 6 | TIP 6 | ----- | | | | • 4BWC, 2TTE, AND 2TTL CANNOT BE INSERTED |
| | | | 5 | SL-WHT | RING 6 | RING 6 | RING 6 | | | | | IN SLOTS 00, 01, 02, 03, 04, OR 05. |
| | | | 31 | RED-BLU | | DATA | | | | | | |
| | | | 6 | BLU-RED | | DATA | | | | | | • MAXIMUM NUMBER OF TIE TRUNKS IN SYSTEM IS 12. |
| | | 7 | 32 | RED-ORN | TIP 7 | TIP 7 | TIP 7 | ----- | ----- | ----- | ----- | |
| 12 | 8 | | 7 | ORN-RED | RING 7 | RING 7 | RING 7 | | | | | |
| | | | 33 | RED-GRN | | DATA | | | | | | |
| | | | 8 | GRN-RED | | DATA | | | | | | |
| | | 0 | 34 | RED-BRN | TIP 0 | TIP 0 | TIP 0 | TIP 0 | TIP 0 | TIP 0 | TIP 0 | |
| | | | 9 | BRN-RED | RING 0 | RING 0 | RING 0 | RING 0 | RING 0 | RING 0 | RING 0 | |
| | | | 35 | RED-SL | | DATA | | | M | M | | |
| | | | 10 | SL-RED | | DATA | | | E | E | | |
| | | 1 | 36 | BLK-BLU | TIP 1 | TIP 1 | TIP 1 | TIP 1 | | SE | TIP 1 | |
| | | | 11 | BLU-BLK | RING 1 | RING 1 | RING 1 | RING 1 | | E | RING 1 | |
| | | | 37 | BLK-ORN | | DATA | | | | M | | |
| | | | 12 | ORN-BLK | | DATA | | | | SB | | |
| | | 2 | 38 | BLK-GRN | TIP 2 | TIP 2 | TIP 2 | TIP 2 | TIP 1 | TIP 1 | ----- | |
| 02 | 1 | | 13 | GRN-BLK | RING 2 | RING 2 | RING 2 | RING 2 | RING 1 | RING 1 | | |
| 05 | 3 | | 39 | BLK-BRN | | DATA | | | M | M | | |
| 08 | 3 | | 14 | BRN-BLK | | DATA | | | E | E | | |
| 11 | 7 | 3 | 40 | BLK-SL | TIP 3 | TIP 3 | TIP 3 | TIP 3 | | SG | ----- | |
| 14 | 9 | | 15 | SL-BLK | RING 3 | RING 3 | RING 3 | RING 3 | | E | | |
| | | | 41 | YEL-BLU | | DATA | | | | M | | |
| | | | 16 | BLU-YEL | | DATA | | | | SB | | |
| | | 4 | 42 | YEL-ORN | TIP 4 | TIP 4 | TIP 4 | ----- | ----- | ----- | ----- | |
| | | | 17 | ORN-YEL | RING 4 | RING 4 | RING 4 | | | | | |
| | | | 43 | YEL-GRN | | DATA | | | | | | |
| | | | 18 | GRN-YEL | | DATA | | | | | | |
| | | 5 | 44 | YEL-BRN | TIP 5 | TIP 5 | TIP 5 | ----- | ----- | ----- | ----- | |
| | | | 19 | BRN-YEL | RING 5 | RING 5 | RING 5 | | | | | |
| | | | 45 | YEL-SL | | DATA | | | | | | |
| | | | 20 | SL-YEL | | DATA | | | | | | |
| | | 6 | 46 | VIO-BLU | TIP 6 | TIP 6 | TIP 6 | ----- | ----- | ----- | ----- | |
| | | | 21 | BLU-VIO | RING 6 | RING 6 | RING 6 | | | | | |
| | | | 47 | VIO-ORN | | DATA | | | | | | |
| | | | 22 | ORN-VIO | | DATA | | | | | | |
| | | 7 | 48 | VIO-GRN | TIP 7 | TIP 7 | TIP 7 | ----- | ----- | ----- | ----- | |
| | | | 23 | GRN-VIO | RING 7 | RING 7 | RING 7 | | | | | |
| | | | 49 | VIO-BRN | | DATA | | | | | | |
| | | | 24 | BRN-VIO | | DATA | | | | | | |
| | | | 50 | VIO-SL | | | | | | | | |
| | | | 25 | SL-VIO | | | | | | | | |

# CDF Cross Connect Reference Chart (Continued)

GTE

| CARD SLOT | CABLE NUMBER | CIRCUIT NUMBER | AMP CONN | CDF CABLE COLOR | 8SLC | 8EKC | 8DTC | 4BWC | 2TTE (TYPE I) | 2TTE (TYPE II) | 2TTL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | 10 | 0 | 26 | WHT-BLU | ----- | ----- | ----- | TIP 0 | TIP 0 | TIP 0 | TIP 0 |
| | | | 1 | BLU-WHT | | | | RING 0 | RING 0 | RING 0 | RING 0 |
| | | | 27 | WHT-ORN | | | | | M | | |
| | | | 2 | ORN-WHT | | | | | E | | |
| | | 1 | 28 | WHT-GRN | ----- | ----- | ----- | TIP 1 | | SG | TIP 1 |
| | | | 3 | GRN-WHT | | | | RING 1 | | E | RING 1 |
| | | | 29 | WHT-BRN | | | | | | M | |
| | | | 4 | BRN-WHT | | | | | | SB | |
| | | 2 | 30 | WHT-SL | ----- | ----- | ----- | TIP 2 | TIP 1 | TIP 1 | |
| | | | 5 | SL-WHT | | | | RING 2 | RING 1 | RING 1 | |
| | | | 31 | RED-BLU | | | | | M | | |
| | | | 6 | BLU-RED | | | | | E | | |
| | | 3 | 32 | RED-ORN | ----- | ----- | ----- | TIP 3 | | SG | ----- |
| | | | 7 | ORN-RED | | | | RING 3 | | E | |
| | | | 33 | RED-GRN | | | | | | M | |
| | | | 8 | GRN-RED | | | | | | SB | |
| 16 | 10 | 0 | 34 | RED-BRN | ----- | ----- | ----- | TIP 0 | TIP 0 | TIP 0 | TIP 0 |
| | | | 9 | BRN-RED | | | | RING 0 | RING 0 | RING 0 | RING 0 |
| | | | 35 | RED-SL | | | | | M | | |
| | | | 10 | SL-RED | | | | | E | | |
| | | 1 | 36 | BLK-BLU | ----- | ----- | ----- | TIP 1 | | SG | TIP 1 |
| | | | 11 | BLU-BLK | | | | RING 1 | | E | RING 1 |
| | | | 37 | BLK-ORN | | | | | | M | |
| | | | 12 | ORN-BLK | | | | | | SB | |
| | | 2 | 38 | BLK-GRN | ----- | ----- | ----- | TIP 2 | TIP 1 | TIP 1 | ----- |
| | | | 13 | GRN-BLK | | | | RING 2 | RING 1 | RING 1 | |
| | | | 39 | BLK-BRN | | | | | M | | |
| | | | 14 | BRN-BLK | | | | | E | | |
| | | 3 | 40 | BLK-SL | ----- | ----- | ----- | TIP 3 | | SG | ----- |
| | | | 15 | SL-BLK | | | | RING 3 | | E | |
| | | | 41 | YEL-BLU | | | | | | M | |
| | | | 16 | BLU-YEL | | | | | | SB | |
| 17 | 10 | 0 | 42 | YEL-ORN | ----- | ----- | ----- | TIP 0 | TIP 0 | TIP 0 | TIP 0 |
| | | | 17 | ORN-YEL | | | | RING 0 | RING 0 | RING 0 | RING 0 |
| | | | 43 | YEL-GRN | | | | | M | | |
| | | | 18 | BRN-YEL | | | | | E | | |
| | | 1 | 44 | YEL-BRN | ----- | ----- | ----- | TIP 1 | | SG | TIP 1 |
| | | | 19 | BRN-YEL | | | | RING 1 | | E | RING 1 |
| | | | 45 | YEL-SL | | | | | | M | |
| | | | 20 | SL-YEL | | | | | | SB | |
| | | 2 | 46 | VIO-BLU | ----- | ----- | ----- | TIP 2 | TIP 1 | TIP 1 | ----- |
| | | | 21 | BLU-VIO | | | | RING 2 | RING 1 | RING 1 | |
| | | | 47 | VIO-ORN | | | | | M | | |
| | | | 22 | ORN-VIO | | | | | E | | |
| | | 3 | 48 | VIO-GRN | ----- | ----- | ----- | TIP 3 | | SG | ----- |
| | | | 23 | GRN-VIO | | | | RING 3 | | E | |
| | | | 49 | VIO-BRN | | | | | | M | |
| | | | 24 | BRN-VIO | | | | | | SB | |
| | | | 50 | VIO-SL | | | | | | | |
| | | | 25 | SL-VIO | | | | | | | |

NOTES:

- 8DTC ONLY CAN BE INSERTED IN SLOTS 00, 03, 06, 09, AND 12 WHEN USED FOR VOICE/DATA (DTA OPTION).
- 8SLC, 8EKC, AND 8DTC CARDS CANNOT BE INSERTED IN SLOTS 15, 16, 17, AND 18.
- 4BWC, 2TTE, AND 2TTL CANNOT BE INSERTED IN SLOTS 00, 01, 02, 03, 04, OR 05.
- MAXIMUM NUMBER OF TIE TRUNKS IN SYSTEM IS 12.

# CDF Cross Connect Reference Chart (Continued)

**GTE**

*GTE OMNI SBCS*

| CARD SLOT | CABLE NUMBER | CIRCUIT NUMBER | AMP CONN | CDF CABLE COLOR | 8SLC | 8EKC | 8DTC | 4BWC | 2TTE$_1$ | 2TTE$_2$ | 2TTL | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 26 | WHT-BLU | ----- | ----- | ----- | TIP 0 | TIP 0 | TIP 0 | TIP 0 | • 8SLC, 8EKC AND 8DTC CARDS CANNOT BE |
| | | | 1 | BLU-WHT | | | | RING 0 | RING 0 | RING 0 | RING 0 | INSERTED IN SLOTS 15, 16, AND 17. |
| | | | 27 | WHT-ORN | | | | | M | | | |
| | | | 2 | ORN-WHT | | | | | E | | | |
| | | 1 | 28 | WHT-GRN | ----- | ----- | ----- | TIP 1 | | SG | TIP 1 | • 2TTE$_1$ IS FOR TYPE I SIGNALING. |
| 18 | 11 | | 3 | GRN-WHT | | | | RING 1 | | E | RING 1 | |
| | | | 29 | WHT-BRN | | | | | | M | | • 2TTE$_2$ IS FOR TYPE II SIGNALING. |
| | | | 4 | BRN-WHT | | | | | | SB | | |
| | | 2 | 30 | WHT-SL | ----- | ----- | ----- | TIP 2 | TIP 1 | TIP 1 | | • MAXIMUM NUMBER OF TIE TRUNKS IN SYSTEM |
| | | | 5 | SL-WHT | | | | RING 2 | RING 1 | RING 1 | | IS 12. PINS 34 AND 9 CAN BE USED FOR |
| | | | 31 | RED-BLU | | | | | M | | | REMOTE MINOR ALARM (DRY CONTACT ONLY). |
| | | | 6 | BLU-RED | | | | | E | | | |
| | | 3 | 32 | RED-ORN | ----- | ----- | ----- | TIP 3 | | SG | ----- | • PINS 35 AND 10 CAN BE USED FOR REMOTE |
| | | | 7 | ORN-RED | | | | RING 3 | | E | | MAJOR ALARM. (DRY CONTACT ONLY). |
| | | | 33 | RED-GRN | | | | | | M | | |
| | | | 8 | GRN-RED | | | | | | SB | | |
| | | | 34 | RED-BRN | ----- | ----- | ----- | ----- | ----- | ----- | ----- | |
| | | | 9 | BRN-RED | | | | | | | | |
| | | | 35 | RED-SL | | | | | | | | |
| | | | 10 | SL-RED | | | | | | | | |
| | | | 36 | BLK-BLU | ----- | ----- | ----- | ----- | ----- | ----- | ----- | |
| | | | 11 | BLU—BLK | | | | | | | | |
| | | | 37 | BLK-ORN | | | | | | | | |
| | | | 12 | ORN-BLK | | | | | | | | |
| | | | 38 | BLK-GRN | ----- | ----- | ----- | ----- | ----- | ----- | ----- | |
| | | | 13 | GRN-BLK | | | | | | | | |
| | | | 39 | BLK-BRN | | | | | | | | |
| | | | 14 | BRN-BLK | | | | | | | | |
| | | | 40 | BLK-SL | ----- | ----- | ----- | ----- | ----- | ----- | ----- | |
| | | | 15 | SL-BLK | | | | | | | | |
| | | | 41 | YEL-BLU | | | | | | | | |
| | | | 16 | BLU-YEL | | | | | | | | |
| | | 0 | 42 | YEL-ORN | ----- | ----- | ----- | ----- | ----- | ----- | ----- | |
| | | | 17 | ORN-YEL | | | | | | | | |
| | | | 43 | YEL-GRN | | | | | | | | |
| | | | 18 | GRN-YEL | | | | | | | | |
| | | 1 | 44 | YEL-BRN | ----- | ----- | ----- | ----- | ----- | ----- | ----- | |
| 01 | 0 | | 19 | BRN-YEL | | | | | | | | |
| 04 | 2 | | 45 | YEL-SL | | | | | | | | |
| 07 | 4 | | 20 | SL-YEL | | | | | | | | |
| 10 | 6 | 2 | 46 | VIO-BLU | ----- | ----- | ----- | ----- | ----- | ----- | ----- | |
| 13 | 8 | | 21 | BLU-VIO | | | | | | | | |
| | | | 47 | VIO-ORN | | | | | | | | |
| | | | 22 | ORN-VIO | | | | | | | | |
| | | 3 | 48 | VIO-GRN | ----- | ----- | ----- | ----- | ----- | ----- | ----- | |
| | | | 23 | GRN-VIO | | | | | | | | |
| | | | 49 | VIO-BRN | | | | | | | | |
| | | | 24 | BRN-VIO | | | | | | | | |
| | | | 50 | VIO-SL | | | | | | | | |
| | | | 25 | SL-VIO | | | | | | | | |

# Optional Power Fail
# Transfer Installation

- THIS SLIDE REPRESENTS A TYPICAL EXAMPLE OF HOW THE CROSS CONNECTIONS WOULD BE MADE FOR A POWER FAIL TRANSFER STATION.
- EXAMPLE ILLUSTRATES THE 6PFT CARD WHEN INSTALLED IN CARD SLOT 22 AND THE CABLE IN CALBE NUMBER 12.
- EACH 6PFT CARD HAS SIX CIRCUITS AND USES FOUR PAIRS OF WIRES FOR EACH POWER FAIL CIRCUIT.

| CN | CS | CONNECTING BLOCK PINS | |
|----|----|----|----|
| | | CO LINE | 28.1 |
| | | 4BWC | 27.2 |
| 12 | 22 | STATION | 28.3 |
| | | 8SLC | 29.4 |

- ONE CONNECTOR BLOCK WILL HANDLE ALL SIX CIRCUITS.

**GTE**

**GTE OMNI SBCS**



CO TRUNKS

4BWC CARD

STATION TIP & RING

8SLC CARD

1.65

# Optional Floppy Diskette Drive Installation

*GTE OMNI SBCS*

**INSTALLATION PROCEDURE:**

(1) SET BIT 4 OF PMP'S DIP SWITCH TO ON POSITION. DIP SWITCH IS LOCATED ON BOTTOM OF PMP.

(2) ENSURE THAT PMP AND TF-20 POWER SWITCHES ARE OFF.

(3) USING #707 CABLE, CONNECT PMP SERIAL INTERFACE CONNECTOR FROM PMP TO 6-PIN SERIAL INTERFACE CONNECTOR PORT IN REAR OF TF-20.

(4) CONNECT PMP'S CABLE #715 FROM BACK DIN CONNECTOR PORT IN REAR OF PMP TO RS-232-C PORT I/O 0 ON OMNI SBCS.

(5) POWER ON TF-20 DRIVE <u>BEFORE</u> TURNING ON PMP POWER SWITCH.

NOTE: REFER TO DATA BASE ADMINISTRATION MODULE OF STUDENT WORKBOOK (MODULE II) FOR PMP START-UP, INITIALIZATION AND OPERATION WITH INSTALLED FLOPPY DISKETTE DRIVE UNIT.
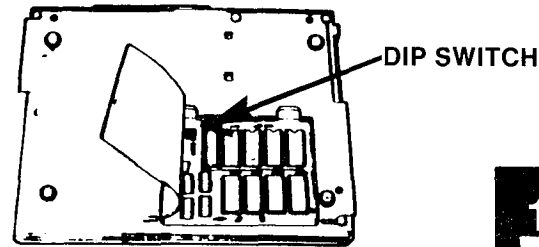
DIP SWITCH

LOCATION OF PMP DIP SWITCHES

1 2 3 4

— OFF —
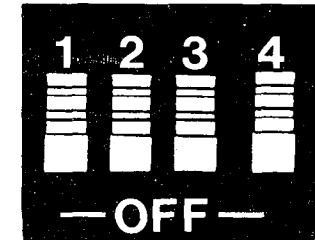
DIP SWITCH SETTINGS FOR OPERATION WITH FLOPPY DISKETTE DRIVE

TF-20

EXPANSION RLY

DIN 5 PIN

RS-232C INTERFACE    SERIAL INTERFACE    CABLE SET #707 (#707 IN US)

CABLE SET #714 (#715 IN US)

TO SBCS I/O PORT 0

FRONT    PUSHBUTTON    REAR    DIN 6 PIN

SERIAL INTERFACE CONNECTOR DIN 6 PIN

DRIVE SELECT    SERIAL INTERFACE CONNECTOR DIN 5 PIN

POWER SWITCH

POWER LAMP    DRIVE B    DRIVE A    AC CORD

1.67
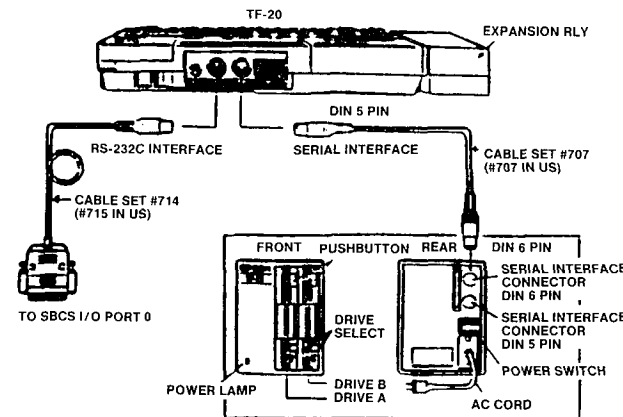
# Optional SMDR Printer Installation

GTE

GTE OMNI SBCS
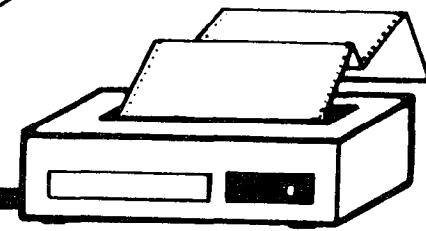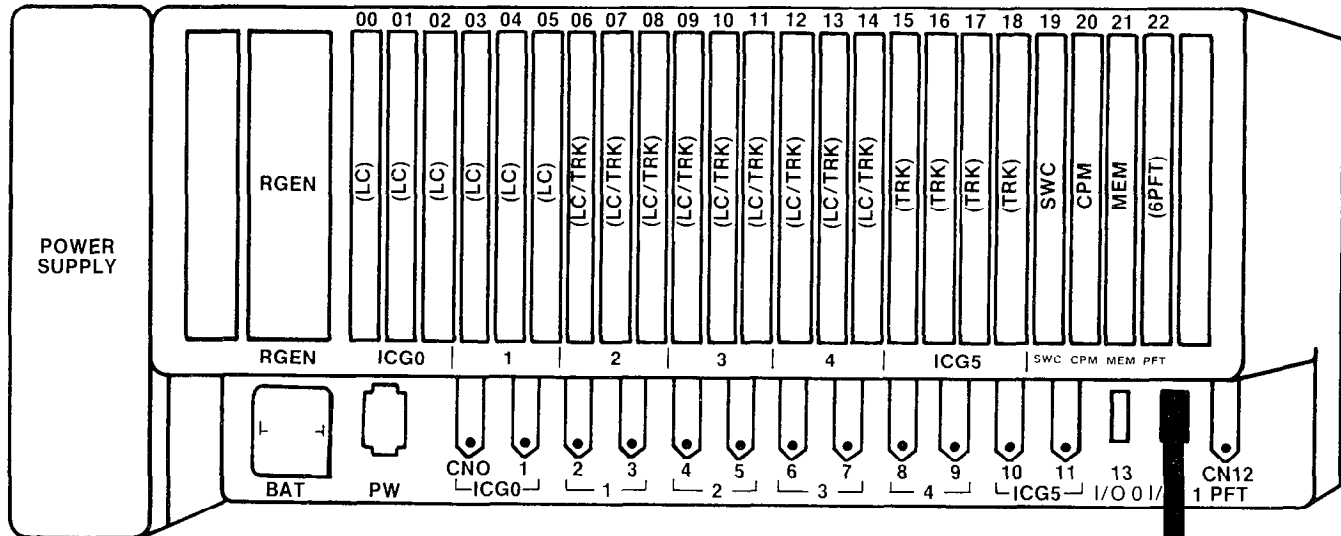


CABLE 14

INSTALLATION PROCEDURE:

(1) CONNECT PRINTER CABLE TO I/O PORT 1

(2) BE SURE PORT CONFIGURATION MATCHES THE REQUIREMENTS OF THE PRINTER:

- 300 BAUD
- 1 STOP BIT
- EVEN PARITY
- ECHO OFF
- 7 BIT WORD

NOTE: REFER TO GTEP MANUAL FOR RS-232-C PORT CONFIGURATION AND SMDR PRINTER CABLE REQUIREMENTS

# Optional Night Bell Installation

*GTE OMNI SBCS*

- DIAGRAM REPRESENTS A TYPICAL EXAMPLE OF CROSS CONNECTIONS FOR A CUSTOMER-SUPPLIED NIGHT BELL.

- A NIGHT BELL REQUIRES ONE PAIR OF WIRES FOR ITS INTERFACE TO AN 8SLC CARD (SAME AS SLT INSTALLATION). EVERY OTHER PAIR OF PINS IS USED ON THE CONNECTING BLOCK.

- EXAMPLE ILLUSTRTES A NIGHT BELL CDF CROSS CONNECTION FOR AN 8SLC CARD IN SLOT 01, USING CABLE NUMBER (CN) 1. CONNECTOR BLOCK SHOWN WOULD HANDLE FOUR OF THE EIGHT CIRCUITS FOR THE CARD SLOT IDENTIFIED ABOVE.

- REFER TO CDF CROSS CONNECT REFERENCE CHART IN STUDENT WORKBOOK FOR CROSS CONNECTION INSTRUCTIONS FOR OTHER CARD AND EQUIPMENT CONFIGURATIONS.



JUST LIKE A STATION ON AN 8SLC CARD.

NIGHT BELL

1.69
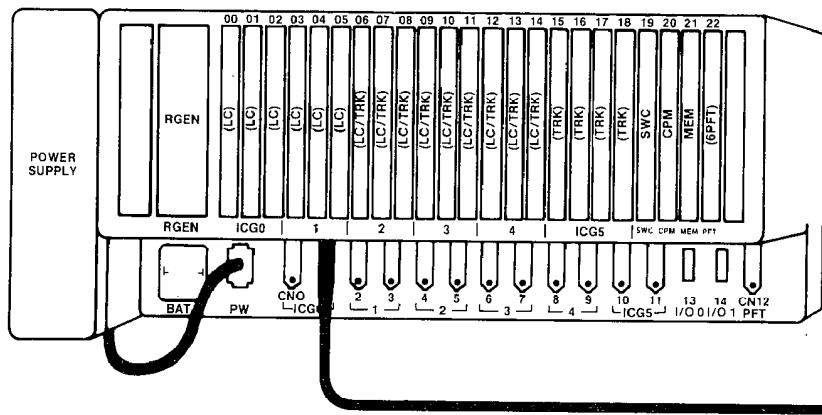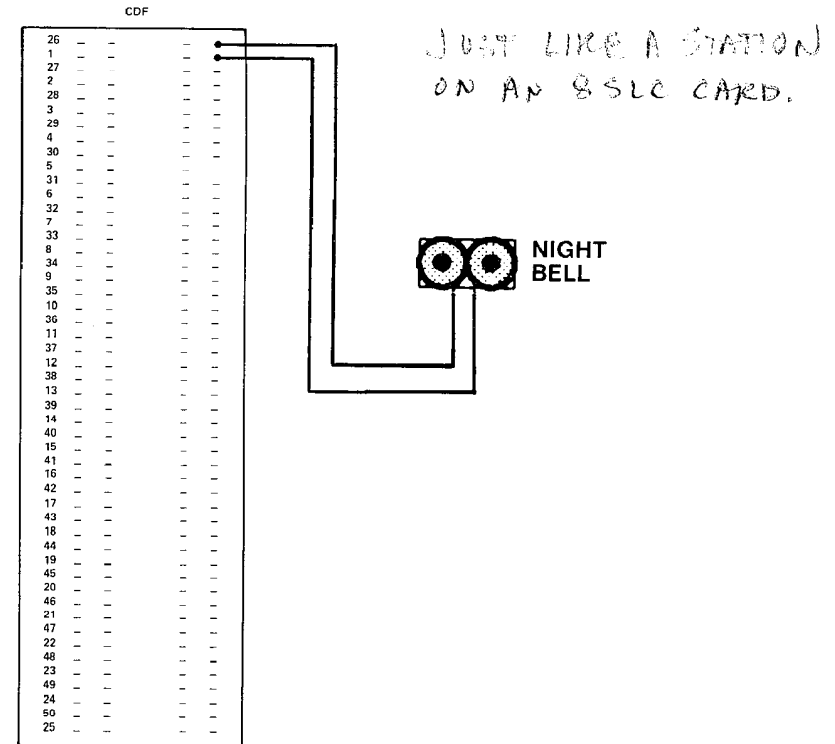
# Optional Music-on-Hold Installation

- DIAGRAM REPRESENTS A TYPICAL EXAMPLE OF CROSS CONNECTIONS FOR A CUSTOMER-SUPPLIED MUSIC SOURCE.

- MUSIC-ON-HOLD REQUIRES ONE PAIR OF WIRES FOR ITS INTERFACE TO A 4BWC CARD (SAME AS CO TRUNK INSTALLATION). EACH 4BWC CARD HAS FOUR CIRCUITS AND ONLY EVERY OTHER PAIR OF PINS IS USED ON THE CONNECTING BLOCK.

- EXAMPLE ILLUSTRATES A MUSIC SOURCE CDF CROSS CONNECTION FOR A 4BWC CARD IN SLOT 07, USING CABLE NUMBER (CN) 4. CONNECTOR BLOCK SHOWN WOULD HANDLE ALL FOUR CIRCUITS FOR THE CARD SLOT IDENTIFIED ABOVE.

- REFER TO CDF CROSS CONNECT REFERENCE CHART IN STUDENT WORKBOOK FOR CROSS CONNECTION INSTRUCTIONS FOR OTHER CARD AND EQUIPMENT CONFIGURATIONS.



MUSIC SOURCE

1.70

# Student Notes
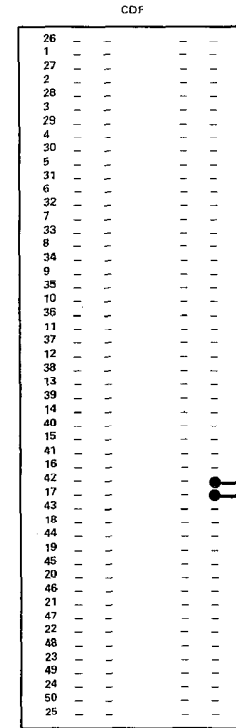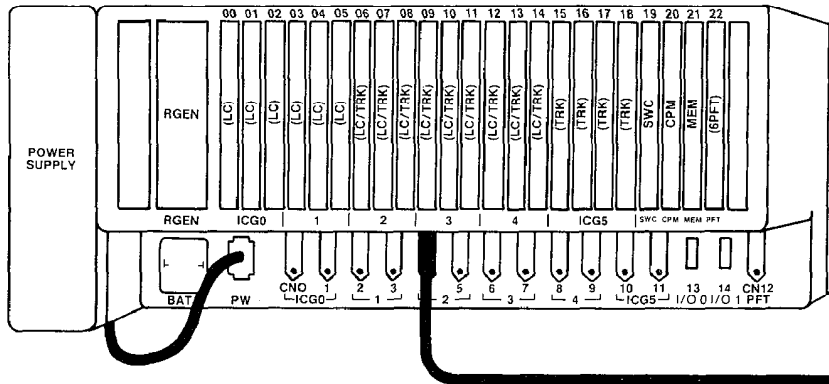
# Laboratory Activity (1.3) — Peripheral Installation

(1) USING 25 PAIR CABLES WITH MALE CONNECTORS ON ONE END, CONNECT FIVE CABLES TO THE FOLLOWING RECEPTACLES: CN 0, CN 1, CN 10, CN 11, CN 12.

(2) RUN CABLES NEATLY FROM THE OMNI SBCS CABINET USING SCREWS TO FASTEN THE CONNECTORS TIGHTLY TO THE RECEPTACLES. CONNECT EACH CABLE TO THE CDF BLOCK DESIGNATED BELOW:

   (A) CN 0 - FIRST STATION CDF BLOCK
   (B) CN 1 - SECOND STATION CDF BLOCK
   (C) CN 10 - FIRST STATION CDF BLOCK
   (D) CN 11 - SECOND STATION CDF BLOCK
   (E) CN 12 - POWER FAIL TRANSFER CDF BLOCK

(3) ENSURE THAT CDF BLOCKS ARE MOUNTED TO THE WALL. MARK EACH CABLE FOR EASY IDENTIFICATION.

---

**LAB MILESTONE:**

● VERIFY THAT ALL CDF CABLES ARE INSTALLED CORRECTLY.

● ASK INSTRUCTOR TO INSPECT INSTALLATION OF CABLES AND INITIAL YOUR PERFORMANCE CHECKLIST.

● TURN TO REVIEW EXERCISE 1.3 AND ANSWER QUESTIONS 1-3.

---

# Laboratory Activity (1.3) — Peripheral Installation (Continued)

GTE OMNI SBCS

(4) WIRE CROSS CONNECTIONS AND INSTALL THE FOLLOWING STATION INSTRUMENTS USING THE DESIGNATED CONFIGURATIONS:

(A) CS-10 TELEPHONE USING 8EKC CARD IN SLOT 01, CIRCUIT 0. DEFAULT STATION DIRECTORY NUMBER WILL BE 208. DO NOT CONNECT THIS STATION TO THE MODULAR JACK AT THIS TIME. IT WILL BE ADDED DURING A DATA BASE PROGRAMMING LAB ACTIVITY.

(B) CS-10 TELEPHONE USING 8EKC CARD IN SLOT 01, CIRCUIT 7. DEFAULT STATION DIRECTORY NUMBER WILL BE 215.

(C) CS-20 TELEPHONE USING 8EKC CARD IN SLOT 01, CIRCUIT 4. DEFAULT STATION DIRECTORY NUMBER WILL BE 212.

(D) CS-20 TELEPHONE USING 8EKC CARD IN SLOT 01, CIRCUIT 6. DEFAULT STATION DIRECTORY NUMBER WILL BE 214.

(E) BLF/DSS CONSOLE USING 8EKC CARD IN SLOT 01, CIRCUIT 5. BLF/DSS WILL BE CONNECTED TO CS-20 TELEPHONE AT DIRECTORY NUMBER 212.

(F) BLF/DSS CONSOLE USING 8EKC CARD IN SLOT 01, CIRCUIT 3. DO NOT CONNECT THIS BLF/DSS AT THIS TIME. IT WILL BE ADDED DURING A DATA BASE PROGRAMMING LAB ACTIVITY. THIS BLF/DSS WILL BE CONNECTED IN FUTURE TO THE CS-20 TELEPHONE AT DIRECTORY NUMBER 214.

(G) SINGLE LINE TELEPHONE INSTRUMENT USING 8SLC CARD IN SLOT 02, CIRCUIT 0. THIS DIRECTORY NUMBER WILL BE 216.

(H) SINGLE LINE TELEPHONE INSTRUMENT USING 8SLC CARD IN SLOT 02, CIRCUIT 7. DEFAULT STATION DIRECTORY NUMBER WILL BE 223.

(I) CSD TELEPHONE USING 8DTC CARD IN SLOT 00, CIRCUIT 0. DEFAULT STATION DIRECTORY NUMBER WILL BE 200.

(J) CSD TELEPHONE USING 8DTC CARD IN SLOT 00, CIRCUIT 1. DEFAULT STATION DIRECTORY NUMBER WILL BE 201.

(5) LABEL EACH INSTRUMENT WITH THE APPROPRIATE STATION DIRECTORY NUMBER AND EQUIPMENT NUMBER (CARD SLOT AND CIRCUIT NUMBER).

---

LAB MILESTONE:

- VERIFY THAT ALL STATION CROSS CONNECTIONS ARE WIRED AND THAT STATION INSTRUMENTS ARE INSTALLED CORRECTLY.
- ASK INSTRUCTOR TO INSPECT CROSS CONNECTIONS AND STATION INSTALLATION AND INITIAL YOUR PERFORMANCE CHECKLIST.
- TURN TO REVIEW EXERCISE 1.3 AND ANSWER QUESTIONS 4 – 6

---

(6)   WIRE CROSS CONNECTIONS FOR THE POWER FAIL TRANSFER STATION:

    (A)   SINGLE LINE TELEPHONE INSTRUMENT USING 8SLC CARD IN SLOT 02, CIRCUIT 0 TO POWER FAIL TRANSFER CDF BLOCK.

    (B)   POWER FAIL TRANSFER CARD (6PFT) IN SLOT 22, CIRCUIT 0 TO CO TRUNK ON 4BWC CARD IN SLOT 18, CIRCUIT 0.

---

LAB MILESTONE:

- VERIFY THAT POWER FAIL TRANSFER CROSS CONNECTIONS ARE WIRED CORRECTLY.

- ASK INSTRUCTOR TO INSPECT THE CROSS CONNECTIONS AND INITIAL YOUR PERFORMANCE CHECKLIST.

- TURN TO REVIEW EXERCISE 1.3 AND ANSWER QUESTION 7.

---

# Laboratory Activity (1.3) — Peripheral Installation (Continued)

(7) VERIFY THAT POWER FAIL TRANSFER TRUNKS HAVE BEEN INSTALLED FROM CARD SLOT 18, CIRCUIT 0. WIRE CROSS CONNECTIONS AND INSTALL THE FOLLOWING TRUNK LINES USING THE DESIGNATED CONFIGURATIONS:

(A) THREE ADDITIONAL CO TRUNK LINES USING 4BWC CARD IN SLOT 18, CIRCUITS 1, 2, AND 3.

(B) TWO LOOP TIE LINES USING 2TTL CARD IN SLOT 16, CIRCUITS 0 AND 1. THESE TIE LINES WILL BE USED TO ACCESS OTHER OMNI SBCS LAB SYSTEMS. INSTRUCTOR WILL PROVIDE INSTRUCTIONS REGARDING CONNECTION.

(C) TWO E&M TIE LINE (TYPE II) USING 2TTE CARD IN SLOT 17, CIRCUITS 0 AND 1. THESE TIE LINES WILL BE USED TO ACCESS OTHER OMNI SBCS LAB SYSTEMS. INSTRUCTOR WILL PROVIDE INSTRUCTIONS REGARDING CONNECTIONS.

---

## LAB MILESTONE:

- VERIFY THAT ALL TRUNK LINE CROSS CONNECTIONS ARE WIRED CORRECTLY.

- ASK INSTRUCTOR TO INSPECT CROSS CONECTIONS AND INITIAL YOUR PERFORMANCE CHECKLIST.

- TURN TO REVIEW EXERCISE 1.3 AND ANSWER QUESTION 8. SUBMIT YOUR COMPLETED REVIEW EXERCISE TO THE INSTRUCTOR FOR GRADING.

---

# Laboratory Activity (1.3) — Peripheral Installation (Continued)

GTE OMNI SBCS

(8)  CONNECT PORTABLE MAINTENANCE PANEL (PMP) TO OMNI SBCS CABINET. CONNECT DIN PLUG OF EPSON CABLE #715 TO PORT MARKED "RS-232-C" ON BACK OF PMP. CONNECT DB-25 CONNECTOR END OF CABLE TO PORT CN13 (I/O 0) ON THE SBCS CABINET.

(9)  ENSURE THAT BOTH OMNI SBCS AND PMP POWER SWITCHES ARE OFF.

(10)  INSTALL FLOPPY DISKETTE UNIT TO PMP USING PROCEDURE FOUND IN THE STUDENT WORKBOOK. DO NOT POWER ON THE PMP OR FLOPPY DISKETTE DRIVE UNIT UNTIL INSTRUCTED TO DO SO DURING THE INITIALIZATION LAB ACTIVITY.

(11)  CONNECT SMDR PRINTER CABLE TO PORT CN14 (I/O 1) ON THE SBCS CABINET. INSTRUCTOR WILL PROVIDE SPECIAL INSTRUCTIONS RELATING TO TYPE OF PRINTER BEING INSTALLED. PORT CONFIGURATION REQUIREMENTS WILL BE DISCUSSED DURING THE DATA BASE ADMINISTRATION MODULE OF THIS COURSE. DO NOT POWER ON SMDR PRINTER UNTIL DIRECTED TO DO SO.

---

### LAB MILESTONE:

- VERIFY THAT PORTABLE MAINTENANCE PANEL, FLOPPY DISKETTE DRIVE, AND SMDR PRINTER ARE CORRECTLY INSTALLED.

- ASK INSTRUCTOR TO INSPECT THESE INSTALLATIONS AND INITIAL YOUR PERFORMANCE CHECKLIST.

- TURN TO REVIEW EXERCISE 1.3 AND ANSWER QUESTIONS 9-12. SUBMIT YOUR COMPLETED REVIEW EXERCISE TO THE INSTRUCTOR FOR GRADING.

- YOU HAVE NOW COMPLETED THE BASIC PERIPHERAL INSTALLATION LAB ACTIVITY.

# Optional Laboratory Activity (1.3) —
# Peripheral Installation

GTE OMNI SBCS

COMPLETE ALL OR PART OF THE FOLLOWING ACTIVITY IF TIME PERMITS OR IF INSTRUCTOR DIRECTS YOU TO DO SO.

(1) WIRE CROSS CONNECTIONS AND INSTALL ONE OR BOTH OF THE FOLLOWING OPTIONAL PERIPHERAL EQUIPMENT USING THE DESIGNATED CONFIGURATIONS BELOW:

   (A) NIGHT BELL USING 8SLC CARD IN SLOT 02, CIRCUIT 3.

   (B) MUSIC SOURCE FOR MUSIC-ON HOLD USING 4BWC CARD IN SLOT 18, CIRCUIT 2.

---

### LAB MILESTONE:

● VERIFY THAT NIGHT BELL AND MUSIC SOURCE ARE WIRED AND INSTALLED CORRECTLY.

● ASK INSTRUCTOR TO INSPECT CROSS CONNECTIONS AND INITIAL YOUR PERFORMANCE CHECKLIST.

● TURN TO REVIEW EXERCISE 1.3 AND ANSWER OPTIONAL QUESTIONS 13 AND 14. SUBMIT YOUR COMPLETED REVIEW EXERCISE TO THE INSTRUCTOR FOR GRADING.

● YOU HAVE NOW COMPLETED THE OPTIONAL PERIPHERAL INSTALLATION LAB ACTIVITY.

---

# Review Exercise (1.3) — Peripheral Installation

GTE

GTE OMNI SBCS

INSTRUCTIONS: THE FOLLOWING EXERCISE CONSISTS OF MULTIPLE CHOICE, FILL IN THE BLANK OR MATCHING TYPE QUESTIONS. ALL AVAILABLE RESOURCES (I.E. STUDENT WORKBOOK, NOTES, AND GTEP MANUAL) MAY BE USED AS REFERENCES. SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

1. WHAT CARD SLOTS AND CIRCUITS DO THESE SYSTEM CABLES SUPPORT (ALL SPACES WILL NOT BE REQUIRED);

| CABLE | CARD SLOT / CIRCUITS | CARD SLOT / CIRCUITS | CARD SLOT / CIRCUITS |
|-------|----------------------|----------------------|----------------------|
| 0 | _____ _____ | _____ _____ | _____ _____ |
| 1 | _____ _____ | _____ _____ | _____ _____ |
| 10 | _____ _____ | _____ _____ | _____ _____ |
| 11 | _____ _____ | _____ _____ | _____ _____ |
| 12 | _____ _____ | _____ _____ | _____ _____ |

2. DESCRIBE THE FUNCTIONS OF CABLE NUMBER 12. _____

3. IF ALL CIRCUITS ON THE LINE AND TRUNK CARDS YOU INSTALLED WERE USED, HOW MANY STATIONS AND TRUNK LINES COULD ACTUALLY BE INSTALLED?

_____ STATIONS    _____ TRUNKS

**GTE**

*GTE OMNI SBCS*

4. COMPLETE THE FOLLOWING DIAGRAM INDICATING THE CROSS CONNECTIONS THAT WERE MADE FOR THE SIX EKT TELEPHONES. ONE OF THE CS-10 TELEPHONES HAS BEEN COMPLETED, AS AN EXAMPLE.



CABLE 0

CABLE 1

CS-20 (CKT4)

CS-20 (CKT6)

DSS (CKT5)

DSS (CKT7)

MODULAR JACK

CS-10 (CKT3)

CS-10 (CKT0)

1.79
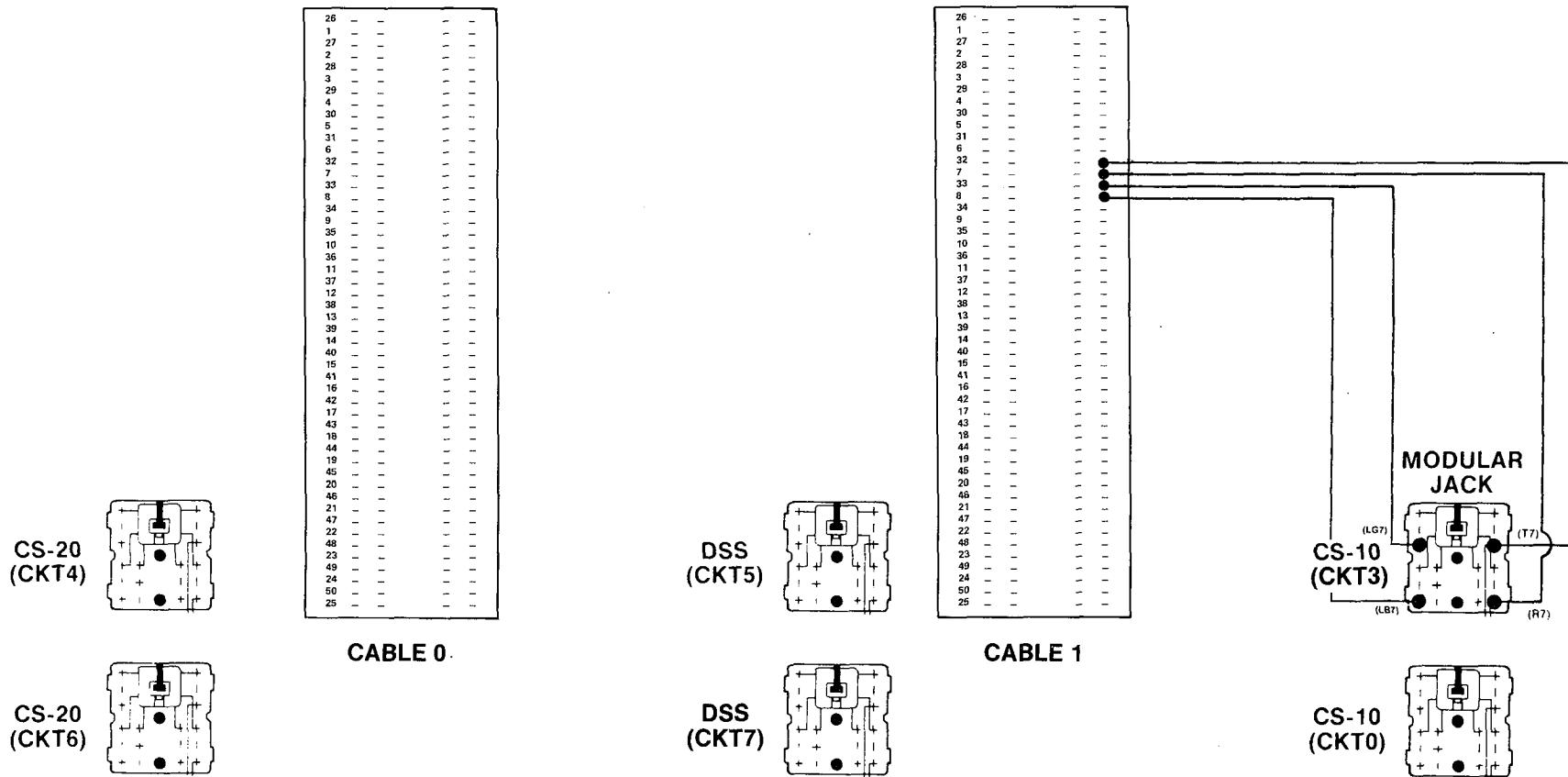
5. COMPLETE THE FOLLOWING DIAGRAM INDICATING THE CROSS CONNECTIONS THAT WERE MADE FOR THE TWO SINGLE LINE TELEPHONES.

CDF

CABLE 1

```
26  _  _      _  _
1   _  _      _  _
27  _  _      _  _
2   _  _      _  _
28  _  _      _  _
3   _  _      _  _
29  _  _      _  _
4   _  _      _  _
30  _  _      _  _
5   _  _      _  _
31  _  _      _  _
6   _  _      _  _
32  _  _      _  _
7   _  _      _  _
33  _  _      _  _
8   _  _      _  _
34  _  _      _  _
9   _  _      _  _
35  _  _      _  _
10  _  _      _  _
36  _  _      _  _
11  _  _      _  _
37  _  _      _  _
12  _  _      _  _
38  _  _      _  _
13  _  _      _  _
39  _  _      _  _
14  _  _      _  _
40  _  _      _  _
15  _  _      _  _
41  _  _      _  _
16  _  _      _  _
42  _  _      _  _
17  _  _      _  _
43  _  _      _  _
18  _  _      _  _
44  _  _      _  _
19  _  _      _  _
45  _  _      _  _
20  _  _      _  _
46  _  _      _  _
21  _  _      _  _
47  _  _      _  _
22  _  _      _  _
48  _  _      _  _
23  _  _      _  _
49  _  _      _  _
24  _  _      _  _
50  _  _      _  _
25  _  _      _  _
```

SLT
(CKT0)

SLT
(CKT7)

1.80

# Review Exercise (1.3) — Peripheral Installation (Continued)

**GTE**
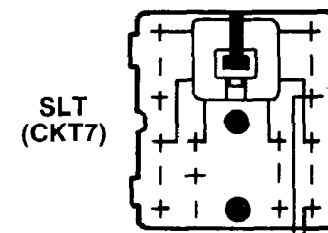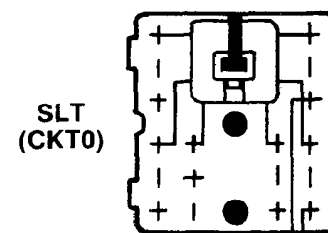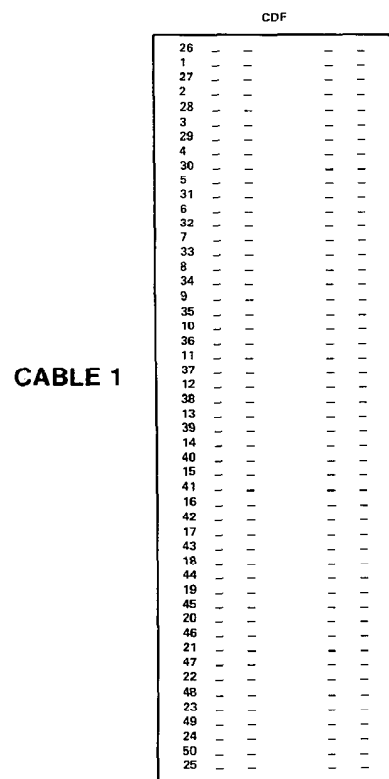
*GTE OMNI SBCS*

7. COMPLETE THE FOLLOWING DIAGRAM INDICATING THE CROSS CONNECTIONS THAT WERE MADE FOR THE POWER FAILURE TRANSFER INSTALLATION (INCLUDE TRUNK AND INSTRUMENT CROSS CONNECTIONS, AS WELL AS CROSS CONNECTIONS TO THE THREE CARDS).

CABLE 1
(TO 8SLC)

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26  __  __    __  __
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CABLE 12
(TO 6PFT)

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CABLE 11
(TO 4BWC)

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1.81

6.  COMPLETE THE FOLLOWING DIAGRAM INDICATING THE CROSS CONNECTIONS THAT WERE
    MADE FOR THE CSD TELEPHONES.



CSD
(CKT0)

CSD
(CKT1)

**CABLE 0**

8. COMPLETE THE FOLLOWING DIAGRAMS INDICATING THE CROSS CONNECTIONS THAT WERE MADE FOR THE EIGHT TRUNKS THAT WERE INSTALLED (POWER FAIL, CO, LOOP TIE LINES, AND E&M TIE LINES).

CABLE 10

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CABLE 11

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CABLE 12

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1.83

9.  THE PMP MAY BE CONNECTED TO EITHER OMNI SBCS PORT _____ OR _____ .

10. BEFORE THE FLOPPY DISKETTE DRIVE MAY BE INSTALLED, THE PMP REQUIRES THAT

    ADDITIONAL _____ MUST FIRST BE INSTALLED.

11. MATCH THE FOLLOWING TYPES OF CABLES TO THEIR APPROPRIATE CONNECTIONS:

    _____ # 715      (A)  FLOPPY DISKETTE DRIVE UNIT TO PMP

    _____ # 707      (B)  PMP TO OMNI SBCS PORT

12. THE SMDR PRINTER IS INSTALLED IN WHAT OMNI SBCS PORT? _____


OPTIONAL PERIPHERAL QUESTIONS (NIGHT BELL AND MUSIC-ON-HOLD INSTALLATION)

13. NIGHT BELL INSTALLATION REQUIRES _____ WIRES, CROSS CONNECTED TO A _____
    INTERFACE CARD.

14. MUSIC-ON-HOLD USING A CUSTOMER-PROVIDED MUSIC SOURCE REQUIRES_____

    WIRES, CROSS CONNECTED TO A _____ INTERFACE CARD.

# Student Notes

**GTE**

*GTE OMNI SBCS*

# SYSTEM INSTALLATION

## Start Up and

## Initialization

# 1.4 Enabling Objective/Start Up and Initialization

GIVEN:
- INSTALLED GTE OMNI SBCS AND PERIPHERALS
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- REVIEW EXERCISE

ACTION:
- POWER ON SYSTEM AND PERFORM COLD RESTART TO INITIALIZE DEFAULT STANDARD DATA BASE.
- PERFORM SYSTEM OPERATION CHECKS.
- COMPLETE REVIEW EXERCISE.

CRITERIA:
- SYSTEM WILL BE INITIALIZED AND OPERATION WILL BE VERIFIED IN ACCORDANCE WITH GTE OMNI SBCS GTEP MANUAL.
- REVIEW EXERCISE QUESTIONS WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

# CPM Controls & Indicators

**GTE**

- **GREEN LED SHOWS SYSTEM STATUS. NORMAL CONDITION IS ON.**

- **ALM (RED) LED INDICATES A MINOR ALARM.**

- **TO (RED) LED INDICATES A MAJOR ALARM.**

```
                                          ┌───┐
                                          │ C │
                                          │ P │
                                          │ M │
                                          └───┘

                                   ◉  ◄────────── RUN (GREEN)
                                                              MINOR
                                   ◉  ◄────────── ALM (RED)  SOFTWARE ALARM
                                                             OR PHONE UNPLUGGED
                                   ◉  ◄────────── TO (RED)  WATCHDOG
                                                            TIMER ALARM
                DATA BASE       UP-COLD RESTART             FOR CPU
                  LOST             CAUTION                  MAJOR ALARM
               DEFAULT        REESTABLISHES DEFAULT         CONTROL CARD
                LOADED        DATA BASE ODDB IS LOST        FAILURE

                                         ┌─────┐
                                         │ CAU-│
                                         │ TION│
                                         │ COLD│
                     CENTER-             │  ⌇  │
               RESET MOMENTARY ──────────┤     │
                  INTERRUPT              │ HOT │
                                         └─────┘
                        DOWN-
                     HOT RESTART
                          ↓            ┌─────┐
                  INTERRUPTS           │  ◉  │◄────── RESTART BUTTON
                  CALL PROCESSING      └─────┘

                                         └───┘
```

1.88
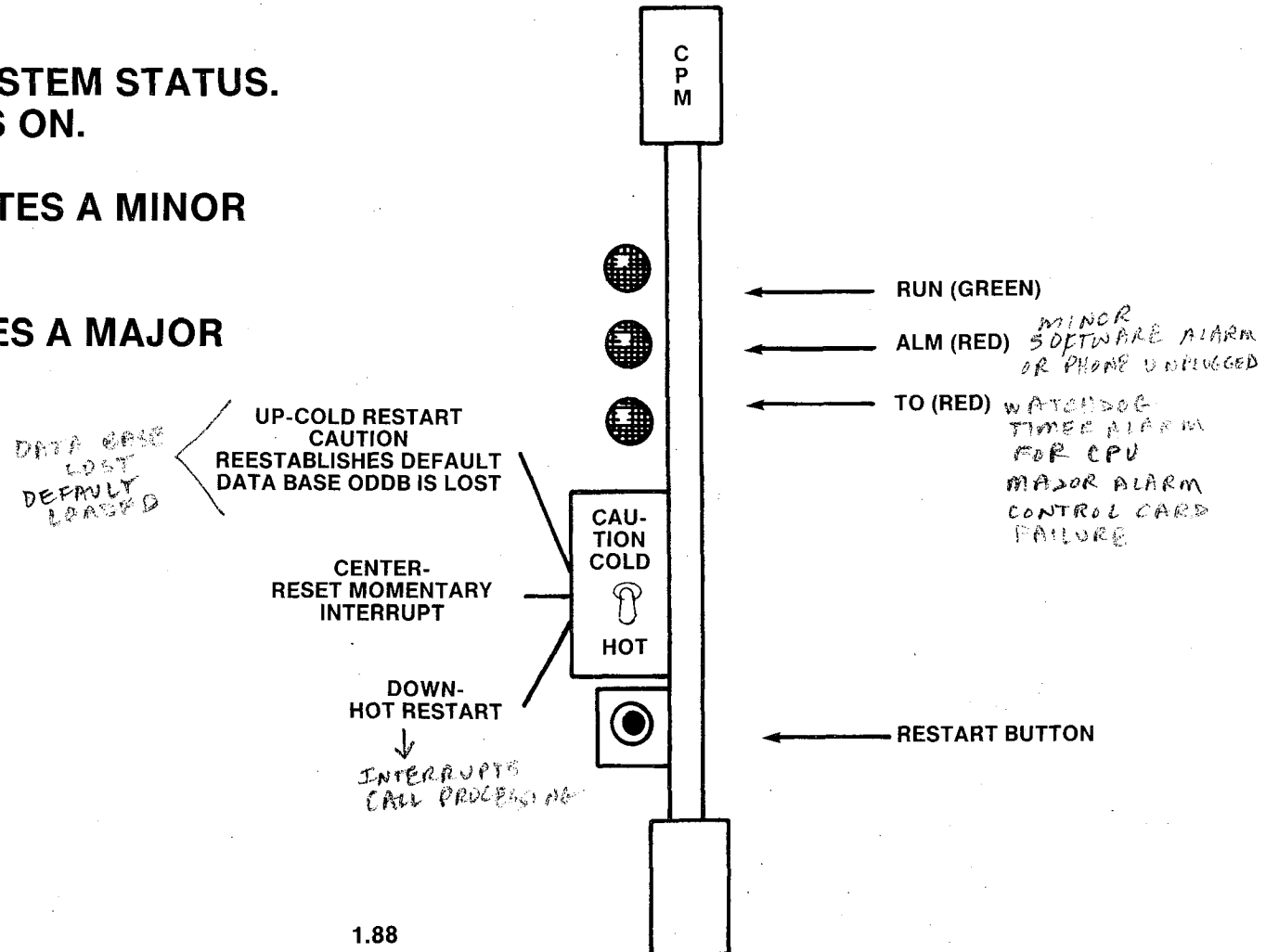
# System Initialization

## COLD RESTART —*lose data base, loads default*

DESCRIPTION:
- LOADS SYSTEM OPERATING PROGRAM AND DATA BASE MANAGEMENT PROGRAM FROM ROM TO WORKING ROM AND EPROM.
- INITIALIZES SYSTEM BY LOADING DEFAULT STANDARD DATA BASE AT TIME OF INSTALLATION.
- REQUIRES THAT AT LEAT ONE LINE CARD AND ONE TRUNK CARD ARE SEATED IN CARD SLOTS FOR SYSTEM PROGRAMMING.
- MUST BE PERFORMED WHENEVER CPM OR MEM CARDS ARE REPLACED.
- MUST ALSO BE PERFORMED AFTER SERIOUS POWER OUTAGE WITH LOSS OF SYSTEM BATTERY BACKUP.

PROCEDURE:
(1) HOLD TOGGLE SWITCH ON CPM CARD IN UP POSITION WHILE SIMULTANEOUSLY PRESSING RESTART BUTTON.
(2) RELEASE TOGGLE SWITCH BACK TO CENTER POSITION.

## HOT RESTART

*call processing stops*

*for new card → data base stays intact*
*(for system to recognize)*

DESCRIPTION:
- CONTROLS, BUT DOES NOT AFFECT CONTENTS OF RAM.
- CALL PROCESSING CEASES.
- ALL DATA BASE MODIFICATIONS IN CUSTOMIZED DATA BASE REMAIN.
- SYSTEM AUTOMATICALLY INITIATES HOT RESTART DURING ITS RECOVERY FROM MAJOR POWER FAILURE.

PROCEDURE:
(1) HOLD TOGGLE SWITCH ON CPM CARD IN DOWN POSITION WHILE SIMULTANEOUSLY PRESSING RESTART BUTTON.
(2) RELEASE TOGGLE SWITCH BACK TO CENTER POSITION.

## MANUAL RESET

DESCRIPTION:
- RECOVERS SYSTEM AND CALL PROCESSING FROM MOMENTARY POWER INTERRUPTION.
- DOES NOT AFFECT CONTENTS OF RAM.
- ALL DATA BASE MODIFICATIONS IN CUSTOMIZED DATA BASE REMAIN.
- MUST BE PERFORMED WHENEVER LINE OR TRUNK CARDS ARE REPLACED.

PROCEDURE:
(1) ENSURE THAT TOGGLE SWITCH ON CPM CARD IS IN CENTER POSITION.
(2) PUSH RESTART BUTTON.

# Operational Checks

AFTER SYSTEM HAS BEEN INITIALIZED WITH A COLD RESTART AND
PROGRAMMED ACCORDING TO CUSTOMER SPECIFICATIONS, PERFORM
THE FOLLOWING CHECKS AS APPLICABLE:

(1)  TEST STATION INSTRUMENTS TO ENSURE THAT EACH IS
     OPERATING CORRECTLY. LISTEN FOR DIAL TONE, TEST FEATURE
     BUTTONS, AND VERIFY CAPABILITY TO MAKE STATION-TO-STATION
     CALLS AND TRUNK CALLS.

(2)  TEST PERSONAL LINES AND KEY SYSTEM TYPE LINES.

(3)  TEST SYSTEM ACCESS CODES.

(4)  TEST CLASSES OF RESTRICTION.

(5)  TEST LEAST COST ROUTING.

(6)  TEST SMDR PRINTER AND POWER FAULT TRANSFER, IF EQUIPPED.

# Laboratory Activity (1.4) — Start Up and Initialization

(1) ENSURE THAT POWER SUPPLY AC PLUG IS NOT CONNECTED TO THE 110 VAC RECEPTACLE AND THAT THE POWER SUPPLY SWITCH IS OFF.

(2) CONNECT THE CABINET POWER SUPPLY CABLE TO OMNI SBCS CABINET.

(3) CONNECT THE POWER SUPPLY AC PLUG TO THE 110 VAC RECEPTACLE AND TURN THE POWER SUPPLY SWITCH TO THE ON POSITION.

(4) VERIFY THAT THE OPE LAMP ON THE POWER SUPPLY AND THE RUN LAMP ON THE CPM CARD ARE LIT. (BOTH LAMPS ARE GREEN).

(5) INITIALIZE THE SYSTEM BY PERFORMING A COLD RESTART.

(6) VERIFY INITIALIZATION OF THE SYSTEM DEFAULT STANDARD DATA BASE BY READING THE LED DISPLAYS ON THE CS-20 AND CSD TELEPHONES. ALL DISPLAYS SHOULD READ "HH:MM". IF DISPLAYS ARE CORRECT, PROCEED TO STEP 8.

(7) IF "HH:MM" IS NOT DISPLAYED ON THE CS-20 AND CSD TELEPHONES, PERFORM THE COLD RESTART PROCEDURE AGAIN. IF DISPLAYS STILL DO NOT OPERATE, POWER SYSTEM OFF AND ON, AND THEN ATTEMPT COLD RESTART PROCEDURE. IF THIS FAILS, CHECK THE CROSS CONNECTIONS FOR EACH INSTRUMENT. NOTIFY YOUR INSTRUCTOR IF YOU CONTINUE TO HAVE PROBLEMS WITH SYSTEM INITIALIZATION.

(8) PERFORM THE FOLLOWING SYSTEM OPERATIONAL CHECKS:

   (A) VERIFY THAT ALL STATION INSTRUMENTS HAVE DIAL TONE AND THAT BLF/DSS LAMPS ARE LIT WHEN EACH STATION IS OFF HOOK.

   (B) DIAL SEVERAL STATION TO STATION CALLS USING DIRECTORY NUMBERS ASSIGNED EARLIER.

   (C) DIAL A CO TRUNK LINE CALL FROM ONE OF THE STATIONS USING THE DEFAULT ACCESS CODE "75".

   (D) DIAL A STATION TO LOOP TIE LINE CALL USING THE DEFAULT ACCESS CODE "82" FOR THE LOOP TIE LINE.

   (E) DIAL A STATION TO E&M TIE LINE CALL USING THE DEFAULT ACCESS CODE "80" FOR THE E&M TIE LINE.

   (F) DIAL AN INCOMING CALL TO YOUR SYSTEM FROM ANOTHER SWITCH (USING THE CO ACCESS CODE). THE TRUNK NUMBER FOR YOUR SYSTEM WILL BE PROVIDED BY THE INSTRUCTOR.

# Laboratory Activity (1.4) — Start Up and Initialization (Continued)

*GTE OMNI SBCS*

(11)   CLEAR YOUR LABORATORY INSTALLATION SITE OF ALL DEBRIS AND REMNANTS OF THE INSTALLATION. SAVE ALL BOXES AND STACK THEM NEARBY YOUR LABORATORY AREA FOR LATER USE.

---

LAB MILESTONE:

- VERIFY THAT THE SYSTEM IS OPERATIONAL.

- ASK INSTRUCTOR TO INSPECT YOUR FINAL SYSTEM INSTALLATION, IMPLEMENTATION START UP, AND INITIALIZATION TASKS. AFTER INSPECTION, INSTRUCTOR WILL INITIAL YOUR PERFORMANCE CHECKLIST.

- YOU HAVE NOW COMPLETED OMNI SBCS SYSTEM INSTALLATION AND INITIALIZATION.

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# Review Exercise (1.4) — Start Up and Initialization

GTE OMNI SBCS

INSTRUCTIONS: THE FOLLOWING EXERCISE CONSISTS OF MULTIPLE CHOICE, FILL IN THE BLANK OR MATCHING TYPE QUESTIONS. ALL AVAILABLE RESOURCES (I.E. STUDENT WORKBOOK, NOTES, AND GTEP MANUAL) MAY BE USED AS REFERENCES. SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

1. MATCH EACH CPM INDICATOR WITH THE CORRECT DESCRIPTION OF ITS FUNCTION WHEN LIT:

    _____ RUN LED (GREEN)

    (A) INDICATES THAT SOFTWARE HAS DETECTED A FAILURE IN ONE OR MORE AREAS OF SYSTEM OPERATION

    _____ MINOR ALARM LED

    (B) INDICATES NORMAL OPERATIONAL STATUS.

    _____ MAJOR TIMER OVERFLOW ALARM

    (C) INDICATES THAT WATCHDOG TIMER HAS DETECTED A FAILURE IN CPM CARD OR OPERATING SYSTEM.

2. WHAT TYPE OF RESTART/RESET SHOULD BE PERFORMED DEPENDING ON THE TYPE OF CARDS BEING REPLACED?

    _____

    _____

# Review Exercise (1.4) — Start Up and Initialization (Continued)

3. WHAT TYPE OF RESTART/RESET LOADS THE DEFAULT STANDARD DATA BASE INTO ROM AND

   EPROM? _____

4. WHAT TYPE OF RESTART/RESET IS PERFORMED AUTOMATICALLY BY THE SYSTEM TO

   RECOVER FROM A POWER FAILURE? _____

5. WHAT VISUAL EVIDENCE INDICATES THAT A COLD RESTART HAS BEEN PERFORMED, ASSUMING
   THAT CS-20 OR CSD TELEPHONES HAVE BEEN INSTALLED?

   _____

   _____

6. WHAT TYPE OF RESTART/RESET REQUIRES REPROGRAMMING OR RELOADING THE CUSTOMIZED

   DATA BASE FROM TAPE OR DISKETTE? _____

7. WHAT IS REQUIRED IF ADDITIONAL LINE OR TRUNK CARDS ARE INSERTED AND SEATED IN CARD

   SLOTS AFTER THE DEFAULT STANDARD DATA BASE HAS BEEN INITIALIZED? _____

# MODULE II
# DATA BASE
# ADMINISTRATION

# Table of Contents

GTE

GTE OMNI SBCS

# Table of Contents (Continued) **GTE**

*GTE OMNI SBCS*

# Table of Contents (Continued)

GTE

*GTE OMNI SBCS*

# Table of Contents (Continued)

GTE

*GTE OMNI SBCS*

# Table of Contents (Continued)

**GTE OMNI SBCS**

# 2.0 Terminal Objective

GIVEN:
- GTE OMNI SBCS
- PORTABLE MAINTENANCE PANEL
- GTE OMNI SBCS PERIPHERALS
- PMP CONTROL PROGRAM AND BLANK OFFICE DEPENDENT DATA BASE TAPES
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- GTE OMNI SBCS IMPLEMENTATION FORMS PACKAGE
- LABORATORY ACTIVITIES
- WRITTEN TEST

ACTION:
- MODIFY GTE OMNI SBCS SYSTEM DATA BASE AND VERIFY PROPER OPERATION.
- USE DATA COLLECTION AND INSTALLATION PROGRAMMING FORMS TO CUSTOMIZE GTE OMNI SBCS DATA BASE.
- COMPLETE AND PASS WRITTEN TEST.

CRITERIA:
- DATA BASE WILL BE MODIFIED IN ACCORDANCE WITH PROCEDURES OUTLINED IN OMNI SBCS GTEP MANUAL AND CORRECTLY USING DATA COLLECTION AND INSTALLATION PROGRAMMING FORMS.
- TEST WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

# GTE

*GTE OMNI SBCS*

# DATA BASE ADMINISTRATION
## Overview

# 2.1 Enabling Objective

GIVEN:
- GTE OMNI SBCS
- PORTABLE MAINTENANCE PANEL
- PMP CONTROL PROGRAM
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- PMP PRIMER
- LABORATORY ACTIVITY
  REVIEW EXERCISE

ACTION:
- IDENTIFY AND USE GTE OMNI SBCS PROGRAMMING TOOLS AND EQUIPMENT BY DEMONSTRATING CORRECT PROCEDURES TO:
  - LOAD AND INITIALIZE PMP CONTROL PROGRAM.
  - OBTAIN SOFTWARE SECURITY ACCESS.
  - OPERATE PORTABLE MAINTENANCE PANEL.
  - ENTER, MODIFY, AND DELETE PARAMETER VALUES FOR CMC COMMANDS.
  - LOAD GTE OMNI SBCS OPERATING SYSTEM AND DEFAULT STANDARD DATA BASE WITH COLD RESTART.
- COMPLETE REVIEW EXERCISE.

CRITERIA:
- DEMONSTRATION OF ABOVE TASKS IN ACCORDANCE WITH PROCEDURES OUTLINED IN OMNI SBCS GTEP MANUAL, PMP PRIMER, AND OMNI SBCS STUDENT WORKBOOK.
- REVIEW EXERCISE WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

# Overview — System Data Base

**DEFINITION:** SOFTWARE DRIVEN AND SOFTWARE CONTROLLED SYSTEM
WHICH PROVIDES FLEXIBILITY FOR DATA BASE MODIFICA-
TIONS AND ALLOWS EFFICIENT UPGRADE OF SYSTEM.

**LOCATION:** RESIDENT ON CPM AND MEM CARDS

**PACKAGING:** ORGANIZED BY CHANGE AND MAINTENANCE CODE (CMC)
COMMAND TABLES FOR EASY REFERENCE AND MODIFICATION

**BACKUP:** MICROCASSETTE TAPE OR FLOPPY DISKETTE.

# Data Base Capabilities

- CUSTOMIZING THE OMNI SBCS DEFAULT STANDARD DATA BASE

- STORING MODIFICATIONS TO THE OFFICE DEPENDANT DATA BASE (ODDB) TAPE OR FLOPPY DISK.

- PERFORMING MAINTENANCE THROUGH FAULT ISOLATION AND TROUBLE SHOOTING STRATEGIES.

- PERFORMING ROUTINE DIAGNOSTIC PROCEDURES.

# Programming Tools and Equipment

**GTE**

*GTE OMNI SBCS*

- SBCS OPERATING SYSTEM SOFTWARE
  - CONTAINS OPERATING PROGRAM WITH CHANGE AND MAINTENANCE TABLES STORED IN ROM.
  - CONTAINS DEFAULT DATA BASE WHICH IDENTIFIES AND CONTROLS SYTEM HARDWARE AND FEATURE ACCESS.
  - WRITTEN IN CHILL HIGH LEVEL PROGRAMMING LANGUAGE.

- PROGRAMMING DEVICES/EQUIPMENT
  - PORTABLE MAINTENANCE PANEL (PMP) EPSON HX-20 MICROCOMPUTER
    - PMP CONTROL PROGRAM TAPE OR FLOPPY DISKETTE
    - OFFICE DEPENDENT DATA BASE TAPE (ODDB) OR FLOPPY DISKETTE
  - MASTER CONTROL TELEPHONE (CSD ELECTRONIC TELEPHONE SET) *

**PORTABLE MAINTENANCE PANEL**

- OPTIONAL EQUIPMENT
  - MODEM
    - REMOTE MAINTENANCE CAPABILITY
  - FLOPPY DISKETTE DRIVE
    - COMPATIBLE WITH PMP
    - PERFORMS SAVE/LOAD FUNCTION IN LESS TIME THAN MICROCASSETTE TAPE

**CSD TELEPHONE AS
MASTER CONTROL TELEPHONE**

- CHANGE AND MAINTENANCE CODE COMMAND (CMC) TABLES
  - OMNI SBCS GTEP MANUAL, MAINTENANCE AND DATA BASE PROGRAMMING SECTIONS.

*PACKAGE B/PHASE 1.5 AVAILABILITY

2.6

# Portable Maintenance Panel
# (Epson HX-20 Microcomputer)
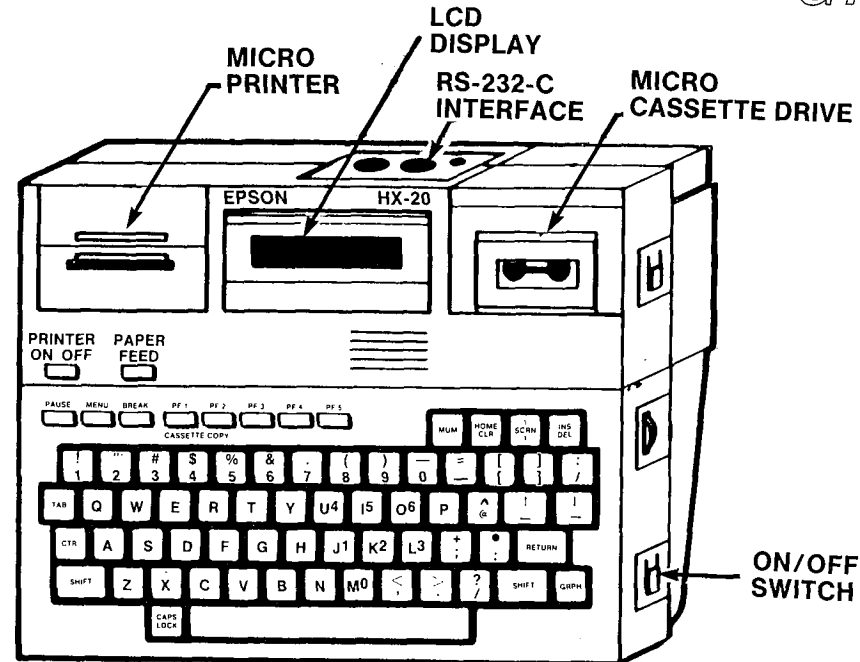
- 80 CHARACTER ALPHANUMERIC LCD DISPLAY
- BATTERY OPERATED (AC POWER SUPPLY FOR RECHARGING)
- RS-232-C PORT FOR CABLE INTERFACE WITH OMNI SBCS
- STANDARD KEYBOARD WITH SPECIAL FUNCTION KEYS
- BUILT IN MICROCASSETTE DRIVE FOR LOADING AND STORING THE PMP CONTROL PROGRAM AND OFFICE DEPENDENT DATA BASE
- BUILT IN MICROPRINTER FOR HARD COPY OF SCREEN DISPLAY

# PMP Cable Connection - Local
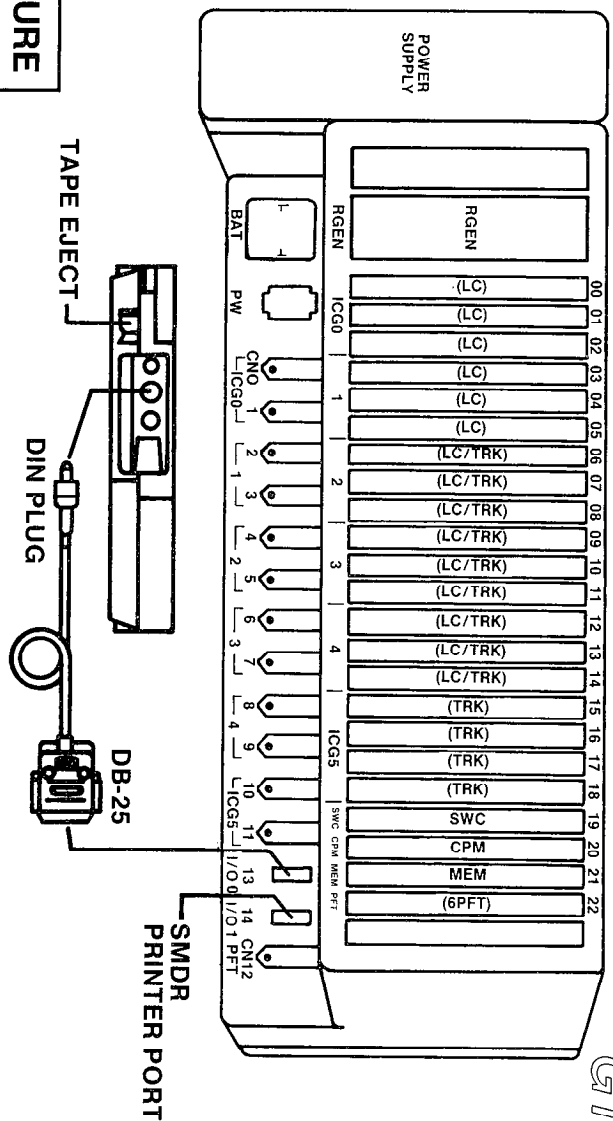
GTE OMNI SBCS



## PROCEDURE

(1) CONNECT DIN PLUG OF EPSON CABLE #715 TO PORT MARKED RS-232-C ON THE BACK OF PMP.

(2) CONNECT DB-25 CONNECTOR END OF EPSON CABLE #715 TO PORT CN13 (MARKED I/0 0) ON OMNI SBCS CABINET.

(3) ENSURE THAT COMMON CONTROL CARDS (CPM, MEM, AND SWC) ARE SEATED AND THAT BOTH OMNI SBCS AND PMP POWER SWITCHES ARE ON.

NOTE: PMP CONTROL PROGRAM MUST BE LOADED INTO PMP MEMORY FOR COMMUNICATION WITH OMNI SBCS.

2.8

# PMP Port Configuration

- FOR COMMUNICATION BETWEEN PMP AND OMNI SBCS, THE PMP CONTROL PROGRAM PORT CONFIGURATION MUST MATCH THE OMNI SBCS RS-232-C PORT AT CN13, I/0 0.

- PORT CONFIGURATION IS PRESET TO FOLLOWING VALUES:
  - BIT RATE = 1200 BAUD
  - STOP BITS = 1 BIT
  - PARITY = EVEN
  - CHARACTER LENGTH = 7 BITS
  - ECHO = OFF

- PORT CONFIGURATION MAY BE CHANGED THROUGH CMC-900 (refer to OMNI SBCS GTEP MANUAL, DATA BASE PROGRAMMING SECTION).

- POWERING THE PMP OFF AND ON RETURNS PMP TO THE PRESET PORT CONFIGURATION.

# PMP Keyboard

*GTE OMNI SBCS*
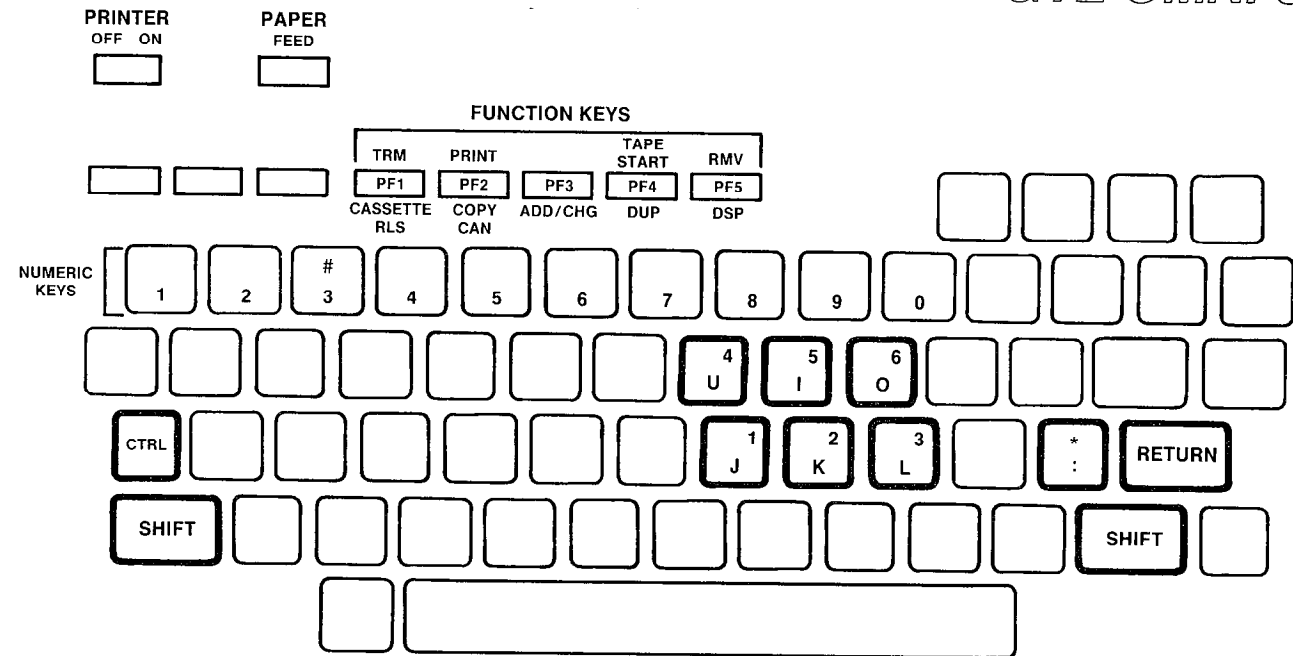


- STANDARD TYPEWRITER FORMAT.
- SPECIAL CONTROL KEYS TO ENABLE FUNCTION AND MICROPRINTER OPERATION.
- PROGRAM FUNCTION (PF) KEYS WHICH CHANGE MEANING AND FUNCTION DURING PMP CONTROL PROGRAM OPERATION.
- CURSOR CONTROL KEYS FOR QUICK MOVEMENT OF CURSOR.
- NUMERIC KEYS FOR ENTRY OF DATA BASE PARAMETER VALUES.

# PMP Tape Drive
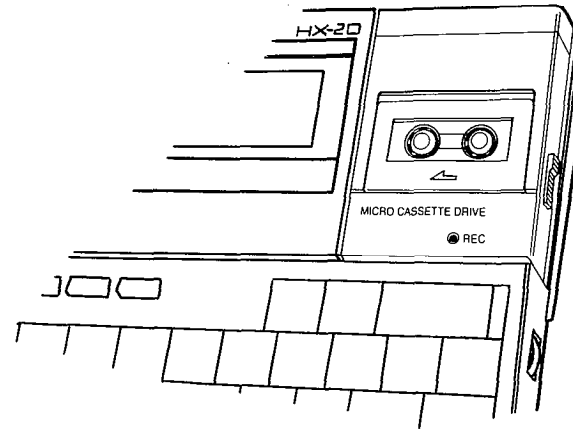
- **USES STANDARD MICROCASSETTE TAPES:**

  - **ONE 30 MINUTE TAPE FOR SAVING PMP CONTROL PROGRAM**
  - **ONE OR MORE 60 MINUTE TAPE(S) FOR SAVING OFFICE DEPENDENT DATA BASE**

- **USED TO LOAD PMP CONTROL PROGRAM INTO PMP MEMORY AT TIME OF INITIALIZATION OR IF PMP BATTERIES DISCHARGE.**

- **USED TO SAVE AND LOAD OFFICE DEPENDENT DATA BASE.**

2.11

# PMP Micro Printer
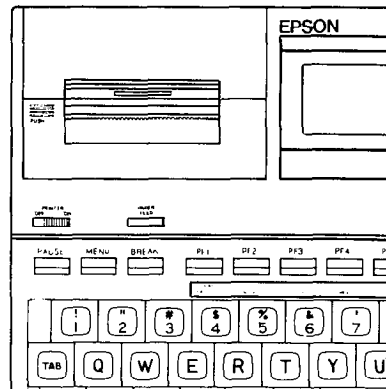
## PROCEDURE

(1)  COMPLETE ANY CMC COMMAND IN PROGRESS AND ENSURE CURSOR IS DISPLAYED ON SCREEN.

(2)  PRESS PRINTER ON/OFF SWITCH (LOCATED ON SIDE OF PMP).

(3)  PRESS CONTROL KEY AND PF2 KEY SIMULTANEOUSLY.

(4)  AFTER SCREEN HAS PRINTED, PRESS PAPER FEED KEY TO ADVANCE PAPER FOR REMOVAL FROM PMP.


NOTE:   1.   MAKE CERTAIN COMMAND PROCESS HAS BEEN COMPLETED BEFORE ADVANCING PAPER OR PRINTING, OR COMMAND WILL BE INTERRUPTED AND INPUT DATA WILL BE LOST.

2.   ONLY CONTENTS OF DISPLAY SCREEN IS PRINTED.

2.12

# Initilizing and Loading
# The PMP Control Program

## PROCEDURE

(1) CONNECT PORTABLE MAINTENANCE PANEL CABLE TO PORT Ø, IF NOT CONNECTED ALREADY.

(2) POWER ON PMP BY PRESSING POWER ON SWITCH LOCATED ON RIGHT SIDE OF PMP. THE PROGRAM MENU WILL BE DISPLAYED:

```
CTRL/@INITIALIZE
  1 MONITOR
  2 BASIC
```

(3) **PRESS CONTROL AND @ KEYS SIMULTA-NEOUSLY.** PMP WILL DISPLAY THE FOLLOWING SCREEN WHICH PROMPTS FOR YEAR, DATE, AND TIME:

```
ENTER DATE AND TIME
MM DD YY HH MM SS CR
=
PRESS BREAK TO ABORT
```

(4) **TYPE YEAR, DATE, AND TIME** (AS IN EXAMPLE):

```
ENTER DATE AND TIME
MM DD YY HH MM SS CR
= 092785143000
PRESS BREAK TO ABORT
```

(5) **PRESS RETURN KEY,** PMP WILL DISPLAY FOLLOWING SCREEN:

```
CTRL/@INITIALIZE
  1 MONITOR
  2 BASIC
```

IF MENU DOES NOT APPEAR, PRESS RESET SWITCH LOCATED ON RIGHT REAR OF PMP.

(6) **PRESS NUMERIC 2 KEY** TO SELECT BASIC MODE. DO NOT PRESS RETURN. SCREEN WILL DISPLAY:

```
COPYRIGHT 1982 BY
MICROSOFT & EPSON
P1:          0 BYTES

—
```

(7) PUSH TAPE DRIVE COVER RELEASE (ON RIGHT OF PMP) TO OPEN TAPE DRIVE. INSERT PMP CONTROL PROGRAM MICROCASSETTE INTO TAPE DRIVE.

(8) TYPE: **WIND** AND **PRESS RETURN** TO REWIND TAPE.

```
MICROSOFT & EPSON
P1:
WIND
—
```

(9) TYPE: **RUN "CASØ:LOADER"** AND **RETURN** (MAKING CERTAIN A NUMERIC ZERO IS USED FOR THE FIRST 0 IN THE COMMAND). DISPLAY WILL READ:

```
WIND
RUN "CASØ:LOADER"
SEARCHING
```

THEN:

```
RUN "CASØ:LOADER"
SEARCHING
FOUND: LOADER
```

WHICH INDICATES MACHINE CODE AND PMP CONTROL PROGRAM ARE BEING LOADED.

(10) WAIT APPROXIMATELY FIVE MINUTES. WHEN TAPE HAS FINISHED MOVING, CURSOR WILL APPEAR ON SCREEN:

```
RUN "CASØ:LOADER"
SEARCHING
FOUND: LOADER
≥
```

(11) TYPE: **TITLE "PMPctrl"** (EXACTLY AS SHOWN) AND PRESS **RETURN.** THIS WILL IDENTIFY CONTROL PROGRAM ON MAIN MENU.

```
SEARCHING
FOUND: LOADER
TITLE: "PMPctrl"
—
```

(12) TYPE: **MON** AND **PRESS RETURN,** SCREEN WILL DISPLAY:

```
-___
A=00 B=6E X=AB1C
C=C4 S=3CEC P=A385
```

(13) TYPE: **K3.** DO NOT PRESS RETURN KEY.

```
-K3___
A=00 B=6E X=AB1C
C=C4 S=3CEC P=A385
```

* THE NUMBER THREE (3) IN THIS ENTRY CAN VARY. IT IDENTIFIES THE NUMERIC ORDER OF PROGRAMS IN THE EPSON HX-20. THE MAIN MENU DISPLAYS ALL STORED PROGRAMS IN ORDER. IF PROGRAM THREE ALREADY EXISTS, 3 CANNOT BE USED IN THIS ENTRY. ENTER THE NEXT AVAILABLE NUMBER IN SEQUENCE INSTEAD OF 3.

(14) **PRESS CONTROL KEY AND @ SIMULTA-NEOUSLY.** DO NOT PRESS THE RETURN KEY. **TURN POWER OFF AND THEN ON.** MAIN PROGRAM MENU WILL NOW BE DISPLAYED INDICATING THE PMP CONTROL PROGRAM IS NOW LOADED AND WILL RUN AUTOMATICALLY.

# PMP Control Program Backup Tape

**GTE**

## PROCEDURE

(1) TURN PMP POWER ON.

(2) AFTER MAIN MENU APPEARS AND PORT CONFIGURATION SCREEN ARE DISPLAYED. **PRESS THE BREAK KEY.**

(3) TYPE: "**LOGIN2**" AND **PRESS RETURN.**

(4) INSERT PMP CONTROL PROGRAM TAPE INTO CASSETTE TAPE DRIVE.

(5) TYPE: "**WIND**" AND **PRESS RETURN.** TAPE WILL NOT REWIND.

(6) TYPE: "**LOAD "CASØ:LOADER""** AND **PRESS RETURN.** WAIT APPROXIMATELY FIVE MINUTES.

(7) AFTER TAPE STOPS MOVING, INSERT BLANK TAPES.

(8) TYPE: "**WIND**" AND **PRESS RETURN.** TAPE WILL REWIND.

(9) AFTER TAPE STOPS, TYPE: "**RUN2**" AND **PRESS RETURN.**

(10) AFTER TAPE STOPS, TYPE: "**SAVE "CASØ:PMPCTRL.BSC""** AND **PRESS RETURN.**

# Student Notes

GTE

# Laboratory Activity — Data Base Overview

**GTE**

INSTRUCTIONS: PERFORM THE FOLLOWING TASKS IN THE SEQUENCE OUTLINED BELOW IN ACCORDANCE WITH THE STUDENT WORKBOOK, THE OMNI GTEP MANUAL AND THE PMP PRIMER.

| WORK ORDER #2.1 |
| --- |
| COMPANY NAME: NU SYSTEM CO.          PHONE #:   (703) 555-1212 |
| LOCATION:  RESTON, VIRGINIA          WORK ORDER #2.1  (TASK #1) |
| ORIGINATOR:  TELECOMMUNICATIONS MANAGER |
| TASKS:<br><br>  •  Initialize and load PMP Control program microcassette tape.<br><br>  •  Create a backup copy of the PMP Control Program. |
| INSTRUCTIONS:<br><br>(1)  Power ON the PMP.<br><br>(2)  Load the PMP Control Program from the microcassette tape using the procedure in the Student Workbook.<br><br>(3)  Using the blank microcassette tape, make a backup of the original PMP Control Program tape using the procedure in the Student Workbook. |

2.16

# PMP Program Security Levels/Access Codes

- ACCESS CODES ARE PROVIDED FOR TWO LEVELS OF SECURITY (ACCESS CODES CHANGE ACCORDING TO SOFTWARE VERSION RELEASE).

| SECURITY LEVELS | SVR.1.0.2.2. (PACKAGE A) | SVR.1.5.X.X AND 2.0.X.X (PACKAGES B AND C) |
|---|---|---|
| HIGH SECURITY ACCESS | 703 | #803 |
| LOW SECURITY ACCESS | #380 | #380 |

- HIGH SECURITY CODES ALLOW ACCESS TO ALL CMC TABLES.

- LOW SECURITY CODES ALLOW ACCESS TO CMC TABLES WHICH DO NOT HAVE CRITICAL IMPACT ON SYSTEM.

- REQUIRED SECURITY LEVEL IS NOTED IN CMC TABLE LISTING IN OMNI SBCS GTEP MANUAL.

2.17

# PMP Security Access Procedure

- IF HIGH LEVEL SECURITY CODE IS ENTERED AT SECURITY CODE PROMPT (AS ILLUSTRATED BELOW), ALL CMC COMMANDS MAY BE ACCESSED. ENTER APPROPRIATE CODE FOR SOFTWARE RELEASE AND PRESS **RETURN.**

```
SECURITY CODE = #803
```

- IF LOW LEVEL CODE IS ENTERED AT SECURITY PROMPT AND ACCESS TO A CMC COMMAND REQUIRING HIGH SECURITY IS ATTEMPTED, PMP WILL DISPLAY "LOCKED" MESSAGE (AS ILLUSTRATED BELOW):

```
CMC=108
LOCKED
```

NOTE:   FOR SOFTWARE VERSION 1.5.X.X, USERS MUST PRESS SHIFT + PF1 TO EXIT TO THE INITIAL SECURITY PROMPT. THEN THE HIGH LEVEL CODE MUST BE ENTERED TO ACCESS THE COMMAND REQUIRING HIGH SECURITY.

FOR SOFTWARE VERSION 1.0.2.2, USERS MAY ENTER THE HIGH LEVEL CODE AT THE POINT WHERE THEY RECEIVE THE "LOCKED" MESSAGE. THIS WILL UNLOCK THE CMC COMMAND AND ALLOW ENTRY. (THE PMP WILL REVERT TO LOW LEVEL STATUS AFTER THE USER EXITS FROM THE HIGH LEVEL CMC COMMAND.)

2.18

# PMP Control Program Access

## PROCEDURE

(1) POWER ON PMP. A SCREEN DISPLAYING MAIN PROGRAM MENU AND COPYRIGHT INFORMATION WILL APPEAR BRIEFLY AND THEN DISAPPEAR. PMP PORT CONFIGURATION WILL BE DISPLAYED:

```
PORT CONFIGURATION
CHANGE?
YES OR NO (Y/N)
```

(2) ENTER: **N** DO NOT PRESS RETURN.

THIS WILL SKIP PORT CONFIGURATION SCREENS AND ASSUME DEFAULT VALUES WHICH ARE PRESENT TO MATCH OMNI SBCS DEFAULT PORT 0 CONFIGURATION.

(3) SECURITY CODE PROMPT WILL NOW BE DISPLAYED:

```
SECURITY CODE=
```

ENTER DESIRED SECURITY LEVEL NUMBER: **#380** AND **PRESS RETURN KEY**. SECURITY CODE WILL NOT APPEAR (ECHO) ON SCREEN.

IF SECURITY CODE IS NOT ACCEPTED, SYSTEM DISPLAYS:

```
SECURITY CODE=
ERROR
```

IF ANOTHER TERMINAL HAS ACCESS TO THE SYSTEM (A MODEM OR ANOTHER PMP CONNECTED TO CN14), SYSTEM DISPLAYS:

```
SECURITY CODE=
BUSY
```

(4) IF SECURITY ACCESS HAS BEEN CLEARED, THE FOLLOWING SCREEN APPEARS WHICH INDICATES THAT USER IS NOW IN PMP COMMAND MODE:

```
CMC=    #####
COMMAND READY
```

NOTE: IF HIGH SECURITY LEVEL IS REQUIRED WHEN USING SVR 1.0.2.2, SYSTEM DISPLAYS:

```
CMC = _____
     END
```

ENTER REQUIRED HIGH LEVEL SECURITY CODE TO OBTAIN CMC ACCESS.

2.19

# Cursor Control Key Operation

*GTE OMNI SBCS*

## LOCATION OF CURSOR CONTROL KEYS



(SUPERSCRIPT NUMBER OVER LETTER KEY INDICATES ASSOCIATED PARAMETER LOCATION ON SCREEN.)

CURSOR MAY BE MOVED FROM ONE PARAMETER TO THE NEXT PARAMETER IN SEQUENCE BY USING THE RETURN KEY OR DIRECTLY TO A DESIRED PARAMETER LOCATION BY USING THE CURSOR CONTROL KEYS.

| CURSOR CONTROL KEYS | PARAMETER |
|---|---|
| SHIFT + J | P1 |
| SHIFT + K | P2 |
| SHIFT + L | P3 |
| SHIFT + U | P4 |
| SHIFT + I | P5 |
| SHIFT + O | P6 |

# Function Key Operation

GTE

*GTE OMNI SBCS*



| NAME | PMP KEY | FUNCTION |
|------|---------|----------|
| SELECT/RETURN | RETURN | USED AFTER TYPING THE SECURITY CODE OR CMC THREE-DIGIT NUMBER. CAN BE USED AFTER TYPING P VALUE TO MOVE THE CURSOR TO THE NEXT PARAMETER POSITION. |
| RELEASE/RLS | PF1 | EXIT FROM A COMMAND AT ANY TIME. USEFUL TO CHANGE TO ANOTHER COMMAND OR EXIT FROM AN ERROR CONDITION. |
| TERMINATE/TRM | SHIFT + PF1 | TERMINATE THE CMC COMMAND. USED BEFORE ENTERING ANY P VALUES TO EXIT FROM A TABLE. |
| CANCEL/CAN | PF2 | CANCELS A KEYED IN VALUE. USED TO ERASE TYPING ERROR. WILL NOT DELETE A VALUE FROM MEMORY. |
| PRINT | CTRL + PF2 | THE DISPLAY OF CURRENT SCREEN IS SENT TO THE PRINTER. ONE SCREEN IS PRINTED AT A TIME. THE CURSOR MUST BE VISIBLE ON THE SCREEN AND ALL PMP/SYSTEM COMMUNICATION COMPLETED BEFORE PRESSING PRINT. OTHERWISE, DATA FROM THE SCREEN IS LOST, TRANSMISSION IS INTERRUPTED, AND THE PMP MUST BE TURNED OFF AND ON TO REINITIALIZE PMP PROGRAM CONTROL. |
| ADD/CHG | PF3 | WRITES (ENTERS) THE ENTERED P VALUE INTO DATA BASE MEMORY. IN SOME TABLES, RMV MUST BE USED TO DELETE PREVIOUS VALUE BEFORE PRESSING ADD/CHG. DISPLAY INDICATES WHETHER THE P VALUE WAS ADDED OR CHANGED. |
| DUPLICATE/DUP | PF4 | INCREMENTS THE TABLE'S MAIN PARAMETER WHILE CAUSING REMAINING P VALUES TO STAY THE SAME AS THE PREVIOUS SCREEN. USEFUL FOR ENTERING REPETITIVE P VALUES SUCH AS STATION AND TRUNK DATA. |
| TAPE START | SHIFT + PF4 | STARTS THE ODDB BACK UP TAPE DURING THE LOAD OR SAVE DATA BASE PROCEDURE. |
| DISPLAY/DSP | PF5 | REQUIRED AFTER ENTERING SOME CMC COMMAND. DISPLAYS P VALUES OF A TABLE. IF NO VALUES EXIST FOR A PARAMETER, THE P VALUE IS BLANK. DEPRESSING DSP A SECOND TIME INCREMENTS THE MAIN PARAMETERS AND THEIR P VALUES ARE DISPLAYED. DEPRESSING DSP AT THE END OF A TABLE LISTING EITHER DISPLAYS THE FIRST P VALUE GAIN OR TERMINATES THE TABLE BY EXITING. |
| REMOVE/RMV | SHIFT + PF5 | DELETES ALL P VALUES EXCEPT THE MAIN PARAMETER FROM A TABLE. REQUIRED AT SOME TABLES BEFORE NEW VALUES CAN BE ENTERED. |

# Change and Maintenance Code (CMC) Commands

**GTE**

*GTE OMNI SBCS*

## DESCRIPTION

- OMNI SBCS DATA BASE IS MODIFIED OR ENHANCED BY ADDRESSING DATA BASE TABLES AND THEN ENTERING OR CHANGING PARAMETER VALUES. DATA BASE TABLES ARE ADDRESSED BY CMC (CHANGE AND MAINTENANCE CODE) COMMAND ENTERED VIA THE PORTABLE MAINTENANCE PANEL OR THE MASTER CONTROL TELEPHONE.

- THE THREE-DIGIT CMC COMMAND IS THE SAME AS THE CMC TABLE NUMBER ADDRESS.

- PARAMETER VALUES ARE ENTERED USING PROGRAM FUNCTION (PF) KEYS, NUMERIC KEYS, *, AND #.

## PROCEDURE

TO ACCESS A DATA BASE CMC TABLE USING THE PMP:

(1) AT SECURITY CODE PROMPT, ENTER APPROPRIATE LEVEL REQUIRED FOR DESIRED CMC TABLE.

```
SECURITY CODE=__
```

(2) AT CMC COMMAND PROMPT, ENTER DESIRED THREE-DIGIT CMC NUMBER AND PRESS **RETURN** KEY.

```
CMC=__ *****
COMMAND READY
```

(3) PARAMETER VALUES MAY NOW BE ENTERED OR MODIFIED USING CMC COMMAND'S INPUT MENU DISPLAYED ON PMP SCREEN.

SCREEN DISPLAYS:
- **PMP ERROR CODE MESSAGES:** COMMUNICATIONS ERRORS ARE DISPLAYED IF OCCURING WHILE IN CMC TABLE.
- **PROGRESS:** INFORMATION IS BEING PROCESSED BY PROGRAM.

# CMC Parameter Format

```
CMC= XXX
P1:        P4:
P2:        P5:
P3:        P6:
```

- EACH CMC TABLE CAN HAVE UP TO SIX PARAMETERS. XXX
  IDENTIFIES THREE-DIGIT CMC COMMAND.

- PARAMETERS ARE ALWAYS NUMBERED ON SCREEN AND LOCATED
  IN SAME POSITION.

- CMC TABLES WITH LESS THAN SIX PARAMETERS WILL DISPLAY ONLY
  REQUIRED NUMBER OF PARAMETERS.

- ALL CMC COMMAND TABLES ARE LOCATED IN OMNI SBCS GTEP
  MANUAL (DATA BASE PROGRAMMING SECTION). PARAMETER VALUES
  (P VALUES) AND CMC COMMAND OPERATION ARE OUTLINED
  FOR EACH COMMAND.

# PMP Process Displays

```
                        (2)
                    CMC COMMAND
        (1)                         (3)              (4)
    CMC PROMPT                  STATUS AREA     MESSAGE AREA

  1ST LINE   | C M C = 1 2 3       D S P            1 0 : 2 3 |
                                                                     }
  2ND LINE   | P 1 : 0 1 0 0       P 4 :                      |           (5)
                                                                     } PARAMETER AREA
  3RD LINE   | P 2 : 2 0 0         P 5 :                      |
                                                                     }
  4TH LINE   | P 3 :               P 6 :                      |

                    CURSOR       NUMBERED PARAMETER
                     (6)                  (5)
```
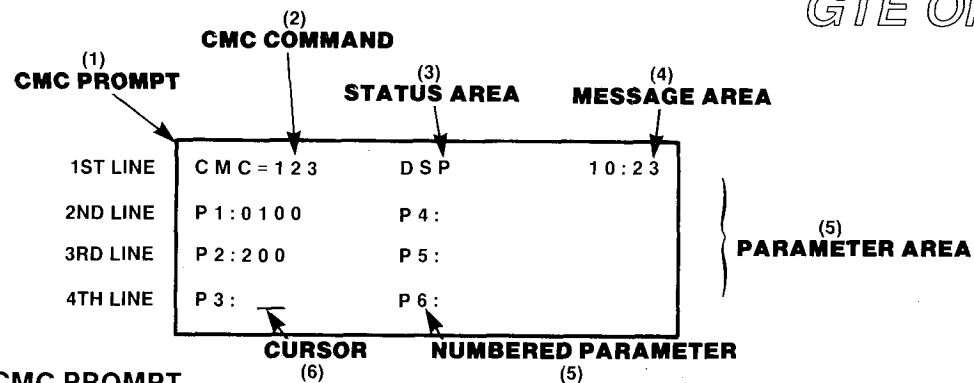
(1)  CMC PROMPT

(2)  CMC COMMAND CODE — THREE DIGIT CMC NUMBER IDENTIFYING SPECIFIC
     CMC COMMAND TABLE.

(3)  OPERATIONAL STATUS AREA —

 • DSP:  INDICATES DISPLAY PROGRAM FUNCTION KEY HAS BEEN PRESSED
   AND SCREEN DISPLAYS P VALUES.

 • ADD OR CHANGE:  INDICATES ADD/CHANGE PROGRAM FUNCTION KEY
   HAS BEEN PRESSED AND NEW DATA OR MODIFICATION IS BEING WRITTEN
   TO OMNI SBCS MEMORY.

 • RMV:  INDICATES REMOVE PROGRAM FUNCTION KEY HAS BEEN PRESSED
   AND PARAMETER VALUE DATA IS BEING DELETED FROM OMNI SBCS
   MEMORY.

(4)  MESSAGE DISPLAY AREA:

 • MM/DD/YY:  DATE IS DISPLAYED BEFORE ENTERING COMMAND TABLE.

 • HH:MM:  TIME IS DISPLAYED DURING DISPLAY, ADD/CHANGE, OR REMOVE
   PROGRAM FUNCTIONS.

(5)  PARAMETER DISPLAY AREA — IDENTIFIES VALUES OF PARAMETERS BEING
     CHANGED OR VERIFIED.

(6)  CURSOR — INDICATES LOCATION OF CURSOR ON SCREEN.

# Error Messages

- TWO TYPES OF ERROR MESSAGES:
  - (1) PMP PROGRAM CODE OR PMP/CPM COMMUNICATION ERRORS (SEE TABLE BELOW).
  - (2) CMC PROGRAMMING PARAMETER ERRORS (SEE OMNI SBCS GTEP MANUAL, DATA BASE PROGRAMMING SECTION).

| PMP DISPLAY | CAUSE AND REACTION |
|---|---|
| # LINE ERROR | TRANSMISSION ERROR, CPM FAILED TO RECEIVE DATA TRANSMITTED FROM PMP CORRECTLY (E.G., LINE PARITY ERROR). |
| HIT ANY KEY | HIT ANY KEY TO REINITIALIZE THE PMP. THE PMP DISPLAYS THE PORT CONFIGURATION CHANGE SCREEN. |
| # NO TRANSMISSION | TRANSMISSION ERROR. NO TRANSMISSION FROM CPM TO PMP. HIT ANY KEY TO REINITIALIZE THE PMP. THE PMP DISPLAYS THE PORT CONFIGURATION CHANGE SCREEN. |
| # SYSTEM NOT READY | TRANSMISSION ERROR. CPM SENT UNEXPECTED DATA TO PMP. THE "SECURITY CODE =" SCREEN WILL APPEAR IN A FEW SECONDS. ENTER THE SECURITY CODE. |
| # BASIC PRG. ERROR | PMP PROGRAM CODE ERROR. THE PMP MONITORS ITS OWN CC ERROR IN 1 1 1 1 INSTRUCTION CODES AND REPORTS A BASIC PROGRAM ERROR WHEN THE PMP CANNOT EXECUTE THE INSTRUCTION. "CC" MEANS AS FOLLOWS:<br><br>CO: BUFFER OVERFLOW<br>IO: DEVICE I/O ERROR<br>UP: UNPRINTABLE ERROR<br>"1 1 1 1" INDICATES THE LINE NUMBER OF THE PMP PROGRAM CODE WHERE THE ERROR OCCURRED. HIT ANY KEY TO REINITIALIZE THE PMP. THE PMP DISPLAYS THE PORT CONFIGURATION SCREEN. |

# Laboratory Activity — Data Base Overview (Continued)

**INSTRUCTIONS: PERFORM THE FOLLOWING TASKS IN THE SEQUENCE OUTLINED BELOW IN ACCORDANCE WITH THE STUDENT WORKBOOK, THE OMNI SBCS GTEP MANUAL, AND THE PMP PRIMER.**

---

### WORK ORDER #2.1

| | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER #2.1 (TASK #2) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

TASKS:
- Access the PMP Control Program.

- Complete 12 introductory exercises in the PMP Primer to become familiar with the format and operation of basic CMC commands.

INSTRUCTIONS:

(1) COLD Restart the system and power ON the PMP.

(2) Access the PMP program which has been loaded by using the procedure in the Student Workbook. Use the high level security code access.

(3) Turn to the laboratory exercises in the PMP Primer. Complete the 12 introductory exercises. Be certain to carefully read the description for each CMC command, the required parameters, and the error conditions. All of these programming commands will be addressed in greater detail during later programming activities. Ask your instructor for assistance or clarification as needed.

# Default Standard Data Base/Status and Capacity

**GTE**

**GTE OMNI SBCS**

| ITEM | MAXIMUM CAPACITY (Packages A and B) | MAXIMUM CAPACITY (Package C) | DEFAULT STATUS |
|---|---|---|---|
| EKT's | 120 | 120 | ASGN |
| CSD's | 40 (B only) | 80 | ASGN |
| TRUNKS | 40 | 52/104 | ASGN |
| TIE TRUNKS | 12 | 12/24 | ASGN |
| SIMULTANEOUS CALLS | 40 (A only) 72 (B only) | 96 | FIXED |
| STATION LINES | 120 | 120/240 | ASGN |
| TRUNK DIALING GROUPS (DGN) | 3 | 3 | ASGN (1) |
| TRUNK RESTRICTION GROUPS (RGN) | 3 | 3 | ASGN (1) |
| TRUNK GROUPS (TGN) | 64 | 64 | ASGN |
| LCR AREA CODE ROUTE GROUPS | 15 | 15 | CMC |
| LCR AREA CODES/ ROUTE GROUP | 10 | 10 | CMC |
| LCR AREA CODE TABLES | 160 | 160 | CMC |
| LCR AREA OFFICE CODE/TABLE | 800 OFC for 8 AC | 800 OFC for 8 AC | CMC |
| LCR OFFICE CODE ROUTE GROUPS | 15 | 15 | CMC |
| LCR OFFICE CODES/ ROUTE GROUP | 10 | 10 | CMC |
| LCR OFFICE CODE TABLES | 800 | 800 | CMC |
| AREA AND OFFICE RESTRICTION TABLES | 1000 (total codes) | 1000 (total codes) | CMC |
| NUMBER OF DATA TERMINALS (DTA's) | 30 (B ONLY) | 80 | ASGN |
| TOTAL NUMBER OF DSS | | | |
| 80 BUTTON | 2 | 2 | ASGN |
| 40 BUTTON | 6 | 8 | ASGN |
| 3-WAY CONFERENCES | 5 | 5/10 | FIXED |

| ITEM | MAXIMUM CAPACITY (Packages A and B) | MAXIMUM CAPACITY (Package C) | DEFAULT STATUS |
|---|---|---|---|
| SIMULTANEOUS RINGER (PH1) | 6 | 6/12 | FIXED |
| SIMULTANEOUS RINGER (PH2) | 6 | 6/12 | FIXED |
| SIMULTANEOUS RINGER (PH3) | 6 | 6/12 | FIXED |
| SIMULTANEOUS RINGER (PH4) | 6 | 6/12 | FIXED |
| HUNT GROUPS (VOICE) | 10 | 20 | CMC |
| HUNT GROUPS (DATA) | 10 (B ONLY) | 10 | CMC |
| HUNT MEMBERS/GROUP (VOICE OR DATA) | 16 | 16 | CMC |
| TENANTS | 5 | 5 | ASGN (0) |
| PICK UP GROUPS | 10 | 20 | CMC |
| PICK UP MEMBERS/ GROUP | 32 | 32 | CMC |
| HOT LINES (VOICE) | 10 | 20 | CMC |
| HOT LINES (DATA) | 40 (B ONLY) | 40 | CMC |
| MESSAGE WAITING CAPACITY/STATION | 4 | 5 | STA |
| NIGHT ANSWER GROUPS (INCLUDES OVERFLOW STATION) | 16 | 32 | CMC |
| NIGHT ANSWER MEMBERS/GROUP | 8 | 8 | CMC |
| EKT PAGING ZONES | 9 | 9 | CMC |
| EKT MEMBERS/ZONE | 4 | 4 | CMC |
| EXTERNAL PAGING ZONES | 9 (B ONLY) | 9 | CMC |
| SCC ROUTES | 6 | 6 | CMC |
| SIMULTANEOUS STATION CAMP-ON | 30 | 30 | STA |
| SIMULTANEOUS USE OF EKT SPEAKER | 48 | 48 | FIXED |

| ITEM | MAXIMUM CAPACITY (Packages A and B) | MAXIMUM CAPACITY (Package C) | DEFAULT STATUS |
|---|---|---|---|
| STATION SPEED DIALING/ STATION (VOICE) | 10 | 10 | STA |
| SYSTEM SPEED CALLING (VOICE) | 100 | 100 | CMC |
| SIMULTANEOUS TRUNK QUEUING | 20 | 20 | STA |
| MASTER CONTROL TELEPHONE | 4 (B ONLY) | 4 | CMC |
| NUMBER OF SIMULTANEOUS TRAFFIC MEASUREMENTS FOR TGN | 10 | 10 | CMC |
| CALL FORWARD | N/A | N/A | STA |
| DO NOT DISTURB | N/A | N/A | STA |
| MESSAGE WAITING | N/A | N/A | STA |
| TRUNK CAMP-ON | N/A | N/A | STA |
| DO NOT DISTURB OVERRIDE | N/A | N/A | STA |
| AUTOMATIC INTERCOM | N/A | N/A | STA |
| CALL ANNOUNCE | N/A | N/A | VOICE |
| DAY/NIGHT MODE | N/A | N/A | DAY |
| OFF-HOOK INCOMING SIGNAL | N/A | N/A | SIGNAL |
| ATTENDANT CONSOLES | -- | 2 | FIXED |
| FRONT DESK CONSOLES | -- | NO LIMIT | CMC |
| HOTEL/MOTEL PRINTERS | -- | 2 | CMC |
| IDLE LINE PREFERENCE (WITH ICM BUTTON) | -- | N/A | ICM LINE |
| RINGING LINE PREFERENCE (WITH ICM BUTTON) | -- | N/A | TRUNK/ICM LINE |
| PRE-SELECTION/ONE TOUCH ACCESS | -- | N/A | ONE TOUCH |

● DEFAULT STATUS COLUMN IDENTIFIES STATUS OF ITEMS IN DEFAULT STANDARD DATA BASE:

    ASGN = ITEMS DEPENDENT UPON SYSTEM CONFIGURATION (NUMBER OF TRUNKS, STATIONS, OR LINES). SPECIFIC DEFAULT ASSIGNMENTS ARE INDICATED IN PARENTHESES.

    FIXED = ITEMS WITH MAXIMUM DEFAULT VALUES, INDEPENDENT OF DATA BASE CHANGES

    CMC = ITEMS REQUIRING ADDITIONAL PROGRAMMING THROUGH CHANGE AND MAINTENANCE CODE COMMANDS.

    STA = ITEMS REQUIRING INPUT BY STATION USER.

● STATION USERS HAVE ACCESS TO ALL FEATURES EXCEPT EXECUTIVE OVERRIDE THROUGH DEFAULT COS LEVEL:
1. (REFER TO CMC-104, CMC-202, AND CMC-252).

2.27

# Default Standard Numbering Plan

**GTE**

*GTE OMNI SBCS*

| | ICG0 | | | ICG1 | | | ICG2 | | | ICG3 | | | ICG4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Slots | | | Slots | | | Slots | | | Slots | | | Slots | | |
| | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 |
| CKT 0 | 200 | 208 | 216 | 224 | 232 | 240 | 248 | 256 | 264 | 272 | 280 | 288 | 296 | 304 | 312 |
| CKT 1 | 201 | 209 | 217 | 225 | 233 | 241 | 249 | 257 | 265 | 273 | 281 | 289 | 297 | 305 | 313 |
| CKT 2 | 202 | 210 | 218 | 226 | 234 | 242 | 250 | 258 | 266 | 274 | 282 | 290 | 298 | 306 | 314 |
| CKT 3 | 203 | 211 | 219 | 227 | 235 | 243 | 251 | 259 | 267 | 275 | 283 | 291 | 299 | 307 | 315 |
| CKT 4 | 204 | 212 | 220 | 228 | 236 | 244 | 252 | 260 | 268 | 276 | 284 | 292 | 300 | 308 | 316 |
| CKT 5 | 205 | 213 | 221 | 229 | 237 | 245 | 253 | 261 | 269 | 277 | 285 | 293 | 301 | 309 | 317 |
| CKT 6 | 206 | 214 | 222 | 230 | 238 | 246 | 254 | 262 | 270 | 278 | 286 | 294 | 302 | 310 | 318 |
| CKT 7 | 207 | 215 | 223 | 231 | 239 | 247 | 255 | 263 | 271 | 279 | 287 | 295 | 303 | 311 | 319 |

- AUTOMATIC ASSIGNMENT OF VOICE STATION DIRECTORY NUMBERS TO CIRCUIT UPON STATION INSTALLATION.*

- STATION CARDS (8EKC, 8SLC and 8DTC) CAN BE REPLACED IN SLOTS 00-14.

- STATION NUMBERS WHERE NO LINE CARD OR EKT IS INSTALLED IN VACANT NUMBER.
  NOTE:  STATION NUMBERS FOR 8SLC WHERE NO SINGLE LINE INSTRUMENT IS CONNECTED MUST BE "MADE BUSY" (SEE CMC 701).

- IF 4DMR CARD IS INSTALLED IN CARD SLOT 06-14, DTMF AND DP TELEPHONES CAN BE CONNECTED TO 8SLC CARD. IF 4DMR CARD IS NOT INSTALLED, ONLY DP, SINGLE LINE TELEPHONES CAN BE CONNECTED TO 8SLC CARD AND NO TOUCH TONE TIE TRUNKS CAN BE USED.

- IF 8EKC CARD IS PLACED IN CARD SLOT 01, DSS CONSOLES ARE AUTOMATICALLY ASSIGNED TO CIRCUITS ALLOTTED FOR STATION DIRECTORY NUMBERS.

*DEFAULT DATA TERMINAL STATION NUMBERING PLAN IS DESCRIBED IN MODULE IV.

# Default Standard Assigned Features and Access Codes

*GTE*

*GTE OMNI SBCS*

| FEATURES | PACKAGES A AND B DEFAULT DATA BASE ACCESS CODES (FAC) | PACKAGE C DEFAULT DATA BASE ACCESS CODES (FAC) |
|---|---|---|
| Attendant Operator | | 0 |
| Default Station Numbers (Voice) | 200-319 | 200-319 (Basic) 320-439 (Expanded) |
| Default Station Numbers (Data) — (DTA only) | 350-379 | 350-379 (Basic) 4400-4429 (Expanded) |
| Least Cost Routing (default allows all routes) | 9 | 9 |
| CO 1 Access | 75 | 75 |
| CO 2 Access | 76 | 76 |
| CO 3 Access | 85 | 85 |
| CO 4 Access | 86 | 86 |
| CO 5 Access | 45 | 45 (Basic) not assigned (Expanded) |
| CO 6 Access | 46 | 46 (Basic) not assigned (Expanded) |
| FX 1 Access | 10 | 10 |
| FX 2 Access | 12 | 12 |
| FX 3 Access | 13 | 13 |
| FX 4 Access | 14 | 14 |
| FX 5 Access | 15 | 15 |
| FX 6 Access | 16 | 16 |
| WATS 1 Access | 70 | 70 |
| WATS 2 Access | 72 | 72 |
| WATS 3 Access | 73 | 73 |
| WATS 4 Access | 74 | 74 |
| TIE 1 Access (E & M) | 80 | 80 |
| TIE 2 Access (Loop) | 82 | 82 |
| TIE 3 Access | 83 | 83 |
| TIE 4 Access | 84 | 84 |

# Default Standard Assigned Features and
# Access Codes (Continued)

GTE

GTE OMNI SBCS

| FEATURES | PACKAGES A AND B DEFAULT DATA BASE ACCESS CODES (FAC) | PACKAGE C DEFAULT DATA BASE ACCESS CODES (FAC) |
|---|---|---|
| SCC 1 Access | 40 | 40 (Basic) 46 (Expanded) |
| SCC 2 Access | 42 | 42 (Basic) 47 (Expanded) |
| SCC 3 Access | 43 | 43 (Basic) 48 (Expanded) |
| SCC 4 Access | 44 | 44 (Basic) 49 (Expanded) |
| Station Speed Calling | *O + user programmed SPC (0-9) | *O + user programmed SPC (0-9) |
| System Speed Calling | ## + installer programmed SPC (00-99) | ## + installer programmed SPC (00-99) |
| Save/Repeat Last Number Dialed | *8 | *8 |
| EKT Paging Access - All Zone/Zone | 77 + for all zones or 1-9 for each zone | 77 + for all zones or 1-9 for each zone |
| EKT Paging Answer (Package B) | 87 + for all zones or 1-9 for each zone | 87 + for all zones or 1-9 for each zone |
| External Paging Access - All Zone/Zone (Package B) | 78 + for all zones or 1-9 for each zone | 78 + for all zones or 1-9 for each zone |
| External Paging Answer (Package B) | 78 + for all zones or 1-9 for each zone | 78 + for all zones or 1-9 for each zone |
| Call Forwarding - All Calls Activate | *34 + STA DN | *34 + STA DN/ATT Access |
| Call Forwarding - All Calls Cancel | *30 | *30 |
| Call Forwarding - Busy No Answer Activate | *33 + STA DN | *33 + STA DN/ATT Access |
| Call Forwarding - No Answer Activate | *32 + STA DN | *32 + STA DN/ATT Access |
| Call Forwarding - Busy/No Answer and No Answer Cancel | *31 | *31 |
| Do-Not-Disturb Activate | *6 | *6 |
| Do-Not-Disturb Cancel | #6 | #6 |
| Message Leaving Activate | *1 + STA DN | *1 + STA DN |
| Message Leaving Cancel | #1 + STA DN | # + STA DN |
| Message Pickup | *5 | *5 |

# Default Standard Assigned Features and Access Codes (Continued)

**GTE**

*GTE OMNI SBCS*

| FEATURES | PACKAGES A AND B DEFAULT DATA BASE ACCESS CODES (FAC) | PACKAGE C DEFAULT DATA BASE ACCESS CODES (FAC) |
|---|---|---|
| Station Camp-On Cancel | #* | #* |
| Trunk Camp-On Cancel | #7 | #7 |
| Group Pickup | *4 | *4 |
| Call Park Answer | #9 + Call Park Orbit No. (1-4 digits) | #9 + Call Park Orbit No. (1-4 digits) |
| Night Answer Pick Up (self-tenant) | #30 | #30 |
| Night Answer Pick Up (all-tenant) | #31 | #31 |
| Directed Call Pick Up | 17 + STA DN | 17 + STA DN |
| DSS Park Answer | 18 + Orbit No. (3 digits) | 18 + Orbit No. (3 digits) |
| Data Call Attribute Change | 69 + Parameter | 69 + Parameter |
| Do Not Disturb Override Activate | *2 + STA DN | *2 + STA DN |
| Do Not Disturb Override Cancel | #2 | #2 |
| Automatic Intercom User Programmability | #4 + (button key) + STA DN or SPCC | #4 + (button key) + STA DN or SAC + SPC |
| Station Speed Call User Programmability | #0 + SPC + TAC + DN | #0 + SPC + TAC + DN |
| Off-Hook Incoming Call Signaling Change (EKT only) | 57 + 0 for lamp only or 1 for ringing | 57 + 0 for lamp only or 1 for ringing |
| Call Announce Receive ON/OFF (EKT only) (see CMC 101) | #8 + 1 for ON or 0 to disallow | #8 + 1 for ON or 0 to disallow |
| Pre-selection Mode Change | | (Basic) 542 + 0 = cancel  1 = activate |
| Ringing Line Preference Change | | 541 + 0 = cancel  1 = ICM  2 = ICM or trunk |
| Idle Line Preference Change | | 541 + 0 = cancel  1 = ICM  2 = trunk |
| Direct Trunk Access | 61* + trunk DN | 61* + trunk DN |
| Day/Night Mode Change (this tenant only) | *# + 0 day or 1 = night | *# + 0 day or 1 = night |
| Night Mode Change (all tenants) | 0# + 0 = day or 1 = night | 0# + 0 = day or 1 = night |
| Key Touch Tone Control (EKT only) | 58 + 0 = cancel or 1 = activate | 58 + 0 = cancel or 1 = activate |
| Station Camp-On Activate | ** | ** |
| Trunk Camp-On Activate | *7 | *7 |

2.30

# Default Standard Assigned Features and Access Codes (Continued)

## GTE

### GTE OMNI SBCS

| FEATURES | PACKAGES A AND B DEFAULT DATA BASE ACCESS CODES (FAC) | PACKAGE C DEFAULT DATA BASE ACCESS CODES (FAC) |
|---|---|---|
| Limited Executive Override (overrides only stations with higher COR) | #5 | #5 |
| Call Park Activate | *9 + 3 digit orbit no. | *9 + 3 digit orbit no. |
| Add Data Call Set Up (Package B) | 67 | 67 |
| Account Code/Client Billing | 56 + identifier (1 to 15 digits) | 56 + identifier (1 to 15 digits) |
| Executive Override (extends Limited Override to override all stations) | #5 (not in default data base, must add COS of this feature at CMC 104, same code) | #5 (not in default data base, must add COS of this feature at CMC 104, same code) |

NOTES:

1. SPC = Speed Access Code: Station = 0-9 progrtammed by user, System = 00-99 programmed by installer.

2. TAC = Trunk Feature Access Code (listed this table)

3. DN = Directory Number or Station Number

4. EKT = Electronic Key Telephone

# Default Standard Timing Values

GTE

GTE OMNI SBCS

| DESCRIPTION | PACKAGES A/B DEFAULT VALUE IN SECONDS (± 0.2) | PACKAGE C DEFAULT VALUE IN SECONDS (± 0.2) | CMC TABLE |
|---|---|---|---|
| **Digit Receive** | | | |
| Incoming digit receive time out | 11.26 | 11.26 | 254 |
| Incoming interdigit time out | 7.17 | 7.17 | 254 |
| **Digit Send** | | | |
| Pre-pause timing (manual) | 2.30 | 2.05 | 254 |
| Interdigit timing (10 pps) | 0.86 (DP) | 0.77 (DP) | 254 |
| Interdigit timing (20 pps) | | 0.51 | |
| Pre-pause timing (speed call) | 3.3 | 3.1 | 254 |
| Interdigit pause (speed call) | 2.1 (PB) 3.0 (DP) | 2.05 | 254 |
| Interdigit timing (DTMF) | 0.06 | 0.13 | 254 |
| **System Timing** | | | |
| Station hook signal (maximum before disconnect | 1.05 | 1.05 | 103 |
| Call start time after sending all digits | 16.40 | 16.40 | 103 |
| Confirmation tone time out | 11.26 | 11.26 | 103 |
| Confirmation tone burst | 0.70 | 0.70 | 103 |
| Service Registration time out | 2.05 | 2.05 | 103 |
| Call Forwarding — No Answer timing | 13.31 | 13.31 | 103 |
| Station Camp-On callback release | 31.74 | 31.74 | 103 |
| Station Camp-On ringback | 31.74 | 31.74 | 103 |
| Station Camp-On release | infinite | infinite | 103 |
| Trunk Camp-On callback cancel | 11.26 | 11.26 | 103 |
| Trunk Camp-On cancel | infinite | infinite | 103 |
| Call Park recall | 62.46 | 62.46 | 103 |
| No Answer recall | 31.74 | 31.74 | 103 |
| Recalled station look-in | 2.05 | 2.05 | 103 |
| Called party release | 1.02 | 1.02 | 103 |
| DSS Camp-On recall | 31.74 | 31.74 | 103 |
| DSS Call Hold recall | 31.74 | 31.74 | 103 |
| Long hold recall (line and ICM hold) | 185.34 | 185.34 | 103 |
| Forward All Calls and DND reminder | 0.7 | 0.7 | 103 |
| Preselection Release (future) | 11.26 | 4.1 | 103 |
| Camp-On burst | 2.05 | 0.2 | 103 |

| DESCRIPTION | PACKAGES A/B DEFAULT VALUE IN SECONDS (± 0.2) | PACKAGE C DEFAULT VALUE IN SECONDS (± 0.2) | CMC TABLE |
|---|---|---|---|
| Override warning burst | 2.05 | 2.05 | 103 |
| Paging warning burst (internal and external) | 2.05 | 2.05 | 103 |
| BT, ROT timing | 31.74 | 31.74 | 103 |
| Call announce warning burst | 2.05 | 2.05 | 103 |
| Pre-pause for second DT (LCR, SCC) | | 1.0 | 103 |
| Account code registration display timing | | 1.1 | 103 |
| Direct-in line called party busy burst timing | | 2.0 | 103 |
| Direct-in line called party look-in timing | | 2.0 | 103 |
| Paging EKT calling timing | | 1.0 | 103 |
| Station hold loop recall timing | | 181.0 | 103 |
| Automatic release for DISA ROT | | 11.0 | 103 |
| Reseizure for DMR hunt failure of TIE/DID | | 2.0 | 103 |
| Attendant Call Park recall | | 31.0 | 103 |
| Attendant Camp-On recall | | 31.0 | 103 |
| Attendant long hold recall | | 61.0 | 103 |
| Attendant transfer call recall | | 31.0 | 103 |
| Attendant incoming overflow timing | | 61.0 | 103 |
| Common hold operation | | 1.6 | 103 |
| Delayed ringing timing | | 11.0 | 103 |
| Verify display timing | | 31.0 | 103 |
| CFT timing for wake-up answer | | 21.0 | 103 |
| Recalled station look-in timing | | 2.0 | 103 |
| Auto pause timing | | 2.1 | 103 |
| **Trunk Route Timing** | | | |
| Central Office line release timeout. Maximum duration of off-cycle incoming ringing | 5.05 | 5.05 | 254 |
| CT timing from incoming answer to transmission | 0.15 | 0.15 | 254 |
| Trunk guard release | 1.0 | 1.0 | 254 |
| Ground trunk seizure time out | 5.10 | 5.10 | 254 |
| Flash timing (disconnect) | 1.0 | 1.0 | 254 |

- **DEFAULT STANDARD TIMING VALUES ASSOCIATED WITH TRANSMISSION AND TRUNK ROUTE TIMING MAY BE CHANGED WITH CMC-254.**

- **ALL DEFAULT STANDARD TIMING VALUES ASSOCIATED WITH SYSTEM OR STATION FEATURES MAY BE CHANGED WITH CMC-103.**

2.31

# Default Standard Dial Outpulsed
# Recognized/Send Plan

**GTE**

*GTE OMNI SBCS*

| DIALING DESTINATION | DIALING PATTERN |
|---|---|
| Local/Toll Operator | 0 |
| International Operator | 01 |
| Toll Prefix | 1 |
| International Prefix | 011 |
| Special Number | N11 |
| Office Code | NNX |
| Area Code | N0/1X |
| Station Number | X to XXXX |

NOTES:

1.  X = 0 to 9,  N = 2 to 9
2.  Type of call available:
    NNX + XXXX
    1 + NNX + XXXX
    N0/1X + NNX + XXXX
    1 + N0/1X + NNX + XXXX
    0 + (time out)
    0 + NNX + XXXX
    0 + N0/1X + NNX + XXXX
    N11
    011 + 12X's

# Guide to Data Base Programming at Time of System Installation
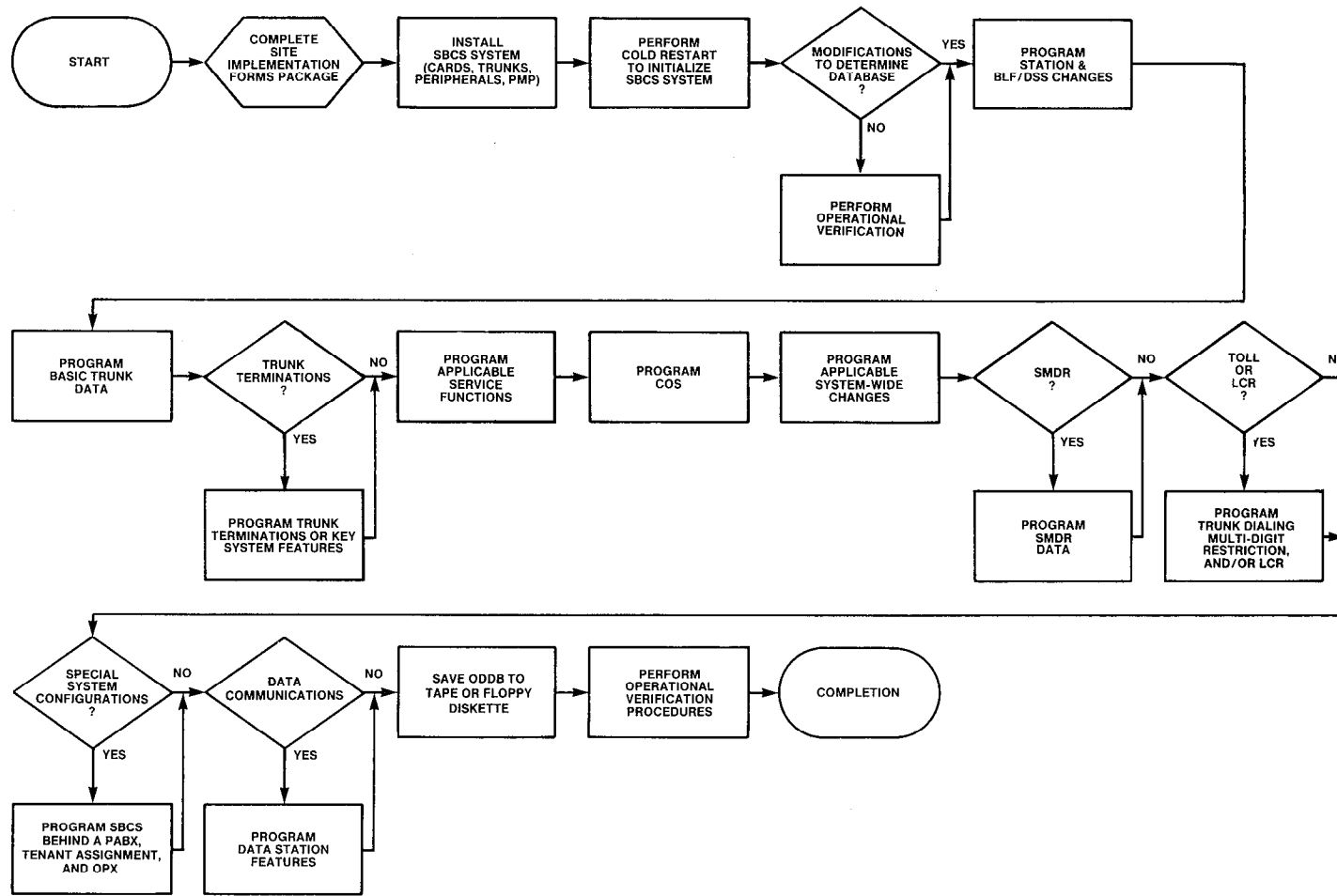
GTE OMNI SBCS

# Review Exercise — Data Base Overview (2.1)

GTE

GTE OMNI SBCS

INSTRUCTIONS: THE FOLLOWING EXERCISE CONSISTS OF MULTIPLE CHOICE, TRUE/FALSE, FILL IN THE BLANK, OR MATCHING TYPE QUESTIONS. ALL AVAILABLE RESOURCES (I.E. STUDENT WORKBOOK, NOTES, AND GTEP MANUAL) MAY BE USED AS REFERENCES. SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

1. THE OMNI SBCS OPERATING SYSTEM SOFTWARE AND DEFAULT DATA BASE RESIDE ON BOTH THE _____ AND _____ CARDS.

2. PROGRAM CHANGES CAN BE MADE WITH THE _____ OR _____ INSTRUMENTS.

3. SPECIAL FUNCTIONS (ADD/CHANGE, ETC.) ARE PERFORMED WITH THE _____ _____ KEYS WHEN USING THE PMP.

4. THE PORTABLE MAINTENANCE PANEL USUALLY INTERFACES TO THE OMNI SBCS THROUGH RS-232-C PORT _____ .

5. WHEN IS THE PMP CONTROL PROGRAM LOADED INTO THE PMP? _____

_____

6. THE SECURITY CODE FOR HIGH SECURITY ACCESS IS _____ AND LOW SECURITY ACCESS IS _____ WITH SVR 1.5.X.X.

7. MATCH EACH OF THE FOLLOWING PF KEYS WITH ITS CORRECT FUNCTION:

    _____ PF1            A. SELECT
    _____ SHIFT + PF5    B. RELEASE
    _____ PF3            C. CANCEL
    _____ PF2            D. ADD/CHANGE
    _____ RETURN         E. REMOVE

8. A CMC TABLE CAN HAVE UP TO _____ PARAMETERS.

9. CMC COMMAND PARAMETER VALUES ARE ENTERED FROM THE PMP KEYBOARD USING _____, _____, _____ AND _____ KEYS.

10. WHAT PARAMETER DOES THE SYSTEM REQUIRE TO BE INPUT FOR MOST CMC COMMANDS? _____

_____

# Review Exercise — Data Base Overview (2.1) (Continued)

11. WHAT IS DISPLAYED ON THE PMP SCREEN IF THE SECURITY CODE IS NOT ACCEPTED BY THE SYSTEM? _____ .

12. THE _____ PROCEDURE LOADS AND ESTABLISHES THE SYSTEM DEFAULT STANDARD DATA BASE.

13. THE PORTABLE MAINTENANCE PANEL IS USED PRIMARILY:

   _____ A. AS AN INSTRUCTIONAL DEVICE TO TEACH CUSTOMERS ABOUT OMNI SBCS FEATURES.
   _____ B. FOR PERFORMING ROUTINE MAINTENANCE, CREATING OR MODIFYING THE OMNI SBCS DATA BASE, AND ISOLATING HARDWARE FAULTS.
   _____ C. FOR PROGRAMMING NEW OMNI SBCS SOFTWARE PROGRAMS.
   _____ D. FOR LEARNING THE CHILL HIGH-LEVEL PROGRAMMING LANGUAGE.

14. THE CURSOR MAY BE MOVED AROUND THE CMC COMMAND SCREEN THROUGH THE USE OF _____ OR _____ .

15. WHAT MESSAGE IS DISPLAYED IF A LOW SECURITY CODE IS ENTERED AND ENTRY TO A CMC COMMAND TABLE REQUIRING HIGH ACCESS THEN IS ATTEMPTED? _____

16. A _____ MINUTE BLANK MICROCASSETTE TAPE IS REQUIRED TO MAKE A BACK-UP OF THE PMP CONTROL PROGRAM.

17. MODIFICATIONS TO A CMC COMMAND TABLE ARE NOT ENTERED INTO THE DATA BASE UNTIL: _____

18. LOCAL PMP CONNECTION TO THE OMNI SBCS REQUIRES USE OF A _____ CABLE.

19. THE DEFAULT PMP PORT CONFIGURATION IS SET TO _____ BAUD WITH THE ECHO TURNED _____ .

20. THE DEFAULT STATUS FOR THE NUMBER OF SIMULTANEOUS CALLS ALLOWED IN THE SYSTEM IS _____ , INDEPENDENT OF DATA BASE CHANGES.

21. WHAT SCREEN IS DISPLAYED WHEN THE PMP IS IN "COMMAND MODE"? _____

_____

_____

22. WHAT IS THE PROCEDURE FOR OBTAINING A HARD COPY OF A CMC COMMAND WITH CURRENT PARAMETER STATUS? _____

_____

_____

_____

23. (TRUE OR FALSE) _____ THE PMP CANNOT COMMUNICATE WITH THE OMNI SBS IF THE MEM AND SWC CARDS HAVE NOT BEEN SEATED.

24. OMNI SBCS DATA BASE TABLES ARE ADDRESSED BY A THREE-DIGIT: _____ .

25. THE OMNI SBCS DEFAULT STANDARD STATION DIRECTORY NUMBERING PLANS BEGINS WITH DIRECTORY NUMBER _____ AND ENDS WITH _____ .

# Student Notes

GTE

# DATA BASE ADMINISTRATION
# Programming Station Instruments
# and BLF/DSS Modules

# 2.2 Enabling Objective

GIVEN:
- GTE OMNI SBCS
- GTE OMNI SBCS PERIPHERALS
- PORTABLE MAINTENANCE PANEL
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- LABORATORY ACTIVITY - PROGRAMMING STATION INSTRUMENTS AND BLF/DSS MODULES.
- REVIEW EXERCISE

ACTION:
- USE OMNI SBCS PROGRAMMING TOOLS AND EQUIPMENT TO:
  - INSTALL AND REMOVE EKT INSTRUMENTS, SLT INSTRUMENTS, AND BLF/DSS MODULES.
  - ASSIGN AND MODIFY EKT, BLF/DSS BUTTON ASSIGNMENTS.
- COMPLETE REVIEW EXERCISE.

CRITERIA:
- DEMONSTRATION OF ABOVE TASKS IN ACCORDANCE WITH PROCEDURES OUTLINED IN OMNI SBCS GTEP MANUAL AND OMNI SBCS STUDENT WORKBOOK.
- REVIEW EXERCISE WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING PROGRAM.

# Default Standard EKT
# Button Assignment/CS-10 and CS-20

**GTE**

*GTE OMNI SBCS*

## STANDARD CONFIGURATION (CARD SLOTS 00 OR 02-14)

### CS-10

| 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|
| LINE (ORIG.) | CAMP-ON | FORWARD ALL | SAVE/ REPEAT | ICM HOLD ANSWER |
| **1** | **2** | **3** | **4** | **5** |
| DND | CALL ANNOUNCE | MONITOR | TRANSFER | HOLD |

### CS-20

| 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|
| LINE (ORIG.) | CAMP-ON | FORWARD ALL | SAVE/ REPEAT | ICM HOLD ANSWER |
| **1** | **2** | **3** | **4** | **5** |
| CALL ANNOUNCE | MUTE | SPEAKER PHONE | TRANSFER | HOLD |

## ALTERNATE CONFIGURATION (CARD SLOT 01)

### CS-10

| 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|
| LINE (ORIG.) | LINE (TERM) | FORWARD ALL | SAVE/ REPEAT | ICM HOLD ANSWER |
| **1** | **2** | **3** | **4** | **5** |
| DND | CALL ANNOUNCE | MONITOR | TRANSFER | HOLD |

### CS-20

| 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|
| LINE (ORIG.) | LINE (TERM) | FORWARD ALL | SAVE/ REPEAT | ICM HOLD ANSWER |
| **1** | **2** | **3** | **4** | **5** |
| CALL ANNOUNCE | MUTE | SPEAKER PHONE | TRANSFER | HOLD |

# Default Standard CSD*
# Button Assignment

**GTE**

*GTE OMNI SBCS*

## CSD CONNECTED TO AN 8DTC CARD
## INSTALLED IN CARD SLOT 01

| 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|
| LINE 1 | TRUNK (IN) | PICK-UP | SAVE/ REPEAT | ICM HOLD ANSWER |

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| VOICE | MW | FLASH | DO NOT DISTURB | PROGRAM |

[ ] SPEAKER

[ ] MUTE

[ ] TRANSFER  — FIXED KEYS

[ ] HOLD
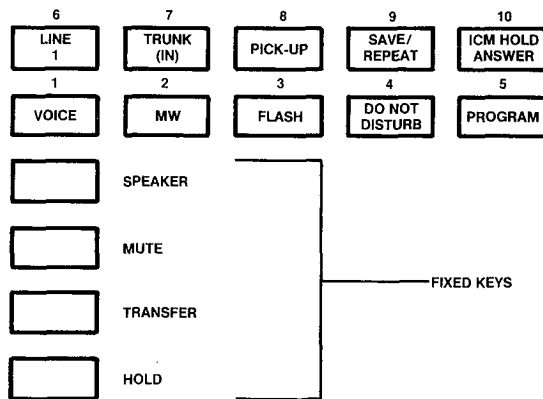
## CSD CONNECTED TO 8DTC CARDS
## INSTALLED IN CARD SLOTS 02-14

| 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|
| LINE 1 | PARK | PICK-UP | SAVE/ REPEAT | ICM HOLD ANSWER |

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| VOICE | MW | FLASH | DO NOT DISTURB | PROGRAM |

[ ] SPEAKER

[ ] MUTE

[ ] TRANSFER  — FIXED KEYS

[ ] HOLD
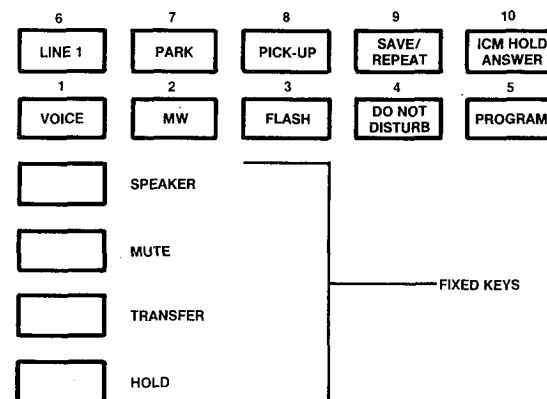
## CSD EQUIPPED WITH DTA INTERFACE
## INSTALLED IN CARD SLOTS
## 00, 03, 06, 09, and 12

| 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|
| LINE 1 | PARK | DATA CALL | MODE CHANGE | ICM HOLD ANSWER |

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| VOICE | MW | FLASH | SAVE/ REPEAT | PROGRAM |

[ ] SPEAKER

[ ] MUTE

[ ] TRANSFER  — FIXED KEYS

[ ] HOLD

**\* PACKAGE B/PHASE 1.5 AVAILABLITY**

2.41
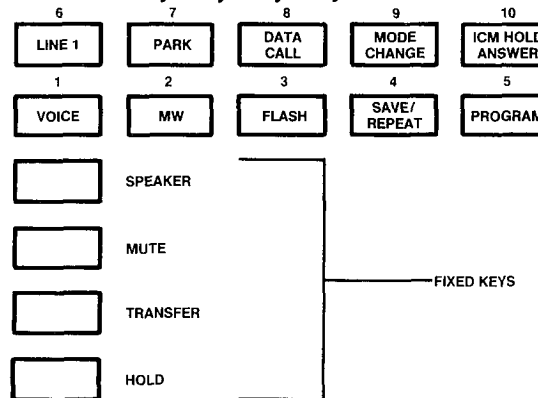
# Programming Station Instruments/Default Standard Station Installation

| PROCEDURE | *

1. COLD RESTART THE SYSTEM (IF AT TIME OF INITIAL SYSTEM INSTALLATION) OR HOT RESTART THE SYSTEM (IF INSTALLING INSTRUMENT AFTER INITIAL SYSTEM INSTALLATION).

2. REFER TO DEFAULT STANDARD DATA BASE TABLES FOR DEFAULT DIRECTORY NUMBER ASSIGNMENT AND BUTTON ASSIGNMENTS (FOR CS-10, CS-20, OR CSD).

3. PROGRAM DESIRED DATA BASE CHANGES WITH APPLICABLE CMC COMMANDS USING DEFAULT STANDARD SETTINGS AS BASIS FOR THE CUSTOMIZED DATA BASE.

*ASSUMES LINE CARD HAS BEEN INSTALLED IN APPROPRIATE SLOT AND TELEPHONE INSTRUMENT HAS BEEN PHYSICALLY CONNECTED TO DESIRED SLOT AND CIRCUIT LOCATION.

# Programming Station Instruments/Manual Station Installation

## GTE

| PROCEDURE | * (REFER TO OMNI SBCS GTEP MANUAL, DATA BASE PROGRAMMING SECTION)

1. USE CMC-200 TO ASSIGN:
   - EQUIPMENT NUMBER (P1)
   - STATION DIRECTORY NUMBER (P2)
   - TYPE OF TERMINAL (P3)
   - COPIED STATION DIRECTORY NUMBER (P4)

```
CMC= 200
P1: 017    P4
P2: 215
P3: 2
```

2. USE CMC-201 TO ASSIGN:
   - DIRECTORY NUMBER (P1)
   - OPERATION MODE (P2)
   - TYPE OF DIALING (P3)
   - TENANT NUMBER (P4)
   - METERING GROUP (P5)

```
CMC=201
P1: 215    P4: 2
P2: 1      P5: 2
P3: 3
```

3. USE CMC-202 TO ASSIGN:
   - STATION DIRECTORY NUMBER (P1)
   - DAY CLASS OF SERVICE (P2)
   - NIGHT CLASS OF SERVICE (P3)
   - DAY CLASS OF RESTRICTION (P4)
   - NIGHT CLASS OF RESTRICTION (P5)

```
CMC=202
P1: 215    P4: 1
P2: 1      P5: 1
P3: 3
```

4.  USE CMC-204 (IF APPLICABLE) TO ASSIGN:
    - STATION DIRECTORY NUMBER (P1)
    - DATA SECURE PATH (P2)
    - OFF PREMISES EXTENSION (P3)
    - SLT WITH MESSAGE WAITING LAMP (P4)**

```
CMC= 204
P1: 215      P4: 0
P2: 1
P3: 0
```

5.  USE CMC-203 (ONLY FOR CS-10, CS-20, AND CSD INSTRUMENTS) TO
    ASSIGN FEATURES OR SERVICES TO BUTTONS:
    - STATION DIRECTORY NUMBER (P1)
    - BUTTON NUMBER (P2)
    - FEATURE NUMBER (P3)
    - SUPPLEMENTARY DATA (P4)
    - LINE TERMINATION TYPE (P5)
    - RINGING MODE (P6)

```
CMC= 203
P1: 215      P4:
P2: 10       P5:
P3: 85       P6:
```

NOTE:   IF LINE BUTTON IS ASSIGNED TO A CS-10, CS-20, OR CSD
        INSTRUMENT, USE CMC-253 TO ASSIGN TRUNK TERMINATION.
        (REFER TO STUDENT WORKBOOK FOR INSTRUCTIONS
        FOR PROGRAMMING TRUNK TERMINATION OR KEY
        SYSTEM TYPE LINES.)

 *ASSUMES LINE CARD HAS BEEN INSTALLED IN APPROPRIATE SLOT
  AND TELEPHONE INSTRUMENT HAS BEEN PHYSICALLY CONNECTED TO
  DESIRED SLOT AND CIRCUIT.
**PACKAGE B/PHASE 1.5 AVAILABILITY

# Student Notes

# Programming Station Instruments/Modification-Removal of Station Information

GTE

| PROCEDURE | (CHANGE) |
| --- | --- |

1. USE CMC-203 TO:
   - REMOVE UNWANTED EKT BUTTON ASSIGNMENTS
   - ENTER NEW BUTTON ASSIGNMENTS

2. USE CMC-200 TO:
   - CHANGE STATION DIRECTORY NUMBERS AND/OR EQUIPMENT NUMBERS

3. CHECK CMC-201, CMC-202 AND CMC-204 TO:
   - MAKE ANY CHANGES AFFECTED BY DIRECTORY NUMBER CHANGE (COS/COR OPERATION MODE TYPE OF DIALING, TENANT NUMBER, METERING GROUP, DATA SECURITY OR OPX DESIGNATION.

4. CHECK CMC-306 AND CMC-307 TO:
   - MAKE ANY CHANGES AFFECTED BY EQUIPMENT NUMBER CHANGE.

| PROCEDURE | (REMOVE) |
| --- | --- |

1. USE CMC-203 TO:
   - REMOVE ALL BUTTON ASSIGNMENTS ASSOCIATED WITH STATION.

2. CHECK CMC-201, CMC-204, CMC-210, CMC-301, CMC-302 AND CMC-304 TO:
   - REMOVE STATION DIRECTORY NUMBERS FROM APPLICABLE TABLES.

3. USE CMC-200 TO:
   - CHANGE STATION DIRECTORY NUMBER ASSIGNMENT AND EQUIPMENT NUMBER ASSIGNMENT.

4. CHECK CMC-306 AND CMC-307 TO:
   - CHANGE STATION DIRECTORY NUMBERS AFFECTED BY THE CHANGES.

# Programming Station Instruments/
# CMC Command Summary

**GTE**

*GTE OMNI SBCS*

| CATEGORY | CMC TABLE | FUNCTION |
|---|---|---|
| • STATION DN ASSIGNMENT | 200 | ASSIGNS, REMOVES, OR CHANGES DIRECTORY NUMBER AND TYPE OF TERMINAL. |
| • STATION DATA ASSIGNMENT | 201 | ASSIGNS, REMOVES, OR CHANGES A STATION'S OPERATION MODE, TYPE OF DIALING, TENANT NUMBER, OR METERING GROUP NUMBER. |
| • STATION COS/COR ASSIGNMENT | 202 | ASSIGNS, REMOVES, OR CHANGES A STATION'S CLASS OF SERVICE OR CLASS OF RESTRICTION LEVEL FOR DAY OR NIGHT MODE. |
| • EKT BUTTON ASSIGNMENT | 203 | ASSIGNS, REMOVES, OR CHANGES FEATURE BUTTON ASSIGNMENT ON EKT. |
| • DATA SECURITY AND OPX | 204 | IDENTIFIES A DIRECTORY NUMBER AS A DATA SECURE LINE OR OFF-PREMISE EXTENSION. |

# Programming BLF/DSS Modules/Default Standard Console Button Station Number Appearance

**GTE**

*GTE OMNI SBCS*

| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
|---|---|---|---|---|---|---|---|---|---|
| 200 | 201 | 202 | 203 | 204 | 205 | 206 | 207 | 208 | 209 |

| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
|---|---|---|---|---|---|---|---|---|---|
| 210 | 211 | 212 | 213 | 214 | 215 | 216 | 217 | 218 | 219 |

| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
|---|---|---|---|---|---|---|---|---|---|
| 220 | 221 | 222 | 223 | 224 | 225 | 226 | 227 | 228 | 229 |

| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
|---|---|---|---|---|---|---|---|---|---|
| 230 | 231 | 232 | 233 | 234 | 235 | 236 | 237 | 238 | 239 |

| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
|---|---|---|---|---|---|---|---|---|---|
| 240 | 241 | 242 | 243 | 244 | 245 | 246 | 247 | 248 | 249 |

| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|---|---|---|---|---|---|---|---|---|---|
| 250 | 251 | 252 | 253 | 254 | 255 | 256 | 257 | 258 | 259 |

| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|
| 260 | 261 | 262 | 263 | 264 | 265 | 266 | 267 | 268 | 269 |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| 270 | 271 | 272 | 273 | 274 | 275 | 276 | 277 | 278 | 279 |

STATION ACCESS BUTTONS WITH LED LAMPS

**DSS 80**

# Programming BLF/DSS Modules
# BLF/DSS Installation — Default Standard

GTE

*GTE OMNI SBCS*

## DESCRIPTION

- ALLOWS FOR PREPROGRAMMED STATION BUTTON ASSIGNMENTS ON BLF/DSS MODULE.

- BLF/DSS SHOULD BE ASSIGNED TO ODD CIRCUIT NUMBER ON 8EKC CARD INSERTED INTO CARD SLOT 01.

- REQUIRES THAT CS-10 OR CS-20 ASSOCIATED WITH BLF/DSS MUST BE INSTALLED AS A STATION ON SAME 8EKC CARD IN SLOT 01. ASSOCIATED EKT SHOULD BE CONNECTED TO THE EVEN NUMBERED CIRCUIT ONE NUMBER LESS THAN THE BLF/DSS CIRCUIT NUMBER (I.E., EKT = CIRCUIT 0, BLF/DSS = CIRCUIT 1).

## PROCEDURE    * (UTILIZING DEFAULT STANDARD DATA BASE SETTINGS)

- COLD RESTART THE SYSTEM. ALL TRUNKS AND STATIONS WILL AUTOMATICALLY RECEIVE THE DEFAULT STANDARD DATA BASE SETTINGS.

WARNING:   DO NOT USE THIS PROCEDURE AFTER DATA BASE MODIFICATIONS HAVE BEEN MADE. A COLD RESTART DELETES ALL PREVIOUS DATA BASE CHANGES SINCE SYSTEM WILL REVERT TO DEFAULT STANDARD DATA BASE SETTINGS.

*ASSUMES 8EKC CARD IS SEATED IN CARD SLOT 01 AND BLF/DSS IS PHYSICALLY CONNECTED TO APPROPRIATE CIRCUIT.

2.49

# Programming BLF/DSS Instruments — BLF/DSS Installation — Manual

**GTE**

*GTE OMNI SBCS*

---

## DESCRIPTION

- ASSUMES THAT COMPLETE PROGRAMMING OF BLF/DSS CONSOLE IS REQUIRED.
- PROCEDURE USED IF DEFAULT STANDARD DATA BASE IS NOT USED OR IF THE BLF/DSS IS NOT CONNECTED TO AN 8EKC CARD IN CARD SLOT 01.*
- THE CS-10 OR CS-20 ASSOCIATED WITH THE BLF/DSS MUST ALREADY BE INSTALLED PRIOR TO BLF/DSS INSTALLATION.

## PROCEDURE

1. USE CMC-210 TO ASSIGN:
   - IDENTIFYING BLF/DSS INSTRUMENT NUMBER (P1)
   - BLF/DSS TYPE (P2)
   - EQUIPMENT NUMBER (P3)
   - ASSOCIATED EKT STATION DIRECTORY NUMBER (P4)
   - COPIED BLF/DSS INSTRUMENT NUMBER (P5)
   - BLF/DSS ORDER**
2. USE CMC-211 TO ASSIGN:
   - ASSOCIATED EKT STATION DIRECTORY NUMBER (P1)
   - BLF/DSS BUTTON NUMBER (P2)
   - TYPE OF BLF/DSS FEATURE (P3)
   - STATION DIRECTORY NUMBER ASSIGNED TO BUTTON (P4)
   - LINE TERMINATION TYPE FOR LINE ACCESS WHEN P3 = 9 (P5)
   - RINGING MODE WHEN P3=9 (P6)

*ASSUMES 8EKC CARD IS SEATED IN CARD SLOT 00 OR 02-14 AND BLF/DSS IS PHYSICALLY CONNECTED TO APPROPRIATE CIRCUIT.

**PACKAGE C AVAILABILITY

```
CMC= 210
P1: 1          P4: 214
P2: 1          P5:
P3: 013        P6:
```

```
CMC= 211
P1: 214        P4:
P2: 3          P5:
P3: 6          P6:
```

2.50

# Programming BLF/DSS Instruments
## Modify/Remove a BLF/DSS Module

GTE

GTE OMNI SBCS

---

| PROCEDURE | (CHANGE)

- USE CMC-211 TO REMOVE BLF/DSS BUTTON ASSIGNMENT BEFORE ENTERING NEW BUTTON ASSIGNMENTS.

| PROCEDURE | (REMOVE)

- USE CMC-211 TO REMOVE BLF/DSS BUTTON ASSIGNMENTS

- USE CMC-210 TO REMOVE BLF/DSS ASSIGNMENT

NOTE: EXISTING ENTRIES MUST BE REMOVED BEFORE CHANGING BLF/DSS MODULE ASSIGNMENTS.

# Programming BLF/DSS Modules
# CMC Command Summary

**GTE**

*GTE OMNI SBCS*

| CATEGORY | CMC TABLE | FUNCTION |
|----------|-----------|----------|
| ● BLF/DSS ASSIGNMENT | 210 | ASSIGNS OR REMOVES BLF/DSS MODULES. |
| ● BLF/DSS BUTTON ASSIGNMENT | 211 | ASSIGNS, REMOVES, OR CHANGES BLF/DSS FEATURE OR STATION INTERCOM BUTTONS FOR EACH BLF/DSS BUTTON. |

# Laboratory Activity — Programming Station Instruments and BLF/DSS Modules

**GTE**

*GTE OMNI SBCS*

PERFORM THE FOLLOWING PROGRAMMING TASKS IN THE SEQUENCE OUTLINED BELOW, USING THE SAMPLE WORK ORDERS AND IN ACCORDANCE WITH THE GTE OMI SBCS GTEP MANUAL. COMPLETE THE REVIEW EXERCISE QUESTIONS PERTAINING TO STATION AND BLF/DSS PROGRAMMING UPON COMPLETION OF THIS LABORATORY ACTIVITY.

| WORK ORDER #2.2 | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER #2.2 (TASK #1) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

**TASKS:**

- Add, modify, or remove a station with CMC-200.

- Assign station characteristics with CMC-201.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Install and add a CS-10 to card 01, circuit 0. (NOTE: Cross connect wiring was completed during installation. Simply connect station to modular jack, perform HOT Restart, and proceed with required programming.) | (1) Perform programming changes for station instruments. |
| | (2) HOT Restart system after installation. |
| (2) Change default station directory number assignment from 208 to 308. | (3) Check/test the operation of changes after completion of this portion of the laboratory activity. |
| (3) Assign station characteristics: <br>     Operation Mode = Bothway <br>     Type of Dialing = DTMF | (4) Proceed to next work order task. |
| (4) Remove station 215. | |

# Laboratory Activity — Programming Station Instruments and BLF/DSS Modules (Continued)

GTE

GTE OMNI SBCS

| WORK ORDER #2.2 |
|---|

| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
|---|---|
| LOCATION: RESTON, VIRGINIA | WORK ORDER #2.2 (TASK #2) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

**TASKS:**
- Restore station 215 to system by adding it with CMC-200.
- Change station operation mode, tenant group, and SMDR metering group using CMC-201.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Add station 215 at slot 01, circuit 07.<br><br>(2) Change operation mode for SLT at slot 02, circuit 0 from bothway, to incoming only.<br><br>(3) Change dialing mode to DTMF for this instrument.<br><br>(4) Assign both SLT instruments to tenant group 1 and metering group 10.<br><br>**NOTE:**<br>Programming of station tenant assignment, SMDR printer output, and station COS/COR assignments will be addressed in later laboratory activities. | (1) Perform programming changes for station instrument.<br>(2) Check/test the operation of changes after completion of this portion of the laboratory activity.<br><br>(3) Proceed to next work order task. |

# Laboratory Activity — Programming Station Instruments and BLF/DSS Modules (Continued)

GTE

*GTE OMNI SBCS*

| WORK ORDER #2.2 | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER #2.2    (TASK #3) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

**TASKS:**

- Identify a station directory number as a data secure line or an off-premises extension with CMC-204.

**PARAMETERS:**

(1) Make station 214 a data secure line.

(2) Designate the SLT at slot 02, circuit 7 as an off-premises extension.

**INSTRUCTIONS:**

(1) Perform programming changes for station instruments.

(2) Check/test the operation of changes after completion of this portion of the laboratory activity.

(3) Proceed to next work order task.

2.55

# Laboratory Activity — Programming Station Instruments and BLF/DSS Modules (Continued)

*GTE OMNI SBCS*

| WORK ORDER #2.2 |
|---|

| | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER # 2.2 (TASK #4) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

**TASKS:**

• Assign and remove feature assignments for EKT button with CMC-203.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Assign "Call Park" to button 1 for both CS-20 instruments. | (1) Perform programming changes for station instruments. |
| (2) Change the "Forward All" feature assigned by default to a button on station 308, to the "Do Not Disturb" feature. | (2) Check/test the operation of changes after completion of this portion of the laboratory activity. |
| (3) Change the "Call Announce" feature also assigned by default to a button on station 308, to the "System Speed Calling" feature (code 00). | (3) Complete review exercise questions 1-17. |
| NOTE: | |
| Programming of EKT buttons for trunk termination or key system type features will be addressed in later laboratory activities. | |

| LAB MILESTONE |
|---|

• VERIFY THAT ALL PROGRAMMING CHANGES REQUESTED IN WORK ORDERS HAVE BEEN PERFORMED CORRECTLY.

• ASK INSTRUCTOR TO INSPECT STATION PROGRAMMING CHANGES AND INITIAL YOUR PERFORMANCE CHECKLIST.

• MAKE CERTAIN QUESTIONS 1-17 OF REVIEW EXERCISE 2.2 HAVE BEEN COMPLETED BEFORE COMPLETING THE REMAINING WORK ORDERS.

# Laboratory Activity — Programming Station Instruments and BLF/DSS Modules (Continued)

**GTE**

*GTE OMNI SBCS*

| WORK ORDER #2.2 |
|---|

| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
|---|---|
| LOCATION: RESTON, VIRGINIA | WORK ORDER #2.2 (TASK #5) |

ORIGINATOR: TELECOMMUNICATIONS MANAGER

TASKS:

- Add, change, or delete a BLF/DSS module with CMC-210.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Install and add a 40 button BLF/DSS to card 01, circuit 3. (NOTE: Cross connect wiring was completed during installation. Simply connect BLF/DSS to modular jack, perform HOT Restart, and proceed with required programming.)<br><br>(2) Assign the BLF/DSS as BLF/DSS module Number 2. Pair it with the CS-20 instrument at station directory 214. | (1) Perform programming changes for BLF/DSS modules.<br><br>(2) Check/test the operation of changes after completion of this portion of the laboratory activity.<br><br>(3) Proceed to next work order task. |

# Laboratory Activity — Programming Station Instruments and BLF/DSS Modules (Continued)

**GTE**

*GTE OMNI SBCS*

---

**WORK ORDER #2.2**

| COMPANY NAME:  NU SYSTEM CO. | PHONE #:  (703) 555-1212 |
| --- | --- |
| LOCATION:  RESTON, VIRGINIA | WORK ORDER #2.4  (TASK #5) |

ORIGINATOR:  TELECOMMUNICATIONS MANAGER

TASKS:

• Assign and remove BLF/DSS button assignments with CMC-211.

---

| PARAMETERS: | INSTRUCTIONS: |
| --- | --- |
| (1)  Assign the following features to the BLF/DSS installed in the previous task: | (1)  Perform programming changes for BLF/DSS modules. |

| BUTTON | FEATURE |
| --- | --- |
| 1 | DSS Park Answer |
| 2 | DSS Camp On |
| 3 | Alternate (assign directory number 212) |
| 4 | Alarm |
| 5 | Night |
| 6 | External Paging |
| 7 | Automatic Intercom (DN 212) |
| 8 | Automatic Intercom (DN 214) |
| 9 | Automatic Intercom (DN 216) |
| 10 | Automatic Intercom (DN 223) |
| 11 | Automatic Intercom (DN 308) |

(2) Check/test the operation of changes after completion of this portion of the laboratory activity.

(3) Complete review exercise questions 18-30.

---

**LAB MILESTONE:**

• VERIFY THAT ALL PROGRAMMING CHANGES REQUESTED IN WORK ORDERS HAVE BEEN PERFORMED CORRECTLY.

• ASK INSTRUCTOR TO INSPECT STATION PROGRAMMING CHANGES AND INITIAL YOUR PERFORMANCE CHECKLIST.

• MAKE CERTAIN QUESTIONS 18-30 OF REVIEW EXERCISE 2.2 HAVE BEEN COMPLETED BEFORE SUBMITTING THE REVIEW EXERCISE TO YOUR INSTRUCTOR FOR GRADING.

# Review Exercise — Programming Station Instruments and BLF/DSS Modules (2.2)

**GTE**

*GTE OMNI SBCS*

INSTRUCTIONS: THE FOLLOWING EXERCISE CONSISTS OF MULTIPLE CHOICE, TRUE/FALSE, FILL IN THE BLANK, OR MATCHING TYPE QUESTIONS. ALL AVAILABLE RESOURCES (I.S. STUDENT WORKBOOK, NOTES, AND GTEP MANUAL) MAY BE USED AS REFERENCES. SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

1. IF YOU ATTEMPT TO ADD AN EKT STATION THROUGH PROGRAMMING BEFORE IT HAS BEEN WIRED, WHAT WILL OCCUR? (TRY THIS IN THE LAB TO VERIFY).

   _____

   _____

2. MATCH THE DEFINITION OF EACH PARAMETER FOR CMC-200 TO ITS CORRECT LOCATION:

   _____ P1          A. DIRECTORY NUMBER

   _____ P2          B. EQUIPMENT NUMBER

   _____ P3          C. TYPE OF TERMINAL

   _____ P4          D. COPIED STATION DIRECTORY NUMBER

3. THE KEY OR MAIN PARAMETER FOR CMC-200 IS: _____

4. DEFINE THE COMPONENTS OF A THREE DIGIT EQUIPMENT NUMBER: _____

   _____

5. ASSIGN A CS-20 TO EQUIPMENT NUMBER 004. WHAT ERROR MESSAGE IS DISPLAYED? _____

   _____

2.59

6.  MATCH THE DEFINITION OF EACH PARAMETER FOR CMC-201 TO ITS CORRECT LOCATION:

    _____ P1     A. METERING GROUP NUMBER

    _____ P2     B. TYPE OF DIALING

    _____ P3     C. DIRECTORY NUMBER

    _____ P4     D. TENANT NUMBER

    _____ P5     E. OPERATION MODE

7.  WHAT IS THE DEFAULT OPERATION CODE FOR STATION INSTRUMENTS?_____

    A.  BOTHWAY

    B.  ORIGINATE ONLY

    C.  TERMINATE ONLY

    D.  BOTH RESTRICTED (ICM ONLY)

8.  WHAT DOES A P VALUE OF 3 INDICATE FOR CMC-201, PARAMETER 3? _____

    _____

9.  HOW COULD FIVE TENANT GROUPS BE INDICATED USING CMC-201? _____

    _____

10. MATCH THE DEFINITION OF EACH PARAMETER FOR CMC-204 WITH ITS CORRECT LOCATION:

    _____ P1     A. OFF-PREMISES EXTENSION

    _____ P2     B. DATA SECURE SPEECH PATH

    _____ P3     C. SLT WITH MESSAGE WAITING LAMP

    _____ P4     D. STATION DIRECTORY NUMBER

11. IDENTIFY THE DEFAULT BUTTON ASSIGNMENTS USING FEATURE NUMBERS (FNO) FOR THE EKT BUTTON ON A CS-10 ASSIGNED TO A CIRCUIT ON CARD SLOT 01

FNO: _____    FNO: _____    FNO: _____    FNO: _____    FNO: _____
      6           7           8           9           10

FNO: _____    FNO: _____    FNO: _____    FNO: _____    FNO: _____
      1           2           3           4           5

12. MATCH THE DEFINITION OF EACH PARAMETER WITH ITS CORRECT LOCATION IN CMC-203:

_____ P1              A. RINGING MODE

_____ P2              B. FEATURE NUMBER

_____ P3              C. STATION DIRECTORY NUMBER

_____ P4              D. LINE TERMINATION TYPE

_____ P5              E. BUTTON NUMBER

_____ P6              F. SUPPLEMENTARY DATA

13. WHAT IS THE FEATURE NUMBER (FNO) FOR THE "CALL PARK" FEATURE ASSIGNED DURING THE WORK ORDER? _____

14. IF FNO 48 IS ASSIGNED USING CMC-203, WHAT OTHER PARAMETERS ARE REQUIRED?

_____

_____

# Review Exercise — Programming Station Instruments and BLF/DSS Modules (2.2) (Continued)

**GTE**

*GTE OMNI SBCS*

15. IDENTIFY AND DEFINE FIVE FEATURES THAT CANNOT BE ASSIGNED TO EKT BUTTONS:

    FNO                              DEFINITION

    _____            _____

    _____            _____

    _____            _____

    _____            _____

    _____            _____

16. WHAT IS THE FUNCTION OF CMC-203's PARAMETER 6? _____

THE FEATURE NUMBERS THAT REQUIRE A VALUE ASSIGNED TO THIS PARAMETER ARE

_____, _____, _____, AND _____.

17. THE _____ PROGRAM FUNCTION KEY MUST BE USED BEFORE A BUTTON ASSIGNMENT CAN BE CHANGED.

18. WHAT OCCURS IF A BLF/DSS IS ASSIGNED THROUGH USE OF CMC-210 BEFORE IT IS WIRED? (TRY THIS TO VERIFY).

_____

_____

19. IF A BLF/DSS IS INSTALLED AFTER THE SYSTEM HAS BEEN INITIALIZED WITH A COLD RESTART, WHAT PROGRAMMING MUST BE IMPLEMENTED?

_____

_____

20. THE OMNI SBCS CAN SUPPORT \_\_\_\_\_ 40 BUTTON AND \_\_\_\_\_ 80 BUTTON BLF/DSS MODULES.

21. HOW MANY BLF/DSS MODULES CAN BE ADDED TO A STATION? _____

2.62

22. MATCH THE DEFINITION OF EACH PARAMETER WITH ITS CORRECT LOCATION IN CMC-210:

    _____ P1              A.  STATION DIRECTORY NUMBER OF EKT ATTACHED TO BLF/DSS

    _____ P2              B.  BLF/DSS TYPE

    _____ P3              C.  COPIED DSN

    _____ P4              D.  BLF/DSS MODULE NUMBER

    _____ P5              E.  EQUIPMENT NUMBER

    _____ P6              F.  BLF/DSS ORDER

23. DESCRIBE THE TWO WAYS IN WHICH BUTTONS CAN BE ASSIGNED TO A BLF/DSS MODULE.

    (1) _____

    (2) _____

24. A BLF/DSS CAN HAVE _____ "DSS PARK" BUTTONS ASSIGNED TO IT.

25. A BLF/DSS CAN HAVE _____ "DSS CAMP ON" BUTTONS ASSIGNED TO IT.

26. WHAT IS THE PURPOSE OF THE "ALTERNATE" FEATURE BUTTON ON A BLF/DSS? _____

_____

27. WHAT PARAMETERS AND P VALUES ARE REQUIRED IF "AUTOMATIC INTERCOM" IS ASSIGNED TO A BLF/DSS BUTTON?

_____

_____

28. MATCH THE DEFINITION OF EACH PARAMETER WITH ITS CORRECT LOCATION IN CMC-211:

| | | | |
|---|---|---|---|
| _____ | P1 | A. | BUTTON NUMBER |
| _____ | P2 | B. | STATION DIRECTORY NUMBER OF EKT ATTACHED TO BLF/DSS |
| _____ | P3 | C. | TYPE OF DSS FEATURE ASSIGNMENT |
| _____ | P4 | D. | DIRECTORY NUMBER |
| _____ | P5 | E. | RINGING MODE |
| _____ | P6 | F. | LINE TERMINATION TYPE FOR LINE ACCESS |

29. THE BLF/DSS MODULE BUTTON NUMBERING PLAN IS ORDERED: _____

A.  LEFT TO RIGHT DOWNWARD

B.  RIGHT TO LEFT DOWNWARD

C.  RIGHT TO LEFT UPWARD

D.  LEFT TO RIGHT UPWARD

30. MATCH EACH OF THE FOLLOWING CMC COMMANDS WITH ITS CORRECT DESCRIPTION.

| | | | |
|---|---|---|---|
| _____ | CMC-200 | A. | EKT BUTTON ASSIGNMENT |
| _____ | CMC-201 | B. | BLF/DSS BUTTON ASSIGNMENT |
| _____ | CMC-203 | C. | STATION DATA ASSIGNMENT |
| _____ | CMC-204 | D. | BLF/DSS EQUIPMENT ASSIGNMENT |
| _____ | CMC-210 | E. | STATION DIRECTORY ASSIGNMENT |
| _____ | CMC-211 | F. | DATA SECURITY AND OFF-PREMISES EXTENSION DESIGNATION |

# Student Notes

# DATA BASE ADMINISTRATION
## Programming Basic
## Trunk Data

# 2.3 Enabling Objective

GIVEN:
- GTE OMNI SBCS
- GTE OMNI SBCS PERIPHERALS
- PORTABLE MAINTENANCE PANEL
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- LABORATORY ACTIVITY — PROGRAMMING BASIC TRUNK DATA
- REVIEW EXERCISE

ACTION:
- USE OMNI SBCS PROGRAMMING TOOLS AND EQUIPMENT TO:
  - INSTALL AND MODIFY BASIC TRUNK LINE DATA FOR CO, TIE, AND SCC.
- COMPLETE REVIEW EXERCISE.

CRITERIA:
- DEMONSTRATION OF ABOVE TASKS IN ACCORDANCE WITH PROCEDURES OUTLINED IN OMNI SBCS GTEP MANUAL AND OMNI SBCS STUDENT WORKBOOK.
- REVIEW EXERCISE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

# Programming Basic Trunk Data — Default Standard Trunk Assignments

**GTE**

*GTE OMNI SBCS*

| DESCRIPTION |
| --- |

- ALL CO TRUNK LINES ARE PLACED IN TRUNK GROUP 13. TRUNK GROUPS MAY BE DIAL ACCESSED VIA FEATURE ACCESS CODES (FEATURE NUMBERS 4-27).

- TRUNK INSTALLATION ASSUMES DEFAULT STANDARD DATA BASE ASSIGNMENTS FOR TYPE OF TRUNK CARD (4BWC, 2TTE, OR 2TTL) BEING INSTALLED.

- DEFAULT TRUNK ASSIGNMENT DATA:

| | TRUNK CARDS | | | |
| --- | --- | --- | --- | --- |
| | 2TTE | 2TTL | 4DMR | 4BWC |
| Type of Terminal | 3-E&M | 2-Loop | 1-DTMF | 6-CO |
| Incoming/Outgoing | 3-BW | 3-BW | Blank | 3-BW |
| Trunk Group Number (TGN) | 31 | 32 | 1 | 13 |
| Line Type | 1-Ground | 2-Loop | Blank | 2-Loop |
| Dial/Receive Send | 2-Delay | 2-Delay | Blank | Blank |
| Signal Type/Break Ratio | 2-10/60% | 2-10PSS/60% | Blank | 2-10PSS/60% |
| COS | 1 | 1 | | 1 |
| NCOS | 1 | 1 | | 1 |
| COR | 1 | 1 | | 1 |
| NCOR | 1 | 1 | | 1 |

1 = CO — BOTHWAY CO TRUNK

2 = BW — BOTHWAY TERMINATION

3 = NUMBERS REFER TO DATA BASE PARAMETERS ENTRIES.

- TIE TRUNK GROUP — IF 2TTL OR 2TTE (E&M) CARDS ARE INSTALLED TO CARD SLOTS 06 TO 18, OMNI SBCS WILL GROUP THESE TIE TRUNK GROUPS (TIE #1 AND #2). IDLE TRUNK IN GROUP CAN BE ACCESSED BY DIALING "80" FOR TIE #1 (2TTE) OR "82" FOR TIE #2 (2TTL).

- DTMF RECEIVER — 4DMR CARDS INSTALLED IN CARD SLOTS 06 TO 14 ARE GROUPED INTO TGN1 (SEE CMC-250). THESE DMTF RECEIVERS ARE AVAILABLE FOR TYPE-2500 SLT INSTRUMENTS TO ORIGINATE CALLS OR ACCESS FEATURES.

- CO TRUNK GROUP — 4BWC CARDS INSTALLED IN CARD SLOTS 06 TO 18 WILL BE GROUPED INTO A CO TRUNK GROUP NUMBER THIRTEEN (CO #1). IDLE TRUNK IN GROUP CAN BE ACCESSED BY PRESSING TRUNK (OUT), ON CS 10 OR CS 20 OR BY DIALING "75".

- TERMINATING CALLS TO TRUNK GROUP WILL BE ROUTED TO TRUNK (IN), ON CS-10 OR CS-20 INSTRUMENTS WITH STATION NUMBER 208 THROUGH 215 (CARD SLOT 01).

# Programming Basic Trunk
# Data/Trunk Installation

**GTE**

*GTE OMNI SBCS*

**PROCEDURE** * (REFER TO OMNI SBCS GTEP MANUAL, DATA BASE PROGRAMMING SECTION)

1. USE CMC-250 TO ASSIGN/ADD TRUNK

   - TRUNK EQUIPMENT NUMBER (P1)
   - TYPE OF TRUNK (P2)
   - TRUNK GROUP NUMBER (P3)
   - OPERATION MODE (P4)
   - SIGNALING (P5)
   - ZONE NUMBER AND START MODE (P6)

   ```
   CMC=250
   P1: 182  P4: 3
   P2: 6    P5: 2
   P3: 14   P6: 1
   ```

2. USE CMC-251 TO ASSIGN TRUNK DATA ASSOCIATED WITH INSTALLED TRUNK.

   - EQUIPMENT NUMBER (P1)
   - DIAL PULSE OR DTMF (P2)
   - TRUNK DIRECTORY NUMBER (P3)
   - TENANT NUMBER (OPTIONAL) (P4)

   ```
   CMC = 251
   P1: 182  P4: 2
   P2: 5
   P3: 182
   ```

3. USE CMC-306 (IF APPLICABLE) TO ASSIGN TRUNK FOR NIGHT RING DESTINATION.

*ASSUMES TRUNK CARD IS SEATED IN APPROPRIATE CARD SLOT AND TRUNK LINE IS PHYSICALLY CONNECTED TO DESIRED SLOT AND CIRCUIT.

# Programming Basic Trunk Data/Trunk Modification

| PROCEDURE |* (REFER TO OMNI SBCS GTEP MANUAL, DATA BASE PROGRAMMING SECTION)

1. USE CMC-250 TO REMOVE TRUNK FROM ASSIGNED GROUP.* THIS OPERATION ALSO AFFECTS OTHER CMC TABLES BY:

   ● AUTOMATICALLY REMOVING TRUNK DATA ASSIGNMENTS FROM CMC-251.
                        AND
   ● AUTOMATICALLY REMOVES TRUNK FROM THE TERMINATING TRUNK GROUP.

2. USE CMC-307 (IF APPLICABLE) TO REMOVE TRUNK FROM DIRECT IN-LINE ASSIGNMENT.

3. USE CMC-306 (IF APPLICABLE) TO REMOVE TRUNK FROM NIGHT RINGING DESTINATION ASSIGNMENT.

4. ASSIGN TRUNK USING PROCEDURES FOR ADDING TRUNKS (SEE STUDENT WORKBOOK).


*TRUNK MUST BE REMOVED FROM ANY BUTTON ASSIGNMENTS (CMC-203) PRIOR TO REMOVAL OF TRUNK FROM ASSIGNED TRUNK GROUP.

# Programming Basic Trunk Data/
# Specialized Common Carrier

**GTE**

## DESCRIPTION

ALLOWS STATION USER TO PLACE OUTGOING CALLS VIA CO LINE TO ACCESS SCC
NETWORK (SPRINT, MCI, ETC.). SBCS SYSTEM AUTOMATICALLY SEIZES CO TRUNK,
OUTPUTS DIRECTORY NUMBER OF DESIGNATED SCC SWITCH TO CO AND
OUTPUTS REQUIRED SECURITY CODE AND DESTINATION DIRECTORY NUMBER TO
SCC SWITCH.

## PROCEDURE  *  (REFER TO <u>OMNI SBCS GTEP MANUAL</u>, DATA BASE
PROGRAMMING SECTION)

1.  USE CMC-404 TO ASSIGN:

    ● SCC ROUTE NUMBER (WHICH CORRESPONDS
       TO DESIGNATED TRUNK GROUP NUMBER) (P1)
    ● SCC GATE OFFICE DIRECTORY NUMBER (P2)
    ● SCC SECURITY CODE (P3)
    ● REQUIRED SCC DEFAULT TIMING VALUES (P4)

```
CMC=404
P1: 2    P4: 0200
P2: 9500777
P3: 3241111
```

    NOTE: TIME INTERVAL REQUIRED (IN SECONDS) BETWEEN SENDING SCC GATE
          DN AND SENDING SECURITY CODE
                         AND
          TIME INTERVAL (IN SECONDS) BETWEEN SENDING SECURITY CODE AND
          CALLED PARTY DIRECTORY NUMBER

2.  USE CMC-405 (WHEN OUTGOING TRUNK CALLS ARE USING
    DIFFERENT FACILITY TO REACH SCC) TO ASSIGN:

    ● SCC TRUNK GROUP NUMBER (P1)
    ● ASSOCIATED ROUTING DESTINATION TRUNK GROUP NUMBER (P2)

```
CMC = 405
P1: 52
P2: 14
```

 *  ASSUMES TRUNK CARD HAS BEEN SEATED IN APPROPRIATE SLOT.

# Programming Basic Trunk Data/
# CMC Command Summary

**GTE**

*GTE OMNI SBCS*

| CATEGORY | CMC TABLE | FUNCTION |
|---|---|---|
| • TRUNK GROUP ASSIGNMENT | 250 | ASSIGN TRUNK CIRCUITS TO TRUNK GROUPS. |
| • TERMINATING TRUNK GROUP ASSIGNMENT | 253 | ASSIGN TRUNKS TO TERMINATING TRUNK GROUP MEMBERS. |
| • TRUNK DATA ASSIGNMENT | 251 | ASSIGNS A DIRECTORY NUMBER TO A TRUNK, ASSIGN TO TENANT, SET TRUNK PARAMETERS IF NECESSARY. |
| • NIGHT ANSWER ASSIGNMENT | 306 | ASSIGN TRUNKS TO NIGHT ANSWER GROUP. |
| • DIRECT-IN LINE ASSIGNMENT | 307 | ASSIGNS A DIRECT-IN TRUNK CIRCUIT TO A DIRECTORY NUMBER. |
| • SPECIALIZED COMMON CARRIER (SCC) ASSIGNMENT | 404 | ASSIGNS IDENTITY DIGITS FOR SCC TRUNK ROUTE TABLE. |

# Student Notes

# Laboratory Activity — Programming Basic Data Trunk

**GTE**

*GTE OMNI SBCS*

PERFORM THE FOLLOWING PROGRAMMING TASKS IN THE SEQUENCE OUTLINED BELOW USING THE SAMPLE WORK ORDERS AND IN ACCORDANCE WITH THE GTE OMNI SBCS GTEP MANUAL. COMPLETE THE REVIEW EXERCISE QUESTIONS PERTAINING TO THE BASIC TRUNK PROGRAMMING UPON COMPLETION OF THIS LABORATORY ACTIVITY.

| WORK ORDER #2.3 | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #:    (703) 555-1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER #2.3   (TASK #1) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

**TASKS:**
- Add, modify, or remove a trunk with CMC-250.
- Remove a terminating trunk group number assignment with CMC-253 (prior to removing a trunk with CMC-250).

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Assign CO trunk at slot 18, circuit 2 as a music source. (Remainder of programming for music-on-hold will be addressed in a later laboratory activity). | (1) Check all appropriate CMC tables before removing trunks. |
| (2) Change the CO trunk at slot 18, circuit 1 to Trunk Group number 14. | (2) Perform basic programming changes for trunks. |
| (3) Remove the E & M tie trunk at slot 17, circuit 0. | (3) Check/test the operation of changes after completion of this portion of the laboratory activity. |
| (4) Change the CO trunk at slot 18, circuit 0 to a WATS trunk. | (4) Proceed to next work order task. |

# Laboratory Activity — Programming Basic Trunk Data (Continued)

GTE OMNI SBCS

| WORK ORDER #2.3 | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER #2.3 (TASK #2) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

**TASKS:**
- Restore E & M tie line assignment with CMC-250.
- Assign dial mode and break ratio with CMC-251.
- Assign tenant number to trunks with CMC-251.

**PARAMETERS:**

(1) Return the E & M tie line to slot 17 circuit 0.

(2) Change the dial mode for trunks at slot 18, circuits 0 and 1 to DTMF.

(3) Assign the CO trunk at slot 18, circuit 1 to tenant group 1.

**NOTE:**

Programming of tenant groups will be addressed in greater detail in a later laboratory activity.

**INSTRUCTIONS:**

(1) Perform programming changes for dial mode and tenant assignment.

(2) Check/test the operation of changes after completion of this portion of the laboratory activity.

(3) Proceed to next work order task.

# Laboratory Activity — Programming Basic Trunk Data (Continued)

**GTE**

*GTE OMNI SBCS*

| WORK ORDER #2.3 |
|---|

| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
|---|---|
| LOCATION: RESTON, VIRGINIA | WORK ORDER #2.4 (TASK #5) |

ORIGINATOR: TELECOMMUNICATIONS MANAGER

**TASKS:**
- Establish and assign an SCC trunk with CMC-404 and CMC-405.
- Restore default tenant group status with CMC-251.
- Restore CO trunk with CMC-250.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Assign an SCC trunk with CMC-404 using the following parameters:<br><br>Route Number = 1<br>SCC Gate Office Directory Number (for SPRINT) = 9500777<br>TM1 and TM2 Timing Values = 02 00<br>Access code = 123456<br><br>(2) Assign the above Trunk Group Number to an SCC routing destination trunk group with CMC-405 using the following parameters:<br><br>SCC Trunk Group Number = 51<br>Routing Destination Trunk Group Number = 14<br><br>(3) Restore the default tenant group status of the CO trunk at slot 18, circuit 1 to no tenant assignment.<br><br>(4) Restore CO trunk with CMC-250. | (1) Perform basic trunk programming changes.<br><br>(2) Check/test the operation of changes after completion of this portion of the laboratory activity.<br><br>(3) Complete Review Exercise Questions 1-17. |

| LAB MILESTONE: |
|---|
| • VERIFY THAT ALL PROGRAMMING CHANGES REQUESTED IN WORK ORDERS HAVE BEEN PERFORMED CORRECTLY.<br><br>• ASK INSTRUCTOR TO INSPECT TRUNK CHANGES AND INITIAL YOUR PERFORMANCE CHECKLIST.<br><br>• MAKE CERTAIN QUESTIONS 1-17 OF REVIEW EXERCISE 2.3 HAVE BEEN COMPLETED BEFORE COMPLETING THE REMAINING WORK ORDERS. |

# Review Exercise — Programming Basic Trunk Data (2.3)

*GTE OMNI SBCS*

INSTRUCTIONS: THE FOLLOWING EXERCISE CONSISTS OF MULTIPLE CHOICE, TRUE/FALSE, FILL IN THE BLANK, OR MATCHING TYPE QUESTIONS. ALL AVAILABLE RESOURCES (I.E. STUDENT WORKBOOK, NOTES, AND GTEP MANUAL) MAY BE USED AS REFERENCES. SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

1.  IDENTIFY THE EQUIPMENT NUMBERS FOR EACH TRUNK WHEN IT WAS INITIALLY INSTALLED:

    CO                      _____

    CO                      _____

    CO                      _____

    CO (MUSIC SOURCE)       _____

    TIE (LOOP)              _____

    TIE (LOOP)              _____

    TIE (E&M)               _____

    TIE (E&M)               _____

2.  SELECT THE DEFAULT STANDARD OPERATION MODE FOR CO TRUNKS: _____

    A.  OGT (OUTGOING TRUNK)

    B.  BWC (BOTHWAY TRUNK)

    C.  ICT (INCOMING TRUNK)

3.  WHAT CMC TABLE ENTRIES MUST BE REMOVED PRIOR TO REMOVING A TRUNK FROM A TRUNK GROUP WITH CMC-250?

    _____

    _____

4.  SELECT THE TYPES OF SIGNALING WHICH ARE AVAILABLE WHEN ADDING TRUNKS: _____

    A.  WINK, DELAY, OR IMMEDIATE

    B.  E&M OR INCOMING

    C.  DIAL PULSE OR DTMF

    D.  GROUND OR LOOP

5.  IDENTIFY THE DEFAULT STANDARD TRUNK GROUP NUMBERS FOR THE FOLLOWING TRUNKS:

    _____  CO

    _____  E&M TIE

    _____  LOOP START TIE

6.  WHAT ARE THE REQUIRED PARAMETERS WHEN ADDING A WATS TRUNK LINE WITH CMC-250?

    _____

7.  WHY WOULD A "NOT RGTR" MESSAGE BE DISPLAYED WHEN ADDING TRUNK EQUIPMENT NUMBER 184 IN THE LAB?

    _____

    _____

    _____

# Review Exercise — Programming Basic Trunk Data (2.3)

8. WHAT ERROR MESSAGE WILL BE DISPLAYED IF A LOOP TIE TRUNK IS ADDED AT CMC-250 WITH A VALUE OF 1 ENTERED FOR PARAMETER 5? _____

9. CIRCUITS ON THE _____ CARD ARE ASSIGNED TO TRUNK GROUP NUMBER 1 BY DEFAULT.

10. WHAT ARE THE ADVANTAGES OF CHANGING A TRUNK'S DIAL MODE TO DTMF? _____

    _____

    _____

11. THE OMNI SBCS WILL ALLOW _____ TENANT TRUNK GROUPS.

12. WHAT OCCURS WHEN A STATION FROM A DIFFERENT TENANT GROUP TRIES TO ACCESS A TRUNK THAT IS NOT IN THEIR TENANT GROUP? _____

    _____

    _____

13. IN THE LAB, ATTEMPT TO REMOVE ONE OF THE CO TRUNKS WITH CMC-250 WITHOUT CHANGING CMC-251. WHAT HAPPENS TO THE DIAL MODE AND BREAK RATIO AT CMC-251?

    _____

    _____

14. EXPLAIN THE DIFFERENCE BETWEEN TM1 AND TM2 TIMING VALUES WHEN ASSIGNING AN SCC TRUNK.

    _____

    _____

# Review Exercise — Programming Basic Trunk Data (2.3)

GTE

*GTE OMNI SBCS*

15. WHAT IS THE DEFAULT FEATURE ACCESS CODE FOR EACH TRUNK ACCESS:

    ____ CO #1
    ____ WATS #1
    ____ TIE #1 (E&M)
    ____ TIE #2 (LOOP)
    ____ SCC #1

16. MATCH EACH OF THE FOLLOWING TERMS WITH ITS CORRECT DEFINITION:

    ____ TRUNK FEATURE ACCESS CODES
    ____ TRUNK GROUP NUMBER
    ____ SIGNALING
    ____ DIAL MODE/BREAK RATIO
    ____ TERMINATING TRUNK GROUP NUMBER
    ____ TRUNK EQUIPMENT NUMBER
    ____ GATE OFFICE DIRECTORY NUMBER

    A. USED BY SYSTEM TO ACCESS SCC NETWORK
    B. GROUND OR LOOP START
    C. ASSIGNMENT IDENTIFYING GROUPS OF TRUNKS TERMINATING TO STATION INSTRUMENTS
    D. DIAL PULSE OR DTMF
    E. CARD SLOT AND CIRCUIT NUMBER
    F. ALLOWS DIRECT CONNECTION TO SPECIFIC TRUNK GROUPS
    G. ASSIGNMENT GROUP BASED ON TYPE OF TRUNKS.

17. MATCH EACH OF THE FOLLOWING CMC COMMANDS WITH ITS CORRECT DESCRIPTION.

    ____ CMC-250
    ____ CMC-251
    ____ CMC-253
    ____ CMC-306
    ____ CMC-307
    ____ CMC-404
    ____ CMC-405

    A. NIGHT ANSWER ASSIGNMENT (STATIONS AND TRUNKS)
    B. SCC ROUTING TRUNK GROUP NUMBER ASSIGNMENT
    C. TRUNK DATA ASSIGNMENT
    D. TRUNK ASSIGNMENT
    E. SCC ASSIGNMENT
    F. DIRECT-IN LINE ASSIGNMENT
    G. TERMINATING TRUNK GROUP ASSIGNMENT

2.80

# Student Notes

GTE

*GTE OMNI SBCS*

# DATA BASE ADMINISTRATION
# Programming Trunk Terminations

# 2.4 Enabling Objective

GIVEN:
- GTE OMNI SBCS
- GTE OMNI SBCS PERIPHERALS
- PORTABLE MAINTENANCE PANEL
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- LABORATORY ACTIVITY — PROGRAMMING TRUNK TERMINATIONS
- REVIEW EXERCISE

ACTION:
- USE OMNI SBCS PROGRAMMING TOOLS AND EQUIPMENT TO:
  - ASSIGN A DIRECT-IN LINE.
  - ASSIGN KEY SYSTEM TRUNK LINE TO EKT STATION.
  - CREATE A PERSONAL/PRIVATE TRUNK LINE.
  - ASSIGN POOLED INCOMING TRUNK LINES.
  - ASSIGN POOLED OUTGOING TRUNK LINES.
  - ASSIGN POOLED BOTHWAY TRUNK LINES.
- COMPLETE REVIEW EXERCISE.

CRITERIA:
- DEMONSTRATION OF ABOVE TASKS IN ACCORDANCE WITH PROCEDURES OUTLINED IN OMNI SBCS GTEP MANUAL AND OMNI SBCS STUDENT WORKBOOK.
- REVIEW EXERCISE WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

# Programming Trunk Terminations/
# Overview

| DESCRIPTION |
| --- |

- TRUNKS CAN BE TERMINATED TO SINGLE LINE TELEPHONE SETS OR TO BUTTONS ON ELECTRONIC KEY TELEPHONE SETS.

- DEFAULT STANDARD DATA BASE ASSIGNS ALL TRUNK GROUPS TO TRUNK GROUP 13 UPON INSTALLATION.

- TERMINATING TRUNK GROUP (TTGN) ASSIGNMENTS MUST BE SPECIFIED TO TERMINATE TRUNKS TO STATION INSTRUMENTS.

- TYPES OF TRUNK TERMINATIONS:

  DIRECT-IN TRUNK LINE — DIRECT TERMINATION OF CO TRUNK LINE TO SLT OR EKT INSTRUMENT, BYPASSING A BLF/DSS ANSWERING STATION. DOES NOT REQUIRE TERMINATION TO BUTTON ON EKT.

  KEY SYSTEM TRUNK LINE — EMULATES OPERATION OF TRADITIONAL KEY TELEPHONE SYSTEM BY ONE OR MORE EKT STATION'S BUTTONS BEING PROGRAMMED TO HAVE ACCESS TO A SPECIFIC TRUNK LINE.

  PERSONAL/PRIVATE LINE — RESERVES ONE TRUNK LINE FOR INCOMING AND/OR OUTGOING CALLS FOR ONE SPECIFIC EKT STATION.

  POOLED INCOMING TRUNK GROUP — ALLOWS INCOMING TRUNK LINES TO BE POOLED INTO A TERMINATING TRUNK GROUP CONNECTED TO MULTIPLE STATIONS (BYPASSING A BLF/DSS ANSWERING STATION). EACH CONNECTED STATION WILL HAVE LINE APPEARANCE OF INCOMING TRUNK.

# Programming Trunk Terminations/ Overview (Continued)

POOLED OUTGOING TRUNK GROUP — ALLOWS OUTGOING TRUNK LINES TO BE POOLED INTO A TERMINATING TRUNK GROUP CONNECTED TO MULTIPLE STATIONS. EACH CONNECTED STATION WILL HAVE LINE APPEARANCE FOR OUTGOING POOLED TRUNKS WITH ACCESS TO CO, WATS, OR FX TRUNK CALLS.

POOLED BOTHWAY TRUNK GROUP — ALLOWS BOTHWAY TRUNK LINES TO BE POOLED INTO A TERMINATING TRUNK GROUP CONNECTED TO MULTIPLE STATIONS. EACH CONNECTED STATION WILL HAVE LINE APPEARANCE FOR TWO-WAY POOLED TRUNKS WITH DIRECT ACCESS TO INCOMING OR OUTGOING CAPABILITIES.

2.85

# Programming Trunk Terminations
## Possible Trunk/Station/EKT
## Button Assignments

GTE

*GTE OMNI SBCS*

| TYPE | MAX. NO. OF BUTTONS/EKT | APPEARANCES (NO. OF MULTIPLE LINES) | NO. OF TRUNKS ASSIGNMENTS TO KEYS | REMARKS |
|---|---|---|---|---|
| POOLED INCOMING TRUNK GROUP | BUTTONS OTHER THAN FEATURE ACCESS BUTTONS | 16/TRUNK GROUP | 1 TRUNK GROUP PER BUTTON | A BOTHWAY TRUNK ASSIGNED TO THIS TRUNK GROUP CANNOT BE ASSIGNED TO AN OUTGOING TRUNK GROUP SIMULTANEOUSLY |
| KEY SYSTEM LINE | BUTTONS OTHER THAN FEATURE ACCESS BUTTONS | 16/TRUNK | 1 TRUNK PER BUTTON | 1 TRUNK/GROUP |
| PERSONAL/ PRIVATE LINE | BUTTONS OTHER THAN FEATURE ACCESS BUTTONS | 1/TRUNK | 1 TRUNK PER BUTTON | 1 TRUNK/GROUP |
| POOLED OUTGOING TRUNK GROUP | BUTTONS OTHER THAN FEATURE ACCESS BUTTONS | NOT LIMITED | 1 TRUNK GROUP PER BUTTON | A BOTHWAY TRUNK ASSIGNED TO THIS TRUNK GROUP CANNOT BE ASSIGNED TO AN INCOM- ING TRUNK GROUP SIMULTANEOUSLY |
| POOLED BOTHWAY TRUNK GROUP | BUTTONS OTHER THAN FEATURE ACCESS BUTTONS | 16/TRUNK GROUP | 1 TRUNK GROUP PER BUTTON | BOTHWAY TRUNKS CAN BE ASSIGNED TO THIS LINE TYPE |
| DIRECT-IN LINE | NO BUTTON (INTERCOM) | 1/TRUNK | NOT ASSIGNABLE TO KEYS | |

NOTE:   MAXIMUM OF 31 TRUNK GROUPS CAN BE ASSIGNED

2.86

# Programming Trunk Terminations/Diagram of Trunk Termination Assignments



GTE

GTE OMNI SBCS

BOTHWAY TRUNK GROUP

OUTGOING TRUNK GROUP

INCOMING TRUNK GROUP

DIRECT-IN

DIRECT-IN

PERSONAL TTGN MAX=1

KEY SYSTEM TTGN MAX=1

POOLED BOTHWAY TTGN

KEY SYSTEM TTGN MAX=1

POOLED OUTGOING TTGN

POOLED INCOMING TTGN

KEY SYSTEM TTGN MAX=1

SLT

EKT

EKT

EKT

—··—··— BOTHWAY

————— OUTGOING

————— INCOMING

——————— DIRECT-IN

2.87
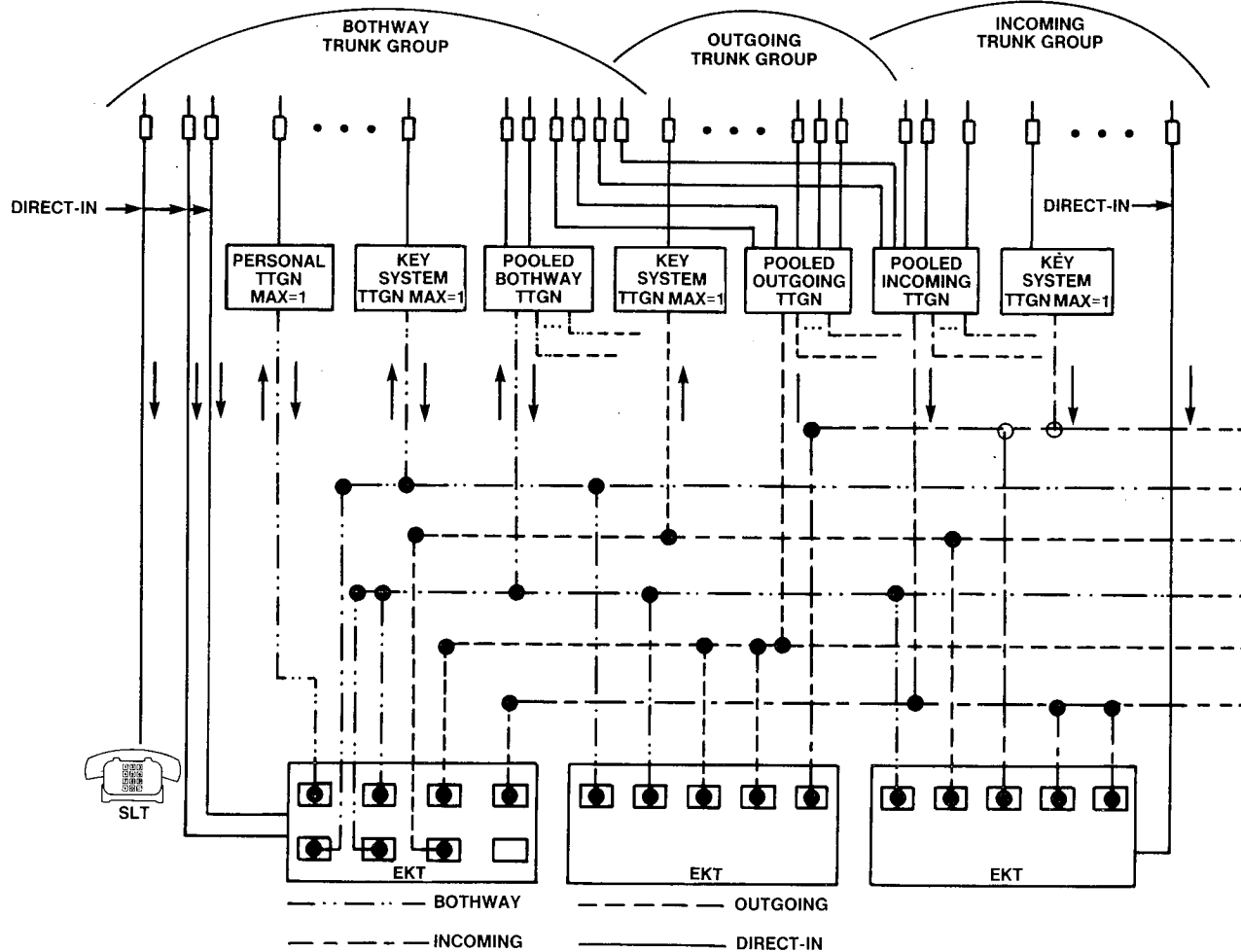
# Programming Trunk Terminations/
# Direct-in Trunk Line Assignment

GTE

*GTE OMNI SBCS*

## DESCRIPTION

- PROVIDES DIRECT TERMINIATION OF ONE CO TRUNK TO SLT OR EKT, BYPASSING A BLF/DSS ANSWERING STATION.

- CAN BE BOTHWAY OR INCOMING TRUNK LINE.

- MULTIPLE DIRECT-IN TRUNK LINES CAN BE ASSIGNED TO ONE STATION.

- ONLY ONE STATION ASSIGNMENT CAN BE MADE PER TRUNK LINE.

- STATION WILL RING ON INTERCOM AND NO LED WILL LIGHT ON EKT INSTRUMENT.

- TOLL RESTRICTIONS APPLY, BUT LCR AND SCC NOT AVAILABLE.

## PROCEDURE

1. USE CMC-307 TO ASSIGN TRUNK LINE TO DESIGNATED SLT OR EKT STATION:
   — TRUNK EQUIPMENT NUMBER (P1)
   — DIRECTORY NUMBER OF TERMINATED STATION (P2)

   *ASSUMES TRUNK HAS BEEN REMOVED FROM ANY TTGN ASSIGNMENT.

CMC=307
P1: 161
P2: 215

# Programming Trunk Terminations/
# Key System Trunk Line Assignment

GTE

*GTE OMNI SBCS*

## DESCRIPTION

- EMULATES OPERATION OF TRADITIONAL KEY TELEPHONE SYSTEM BY RESERVING ONE TRUNK LINE FOR UP TO 16 EKT STATIONS.

- TERMINATES TO ONE BUTTON ON EKT.

- UTILIZES BOTHWAY, OUTGOING, OR INCOMING TRUNK LINE.

- TOLL RESTRICTIONS APPLY, BUT LCR AND SCC NOT AVAILABLE.

## PROCEDURE *

1. USE CMC-253 to assign:
   — TERMINATING TRUNK GROUP (P1)
   — EQUIPMENT NUMBER (P2)
   — TRUNK TERMINATION FLAG (P3)

```
CMC=253
P1: 3
P2: 152
P3: 2
```

   NOTE: ENSURE THAT TRUNK TYPE VALUE FOR CMC-250 (PARAMETER 4).
   MATCHES THE TRUNK TYPE VALUE FOR CMC-253 (PARAMETER 3).

2. USE CMC-203 TO ASSIGN TTGN TO DESIGNATED EKT BUTTON:
   — STATION DIRECTORY NUMBER (P1)
   — BUTTON NUMBER (P2)
   — FEATURE NUMBER (P3)
   — SUPPLEMENTARY DATA (P4)
   — LINE TERMINATION TYPE (P5)
   — RINGING MODE (P6)

```
CMC=203
P1: 502    P4: 3
P2: 7      P5: 2
P3: 5      P6: 1
```

3. USE CMC-251 TO ASSIGN TRUNK DIRECTORY NUMBER AND TENANT NUMBER (IF APPLICABLE).

# Programming Trunk Terminations/
# Personal-Private Trunk Line Assignment

**GTE**

*GTE OMNI SBCS*

## DESCRIPTION

- RESERVES ONE TRUNK LINE FOR A SINGLE EKT STATION BUTTON.
- UTILIZES BOTHWAY, OUTGOING, OR INCOMING TRUNK LINE.
- BYPASSES BLF/DSS ANSWERING STATION AND CALLS CANNOT BE PICKED UP BY ANY OTHER STATION.
- TOLL RESTRICTIONS APPLY, BUT LCR AND SCC NOT AVAILABLE.

## PROCEDURE *

1. USE CMC-253 to assign:
   - TERMINATING TRUNK GROUP (P1)
   - EQUIPMENT NUMBER (P2)
   - TRUNK TERMINATION FLAG (P3)

```
CMC=253
P1: 4
P2: 142
P3: 1
```

2. USE CMC-203 TO ASSIGN TTGN TO DESIGNATED EKT BUTTON:
   - STATION DIRECTORY NUMBER (P1)
   - BUTTON NUMBER (P2)
   - FEATURE NUMBER (P3)
   - SUPPLEMENTARY DATA (P4)
   - LINE TERMINATION TYPE (P5)
   - RINGING MODE (P6)

```
CMC=203
P1: 308     P4: 4
P2: 6       P5: 1
P3: 6       P6: 1
```

3. USE CMC-251 TO ASSIGN TRUNK DIRECTORY NUMBER AND TENANT NUMBER (IF APPLICABLE).

*ASSUMES TRUNK HAS BEEN REMOVED FROM ANY PREVIOUS TTGN ASSIGNMENT.

# Programming Trunk Terminations/Pooled Incoming Trunk Lines Assignments

**GTE**

*GTE OMNI SBCS*

## DESCRIPTION

- ALLOWS INCOMING TRUNK LINES TO BE POOLED INTO ONE TTGN — NO LIMIT ON NUMBER OF TRUNKS PLACED IN TTGN.
- UTILIZES BOTHWAY AND/OR INCOMING TRUNKS, BUT BOTHWAY TRUNKS WILL BE LIMITED TO INCOMING CAPABILITIES ONLY.
- BYPASSES BLF/DSS ANSWERING STATION.
- CAN APPEAR AT MULTIPLE STATIONS (16 MAXIMUM) AND TO ANY NUMBER OF DESIGNATED BUTTONS ON AN EKT INSTRUMENT.
- ONE BUTTON PER TRUNK GROUP SHOULD BE ASSIGNED.

## PROCEDURE *

1. USE CMC-253 TO CREATE POOLED INCOMING TTGN GROUP:
   - TERMINATING TRUNK GROUP (P1)
   - EQUIPMENT NUMBER (P2)
   - TRUNK TERMINATION FLAG (P3)

```
CMC=253
P1: 7
P2: 143
P3: 4
```

2. USE CMC-203 TO ASSIGN TTGN TO DESIGNATED EKT BUTTONS ON DESIRED STATIONS:
   - STATION DIRECTORY NUMBER (P1)
   - BUTTON NUMBER (P2)
   - FEATURE NUMBER (P3)
   - SUPPLEMENTARY DATA (P4)
   - LINE TERMINATION TYPE (P5)
   - RINGING MODE (P6)

```
CMC=203
P1: 308      P4: 7
P2: 6        P5: 1
P3: 6        P6: 1
```

3. IF APPLICABLE, USE CMC-251 TO ASSIGN TRUNK TO TENANT GROUP.

*ASSUMES TRUNK HAS BEEN REMOVED FROM ANY PREVIOUS TTGN ASSIGNMENT.

# Programming Trunk Terminations/Pooled Outgoing Trunk Lines Assignment

**GTE**

*GTE OMNI SBCS*

## DESCRIPTION

- ALLOWS OUTGOING TRUNK LINES TO BE POOLED INTO ONE TTGN — NO LIMIT ON NUMBER OF TRUNKS PLACED IN TTGN.
- UTILIZES BOTHWAY AND/OR OUTGOING TRUNKS, BUT BOTHWAY TRUNKS WILL BE LIMITED TO OUTGOING CAPABILITIES ONLY.
- DATA SECURITY OF LINE IS AUTOMATIC.
- CAN APPEAR AT MULTIPLE STATIONS (16 MAXIMUM) AND TO ANY NUMBER OF DESIGNATED BUTTONS ON AN EKT INSTRUMENT.
- TOLL RESTRICTIONS APPLY, BUT LCR AND SCC NOT AVAILABLE.

## PROCEDURE *

1. USE CMC-253 TO ASSIGN:
   - TERMINATING TRUNK GROUP (P1)
   - EQUIPMENT NUMBER (P2)
   - TRUNK TERMINATION FLAG (P3)

2. USE CMC-203 TO ASSIGN TTGN TO DESIGNATED EKT BUTTONS ON DESIRED STATIONS:
   - STATION DIRECTORY NUMBER (P1)
   - BUTTON NUMBER (P2)
   - FEATURE NUMBER (P3)
   - SUPPLEMENTARY DATA (P4)
   - LINE TERMINATION TYPE (P5)
   - RINGING MODE (P6)

3. IF APPLICABLE, USE CMC-251 TO ASSIGN TRUNK TO TENANT GROUP.

*ASSUMES TRUNK HAS BEEN REMOVED FROM ANY PREVIOUS TTGN ASSIGNMENT.

```
CMC=253
P1: 8
P2: 151
P3: 3
```

```
CMC=203
P1: 308    P4: 8
P2: 6      P5: 1
P3: 6      P6: 1
```

2.92

# Programming Trunk Terminations/ Pooled Bothway (Two-Way) Trunk Lines Assignment

**GTE**

*GTE OMNI SBCS*

---

## DESCRIPTION

- ALLOWS INCOMING TRUNK LINES TO BE POOLED INTO ONE TTGN.
- UTILIZES BOTHWAY ONLY.
- BYPASS BLF/DSS ANSWERING STATION.
- CAN APPEAR AT MULTIPLE STATIONS (16 MAXIMUM) AND TO ANY NUMBER OF DESIGNATED BUTTONS ON AN EKT INSTRUMENT.
- NO LIMIT PLACED ON NUMBER OF TRUNKS PLACED IN TTGN, BUT ONLY POOLED BOTHWAY TRUNKS MAY BE ASSIGNED.

## PROCEDURE *

NOTE: IF TRUNK CARD WERE SEATED AT TIME OF COLD RESTART, THE DEFAULT DATA BASE PLACES ALL TRUNKS IN TTGN 1 AND DESIGNATES THEM AS BOTHWAY TRUNKS.

1. (IF TRUNK CARDS WERE UNSEATED) USE CMC-253 TO ASSIGN:
   — TERMINATING TRUNK GROUP (P1)
   — EQUIPMENT NUMBER (P2)
   — TRUNK TERMINATION FLAG (P3)

```
CMC=253
P1: 9
P2: 172
P3: 3
```

2. USE CMC-203 TO ASSIGN TTGN TO DESIGNATED EKT BUTTONS ON DESIRED STATIONS:
   — STATION DIRECTORY NUMBER (P1)
   — BUTTON NUMBER (P2)
   — FEATURE NUMBER (P3)
   — SUPPLEMENTARY DATA (P4)
   — LINE TERMINATION TYPE (P5)
   — RINGING MODE (P6)

```
CMC=203
P1: 308      P4: 9
P2: 6        P5: 1
P3: 6        P6: 1
```

3. IF APPLICABLE, USE CMC-251 TO ASSIGN TRUNK TO TENANT GROUP.

*ASSUMES TRUNK HAS BEEN REMOVED FROM ANY PREVIOUS TTGN ASSIGNMENT.

# Programming Trunk Terminations/
# CMC Command Summary

**GTE**

*GTE OMNI SBCS*

| CATEGORY | CMC TABLE | FUNCTION |
|---|---|---|
| ● TERMINATING TRUNK GROUPS | 253 | ASSIGNS DIRECT-IN, PERSONAL, KEY SYSTEM AND POOLED TRUNKS TO TERMINATING TRUNK GROUPS. |
| ● EKT BUTTON ASSIGNMENT | 203 | ASSIGNS TTGN TO AN EKT BUTTON. |
| ● TRUNK DATA | 251 | ASSIGNS DIRECTORY NUMBER AND TENANT NUMBER TO A TRUNK. |
| ● DIRECT-IN LINE ASSIGNMENT | 307 | ASSIGNS DIRECT-IN LINE SERVICE. |

# Laboratory Activity — Programming Trunk Terminations

GTE OMNI SBCS

PERFORM THE FOLLOWING TASKS IN THE SEQUENCE OUTLINED BELOW USING THE SAMPLE
WORK ORDERS AND IN ACCORDANCE WITH THE GTE OMNI SBCS GTEP MANUAL. COMPLETE
THE REVIEW EXERCISE QUESTIONS PERTAINING TO PROGRAMMING TRUNK TERMINATIONS
UPON COMPLETION OF THIS LABORATORY AVTIVITY.

---

### WORK ORDER #2.4

**COMPANY NAME:** NU SYSTEM CO.    **PHONE #:** (703) 555-1212

**LOCATION:** RESTON, VIRGINIA    **WORK ORDER #2.4** (TASK #1)

**ORIGINATOR:** TELECOMMUNICATIONS MANAGER

**TASKS:**
- Pool bothway trunks into one Terminating Trunk Group Number.
- Assign a key system type trunk line with CMC-253, CMC-250, CMC-203, and CMC-251.
- Assign a personal/private line with CMC-253, CMC-203, and CMC-251.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Create a TTGN of 2 for the bothway CO trunks at slot 18, circuits 0 and 1 with CMC-253. | (1) Ensure that trunks are removed from any previous TTGN assignments. |
| (2) Assign the TTGN to a button on both CS-20 instruments with CMC-203. Select "ringing" option. | (2) Perform programming changes for trunk termination. |
| (3) Assign a reserved key system trunk line to EKT buttons on station directory number 212 using the CO trunk at slot 18, circuit 0. | (3) Check/test the operation of changes after completion of this portion of the laboratory activity. |
| (4) Assign a personal line to station directory number 308. Select the "no ringing" option when programming the EKT button with CMC-203 using the CO trunk at slot 18, circuit 1. | (4) Proceed to next work order task. |

# Laboratory Activity — Programming
# Trunk Terminations (Continued)

| WORK ORDER #2.4 | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER #2.4 (TASK #2) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

TASKS:
- Remove previously programmed key system and personal line.
- Assign a direct-in line with CMC-307.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Remove key system assignment from station directory number 212. | (1) Ensure that trunks are removed from any previous TTGN assignments. |
| (2) Remove personal line from station directory number 308. | (2) Perform programming changes from trunk terminations. |
| (3) Add a direct-in line assignment to station directory number 216 using the CO trunk at slot 18, circuit 0. | (3) Check/test the operation of changes after completion of this portion of the laboratory activity. |
| | (4) Proceed to next work order task. |

# Laboratory Activity — Programming Trunk Terminations (Continued)

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## WORK ORDER #2.4

| | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER #2.4 (TASK #3) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

TASKS: • Remove the previously programmed direct-in line assignment.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Remove the previously assigned direct-in line from station directory number 216. | (1) Ensure that trunks are removed from any previous TTGN assignments.<br><br>(2) Perform programming changes for trunk terminations.<br><br>(3) Check/test the operation of changes after completion of this portion of the laboratory activity.<br><br>(4) Complete the review exercise questions 1-16. |

---

## LAB MILESTONE

- VERIFY THAT ALL PROGRAMMING CHANGES REQUESTED IN WORK ORDERS HAVE BEEN PERFORMED CORRECTLY.

- ASK INSTRUCTOR TO INSPECT THESE TRUNK TERMINATION CHANGES AND INITIAL YOUR PERFORMANCE CHECKLIST.

- MAKE CERTAIN QUESTIONS 10 - 17 OF REVIEW EXERCISE 2.4 HAVE COMPLETED BEFORE SUBMITTING THE REVIEW EXERCISE TO THE INSTRUCTOR FOR GRADING.

# Review Exercise — Programming Trunk Terminations (2.4)

INSTRUCTIONS: THE FOLLOWING EXERCISE CONSISTS OF MULTIPLE CHOICE, TRUE/FALSE, FILL IN THE BLANK, OR MATCHING TYPE QUESTIONS. ALL AVAILABLE RESOURCES (I.E. STUDENT WORKBOOK, NOTES, AND GTEP MANUAL) MAY BE USED AS REFERENCES. SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

1.  THE DEFAULT STANDARD TERMINATING TRUNK GROUP NUMBER FOR CO TRUNKS IS _____ .

2.  EKT INSTRUMENTS CAN HAVE _____ TERMINATING TRUNK GROUP NUMBERS ASSIGNED TO EACH BUTTON.

3.  THE FLAG DESIGNATING PERSONAL LINES IS SET TO _____ AND FOR KEY SYSTEMS _____ AT CMC-253, P3.

4.  HOW IS THE "RINGING/NO RINGING" OPTION PROGRAMMED FOR A TRUNK TERMINATION LINE BUTTON?

    _____

    _____

5.  WHAT STEPS MUST BE PERFORMED BEFORE A KEY SYSTEM LINE CAN BE ASSIGNED TO A BUTTON WITH CMC-203?

    _____

    _____

6.  IN WHAT TERMINATING TRUNK GROUP WAS THE PERSONAL LINE PLACED DURING THE LAB ACTIVITY? _____

7.  A PERSONAL LINE RESERVES ONE TRUNK FOR INCOMING AND/OR OUTGOING CALLS FOR A SPECIFIC _____ STATION.

8. IF A CUSTOMER DESIRES ONE OR MORE EKT STATIONS TO HAVE ACCESS TO THE SAME TRUNK LINE THROUGH EKT BUTTONS, A _____ TRUNK TERMINATION SHOULD BE PROGRAMMED.

9. THE SYSTEM WILL ALLOW A MAXIMUM _____ DIRECT IN-LINES PER TRUNK GROUP.

10. A DIRECT IN-LINE CAN BE ASSIGNED TO BOTH _____ OR _____ TYPES OF STATION INSTRUMENTS.

11. CMC- _____ IS USED TO ASSIGN OR REMOVE A DIRECT-IN LINE FROM A SPECIFIC STATION.

12. A MAXIMUM OF _____ POOLED INCOMING TRUNK LINES MAY BE ASSIGNED TO A TERMINATING TRUNK GROUP.

13. A POOLED _____ TRUNK GROUP IS A TYPE OF TRUNK TERMINATION WHERE A NUMBER OF OUTGOING TRUNKS FROM A SINGLE TRUNK GROUP ARE SHARED BY A TERMINATING TRUNK GROUP.

14. HOW DOES AN SLT OR A STATION WITHOUT A LINE TERMINATION BUTTON ASSIGNMENT ACCESS A POOLED BOTHWAY TRUNK?

_____

_____

15. MATCH EACH OF THE FOLLOWING CMC COMMANDS WITH ITS CORRECT DESCRIPTION:

_____ CMC-203          A.  DIRECT IN-LINE ASSIGNMENT

_____ CMC-250          B.  TRUNK ASSIGNMENT

_____ CMC-253          C.  EKT BUTTON ASSIGNMENT

_____ CMC-307          D.  TERMINATING TRUNK GROUP ASSIGNMENT.

# DATA BASE ADMINISTRATION
## Programming Service
## Functions

# 2.5 Enabling Objective

GIVEN:
- GTE OMNI SBCS
- GTE OMNI SBCS PERIPHERALS
- PORTABLE MAINTENANCE PANEL
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- LABORATORY ACTIVITY — PROGRAMMING SERVICE FUNCTIONS
- REVIEW EXERCISE

ACTION:
- USE OMNI SBCS PROGRAMMING TOOLS AND EQUIPMENT TO:
  - ESTABLISH A SYSTEM SPEED CALLING DIRECTORY.
  - ASSIGN STATIONS TO HUNT AND PICKUP GROUPS.
  - INSTALL AND ASSIGN SYSTEM MUSIC-ON-HOLD FEATURE.
  - CREATE HOT LINE SERVICE.
  - ASSIGN INTERNAL SPEAKER PAGING GROUPS.
  - ESTABLISH NIGHT RINGING ANSWER STATION.
- COMPLETE REVIEW EXERCISE.

CRITERIA:
- DEMONSTRATION OF ABOVE TASKS IN ACCORDANCE WITH PROCEDURES OUTLINED IN GTEP MANUAL AND OMNI SBCS STUDENT WORKBOOK.
- REVIEW EXERCISE WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

# Programming Service Functions/System Speed Calling Directory

| DESCRIPTION |
|---|

- A MAXIMUM OF 100 DIRECTORY NUMBERS CAN BE PLACED IN A SYSTEM SPEED CALLING DIRECTORY. STATION USER DIALS AN ENTRY CODE TO ACCESS NUMBER ON SPEED CALLING LIST.

- DEFAULT STANDARD ACCESS CODE FOR SYSTEM SPEED CALLING NUMBER IS ##.

```
CMC=300
P1: 02
P2: 75
P3: 9361111
```

| PROCEDURE |
|---|

1. USE CMC-300 TO ASSIGN, CHANGE OR DELETE:
   - SYSTEM SPEED CALLING USER ENTRY CODE (P1)
   - ACCESS CODE (SYSTEM ACCESS CODES FOR CO, FX, WATS, TIE LINE, SCC OR LCR) (P2)
   - SEND NUMBER (P3)

2. USE CMC-100 TO CHANGE ACCESS CODE NUMBERING PLAN.

# Programming Service Functions/
# Station Hunt Group Assignment

**GTE**

*GTE OMNI SBCS*

---

## DESCRIPTION

- STATION DIRECTORY NUMBER MAY BE ASSIGNED TO ONE OF THREE TYPES OF HUNT GROUPS:
  - CIRCULAR — IF CALLED DIRECTORY NUMBER IS BUSY, ALL STATIONS WITHIN GROUP ARE TRIED IN TURN UNTIL AN IDLE STATION IS FOUND. IF CALLED DIRECTORY NUMBER IS NOT REACHED AFTER CIRCULAR HUNTING, CALLING PARTY IS CONNECTED TO BUSY TONE.
  - TERMINATING — DIRECTORY NUMBERS WITHIN GROUP ARE ASSIGNED A PRIORITY. WHEN CALLED STATION IS BUSY, IDLE STATION IS HUNTED IN ORDER OF PROGRAMMED PRIORITY. CALLING PARTY IS CONNECTED TO BUSY TONE IF NO IDLE STATION IS FOUND.
  - PILOT — DIRECTORY NUMBER IS ASSIGNED AS PILOT STATION. IF PILOT IS BUSY, ALL STATIONS WITHIN GROUP ARE TRIED. IF NO IDLE STATION IS FOUND, CALLING PARTY IS CONNECTED TO BUSY TONE. IF OTHER DIRECTORY NUMBERS ARE BUSY, NO GROUP HUNT OCCURS SINCE HUNT MUST ORIGINATE FROM PILOT STATION.

- SYSTEM DEFAULT CAPACITY ALLOWS FOR MAXIMUM OF 10 VOICE OR DATA HUNT GROUPS WITH UP TO 16 DIRECTORY NUMBER MEMBERS IN EACH HUNT GROUP.*

## PROCEDURE

1. USE CMC 301 TO ADD, CHANGE OR REMOVE:
   - STATION HUNTING GROUP NUMBER (P1)
   - TERMINATING ORDER (P2)
   - DIRECTORY NUMBER OF HUNT GROUP (P3)
   - HUNTING TYPE (P4)

```
CMC=301
P1: 2    P4: 2
P2: 3
P3: 412
```

NOTES:  1.  WHEN ENTERING PARAMETER FOR TERMINATING ORDER OF PILOT HUNT GROUP, FIRST DIRECTORY NUMBER ENTERED IS DESIGNATED PILOT STATION.

2. EXISTING ENTRIES MUST BE REMOVED BEFORE CHANGING HUNT GROUP ASSIGNMENTS.

* PACKAGE C ALLOWS 20 VOICE HUNT GROUPS.

# Programming Service Functions/
# Pickup Group Assignment

**GTE**

*GTE OMNI SBCS*

## DESCRIPTION

- SYSTEM DEFAULT CAPACITY ALLOWS FOR MAXIMUM OF 10 PICKUP GROUPS WITH UP TO 32 DIRECTORY NUMBER MEMBERS IN EACH PICKUP GROUP.*

## PROCEDURE

```
CMC= 302
P1: 10
P2: 517
```

1. USE CMC-302 TO ADD CHANGE OR DELETE:

    - PICKUP GROUP NUMBER (P1)

    - DIRECTORY NUMBER OF PICKUP GROUP MEMBER (P2)

NOTE:   EXISTING ENTRIES MUST BE DELETED BEFORE CHANGING PICKUP GROUP DIRECTORY NUMBERS. CHANGE (CHG) PROGRAM FUNCTION IS USED TO ASSIGN NEW ENTRY.

 * PACKAGE C ALLOWS 20 PICKUP GROUPS.

# Programming Service Functions/
# Hot Line Station Assignment

**GTE**

*GTE OMNI SBCS*

## DESCRIPTION

- HOT LINE FEATURE ALLOWS FOR SINGLE-LINE STATIONS TO BE PROGRAMMED TO AUTOMATICALLY SIGNAL A TERMINATING INTERNAL STATION WHENEVER IT GOES OFF-HOOK.

- DESIGNATED HOT LINE STATIONS CAN ACCEPT TERMINATING CALLS AND USE CONSULTATION HOLD, TRANSFER, AND OTHER SERVICES.

- SYSTEM DEFAULT CAPACITY ALLOWS FOR A MAXIMUM OF 10 SYSTEM HOT LINES FOR VOICE (PACKAGES A AND B) AND 40 FOR DATA (PACKAGE B).

## PROCEDURE

1. USE CMC-304 TO ASSIGN OR REMOVE:
   - HOT LINE NUMBER (P1)
   - ORIGINATING STATION DIRECTORY NUMBER (P2)
   - TERMINATING STATION DIRECTORY NUMBER (P3)

```
CMC= 304
P1: 2
P2: 500
P3: 523
```

NOTE:  EXISTING ENTRIES MUST BE DELETED BEFORE CHANGING HOT LINE STATION ASSIGNMENTS. CHANGE (CHG) PROGRAM FUNCTION IS USED TO ASSIGN NEW ENTRY.

* PACKAGE C ALLOWS 20 SYSTEM HOT LINES FOR VOICE AND 40 FOR DATA.

# Programming Service Functions/Internal
# Speaker Paging Group Assignment

**GTE**

*GTE OMNI SBCS*

---

### DESCRIPTION

- INTERNAL PAGING IS ACCOMPLISHED BY UTILIZING SPEAKERS ON EKT INSTRUMENTS.

- PROXIMITY OF EKT INSTRUMENTS TO USERS SERVED WITHIN EACH GEOGRAPHIC PAGING ZONE MUST BE CONSIDERED WHEN ESTABLISHING PAGING ZONES.

- SYSTEM DEFAULT CAPACITY ALLOWS FOR MAXIMUM OF NINE PAGING ZONES (GROUPS) WITH UP TO FOUR EKT DIRECTORY MEMBERS ASSIGNED TO EACH ZONE.

### PROCEDURE

1. USE CMC-303 TO ADD OR REMOVE:
   - PAGING GROUP (P1)
   - DIRECTORY NUMBER OF A PAGING GROUP MEMBER (P2)

```
CMC=303
P1:2
P2:346
```

NOTES: 1. EXISTING ENTRIES MUST BE DELETED WITH **REMOVE** (RMV) PROGRAM FUNCTION BEFORE CHANGING PAGING GROUPS ASSIGNMENTS. ADD (ADD) PROGRAM FUNCTION IS USED TO ASSIGN NEW ENTRY.

2. EXTERNAL PAGING WILL BE COVERED IN MODULE IV.

# Programming Service Functions — Music-On-Hold

## DESCRIPTION

- MUSIC-ON-HOLD SERVICE REQUIRES CUSTOMER PROVIDED 600 OHM IMPEDANCE MUSIC SERVICE

## PROCEDURE *

1. USE CMC-250 TO ASSIGN TYPE OF TRUNK.

2. USE CMC-305 TO ASSIGN:
   - EQUIPMENT NUMBER FOR MUSIC SOURCE (P1)

```
CMC=305
P1:182
```

* ASSUMES TRUNK CARD (4BWC) HAS BEEN SEATED IN APPROPRIATE SLOT AND CUSTOMER PROVIDED MUSIC SOURCE HAS BEEN PHYSICALLY CONNECTED TO DESIRED SLOT AND CIRCUIT.

# Programming Service Functions/
# Night Answer Station Assignment

**GTE**

## DESCRIPTION

- NIGHT ANSWER ASSIGNMENT ALLOWS INCOMING CALLS TO BE DIRECTED TO A SPECIFIC NIGHT ANSWER STATION OR TO ACTIVATE A NIGHT BELL WHICH ALLOWS A PICK-UP BY ANY INTERNAL STATION.

- SYSTEM DEFAULT CAPACITY IS 16 NIGHT ANSWER GROUPS* WITH UP TO 8 MEMBERS IN EACH GROUP.

- DEFAULT ACCESS CODE TO ANSWER NIGHT RINGING CALL IS #31 (ALL TENANT) OR #30 (SELF TENANT). NOTE: ACCESS CODE MAY BE CHANGED WITH CMC-100.

- AT LEAST ONE TRUNK AND ONE STATION MUST BE ASSIGNED TO INITIALIZE NIGHT ANSWER FEATURE.

## PROCEDURE

1. USE CMC-306 TO ASSIGN:
   - NIGHT ANSWER GROUP NUMBER (P1)
   - TRUNK/STATION FLAG (P2)
   - EQUIPMENT NUMBER (P3)

2. USE CMC-201 AND CMC-251 (IF APPLICABLE) TO CHECK TENANT ASSIGNMENTS

```
CMC=306
P1:2
P2:1
P3:013
```

*PACKAGE C ALLOWS 32 NIGHT ANSWER GROUPS.

NOTES:
- IF NIGHT BELL IS SELECTED FOR NIGHT ANSWER OPERATION, THE BELL MUST BE PROGRAMMED AS A STATION (ASSIGNED AN EQUIPMENT NUMBER), PHYSICALLY CONNECTED TO DESIRED CIRCUIT ON 8SLC CARD, AND RGEN MUST BE INSTALLED.
- EXISTING TRUNK OR STATION ASSIGNMENTS MUST BE DELETED BY **REMOVE** PROGRAM FUNCTION BEFORE CHANGING OR REMOVING NIGHT GROUP ASSIGNMENTS.

# Programming Service Functions/
# CMC Command Summary

*GTE OMNI SBCS*

| CATEGORY | CMC TABLE | FUNCTION |
|---|---|---|
| • SYSTEM SPEED CALLING DIRECTORY | 300 | ADDS, REMOVES, OR CHANGES SYSTEM SPEED CALLING DIRECTORY NUMBERS. |
| • STATION HUNT GROUP ASSIGNMENT | 301 | ASSIGNS, REMOVES, OR CHANGES VOICE OR DATA FROM ONE OF THREE TYPES OF HUNT GROUPS: CIRCULAR, TERMINATING OR PILOT. |
| • PICKUP GROUP ASSIGNMENT | 302 | ASSIGNS, REMOVES OR CHANGES STATIONS FROM PICK-UP GROUPS. |
| • EKT SYSTEM PAGING GROUP ASSIGNMENT | 303 | ASSIGNS, REMOVES OR CHANGES EKT STATIONS FROM PAGING ZONES. |
| • HOT LINE STATION ASSIGNMENT | 304 | ASSIGNS, REMOVES OR CHANGES STATIONS FROM HOT LINE SERVICE |
| • MUSIC ON HOLD ASSIGNMENT | 305 | ASSIGNS OR REMOVES MUSIC ON HOLD SERVICE |
| • NIGHT ANSWER STATION ASSIGNMENT | 306 | ASSIGNS, REMOVES OR CHANGES STATIONS OR TRUNKS FROM NIGHT RING GROUPS. |

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# Programming Service Functions/
# Night Answer Station Assignment

**GTE**

*GTE OMNI SBCS*

---

## DESCRIPTION

- NIGHT ANSWER ASSIGNMENT ALLOWS INCOMING CALLS TO BE DIRECTED TO A SPECIFIC NIGHT ANSWER STATION OR TO ACTIVATE A NIGHT BELL WHICH ALLOWS A PICK-UP BY ANY INTERNAL STATION.

- SYSTEM DEFAULT CAPACITY IS 16 NIGHT ANSWER GROUPS* WITH UP TO 8 MEMBERS IN EACH GROUP.

- DEFAULT ACCESS CODE TO ANSWER NIGHT RINGING CALL IS #31 (ALL TENANT) OR #30 (SELF TENANT).
  NOTE: ACCESS CODE MAY BE CHANGED WITH CMC-100.

- AT LEAST ONE TRUNK AND ONE STATION MUST BE ASSIGNED TO INITIALIZE NIGHT ANSWER FEATURE.

## PROCEDURE

1. USE CMC-306 TO ASSIGN:
   - NIGHT ANSWER GROUP NUMBER (P1)
   - TRUNK/STATION FLAG (P2)
   - EQUIPMENT NUMBER (P3)

2. USE CMC-201 AND CMC-251 (IF APPLICABLE) TO CHECK TENANT ASSIGNMENTS

```
CMC=306
P1:2
P2:1
P3:013
```

*PACKAGE C ALLOWS 32 NIGHT ANSWER GROUPS.

NOTES:
- IF NIGHT BELL IS SELECTED FOR NIGHT ANSWER OPERATION, THE BELL MUST BE PROGRAMMED AS A STATION (ASSIGNED AN EQUIPMENT NUMBER), PHYSICALLY CONNECTED TO DESIRED CIRCUIT ON 8SLC CARD, AND RGEN MUST BE INSTALLED.
- EXISTING TRUNK OR STATION ASSIGNMENTS MUST BE DELETED BY **REMOVE** PROGRAM FUNCTION BEFORE CHANGING OR REMOVING NIGHT GROUP ASSIGNMENTS.

# Programming Service Functions/
# CMC Command Summary

**GTE**

*GTE OMNI SBCS*

| CATEGORY | CMC TABLE | FUNCTION |
|---|---|---|
| ● SYSTEM SPEED CALLING DIRECTORY | 300 | ADDS, REMOVES, OR CHANGES SYSTEM SPEED CALLING DIRECTORY NUMBERS. |
| ● STATION HUNT GROUP ASSIGNMENT | 301 | ASSIGNS, REMOVES, OR CHANGES VOICE OR DATA FROM ONE OF THREE TYPES OF HUNT GROUPS: CIRCULAR, TERMINATING OR PILOT. |
| ● PICKUP GROUP ASSIGNMENT | 302 | ASSIGNS, REMOVES OR CHANGES STATIONS FROM PICK-UP GROUPS. |
| ● EKT SYSTEM PAGING GROUP ASSIGNMENT | 303 | ASSIGNS, REMOVES OR CHANGES EKT STATIONS FROM PAGING ZONES. |
| ● HOT LINE STATION ASSIGNMENT | 304 | ASSIGNS, REMOVES OR CHANGES STATIONS FROM HOT LINE SERVICE |
| ● MUSIC ON HOLD ASSIGNMENT | 305 | ASSIGNS OR REMOVES MUSIC ON HOLD SERVICE |
| ● NIGHT ANSWER STATION ASSIGNMENT | 306 | ASSIGNS, REMOVES OR CHANGES STATIONS OR TRUNKS FROM NIGHT RING GROUPS. |

# Laboratory Activity — Programming
# Service Functions

PERFORM THE FOLLOWING PROGRAMMING TASKS IN THE SEQUENCE OUTLINED BELOW USING THE SAMPLE WORK ORDERS AND IN ACCORDANCE WITH THE GTE OMNI SBCS GTEP MANUAL. COMPLETE THE REVIEW EXERCISE QUESTIONS PERTAINING TO PROGRAMMING SERVICE FUNCTIONS UPON COMPLETION OF THIS LABORATORY ACTIVITY.

---

**WORK ORDER # 2.5**

| | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER #2.5 (TASK #1) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

TASKS:

- Establish a system speed calling directory with CMC-300.

---

**PARAMETERS:**

(1) Add the following numbers and access codes to the system speed calling directory:

SPEED DIAL:

| CODE | ACCESS CODE | SEND NUMBER |
|------|-------------|-------------|
| 00 | 75 (FOR CO TRUNK 1) | 301 555 1221 |
| 01 | 75 | 737 8866 |
| 02 | 75 | 202 936 1111 |

**INSTRUCTIONS:**

(1) Perform programming change for service function.

(2) Check/test the operation of changes after completion of this portion of the laboratory activity.

(3) Proceed to next work order task.

# Laboratory Activity — Programming Service Functions (Continued)

| WORK ORDER # 2.5 | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER # 2.5 (TASK #2) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

**TASKS:**

- Assign stations to a hunt group with CMC-301.

**PARAMETERS:**

(1) Assign stations to a terminating type hunt group using the following parameters:

| STATION DN | HUNT GROUP # | TERMINATING ORDER |
|---|---|---|
| 214 | 1 | 1 |
| 308 | 1 | 2 |
| 212 | 1 | 3 |
| 223 | 1 | 4 |

**INSTRUCTIONS:**

(1) Perform programming change for service function.

(2) Check/test the operation of changes after completion of this portion of the laboratory activity.

(3) Proceed to next work order task.

# Laboratory Activity — Programming Service Functions (Continued)

**GTE**

*GTE OMNI SBCS*

| WORK ORDER #2.5 |
|---|

| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
|---|---|
| LOCATION: RESTON, VIRGINIA | WORK ORDER #2.5 (TASK #3) |

ORIGINATOR: TELECOMMUNICATIONS MANAGER

TASKS:

- Assign stations to a pickup group with CMC-302.

**PARAMETERS:**

(1) Assign the following stations to designated pickup groups.

| PICKUP GROUP | STATION DN |
|---|---|
| 1 | 214 |
| 1 | 308 |
| 1 | 212 |
| 2 | 223 |
| 2 | 216 |
| 2 | 215 |

**INSTRUCTIONS:**

(1) Perform programming change for service function.

(2) Check/test the operation of changes after completion of this portion of the laboratory activity.

(3) Proceed to next work order task.

# Laboratory Activity — Programming Service Functions (Continued)

| WORK ORDER # 2.5 |
|---|

| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
|---|---|
| LOCATION: RESTON, VIRGINIA | WORK ORDER # 2.5 (TASK #4) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

**TASKS:**

- Create a hot line service with CMC-304.

**PARAMETERS:**

(1) Assign hot line service using the following parameters:

Hot line number = 1

Originating station = 216

Terminating station = 223

**INSTRUCTIONS:**

(1) Perform programming change for service function.

(2) Check/test the operation of changes after completion of this portion of the laboratory activity.

(3) Proceed to next work order task.

# Laboratory Activity — Programming Service Functions (Continued)

**GTE**

*GTE OMNI SBCS*

| WORK ORDER # 2.5 | |
|---|---|
| COMPANY NAME:  NU SYSTEM CO. | PHONE #:  (703) 555-1212 |
| LOCATION:  RESTON, VIRGINIA | WORK ORDER # 2.5 (TASK #5) |
| ORIGINATOR:  TELECOMMUNICATIONS MANAGER | |

**TASKS:**

- Remove hot line service with CMC-304.

- Create an internal paging group with CMC-303.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1)  Remove previously assigned hot line service from station directory numbers 216 and 225.<br><br>(2)  Assign all CS-20 and CS-10 EKT instruments to paging group 1.<br><br>NOTE:<br><br>Programming of external zone paging (speaker amplifier) will be addressed in Module IV. | (1)  Perform programming changes for service functions.<br><br>(2)  Check/test the operation of changes after completion of this portion of the laboratory activity.<br><br>(3)  Proceed to next work order task. |

# Laboratory Activity — Programming Service Functions (Continued)

COMPLETE MUSIC-ON-HOLD SERVICE FUNCTION TASK IF TIME PERMITS OR IF INSTRUCTOR DIRECTS YOU TO DO SO.

| WORK ORDER # 2.5 | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER # 2.5 (TASK #6) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

**TASKS:**

- Assign music-on-hold with CMC-305.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Verify that the music-on-hold service has been physically connected to circuit on 4BWC card and music source assigned to correct trunk circuit (slot 18, circuit 2) with CMC-250. <br><br> (2) Activate the music-on-hold service with CMC-305 using the equipment number designated above. | (1) Perform programming change for service function. <br><br> (2) Check the operation of changes after completion of this portion of the laboratory activity. <br><br> (3) Proceed to next work order task. |

# Laboratory Activity — Programming Service Functions (Continued)

GTE

GTE OMNI SBCS

COMPLETE NIGHT ANSWER SERVICE FUNCTION TASK IF TIME PERMITS OR IF INSTRUCTOR DIRECTS YOU TO DO SO.

| WORK ORDER # 2.5 |
|---|

| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
|---|---|
| LOCATION: RESTON, VIRGINIA | WORK ORDER # 2.5 (TASK #7) |

ORIGINATOR: TELECOMMUNICATIONS MANAGER

TASKS:

- Assign night ring trunks and answer station with CMC-306.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Identify following trunks as incoming night trunks:<br>    180<br>    181<br>    160<br>    170<br>Select night answer group number "1".<br><br>(2) Assign both CS-20 instruments as night answer stations. Select night answer group "1".<br><br>(3) If night bell was previously installed, assign its designated equipment number (023) as station night answer. Select night answer group number "1". | (1) Perform programming change for service function.<br><br>(2) Check the operation of changes after completion of this portion of the laboratory activity.<br><br>(3) Complete review exercise questions 1-28. |

| LAB MILESTONE: |
|---|
| • VERIFY THAT ALL PROGRAMMING CHANGES REQUESTED IN WORK ORDERS HAVE BEEN PERFORMED CORRECTLY.<br><br>• ASK INSTRUCTOR TO INSPECT SERVICE FUNCTION CHANGES AND INITIAL YOUR PERFORMANCE CHECKLIST.<br><br>• MAKE CERTAIN QUESTIONS 1-28 OF REVIEW EXERCISE 2.5 HAVE BEEN COMPLETED BEFORE SUBMITTING THE REVIEW EXERCISE TO THE INSTRUCTOR FOR GRADING. |

# Student Notes

GTE

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# Review Exercise — Programming Service Functions (2.5)

GTE

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INSTRUCTIONS: THE FOLLOWING EXERCISE CONSISTS OF MULTIPLE CHOICE, TRUE/FALSE, FILL IN THE BLANK, OR MATCHING TYPE QUESTIONS. ALL AVAILABLE RESOURCES (I.E. STUDENT WORKBOOK, NOTES, AND GTEP MANUAL) MAY BE USED AS REFERENCES. SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

1. THE OMNI SBCS ALLOWS UP TO _____ NUMBERS IN THE SYSTEM SPEED CALLING DIRECTORY.

2. IN CMC-300, P2 IDENTIFIES _____ .

3. THE SYMBOL _____ IS USED TO INDICATE A PAUSE IN THE SYSTEM SPEED CALLING SEND NUMBER.

4. IF DESIRED, CMC- _____ IS USED TO CHANGE TRUNK ACCESS CODES PRIOR TO ENTRY IN THE SYSTEM SPEED CALLING DIRECTORY.

5. THE STATION HUNTING GROUP NUMBERS 51-60 ARE RESERVED FOR _____ .

6. A MAXIMUM OF _____ VOICE HUNT GROUPS WITH UP TO _____ DIRECTORY NUMBER MEMBERS IN EACH GROUP MAY BE ASSIGNED (PACKAGES A AND B).

7. MATCH EACH OF THE FOLLOWING TERMS WITH ITS CORRECT DESCRIPTION:

   _____ CIRCULAR HUNT GROUP TYPE
   _____ TERMINATING HUNT GROUP TYPE
   _____ PILOT HUNT GROUP TYPE

   A. ALL STATIONS ARE TRIED IN ORDER OF PROGRAMMED PRIORITY.
   B. ALL STATIONS ARE TRIED AROUND THE GROUP UNTIL IDLE STATION IS FOUND.
   C. IF A DESIGNATED STATION IS TRIED AND IS BUSY, ALL STATIONS WITHIN GROUP ARE TRIED.

8. WHAT OCCURS IF A PILOT STATION AND THE OTHER MEMBERS OF ITS HUNT GROUP ARE BUSY?

   _____

   _____

**GTE**

*GTE OMNI SBCS*

9. IS IT POSSIBLE FOR A PHONE IN ONE PICKUP GROUP TO ANSWER AN INCOMING CALL TO ANOTHER PICKUP GROUP? _____

10. A MAXIMUM OF _____ PICKUP GROUPS WITH UP TO _____ DIRECTORY NUMBER MEMBERS IN EACH GROUP MAY BE ASSIGNED (WITH PACKAGES A AND B).

11. EXPLAIN THE PROCEDURE TO MOVE A MEMBER OF ONE PICKUP GROUP TO ANOTHER GROUP. _____

_____

_____

12. HOT LINE NUMBERS 1-10 ARE RESERVED FOR _____ AND 51-90 FOR _____ . (WITH PACKAGES A AND B).

13. IS IT POSSIBLE FOR TWO STATION INSTRUMENTS TO BE BOTH ORIGINATING AND TERMINATING HOT LINE STATIONS TO EACH OTHER? _____ .

14. A MAXIMUM OF _____ VOICE HOT LINES MAY BE ASSIGNED (WITH PACKAGES A AND B).

15. IS IT POSSIBLE FOR HOT LINE STATIONS TO RECEIVE TERMINATING CALLS? _____ .

16. A MAXIMUM OF _____ PAGING GROUPS WITH UP TO _____ DIRECTORY NUMBER MEMBERS MAY BE ASSIGNED.

17. INTERNAL ZONE PAGING REQUIRES THE USE OF _____ INSTRUMENTS FOR BROADCAST.

18. EXPLAIN THE PROCEDURE TO MOVE A MEMBER OF ONE PAGING GROUP TO ANOTHER GROUP. _____

_____

_____

19. WHAT FACTOR(S) SHOULD BE CONSIDERED WHEN ESTABLISHING AN INTERNAL PAGING SYSTEM? _____

_____

_____

20. WHAT PARAMETERS ARE REQUIRED WHEN ASSIGNING A MUSIC-ON-HOLD TRUNK WITH CMC-250? _____

_____

_____

21. CMC _____ ACTIVATES THE MUSIC-ON-HOLD FEATURE AFTER TRUNK ASSIGNMENT.

22. WHAT HAPPENS TO TRUNK CALLS WHEN THE SYSTEM IS PLACED IN NIGHT MODE?

_____

_____

23. A MAXIMUM OF _____ NIGHT ANSWER GROUPS WITH UP TO _____ NIGHT ANSWER MEMBERS IN EACH GROUP MAY BE ASSIGNED.

24. EXPLAIN THE PROCEDURE IN WHICH AN INTERNAL STATION CAN ANSWER A CALL RINGING AT A NIGHT BELL OR STATION.

_____

_____

25. WHAT HAPPENS TO A NIGHT CALL WHEN THE NIGHT ANSWER STATION IS USING ITS "CALL FORWARD" FEATURE TO ANOTHER STATION? (ATTEMPT THIS IN THE LAB). _____

_____

_____

26. WHAT HAPPENS TO A NIGHT CALL WHEN THE NIGHT ANSWER STATION IS USING ITS "DO NOT DISTURB" FEATURE? (ATTEMPT THIS IN THE LAB.)

_____

_____

27. A NIGHT BELL MAY BE ASSIGNED TO A NIGHT ANSWER STATION THROUGH THE USE OF A CIRCUIT ON THE _____ CARD.

28. MATCH EACH OF THE FOLLOWING CMC COMMANDS WITH ITS CORRECT DESCRIPTION.

_____ CMC-300         A.  HOT LINE ASSIGNMENT

_____ CMC-301         B.  INTERNAL ZONE PAGING ASSIGNMENT

_____ CMC-302         C.  SYSTEM SPEED CALLING DIRECTORY ASSIGNMENT

_____ CMC-303         D.  NIGHT ANSWER ASSIGNMENT

_____ CMC-304         E.  MUSIC-ON-HOLD ASSIGNMENT

_____ CMC-305         F.  PICKUP GROUP ASSIGNMENT

_____ CMC-306         G.  HUNT GROUP ASSIGNMENT

GTE

# DATA BASE ADMINISTRATION
## Programming Class of Service

# 2.6 Enabling Objective

GIVEN:
- GTE OMNI SBSC
- GTE OMNI SBSC PERIPHERALS
- PORTABLE MAINTENANCE PANEL
- GTE OMNI SBSC COURSE AND SITE DOCUMENTATION PACKAGE
- LABORATORY ACTIVITY - PROGRAMMING CLASS OF SERVICE
- REVIEW EXERCISE

ACTION:
- USE OMNI SBCS PROGRAMMING TOOLS AND EQUIPMENT TO:
  - ASSIGN STATION AND TRUNK FEATURES TO SYSTEM CLASS OF SERVICE TABLE.
  - ASSIGN CLASS OF SERVICE LEVELS TO STATION.
  - ASSIGN CLASS OF SERVICE AND CLASS OF RESTRICTION TO TRUNK GROUPS.
- COMPLETE REVIEW EXERCISE.

CRITERIA:
- DEMONSTRATION OF ABOVE TASKS IN ACCORDANCE WITH PROCEDURES OUTLINED IN OMNI SBCS GTEP MANUAL AND OMNI SBSC STUDENT WORKBOOK.
- REVIEW EXERCISE WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

# Programming Class of Service/Feature Assignment

## DESCRIPTION

- ALLOWS STATION AND TRUNK FEATURES TO BE ASSIGNED OR REMOVED FROM SYSTEM CLASS OF SERVICE (COS) TABLE.

- DEFAULT DATA BASE ASSIGNS ALL STATIONS TO COS 1 WHICH PROVIDES ACCESS TO ALL FEATURES.

- 16 COS LEVELS MAY BE ASSIGNED PER TENANT GROUP WITH COS LEVEL 1 BEING LEAST RESTRICTIVE AND COS LEVEL 16 BEING MOST RESTRICTIVE.

- AFTER ASSIGNING FEATURES TO THE SYSTEM COS TABLE, INDIVIDUAL STATIONS RECEIVE COS DESIGNATIONS WITH CMC-202. TRUNK GROUP COS ASSIGNMENTS ARE MADE WITH CMC-252.

## PROCEDURE   *

1. USE CMC-104 TO ASSIGN OR REMOVE:
   - CLASS OF SERVICE (P1)
   - FEATURE NUMBER (P2)

```
CMC=104
P1: 3
P2: 130
```

* REVIEW DEFAULT COS TABLE TO IDENTIFY COS LEVELS REQUIRING ADDITION OR REMOVAL OF FEATURES.

# Programming Class of Service and Class of Restriction/Station Assignment

GTE

GTE OMNI SBCS

## DESCRIPTION

- STATIONS MAY BE ASSIGNED ONE OF 16 COS AND COR LEVELS.

- SEPARATE COS/COR ASSIGNMENTS MAY BE MADE FOR DAY AND NIGHT MODES.

- ALL STATIONS RECEIVE A COS LEVEL OF 1 OR COR LEVEL OF 1 THROUGH DEFAULT STANDARD DATA BASE SETTING.

- CSD DATA STATION COS AND COR LEVELS ARE ASSIGNED SEPARATELY WITH CMC-221.

## PROCEDURE *

IDENTIFY APPROPRIATE COS AND COR LEVELS FOR EACH STATION IN THE SYSTEM.

1. USE CMC-202 TO ASSIGN OR CHANGE COS AND COR FOR EACH STATION:
   - STATION DIRECTORY NUMBER (P1)
   - CLASS OF SERVICE IN DAY MODE (P2)
   - CLASS OF SERVICE IN NIGHT MODE (P3)
   - CLASS OF RESTRICTION IN DAY MODE (P4)
   - CLASS OF RESTRICTION IN NIGHT MODE (P5)

   ```
   CMC=202
   P1: 547    P4: 1
   P2: 1      P5: 1
   P3: 6
   ```

   * CLASS OF RESTRICTION IS DISCUSSED IN TOLL AND MULTI-DIGIT RESTRICTION SECTION OF THIS WORKBOOK MODULE.

# Programming Class of Service and Class of Restriction/Trunk Group Assignment

**GTE**

*GTE OMNI SBCS*

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## DESCRIPTION

● TRUNK GROUPS MAY BE ASSIGNED TO ONE OF 16 COS AND COR LEVELS.

● SEPARATE COS/COR ASSIGNMENTS MAY BE MADE FOR DAY AND NIGHT MODES.

● ALL TRUNK GROUPS RECEIVE A COS LEVEL OF 1 AND COR LEVEL OF 1 THROUGH DEFAULT STANDARD DATA BASE SETTING.

## PROCEDURE *

1. USE CMC-252 TO ASSIGN OR CHANGE COS AND COR FOR EACH TRUNK GROUP:
   — TRUNK GROUP NUMBER (P1)
   — CLASS OF SERVICE (P2)
   — CLASS OF SERVICE IN NIGHT MODE (P3)
   — CLASS OF RESTRICTION (P4)
   — CLASS OF RESTRICTION IN NIGHT MODE (P5)

   * CLASS OF RESTRICTION IS DISCUSSED IN TOLL AND MULTI-DIGIT RESTRICTION SECTION OF THIS WORKBOOK MODULE.

```
CMC=252
P1: 14     P4: 1
P2: 1      P5: 1
P3: 6
```

# Programming Class of Service/
# Class of Restriction — CMC
# Command Summary

**GTE**

*GTE OMNI SBCS*

| CATEGORY | CMC TABLE | FUNCTION |
|---|---|---|
| • CLASS OF SERVICE — FEATURE ASSIGNMENT | CMC-104 | ASSIGNS FEATURES TO SYSTEM CLASS OF SERVICE TABLE. |
| • STATION CLASS OF SERVICE AND CLASS OF RESTRICTION | CMC-202 | ASSIGNS COS AND COR TO STATION FOR DAY/NIGHT MODE. |
| • TRUNK CLASS OF SERVICE AND CLASS OF RESTRICTION | CMC-252 | ASSIGNS COS AND COR TO TRUNKS FOR DAY/NIGHT MODE. |

# Laboratory Activity — Programming Class of Service

PERFORM THE FOLLOWING PROGRAMMING TASKS IN THE SEQUENCE OUTLINED BELOW USING THE SAMPLE WORK ORDERS AND IN ACCORDANCE WITH THE GTE OMNI SBCS GTEP MANUAL. COMPLETE THE REVIEW EXERCISE QUESTIONS PERTAINING TO COS/COR PROGRAMMING UPON COMPLETION OF THIS LABORATORY ACTIVITY.

| WORK ORDER #2.6 | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER #2.6 (TASK #1) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

**TASKS:**

- Assign station and trunk features to a COS table with CMC-104.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Change "limited override" to "full executive override" for COS 1. | (1) Perform programming changes for COS table. |
| | (2) Check/test the operation of changes after completion of this portion of the laboratory activity. |
| (2) Remove "system speed dial" from COS 2. | (3) Proceed to next work order task. |

2.128

# Laboratory Activity — Programming COS/ (Continued)

| WORK ORDER #2.6 |
|---|

| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
|---|---|
| LOCATION: RESTON, VIRGINIA | WORK ORDER # 2.6 (TASK #2) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

TASKS:

- Assign COS to station with CMC-202.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Change station directory number 308 from COS 1 (default setting) to COS 12 for day mode.<br><br>(2) Change station directory number 215 from COS 1 to COS 6 for day mode.<br><br>(2) Change station directory numbers 212 and 214 from COS 1 to COS 3 for night mode. | (1) Perform programming changes for COS.<br><br>(2) Check/test the operation of changes after completion of this portion of the laboratory activity.<br><br>(3) Proceed to next work order task. |

# Laboratory Activity — Programming COS/ (Continued)

| WORK ORDER #2.6 |
|---|

| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
|---|---|
| LOCATION: RESTON, VIRGINIA | WORK ORDER #2.6 (TASK #3) |

**ORIGINATOR:** TELECOMMUNICATIONS MANAGER

**TASKS:**

- Assign COS to trunk group with CMC-252.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Change both tie lines (TGN 31 and 32) from COS 1 (default setting) to COS 2. | (1) Perform programming changes for COS.<br><br>(2) Check/test the operation of changes after completion of this portion of the laboratory activity.<br><br>(3) Complete review exercise questions 1-10.<br><br>NOTE:<br><br>COR assignment will be addressed in Multi-digit Restriction lab activity. |

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## LAB MILESTONE:

- VERIFY THAT ALL PROGRAMMING CHANGES REQUESTED IN WORK ORDERS HAVE BEEN PERFORMED CORRECTLY.

- ASK INSTRUCTOR TO INSPECT COS/COR CHANGES AND INITIAL YOUR PERFORMANCE CHECKLIST.

- MAKE CERTAIN QUESTIONS 1-10 OF REVIEW EXERCISE 2.6 HAVE BEEN COMPLETED BEFORE SUBMITTING THE REVIEW EXERCISE TO THE INSTRUCTOR FOR GRADING.

# Student Notes

**GTE**

*GTE OMNI SBCS*

# Review Exercise — Programming Class of Service (2.6)

INSTRUCTIONS: THE FOLLOWING EXERCISE CONSISTS OF MULTIPLE CHOICE, TRUE/FALSE, FILL IN THE BLANK, OR MATCHING TYPE QUESTIONS. ALL AVAILABLE RESOURCES (I.E. STUDENT WORKBOOK, NOTES, AND GTEP MANUAL) MAY BE USED AS REFERENCES. SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

1. FEATURES MAY BE ASSIGNED OR REMOVED FROM A COS LEVEL WITH CMC- _____ .

2. INDICATE WITH AN X THE FOLLOWING FEATURES WHICH CAN BE ASSIGNED TO A COS GROUP:

    _____ EKT SPEAKERPHONE BUTTON    _____ CALL PARK ANSWER

    _____ CO# 1 ACCESS    _____ STATION SPEED CALLING

    _____ OFF-HOOK INCOMING CALL    _____ GROUP PICKUP
                SIGNALING CHANGE

3. LIST THE COS LEVELS WHICH CONTAIN THE FOLLOWING FEATURES IN THE DEFAULT STANDARD BASE:

    SAVE/REPEAT LAST NUMBER DIALED: _____

    _____

    CO #2 ACCESS: _____

    _____

    DO NOT DISTURB: _____

    _____

    STATION CAMP-ON: _____

    _____

    DIRECT TRUNK ACCESS: _____

    _____

4. THE TWO MODES ALLOWED IN THE SYSTEM FOR COS AND COR ARE _____ AND _____ .

5. NIGHT CLASS OF SERVICE FOR STATIONS IS ASSIGNED WITH CMC-_____, PARAMETER _____ . NIGHT CLASS OF RESTRICTIONS FOR STATIONS IS ASSIGNED WITH CMC-_____, PARAMETER _____ .

6. WHAT FEATURES IS A STATION ALLOWED WITH A COS LEVEL OF 16? _____

_____

_____

7. DAY CLASS OF SERVICE FOR TRUNKS IS ASSIGNED WITH CMC-_____, PARAMETER _____ . NIGHT CLASS OF SERVICE FOR TRUNKS IS ASSIGNED WITH CMC-_____, PARAMETER _____ .

8. A MAXIMUM OF _____ COS LEVELS AND _____ COR LEVELS ARE ALLOWED IN THE SYSTEM DATA BASE FOR STATIONS AND TRUNKS.

9. MATCH EACH OF THE FOLLOWING CMC COMMANDS WITH ITS CORRECT DEFINITION:

_____ CMC-104          A.   TRUNK COS/COR ASSIGNMENT

_____ CMC-202          B.   FEATURE SERVICE TO CLASS OF SERVICE ASSIGNMENT

_____ CMC-252          C.   STATION COS/COR ASSIGNMENT

**GTE**

# DATA BASE ADMINISTRATION
## System-wide Programming Changes

# 2.7 Enabling Objective

*GTE OMNI SBCS*

GIVEN:
- GTE OMNI SBSC
- GTE OMNI SBSC PERIPHERALS
- PORTABLE MAINTENANCE PANEL
- GTE OMNI SBSC COURSE AND SITE DOCUMENTATION PACKAGE
- LABORATORY ACTIVITY - SYSTEM-WIDE PROGRAMMING CHANGES
- REVIEW EXERCISE

ACTION:
- USE OMNI SBCS PROGRAMMING TOOLS AND EQUIPMENT TO:
  - MODIFY DEFAULT STANDARD SYSTEM NUMBERING PLAN, DEFINE FEATURE NUMBERS, FEATURE ACCESS CODES, AND SEND AND SAVE/SEND AS DIALED SETTINGS FOR TIE LINES AND SCC.
  - CHANGE SERVICE PARAMETER FLAGS FOR TRUNK-TO-TRUNK TRANSFER RESTRICTION, EXECUTIVE OVERRIDE WARNING BURST, AND VOICE/RINGING OPTION FOR CALL ANNOUNCE INTERCOM FEATURE.
  - MODIFY SYSTEM TIMING VALUES.
  - CHANGE SYSTEM PARAMETER FLAGS.
  - MODIFY OMNI SBCS DEFAULT PAD CIRCUIT VALUES TO CORRECT NETWORK LOSS RESULTING FROM DIGITAL PAD CIRCUIT IN NETWORK.
  - SET TRUNK ROUTE TIMING PARAMETER.
- COMPLETE REVIEW EXERCISE.

CRITERIA:
- DEMONSTRATION OF ABOVE TASKS IN ACCORDANCE WITH PROCEDURES OUTLINED IN OMNI SBCS GTEP MANUAL AND OMNI SBCS STUDENT WORKBOOK.
- REVIEW EXERCISE WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

2.135

# Systemwide Programming Changes/
# Numbering Plan Assignment

**GTE**

*GTE OMNI SBCS*

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## DESCRIPTION

- DEFAULT STANDARD SYSTEM NUMBERING PLAN DEFINING FEATURE NUMBERS, FEATURE ACCESS CODES, TRUNK GROUP NUMBERS, AND SEND AND SAVE/SEND AS DIALED FOR TIE LINES.

## PROCEDURE *

IDENTIFY FEATURE ACCESS CODES TO BE CHANGED USING DEFAULT STANDARD TABLE.

1. USE CMC-100 TO CHANGE:
   — FEATURE NUMBER (P1)
   — FEATURE ACCESS CODE (P2)
   — TRUNK GROUP NUMBER (P3)
   — OUTGOING DIRECTORY NUMBER (P4)
   — ACCESS CODE DIGITS TO BE SENT FOR TIE ACCESS ONLY (P5)
   — DIAL AND STORE AND FORWARD FLAG (P6)

```
CMC= 100
P1: 92        P4:
P2: 2         P5:
P3:           P6: 0
```

* CAUTION SHOULD BE EXERCISED TO ENSURE THAT ANY MODIFICATION OF FEATURE ACCESS CODES DOES NOT CONFLICT WITH EXISTING FEATURE ACCESS CODES OR STATION DIRECTORY NUMBER ASSIGNMENTS.

2.136

# Systemwide Programming Changes/Service Parameter Assignment

## DESCRIPTION

- ALLOWS FLAGS TO BE SET FOR THE FOLLOWING SERVICE FUNCTIONS:
  - A CHECK FOR TRUNK-TO-TRUNK TRANSFER RESTRICTION.
  - INDICATION OF WHETHER A WARNING BURST (TONE) INTERRUPTS USERS WHEN EXECUTIVE OVERRIDE FEATURE IS ACTIVATED.
  - DESIGNATION OF VOICE OR TONE OPTION WHEN CALL ANNOUNCE INTERCOM FEATURE IS ACTIVATED.
- WHILE DEFAULT SYSTEM CAPACITY FOR SYSTEM FLAGS IS 32, ONLY 3 FLAGS (AS DEFINED ABOVE) CAN BE USED AT THE PRESENT TIME. REMAINING FLAGS HAVE BEEN RESERVED FOR PROGRAM USE OR FOR FUTURE ENHANCEMENTS.

## PROCEDURE *

1. USE CMC-101 TO ASSIGN:
   - SYSTEM FLAG IDENTIFICATION NUMBER (P1)
   - FLAG VALUE (0 or 1) (P2)

```
CMC=101
P1: 3
P2: 1
```

* CMC TABLE IN <u>OMNI SBCS GTEP MANUAL</u> CONTAINS THE AVAILABLE INDENTIFICATION NUMBERS AND VALUES FOR SYSTEM SERVICE FEATURES.

# Systemwide Programming Changes/System Timing Assignment

GTE OMNI SBCS

## DESCRIPTION

- ALLOWS CHANGE OF TIMING PARAMETERS FOR VARIOUS SYSTEM FUNCTIONS.

- ACTUAL TIMING FOR EACH TIMING PARAMETER IS CALCULATED BY MULTIPLYING THE TIMING PARAMETER'S DESIGNATED FIXED UNIT BY A MULTIPLER VALUE (0 TO 255).

EXAMPLE:
FOR DSS CAMP-ON RECALL (PARAMETER 1), FIXED TIMING UNIT IS 1024 ms. THE DEFAULT MULTIPLIER (PARAMETER 2) IS 31:

$$1024 \text{ ms X } 31 = 31.1744 \text{ SECONDS}$$

TO INCREASE TIME TO APPROXIMATELY ONE MINUTE, CHANGE VALUE FOR PARAMETER 2 TO 60:

$$1024 \text{ ms X } 60 = 6144 \text{ SECONDS}$$

## PROCEDURE *

1. USE CMC-103 TO SELECT:
   - SYSTEM TIMING IDENTIFICATION NUMBER (P1)
   - MULTIPLIER (P2)

```
CMC=103
P1: 22
P2: 60
```

NOTE:   CMC TABLE IN OMNI SBCS GTEP MANUAL CONTAINS IDENTIFICATION NUMBER FOR ALL SYSTEM TIMING FUNCTIONS.

# Systemwide Programming Changes/System Parameter Assignment

GTE

*GTE OMNI SBCS*

## DESCRIPTION

- ALLOWS UP TO 26 FLAGS TO BE SET FOR VARIOUS SYSTEM FUNCTIONS.

## PROCEDURE *

1. USE CMC-102 TO ADD/CHANGE:
   - FLAG NUMBER (P1)
   - SET FLAG VALUE (P2)

```
CMC=102
P1: 6
P2: 1
```

* SEE CMC TABLE IN OMNI SBCS GTEP MANUAL, FOR A LISTING OF FLAG NUMBERS AND APPROPRIATE SETTING OF PARAMETER VALUES.

REFER TO CMC TABLE IN OMNI SBCS GTEP MANUAL WHEN CHANGING FLAG NUMBER 5 (SIGNALING CHECK FOR TRUNK TO TRUNK CONNECTION RESTRICTION).

# System-wide Programming Changes/
# Network Loss Plan Assignment

**GTE**

*GTE OMNI SBCS*

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| DESCRIPTION |

- ALLOWS CHANGE IN DIGITAL PAD CIRCUIT (PAD) VALUE TO IMPROVE QUALITY OF INCOMING OR OUTGOING CONNECTIONS.

| PROCEDURE | *

DETERMINE WHICH INCOMING OR OUTGOING ROUTES ARE AFFECTED BY CIRCUIT LOSS QUALITY. IDENTIFY SPECIFIC CIRCUITS THAT ARE EXPERIENCING CIRCUIT LOSS.

1. USE CMC-106 TO CHANGE VALUE OF DIGITAL PAD:
   — INCOMING ROUTE (P1)
   — OUTGOING ROUTE (P2)
   — VALUE OF DIGITAL PADDING CIRCUIT (P3)

```
CMC=106
P1: 2
P2: 5
P3: 4
```

* SEE CMC TABLE IN <u>OMNI SBCS GTEP MANUAL</u>, FOR A LISTING OF AVAILABLE INCOMING/OUTGOING ROUTE PARAMETERS.
  SEE CMC TABLE IN <u>OMNI SBCS GTEP MANUAL</u>, FOR A LISTING OF AVAILABLE DECIBEL (dB) LEVELS FOR PAD VALUE PARAMETERS.

# System-Wide Programming Changes/ Trunk Route Timing

## DESCRIPTION

- SETS TRUNK ROUTE TIMING PARAMETER FOR VARIOUS SYSTEM TRUNK ROUTES
- TIMING IS CALCULATED BY MULTIPLYING THE TRUNK'S FIXED TIMING UNIT (IN ms) BY A DESIGNATED MULTIPLER.

## PROCEDURE

1. USE CMC-254 TO ASSIGN:
   - TRUNK GROUP NUMBER (P1)
   - ROUTE TIMING ID NUMBER (P2)
   - NORMALIZED TIMING/MULTIPLIER (P3)

```
CMC=254
P1: 13
P2: 1
P3: 14
```

* REFER TO CMC TABLE IN OMNI SBCS GTEP MANUAL FOR DESCRIPTIONS OF AVAILABLE ROUTE TIMING AND MULTIPLIER FOR NORMALIZED TIMING.

# System-wide Programming Changes/CMC Command Summary

**GTE OMNI SBCS**

| CATEGORY | CMC TABLE | FUNCTION |
|---|---|---|
| • NUMBERING PLAN ASSIGNMENT | CMC-100 | DEFINES DEFAULT STANDARD SYSTEM NUMBERING PLAN (FEATURE NUMBERS, FEATURE ACCESS CODES, TRUNK GROUP NUMBERS, ETC.) |
| • SERVICE PARAMETER ASSIGNMENT | CMC-101 | DEFINES SYSTEM SERVICE FUNCTION PARAMETERS. |
| • SYSTEM PARAMETERS ASSIGNMENT | CMC-102 | DEFINES SYSTEM FUNCTION PARAMETERS. |
| • SYSTEM TIMING PARAMETER ASSIGNMENT | CMC-103 | DEFINES SYSTEM TIMING PARAMETERS. |
| • NETWORK LOSS (PAD) CONTROL | CMC-106 | DEFINES DIGITAL PAD CIRCUIT VALUES. |
| • TRUNK ROUTE TIMING | CMC-254 | SETS THE TRUNK ROUTE TIMING PARAMETER. |

# Laboratory Activity — System-wide Programming Changes

GTE OMNI SBCS

PERFORM THE FOLLOWING PROGRAMMING TASKS IN THE SEQUENCE OUTLINED BELOW USING THE SAMPLE WORK ORDERS AND IN ACCORDANCE WITH THE GTE OMNI SBCS GTEP MANUAL. COMPLETE THE REVIEW EXERCISE QUESTIONS PERTAINING TO SYSTEM-WIDE PROGRAMMING CHANGES UPON COMPLETION OF THIS LABORATORY ACTIVITY.

| WORK ORDER #2.7 |
|---|

| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
|---|---|
| LOCATION: RESTON, VIRGINIA | WORK ORDER # 2.7 (TASK #1) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

TASKS:

• Modify default standard numbering plan with CMC-100.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Change the feature access code for "Save/Repeat Last Number Dialed" from "8" (default) to 89 (Parameters 3, 4, 5, and 6 will be blank). | (1) Perform programming changes for system-wide function.<br><br>(2) Check/test the operation of changes after completion of this portion of the laboratory activity.<br><br>(3) Proceed to next work order task. |

2.143

# Laboratory Activity — System-wide Programming Changes (Continued)

**GTE**

GTE OMNI SBCS

| WORK ORDER #2.7 |
|---|

| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
|---|---|
| LOCATION: RESTON, VIRGINIA | WORK ORDER #2.7 (TASK #2) |

ORIGINATOR:  TELECOMMUNICATIONS MANAGER

TASKS:

- Change a service parameter flag with CMC-101.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Change the flag indicating whether a warning burst is heard during executive override, to "send burst". | (1) Perform programming changes for system-wide function.<br><br>(2) Check/test the operation of changes after completion of this portion of the laboratory activity.<br><br>(3) Proceed to the next work order task. |

# Laboratory Activity — System-Wide Programming Changes (Continued)

**GTE**

*GTE OMNI SBCS*

| WORK ORDER #2.7 |
|---|

| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
|---|---|
| LOCATION: RESTON, VIRGINIA | WORK ORDER #2.7 (TASK #3) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

**TASKS:**

- Change a system parameter flag with CMC-102.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Change the flag indicating the type of ringing pattern for off-premises extensions to "recall ringing."<br><br>NOTE:<br><br>Programming off-premises extensions will be addressed in later module. | (1) Perform programming change for system-wide function.<br><br>(2) Check/test the operation of changes after completion of this portion of the laboratory activity.<br><br>(3) Proceed to next work order task. |

# Laboratory Activity — System-Wide Programming Changes (Continued)

---

**WORK ORDER #2.7**

| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
|---|---|
| LOCATION: RESTON, VIRGINIA | WORK ORDER #2.7 (TASK #4) |

ORIGINATOR: TELECOMMUNICATIONS MANAGER

TASKS:

- Modify a system timing parameter with CMC-103.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Change the timing value for "call park recall" to 1/2 minute. (Note: current multiplier is set at 61, yielding a default timing value of 62.464. A multiplier of 88 will provide a timing value of 91.112 seconds, or appropriately a minute and a half). | (1) Perform programming change for system-wide function. |
| | (2) Check/test the operation of changes after completion of this portion of the laboratory activity. |
| (2) Change the timing value for "no answer recall" timing to approximately 45 seconds. | (3) Proceed to next work order task. |

# Laboratory Activity — System-Wide Programming Changes (Continued)

**GTE**

*GTE OMNI SBCS*

| WORK ORDER #2.7 |
|---|

| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
|---|---|
| LOCATION: RESTON, VIRGINIA | WORK ORDER #2.7 (TASK #5) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

**TASKS:**

- Modify the default network PAD circuit values with CMC-106.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Reduce the PAD value for outgoing station dial tone with the following parameters:<br><br>    Incoming route = 1 (dial tone<br>        and recall dial tone)<br><br>    Outgoing route = 6 (station)<br><br>    Value of padding circuit = 6<br>                (-8.5 db)<br><br>(2) After inspection by instructor, restore the PAD value modified above to its default value. | (1) Perform programming change for system-wide function.<br><br>(2) Check/test the operation of changes after completion of this portion of the laboratory activity.<br><br>(3) Complete review exercise questions 1-13. |

| LAB MILESTONE: |
|---|

- VERIFY THAT ALL PROGRAMMING CHANGES REQUESTED IN WORK ORDERS HAVE BEEN PERFORMED CORRECTLY.

- ASK INSTRUCTOR TO INSPECT SYSTEM-WIDE PROGRAMMING CHANGES AND INITIAL YOUR PERFORMANCE CHECKLIST.

- MAKE CERTAIN QUESTIONS 1–13 OF REVIEW EXERCISE 2.7 HAVE BEEN COMPLETED BEFORE SUBMITTING THE REVIEW EXERCISE TO THE INSTRUCTOR FOR GRADING.

# Student Notes

GTE

# Review Exercise — System-Wide Programming Changes (2.7)

INSTRUCTIONS: THE FOLLOWING EXERCISE CONSISTS OF MULTIPLE CHOICE, TRUE/FALSE, FILL IN THE BLANK, OR MATCHING TYPE QUESTIONS. ALL AVAILABLE RESOURCES (I.E., STUDENT WORKBOOK, NOTES, AND GTEP MANUAL) MAY BE USED AS REFERENCES. SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

1. THE DEFAULT FEATURE NUMBER (FNO) FOR GROUP PICKUP IS _____ AND DEFAULT FEATURE ACCESS CODE IS _____ .

2. FEATURE ACCESS CODES MAY BE COMPOSED OF A MAXIMUM OF _____ DIGITS, WITH THE SYMBOLS _____ AND _____ USED AS WELL.

3. WHEN WOULD YOU SPECIFY THE NUMBER OF ACCESS CODE DIGITS TO BE SENT IF USING CMC-100?

_____

_____

4. THE EKT PAGING ACCESS CODE CAN TAKE _____ ADDITIONAL DIGIT AND IDENTIFIES:

_____

_____

5. NAME THREE OF THE SYSTEM FLAGS WHICH CAN BE SET WITH CMC-101:

_____ , _____ and _____ .

6. WHAT IS THE DEFAULT SETTING FOR CMC-101, FLAG 4, PARAMETER 2? _____

7. WHAT VALUE WOULD YOU ASSIGN TO FLAG 1 FOR CMC-102, TO INDICATE THAT TENANTS WILL BE SHARING OUTGOING TRUNKS? _____

8. HOW IS TIMING CALCULATED FOR SYSTEM TIMING VALUES? _____

_____

9. WHAT MULTIPLIER VALUE WOULD YOU USE TO CHANGE THE CALL ANNOUNCE WARNING BURST TO ONE SECOND? _____

10. WHAT MULTIPLIER VALUE WOULD YOU USE TO CHANGE THE DSS CAMP-ON RECALL TIMING TO 1½ MINUTES? _____

11. WHEN MIGHT IT BE NECESSARY TO CHANGE THE DEFAULT PAD CIRCUIT VALUES? _____

_____

_____

12. STATION USERS HAVE COMPLAINED THAT THE BUSY TONE IS TOO LOUD. WHAT PARAMETERS NEED CHANGING WITH CMC-106 TO CORRECT THIS PROBLEM?

 P1 = _____

 P2 = _____

 P3 = _____

13. MATCH EACH OF THE FOLLOWING CMC COMMANDS WITH ITS CORRECT DEFINITION:

_____ CMC-100          A.  SERVICE PARAMETER ASSIGNMENT

_____ CMC-101          B.  NETWORK LOSS PLAN ASSIGNMENT

_____ CMC-102          C.  SYSTEM TIMING PARAMETER ASSIGNMENT

_____ CMC-103          D.  FEATURE ACCESS CODE NUMBER PLAN ASSIGNMENT

_____ CMC-106          E.  SYSTEM PARAMETER ASSIGNMENT

GTE

*GTE OMNI SBCS*

# DATA BASE ADMINISTRATION
# Programming Station Message Detail Recorder

## 2.8    Enabling Objective

GIVEN:
- GTE OMNI SBCS
- GTE OMNI SBCS Peripherals
- PORTABLE MAINTENANCE PANEL
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- LABORATORY ACTIVITY — PROGRAMMING STATION MESSAGE DETAIL RECORDER
- REVIEW EXERCISE

ACTION:
- USE OMNI SBCS PROGRAMMING TOOLS AND EQUIPMENT TO:
  - INSTALL STATION MESSAGE DETAIL RECORDER AND ASSIGN CALL SCREENING OPTIONS.
- COMPLETE REVIEW EXERCISE.

CRITERIA:
- DEMONSTRATION OF ABOVE TASKS IN ACCORDANCE WITH PRO-CEDURES OUTLINES IN GTEP MANUAL AND OMNI SBCS STUDENT WORKBOOK
- REVIEW EXERCISE WILL BE COMPLETED CORRECTLY IN ACCOR-DANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

# Programming Station Message Detail Recorder/SMDR (MDR) Screening

**GTE**

*GTE OMNI SBCS*

## DESCRIPTION

- PROVIDES LOCAL PRINTOUT OF SYSTEM CALL INFORMATION.

- IF SMDR OPTION IS INSTALLED THE FOLLOWING INFORMATION IS RECORDED FOR EVERY CALL:
  - TIME OF CALL ORIGINATION
  - CALL DURATION RECORDED IN HOURS, MINUTES, AND SECONDS
  - ORIGINATING STATION NUMBER
  - TRUNK NUMBER WITH IDENTIFICATION
  - CALLING PARTY IDENTIFICATION
  - TRUNK ACCESS CODE
  - DIRECTORY NUMBER DIALED AND PERSONAL ACCOUNTING CODE (SVR 1.5.X.X)
  - ACCOUNT CODE
  - TENANT NUMBER (FOR MULTI-TENANT APPLICATION)
  - METERING GROUP NUMBER

- AUTOMATIC SCREENING OPERATION

- OPTIONAL CALL SCREENING OPTIONS:
  - OUTGOING CALLS THROUGH CO TRUNK LINES
  - OUTGOING CALLS THROUGH TIE TRUNK LINES
  - ACCOUNT CODE CALLS
  - TOLL CALLS
  - OVERTIME CALLS
  - TRUNK GROUP SELECTION
  - CLASS OF RESTRICTION SELECTION
  - TENANT SELECTION

- CALLS LASTING LESS THAN PROGRAMMED DATA BASE THRESHOLD TIME ARE NOT RECORDED IN ORDER TO EXCLUDE INCOMPLETE CALLS (E.G., TERMINATED TO BUSY TONE, REORDER TONE, OR NO ANSWER) FROM CALL RECORD.

# Programming Station Message Detail Recorder/SMDR Screening

**GTE**

*GTE OMNI SBCS*

1. USE CMC-500 TO ASSIGN SMDR OUTPUT OPTIONS ON OUTGOING CONNECTION:
   - CO OUTGOING CONNECTION (P1)
   - TIE LINE OUTGOING CONNECTION (P2)
   - ACCOUNT FLAG (P3)
   - TOLL CALL FLAG (P4)

```
CMC=500
P1: 1   P4: 1
P2: 0
P3: 0
```

2. USE CMC-501 TO ASSIGN TRUNK GROUPS FOR SMDR OUTPUT:

   - TRUNK GROUP NUMBER (P1)**
   - OUTPUT IDENTIFICATION FLAG (P2)

```
CMC=501
P1: 13
P2: 1
```

3. USE CMC-502 TO ASSIGN COR FOR SMDR OUTPUT:
   - CLASS OF RESTRICTION (P1)
   - OUTPUT IDENTIFICATION FLAG (P2)

```
CMC=502
P1: 3
P2: 1
```

4. USE CMC-503 TO ASSIGN SMDR OUTPUT FOR TENANTS:
   - TENANT NUMBER (P1)
   - OUTPUT IDENTIFICATION FLAG (P2)

```
CMC=503
P1: 2
P2: 1
```

5. USE CMC-504 TO SET MINIMUM CALL DURATION FOR SMDR OUTPUT:
   - HOURS FOR MINIMUM CALL DURATION (P1)
   - MINUTES FOR MINIMUM CALL DURATION (P2)
   - SECONDS FOR MINIMUM CALL DURATION (P3)

```
CMC=504
P1: 0
P2: 0
P3: 45
```

NOTE:   REFER TO MODULE III FOR SMDR MAINTENANCE COMMANDS (CMC 705 AND 901)

*  ASSUMES PHYSICAL INSTALLATION OF SERIAL PRINTER.
** REFER TO DATA BASE PROGRAMMING SECTION IN <u>OMNI SBCS GTEP MANUAL</u> FOR LISTING OF TRUNK GROUP  NUMBERS.

# Programming Station Message
# Detail Recorder/SMDR
# Output Format

**GTE**

*GTE OMNI SBCS*

● TIME MESSAGE IS PRINTED WITH SMDR REPORT TO SEPARATE EACH SMDR MESSAGE. TIME INCREMENTS BY HOUR.

```
        09:27      02/07/86
         (1)         (2)
        Time        Date
```

● SAMPLE OUTPUT:

```
08:15   00.00.36  ST  0201   C1234   1600   07035344789   123456780123      00     00
 (1)      (2)     (3) (4)     (5)     (6)        (7)           (8)          (09)   (10)
```

| | | |
|---|---|---|
| (1) | = | Time of call origination |
| (2) | = | Duration of call |
| (3) | = | Calling party identification: |
| | | ST = Station |
| | | AT = Attendant |
| | | TI = TIE trunk |
| (4) | = | Originating Station number |
| (5) | = | Trunk Identification and Trunk number: |
| | | C:   CO trunk          DDD:   Trunk number |
| | | F:   FX trunk |
| | | W:   WATS trunk |
| | | T:   TIE trunk |
| (6) | = | Trunk access code (also when line button on EKT is used, access code is output) |
| (7) | = | Directory number dialed (maximum 20 digits) |
| (8) | = | Account code (if not specified, no code is output) |
| (9) | = | Tenant number (if not specified, no tenant number is output) |
| (10) | = | Metering group (if not specified, no metering group is output) |

# Programming Station Message Detail Recorder/CMC Command Summary

**GTE**

*GTE OMNI SBCS*

| CATEGORY | CMC TABLE | FUNCTION |
|---|---|---|
| • OUTGOING MDR | CMC-500 | SELECTS CO, TIE, ACCOUNT AND TOLL FOR SMDR OUTPUT |
| • MDR TRUNK SCREEN | CMC-501 | SELECTS TRUNK GROUPS FOR MDR OUTPUT |
| • CLASS OF RESTRICTION | CMC-502 | SELECTS COR GROUPS FOR MDR OUTPUT |
| • TENANT | CMC-503 | SELECTS TENANTS FOR SMDR OUTPUT |
| • CALL DURATION | CMC-504 | SETS MINIMUM CALL DURATION FOR MDR REGISTRATION |

NOTE: REFER TO MODULE III FOR SMDR MAINTENANCE COMMANDS (CMC-705) AND CMC-901).

# Laboratory Activity — Station Message Detail Recorder Programming

GTE OMNI SBCS

PERFORM THE FOLLOWING PROGRAMMING TASKS IN THE SEQUENCE OUTLINED BELOW USING THE SAMPLE WORK ORDERS AND IN ACCORDANCE WITH THE GTE OMNI SBCS GTEP MANUAL. COMPLETE THE REVIEW EXERCISE QUESTIONS PERTAINING TO STATION MESSAGE DETAIL RECORDER PROGRAMMING UPON COMPLETION OF THIS LABORATORY ACTIVITY.

| WORK ORDER #2.8 | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER #2.8 (TASK #1) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

**TASKS:**

- Determine SMDR output for system parameters with CMC-500.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Assign both tie line outgoing connections with "no SMDR output".<br><br>(2) Change toll call flag to indicate "SMDR output for toll calls only". | (1) Perform programming changes for Station Message Detail Recorder.<br><br>(2) Check/test the operation of changes after completion of this portion of the laboratory activity.<br><br>(3) Proceed to next work order task. |

# Laboratory Activity — Station Message Detail Recorder Programming (Continued)

GTE

GTE OMNI SBCS

| WORK ORDER #2.8 | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER #2.8 (TASK #2) |
| ORIGINATOR: TELECOMMUNICTIONS MANAGER | |

**TASKS:**

● Establish minimum call duration for SMDR with CMC-504.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Specify 45 seconds for "minimum call duration" to receive SMDR output. | (1) Perform programming changes for Station Message Detail Recorder. <br><br> (2) Check/test the operation of changes after completion of this portion of the laboratory activity. <br><br> (3) Proceed to next work order task. |

# Laboratory Activity — Station Message Detail Recorder Programming (Continued)

GTE

GTE OMNI SBCS

| WORK ORDER #2.8 | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER #2.8 (TASK #3) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

TASKS:

   • Assign SMDR output for COR with CMC-502.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Change COR 3 and 4 to indicate "no SMDR OUTPUT". | (1) Perform programming changes for Station Message Detail Recorder.<br><br>(2) Check/test the operation of changes after completion of this portion of the laboratory activity.<br><br>(3) Complete review exercise questions 1-8.<br><br>NOTE:<br><br>    Tenant Group SMDR output was assigned previously during Special System Configuration laboratory activity with CMC-503. |

### LAB MILESTONE:

• VERIFY THAT ALL PROGRAMMING CHANGES REQUESTED IN WORK ORDERS HAVE BEEN PERFORMED CORRECTLY.

• ASK INSTRUCTOR TO INSPECT STATION MESSAGE DETAIL RECORDER AND INITIAL YOUR PERFORMANCE CHECKLIST.

• MAKE CERTAIN QUESTIONS 1-8 OF REVIEW EXERCISE 2.8 HAVE BEEN COMPLETED BEFORE SUBMITTING TO THE INSTRUCTOR FOR GRADING.

# Student Notes

**GTE**

*GTE OMNI SBCS*

**GTE**

INSTRUCTIONS: THE FOLLOWING EXERCISE CONSISTS OF MULTIPLE CHOICE, TRUE/FALSE, FILL IN THE BLANK, OR MATCHING TYPE QUESTIONS. ALL AVAILABLE RESOURCES (I.E. STUDENT WORKBOOK, NOTES, AND GTEP MANUAL) MAY BE USED AS REFERENCES. SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

1. THE FOLLOWING INFORMATION IS RECORDED FOR EVERY CALL IF SMDR OUTPUT IS SELECTED: _____

   A. TIME OF CALL ORIGINATION, CALL DURATION, AND CLASS OF RESTRICTION SELECTION.
   B. CALL DURATION, CALLING PARTY IDENTIFICATION, AND TOLL CALLS.
   C. CALL DURATION, ORIGINATING STATION NUMBER, AND TRUNK ACCESS CODE.
   D. TIME OF CALL ORIGINATION, OVERTIME CALLS, AND METERING GROUP NUMBER.

2. WHAT CMC COMMAND, PARAMETERS AND SETTINGS WOULD BE REQUIRED TO ESTABLISH SMDR OUTPUT FOR OUTGOING CO CONNECTIONS, AND TOLL AND NON-TOLL CALLS?

   _____

   _____

   _____

3. SMDR OUTPUT FOR TRUNKS IS IDENTIFIED ON PRINTOUT BY _____

4. WHY MIGHT A MINIMUM CALL DURATION TO RECEIVE SMDR OUTPUT BE SELECTED?

   _____

   _____

5. WHAT CMC COMMAND, PARAMETERS, AND SETTINGS WOULD BE REQUIRED TO ESTABLISH A MINIMUM CALL DURATION OF 1½ MINUTES?

   _____

   _____

# Review Exercise — Station Message Detail Recorder (2.8)

6. WHAT CMC COMMAND, PARAMETERS, AND SETTING WOULD BE REQUIRED TO PROVIDE SMDR OUTPUT FOR COR LEVELS 6 AND 16?

_____

_____

7. IS IT NECESSARY FOR ALL FIVE TENANTS TO RECEIVE SMDR OUTPUT? _____

PLEASE EXPLAIN _____

_____

8. MATCH EACH OF THE FOLLOWING CMC COMMANDS WITH ITS CORRECT DEFINITION:

_____ CMC-500    A.  SMDR COR SCREENING ASSIGNMENT

_____ CMC-501    B.  SMDR CALL DURATION SCREENING ASSIGNMENT

_____ CMC-502    C.  SMDR OUTGOING CONNECTION SCREENING ASSIGNMENT

_____ CMC-503    D.  SMDR TENANT SCREENING ASSIGNMENT

_____ CMC-504    E.  SMDR TRUNK GROUP SCREENING ASSIGNMENT

_____ CMC-705    F.  SMDR IN/OUT OF SERVICE

# DATA BASE ADMINISTRATION
## Programming Toll and
## Multi-Digit Restriction

# 2.9 Enabling Objective

GTE

GTE OMNI SBCS

GIVEN:
- GTE OMNI SBCS
- GTE OMNI SBCS PERIPHERALS
- PORTABLE MAINTENANCE PANEL
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- LABORATORY ACTIVITY — PROGRAMMING TOLL AND MULTI-DIGIT RESTRICTION PROGRAMMING
- REVIEW EXERCISE

ACTION:
- USE OMNI SBCS PROGRAMMING TOOLS AND EQUIPMENT TO:
  - ASSIGN TOLL AND TRUNK GROUP RESTRICTIONS TO CLASS OF RESTRICTION TABLE.
  - CREATE AREA CODE, OFFICE CODE, AND COMBINED AREA/ OFFICE CODE MULTI—DIGIT RESTRICTION TABLES.
  - ESTABLISH TOLL AND OPERATOR CALL RESTRICTION NUMBER.
  - IDENTIFY AND ASSIGN TOLL AND OPERATOR PREFIX CODES FOR TRUNK DIAL GROUP NUMBERS.
- COMPLETE REVIEW EXERCISE.

CRITERIA:
- DEMONSTRATION OF ABOVE TASKS IN ACCORDANCE WITH PROCEDURES OUTLINED IN OMNI SBCS GTEP MANUAL AND OMNI SBCS GTEP MANUAL AND OMNI SBCS STUDENT WORKBOOK.
- REVIEW EXERCISE WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

2.165

# Programming Toll and Multi-Digit/ Restriction Assignment

**GTE**

### DESCRIPTION

- RESTRICTS CONNECTION TO CO (INCLUDING FX OR WATS) AND TIE TRUNK LINES.
- 16 COR LEVELS MAY BE ASSIGNED WITH COR LEVEL 1 BEING LEAST RESTRICTIVE AND COR LEVEL 16 BEING MOST RESTRICTIVE.
- COR DESIGNATION MAY BE MADE SEPARATELY FOR INCOMING OR OUTGOING CONNECTIONS.
- DEFAULT DATA BASE ASSIGNS ALL STATIONS AND TRUNK GROUPS TO COR LEVEL 1 WHICH ALLOWS ACCESS AND CONNECTION TO ALL AVAILABLE TRUNK GROUPS.

### PROCEDURE

REVIEW DEFAULT COR TABLE TO IDENTIFY ANY RESTRICTIONS TO BE ADDED OR REMOVED FROM COR LEVELS.

1. IF DESIRED USE CMC-105 TO ASSIGN OR CHANGE RESTRICTION TO EACH COR LEVEL:
   - CLASS OF RESTRICTION (P1)
   - RESTRICTION ON OUTGOING CONNECTIONS TO CO LINES (INCLUDING FX AND WATS) (P2)
   - RESTRICTION ON INCOMING CONNECTIONS FROM CO LINES (INCLUDING FX AND WATS) (P3)
   - RESTRICTION ON OUTGOING CONNECTIONS TO TIE LINES (P4)
   - RESTRICTION ON INCOMING CONNECTIONS FROM TIE LINES (P5)

```
CMC=105
P1: 3   P4: 0
P2: 1   P5: 0
P3: 1
```

2. IF DESIRED USE CMC-202 TO ASSIGN OR CHANGE COR FOR EACH STATION:
   - STATION DIRECTORY NUMBER (P1)
   - CLASS OF SERVICE IN DAY MODE (P2)
   - CLASS OF SERVICE IN NIGHT MODE (P3)
   - CLASS OF RESTRICTION IN DAY MODE (P4)
   - CLASS OF RESTRICTION IN NIGHT MODE (P5)

```
CMC=202
P1: 417  P4: 1
P2: 1    P5: 3
P3: 3
```

3. IF DESIRED USE CMC-252 TO ASSIGN OR CHANGE COR FOR EACH TRUNK GROUP:
   - TRUNK GROUP NUMBER (P1)
   - CLASS OF SERVICE IN DAY MODE (P2)
   - CLASS OF SERVICE IN NIGHT MODE (P3)
   - CLASS OF RESTRICTION IN DAY MODE (P4)
   - CLASS OF RESTRICTION IN NIGHT MODE (P5)

```
CMC=252
P1: 14   P4: 1
P2: 1    P5: 3
P3: 3
```

2.166

# Programming Toll and Multi-Digit/ Restriction Area and Office Code Restriction Assignments

**GTE**

## DESCRIPTION

- DEFINES AREA CODE AND OFFICE CODE RESTRICTIONS FOR OUTGOING TRUNK GROUPS TO CONTROL TOLL EXPENSES AND PREVENT TELEPHONE ABUSE.
- RESTRICTED AREA CODES AND OFFICE CODES MUST BE DETERMINED AND ASSIGNED TO AREA CODE, OFFICE CODE, AND AREA/OFFICE CODE TABLE. THESE TABLES ARE ASSIGNED TO CLASS OF RESTRICTION ON AN ALLOWED OR DENIED BASIS.
- SYSTEM BLOCKS ANY CALLS PLACED TO RESTRICTED AREA CODES OR OFFICE CODES.
- SYSTEM CAPACITY IS TOTAL OF 1000 AREA AND OFFICE CODES IN COMBINED RESTRICTION TABLES.

## PROCEDURE

1. USE CMC-411 TO ESTABLISH TOLL AND OPERATOR CALL RESTRICTION NUMBERS:
   - RESTRICTION GROUP NUMBER (P1)
   - CLASS OF RESTRICTION
   - FLAG IDENTIFICATION VALUE (P3)**
   - FLAG VALUE (P4)**

   ```
   CMC=411
   P1: 3  P4: 0
   P2: 1
   P3: 1
   ```

2. USE CMC-413 TO DEFINE AREA CODES TO BE INCLUDED IN RESTRICTION TABLE:
   - RESTRICTION GROUP NUMBER (P1)
   - CLASS OF RESTRICTION (P2)
   - CALLS ALLOWED/DENIED FLAG (P3)*
   - AREA CODE (P4)

   NOTE:  REPEAT ABOVE STEPS TO ASSIGN OTHER AREA CODES.

   ```
   CMC=413
   P1: 1   P4: 301
   P2: 3
   P3: 0
   ```

*ALLOW OR DENY FLAG AFFECTS ALL AREA AND OFFICE CODES WHICH PREVIOUSLY HAVE BEEN ASSIGNED TO RESTRICTION TABLE. MOST RECENT SETTING OVERRIDES EARLIER SETTINGS.

# Programming Toll and Multi-Digit Restriction/ Area/Office Code Restriction Assignment

GTE

*GTE OMNI SBCS*

| PROCEDURE | (Continued)

3.
USE CMC-412 TO DEFINE OFFICE CODES TO BE INCLUDED IN RESTRICTION TABLE:
* RESTRICTION GROUP NUMBER (P1)
* CLASS OF RESTRICTION (P2)
* CALLS ALLOWED/DENIED FLAG (P3)*
* OFFICE CODE (P4)

NOTE: REPEAT ABOVE STEPS TO ADD OTHER OFFICE CODES.

```
CMC=412
P1: 1    P4: 279
P2: 3
P3: 1
```

4. USE CMC-414 TO DEFINE COMBINED OFFICE AND AREA CODES TO BE INCLUDED IN RESTRICTION TABLE:
* RESTRICTION GROUP NUMBER (P1)
* CLASS OF RESTRICTION (P2)
* CALLS ALLOWED/DENIED FLAG (P3)*
* AREA CODE (P4)
* OFFICE CODE (P5)

```
CMC=414
P1: 2   P4: 301
P2: 6   P5: 270
P3: 1
```

NOTE: REPEAT STEPS TO ADD OTHER COMBINED OFFICE AND AREA CODES.

*ALLOW OR DENY FLAG AFFECTS ALL AREA AND OFFICE CODES WHICH PREVIOUSLY HAVE BEEN ASSIGNED TO RESTRICTION TABLE. MOST RECENT SETTING OVERRIDES EARLIER SETTINGS.

**REFER TO OMNI SBCS GTEP MANUAL, CMC TABLE FOR LIST OF FLAG IDENTIFICATION NUMBERS AND FLAG VALUES.

# Programming Toll and Multi-Digit Restriction/Dial Group, Restriction Group and NO/1X Office Code Assignment

**GTE**

*GTE OMNI SBCS*

## DESCRIPTION

- CMC-400 ASSIGNS DIALING GROUP AND RESTRICTION GROUP NUMBERS TO DESIGNATED TRUNK GROUP NUMBERS.

- CMC-401 IDENTIFIES CUSTOMER TOLL PREFIX CODES AND OPERATOR TOLL PREFIX CODES WITH TRUNK DIAL GROUP NUMBERS. DEFAULT SETTING FOR CUSTOMER TOLL PREFIX IS 1+. DEFAULT SETTING FOR OPERATOR TOLL PREFIX IS 0+.

- CMC-402 PROVIDES ASSIGNMENT FOR THOSE AREAS WHICH REQUIRE A PROGRAMMED NO/1X OFFICE CODE DUE TO CONFLICTING OFFICE AND AREA CODES (E.G., LOS ANGELES, CHICAGO, NEW YORK, ETC.)

## PROCEDURE

1. USE CMC-400 TO ASSIGN:
   - TRUNK GROUP NUMBER (P1)
   - DIAL GROUP NUMBER (P2)
   - TOLL RESTRICTION GROUP NUMBER (P3)

2. USE CMC-401 TO ASSIGN:
   - DIAL GROUP NUMBER (P1)
   - CUSTOMER TOLL PREFIX CODE (P2)
   - OPERATOR TOLL PREFIX CODE (P3)

   NOTE:   UP TO THREE DIAL GROUPS MAY BE ASSIGNED.

3. USE CMC-402 TO ASSIGN NO/1X OFFICE CODE:
   - TOLL PREFIX REQUIRED (P1)
   - DIAL GROUP NUMBER (P2)
   - REGISTRATION DIGIT FLAG (P3)
   - REGISTRATION DIGITS (P4)

---

CMC=400
P1: 13
P2: 1
P3: 2

---

CMC=401
P1: 2
P2: 1
P3: 0

---

CMC=402
P1: 1   P4: 312
P2: 2
P3: 1

# Programming Toll and Multi-Digit Restriction/SCC Restriction Assignment

**GTE**

*GTE OMNI SBCS*

## DESCRIPTION

- DEFINES SCC ACCESS CODE RESTRICTION TABLE AND ASSIGNS TABLE TO RESTRICTION GROUPS BASED ON CLASS OF RESTRICTION.

- UP TO 10 CARRIER ACCESS CODES MAY BE ASSIGNED TO EACH COR.

## PROCEDURE

1. IF APPLICABLE USE CMC-415 TO ASSIGN/REMOVE:
   - RESTRICTION GROUP NUMBER (P1)
   - CLASS OF RESTRICTION (P2)
   - CARRIER ACCESS CODE (P3)

```
CMC=415
P1: 2
P2: 3
P3: 10288
```

2.170

# Programming Toll and Multi-Digit Restriction/CMC Command Summary

**GTE**

*GTE OMNI SBCS*

| CATEGORY | CMC TABLE | FUNCTION |
|---|---|---|
| ● TRUNK RESTRICTION | CMC 105 | ASSIGNS TRUNK RESTRICTION TO COR |
| ● STATION CLASS OF RESTRICTION | CMC 202 | ASSIGNS COR TO STATIONS FOR DAY/NIGHT MODE |
| ● TRUNK CLASS OF RESTRICTION | CMC 252 | ASSIGNS COR TO TRUNKS FOR DAY/NIGHT MODE |
| ● TRUNK DIALING GROUP/ RESTRICTION GROUP ASSIGNMENT | CMC 400 | ASSIGNS DIALING GROUP AND RESTRICTION GROUP NUMBERS TO TRUNK GROUP NUMBERS |
| ● TOLL PREFIX AND OPERATOR ACCESS CODE ASSIGNMENT | CMC 401 | ASSIGNS CUSTOMER TOLL PREFIX AND OPERATOR TOLL PREFIX TO TRUNK DIAL GROUP NUMBERS |
| ● NO/1X OFFICE CODE ASSIGNMENT | CMC 402 | ASSIGNS NO/1X OFFICE CODE TO IDENTIFY EITHER OFFICE OR AREA CODE CORRESPONDING TO DIAL GROUP NUMBER |
| ● TOLL AND OPERATOR CALL RESTRICTION ASSIGNMENT | CMC 411 | ASSIGNS TOLL AND OPERATOR RESTRICTION NUMBERS |
| ● OFFICE CODE RESTRICTION | CMC 412 | ASSIGNS OFFICE CODE RESTRICTIONS FOR OUTGOING TRUNK GROUPS |
| ● AREA CODE RESTRICTION | CMC 413 | ASSIGNS AREA CODE RESTRICTIONS FOR OUTGOING TRUNK GROUPS |
| ● AREA/OFFICE CODE RESTRICTION | CMC 414 | ASSIGNS AREA/OFFICE CODE RESTRICTIONS FOR OUTGOING TRUNK GROUPS |
| ● CARRIER ACCESS CODE RESTRICTION | CMC 415 | DEFINES CARRIER ACCESS CODE RESTRICTION TABLE |

2.171

# Laboratory Activity — Multi-Digit Restriction Programming (Continued)

**GTE**

*GTE OMNI SBCS*

PERFORM THE FOLLOWING PROGRAMMING TASKS IN THE SEQUENCE OUTLINED BELOW USING
THE SAMPLE WORK ORDERS AND IN ACCORDANCE WITH THE GTE OMNI SBCS GTEP MANUAL.
COMPLETE THE REVIEW EXERCISE QUESTIONS PERTAINING TO MULTI-DIGIT RESTRICTION
PROGRAMMING UPON COMPLETION OF THIS LABORATORY SETTING.

| WORK ORDER #2.9 | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER #2.9 (TASK #1) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

**TASKS:**

• Reassign trunk circuits to trunk group numbers with CMC-250.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Reassign each of the following trunks to the designated trunk group and type of trunk using CMC-250:<br><br>    EN 160 to TGN 31 (TIE 1)<br>    EN 161 to TGN 32 (TIE 2)<br>    EN 170 to TGN 33 (TIE 3)<br>    EN 171 to TGN 34 (TIE 4)<br><br><br>    NOTE: Existing trunks must be removed before new values can be added. | (1) Perform programming changes for trunks required for Multi-digit restriction laboratory activity.<br><br>(2) Check/test the operation of changes after completion of this portion of the laboratory activity.<br><br>(3) Proceed to next work order task. |

2.172

# Laboratory Activity — Multi-Digit Restriction Programming (Continued)

**GTE**

**GTE OMNI SBCS**

| WORK ORDER #2.9 | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER 2.9 (TASK #2) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

TASKS:

- Assign station directory numbers to Class of Restriction with CMC-202.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Assign the following stations to the following designated COR levels:<br><br>DN = 212 to COR 1<br><br>DN = 215 to COR 2<br><br>DN = 208 to COR 3 | (1) Perform programming changes for Multi-digit Restriction.<br><br>(2) Check-test the operation of changes after completion of this portion of the laboratory activity.<br><br>(3) Proceed with next work order task. |

# Laboratory Activity — Multi-Digit Restriction Programming (Continued)

| WORK ORDER #2.9 |
|---|

| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
|---|---|
| LOCATION:        RESTON, VIRGINIA | WORK ORDER 2.9 (TASK #3) |
| ORIGINATOR:        TELECOMMUNICATIONS MANAGER | |

**TASKS:**

- Assign trunk group numbers to dial groups and restriction groups with CMC-400.

- Assign customer toll prefix and operator access codes to dial groups with CMC-401.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1)  Assign TGN 13 to dialing group number 1 and restriction group number 1 using CMC-400. | (1)  Perform programming changes for Multi-digit Restriction. |
| (2)  Assign CTP 1 and OTP 0 to dialing group number 1. | (2)  Check/test the operation of this portion of the laboratory activity. |
|  | (3)  Proceed with next work order task. |

2.174

# Laboratory Activity — Multi-Digit Restriction Programming (Continued)

**GTE**

*GTE OMNI SBCS*

| WORK ORDER #2.9 | |
|---|---|
| **COMPANY NAME:** NU SYSTEM CO. | **PHONE #:** (703) 555-1212 |
| **LOCATION:** RESTON, VIRGINIA | **WORK ORDER 2.9 (TASK #4)** |
| **ORIGINATOR:** TELECOMMUNICATIONS MANAGER | |

**TASKS:**

- Assign toll restrictions to a restriction group and assign the restriction groups to a Class of Restriction with CMC-411.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Assign the following toll restrictions and COR levels to the following designated restriction groups:<br><br>RGN = 1  COR = 1  FLAG ID = 1  FLAG VALUE = 0<br>RGN = 1  COR = 1  FLAG ID = 2  FLAG VALUE = 0<br>RGN = 1  COR = 1  FLAG ID = 3  FLAG VALUE = 0<br>RGN = 1  COR = 1  FLAG ID = 4  FLAG VALUE = 1<br>RGN = 1  COR = 1  FLAG ID = 5  FLAG VALUE = 0<br>RGN = 1  COR = 1  FLAG ID = 6  FLAG VALUE = 0<br>RGN = 1  COR = 1  FLAG ID = 7  FLAG VALUE = 1<br><br>RGN = 1  COR = 2  FLAG ID = 1  FLAG VALUE = 1<br>RGN = 1  COR = 2  FLAG ID = 2  FLAG VALUE = 1<br>RGN = 1  COR = 2  FLAG ID = 3  FLAG VALUE = 0<br>RGN = 1  COR = 2  FLAG ID = 4  FLAG VALUE = 0<br>RGN = 1  COR = 2  FLAG ID = 5  FLAG VALUE = 0<br>RGN = 1  COR = 2  FLAG ID = 6  FLAG VALUE = 0<br>RGN = 1  COR = 2  FLAG ID = 7  FLAG VALUE = 0 | (1) Perform programming changes for Multi-Digit Restriction. |

# Laboratory Activity — Multi-Digit Restriction Programming (Continued)

**GTE**

| WORK ORDER #2.9 |
| --- |

| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| --- | --- |
| LOCATION:　　RESTON, VIRGINIA | WORK ORDER 2.9 (TASK #4 — Continued) |
| ORIGINATOR:　　TELECOMMUNICATIONS MANAGER | |

**TASKS:**

- **WORK ORDER #2.8, TASK #4 (Continued)**

| PARAMETERS: | INSTRUCTIONS: |
| --- | --- |
| RGN = 1 COR = 3　FLAG ID = 1　FLAG VALUE = 1<br>RGN = 1 COR = 3　FLAG ID = 2　FLAG VALUE = 1<br>RGN = 1 COR = 3　FLAG ID = 3　FLAG VALUE = 1<br>RGN = 1 COR = 3　FLAG ID = 4　FLAG VALUE = 0<br>RGN = 1 COR = 3　FLAG ID = 5　FLAG VALUE = 1<br>RGN = 1 COR = 3　FLAG ID = 6　FLAG VALUE = 0<br>RGN = 1 COR = 3　FLAG ID = 7　FLAG VALUE = 0 | (2) Check/test the operation of changes after completion of this portion of the laboratory activity.<br><br>(3) Proceed with next work order task. |

# Laboratory Activity — Multi-Digit
# Restriction Programming (Continued)

| WORK ORDER #2.9 |
|---|

| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
|---|---|
| LOCATION: RESTON, VIRGINIA | WORK ORDER 2.9 (TASK #5) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

**TASKS:**

- Establish office code restriction table with CMC-412.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Within restriction group number 1, COR 1, deny office codes 258, 494, 491, 428, 778, 235, and 243. | (1) Perform programming changes for Multi-digit Restriction. |
| (2) Within restriction group number 1, COR 2, allow office codes 490, 491, 494, 258, 353, 428, 670, and 748. | (2) Check/test the operation of after completion of this portion of the laboratory activity. |
| (3) Within restriction group number 1, COR 3, deny office code 555. | (3) Proceed with next work order task. |

# Laboratory Activity — Multi-Digit
# Restriction Programming (Continued)

GTE

GTE OMNI SBCS

| WORK ORDER #2.9 |
|---|

| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
|---|---|
| LOCATION:    RESTON, VIRGINIA | WORK ORDER 2.9 (TASK #6) |
| ORIGINATOR:    TELECOMMUNICATIONS MANAGER | |

**TASKS:**

- Establish area code restriction tables with CMC-413.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Within restriction group number 1, COR 1, deny area codes 703, 304, 213, 301, 302, and 609. <br><br> (2) Within restriction group number 1, COR 2, allow area codes 304, 302, 804, 215, and 703. | (1) Perform programming changes for Multi-digit Restriction. <br><br> (2) Check/test the operation of changes after completion of this portion of the laboratory activity. <br><br> (3) Proceed with next work order task. |

2.178

# Laboratory Activity — Multi-Digit
# Restriction Programming (Continued)

## WORK ORDER #2.9

| | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER 2.9 (TASK #7) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

TASKS:

● Establish combination area/office code restriction tables with CMC-414.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) With restriction group number 1, COR 2, deny area code 304 and office code 490. | (1) Perform programming changes for Multi-digit Restriction. |
| (2) Within restriction group number 1, COR 1, allow area code 703 and office codes 771, 777, and 327. | (2) Check/test the operation of changes after completion of this portion of the laboratory activity. |
| | (3) Complete review exercise questions. |

### LAB MILESTONE:

● VERIFY THAT ALL PROGRAMMING CHANGES REQUESTED IN WORK ORDERS HAVE
   BEEN PERFORMED CORRECTLY.

   ● ASK INSTRUCTOR TO INSPECT STATION PROGRAMMING CHANGES AND INITIAL
   YOUR PERFORMANCE CHECKLIST.

   ● MAKE CERTAIN QUESTIONS 1-10 OF REVIEW EXERCISE 2.9 HAVE BEEN COMPLETED
   BEFORE SUBMITTING THE REVIEW EXERCISE TO THE INSTRUCTOR FOR GRADING.

# Review Exercise — Toll and Multi-Digit Restriction (2.9)

INSTRUCTIONS: THE FOLLOWING EXERCISE CONSISTS OF MULTIPLE CHOICE, TRUE/FALSE, FILL IN THE BLANK, OR MATCHING TYPE QUESTIONS. ALL AVAILABLE RESOURCES (I.E. STUDENT WORKBOOK, NOTES, AND GTEP MANUAL) MAY BE USED AS REFERENCES. SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

1. ASSIGNED RESTRICTION TABLES MUST BE _____ OR _____ THROUGH CLASS OF RESTRICTION.

2. DESIGNATED TRUNKS GROUP NUMBERS ARE ASSIGNED TO DAY AND NIGHT COR LEVELS WITH CMC- _____ .

3. A MAXIMUM OF _____ AREA AND OFFICE CODES ARE ALLOWED IN THE SYSTEM'S COMBINED RESTRICTION TABLES.

4. WHAT CMC COMMANDS, PARAMETERS AND SETTINGS WOULD REQUIRE ENTRY TO ALLOW INTERNATIONAL, TOLL ASSISTANCE, AND LONG DISTANCE DIRECTORY?

   _____

   _____

5. THE DEFAULT SETTING FOR CUSTOMER TOLL PREFIX IS _____ AND FOR OPERATOR PREFIX IS _____ .

6. AREA CODES AND OFFICE CODES ARE SELECTED IN RESTRICTION TABLES BASED ON THE KEY PARAMETERS, _____ AND _____ .

7. (TRUE OR FALSE) _____ WHEN ASSIGNING OFFICE AND AREA CODE RESTRICTION TABLES, THE MOST RECENT SETTING FOR A RESTRICTION GROUP OVERRIDES ALL PREVIOUS SETTINGS.

8.  WHAT CMC COMMAND, PARAMETERS, AND SETTINGS WOULD BE REQUIRED TO ASSIGN 916 & 418 AS OFFICE CODES?

    _____

    _____

9.  MATCH EACH OF THE FOLLOWING CMC COMMANDS WITH ITS CORRECT DEFINITION:

    _____ CMC-105          A.  TRUNK COS/COR ASSIGNMENT

    _____ CMC-252          B.  OFFICE CODE RESTRICTION ASSIGNMENT

    _____ CMC-400          C.  AREA/OFFICE CODE RESTRICTION ASSIGNMENT

    _____ CMC-401          D.  ASSIGN A TOLL PREFIX CODE

    _____ CMC-402          E.  TOLL AND OPERATOR CALL RESTRICTION ASSIGNMENT

    _____ CMC-411          F.  AREA CODE RESTRICTION ASSIGNMENT

    _____ CMC-412          G.  NO/1X OFFICE CODE ASSIGNMENT

    _____ CMC-413          H.  TRUNK DIALING GROUP/RESTRICTION GROUP ASSIGNMENT

    _____ CMC-414          I.  TRUNK RESTRICTION

# DATA BASE ADMINISTRATION
## Programming Least Cost Routing

# 2.10   Enabling Objective

GTE

*GTE OMNI SBCS*

**GIVEN:**
- GTE OMNI SBCS
- GTE OMNI SBCS PERIPHERALS
- PORTABLE MAINTENANCE PANEL
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- LABORATORY ACTIVITY — LEAST COST ROUTING PROGRAMMING
- REVIEW EXERCISE

**ACTION:**
- USE OMNI SBCS PROGRAMMING TOOLS AND EQUIPMENT TO:
  - CREATE AREA CODE, OFFICE CODE, AND COMBINED AREA/OFFICE CODE ROUTE TABLES INCLUDING DESIRED ROUTE SELECTION SEQUENCE, DESIGNATED TRUNK GROUPS, AND DIALING PATTERN.
  - IDENTIFY AND ASSIGN APPROPRIATE CARRIER ACCESS CODES FOR OUTGOING LCR CONNECTIONS.
- COMPLETE REVIEW EXERCISE.

**CRITERIA:**
- DEMONSTRATION OF ABOVE TASKS IN ACCORDANCE WITH PROCEDURES OUTLINED IN OMNI SBCS GTEP MANUAL AND OMNI SBCS STUDENT WORKBOOK
- REVIEW EXERCISE WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

2.183

# Programming Least Cost Routing ═══ GTE

*GTE OMNI SBCS*

## DESCRIPTION

- ALLOWS SYSTEM TO SELECT MOST ECONOMICAL TRUNK ROUTE FOR OUTGOING CALLS (BASED ON OUTSIDE NUMBER DIALED).

- STORES AND EXAMINES EACH DIALED NUMBER AND CHECKS AREA AND/OR OFFICE CODES TO SELECT MOST APPROPRIATE TRUNK FROM LCR ROUTE TABLE.

- PROVIDES 15 ROUTE TABLES FOR DEFINING TRUNK GROUPS BASED ON AREA CODES OR COMBINED AREA/OFFICE CODES AND ANOTHER 15 ROUTE TABLES FOR OFFICE CODES - 10 SELECTION SEQUENCES CAN BE REGISTERED FOR EACH ROUTE TABLE.

- CALLING STATION'S CLASS OF SERVICE DETERMINES THE LCR ROUTES.

- TOLL AND MULTI-DIGIT RESTRICTION APPLY TO OUTGOING CALLS USING LCR.

## PROCEDURE

1. USE CMC-421 TO ESTABLISH AREA CODE ROUTE TABLE
   - AREA CODE ROUTE TABLE NUMBER (P1)
   - ROUTE SELECTION SEQUENCE (P2)
   - DESIGNATED TRUNK GROUP NUMBER (P3)*
   - DIGIT COMPOSING (DIALING PATTERN) FLAG (P4)**

```
CMC = 421
P1: 2      P4: 1
P2: 1
P3: 25
```

2. USE CMC-423 TO ASSIGN LCR AREA CODE TO ROUTE TABLE NUMBER:
   - AREA CODE ROUTE TABLE NUMBER (P1)
   - (THREE DIGIT) AREA CODE FOR AREA CODE ROUTE TABLE (FOR CMC-421) (P2)

```
CMC = 423
P1: 2
P2: 213
```

3. USE CMC-420 TO ESTABLISH OFFICE CODE ROUTE TABLE:
   - OFFICE CODE ROUTE TABLE NUMBER (P1)
   - ROUTE SELECTION SEQUENCE (P2)
   - DESIGNATED TRUNK GROUP NUMBER (P3)*
   - DIGIT COMPOSING (DIALING PATTERN) FLAG (P4)**

```
CMC = 420
P1: 2      P4: 3
P2: 1
P3: 14
```

\*    REFER TO CMC TABLE, OMNI SBCS GTEP MANUAL, FOR LIST OF TRUNK GROUPS NUMBERS.
\*\*   REFER TO CMC TABLE, OMNI SBCS GTEP MANUAL, FOR LIST OF FLAG VALUE DENITIONS.

# Programming Least Cost Routing

**GTE**

**GTE OMNI SBCS**

PROCEDURE (CONTINUED)

4.  USE CMC-422 TO ASSIGN LCR OFFICE CODE FOR ROUTE TABLE NUMBER:
    - DESIGNATED OFFICE CODE ROUTE TABLE NUMBER (FOR CMC-420) (P1)
    - THREE-DIGIT OFFICE CODE (P2)

    CMC = 422
    P1: 2
    P2: 273

5.  USE CMC-424 TO ASSIGN LCR AREA/OFFICE CODE TO AREA/OFFICE CODE ROUTE
    TABLE NUMBER:
    - DESIGNATED AREA/OFFICE CODE ROUTE TABLE NUMBER (FOR
      CMC-421) (P1)
    - THREE-DIGIT AREA CODE (P2)
    - THREE-DIGIT OFFICE CODE (P3)

    CMC = 424
    P1: 3
    P2: 614
    P3: 486

6.  USE CMC-425 TO ASSIGN CARRIER ACCESS CODES WHEN OUTGOING
    CONNECTIONS ARE MADE BY LCR:
    - CARRIER ACCESS CODE (P1)*
    - DESIGNATED 5-DIGIT CARRIER ACCESS NUMBER (P2)

    CMC = 425
    P1: 1
    P2: 10288

\* REFER TO CMC TABLE, OMNI SBCS GTEP MANUAL, FOR APPROPRIATE CODE.

# Programming Least Cost Routing/CMC
## Command Summary

| CATEGORY | CMC TABLE | FUNCTION |
|---|---|---|
| • LCR OFFICE CODE ROUTE SELECTION | 420 | DEFINES OFFICE CODE ROUTE SEQUENCE |
| • LCR AREA AND AREA/ OFFICE CODE ROUTE SELECTION | 421 | DEFINES AREA CODE ROUTE SEQUENCE |
| • LCR OFFICE CODE ASSIGNMENT | 422 | DEFINES OFFICE CODE TABLE |
| • LCR AREA CODE ASSIGNMENT | 423 | DEFINES AREA CODE TABLE |
| • LCR AREA/OFFICE CODE ASSIGNMENT | 424 | DEFINES AREA/OFFICE CODE TABLE |
| • LCR CARRIER ACCESS CODE ASSIGNMENT | 425 | DEFINES SCC ACCESS CODE TABLE |

# Laboratory Activity — Least Cost Routing Programming

**GTE**

PERFORM THE FOLLOWING PROGRAMMING TASKS IN THE SEQUENCE OUTLINED BELOW USING THE SAMPLE WORK ORDERS AND IN ACCORDANCE WITH THE GTE OMNI SBCS GTEP MANUAL. COMPLETE THE REVIEW EXERCISE QUESTIONS PERTAINING TO LEAST COST ROUTING PROGRAMMING UPON COMPLETION OF THIS LABORATORY ACTIVITY.

| WORK ORDER #2.10 | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION:    RESTON, VIRGINIA | WORK ORDER #2.10 (TASK #1) |
| ORIGINATOR:    TELECOMMUNICATIONS MANAGER | |

**TASKS:**

- Build LCR Office code route tables with CMC-420.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Establish office code route table numbers for following trunk group numbers including designated selection sequence and digit composing flag: | (1) Perform programming changes for Least Cost Routing. |
| | (2) Check/test the operation of changes after completion of this portion of the laboratory activity. |
| Office Code Route Table 1 — Selection Sequence=1 TGN=19 Flag=3<br>Selection Sequence=2 TGN=32 Flag=3<br>Selection Sequence=3 TGN=31 Flag=3 | |
| Office Code Route Table 2 — Selection Sequence=1 TGN=32 Flag=3<br>Selection Sequence=2 TGN=33 Flag=3<br>Selection Sequence=3 TGN=31 Flag=3<br>Selection Sequence=4 TGN=19 Flag=3 | (3) Proceed to next work order task. |

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# Laboratory Activity — Least Cost Routing Programming (Continued)

**GTE**

*GTE OMNI SBCS*

| WORK ORDER #2.10 |
|---|

| | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION:     RESTON, VIRGINIA | WORK ORDER #2.10 (TASK #2) |
| ORIGINATOR:     TELECOMMUNICATIONS MANAGER | |

**TASKS:**

- Assign office codes to route tables with CMC-422.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Assign the following office codes to the designated office code route table:<br><br>Office Code Route Table 1     Office Codes = 490, 491, and 494<br><br>Office Code Route Table 2     Office Codes = 258, 353, 428, 670, 753, 843, and 870 | (1) Perform programming changes for Least Cost Routing.<br><br>(2) Check/test the operation of changes after completion of this portion of the laboratory activity.<br><br>(3) Proceed to next work order task. |

# Laboratory Activity — Least Cost Routing Programming (Continued)

**GTE**

GTE OMNI SBCS

| WORK ORDER #2.10 | |
|---|---|
| **COMPANY NAME:** NU SYSTEM CO. | **PHONE #:** (703) 555-1212 |
| **LOCATION:** RESTON, VIRGINIA | **WORK ORDER #2.10 (TASK #3)** |
| **ORIGINATOR:** TELECOMMUNICATIONS MANAGER | |

**TASKS:**

- Build LCR area code route tables with CMC-421.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Establish area code route numbers for following trunk group numbers including designated selection sequence and digit composing flag: | (1) Perform programming changes for Least Cost Routing. |
| | (2) Check/test the operation of changes after completion of this portion of the laboratory activity. |
| Area Code Route Table 1 — Selection Sequence=1 TGN=33 Flag=10<br>Selection Sequence=2 TGN=32 Flag=10<br>Selection Sequence=3 TGN=19 Flag=10 | (3) Proceed to next work order task. |
| Area Code Route Table 2 — Selection Sequence=1 TGN=25 Flag=10<br>Selection Sequence=2 TGN=29 Flag=10<br>Selection Sequence=3 TGN=34 Flag=10<br>Selection Sequence=4 TGN=33 Flag=10<br>Selection Sequence=5 TGN=19 Flag=10 | |
| Area Code Route Table 3 — Selection Sequence=1 TGN=19 Flag=10 | |

2.189

# Laboratory Activity — Least Cost Routing Programming (Continued)

GTE

GTE OMNI SBCS

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## WORK ORDER #2.10

| | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION:     RESTON, VIRGINIA | WORK ORDER #2.10 (TASK #4) |
| ORIGINATOR:     TELECOMMUNICATIONS MANAGER | |

**TASKS:**

- Assign exceptions to area/office code route tables with CMC-423.

---

**PARAMETERS:**

(1) Assign following area code exceptions to designated area code route table numbers.

Area Code Route Table 1     Area Codes = 301, 302, 304, and 804.

Area Code Route Table 2     Area Codes = 609, 212, 718, 215, 415, and 213.

**INSTRUCTIONS:**

(1) Perform programming changes for Least Cost Routing.

(2) Check/test the operation of changes after completion of this portion of the laboratory activity.

(3) Proceed to next work order task.

# Laboratory Activity — Least Cost Routing Programming (Continued)

| WORK ORDER #2.10 |
|---|

| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
|---|---|
| LOCATION:      RESTON, VIRGINIA | WORK ORDER #2.10 (TASK #5) |
| ORIGINATOR:      TELECOMMUNICATIONS MANAGER | |

**TASKS:**

    •  Assign combined office/area code route tables with CMC-424.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1)  Assign the following office/area codes to the designated area/office code table:<br><br>    Area/Office      Area Code = 703<br>    Code Route      Office Codes = 771, 777, and 327<br>    Table 1 | (1)  Perform programming changes for Least Cost Routing.<br><br>(2)  Check/test the operation of changes after completion of this portion of the laboratory activity.<br><br>(3)  Complete review exercise questions 1-10. |

| LAB MILESTONE: |
|---|
| •  VERIFY THAT ALL PROGRAMMING CHANGES REQUESTED IN WORK ORDERS HAVE BEEN PERFORMED CORRECTLY.<br><br>•  ASK INSTRUCTOR TO INSPECT LEAST COST ROUTING PROGRAMMING CHANGES AND INITIAL YOUR PERFORMANCE CHECKLIST.<br><br>•  MAKE CERTAIN QUESTIONS 1-10 OF REVIEW EXERCISE 2.10 HAVE BEEN COMPLETED BEFORE SUBMITTING THE REVIEW EXERCISE TO THE INSTRUCTOR FOR GRADING. |

# Review Exercise — Least Cost Routing (2.10)

INSTRUCTIONS: THE FOLLOWING EXERCISE CONSISTS OF MULTIPLE CHOICE, TRUE/FALSE, FILL IN THE BLANK, OR MATCHING TYPE QUESTIONS. ALL AVAILABLE RESOURCES (I.E., STUDENT WORKBOOK, NOTES, AND GTEP MANUAL) MAY BE USED AS REFERENCES. SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

1. LEAST COST ROUTING STORES AND SELECTS TRUNK ROUTE BASED ON: _____
   - A) AVAILABILITY
   - B) LCR ROUTE TABLE
   - C) CALLING STATION'S COS
   - D) ALL OF THE ABOVE
   - E) NONE OF THE ABOVE

2. LCR PROVIDES _____ AREA CODE OR COMBINED AREA/OFFICE CODE ROUTE TABLES AND _____ OFFICE CODE ROUTE TABLES.

3. A MAXIMUM OF _____ TRUNK GROUP ALTERNATIVES MAY BE ASSIGNED TO EACH LCR ROUTE.

4. (TRUE OR FALSE) _____ TOLL AND MULTI-DIGIT RESTRICTION DO NOT APPLY TO LCR CALLS.

5. BEFORE ASSIGNING LCR OFFICE OR AREA CODES, LCR _____ MUST BE BUILT WITH CMC-420 AND 421.

6. WHAT PARAMETER WOULD YOU USE TO ASSIGN THE APPROPRIATE DIGIT COMPOSING FLAG WHEN BUILDING AN OFFICE OR AREA ROUTE TABLE WITH CMC-420 AND 421? _____

7. OFFICE AND AREA CODES MAY BE ASSIGNED TO _____ WITH CMC-422 AND CMC-423.

8. WHAT CMC COMMANDS, PARAMETERS, AND SETTINGS WOULD BE REQUIRED TO ESTABLISH AREA CODE ROUTE TABLE NUMBER 1 FOR A CO TRUNK USING AREA CODES 614, 317, and 201?

_____

_____

_____

_____

_____

_____

9. WHICH COS LEVELS WOULD ALLOW ACCESS TO ALL ROUTES IN THE LCR TABLES? _____

10. MATCH EACH OF THE FOLLOWING CMC COMMANDS WITH ITS CORRECT DESCRIPTION:

_____ CMC-420    A. LCR AREA CODE ASSIGNMENT

_____ CMC-421    B. LCR OFFICE CODE ASSIGNMENT

_____ CMC-422    C. LCR AREA AND AREA/OFFICE CODE ROUTE SELECTION ASSIGNMENT

_____ CMC-423    D. LCR CARRIER ACCESS CODE ASSIGNMENT

_____ CMC-424    E. LCR AREA/OFFICE CODE ASSIGNMENT

_____ CMC-425    F. LCR OFFICE CODE ROUTE SELECTION ASSIGNMENT

# DATA BASE ADMINISTRATION
## Programming Special System Configurations

# 2.11 Enabling Objective

**GTE OMNI SBCS**

GIVEN:
- GTE OMNI SBCS
- GTE OMNI SBCS PERIPHERALS
- PORTABLE MAINTENANCE PANEL
- GTE OMNI SBS COURSE AND SITE DOCUMENTATION PACKAGE
- LABORATORY ACTIVITY — SPECIAL SYSTEM CONFIGURATION PROGRAMMING
- REVIEW EXERCISE

ACTION:
- USE OMNI SBCS PROGRAMMING TOOLS AND EQUIPMENT TO:
  - MODIFY SYSTEM PARAMETERS TO ACCOMMODATE FRONT-END ARRANGEMENT WHERE OMNI SBCS FUNCTIONS BEHIND A PABX.
  - ASSIGN TENANT SERVICE CONFIGURATION.
  - ESTABLISH AN OFF-PREMISE EXTENSION.
  - MODIFY SYSTEM TANDEM TRUNK SWITCHING FOR NETWORK APPLICATIONS.
- COMPLETE REVIEW EXERCISE.

CRITERIA:
- DEMONSTRATION OF ABOVE TASKS IN ACCORDANCE WITH PROCEDURES OUTLINED IN OMNI SBCS GTEP MANUAL AND OMNI SBCS STUDENT WORKBOOK
- REVIEW EXERCISE WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

# Programming Special System Configurations/
# SBCS Behind a PABX

## DESCRIPTION

- SBCS CAN FUNCTION AS A STANDALONE COMMUNICATION SYSTEM OR AS A FRONT-END SYSTEM BEHIND OTHER SWITCHING EQUIPMENT, SUCH AS A PABX.

- SOME SYSTEM PARAMETER VALUES MAY REQUIRE RESETTING TO ACCOMMODATE CONFIGURATIONS POSSIBLE WITH A FRONT-END ARRANGEMENT.

## PROCEDURE

REFER TO CMC-100 TO COORDINATE FEATURE ACCESS NUMBERING PLANS FOR BOTH SYSTEMS AND CMC-200 TO COORDINATE STATION NUMBERING PLANS.

1. USE CMC-250 TO MODIFY TRUNK ASSIGNMENT DATA:
   - EQUIPMENT NUMBER (P1)
   - TYPE OF TRUNK (P2)
   - TRUNK GROUP NUMBER (P3)
   - OPERATION MODE (P4)
   - SIGNALING (P5)
   - START MODE/ZONE NUMBER (P6)

```
CMC = 250
P1: 182   P4: 3
P2: 6     P5: 1
P3: 13    P6: 1
```

2. USE CMC-254 TO MODIFY TRUNK ROUTE TIMING SO THAT SBCS FLASH TIMING VALUE MATCHES HOST PABX:
   - TRUNK GROUP NUMBER (P1)
   - ROUTE TIMING IDENTIFICATION NUMBER (P2)
   - NORMALIZED TIMING (P3)

```
CMC = 254
P1: 13
P2: 12
P3: 5
```

3. USE CMC-400 TO MODIFY TRUNK DIALING GROUP NUMBERS AND RESTRICTION GROUP ASSIGNMENTS:
   - TRUNK GROUP NUMBER (P1)
   - DIAL GROUP NUMBERS (P2 = BLANK)
   - TOLL RESTRICTION GROUP NUMBER (P3 = BLANK)

```
CMC = 400
P1: 13
P2:
P3:
```

# Programming Special System Configurations/ Tenant Assignments

## DESCRIPTION

- ALLOWS SBCS TO BE SHARED BY AS MANY AS FIVE TENANTS. TENANTS MAY USE OWN STATIONS AND/OR TRUNKS, BUT SHARE COMMON CONTROL LOGIC, POWER SUPPLY, ATTENDANT CONSOLE, AND SERVICE TRUNKS.

- STATIONS AND TRUNKS (EXCEPT TIE TRUNKS) ARE ASSIGNED TO TENANT NUMBERS SO EACH TENANT CAN ACCESS OWN TRUNKS. TENANTS SHARE SAME FEATURE ACCESS CODE AND STATION NUMBERING PLAN.

- THREE TYPES OF TENANT TRUNK SHARING DESIGNATIONS ARE AVAILABLE:

  - OUTGOING/INCOMING TENANT (NO TRUNK SHARING WITH OTHER TENANTS)
  - OUTGOING ONLY TENANT (SHARING INCOMING TRUNKS WITH OTHER TENANTS)
  - INCOMING ONLY TENANT (SHARING OUTGOING TRUNKS WITH OTHER TENANTS)

- STATION MESSAGE DETAIL RECORDING (SMDR) OUTPUT CAN BE RECORDED BY TENANT NUMBERS. FIFTH TENANT IS INDICATED BY CORRESPONDING "BLANK" OUTPUT FOR TENANT NUMBER REFERENCE.

# Programming Special System Configurations/ Tenant Assignment

## PROCEDURE

1. USE CMC-201 TO ASSIGN TENANT NUMBERS TO STATIONS:
   - STATION DIRECTORY NUMBER (P1)
   - OPERATION MODE (P2)
   - TYPE OF DIALING (P3)
   - TENANT NUMBER (P4)
   - METERING GROUP NUMBER FOR SMDR (P5)

   > CMC = 201
   > P1: 236   P4: 2
   > P2: 1     P5:
   > P3: 3

2. IF APPLICABLE, USE CMC-102 TO SELECT:
   - FLAG NUMBER (P1)
   - SET VALUE (P2)

   > CMC = 102
   > P1: 1
   > P2: 1

3. USE CMC-251 TO ASSIGN TENANT NUMBERS TO TRUNKS:
   - EQUIPMENT NUMBER (P1)
   - DIAL MODE/BREAK RATIO (P2)
   - TRUNK DIRECTORY NUMBER (P3)
   - TENANT NUMBER (P4)

   > CMC = 251
   > P1: 161   P4: 3
   > P2: 5
   > P3: 3

4. USE CMC-503 TO ASSIGN SMDR OUTPUT FOR TENANTS:
   - TENANT NUMBER (P1)
   - OUTPUT IDENTIFICATION FLAG (P2)

   > CMC = 503
   > P1: 2
   > P2: 1

# Programming Special System Configurations/
# Off-Premises Extension (OPX)

GTE

## DESCRIPTION

- ALLOW CONNECTION TO THE SBCS SYSTEM OF SINGLE-LINE TELEPHONE INSTRUMENTS LOCATED AT OFF-PREMISES LOCATION.

- CUSTOMER PROVIDED LOOP EXTENDER MUST BE INSTALLED TO EXTEND STATION LINES AND TO PROTECT PUBLIC SWITCHED NETWORK, IF THE IMPEDANCE OF THE PHONE EXCEEDS THE LOOP LIMIT OF THE SYSTEM.

- OFF PREMISES EXTENSION (OPX) EQUIPMENT IS MOUNTED AND POWERED EXTERNALLY TO OMNI SBCS CABINET.

- RINGING PATTERN FOR OPX STATIONS IS FIXED AND DEFAULT PATTERN IS STATION RINGING PATTERN.

## PROCEDURE*

1. USE CMC-200 TO ASSIGN OPX EQUIPMENT NUMBER TO STATION DIRECTORY NUMBER.
   - EQUIPMENT NUMBER (P1)
   - DIRECTORY NUMBER (P2)
   - TYPE OF TERMINAL (P3)
   - COPIED STATION DIRECTORY NUMBER (P4)

```
CMC = 200
P1: 015    P4:
P2: 346
P3: 1
```

2. USE CMC-204 TO IDENTIFY DIRECTORY NUMBER AS OPX EXTENSION:
   - STATION NUMBER (P1)
   - DATA SECURE (P2)
   - OFF-PREMISES EXTENSION (P3)
   - SLT WITH MESSAGE WAITING LAMP (P4)

```
CMC = 204
P1: 346    P4: 0
P2: 0
P3: 1
```

3. USE CMC-102 TO CHANGE RINGING PATTERN:
   - FLAG NUMBER (P1) — (FLAGS 2 AND 9)
   - SET VALUE (P2)

```
CMC = 102
P1: 2
P2: 2
```

* ASSUMES INSTALLATION OF SINGLE-LINE TELEPHONE INSTRUMENT AND LOOP EXTENDER AND PHYSICAL CONNECTION OF OPX LINE TO DESIRED CIRCUIT ON 8SLC CARD.

# Programming Special System Configuration/ GTE
## CMC Command Summary

*GTE OMNI SBCS*

| CATEGORY | CMC TABLE | FUNCTION |
|---|---|---|
| ● SBCS BEHIND A PABX | CMC-250 | MODIFY TRUNK ASSIGNMENT DATA |
| | CMC-254 | MODIFY TRUNK ROUTE TIMING ASSIGNMENT |
| | CMC-400 | MODIFY TRUNK DIALING ASSIGNMENT |
| ● TENANT ASSIGNMENT | CMC-201 | ASSIGN TENANT NUMBERS TO STATIONS |
| | CMC-251 | ASSIGN TENANT NUMBERS TO TRUNKS |
| | CMC-503 | ASSIGN SMDR OUTPUT FOR TENANTS |
| ● OFF-PREMISE EXTENSION | CMC-200 | ASSIGN OPX EQUIPMENT NUMBER TO STATION DIRECTORY NUMBER |
| | CMC-204 | IDENTIFY DIRECTORY NUMBER AS OPX EXTENSION |
| | CMC-102 | CHANGE RINGING PATTERN FOR OPX FIXED RINGING |

# Student Notes

GTE

# Laboratory Activity — Programming Special System Configurations

**GTE**

*GTE OMNI SBCS*

PERFORM THE FOLLOWING PROGRAMMING TASKS IN THE SEQUENCE OUTLINED BELOW USING THE SAMPLE WORK ORDERS AND IN ACCORDANCE WITH THE GTE OMNI SBCS GTEP MANUAL. COMPLETE THE REVIEW EXERCISE QUESTIONS PERTAINING TO SPECIAL SYSTEM CONFIGURATIONS UPON COMPLETION OF THIS LABORATORY ACTIVITY.

---

### WORK ORDER #2.11

| | |
|---|---|
| COMPANY NAME:  NU SYSTEM CO. | PHONE #:  (703) 555-1212 |
| LOCATION:  RESTON, VIRGINIA | WORK ORDER #2.11 (TASK #1) |
| ORIGINATOR:  TELECOMMUNICATIONS MANAGER | |

TASKS:
  • Perform necessary system modifications required to program OMNI SBCS behind a host PABX with CMC-100, CMC-254, CMC-400, and CMC-300.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Modify the OMNI SBCS flash timing value to .500 seconds using CMC-254. Change P3 to value of 5. | (1) Verify that there are no numbering conflicts in feature access for the OMNI SBCS or the host PABX, using CMC-100. Examine station numbering plan for conflicts and make appropriate changes with CMC-200. |
| (2) Change the trunk dialing group and restriction group numbers with CMC-400. Ensure that P2 and P3 are blank. | (2) Perform programming changes for special system configuration. |
| (3) Change any system speed calling directory numbers with CMC-300 to conform to host system. Ensure that access code (P2) is 9 and send number (P3) begins with 9#. | (3) Check/test the operation of changes after completion of this portion of the laboratory activity. |
| | (4) Proceed to next work order task. |

# Laboratory Activity — Programming Special System Configurations (Continued)

| WORK ORDER #2.11 |
|---|

| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
|---|---|
| LOCATION: RESTON, VIRGINIA | WORK ORDER #2.11 (TASK #2) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

TASKS:

* Assign tenant assignments with CMC-201, CMC-102, and CMC-251.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Assign stations to tenant numbers with CMC-201 using the following groups: | (1) Perform programming changes for special system configuration. |
| | (2) Check/test the operation of changes after completion of this portion of the laboratory activity. |
| | (3) Proceed to next work order task. |

| Station DN | Tenant Group |
|---|---|
| 308 | 1 |
| 215 | 1 |
| 212 | 1 |
| 214 | 2 |
| 216 | 2 |
| 223 | 2 |

(2) Select "own trunk for outgoing - share incoming trunks" option with CMC-102.

(3) Assign trunk equipment number to tenant group 1 and trunk equipment number to tenant group 2 with CMC-251.

(4) If SMDR has been installed, indicate that tenant groups 1 and 2 will require output with CMC-503.

# Laboratory Activity — Programming
# Special System Configurations
# (Continued)

| WORK ORDER #2.11 |
|---|

| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
|---|---|
| LOCATION: RESTON, VIRGINIA | WORK ORDER #2.11 (TASK #3) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

**TASKS:**

- Perform programming required for single line station designated as off-premises extension with CMC-200, CMC-204, and CMC-102.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Verify the OPX equipment number 027 has been assigned to the SLT instrument (directory number 223) using CMC-200. | (1) Ensure that off-premises SLT instrument and customer provided loop extender are physically installed.<br>NOTE: Above verification is not required for this lab activity since lab activity simulates OPX installation and actually uses an on-site SLT. |
| (2) Identify above station as OPX station using CMC-204 (P3). | |
| (3) Change ringing pattern for OPX station using CMC-102 (P2, flag 2) from station call ringing (default) to incoming call ringing. | (2) Perform programming changes for special system configuration. |
| | (3) Check/test the operation of changes after completion of this portion of the laboratory activity. |
| | (4) Complete review exercise questions 1 - 10. |

LAB MILESTONE:

- VERIFY THAT ALL PROGRAMMING CHANGES REQUESTED IN WORK ORDERS HAVE BEEN PERFORMED CORRECTLY.

- ASK INSTRUCTOR TO INSPECT SPECIAL SYSTEM CONFIGURATIONS PROGRAMMING AND INITIAL YOUR PERFORMANCE CHECKLIST.

- MAKE CERTAIN QUESTIONS 1-10 OF REVIEW EXERCISE 2.11 HAVE BEEN COMPLETED BEFORE SUBMITTING TO THE INSTRUCTOR FOR GRADING.

# Review Exercise — Special System Configurations (2.11)

**GTE**

*GTE OMNI SBCS*

INSTRUCTIONS: THE FOLLOWING EXERCISE CONSISTS OF MULTIPLE CHOICE, TRUE/FALSE, FILL IN THE BLANK, OR MATCHING TYPE QUESTIONS. ALL AVAILABLE RESOURCES (I.E. STUDENT WORKBOOK, NOTES, AND GTEP MANUAL) MAY BE USED AS REFERENCES. SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

1. EXPLAIN WHY IT IS NECESSARY TO EXAMINE TABLES FOR CMC-100 AND CMC-200 WHEN INSTALLING AN OMNI SBCS BEHIND A PABX. _____

   _____

2. HOW WOULD YOU INCREASE THE OMNI SBCS FLASH TIMING VALUE WITH CMC-254? _____

   _____

   _____

3. WHY WOULD YOU LEAVE THE PARAMETERS FOR TRUNK DIAL GROUP NUMBER AND TOLL RESTRICTION GROUP BLANK WHEN MODIFYING CMC-400 TO ALLOW FOR THE OMNI SBCS BEHIND A PABX? _____

   _____

   _____

# Review Exercise — Special System Configurations (2.11) (Continued)

GTE OMNI SBCS

4. THE SYSTEM WILL ALLOW A MAXIMUM OF _____ TENANT GROUPS FOR STATIONS AND TRUNKS.

5. WHAT PROGRAMMING WOULD BE REQUIRED TO ALLOW TENANTS TO HAVE THEIR OWN INCOMING AND OUTGOING TRUNKS?

_____

_____

_____

6. WHAT ADDITIONAL CUSTOMER PROVIDED EQUIPMENT IS REQUIRED FOR OPX INSTALLATION? WHY?

_____

_____

_____

7. WHAT PROCEDURE(S) COULD BE USED TO CHANGE THE DEFAULT STANDARD RINGING PATTERN FOR AN OPX STATION?

_____

_____

_____

8. OPX STATIONS INTERFACE TO THE OMNI SBCS THROUGH A _____ CARD.

# Review Exercise — Special System Configurations (2.11) (Continued)

*GTE*

*GTE OMNI SBCS*

9.  WHAT PARAMETER AND SETTING IS REQUIRED FOR CMC-204 FOR DESIGNATING AN OPX STATION?

    _____

    _____

10. MATCH EACH OF THE FOLLOWING CMC COMMANDS WITH ITS CORRECT DEFINITION:

    _____  CMC-100    A.  TRUNK DIALING GROUP AND RESTRICTION GROUP ASSIGNMENT

    _____  CMC-102    B.  TRUNK DATA ASSIGNMENT

    _____  CMC-200    C.  SYSTEM PARAMETER ASSIGNMENT

    _____  CMC-201    D.  DATA SECURITY AND OPX ASSIGNMENT

    _____  CMC-204    E.  TRUNK GROUP ROUTE TIMING ASSIGNMENT

    _____  CMC-251    F.  SMDR TENANT SCREENING

    _____  CMC-254    G.  STATION DIRECTORY NUMBER ASSIGNMENT

    _____  CMC-400    H.  NUMBERING PLAN ASSIGNMENT

    _____  CMC-503    I.  STATION DATA ASSIGNMENT

2.207

GTE

*GTE OMNI SBCS*

# DATA BASE ADMINISTRATION
## Save/Load Procedures

# 2.12 Enabling Objective

*GTE OMNI SBCS*

**GIVEN:**
- GTE OMNI SBCS
- GTE OMNI SBCS PERIPHERALS
- PORTABLE MAINTENANCE PANEL
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- LABORATORY ACTIVITY — SAVING AND LOADING OFFICE DEPENDENT DATA BASE ODDB)
- REVIEW EXERCISE

**ACTION:**
- USE OMNI SBCS PROGRAMMING TOOLS AND EQUIPMENT TO:
  - SAVE OFFICE DEPENDENT DATA BASE TO TAPE.
  - LOAD OFFICE DEPENDENT DATA BASE FROM TAPE.
  - SAVE OFFICE DEPENDENT DATA BASE TO FLOPPY DISKETTE.
  - LOAD OFFICE DEPENDENT DATA BASE FROM TAPE.
- COMPLETE REVIEW EXERCISE.

**CRITERIA:**
- DEMONSTRATION OF ABOVE TASKS IN ACCORDANCE WITH PROCEDURES OUTLINES IN OMNI SBCS GTEP MANUAL AND OMNI SBCS STUDENT WORKBOOK
- REVIEW EXERCISE WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

# Saving Office Dependent
# Data Base to Tape

## DESCRIPTION

- AFTER PROGRAMMING CHANGES, CUSTOMIZED DATA BASE OR OFFICE DEPENDENT DATA BASE (ODDB) STORED IN THE OMNI SBCS SYSTEM MAIN MEMORY MUST BE STORED TO A PMP MICROCASSETTE.

- TIME REQUIRED TO WRITE ODDB TO TAPE IS DEPENDENT UPON SIZE OF ODDB AND LINE SPEED.

- SAVE PROCEDURE WILL NOT INTERRUPT CALL PROCESSING IF OPERATING AT LESS THAN 1200 BITS PER SECOND.

- SAVE PROCEDURE CANNOT BE PERFORMED USING MASTER CONTROL TELEPHONE.


## PROCEDURE

1. USE CMC-903 TO SAVE ODDB TO PMP TAPE:
   - VERIFICATION (P1)
     a. ENTER: **SAVE**
     b. **PRESS ADD/CHANGE.** SCREEN WILL PROMPT.

        *SAVE PROCESS
        SET DATA TAPE
        HIT PF9 TO START

     c. INSERT A BLANK 60 MINUTE MICROCASSETTE INTO THE TAPE DRIVE. (PMP WILL AUTOMATICALLY REWIND TAPE IF NECESSARY).
     d. **PRESS PF9 (SHIFT + PF4).** SCREEN WILL DISPLAY MESSAGE THAT SAVE PROCESS HAS BEGUN:

        *SAVE PROCESS
        START

2.210

# Saving Office Data Base
# to Tape (Continued)

e.  THEN SCREEN WILL DISPLAY TAPE DATE INCLUDING SAVED DATE, TAPE VERSION, AND VOLUME SERIAL NUMBER:

```
*SAVE PROCESS
SAVED DATE NN/DD/YY
TAPE VER xxx/VOL xx
```

f.  WHEN SAVE PROCESS IS COMPLETED, THE SCREEN WILL DISPLAY:

```
*SAVE PROCESS
COMPLETION
```

ERRORS

- IF ODDB BACKUP TAPE HAS NOT BEEN INSERTED OR IF TAPE IS OVERWRITE PROTECTED, SCREEN WILL DISPLAY:

```
*SAVE PROCESS
TAPE DOES NOT EXIST
SEE DATA TAPE
HIT PF9 TO START
```

  INSERT TAPE OR BREAK OVERWRITE TAPE. REPEAT STEP 5 AND CONTINUE PROCEDURE.

- IF TAPE ENDS BEFORE SAVE PROCESS IS COMPLETED, SCREEN WILL DISPLAY:

```
*SAVE PROCESS
DATA TAPE END
CHANGE DATA TAPE
HIT PF9 TO START
```

  ATTEMPT TO LOAD TAPE AGAIN OR INSERT ANOTHER TAPE. REPEAT STEP 5 TO RESTART THE SAVE PROCESS.

# Saving Office Data Base
# to Tape (Continued)

GTE

GTE OMNI SBCS

- IF RELEASE (PF1) KEY IS ACCIDENTALLY PRESSED, SAVE PROCESS WILL BE INTERRUPTED AND SCREEN WILL DISPLAY:

```
*SAVE PROCESS

QUIT
```
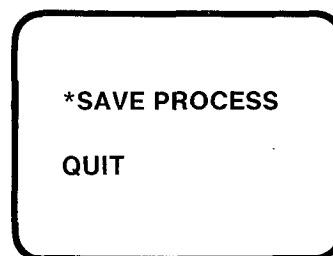
BEGIN SAVE PROCEDURE AGAIN FROM STEP a.

# Loading Office Dependent
# Data Base From Tape

**GTE**

## DESCRIPTION

- TIME REQUIRED TO LOAD ODDB FROM TAPE IS DEPENDENT UPON SIZE OF ODDB AND LINE SPEED.
- <u>ALL CALL PROCESSING STOPS DURING LOADING PROCESS.</u>
- AFTER COMPLETION OF LOADING PROCESS, OMNI SBCS AUTOMATICALLY INITIATES HOT RESTART.

## PROCEDURE

NOTE:   BECAUSE CALL PROCESSING STOPS DURING LOADING PROCESS, CHECK CALL STATUS WITH DSS/BLF CONSOLE AND WAIT UNTIL CALLS ARE COMPLETED. IF LOADING RE-QUIREMENT IS URGENT, INTERRUPT CALLS THROUGH EXECUTIVE OVERRIDE FEATURE AND WARN USERS THAT CALL PROCESSING SERVICE WILL BE INTERRUPTED.

1.  USE CMC-904 TO VERIFY TAPE VERSION AGAINST OMNI SBCS SYSTEM SOFTWARE VERSION.
    - VERSION IDENTIFICATION NUMBER (P1)

2.  USE CMC-902 TO LOAD ODDB FROM PMP TAPE TO SYSTEM MEMORY.
    - VERIFICATION (P1)

    a.   ENTER:  **LOAD**
    b.   **PRESS ADD/CHANGE.** SCREEN WILL PROMPT:
    
    > *LOAD PROCESS
    > SET DATA TAPE
    > HIT PF9 TO START

    c.   INSERT ODDB MICROCASSETTE TAPE. ENSURE THAT TAPE IS REWOUND.

# Loading Office Dependent Data Base
# From Tape (Continued)

d.  **PRESS PF9 (SHIFT** + **PF4).** CALL PROCESSING NOW IS INTERRUPTED. SCREEN WILL DISPLAY:

> *LOAD PROCESS
> START

THEN SCREEN WILL DISPLAY TAPE DATA INCLUDING SAVED DATE, TAPE VERSION, AND VOLUME SERIAL NUMBER:

> *LOAD PROCESS
> SAVED DATE NN/DD/YY
> TAPE VER xxx/VOL.xx
> HIT PF9 TO START

e.  **PRESS PF9 (SHIFT** + **PF4)** TO START LOADING PROCESS.

f.  WHEN LOAD PROCESS IS COMPLETED, THE SYSTEM WILL AUTOMATICALLY INITIATE A HOT RESTART. THE SCREEN WILL DISPLAY:

> *LOAD PROCESS
> COMPLETION

g.  CONFIRM HOT RESTART BY VERIFYING THAT "SECURITY CODE=" IS DISPLAYED ON SCREEN. **MANUALLY HOT RESTART SYSTEM** (CPM CARD TOGGLE SWITCH DOWN WHILE PRESSING RESTART BUTTON) IF SYSTEM FAILS TO HOT RESTART AUTOMATICALLY.

h.  THE TIMER OVERFLOW LAMP WILL BE ON. **ENTER CMC-801 AND READ OUT ALL FAULTS.** LAMP WILL BE TURNED OFF WHEN FAULT LISTING IS COMPLETED.

i.  THE SCREEN MAY DISPLAY "NO TRANSMISSION" IF PMP HAS BEEN UNATTENDED FOLLOWING LOADING OF ODDB TAPE. THIS INDICATES THAT COMMUNICATION CHANNEL BETWEEN PMP AND OMNI SBCS HAS BEEN IDLE. **PRESS ANY ALPHABETIC KEY TO STOP MESSAGE.**

2.214

ERRORS

- IF ODDB TAPE VERSION DOES NOT MATCH OMNI SBCS SOFTWARE VERSION,, THE SCREEN WILL DISPLAY:

  ```
  *LOAD PROCESS
  BAD TAPE/SF VER xxx
  CHANGE DATA TYPE
  HIT PF9 TO START
  ```

  CHANGE TAPE AND **PRESS PF9 (SHIFT + PF4).** REPEAT STEP D AND CONTINUE PROCEDURE.

- IF INSERTED TAPE IS NOT ODDB TAPE, THE SCREEN WILL DISPLAY:

  ```
  *LOAD PROCESS
  BAD TAPE
  CHANGE DATA TAPE
  HIT PF9 TO START
  ```

  CHANGE TAPE AND PRESS PF9 (SHIFT + PF4). REPEAT STEP D AND CONTINUE PROCEDURE.

- IF ODDB TAPE VOLUME SERIAL NUMBER IS NOT CORRECT, THE SCREEN WILL DISPLAY:

  ```
  *LOAD PROCESS
  ILLEGAL VOL XX
  CHANGE DATA TAPE
  HIT PF9 TO START
  ```

  CHANGE TAPE AND **PRESS PF9 (SHIFT + PF4).** REPEAT STEP d AND CONTINUE PROCEDURE.

- IF TAPE ENDS BEFORE LOAD PROCESS IS COMPLETED, SCREEN WILL DISPLAY:

  ```
  *LOAD PROCESS
  DATA TAPE ENDS
  CHANGE DATA TAPE
  HIT PF9 TO START
  ```

  CHANGE TO NEXT TAPE AND **PRESS PF9 (SHIFT + PF4).** REPEAT STEP d TO RESTART LOAD PROCESS.

# Loading Office Dependent Data Base
# From Tape (Continued)

- IF A DEVICE ERROR OCCURS, SCREEN WILL DISPLAY:

```
*LOAD PROCESS
HARD ERROR
CHANGE DATA TAPE
HIT PF9 TO START
```

CHANGE TAPE AND **PRESS PF9 (SHIFT** + **PF4)** TO CONTINUE.

- IF RELEASE (PF1) KEY IS ACCIDENTALLY PRESSED, LOAD PROCESS WILL BE INTERRUPTED AND SCREEN WILL DISPLAY:

```
*LOAD PROCESS
QUIT
```

BEGIN LOAD PROCEDURE AGAIN FROM STEP a.

# Saving and Loading Office Dependent Data Base to Floppy Diskette

**GTE**

*GTE OMNI SBCS*

## DESCRIPTION

- FLOPPY DISKETTES CAN SIGNIFICANTLY REDUCE TIME REQUIRED FOR ODDB BACKUP AND LOADING.

- AN EPSON TF-20 FLOPPY DISKETTE DRIVE UNIT IS USED IN CONJUNCTION WITH PORTABLE MAINTENANCE PANEL.

- SAVING AND LOADING OPERATING PROCEDURE IS SIMILAR TO PROCEDURE FOR PMP MICROCASSETTES.

- ONE SAVE FLOPPY DISKETTE CAN HOLD ONE COMPLETE OMNI SBCS DATA BASE BACKUP USING A SEQUENTIAL FILE.

- SAVE FLOPPY DISKETTE MUST BE INITIALIZED OR HAVE BEEN USED PREVIOUSLY FOR A BACKUP OPERATION. SAVE DATA ON DISKETTE USED PREVIOUSLY WILL BE WRITTEN OVER BY NEW BACKUP DATA.

## PROCEDURE

1. TO CONFIGURE AND CONNECT TF-20 FLOPPY DISKETTE DRIVE TO PORTABLE MAINTENANCE PANEL:
   - ENSURE THAT PMP IS EQUIPPED WITH EXPANSION RAM (EXPANSION UNIT H20EU).
   - SET BIT 4 OF PMP'S DIP SWITCH TO ON. DIP SWITCH IS LOCATED WELL INSIDE AND TO LEFT AS VIEWED WHEN OPENING LID OF BOTTOM PANEL.
   - ENSURE THAT PMP AND TF-20 POWER SWITCHES ARE OFF BEFORE INSERTING OR REMOVING CONNECTORS.
   - USING A NUMBER 707 CABLE, CONNECT THE PMP SERIAL INTERFACE CONNECTOR TO THE TF-20 TOP (6- PIN) SERIAL INTERFACE CONNECTOR LOCATED ON REAR OF TF-20.
   - PMP CAN NOW BE CONNECTED TO OMNI SBCS PORT WITH RS-232-C CONNECTOR.

2. TO OPERATE FLOPPY DISKETTE UNIT —

   FIRST POWER ON TF-20 FLOPPY DISKETTE DRIVE:
   - ENSURE THAT PUSHBUTTON IS OFF.
   - INSERT FLOPPY DISKETTE INTO DISKETTE DRIVE.
   - ALWAYS TURN TF-20 POWER SWITCH ON BEFORE TURNING PMP POWER SWITCH TO ON. WHEN DISCONNECTING, TURN PMP POWER SWITCH OFF, THEN TURN TF-20 POWER SWITCH TO OFF.

---

| PROCEDURE | (CONTINUED)

TO LOAD FLOPPY DISKETTE:
- ENSURE THAT PUSHBUTTON IS OFF.
- INSERT FLOPPY DISKETTE INTO DRIVE, WITH WRITE-PROTECTION NOTCH UP (STANDARD LABEL AT RIGHT).
- PUSH FLOPPY DISKETTE IN UNTIL A CLICK IS HEARD AND EJECT LOCK LEVER POPS OUT.
- SLOWLY DEPRESS PUSHBUTTON TO TURN DRIVE ON.

TO EJECT FLOPPY DISKETTE:
- ENSURE THAT DRIVE SELECT LED IS OFF FOR DRIVE CONTAINING FLOPPY DISKETTE. IF STILL ON, INPUT CLOSE OR RESET COMMAND.
- DEPRESS PUSHBUTTON UNTIL IT POPS INTO OFF POSITION. FLOPPY DISKETTE WILL BE EJECTED 2 TO 3 CM.
- SLOWLY REMOVE FLOPPY DISKETTE FROM DRIVE.

4. TO START PMP WITH FLOPPY DISKETTE DRIVE UNIT:
- TURN TF-20 POWER SWITCH ON.
- INSERT TF-20 SYSTEM DISKETTE (EPSON TF-20 DISK BASIC) INTO DRIVE A SLOT OF TF-20. ENSURE THAT DRIVE SELECT LED BLINKS TO INDICATE THAT DISK OPERATING SYSTEM (DOS) IS STARTING.
- TURN PMP POWER SWITCH ON. ENSURE THAT DRIVE SELECT LED BLINKS AGAIN, TO INDICATE THAT DISKETTE BASIC HAS BEEN BOOTED ON THE PMP.
- PORT CONFIGURATION PROMPT SCREEN WILL BE DISPLAYED ON SCREEN:

```
PORT CONFIGURATION
CHANGE?

YES OR NO (Y/N)
```

PROCEDURE (CONTINUED)

5. TO INITIALIZE NEW FLOPPY DISKETTE FOR BACKUP:
   - WHEN PORT CONFIGURATION SCREEN IS DISPLAYED, PRESS PMP's BREAK KEY. ENTER: 2 TO SELECT BASIC MODE.
   - INSERT FLOPPY DISKETTE TO BE INITIALIZED IN DRIVE A OF TF-20 UNIT.
   - USING PMP, ENTER: **FORMAT "A". PRESS RETURN.** SCREEN WILL PROMPT, "ARE YOU SURE?"
   - **PRESS RETURN** TO FORMAT DISKETTE

6. TO SAVE OFFICE DEPENDENT DATA BASE TO FLOPPY DISKETTE:
   - PUT PMP INTO COMMAND MODE.
   - ENTER CMC-903 (SVR 1.5.X.X) OR CMC 703 (SVR 1.0.2.2)
   - AT PARAMETER 1, ENTER: **SAVE** AND **PRESS ADD/CHANGE** PROGRAM FUNCTION KEY
   - INSERT FLOPPY DISKETTE FOR BACKUP INTO DRIVE B OF TF-20 UNIT. ALSO ENSURE THAT A BLANK FLOPPY DISKETTE IS IN DRIVE A.
   - **PRESS PF9 (SHIFT + PF4)** PROGRAM FUNCTION KEY.

7. TO LOAD OFFICE DEPENDENT DATA BASE FROM FLOPPY DISKETTE:
   - PUT PMP INTO COMMAND MODE.
   - ENTER CMC-902 (SVR 1.5.X.X.) OR CMC-702 (SVR 1.0.2.2).
   - AT PARAMETER 1, ENTER: LOAD AND PRESS ADD/CHANGE PROGRAM FUNCTION KEY.
   - INSERT FLOPPY DISKETTE WITH BACKUP OF DATA BASE INTO DRIVE B OF TF-20 UNIT. ALSO ENSURE THAT A BLANK FLOPPY DISKETTE IS IN DRIVE A.
   - **PRESS PF9 (SHIFT + PF4)** PROGRAM FUNCTION KEY.
   - ENSURE THAT CORRECT SAVE DATE AND FILE VERSION ARE DISPLAYED ON SCREEN. **PRESS PF 9 (SHIFT + PF4)** PROGRAM FUNCTION KEY.

# Laboratory Activity — Saving and Loading the Office Dependent Data Base

PERFORM THE FOLLOWING DATA BASE TASKS IN THE SEQUENCE OUTLINED BELOW USING THE SAMPLE WORK ORDERS AND IN ACCORDANCE WITH THE GTE OMNI SBCS GTEP MANUAL. COMPLETE THE REVIEW EXERCISE QUESTIONS PERTAINING TO SAVING AND LOADING THE ODDB UPON COMPLETION OF THIS LABORATORY ACTIVITY.

---

### WORK ORDER #2.12

COMPANY NAME: NU SYSTEM CO.      PHONE #: (703) 555-1212

LOCATION: RESTON, VIRGINIA      WORK ORDER 2.12 (TASK #1)

ORIGINATOR: TELECOMMUNICATIONS MANAGER

TASKS:
- Save Office Dependent Data Base (programmed during previous data base lab activities) to microcassette tape with CMC-903.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Save ODDB to tape from system main memory using PMP tape drive. Follow instructions outlined in Student Workbook for operation of CMC-903. <br><br> (2) Label tape with contents and date that back-up tape was created. | (1) Ensure that blank microcassette tape is 60 minutes in length. <br><br> (2) Proceed to the next work order task. |

---

### LAB MILESTONE:

- ASK INSTRUCTOR TO INSPECT TAPE BACK-UP PROCEDURE AND INITIAL YOUR PERFORMANCE CHECKLIST.

- PROCEED TO THE NEXT WORK ORDER TASK.

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# Laboratory Activity — Saving and Loading the Office Dependent Data Base (Continued)

| WORK ORDER #2.12 |
|---|

| | |
|---|---|
| COMPANY NAME:   NU SYSTEM CO. | PHONE #:     (703) 555-1212 |
| LOCATION:   RESTON, VIRGINIA | WORK ORDER 2.12    (TASK #2) |
| ORIGINATOR:   TELECOMMUNICATIONS MANAGER | |

**TASKS:**

- Load Office Dependent Data Base (programmed during previous data base lab activities) from microcassette tape with CMC-902.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1)   LOAD ODDB from tape to system main memory using PMP tape drive. Use tape created during previous work order task. Follow instructions outlined in Student Workbook for operation of CMC-902. | (1)   Since all call processing stops during loading process, remember to check call status with BLF/DSS before proceeding with CMC-902, when performing an actual load at a customer site.  (2)   Proceed to the next work order task. |

**LAB MILESTONE:**

- ASK INSTRUCTOR TO INSPECT TAPE LOADING PROCEDURE AND INITIAL YOUR PERFORMANCE CHECKLIST.

- PROCEED TO THE NEXT WORK ORDER TASK.

# Laboratory Activity — Saving and Loading the Office Dependent Data Base (Continued)

| WORK ORDER #2.12 |
|---|

| | |
|---|---|
| COMPANY NAME:  NU SYSTEM CO. | PHONE #:    (703) 555-1212 |
| LOCATION:  RESTON, VIRGINIA | WORK ORDER #2.12  (TASK #3) |
| ORIGINATOR:    TELECOMMUNICATIONS MANAGER | |

**TASKS:**

- Save Office Dependent Data Base (programmed during previous data base lab activities) to floppy diskette with CMC-903.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Save ODDB to floppy diskette from system main memory using EPSON TF-20 floppy diskette drive in conjunction with PMP. Follow instructions outlined in Student Workbook for operation of CMC-903 using floppy diskette.<br><br>(2) Label diskette with contents and date that back-up diskette was created. | (1) Verify that TF-20 diskette drive and expansion RAM are correctly installed and connected to PMP.<br><br>(2) Initialize new floppy diskette before proceeding with back-up.<br><br>(3) Proceed to the next work order task. |

| LAB MILESTONE: |
|---|
| • ASK INSTRUCTOR TO INSPECT THE FLOPPY DISKETTE BACK-UP PROCEDURE AND INITIAL YOUR PERFORMANCE CHECKLIST.<br><br>• PROCEED TO THE NEXT WORK ORDER TASK. |

# Laboratory Activity — Saving and Loading the Office Dependent Data Base (Continued)

**GTE**

*GTE OMNI SBCS*

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### WORK ORDER #2.12

| | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER #2.12 (TASK #4) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

**TASKS:**

- Load Office Dependent Data Base (programmed during previous data base lab activities) from floppy diskette with CMC-902.

---

**PARAMETERS:**

(1) Load ODDB from flopy diskette to system main memory using EPSON TF-20 floppy diskette drive in conjunction with PMP. Use ODDB back-up diskette created during Work Order 2.13 (Task 3). Follow instructions outlined in Student Workbook for operation of CMC-902.

**INSTRUCTIONS:**

(1) Verify that TF-20 diskette drive and expansion RAM are correctly installed and connected to PMP.

(2) Complete review exercise questions 1-15.

---

### LAB MILESTONE

- Ask instructor to inspect the floppy diskette loading procedure and initial your performance checklist.

- Make certain questions 1-15 of review exercise 2.12 have been completed before submitting to the instructor for grading.

2.223

# Student Notes

# Review Exercise — Saving and Loading the Office Dependent Data Base (2.12)

GTE

GTE OMNI SBCS

INSTRUCTIONS: THE FOLLOWING EXERCISE CONSISTS OF MULTIPLE CHOICE, TRUE/FALSE, FILL IN THE BLANK, OR MATCHING TYPE QUESTIONS. ALL AVAILABLE RESOURCES (I.E., STUDENT WORKBOOK, NOTES, AND GTEP MANUAL) MAY BE USED AS REFERENCES. SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

1. WHAT FACTORS AFFECT THE LENGTH OF TIME REQUIRED TO SAVE THE ODDB TO TAPE?

   _____

   _____

2. MICROCASSETTE TAPES USED FOR BACK-UPS MUST BE AT LEAST ____ MINUTES IN LENGTH.

3. SAVING THE ODDB WITH CMC-903 CANNOT BE PERFORMED USING THE _____ PROGRAMMING INSTRUMENT.

4. IF THE TAPE ENDS BEFORE THE SAVE PROCESS IS COMPLETED, THE PMP SCREEN WILL DISPLAY:

   _____

   _____

5. WHAT OCCURS IF THE PF1 KEY (RELEASE) IS ACCIDENTALLY PRESSED DURING THE SAVE OPERATION?

   _____

   _____

   _____

   _____

6. ALL _____ STOPS DURING THE ODDB LOADING PROCESS.

7. WHAT IS INDICATED IF A "NO TRANSMISSION" MESSAGE IS RECEIVED ON THE PMP SCREEN FOLLOWING THE LOADING OF THE ODDB? _____ .

2.225

# Review Exercise — Saving and Loading the Office Dependent Data Base (2.12) (Continued)

*GTE OMNI SBCS*

8. THE SYSTEM AUTOMATICALLY INITIATES A _____ FOLLOWING THE LOADING OF THE ODDB TAPE.

9. IF THE ODDB TAPE VOLUME SERIAL NUMBER IS NOT CORRECT, THE PMP SCREEN WILL DISPLAY:

   _____

   _____

10. WHAT IS INDICATED IF THE MESSAGE "BAD TAPE/SF VER.XXX" IS DISPLAYED ON THE PMP SCREEN?

    _____

    _____

11. WHAT ADDITIONAL EQUIPMENT IS REQUIRED TO SAVE AND LOAD THE ODDB USING A FLOPPY DISKETTE?

    _____

12. WHAT PROCEDURE MUST BE PERFORMED BEFORE A NEW FLOPPY DISKETTE MAY BE USED?

    _____

    _____

13. THE OMNI SBCS REQUIRES _____ FLOPPY DISKETTES TO STORE A COMPLETE ODDB.

14. (TRUE OR FALSE): _____ SAVING AND LOADING THE ODDB WITH THE DISKETTE DRIVE (WHEN USING SVR 1.5.X.X) REQUIRES DIFFERENT CMC COMMANDS THAN THE TAPE BACK-UPS.

15. MATCH EACH OF THE FOLLOWING CMC COMMANDS WITH ITS CORRECT DEFINITION:

    _____  CMC-902    A.   LOAD ODDB TO SYSTEM MEMORY FROM TAPE OR FLOPPY DISKETTE.

    _____  CMC-903    B.   SAVE ODDB FROM SYSTEM MEMORY TO TAPE OR FLOPPY DISKETTE.

GTE

# DATA BASE ADMINISTRATION
## Implementation Forms

## 2.13  Enabling Objective

GTE

GIVEN
- GTE OMNI SBCS
- GTE OMNI SBCS PERIPHERALS
- PORTABLE MAINTENANCE PANEL
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- LABORATORY ACTIVITY — COMPLETING AND USING OMNI SBCS IMPLE-MENTATION FORMS PACKAGE
- REVIEW EXERCISE

ACTION:
- INTERPRET AND USE OMNI SBCS IMPLEMENTATION FORMS PACKAGE AS ESSENTIAL TOOL FOR SYSTEM CONFIGURATION AND DATA BASE ADMINISTRATION.
- COMPLETE REVIEW EXERCISE

CRITERIA:
- DEMONSTRATION OF ABOVE TASKS IN ACCORDANCE WITH PRO-CEDURES OUTLINED IN OMNI SBCS GTEP MANUAL AND OMNI SBCS STUDENT WORKBOOK.
- REVIEW EXERCISE WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

2.229

# Laboratory Activity — Implementation Package

**GTE**

*GTE OMNI SBCS*

PERFORM THE PROGRAMMING TASKS DESIGNATED BY THE COMPLETED SAMPLE IMPLEMENTATION FORMS ATTACHED TO THE WORK ORDER BELOW. COMPLETE THE REVIEW EXERCISE QUESTIONS PERTAINING TO THE IMPLEMENTATION FORMS PACKAGE UPON COMPLETION OF THIS LABORATORY ACTIVITY.

---

### WORK ORDER # 2.13

COMPANY NAME: NU SYSTEM CO.　　　　　　　　PHONE #:　(703) 555-1212

LOCATION: RESTON, VIRGINIA　　　　　　　　WORK ORDER # 2.13

ORIGINATOR: TELECOMMUNICATIONS MANAGER

TASKS:
- Reestablish the default standard data base with COLD Restart.
- Perform all data base modification required for tables and parameters outlined in the Implementation Forms Package.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Complete Implementation Forms Package following instructor's directions. | (1) Check/test the operation of changes after completion of this portion of the laboratory activity. |
| (2) Program all required data base changes using completed Implementation Forms Package. | (2) Complete review exercise questions 1-9. |

---

### LAB MILESTONE:

- VERIFY THAT ALL PROGRAMMING CHANGES REQUESTED ON IMPLEMENTATION FORMS HAVE BEEN PERFORMED CORECTLY.

- ASK INSTRUCTOR TO INSPECT DATA BASE MODIFICATIONS AND INITIAL YOUR PERFORMANCE CHECKLIST.

- MAKE CERTAIN ALL QUESTIONS OF REVIEW EXERCISE 2.13 HAVE BEEN COMPLETED BEFORE SUBMITTING THE REVIEW EXERCISE TO THE INSTRUCTOR FOR GRADING.

- YOU HAVE NOW COMPLETED THE DATA BASE ADMINISTRATION MODULE.

# Review Exercise — Implementation Forms Package (2.13)

INSTRUCTIONS: THE FOLLOWING EXERCISE CONSISTS OF MULTIPLE CHOICE, TRUE/FALSE, FILL IN THE BLANK, OR MATCHING TYPE QUESTIONS. ALL AVAILABLE RESOURCES (I.E., STUDENT WORKBOOK, NOTES, AND GTEP MANUAL) MAY BE USED AS REFERENCES. SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

1. THE IMPLEMENTATION FORMS PACKAGE PROVIDES: _____ .

   A. INFORMATION USED TO DETERMINE HARDWARE AND SOFTWARE FAULTS.
   B. A PERMANENT RECORD OF PROGRAMMING REQUIRED FOR CUSTOMER DATA BASE SPECIFICATIONS AT TIME OF INSTALLATION.
   C. A DESCRIPTION OF THE DEFAULT STANDARD DATA BASE
   D. A RECORD OF ALL PROGRAMMING CHANGES MADE AFTER LATER SVR UPGRADES.

2. THE _____ AND _____ IMPLEMENTATION FORMS ARE USED PRIMARILY TO PROVIDE GENERAL SYSTEM INFORMATION RATHER THAN USED AS PROGRAMMING TOOLS.

3. SYSTEM/STATION DIALING PATTERNS ARE PROGRAMMED USING THE _____ IMPLEMENTATION FORM(S).

4. A CUSTOMER WISHING TO DEFINE CLASS OF RESTRICTION FOR RESTRICTION GROUPS WOULD COMPLETE THE _____ IMPLEMENTATION FORM(S).

5. WHAT GTEP TABLE IS USED TO IDENTIFY TRUNK GROUP NUMBERS WHEN PROGRAMMING TRUNK ASSIGNMENTS?

_____

# Review Exercise — Implementation Forms Package (2.13) (Continued)

6. THE _____ IMPLEMENTATION FORM IS USED WHEN PROGRAMMING COMMON CARRIER ACCESS CODES FOR LEAST COST ROUTING IN AREAS WITH EQUAL ACCESS.

7. WHAT CMC COMMAND AND PARAMETER SETTINGS ARE REQUIRED WHEN PROGRAMMING THE AUTOMATIC INTERCOM FEATURE USING THE BLF/DSS FEATURE ASSIGNMENT FORM?

_____

8. NAME TWO TYPES OF IMFORMATION REQUIRED FOR STATION INSTALLATION ON THE SINGLE LINE STATION DETAIL FORM THAT ARE NOT RELATED TO DATA BASE PROGRAMMING. _____

_____

_____

9. MATCH THE FOLLOWING IMPLEMENTATION FORMS WITH THE TYPE OF INFORMATION INCLUDED ON EACH:

_____ MULTI-DIGIT/TOLL RESTRICTION FORM

_____ EKT FEATURE BUTTON ASSIGNMENT FORM

_____ SYSTEM SPEED CALL FORM

_____ STATION HUNTING GROUPS FORM

_____ SYSTEM OVERVIEW FORM

A. A MAXIMUM OF 100 PHONE NUMBERS PROGRAMMED FOR SYSTEM USE.

B. NO/1X AREA/OFFICE ASSIGNMENT TABLES

C. IDENTIFIES TYPE OF SBSC DEVICE USED TO PROGRAM THE SYSTEM

D. BUTTON ASSIGNMENTS

E. PILOT STATION ASSIGNMENT

2.232

# Student Notes

**GTE**

*GTE OMNI SBCS*

**GTE**

*GTE OMNI SBCS*

# MODULE III
# SYSTEM MAINTENANCE

# Table of Contents

Page

# Table of Contents (Continued)

**GTE**

*GTE OMNI SBCS*

# 3.0 Terminal Objective

*GTE OMNI SBCS*

GIVEN:
- GTE OMNI SBCS
- PORTABLE MAINTENANCE PANEL
- GTE OMNI SBCS PERIPHERALS
- STANDARD MAINTENANCE TOOLS
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- LABORATORY ACTIVITIES
- WRITTEN TEST

ACTION:
- ISOLATE AND IDENTIFY ROUTINE SYSTEM HARDWARE FAULTS.
- PERFORM ROUTINE DIAGNOSTICS ON SYSTEM AND PERIPHERAL DEVICES.
- COMPLETE AND PASS WRITTEN TEST.

CRITERIA:
- TROUBLESHOOTING AND DIAGNOSTIC PROCEDURES WILL BE COMPLETED IN ACCORDANCE WITH SBCS GTEP MANUAL.
- TEST WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

# SYSTEM MAINTENANCE
## Overview

**GTE**

*GTE OMNI SBCS*

| | |
|---|---|
| **GIVEN:** | • GTE OMNI SBCS<br>• PORTABLE MAINTENANCE PANEL<br>• GTE OMNI SBCS PERIPHERALS<br>• STANDARD MAINTENANCE TOOLS<br>• GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE<br>• REVIEW EXERCISE |
| **ACTION:** | • IDENTIFY SBCS MAINTENANCE TOOLS AND FUNCTIONS.<br>• DESCRIBE PREVENTIVE MAINTENANCE PROCEDURES FOR CABINET AND PERIPHERALS.<br>• DETERMINE SYSTEM STATUS THROUGH USE OF VISUAL INDICATORS SUCH AS CPM CONTROLS AND ALARMS. |
| **CRITERIA:** | • REVIEW EXERCISE WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION. |

# System Maintenance/Overview

OMNI SBCS EMPLOYS SIX TYPE OF MAINTENANCE FUNCTIONS:



PREVENTIVE MAINTENANCE

TROUBLESHOOTING

DIAGNOSTICS

ROUTINE MAINTENANCE

TRAFFIC MEASUREMENT

SUPPORT

OMNI SBCS

3.4
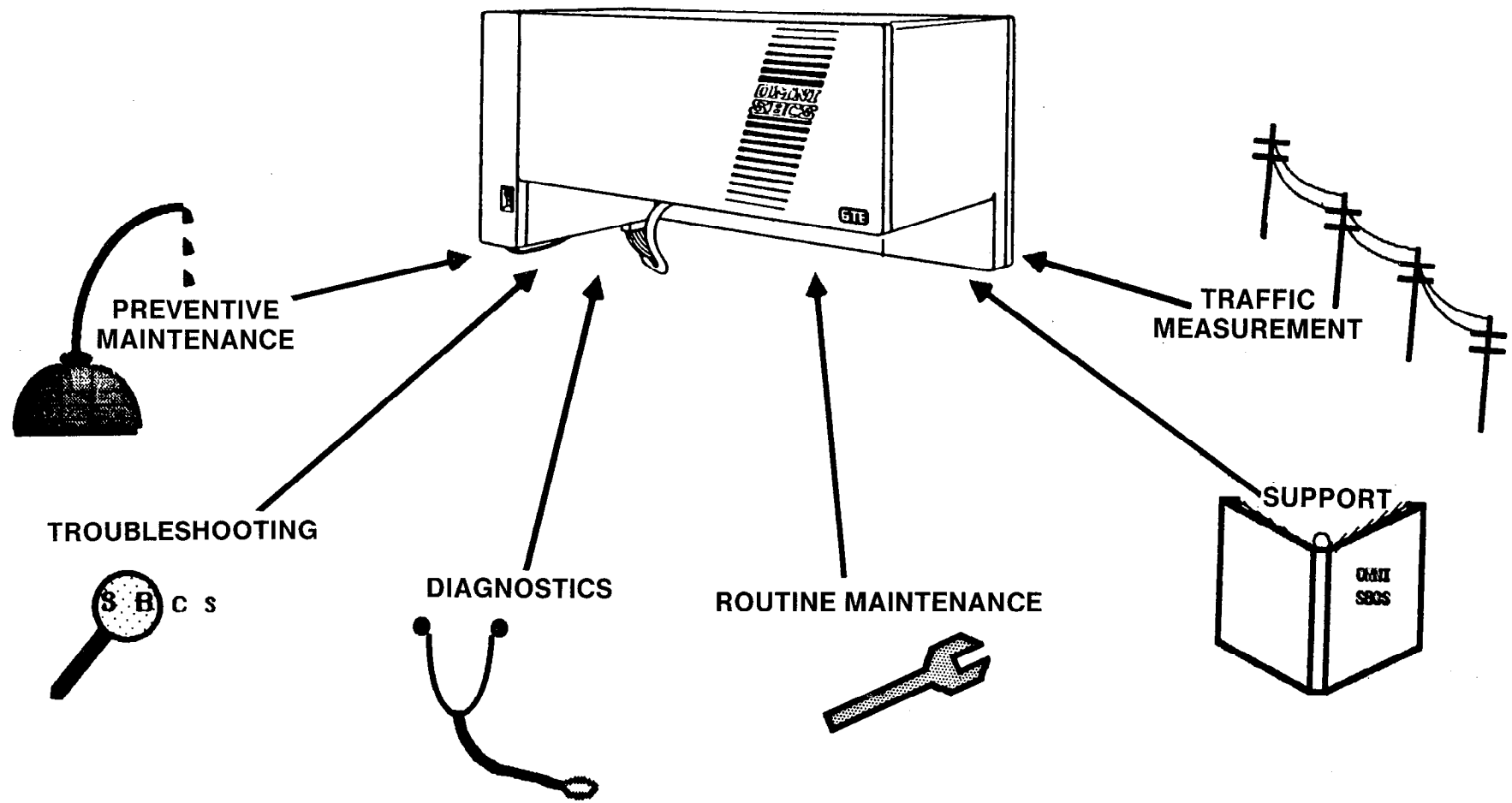
# Major Maintenance Functions

- PREVENTIVE MAINTENANCE
  - CABINET AND PERIPHERALS
  - PCB CARD INSTALLATION
  - BATTERY
  - PMP

- TROUBLESHOOTING
  - SYSTEM OPERATION CHECKS
  - VISUAL INDICATORS
  - DEVICE STATUS AND FAULT LOG THROUGH LOCAL OR REMOTE ACCESS
  - INSTRUMENT DIAGNOSTICS
  - FAULT ISOLATION
  - DEFECTIVE CARD REPLACEMENT

- DIAGNOSTICS
  - DIAGNOSTIC ALARMS/FAULTS
  - SYSTEM SELF-DIAGNOSTICS
  - CALL PROCESSING DIAGNOSTICS
  - TRUNK CONNECTION DIAGNOSTICS
  - INSTRUMENT DIAGNOSTICS

- SUPPORT
  - RS-232-C PORT ASSIGNMENT
  - SOFTWARE AND DISTRIBUTED PROCESSOR VERSION ID DISPLAYS

- ROUTINE MAINTENANCE
  - SYSTEM SECURITY CODES
  - SMDR PRINTER CONTROL
  - TIME AND DATE
  - CIRCUIT IN/OUT OF SERVICE

- TRAFFIC MANAGEMENT
  - TRUNK GROUP SCREENING

# Maintenance Tools

- THE FOLLOWING DATA BASE TOOLS ARE REQUIRED, IN ADDITION TO TOOLS NORMALLY CARRIED BY A FIELD TECHNICIAN:

PORTABLE MAINTENANCE PANEL (PMP)
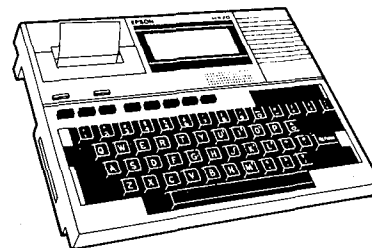
OR

MASTER CONTROL TELEPHONE (MCT)
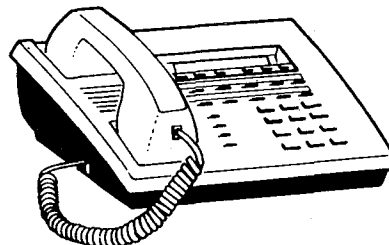
- BOTH DEVICES ALLOW ACCESS TO ROUTINE CMC MAINTENANCE AND DIAGNOSTIC COMMAND TABLES, HOWEVER, CHANGES WHICH MUST BE STORED TO ODDB TAPE OR FLOPPY DISKETTE CAN ONLY BE PERFORMED WITH PMP.

# Remote Maintenance
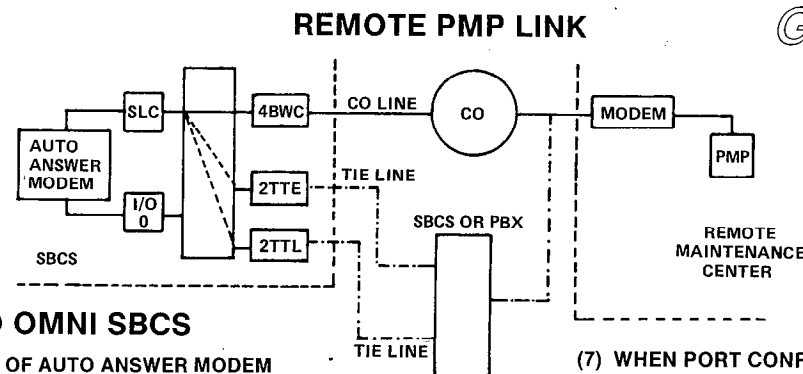
## REMOTE PMP LINK

## REMOTE PMP ACCESS TO OMNI SBCS

(1) ENSURE COMPATIBILITY OF AUTO ANSWER MODEM AT OMNI SBCS SITE AND MODEM AT REMOTE SITE AND THAT RS-232-C CONFIGURATIONS FOR FOLLOWING PORTS MATCH:
- OMNI SBCS PORT CN13, I/O Ø (SET WITH CMC-900)
- LOCAL MODEM AT OMNI SBCS SITE REQUIRES AUTO ANSWER WITH LOSS OF CARRIER DISCONNECT, ASYNCHRONOUS, AND FULL DUPLEX CAPABILITIES
- REMOTE MODEM (AT&T DATA SET IS RECOMMENDED)
- PMP AT REMOTE SITE

(2) CONNECT MODULAR PHONE WIRE FROM LOCAL MODEM TO SLT JACK THAT HAS BEEN PROGRAMMED AS A DATA SECURE, DIRECT IN-LINE STATION FOR DATA BASE MAINTENANCE.

(3) CONNECT THE RS-232-C CABLE FROM LOCAL MODEM TO PORT CN13, I/O Ø OF THE OMNI SBCS.

(4) POWER ON OMNI SBCS (IF NOT ALREADY POWERED) AND LOCAL MODEM.

(5) CONNECT PMP TO RS-232-C PORT ON REMOTE DATA SET MODEM.

(6) POWER ON PMP AT REMOTE SITE (WHICH MUST BE INITIALIZED WITH PMP CONTROL PROGRAM) AND SELECT PMP CONTROL PROGRAM.

(7) WHEN PORT CONFIGURATION PROMPT IS DISPLAYED ON THE PMP SCREEN, ENTER: Y TO REVIEW PORT CONFIGURATION MENU AND SETTINGS.

(8) LIFT REMOTE DATA SET MODEM HANDSET AND PRESS TALK KEY.

(9) USING REMOTE DATA SET MODEM, DIAL DIRECTORY NUMBER OF LOCAL AUTO ANSWER MODEM CONNECTED TO OMNI SBCS.

(10) WHEN CONFIGURATION ANSWER TONE IS HEARD, QUICKLY PRESS DATA KEY ON THE REMOTE DATA SET MODEM AND REPLACE HANDSET ON THE HOOK.

(11) PRESS RETURN KEY ON THE PMP TO EXIT FROM PORT CONFIGURATION SCREEN. WHEN PORT CONFIGURATION PROMPT IS DISPLAYED, ENTER: N.

(12) WHEN SECURITY CODE PROMPT SCREEN IS DISPLAYED, ENTER CORRECT SECURITY ACCESS CODE.

(13) COMPLETE DATA BASE TASKS BY ENTERING DESIRED CMC COMMANDS AND PARAMETERS ACCORDING TO PROCEDURES OUTLINED IN PROGRAMMING SECTIONS OF THIS WORKBOOK OR OMNI SBCS GTEP MANUAL.

(14) WHEN DATA BASE TASKS HAVE BEEN COMPLETED, PRESS DATA KEY ON REMOTE DATA SET MODEM TO DISCONNECT. POWER OFF PMP AND REMOTE DATA SET MODEM.

# Preventive Maintenance

*GTE OMNI SBCS*

- CHECK VISUAL INDICATORS AND DEVICE STATUS TABLE (CMC-800) REGULARLY TO DETERMINE SYSTEM OPERATING STATUS.

- DO NOT OBSTRUCT AIR FLOW AT TOP OF SYSTEM CABINET OR POWER SUPPLY. KEEP FOREIGN PARTICLES AND LIQUIDS FROM ENTERING VENTILATION HOLES.

- KEEP ALL GROUNDING, POWER, AND INTERFACE CABLES DRESSED AND FREE FOR EASY ACCESS.

- CLEAN HEADS ON PMP MICROCASSETTE TAPE DRIVE WITH DENATURED ALCOHOL PRIOR TO LOADING OR SAVING OPERATIONS. I/O DEVICE ERROR CAN BE CAUSED BY DIRTY TAPE HEADS.

- AVOID STATIC ELECTRICITY DISCHARGES WHILE HANDLING PCB CARDS. MICROPROCESSORS, PROM, RAM, AND OTHER MICROCIRCUITS CAN BE DAMAGED IF FOLLOWING PROCEDURES ARE NOT IMPLEMENTED:
  - GROUND YOURSELF TO CABINET WITH ANTI-STATIC WRIST STRAP DEVICE BEFORE INSERTING OR REMOVING CARDS.
  - SPRAY SYSTEM CABINET AREA AND CARD STORAGE SURFACES WITH ANTI-STATIC SPRAY.
  - NEVER TOUCH GOLD-PLATED CONNECTORS OR COMPONENTS.
  - USE EJECTOR TABS WHEN REMOVING CARDS FROM SLOTS AND HANDLE CARDS BY EDGES ONLY.
  - ELIMINATE STATIC PRODUCING MATERIALS (CELLOPHONE, STYROFOAM, ETC.) FROM CABINET AREA.
  - STORE UNUSED CARDS IN ANTI-STATIC BAGS.
  - TURN POWER OFF WHEN INSTALLING COMMON CONTROL OR RGEN CARDS.

- IF BACKUP BATTERY CANNOT BE RECHARGED OR REPLACED IMMEDIATELY, SAVE ODDB TO TAPE OR FLOPPY DISKETTE.

3.8

# Visual Indicators of System Status

- THREE LED LAMPS ON CPM CARD

- MAJOR AND MINOR ALARMS AT REMOTE LOCATION

- ALARM BUTTON ON BLF/DSS OR EKT INSTRUMENTS

# CPM LED Lamps

**RUN LAMP (GREEN):**

- INDICATES NORMAL ON CONDITION.
- IF OUT, A MAJOR ALARM CONDITION IS INDICATED (DISPLAYED AT REMOTE LOCATION) CAUSED BY ONE OF FOLLOWING CONDITIONS:
  - POWER OUTAGE,
  - DEFECTIVE CPM OR SWC OSCILLATING CIRCUIT, OR
  - SIXTEENTH FAILURE TO RESTART SYSTEM VIA WATCH-DOG TIMER.
- 6PFT CARD AUTOMATICALLY SWITCHES ITS CIRCUITS TO POWER FAILURE TRANSFER MODE.

**ALARM LAMP (RED):**

- INDICATES A MINOR ALARM CONDITION (REMOTE LOCATION) BECAUSE SOFTWARE HAS DETECTED A FAILURE IN ONE OR MORE SYSTEM AREAS.
- FAULT LOG (CMC-801) LISTS MORE DETAILED INFORMATION ON CAUSES OF FAILURE.

**TIME OVERFLOW (TO) LAMP (RED):**

- INDICATES WATCH-DOG TIMER HAS DETECTED A FAILURE IN CPM CARD OR OPERATING PROGRAM.
- SYSTEM AUTOMATICALLY ATTEMPTS RESTART AND IF SUCCESSFUL, LOGS FAULT IN FAULT LOG.
- AFTER 16 UNSUCCESSFUL RETRIES, RUN LAMP IS TURNED OFF. TO LAMP MUST BE TURNED OFF BY COLD OR HOT RESTART, OR BY READING FAULT LOG.

CPM

RUN (GREEN)

ALM (RED)

TO (RED)

UP-COLD RESTART
CAUTION
REESTABLISHES DEFAULT
DATA BASE. ODDB IS LOST

CAU-
TION
COLD

CENTER-
RESET MOMENTARY
INTERRUPT

HOT

DOWN-
HOT RESTART

RESTART BUTTON

3.10

**GTE**
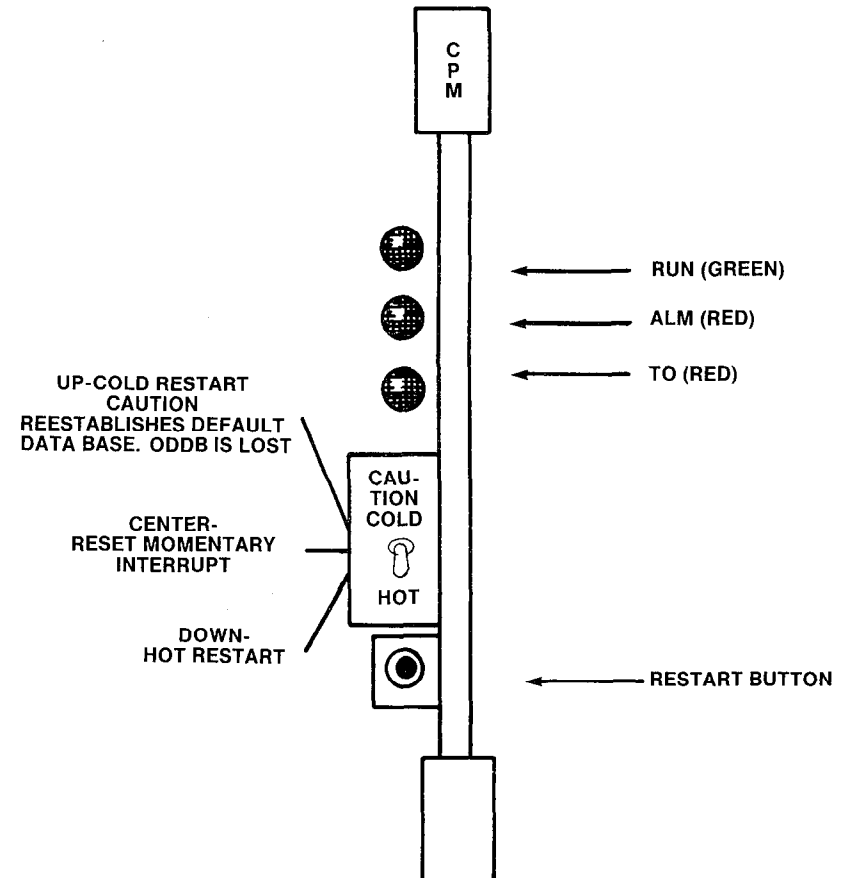
*GTE OMNI SBCS*

CUSTOMER PROVIDED ALARMS AT REMOTE LOCATIONS CAN INDICATE
ONE OF TWO ALARM STATES:

## MAJOR ALARM —

- SYSTEM POWER IS OFF AND SYSTEM IS IN POWER FAILURE TRANSFER
  MODE.

## MINOR ALARM —

- SYSTEM HAS FAILURE IN ONE OR MORE AREAS OF OPERATION.

IF BOTH ALARMS ARE ON, THE SYSTEM HAS DETECTED A SYSTEM-WIDE
PROBLEM.

**GTE**

*GTE OMNI SBCS*
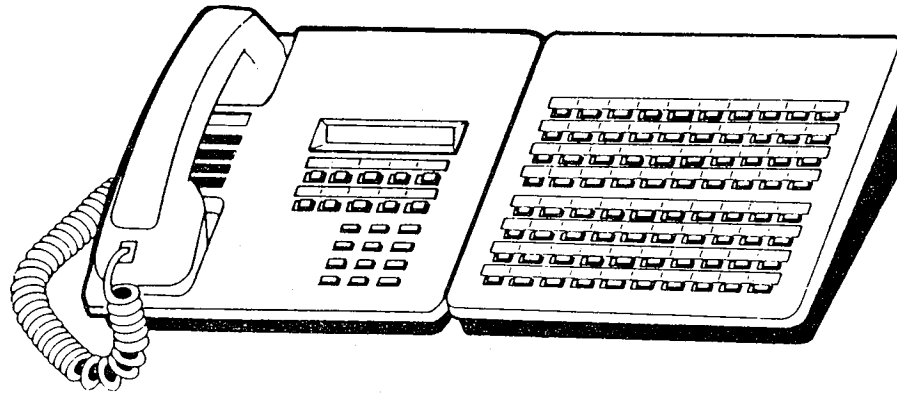
- PROGRAMMED ALARM BUTTON ON BLF/DSS (OR OTHER DESIGNATED EKT INSTRUMENT) INDICATES A MINOR ALARM CONDITION.

- LOCATION OF PROBLEM AND FAULT LOG LISTING CAN BE OBTAINED THROUGH USE OF PMP OR MCT WITH CMC-800 AND 801.

# Visual Alarms Schematic

GTE
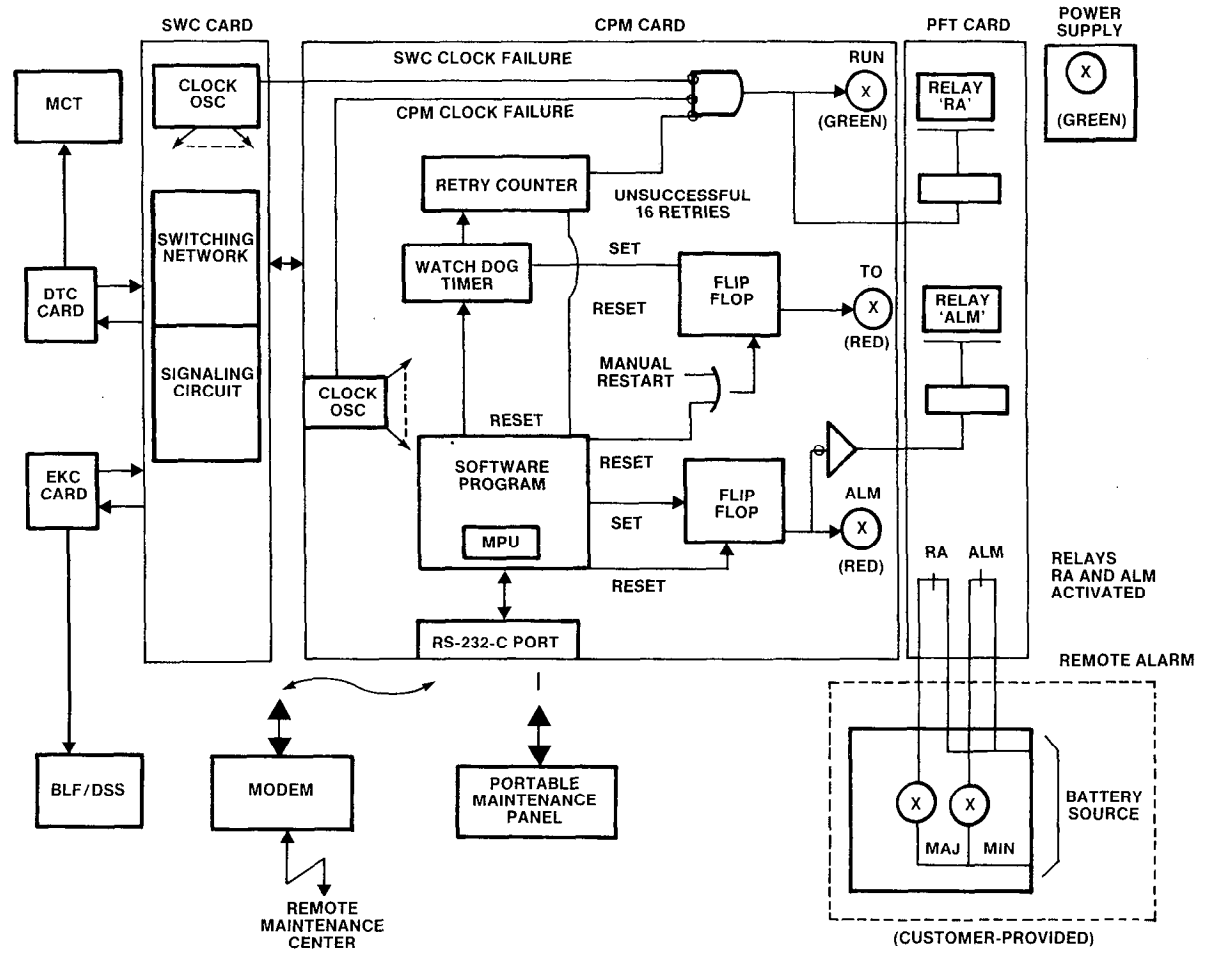
*GTE OMNI SBCS*

# Review Exercise —
# Maintenance Overview (3.1)

INSTRUCTIONS: THE FOLLOWING EXERCISE CONSISTS OF MULTIPLE CHOICE, TRUE/FALSE, FILL IN THE BLANK, OR MATCHING TYPE QUESTIONS. ALL AVAILABLE RESOURCES (I.E., STUDENT WORK-BOOK, NOTES, AND GTEP MANUAL) MAY BE USED AS REFERENCES. SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

1.  THE TOOLS REQUIRED FOR SYSTEM DATA BASE MAINTENANCE ARE _____ AND
    _____ .

2.  REMOTE MAINTENANCE USING A PORTABLE MAINTENANCE PANEL REQUIRES
    _____ AT BOTH THE REMOTE SITE AND AT THE OMNI SBCS SITE.

3.  LIST THREE PREVENTIVE MAINTENANCE PROCEDURES RELATED TO PROPER CARE OF PCB CARDS:

    (A) _____

    (B) _____

    (C) _____

4.  THE THREE PRIMARY VISUAL INDICATORS OF SYSTEM STATUS ARE: _____

    A.  CPM LED LAMPS, CABLE WARNING SYSTEM, AND MAJOR AND MINOR ALARMS AT REMOTE LOCATION.

    B.  ALARM BUTTON ON SINGLE LINE TELEPHONE, MAJOR AND MINOR ALARMS AT REMOTE LOCATION, AND SYSTEM FAULT LOG.

    C.  POWER ON LAMP, CPM LED LAMPS, AND POWER FAIL TRANSFER ALARM.

    D.  CPM LED LAMPS, MAJOR AND MINOR ALARMS AT REMOTE LOCATIONS, AND ALARM BUTTON ON BLF/DSS OR EKT INSTRUMENTS.

5.  HOW COULD MORE DETAILED INFORMATION BE FOUND ABOUT MINOR ALARM CONDITION OR WATCHDOG TIMER OVERFLOW? _____

    _____

3.14

6. WHAT MAY BE INDICATED IF THE RUN LAMP IS OFF AND A MAJOR ALARM CONDITION EXISTS?

_____

_____

_____

7. HOW IS THE TIMER OVERFLOW LAMP RESET (TURNED OFF)? _____

_____

_____

8. THE SYSTEM WILL AUTOMATICALLY ATTEMPT TO RESTART THE SYSTEM _____ TIMES, IN THE EVENT OF A WATCHDOG TIMER OVERFLOW.

9. WHAT SYSTEM ALARM STATES CAN BE INDICATED BY A CUSTOMER-PROVIDED ALARM AT A REMOTE LOCATION?

_____

_____

_____

10. WHAT CMC COMMAND IS USED TO PROGRAM AN ALARM BUTTON ON A BLF/DSS INSTRUMENT?

_____

# SYSTEM MAINTENANCE
## Maintenance Data Base
## Commands

# 3.2 Enabling Objective

GIVEN:
- GTE OMNI SBCS
- PORTABLE MAINTENANCE PANEL
- GTE OMNI SBCS PERIPHERALS
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- LABORATORY ACTIVITY
- REVIEW EXERCISE

ACTION:
- IDENTIFY FUNCTIONS AND APPLICATIONS OF CMC MAINTENANCE COMMANDS.
- MODIFY PARAMETER VALUES FOR CMC MAINTENANCE COMMANDS.
- COMPLETE REVIEW EXERCISE.

CRITERIA:
- DEMONSTRATION OF ABOVE TASKS IN ACCORDANCE WITH PROCEDURES OUTLINED IN OMNI SBCS GTEP MANUAL AND OMNI SBCS STUDENT WORKBOOK.
- REVIEW EXERCISE WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

3.17

# Clock, Day and Date

## DESCRIPTION

- SETS THE SYSTEM HARDWARE AND SOFTWARE CLOCKS.
- TIME AND DATE ARE DISPLAYED ON ALL EKT LCD DISPLAYS.
- CLOCK MUST BE RESET FOLLOWING COLD RESTART.

## PROCEDURE

1. USE CMC-700 TO SET CURRENT CLOCK AND DATE PARAMETERS*:
   - YEAR (P1)
   - MONTH AND DAY (P2)
   - DAY OF THE WEEK (P3)
   - HOUR AND MINUTE (P4)

```
CMC=700
P1: 1986   P4: 0936
P2: 0207
P3: 6
```

*SYSTEM WILL NOT ACCEPT ERRONEOUS VALUES SUCH AS DAY 43.

NOTE:  **HARD ERR** ERROR MESSAGE INDICATES THAT CPM CARD MAY NEED REPLACEMENT.

3.18

# Circuit Busy Assignment

## DESCRIPTION

- ALLOWS CIRCUITS FOR TRUNKS AND INSTRUMENTS TO BE PUT OUT OF SERVICE (MADE BUSY) WHILE MAINTENANCE PROCEDURES ARE BEING PERFORMED.

- SAME COMMAND IS USED TO RESTORE SERVICE TO CIRCUIT.

## PROCEDURE

1. USE CMC-701 TO BUSY OUT A CIRCUIT OR RETURN CIRCUIT TO SERVICE.
   - EQUIPMENT NUMBER (P1)
   - MAKE BUSY OR PUT IN SEVICE FLAG (P2)

```
CMC=701
P1: 162
P2: 1
```

*SYSTEM WILL DENY ANY ATTEMPT TO MAKE THE MASTER CONTROL TELEPHONE'S CIRCUIT BUSY.

NOTE: SMDR PRINTER CIRCUIT IS MADE BUSY WITH CMC-705.

3.19

# Student Notes

# Software and Distributed Processor
# Version Number Displays

## DESCRIPTION

- CMC-904 WILL DISPLAY CURRENT SYSTEM SOFTWARE VERSION NUMBER INDICATING:
  - FEATURE PACKAGE BY ALPHABETIC CHARACTER
  - SAVE/LOAD OPERATION CAPABILITY
  - RELEASE VERSION WITH ENHANCEMENTS AFFECTING DOCUMENTATION, TECHNICAL OR SALES TRAINING.
  - POINT RELEASE VERSION WITH ENHANCEMENTS NOT AFFECTING USER OPERATION
- CMC-907 WILL DISPLAY CURRENT DISTRIBUTED PROCESSOR VERSION NUMBER FOR ANY CARD IN INTERFACE CARD GROUP.

## PROCEDURE

1. USE CMC-904 TO OBTAIN CURRENT SOFTWARE VERSION NUMBER. ENTER **DISPLAY** AT P1.

    - VERSION ID (P1):

         FORMAT
         B   01   1.   1

    FEATURE PACKAGE ◄─┘

    SAVE/LOAD
    COMPATIBILITY ◄─────────

    ────► POINT RELEASE

    ────► RELEASE

    CMC=904
    P1: BOI 1.2 17130

3.21

**GTE**

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2. USE CMC-907 TO OBTAIN CURRENT VERSION NUMBER FOR INTERFACE CARD. ENTER **DISPLAY** AT P1:

- EQUIPMENT NUMBER (P1)

- CARD TYPE (P2)

  1: 8SLC

  2: 4BWC

  3: 2TTE

  4: 2TTL

  5: 4DMR

- VERSION NUMBER (P3)

```
CMC=907
P1: 040
P2: 1
P3: 0
```
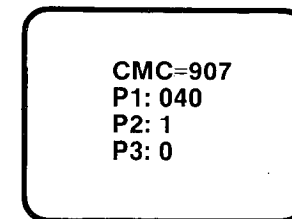
NOTE:   WHEN THE CARD FOR SPECIFIED EQUIPMENT NUMBER IS NOT
        INSTALLED OR IS AN 8EKC OR 8DTC CARD, THE CARD TYPE
        AND VERSION NUMBER CORRESPONDING TO THE NEXT
        INSTALLED CARD (EXCEPT FOR 8EKC OR 8DTC) ARE DISPLAYED.

# Device Status Display

## DESCRIPTION

- CMC-800 DISPLAYS A SERIES OF THREE SCREENS BRIEFLY LISTING FAULTY DEVICES AND LOCATIONS. MORE DETAILED INFORMATION ABOUT THESE FAULTS CAN BE OBTAINED WITH CMC-801.

- FOLLOWING ABBREVIATIONS FOR FAULTY DEVICES MAY BE LISTED:

| DEVICE ABBREVIATION | DEVICE NAME |
|---|---|
| CC | CPM CARD OR MEM CARD |
| RAM | RAM ON CPM CARD OR MEM CARD |
| RTS | REAL TIME SOURCE ON CPM CARD |
| BAT | BATTERY |
| SWC | SWC CARD |
| ICG | TRUNK/LINE CARD |
| TRM | ELECTRONIC KEY TELEPHONE INSTRUMENT |
| SCI | RS-232-C PORT |
| RG | RGEN CARD |

- THREE DEVICE STATUS SCREENS MAY BE DISPLAYED IN SEQUENCE:

  SCREEN ONE — HIGH LEVEL FAULT SUMMARY
  SCREEN TWO — LINE/TRUNK CARD AND RS-232-C PORT STATUS
  SCREEN THREE — EKT STATUS

- EACH FAULTY DEVICE IS DISPLAYED IN A FIXED POSITION ON THE SCREEN:

| P1: | CC | RAM | RTS | BAT |
|---|---|---|---|---|
| P2: | SWC | ICG | TRM | SCI |
| P3: | RG | | | |

3.23

# Device Status Display (Continued)

## PROCEDURE

1. ENTER CMC-800. AT P1, PRESS **DISPLAY** TO DISPLAY SCREEN ONE.

```
CMC=800 DSP
P1:
P2:   ICG TRM
P3:
```

2. AT P1, PRESS **DISPLAY** TO DISPLAY SCREEN TWO*:

```
CMC=800 DSP
P1: ICG&SCI STATUS
P2: 0000000000
P3: 000000100 00
```

3. AT P1, PRESS **DISPLAY** TO DISPLAY AT SCREEN THREE*:

```
CMC=800 DSP
P1: FAULT TERMINAL
P2: 004 032
P3:
```

4. IF NO OTHER INFORMATION IS AVAILABLE, SCREENS ARE SKIPPED AND END IS DISPLAYED).

*PARAMETER VALUES ARE DESCRIBED IN OMNI SBCS GTEP MANUAL, (MAINTENANCE SECTION, CMC-800).

# Fault Log Display

## DESCRIPTION

- PROVIDES DETAILED FAULT INFORMATION FOR TROUBLE-SHOOTING INCLUDING:

  - DEVICE NAME AND EQUIPMENT NUMBER
  - TIME OF FAULT OCCURRENCE OR REPAIR
  - CAUSED FACTOR AND SUPPLEMENTARY FAULT DATA

- READING OUT FAULT LOG TURNS THE ALARM AND TIMER OVERFLOW LAMPS OFF AND INITIALIZES THE WATCH DOG TIMER RESTART COUNTER TO ZERO.

- FAULT INFORMATION IS DISPLAYED IN HISTORICAL ORDER OF OCCURRENCE WITH MOST RECENT FAULT DISPLAYED LAST.

- MAXIMUM OF 16 FAULTS IS STORED. WHEN NUMBER OF FAULTS EXCEEDS CAPACITY, OLDEST FAULT IS DELETED AND MOST RECENT FAULT IS ADDED TO THE LOG.

- MAKING A HARDCOPY PRINTOUT OF EACH FAULT LISTING IS RECOMMENDED.

3.25

# Fault Log Display (Continued)

## PROCEDURE

1.  ENTER CMC-801. AT P1 PRESS **DISPLAY** TO DISPLAY OLDEST FAULT LISTING IN LOG:

> CMC=801 DSP
> P1: TRM   P4: 026
> P2:  11: 22 02/28
> P3: 0

2.  CONTINUED TO PRESS **DISPLAY** AT P1 UNTIL ALL FAULTS LISTED IN LOG HAVE BEEN DISPLAYED:

> CMC=801 DSP
> P1: TRM   P4: 005
> P2: 12:16 02/03
> P3: 1

3.  AFTER ALL FAULTS HAVE BEEN LISTED FROM LOG, END IS DISPLAYED:

> CMC= END

# Fault Code Translation

**CMC-801:**

| DEVICE NAME | DEVICE OR EQUIPMENT NUMBER (P4) | CAUSED FACTOR (P3) | FAULT DATA (P4) (SEE NEXT PAGE) |
|---|---|---|---|
| CC (CPM CARD OR MEM CARD | 200 OR 210 | 0 = COLD RESTART<br>1 = WATCH DOG TIMER OVER-FLOW<br>2 = SOFTWARE MAZE<br>3 = RAM DATA PROBLEM<br>4 = ILLEGAL INTERRUPTION<br>5 = MANUAL HOT RESTART | |
| RAM RAM ON CPM OR MEM CARD | | 0 = TURN ALM LAMP OFF<br>1 = RAM MEMORY STACK | 1,2) SEGMENT ADDRESS<br>3,4) OFFSET ADDRESS<br>5),<br>6,7) STACK DATA |
| | | 2 = RAM PROTECTION | 1,2) SEGMENT ADDRESS<br>3,4) OFFSET ADDRESS<br>5,<br>6) READ DATA<br>7) WRITE DATA |
| RTS REAL TIME SOURCE ON CPM CARD | 200<br><br>2 = ILLEGAL TIME | 0 = RECOVERY<br>1 = STOP INCREMENTING<br>2 = ILLEGAL TIME | |
| BAT BATTERY | | 0 = RECOVERY<br>1 = DISCHARGE | |
| SWC SWC CARD | 190 | 0 = TURN ALM LAMP OFF<br>1 = CLOCK FAILED<br>2 = CM MEMORY STACK | 1,2) READ AFTER WRITE DATA<br>5,6) CM ADDRESS |
| | | 3 = RSM MEMORY STACK | 1) READ AFTER WRITE DATA<br>5,6) RSM ADDRESS |
| | | 4 = SSM MEMORY STACK | 1) READ AFTER WRITE DATA<br><br>5,6) SSM ADDRESS |
| ICG TRUNK/LINE CARD | FIRST EN ON CARD | 0 = RECOVERY<br>1 = DATA TRANSMISSION ERROR<br>2 = ICG AUDIT ERROR | |
| TRM PROPRIETARY TELEPHONE | EN OF EKT OR DSS | 0 = RECOVERY<br>1 = DATA TRANSMISSION ERROR<br>2 = EKT AUDIT ERROR | |
| SCI RS-232-C PORT | PORT NO. 000/001 | 0 = RECOVERY<br>1 = DATA TRANSMISSION ERROR<br>2 = SEND DATA TIME OUT | |
| RG RGEN CARD | 1 = RGEN FAULT | 0 = RECOVERY<br>1 = RGEN FAULT | |

3.27

# Fault Log Display (Continued)

## PROCEDURE

1. ENTER CMC-801. AT P1 PRESS **DISPLAY** TO DISPLAY OLDEST FAULT LISTING IN LOG:

```
CMC=801 DSP
P1: TRM   P4: 026
P2:  11: 22 02/28
P3: 0
```

2. CONTINUED TO PRESS **DISPLAY** AT P1 UNTIL ALL FAULTS LISTED IN LOG HAVE BEEN DISPLAYED:

```
CMC=801 DSP
P1: TRM  P4: 005
P2: 12:16 02/03
P3: 1
```

3. AFTER ALL FAULTS HAVE BEEN LISTED FROM LOG, END IS DISPLAYED:

```
CMC= END
```

# Fault Code Translation

**CMC-801:**

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| DEVICE NAME | DEVICE OR EQUIPMENT NUMBER (P4) | CAUSED FACTOR (P3) | FAULT DATA (P4) (SEE NEXT PAGE) |
|---|---|---|---|
| CC (CPM CARD OR MEM CARD | 200 OR 210 | 0 = COLD RESTART<br>1 = WATCH DOG TIMER OVER-FLOW<br>2 = SOFTWARE MAZE<br>3 = RAM DATA PROBLEM<br>4 = ILLEGAL INTERRUPTION<br>5 = MANUAL HOT RESTART | |
| RAM RAM ON CPM OR MEM CARD | | 0 = TURN ALM LAMP OFF<br>1 = RAM MEMORY STACK | 1,2) SEGMENT ADDRESS<br>3,4) OFFSET ADDRESS<br>5),<br>6,7) STACK DATA |
| | | 2 = RAM PROTECTION | 1,2) SEGMENT ADDRESS<br>3,4) OFFSET ADDRESS<br>5,<br>6) READ DATA<br>7) WRITE DATA |
| RTS REAL TIME SOURCE ON CPM CARD | 200<br><br>2 = ILLEGAL TIME | 0 = RECOVERY<br>1 = STOP INCREMENTING<br>2 = ILLEGAL TIME | |
| BAT BATTERY | | 0 = RECOVERY<br>1 = DISCHARGE | |
| SWC SWC CARD | 190 | 0 = TURN ALM LAMP OFF<br>1 = CLOCK FAILED<br>2 = CM MEMORY STACK | 1,2) READ AFTER WRITE DATA<br>5,6) CM ADDRESS |
| | | 3 = RSM MEMORY STACK | 1) READ AFTER WRITE DATA<br>5,6) RSM ADDRESS |
| | | 4 = SSM MEMORY STACK | 1) READ AFTER WRITE DATA<br><br>5,6) SSM ADDRESS |
| ICG TRUNK/LINE CARD | FIRST EN ON CARD | 0 = RECOVERY<br>1 = DATA TRANSMISSION ERROR<br>2 = ICG AUDIT ERROR | |
| TRM PROPRIETARY TELEPHONE | EN OF EKT OR DSS | 0 = RECOVERY<br>1 = DATA TRANSMISSION ERROR<br>2 = EKT AUDIT ERROR | |
| SCI RS-232-C PORT | PORT NO. 000/001 | 0 = RECOVERY<br>1 = DATA TRANSMISSION ERROR<br>2 = SEND DATA TIME OUT | |
| RG RGEN CARD | 1 = RGEN FAULT | 0 = RECOVERY<br>1 = RGEN FAULT | |

3.27

# Fault Code Translation (Continued)

**CMC-801:**  **FAULT DATA TRANSLATION**

1. FAULT DATA IN HEX CODE:

   HH HH HH HH HH HH HH

    1   2   3   4   5   6   7

   H:  HEX CHARACTER 0-9, A TO F OR BLANK

2. SCI STATUS

   EACH BIT SHOWS THE FOLLOWING MEANING:

   B B B B B B B

   - TRANSMITTER READY
   - RECEIVER READY
   - TRANSMITTER EMPTY
   - PARITY ERROR
   - OVER-RUN ERROR
   - FRAMING ERROR
   - BREAK DETECT
   - DATA SET READY
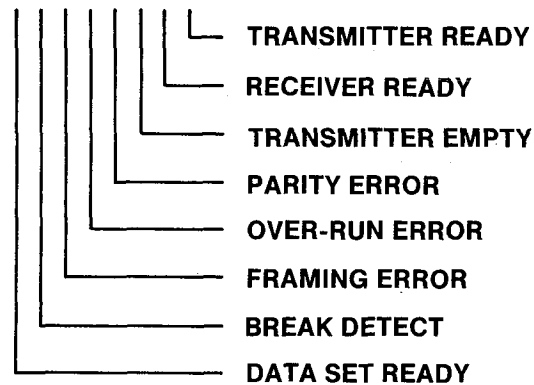
# SMDR Printer Controls

## DESCRIPTION

- PLACE SMDR PRINTER OUT OF SERVICE WITH CMC-705 WHEN CHANGING PAPER. ENSURE THAT CORRECT RS-232-C PORT IS ENTERED.
- CHANGE THE CONTROL CONDITION FOR THE MDR PRINTER REQUIREMENTS RELATING TO PAUSE TRANSMISSION CHARACTER, POWER CONTROL AND TIMING, OR PRINTOUT FORMAT

## PROCEDURE *

1. PLACE PRINTER IN OR OUT OF SERVICE WITH CMC-705:
   - PORT NUMBER (P1)
   - IN/OUT OF SERVICE FLAG (P2)

2. MODIFY PRINTER CONTROLS WITH CMC-901:
   - PORT NUMBER (P1)
   - PAUSE TRANSMISSION (XOFF/XON) CHARACTER (P2)
   - POWER CONTROL (P3)
   - POWER ON TIMING (P5)
   - POWER OFF TIMING (P6)

* REFER TO OMNI SBCS GTEP MANUAL, MAINTENANCE SECTION, FOR DESCRIPTION OF ASCII X-ON/X-OFF AND POWER CONTROL CHARACTERS.

```
CMC=705
P1:1
P2:1
```

```
CMC=901
P1:1      P4:
P2:1      P5:
P3:       P6:1
```

# RS-232-C Port Configuration Assignment

GTE

## DESCRIPTION

- ASSIGN OR MODIFY THE CHARACTERISTICS OF THE TWO RS-232-C PORTS INCLUDING BIT RATE, PARITY, CHARACTER LENGTH, STOP BIT AND ECHO.

- BOTH PORTS ARE FULL DUPLEX.

- DEFAULT STANDARD DATA BASE PRESENTS PORT Ø FOR PMP AND PORT 1 FOR MDR PRINTER.

## PROCEDURE

1. USE CMC-900 TO SET RS-232-C PORT CHARACTERISTICS:

    - PORT (P1)

    - BIT RATE (P2)

    - PARITY (P3)

    - CHARACTER LENGTH (P4)

    - STOP BIT (P5)

    - ECHO BACK (P6)

```
CMC=900
P1:1      P4:7
P2:3      P5:1
P3:3      P6:1
```

NOTE: IF PORT TO BE CHANGED IS ASSIGNED TO SMDR PRINTER, FIRST PLACE PRINTER OUT OF SERVICE WITH CMC—705.

# Diagnostic Trunk Connection Assignment — GTE

GTE OMNI SBCS

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## DESCRIPTION

- CMC-802 DEDICATES A TRUNK TO A DESIGNATED STATION FOR AUDITORY, RINGING, AND TRANSMISSION VERIFICATION.

- AFTER ASSIGNMENT, TESTS CAN BE MADE BY ORIGINATING A CALL TO THE TRUNK BY DIALING THE TRUNK ACCESS CODE FOR THE TRUNK GROUP.

- WORKING TRUNK CAN BE CONFIRMED BY DIALING AN OUTSIDE DIRECTORY NUMBER AND LISTENING FOR CONFIRMATION CALL PROGRESS TONES.

## PROCEDURE *

1. USE CMC-802 TO ENTER STATION DIRECTORY NUMBER AND TRUNK TO BE TESTED:

   - DIRECTORY NUMBER (P1)

   - TRUNK EQUIPMENT NUMBER (P2)

   ```
   CMC=802
   P1:214
   P2:181
   ```

   NOTE: WHEN ACTIVATED STATION WILL ALWAYS SEIZE ASSIGNED TRUNK UNTIL VALUES FOR P1 AND P2 ARE DELETED WITH **REMOVE** KEY.

3.31

# Traffic Measurement

## DESCRIPTION

- ASSIGN OR CANCEL TRUNK GROUP NUMBERS TO BE SAMPLED WITH CMC-600.
- ACTIVATE A TRAFFIC MEASUREMENT STUDY WITH CMC-601.
- DEFINE THE DISPLAY FOR TRAFFIC MEASUREMENT BASED ON RECENT DATA (LESS THAN 10 HOURS) OR OLDER DATA (AFTER 10 HOURS).
- TRAFFIC DENSITY PERCENTAGE IS DISPLAYED BASED ON DESIGNATED TRUNK GROUP NUMBERS.

## PROCEDURE *

1. ASSIGN TRUNK GROUP NUMBERS TO BE SAMPLED WITH CMC-600:
   - REGISTRATION SEQUENCE NUMBER: (P1)
   - TRUNK GROUP NUMBER (P2)
2. USE CMC-601 TO ACTIVATE TRAFFIC MEASUREMENT FLAG:
   - TRAFFIC MEASUREMENT START/STOP FLAG (P1)
3. USE CMC-602 TO DISPLAY TRAFFIC MEASUREMENT DATA:
   - TRAFFIC MEASUREMENT DATA AREA (P1)
   - REGISTRATION SEQUENCE NUMBER (P2)
   - TRUNK GROUP NUMBER (P3)
   - ELAPSED TIME IN HOURS (P4)
   - TRAFFIC DENSITY (P5)

   NOTE: TRUNK GROUP NUMBERS MUST BE DELETED FROM SAMPLE WITH **REMOVE** KEY AFTER TRAFFIC STUDY HAS BEEN DEACTIVACTIVATED (CMC-601).

```
CMC=600
P1:1
P2:13
```

```
CMC=601
P1:1
```

```
CMC=602
P1:2        P4:1
P2:1        P5:0
P3:13
```

3.32

# Maintenance Data Base Commands/CMC Command Summary

- TRUNK GROUP TRAFFIC
  SCREENING ASSIGNMENT
  
  600   ASSIGNS TRUNK GROUP NUMBERS TO TRAFFIC SAMPLE.

- TRAFFIC MEASUREMENT
  ACTIVATION
  
  601   ACTIVATES TRAFFIC MEASUREMENT STUDY.

- TRAFFIC MEASUREMENT
  DATA DISPLAY
  
  602   DISPLAYS TRAFFIC DENSITY.

- TIME AND DATE SETTING
  
  700   SETS SYSTEM HARDWARE AND SOFTWARE CLOCK.

- CIRCUIT BUSY
  ASSIGNMENT
  
  701   PLACES CIRCUITS IN/OUT OF SERVICE FOR MAINTENANCE.

- SMDR IN/OUT OF SERVICE
  
  705   PLACES SMDR IN/OUT OF SERVICE FOR MAINTENANCE.

# Maintenance Data Base Commands/
# CMC Command Summary (Continued)

- DEVICE STATUS | 800 | LISTS FAULTY DEVICES AND LOCATIONS.

- FAULT LOG | 801 | PROVIDES DETAILED FAULT INFORMATION FOR TROUBLESHOOTING.

- DIAGNOSTIC TRUNK CONNECTION ASSIGNMENT | 802 | ASSIGNS A STATION TO A TRUNK FOR DIAGNOSTIC VERIFICATION.

- RS-232-C PORT CONFIGURATION | 900 | CHANGES CHARACTERISTICS OF RS-232-C PORTS.

- SMDR PRINTER CONTROL | 901 | CHANGES CONTROL CONDITION FOR SMDR.

- READ OUT SYSTEM SOFTWARE VERSION ID DISPLAY | 904 | DISPLAYS CURRENT SOFTWARE RELEASE.

- DISTRIBUTED PROCESSOR VERSION ID DISPLAY | 907 | DISPLAYS VERSION NUMBER FOR ICG CARDS.

# Student Notes

GTE OMNI SBCS

3.35

# Laboratory Activity — Maintenance/Data Base Commands (3.2)

**GTE OMNI SBCS**

PERFORM THE FOLLOWING PROGRAMMING TASKS IN THE SEQUENCE OUTLINED BELOW AND IN ACCORDANCE WITH THE GTE OMNI SBCS MANUAL. COMPLETE THE REVIEW EXERCISE QUESTIONS UPON COMPLETION OF THIS LABORATORY ACTIVITY.

---

### WORK ORDER #3.2

| | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER 3.2 (TASK #1) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

**TASKS:**
- Set time, day, date with CMC-700.
- Take a circuit out of service with CMC-701.
- Display software and distributed processor version number with CMC-904 and CMC-907.

**PARAMETERS:**

(1) Set system clock using CMS-700.

(2) Remove loop tie line circuit. (EN160) from service with CMC-701.

(3) Obtain current software version number with CMC-904 and CMC-907.

**INSTRUCTIONS:**

(1) Perform maintenance programming commands.

(2) Check/test the operation of commands after completion of this portion of the laboratory activity.

(3) Proceed with next work order task.

---

**GTE**

*GTE OMNI SBCS*

---

### WORK ORDER #3.2

| | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER 3.2 (TASK #2) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

TASKS:
- Restore circuit to service with CMC-701.
- Display device status with CMC-800.
- Display fault log with CMC-801.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Restore the loop tie line to service. | (1) Perform maintenance programming commands. |
| (2) Unplug one of the CS-10 telephones from its modular jack. | (2) Check/test the operation of commands after completion of this portion of the laboratory activity. |
| (3) Check the device status display with CMC-800. | (3) Proceed with next work order task. |
| (4) Read out the latest fault log listing with CMC-801. Was equipment number of disconnected CS-10 telelphone displayed? | |
| (5) Plug the CS-10 telephone into its assigned modular jack. | |

# Laboratory Activity — Maintenance/Data Base Commands (3.2) (Continued)

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---

## WORK ORDER #3.2

| | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER 3.2 (TASK #3) |

ORIGINATOR: TELECOMMUNICATIONS MANAGER

TASKS:
- Take SMDR printer out of service with CMC-705.
- Modify printer controls with CMC-901.
- Change the RS-232-C port configuration assignment with CMC-900.

**PARAMETERS:**

(1) Remove SMDR printer from service with CMC-705.

(2) Change SMDR power on character to NUL and power off to DEL. Change power on timing to 800 ms and power off timing to 30 seconds.

(3) Modify the RS-232-C configuration for port ∅ to:

— 2400 bps
— even parity
— 7 bit character length
— 1 bit stop
— no echo

*(Above data terms will be discussed in Module IV).*

**INSTRUCTIONS:**

(1) Perform maintenance programming commands.

(2) Check/test the operation of commands after completion of this portion of the laboratory activity.

(3) Proceed with next work order task.

# Laboratory Activity — Maintenance/Data Base Commands (3.2) (Continued)

**GTE**

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| WORK ORDER #3.2 | |
|---|---|
| COMPANY NAME:  NU SYSTEM CO. | PHONE #:   (703) 555-1212 |
| LOCATION:  RESTON, VIRGINIA | WORK ORDER 3.2 (TASK #4) |
| ORIGINATOR:  TELECOMMUNICATIONS MANAGER | |

**TASKS:**
- Restore SMDR printer to service with CMC-705.
- Assign diagnostic trunk connection with CMC-802.
- Establish a traffic measurement study with CMC-600, CMC-601, and CMC-602.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1)  Restore SMDR printer to service. | (1)  Perform maintenance programming commands. |
| (2)  Dedicate the E&M tie line (EN170) to station directory number 212 using CMC-802. Trunk tests will be conducted later in Maintenance, Diagnostics section). | (2)  Check/test the operation of commands after completion of this portion of the laboratory activity. |
| (3)  Assign CO trunk group 13 to traffic sample (registration sequence number 1) with CMC-600. | (3)  Complete Review Exercise questions 1-15. |
| (4)  Activate the traffic measurement study with CMC-601. | |
| (5)  Place several outgoing Co trunk calls. | |
| (6)  Display the traffic measurement data for most recent data with CMC-602. | |
| (7)  Deactivate the traffic measurement study with CMC-602. | |
| (8)  Remove CO trunk group (13) from the sample registration sequence number 1 using CMC-600. | |

# Review Exercise —
# Maintenance/Data Base Commands (3.2) ═══ **GTE**

INSTRUCTIONS: THE FOLLOWING EXERCISE CONSISTS OF MULTIPLE CHOICE, TRUE/FALSE, FILL IN THE BLANK, OR MATCHING TYPE QUESTIONS. ALL AVAILABLE RESOURCES (I.E., STUDENT WORK-BOOK, NOTES, AND GTEP MANUAL) MAY BE USED AS REFERENCES. SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

1. WHEN MUST THE SYSTEM HARDWARE/SOFTWARE CLOCK BE SET OR RESET? _____

   _____

   _____


2. (TRUE OR FALSE)_____ CIRCUITS FOR ALL SYSTEM EQUIPMENT AND TRUNKS CAN BE TAKEN OUT OF SERVICE WITH CMC-701.


3. IDENTIFY THE COMPONENTS OF THE FOLLOWING SOFTWARE VERSION NUMBER (B011.2)

   B        01              1.              2

   _____         _____

   _____         _____
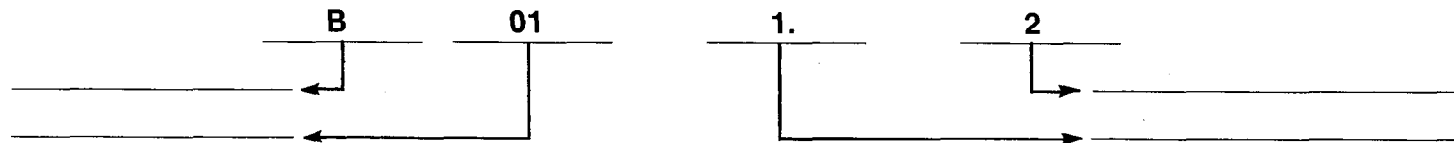

4. IDENTIFY THE COMPONENTS OF THE FOLLOWING VERSION NUMBER FOR THE INTERFACE CARD LISTED BELOW:

   CMC = 907

   P1 = 180          _____

   P2 = 2            _____

   P3 = 0            _____

3.40

# Review Exercise —
# Maintenance/Date Base Commands (3.2)
# (Continued)

5. MATCH THE CORRECT CONTENTS OF THE THREE DEVICE STATUS SCREENS FOR CMC-800:

_____ SCREEN ONE          A. EKT STATUS

_____ SCREEN TWO          B. LINE/TRUNK CARD AND RS-232-C

_____ SCREEN THREE        C. HIGH LEVEL PORT STATUS FAULT SUMMARY

6. WHAT CAN BE DONE TO OBTAIN MORE INFORMATION REGARDING A FAULTY DEVICE LISTED WITH CMC-800? _____

_____

_____

_____

7. IDENTIFY THE FOLLOWING DEVICES LISTED FROM CMC-800:

SCI _____

ICG _____

RTS _____

8. IDENTIFY THE INFORMATION LISTED ON THE FOLLOWING FAULT LOG DISPLAYS:

```
CMC= 801 DSP
P1: TRM      P4: 015
P2: 10:37    03/12
P3: 1
```

P1: _____

P2: _____

P3: _____

P4: _____

```
CMC= 801
P1: ICG      P4: 020
P2: 10:38    03/12
P3: 0
```

P1: _____

P2: _____

P3: _____

P4: _____

9.  HOW COULD THE POWER OFF TIMING VALUE FOR THE SMDR PRINTER BE CHANGED TO ONE
    MINUTE? _____

    _____

    _____

10. THE SLOWEST BIT RATE ACCOMMODATED BY THE RS-232-C PORT CONFIGURATION IS
    _____ AND THE FASTEST BIT RATE IS _____.

11. TRUE OR FALSE _____ STATION ASSIGNED TO TRUNK FOR DIAGNOSTIC TRUNK TESTS
    WITH CMC-802 WILL ALWAYS SEIZE THAT PARTICULAR TRUNK CONNECTION.

12. WHAT MUST OCCUR BEFORE A TRAFFIC MEASUREMENT STUDY IS ACTIVATED WITH CMC-
    601? _____

    _____

    _____

13. TRAFFIC MEASUREMENT DATA CAN BE PROVIDED FOR _____ AND _____
    STORED DATA.

14. A MAXIMUM OF _____ TRUNK GROUP MEMBERS CAN BE SAMPLED IN A TRAFFIC
    MEASUREMENT STUDY.

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15.

| | | |
|---|---|---|
| _____ | CMC-600 | A. TRAFFIC TRUNK GROUP SCREENING |
| _____ | CMC-601 | B. TIME, DAY, AND DATE SETTING |
| _____ | CMC-602 | C. SMDR PRINTER IN/OUT OF SERVICE |
| _____ | CMC-700 | D. DEVICE STATUS DISPLAY |
| _____ | CMC-701 | E. TRAFFIC MEASUREMENT DATA DISPLAY |
| _____ | CMC-705 | F. RS-232-C PORT CONFIGURATION ASSIGNMENT |
| _____ | CMC-800 | G. SMDR PRINTER CONTROL |
| _____ | CMC-801 | H. CIRCUIT IN/OUT OF SERVICE |
| _____ | CMC-802 | I. FAULT LOG DISPLAY |
| _____ | CMC-900 | J. DISTRIBUTED PROCESSOR VERSION ID DISPLAY |
| _____ | CMC-901 | K. TRAFFIC MEASUREMENT ACTIVATION |
| _____ | CMC-904 | L. DIAGNOSTIC TRUNK CONNECTION ASSIGNMENT |
| _____ | CMC-907 | M. SYSTEM SOFTWARE VERSION ID DISPLAY |

# SYSTEM MAINTENANCE
## Troubleshooting

# 3.3 Enabling Objective

GIVEN:
- GTE OMNI SBCS
- PORTABLE MAINTENANCE PANEL
- GTE OMNI SBCS PERIPHERALS
- REPLACEMENT CARDS AND INSTRUMENTS
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- STANDARD MAINTENANCE TOOLS
- LABORATORY ACTIVITY
- REVIEW EXERCISE

ACTION:
- USE SBCS TROUBLESHOOTING STRATEGIES TO ISOLATE AND RESOLVE TYPICAL SYSTEM HARDWARE AND SOFTWARE PROBLEMS.
- COMPLETE REVIEW EXERCISE.

CRITERIA:
- PROBLEMS WILL BE IDENTIFIED AND RESOLVED IN ACCORDANCE WITH TROUBLESHOOTING PROCEDURES OUTLINED IN OMNI SBCS GTEP MANUAL AND OMNI SBCS STUDENT WORKBOOK.
- REVIEW EXERCISE WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

# Troubleshooting Overview

- TROUBLESHOOTING IS A SYSTEMATIC APPROACH TO IDENTIFYING AND ISOLATING SYSTEM PROBLEMS.

- PRIMARY TROUBLESHOOTING TOOLS INCLUDE BOTH THE DEVICE STATUS AND FAULT LOG TABLES, IN CONJUNCTION WITH SYSTEM VISUAL INDICATORS.

- ISOLATION OF A PROBLEM'S CAUSES REQUIRES:

  1. DETERMINATION OF SPECIFIC PROBLEMS (E.G., NO RINGING, NO DIAL TONE)

  2. DETERMINATION OF THE EXTENT OF THE PROBLEM (E.G., A CIRCUIT, A CARD, OR A GROUP NUMBER)

- CORRECTION OF A PROBLEM REQUIRES:

  1. INITIAL CHECKING OF CORRECT SYSTEM OPERATION.

  2. POSSIBLE REPLACEMENT OF DEFECTIVE COMPONENTS OR RELATED FOLLOW-UP ACTION.

  3. TESTING TO ENSURE CORRECT MAINTENANCE SYSTEM OPERATION.

# System-Wide Problems
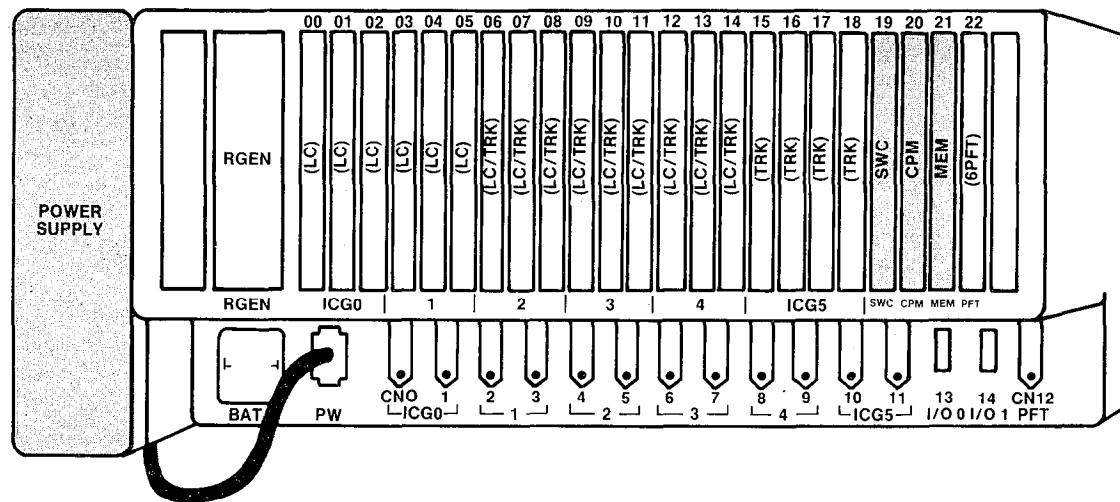
- A SYSTEM-WIDE PROBLEM IS INDICATED BY A COMPLETE CALL PROCESSING FAILURE.
- SYSTEM-WIDE PROBLEMS USUALLY ARE CAUSED BY:

  - A DEFECTIVE POWER SUPPLY OR FAULT IN THE INTERCONNECTING POWER CABLES, OR

  - A DEFECTIVE COMMON CONTROL GROUP CARD.

- IF CAUSE CANNOT BE ISOLATED, THE CABINET BACKPLANE CIRCUITRY MAY BE DEFECTIVE.
- REFER TO THE FOLLOWING THREE FLOWCHARTS FOR TROUBLESHOOTING PROCEDURES FOR SYSTEM-WIDE PROBLEMS.

3.47

# System-Wide Problems (Continued)

GTE

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## PROCEDURE FOR DETERMINATION OF CAUSE (FLOWCHART 1)

```
START
(CALL PROCESSING
FAILURE)
        │
        ▼
CHECK OPE
LAMP ON
POWER SUPPLY.
        │
        ▼
   IS LAMP LIT? ──YES──▶ REFER TO FLOWCHART 3
        │
        NO
        ▼
   IS AC POWER ON? ──NO──▶ END (CAUSE COMMERICAL AC POWER FAILURE)
        │
        YES
        ▼
TURN POWER
SWITCH OFF
AND ON AGAIN.
```

```
   IS LAMP LIT? ──YES──▶ VERIFY SYSTEM OPERATION
        │                      │
        NO                     ▼
        ▼                 IS SYSTEM OPERATING? ──NO──▶ REFER TO FLOWCHART 3
TURN POWER OFF-                 │
REMOVE POWER CABLE              YES
AT POWER SUPPLY                 ▼
REPLACE AND TURN          END (CAUSE POWER SUPPLY HAD
POWER ON AGAIN.           TEMPORILY STOPPED
        │                 WORKING TO PROTECT
        ▼                 ITSELF AGAINST
   IS LAMP LIT? ──YES──▶ REFER TO FLOWCHART 2   AC POWER SURGE)
        │
        NO
        ▼
REPLACE POWER CABLE
INSTALL NEW POWER
SUPPLY AND VERIFY
SYSTEM OPERATION
        │
        ▼
END
(CAUSE: DEFECTIVE
POWER SUPPLY)
```

3.48

# System-Wide Problems (Continued) GTE

## PROCEDURE FOR DETERMINATION OF CAUSE (FLOWCHART 2)

```
CONTINUATION
FROM FLOWCHART 1.  ────────►   TURN POWER OFF.
                               REMOVE ALL CARDS
                               (INCLUDING RGEN) FROM
                               BACKPLANE CONNECTORS.
                               RECONNECT POWER CABLE
                               AND TURN POWER ON.
                                        │
                                        ▼
                                   IS LAMP LIT? ──NO──►  TURN POWER OFF.
                                                         REPLACE POWER CABLE
                                                         AND TURN POWER
                                                         ON.
                                        │                         │
                                       YES                        ▼
                                        │                    IS LAMP LIT? ──YES──►  TURN POWER OFF.
                               A CARD HAS A FAULT-                                  REINSERT ALL
                               REINSERT CARDS ONE AT                                CARDS.
                               A TIME TO IDENTIFY                   │                   │
                               DEFECTIVE CARD(S).                  NO                   ▼
                                        │                           │            TURN POWER ON.
                                        ▼                          END           VERIFY SYSTEM
                               REPLACE ANY DEFECTIVE          (CONSULT WITH       OPERATION.
                               CARDS. VERIFY                   TECHNICAL             │
                               SYSTEM OPERATION.               SERVICE).            ▼
                                        │                                    RESTORE ODDB
                                        ▼                                    THROUGH LOADING
                               RESTORE ODDB                                  OR PROGRAMMING.
                               THROUGH LOADING                                     │
                               OR PROGRAMMING.                                     ▼
                                        │                                        END
                                        ▼                                 (CAUSE: DEFECTIVE
                                      END                                  POWER SUPPLY).
                               (CAUSE: DEFECTIVE
                                CARD OR CARDS).
```

NOTE:  TURN POWER OFF WHEN REINSERTING CPM, SWC, MEM, AND RGEN
       CARDS.  UNSEATING CPM OR MEM CARDS DELETES ODDB.

# System-Wide Problems (Continued)

GTE

## PROCEDURE FOR DETERMINATION OF CAUSE (FLOWCHART 3)
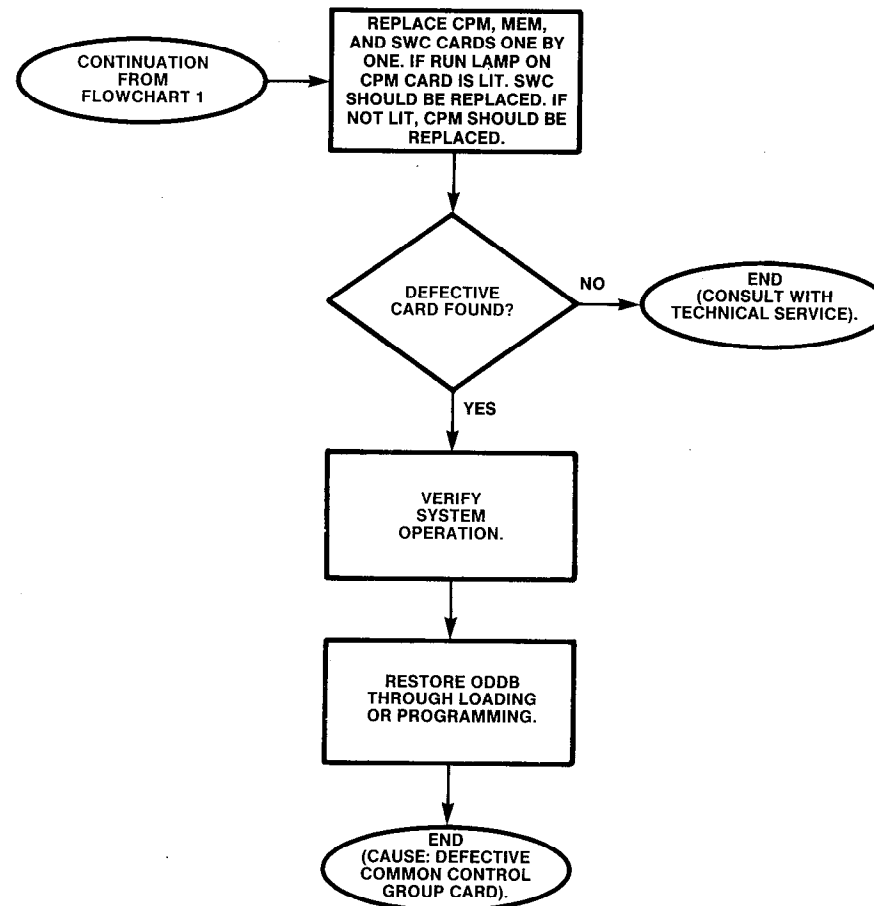
```
   ┌──────────────┐         ┌─────────────────────┐
   │ CONTINUATION │         │  REPLACE CPM, MEM,  │
   │    FROM      │ ──────▶ │ AND SWC CARDS ONE BY │
   │ FLOWCHART 1  │         │ ONE. IF RUN LAMP ON │
   └──────────────┘         │ CPM CARD IS LIT. SWC │
                            │SHOULD BE REPLACED. IF│
                            │ NOT LIT, CPM SHOULD BE│
                            │      REPLACED.       │
                            └─────────────────────┘
                                     │
                                     ▼
                              ◇ DEFECTIVE ◇    NO    ┌──────────────────┐
                              ◇ CARD FOUND? ◇ ─────▶ │      END         │
                              ◇            ◇         │  (CONSULT WITH   │
                                                     │TECHNICAL SERVICE).│
                                     │ YES           └──────────────────┘
                                     ▼
                            ┌─────────────┐
                            │   VERIFY    │
                            │   SYSTEM    │
                            │ OPERATION.  │
                            └─────────────┘
                                     │
                                     ▼
                            ┌─────────────┐
                            │ RESTORE ODDB │
                            │THROUGH LOADING│
                            │OR PROGRAMMING.│
                            └─────────────┘
                                     │
                                     ▼
                            ┌──────────────────┐
                            │       END        │
                            │(CAUSE: DEFECTIVE │
                            │ COMMON CONTROL   │
                            │   GROUP CARD).   │
                            └──────────────────┘
```

3.50

# Multiple Card/Interface
# Signal Problems

- ASSOCIATED WITH MORE THAN ONE DEFECTIVE STATION OR TRUNK BEING SERVED BY MULTIPLE CARDS.

- PROBLEMS MAY RESULT FROM:

  - INTERFACE SIGNAL ASSOCIATED WITH A GROUP OF CARDS BEING SHORTED BY A DEFECTIVE CARD OR OPENED BY A DEFECTIVE BACKPLANE.

  - DEFECTIVE SWC CARD WHICH IS CONTROLLING THE GROUP.

- THREE TYPES OF INTERFACE SIGNAL PROBLEMS MAY OCCUR:

  1. SIGNALS ASSOCIATED WITH EACH OF THE SIX INTERFACE CARD GROUPS (WHERE EACH ICG HAS ONE INBOUND AND ONE OUTBOUND BUS TO/FROM THE SWC).

  2. SIGNALS ASSOCIATED WITH ICG 0 THROUGH 2 AND ICG 3 THROUGH 5 (WHERE LOAD SHARING ALLOWS SEVERAL CLOCK AND TIMING SIGNALS FOR ALL LINE/TRUNK CARDS TO BE DRIVEN FROM THE SWC BY TWO SEPARATE GATES).

  3. SIGNALS USED TO DISTRIBUTE TIME SLOTS AMONG THE CARD SLOTS IN EACH ICG (WHERE EACH ICG HAS ITS OWN BUS AND THREE CARD SLOTS, EXCEPT ICG 5 WHICH HAS A FOURTH CARD SLOT).

- REFER TO FOLLOWING FLOWCHART FOR TROUBLE SHOOTING PROCEDURE FOR MULTIPLE CARD PROBLEMS.

# Multiple Card/Interface Signal Problems (Continued)

GTE OMNI SBCS

## PROCEDURE FOR DETERMINATION OF CAUSE

START
(MULTIPLE STATION OR TRUNK FAILURE).

REMOVE ONE OF AFFECTED LINE/TRUNK CARDS. VERIFY OPERATION OF OTHERS.

IS PROBLEM SOLVED? — YES → REPLACE REMOVED CARD WITH A SPARE.

END (CAUSE: DEFECTIVE ICG CARD.)

NO

ARE ALL AFFECTED CARDS REMOVED? — NO

YES

TURN POWER OFF. REPLACE SWC CARD WITH A SPARE. REINSERT LINK/TRUNK CARDS.

NOTE: COLD RESTART DELETES ODDB.

TURN POWER ON INITIALIZE HOT RESTART

IS PROBLEM SOLVED? — NO → END (CONSULT WITH TECHNICAL SERVICE).

YES

RESTART ODDB THROUGH LOADING OR PROGRAMMING (IF COLD START HAS PERFORMED).

RETURN SWC CARD FOR REPAIR.

END (CAUSE: DEFECTIVE SWC CARD).

3.52

# Single ICG Card Problems

- ASSOCIATED WITH MORE THAN ONE DEFECTIVE STATION OR TRUNK BEING SERVED BY THE SAME LINE OR TRUNK CARD.

- PRESCRIPTIVE ACTION MAY INCLUDE:

  - REPLACING THE DEFECTIVE LINE OR TRUNK CARD.

  - CHECKING FOR A LOOSE CONNECTION BETWEEN ICG CONNECTORS AND PINS AT THE CABINET.

# Student Notes

**GTE**

*GTE OMNI SBCS*

# Single Station or Trunk Problems

- ASSOCIATED WITH A SINGLE STATION OR TRUNK.

- PROBLEMS MAY RESULT FROM:
  - DEFECTIVE LINE/TRUNK CIRCUIT.
  - FAULTY WIRING BETWEEN LINE CIRCUIT AND STATION, OR BETWEEN TRUNK CIRCUIT AND EXCHANGE (CO OR HOST PABX).
  - DEFECTIVE STATION INSTRUMENT OR CONNECTING CO/PABX.
  - STATION/TRUNK WAS NOT INSTALLED IN DATA BASE.
  - TRUNK CIRCUIT WAS PROGRAMMED FOR A DIFFERENT SIGNALING MODE (GROUND OR LOOP START) THAN THE CENTRAL OFFICE.

- REFER TO FOLLOWING FLOW CHART FOR TROUBLESHOOTING PROCEDURE FOR SINGLE STATION OR TRUNK PROBLEMS.

# Single Station or Trunk
# Problems (Continued)

**GTE**

*GTE OMNI SBCS*

## PROCEDURE FOR DETERMINATION OF CAUSE

START
(SINGLE STATION
OR TRUNK FAILURE).

STATION/
TRUNK INSTALLED
IN DATA BASE
? — NO →

YES

STATION
TRUNK OUT OF
SERVICE
(CMC-701)
? — YES →

NO

REPLACE LINE/TRUNK
CARD SERVING
DEFECTIVE
CIRCUIT.

IS
PROBLEM
SOLVED
? — YES →

NO

INSTALL STATION/
TRUNK IN DATA BASE
WITH CMC COMMAND.
VERIFY STATION/
TRUNK OPERATION.

PLACE STATION/
TRUNK IN SERVICE
WITH CMC-701.
VERIFY STATION
TRUNK OPERATION.

END
(CAUSE: DEFECTIVE
CIRCUIT ON CARD).

END
(CAUSE: DEFECTIVE
CIRCUIT ON CARD).

CHECK STATION
INSTRUMENT/TRUNK
LINE OR WIRING.
REPLACE INSTRUMENT/
TRUNK LINE WITH
A WORKING ONE.

IS
PROBLEM
SOLVED
? — NO →

YES

END
(CONSULT WITH
TECHNICAL SERVICE).

END
(CAUSE: FAULTY
INSTRUMENT OR LOOSE
WIRING CONNECTION).

3.56

- RINGING PROBLEMS MAY RESULT FROM:

  - DEFECTIVE RGEN CARD (LIKELY CAUSE IF ALARM LAMP ON CPM CARD IS LIT).

  - OUTPUT FROM RGEN CARD BEING SHORTED BY A LINE OR TRUNK CARD.

  - RGEN CARD SET TO PROVIDE SYSTEM WITH DC VOLTAGE FOR MESSAGE WAITING SERVICE, BUT MESSAGE WAITING WAS NOT SPECIFIED IN THE DATA BASE.
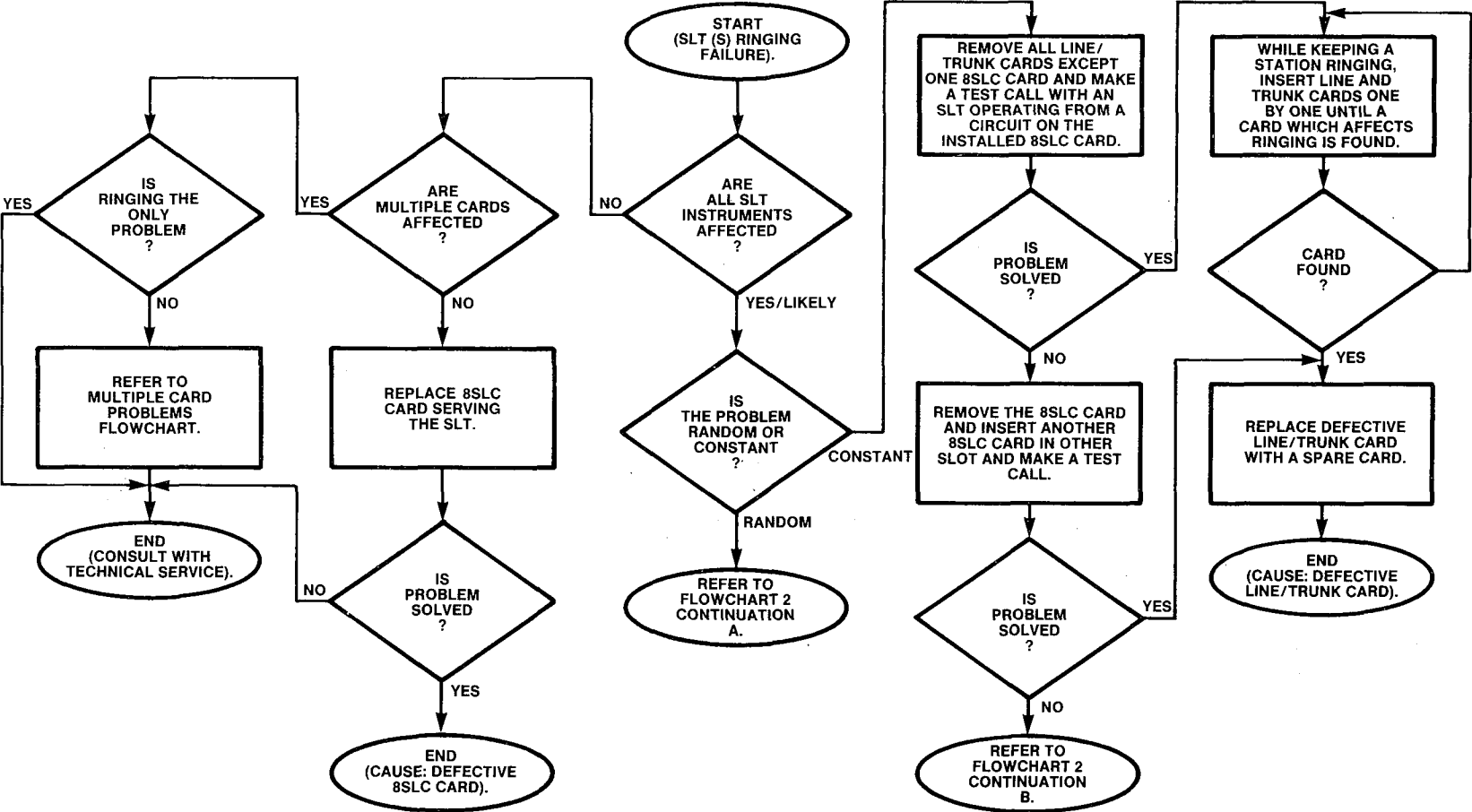
- REFER TO FOLLOWING FLOWCHART FOR TROUBLESHOOTING PROCEDURES FOR RINGING PROBLEMS.

# Ringing Problems (Continued)

## GTE

### GTE OMNI SBCS

## PROCEDURE FOR DETERMINATION OF CAUSE (FLOWCHART 1)

START
(SLT (S) RINGING
FAILURE).

IS
RINGING THE
ONLY
PROBLEM
?

YES

NO

ARE
MULTIPLE CARDS
AFFECTED
?

YES

NO

ARE
ALL SLT
INSTRUMENTS
AFFECTED
?

NO

YES/LIKELY

REMOVE ALL LINE/
TRUNK CARDS EXCEPT
ONE 8SLC CARD AND MAKE
A TEST CALL WITH AN
SLT OPERATING FROM A
CIRCUIT ON THE
INSTALLED 8SLC CARD.

WHILE KEEPING A
STATION RINGING,
INSERT LINE AND
TRUNK CARDS ONE
BY ONE UNTIL A
CARD WHICH AFFECTS
RINGING IS FOUND.

IS
PROBLEM
SOLVED
?

YES

NO

CARD
FOUND
?

YES

REFER TO
MULTIPLE CARD
PROBLEMS
FLOWCHART.

REPLACE 8SLC
CARD SERVING
THE SLT.

IS
THE PROBLEM
RANDOM OR
CONSTANT
?

CONSTANT

REMOVE THE 8SLC CARD
AND INSERT ANOTHER
8SLC CARD IN OTHER
SLOT AND MAKE A TEST
CALL.

REPLACE DEFECTIVE
LINE/TRUNK CARD
WITH A SPARE CARD.

END
(CONSULT WITH
TECHNICAL SERVICE).

NO

RANDOM

END
(CAUSE: DEFECTIVE
LINE/TRUNK CARD).

IS
PROBLEM
SOLVED
?

REFER TO
FLOWCHART 2
CONTINUATION
A.

IS
PROBLEM
SOLVED
?

YES

YES

END
(CAUSE: DEFECTIVE
8SLC CARD).

NO

REFER TO
FLOWCHART 2
CONTINUATION
B.

3.58

## PROCEDURE FOR DETERMINATION OF CAUSE (FLOWCHART 2)

CONTINUATION A
FROM FLOWCHART 1

CONTINUATION B
FROM FLOWCHART 1

CHECK THE STRAPPING (JUMPER) OPTION ON RGEN AND THE CUSTOMER SYSTEM SPECIFICATION (CSS) FOR THE MESSAGE WAITING OPTION

TURN THE SYSTEM POWER OFF. REPLACE RGEN, AND TURN POWER ON AGAIN. INITIATE HOT RESTART

DO THE STRAPPING/JUMPER PATTERNS AND DATA BASE AGREE ? — YES

IS PROBLEM SOLVED ? — NO

END (CONSULT WITH TECHNICAL SERVICE).

NO

YES

CHANGE THE RGEN STRAPPING/JUMPERS OR MODIFY THE DATA BASE TO REFLECT THE HARDWARE OPTION USED.

RESTORE ODDB THROUGH LOADING OR PROGRAMMING.

END (CAUSE: MESSAGE WAITING OPTION DIDN'T MATCH DATA BASE SETTING).

END (CAUSE: DEFECTIVE RGEN CARD).

3.59

# Student Notes

GTE

*GTE OMNI SBCS*

# DTMF Single Line
# Telephone Problems

- TWO TYPES OF PROBLEMS MAY OCCUR:

  - SINGLE CIRCUIT PROBLEM AFFECTING A SINGLE DTMF SLT INSTRUMENT.

  - MULTIPLE CIRCUIT PROBLEM AFFECTING ALL DTMF SLT INSTRUMENTS.

- REFER TO TROUBLESHOOTING PROCEDURE FOR SINGLE STATIONS/ TRUNKS FOR PROBLEMS AFFECTING SINGLE DTMF STATIONS.

- PROBLEMS AFFECTING ALL DTMF SLT INSTRUMENTS REQUIRE IDENTIFYING ONE OR MORE DEFECTIVE CIRCUITS ON THE 4DMR CARD. DEFECTIVE CIRCUIT(S) CAN BE ISOLATED BY USING CMC-701 TO PUT ALL DTMF CIRCUITS EXCEPT ONE BEING TESTED, OUT OF SERVICE.

# SWC and CPM Card Problems

- REPLACE THE SWC CARD IF PROBLEMS OCCUR RELATING TO ANY OF THE FOLLOWING SWC FUNCTIONS:

  — CALL PROGRESS TONE GENERATION
  — MIXING FUNCTION PERMITTING THREE-WAY CONVERSATION OR EXECUTIVE OVERRIDE
  — DTMF TONE SENDER FUNCTION
  — CONTROL LOSS (DIGITAL PAD)

- REPLACE THE CPM CARD IF THE REAL TIME SOURCE CLOCK ON THE CPM CARD BECOMES DEFECTIVE. A DEFECTIVE CONDITION IS INDICATED BY:

  — CPM ALARM LAMP ON
  — HH:MM DISPLAYED ON CS-20 AND CSD INSTRUMENTS INSTEAD OF PROGRAMMED SETTING
  — FAULT LOG LISTING FOR REAL TIME SOURCE (RTS)

NOTE:   WHEN REPLACING COMMON CONTROL AND RGEN CARDS, SYSTEM POWER MUST BE OFF. UNSEATING THE CPM CARD DELETES THE ODDB. RELOAD OR REPROGRAM THE ODDB.

# Printed Circuit Board Card Replacement

GTE

| PROCEDURE |
|-----------|

1.  GROUND YOURSELF PRIOR TO HANDLING CARDS.

2.  SYSTEM POWER MUST BE TURNED OFF WHEN INSTALLING OR REPLACING CPM, MEM, SWC, OR RGEN CARDS.

3.  ALL LINE, TRUNK AND 4DMR CARDS CAN BE REPLACED WITH POWER ON. TRUNK CIRCUITS SHOULD BE TAKEN OUT OF SERVICE WITH CMC-701 PRIOR TO REMOVAL.

4.  ALWAYS ENSURE THAT CARDS ARE INSERTED IN CORRECT SLOTS (REFER TO STUDENT WORKBOOK, INSTALLATION). FORCING THEM INTO INCORRECT SLOTS MAY RESULT IN CARD MALFUNCTIONS.

5.  HANDLE CARDS BY EDGES ONLY. USE CAUTION BECAUSE DAMAGE TO EDGE OF CARD COULD RESULT IN MALFUNCTION.

6.  WHEN REMOVING A CARD FROM A SLOT, GRASP PLASTIC EJECTORS AND FLIP TOWARD TOP AND BOTTOM OF CABINET.

7.  ENSURE THAT CARD COMPONENTS FACE THE LEFT SIDE OF THE CABINET WHEN INSERTING (EXCEPT THE RGEN CARD WHOSE COMPONENTS FACE RIGHT).

8.  SLIDE THE REPLACEMENT CARD COMPLETELY INTO ITS ASSIGNED SLOT AND FIRMLY PRESS PLASTIC EJECTOR TABS.

9.  ENSURE THAT CARDS ARE SEATED FIRMLY INTO BACKPLANE CONNECTOR, BUT DO NOT FORCE CARDS THAT ARE NOT EASILY INSERTED. VERIFY THAT CARD BELONGS IN SLOT, THEN REINSERT IT.

10. INITIALIZE LINE/TRUNK CARDS BY PRESSING RESTART BUTTON WITH TOGGLE IN CENTER POSITION ON CPM CARD.

# Laboratory Activity/Review Exercise
# — Troubleshooting (3.3)

**GTE**

*GTE OMNI SBCS*

## INSTRUCTIONS

- THE COMBINED LABORATORY ACTIVITY AND REVIEW EXERCISE ON THE FOLLOWING PAGES WILL ALLOW YOU TO BECOME MORE FAMILIAR WITH THE OMNI SBCS FAULT RESOLUTION PROCEDURES ASSOCIATED WITH THE FAULT CODES IN THE FAULT LOG.

- YOUR INSTRUCTOR HAS CREATED SEVEN SIMULATED FAULT CONDITIONS. USE THE TROUBLESHOOTING FLOWCHARTS INCLUDED IN THE STUDENT WORKBOOK AS A GUIDE FOR IDENTIFYING, ISOLATING, AND CORRECTING EACH OF THE FAULTS.

- TWO HOURS ARE ALLOWED TO COMPLETE THIS ACTIVITY. AS YOU PROCEED WITH EACH FAULT PROBLEM, COMPLETE THE CORRESPONDING REVIEW EXERCISE BELOW.

- SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

### FAULT 1

1. DETERMINE SYSTEM STATUS BY CHECKING CPM LED LAMPS AS INDICATORS. RECORD LAMP STATUS:

    RUN LAMP: _____

    ALARM LAMP: _____

    TIMER OVERFLOW LAMP: _____

2. CHECK THE DEVICE STATUS DISPLAY WITH CMC-800 FOR AGREEMENT WITH THE CPM LED LAMPS. RECORD THE DISPLAY BELOW:

    _____

    _____

# Laboratory Activity/Review Exercise — Troubleshooting (3.3) (Continued)

3.  CHECK THE FAULT LOG LISTED WITH CMC-801. RECORD ANY FAULT INDICATED BELOW:

    _____

    _____

    _____

4.  TROUBLESHOOT THE FAULT USING APPROPRIATE FAULT RESOLUTION STEPS OUTLINED IN THE TROUBLESHOOTING FLOWCHARTS IN THE STUDENT WORKBOOK. RECORD THE STEPS YOU TOOK TO RESOLVE THE SPECIFIC FAULT. (INSTRUCTOR WILL BE EVALUATING YOUR STEPS BASED ON YOUR LOGIC, USE OF THE FLOWCHARTS, AS WELL AS SPEED IN IDENTIFYING THE FAULT):

    _____

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**LAB MILESTONE**

WHEN THE FAULT HAS BEEN RESOLVED, NOTIFY THE INSTRUCTOR TO VERIFY YOUR ANSWERS.

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# Laboratory Activity/Review Exercise
# — Troubleshooting (3.3) (Continued)

## FAULT 2

1. DETERMINE SYSTEM STATUS BY CHECKING CPM LED LAMPS AS INDICATORS. RECORD LAMP STATUS:

    RUN LAMP: _____

    ALARM LAMP: _____

    TIMER OVERFLOW LAMP: _____

2. CHECK THE DEVICE STATUS DISPLAY WITH CMC-800 FOR AGREEMENT WITH THE CPM LED LAMPS. RECORD THE DISPLAY BELOW:

   _____

3. CHECK THE FAULT LOG LISTING WITH CMC-801. RECORD ANY FAULT INDICATED BELOW:

   _____

   _____

   _____

4. TROUBLESHOOT THE FAULT USING APPROPRIATE FAULT RESOLUTION STEPS OUTLINED IN THE TROUBLESHOOTING FLOWCHARTS IN THE STUDENT WORKBOOK. RECORD THE STEPS YOU TOOK TO RESOLVE THE SPECIFIC FAULT. (INSTRUCTOR WILL BE EVALUATING YOUR STEPS BASED ON YOUR LOGIC, USE OF THE FLOWCHARTS, AS WELL AS SPEED IN IDENTIFYING THE FAULT):

   _____

   _____

   _____

# Laboratory Activity/Review Exercise — Troubleshooting (3.3) (Continued)

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**LAB MILESTONE**

WHEN THE FAULT HAS BEEN RESOLVED, NOTIFY THE INSTRUCTOR TO VERIFY YOUR ANSWERS.

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## FAULT 3

1. DETERMINE SYSTEM STATUS BY CHECKING CPM LED LAMPS AS INDICATORS. RECORD LAMP STATUS:

     RUN LAMP: _____

     ALARM LAMP: _____

     TIMER OVERFLOW LAMP: _____

2. CHECK THE DEVICE STATUS DISPLAY WITH CMC-800 FOR AGREEMENT WITH THE CPM LED LAMPS. RECORD THE DISPLAY BELOW:

_____

_____

# Laboratory Activity/Review Exercise — Troubleshooting (3.3) (Continued)

GTE OMNI SBCS

3.  CHECK THE FAULT LOG LISTING WITH CMC-801. RECORD ANY FAULT INDICATED BELOW:

_____

_____

_____

4.  TROUBLESHOOT THE FAULT USING APPROPRIATE FAULT RESOLUTION STEPS OUTLINED IN THE TROUBLESHOOTING FLOWCHARTS IN THE STUDENT WORKBOOK. RECORD THE STEPS YOU TOOK TO RESOLVE THE SPECIFIC FAULT. (INSTRUCTOR WILL BE EVALUATING YOUR STEPS BASED ON YOUR LOGIC, USE OF THE FLOWCHARTS, AS WELL AS SPEED IN IDENTIFYING THE FAULT):

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**LAB MILESTONE**

WHEN THE FAULT HAS BEEN RESOLVED, NOTIFY THE INSTRUCTOR TO VERIFY YOUR ANSWERS.

## FAULT 4

1.  DETERMINE SYSTEM STATUS BY CHECKING CPM LED LAMPS AS INDICATORS. RECORD LAMP STATUS:

       RUN LAMP: _____

       ALARM LAMP: _____

       TIMER OVERFLOW LAMP: _____

2.  CHECK THE DEVICE STATUS DISPLAY WITH CMC-800 FOR AGREEMENT WITH THE CPM LED LAMPS. RECORD THE DISPLAY BELOW:

_____

_____

3.  CHECK THE FAULT LOG LISTED WITH CMC-801. RECORD ANY FAULT INDICATED BELOW:

_____

_____

_____

# Laboratory Activity/Review Exercise
— Troubleshooting (3.3) (Continued)

GTE

*GTE OMNI SBCS*

4.  TROUBLESHOOT THE FAULT USING APPROPRIATE FAULT RESOLUTION STEPS OUTLINED IN
    THE TROUBLESHOOTING FLOWCHARTS IN THE STUDENT WORKBOOK. RECORD THE STEPS
    YOU TOOK TO RESOLVE THE SPECIFIC FAULT. (INSTRUCTOR WILL BE EVALUATING YOUR
    STEPS BASED ON YOUR LOGIC, USE OF THE FLOWCHARTS, AS WELL AS SPEED IN
    IDENTIFYING THE FAULT):

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| **LAB MILESTONE** |
|---|
| WHEN THE FAULT HAS BEEN RESOLVED, NOTIFY THE INSTRUCTOR TO VERIFY YOUR ANSWERS. |

# Laboratory Activity/Review Exercise
# — Troubleshooting (3.3) (Continued)

## FAULT 5

1. DETERMINE SYSTEM STATUS BY CHECKING CPM LED LAMPS AS INDICATORS. RECORD LAMP STATUS:

    RUN LAMP: _____

    ALARM LAMP: _____

    TIMER OVERFLOW LAMP: _____

2. CHECK THE DEVICE STATUS DISPLAY WITH CMC-800 FOR AGREEMENT WITH THE CPM LED LAMPS. RECORD THE DISPLAY BELOW:

   _____

   _____

3. CHECK THE FAULT LOG LISTING WITH CMC-801. RECORD ANY FAULT INDICATED BELOW:

   _____

   _____

   _____

4. TROUBLESHOOT THE FAULT USING APPROPRIATE FAULT RESOLUTION STEPS OUTLINED IN THE TROUBLESHOOTING FLOWCHARTS IN THE STUDENT WORKBOOK. RECORD THE STEPS YOU TOOK TO RESOLVE THE SPECIFIC FAULT. (INSTRUCTOR WILL BE EVALUATING YOUR STEPS BASED ON YOUR LOGIC, USE OF THE FLOWCHARTS, AS WELL AS SPEED IN IDENTIFYING THE FAULT):

   _____

   _____

   _____

   _____

3.71

# Laboratory Activity/Review Exercise
# — Troubleshooting (3.3) (Continued)

**GTE**

*GTE OMNI SBCS*

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**LAB MILESTONE**

**WHEN THE FAULT HAS BEEN RESOLVED, NOTIFY THE INSTRUCTOR TO VERIFY YOUR ANSWERS.**

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## FAULT 6

1. DETERMINE SYSTEM STATUS BY CHECKING CPM LED LAMPS AS INDICATORS. RECORD LAMP STATUS:

    RUN LAMP: _____

    ALARM LAMP: _____

    TIMER OVERFLOW LAMP: _____

2. CHECK THE DEVICE STATUS DISPLAY WITH CMC-800 FOR AGREEMENT WITH THE CPM LED LAMPS. RECORD THE DISPLAY BELOW:

    _____

    _____

# Laboratory Activity/Review Exercise — Troubleshooting (3.3) (Continued)

3.  CHECK THE FAULT LOG LISTING WITH CMC-801. RECORD ANY FAULT INDICATED BELOW:

    _____

    _____

    _____

4.  TROUBLESHOOT THE FAULT USING APPROPRIATE FAULT RESOLUTION STEPS OUTLINED IN THE TROUBLESHOOTING FLOWCHARTS IN THE STUDENT WORKBOOK. RECORD THE STEPS YOU TOOK TO RESOLVE THE SPECIFIC FAULT. (INSTRUCTOR WILL BE EVALUATING YOUR STEPS BASED ON YOUR LOGIC, USE OF THE FLOWCHARTS, AS WELL AS SPEED IN IDENTIFYING THE FAULT):

    _____

    _____

    _____

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    _____

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**LAB MILESTONE**

WHEN THE FAULT HAS BEEN RESOLVED, NOTIFY THE INSTRUCTOR TO VERIFY YOUR ANSWERS.

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FAULT 7

1. DETERMINE SYSTEM STATUS BY CHECKING CPM LED LAMPS AS INDICATORS. RECORD LAMP STATUS:

    RUN LAMP: _____

    ALARM LAMP: _____

    TIMER OVERFLOW LAMP: _____

2. CHECK THE DEVICE STATUS DISPLAY WITH CMC-800 FOR AGREEMENT WITH THE CPM LED LAMPS. RECORD THE DISPLAY BELOW:

    _____

    _____

3. CHECK THE FAULT LOG LISTED WITH CMC-801. RECORD ANY FAULT INDICATED BELOW:

    _____

    _____

    _____

**3.74**

# Laboratory Activity/Review Exercise
# — Troubleshooting (3.3) (Continue@

**GTE**

GTE OMNI SBCS

4. TROUBLESHOOT THE FAULT USING APPROPRIATE FAULT RESOLUTION STEPS OUTLINED IN THE TROUBLESHOOTING FLOWCHARTS IN THE STUDENT WORKBOOK. RECORD THE STEPS YOU TOOK TO RESOLVE THE SPECIFIC FAULT. (INSTRUCTOR WILL BE EVALUATING YOUR STEPS BASED ON YOUR LOGIC, USE OF THE FLOWCHARTS, AS WELL AS SPEED IN IDENTIFYING THE FAULT):

_____

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| LAB MILESTONE |
|---|
| WHEN THE FAULT HAS BEEN RESOLVED, NOTIFY THE INSTRUCTOR TO VERIFY YOUR ANSWERS. |

# SYSTEM MAINTENANCE

## Diagnostics

# 3.4 Enabling Objective

**GIVEN:**
- GTE OMNI SBCS
- PORTABLE MAINTENANCE PANEL
- GTE OMNI SBCS PERIPHERALS
- REPLACEMENT CARDS AND INSTRUMENTS
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- STANDARD MAINTENANCE TOOLS
- LABORATORY ACTIVITY
- REVIEW EXERCISE

**ACTION:**
- USE OMNI SBCS SYSTEM DIAGNOSTICS TESTS TO IDENTIFY HARDWARE AND SOFTWARE MALFUNCTIONS.
- COMPLETE REVIEW EXERCISE.

**CRITERIA:**
- DIAGNOSTIC TESTS WILL BE PERFORMED IN ACCORDANCE WITH PROCEDURES OUTLINED IN OMNI SBCS GTEP MANUAL AND OMNI SBCS STUDENT WORKBOOK.
- REVIEW EXERCISE WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

3.77

- **DIAGNOSTICS ARE A GROUP OF SYSTEM FUNCTIONS THAT FACILITATE MAINTENANCE BY DETECTION AND ISOLATION OF HARDWARE AND SOFTWARE MALFUNCTIONS.**

- **OMNI SBCS PROVIDES 3 TYPES OF ON-LINE SYSTEM DIAGNOSTICS:**

  - SELF-DIAGNOSTICS: **ROUTINE SELF-TESTS DONE AT TIME OF A RESTART WHERE SYSTEM RESPONDS TO A DETECTED ERROR WITH AN ALARM.**

  - CALL-PROCESSING DIAGNOSTICS: **ROUTINE TESTS DONE CONTINUOUSLY AND AUTOMATICALLY BY OPERATING SYSTEM.**

  - MANUAL **TRUNK** CONNECTION DIAGNOSTICS: **CMC COMMAND DEDICATED TO TESTING TRUNKS WHILE SYSTEM IS ON-LINE.**

# System Self-Diagnostics

. SYSTEM IMPLEMENTS THE FOLLOWING TESTS WHEN THE SYSTEM IS POWERED ON, BY PRESSING THE CPM RESTART BUTTON, OR BY THE WATCH DOG TIMER OVERFLOW:

- RAM READ/WRITE TEST
- RAM PROTECTION TEST
- SWITCH CONTROL TEST
- NON-VOLATILE RAM CHECK

● TABLE BELOW INDICATES THE TYPE OF ALARM AND SYSTEM RESPONSE TO ERRORS DETECTED DURING SELF-DIAGNOSTIC TESTS:

| TYPE OF DIAGNOSTICS | TYPE OF RESTART | | | TYPE OF ALARM | | | SYSTEM RESPONSE |
|---|---|---|---|---|---|---|---|
| | COLD | HOT | R | RUN | TO | ALM | |
| RAM/R/W | X | X | | ON | — | ON | CALL PROCESSING UNINTERRUPTED |
| RAM MEMORY | X | X | | ON | — | ON | CALL PROCESSING UNINTERRUPTED |
| SWC MEMORY R/W | X | X | X | ON | — | ON | CALL PROCESSING UNINTERRUPTED |
| NON-VOLATILE RAM | X | X | X | ON | — | OFF | INITIATE COLD RESTART (ODDB IS LOST) |

NOTE: ALL ERRORS/RESPONSES ARE ENTERED IN THE SYSTEM FAULT LOG.

TYPES OF RESTARTS:
X = TEST DONE AT RESTART
COLD = COLD RESTART INITIALIZES DEFAULT DATA BASE, ODDB IS DELETED
HOT = HOT RESTART RETAINS ODDB
R =RESET INDICATES A MOMENTARY POWER INTERRUPT

. TYPES OF ALARM:
ON = ALARM LAMP STEADILY ON.
OFF = ALARM LAMP STEADILY OFF.
— = ALARM INDICATES LAST STATE.

3.79

# Call Processing Diagnostics

- SYSTEM AUTOMATICALLY SUPERVISES CALL PROCESSING OPERATION BY IMPLEMENTING THE FOLLOWING TESTS:

  - REAL TIME SOURCE CLOCK
  - I/O CONTROL CHECK
  - SWITCH CONTROL CLOCK DOWN CHECK
  - SWITCH MEMORY TEST
  - SWITCH CONTROL TEST
  - CPM PERIPHERAL CARD DATA TRANSMISSION CHECK
  - CPM CARD GROUP DATA COMMUNICATION CHECK
  - MEMORY BACKUP BATTERY CHARGE CHECK
  - INVALID SYSTEM INTERRUPTING CHECK
  - SOFTWARE MAZE CHECK
  - RGEN CARD CHECK

- TABLES ON FOLLOWING PAGES DESCRIBE THE TYPE OF ALARM AND: SYSTEM RESPONSE TO ERRORS DETECTED DURING CALL PROCESSING DIAGNOSTIC TESTS.

# Call Processing Diagnostics
# (Continued)

GTE OMNI SBCS

## SYSTEM CALL PROCESSING DIAGNOSTICS

| TYPES OF DIAGNOSTICS | PROBLEM | TYPES OF ALARM | | | FAULT LOGGED | SYSTEM RESPONSE |
|---|---|---|---|---|---|---|
| | | RUN | TO | ALM | | |
| REAL TIME SOURCE CLOCK (RTS) | STOP INCREMENTING TIME OUTPUT ILLEGAL TIME | ON | ⬤ | ON | YES | CALL PROCESSING UNINTERRUPTED. TIMER IS DOWN. TIME NOT OUTPUT TO EKT SCREENS. |
| I/O CONTROL (SERIAL COMMUNICATION INTERFACE) | PARITY ERROR. FRAMING ERROR. (NOT RECOVERABLE) | ON | — | ON | YES | CALL PROCESSING UNINTERRUPTED. |
| SWC CONTROL CLOCK DOWN | CLOCK DOWN. | OFF | — | ON | YES | SYSTEM DOWN (PFT ACTIVATED) WHEN THE CLOCK IS RESTORED AND HOT RESTART INITIATED TO LAMP GOES TO ON. |
| SWC MEMORY ERROR | MEMORY R/W ERROR. | ON | — | ON | YES | CALL PROCESSING UNINTERRUPTED. |
| ICG CARD GROUP DATA ERROR | CARD OR CIRCUIT HAS BEEN REMOVED. ILLEGAL FUNCTION ATTEMPTED. | ON | — | ON | YES | MAKES FAULTY LINE/TRUNK CIRCUITS BUSY |
| EKT ERROR | DATA PARITY ERROR LINE CARD OR EKT | ON | — | ON | YES | MAKES FAULTY EKT CIRCUIT BUSY. |
| MEMORY BACKUP BATTERY CHARGE | BACKUP BATTERY DISCHARGED | ON | — | ON | YES | CALL PROCESSING UNINTERRUPTED. |
| SWC CONTROL ERROR | BUSY FLAG STACK | ON | — | ON | YES | INITIATES HOT RESTART |
| SOFTWARE MAZE (MEMORY PROBLEM. | SOFTWARE LOGIC ERROR | ON | — | OFF | YES | INITIATES HOT RESTART.. |
| RGEN CARD | RGEN DEFECTIVE | ON | — | ON | YES | NO RINGING TO SLT. |

3.81

# Call Processing Diagnostics
## (Continued)

## HARDWARE FAULT DETECTION

| TYPE OF DIAGNOSTICS | TYPES OF ALARM | | | SYSTEM RESPONSE |
|---|---|---|---|---|
| | RUN | TO | ALM | |
| CPM CLOCK FAILURE | OFF | ON | OFF | SYSTEM DOWN (PFT IS ACTIVATED) |
| WATCH DOG TIMER OVERFLOW | ON | ON | OFF | INITIATE HOT RESTART |
| RESTART THRESHOLD EXCEEDED | OFF | ON | OFF | SYSTEM DOWN (PFT IS ACTIVATED) |

3.82

# Manual Trunk Connection Diagnostics

**GULL**OMNISBCS

- SYSTEM PROVIDES CMC-802 AS A DIAGNOSTIC TOOL FOR DEDICATING A SPECIFIC TRUNK LINE TO A DESIGNATED STATION FOR AUDITORY, RINGING, AND TRANSMISSION VERIFICATION.

- REFER TO DIAGNOSTIC TRUNK CONNECTION IN STUDENT WORKBOOK FOR TESTING PROCEDURE.

# Student Notes

**GTE**

GTE OMNI SBCS

# Lamp Status Fault Isolation

**GTE**

. TABLE BELOW DESCRIBES PRESCRIPTIVE ACTIONS TO BE TAKEN IF AN ERROR OR FAULT IS DETECTED AND INDICATED ON THE SYSTEM LED STATUS LAMPS.

| LAMP STATUS FAULT ISOLATION/PRESCRIPTIVE ACTION | | | | | |
|---|---|---|---|---|---|
| LAMP STATUS | | | | LIKELY PROBLEM | ACTION |
| POWER | RUN | TO | ALM | | |
| OFF | OFF | OFF | OFF | POWER DOWN OR POWER SUPPLY FAULT | REFER TO CMC FAULT ISOLATION TABLE ON NEXT PAGE. |
| ON | OFF | ON | OFF | CPM FAULT: CLOCK FAILED RESTARTRETRYOVERRUN | REPLACE CPM CARD AND REPLACE SWC CARD. |
| ON | OFF | OFF | ON | SWC FAULT: CLOCK DOWN | READ OUT FAULT LOG, THEN REPLACE SWC CARD. |
| ON | OFF | ON | ON | CPM OR SWC FAULT: PERIPHERAL CARD FAULT EKT FAULT | REPLACE SWC CARD AND CHECK THE SYSTEM STATUS. IF NECESSARY, CHANGE CPM CARD. |
| ON | ON | ON | OFF | SOFTWARE FAULT: CPM INTERMITTENT FAULT | READ OUT THE FAULT LOG, THEN RESPOND ACCORDING TO CMC FAULT ISOLATION TABLE ON NEXT PAGE. |
| ON | ON | OFF | ON | SWC FAULT: PERIPHERAL CARD FAULT EKT FAULT RGEN FAULT | READ OUT THE FAULT LOG, THEN RESPOND ACCORDING TO CMC FAULT ISOLATION TABLE ON NEXT PAGE. |
| ON | ON | ON | ON | SOFTWARE FAULT: CPM/SWC INTERMITTENT FAULT PERIPHERAL CARD FAULT EKT FAULT | READ OUT THE FAULT LOG, THEN RESPOND ACCORDING TO CMC FAULT ISOLATION TABLE ON NEXT PAGE. |

# Lamp Status Fault
# Isolation (Continued)

| TYPES OF FAULTS | ACTION |
|---|---|
| COMMON CONTROL (CC) | GENERALLY NO ACTION REQUIRED. IF PROBLEM GETS WORSE, INITIATE RESTART IN THIS ORDER: RESET, HOT, COLD. THE COLD RESTART WILL LOSE THE ODDB. |
| REAL TIME SOURCE CLOCK | REPLACE CPM CARD DURING LOW TRAFFIC PERIOD. |
| RAM MEMORY | REPLACE CPM CARD DURING LOW TRAFFIC PERIOD. |
| BACK-UP BATTERY | IF THERE HAS BEEN A LONG TERM POWER FAILURE, NO ACTION IS NEEDED. THE BATTERY IS BEING CHARGED. IF DISCHARGE CONDITION CONTINUES MORE THAN TWO DAYS, CHANGE BACK-UP BATTERY. SAVE CUSTOMER DATA BASE TO TAPE. |
| SWITCH CONTROL | REPLACE SWC CARD. |
| LINE/TRUNK CARD | TROUBLESHOOT ACCORDING TO PROCEDURE FOR SINGLE ICG CARD PROBLEMS. |
| TERMINAL (TRM) EKT OR DSS | TEST EKT AND/OR BLF/DSS. IF INSTRUMENT IS FAULTY, REPLACE IT IF INSTRUMENT IS OPERATIONAL. |
| SERIAL COMMUNICATION INTERFACE | CHECK I/O EQUIPMENT. CHECK CONFIGURATION MATCH OF RS-232-C PORT (CMC-900) AND THE CONNECTION. IF OPERATIONAL, CHANGE CPM CARD DURING LOW TRAFFIC CONDITION. |
| SOFTWARE | NO RESPONSE IS NEEDED. IF SYSTEM OPERATION DETERIORATES, INITIATE RESTART. (RESET, HOT, OR COLD RESTART). |
| RGEN CARD | REPLACE WITH SPARE RGEN CARD. |

NOTE: IF FAULT LOG CANNOT BE ACCESSED, REPLACE CPM CARD. INITIATE RESET AND VERIFY SYSTEM OPERATION BEFORE CHANGING CPM CARD. ENSURE THAT ODDB HAS BEEN SAVED BEFORE REPLACING CPM OR MEM CARDS.

# EKT and BLF/DSS Instrument Diagnostics ▄▄ GTE

*GTE OMNI SBCS*

## DESCRIPTION

. CS-10, CS-20, CSD, AND BLF/DSS MUST BE TESTED OFF-LINE.

. THE FOLLOWING TESTS CAN BE PERFORMED:
— BUTTON AND KEY PAD TEST
— LED LAMP TEST
— LCD DISPLAY TEST
— VOICE CIRCUIT TEST
— AUDIBLE TONE TEST

## PROCEDURE — EKT INSTRUMENTS

1. UNPLUG TELEPHONE CORD FROM MODULAR JACK IN BACK OF TELEPHONE.

2. PRESS 1 AND 3 KEYS SIMULTANEOUSLY.

3. PLUG TELEPHONE CORD INTO MODULAR JACK IN BACK OF TELEPHONE WHILE KEEPING THE 1 AND 3 KEYS PRESSED.

4. PRESS APPROPRIATE TEST EXECUTION KEYS (REFER TO TABLES ON FOLLOWING PAGES OF STUDENT WORKBOOK) AND MONITOR RESULTS. IF RESULTS VARY FROM THOSE LISTED, RETURN DEFECTIVE INSTRUMENT FOR REPAIR.

## PROCEDURE — BLF/DSS INSTRUMENTS

1. UNPLUG TELEPHONE CORD FROM MODULAR JACK IN BACK OF INSTRUMENT.

2. PRESS FUNCTION KEYS 23 AND 3 SIMULTANEOUSLY.

3. PLUG TELEPHONE CORD INTO MODULAR JACK WHILE KEEPING FUNCTION KEYS 23 AND 3 PRESSED.

4. PRESS APPROPRIATE TEST EXECUTION KEYS (REFER TO TABLE ON FOLLOWING PAGES OF STUDENT WORKBOOK) AND MONITOR RESULTS. IF RESULTS VARY FROM THOSE LISTED, RETURN DEFECTIVE INSTRUMENT FOR REPAIR.

# EKT and BLF/DSS Test Execution

| KEYS PRESSED | RESULT |
|---|---|
| 1 | STOP RINGING.<br>CS 20 AND CSD DISPLAYS "1". |
| 2 | START RINGING IN PATTERN 1.<br>CS 20 AND CSD DISPLAYS "2". |
| 3 | START RINGING IN PATTERN 2.<br>CS 20 AND CSD DISPLAY "3". |
| 4 | START RINGING IN PATTERN 3.<br>CS 20 AND CSD DISPLAY "4". |
| 5 | START RINGING IN PATTERN 4. CS 20 AND CSD DISPLAY "5". |
| 6 | START RINGING IN PATTERN 5.<br>CS 20 AND CSD DISPLAY "6". |
| 7 | START RINGING IN PATTERN 6.<br>CS 20 AND CSD DISPLAY "7". |
| 8 | START RINGING IN PATTERN 7.<br>CS 20 AND CSD DISPLAY "8". |
| 9 | START RINGING IN PATTERN 8.<br>CS 20 AND CSD DISPLAY "9". |
| 0 | ASSOCIATED LED LAMP FLASHING.<br>(REPEAT OF 0.125 SEC ON, 0.125 SEC OFF,<br>0.125 SEC ON AND 1.625 SEC OFF). |
| # | ASSOCIATED LED LAMP FLASHING.<br>(REPEAT OF 1.0 SEC ON AND 1.0 SEC OFF).<br>CS 20 AND CSD DISPLAY "#". |
| * | ASSOCIATED LED LAMP FLASHING.<br>(REPEAT OF 0.125 SEC ON, 0.25 SEC OFF, and<br>1.625 SEC OFF).<br>CS 20 AND CSD DISPLAY ".". |

| KEYS PRESSED | RESULT |
|---|---|
| FK1 | ASSOCIATED LED LAMP ON |
| FK2 | ASSOCIATED LED LAMP ON |
| FK3 | ASSOCIATED LED LAMP ON |
| FK4 | ASSOCIATED LED LAMP ON |
| FK5 | ASSOCIATED LED LAMP ON |
| FK6 | ASSOCIATED LED LAMP ON |
| FK7 | ASSOCIATED LED LAMP ON |
| FK8 | ASSOCIATED LED LAMP ON |
| FK9 | ASSOCIATED LED LAMP ON. DISPLAY ALL DOT PATTERN ON THE LCD OF THE CS 20 AND CSD. |
| FK10 | ASSOCIATED LED LAMP ON. DISPLAY BLANK ON THE LCD OF THE CS 20 AND CSD. |
| FK11-14 (CSD ONLY) | ASSOCIATED LED LAMP ON |
| FK1 I-80 (DSS ONLY) | ASSOCIATED LED LAMP ON |
| SK1 (CSD ONLY) | LED ASSOCIATED WITH FK1 FLASHING (REPEAT OF 1.875 SEC ON, 0.125 SEC OFF) |
| SK2 (CSD ONLY) | LED ASSOCIATED WITH FK2 FLASHING (REPEAT OF 1.875 SEC ON, 0.125 SEC. OFF) |
| SK3 (CSD ONLY) | LED ASSOCIATED WITH FK3 FLASHING (REPEAT OF 1.875 SEC ON, 0.125 SEC OFF). |
| SK4 (CSD ONLY) | LED ASSOCIATED WITH FK4 FLASHING (REPEAT OF 1.875 SEC ON, 0.125 SEC OFF) |
| SK5 (CSD ONLY) | LED ASSOCIATED WITH FK5 FLASHING (REPEAT OF 1.875 SEC ON, 0.125 SEC OFF) |
| SK6 (CSD ONLY) | LED ASSOCIATED WITH FK6 FLASHING (REPEAT OF 1.875 SEC ON, 0.125 SEC OFF). |
| HOOKSWITCH | GO ON-HOOK: HIGH VOLUME TONE RINGER. ALL LEDs FLASHING (REPEAT OF 0.5 SEC ON, 0.5 SEC OFF)<br>GO OFF-HOOK: LOW VOLUME TONE RINGER. ALL LEDs FLASHING (REPEAT OF 0.125 SEC ON, 0.125 SEC OFF) |
| DTA TEST SWITCH (CSD ONLY) | ON: ALL LEDs FLASHING (REPEAT OF 1.875 SEC ON, 0.125 SEC OFF)<br>OFF: ALL LEDs FLASHING (REPEAT OF 0.125 SEC ON, 0.125 SEC OFF, 0.125 SEC ON AND 1.625 SEC OFF) |

# Laboratory Activity — Diagnostics (3.4)

GTE

*GTE OMNI SBCS*

(INSTRUMENT   DIAGNOSTICS)

1.  USING THE INSTRUCTIONS PROVIDED IN THE STUDENT WORKBOOK, TEST ONE OF THE  CS-20 TELEPHONES. BE SURE TO USE ALL TEST EXECUTION KEYS LISTED AND MONITOR THE RESULTS.

2.  USING THE INSTRUCTIONS PROVIDED IN THE STUDENT WORKBOOK, TEST ONE OF THE BLF/DSS INSTRUMENTS. BE SURE TO USE ALL TEST EXECUTION KEYS LISTED AND MONITOR THE RESULTS.

(TRUNK  DIAGNOSTICS)

3.  VERIFY AUDITORY, RINGING, AND TRANSMISSION FOR THE TRUNK (EN170) ASSIGNED TO STATION DIRECTORY NUMBER 212 FOR DIAGNOSTICS (LABORATORY ACTIVITY 3.2). ORIGINATE A CALL TO THE TRUNK BY NUMBER AND LISTEN FOR CONFIRMATION CALL PROGRESS TONES. (BE SURE TO RELEASE SEIZED TRUNK AFTER DIAGNOSTIC TESTING USING  CMC-802).

# Review Exercise — Diagnostics (3.4)

**GTE**

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INSTRUCTIONS: THE FOLLOWING EXERCISE CONSISTS OF MULTIPLE CHOICE, TRUE/FALSE, FILL IN THE BLANK, OR MATCHING TYPE QUESTIONS. ALL AVAILABLE RESOURCES (I.E. STUDENT WORKBOOK, NOTES, AND GTEP MANUAL) MAY BE USED AS REFERENCES. SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

1. THE OMNI SBCS PROVIDES THREE TYPES OF ON-LINE SYSTEM DIAGNOSTICS: _____, _____, AND _____ .

2. WHICH ACTIONS WILL AUTOMATICALLY INITIATE SYSTEM SELF-DIAGNOSTICS?

   _____

   _____

3. WHAT OCCURS IF A NON-VOLATILE RAM ERROR IS DETECTED DURING THE SELF-DIAGNOSTIC TEST?

   _____

   _____

4. WHAT TYPE OF PROBLEMS COULD BE IDENTIFIED FROM I/O CONTROL (SERIAL COMMUNICATION INTERFACE) DIAGNOSTICS? _____

   _____

5. EXPLAIN THE PROCEDURE FOR PERFORMING MANUAL TRUNK CONNECTION DIAGNOSTICS:

   _____

   _____

   _____

6.  DESCRIBE THE LIKELY AND PRESCRIPTIVE ACTION FOR THE CPM LAMP STATUS OUTLINED BELOW:

    POWER = ON

    RUN = OFF

    ALM = ON

    TO=ON

    _____

    _____

    _____

    _____

    _____

7.  IF EKT TELEPHONES BEGIN DISPLAYING INCORRECT (ILLEGAL) TIME DISPLAYS, IT PROBABLY INDICATES:

    _____

    _____

_____

_____

8. (TRUE OR FALSE)_____ A RAM MEMORY FAULT USUALLY REQUIRES REPLACEMENT OF THE SWC CARD DURING A LOW TRAFFIC PERIOD.

9. (TRUE OR FALSE)_____ AN RGEN FAULT USUALLY REQUIRES REPLACEMENT OF THE NON-RINGING SLT INSTRUMENT.

10. AFTER AN EKT TELEPHONE IS TAKEN OFF-LINE IT CAN BE TESTED BY UNPLUGGING THE TELEPHONE CORD AND PRESSING THE _____ AND _____ KEYS SIMULTANEOUSLY.

**GTE**

*GTE OMNI SBCS*

# MODULE IV

# PACKAGE B/SVR 1.5.X.X

# Table of Contents

*GTE OMNI SBCS*

# Table of Contents (Continued)

GTE

*GTE OMNI SBCS*

# 4.0  Terminal Objective

**GTE**

**GIVEN:**
- GTE OMNI SBCS
- GTE OMNI SBCS PACKAGE B EQUIPMENT AND PERIPHERALS
- PORTABLE MAINTENANCE PANEL/MASTER CONTROL TELEPHONE
- STANDARD INSTALLATION TOOLS
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- PRE-READING ASSIGNMENT (DATACOM FOR TELECOM — THE BASICS)
- WRITTEN TEST

**ACTION:**
- INSTALL PACKAGE B EQUIPMENT AND PERIPHERALS.
- MODIFY THE SYSTEM DATA BASE USING NEW OR ENHANCED PACKAGE B CMC COMMANDS.
- PERFORM DATA BASE ADMINISTRATION AND MAINTENANCE TASKS USING CSD TELEPHONE AS A MASTER CONTROL TELEPHONE.
- DESCRIBE RETROFIT PROCEDURES REQUIRED TO UPGRADE GTE OMNI SBCS TO SVR 1.5.X.X (PACKAGE B).
- COMPLETE WRITTEN TEST.

**CRITERIA:**
- INSTALLATION, DATA BASE ADMINISTRATION, AND MAINTENANCE TASKS WILL BE COMPLETED IN ACCORDANCE WITH PACKAGE B PROCEDURES OUTLINED IN OMNI SBCS GTEP MANUAL AND OMNI SBCS STUDENT WORKBOOK.
- TEST WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

4.1

# PACKAGE B
## Overview

# 4.1 Enabling Objective

**GTE**

*GTE OMNI SBCS*

GIVEN:    .   GTE OMNI SBCS
- GTE OMNI SBCS PACKAGE B EQUIPMENT AND PERIPHERALS
- PRE-READING ASSIGNMENT (DATACOM FOR TELECOM - THE BASICS)
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- REVIEW EXERCISE

ACTION:
- DESCRIBE THE NEW FEATURES AND ENHANCEMENTS AVAILABLE WITH SVR PACKAGE B.
- IDENTIFY AND DESCRIBE THE FUNCTIONS OF PACKAGE B EQUIPMENT AND INTERFACES.
- DEFINE BASIC DATA COMMUNICATIONS TERMS APPLICABLE TO PACKAGE B
- COMPLETE REVIEW EXERCISE.

CRITERIA:
- REVIEW EXERCISE WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

# OMNI SBCS Development Phases

THE OMNI SBCS IS BEING DEVELOPED IN PHASES CORRESPONDING TO SYSTEM VERSION RELEASES. THIS MODULE WILL ADDRESS THE INSTALLATION, DATA BASE ADMINISTRATION, AND MAINTENANCE TASKS ASSOCIATED WITH PACKAGE B (SVR 1.5.X.X). HIGHLIGHTS OF EACH NEW DEVELOPMENT PHASE ARE DESCRIBED BELOW.

PACKAGE B/PHASE 1.5 — INTRODUCES BASIC INTERNAL DATA COMMUNICATION FEATURES FOR LOW SPEED DATA TERMINALS, ALLOWING SIMULTANEOUS VOICE/DATA TRANSMISSION.
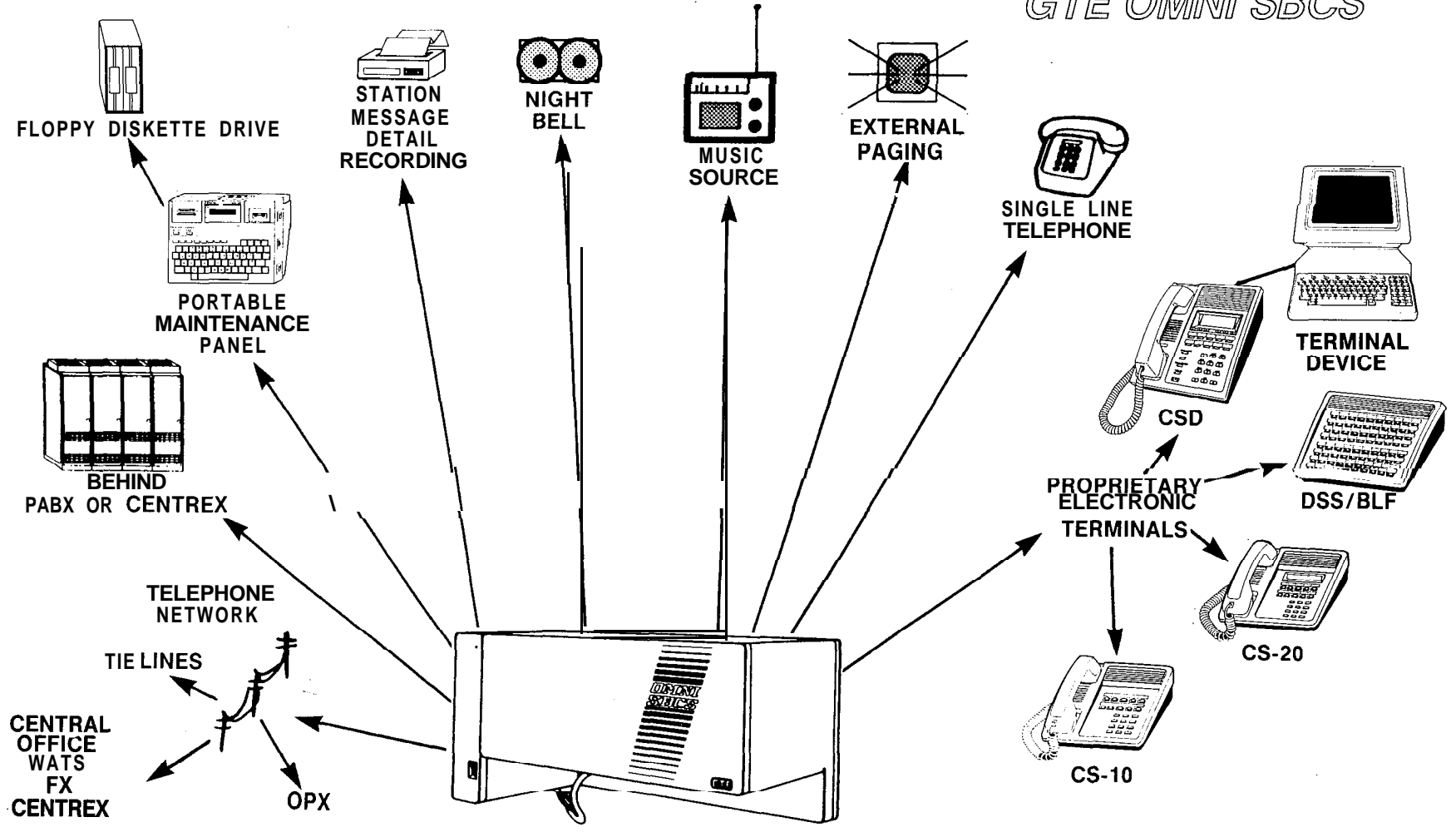
PACKAGE C/PHASE 2.0 — EXPANDS SYSTEM TO INCLUDE LOW SPEED DATA COMMUNICATION USING REMOTE DATA TERMINALS, KEY SYSTEM FEATURES, DIRECT INWARD SYSTEM ACCESS, DIRECT INWARD DIALING, A HOTEL/MOTEL PACKAGE, AND AN ATTENDANT CONSOLE WITH RELATED FEATURES.

PACKAGE D/PHASE 3.0 (FUTURE) — PROJECTED TO EXPAND SYSTEM TO INCLUDE AUTOMATIC CALL DISTRIBUTION, MULTI STATION LINE APPEARANCES ON EKT INSTRUMENTS, VOICE MESSAGE, SILENT MESSAGE, AND DICTATION AND CONTROL.

# System With Package **B** Interfaces

**GTE**

**GTE OMNI SBCS**

FLOPPY DISKETTE DRIVE

STATION
MESSAGE
DETAIL
RECORDING

NIGHT
BELL

MUSIC
SOURCE

EXTERNAL
PAGING

SINGLE LINE
TELEPHONE

TERMINAL
DEVICE

PORTABLE
MAINTENANCE
PANEL

CSD

PROPRIETARY
ELECTRONIC
TERMINALS

DSS/BLF

BEHIND
PABX OR CENTREX

CS-20

TELEPHONE
NETWORK

TIE LINES

CENTRAL
OFFICE
WATS
FX
CENTREX

OPX

CS-10

# Package B/Summary of Features and Enhancements

BASIC DATA SWITCHING — ALLOWS INTERNAL DATA COMMUNICATION BETWEEN ON-SITE, LOW SPEED DATA TERMINALS. PROVIDES ASYNCHRONOUS OR SYNCHRONOUS TRANSMISSION IN HALF OR FULL DUPLEX MODES.

SIMULTANEOUS VOICE/DATA TRANSMISSION — PROVIDES VOICE AND DATA TRANSMISSION SIMULTANEOUSLY OVER SINGLE PAIR WIRING THROUGH USE OF CSD DIGITAL TELEPHONE. EQUIPPED WITH DATA TERMINAL ADAPTER.

EQUAL ACCESS — ACCOMMODATES CARRIER EQUAL ACCESS IN GEOGRAPHIC AREAS WHERE SERVICE IS NOW AVAILABLE.

MASTER CONTROL TELEPHONE — ALLOWS DATA BASE ADMINISTRATION AND MAINTENANCE TASKS TO BE PERFORMED FROM PROGRAMMING CSD TELEPHONES.

**GTE**

*GTE OMNI SBCS*

ENHANCED PAGING — ALLOWS ACCESS TO EXTERNAL PAGING AMPLIFIER AND PROVIDES IMPROVED PAGING FEATURES.

CALL SPLITTING — ALLOWS STATION USERS TO SPLIT A CALL CONNECTION PROVIDING CAPABILITY OF TALKING TO EITHER CALLED OR CALLING PARTY WITHOUT EITHER HEARING THE OTHER'S CONVERSATION.

MESSAGE WAITING FEATURE FOR SLT INSTRUMENTS — PROVIDES MESSAGE WAITING FEATURE FOR SINGLE LINE TELEPHONES (DP OR DTMF) EQUIPPED WITH MESSAGE WAITING LAMPS. MESSAGE LEAVING STATIONS ARE ACCESSED BY THE SLT USING A MESSAGE PICKUP ACCESS CODE.

# Package B/Summary of Features and Enhancements

**GTE**

*GTE OMNI SBCS*

| | |
|---|---|
| BASIC DATA SWITCHING | — ALLOWS INTERNAL DATA COMMUNICATION BETWEEN ON-SITE, LOW SPEED DATA TERMINALS. PROVIDES ASYNCHRONOUS OR SYNCHRONOUS TRANSMISSION IN HALF OR FULL DUPLEX MODES. |
| SIMULTANEOUS VOICE/DATA TRANSMISSION | — PROVIDES VOICE AND DATA TRANSMISSION SIMULTANEOUSLY OVER SINGLE PAIR WIRING THROUGH USE OF CSD DIGITAL TELEPHONE. EQUIPPED WITH DATA TERMINAL ADAPTER. |
| EQUAL ACCESS | — ACCOMMODATES CARRIER EQUAL ACCESS IN GEOGRAPHIC AREAS WHERE SERVICE IS NOW AVAILABLE. |
| MASTER CONTROL TELEPHONE | — ALLOWS DATA BASE ADMINISTRATION AND MAINTENANCE TASKS TO BE PERFORMED FROM PROGRAMMING CSD TELEPHONES. |

.6

# Package B/Summary of Features and Enhancements (Continued)

ENHANCED PAGING — ALLOWS ACCESS TO EXTERNAL PAGING AMPLIFIER AND PROVIDES IMPROVED PAGING FEATURES.

CALL SPLITTING — ALLOWS STATION USERS TO SPLIT A CALL CONNECTION PROVIDING CAPABILITY OF TALKING TO EITHER CALLED OR CALLING PARTY WITHOUT EITHER HEARING THE OTHER'S CONVERSATION.

MESSAGE WAITING FEATURE FOR SLT INSTRUMENTS — PROVIDES MESSAGE WAITING FEATURE FOR SINGLE LINE TELEPHONES (DP OR DTMF) EQUIPPED WITH MESSAGE WAITING LAMPS. MESSAGE LEAVING STATIONS ARE ACCESSED BY THE SLT USING A MESSAGE PICKUP ACCESS CODE.

# Data Communieations Overview/ Self-Test

## GTE

GTE OMNI SBCS

## WHAT DO YOU KNOW ABOUT DATA COMMUNICATIONS?
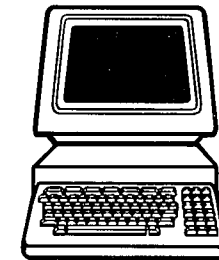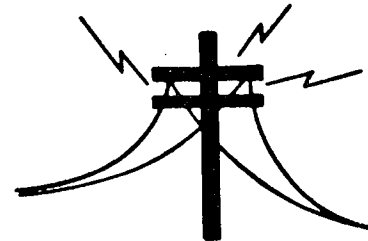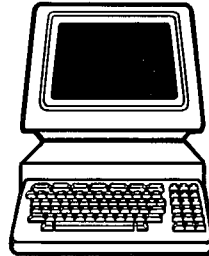
STUDENTS ARE REQUIRED TO COMPLETE A PRE-READING ASSIGNMENT (DATACOM FOR TELECOM - THE BASICS) PRIOR TO BEGINNING THIS COURSE MODULE. AN UNDERSTANDING OF BASIC DATA COMMUNICATIONS CONCEPTS IS HELPFUL BECAUSE THE PRIMARY FUNCTION OF PACKAGE B INCLUDES BASIC, INTERNAL DATA SWITCHING.

INSTRUCTIONS: 
- ON THE NEXT SEVERAL PAGES YOU WILL BE GIVEN THE OPPORTUNITY TO TEST YOUR UNDERSTANDING OF DATA COMMUNICATIONS BY MATCHING SIMPLE TERMS TO THEIR DEFINITIONS. TEST ITEMS DO NOT ADDRESS ALL OF THE CONTENT DISCUSSED IN THE PRE-READING ASSIGNMENT, BUT INSTEAD FOCUS ON AREAS MOST RELEVANT TO PACKAGE B DATA COMMUNICATIONS.
- CORRECT YOUR RESPONSE USING THE ANSWER KEY PROVIDED AND ASK YOUR INSTRUCTOR TO REVIEW ANY TERMS THAT MAY NEED FURTHER EXPLANATION OR CLARIFICATION. NO SCORE WILL BE RECORDED FOR STUDENT PERFORMANCE ON THIS SELF-TEST.

**MATCH THE FOLLOWING ITEMS:**

| TERMS | DEFINITIONS |
|---|---|
| 1. _____ ANALOG | A. FACTS, NUMBERS, LETTERS, SYMBOLS, ETC. PROCESSED OR PRODUCED BY A COMPUTER |
| 2. _____ SYNCHRONOUS | B. DEVICE WHICH CONVERTS DIGITAL DATA TO ANALOG DATA FOR TRANSMISSION OVER A TELEPHONE LINE, THEN BACK |
| 3. _____ WORD LENGTH | |
| 4. _____ ECHOPLEX | C. TRANSMISSION ERROR CHECKING |
| 5. _____ FULL DUPLEX | D. TWO-WAY SIMULTANEOUS TRANSMISSION |
| 6. _____ DIGITAL | E. NUMBER OF BITS IN A BINARY WORD |
| 7. _____ TERMINAL | F. TRANSMISSION RATE FOR DIGITAL DATA |
| 8. _____ RS-232-C | G. LAST BIT IN AN ASYNCHRONOUS TRANSMISSION, USED TO ENSURE RECOGNITION OF NEXT STARTING |
| 9. _____ HALF DUPLEX | |
| 10. _____ MODEM | H. TRANSMISSION WHERE THE SENDING DEVICE SIGNALS THE RECEIVING DEVICE BEFORE IT TRANSMITS EACH BYTE OF DATA |
| 11. _____ BITS PER SECOND | |
| 12. _____ ASYNCHRONOUS | I. CHARACTERS ARE DISPLAYED OR REFLECTED BACK ON SCREEN FOR ERROR CONTROL (AS THEY ARE TYPED) PRIOR TO TRANSMISSION TO ANOTHER TERMINAL |
| 13. _____ PARITY | |
| 14. _____ STOP BIT | J. AN INPUT/OUTPUT DEVICE FOR SENDING OR RECEIVING DATA |
| 15. _____ DATA | |
| | K. DATA TRANSMITTED IN A CONTINUOUSLY, VARYING SIGNAL; VOICE TRANSMISSION |

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GTE

GTE OMNI SBCS

## DEFINITIONS (Continued)

L. TWO-WAY TRANSMISSION NOT OCCURING SIMULTANEOUSLY, WHICH REQUIRES TURNAROUND TIME

M. DATA TRANSMITTED IN BINARY FORM, USING A PATTERN OF O's AND I's OR MARKS AND SPACES

N. TRANSMISSION WHERE SENDING AND RECEIVING DEVICES TRANSMIT AND RECEIVE DATA AS A RESULT OF AGREED UPON CLOCK SIGNALS

0. THE STANDARD CABLE INTERFACE BETWEEN DATA TERMINALS AND DATA COMMUNICATION (TRANSMISSION) EQUIPMENT
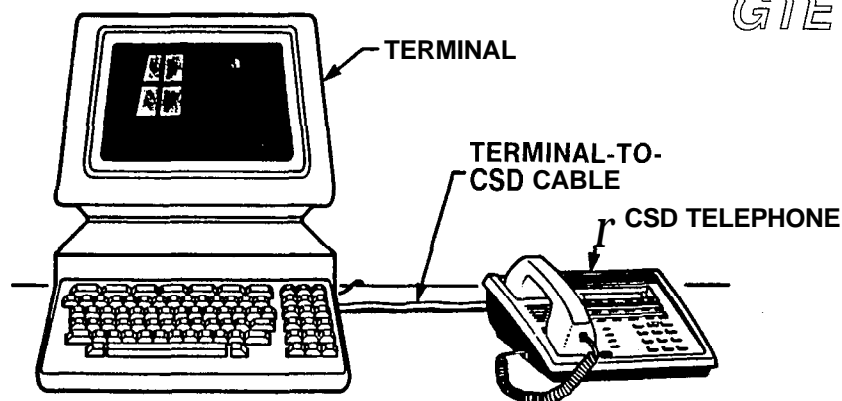
# Data Communications Overview/Answer Key

1.  K
2.  N
3.  E
4.  I
5.  D
6.  M
7.  J
6.  O
9.  L
10. B
11. F
12. H
13. c
14. G
15. A

# Student Notes

**GTE**

*GTE OMNI SBCS*

# Package B/Data Capabilities

TERMINAL

TERMINAL-TO-CSD CABLE

CSD TELEPHONE

- OMNI SBCS PROVIDES SIMULTANEOUS, INTERNAL VOICE/DATA COMMUNICATION BASED ON CIRCUIT SWITCHING WITH A NON-BLOCKING DIGITAL SWITCH.

- CUSTOMER-SUPPLIED DATA TERMINALS ARE CONNECTED WITH THE OMNI SBCS USING A CSD DIGITAL TELEPHONE EQUIPPED WITH A DATA TERMINAL ADAPTER, AND A ONE PAIR DIGITAL LINE INTERFACE.

- SYSTEM SUPPORTS ASYNCHRONOUS AND SYNCHRONOUS DATA TRANSMISSION SPEED OF UP TO 19.2 KBPS IN FULL OR HALF-DUPLEX MODES.

- LISTED ON THE FOLLOWING PAGE IS A SUMMARY OF THE KEY DATA FEATURES AVAILABLE WITH PACKAGE B REQUIRED DATA BASE PROGRAMMING FOR THESE FEATURES WILL BE ADDRESSED LATER IN THIS MODULE.

NOTE: REFER TO CSD USER'S GUIDE FOR PACKAGE B FEATURE OPERATION INSTRUCTIONS.
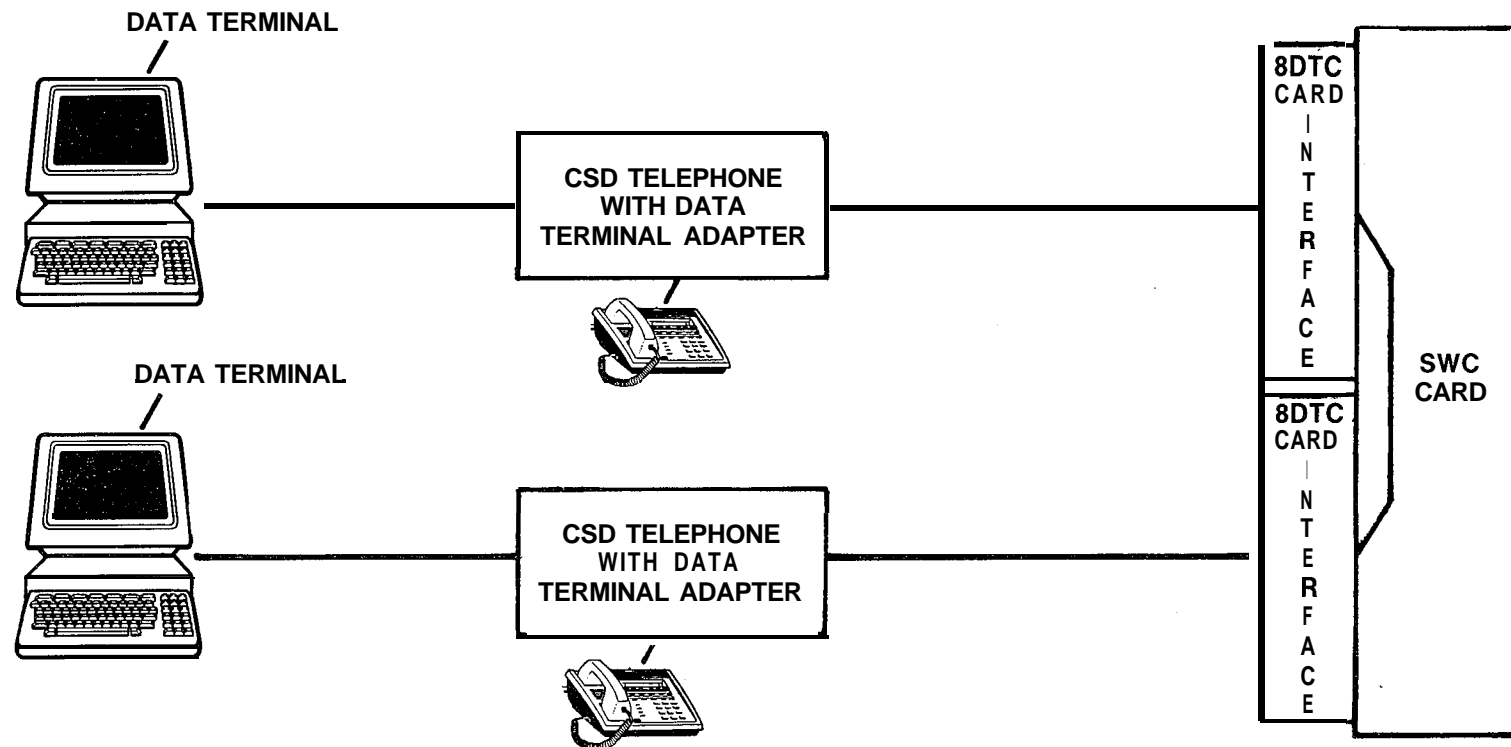
# Internal Data Call Connection

*GTE OMNI SBCS*

- PACKAGE B PROVIDES BASIC INTERNAL DATA SWITCHING ALLOWING DATA CALL CONNECTION (HALF OR FULL DUPLEX) USING THE CSD TELEPHONE'S KEYPAD AND PREPROGRAMMED DATA FEATURE BUTTONS.

## CONNECTION PATTERN BETWEEN DATA TERMINALS

DATA TERMINAL

| 8DTC CARD |
| INTERFACE |

CSD TELEPHONE WITH DATA TERMINAL ADAPTER

DATA TERMINAL

SWC CARD

| 8DTC CARD |
| INTERFACE |

CSD TELEPHONE WITH DATA TERMINAL ADAPTER

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# Package B Data Features

- . DATA AUTOMATIC ANSWER — . IN THIS MODE, A DATA TERMINAL STATION CAN AUTO-MATICALLY ANSWER A DATA CALL WITHOUT USER INTER-VENTION.
  - USER CAN CHANGE FROM MANUAL DATA ANSWER MODE USING THE CSD TELEPHONE'S DATA CHANGE FEATURE BUTTON.

- AUTOMATIC DISCONNECT — . ALLOWS A DATA CALL TO BE RELEASED AUTOMATICALLY BY THE CALLING DATA TERMINAL STATION'S CALL RELEASE OPERATION.

- . DATA CLASS OF SERVICE/ — . SIMILAR TO VOICE COS/COR, BUT THIS DATA BASE
  CLASS OF RESTRICTION FEATURE ALLOWS OR DENIES DATA TERMINAL STATIONS ACCESS TO SYSTEM DATA FEATURES BASED ON THEIR ASSIGNED COS/COR LEVELS.

- DATA TERMINAL STATION — • ALLOWS DATA TERMINAL STATIONS TO BE ASSIGNED
  FLEXIBLE NUMBERING PLAN DATA STATION DIRECTORY NUMBERS IN THE SAME MANNER AS VOICE DIRECTORY NUMBERS, USING FLEXIBLE NUMBERING SCHEME.

- DATA CALL INITIATION — • ALLOWS DATA CALLS TO BE PLACED DIRECTLY FROM A CSD TELEPHONE EQUIPPED WITH DATA TERMINAL ADAPTER (DTA) USING THE DATA CALL FEATURE BUTTON IN THE DATA TERMINAL STATION'S ASSOCIATED CSD TELEPHONE.
  - ALLOWS VOICE CALLS TO BE PLACED SIMULTANEOUSLY WHILE A DATA CALL IS IN PROGRESS BY USING THE VOICE/DATA MODE FEATURE BUTTON ON THE DATA TERMINAL STATION'S ASSOCIATED CSD.
  - ALSO ALLOWS DATA CALLS TO BE PLACED SIMULTANEOUSLY WHILE A VOICE CALL IS IN PROGRESS, BY USING THE VOICE/DATA MODE FEATURE BUTTON ON THE DATA TERMINAL STATION'S ASSOCIATED CSD TELEPHONE.

# Package B Data Features

. DATA HOT LINE — ● ALLOWS A DATA TERMINAL STATION TO AUTOMATICALLY PLACE A DATA CALL TO ANOTHER PREDETERMINED DATA TERMINAL STATION WITHOUT DIALING FROM THE TERMINAL'S ASSOCIATED CSD TELEPHONE.

. VOICE PORT NUMBER DATA — ● ALLOWS A DATA TERMINAL STATION TO PLACE A DATA CALL BY DIALING THE VOICE PORT (STATION DIRECTORY) NUMBER OF THE CSD TELEPHONE ASSOCIATED WITH THE DATA TERMINAL STATION BEING CALLED.

● DATA TERMINAL STATION —
   GROUP HUNTING

o ALLOWS A DATA CALL AT AN IDLE STATION IN A DEFINED DATA HUNTING GROUP, AFTER IT ENCOUNTERS A BUSY DATA TERMINAL STATION.

0 PROVIDES THE SAME TYPES OF HUNTING GROUPS (PILOT, CIRCULAR, AND TERMINATING) AS THE VOICE GROUP HUNTING FEATURE.
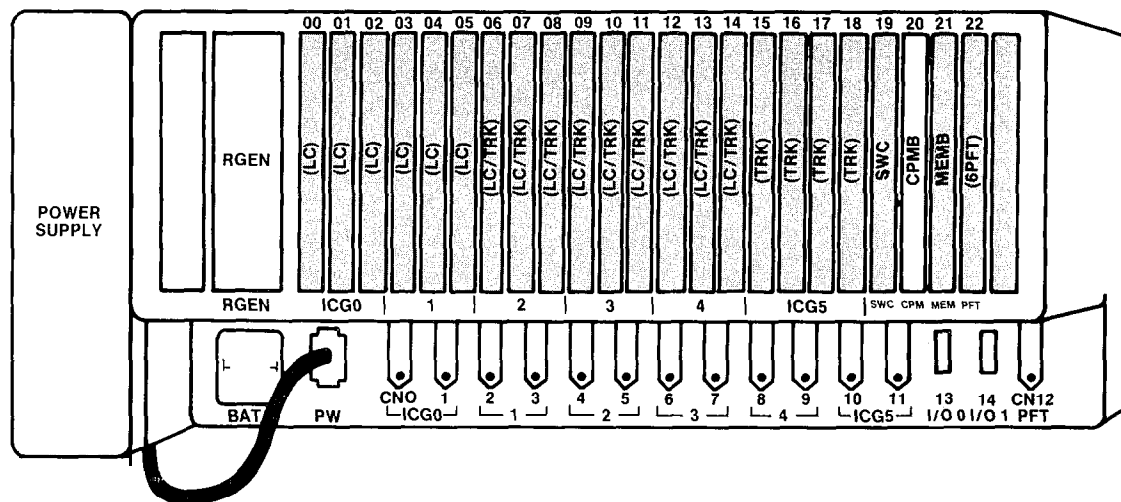
# Student Notes

**GTE**

*GTE OMNI SBCS*

# PACKAGE B
# NEW/ENHANCED CARDS
# AND PERIPHERALS

# CPMB (Enhanced Central Processing Unit and Basic Memory Card)

**GTE**

*GTE OMNI SBCS*



- CPMA (PACKAGE A/SVR 1.0.2.2) and **CPMB** (PACKAGE B/SVR 1.5.X.X) BOTH INCLUDE:
  - 16 BIT MICROPROCESSOR (INTEL 8086 COMPATIBLE)
  - TWO RS-232-C PORTS:
    - P M P
    - S M D R
  - ROM FOR OPERATING SYSTEM SOFTWARE AND DEFAULT STANDARD DATA BASE
  - RAM FOR CUSTOMIZED DATA BASE (REMAINDER OF RAM RESIDES IN MEMB CARD)
  - REAL TIME CLOCK

- CPM5 (PACKAGE B/SVR 1.5.X.X):
  - SUPPORTS ALL PACKAGE B EQUIPMENT AND FEATURES
  - FUNCTIONS ONLY WITH MEMB CARD

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# MEMB (Enhanced Memory Card)
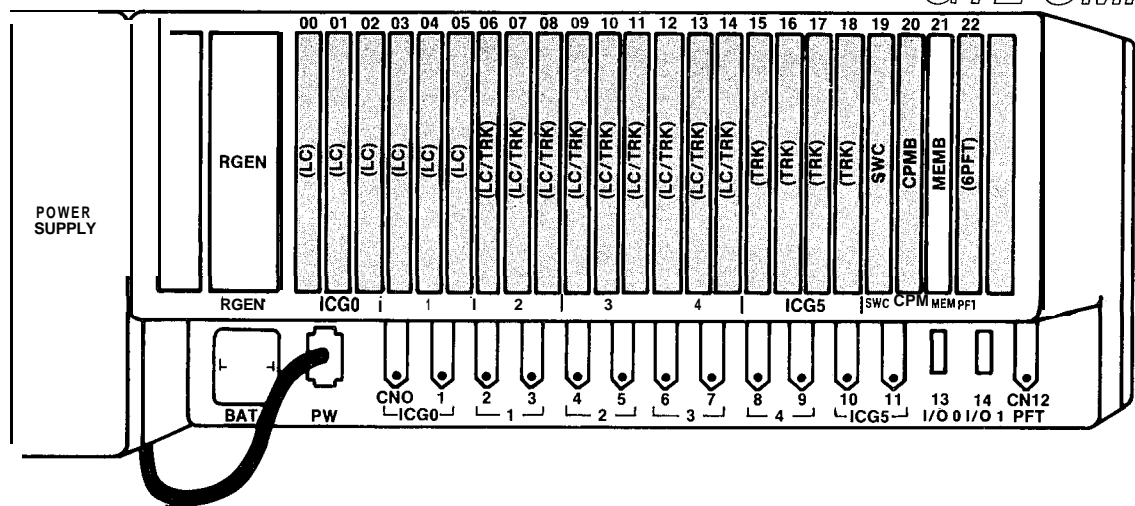
- **MEMA (PACKAGE A/SVR 1.0.2.2) AND MEMB (PACKAGE B/SVR 1.5.X.X) BOTH INCLUDE:**

  - ROM FOR OPERATING SYSTEM SOFTWARE AND DEFAULT STANDARD DATA BASE
  - RAM FOR CUSTOMIZED DATA BASE (ALSO RESIDES IN CPM CARD)

. **MEMB (PACKAGE B/SVR 1.5.X.X):**

  - SUPPORTS PACKAGE B EQUIPMENT AND FEATURES
  - FUNCTIONS ONLY WITH CPMB CARD
  - CONTAINS MORE MEMORY THAN CPMA CARD:

|             | ROM (IN BYTES) | RAM (IN BYTES) |
|-------------|----------------|----------------|
| MEMA        | 64K            | 0              |
| MEMB        | 192K           | 48K            |
| CPMA/MEMA   | 256K           | 96K            |
| CPMB/MEMB   | 448K           | 144K           |

4.20

# Review of Optional RGEN Card (Ring Generator) Package B Strapping Option
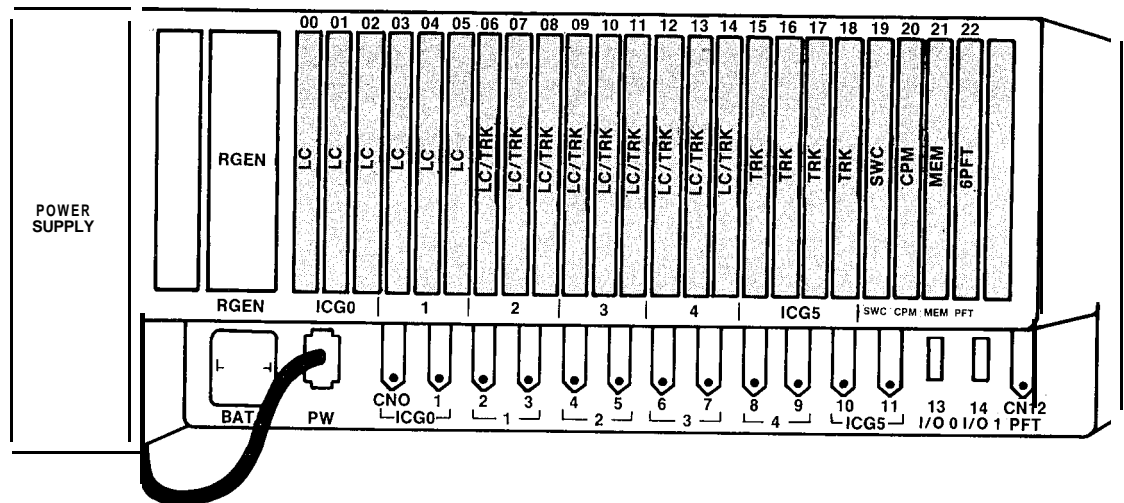
- RGEN CARD IS INSERTED IN MOUNTING SLOT LEFT OF CARD SLOT 00.

- GENERATES RINGING TONES FOR SINGLE LINE TELEPHONE INSTRUMENTS.

- SUPPLIES POWER TO MESSAGE WAITING FEATURE FOR SLT INSTRUMENTS EQUIPPED WITH MESSAGE WAITING LAMP (PACKAGE B).

- MESSAGE WAITING FEATURE FOR SLT IS ACTIVATED THROUGH A STRAPPING OPTION ON THE RGEN CARD. (STRAPPING OPTION INSTRUCTIONS ARE DESCRIBED IN SVR 1.5.X.X, INSTALLATION SECTION).
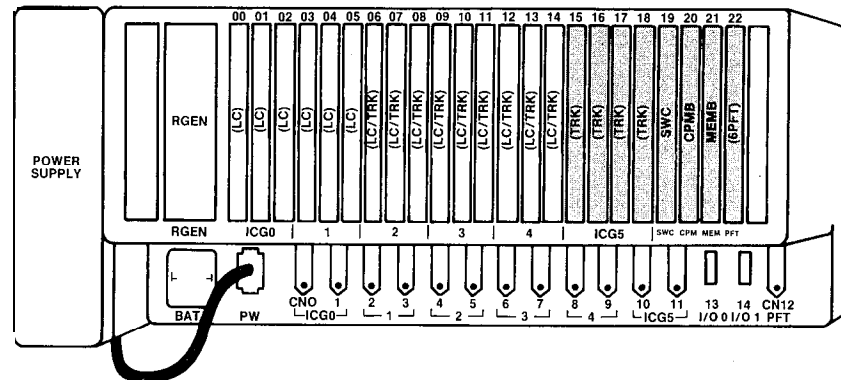
- RINGING:
  - FREQUENCY:        $2 \pm 2$ Hz
  - VOLTAGE:          80 V RMS (NOMINAL)

- MESSAGE WAITING LAMP:
  - VOLTAGE:          -100 V DC
  - ON/OFF INTERVAL:  1 SECOND ON, 3 SECONDS OFF

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# 8DTC Card (CSD Telephone/Data Terminal Interface Card)

**GTE**

*GTE OMNI SBCS*



- 8DTC CARDS CAN BE INSERTED IN SLOTS 00 THROUGH 14 (IF CSD TELEPHONES EQUIPPED WITH DATA TERMINAL ADAPTER (DTA) ARE INSTALLED, ONLY SLOTS 00, 03, 06, 09 AND 12 MAY BE USED).

. SYSTEM CAPACITY OF FIVE 8DTC CARDS.

- 8DTC SPECIFICATIONS:

  - EIGHT CIRCUITS PER CARD (ONLY SIX IF CSD TELEPHONES ARE USED FOR DATA TRANSMISSION)
  - PROVIDES SIMULTANEOUS VOICE/DATA TRANSMISSION CONTROL DATA TRANSMISSION, CONTROL DATA TRANSMISSION, AND POWER FEEDING (-24V) OVER A SINGLE PAIR OF WIRES
  - SUPPORTS CSD DIGITAL TELEPHONES OR CSD TELEPHONES WITH DATA TERMINAL INTERFACES VIA DATA TERMINAL ADAPTER
  - 2000 FEET LOOP LIMIT
  - CHANNEL CAPACITY = 64 KBPS FOR VOICE AND DATA, 8 KBPS FOR TELEPHONE CONTROL
  - LINE BIT RATE = 384 KBPS

4.22

# CSD Digital Telephone

**GTE**

*GTE OMNI SBCS*

- TEN PROGRAMMABLE FEATURE BUTTONS (TWO PREPROGRAMMED DATA COMMUNICATION BUTTONS: DATACALL AND VOICE/DATA MODE)

- FOUR FIXED FEATURE BUTTONS: SPEAKERPHONE, MUTE, TRANSFER, AND HOLD

- SPEAKERPHONE

- FOUR LINE, 20 CHARACTER LCD DISPLAY

- INTERFACE THROUGH 8DTC CARD

- LINE POWERED

- TWO WIRE:
  — 2 DIGITAL TIP AND RING

- 2,000 FEET LOOP LIMIT

- MAY BE CONNECTED TO BLF/DSS INSTRUMENT & AS CONSOLE

- OPTIONAL DATA TERMINAL ADAPTER (DTA) INSTALLED WITHIN CSD PROVIDES RS-232-C INTERFACE TO CUSTOMER-SUPPLIED DATA TERMINAL.

- SYSTEM CAPACITY OF 40 CSD TELEPHONES (8 CIRCUITS X 5 CARDS) OR 30 CSD TELEPHONES WITH DATA INTERFACE (6 CIRCUITS X 5 CARDS).

4.23
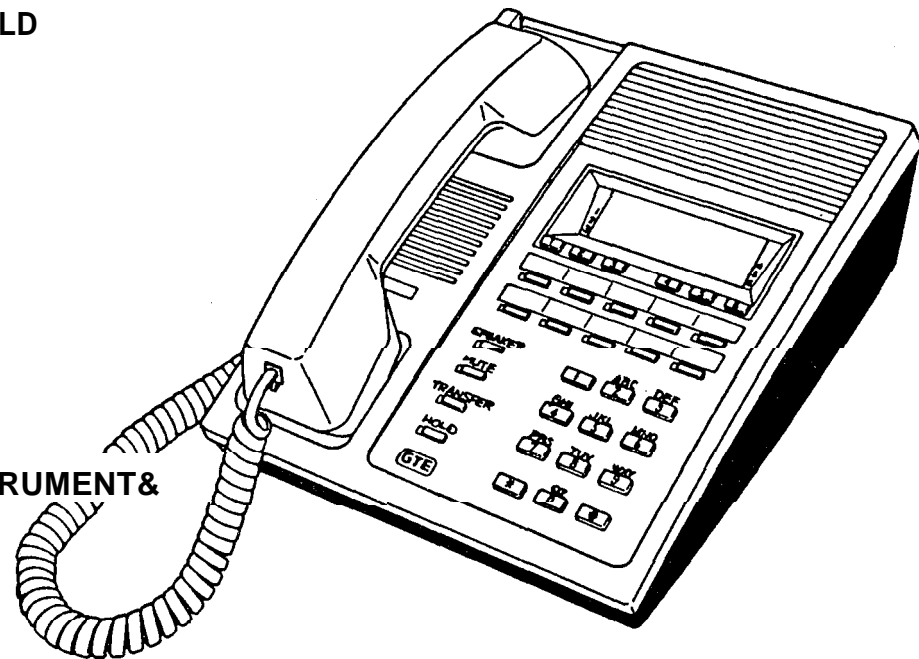
# DTA Terminal Adapter (DTA)

**GTE**

*GTE OMNI SBCS*

- INSTALLED IN CSD TELEPHONES REQUIRING DATA APPLICATIONS

- SUPPORTS ASYNCHRONOUS/SYNCHRONOUS RS-232-C INTERFACE

- DATA SPEED = UP TO 19.2 KBPS

- CONNECTS TO CSD TELEPHONE USING ONE 64 KBPSCHANNEL

- POWERED BY SEPARATE AC POWER SUPPLY ADAPTER (9V DC)

- INTERFACES WITH 8DTC CARDS IN SLOTS 00, 03, 06, 09, OR 12.

- CUSTOMER-SUPPLIED DATA TERMINAL, WORK STATION, OR PRINTER CONNECTS TO DTA'S RS-232-C CONNECTOR LOCATED IN REAR OF CSD TELEPHONE).

DATA TERMINAL ADAPTER

REAR OF CSD TELEPHONE EQUIPPED WITH DTA

AC ADAPTER JACK

RS-232-C CONNECTOR
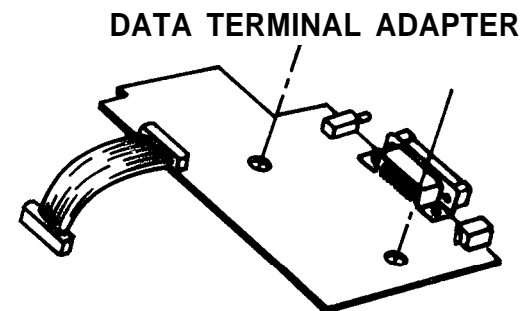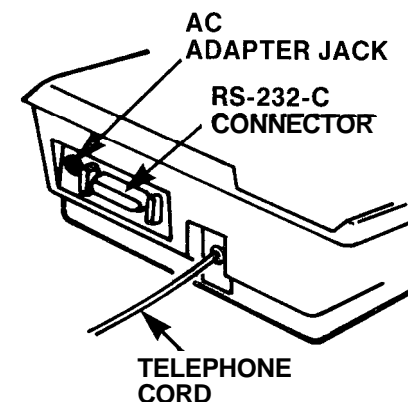
TELEPHONE CORD

NOTE: REFER TO PACKAGE B, INSTALLATION SECTION FOR INSTRUCTIONS FOR INSTALLING DTA IN CSD TELEPHONE.

# Data Terminal Station

**GTE**

*GTE OMNI SBCS*

- CUSTOMER-PROVIDED MICROCOMPUTER, WORK STATION, CRT TERMINAL, PRINTER, OR MODEM

- INTERFACES TO OMNI SBCS VIA DTA IN CSD TELEPHONE

- DATA STATION DIRECTORY NUMBERING PLAN BEGINS WITH DIRECTORY NUMBER 350

- REQUIRES 25 PIN RS-232-C CONNECTOR CABLE (4, 7, OR 12 PIN CABLE MAY BE USED DEPENDING ON SYSTEM APPLICATION)

- RS-232-C PIN CONFIGURATION MUST BE COMPATIBLE WITH PIN CONFIGURATION OF DTA IN CSD TELEPHONE

- SYSTEM ACCOMMODATES DATA TERMINALS WITH:

  - ASYNCHRONOUS OR SYNCHRONOUS TRANSMISSION

  - HALF OR FULL DUPLEX OPERATION

  - DATA SPEED OF UP TO 19.2 KBPS
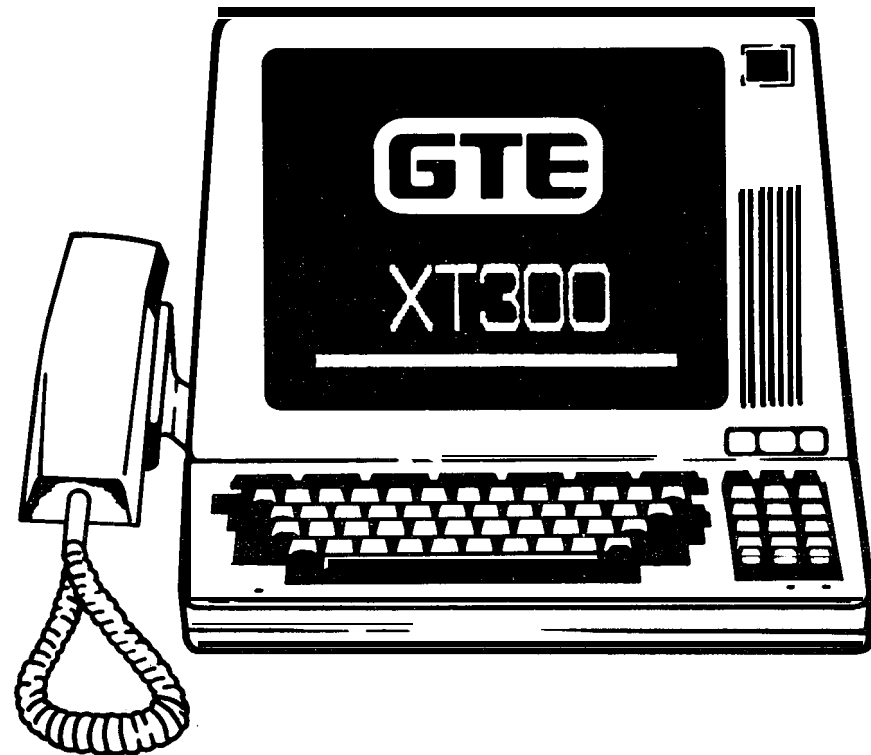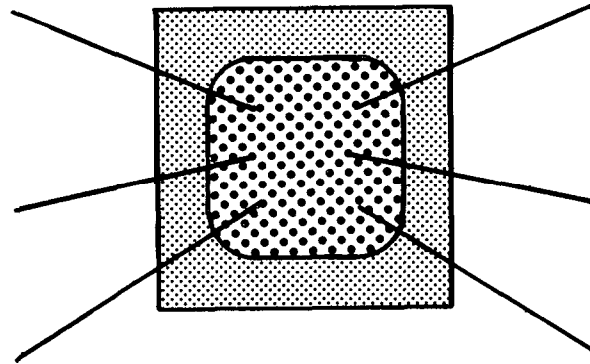
NOTE:  REFER TO CSD USER'S GUIDE FOR DATA CALL OPERATING INSTRUCTIONS.

# Optional External Paging Amplifier Interface

- PROVIDES SYSTEM ACCESS TO CUSTOMER PROVIDED PAGING SPEAKER/AMPLIFIER.

- ALLOWS FOR PAGING TO A MAXIMUM OF 9 PAGING ZONES.

- INTERFACES WITH SYSTEM VIA A 4BWC TRUNK CIRCUIT.

# Student Notes

**GTE**

*GTE OMNI SBCS*

# Review Exercise —SVR.1.5.X.X
## Overview (4.1)

INSTRUCTIONS: THE FOLLOWING EXERCISE CONSISTS OF MULTIPLE CHOICE, TRUE/FALSE, FILL IN THE BLANK, OR MATCHING TYPE QUESTIONS. ALL AVAILABLE RESOURCES (I.E., STUDENT WORKBOOK, NOTES, AND GTEP MANUAL) MAY BE USED AS REFERENCES. SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

1. OMNI SBCS PACKAGE B DEVELOPMENT PHASE SVR.1.5.X.X) DIFFERS FROM THE LATER DEVELOPMENT PHASE BY PROVIDING BASIC _____ DATA COMMUNICATIONS ONLY.

2. MATCH EACH OF THE FOLLOWING PACKAGE B FEATURES OR ENHANCEMENTS WITH ITS CORRECT DEFINITION:

   _____ EQUAL ACCESS

   _____ SIMULTANEOUS VOICE/DATA TRANSMISSION

   _____ CALL SPLITTING

   _____ MASTER CONTROL TELEPHONE

   _____ BASIC DATA SWITCHING

   _____ ENHANCED PAGING

   _____ MESSAGE WAITING FOR SLT INSTRUMENTS

   a. ACCESS TO EXTERNAL SPEAKER/AMPLIFIER

   b. ACTIVATES LAMP ON SLT TELEPHONES

   c. INTERNAL DATA COMMUNICATION BETWEEN ON-SITE, LOW SPEED DATA TERMINALS

   d. CSD TELEPHONE FOR DATA BASE ADMINISTRATION AND MAINTENANCE TASKS

   e. VOICE AND DATA AT SAME TIME OVER CSD TELEPHONE'S SINGLE PAIR WIRING

   f. CAPABILITY OF TALKING TO EITHER CALLED OR CALLING PARTY WITHOUT HEARING THE OTHER'S CONVERSATION

   g. AUTOMATIC TRUNK CONNECTION TO CARRIER IN GEOGRAPHIC AREAS WHERE SERVICE IS AVAILABLE

4.28

GTE

*GTE OMNI SBCS*

3. _____ ASYNCHRONOUS TRANSMISSION IS:

    a. TWO-WAY SIMULTANEOUS TRANSMISSION

    b. TRANSMISSION WHERE THE SENDING DEVICE SIGNALS THE RECEIVING DEVICE BEFORE IT TRANSMITS EACH BYTE OF DATA

    c. TRANSMISSION ERROR CHECKING

    d. DATA TRANSMITTED IN A CONTINUOUSLY, VARYING SIGNAL

4. (TRUE OR FALSE) _____ DATA TERMINALS MUST BE CONNECTED TO A CSD TELEPHONE PROGRAMMED AS A MASTER CONTROL TELEPHONE.

5. MATCH EACH OF THE FOLLOWING PACKAGE B DATA FEATURES WITH ITS CORRECT DEFINITION:

    _____ DATA HOT LINE          a. RELEASES A DATA CALL AUTOMATICALLY BY THE CALLING STATION'S CALL RELEASE OPERATION

    _____ AUTOMATIC DISCONNECT      b. ALLOWS OR DENIES DATA TERMINAL STATIONS ACCESS TO SYSTEM DATA FEATURES BASED ON ASSIGNED LEVELS

    _____ DATA TERMINAL GROUP HUNTING      c. ALLOWS A DATA TERMINAL STATION TO BE AUTOMATICALLY CONNECTED TO ANOTHER PREDETERMINED DATA TERMINAL STATION

    _____ DATA CLASS OF SERVICE/ CLASS OF RESTRICTION      d. ALLOWS A DATA CALL TO CALL AT AN IDLE STATION IN A DEFINED DATA TERMINAL STATION SELECTION GROUP AFTER IT ENCOUNTERS A BUSY SIGNAL

6. THE PRIMARY ENHANCEMENT INCLUDED ON THE CPMB CARD IS ITS SUPPORT OF ALL _____ EQUIPMENT AND FEATURES.

7. (TRUE OR FALSE) -THE MEMBCARD FUNCTIONS ONLY WITH THE CPMB CARD AND CONTAINS MORE THAN TWICE THE MEMORY OF THE MEMA CARD.

# PACKAGE B
# INSTALLATION

# 4.2 Enabling Objective

**GTE**

*GTE OMNI SBCS*

GIVEN:
- GTE OMNI SBCS (PREVIOUSLY INSTALLED)
- GTE OMNI SBCS PACKAGE B EQUIPMENT AND PERIPHERALS
  - CPMB, MEMB, 8DTC, AND RGEN CARDS
  - CSD TELEPHONES
  - CSD DATA ADAPTERS (DTA)
  - DATA TERMINALS/WORK STATIONS
  - EXTERNAL PAGING AMPLIFIER
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- STANDARD INSTALLATION TOOLS
- REVIEW EXERCISE

ACTION:
- INSERT AND SEAT PACKAGE B CARDS AND ACTIVATE STRAPPING OPTION ON RGEN CARD FOR MESSAGE WAITING FEATURE ON SLT INSTRUMENTS.
- INSTALL DATA ADAPTER IN CSD TELEPHONES.
- INSTALL CSD TELEPHONE AND WIRE CROSS CONNECTIONS.
- CONNECT DATA TERMINALS TO CSD TELEPHONES.
- INSTALL EXTERNAL PAGING AMPLIFIER AND WIRE CROSS CONNECTIONS.
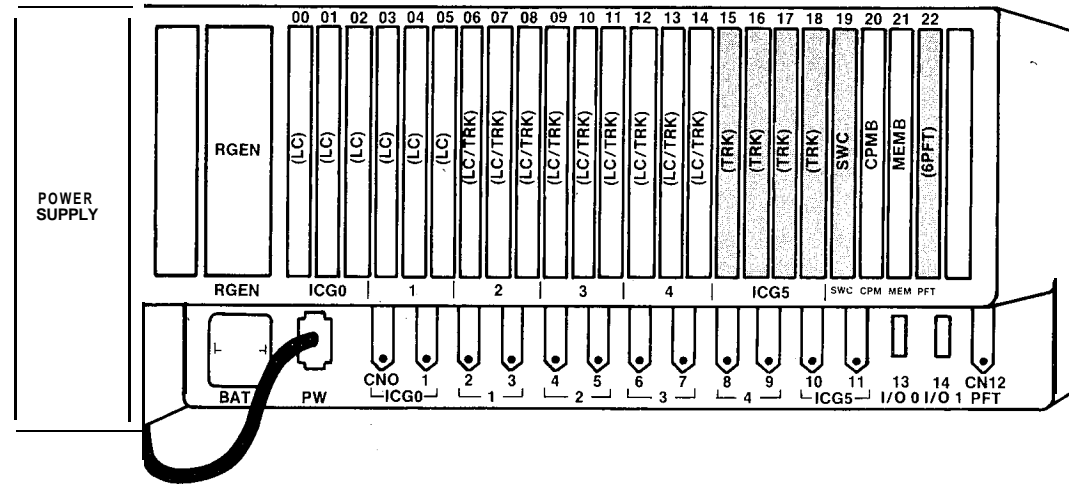- COMPLETE REVIEW EXERCISE.

CRITERIA:
- ENHANCED CARDS AND NEW PERIPHERALS WILL BE INSTALLED IN ACCORDANCE WITH STUDENT WORKBOOK AND GTE OMNI SBCS GTEP MANUAL.
- REVIEW EXERCISE QUESTIONS WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

4.31

# Package B Card Installation

## PROCEDURE

1. GROUND YOURSELF PRIOR TO HANDLING CARDS.

2. SINCE SYSTEM POWER MUST BE TURNED OFF WHEN INSTALLING OR REPLACING CPMC OR MEMC CARDS, OFFICE DEPENDENT DATA BASE WILL BE DELETED AND CUSTOMIZED DATA BASE MUST BE REPROGRAMMED.

3. IF MESSAGE WAITING ON SLT INSTRUMENTS IS REQUIRED, CUT STRAP OR SLIDE SWITCH ON RGEN CARD.

4. INSTALL CARDS AFFECTED BY PACKAGE B IN DESIGNATED SLOTS:
   RGEN — RGEN SLOT
   8DTC — SLOTS 00 THROUGH 14 (IF DTA IS INSTALLED, USE SLOTS 00, 03, 06, 09, OR 12)
   CPMB — SLOT 20
   MEMB — SLOT 21

5. INITIALIZE CARDS BY COLD RESTARTING SYSTEM. PRESS RESTART BUTTON WITH TOGGLE IN UPPER POSITION ON CPMB CARD.

6. REPROGRAM THE SYSTEM IF CPMB, MEMB, OR RGEN CARDS HAVE BEEN REPLACED.

4.32

# Data Terminal Adapter (DTA) Installation
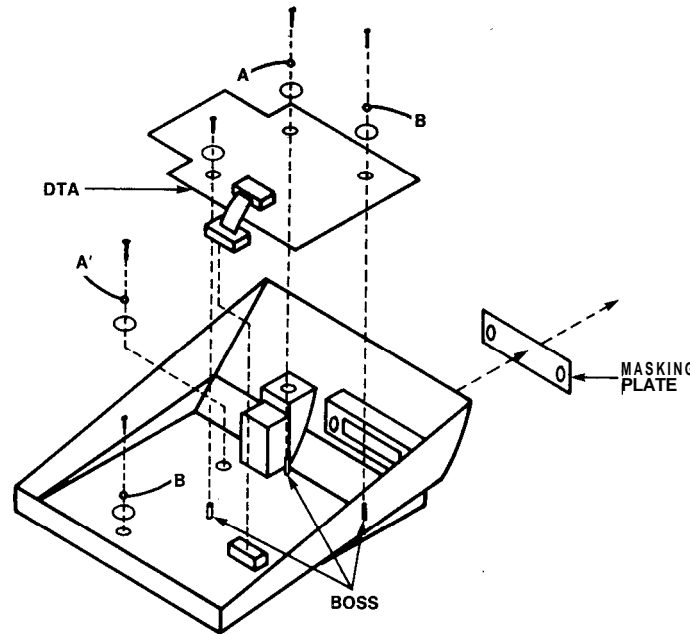
PROCEDURE 1

. INSTALLATION OF DATA ADAPTER (DTA) IN CSD TELEPHONE ALLOWS RS-232-C INTERFACE CONNECTION TO A CUSTOMER-SUPPLIED TERMINAL OR WORK STATION.

● REFER TO FOLLOWING PAGE FOR DTA INSTALLATION PROCEDURE.

4.33

# Data Adapter (DTA) Installation (Continued)

## PROCEDURE

1. ENSURE THAT YOU ARE WEARING A GROUNDED ANTI-STATIC WRIST STRAP.

2. REMOVE THE DTA, AC POWER SUPPLY ADAPTER, TWO GROUNDING WIRES, FIVE WASHERS, AND THREE SCREWS FROM PACKAGE.

3. REMOVE UPPER CASE AND MASKING PLATE FROM CSD TELEPHONE.

4. INSTALL TWO GROUNDING WIRES TO CSD CONTROL CIRCUIT CARD. GROUNDING WIRE A IS TWO INCHES IN LENGTH AND WIRE B IS EIGHT AND FIVE-EIGHTHS INCHES IN LENGTH. ATTACH WIRES WITH ONE WASHER AND SCREW, IN FOLLOWING SEQUENCE: WASHER, WIRE, AND SCREW.

5. PLACE THE DTA ON THE BOSSES, THEN CONNECT THE TWO GROUNDING WIRES TO THE DTA WITH THE TWO WASHERS AND SCREWS USED TO FASTEN THE DTA TO THE BOSSES.

6. INSTALL THE THIRD WASHER AND SCREW USED TO FASTEN THE DTA TO THE BOSSES.

7. CONNECT THE CONNECTOR FROM THE DTA TO THE CONNECTOR ON THE CONTROL CIRCUIT CARD.

8. REPLACE THE CSD TELEPHONE'S UPPER CASE.

9. PLUG THE POWER ADAPTER CORD INTO THE AC POWER JACK ON THE REAR OF THE CSD TELEPHONE.

10. PLUG THE AC POWER SUPPLY ADAPTER INTO AN AC POWER OUTLET.

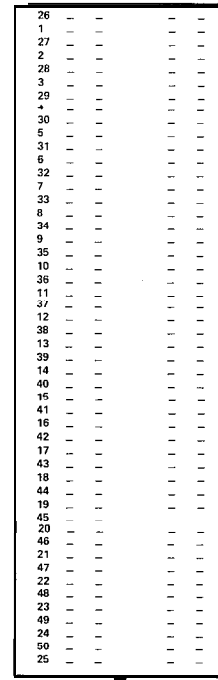11. PROCEED WITH CSD TELEPHONE INSTALLATION AND CROSS CONNECTION.

# CSD Telephone Installation

**GTE**

**GTE OMNI SBCS**

- DIAGRAM REPRESENTS A TYPICAL EXAMPLE OF CROSS CONNECTIONS FOR A CSD TELEPHONE.

- EACH CSD TELEPHONE REQUIRES ONLY ONE PAIR OF WIRES FOR TIP AND RING (SIMILAR TO SLT CROSS CONNECTIONS). ON THE CDF TERMINAL BLOCK, ONLY EVERY OTHER PAIR OF WIRES IS USED.

- EXAMPLE ILLUSTRATES CDF CROSS CONNECTION FOR AN 8DTC INTERFACE CARD IN SLOT 00, USING CABLE NUMBER (CN) 0. CONNECTOR BLOCK SHOWN WOULD HANDLE ALL EIGHT CIRCUITS FOR THE CARD SLOT IDENTIFIED ABOVE.

- REFER TO CDF CROSS CONNECT REFERENCE CHART IN OF STUDENT WORKBOOK, INSTALLATION MODULE FOR CROSS CONNECTION INSTRUCTIONS FOR OTHER CARD AND EQUIPMENT CONFIGURATIONS.

**25 PAIR CDF BLOCK**

TIP

RING

MODULAR JACK

GREEN

RED

MODULAR CABLE

25 PAIR CABLE

**TYPICAL CSD CROSS CONNECTION**

4.35

# Student Notes

# Data Terminal Installation

**DESCRIPTION**



- **REQUIRES FOLLOWING PIECES OF EQUIPMENT:**

  - CUSTOMER SUPPLIED DATA TERMINAL, WORK STATION, OR PRINTER
  - CSD TELEPHONE WITH INSTALLED DATA TERMINAL ADAPTER (DTA)
  - AC POWER SUPPLY ADAPTER
  - CSD TO DATA TERMINAL CABLE

4.37

# Data Terminal Installation (Continued)

## DESCRIPTION (Continued)
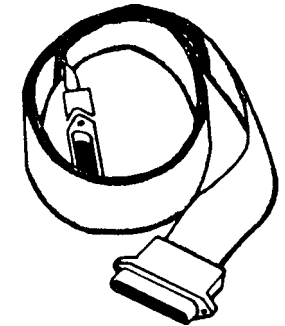
- **DATA TERMINAL'S RS-232-C PORT PIN CONFIGURATION MUST BE COMPATIBLE WITH PIN CONFIGURATION FOR RS-232-C PORT ON CSD TELEPHONE'S DATA TERMINAL ADAPTER (DTA), AS LISTED BELOW:**

| PIN CONFIGURATION | SIGNAL | DESCRIPTION |
|---|---|---|
| 1 | F G | PROTECTIVE GROUND |
| 2 | TD | TRANSMITTED DATA |
| 3 | R D | RECEIVED DATA |
| 4 | RTS | REQUEST TO SEND |
| 5 | CTS | CLEAR TO SEND |
| 6 | D S R | DATA SET READY |
| 7 | S G | SIGNAL GROUND (COMMON GROUND) |
| a | RLSD | RECEIVED LINE SIGNAL DETECTOR |
| 9 | | |
| 10 | | |
| 11 | | |
| 12 | | |
| 13 | | |
| 14 | | |
| 15 | ST2 | TRANSMISSION SIGNAL ELEMENT TIMING |
| 16 | | |
| 17 | | |
| 18 | | |
| 19 | | |
| 20 | D T R | DATA TERMINAL READY |
| 21 | | |
| 22 | R I | RING INDICATOR |
| 23 | | |
| 24 | | |
| 25 | | |

4.38

# Data Terminal Installation (Continued)

**GTE**

*GTE OMNI SBCS*

| PROCEDURE |

1. **ENSURE THAT DTA IS INSTALLED IN CSD TELEPHONE.**

2. **PLUG DATA TERMINAL POWER CABLE INTO THE POWER OUTLET.**

3. **CONNECT CSD AND DATA TERMINAL WITH THE CSD TO DATA TERMINAL CABLE.**

AC
ADAPTER JACK

RS-232-C
CONNECTOR

TELEPHONE
CORD

TERMINAL

TERMINAL
POWER CORD

115V/60C
POWER OUTLET

TERMINAL-
TO-CSD CABLE

CSD
(REAR)

TERMINAL
(REAR)

4.39
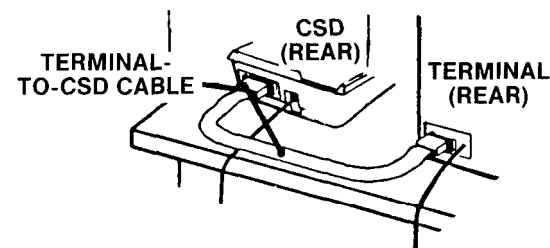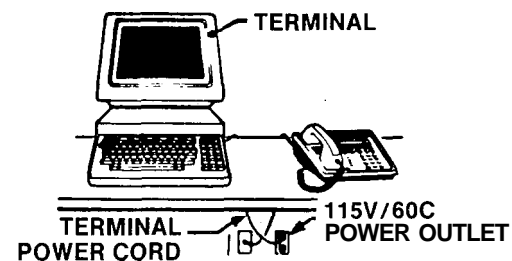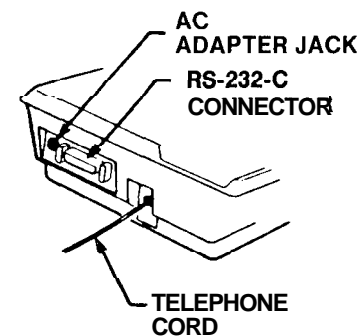
# Data Terminal Installation (Continued)

| PROCEDURE |

4. PLUG THE AC POWER SUPPLY ADAPTER INTO THE POWER OUTLET.



AC ADAPTER



AC ADAPTER

5. PLUG THE ROUND END OF THE AC POWER SUPPLY ADAPTER INTO THE CSD TELEPHONE.
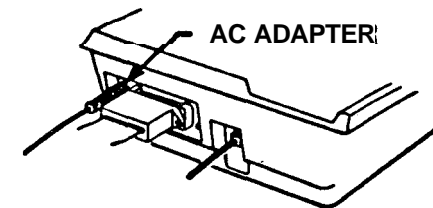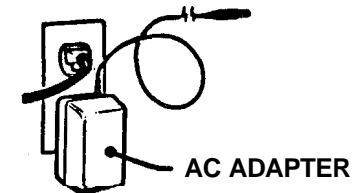
NOTE:   REFER TO OPERATIONS MANUAL SUPPLIED WITH CUSTOMER-SUPPLIED DATA TERMINAL FOR OPERATING INSTRUCTIONS.

4.40

# Message Waiting on SLT Instruments ════ GTE

## DESCRIPTION

- MESSAGES CAN BE LEFT AT SLT INSTRUMENTS (DIAL PULSE OR DTMF) EQUIPPED WITH MESSAGE WAITING LAMPS.

- MESSAGE WAITING FEATURE FOR SLT INSTRUMENTS IS ACTIVATED THROUGH A STRAPPING OPTION ON THE RGEN CARD AND TWO DATA BASE COMMANDS.

## [PROCEDURE]

1. CUT STRAPPING JUMPER ON RGEN CARD (SEE DIAGRAM) OR IF EQUIPPED, SLIDE MESSAGE WAITING SWITCH (LOCATED IN SAME PLACE) TO ON.

2. ACTIVATE MESSAGE WAITING ON SLT INSTRUMENTS FOR SYSTEM WITH CMC-102. (REFER TO PACKAGE B, DATA BASE ADMINISTRATION SECTION).

3. IDENTIFY DIRECTORY NUMBERS OF SLT INSTRUMENTS TO BE ASSIGNED MESSAGE WAITING FEATURE WITH CMC-204. (REFER TO PACKAGE B, DATA BASE ADMINISTRATION SECTION).

MESSAGE WAITING OPTION
CUT STRAP TO ACTIVATE

C21

J1

BUS BAR
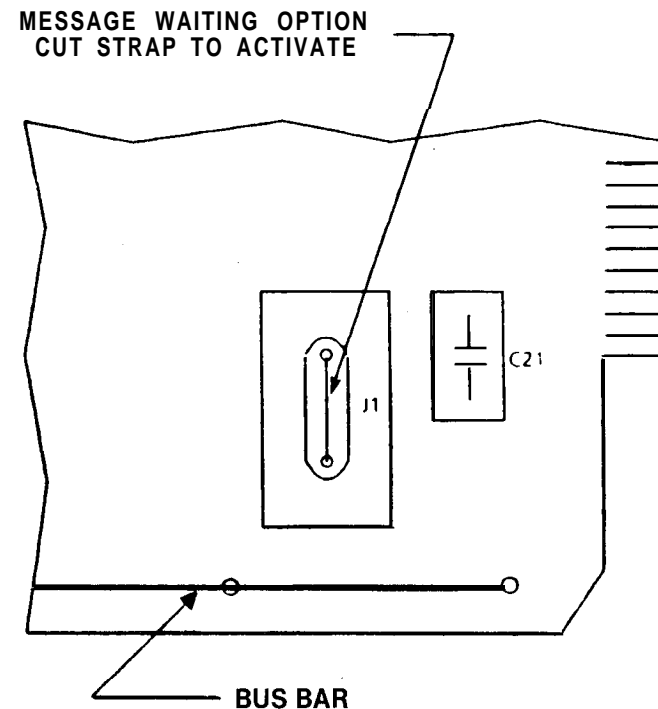
# Optional External Paging Installation

**GTE**

*GTE OMNI SBCS*

- DIAGRAM REPRESENTS A TYPICAL EXAMPLE OF CROSS CONNECTIONS FOR A CUSTOMER-SUPPLIED EXTERNAL PAGING AMPLIFIER.

- EXTERNAL PAGING REQUIRES ONE PAIR OF WIRES FOR ITS INTERFACE TO A 4BWC CARD (SAME AS CO TRUNK INSTALLATION). EACH 4BWC CARD HAS FOUR CIRCUITS AND ONLY EVERY OTHER PAIR OF PINS IS USED ON THE CONNECTING BLOCK.

- OPERATION MAY REQUIRE 24 VOLT POWER SUPPLY (DEPENDENT ON CUSTOMER-SUPPLIED EQUIPMENT)

25 PAIR CDF BLOCK

TIP
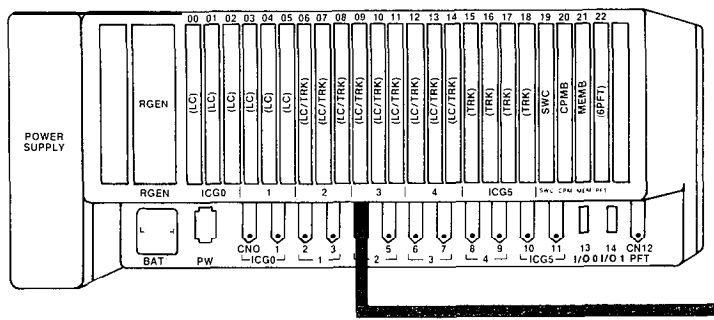
RING

25 PAIR CABLE
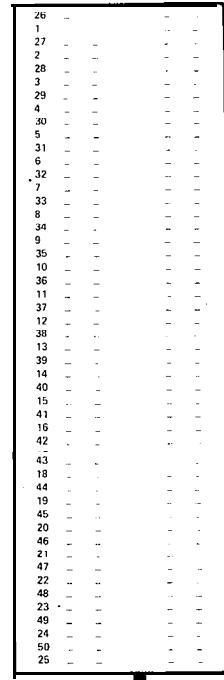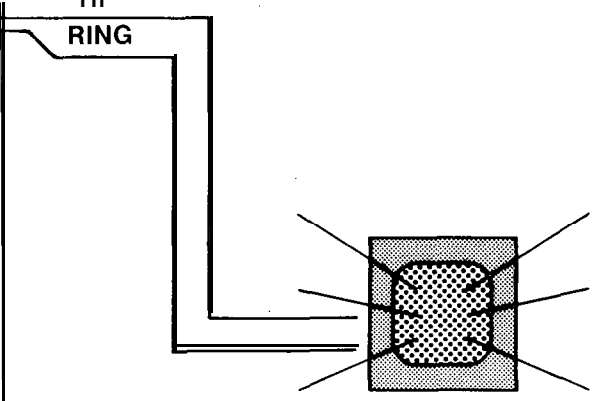
| CN | CS | CONNECTING BLOCK PINS | | | |
|----|----|------|------|------|------|
| 4 | 8 | 26.1 | 28.3 | 30.5 | 32.7 |
| | 9 | | | | |
| 6 | 12 | | | | |
| 8 | 7 | 42.17 | 4.19 | 46.21 | 40.23 |
| | 10 | | | | |
| | 13 | | | | |
| 5 | 6 | 34.9 | 36.11 | 38.13 | 40.15 |
| 7 | 11 | | | | |
| 9 | 14 | | | | |
| 10 | 15 | 26.1 | 28.3 | 20.5 | 32.7 |
| | 16 | 34.9 | 36.11 | 38.13 | 40.15 |
| | 17 | 42.17 | 44.19 | 46.26 | 48.23 |
| 11 | 18 | 26.1 | 28.3 | 30.5 | 32.7 |

REFER TO CDF CROSS CONNECT REFERENCE CHART IN STUDENT WORKBOOK FOR CROSS CONNECTION INSTRUCTIONS FOR OTHER CARD AND EQUIPMENT CONFIGURATIONS.

4.42

# Laboratory Activity — Package B
# Installation (4.2)

GTE OMNI SBCS

1. POWER SYSTEM OFF.

2. ENSURE THAT PROPER ELECTROSTATIC GROUNDING PROCEDURES ARE FOLLOWED PRIOR TO HANDLING PCB CARDS.

3. BEGIN REPLACING AND INSTALLING THE DESIGNATED PRINTED CIRCUIT BOARDS IN CARD SLOTS IDENTIFIED BELOW (IF NOT PREVIOUSLY INSTALLED IN MODULE I). ENSURE THAT CARD COMPONENTS ARE ON LEFT SIDE OF THE BOARDS.

   (A) INSERT AND SEAT AN INTERFACE CARD FOR CSD/DTA INSTRUMENTS (8DTC) IN CARD SLOT 00.
   (B) REPLACE THE CPMA CARD IN SLOT 20 WITH THE ENHANCED CONTROL PROCESSOR MEMORY CARD (CPMB).
   (C) REPLACE THE MEMA CARD IN SLOT 21 WITH THE ENHANCED MEMORY CARD (MEMB).

4. REMOVE THE RING GENERATOR (RGEN). CUT STRAP OR SLIDE SWITCH ON CARD TO ACTIVATE MESSAGE WAITING FOR SLT INSTRUMENTS. INSERT AND SEAT RGEN WITH CARD COMPONENTS ON RIGHT SIDE OF THE BOARD.

5. INSTALL DATA TERMINAL ADAPTERS IN TWO CSD TELEPHONES.

6. WIRE CROSS CONNECTIONS AND INSTALL CSD TELEPHONES USING THESE DESIGNATED CONFIGURATIONS (IF NOT PREVIOUSLY INSTALLED IN MODULE I).

   (A) CSD TELEPHONE USING 8DTC CARD IN SLOT 00, CIRCUIT 0. DEFAULT DIRECTORY NUMBER WILL BE 200 (VOICE).
   (B) CSD TELEPHONE USING 8DTC CARD IN SLOT 00, CIRCUIT 1. DEFAULT DIRECTORY NUMBER WILL BE 201 (VOICE).

7. LABEL EACH INSTRUMENT WITH THE APPROPRIATE STATION DIRECTORY NUMBER AND EQUIPMENT NUMBER (CARD SLOT AND CIRCUIT NUMBER).

6. INSTALL DATA TERMINAL STATIONS TO BOTH CSD TELEPHONES.

# Laboratory Activity — Package B
# Installation (4.2) (Continued)

9.  WIRE CROSS CONNECTION AND INSTALL EXTERNAL SPEAKER TO 4BWC CARD IN SLOT 18, CIRCUIT 3.

10. POWER SYSTEM ON AND RESET SYSTEM BY PRESSING RESTART BUTTON ON CPMB CARD WITH TOGGLE SWITCH IN CENTER POSITION.

11. REPROGRAM THE ODDB.

# Review Exercise — Package B
# Installation (4.2)

**GTE**

*GTE OMNI SBCS*

INSTRUCTIONS:   THE FOLLOWING EXERCISE CONSISTS OF MULTIPLE CHOICE, TRUE/FALSE, FILL IN THE BLANK, OR MATCHING TYPE QUESTIONS. ALL AVAILABLE RESOURCES (I.E. STUDENT WORKBOOK, NOTES AND GTEP MANUAL) MAY BE USED AS REFERENCES. SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

1. (TRUE OR FALSE) _____ CPMB CAN BE INSTALLED AS A COMMON CONTROL CARD WITH SWC AND MEMA CARDS.

2. (TRUE OR FALSE) _____ 'REPLACING CPMB OR MEMB AUTOMATICALLY DELETES THE ODDB.

3. INSTALLATION OF THE DTA REQUIRES _____ GROUNDING WIRES.

4. (TRUE OR FALSE) _____ THE DTA OBTAINS ITS POWER DIRECTLY FROM THE CSD INSTRUMENT.

5. A CSD TELEPHONE CROSS CONNECTED TO THE SECOND CIRCUIT OF AN 8DTC INSTALLED IN SLOT 03 WOULD USE

   PINS - A N D ___ ON THE CDF TERMINAL BLOCK.

6. INDICATE WHICH OF THE FOLLOWING PIECES OF EQUIPMENT ARE REQUIRED FOR INTERNAL DATA TERMINAL INSTALLATION: _____

   a. CSD TO DATA TERMINAL CABLE, MODEM, DATA TERMINAL, AND CSD TELEPHONE.
   b. CSD TELEPHONE WITH DTA, AC POWER SUPPLY ADAPTER, DATA TERMINAL, AND CSD TO DATA TERMINAL CABLE.
   c. AC POWER SUPPLY, MASTER CONTROL TELEPHONE, DATA TERMINAL, AND CODEC.
   d. CSD TO DATA TERMINAL CABLE, DATA TERMINAL, CSD TELEPHONE, AND AC POWER SUPPLY.

7. THE MESSAGE WAITING OPTION ON THE RING GENERATOR IS INSTALLED BY:   (1) CUTTING A STRAPPING JUMPER

   OR, (2) _____

8. AN EXTERNAL PAGING AMPLIFIER CROSS CONNECTED TO THE THIRD CIRCUIT OF A 4BWC CARD INSTALLED IN SLOT

   15 WOULD USE PINS - A N D _____ ON THE CDF TERMINAL BLOCK.

9. What card slots may be used for 8DTC cards when CSD telephones are installed without Data Terminal Adapters?

_____

_____

10. Identify the correct descriptions for the RS-232-C pin configuration required for the RS-232-C port on a CSD equipped with a DTA:

| PIN | SIGNAL | DESCRIPTION |
|---|---|---|
| 1 | FG | PROTECTIVE GROUND |
| 2 | TD | _____ |
| 3 | RD | RECEIVED DATA |
| 4 | RTS | _____ |
| 5 | CTS | _____ |
| 6 | DSR | DATA SET READY |
| 7 | SC | SIGNAL GROUND |
| 8 | RLSD | _____ |
| 9 | ▪▪▪▪▪▪ | _____ |
| 10 | ------- | ---------------------------- |
| 11 | ------- | ---------------------------- |
| 12 | ------- | ---------------------------- |
| 13 | ------- | ---------------------------- |
| 14 | ▪▪▪▪▪▪ | ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ |
| 15 | ST2 | TRANSMISSION SIGNAL |
| 16 | ------- | ---------------------------- |
| 17 | –mm-w- | _____ |
| 18 | ▪▪▪▪▪▪ | ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ |
| 19 | ▪▪▪▪▪▪ | _____ |
| 20 | DTR | _____ |
| 21 | ▪▪▪▪▪▪ | ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ |
| 22 | RI | _____ |
| 23 | ▪▪▪▪▪▪ | _____ |
| 24 | ▪▪▪▪▪▪ | ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ |
| 25 | ------- | _____ |

4.46

# Student Notes

**GTE**

*GTE OMNI SBCS*

**GTE**

*GTE OMNI SBCS*

# PACKAGE B
# DATA BASE
# ADMINISTRATION

# 4.3 Enabling Objective

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**GIVEN:**
- GTE OMNI SBCS
- GTE OMNI SBCS PACKAGE B EQUIPMENT AND PERIPHERALS
- PORTABLE MAINTENANCE PANEL
- OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- REVIEW EXERCISE

**ACTION:**
- IDENTIFY FUNCTIONS AND APPLICATIONS OF PACKAGE B CMC COMMANDS.
- MODIFY PARAMETER VALUES FOR PACKAGE B CMC COMMANDS.
- COMPLETE REVIEW EXERCISE.

**CRITERIA:**
- DEMONSTRATION OF ABOVE TASKS IN ACCORDANCE WITH PROCEDURES OUTLINED IN OMNI SBCS GTEP MANUAL AND OMNI SBCS STUDENT WORKBOOK.
- REVIEW EXERCISE WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

# Data Switching Programming

## DESCRIPTION

- INTERNAL DATA COMMUNICATIONS CAN BE ACCOMMODATED FOR CSD TELEPHONES EQUIPPED WITH A DATA ADAPTER (DTA) USING AN RS-232-C INTERFACE BETWEEN THE CSD AND A CUSTOMER SUPPLIED DATA TERMINAL STATION.

- CALLS CAN BE ESTABLISHED AS VOICE ONLY, DATA ONLY, OR SIMULTANEOUS VOICE/DATA.

- SYSTEM PROVIDES ASYNCHRONOUS OR SYNCHRONOUS COMMUNICATION IN FULL OR HALF DUPLEX MODES WITH SPEEDS OF UP TO 19,200 BPS. DATA TERMINAL STATION ATTRIBUTES FOR BOTH THE SENDING AND RECEIVING TERMINALS MUST BE MADE COMPATIBLE WITHIN THE SYSTEM DATA BASE.

- DATA TERMINAL STATIONS CAN BE PROGRAMMED TO INITIATE DATA CALLS IN AUTO ORIGINATE OR MANUAL ORIGINATE MODE AND RECEIVE DATA CALLS IN AUTO ANSWER OR MANUAL ANSWER MODE.

- DATA CALLS CAN BE RELEASED USING EITHER NORMAL DICONNECT OR AUTOMATIC DISCONNECT   MODES.

- DATA TERMINAL STATIONS ARE ASSIGNED DATA TERMINAL STATION DIRECTORY NUMBERS USING A FLEXIBLE NUMBERING PLAN SEPARATE FROM THE VOICE STATION DIRECTORY  NUMBERING  PLAN.

- OPTIONAL DATA FEATURES INCLUDE ASSIGNMENT TO CLASS OF SERVICE LEVELS FOR DATA TERMINAL STATIONS, ASSIGNMENT TO DATA TERMINAL STATION HUNT GROUPS, OR ESTABLISHMENT OF DATA TERMINAL STATION HOT LINES.

- DATA TERMINAL STATIONS CAN BE ASSIGNED TO TENANT AND METERING GROUPS.

# Data Switching  Programming

| PROCEDURE |

1. INSTALL DATA ADAPTERS (DTA) IN CSD TELEPHONES TO BE CONNECTED TO DATA TERMINAL STATIONS.

2. INSTALL CSD INSTRUMENTS. ENSURE THAT CSD INSTRUMENTS WITH DATA 8DTC CARDS INSERTED IN SLOTS 00, 03, 06, 09 OR 12. CONNECT DATA TERMINALS STATIONS TO RS-232-C INTERFACE IN REAR OF CSD TELEPHONES.

3. ASSIGN CSD TELEPHONES AS VOICE STATIONS AND DESIGNATE APPROPRIATE SERVICE USING CMC-201, 202, 203, AND 204.

NOTE:   REFER TO STUDENT WORKBOOK, DATA BASE ADMINISTRATION MODULE, FOR DESCRIPTIONS AND PROCEDURES.

4. ASSIGN DATA TERMINAL STATION WITH CMC-220:
   . EQUIPMENT NUMBER (P1)
   .   DIRECTORY NUMBER OF DATA STATION (Pi)
   .   DATA INTERFACE TYPE (P3)
   .   DIRECTORY NUMBER OF CORRESPONDING VOICE STATION (P4)

```
CMC=220
P1:006   P4:206
P2:3648
P3:1
```

5. ASSIGN DATA TERMINAL STATION CLASS OF SERVICE/CLASS OF RESTRICTION LEVELS WITH CMC-221:
   ● DIRECTORY NUMBER OF DATA STATION (P1)
   . DAY CLASS OF SERVICE (P2) — (DEFAULT = 1)
   ● NIGHT CLASS OF SERVICE (P3) — (DEFAULT = 1)
   . DAY CLASS OF RESTRICTION (P4) — (DEFAULT = 1)
   . NIGHT CLASS OF RESTRICTION (P5) — (DEFAULT = 1)

```
CMC=221
P1:3648   P4:1
P2:1      P5:3
P3:3
```

# Data Switching Programming (Continued)

6. ASSIGN OR MODIFY FAULT DATA TERMINAL STATION ATTRIBUTES WITH CMC-222:
   - DIRECTORY NUMBER OF DATA TERMINAL STATION (P1)
   . DATA SPEED (P2) — (DEFAULT = 1200 BPS)
   . SYNCHRONIZATION AND COMMUNICATIONS (P3) — (DEFAULT = ASYNCHRONOUS/FULL DUPLEX)
   . WORD STRUCTURE (P4) — (DEFAULT = STOP BIT-I BIT,)
   . PARITY (P5) (DEFAULT = SPACE)
   . ECHOPLEX (P6) (DEFAULT = NOT USED)

```
CMC=222
P1:3648    P4:4
P2:5       P5:3
P3:3       P6:0
```

7. ASSIGN RS-232-C INTERFACE SIGNAL MODE WITH CMC-223:
   . DIRECTORY NUMBER OF DATA TERMINAL STATION (P1)
   - CALL CONTROL MODE (P2) — (DEFAULT = MANUAL ORIGINATE AND ANSWER MODES, NORMAL DISCONNECT MODE, AND ONE RING OPTION IN AUTO ANSWER NOT USED)
   - RS-232-C INTERFACE SIGNAL/MODE 1 (P3) — (DEFAULT = DTR-NORMAL, RTS-NORMAL, AND DSR-NORMAL)
   - RS-232-C INTERFACE SIGNAL/MODE 2 (P4) — (DEFAULT = R1 OPTION-STEADY ON)

```
CMC=223
P1:3648    P4:0
P2:0111
P3:111
```

8. ASSIGN DATA TERMINAL STATION OPERATION MODE, DIAL MODE, TENANT GROUP AND METERING GROUP NUMBERS WITH CMC-224:
   - DIRECTORY NUMBER OF DATA TERMINAL STATION (P1)
   - OPERATION MODE (P2) — DEFAULT = TWO-WAY)
   - DIAL MODE (P3) — (DEFAULT = TELEPHONE DIAL)
   - TENANT NUMBER (P4) — (DEFAULT = BLANK)
   - METERING GROUP NUMBER (P5) — (DEFAULT = BLANK)

```
CMC=224
P1:3648  P 4 :
P2:1        P5:
P3:0
```

9. IF DESIRED, ASSIGN DATA TERMINAL STATIONS TO DATA HUNT GROUPS WITH CMC-301:
   - DATA TERMINAL STATION HUNT GROUP NUMBER (P1)
   - TERMINATING (P2)
   - DIRECTORY NUMBER OF DATA TERMINAL HUNT GROUP NUMBER (P3)
   . HUNT GROUP TYPE (P4)

```
CMC=301
P1:51    P4:2
P2:2
P3:3648
```

10. IF APPLICABLE, ASSIGN DATA TERMINAL STATIONS TO HOT LINE SERVICE WITH
    CMC-304:

    . DATA HOT LINE NUMBER (P1) — (51-90)

    . ORIGINATING DATA TERMINAL STATION (P2)

    . TERMINATING DATA TERMINAL STATION (P3)

```
CMC=304
P1:51
P2:3648
P3:3661
```

NOTE: REFER TO STUDENT WORKBOOK, DATA BASE ADMINISTRATION MODULE FOR HUNT
      GROUP AND HOT LINE SERVICE FEATURE DESCRIPTIONS.

# Student Notes

# External Speaker Paging Assignment

## DESCRIPTION

. EXTERNAL PAGING IS ACCOMPLISHED BY UTILIZING CUSTOMER-SUPPLIED SPEAKER/AMPLIFIERS.

• PAGING IS ACTIVATED BY DEPRESSING A FEATURE BUTTON OR DIALING AN ACCESS CODE AND ZONE NUMBER.

. PAGING AMPLIFIERS ARE PROGRAMMED FOR A MAXIMUM OF 9 PAGING ZONES.

## PROCEDURE

1. INSERT 4BWC CARD AND INSTALL EXTERNAL SPEAKER/AMPLIFIER WITH APPROPRIATE CROSS CONNECTIONS (REFER TO PACKAGE B, INSTALLATION SECTION).

2. ASSIGN EQUIPMENT NUMBER AS EXTERNAL PAGING TRUNK CIRCUIT WITH CMC-250.

   . EQUIPMENT NUMBER (PI)

   . TYPE OF TRUNK (P2)

   . TRUNK GROUP NUMBER (P3)

   . OPERATION MODE (P4)

   . SIGNALING (P5)

   . ZONE NUMBER (P6)

```
CMC=250
P1:182    P4:3
P2:9      P5:1
P3:3      P6:1
```

# External Speaker Paging Assignment (Continued)

3.  IF APPLICABLE, CHANGE FEATURE ACCESS CODES FOR EXTERNAL PAGE ACCESS AND ENTER WITH CMC-100:

    . FEATURE NUMBER (P1)

    .   FEATURE ACCESS CODE (P2)

```
CMC=100
P1:51
P2:**
```

4.  IF APPLICABLE, CHANGE EXTERNAL PAGING WARNING BURST TIMING WITH CMC-103:

    .   IDENTIFICATION FOR TIMING (PI)

    ● MULTIPLIER (P2)

```
CMC=103
P1:45
P2:1
```

# Message Waiting for SLT Programming

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## DESCRIPTION

. PACKAGE B ACCOMMODATES THE MESSAGE WAITING LAMP FEATURE FOR SLT INSTRUMENTS USING SYSTEM ACCESS CODE.

. FEATURE FIRST MUST BE ACTIVATED ON SYSTEM AND THEN ASSIGNED TO SLT INSTRUMENTS ON AN INDIVIDUAL BASIS.

## PROCEDURE

1. ACTIVATE MESSAGE WAITING FOR SLT INSTRUMENTS WITH CMC-102:

   . FLAG NUMBER (PI)

   . SET VALUE (P2)

```
CMC=102
P1:15
P2:1
```

2. ASSIGN MESSAGE WAITING FEATURE TO INDIVIDUAL SLT INSTRUMENTS EQUIPPED WITH LAMP USING CMC-204:

   . STATION DIRECTORY NUMBER (P1)

   . SLT WITH MESSAGE WAITING LAMP IDENTIFICATION (P4)

```
CMC=204
P1:218   P4:1
P2:
P3:
```

# Access Codes/Package B

### DESCRIPTION

- DEFAULT ACCESS CODES FOR THE FOLLOWING PACKAGE B FEATURES CAN BE MODIFIED IF DESIRED:

- EKT PAGING ANSWER (FNO 52, ACCESS CODE = 87)
- EXTERNAL PAGING ACCESS (FNO 53, ACCESS CODE = 78)
- EXTERNAL PAGING ANSWER (FNO 54, ACCESS CODE = 88)
- DATA CALL ATTRIBUTE CHANGE (FNO 117, ACCESS CODE = 69)
- ADD DATA CALL (FNO 160, ACCESS CODE = 67)

### PROCEDURE

1. CHANGE FEATURE ACCESS CODE NUMBERS WITH CMC-100:

   - FEATURE NUMBER (PI)
   - FEATURE ACCESS CODE (P2)

```
CMC=100
P1:54
P2:##
```

NOTE: P3 — P6 ARE NOT APPLICABLE FOR THESE FEATURES.

# System Parameters/Package B

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## DESCRIPTION

● PACKAGE B MAY REQUIRE MODIFICATION OF SETTINGS FOR FOLLOWING
 APPLICABLE SYSTEM PARAMETER FLAGS:

. POUND CODE TREATMENT FOR TIE OR CO TRUNKS (FLAG NUMBERS 13 AND 14)

● ACTIVATION OF MESSAGE WAITING FOR SLT INSTRUMENTS (FLAG NUMBER 15)

● NUMBER OF DIGITS TO BE SENT AS ACCOUNT CODES FOR SYSTEM
 SPECIALIZED COMMON CARRIERS (FLAG NUMBERS 16 - 21).

## PROCEDURE

1. CHANGE SYSTEM PARAMETER FLAGS WITH CMC-102:

 ● FLAG NUMBER (PI)

 ● SET VALUE (P2)

```
CMC=102
P1:15
P2:1
```

# Student Notes

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# Equal Access Programming

### DESCRIPTION

- PACKAGE B ALLOWS SYSTEM DATA BASE TO ACCOMMODATE EQUAL ACCESS IN GEOGRAPHIC AREAS WHERE IT NOW IS AVAILABLE.

- PROGRAMMING REQUIRES BUILDING A RESTRICTION TABLE FOR CARRIER ACCESS CODES (CAC) SIMILAR TO TOLL RESTRICTION TABLES BUILT FOR AREA AND OFFICE CODES (REFER TO STUDENT WORKBOOK, DATA BASE ADMINISTRATION/MULTI-DIGIT RESTRICTION SECTION).

- IF LEAST COST ROUTING IS IMPLEMENTED, OUTGOING CONNECTINGS CAN BE PROGRAMMED TO INCORPORATE ANY CAC NUMBERS TO BE USED FOR LCR ROUTE TABLES.

### PROCEDURE

1. BUILD CAC RESTRICTION TABLES BY ASSIGNING CAC NUMBERS AND DESIRED CLASS OF RESTRICTION LEVELS TO RESTRICTION GROUPS USING CMC-415 RESTRICTION GROUPS AND COR ARE THEN ASSOCIATED WITH OTHER TOLL RESTRICTION TABLES):

    ```
    CMC=415
    P1:1
    P2:2
    P3:10288
    ```

    . RESTRICTION GROUP NUMBER (P1)
    .   CLASS OF RESTRICTION (P2)
    ● CARRIER ACCESS CODE (P3)

2. ASSIGN TOLL AND OPERATOR RESTRICTIONS FOR SAME RESTRICTION GROUP NUMBER (REFERENCED ABOVE FOR CMC-415) USING CMC-411:

    ```
    CMC=411
    P1:1   P4:1
    P2:2
    P3:1
    ```

    . RESTRICTION GROUP NUMBER (PI)
    ● CLASS OF RESTRICTION (P2)
    . FLAG IDENTIFICATION (P3)
    ● FLAG VALUE (P4)

# Equal Access Programming (Continued)

3. ASSIGN THE DIGIT COMPOSING FLAG FOR THE CAC NUMBER TO THE LCR OFFICE CODE ROUTE TABLES AND TRUNK GROUP NUMBER (PROBABLY A CO TRUNK) USING CMC-420:

   . OFFICE CODE ROUTE TABLE NUMBER (P1)
   . SELECTION SEQUENCE (P2)
   . TRUNK GROUP NUMBER (P3)
   . DIGIT COMPOSING FLAG (P4)

```
CMC=420
P1:1    P4:14
P2:1
P3:13
```

4. ASSIGN THE DIGIT COMPOSING FLAG FOR THE CAC NUMBER TO THE LCR AREA AND AREA/OFFICE CODE ROUTE TABLES AND TRUNK GROUP NUMBER USING CMC-421:

   . AREA CODE ROUTE TABLE NUMBER (PI)
   . SELECTION SEQUENCE (P2)
   . TRUNK GROUP NUMBER (P3)
   . DIGIT COMPOSING FLAG (P4)

```
CMC=421
P1:1    P4:11
P2:1
P3:13
```

5. ASSIGN THE CARRIER ACCESS CODES (USED IN THE DIGIT COMPOSING FLAGS ABOVE) IF THEY ARE TO BE USED FOR OUTGOING CONNECTIONS MADE BY LCR, USING CMC-425:

   . LEAST COST ROUTING CAC NUMBER (PI)
   . CARRIER ACCESS NUMBER (P2)

```
CMC=425
P1:1
P2:10288
```

# Laboratory Activity - Package B Data Base; Administration (4.3)

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PERFORM THE FOLLOWING PROGRAMMING TASK IN THE SEQUENCE OUTLINED BELOW AND IN ACCORDANCE WITH THE GTE OMNI SBCS GTEP MANUAL. COMPLETE THE REVIEW EXERCISE QUESTIONS UPON COMPLETION OF THIS LABORATORY ACTIVITY.

| WORK ORDER #4.3 | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555 1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER #4.3 (TASK #1) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

**TASKS:**

- &••)(Υ⅔■ CSD telephone as a voice station with CMC-201, CMC-202, CMC-203 and CMC-204

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Assign both CSD telephones at slot 00, circuits 0 and 1 using CMC-201:<br>Voice Directory Number = 200 and 201<br>Operation Mode = Bothway<br>Dialing = DTMF | (1) Perform data base changes<br><br>(2) Check/test the operation of commands after completion of this portion of the laboratory activity. |
| (2) Assign voice COS/COR to CSD telephones with CMC-202:<br>COS (day) = 1<br>COS (night) = 3<br>COR (day) = 1<br>COR (night) = 1 | (3) Proceed with next work order task. |
| (3) identify both voice stations as being "data secure" with CMC-204. | |

# Laboratory Activity - Package B Data Base Administration (4.3) (Continued)

**GTE**

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## WORK ORDER #2.2

| | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER # 4.3 (TASK #2) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

**TASKS:**

- Assign data terminal station with CMC-220.
- Assign data terminal's COS/COR with CMC-221.

---

**PARAMETERS:**

(1) Assign the data terminal stations associated with the CSD telephones at slot 00, circuits 0 and 1 using CMC-220 and the parameters listed below:
CMC-200
Equipment number = 000 and 001

Directory Number
of Data Stations = 1000 and 1001

Data Interface = DTA

Directory Number of
Voice Stations = 200 and 201

(2) Assign the data terminal's COS/COR using CMC-221 and the parameters listed below:

CMC-221
Data Directory Number = 1000 and 1001
COS (day) = 1
COS (night) = 3
COR (day) = 1
COR (night) = 1

**INSTRUCTIONS:**

(1) Perform data base changes.

(2) Proceed with next work order task.

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# Laboratory Activity - Package B Data Base Administration (4.3) (Continued)

**GTE**

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| WORK ORDER #2.2 |
|---|

| | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER #4.3 (TASK #3) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

**TASKS:**
- Modify default data terminal station attributes with CMC-222.
- Assigns RS-232-C interface mode with CMS-223.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Assign the data attributes listed below to both data terminals using CMC-222:<br>Data Directory Numbers 1000 and 1001<br>Data Speed = 300 bps<br>Synchronization/<br>  Communications = Asynchronous, full duplex<br>Word Structure = 1 stop bit,<br>  word length - 8 bits<br>Parity = Blank (not assigned)<br>Echoplex = not used<br><br>(2) Assign the RS-232-C interface signal mode as listed below using CMC-223:<br>Data Directory Numbers = 1000 and 1001<br>Call Control Mode = manual originate, auto answer<br>  forced disconnect and use one ring<br>  option in auto answer mode.<br><br>  RS-232-C interface;<br> signal mode 1 = forced in DTR option, forced on<br>  RTS option and DSR OFF.<br>  RS-232-C omterface;<br> signal mode 2 = RI option stead on. | (1) Perform data base changes.<br><br>(2) Proceed with next work order task. |

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| WORK ORDER #4.3 | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER #4.3 (TASK #4) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

**TASKS:**

- Assign data terminal mode, dial mode, tenant group and metering group number with CMC-224.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Assign both data terminal stations to the attributes listed below using CMC-224: <br><br> Data Directory Numbers 1000 and 1001 <br><br> Operation Mode = Bothway <br><br> Dial Mode = Tel dial <br><br> Tenant Number = Blank <br><br> Metering Group Number = Blank | (1) Perform data base changes. <br><br> (2) Check/test the operation of commands after completion of this portion of the laboratory activity. <br><br> (3) Proceed with next work order task. |

# Laboratory Activity - Package B Data Base Administration (4.3) (Continued)

| WORK ORDER #4.3 | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER #4.3 (TASK #5) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

**TASKS:**

- Assign data terminal stations to hunt groups with CMC-301.

- Assign data terminal stations to hot line service with CMC-304.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Assign both data terminal stations to hunt group number 51 using CMC-301. Identify this group as a circular type of hunting group.<br><br>(2) Create hot line number 51 using CMC-304. Assign data directory number 1000 as the originating data terminal station and 1001 as the terminating data terminal station. | (1) Perform data base changes.<br><br>(2) Check/test the operation of commands after completion of this portion of the laboratory activity.<br><br>(3) Proceed with next work order task. |

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# Laboratory Activity - Package B Data Base Administration (4.3) (Continued)

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| WORK ORDER #4.3 |
|---|

| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
|---|---|
| LOCATION: RESTON, VIRGINIA | WORK ORDER # 4.3 (TASK #6) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

**TASKS:**

● Assign external speaker to trunk group number with CMC-250.

● Activate message waiting for SLT instruments with CMC-102.

● Assign message waiting feature to individual SLT instruments with CMC-204.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Assigns the trunk installed at slot 18, circuit 0 as an external paging speaker using CMC-250.<br><br>(2) Activate message waiting for SLT instruments with CMC-102 using flag 15.<br><br>(3) Assign the message waiting feature to directory numbers 216 and 223 using CMC-204. | (1) Perform data base changes.<br><br>(2) Check/test the operation of commands after completion of this portion of the laboratory activity.<br><br>(3) Complete Review Exercise questions l-l 0. |

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# Review Exercise - Package B Data Base Administration (4.3)

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INSTRUCTIONS: THE FOLLOWING EXERCISE CONSISTS OF MULTIPLE CHOICE, TRUE/FALSE, FILL IN THE BLANK, OR MATCHING TYPE QUESTIONS. ALL AVAILABLE RESOURCES (I.E., STUDENT WORKBOOK, NOTES AND GTEP MANUAL) MAY BE USED AS REFERENCES. SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

1. (TRUE OR FALSE) _____ DATA TERMINAL STATION DIRECTORY NUMBERING PLAN IS SEPARATE FROM THE VOICE STATION DIRECTORY NUMBERING PLAN.

2. INDICATE THE DEFAULT DATA BASE SETTING FOR THE FOLLOWING DATA TERMINAL STATION ATTRIBUTES:
   DATA SPEED = _____
   SYNCHRONIZATION & COMMUNICATIONS = _____
   WORD STRUCTURE = _____
   PARITY = _____
   ECHOPLEX = _____

3. WHICH TWO VOICE SERVICE FUNCTIONS MAY ALSO BE APPLIED TO DATA TERMINAL STATIONS:
   _____

4. EXTERNAL PAGING IS ASSIGNED TO TRUNKS WITH CMC- _____ AFTER A CROSS CONNECTION IS MADE TO A _____ CARD.

5. (TRUE OR FALSE) _____ CMC-102 IS USED TO ASSIGN MESSAGE WAITING TO INDIVIDUAL SLT INSTRUMENTS.

6. IF EQUAL ACCESS OUTGOING CONNECTIONS ARE TO BE MADE BY LCR, CARRIER ACCESS CODES ARE ASSIGNED WITH CMC- _____

7. IF EQUAL ACCESS IS TO BE IMPLEMENTED, WHAT TYPE OF TABLE MUST BE BUILT FOR USE OF TOLL AND MULTI-DIGIT RESTRICTION? _____

4.69

# Laboratory Activity - Package B Data Base Administration (4.3) (Continued)

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**WORK ORDER #4.3**

| | |
|---|---|
| COMPANY **NAME: NU SYSTEM CO.** | PHONE #: **(703) 555-1212** |
| LOCATION: **RESTON, VIRGINIA** | **WORK ORDER # 4.3 (TASK #6)** |
| ORIGINATOR: **TELECOMMUNICATIONS MANAGER** | |

**TASKS:**

- Assign external speaker to trunk group number with CMC-250.

- Activate message waiting for SLT instruments with CMC-102.

- Assign message waiting feature to individual SLT instruments with CMC-204.

| PARAMETERS: | INSTRUCTIONS: |
|---|---|
| (1) Assigns the trunk installed at slot 18, circuit 0 as an external paging speaker using CMC-250. | (1) Perform data base changes. |
| (2) Activate message waiting for SLT instruments with CMC-102 using flag 15. | (2) Check/test the operation of commands after completion of this portion of the laboratory activity. |
| (3) Assign the message waiting feature to directory numbers 216 and 223 using CMC-204. | (3) Complete Review Exercise questions I-10. |

# Review Exercise - Package B Data Base Administration (4.3)

**GTE**

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INSTRUCTIONS: THE FOLLOWING EXERCISE CONSISTS OF MULTIPLE CHOICE, TRUE/FALSE, FILL IN THE BLANK, OR MATCHING TYPE QUESTIONS. ALL AVAILABLE RESOURCES (I.E., STUDENT WORKBOOK, NOTES AND GTEP MANUAL) MAY BE USED AS REFERENCES. SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

1. (TRUE OR FALSE) _____ DATA TERMINAL STATION DIRECTORY NUMBERING PLAN IS SEPARATE FROM THE VOICE STATION DIRECTORY NUMBERING PLAN.

2. INDICATE THE DEFAULT DATA BASE SETTING FOR THE FOLLOWING DATA TERMINAL STATION ATTRIBUTES:
   DATA SPEED = _____
   SYNCHRONIZATION & COMMUNICATIONS = _____
   WORD STRUCTURE = _____
   PARITY = _____
   ECHOPLEX = _____

3. WHICH TWO VOICE SERVICE FUNCTIONS MAY ALSO BE APPLIED TO DATA TERMINAL STATIONS:
   _____

4. EXTERNAL PAGING IS ASSIGNED TO TRUNKS WITH CMC- _____ AFTER A CROSS CONNECTION IS MADE TO A _____ CARD.

5. (TRUE OR FALSE) _____ CMC-102 IS USED TO ASSIGN MESSAGE WAITING TO INDIVIDUAL SLT INSTRUMENTS.

6. IF EQUAL ACCESS OUTGOING CONNECTIONS ARE TO BE MADE BY LCR, CARRIER ACCESS CODES ARE ASSIGNED WITH CMC- _____

7. IF EQUAL ACCESS IS TO BE IMPLEMENTED, WHAT TYPE OF TABLE MUST BE BUILT FOR USE OF TOLL AND MULTI-DIGIT RESTRICTION? _____
   _____

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# Review Exercise - Package B Data Base Administration (4.3) (Continued)

8.  WHAT IS THE DIGIT COMPOSED FLAG SETTING FOR THE FIRST CARRIER ACCESS CODE USING A CUSTOMER TOLL PREFIX FOLLOWED BY 7 DIGITS? _____

9. (TRUE OR FALSE) _____ DATA TERMINAL STATIONS CAN BE ASSIGNED TO METERING1 GROUPS, BUT NOT TENANT GROUPS.

10. MATCH EACH OF THE FOLLOWING PACKAGE B CMC COMMANDS WITH ITS CORRECT DEFINITION:

_____ CMC-102          A. TRUNK ASSIGNMENT'

_____ CMC-220          B. HOT LINE STATION ASSIGNMENTS

_____ CMC-221          C. CARRIER ACCESS CODE RESTRICTION ASSIGNMENT

_____ CMC-222          D. DATA TERMINAL STATION ATTRIBUTES (DATA SPEED, SYNCHRONIZATION/COMMUNICATIONS, ETC.)

_____ CMC-223          E. DATA TERMINAL STATION COS/COR ASSIGNMENT

                             F. HUNT GROUP ASSIGNMENT

_____ CMC-224          G. LCR OUTGOING CONNECTIONS CARRIER ACCESS CODE ASSIGNMENT

_____ CMC-250          H. SYSTEM PARAMETER ASSIGNMENT

_____ CMC-301          I. DATA TERMINAL STATION ASSIGNMENT RS-232-C INTERFACE SIGNAL MODE

_____ CMC-304          J. DATA TERMINAL STATION DIRECTORY ASSIGNMENT

_____ CMC-415          K. DATA STATION OPERATION/DIAL MODE ASSIGNMENT

_____ CMC-425

# Student Notes

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# PACKAGE B

# MAINTENANCE

# 4.4 Enabling Objective

**GTE**

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**GIVEN:**
- GTE OMNI SBCS
- GTE OMNI SBCS PERIPHERALS
- CSD TELEPHONE (ASSIGNED AS MASTER CONTROL TELEPHONE IN DATA BASE)
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- REVIEW EXERCISE

**ACTION:**
- USE MASTER CONTROL TELEPHONE AS AN ALTERNATE DATA BASE ADMINISTRATION AND MAINTENANCE TOOL.
- MODIFY SYSTEM SECURITY CODES IN DATA BASE.
- COMPLETE REVIEW EXERCISE.

**CRITERIA:**
- TASKS WILL BE PERFORMED IN ACCORDANCE WITH PROCEDURES OUTLINED ON OMNI SBCS GTEP MANUAL AND OMNI SBCS STUDENT WORKBOOK.
- REVIEW EXERCISE WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

# Master Control Telephone Assignment

**GTE**

*GTE OMNI SBCS*

### DESCRIPTION

. MAXIMUM OF 4 CSD TELEPHONES CAN BE IDENTIFIED IN SYSTEM DATA BASE AS
HAVING MASTER CONTROL TELEPHONE (MCT) CAPABILITIES FOR DATA BASE
ADMINISTRATION AND MAINTENANCE ACTIVITIES.

. CSD TELEPHONES USED AS MASTER CONTROL TELEPHONES DO NOT REQUIRE
INSTALLATION OF DATA ADAPTERS (DTA).

• REFER TO PACKAGE B, MAINTENANCE SECTION FOR MCT OPERATION
PROCEDURE.

### PROCEDURE

1. ASSIGN OR CANCEL MCT DIRECTORY NUMBER IDENTIFICATION
WITH CMC-702:

   • MCT NUMBER (PI)

   . STATION DIRECTORY NUMBER (P2)

```
CMC=702
P1:3
P2:206
```
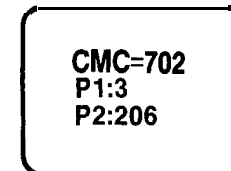
NOTE: ATTEMPTS TO DELETE THE MCT BEING USED TO MAKE ENTRIES WILL BE
DENIED BY DATA BASE.

# Master Control Telephone Operation
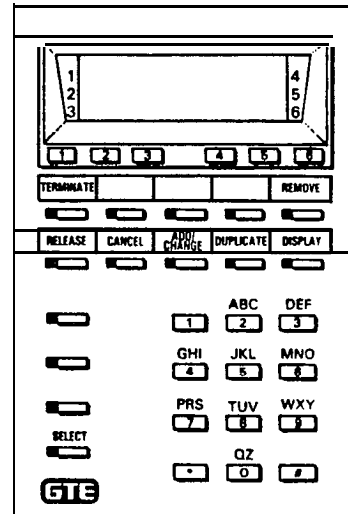
BUTTON CONFIGURATION OF
MASTER CONTROL TELEPHONE

## PROCEDURE

1. ENTER APPROPRIATE HIGH OR LOW LEVEL SECURITY CODE USING KEYBOARD OF A CSD TELEPHONE (ASSIGNED AS MCT) WHILE ON-HOOK AND IN AN IDLE STATE.

2. AT COMMAND PROMPT, ENTER APPROPRIATE CMC COMMAND AND PRESS RETURN (CSD'S TELEPHONE'S HOLD BUTTON).

3. ENTER PARAMETER VALUES USING CSD TELEPHONE'S NUMERIC KEYPAD AND DESIGNATED PROGRAM FUNCTION BUTTONS (ILLUSTRATED ABOVE).

4. PLEASE RELEASE, THEN TERMINATE TO RETURN THE MCT TO NORMAL CALL PROCESSING MODE AS A CSD TELEPHONE.

4.75

# Security Code Assignment

GTE OMNI SBCS

## DESCRIPTION

● PACKAGE B ALLOWS THE DEFAULT HIGH AND LOW LEVEL SECURITY CODES TO BE CHANGED BASED ON CUSTOMER PREFERENCE, OR TO PROTECT AGAINST UNAUTHORIZED DATA BASE ACCESS FROM A PMP OR MCT.

. SECURITY CODES MUST BE FOUR DIGITS IN LENGTH.

## PROCEDURE

1. CHANGE DATA BASE SECURITY CODES WITH CMC-704:

    . LOW LEVEL SECURITY CODE (PI)

    . HIGH LEVEL SECURITY CODE (P2)

```
CMC=704
P1:#123
P2:#456
```

# Student Notes

**GTE**
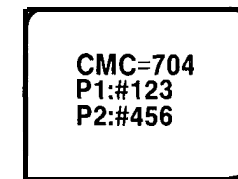
*GTE OMNI SBCS*

# Laboratory Activity - Package B
# Maintenance (4.4)

**GTE**

*GTE OMNI SBCS*

PERFORM THE FOLLOWING PROGRAMMING TASK IN THE SEQUENCE OUTLINED
BELOW AND IN ACCORDANCE WITH THE GTE OMNI SBCS GTEP MANUAL. COMPLETE
THE REVIEW EXERCISE QUESTIONS UPON COMPLETION OF THIS LABORATORY
ACTIVITY

| WORK ORDER #2.10 | |
|---|---|
| COMPANY NAME: NU SYSTEM CO. | PHONE #: (703) 555-1212 |
| LOCATION: RESTON, VIRGINIA | WORK ORDER #4.4 (TASK #1) |
| ORIGINATOR: TELECOMMUNICATIONS MANAGER | |

**TASKS:**
- Assign CSD as a Master Control Telephone with CMC-702.
- Operate MCT.
- Change high and low level security codes with CMC-704.

**PARAMETERS:**

(1) Assign station as MCT with CMC-702.

(2) Using MCT as programming instrument change high
level security code to 9999 and low level security
code to 2222.

(3) After verification, restore security codes back to
default settings.

**INSTRUCTIONS:**

(1) Perform maintenance programming commands. .

(2) Check/test the operation of commands after
completion of this portion of the laboratory.
activity.

(3) Use MCT to display current setting for a few
CMC command tables.

(4) Complete Review Exercise questions 1-6.

# Review Exercise - Package B Maintenance (4.4)

GTE OMNI SBCS

1.  (TRUE OR FALSE) _____ CSD TELEPHONES USED AS MASTER CONTROL TELEPHONES DO NOT REQUIRE INSTALLATION OF DATA TERMINAL ADAPTERS.

2 . UP TO _____ CSD TELPHONES CAN BE DESIGNATED AS MASTER CONROL TELEPHONES.

3.  IDENTIFY THE MASTER CONTROL TELEPHONE FUCNTION KEY WHICH CORRESPONDS TO EACH NUMBER BELOW:

(1) _____
(2) _____
(3) _____
(4) _____
(5) _____

(6) _____
(7) _____
(8) _____
(9) _____
(10) _____
(11) _____

BUTTON CONFIGURATION OF
MASTER CONTROL TELPEPHONE

4.79

# MODULE V
# PACKAGE C/SVR 2.0.X.X

# Table of Contents

**GTE**

**GTE OMNI SBCS**

# Table of Contents (Continued)

**GTE**

*GTE OMNI SBCS*

# 5.0 Terminal Objective

GIVEN:
- GTE OMNI SBCS
- GTE OMNI SBCS PACKAGE C EQUIPMENT AND PERIPHERALS
- PORTABLE MAINTENANCE PANEL, CSD TELEPHONE OR ATTENDANT CONSOLE AS MASTER CONTROL TELEPHONE
- STANDARD INSTALLATION TOOLS
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- WRITTEN TEST

ACTION:
- INSTALL PACKAGE C EQUIPMENT AND PERIPHERALS.
- MODIFY THE SYSTEM DATA BASE USING NEW OR ENHANCED PACKAGE C CMC COMMANDS.
- DESCRIBE RETROFIT PROCEDURES REQUIRED TO UPGRADE SBCS TO SVR 2.0.X.X (PACKAGE C).
- PERFORM DATA BASE ADMINISTRATION AND MAINTENANCE TASKS USING THE ATTENDANT CONSOLE AS A MASTER CONTROL TELEPHONE.
- COMPLETE WRITTEN TEST.

CRITERIA:
- INSTALLATION, DATA BASE ADMINISTRATION, AND MAINTENANCE TASKS WILL BE COMPLETED IN ACCORDANCE WITH PACKAGE C PROCEDURES OUTLINED IN GTEP MANUAL AND OMNI SBCS STUDENT WORKBOOK.
- TEST WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

**GTE**

*GTE OMNI SBCS*

# PACKAGE C
# Overview

## 5.1  **Enabling Objective** ━━━━━━━━━━ GTe

GTE OMNI SBCS

GIVEN:
- GTE OMNI SBCS
- GTE OMNI SBCS PACKAGE C EQUIPMENT AND PERIPHERALS
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- REVIEW EXERCISE

ACTION:
- DESCRIBE THE NEW FEATURES AND ENHANCEMENTS AVAILABLE WITH SVR PACKAGE C.
- IDENTIFY AND DESCRIBE THE FUNCTIONS OF PACKAGE C EQUIPMENT AND INTERFACES.
- COMPLETE REVIEW EXERCISE.

CRITERIA:
- REVIEW EXERCISE WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

# OMNI SBCS Development Phases

THE OMNI SBCS IS BEING DEVELOPED IN PHASES CORRESPONDING TO SYSTEM VERSION RELEASES. THIS MODULE WILL ADDRESS THE INSTALLATION, DATA BASE ADMINISTRATION, AND MAINTENANCE TASKS ASSOCIATED WITH PACKAGE C (SVR 2.0.X.X). HIGHLIGHTS OF EACH DEVELOPMENT PHASE ARE DESCRIBED BELOW:

PACKAGES A/SVR 1.0.X.X
AND B/SVR 1.5.X.X
— PROVIDE ADVANCED HYBRID SYSTEM FOR BUSINESS USE. INTRODUCE BASIC INTERNAL DATA COMMUNICATIONS FEATURES FOR LOW SPEED DATA TERMINALS, ALLOWING SIMULTANEOUS VOICE/DATA TRANSMISSION.

PACKAGE C/SVR 2.0.X.X
— EXPANDS SYSTEM TO INCLUDE FOLLOWING SYSTEM APPLICATIONS AND FEATURES:

. ATTENDANT CONSOLE - PROVIDES EFFICIENT CALL HANDLING FOR PABX APPLICATIONS AND ALLOWS USE OF ATTENDANT CONSOLE FOR DATA BASE ADMINISTRATION OR MAINTENANCE FUNCTIONS.

● KEY TELEPHONE SYSTEM - REPLACES TRADITIONAL ELECTROMECHANICAL KEY TELEPHONE OPERATIONS WITH EMULATED KEY SYSTEM FEATURES AND ENABLES SYSTEM TO FUNCTION BEHIND A HOST PABX OR CENTREX.

. HOTEL/MOTEL PACKAGE - PROVIDES SINGLE BUTTON ACCESS TO LODGING OR HEALTHCARE FEATURES USING A FRONT DESK CONSOLE (CSD OR ATTENDANT CONSOLE), ROOM STATUS INDICATOR, AND HOTEL/MOTEL PRINTER.

. EXPANDED SYSTEM ARCHITECTURE - ALLOWS FOR USE OF AN ADDITIONAL SBCS SYSTEM CABINET TO INCREASE BASIC SYSTEM CAPACITY TO A MAXIMUM NUMBER OF 104 TRUNKS OR 240 STATIONS.*

. ENHANCED DATA COMMUNICATIONS - EXTENDS NUMBER OF AVAILABLE DATA TERMINALS THROUGH USE OF A DATA INTERFACE UNIT (DIU) DEVICE.

PACKAGE D/SVR 3.0.X.X
(FUTURE)
— PROJECTED TO EXPAND SYSTEM TO INCLUDE ADVANCED OFFICE APPLICATIONS AND FEATURES SUCH AS AUTOMATIC CALL DISTRIBUTION, MULTI-STATION LINE APPEARANCES ON EKT INSTRUMENTS, VOICE MESSAGE, SILENT MESSAGE, AND DICTATION AND CONTROL.

* NOT ACHIEVED SIMULTANEOUSLY

# Student Notes

GTE

# System with Package C Interfaces

**GTE**

*GTE OMNI SBCS*

FLOPPY DISKETTE DRIVE

STATION
MESSAGE
DETAIL
RECORDING

NIGHT
BELL

MUSIC
SOURCE

EXTERNAL
PAGING

CSD

TERMINAL
DEVICE

PROPRIETARY
ELECTRONIC
TERMINALS

DSS/BLF

SINGLE LINE
TELEPHONE

PORTABLE
MAINTENANCE
PANEL

BEHIND
PABX OR CENTREX

CS-10

CS-20

TELEPHONE
NETWORK

TIE LINES

CENTRAL
OFFICE
WATS
FX
CENTREX
DID/DISA

OPX

DATA
INTERFACE
UNIT

TERMINAL
DEVICE

ATTENDANT
CONSOLE

5.7

# Package C/Summary of Features and Enhancements

**GTE**

SYSTEM FEATURES:

| | |
|---|---|
| DIRECT INWARD DIALING (DID) | — ALLOWS INCOMING CALLS ON DID TRUNKS (USING 2TTL OR 2TTE TRUNK CARDS) TO BYPASS THE ATTENDANT CONSOLE AND RING DIRECTLY TO A STATION. |
| DIRECT INWARD SYSTEM ACCESS (DISA) | — ALLOWS DIRECT ACCESS TO STATIONS, TRUNKS (e.g., WATS AND TIE), AND FEATURES FROM ANY REMOTE DTMF TELEPHONE. |
| ATTENDANT CONSOLE | — ALLOWS A FULL RANGE OF ATTENDANT SERVICES SUCH AS SINGLE-BUTTON ACCESS TO CALL PROCESSING AND SYSTEM/STATION FEATURES. |
| | — MAY BE EQUIPPED WITH OPTIONAL HEADSET. |
| | — FUNCTIONS AS A MASTER CONTROL TELEPHONE WHILE IN SYSTEM PROGRAMMING MODE. |
| KEY SYSTEM PACKAGE | — PROVIDES A VARIETY OF TRADITIONAL KEY SYSTEM FUNCTIONS (EMULATING A KEY OPERATION BEHIND A PABX). FEATURES INCLUDE COMMON HOLD, DSS SPEED CALLING, FLASH/NEW CALL, IDLE LINE/RINGING LINE PREFERENCE, POST/PRESELECTION, PRIME LINE PREFERENCE, ETC. |
| DATA COMMUNICATION | — PROVIDES A MAXIMUM OF 40 DATA LINES AND SIMULTANEOUS VOICE/DATA TRANSMISSION USING A CS-IO/CS-20 TELEPHONE CONNECTED TO A DATA INTERFACE UNIT (DIU). |
| | — ALLOWS DATA CALL SET UP USING DIU OR CS-IO/CS-20 (CONNECTED TO A DIU). |
| HOTEL/MOTEL PACKAGE | — ALLOWS A CSD OR ATTENDANT CONSOLE TO SERVE AS A FRONT DESK CONSOLE. |
| | — ALLOWS FRONT DESK CONSOLE TO BE ASSOCIATED WITH A BLF/DSS MODULE OR PRINTER. |
| | — PROVIDES SERVICES SUCH AS AUTOMATIC WAKE-UP CALLS, MESSAGE WAITING, SPECIAL SERVICE CODES, ROOM STATUS INDICATION, ETC. |

# Attendant Console Package/Programmable Features and Functions

**GTE**

*GTE OMNI SBCS*

THE FOLLOWING LISTED FEATURES MAY BE ASSIGNED TO FEATURE BUTTONS ON ATTENDANT CONSOLE:

| | |
|---|---|
| ACCOUNT CODE/CLIENT BILLING | — ALLOWS THE ATTENDANT TO INPUT AN ACCOUNT/CLIENT CODE OF UP TO 15 DIGITS WHICH WILL BE RECORDED ON STATION MESSAGE DETAIL RECORDING. IF ACTIVATED DURING A CONVERSATION, THERE IS NO INTERRUPTION TO CALLING PARTY. |
| ALARM | — ACTIVATED BY AN ALARM IN THE SYSTEM, THE LED LOCATED ABOVE THIS FEATURE BUTTON WILL ALERT THE ATTENDANT TO A FAULT IN THE SYSTEM. |
| AUTOMATIC INTERCOM | — PROVIDES SINGLE BUTTON ACCESS TO A PREDETERMINED STATION. |
| BREAK-IN | — ALLOWS ATTENDANT TO DEPRESS BUTTON WHEN A BUSY STATION IS ENCOUNTERED TO BREAK-IN ON THE CONVERSATION. WARNING TONE IS PROVIDED TO THE STATION. |
| CALL ANNOUNCE | — PROVIDES THE ATTENDANT WITH ABILITY TO ANNOUNCE CALLS TO STATIONS UTILIZING THE INTERNAL SPEAKERS IN ELECTRONIC KEY TELEPHONES. |
| CALL PARK | — ALLOWS ATTENDANT TO DEPRESS A FEATURE BUTTON AND DIAL A STATION NUMBER TO PARK A STATION OR TRUNK CALL. IF THE CALL IS UNANSWERED WITHIN A PRE-PROGRAMMED PERIOD OF TIME, THE CALL WILL RECALL TO THE ATTENDANT. |
| CALL RESTRICTION | — ALLOWS ATTENDANT TO CHANGE THE OPERATION MODE OF ALL STATIONS ASSIGNED A GIVEN CLASS OF SERVICE. OPERATION MODE CAN BE DESIGNATED AS TWO-WAY, TERMINATING ONLY, ORGINATING ONLY, OR TOTALLY RESTRICTED. |
| CLASS OF SERVICE/ CLASS OF RESTRICTION | — ALLOWS ATTENDANT TO DEPRESS BUTTON WHILE IN CONVERSATION WITH A STATION PROVIDING DISPLAY OF THE STATION'S CLASS OF SERVICE AND CLASS OF RESTRICTION LEVELS. |

5.9

# Attendant Console Package/Programmable Features and Functions (Continued)

**GTE**

*GTE OMNI SBCS*

DO NOT DISTURB OVERRIDE — ALLOWS A STATION IN DO NOT DISTURB MODE TO BE OVERRIDDEN SO STATION WILL RING.

EXTERNAL PAGING — AUTOMATICALLY DIALS THE EXTERNAL PAGING CODE. ALLOWS ATTENDANT TO DIAL THE APPROPRIATE ZONE NUMBER.

FLASH/NEW CALL — ALLOWS ATTENDANT TO DEPRESS BUTTON DURING ACCESS TO OR CONVERSATION ON A TRUNK TO DISCONNECT THE CALL IN PROGRESS AND RESEIZE THE TRUNK.

FRONT DESK PROGRAM — ALLOWS THE ATTENDANT CONSOLE TO BE UTILIZED AS THE FRONT DESK CONSOLE IN HOTEL/MOTEL APPLICATIONS. PROVIDES ACCESS TO ROOM STATUS, MESSAGE METERING, WAKE-UP, AND DO NOT DISTURB FOR GUEST ROOMS.

MESSAGE LEAVING — ALLOWS ATTENDANT TO DEPRESS BUTTON AND DIAL A DESIRED STATION NUMBER TO ACTIVATE THE MESSAGE WAITING LAMP ON THE STATION OR SINGLE-LINE PHONE. STATION INSTRUMENTS WITH DISPLAY WILL REGISTER A CALL FROM THE ATTENDANT CONSOLE.

NIGHT ANSWER — ALLOWS ATTENDANT TO DEPRESS BUTTON TO ACTIVATE THE NIGHT MODE OF OPERATION. ALL STATIONS AND TRUNKS ARE CHANGED TO NIGHT CLASS OF SERVICE AND NIGHT CLASS OF RESTRICTION. TRUNK CALLS ARE DIRECTED TO UNIVERSAL OR PREDETERMINED NIGHT ANSWER.

PLACING AN EXTERNAL CALL — ALLOWS ATTENDANT TO DEPRESS BUTTON TO SEIZE AN IDLE TRUNK IN THE ASSIGNED TRUNK GROUP. THE ASSOCIATED LED PROVIDES INDICATION OF ALL TRUNKS BUSY IN THE TRUNK GROUP.

**GTE**

*GTE OMNI SBCS*

POSITION BUSY
— ACTIVATES POSITION BUSY FEATURE REQUIRED FOR SYSTEM PROGRAMMING MODE. REMOVES THE ATTENDANT CONSOLE FROM ACTIVE STATUS SO CALLS CANNOT BE ANSWERED OR ORIGINATED FROM THE ATTENDANT CONSOLE.

SAVE NUMBER AND REPEAT LAST NUMBER
— AUTOMATICALLY REDIALS THE LAST NUMBER DIALED FROM THE KEY PAD ON THE ATTENDANT CONSOLE.

STATION PAGING
— ALLOWS ATTENDANT TO DEPRESS BUTTON TO DIAL THE STATION PAGING ACCESS CODE. ATTENDANT CAN THEN DIAL THE REQUESTED ZONE NUMBER FOR PAGING ANNOUNCEMENT.

STATION PICK-UP
— ALLOWS ATTENDANT TO ANSWER A STATION-TO-STATION, DIRECT INWARD DIALING, OR DIRECT-IN LINE CALL RINGING AT ANY TELEPHONE, BY DEPRESSING BUTTON AND DIALING THE STATION NUMBER OF THE RINGING TELEPHONE.

STATION SPEED CALLING
— PROVIDES ATTENDANT WITH ACCESS TO ONE PREDETERMINED STATION SPEED CALL NUMBER.

SYSTEM SPEED CALLING
— PROVIDES ATTENDANT WITH ACCESS TO ONE PREDETERMINED SYSTEM SPEED CALL NUMBER.

TRUNK CAMP-ON
— ALLOWS ATTENDANT TO DEPRESS A BUTTON WHEN A BUSY TRUNK/TRUNK GROUP IS ENCOUNTERED BY THE ATTENDANT TO ACTIVATE CAMP-ON WITH CALL-BACK. ATTENDANT MAY WAIT IN EITHER ON OR OFF-HOOK STATUS. IF CALLER IS ON HOLD WHEN THE BUSY TRUNK IS REACHED, ATTENDANT CAN DEPRESS FEATURE BUTTON, FOLLOWED BY POSITION RELEASE, TO CAMP THE STATION TO A TRUNK/TRUNK GROUP.

# Key System Features

**GTE**

*GTE OMNI SBCS*

THE FOLLOWING KEY SYSTEM FEATURES MAY BE ASSIGNED TO BUTTONS ON CS-10, CS-20, OR CSD TELEPHONES:

**COMMON HOLD** — ALLOWS ALL STATION USERS TO RETRIEVE A CALL ON HOLD BY USING A LINE BUTTON ON THE TELEPHONE.

**DSS LINE TERMINATIONS** — ALLOWS A MAXIMUM OF 40 LINES TO TERMINATE TO BUTTONS IN A BLF/DSS MODULE. A LINE MAY HAVE 52 APPEARANCES IN SYSTEM ON STATON OR BLF/DSS BUTTONS.

**DSS SPEED DIALING** — ALLOWS UP TO 40 BLF/DSS BUTTONS TO BE PROGRAMMED WITH DESIGNATED SYSTEM SPEED CALL NUMBERS.

**FLASH/NEW CALL** — SENDS A FLASH INDICATION TO A HOST PABX.

**DELAYED RINGING** — ALLOWS RINGING TO OCCUR ON LINES APPEARING AT MORE THAN ONE STATION AFTER A PREDETERMINED PERIOD OF TIME.

**IDLE LINE/RINGING LINE PREFERENCE** — ALLOWS STATION USERS TO DESIGNATE AN IDLE OR RINGING LINE PREFERENCE FOR A STATION, ELIMINATING THE NEED TO MANUALLY PRESS THE LINE OR INTERCOM BUTTON TO ANSWER OR ORIGINATE A CALL.

**POST/PRESELECTION** — PROVIDES THE ABILITY TO SELECT AN INTERCOM OR LINE BUTTON BEFORE OR AFTER GOING OFF-HOOK.

**PRIME LINE PREFERENCE** — ALLOWS USER TO AUTOMATICALLY SELECT A LINE OR INTERCOM BUTTON DESIGNATED AS THE PRIME LINE WHEN GOING OFF-HOOK.

**PRIVACY/PRIVACY RELEASE** — ALLOWS USER TO RELINQUISH PRIVACY ON A LINE OR INTERCOM CALL AND PERMIT A THIRD STATION TO ENTER THE CONVERSATION BY DEPRESSING THE LINE BUTTON.

**PROGRAMMING FROM STATION** — ALLOWS STATION USERS TO PROGRAM STATION AND SYSTEM FEATURES (OTHER THAN LINE OR INTERCOM APPEARANCES) FOR BUTTONS ON THEIR TELEPHONES.

# Enhanced Data
# Communication  Capabilities

GTE

*GTE OMNI SBCS*
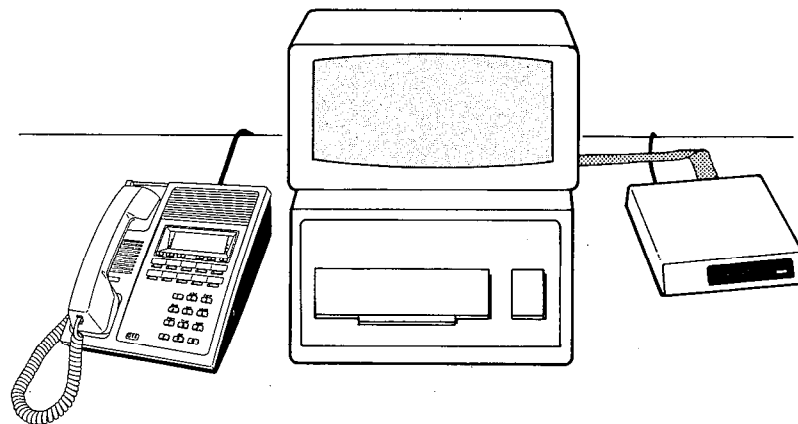
. **NEW DATA INTERFACE UNIT (DIU) PROVIDES INTERFACE BETWEEN DATA
TERMINALS AND SYSTEM BY SERVING AS STANDALONE UNIT (WITH MODEMS OR
PRINTERS) OR BY BEING PAIRED WITH CS-10 OR CS-20 INSTRUMENTS FOR
SIMULTANEOUS  VOICE/DATA  COMMUNICATIONS.**

● **PACKAGE C PROVIDES FOLLOWING DATA SWITCHING CONNECTION FEATURES (IN
ADDITION TO BASIC DATA SWITCHING FUNCTIONS AVAILABLE WITH PACKAGE B):**

  — **DATA CALL SET UP (INTERNAL OR EXTERNAL) WITH DATA INTERFACE UNIT
  (DIU). AS  STANDALONE  UNIT**

  — **DATA CALL SET UP (INTERNAL OR EXTERNAL) WITH CS-10 OR CS-20
  TELEPHONE CONNECTED TO DATA INTERFACE UNIT (DIU)**

5. 13

# Hotel/Motel Package

## GTE

### GTE OMNI SBCS

THE FOLLOWING FEATURES ARE AVAILABLE WITH THE HOTEL/MOTEL FEATURE PACKAGE:

| | | |
|---|---|---|
| AUTOMATIC WAKE-UP WITH PRINTOUT | — | PROVIDES AUTOMATIC WAKE-UP SERVICE WITH MUSIC OR SYSTEM TONES. SECOND ATTEMPT WITH NO ANSWER OR BUSY IS REPORTED ON HOTEL/MOTEL PRINTER OR ROOM STATUS INDICATOR (BLF/DSS MODULE). |
| CALL RESTRICTION | — | ALLOWS FRONT DESK CONSOLE TO CHANGE OPERATION MODE FOR STATIONS IN A PARTICULAR CLASS OF SERVICE/CLASS OF RESTRICTION. OPERATION MODE CHANGES MAY INCLUDE TWO-WAY CALLING, ORIGINATING ONLY, TERMINATING ONLY, OR TOTALLY RESTRICTED OPERATION. |
| DO NOT DISTURB/ DO NOT DISTURB OVERRIDE | — | PROHIBITS CALLS FROM OTHER GUEST ROOMS. FEATURE MAY BE OVERRIDDEN BY FRONT DESK CONSOLE. |
| FRONT DESK CONSOLE | — | ALLOWS ATTENDANT CONSOLE OR CSD TELEPHONE TO SERVE AS THE FRONT DESK CONSOLE WITH SINGLE-BUTTON ACCESS TO HOTEL/MOTEL FEATURES. FRONT DESK CONSOLE MAY BE ASSOCIATED WITH A BLF/DSS MODULE FOR ROOM STATUS INDICATION OR EQUIPPED WITH A PRINTER FOR WAKE-UP CALL AND ROOM CHARGES REPORTING. |
| HOT LINE TO ATTENDANT | — | ALLOWS A STATION IN HOT LINE CONDITION TO AUTOMATICALLY CALL ATTENDANT OR FRONT DESK. USEFUL FOR LOBBY TELEPHONE. |
| MESSAGE REGISTRATION | — | PROVIDES ABILITY TO AUTOMATICALLY CHARGE GUESTS FOR USE OF LOCAL LINES, WATS LINES, FX LINES, OR OCC/SCC FACILITIES BASED ON PREPROGRAMMED RATE TABLES IN SYSTEM. ROOM CHARGES MAY BE DISPLAYED AT FRONT DESK CONSOLE OR REPORTED ON GUEST ROOM PRINTOUT. |
| MESSAGE WAITING | — | ALLOWS FRONT DESK CONSOLE TO ACTIVATE MESSAGE WAITING LAMPS ON EQUIPPED GUEST ROOM TELEPHONES. MESSAGES MAY BE RETRIEVED BY GUEST USING TELEPHONE'S FEATURE BUTTON OR MESSAGE PICK-UP ACCESS CODE. |

# Hotel/Motel Package (Continued)

**GTE**

*GTE OMNI SBCS*

| | |
|---|---|
| **ROOM NUMBER CORRELATION** | — ALLOWS GUEST ROOM TELEPHONES TO BE ASSIGNED STATION DIRECTORY NUMBERS CORRESPONDING TO HOTEL/MOTEL ROOM NUMBERS. |
| **ROOM STATUS/ROOM STATUS INDICATOR** | — ALLOWS FRONT DESK CONSOLE EQUIPPED WITH 40 OR 80 BUTTON BLF/DSS MODULE TO DISPLAY ROOM STATUS INDICATION FOR VACANT, OCCUPIED, NEEDS CLEAN-UP, DO NOT DISTURB, AND WAKE-UP/NO ANSWER STATUS. |
| **ROOM TO ROOM BLOCKING** | — ALLOWS SYSTEM TO BE PROGRAMMED TO PREVENT ROOM-TO-ROOM CALLS ON A SYSTEM WIDE BASIS. |
| SERVICE CALL ROUTING | — ALLOWS GUESTS TO DIAL ONE TO FOUR DIGIT SERVICE CODES CORRESPONDING TO FLOOR OR ZONE FOR AUTOMATIC CONNECTION TO SERVICE DEPARTMENTS OR MAID SERVICE. |
| **SPECIAL SERVICE CODES** | — ALLOWS UP TO 10 SINGLE DIGIT ACCESS NUMBERS TO BE PROGRAMMED FOR GUEST CALLS TO HOTEL/MOTEL SERVICES SUCH AS ROOM SERVICE, RESTAURANT, LAUNDRY, ETC. |
| **TIME OUT ROUTING TO ATTENDANT** | — AUTOMATICALLY DIALS FRONT DESK CONSOLE IF GUEST TELEPHONE REMAINS OFF-HOOK AFTER A PREPROGRAMMED PERIOD OF TIME. |
| **VACANT ROOM RESTRICTION** | — RESTRICTS INCOMING AND/OR OUTGOING CALLS WHILE ROOM IS IN VACANT STATUS. |

# Business Features

GTE

GTE OMNI SBCS

FEATURES LISTED MAY BE ASSIGNED TO BUTTONS ON CS-10, CS-20, OR CSD TELEPHONES:

HEADSET OPERATION — PROVIDES HANDS-FREE OPERATION BY ALLOWING A STATION BUTTON TO SIMULATE THE HOOKSWITCH FLASH WHILE HANDSET REMAINS ON-HOOK.

DO NOT DISTURB OVERRIDE — ALLOWS DESIGNATED STATION USERS TO OVERRIDE DO NOT DISTURB FEATURE WHEN CALLING A STATION WITH ACTIVATED DO NOT DISTURB FEATURE.

REMINDER* — ALLOWS A STATION USER TO PROGRAM A PARTICULAR TIME TO BE REMINDED OF A PARTICULAR EVENT. AT THE PREPROGRAMMED TIME THE TELEPHONE WILL RING AND A TONE OR RECORDING WILL BE HEARD.

*IMPLEMENTED BY PROGRAMMING WAKE-UP TO A STATION WHICH IS NOT A ROOM.

# PACKAGE C
# Standard and Expanded Architecture

# Standard and Expanded Systems

BASIC CABINET ⟶
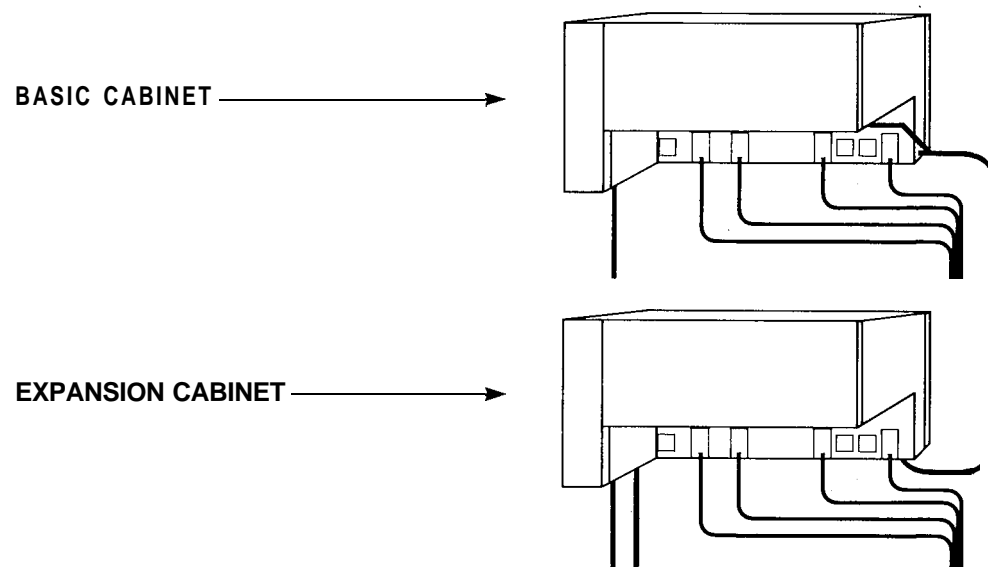
EXPANSION CABINET ⟶

- . PACKAGE C ALLOWS SBCS TO BE ENLARGED FROM STANDARD SYSTEM (USING ONE BASIC CABINET) TO EXPANDED SYSTEM WITH ADDITION OF EXPANSION CABINET.

- . EXPANSION MODULE EXPANDS CAPACITY OF SYSTEM TO 240 STATIONS AND 104 TRUNKS (NOT ACHIEVED SIMULTANEOUSLY).

- . ALL SYSTEM AND STATION FEATURES REMAIN THE SAME AS IN THE SMALLER STANDARD   SYSTEM.

5.18

# Expanded System Trunk/Station Line Combinations

**GTE**

*GTE OMNI SBCS*

| C.O. TRUNKS | STATION LINES | C.O. TRUNKS | STATION LINES |
|:---:|:---:|:---:|:---:|
| 0 | 240 | 76 | 152 |
| 4 | 240 | 80 | 144 |
| 8 | 240 | 84 | 136 |
| 12 | 240 | 88 | 128 |
| 16 | 240 | 92 | 120 |
| 20 | 240 | 96 | 112 |
| 24 | 240 | 100 | 104 |
| 28 | 240 | 104 | 96 |
| 32 | 240 | 104 | 88 |
| 36 | 232 | 104 | 80 |
| 40 | 224 | 104 | 72 |
| 44 | 216 | 104 | 64 |
| 48 | 208 | 104 | 56 |
| 52 | 200 | 104 | 48 |
| 56 | 192 | 104 | 40 |
| 60 | 184 | 104 | 32 |
| 64 | 176 | 104 | 24 |
| 68 | 168 | 104 | 16 |
| 72 | 160 | 104 | 8 |
|  |  | 104 | 0 |

# Package C System Capacities (Standard and Expanded Systems)

**GTE**

*GTE OMNI SBCS*

| EQUIPMENT | MAXIMUM SYSTEM CAPACITY |
|---|---|
| STATION LINES | 1201240" |
| TRUNK LINES | 40/104* |
| DATA TERMINALS | 40** |
| ATTENDANT CONSOLES | 2 (PACKAGE C) |
| DIRECT STATION SELECTION MODULES | 8*** |
| TENANT SERVICE | 5 |
| TRUNK GROUPS | 62 |
| VOICE SPEAKER PAGING | 9 ZONES + ALL CALL |
| RS-232-C PORTS | 2 |
| FRONT DESK CONSOLES | 2 (PACKAGE C) |
| HOTEL/MOTEL PRINTERS | 2 (PACKAGE C) |
| POWER FAILURE TRANSFER | 6/12**** |
| DTMF RECEIVER CARDS | 2/4* (8/16 CIRCUITS) |
| CHARACTER TRUNK CARDS | 2/4* (8/16 CIRCUITS) |

*UTILIZING EXPANSION CABINET

**SYSTEM MAXIMUM INCLUDES: 30 CSD TELEPHONES WITH DTA OR 40 CSD, CS-10, OR CS-20 TELEPHONES WITH DIU.

***SYSTEM MAXIMUM INCLUDES: TWO 80-BUTTON BLF/DSS MODULES, SIX 40-BUTTON BLF/DSS MODULES, OR EIGHT 40-BUTTON BLF/DSS MODULES WITH INDEPENDENT LINE ASSIGNMENT.

****SINGLE-LINE TELEPHONE SETS (6 WITH BASIC CABINET, 12 WITH EXPANSION CABINET).

5.20

# Expanded System Frame Image/Common Control Cards

**GTE**
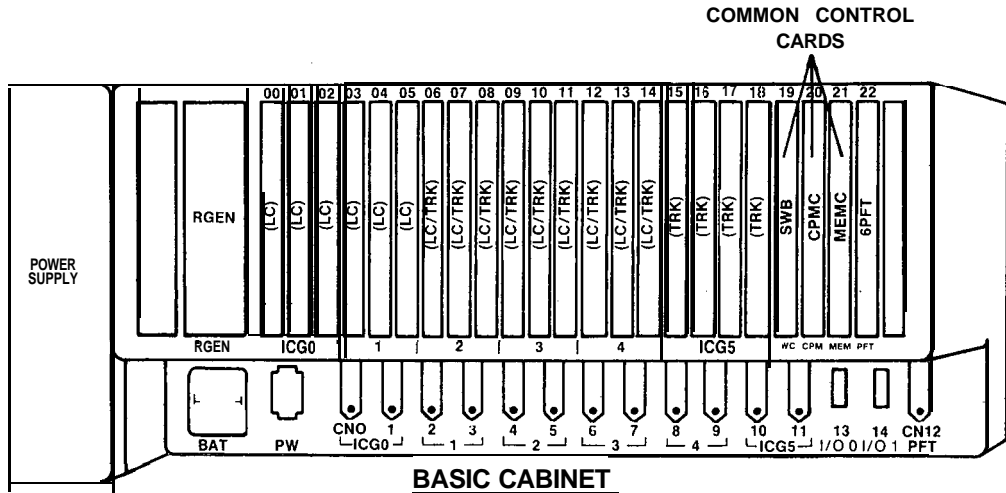
COMMON CONTROL
CARDS



BASIC CABINET

- **SWB — SWITCH CONTROL BASIC CARD**

- **CPMC — ENHANCEDCENTRAL PROCESSING UNIT AND BASIC MEMORY CARD**

- **MEMC — ENHANCED MEMORY CARD**
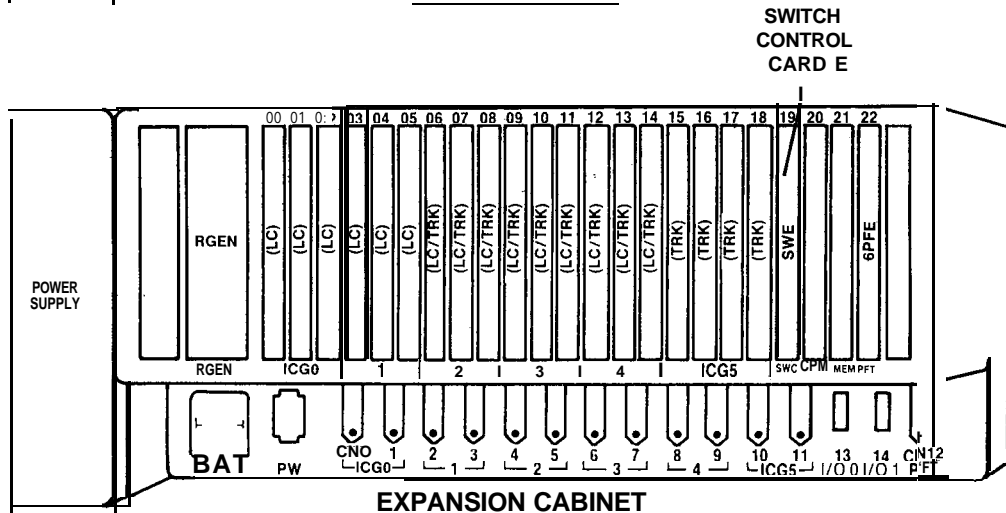
SWITCH
CONTROL
CARD E



EXPANSION CABINET

- **SWE — SWITCH CONTROL EXPANSION CARD**

5.21

# Expanded System Frame Image/
# Interface Cards

**GTE**

**GTE OMNI SBCS**

### BASIC CABINET

```
        LINE              UNIVERSAL                           POWER
       CARDS                SLOTS                            FAILURE

      00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22

POWER    RGEN  (LC)(LC)(LC)(LC)(LC)(LC/TRK)(LC/TRK)(LC/TRK)(LC/TRK)(LC/TRK)(LC/TRK)(LC/TRK)(TRK)(TRK)(TRK)(TRK) SWB CPMC MEMC (6PFT)
SUPPLY
                                                                        WC CPM MEM PFT
         BAT   PW    CNO
         BAT   PW   └ICG0┘ └ 1 ┘3 4└ 2 ┘5 6└ 3 ┘7 8└ 4 ┘9 10 11 13 14 CN
                                                      └ICG5┘ I/O 0 I/O 1 PF
```
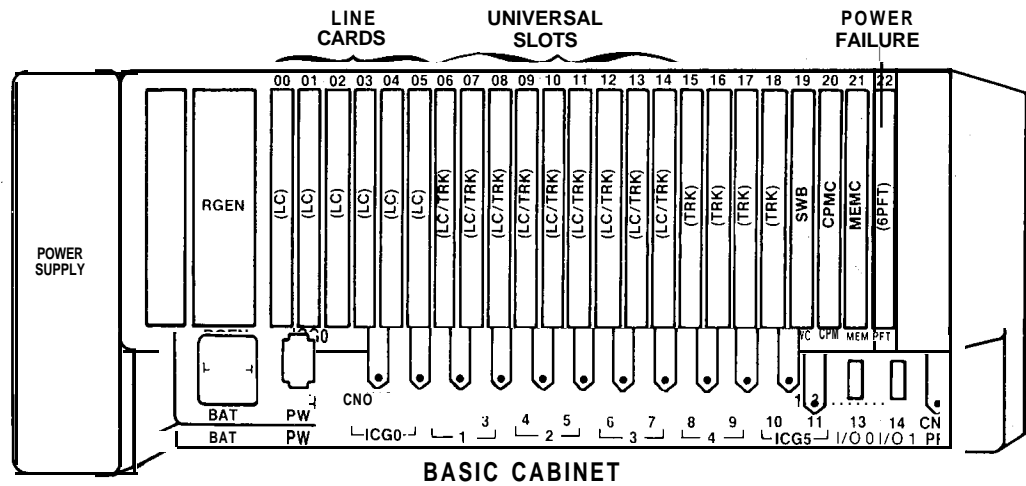
- 8EKC — ELECTRONIC KEY TELEPHONE CARDS
- 8DTC — CSD TELEPHONE DIGITAL INTERFACE CARDS
- 6PFT — POWER FAIL TRANSFER CARD

### EXPANSION CABINET

```
     SINGLE LINE         UNIVERSAL                          POWER
       CARDS               SLOTS             TRUNKS         FAILURE

      00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22

POWER    RGEN  (LC)(LC)(LC)(LC)(LC)(LC/TRK)(LC/TRK)(LC/TRK)(LC/TRK)(LC/TRK)(LC/TRK)(LC/TRK)(TRK)(TRK)(TRK)(TRK) SWE        6PFE
SUPPLY
         RGEN  ICG0  |  1  |  2  |  3  |  4  ICG5   SWC CPM MEM PFT
                    CNO 1   2   3   4   5   6   7   8   9  10  11  13  14 CN12
         BAT   PW   └ICG0┘ └ 1 ┘ └ 2 ┘ └ 3 ┘ └ 4 ┘ └ICG5┘ I/O 0 I/O 1 PFT
```
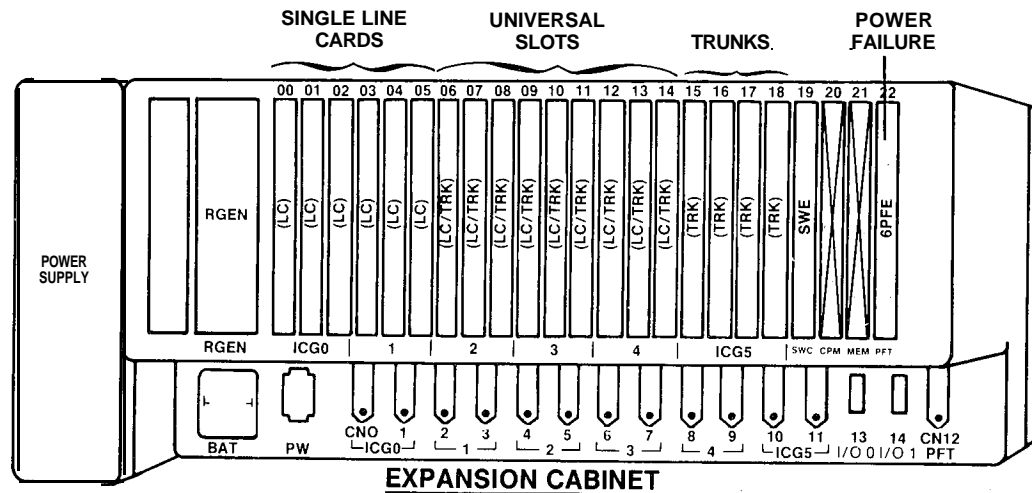
- 8SLC — SINGLE LINE TELEPHONE CARDS
- 4DMR — DUAL TONE MULTI-FREQUENCY RECEIVER CARDS
- 2TTL — LOOP DIAL TIE TRUNK CARDS
- 2TTE — E&M TIE TRUNK CARDS
- 4BWC — BOTHWAY TRUNK CARDS
- 4CHT — CHARACTER TRUNK CARD
- 6PFE — POWER FAIL TRANSFER EXPANSION CARD

5.22

# Interface Card Group Configuration

**GTE**

**GTE OMNI SBCS**

## BASIC CABINET

| Card Group | No. 1 | | | No. 2 | | | No. 3 | | | No. 4 | | | No. 5 | | | No. 6 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Slot | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 8EKC | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | | | |
| 8SLC | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | | | |
| 4DMR | | | | | | | X | X | X | X | X | X | X | X | X | | | | |
| 8DTC | X* | X | X | X* | X | X | X* | X | X | X* | X | X | X* | X | X | | | | |
| 4CHT | | | | | | | X | X | X | X | X | X | X | X | X | | | | |
| 4BWC | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X |
| 2TTL/2TTE | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X |

## EXPANSION CABINET

| Card Group | No. 1 | | | No. 2 | | | No. 3 | | | No. 4 | | | No. 5 | | | No. 6 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Slot | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 8SLC | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | | | | |
| 4DMR | | | | | | | x | x | x | x | x | x | x | x | | | | | |
| 4CHT | | | | | | | x | x | x | x | x | x | x | x | | | | | |
| 4BWC | | | | | | | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 2TTL/2TTE | | | | | | | x | x | x | x | x | x | x | x | x | x | x | x | x |

*FOR CSD WITH DTA OR DIU OPTIONS

5.23

# Expanded System/Cabinet Card Capacities

**GTE**

*GTE OMNI SBCS*

| CARD TYPE | BASIC CABINET | EXPANSION CABINET | SYSTEM TOTAL |
|-----------|---------------|-------------------|--------------|
| 8EKC | 15 | — | 15 |
| 8DTC | 5 | — | 5 |
| 8SLC | 15 | 15 | 30 |
| 4DMR | 2 | 2 | 4 |
| 4BWC | 10/13* | 13 | 26 |
| 2TTE,2TTL | 6 TOTAL | 6 TOTAL | 12 TOTAL |
| 4CHT | 2 | 2 | 4 |
| 6PFT/6PFE | 1 | 1 (6PFE) | 2 TOTAL |

*13 4BWC CARDS CAN BE INSTALLED IN THE BASIC CABINET WHEN USED WITH AN EXPANSION CABINET. IF ONLY BASIC CABINET IS INSTALLED, ONLY 10 4BWC CARDS CAN BE INSTALLED.

# PACKAGE C

# New/Enhanced Cards and Peripherals

# CPMC (Enhanced Central Processing Unit and Basic Memory Card)

**GTE**

*GTE OMNI SBCS*
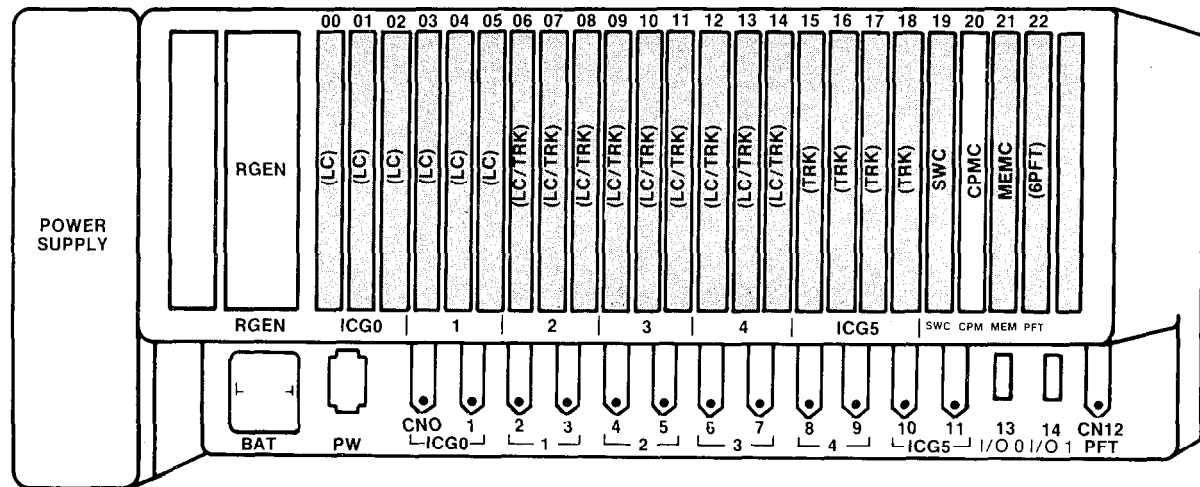


- **CPMC (PACKAGE C/SVR 2.0.X.X) INCLUDES:**

  - 16 BIT MICROPROCESSOR (INTEL 8086 COMPATIBLE)
  - TWO RS-232-C PORTS (FOR PMP AND SMDR EQUIPMENT)
  - ROM FOR OPERATING SYSTEM SOFTWARE AND DEFAULT STANDARD DATA BASE
  - RAM FOR CUSTOMIZED DATA BASE (REMAINDER OF RAM RESIDES IN MEM CARD)
  - REAL TIME CLOCK

- **CPMC CARD:**

  - SUPPORTS ALL PACKAGE C EQUIPMENT AND FEATURES
  - FUNCTIONS ONLY WITH MEMC CARD

# MEMC (Enhanced Memory Card)

GTE

GTE OMNI SBCS
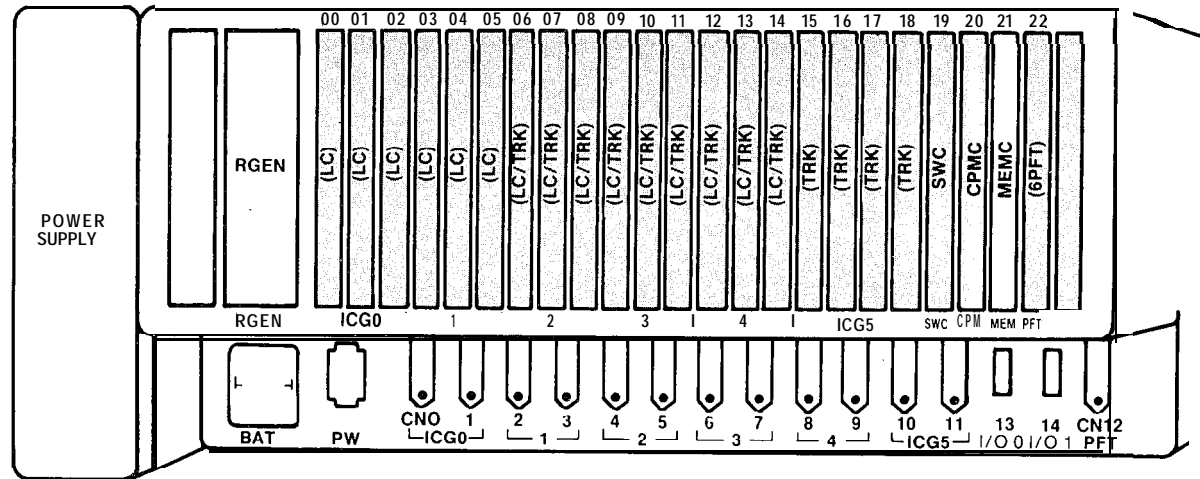


- MEMC (PACKAGE C/SVR 2.0.X.X) INCLUDES:

    - ROM FOR OPERATING SYSTEM SOFTWARE AND DEFAULT STANDARD DATA BASE
    - RAM FOR CUSTOMIZED DATA BASE (ALSO RESIDES IN CPMC CARD)

- MEMC CARD:

    - SUPPORTS ALL PACKAGE C EQUIPMENT AND FEATURES
    - FUNCTIONS ONLY WITH CPMC CARD
    - CONTAINS MORE MEMORY THAN CPMA OR CPMB CARDS

5.27

# SWE (Switch Control Expansion Card)
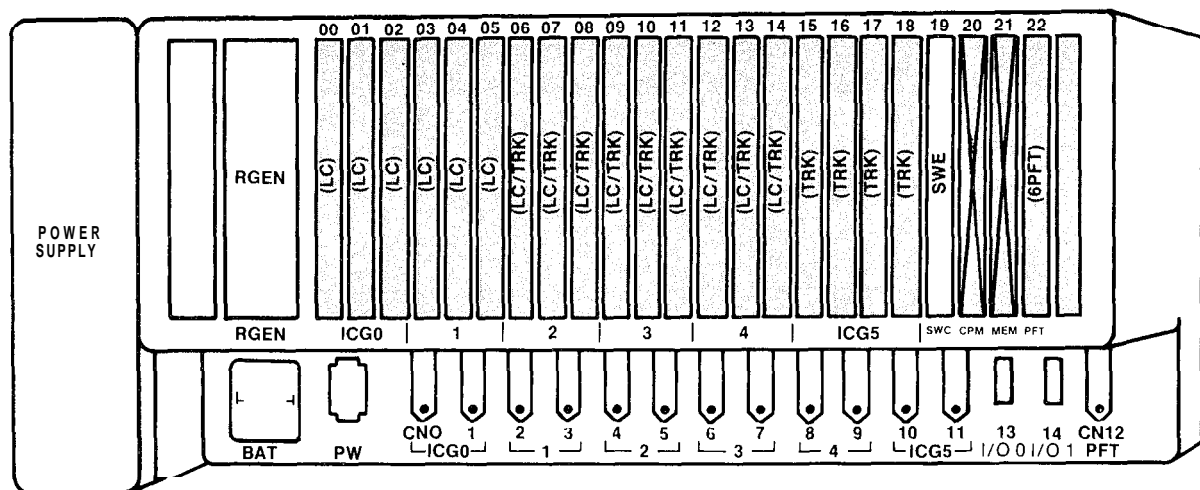
- LOCATED IN EXPANSION CABINET

- CONTAINS PCM TIME DIVISION SWITCHING CIRCUITRY AND SIGNAL MEMORY FOR INTERFACE BETWEEN EXPANSION CABINET AND THE CPMC CARD (LOCATED IN THE BASIC CABINET)

- EIGHT HIGHWAYS OF 256 CHANNELS MULTIPLEXING FULL DUPLEX ARE DEDICATED TO THE EXPANSION CABINET

- CONTAINS A FRONT EDGE CONNECTOR TO WHICH CABLE FROM BASIC CABINET IS CONNECTED

# 4CHT (Character Trunk Card)

GTE

GTE OMNI SBCS
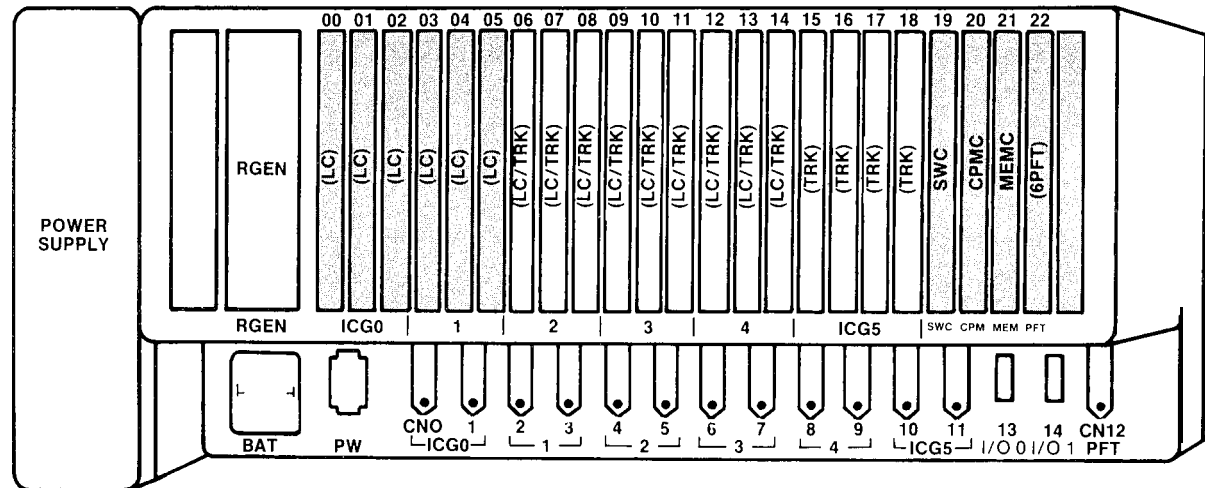


- 4CHT CARD:

  - ACCOMMODATES FOUR DIGITAL SENDER/RECEIVER CIRCUITS PER CARD IN CONJUNCTION WITH A DATA INTERFACE UNIT (DIU)
  - PROVIDES HOTEL/MOTEL MESSAGE OUTPUT
  - SUPPORTS THE FOLLOWING COMMUNICATION CONFIGURATION:

    - 7 BITS ASCII CODE TRANSMISSION
    - ASYNCHRONOUS TRANSMISSION
    - HALF/FULL DUPLEX OPERATION
    - DATA SPEED OF 110 BPS — 19.2 KBPS

- MAXIMUM OF TWO CARDS PER CABINET IN CARD SLOTS 06-18

5.30

# PFE (Power Failure Transfer Expansion Card)
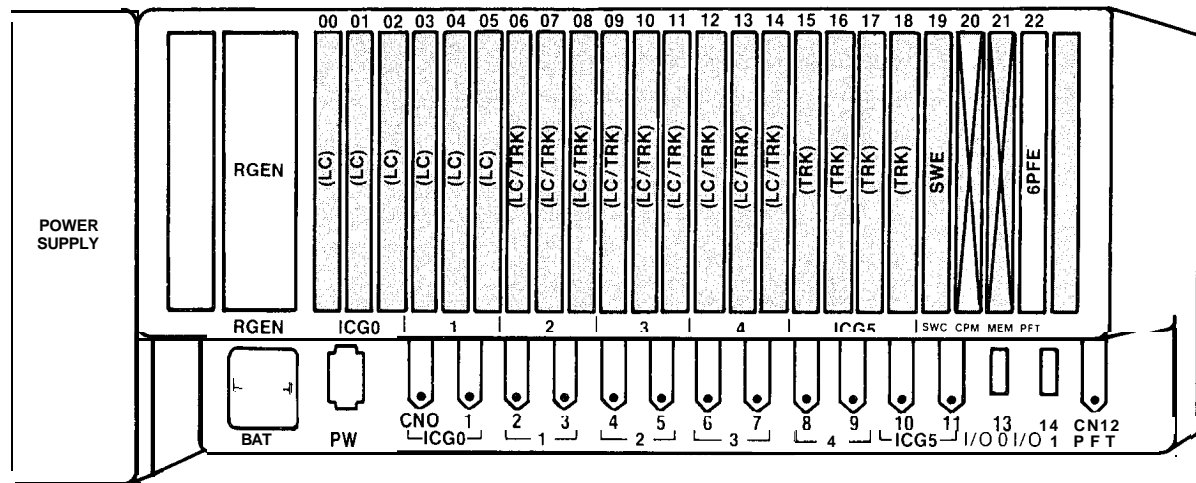
- LOCATED IN SLOT 22 OF EXPANSION CABINET
- PROVIDES SIX ADDITIONAL POWER FAILURE STATIONS FOR SIX PREDETERMINED TRUNKS
- TIED BY A CIRCUIT TO THE 6PFT (POWER FAILURE TRANSFER CARD) LOCATED IN BASIC CABINET
- ALARMS IN EXPANSION CABINET ARE TRANSMITTED TO AN EXTERNAL DEVICE BY THE 6PFE CARD
- MAY BE INSTALLED IN THE STANDARD SYSTEM (BASIC CABINET ONLY) THROUGH USE OF A TOGGLE SWITCH ON PRINTED CIRCUIT BOARD
- ACTIVATED FOR INSTALLATION IN EXPANSION CABINET BY THE NAO AND NA1 SIGNAL CONNECTED TO THE JAO AND JAI SIGNAL OF 6PFT CARD IN BASIC CABINET

5. 31

# Attendant Console

**GTE**

*GTE OMNI SBCS*



**. ATTENDANT CONSOLE**

- **—** PROVIDES PABX OPERATION OF SBCS
- **—** FUNCTIONS AS FRONT DESK CONSOLE WITH HOTEL/MOTEL PACKAGE
- **—** FUNCTIONS AS MASTER CONTROL TELEPHONE PROGRAMMING DEVICE FOR CUSTOMER DATA BASE ADMINISTRATION AND MAINTENANCE TASKS WHEN IN POSITION BUSY MODE
- **—** CONTAINS:
    - • 28 NON-LOCKING LINE/FEATURE BUTTONS
    - • 4 LINE 20 CHARACTER ALPHANUMERIC
    - • TWO PAIR WIRING (UP TO 300 FEET FROM CABINET)
    - • MODULE PLUG
    - • K STYLE HANDSET
    - • HEADSET JACK

- **●** OVERFLOW AND/OR NIGHT ANSWER STATIONS CAN BE ESTABLISHED TO OPTIMIZE ATTENDANT CONSOLE CALL HANDLING

# Front Desk Console (FDC)

CSD TELEPHONE EQUIPPED WITH BLF/DSS MODULE     ATTENDANT CONSOLE EQUIPPED WITH BLF/DSS MODULE

.  ATTENDANT CONSOLE OR CSD TELEPHONE MAY SERVE AS FRONT DESK CONSOLE FOR HOTEL/MOTEL APPLICATIONS IF PROGRAMMED WITH FRONT DESK FEATURE BUTTON

. FRONT DESK CONSOLE:
- PROVIDES SINGLE-BUTTON ACCESS TO HOTEL/MOTEL FEATURES
- MAY BE ASSOCIATED WITH A BLF/DSS FOR ROOM STATUS OR BLF/DSS INDICATION
- FUNCTIONS AS PROGRAMMING DEVICE WHILE IN PROGRAMMING MODE
- MAY BE EQUIPPED WITH A PRINTER TO PROVIDE PRINTOUTS OF WAKE-UP CALLS AND MESSAGE CHARGES

.  ANSWERING POSITION MAY FUNCTION AS FRONT DESK CONSOLE

.  MAXIMUM OF TWO FRONT DESK CONSOLES MAY BE ASSIGNED

# Data Interface Unit (DIU)

**GTE**

*GTE OMNI SBCS*

POWER

TRANSMIT

RECEIVE

CARRIER DETECT

TEST

CALL

CALL BUTTON
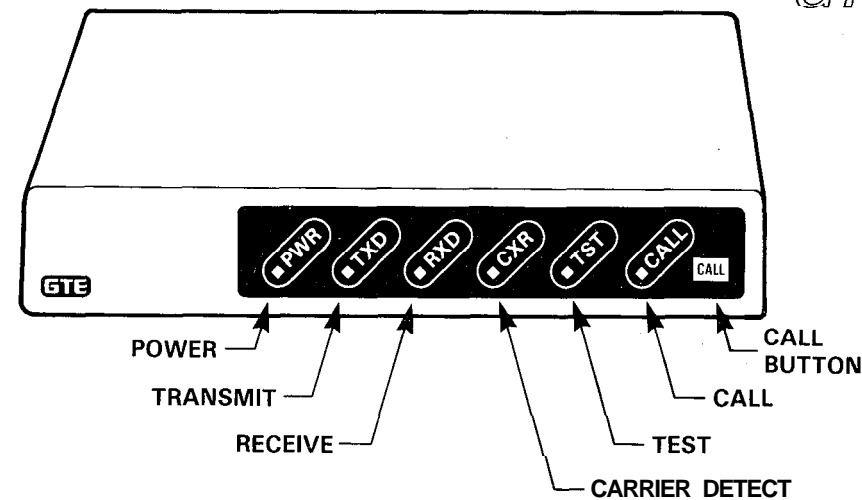
● **PROVIDES DIGITAL DATA AND CONTROL BETWEEN 8DTC CARDS AND TERMINALS, MODEMS, WORK STATIONS OR PRINTERS STATIONS(WITHOUT BEING ASSOCIATED WITH TELEPHONE)**

● **MAY BE ASSOCIATED WITH CS-10 OR CS-20 TELEPHONES FOR SIMULTANEOUS VOICE/DATA TRANSMISSION**

● **MAXIMUM OF 40 DIU INSTRUMENTS IN EXPANDED SYSTEMS**

. **DIU SUPPORTS THE FOLLOWING COMMUNICATION:**

   — **RS-232-C INTERFACE**
   — **ASYNCHRONOUS/SYNCHRONOUS TRANSMISSION**
   — **DATA SPEEDS OF UP TO 19.2 KBPS**

. **PROVIDES AN INTERFACE PORT TO RS-232-C PRINTER FOR HOTEL/MOTEL APPLICATION**

# Hotel/Motel Printer

**GTE**

*GTE OMNI SBCS*
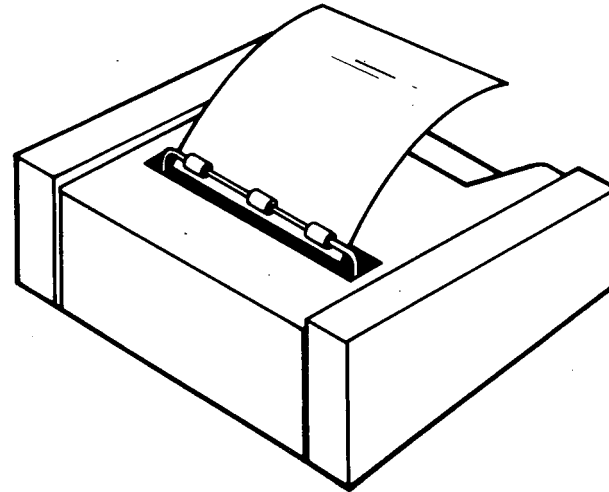
- PRINTS STORED INFORMATION SUCH AS WAKE-UP EXECUTION AND MESSAGE REGISTRATION

- MAXIMUM OF TWO PRINTERS CAN BE INSTALLED

- CONNECTED TO DIU OR CSD (WITH DTA INTERFACE)

- REQUIRES 4CHT CARD FOR SYSTEM OPERATION OF PRINTER

- REQUIRES 8DTC CARD FOR DIU/DTA CONNECTION

- SYSTEM PROVIDES PRINTOUT BUFFER CAPABLE OF STORING 100 MESSAGES FOR EACH HOTEL/MOTEL  PRINTER

- MAXIMUM CABLE LENGTH OF 50 FEET FROM DIU/DTA

# Student Notes

GTE

*GTE OMNI SBCS*

# PACKAGE C
# Data Communications Architecture

# Data Switching Internal and
# External Interfaces

PUBLIC NETWORK
(INCLUDING SCC)

PABX

CO
WATS
FX
DID/DISA
CENTREX

KEY
BEHIND
PBX

SBCS

TIE LINE

PABX
(OR SBCS)

DATA
INTERFACE
UNIT

CO TRUNK

MODEM

CSD
WITH DATA
TERMINAL ADAPTER
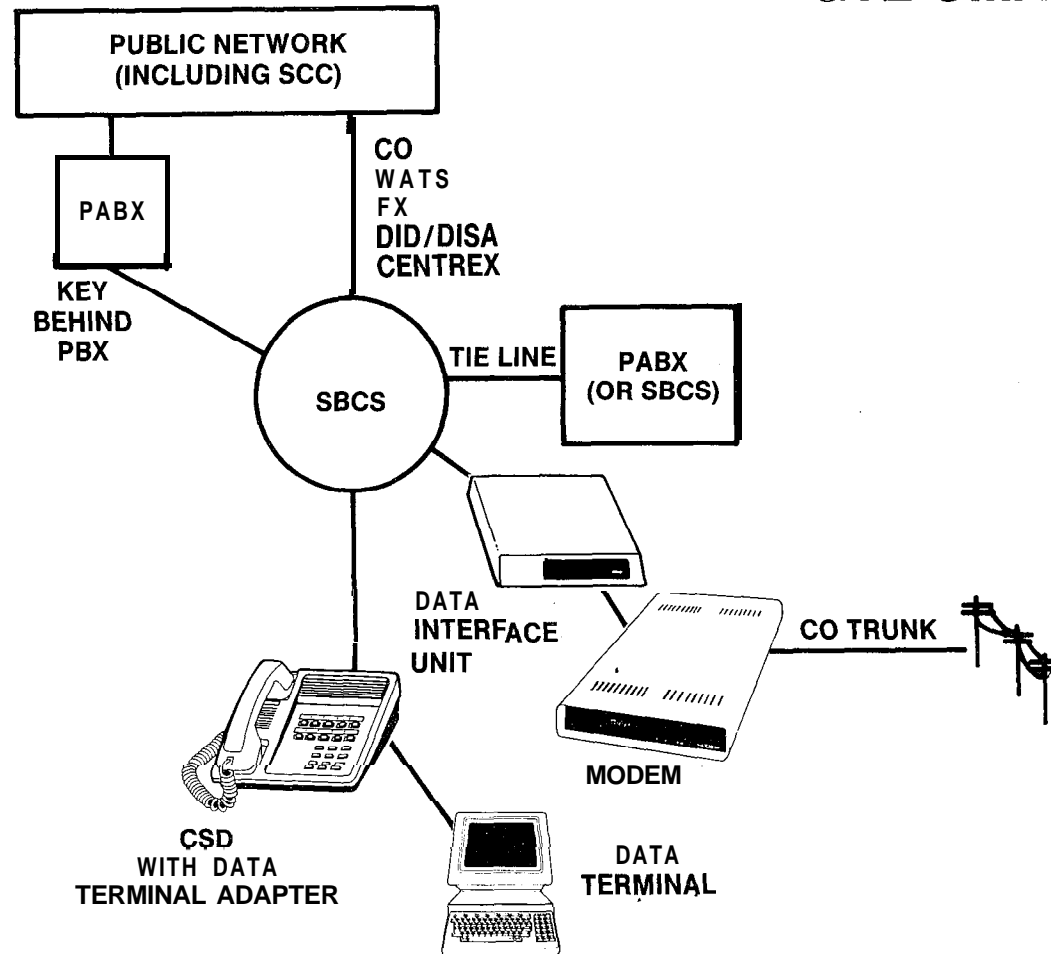
DATA
TERMINAL

# Package C Data Communications Configuration

**GTE**
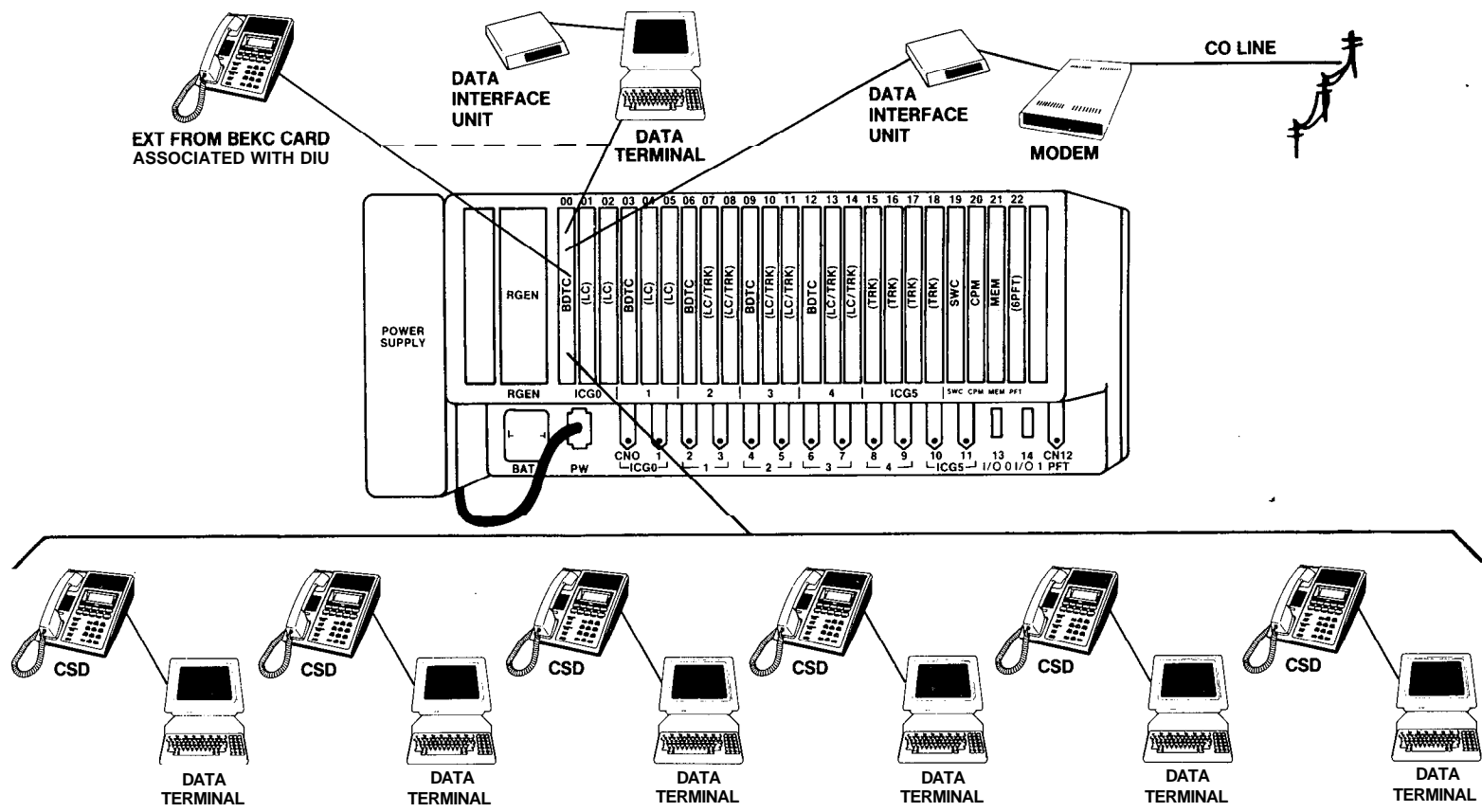
*GTE OMNI SBCS*



- SUPPORTS SIX CSD TELEPHONES WITH DATA TERMINAL ADAPTERS AND TWO DATA INTERFACE UNITS (OR TWO VOICE ONLY CSD TELEPHONES).

# Student Notes

GTE

INSTRUCTIONS:    THE FOLLOWING EXERCISE CONSISTS OF MULTIPLE CHOICE, TRUE/FALSE, FILL IN THE BLANK, OR MATCHING TYPE QUESTIONS. ALL AVAILABLE RESOURCES (I.E., STUDENT WORKBOOK, NOTES, AND GTEP MANUAL) MAY BE USED AS REFERENCES. SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

1.  PACKAGE C EXPANDS THE SYSTEM TO INCLUDE THE FOLLOWING SYSTEM APPLICATIONS: _____

    A.   HOTEL/MOTEL, KEY SYSTEM FEATURES, AUTOMATIC CALL DISTRIBUTION, AND EXPANDED SYSTEM ARCHITECTURE

    B.   VOICE MESSAGE, ATTENDANT CONSOLE, HOTEL/MOTEL, AND ENHANCED DATA COMMUNICATIONS

    C.   KEY SYSTEM FEATURES, ATTENDANT CONSOLE, EXPANDED SYSTEM ARCHITECTURE, AND DICTATION AND CONTROL

    D.   ATTENDANT CONSOLE, KEY SYSTEM FEATURES, EXPANDED SYSTEM ARCHITECTURE, AND HOTEL/MOTEL

2.  THE EXPANDED SYSTEM ARCHITECTURE INCREASES THE SYSTEM CAPACITY TO A MAXIMUM OF _____ TRUNKS AND _____ STATIONS.

3.  THE _____ FEATURE ALLOWS DIRECT ACCESS TO STATIONS, TRUNKS, AND FEATURES FROM ANY REMOTE DTMF TELEPHONE.

4.  THE _____ FEATURE ALLOWS INCOMING CALLS ON DID TRUNKS TO BYPASS THE ATTENDANT CONSOLE AND RING DIRECTLY TO A STATION.

5.  THE _____ ATTENDANT CONSOLE FEATURE BUTTON ALLOWS THE ATTENDANT CONSOLE TO BE UTILIZED AS THE FRONT DESK CONSOLE IN HOTEL/MOTEL APPLICATIONS.

6.  THE _____ KEY SYSTEM FEATURE ALLOWS A STATION USER TO AUTOMATICALLY SELECT AN INTERCOM OR LINE BUTTON BEFORE OR AFTER GOING OFF-HOOK.

# Review Exercise — Package C
## Overview (5.1) (Continued)

**GTE**

*GTE OMNI SBCS*

7. _____ (TRUE OR FALSE)   THE DATA INTERFACE UNIT (DIU) CAN SERVE AS A STANDALONE UNIT FOR INTERFACE WITH A MODEM OR PRINTER.

8. MATCH EACH OF THE FOLLOWING HOTEL/MOTEL FEATURES WITH ITS CORRECT DEFINITION:

_____ DO NOT DISTURB

_____ AUTOMATIC WAKE-UP WITH PRINTER

_____ ROOM STATUS

_____ MESSAGE REGISTRATION

_____ VACANT ROOM RESTRICTION

A.   RESTRICTS INCOMING AND/OR OUTGOING CALLS WHILE ROOM IS IN VACANT STATUS

B.   ALLOWS FRONT DESK CONSOLE EQUIPPED WITH BLF/DSS MODULE TO DISPLAY INDICATION FOR VACANT, OCCUPIED, NEEDS CLEAN-UP, DO NOT DISTURB, AND WAKE-UP/NO ANSWER CONDITIONS

C.   PROHIBITS CALLS FROM OTHER GUEST ROOMS

D.   PROVIDES WAKE-UP SERVICE WITH MUSIC OR SYSTEM TONES

E.   PROVIDES RECORD OF GUEST CHARGES FOR USE OF LOCAL LINES, WATS LINES, FX LINES, OR OCC/SCC FACILITIES BASED ON PREPRO-GRAMMED RATE TABLES IN SYSTEM

9. THE SYSTEM ALLOWS A MAXIMUM OF _____ CSD TELEPHONES EQUIPPED WITH DATA TERMINAL ADAPTERS OR _____ CSD, CS-10, OR CS-20 TELEPHONES. INTERFACED WITH DATA INTERFACE UNITS.

10. THE NEW _____ CARD PROVIDES HOTEL/MOTEL MESSAGE OUTPUT AND ACCOMMODATES THE FOUR DIGITAL SENDER/RECEIVER CIRCUITS USED IN CONJUNCTION WITH DATA INTERFACE UNITS.

GTE

GTE OMNI SBCS

# PACKAGE C

## Installation

5.43

# 5.2 Enabling Objective

GIVEN:
- GTE OMNI SBCS (PREVIOUSLY INSTALLED)
- GTE OMNI SBCS PACKAGE C EQUIPMENT AND PERIPHERALS

  - CPMC, MEMC, 4CHT, SWB, SWE, AND PFE CARDS:
  - ATTENDANT CONSOLE
  - HOTEL/MOTEL PRINTER
  - DATA INTERFACE UNIT (DIU)

- GTE OMNI SBCS COURSE AND SITE DOCUMENTATIO N PACKAGE
- STANDARD INSTALLATION TOOLS
- REVIEW EXERCISE

ACTION:
- INSERT AND SEAT PACKAGE C CARDS
- INSTALL ATTENDANT CONSOLE AND WIRE CROSS CONNECTIONS
- INSTALL DATA INTERFACE UNIT AND WIRE CROSS CONNECTIONS
- INSTALL HOTEL/MOTEL PRINTER
- DESCRIBE PROCEDURES REQUIRED FOR EXPANDED SYSTEM INSTALLATION
- COMPLETE REVIEW EXERCISE

CRITERIA:
- ENHANCED/NEW CARDS WILL BE INSTALLED IN ACCORDANCE WITH STUDENT WORKBOOK AND GTE OMNI SBCS GTEP MANUAL.
- REVIEW EXERCISE QUESTIONS WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

# Package C Card Installation

**GTE**

*GTE OMNI SBCS*
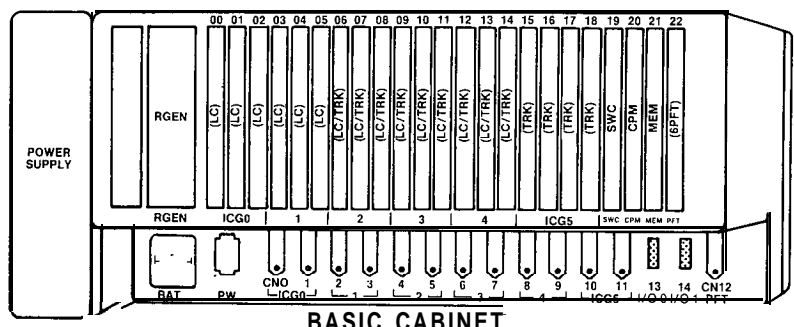


BASIC CABINET
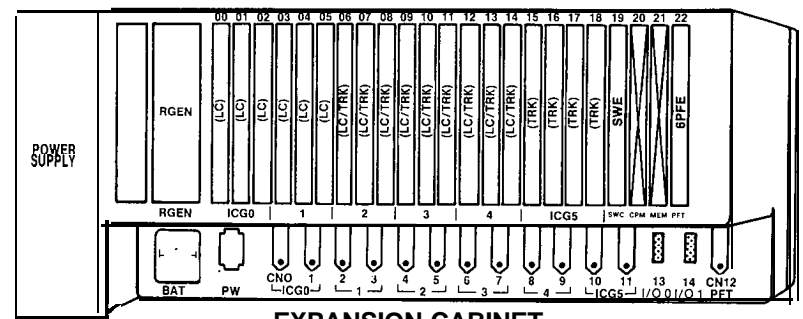


EXPANSION CABINET

## PROCEDURE

1. GROUND YOURSELF PRIOR TO HANDLING CARDS.

2. SINCE SYSTEM POWER MUST BE TURNED OFF WHEN INSTALLING OR REPLACING CPMC OR MEMC CARDS, OFFICE DEPENDENT DATA BASE WILL BE DELETED AND CUSTOMIZED DATA BASE MUST BE REPROGRAMMED.

3. IF POWER FAIL TRANSFER IS REQUIRED IT WILL BE NECESSARY TO INSTALL A 6PFE CARD IN SLOT 22 OF THE EXPANSION CABINET USING THE CORRECT TOGGLE OPTION. CROSS CONNECT THE APPROPRIATE CONTROL LEADS BETWEEN THE BASIC AND EXPANSION CABINETS.

4. INSTALL CARDS AFFECTED BY PACKAGE C SLOTS:-

   CPMC — SLOT 20
   MEMC — SLOT 21
   6PFT/6PFE — BASIC CABINET SLOT 22
   6PFE — IF EXPANDED SYSTEM IS INSTALLED, USE EXPANSION CABINET SLOT 22. SLOTS 20 AND 21 WILL BE BLANK
   4CHT — SLOTS 06 THROUGH 14 (BASIC AND EXPANSION CABINET)
   SWB — SLOT 19 (BASIC CABINET)
   SWE — IF EXPANDED SYSTEM IS INSTALLED, USE EXPANSION CABINET SLOT 19

5. INITIALIZE CARDS BY USING COLD RESTART TO RESET THE SYSTEM. PRESS RESTART BUTTON WITH TOGGLE IN UPPER POSITION ON CPMC CARD.

6. REPROGRAM SYSTEM WITH ODDB.

5.45

# Student Notes

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# 6PFT and 6PFE Cards Installation

**GTE**

*GTE OMNI SBCS*

## DESCRIPTION

. **6PFT** CARD CAN BE INSTALLED ONLY IN BASIC CABINET.

. **6PFE** CARD CAN BE INSTALLED IN EITHER BASIC OR EXPANSION CABINETS DEPENDING ON TOGGLE SWITCH SETTING.

## PROCEDURE

1. INSTALL **6PFT** CARD IN SLOT 22 OF BASIC CABINET.   (6PFE MAY BE USED IF TOGGLE SWITCH IS SET FOR BASIC MODE.)

2. INSTALL 6PFE CARD IN EXPANSION CABINET USING EXPANSION MODE TOGGLE SETTING.

3. CROSS CONNECT SIGNAL LEADS FOR BOTH CARDS (USE JAO-JAI LEAD OF CARD IN BASIC CABINET AND NAO-NAI LEAD IN EXPANSION CABINET), USING SYSTEM CROSS CONNECTIONS DESIGNATED BELOW:

| APM PIN NUMBER | SIGNAL NAME | CDF CABLE COLOR CODE | CARD SLOT NUMBER | 48WC LEAD NAME | 2TTL LEAD NAME | 2TTE LEAD NAME |
|---|---|---|---|---|---|---|
| 34 | JAO | RED-BRN | BASIC | JAO | REMOTE ALARM | -MAJOR |
| 9 | JAI | BRN-RED | 22 | JAI | EXPANSION | -JAO/1 |
| 35 | NAO | RED-SL | (6PFT/6PFE) | N00 | REMOTE ALARM | -MINOR |
| 10 | NA1 | SL-RED | | NA1 | REMOTE ALARM | -MINOR |
| | | | | | | |
| 34 | JAO | RED-BRN | EXPANSION | JAO | REMOTE ALARM | -MAJOR |
| 9 | JAI | BRN-RED | 22 | JA1 | REMOTE ALARM | -MAJOR |
| 35 | NAO | RED-SL | (6PFT/6PFE) | NAO | REMOTE ALARM | -MAJOR |
| 10 | NA1 | SL-RED | | NA1 | BASIC | -JA0/1 |
| 36 | | | | | | |

# 6PFT and 6PFE Cards
## Installation (Continued)
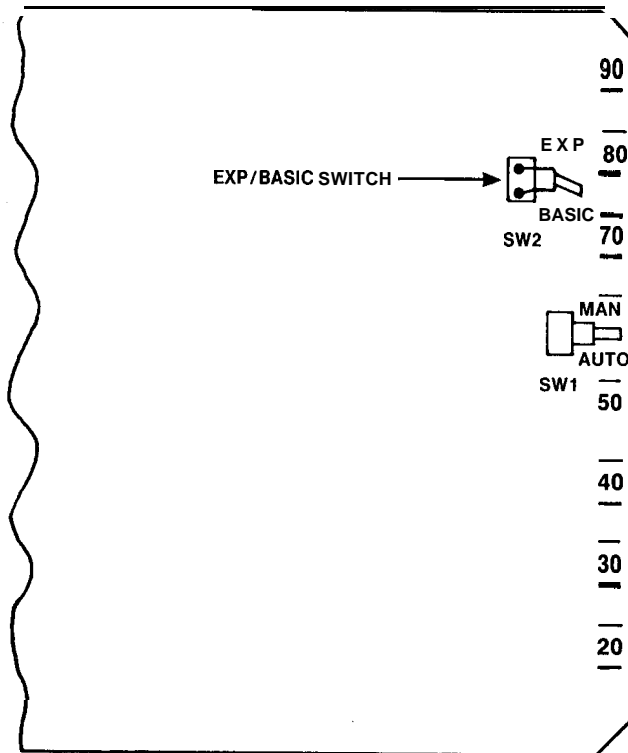
- IF 6PFE IS USED IN SINGLE CABINET ONLY (STANDARD SYSTEM CONFIGURATION) OR IS INSTALLED IN BASIC CABINET (EXPANDED SYSTEM CONFIGURATION), THEN TOGGLE SWITCH MUST BE SET FOR BASIC MODE (SEE ABOVE).

- IF 6PFE IS USED IN EXPANSION CABINET (EXPANDED SYSTEM CONFIGURATION), THEN TOGGLE SWITCH MUST BE SET FOR EXPANSION MODE.

# 6PFT and 6PFE Card
## Installation (Continued)

## 6PFT AND 6PFE CROSS CONNECTION



5.49
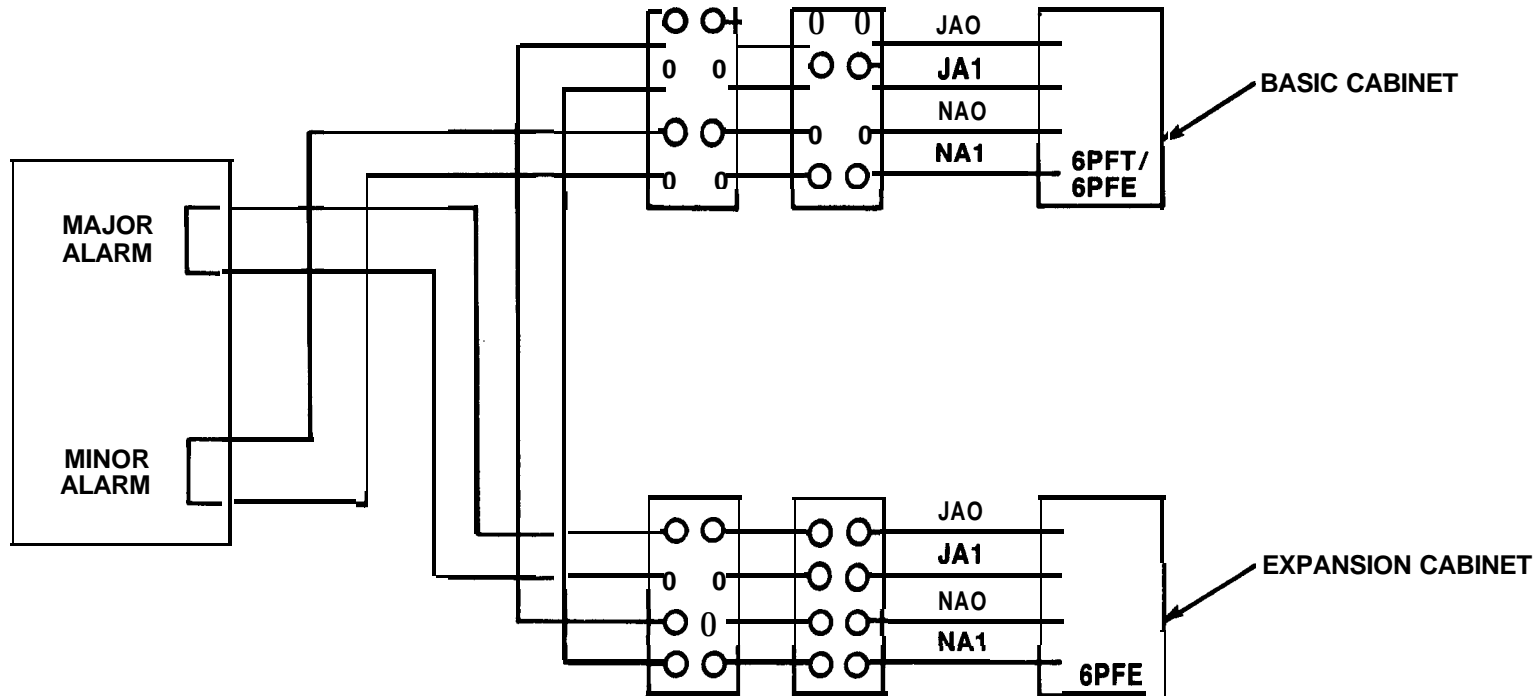
# Data Interface Unit (DIU) Installation

**GTE**

**GTE OMNI SBCS**

- DIAGRAM REPRESENTS A TYPICAL EXAMPLE OF CROSS CONNECTIONS FOR A DIU INSTRUMENT.

- EACH DIU REQUIRES ONLY ONE PAIR OF WIRES FOR TIP AND RING. ON THE CDF TERMINAL BLOCK, ONLY EVERY OTHER PAIR OF WIRES IS USED.

- EXAMPLE ILLUSTRATES A CDF CROSS CONNECTION FOR AN 8DTC INTERFACE CARD IN SLOT 00, USING CABLE NUMBER (CN)0. CONNECTOR BLOCK WOULD HANDLE ALL EIGHT CIRCUITS FOR THE CARD SLOT IDENTIFIED ABOVE.

- REFER TO CDF CROSS CONNECTION REFERENCE IN STUDENT WORKBOOK, INSTALLATION MODULE FOR CROSS CONNECTION INSTRUCTIONS FOR OTHER CARD AND EQUIPMENT CONFIGURATIONS.
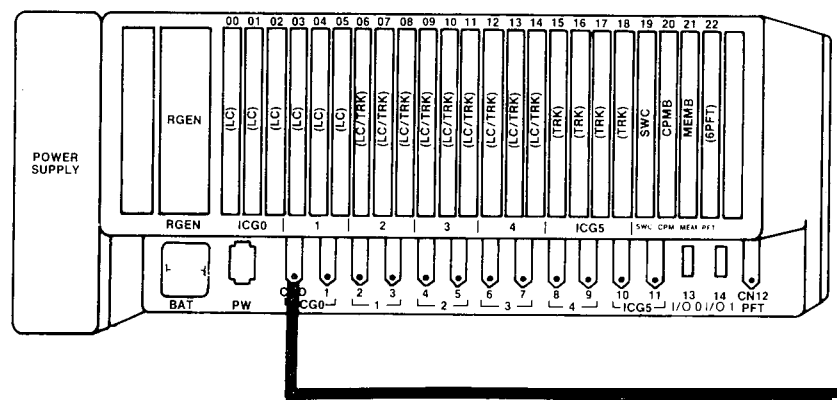
TERMINAL BLOCK

TIP

RING

MODULAR JACK

GREEN

RED
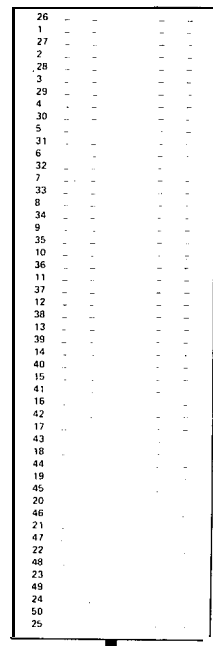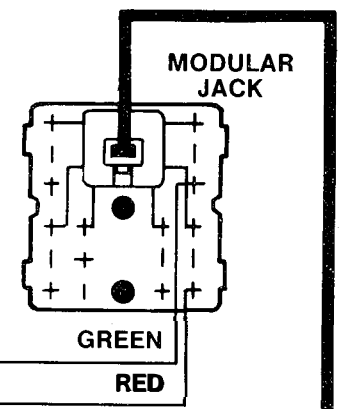
MODULAR CABLE

DATA INTERFACE UNIT

25 PAIR CABLE

5.50

TYPICAL DIU CROSS CONNECTION

# Installation of Data Interface Unit (DIU) with Printer, Modem, or Data Terminal

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DIU — T / R — 8DTC — T / |?

---
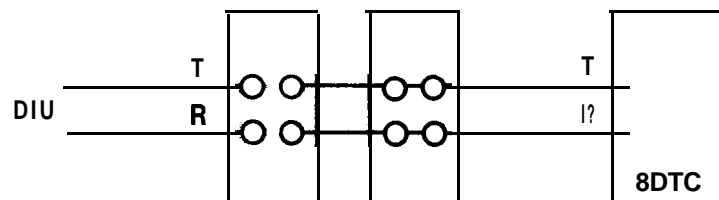
**DESCRIPTION**

. DIU IS CONNECTED DIRECTLY TO A CIRCUIT ON THE 8DTC CARD AND USES ONE 64 KBPS CHANNEL.
. THE DIU CAN ACCOMMODATE A PRINTER, DATA TERMINAL, OR MODEM (DTE/DCE) OF UP TO 19.2 KBPS SYNCHRONOUS/ASYNCHRONOUS WITH ITS RS-232-C INTERFACE.

**PROCEDURE**

1. WIRE CROSS CONNECTION FOR THE DIU TO A CDF TERMINAL BLOCK FROM A CIRCUIT ON THE 8DTC CARD (REFER TO CDF CROSS CONNECTION TABLE IN GTEP MANUAL).
2. FOR HOTEL/MOTEL CONFIGURATION CONNECT THE PRINTER TO THE DIU WITH RS-232-C CABLE. THE PRINTER AND DIU MUST BE IN DATA TERMINAL EQUIPMENT (DTE) MODE.
3. FOR USE WITH A MODEM, CONNECT MODEM TO DIU WITH RS-232-C CABLE. THE DIU MUST BE IN DATA COMMUNICATION EQUIPMENT (DCE) MODE.



PWR RXD TST
TXD CXR CALL
CALL BUTTON



RINGER DTE/DCE TEST RS232C DTE/DCE MODEM LINE

REAR VIEW

5.51

**GTE**
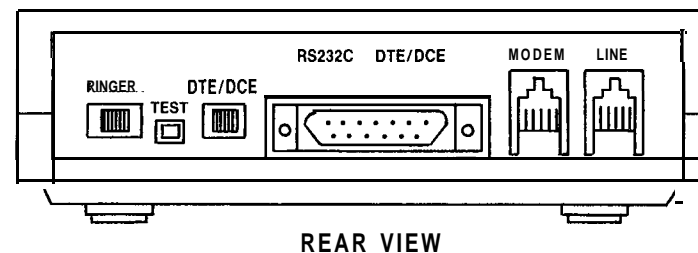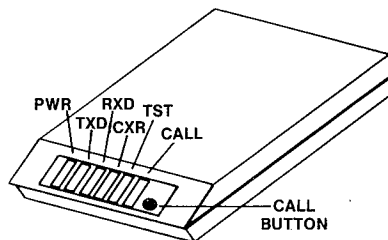
*GTE OMNI SBCS*

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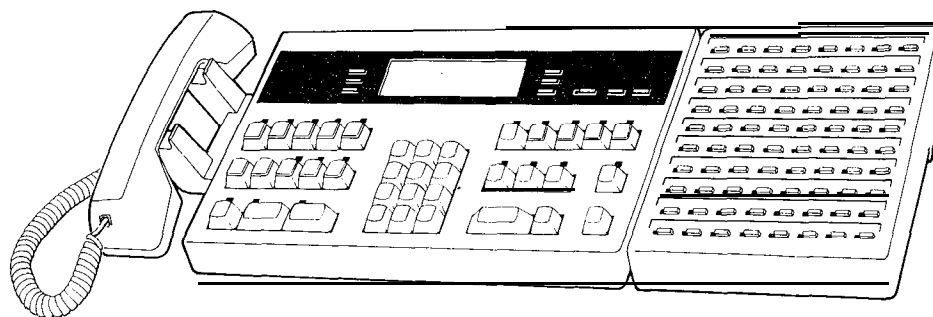
| DESCRIPTION |
| --- |

- EACH ATTENDANT CONSOLE WE.QUIRES TWO PAIRS OF WIRES: ONE PAIR FOR TIP AND RING, THE OTHER FOR DATA/POWER.

- REFER TO EKT CROSS CONNECTION REFERENCE CHART IN MODULE I, FOR CROSS CONNECT WIRING INSTRUCTIONS.

- ATTENDANT CONSOLE CAN BE LOCATED UP TO 300 FEET FROM SYSTEM CABINET USING 24 AWG CABLE WITH FOUR LEAD WIRING (ONE PORT) AS DESCRIBED ABOVE.

- FOR DISTANCES OF UP TO 2000 FEET, TWO PORTS CAN BE WIRED (AS ILLUSTRATED IN DIAGRAM ON FOLLOWING PAGE), USING ONE ADDITIONAL PAIR OF DATA/POWER LEADS.

# Expansion Cabinet Installation

**GTE**

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BASIC CABINET
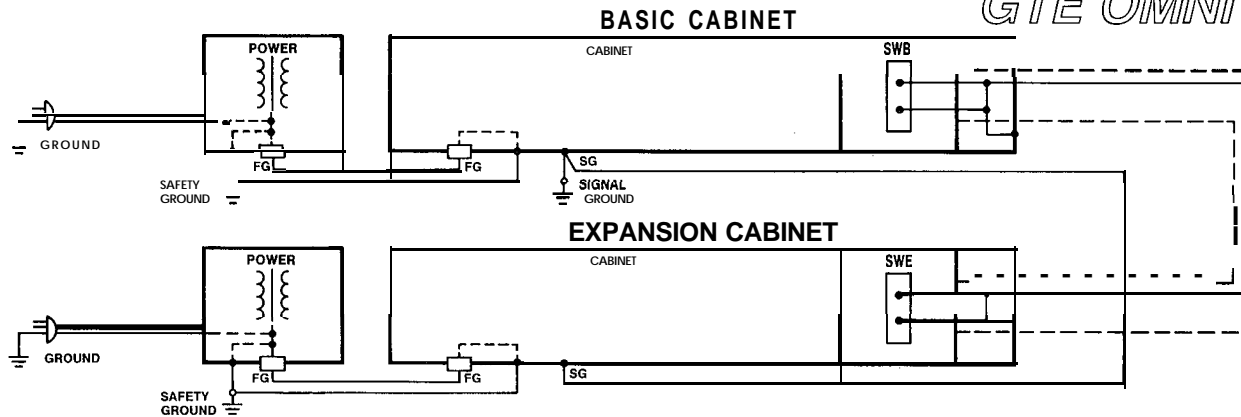
EXPANSION CABINET



## DESCRIPTION

. INSTALLATION OF SECOND (EXPANSION) CABINET FOR EXPANDED SYSTEM CONFIGURATION REQUIRES CONNECTION OF SWB CARD (IN BASIC CABINET) TO SWE CARD (IN EXPANSION CABINET) USING AN INTERMODULE CABLE.

## PROCEDURE

1. ENSURE THAT SYSTEM POWER IS OFF FOR BOTH CABINETS.
2. GROUND END OF INTERMODULE CABLE CONNECTED TO BASIC CABINET, THEN CONNECT CABLE TO BASIC CABINET DOOR WITH BASIC CABINET SCREW.
3. THREAD CABLE THROUGH OPENINGS IN BOTTOM OF BOTH BASIC AND EXPANSION CABINETS.
4. CONNECT CABLE TO EXPANSION CABINET DOOR WITH EXPANSION CABINET SCREW.
5. CONNECT SIGNAL GROUND WIRES (AS ILLUSTRATED IN DIAGRAM) FOR BOTH CABINETS.
6. CONNECT FRAME GROUND WIRES (AS ILLUSTRATED IN DIAGRAM) FOR BOTH CABINETS.

# Hotel/Motel Printer Installation

**GTE**

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## HOTEL/MOTEL PRINTER INTERFACE



```
CPM = CENTRAL PROCESSING UNIT AND MEMORY CARD
CHT = CHARACTER TRUNK CARD
DIU = DATA INTERFACE UNIT
DTA = DATA ADAPTER
DTC = PROPRIETARY DIGITAL TELEPHONE INTERFACE CARD
SWC = SWITCHING CONTROL CARD
MEM = MEMORY CARD
```
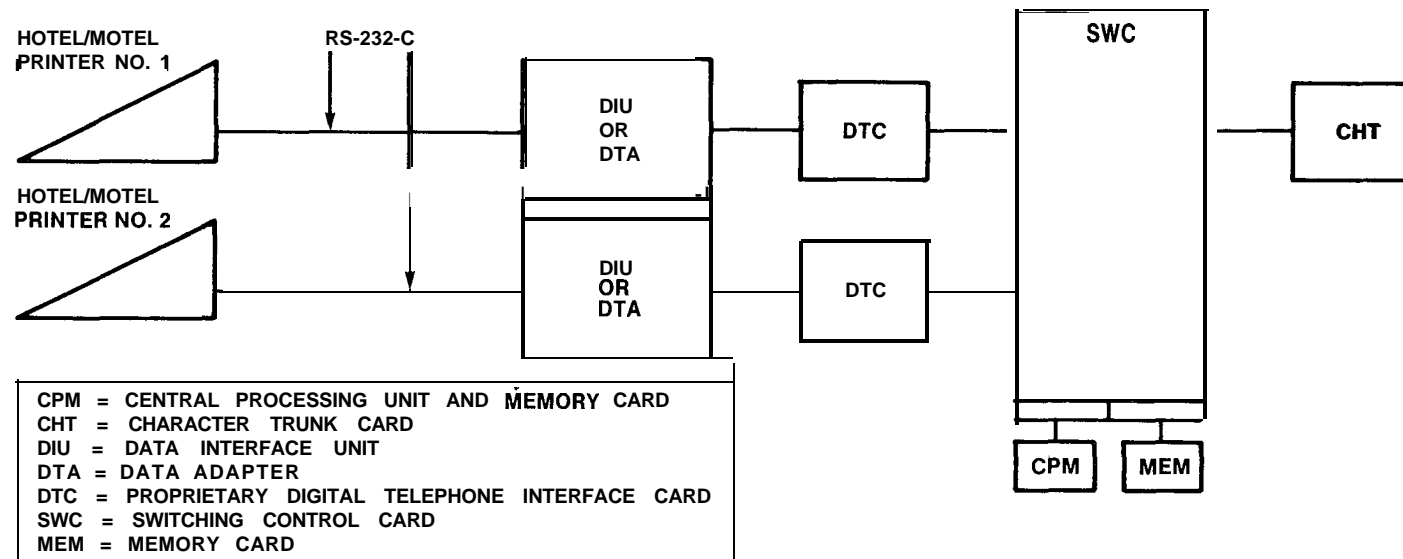
## PROCEDURE

1.  ENSURE THAT 4CHT CARD IS INSTALLED IN SYSTEM.

2.  CONNECT DIU TO SYSTEM VIA TWO WIRE INTERFACE (TO 8DTC CARD OR CONNECT TO DTA ADAPTER).

3.  CONNECT THE HOTEL/MOTEL PRINTER TO THE RS-232-C PORT OF THE DIU OR DTA.

4.  PROGRAM REQUIRED DATA BASE ENTRIES.

5.54

# Hotel/Motel Printer Installation  (Continued)

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## HOTEL/MOTEL  COMMUNICATION  REQUIREMENTS

| ITEM | REQUIREMENT* |
|------|--------------|
| INTERFACE | RS-232-C, DTE MODE |
| SPEED | ASYNCHRONOUS, UP TO 19.2 KBPS |
| , CODE | 7 BIT ASCII |
| PARITY | NONE/ODD/EVEN |
| CHARACTER  LENGTH | 7 BIT/8 BIT**, 80  CHARACTERS |
| STOP BIT | 1 BIT/2 BIT |
| ON/OFF  OPTION | AVAILABLE |
| POWER ON/OFF  OPTION | NOT  AVAILABLE |

* CONFIGURATION CAN BE MODIFIED BY USING MAINTENANCE COMMANDS (CMC-222 AND CMC-223), ACCORDING TO THE CHARACTERISTICS OF THE INSTALLED  PRINTER.

** WHEN 8 BIT OPTION IS SELECTED, THE MOST SIGNIFICANT BIT MUST BE A SPACE OR A ZERO.

## HOTEL/MOTEL PRINTER AND DIU/DTA RS-232-C
## PIN CONFIGURATION

| H/M PRINTER | | | DIU/DTA |
|---|---|---|---|
| FG | 1 | 1 | FG |
| TXD | 2 | 2 | TXD |
| RXD | 3 | 3 | RXD |
| RTS | 4 | 4 | RTS |
| CTS | 5 | 5 | CTS |
| DSR | 6 | 6 | DSR |
| SG | 7 | 7 | SG |
| RLSD | 8 | 8 | RLSD |
| DTR | 20 | 20 | DTR |
| **25 PIN** | | | **25 PIN** |

5.56

# Laboratory Activity — Package C Installation; (5.2)

1. POWER SYSTEM OFF.

2. ENSURE THAT PROPER ELECTROSTATIC GROUND PROCEDURES ARE FOLLOWED PRIOR TO HANDLNG PCB CARDS.

3. BEGIN REPLACING AND INSTALLING THE DESIGNATED PRINTED CIRCUIT BOARDS IN CARD SLOTS IDENTIFIED BELOW. ENSURE THAT CARD COMPONENTS ARE ON LEFT SIDE OF THE BOARDS.

   (A)  INSERT AND SEAT A CHARACTER TRUNK CARD (4CHT) IN CARD SLOT 14.
   (B)  REPLACE THE CPMB CARD IN SLOT 20 WITH THE PACKAGE C ENHANCED CONTROL PROCESSOR MEMORY CARD (CPMC).
   (C)  REPLACE THE MEMB CARD IN SLOT 21 WITH THE PACKAGE C ENHANCED MEMORY CARD (MEMC).

4. REMOVE THE CS-20 PREVIOUSLY WIRED TO CARD SLOT 01, CIRCUIT 4 (FORMERLY DIRECTORY NUMBER 212). REPLACE THE INSTRUMENT WITH AN ATTENDANT CONSOLE INSTRUMENT.

5. REMOVE THE BLF/DSS MODULE PREVIOUSLY WIRED TO CARD SLOT 01, CIRCUIT 5. REPLACE THE MODULE WITH AN ATTENDANT CONSOLE BLF/DSS MODULE WHICH WILL BE USED FOR ROOM STATUS INDICATION.

6. WIRE CROSS CONNECTION AND INSTALL A DATA INTERFACE UNIT (WITH ATTACHED PRINTER) TO CARD SLOT 00, CIRCUIT 2. DEFAULT DIRECTORY NUMBER WILL BE 202.

7. POWER SYSTEM ON AND COLD RESTART SYSTEM BY PRESSING RESTART BUTTON ON CPMC CARD WITH TOGGLE SWITCH IN UPPER POSITION.

6. REPROGRAM THE ODDB.

9. TEST OPERATION OF PACKAGE C PERIPHERALS.

# Review Exercise —
# Package C Installation (5.2)

INSTRUCTIONS:   THE FOLLOWING EXERCISE CONSISTS OF MULTIPLE CHOICE, TRUE/FALSE, FILL IN THE BLANK, OR MATCHING TYPE QUESTIONS. ALL AVAILABLE RESOURCES (I.E., STUDENT WORKBOOK, NOTES, AND GTEP MANUAL) MAY BE USED AS REFERENCES. SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

1.   _____ (TRUE OR FALSE) THE 6PFE CARD CAN PROVIDE POWER FAILURE TRANSFER INTERFACES FOR THE STANDARD OR EXPANDED SYSTEMS, IF INSTALLED IN SLOT 22 OF BOTH BASIC OR EXPANSION CABINETS.

2.   IF THE 6PFE CARD IS USED IN THE EXPANSION CABINET, THE CARD'S _____ MUST BE SET IN EXPANSION MODE.

3.   EACH DATA INTERFACE UNIT (DIU) REQUIRES INSTALLATION OF _____ PAIR OF WIRES ON THE TERMINAL BLOCK.

4.   DATA INTERFACE UNITS USED WITH MODEMS MUST BE IN _____ MODE TO COMMUNICATE VIA THE RS-232-C CABLE.

5.   HOW CAN AN ATTENDANT CONSOLE BE INSTALLED TO ACCOMMODATE DISTANCES GREATER THAN 300 FEET FROM THE SYSTEM CABINET?

   _____

   _____

   _____

6.   INSTALLATION OF EXPANSION CABINET REQUIRES CONNECTION OF AN INTERMODULE CABLE FROM THE _____ CARD IN THE BASIC CABINET TO THE _____ CARD IN THE EXPANSION CABINET.

7. _____(TRUE OR FALSE)    THE HOTEL/MOTEL PRINTER IS CONNECTED DIRECTLY TO THE SYSTEM VIA A TWO-WIRE INTERFACE TO A CIRCUIT ON THE 4CHT CARD.

8. INSTALLATION OF POWER TRANSFER FOR THE EXPANDED SYSTEM REQUIRES CROSS CONNECTIONS FOR THE _____, AND _____, SIGNAL LEADS ON THE 6PFT AND 6PFE CARDS.

9. AN ATTENDANT CONSOLE CROSS CONNECTED TO CIRCUIT 4 OF AN 8EKC CARD INSTALLED IN SLOT 01 WOULD USE PINS _____, AND _____, ON THE CDF TERMINAL BLOCK.

10. A DATA INTERFACE UNIT CROSS CONNECTED TO CIRCUIT 2 OF AN 8DTC CARD INSTALLED IN SLOT 00 WOULD USE PINS _____AND _____ON THE CDF TERMINAL BLOCK.

# Student Notes

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**GTE**

# PACKAGE C
# Data Base Administration

# 5.3  Enabling Objective

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GIVEN:
- GTE OMNI SBCS
- GTE OMNI SBCS PACKAGE C EQUIPMENT AND PERIPHERALS
- PROGRAMMING DEVICE (PMP OR MCT)
- OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- REVIEW EXERCISE

- IDENTIFY FUNCTIONS AND APPLICATIONS OF PACKAGE C CMC COMMANDS.
- PERFORM SYSTEM PROGRAMMING TASKS RELATED TO ATTENDANT CONSOLE, HOTEL/MOTEL, KEY SYSTEM, AND DID/DISA APPLICATIONS.
- COMPLETE REVIEW EXERCISE.

CRITERIA:
- DEMONSTRATION OF ABOVE TASKS IN ACCORDANCE WITH PROCEDURES OUTLINED IN OMNI SBCS GTEP MANUAL AND OMNI SBCS STUDENT WORKBOOK.
- REVIEW EXERCISE WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

# Programming Attendant Console

### DESCRIPTION

. ATTENDANT CONSOLE PROVIDES A VARIETY OF FEATURES ALLOWING FOR ANSWERING, TRANSFERRING, AND PROCESSING OF CALLS USING FIXED AND PROGRAMMABLE FEATURE BUTTONS AND ACCESS CODES.
. TWO ADD ON MODULES ARE AVAILABLE TO SUPPLEMENT THE OPERATION OF THE ATTENDANT CONSOLE: A BUSY LAMP FIELD/DIRECT STATION SELECTION (BLF/DSS) MODULE AND A ROOM STATUS INDICATOR MODULE.

### PROCEDURE

1. IDENTIFY CIRCUIT PORT ON 8EKC CARD TO BE USED FOR CONNECTION. (IF ATTENDANT CONSOLE IS TO BE PLACED MORE THAN 300 FEET FROM SYSTEM CABINET, A SECOND DATA PAIR WILL BE REQUIRED.)

2. INSTALL ATTENDANT CONSOLE.

3. ASSIGN ATTENDANT CONSOLE WITH CMC-230:

   . ATTENDANT CONSOLE (PI) - (1 OR 2)
   ● EQUIPMENT NUMBER (P2)
   . TENANT NUMBER (P3) - (1 - 4)
   . ATTENDANT CONSOLE NUMBER FOR COPY (P4)

```
CMC= 230
P1:          P4:
P2: 010
P3:
```

NOTE: THE ATTENDANT CONSOLE CAN BE INSTALLED OR REMOVED ONLY IN AN OFF LINE (POSITION BUSY) STATE. ATTENDANT CONSOLE CAN BE REMOVED ONLY IF BLF/DSS IS ATTACHED.

# Programming Attendant
# Console (Continued)

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PROCEDURE    (Continued)

4.  ASSIGN ATTENDANT CONSOLE SERVICES TO FEATURE BUTTONS
    WITH CMC-231:

    .  ATTENDANT CONSOLE NUMBER (PI) - (1 OR 2)
    .  BUTTON NUMBER (P2) - (1 - 16)
    .  FEATURE NUMBER (P3) - (1 - 255)
    .  SUPPLEMENTARY DATA (P4)

```
CMC= 231
P1: 1        P4:
P2: 1
P3: 50
```

5.  ASSIGN ATTENDANT CONSOLE CLASS OF SERVICE (COS) AND CLASS
    OF RESTRICTION (COR) ASSIGNMENT WITH CMC-232:

    .  ATTENDANT CONSOLE NUMBER (P1) - (1 OR 2)
    ●  CLASS OF SERVICE - DAY MODE (P2) - (1 - 16)
    ●  CLASS OF SERVICE - NIGHT MODE (P3) - (1 -1 6)
    ●  CLASS OF RESTRICTION - DAY MODE (P4) - (1 - 16)
    .  CLASS OF RESTRICTION-NIGHT MODE (P5) - (1 - 16)

```
CMC= 232
P1: 1        P4: 1
P2: 1        P5: 16
P3: 16
```

6.  ASSIGN ATTENDANT CONSOLE PRIORITY FOR INCOMING CALL
    TERMINATION WITH CMC-233:

    .  TRUNK GROUP NUMBER (PI) - (1 - 63)
    .  ANSWER PRIORITY (P2) - (1 = HIGH to 3 = LOW)

```
CMC= 233
P1: 13
P2: 1
```

5.64

PROCEDURE (Continued)

7. CREATE NIGHT ANSWER GROUP FOR ATTENDANT CONSOLE
   OVERFLOW STATION WITH CMC-306:

   . NIGHT ANSWER GROUP NUMBER (PI) - (1 - 32)
   . TRUNK/STATION TENANT FLAG (P2) - (1 = STATION,
     2 = TRUNK; 3 = TENANT)
   ● EQUIPMENT NUMBER (P3) - (STATION TO RECEIVE OVERFLOW CALLS)

```
CMC= 306
P1: 1
P2: 1
P3:  016
```

8. ASSIGN "ALL TENANTS" TO ATTENDANT CONSOLE OVERFLOW
   NIGHT ANSWER GROUP (ASSIGNED ABOVE) WITH CMC-306:

   ● NIGHT ANSWER GROUP NUMBER (PI)
   . TRUNK/STATION TENANT (P2) - (1 = STATION,
     2 = TRUNK, 3 = TENANT)
   . EQUIPMENT NUMBER (P3) - (ASSIGN "*" TO INDICATE ALL TENANTS)

```
CMC= 306
P1: 1
P2: 3
P3: *
```

# Programming Attendant Console (Continued)

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## ATTENDANT CONSOLE NUMBERING PLAN FOR PROGRAMMING ASSIGNABLE FEATURES (CMC-231)

-SOURCE-          -DESTINATION-

POS BUSY ▽ VOL △

16

| 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|

| DROP/CNCL | 11 | 12 | 13 | 14 |
|---|---|---|---|---|

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|

| SRCE | DEST | CONF JOIN | 15 |
|---|---|---|---|

- A N S W E R - ,

| STA | RECALL | INCOMING |
|---|---|---|

————EXTEND————

| POS RLSE | SUP HOLD | SEP LOCK |
|---|---|---|

5.66
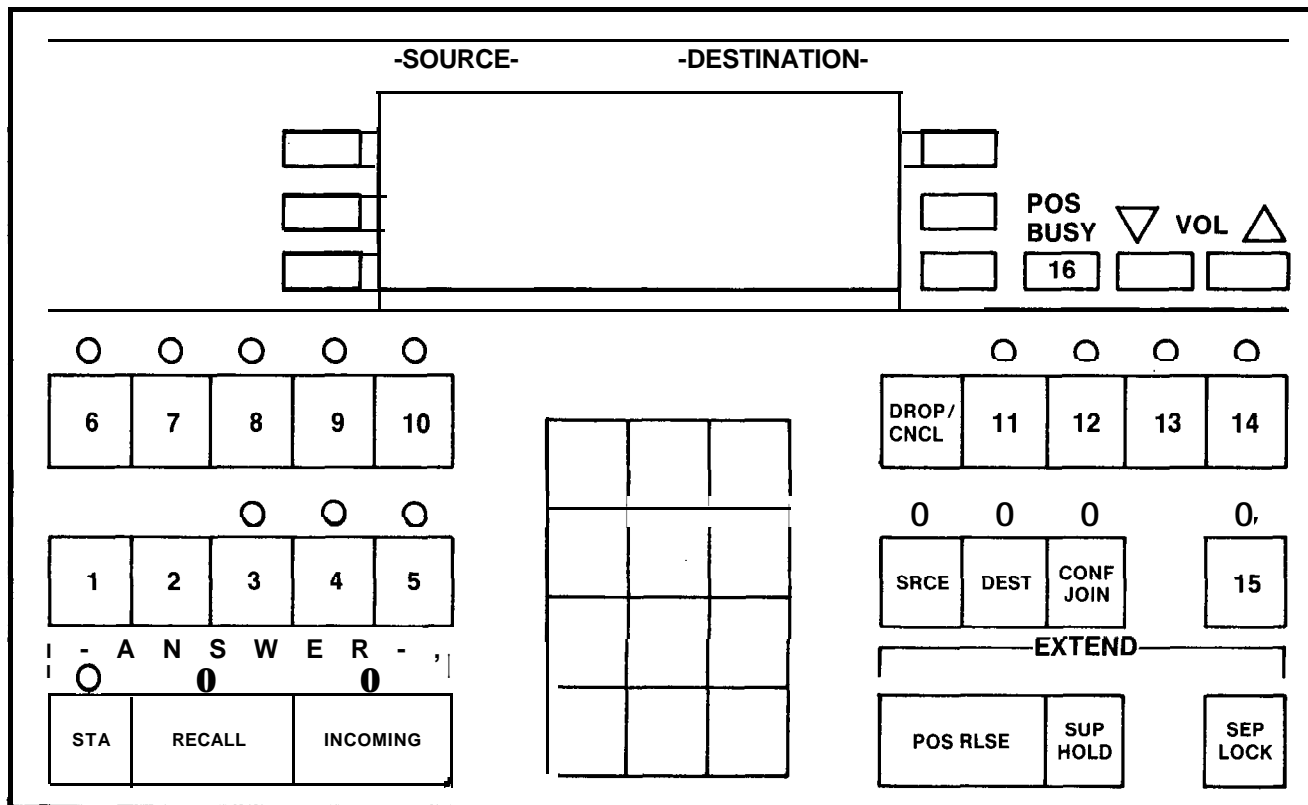
# Programming Attendant Console/CMC Command Summary

GTE

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| CATEGORY | CMC TABLE | FUNCTION |
|---|---|---|
| . ATTENDANT ASSIGNMENT | CMC-230 | ASSIGNS ATTENDANT CONSOLE IN SYSTEM |
| . ATTENDANT BUTTON ASSIGNMENT | CMC-231 | ASSIGNS ATTENDANT CONSOLE SERVICES TO FEATURE BUTTONS |
| . ATTENDANT COS/COR ASSIGNMENT | CMC-232 | ASSIGNS ATTENDANT CONSOLE COS/OCR FOR DAY OR NIGHT MODE |
| ● ATTENDANT QUEUE AND PRIORITY ASSIGNMENT | CMC-233 | REGISTERS THE PRIORITY FOR ANSWERING INCOMING CALLS TO ATTENDANT CONSOLE |
| ● ATTENDANT OVERFLOW STATION ASSIGNMENT | CMC-306 | CREATES NIGHT ANSWER GROUP FOR ATTENDANT CONSOLE OVERFLOW STATION AND ASSIGNS TENANTS TO OVERFLOW NIGHT ANSWER GROUP |

# Student Notes

GTE

5.68

# Programming Hotel/Motel Features

**GTE**

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## DESCRiPTiOn

. **PROGRAMMABLE HOTEL/MOTEL FEATURES INCLUDE:**

- MESSAGE REGISTRATION FOR BILLING OF LOCAL CALLS TO ROOMS
- SPECIAL SERVICE CODES WHICH ENABLE ROOMS TO DIAL SPECIFIC SERVICES (ROOM SERVICE)
- ROOM STATUS INDICATOR WHICH VISUALLY DISPLAYS STATUS OF ROOMS (VACANT/OCCUPIED)
- HOTEL/MOTEL PRINTER WHICH PROVIDES PRINTOUT OF WAKE-UP CALLS AND ROOM CHARGES

## PROCEDURE

1. ASSIGN FRONT DESK CONSOLE PROGRAM BUTTON TO FRONT DESK CONSOLE WITH CMC-283 (CSD) OR CMC-231 (ATTENDANT CONSOLE):

    CMC-203 ▪

    - . STATION DIRECTORY NUMBER (P1) ▪ (1 -4 DIGITS)
    - . BUTTON NUMBER (P2) ▪ (1 ▪ 14)
    - . FEATURE NUMBER (P3) ▪ (FNO 188)
    - . SUPPLEMENTARY DATA (P4) ▪ (NOT APPLICABLE/BLANK)
    - . LINE TERMINATION TYPE (P5) ▪ (NOT APPLICABLE/BLANK)
    - . RINGING MODE (P6) ▪ (NOT APPLICABLE/BLANK)

    ```
    CMC = 203
    P1:   001    P4:
    P2: 6         P5:
    P3:   188    P6:
    ```

    CMC-231 ▪

    - ● ATTENDANT CONSOLE NUMBER (P1) ▪ (1 or 2)
    - . BUTTON NUMBER (P2) (1 ▪ 16)
    - . FEATURE NUMBER (P3) ▪ (FNO 188)
    - . SUPPLEMENTARY DATA (P4) ▪ (NOT APPLICABLE/BLANK)

    ```
    CMC = 231
    P1: 1          P4:
    P2: 10
    P3: 188
    ```

# Programming Hotel/Motel Features (Continued)

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(PROCEDURE i n u e d )

2.  IDENTIFY STATION DIRECTORY NUMBERS AS HOTEL/MOTEL GUEST
    ROOMS WITH CMC-204:

    . STATION  DIRECTORY  NUMBER  (P1)
    .   DATA SECURE SPEECH PATH (P2)
    ● OFF-PREEMISES  EXTENSION  (P3)
    .   SLT WITH MESSAGE WAITING (P4)
    .   GUEST ROOM FLAG (P5) . (0 OR BLANK = NOT A GUEST ROOM,
        1 = GUEST ROOM)

```
CMC= 204
P1: 216      P4: 1
P2: 0        P5: 1
P3: 0
```

3.  ASSIGN ROOM STATUS INDICATOR WITH CMC-354:

    .   ROOM STATUS EQUIPMENT NUMBER (P1) . (1 OR 2)
    .   ROOM STATUS INDICATOR BUTTON (P2) . (1 = 40 BUTTON BLF/DSS,
        2 = 80 BUTTON BLF/DSS)
    . EQUIPMENT  NUMBER  (P3)

    NOTE:   REMOVE BLF/DSS ALREADY ASSIGNED WITH CMC-210

```
CMC= 354
P1: 1
P2: 2
P3: 001
```

4.  ASSIGN ROOM STATUS INDICATOR LAMP WITH CMC-355:

    .   ROOM STATUS INDICATOR NUMBER (PI) . (1 OR 2)
    .   BUTTON NUMBER (P2) . (1 . 80)
    .   DIRECTORY NUMBER (P3) . (1 . 4 DIGITS)

```
CMC= 355
PI: 1
P2: 1
P3: 200
```

5.  ASSIGN HOTEL/MOTEL PRINTER WITH CMC-356:

    .   PRINTER NUMBER (PI) . (1 OR 2)
    .   CHARACTER TRUNK EQUIPMENT NUMBER (P2)-(1 - 4)
    .   DIU/DTA DIRECTORY NUMBER (P3) . (1 . 4 DIGITS, OR BLANK WHEN
        UNREGISTERED)

```
CMC= 356
PI: 1
P2: 080
P3: 4400
```

5.70

PROCEDURE   (Continued)

6. ASSIGN HOTEL/MOTEL PRINTOUT MESSAGE ALLOCATION, WITH CMC-357:

- PRINTER NUMBER (P1) - (1 OR 2)
- MESSAGE IDENTIFICATION NUMBER (P2)* -
  (1 = INDEPENDENT MESSAGE,
  2 = COMMON MESSAGE)
  NOTE: REFER TO TABLE BELOW
  P2 = 1 (REQUIRED IF ATTENDANT CONSOLE)

  BOTH TYPES OF MESSAGES CAN BE RECORDED

- FRONT DESK CONSOLE DIRECTORY NUMBER (P3) - (1 - 4 DIGITS: ATTENDANT ACCOUNT CODE + ATTENDANT NUMBER)

```
CMC= 357
P1: 1
P2: 1
P3: 01
```

### HOTEL/MOTEL MESSAGES

| INDEPENDENT MESSAGES | COMMON MESSAGES |
|---|---|
| (a) AUTOMATIC WAKE-UP STATUS (FOR ALL GUEST ROOM STATIONS UNDER REGISTRATION OF SERVICE) | (e) AUTOMATIC WAKE-UP REGISTRATION/CANCELLATION BY GUEST ROOM |
| (b) AUTOMATIC WAKE-UP REGISTRATION/CANCELLATION BY FRONT DESK CONSOLE | (f) AUTOMATIC WAKE-UP EXECUTION |
| (c) MESSAGE REGISTRATION STATUS (FOR ALL GUEST ROOM STATIONS UNDER REGISTRATION OF SERVICE) | (g) RTS FAILURE/REPAIR/CHANGE |
| (d) MESSAGE REGISTRATION ADDED/INITIALIZED/VERIFIED | |

NOTES: (1) UP TO TWO FRONT DESK CONSOLES CAN BE ASSIGNED TO HOTEL/MOTEL PRINTER 1 or 2
(2) INDEPENDENT MESSAGES, ACCORDING TO ONE FRONT DESK CONSOLE, CANNOT BE PRINTED OUT TO TWO HOTEL/MOTEL PRINTERS
(3) THE (b), (d), AND (f) MESSAGES CAN BE OMITTED BY SETTING THE ALLOW/DENY FLAG WITH CMC-358.

(PROCEDURE n u e d )

7. **ASSIGN HOTEL/MOTEL SERVICE PARAMETERS WITH CMC-358:**

 . FLAG NUMBER (P1) . (1 . 32)
 . STATUS VALUE (P2) . (REFER TO TABLE BELOW)

```
CMC= 358
P1: 1
P2: 1
```

## HOTEL/MOTEL OPTION DATA

| FLAG NUMBER | DEFINITION | STATUSVALUE |
|---|---|---|
| 1 | HOTEL/MOTEL MESSAGE PRINTOUT (WAKE-UP REGISTRATION) | 0 = NOT TO PRINT OUT THE CORRESPONDING INFORMATION<br>1 = TO PRINT OUT THE CORRESPONDING INFORMATION |
| 2 | HOTEL/MOTEL MESSAGE PRINTOUT (WAKE-UP CANCELLATION) | 0 = NOT TO PRINT OUT THE CORRESPONDING INFORMATION<br>1 = TO PRINT OUT THE CORRESPONDING INFORMATION |
| 3 | HOTEL/MOTEL MESSAGE PRINTOUT (WAKE-UP ANSWER) | 0 = NOT TO PRINT OUT THE CORRESPONDING INFORMATION<br>1 = TO PRINT OUT THE CORRESPONDING INFORMATION |
| 4 | HOTEL/MOTEL MESSAGE PRINTOUT (WAKE-UP NO ANSWER) | 0 = NOT TO PRINT OUT THE CORRESPONDING INFORMATION<br>1 = TGO PRINT OUT THE CORRESPONDING INFORMATION |
| 5 | HOTEL/MOTEL MESSAGE PRINTOUT (MESSAGE REGISTRATION ADDED) | 0 = NOT TO PRINT OUT THE CORRESPONDING INFORMATION<br>1 = TO PRINT OUT THE CORRESPONDING INFORMATION |
| 6 | HOTEL/MOTEL MESSAGE PRINTOUT (MESSAGE REGISTRATION INITIALIZED) | 0 = NOT TO PRINT OUT THE CORRESPONDING INFORMATION<br>1 = TO PRINT OUT THE CORESPONDING INFORMATION |
| 7 | HOTEL/MOTEL MESSAGE PRINTOUT (MESSAGE REGISTRATION VERIFY-VACANT) | 0 = NOT TO PRINT OUT THE CORRESPONDING INFORMATION<br>1 = TO PRINT OUT THE CORRESPONDING INFORMATION |
| 8 | CLEAN UP FLAG | 0 = NOT TO APPLY CLEAN UP STATE<br>1 = TO APPLY CLEAN UP STATE |
| 9 | ROOM STATUS OPTION FLAG (LINE LOCK OUT) | 0 = NOT TO DISPLAY<br>1 = TO DISPLAY |
| 10 | ROOM STATUS OPTION FLAG (WAKE-UP NO ANSWER) | 0 = NOT TO DISPLAY<br>1 = TO DISPLAY |
| 11 | ROOM STATUS OPTION FLAG (DND REGISTRATION) | 0 = NOT TO DISPLAY<br>1 = TO DISPLAY |
| 12 | ROOM TO ROOM BLOCKING FLAG | 0 = NOT TO RESTRICT<br>1 = TO RESTRICT |
| 13 | VACANT ROOM RESTRICTION (INCOMING STATION CALL) | 0 = NOT TO RESTRICT<br>1 = TO RESTRICT |
| 14 | VACANT ROOM RESTRICTION FLAG (OUTGOING TRUNK CALL) | 0 = NOT TO RESTRICT<br>1 = TO RESTRICT |
| 15 | SERVICE CALL ROUTING BASE FLOOR (BASFLW) | 1 to 99 |
| 16 | RESERVED | |
| 32 | RESERVED | |

5.72

**GTE**

*GTE OMNI SBCS*

PROCEDURE    (Continued)

8. ASSIGN MESSAGE REGISTRATION TRUNK GROUP NUMBER WITH CMC-350:

   . TRUNK GROUP NUMBER (PI)
   . MESSAGE REGISTRATION FLAG (P2)
      (0 = TGN NOT SUBJECT TO MESSAGE REGISTRATION,
       1 = TGN SUBJECT TO THE MESSAGE REGISTRATION)

```
CMC= 350
PI: 13
P2: 1
```

9. ASSIGN MESSAGE REGISTRATION OFFICE CODE WITH CMC-35i:

   .   BILLING RATE NUMBER (PI) ■ (1 ■ 6)
   . OFFICE CODE (P2)

```
CMC= 351          I
PI: 1
P2: 476
```

10. ASSIGN MESSAGE REGISTRATION BILLING RATE WITH CMC-352:

    .   BILLING RATE NUMBER (PI) ■ (1 ■ 6)
    ●   INITIAL TIME FOR THE TELEPHONE CALL (P2) (1 ■ 400 SECONDS)
    .   INITIAL CHARGE FOR TELEPHONE CALL (P3) ■ (0 ■ 255 CENTS)
    .   ADDITIONAL TIME FOR TELEPHONE CALL (P4) ■ (1 ■ 400 SECONDS)
    .   ADDITIONAL CHARGE FOR TELEPHONE CALL (P5) ■ (0 ■ 255 CENTS)

```
CMC= 352
P1: 1      P4: 60
P2: 20     P5: 30
P3: 50
```

11. ASSIGN SPECIAL SERVICE CODES/SERVICE CALL ROUTING ASSIGNMENT WITH CMC-353:

    ●   FEATURE ACCESS CODE (PI)* ■ (1 ■ 4)
    .   FEATURE SELECTION CONTROL (P2) ■ (1 = SPECIAL SERVICE,
        2 = SERVICE CALL ROUTING)
    ●   DESTINATION DIRECTORY NUMBER (P3) ■ (1 ■ 4 DIGITS)
    .   GUEST ROOM FLOOR NUMBER (P4) ■ (1 ■ 99)

    *   FROM ACCESS CODES ASSIGNED WITH CMC-100

```
CMC= 353
P1: 3      P4:2
P2: 2
P3: 285
```

5.73

## HOTEL/MOTEL PRINTER OUTPUT FORMAT

**MESSAGE TYPE**                         **OUTPUT**

**AUTOMATIC**
**WAKE-UP**

REGISTRATION:        mm/dd hh:mm WAKE-UP REG    rrrr hh:mm [1] hh:mm [2]            BY rrrr

CANCELLATION:        mm/dd hh:mm WAKE-UP CNCL rrrr hh:mm [1]            BY rrr

EXECUTION:          **mm/dd hh:mm WAKE-UP CALL rrrr sssssssss

REPORT:             mm/dd hh:mm WAKE-UP REGISTRATION PRINT OUT        BY rrrr
                    hh:mm [2] rrrr rrrr rrrr rrrr rrrr
                eeeeee

NOTE:       mm/dd hh:mm =     operated day and time
          rrrr =                 registered, cancelled, or verified room number
          hh:mm [1] =         old wake-up lime
          hh:mm [2] =         new or current wake-up time
          BY rrrr =            operated station number
          sssssssss =        wake-up call status (answer, no answer, busy, or no ring)
          eeeeee =           completion message (end or cancel)
                            wake-up no answer sign

**MESSAGE ** = **
**REGISTRATION**

ADDITION:          mm/dd hh:mm MESSAGE ADDED    rrrr $ddd.cc [1] $ddd.cc         BY rrrr

CLEAR:              mm/dd hh:mm MESSAGE CLEARED rrrr $ddd.cc [1]         BY rrrr

VERIFICATION:       mm/dd hh:mm MESSAGE VERIFIED rrrr $ddd.cc         BY rrrr

REPORT:             mm/dd hh:mm MESSGE REGISTRATION PRINT OUT        BY rrrr
                  rrrr $ddd.cc rrrr $ddd.cc rrrr $ddd.cc rrrr $ddd.cc rrrr $ddd.cc
                eeeeee

NOTE;       mm/dd hh:mm =     operated day and time
          rrrr =                 registered, cancelled, or verified room number
          $ddd.cc [1] =        old or current message
          $ddd.cc =            new message
          BY rrrr =            operated station number
          eeeeee =           completion message (end or cancel)

5.74

**GTE**

*GTE OMNI SBCS*

## HOTEL/MOTEL PRINTER OUTPUT FORMAT (CONTINUED)

| MESSAGE TYPE | OUTPUT |
|---|---|
| **OTHER** | |
| SHORT POWER FAILURE: | POWER FAIL |
| PRINTER FAILURE: | PRINTER FAILURE |
| REAL TIME CLOCK FAILURE: | CLOCK FAIL      hh:mm  CHECK  WAKE-UP |
| REAL TIME CLOCK REPAIR: | CLOCK  REPAIR  hh:mm  CHECK  WAKE-UP |
| REAL TIME CLOCK CHANGE: | CLOCK  CHANGE  hh:mm  CHECK  WAKE-UP |

# Programming Hotel/Motel Features — CMC Command Summary

GTE

GTE OMNI SBCS

| CATEGORY | CMC TABLE | FUNCTION |
|---|---|---|
| . FRONT DESK CONSOLE PROGRAM BUTTON ASSIGNMENT | CMC-203 (CSD) CMC-231 (ATTENDANT CONSOLE) | ASSIGNS FRONT DESK CONSOLE PROGRAM BUTTON TO CSD OR ATTENDANT CONSOLE DESIGNATED AS FRONT DESK CONSOLE |
| . CHANGE GUEST ROOM FLAG | CMC-204 | IDENTIFIES STATION DIRECTORY NUMBERS AS HOTEL/ MOTEL GUEST ROOMS |
| . ROOM STATUS INDICATOR ASSIGNMENT | CMC-354 | ASSIGNS A BLF/DSS MODULE IN SYSTEM AS A ROOM STATUS INDICATOR MODULE |
| . ROOM STATUS INDICTOR LAMP ASSIGNMENT | CMC-355 | ASSIGNS GUEST ROOM NUMBERS TO ROOM STATUS INDICA- TOR LAMPS |
| . HOTEL/MOTEL PRINTER ASSIGNMENT | CMC-356 | ASSIGNS THE HOTEL/MOTEL PRINTER IN THE SYSTEM |
| . HOTEL/MOTEL PRINT OUT MESSAGE ALLOCATION | CMC-357 | ASSIGNS THE INDEPENDENT AND COMMON PRINTER MESSAGES TO EACH HOTEL/MOTEL PRINTER |
| . HOTEL/MOTEL PARAMETER ASSIGNMENT | CMC-358 | ASSIGNS PARAMETERS FOR DESIGNATED HOTEL/MOTEL SERVICES |
| . MESSAGE REGISTRATION TRUNK GROUP NUMBER SCREENING ASSIGNMENT | CMC-350 | ASSIGNS TRUNK GROUP NUMBERS FOR HOTEL/MOTEL MESSAGE REGISTRATION |
| . MESSAGE REGISTRATION OFFICE CODE ASSIGNMENT | CMC-351 | ASSIGNS OFFICE CODES CORRESPODING TO BILLING RATE NUMBERS |
| . MESSAGE REGISTRATION BILLING RATE ASSIGNMENT | CMC-352 | ASSIGNS TIME AND RATE CHARGES FOR MESSAGE REGIS- TRATION BILLING RATE NUMBERS |
| . SPECIAL SERVICE CODES/SERVICE CALL ROUTING ASSIGNMENT | CMC-353 | ASSIGNS SPECIAL SERVICE CODES AND SERVICE CALL ROUTING TO ACCESS CODES FOR DESTINATION DIRECTORY NUMBERS AND/OR GUEST ROOM FLOOR NUMBERS |

5.76

# Student Notes

**GTE**

GTE OMNI SBCS

5.77

# Direct Inward System Access Standard (DISA-S) Programming

**GTE**

*GTE OMNI SBCS*

## DESCRIPTION

- FEATURE PROVIDES DIRECT ACCESS TO SYSTEM FEATURES FROM ANY REMOTE LOCATION.
- DISA-S IS ASSIGNED TO A GROUND START CO TRUNK AT A 4BWC PORT.
- USERS OUTSIDE THE SYSTEM MAY ACCESS ASSIGNED DISA-S TRUNK VIA A DTMF TELEPHONE AND THEN ENTERING AN ACCESS CODE.
- USERS HAVE ACCESS TO THE FOLLOWING FEATURES:
  - STATION CALL
  - ATTENDANT CALL
  - OUTGOING TRUNK LINES (CO, TIE, WATS, FX)
  - LCR
  - SCC
  - SYSTEM SPEED DIALING
  - EKT PAGING ACCESS
  - EXTERNAL PAGING

## PROCEDURE

1. ASSIGN DISA-S TO A GROUND START TRUNK WITH CMC-250:

   . EQUIPMENT NUMBER (P1)
   . TYPE OF TRUNK (P2) - (6 = CO)
   . TRUNK GROUP NUMBER (P3)
   . OPERATION MODE (P4) - (1 = INCOMING TRUNK, 3 = BOTHWAY TRUNK)
   . SIGNALING (P5) - (1 = GROUND OR E & M)
   . DISA-S (P6) - (2 = DISA-S)

| CMC= 250 | |
|----------|----------|
| P1: 180 | P4: 1 |
| P2: 6 | P5: 1 |
| P3: 14 | P6: 2 |

# Direct Inward System Access Programming (Continued)

**PROCEDURE** (Continued)

2. ASSIGN COS/COR TO DISA-S TRUNK WITH CMC-252:

   . TRUNK GROUP NUMBER (PI)
   .   CLASS OF SERVICE DAY (P2) - (1 - 16)
   .   CLASS OF SERVICE NIGHT (P3) - (1 - 16)
   .   CLASS OF RESTRICTION DAY (P4) - (1 - 16)
   .   CLASS OF RESTRICTION NIGHT (P5) - (1 - 16)

3. ASSIGN DISA-S AUTHORIZATION CODE WITH CMC-432:

   .   AUTHORIZATION CODE (P1) - (1 - 8 DIGITS OR BLANK)

```
CMC= 252
P1: 14        P4: 1
P2: 1         P5: 16
P3: 16
```

```
CMC= 432
P1: 1234
```

# Direct Inward System Access —
# Standard Programming — CMC
# Command Summary

**GTE**

*GTE OMNI SBCS*

| CATEGORY | CMC TABLE | FUNCTION |
|---|---|---|
| • DISA-S TRUNK ASSIGNMENT | CMC-250 | ASSIGNS DIRECT SYSTEM INWARD ACCESS (STANDARD) TO A GROUND START TRUNK |
| • DISA-S TRUNK COS/COR ASSIGNMENT | CMC-252 | ASSIGNS TRUNK COS/COR TO DISA-STANDARD TRUNK |
| • DISA-S AUTHORIZATION CODE ASSIGNMENT | CMC-432 | ASSIGNS THE AUTHORIZATION CODE FOR THE DISA-STANDARD FEATURE |

# Student Notes

**GTE**

*GTE OMNI SBCS*

# Direct Inward Dialing (DID) Programming

### DESCRIPTION

. ALLOWS INCOMING CALLS ON DID TRUNK TO BYPASS ATTENDANT CONSOLE AND DIRECTLY RING STATION

. DID TRUNKS ARE TERMINATING-ONLY TRUNKS AND ARE ASSIGNED ONLY TO 2TTE OR 2TTL PORTS.

### PROCEDURE

1. ASSIGN DID TRUNK WITH CMC-250:

   . EQUIPMENT NUMBER (P1)
   . TYPE OF TRUNK (P2) - (5 = DID E & M, 13 = DID LD)
   . TRUNK GROUP NUMBER (P3) - (57 - 62)
   . OPERATION MODE (P4) - (1 = INCOMING TRUNK)
   . SIGNALING (P5) - (1 = GROUND OR E & M)
   . START MODE (P6) - (1 = WINK START, 2 = DELAY START, 3 = IMMEDIATE START)

```
CMC= 250
P1: 160     P4: 1
P2: 5       P5: 1
P3: 57      P6: 3
```

2. ASSIGN COS/COR TO TRUNK WITH CMC-252:

   ● TRUNK GROUP NUMBER (PI) - (57 - 62)
   . CLASS OF SERVICE DAY (P2)
   . CLASS OF SERVICE NIGHT (P3)
   . CLASS OF RESTRICTION DAY (P4)
   . CLASS OF RESTRICTION NIGHT (P5)

```
CMC= 252
P1: 57      P4: 1
P2: 1       P5: 16
P3: 16
```

5.62

# Direct Inward Dialing (DID) Programming (Continued)

PROCEDURE (Continued)

3. ASSIGN RECEIVED DIGIT LENGTH AND PREFIX CODE TO DID TRUNKS WITH CMC-430:

   . TRUNK GROUP NUMBER (PI) - (57 - 62)
   ● RECEIVED DIGIT LENGTH (P2) - (1 - 4 DIGITS)
   . PREFIX CODE (P3) - (1 - 4 DIGITS OR BLANK)
   . DISA DIRECTORY NUMBER (P4) - (BLANK)
   . DISA AUTHORIZATION CODE (P5) - (BLANK)

```
CMC = 430
P1: 57        P4:
P2: 3         P5:
P3:
```

4. ASSIGN THE LISTED DIRECTORY NUMBERS TO A DID TRUNK WITH CMC-431:

   ● TRUNK GROUP NUMBER (3) - (57 - 62)
   ● LISTED DIRECTORY NUMBER (P1) - (I-4 DIGITS OR BLANK)
   ● LISTED DIRECTORY NUMBER (P2) - (1-4 DIGITS OR BLANK)
   ● LISTED DIRECTORY NUMBER (P3) - (I-4 DIGITS OR BLANK)
   ● LISTED DIRECTORY NUMBER (P4) - (I-4 DIGITS OR BLANK)
   ● LISTED DIRECTORY NUMBER (P5) - (1-4 DIGITS OR BLANK)
   ● LISTED DIRECTORY NUMBER (P6) - (1-4 DIGITS OR BLANK)

```
CMC = 431
P1: 57        P4: 1402
P2: 1400      P5:
P3: 1402      P6:
```

NOTE:   THE NUMBER OF DIGITS OF THE LISTED DIRECTORY NUMBER MUST MATCH THE RECEIVED DIGITS LENGTH (P2) OF CMC-430.

5. ASSIGN DID TRUNK LEVEL CHANGE DIGITS WITH CMC-433:

   ● TRUNK GROUP NUMBER (P1) - (57 - 62)
   . REPLACED DIGIT (P2) - (0 - 9)
   ● LEVEL CHANGE DIGIT (P3) - (0 - 9)

```
CMC = 433
PI: 57
P2: 3
P3: 2
```

5.83

# Direct Inward Dialing/Direct Inward System Access Programming

**GTE**

*GTE OMNI SBCS*

---

## DESCRIPTION

. DIRECT INWARD SYSTEM ACCESS VIA DIRECT INWARD DIALING TRUNK (DID/DISA) ALLOWS OUTSIDE USERS ACCESS TO SYSTEM FEATURES VIA DID TRUNKS USING A DTMF TELEPHONE.

. ACCESSIBLE DID/DISA FEATURES INCLUDE:

- STATION CALL
- ATTENDANT CALL
- OUTGOING TRUNK LINE CALL (CO, TIE, WATS, FX)
- LCR
- SCC
- SYSTEM SPEED DIALING
- EKT PAGING ACCESS
- EXTERNAL PAGING

## PROCEDURE

1. ASSIGN DISA DIRECTORY NUMBER AND AUTHORIZATION CODE TO EXISTING DID TRUNK LINE WITH CMC-430:

   - TRUNK GROUP NUMBER (PI) - (57 - 62)
   - RECEIVED DIGIT LENGTH (P2) - (1 - 4)
   - PREFIX CODE (P3) - (1 - 3 DIGITS OR BLANK)
   - DISA DIRECTORY NUMBER (P4) - (1 - 4 DIGITS OR BLANK)
   - DISA DIRECTORY NUMBER (P5) - (1 - 4 DIGITS OR BLANK)

```
CMC = 430
PI: 57          P4: 123
P2: 3           P5: 456
P3:
```

5.84

# Direct Inward Dialing and DID/DISA Programming CMC Command Summary

**GTE**

*GTE OMNI SBCS*

| CATEGORY | CMC TABLE | FUNCTION |
|---|---|---|
| . DID TRUNK ASSIGNMENT | CMC-250 | ASSIGNS DID SERVICE TO DID TRUNKS |
| ● DID TRUNK COS/COR ASSIGNMENT | CMC-252 | ASSIGNS TRUNK COS/COR TO DID TRUNKS |
| ● DID ADDITIONAL CODE ASSIGNMENT OR DID/DISA DIRECTORY AND CODE ASSIGNMENT | CMC-430 | ASSIGNS RECEIVED DIGITS LENGTH, PREFIX CODE, DISA DIRECTORY NUMBER, AND DISA AUTHORIZATION CODE FOR DID/DISA |
| ● DID LISTED DIRECTORY NUMBER | CMC-431 | ASSIGNS LISTED DIRECTORY NUMBERS FOR DID TRUNKS |
| . DID TRUNK LEVEL CHANGE ASSIGNMENT | CMC-433 | ASSIGNS ADDITIONAL DIGITS OR REPLACED DIGITS TO THE RECEIVED DIGIT VIA DID TRUNK |

# Data Interface Unit (DIU) Programming

**GTE**

*GTE OMNI SBCS*

---

## DESCRIPTION

.   PROVIDES STANDALONE DATA STATION CAPABILITY WITH TERMINAL, MODEM, OR PRINTER

.   PROGRAMMABLE DIU FEATURES INCLUDE:

—   COS/COR
—   DATA ATTRIBUTES
—   TENANT GROUP
—   DATA HUNT GROUP
—   DATA HOT LINE

## PROCEDURE

1.   ASSIGN THE DIU AS A DATA STATION WITH CMC-220:

.   EQUIPMENT NUMBER OF DATA STATION (PI)
.   DIRECTORY NUMBER OF DATA STATION (P2)
●   DATA TERMINAL TYPE (P3) ▪ (4 = DIU)
.   DIRECTORY NUMBER OF VOICE STATION (P4) ▪ BLANK

```
CMC = 220
P1:  030   P4:
P2:  4700  P5:
P3: 4
```

2.   ASSIGN COS/COR TO DIU DATA STATION WITH CMC-221:

.   DIRECTORY NUMBER OF DATA STATION (P1)
.   CLASS OF SERVICE DAY (P2)
.   CLASS OF SERVICE NIGHT (P3)
.   CLASS OF RESTRICTION DAY (P4)
.   CLASS OF RESTRICTION NIGHT (P5)

```
CMC = 221
P1: 4700   P4: 1
P2: 1      P5: 1
P3: 1
```

PROCEDURE (Continued).

3. ASSIGN DATA ATTRIBUTES OF DIU WITH CMC-222:

   - DIRECTORY NUMBER OF DATA STATION (PI)
   . DATA SPEED (P2)
   - SYNCHRONIZATION AND COMMUNICATION (P3)
   . WORD STRUCTURE (P4)
   ', PARITY (P5)
   - ECHOPLEX (P6)

```
CMC = 222
P1: 4700      P4: 1
P2: 5         P5: 3
P3: 3
```

4. ASSIGN DATA ATTRIBUTES AND RS-232-C INTERFACE FOR DIU WITH CMC-223:

   . DIRECTORY NUMBER OF DATA DIU (P1)
   . CALL CONTROL MODE (P2)
   . RS-232-C INTERFACE SIGNAL MODE 1 (P3)
   - RS-232-C INTERFACE SIGNAL MODE 2 (P4)

```
CMC = 223
P1: 4700      P4: 1
P2: 010
P3:
```

5. ASSIGN DATA ATTRIBUTES, TENANT GROUP, AND METERING GROUP TO DIU WITH CMC-224:

   . DIRECTORY NUMBER OF DATA DIU (P1)
   - CALL OPERATION MODE (P2)
   - DIAL MODE (P3) ▪ (BLANK)
   - TENANT NUMBER (P4)
   - METERING GROUP (P5)

```
CMC = 224
P1:  4700   P4:
P2: 1       P5:
P3: 0
```

# Data Interface Unit (DIU) Programming (Continued)

## PROCEDURE (Continued)

6. ASSIGN DIU DATA STATION TO HUNT GROUP WITH CMC-301:

    . STATION HUNTING GROUP NUMBER (P1) - (51 - 60)
    • TERMINATING ORDER (P2)
    . DIRECTORY NUMBER OF DATA STATION (P3)
    . HUNTING TYPE (P4)

```
CMC = 301
P1: 51          P4: 1
P2: 1
P3: 4700
```

7. ASSIGN DIU DATA STATIONS TO HOT LINE SERVICE WITH CMC-304:

    • HOT LINE NUMBER (P1) - (51 - 90)
    . ORIGINATING DATA STATION (DIRECTORY NUMBER) - (P2)
    . TERMINATING DATA STATION DN (DIRECTORY NUMBER) - (P3)

```
CMC = 304
P1: 51
P2: 4700
P3: 7401
```

# Data Interface Unit (DIU) Programming — CMC Command Summary

**GTE**

*GTE OMNI SBCS*

| CATEGORY | CMC TABLE | FUNCTION |
|---|---|---|
| . DATA STATION ASSIGNMENT | CMC-220 | INSTALLS OR REMOVES DIU AS DATA STATION WITH ITS ASSOCIATED DIRECTORY NUMBERS |
| . DATA STATION COS/COR ASSIGNMENT | CMC-221 | CHANGES DATA STATION'S COS/COR ASSIGNMENT |
| ● DATA STATION ATTRIBUTES ASSIGNMENT (I) | CMC-222 | ASSIGNS DATA STATION'S ATTRIBUTES INCLUDING DATA SPEED, SYNCHRONI-ZATION AND COMMUNCATIONS WORD STRUCTURE, PARITY, AND ECHOPLEX |
| ● DATA STATION'S ATTRIBUTES ASSIGNMEMTS (II) AND RS-232-C SIGNAL MODES | CMC-223 | ASSIGNS DATA STATION'S ATTRIBUTES INCLUDING CALL CONTROL MODE AND RS-232-C INTERFACE SIGNAL MODES |
| ● DATA STATION ATTRIBUTES ASSIGNMENT (III) | CMC-224 | ASSIGNS DATA STATIONS'S ATTRIBUTES INCLUDING OEPRATION MODE, DIAL MODE, TENANT NUMBER, AND METERING GROUP |
| ● DATA STATION HUNT GROUP ASSIGNMENT | CMC-301 | ASSIGNS DATA STATION HUNT GROUPS AND MEMBERS |
| ● DATA STATION HOT LINE ASSIGNMENT | CMC-304 | ASSIGNS DATA STATION HOT LINE SERVICE |

5.89

# Programming Data Interface Unit (DIU) Associated with CS-10/CS-20

GTE

## DESCRIPTION

. ALLOWS DIU ASSOCIATED WITH CS-10 OR CS-20 TO ESTABLISH DATA CALLS AND PROVIDE SAME OPERATION AS CSD WITH DATA TERMINAL ADAPTER (DTA).

## PROCEDURE

1. ASSIGN CS-10 OR CS-20 AS VOICE STATION ASSOCIATED WITH DIU WITH CMC-220:

   - EQUIPMENT NUMBER OF DATA STATION (P1)
   . DIRECTORY NUMBER OF DATA STATION (P2)
   . DATA TERMINAL TYPE (P3) ▪ (2 = DIU AND CS-10/CS-20)
   - DIRECTORY NUMBER OF VOICE STATION (P4)

```
CMC = 220
PI: 031        P4: 212
P2: 4702
P3: 2
```

2. ASSIGN DATA CALL BUTTON TO CS-20 OR CS-20 ASSOCIATED WITH DIU WITH CMC-203:

   . STATION DIRECTORY NUMBER (P1)
   . BUTTON NUMBER (P2)
   . FEATURE NUMBER (P3) — (185 = DATA CALL FEATURE NUMBER)
   . SUPPLEMENTARY DATA (P4) — (BLANK)
   . LINE TERMINATING TYPE (P5) — (BLANK)
   . RINGING MODE (P6) — (BLANK)

```
CMC = 203
P1:   212    P4:
P2: 4        P5:
P3:   185    P8:
```

# Programming Data Interface Unit (DIU) Associated with CS-10/CS-20

**GTE**

*GTE OMNI SBCS*

| CATEGORY | CMC TABLE | FUNCTION |
|---|---|---|
| . DATA STATION ASSIGNMENT | CMC-220 | INSTALLS OR REMOVES DIU WITH CS-20/CS-20 AS VOICE/DATA STATION WITH ITS ASSOCIATED DIRECTORY NUMBERS |
| ● EKT BUTTON ASSIGNMENT | CMC-203 | ASSIGNS DATA CALL BUTTON TO CS-10 OR CS-20 TELEPHONE ASSOCIATED WITH DIU |

## KEY TELEPHONE EKT BUTTON ARRANGEMENT
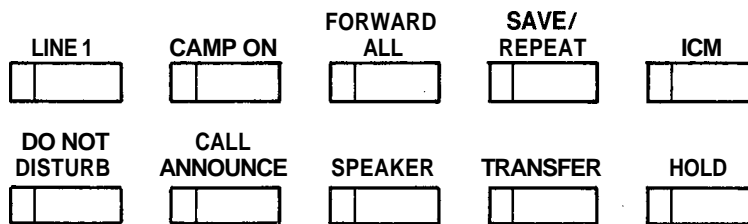
| LINE 1 | CAMP ON | FORWARD ALL | SAVE/ REPEAT | ICM |
|---|---|---|---|---|
| [ ] | [ ] | [ ] | [ ] | [ ] |

| DO NOT DISTURB | CALL ANNOUNCE | SPEAKER | TRANSFER | HOLD |
|---|---|---|---|---|
| [ ] | [ ] | [ ] | [ ] | [ ] |

**CS-10 BUTTON ASSIGNMENTS FOR TELEPHONES CONNECTED TO CARD SLOTS OTHER THAN 01**

| LINE 1 | CAMP ON | FORWARD ALL | SAVE/ REPEAT | ICM |
|---|---|---|---|---|
| [ ] | [ ] | [ ] | [ ] | [ ] |

| CALL ANNOUNCE | MUTE | SPEAKER- PHONE | TRANSFER | HOLD |
|---|---|---|---|---|
| [ ] | [ ] | [ ] | [ ] | [ ] |

**CS-20 BUTTON ASSIGNMENTS FOR TELEPHONES CONNECTED TO CARD SLOTS OTHER THAN 01**

| LINE 1 | TRUNK (IN) | FORWARD ALL | SAVE/ REPEAT | ICM |
|---|---|---|---|---|
| [ ] | [ ] | [ ] | [ ] | [ ] |

| DO NOT DISTURB | CALL ANNOUNCE | SPEAKER | TRANSFER | HOLD |
|---|---|---|---|---|
| [ ] | [ ] | [ ] | [ ] | [ ] |

**CS-10 BUTTON ASSIGNMENTS FOR TELEPHONES CONNECTED TO CARD SLOT 01**

| LINE 1 | TRUNK (IN) | FORWARD ALL | SAVE/ REPEAT | ICM |
|---|---|---|---|---|
| [ ] | [ ] | [ ] | [ ] | [ ] |

| CALL ANNOUNCE | MUTE | SPEAKER- PHONE | TRANSFER | HOLD |
|---|---|---|---|---|
| [ ] | [ ] | [ ] | [ ] | [ ] |
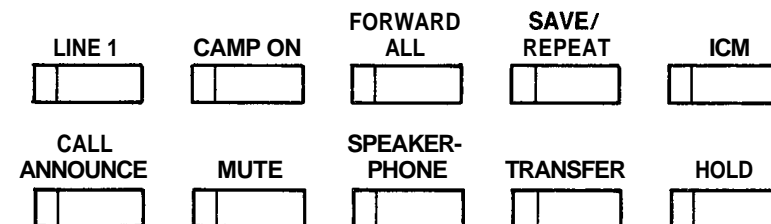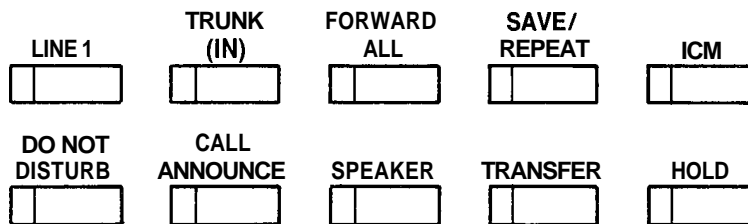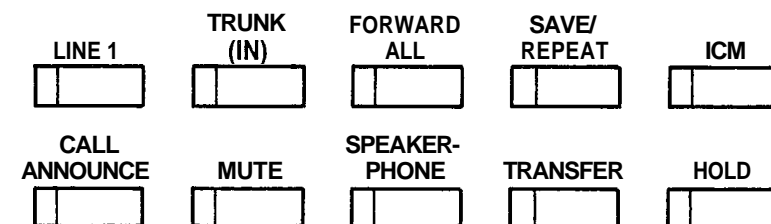
**CS-20 BUTTON ASSIGNMENTS FOR TELEPHONES CONNECTED TO CARD SLOT 01**

NOTE: TELEPHONES CONNECTED TO CARD SLOT 01 WILL RING ON ALL INCOMING CALLS (ANSWERING STATION).

# Laboratory Activity - Package C
# Data Base Adminstration (5.3)

## PART 1: ATTENDANT CONSOLE

1. TEST THE FOLLOWING ATTENDANT CONSOLE FEATURE BUTTONS (USING ATTENDANT CONSOLE USER'S GUIDE FOR REFERENCE):
   A.  COS/COR
   B. TRUNK  CAMP-ON
   C. EKT  STATION  PAGING
   D. MESSAGE  LEAVING
   E. ACCOUNT  CODE  ENTRY

2. USE CMC-231 TO PERFORM THE FOLLOWING TASKS:
   A.  IDENTIFY THE DEFAULT FEATURE ASSIGNED TO BUTTON 14 OF THE ATTENDANT CONSOLE.
   B.  REMOVE THE FEATURE FROM BUTTON 14 AND ASSIGN THE FDC PROGRAM FEATURE (WHICH WILL BE USED FOR HOTEL/MOTEL TASKS LATER IN THIS LABORATORY ACTIVITY).

3. USE CMC-233 TO ASSIGN ATTENDANT CONSOLE PRIORITIES FOR INCOMING CALL TERMINATION. ASSIGN LOW PRIORITY TO THE LOOP TIE TRUNK LINES AND HIGH PRIORITY TO THE E&M TIE TRUNK LINES. TEST THESE INCOMING CALL TERMINATION ASSIGNMENTS BY CALLING FROM TWO OF THE OTHER SYSTEMS, TO CONFIRM THAT ATTENDANT CONSOLE SELECTS PRIORITY BASED ON TRUNK GROUP.

4. USE CMC-306 TO COMPLETE THE FOLLOWING STEPS ASSOCIATED WITH CREATING AN ATTENDANT CONSOLE OVERFLOW  STATION.
   A.  CREATE A NIGHT ANSWER GROUP FOR THE ATTENDANT CONSOLE OVERFLOW STATION (PI = 1).
   B.  IDENTIFY NIGHT ANSWER GROUP AS A STATION (P2 = 1)
   C.  IDENTIFY THE EQUIPMENT NUMBER OF THE CS-20 STATION DESIGNATED TO SERVE AS THE ATTENDANT CONSOLE OVERFLOW STATION (P3 = 016), THEN ENTER THE ABOVE PARAMETER VALUES WITH THE ADD/CHANGE  FUNCTION  KEY.
   D.  CONTINUE TO USE CMC-306 TO ASSIGN ALL TENANTS TO THE NIGHT ANSWER GROUP JUST CREATED BY DESIGNATING THE FOLLOWING VALUES: Pi = 1, P2 = 3 (INDICATING TENANT), AND P3 = * (INDICATING ALL TENANTS). ENTER  THESE  PARAMETER  VALUES  WITH  THE  ADD/CHANGE  FUNCTION  KEY.
   E.  TEST THE OVERFLOW ASSIGNMENT BY ACTIVATING THE ATTENDANT CONSOLE'S 'POSITION BUSY' FEATURE BUTTON.   PLACE AN INCOMING CALL TO THE SYSTEM TO DEMONSTRATE THAT THE OVERFLOW STATION NOW RECEIVED THE CALLS INTENDED FOR THE ATTENDANT CONSOLE.

# Laboratory Activity - Package C Data Base Adminstration (5.3) (Continued)

**GTE**

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PART 2: HOTEL/MOTEL

1. USE CMC-203 TO ASSIGN THE CSD TELEPHONE (EQUIPMENT NUMBER 000) AS THE FRONT DESK CONSOLE.

2. USE CMC-204 TO SET FLAG WHICH WILL ASSIGN ALL LABORATORY 'STATIONS (EXCEPT PREVIOUSLY DESIGNATED CSD/FDC) AS GUEST ROOMS.

3. USE CMC-354 TO ASSIGN THE BLF/DSS MODULE (EQUIPMENT NUMBER 015) AS A ROOM STATUS INDICATOR MODULE.

4. USE CMC-355 TO ASSIGN HOTEL/MOTEL ROOMS (STATION DIRECTORY NUMBERS) TO BUTTONS ON THE ROOM STATUS INDICATOR MODULE.

5. USE CMC-356 TO ASSOCIATE THE HOTEL/MOTEL PRINTER WITH A 4CHT CIRCUIT (EQUIPMENT NUMBER 090) AND A DIU DIRECTORY NUMBER (202).

6. ASSIGN THE HOTEL/MOTEL PRINTOUT MESSAGE ALLOCATION WITH CMC-357, USING THE FOLLOWING PARAMETER VALUES:
   INDEPENDENT MESSAGES —
       P1 = 1
       P2 = 1 (INDICATING INDEPENDENT MESSAGES)
       P3 = 01 (TAKING MESSAGES FROM THE ATTENDANT CONSOLE)
   COMMON MESSAGES —
       PI = 1
       P2 = 2 (INDICATING COMMON MESSAGES)
       P3 = BLANK

7. USE CMC-350 TO ASSIGN THE MESSAGE REGISTRATION TRUNK GROUP NUMBER. MAKE ALL CO TRUNKS (TGN 13) SUBJECT TO HOTEL/MOTEL MESSAGE REGISTRATION.

8. USE CMC-351 TO ASSIGN MESSAGE REGISTRATION BILLING RATE NUMBER 1 TO THE FOLLOWING OFFICE CODES: 227, 476, AND 892.

# Laboratory Activity - Package C Data Base Adminstration (5.3) (Continued)

GTE

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9. **USE CMC-352 TO ASSIGN THE FOLLOWING BILLING RATES FOR BILLING RATE NUMBER 1:**

   **INITIAL TIME FOR TELEPHONE CALL (P2) = 20 SECONDS**
   **INITIAL CHARGE FOR TELEPHONE CALL (P3) = 50 CENTS**
   **ADDITIONAL TIME FOR TELEPHONE CALL (P4) = 60 SECONDS**
   **ADDITIONAL CHARGE FOR TELEPHONE CALL (P5) = 30 CENTS**

10. **USE CMC-100 TO CREATE NEW ACCESS CODES FOR THE FOLLOWING HOTEL/MOTEL CODES:**

    **FNO 73 — GUEST ROOM CLEAN-UP**
    **FNO 78 — WAKE-UP REGISTRATION**
    **FNO 79 — WAKE-UP CANCELLATION**
    **FNO 96 — SERVICE CALL ROUTING #1**
    **FNO 97 — SERVICE CALL ROUTING #2**
    **FNO 98 — SERVICE CALL ROUTING #3**

    **ENSURE THAT NEW CODES DO NOT CONFLICT WITH EXISTING SYSTEM ACCESS CODES.**

11. **USE CMC-353 TO ASSIGN SERVICE CODE DESTINATIONS TO THE SERVICE CALL FEATURE ACCESS CODES (PREVIOUSLY ASSIGNED). ASSIGN THE FOLLOWING PARAMETER VALUES:**

    **P1 = (USE ACCESS CODES ASSIGNED TO FNO 96, 97, AND 98)**
    **P2 = 1 (INDICATING SPECIAL SERVICE)**
    **P3 = 200 (DESTINATION DIRECTORY NUMBER)**
    **P4 = BLANK**

5.96

# Laboratory Activity - Package C Data Base Adminstration (5.3) (Continued)

**PART 3: DIRECT INWARD DIALING**

1. PRIOR TO PROGRAMMING, EMULATE A DID LINE BY PUNCHING THE TIP/RING WIRES FROM A SLT TO THE TIP/RING WIRES OF A LOOP TIE TRUNK CIRCUIT (USE EQUIPMENT NUMBER 160).

2. USE THE CMC-250 TO ASSIGN A DID TRUNK USING THE FOLLOWING PARAMETER VALUES:

   EQUIPMENT NUMBER (PI) = 160
   TYPE OF TRUNK (P2) = 13 (LOOP DIAL)
   TRUNK GROUP NUMBER (P3) = 57
   OPERATION MODE (P4) = 1 (INCOMING)
   SIGNALING (P5) = 1 (FIXED)
   START MODE (P6) = 3 (IMMEDIATE)

3. ASSIGN COS/COR TO THE DID TRUNK LINE WITH CMC-252, USING THE FOLLOWING PARAMETERS VALUES:

   TRUNK GROUP NUMBER (PI) = 57
   DAY COS (P2) = 1
   NIGHT COS (P3) = 16
   DAY COR (P4) = 1
   NIGHT COR (P5) = 16

4. ASSIGN THE RECEIVED DIGIT LENGTH AND PREFIX CODE TO THE DID TRUNK WITH CMC-430, USING THE FOLLOWING PARAMETER VALUES:

   TRUNK GROUP NUMBER (PI) = 57
   RECEIVED DIGIT LENGTH (P2) = 3 (RECIEVED DIGIT LENGTH FROM CO PROVIDING DID)
   PREFIX CODE (P3) = BLANK
   DISA DIRECTORY NUMBER = 123 (SIMULATED)
   DISA AUTHORIZATION CODE = 456 (SIMULATED)

# Laboratory Activity - Package C Data Base Adminstration (5.3) (Continued)

**GTE**

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PART 4:   KEY SYSTEM FEATURES

1. REMOVE  ATTENDANT  CONSOLE.

2.   COLD RESTART THE SYSTEM.

3.   CHECK/CONFIRM  KEY  SYSTEM  FEATURE  CHANGES  ON  EKT  INSTRUMENT  BUTTONS.

# Review Exercise - Package C
# Data Base Adminstration (5.3)

INSTRUCTIONS: THE FOLLOWING EXERCISE CONSISTS OF MULTIPLE CHOICE, TRUE/FALSE, FILL IN THE BLANK, OR MATCHING TYPE QUESTIONS. ALL AVAILABLE RESOURCES (I.E., STUDENT WORKBOOK, NOTES, AND GTEP MANUAL) MAY BE USED AS REFERENCES. SUBMIT EXERCISE TO INSTRUCTOR FOR GRADING WHEN LAST QUESTION HAS BEEN COMPLETED.

1. WHAT INSTALLATION OR DATA BASE PROGRAMMING STEPS ARE REQUIRED TO ALLOW A PREVIOUSLY INSTALLED BLF/DSS MODULE TO FUNCTION AS A ROOM STATUS INDICATOR?

   _____

   _____

   _____

2. _____ (TRUE OR FALSE) A TRUNK GROUP WITH AN INCOMING CALL TERMINATION PRIORITY OF 1 WOULD BE ANSWERD BY THE ATTENDANT CONSLE BEFORE ANOTHER TRUNK GROUP WITH A PRIORITY OF 3.

3. CMC-_____ IS USED TO CREATE A NIGHT ANSWER GROUP FOR AN ATTENDANT CONSOLE OVERFLOW STATION, THEN TO ASSIGN "ALL TENANTS" TO BE ANSWERED BY THE OVERFLOW STATION.

4. THE _____ FEATURE BUTTON MUST BE ASSIGNED TO EITHER THE ATTENDANT CONSOLE OR CSD DESIGNATED TO SERVE AS THE HOTEL/MOTEL FRONT DESK CONSOLE.

5. "AUTOMATIC WAKE-UP REGISTRATION/CANCELLATION BY GUEST ROOM" IS AN EXAMPLE OF A _____ MESSAGE WHICH CAN BE RECORDED BY THE HOTEL/MOTEL PRINTER.

6. THE DTMF AUTHORIZATION CODE REQUIRED BY DISA USERS IS ASSIGNED WITH CMC-_____

5.99

# Review Exercise - Package C Data Base Adminstration (5.3) (Continued)

7. CMC-430 ASSIGNS DISA DIRECTORY NUMBERS AND AN AUTHORIZATON CODE TO A _____ TRUNK LINE.

8. A CS-10 OR CS-20 WHICH WILL SERVE AS A VOICE STATION ASSOCIATED WITH A DIU MUST BE ASSIGNED WITH CMC-_____, AND HAVE THE _____ FEATURE BUTTON ASSIGNED WITH CMC-203.

9. EKT INSTRUMENTS CONNECTED TO CARD SLOT _____ RING ON ALL INCOMING CALLS IN A KEY TELEPHONE BUTTON ARRANGEMENT.

10. MATCH EACH OF THE FOLLOWING CMC COMMANDS WITH ITS CORRECT FUNCTION:

_____ CMC-223          A. ASSIGNS TRUNK COS/COR TO DID TRUNKS

_____ CMC-355          B. ASSIGNS DISA STANDARD TO A GROUND STRAT TRUNK

_____ CMC-252          C. ASSIGNS GUEST ROOM NUMBERS TO ROOM STATUS INDICATOR LAMPS

_____ CMC-231          D. ASSIGNS ATTENDANT CONSOLE SERVICES TO FEATURE BUTTONS

_____ CMC-250          E. ASSIGNS DATA STATION ATTRIBUTES (III) AND RS-232-C SIGNAL MODES

GTE

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# PACKAGE C
# MAINTENANCE

# 5.4 Enabling Objective

GIVEN:
- GTE OMNI SBCS
- GTE OMNI SBCS PACKAGE C EQUIPMENT AND PERIPHERALS
- ATTENDANT CONSOLE (ASSIGNED AS MASTER CONTROL TELEPHONE IN DATA BASE)
- GTE OMNI SBCS COURSE AND SITE DOCUMENTATION PACKAGE
- REVIEW EXERCISE

ACTION:
- USE ATTENDANT CONSOLE AS AN ALTERNATE MASTER CONTROL TELEPHONE FOR DATA BASE ADMINSTRATION AND MAINTENANCE TASKS.
- IDENTIFY FUNCTIONSAND APPLICATIONS OF PACKAGE C CMC MAINTENANCE COMMANDS.
- MODIFY PARAMETER VALUES FOR PACKAGE C CMC MAINTENANCE COMMANDS.
- USE ATTENDANT CONSOLE AND DATA INTERFACE UNIT DIAGNOSTIC TESTS TO IDENTIFY INSTRUMENT MALFUNCTIONS.
- COMPLETE REVIEW EXERCISE.

CRITERIA:
- TASKS WILL BE PERFORMED IN ACCORDANCE WITH PROCEDURES OUTLINED IN OMNI SBCS GTEP MANUAL AND OMNI SBCS STUDENT WORKBOOK.
- REVIEW EXERCISE WILL BE COMPLETED CORRECTLY IN ACCORDANCE WITH PASS/FAIL CRITERIA OF THIS TRAINING ORGANIZATION.

# Attendent Console Assignment as Master Control Telephone

**GTE**

*GTE OMNI SBCS*

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### DESCRIPTION

. A MAXIMUM OF TWO ATTENDANT CONSOLES CAN BE IDENTIFIED IN SYSTEM AS HAVING MASTER CONTROL TELEPHONE (MCT) CAPABILITIES FOR DATA BASE ADMINSTRATION AND MAINTENANCE ACTIVITIES.

. ATTENDANT CONSOLE FIRST MUST BE PLACED IN THE POSITION BUSY MODE TO FUNCTION AS AN MCT.

### PROCEDURE

1. ASSIGN OR CANCEL ATTENDANT CONSOLE DIRECTORY NUMBER AS MCT WITH CMC-702:

    . MCT NUMBER (P1) - (1 - 4)

    . DIRECTORY NUMBER OF MCT ATTENDANT CONSOLE (P2) (ATTENDANT CONSOLE ACCESS (0) + ATTENDANT CONSOLE NUMBER)

```
CMC = 702
P1: 4
P2: 01
```

NOTE: ATTEMPTS TO DELETE THE MCT BEING USED TO MAKE ENTRIES WILL BE DENIED BY DATA BASE.

5.103
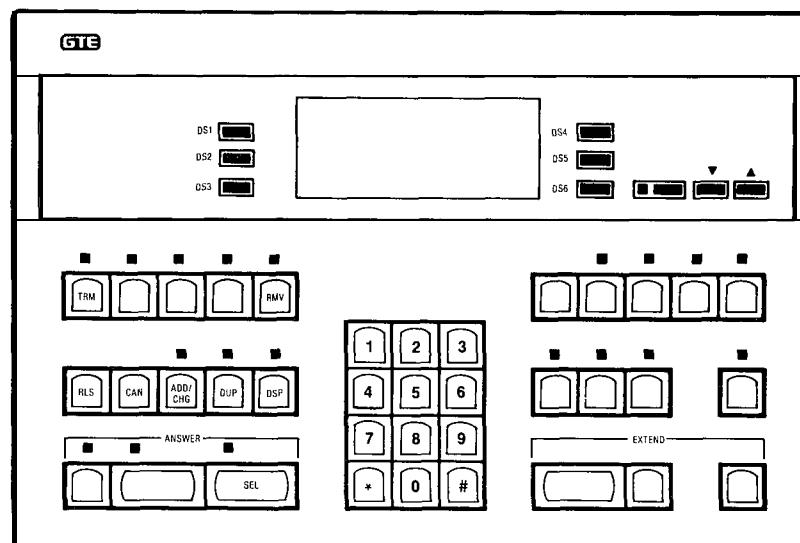
PROCEDURE

1. PLACE ATTENDANT CONSOLE IN POSITION BUSY MODE BY DEPRESSING THE POSITION BUSY FEATURE BUTTON. ANY CALLS IN PROCESS MUST BE CLEARED BEFORE POSITION BUSY MODE CAN BE ACTIVATED.

2. ENTER APPROPRIATE HIGH OR LOW LEVEL SECURITY CODE USING KEYBOARD OF ATTENDANT CONSOLE (PREVIOUSLY ASSIGNED AS MCT) WHILE ON-HOOK AND IN IDLE STATE.

3. AT COMMAND PROMPT, ENTER APPROPRIATE CMC COMMAND AND PRESS SELECT (ATTENDANT CONSOLE'S DEFAULT INCOMING FEATURE BUTTON).

4. ENTER PARAMETER VALUES USING ATTENDANT CONSOLE'S NUMERIC KEYPAD AND DESIGNATED PROGRAM FUNCTION BUTTONS (ILLUSTRAED ABOVE).

5. PRESS RELEASE, THEN TERMINATE PROGRAM FUNCTION BUTTONS. PRESS POSITION BUSY FEATURE BUTTON TO RETURN TO NORMAL CALL PROCESSING MODE AS AN ATTENDANT CONSOLE.

5.104

# Student Notes

**GTE**

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# Attendent Console
# Instrument Diagnostics ═══════ GTE

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## DESCRIPTION

. ATTENDANT CONSOLE MUST BE TESTED OFF-LINE.

● THE FOLLOWING TESTS CAN BE PERFORMED:

   — BUTTON AND KEYPAD TEST
   — LED LAMP TEST
   — LCD DISPLAY TEST
   — AUDIBLE TONE TEST

## PROCEDURE

1. UNPLUG TELEPHONE CORD FROM MODULAR JACK IN BACK OF ATTENDANT CONSOLE.

2. PRESS 1 and 3 KEYS SIMULTANEOUSLY.

3. PLUG TELEPHONE CORD INTO MODULAR JACK WHILE KEEPING THE 1 AND 3 KEYS PRESSED.

4. WHEN STEP 3 IS COMPLETED, PRESS ANY KEY TO ELIMINATE INITIAL SIGNAL (INDICATING INSTRUMENT IS IN DIAGNOSTIC MODE WITH ALL LED LAMPS FLASHING AND TONE RINGER SOUNDING).

5. PRESS APPROPRIATE TEST EXECUTION KEYS (REFER TO TABLES ON FOLLOWING PAGES) AND MONITOR VISUAL AND AUDIBLE RESULTS. IF RESULTS VARY FROM THOSE LISTED, RETURN DEFECTIVE INSTRUMENT FOR REPAIR.

6. TO RETURN TO NORMAL CALL PROCESSING MODE, REMOVE TELEPHONE CORD AND THEN REPLACE IN MODULAR JACK.

# Attendant Console
# Diagnsstics (Continued)

**GTE**

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## ATTENDANT CONSOLE TEST BUTTON ARRANGEMENT

| | | |
|---|---|---|
| SK1 | | SK4 |
| SK2 | | SK5 |
| SK3 | | SK6 FK31 ▽ VOL △ |

○ ○ ○ ○ ○      ○ ○ ○ ○

| FK21 | FK22 | FK23 | FK24 | FK25 |
|------|------|------|------|------|

| DROP/CNCL | FK26 | FK27 | FK28 | FK29 |
|-----------|------|------|------|------|

| 1 | 2 | 3 |
|---|---|---|
| 4 | 5 | 6 |
| 7 | 8 | 9 |
| * | 0 | # |

○ ○ ○

| FK16 | FK17 | FK18 | FK19 | FK20 |
|------|------|------|------|------|

○ ○ ○     ○

| SRCE | DEST | CONF/JOIN | FK30 |
|------|------|-----------|------|

**ANSWER**

○ ○ ○

| STA | RECALL | INCOMING |
|-----|--------|----------|

| POS. RLSE | SUP HOLD | SEP. LOCK |
|-----------|----------|-----------|

5.107
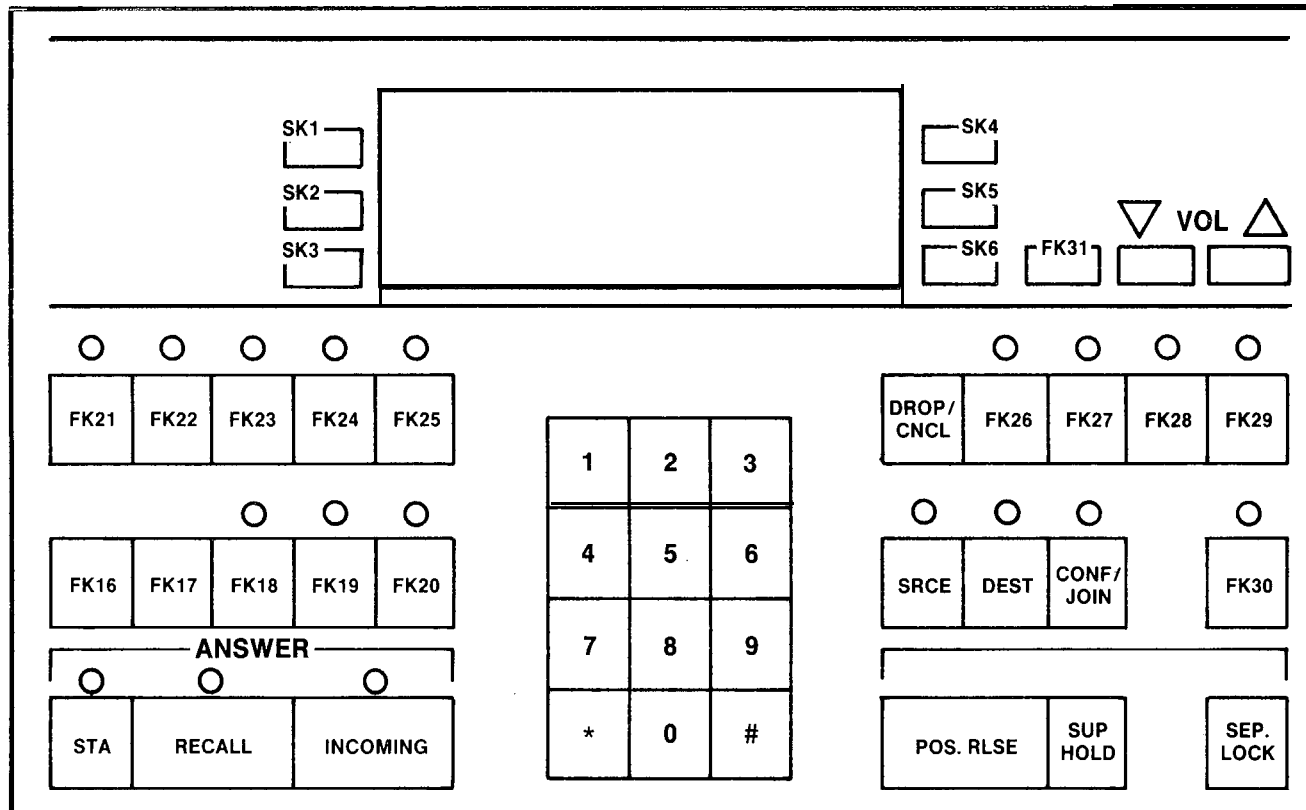
# Attendant Console Test Execution

**GTE**

*GTE OMNI SBCS*

## ATTENDANT CONSOLE NUMERIC KEYPAD TEST

**KEY PRESSED**                                                    **FUNCTION**

**KEYPAD:**

| | |
|---|---|
| 1 | STOP RINGING, DISPLAY SHOWS 1 ON THE LCD |
| 2 | START RINGING IN PATTERN 1, DISPLAY SHOWS 2 ON THE LCD |
| 3 | START RINGING IN PATTERN 2, DISPLAY SHOWS 3 ON THE LCD |
| 4 | START RINGING IN PATTERN 3, DISPLAY SHOWS 4 ON THE LCD |
| 5 | START RINGING IN PATTERN 4, DISPLAY SHOWS 5 ON THE LCD |
| 6 | START RINGING IN PATTERN 5, DISPLAY SHOWS 6 ON THE LCD |
| 7 | START RINGING IN PATTERN 6, DISPLAY SHOWS 7 ON THE LCD |
| 8 | START RINGING IN PATTERN 7, DISPLAY SHOWS 8 ON THE LCD |
| 9 | START RINGING IN PATTERN 8, DISPLAY SHOWS 9 ON THE LCD |
| 0 | ASSOCIATED LAMP FLASHES IN PATTERN 5, DISPLAY SHOWS 0 ON THE LCD |
| # | ASSOCIATED LAMP FLASHES IN PATTERN 6, DISPLAY SHOWS # ON THE LCD |
| * | ASSOCIATED LAMP FLASHES IN PATTERN 7, DISPLAY SHOWS * ON THE LCD |

# Attendant Console Test Execution (Continued)

## ATTENDANT CONSOLE FUNCTION KEY TEST

FUNCTION
KEY:

FK16    DISPLAY SHOWS @ ON THE LCD
FK17    DISPLAY SHOWS A ON THE LCD
FK18    ASSOCIATED LAMP FLASHES IN PATTERN 4, DISPLAY SHOWS B ON THE LED
FK19    ASSOCIATED LAMP FLASHES IN PATTERN 4, DISPLAY SHOWS C ON THE LED
FK20    ASSOCIATED LAMP FLASHES IN PATTERN 4, DISPLAY SHOWS D ON THE LED
FK21    ASSOCIATED LAMP FLASHES IN PATTERN 4, DISPLAY SHOWS E ON THE LED
FK22    ASSOCIATED LAMP FLASHES IN PATTERN 4, DISPLAY SHOWS F ON THE LED
FK23    ASSOCIATED LAMP FLASHES IN PATTERN 4, DISPLAY SHOWS G ON THE LED
FK24    ASSOCIATED LAMP FLASHES IN PATTERN 4, DISPLAY SHOWS ALL DOT PATTERN ON THE LED
FK25    ASSOCIATED LAMP FLASHES IN PATTERN 4, DISPLAY SHOWS ALL BLANK PATTERN ON THE LED
FK26    ASSOCIATED LAMP FLASHES IN PATTERN 4, DISPLAY SHOWS J ON THE LED
FK27    ASSOCIATED LAMP FLASHES IN PATTERN 4, DISPLAY SHOWS K ON THE LED
FK28    ASSOCIATED LAMP FLASHES IN PATTERN 4, DISPLAY SHOWS L ON THE LED
FK29    ASSOCIATED LAMP FLASHES IN PATTERN 4, DISPLAY SHOWS M ON THE LEQ
FK30    ASSOCIATED LAMP FLASHES IN PATTERN 4, DISPLAY SHOWS N ON THE LED
FK31    ASSOCIATED LAMP FLASHES IN PATTERN 4, DISPLAY SHOWS 0 ON THE LED

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## ATTENDANT CONSOLE FUNCTION KEY TEST

KEYPRESSED                                                          FUNCTION

FUNCTION
KEY:

| | |
|---|---|
| STA | ASSOCIATED LAMP FLASHES IN PATTERN 4, DISPLAY SHOWS P ON THE LED |
| RECALL | ASSOCIATED LAMP FLASHES IN PATTERN 4, DISPLAY SHOWS Q ON THE LED |
| INCOMING | ASSOCIATED LAMP FLASHES IN PATTERN 4, DISPLAY SHOWS R ON THE LED |
| POS.RLSE | DISPLAY SHOWS S ON LCD |
| SUP/HOLD | DISPLAY SHOWS T ON LCD |
| SER/LOCK | DISPLAY SHOWS U ON LCD |
| SRCE | ASSOCIATED LAMP FLASHES IN PATTERN 4, DISPLAY SHOWS V ON THE LED |
| DEST | ASSOCIATED LAMP FLASHES IN PATTERN 4, DISPLAY SHOWS W ON THE LED |
| CONF/JOIN | ASSOCIATED LAMP FLASHES IN PATTERN 4, DISPLAY SHOWS X ON THE LED |
| DROP/CNCL | DISPLAY SHOWS Y ON LCD |
| VOL UP | ALL LEDS FLASH N PATTERN 1, DISPLAY SHOWS CONTROLLING OF VOLUME ON LCD-MAKE RECEIVER VOLUME LOUDER |
| VOL DOWN | ALL LEDS FLASH IN PATTERN 4, DISPLAY SHOWS CONTROLLING OF VOLUME ON LCD-MAKE RECEIVER VOLUME SOFTER |
| SK1 | LED ASSOCIATED WITH FK18 FLASHES IN PATTERN 4 |
| SK2 | LED ASSOCIATED WITH FK19 FLASHES IN PATTERN 4 |
| SK3 | LED ASSOCIATED WITH FK20 FLASHES IN PATTERN 4 |
| SK4 | LED ASSOCIATED WITH FK21 FLASHES IN PATTERN 4 |
| SK5 | LED ASSOCIATED WITH FK22 FLASHES IN PATTERN 4 |
| SK6 | LED ASSOCIATED WITH FK23 FLASHES IN PATTERN 4 |

**GTE**

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## ATTENDANT CONSOLE TEST LAMP PATTERNS

| LAMP PATTERN INDICATOR | PATTERN |
|---|---|
| 0 | 0.125 SEC. ON, 0.125 SEC. OFF |
| 1 | 0.5 SEC. ON, 0.5 SEC. OFF |
| 2 | 0.125 SEC. OFF, 0.125 SEC. ON, 0.125 SEC. OFF, 0.125 SEC. ON, 1.625 SEC. OFF |
| 3 | 0.125 SEC. OFF, 1.875 SEC. ON |
| 4 | STEADY ON |
| 5 | STEADY OFF |
| 6 | 0.125 SEC. ON, 0.125 SEC. OFF, 0.125 SEC. ON, 0.125 SEC. OFF, 1.625 SEC. ON |
| 7 | 1 SEC. ON, 1 SEC. OFF |

# Data Interface Unit Diagnostics

### DESCRIPTION

- DATA INTERFACE UNIT (DIU) MUST BE TESTED OFF-LINE.

- THE FOLLOWING TESTS CAN BE PERFORMED:

  - INITIAL CONDITION TEST
  - CALL BUTTON TEST
  - TEST SWITCH TEST
  - DTE/DCE MODE SWITCH TEST

### PROCEDURE

1. SET DIU'S TEST SWITCH TO ON POSITION, THEN SET DTE/DCE SWITCH TO DCE SIDE.

2. UNPLUG CORD FROM MODULAR JACK IN BACK OF DIU.

3. PRESS CALL BUTTON WHILE SIMULTANEOUSLY PLUGGING CORD INTO MODULAR JACK IN BACK OF DIU.

4. PRESS APPROPRIATE DIU TEST EXECUTION KEYS (REFER TO TABLE ON FOLLOWING PAGE) AND MONITOR VISUAL AND AUDIBLE RESULTS.

# Data Interface Unit Test Execution

**GTE**

*GTE OMNI SBCS*

DATA INTERFACE UNIT TEST

| TEST ITEM | FUNCTION |
|-----------|----------|
| INITIAL CONDITION | RINGING START IN PATTERN 4<br>POW LAMP FLASHES IN PATTERN 1<br>TEST LAMP INDICATES ON<br>CALL LAMP FLASHES IN PATTERN 7<br>MI/MIC SIGNAL IS SET TO OFF |
| PRESS CALL BUTTON | CALL LAMP FLASHES, CHANGING IN PATTERNS FROM 0 TO 7<br>RINGING STARTS, CHANGING IN PATTERNS FROM 0 TO 7 |
| TEST SWITCH | TEST LAMP GOES ON WHEN SWITCH IS SET TO ON, TEST LAMP GOES OFF WHEN SWITCH IS SET TO OFF |
| DTE/DCE SWITCH MODE | IN DCE MODE, MI/MIC SIGNAL GOES OFF, AND POW LAMP FLASHES IN PATTERN 1<br>IN DTE MODE, MI/MIC SIGNAL GOES ON, AND POW LAMP FLASHES IN PATTERN 2 |

NOTE: CALL BUTTON, TEST SWITCH, AND DTE/DCE MODE SWITCH TEST OPERATIONS ARE INDEPENDENT

# Hotel/Motel Printer Busy Assignment

**GTE**

*GTE OMNI SBCS*

## DESCRIPTION

- **PLACES HOTEL/MOTEL PRINTER OUT OF SERVICE (MADE BUSY) WHILE MAINTENANCE PROCEDURES ARE BEING PERFORMED.**

- **SAME COMMAND IS USED TO RESTORE SERVICE TO HOTEL/MOTEL PRINTER.**

## PROCEDURE

1. **USE CMC-706 TO MAKE HOTEL/MOTEL PRINTER BUSY OR RETURN IT TO SERVICE:**

   - **PRINTER NUMBER (PI) - (1 OR 2)**

   - **MAKE BUSY OR PUT IN SERVICE FLAG (P2) - (0 = IN SERVICE; 1 = MAKE BUSY).**

# Character Trunk (CHT) Loop Test

## DESCRIPTION

. PERFORMS LOOP TEST WITHIN 4CHT CARD AND BETWEEN 4CHT CARD AND DIU/DTA.

. TEST CHECKS FOR TRANSMISSION TIMING OUT, PARITY ERRORS, OVERRUN ERRORS, FRAMING ERRORS, CHT STATUS DISAGREEMENT, TRANSMISSION AND RECEPTION CHARACTERS, AND RECEPTION TIMING OUT.

## PROCEDURE

1. USE CMC-810 TO ENTER PARAMETERS REQUIRED TO PERFORM LOOP TEST WITHIN 4CHT CARD:

   - TEST TYPE (P1) - (0 = LOOP TEST WITHIN 4 CHT;
     1 = LOOP TEST BETWEEN 4CHT AND DIU/DTA)
   . CHARACTER TRUNK EQUIPMENT NUMBER (P2)
   . DIU/DTA DIRECTORY NUMBER (P3) - (1 - 4 DIGITS; TTP = 1)
   . TEST RESULT 1 (P4)
   . TEST RESULT 2 (P5)

2. PRESS DISPLAY TO PERFORM TEST. RESULTS ARE DISPLAYED IN P4 AND P5.

3. FOR LOOP TEST BETWEEN 4CHT AND DIU/DTA, SET DIU/DTA TEST SWITCH TO ON POSITION.

NOTE: REFER TO TABLE ON FOLLOWING PAGE FOR PARAMETER 4 AND 5 TEST RESULT MEANINGS AND POSSIBLE CMC ERRORS.

# Character Trunk (CHT) Loop Test (Continued)

**GTE**

## LOOP TEST RESULT MEANINGS

### P4 VALUE

**ANS2 (3 DIGITS)**

FIRST DIGIT:    O/I TO 9 = NORMAL/CHT STATUS DISAGREEMENT (NUMBER OF OCCURRENCES)

SECOND DIGIT:    0/1 TO 9 = NORMAL/DISAGREEMENT OF TRANSMISSION AND RECEPTION CHARACTERS (NUMBER OF OCCURRENCES)

THIRD DIGIT:    0/1 TO 9 = NORMAL/RECEPTION TIMING OUT (NUMBER OF OCCURRENCES)

### P5 VALUE

**ANSI (4 DIGITS)**

FIRST DIGIT:    O/I TO 9 = NORMAL/TRANSMISSION TIMING OUT (NUMBER OF QCCURRENCES)

SECOND DIGIT:    0/1 TO 9 = NORMAL/PARITY ERROR (NUMBER OF OCCURRENCES)

THIRD DIGIT:    0/1 TO 9 = NORMAL/OVERRUN ERROR (NUMBER OF OCCURRENCES)

FOURTH DIGIT:    0/1 TO 9 = NORMAL/FRAMING ERROR (NUMBER OF OCCURRENCES)

# Character Trunk (CHT) Loop Test (Continued)

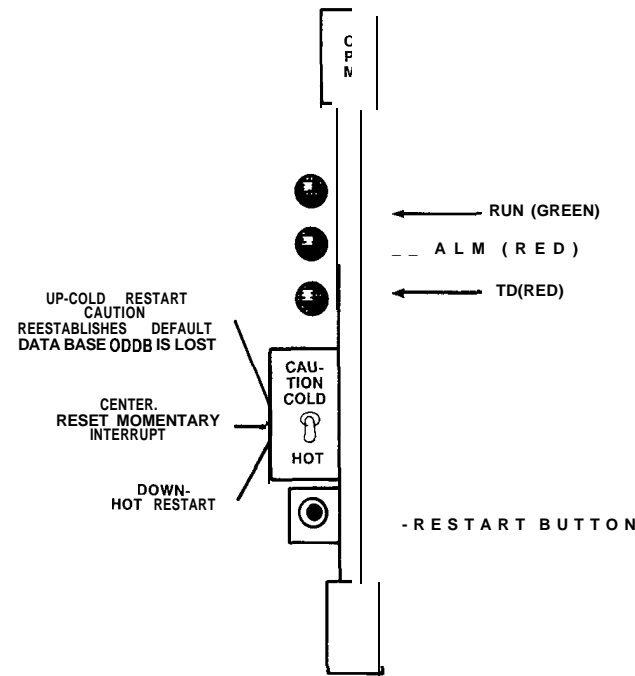## CMC-810 ERROR MESSAGES

NOT RGTR      =  SPECIFIED EQUIPMENT NUMBER HAS NOT BEEN
                 INSTALLED: CHECK PARAMETERS.

DISAGREE      =  (1) DISAGREEMENT OF TERMINAL TYPES; CHECK
                  PARAMETERS.
                 (2) SYNCHRONOUS MODE IS SET ON DIU/DTA; CHECK
                     PARAMETERS.

DENIED 20     –  HOTEL/MOTEL PRINTER IS BEING CONNECTED; RELEASE
                 PRINTER.

NOT EXEC      =  4CHT CARD OR DIU/DTA IS FAULTY OR HAS BEEN MADE
                 BUSY. CHT LOOP TEST IS DISABLED DURING A FAULT. IF
                 PRINTER IS BUSY, PLACE IN SERVICE WITH CMC-706.

# Expanded System Maintenance —
# Controls and Indicators

**GTE**

*GTE OMNI SBCS*

CPN

UP-COLD  RESTART
CAUTION
REESTABLISHES    DEFAULT
DATA BASE ODDB IS LOST

CENTER.
RESET  MOMENTARY
INTERRUPT

DOWN-
HOT  RESTART

CAU-
TION
COLD

HOT

RUN (GREEN)

A L M  ( R E D )

TD(RED)

- R E S T A R T  B U T T O N

- SYSTEM RESTARTS (COLD, HOT, AND RESET) ARE PERFORMED MANUALLY USING TOGGLE SWITCH ON CPM CARD IN BASIC CABINET.

- SYSTEM STATUS FOR BOTH CABINETS IS INDICATED BY INDICATOR LAMPS ON CPM CARD IN BASIC CABINET.

# Expanded System Maintenance —
# Alarm States

**GTE**

*GTE OMNI SBCS*

MAJOR ALARMS —

. POWER FAILURE TRANSFER MODE IN BASIC CABINET:
  — ENTIRE SYSTEM IS INOPERABLE
  — RUN LAMP IS OUT

● POWER FAILURE TRANSFER MODE IN EXPANDED CABINET:
  — ONLY EXPANSION CABINET IS INOPERABLE
  — ALARM LAMP IS LIT

● DEFECTIVE SWB CARD IN BASIC CABINET:
  — ENTIRE SYSTEM IS INOPERABLE
  — RUN LAMP IS OUT

● DEFECTIVE SWE CARD IN EXPANDED CABINET:
  — ONLY EXPANSION CABINET IS INOPERABLE
  — ALARM LAMP IS LIT

MINOR ALARM —

● ALL SELF DIAGNOSTIC TESTS ARE PERFORMED FOR ENTIRE SYSTEM
  — ALARM LAMP IS LIT
  — FAULT IS LOGGED INTO MEMORY (REFER TO CMC-800)

# Expanded System Maintenance — Power Failure Transfer Activation

**GTE**

*GTE OMNI SBCS*

. SIX POWER FAILURE TRANSFER CIRCUITS ARE PROVIDED THROUGH 6PFT CARD IN BASIC CABINET. ADDITIONAL CIRCUITS ARE AVAILABLE THROUGH 6PFE CARD IN EXPANSION CABINET (REQUIRING WIRING OF SIGNAL LINE BETWEEN CARDS THROUGH CDF BLOCK).

**EXPANDED SYSTEM POWER FAILURE TRANSFER OPERATIONAL STATUS**
**(BASIC AND EXPANDED CABINETS)**

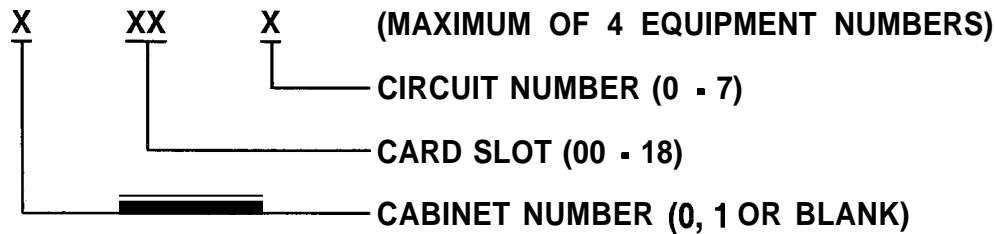| INCIDENTS | | | 6PFT IN BASIC CABINET | 6PFE IN EXPANSION CABINET |
|---|---|---|---|---|
| POWER FAILURE | BASIC CABINET | | ACTIVE | ACTIVE |
| | EXPANSION CABINET | | INACTIVE | ACTIVE |
| SYSTEM FAILURE | | ACTIVE | ACTIVE | ACTIVE |
| MANUAL SWITCH ACTI-VATION | BASIC CABINET | | ACTIVE | INACTIVE |
| | EXPANDED CABINET | | INACTIVE | ACTIVE |

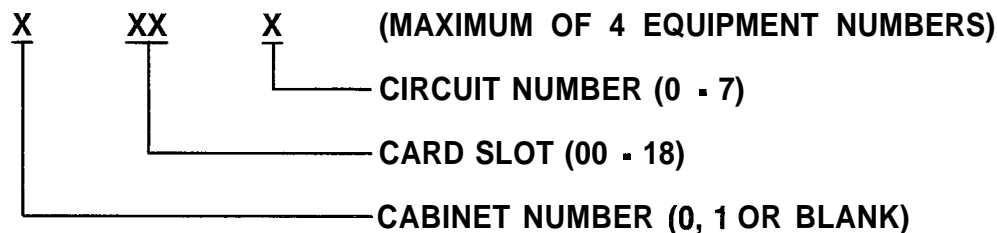NOTE:   ACTIVE = POWER FAILURE TRANSFER CONDITION

5. 120

# Expanded System Maintenance —
# Fault Detection

**GTE**

*GTE OMNI SBCS*

- FAULTY DEVICES AND LOCATIONS ARE DISPLAYED USING CMC-800.

- CMC-800's SCREEN THREE, DISPLAYING EKT STATUS, HAS BEEN ENHANCED TO DISPLAY THE FOLLOWING INFORMATION:

  — SYSTEM PROMPT (P1) - FAULT TERMINAL
  — EQUIPMENT NUMBER OF FAULTY TERMINAL (P2) -

  X     XX     X     (MAXIMUM OF 4 EQUIPMENT NUMBERS)

                            CIRCUIT NUMBER (0 - 7)

                            CARD SLOT (00 - 18)

                            CABINET NUMBER (0, 1 OR BLANK)

  — EQUIPMENT NUMBER OF FAULTY TERMINAL (P3) -

  X     XX     X     (MAXIMUM OF 4 EQUIPMENT NUMBERS)

                            CIRCUIT NUMBER (0 - 7)

                            CARD SLOT (00 - 18)

                            CABINET NUMBER (0, 1 OR BLANK)

- OPERATION AND INTERPRETATION OF SYSTEM FAULTS REMAINS THE SAME, OTHER THAN IDENTIFICATION OF SYSTEM CABINETS CONTAINING FAULTY TERMINALS.

# Laboratory Activity — Package C
## Maintenance (5.4)

1.  USING THE INSTRUCTIONS PROVIDED IN THE STUDENT WORKBOOK, PERFORM THE ATTENDANT CONSOLE DIAGNOSTIC TEST. BE SURE TO USE ALL TEST EXECUTION KEYS AND MONITOR THE RESULTS. RETURN INSTRUMENT TO NORMAL CALL PROCESSING MODE AFTER TESTS HAVE BEEN PERFORMED.

2.  USING THE INSTRUCTIONS PROVIDED IN THE STUDENT WORKBOOK, PERFORM THE DATA INTERFACE UNIT DIAGNOSTIC TEST. BE SURE TO USE ALL TEST EXECUTION KEYS AND MONITOR THE RESULTS. RETURN THE DIU TO NORMAL CALL PROCESSING MODE AFTER TESTS HAVE BEEN PERFORMED.

3.  ASSIGN THE ATTENDANT CONSOLE AS A MASTER CONTROL TELEPHONE WITH CMC-702.

4.  REMOVE THE HOTEL/MOTEL PRINTER FROM SERVICE FOR ROUTINE MAINTENANCE WITH CMC-706.

5.  USING THE ATTENDANT CONSOLE AS A MASTER CONTROL TELEPHONE, PERFORM THE LOOP TEST BETWEEN THE 4CHT CARD AND THE DIU WITH CMC-810. WHAT ERROR MESSAGE IS RECEIVED?