Owner's Manual

ZT-S OWNER'S MANUAL

This manual describes the components, features, operations, and simplified programming procedures of the Omega-phone ZT-S 616 Key Telephone System. The features and operations of your system may differ from those listed in this manual, depending on the hardware, software, and programmed functions. For more information, contact your authorized IWATSU distributor. Features and specifications are subject to change without notice.

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FCC RULES AND REGULATIONS

The ZT-S Electronic Key Telephone system is registered under Part 68 of the FCC Rules and Regulations, as a fully-protected key telephone system. The following information must be supplied to the local telephone operating company when requesting service to terminate lines to the ZT-S system.

Model...IWATSU OMEGA-PHONE IV, ZS-616
FCC Registration No. BD6USA-61651-KF-E
DOC Certification No. 577-3703A

CO LINE INTERFACE
Ringer Equivalence No. 0.4A/0.8B
Load No. 7
Service Order Code....9.0F
Network Addressing Signalling Code....E
Registered Connection....USOC Jack RJ11

All of the ZT-S key telephones are provided with hearing aid compatible handsets, in accordance with Part 15 of the FCC Rules and Regulations. The FCC rules prohibit the use of non-hearing aid compatible equipment in the following applications:

* Any public or semi-public location where coin operated or credit card telephones are located.

* Elevators, highways, tunnels, automobiles, subway or pedestrian walkways where a person with impaired hearing might be isolated in an emergency.

* Places where telephones are specifically installed to alert emergency authorities such as fire, police or medical assistance personnel.

* Hospital rooms, residential health care facilities, convalescent homes and prisons, specifically where telephones are used for signalling life-threatening or emergency situations if alternative signalling methods are not available.

* Work stations for hearing impaired personnel.

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*   Hotel, motel, apartment building lobbies, in stores where telephones are used by patrons to order merchandise; in public transportation terminals where telephones are used to call taxis, or to reserve lodging or rental automobiles.

*   Hotel and motel rooms. (At least ten percent of the rooms must contain hearing aid compatible telephones; or contain jacks for plug-in hearing aid compatible telephones which will be provided to hearing impaired customers upon request.)

Single line telephones used on the system for emergency back-up purposes are also subject to FCC rules regarding the hearing impaired. Refer to the model and type of telephone used for eligibility.

A card is provided with each KSU detailing FCC requirements for user rights and responsibilities when connecting public telephone company lines to customer provided equipment. This card should be presented to you and explained in accordance with FCC, Part 68 regulations.

The Ringer Equivalence Number, or REN is utilized to determine the quantity of devices you may connect to the telephone line and still have assurance that all of those devices will ring properly when the respective telephone line is called. In most, but not all areas, the sum of the RENs of all devices connected to the same line should not exceed five (5.0). To be certain of the number of devices you may connect to each line as determined by the RENs, contact your local telephone company and request information on the maximum allowable REN for your calling area.

If any of your telephone equipment causes harm to the network, the telephone company may discontinue service to your line(s). If possible, they will notify you in advance. But if advance notice is not practical, you will be notified as soon as possible. You will also be advised of your right to file a complaint with the FCC.

The telephone company may make changes in its facilities, equipment operations, or procedures that could affect the proper operation of your equipment. Advance notice of this will be given to you to provide an opportunity to maintain uninterrupted service.

In the event repairs are needed on the ZT-S communications system equipment, please contact your local authorized Iwatsu America distributor.

GENERAL SYSTEM INFORMATION

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INTRODUCTION

Thank you for purchasing the Omega-phone ZT-S 616 Telephone System. Iwatsu has designed the ZT-S system especially for small businesses, offering a broad variety of advanced communication features, in a very compact package.

Operations are simplified, so that anyone can easily learn to use the many features the ZT-S system provides.

The system component design makes the ZT-S system extremely easy to install and program. There are also several features that the system administrator can program to customize the system.

This guide describes the ZT-S system components, features, telephone operations, and system administrator programming procedures. Please be sure to read this information carefully, so that you get the most from your new telephone system.

CONDITIONS FOR INSTALLATION

Your ZT-S Telephone System is designed to provide you with years of reliable performance. In order for your system to operate correctly, you should make sure to provide the right environment for installation of the Key Service Unit (KSU), which controls the system operation.

The KSU is a cabinet which can be hung on the wall or placed on a shelf. It should NEVER be placed on the floor. Make sure the location where the KSU is to be installed conforms to the following requirements:

1. The temperature never drops below 30° F, or rises above 113° F.

2. The relative humidity is always within 10% to 90%.

3. There is a standard 3 prong outlet within 5 feet of the KSU. The KSU requires AC power to operate the system. The outlet must be a single phase, 120 Volt AC, 60Hz, 15 Amphere grounded outlet. This outlet must be used exclusively for the ZT-S KSU; no other equipment may be plugged into the same outlet.

4. The KSU is within 25 feet of the network interface provided by the local telephone company, or the cross connect serving that area of the building.

5. There are no objects less than 1" away from the KSU that can block the ventilation holes and impede air circulation. NEVER place any objects on top of the KSU or covering the vents.

6. There is sufficient space to install any necessary peripheral equipment near the KSU.

7. All electrical equipment, radios, appliances, etc. are at least 10 feet away from the KSU.

CAUTION: DO NOT PLACE THE KSU IN THE FOLLOWING AREAS:

- On the floor.
- Near a sprinkler system, sweating pipes, steam pipes, or steam vents.
- In an extremely hot or cold area.
- In direct sunlight.
- In a passageway or hallway used for moving equipment.
- In an area where there may be exhaust fumes or corrosive fumes from machinery.
- In any area where there is a high power radio frequency transmitter or transmission cable.

Your KSU includes a battery to protect the system memory in the event of an AC power loss. There is also a connection provided for a standard single line telephone, so that in the event of a power failure, you can still make and receive outside calls on the first outside line connected to the ZT-S system, using a single line telephone.

If your area suffers from frequent power outages or "brown-outs", which affect your system's operation consult your authorized IWATSU dealer for more information.
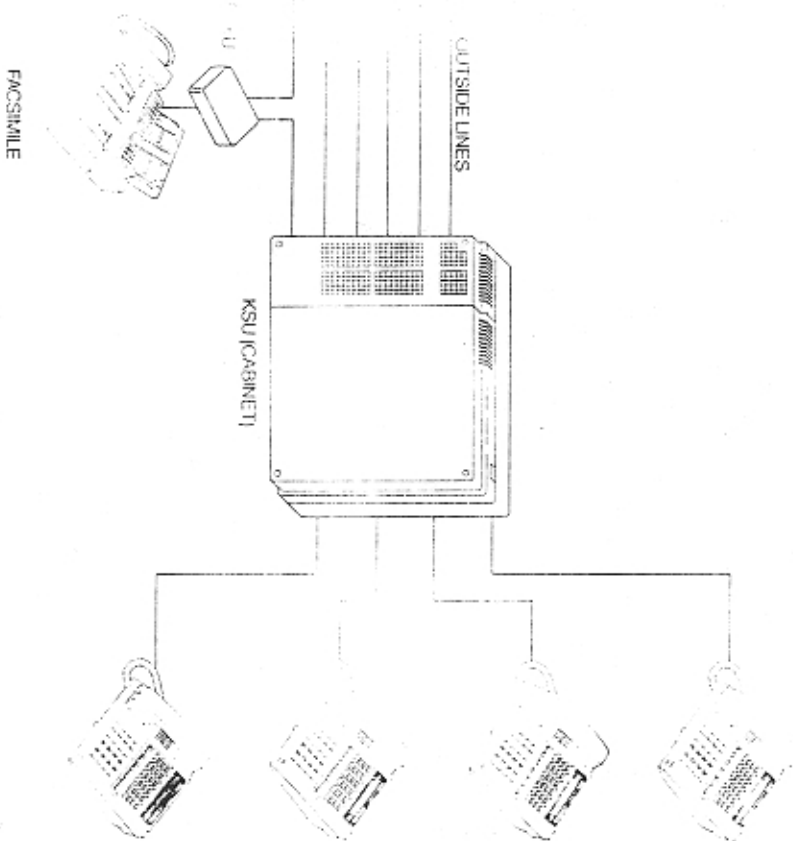
KSU (CABINET)

OUTSIDE LINES

FACSIMILE

FIGURE 1-1 ZT-S SYSTEM COMPONENTS

1. KEY SERVICE UNIT

The Key Service Unit, or KSU, is the heart of the ZT-S Telephone System. This cabinet functions as the "brain" of the system, processing calls and features, and controlling communications between all internal telephones, and between internal phones and outside lines.

The Key Service Unit contains the following main equipment:

a. ZT-S MAIN CONTROL UNIT (ZS-MAIN)
This is the printed circuit board which contains the system memory and controls all system functions. This unit includes interfaces to connect 3 outside lines and 8 extensions to the system. This board also contains a phono jack to connect a device such as an FM tuner, for music on hold.

b. ZT-S POWER SUPPLY (ZS-PWSA)
The ZT-S requires a 120 volt AC commercial power supply for system operation. This unit converts the AC power from a standard electrical outlet to power for controlling system operation. This unit plugs into the ZS-MAIN for the system to operate.

c. ZT-S SOFTWARE PACKAGE (ZT-PKGA)
This case contains the system control software and must be plugged into the ZS-MAIN for the system to operate.

d. MEMORY BACK-UP BATTERY
This lithium battery must be installed in the KSU to protect the system memory in the event the power is turned off. The battery life is approximately 10 years, under continuous operating conditions.

2. OPTIONAL SYSTEM EQUIPMENT

a. ZT-S EXPANSION UNIT (ZS-EXPU)
To expand the ZT-S system to the full capacity of 6 outside lines and 16 extensions, this unit must be installed in the KSU. This unit contains interfaces for another 3 outside lines and 8 extensions.

b. **ZT-S FACSIMILE ADAPTOR (ZS-FAXU)**

This unit allows you to connect a facsimile machine to the ZT-S system so that the same outside line used for facsimile transmissions can also be used for outgoing phone calls, when the facsimile is not in use.

3. **ZT-S TELEPHONES**

ZT-S telephones have "keys", or buttons, that allow you to directly pick up any outside line, call any extension, or use many helpful features at the touch of a button. Two models are available, display telephones, and non-display telephones. The features and operation of both models are identical.

a. **ZT-S DISPLAY TELEPHONES (ZS-6KTD)**

ZT-S display telephones have 6 outside line buttons, with red lamps (LEDs) which indicate the status of each outside line. The telephones also include ten feature buttons with red lamp indicators, and sixteen buttons which can be used for either one touch calling to another extension (Direct Station Selection), or one touch dialing of personal speed dial numbers (Auto Dial). There are two additional buttons which are assigned for auto dialing System Speed Dial Numbers 00 and 01. The display is a sixteen character liquid crystal display (LCD), with adjustable contrast control. The display shows the following information:

- Clock and calendar
- Dialed number
- Calling extension/called extension number
- Call duration

b. **ZT-S TELEPHONES WITHOUT DISPLAY (ZS-6KTS)**

Non-display telephones have all of the same features and operations, but do not have the liquid crystal display.

Figures 2 and 3 show the ZT-S telephone models. Refer to Section 3 for detailed telephone features and operation information.
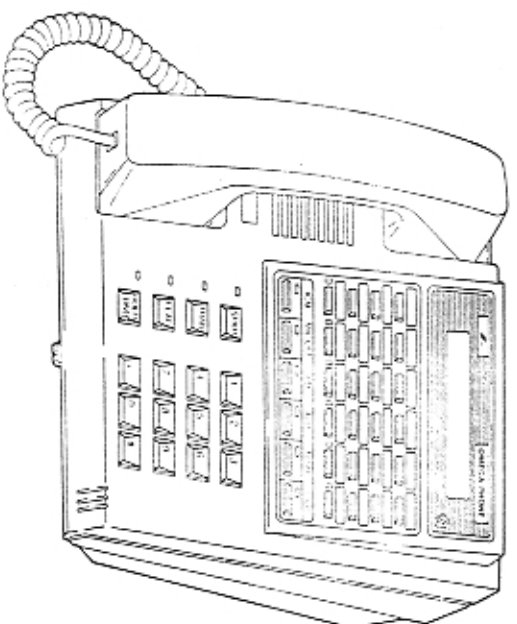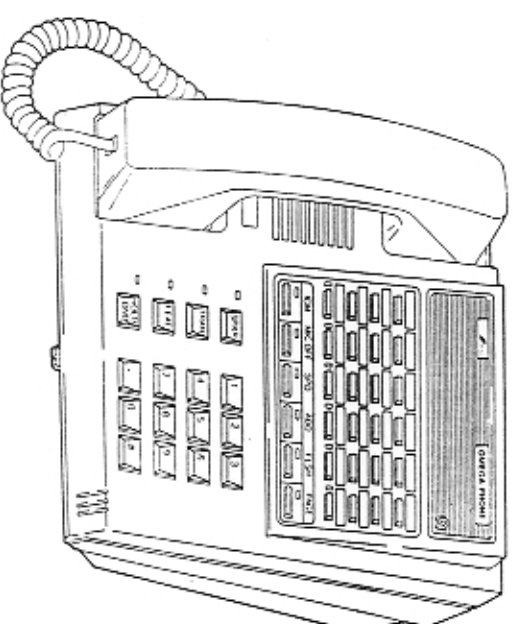
FIGURE 2 - ZT-S DISPLAY TELEPHONE

FIGURE 3 - ZT-S TELEPHONE WITHOUT DISPLAY

4. TELEPHONE OPTIONAL EQUIPMENT

The following optional equipment can be added to the ZT-S telephones.

a. BUILT-IN SPEAKERPHONE UNIT (SSPU-Z1)
The speakerphone unit can be installed in the ZT-S telephone to allow full handsfree operation. This means that you can converse on outside calls using the telephone microphone and speaker, without lifting the telephone receiver.

If the telephone is not equipped with this unit, you can only answer an incoming intercom call through the microphone without using the receiver (refer to Section 3, ICM Handsfree Answerback Feature).

b. STATION NOISE CANCELLING HANDSET (IX-SNHD)
This optional receiver cancels out background noise, and amplifies the receiving level, enabling comfortable conversation in noisy environments. This receiver is hearing aid compatible.

c. LONG HANDSET CORD (IX-HSCD)
This long cord can be used in place of the standard receiver cord. The cord is dark gray and approximately 16 feet long when stretched to the maximum length.

d. STATION PEDESTAL (IX-STPD)
The IX-STPD is used to mount the telephone on a wall, or to raise the angle of the telephone, for more convenient operation.

e. HEAVY DUTY HANDSET HANGER (HSHG)
This hanger can be used in place of the standard hanger to provide better support to the receiver when the telephone is wall mounted.

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ZT-S SYSTEM FEATURES

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This section describes the system features provided in the ZT-S 616 Key Telephone System. Most of these features are provided as standard in the basic system. Many features are programmable, so that you can change the way the feature operates according to your own needs. For detailed information regarding feature programming, see Section 4, Programming.

CENTREX COMPATIBILITY: The ZT-S system can access Centrex services provided by the local telephone company. A separate Centrex flash timing can be programmed according to the local telephone company's Centrex specifications, so that ZT-S telephones can easily access Centrex services by dialing a feature code.

You must have Centrex services provided by the telephone company to use this feature.

CO/PBX LINE COMPATIBILITY: Either central office lines (CO) from the local telephone company or Private Branch Exchange (PBX) lines can be connected to the ZT-S 616 as outside lines.

DATA SECURITY ON CO/PBX LINES: Since all outside lines have automatic privacy, facsimile transmissions cannot be interrupted by any extension. The line designated as the facsimile line in the system installer programming cannot be interrupted when in use by the facsimile, even by a telephone assigned as a barge in station.

DIAL PULSE (DP)/DTMF SIGNALLING: Both dial pulse (DP) and dual tone multi-frequency (DTMF) types of Central Office outside lines can be connected to the ZT-S system. Either DP or DTMF address signalling can be selected for each line in the system installer programming, according to the type of line connected.

DISCONNECT SIGNAL DETECTION: The ZT-S system will automatically disconnect an outside line on hold when a disconnect signal (momentary loop open signal) is received from the telephone company central office. This feature and the time required to detect disconnect can be set in the system installer programming.

DISTINCTIVE RINGING-CO/ICM: Outside line calls and internal calls have different ringing signals, enabling users to easily distinguish outside calls from intercom calls.

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EQUAL ACCESS SERVICES (OCC ACCESS): Extensions in the ZT-S system can use equal access services to dial outgoing calls through other common carriers (OCCs). Access codes and identification codes can be registered for up to four other common carriers in the system installer programming. Calls made using equal access services can also be toll restricted by the ZT-S system.

FACSIMILE ADAPTOR: A facsimile device can be connected to the ZT-S system using the facsimile adaptor unit (ZS-FAXU). This unit enables an outside line to be used for facsimile transmissions, and for voice calls when the facsimile is idle.

The optional ZS-FAXU and a customer supplied facsimile are required for this feature.

FLASH (LONG/SHORT): Two flash times can be set in the system installer programming to send a momentary line opening, either to receive a new dial tone, or to operate Centrex/PBX features. The longer time, called "long flash" is used for the Dial Tone Reorder Feature. The short flash, which is used for Centrex and PBX features, can be registered in the memory as part of speed dial numbers.

FLEXIBLE NIGHT SERVICE: The ZT-S system has two different operating modes; the day mode and the night mode. Outside lines can be assigned to ring at different groups of extensions in the day and night modes. ZT-S telephones can be assigned a different class of service for toll restriction of outgoing dialing in the day and night modes. The telephone designated as the master KT in the system installer programming can switch the system into the night mode and back to the day mode. This will change the incoming ringing assignment for all outside lines and the class of service for all telephones to the mode selected.

FLEXIBLE INCOMING RINGING ASSIGNMENT: Each outside line can be programmed for incoming calls to ring at any desired extension(s). Each line can have a different incoming ringing assignment for the day and night modes. The ringing assignment can be changed in the system administrator programming.

FLEXIBLE TOLL RESTRICTION: The ZT-S system can restrict outgoing dialing on outside lines, to control abuse. Each telephone is assigned one of seven toll restriction levels for each outside line in the system installer programming. Different toll restriction levels can be assigned to each telephone in the day and night modes. Up to 10 digits of dialing can be controlled by the toll restriction plan.

INTERCOM DIALING: The intercom is the internal communications network of the ZT-S system. ZT-S telephones can access an intercom line to make calls to other extensions or can answer calls from other extensions.

MULTIPLE ANSWERING POSITIONS: Any telephone can answer an incoming call, either by pressing the outside line button which is flashing in the incoming call pattern, or by going off hook (lifting the receiver or pressing the Speaker button) **if the call is ringing at that extension.** However, extensions which are pickup restricted for the line will not be able to answer incoming calls on that line.

MUSIC ON HOLD (EXTERNAL): An external music source such an FM tuner can be connected to the ZT-S system to play music to outside calls placed on hold. Music will be played to outside lines in the following status:

*System Hold
*Exclusive Hold
*Consultation Hold
*Screened or Unscreened Transfer
*Hold Recall
*Camp-On Recall
*Consultation Hold Recall

A customer supplied music source is required for this feature.

OUTSIDE LINE OUTGOING RESTRICTION: ZT-S telephones can be restricted from making outgoing calls on specific outside lines by designating those lines in the system installer programming. This restriction does not affect the ability to answer incoming calls, calls on hold, or transferred calls on restricted lines.

OUTSIDE LINE PICKUP RESTRICTION: ZT-S telephones can be restricted from accessing specific outside lines by designating those lines in the system installer programming. If an outside line is pickup restricted for an extension, that extension will not be able to access the line to make outgoing calls, answer incoming calls, or retrieve calls placed on hold.

PRIVACY: All outside lines in the ZT-S system have automatic privacy, so that other extensions cannot accidentally interrupt calls in progress.

POWER FAILURE TRANSFER: An industry standard single line telephone can be connected to the ZT-S system, to make outgoing calls and answer incoming calls on outside line 1 (CO 1) during a commercial power failure. When a power failure occurs, outside line 1 will automatically be switched directly to the single line telephone.

A single line telephone is required for this feature.

STATION CLASS OF SERVICE: Each telephone can be assigned a different class of service in the day and night modes. The class of service specifies the telephone's toll restriction level for each outside line. Seven different classes of service are available. The class of service is assigned for each telephone in the system installer programming.

STATION CLASS OF SERVICE CHANGE: The telephone assigned as the Master-KT can change the class of service for all extensions from the day to night mode assignment by performing the night transfer operation. The same operation is used to switch the station class of service back to the day mode assignment. Refer to Section 4, Night Transfer Feature, for more information.

ZT-S TELEPHONE FEATURES AND OPERATIONS

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ZT-S 616 TELEPHONE COMPONENTS

ZT-S telephones are available with a 16 character alphanumeric display (ZS-6kTD) or without a display (ZS-6kTS). The features and operations of both models are identical. This section describes the telephone components, then describes each telephone feature in detail, along with the operation of that feature.

FIGURE 4 - ZT-S TELEPHONE COMPONENTS

Labels: Speaker, Receiver Volume Control, Receiver, Liquid Crystal Display (LCD), Display Contrast Control, DSS/Autodial Buttons, Outside Line Buttons, Feature Buttons, Dialpad, Microphone, Speaker Volume Control
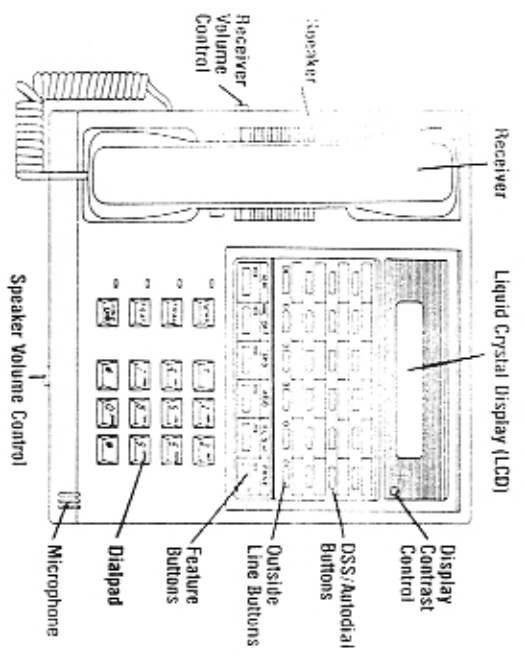
DESCRIPTION OF BUTTONS

Outside (CO/PBX) Line Buttons: Used to access outside lines. Red lamps indicate the line status.

DSS/Autodial Keys: Can be programmed as either Direct Station Selection buttons, for one touch calling to other extensions, or as Autodial buttons, for one touch dialing of station speed dial numbers. The seventeenth and eighteenth buttons are assigned for auto dialing System Speed Dial Numbers 00 and 01 respectively.

Feature Buttons:

ICM: Intercom button, used to access an intercom line or an intercom call, for internal communication with other extensions. The red lamp indicates the line status.

MIC OFF: Microphone Off, turns the telephone microphone On (lamp off) or Off (lamp steadily lit). This prevents any sound from being transmitted through the telephone microphone, during handsfree conversations.

SPEED: Speed Dial button, used for system/station speed dialing and station speed dial registration.

ADD: Add On Conference button, used to join three parties (3 extension, 2 extensions and 1 outside line, or 1 extension and 2 outside lines) on a call. **This button can also be used to release the privacy on an outside line.**

FLASH: Flash button, used to reorder a new outside line or intercom dial tone.

PAGE: Page button, used to make paging announcements.

SPKR: Speaker button, used for dialing without lifting the handset and handsfree conversation features.

TRAN: Transfer button, used to transfer calls to another extension.

FEAT: Feature button, used to operate several additional features.

HOLD/UNID: Hold/Do Not Disturb button, used to place calls on hold, or activate the do not disturb feature to deny all incoming calls and paging announcements.

TELEPHONE VOLUME AND DISPLAY CONTROLS

Your ZT-5 telephone has three adjustable switches to set the volume and display brightness.

1. SPEAKER VOLUME CONTROL
Slide the control knob at the base of the telephone to the right to raise the speaker volume, or to the left to lower it.

2. RECEIVER VOLUME CONTROL
Move the control knob on the left side of the telephone to either the high (up) or low (down) position.

3. DISPLAY CONTRAST CONTROL
Twist the screw at the bottom right side of the display clockwise to darken the display area, or counter clockwise to lighten it.

Making An Outgoing Call
*Lift the receiver
*Press the button for the desired outside line, and when you hear the dial tone
*Dial the telephone number

Receiving An Incoming Call
When your phone rings, and an outside line lamp flashes quickly:
*Just lift the receiver, and you will be connected to the call.

If your phone is not ringing, but one of the outside line lamps flashes quickly, indicating an incoming call:
*Lift the receiver
*Press the outside line button with the flashing lamp, and you will be connected to the call.

Making An Intercom Call to Another Extension
*Lift the receiver, and when you hear the intercom dial tone:
*Dial the extension number
Or
Press the DSS button for that extension (if assigned)

Receiving an Intercom Call
When your phone rings and the ICM lamp flashes, or you hear a tone followed by the caller's voice through the speaker:
*Lift the receiver
Or
Reply through the telephone microphone, without lifting the receiver.

Reordering a New Dial Tone (Flash)
If you make a mistake when dialing, or if you want to disconnect either an outside call or intercom call and automatically receive a new outside dial tone or intercom dial tone:
*Press the Flash button [FLASH]

If you were dialing or speaking on an outside line, you will receive a new outside line dial tone. If you were dialing or speaking on an intercom line, you will receive a new intercom dial tone.

Transferring a Call to Another Extension
When speaking on an outside line:
*Press the Transfer button [TRAN]
When you hear the dial tone:
*Dial the extension number or press the DSS button for that extension (if assigned)
*Hang up
Or
Announce the call when the other extension answers and hang up.

Putting a Call on Hold
When speaking on an outside line:
*Press the Hold button [HOLD/DND]
The outside line lamp flashes slowly, indicating the call on hold.

If the call is left on hold too long, the call will return to your phone and ring again. This is called Hold Recall.

Picking Up a Call on Hold
*Just press the outside line button where the lamp is flashing slowly, and you will be connected to the call.

Handling a Second Call
When you are speaking on your telephone and an incoming call rings at your telephone, you can place the first call on hold and pick up the incoming call.

When speaking on an outside or intercom line, and your phone rings:
*Press the Hold button [HOLD/DND]. The outside line lamp or ICM lamp flashes slowly, indicating that the first call has been placed on hold.
*Press the button where the lamp is flashing to indicate the incoming call.
You will be connected to the incoming call.

To return to the first call:
*Repeat the same procedure.

ALPHANUMERIC DISPLAY

ZT-S display telephones have a large sixteen digit alphanumeric liquid crystal display (LCD). The display provides the following information:

*Call Duration Timer
*Calling Extension No.
*Called Extension No., and Status (Busy/DND)
*Outside Line Number
*Outside Line/Intercom Ringing Call Identification
*Clock and Calendar
*Dialed Number
*Camp-On
*Outside Line/Intercom Recalls

ALTERNATE TONE/PULSE DIALING (DIAL REVERSE)

If the outside lines connected to your ZT-S Telephone System are dial pulse lines (rotary dialing), you can switch the signalling method to dual tone multifrequency (Touch Tone) dialing at any time after dialing the outside telephone number. This allows you to use voice mail or automated attendant systems at the location you are calling, and also use enhanced services, such as automated banking services.

To change the dialing method from dial pulse to touch tone:
*Follow the operation to make an outside call. After the call is answered:
*Press the Feature button [FEAT]
*Press the Star button [*]

All subsequent dialing will be changed from dial pulse to dual tone multifrequency (Touch Tone).

AUTODIAL

The first sixteen buttons on ZT-S telephones can be used for Direct Station Selection (DSS) calling or for Autodialing of station speed dial numbers. Each telephone can register 16 frequently dialed numbers for personal speed dialing (Station Speed Dial). If you have autodial buttons assigned to your telephone, you can dial station speed dial numbers by simply pressing the corresponding Autodial button. Autodial buttons must be assigned in the system programming.

The additional two buttons are assigned as Autodial Buttons for one touch dialing of System Speed Dial Numbers 00 and 01.

To register station speed dial numbers, refer to the Station Speed Dial Feature.

To dial a station speed dial number using autodial:
*Lift the receiver
*Press the corresponding Autodial button
The system will pick up an outside line and dial the telephone number registered in the station speed dial memory.

BARGE-IN STATION

Telephones can be programmed as barge-in stations in the system installer programming. Barge-in telephones can interrupt an outside call in progress. When barge-in occurs, a warning tone is heard to inform all parties that another telephone has entered a call.

Note that a barge-in telephone cannot interrupt facsimile incoming calls and transmissions, nor can a barge-in telephone interrupt a conference call.

To barge-in on a call in progress:
*Press the outside line button with the lamp lit steady (busy)
...rning tone will be heard, and you will be connected to the call.

BUILT-IN SPEAKERPHONE

An optional speakerphone unit (SSPU-Z1), can be installed in ZT-S telephones, in order to converse on outside and intercom calls using the telephone microphone and speaker, without lifting the receiver.

To make an outside call using the speakerphone:
*Press the Speaker button [SPKR]
*Press the button for the outside line to be used for dialing. the lamp at that button will flash.
*When you hear the dial tone, dial the outside number.

To answer an incoming call using the speakerphone:
*Press the Speaker button [SPKR] and you will be connected to the incoming call.

When the call is ringing at your telephone:
*Press the Speaker button [SPKR] and you will be connected to the incoming call.

When your telephone is not ringing, but one of the outside line lamps is flashing quickly, to indicate an incoming call.
*Press the Speaker button [SPKR]
*Press the outside line button with the lamp flashing
You will be connected to the incoming call.

To end a speakerphone call:
*Press the Speaker button [SPKR]. The lamp will go out and the call will be disconnected.

To activate the speakerphone during a call:
*Press the Speaker button [SPKR]. The lamp will flash.
*Hang up the receiver.

Note: The microphone must be turned on (MIC OFF lamp out) when the speakerphone is used.

BUSY OVERRIDE SIGNALLING

When a telephone is busy and there is a second incoming call to that telephone, a muted ringing tone can be sent through the telephone speaker, to notify them of the waiting call. The busy override tone will be heard when there is an incoming call, camp-on call, or recall to a telephone. Each telephone can be programmed to allow or deny busy override signalling in the system administrator programming.

When you call a busy telephone, and want to send them a busy override signal:
*Do not hang up
*Press the Star button [*]
You will hear a ringing tone, and the other telephone will hear the override ringing through their speaker.

To answer the second call:
*Hang up on the first call
Or
Press the Hold button [HOLD/DND] to place the first call on hold.
*Press the outside line button or intercom button with the flashing lamp to be connected to the second call.

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CALL FORWARD

You can set your telephone to automatically transfer and forward all incoming calls to another extension. To use this feature, you must first set the forwarding extension.

To Set or Change the Forwarding Extension:
*Lift the receiver
*Dial the destination extension number
Or
Press the DSS button for that extension (if assigned)
*Press the Feature button [FEAT]
*Dial [7]
The at TRAN lamp will flash, indicating that your telephone is in the Call Forward mode.

To Cancel Call Forward:
When your telephone is in the Call Forward Mode:
*Lift the receiver
*Press the Feature button [FEAT]
*Dial [7]
The TRAN lamp will go out, and your telephone will return to normal operation.

To Activate Call Forward to the Same Extension Previously Set:
*Lift the receiver
*Press the Feature button [FEAT]
*Dial [7]
Your telephone will be set in the Call Forward Mode (TRAN lamp will flash).

CALL RELEASE

You can disconnect a call by performing the release operation, instead of hanging up.

To release (disconnect) an outside or intercom call:
*Press the Feature button [FEAT]
*Dial [9]
The call will be disconnected and your telephone will return to the idle state.

On the Master KT, the DSS button assigned to that telephone's extension number functions as a Call Release button.

You can release an intercom call in progress by pressing the DSS button assigned to the other extension. (This operation only works if the other extension has answered the call by lifting the receiver.)

To release an intercom call using a Direct Station Selection (DSS) button:
*Press the DSS button for the other extension

You can transfer outside calls or intercom calls to another extension which is busy. The extension will hear a ringing tone through the telephone speaker, indicating the call waiting. If the extension to which the call is camped-on is a display telephone, the display shows the camped-on outside line or extension number and the extension which camped on the call.

If the extension does not answer the camp-on call within a preset time period, the call will recall your telephone.

When you are speaking on a call, to camp-on **the call to a busy extension:**
*Press the Transfer button [TRAN]. The call will automatically be placed on hold.
*Dial the number of the extension to which you want to transfer the call
Or
Press the DSS button for that extension (if assigned)
*Hang up
The call will be camped-on to the other extension.

To answer a camp-on call:
*Hang up on the first call
Or
Press the Hold button [HOLD/DND] to place the first call on hold
*Press the outside line button or intercom button with the flashing lamp to **be connected** to the camp-on call

CENTREX ACCESS

If you have Centrex service provided from the local telephone company, you can easily access Centrex features through the programming for Centrex flash timing can be set in the system installer programming for Centrex access, according to the local telephone company's specifications.

When you want to use a Centrex feature, after picking up an outside line, or speaking on an outside line (depending on the operation):
*Press the Feature button [FEAT]
*Press the Flash button [FLASH]
You can now perform the Centrex operation.

CONFERENCE

You can make a conference calls of up to three parties in the ZT-S system. Either three extensions, one outside line and two extensions, or two outside lines and one extension can be joined on the same call.

ADD-ON CONFERENCE (Three Extensions or One Outside Line and Two Extensions)

When you are speaking on an outside or intercom call and want to add another extension to the call:
*Press the Transfer button [TRAN]
*Dial the number of the extension you want to add to the call
Or
Press the DSS button for that extension (if assigned)
*When the called extension lifts the receiver to answer your call, press the Add button [ADD]
All parties will be connected.

MULTI-LINE CONFERENCE (Two Outside Lines and One Extension)

When you are speaking on an outside call and want to add another outside line to the call:
*Press the Hold button [HOLD/DND] to place the call on hold
*Press the button for another outside line
*Dial the other telephone number
*When the other party answers, press the Add button [ADD]
*Press the outside line button of the line placed on hold
All parties will be connected.
(If you are already speaking on an outside line with another call on hold, simply press [ADD] and the outside line button to make the conference).

CONSULTATION HOLD WITH RECALL

You can automatically place an outside call on temporary hold as part of the transfer or conferencing operation. The call is placed on hold will hear music on hold, if a music source is connected to the ZT-S system. If you do not perform the transfer or conferencing operation within a preset time period, or if you perform an incorrect operation, the call on consultation hold will recall your telephone. If your telephone is a display telephone, the Recall display will be shown.

To place a call on consultation hold:
*Press the Transfer button [TRAN]. You will hear an intercom dial tone and the call will be placed on consultation hold.

To retrieve a call placed on consultation hold:
*Press the Transfer button [TRAN].
You will be connected to the call again.

DIRECT CALL PICKUP

You can answer calls ringing at other telephones by a simple feature operation.

To answer a call which is ringing at another extension:
*Lift the receiver
*Dial [4]
You will be connected with the incoming call or the calling extension.

DIRECT OUTSIDE LINE ACCESS BUTTONS

ZT-S telephones have six outside line buttons with status indication lamps. Each button is used for direct access to one of the lines connected to the ZT-S system. Telephones can access a specific outside line for making outside calls, or for answering an incoming call by pressing the outside line button for that line. The lamp indicates whether the line is busy, has an incoming call, call on hold, or is idle.

Telephones can either be restricted from making outgoing calls on specific outside line (Refer to Section 3, Outside Line Outgoing Restriction), or completely denied from accessing a line for outgoing, incoming, or calls on hold (Refer to Section 3, Outside Line Pickup Restriction).

To access an outside line:
*Lift the receiver or press the Speaker button [SPKR]
*Press the button for the desired outside line. The lamp will flash quickly and you will hear dial tone.

DIRECT STATION SELECTION (DSS) BUTTONS

ZT-S telephones have sixteen buttons that can be used for one touch calling to another extension, without dialing the extension number. These buttons are called Direct Station Selection, or DSS buttons.

The first sixteen buttons are automatically set as DSS buttons to call Extensions 20 to 35, in order. If any of these buttons are to be used as Autodial buttons, this must be assigned in the system administrator programming. The first DSS button will call Extension 20, the second button will call Extension 21, etc.

To call another extension using the DSS button:
*Lift the receiver
*Press the DSS button for that extension
The other extension will ring.
The DSS button operation can be used in any of the operations that require dialing an extension number.

DO NOT DISTURB

If you do not wish to be disturbed, you can set your phone to prevent any calls or paging announcements from getting through to your phone.

To place your telephone in the Do Not Disturb Mode:
*Do not lift the receiver
*Press the Do Not Disturb button [HOLD/DND]
The HOLD/DND lamp flashes, indicating that the telephone is in the Do Not Disturb Mode.

To cancel Do Not Disturb:
*Do not lift the receiver
*Press the Do Not Disturb button [HOLD/DND]
The HOLD/DND lamp will go out, and the telephone will return to normal operation.

EXCLUSIVE HOLD WITH RECALL

You can place outside calls on exclusive hold, so that other extensions cannot answer the call. If you do not answer the call you placed on exclusive hold within a preset time period, the call will recall your telephone, and the status changes to system hold, so that other extensions can answer the call.

When you are speaking on an outside line and you want to place the call on exclusive hold:
*Press the outside line button for the line which you are already using
The lamp for that button will flash intermittently at your phone, and the lamp will be steadily lit at other extensions, indicating the line is busy.

INTERCOM CALL AUTOMATIC ACCESS

You can automatically pick up an intercom line when you lift the receiver or press the speaker button [SPKR] without pressing the Intercom button.

To access an intercom line:
*Lift the receiver
Or
Press the Speaker button [SPKR]
The ICM lamp starts flashing quickly and you will hear intercom dial tone.

INCOMING CALL AUTOMATIC ANSWER

You can automatically answer incoming calls ringing at your telephone by simply lifting the receiver, without pressing an outside line button or the Intercom button.

When there is an incoming call ringing at your telephone, and the outside line lamp or the ICM lamp is flashing quickly:
*Lift the receiver
You will be connected to the incoming call.

INTERCOM HANDSFREE ANSWERBACK

The ZT-S system has two calling modes, tone and voice calling. When you receive an intercom voice call, that is, when you hear a burst tone followed by the caller's voice through the telephone speaker, you can answer the call using the telephone microphone and speaker, without lifting the receiver. You can turn the microphone on and off by pressing the Microphone button [MIC OFF].

To turn the microphone on (so the other party can hear your voice):
*The [MIC OFF] lamp should be out. If the lamp is lit, press the Microphone button [MIC OFF] to turn the lamp off.

To turn the microphone off (if you do not want callers to be able to hear your voice when they call):
*The MIC OFF lamp should be lit. If the lamp is off, press the Microphone button [MIC OFF] to turn the lamp on.

LAST NUMBER REDIAL

Your telephone always remembers the last number you have dialed. You can automatically call that number again, without redialing.

When you want to redial the last telephone number you dialed:
* **Lift the receiver**
* **Press the** Speed button [SPEED]
* **Press the** Pound button [#]
The system will automatically redial the last telephone number you dialed.

MONITORING

When you are engaged in a conversation, you can monitor the other party's voice through the telephone speaker. This feature is useful if you are placed on hold, so that you can hang up, and still listen for the other party to pick up your call.

When you are on a call and want to monitor the call:
*Press the Speaker button [SPKR]
*Hang up the receiver

You will hear the other party through the telephone speaker. If your telephone is equipped with the optional built-in speakerphone unit, you can turn the microphone off (MIC OFF lamp on), if you do not want the other party to hear your voice.

NIGHT TRANSFER

The ZT-S system has two different operating modes, the day mode and the night mode. Your system can have a different incoming ringing assignment and a different toll restriction level for each telephone programmed for the day and night modes.

For example, the system can be programmed so that only secretaries' phones ring when there is an incoming call in the day mode, but have incoming calls ring at all telephones when the system is placed in the night mode. Likewise, the system can be programmed so that certain extensions are allowed certain types of outgoing dialing in the day mode, but restricted from dialing any outgoing calls in the night mode.

The telephone designated as the Master KT in the system installer programming can switch the system between the day and night modes.

To switch the system into the Night Mode (when the telephone is not in use):
* **Lift the receiver**
* **Press the Feature button [FEAT]**
* **Dial Pound [#] + [3]**
* **Hang up**
The system is now in the night mode. The FEAT lamp will be steadily lit, indicating that the system is in the night mode. To return the system to the day mode, repeat the above operation.

ON-HOOK DIALING

You can dial telephone numbers or extension numbers without lifting the receiver by pressing the Speaker button [SPKR] instead of lifting the receiver.

If you press a DSS button or an Autodial button, the system will automatically pickup an intercom or outside line and dial the extension or dial the telephone number. This is called Quick Mode Dialing.

OPTIONAL RECEIVER CONNECTION

If your telephone is located in an area where there is background noise, you can replace the standard receiver with the optional Station Noise Cancelling Handset (IX-SNH-D). This receiver cancels out background noise, allowing more comfortable conversation in noisy environments.

PAGING

You can make paging announcements that will be heard through the speakers of all telephones which are not in use. Telephones which are busy or in the do not disturb mode will not hear the paging announcement.

You can select which telephones are allowed to make paging announcements and which telephones will receive paging announcements in the system administrator programming.

When you want to make a paging announcement:
*Lift the receiver
*Press the Page button [PAGE]
The PAGE lamp will flash at your phone, and will light steady at other extensions.
*Make your announcement, speaking into the receiver
*Hang up
Or
Wait for another extension to answer your page using the Meet Me Answer feature.

ANSWERING A PAGING ANNOUNCEMENT (MEET ME ANSWER)

Other extensions can answer a paging announcement, while the PAGE lamp is lit.

When you hear a paging announcement, and the PAGE lamp on your phone is steadily lit:
*Lift the receiver
*Dial [6]
You will be connected to the paging extension.

When you are speaking on an outside line, and want to place the line on hold to make a paging announcement:
*Press the [PAGE] button
*Make your paging announcement
Wait for another extension to answer your page, using the Meet Me Answer feature.

When another extension answers your page using the Meet Me Answer feature:
*Hang up
The outside call on hold will be transferred to the other extension.

If another extension does not answer the call before you hang up or the PAGE lamp goes out, the call will recall your phone.

PRIVACY/PRIVACY RELEASE

The ZT-S system provides automatic privacy on each line so that another extension cannot accidentally interrupt your conversations. However, you can release the privacy on a line on which you are speaking, to allow another extension to join your call. Only one extension can interrupt a call at a time (three parties per call maximum).

A telephone which has been programmed as a barge-in station in the system installer programming can interrupt a call even if privacy has not been released on that line.

When you are speaking on a call, and want to release privacy on the line:
*Press the Add button [ADD]

The Add lamp will flash (if set to flash during a conference in the system installer programming), indicating that privacy on the line is released. Another extension can join your call by pressing the outside line button, or your extension's DSS button on their telephone.

To return to privacy, repeat the above procedure, and the ADD lamp will go out. When the call has ended, after hanging up, privacy will be returned to the line.

QUICK MODE DIALING

You can pick up an outside line, turn the speaker on, and receive dial tone by **simply** pressing the outside line or intercom button.

To make a call using Quick Mode:
*Press the desired outside line or intercom button
The speaker will automatically be turned on, and you will hear outside or intercom dial tone. If you press a DSS button or Autodial button, your telephone will also automatically dial the extension or outside telephone number.

SPEED DIAL

Frequently dialed telephone numbers can be stored in the system or telephone memory for automatic dialing using a two digit code. Two types of speed dialing are provided, system and station (personal) speed dialing.

SYSTEM SPEED DIAL

Eighty-four (84) numbers can be memorized by the system, so that any extension can dial these numbers using speed dial code numbers 00 to 83. The numbers are registered in the system administrator programming.

STATION SPEED DIAL (Personal Speed Dial)

Each telephone can memorize sixteen (16) numbers for speed dialing by that telephone only. The telephone user can enter these numbers by the operation shown below, or these numbers can be entered in the system administrator programming.

When you register speed dial numbers, you must always enter the number of the outside line to be used for dialing.

To register Station Speed Dial numbers:
*Lift the receiver (the [SPKR] button cannot be used)
*Press the Feature button [FEAT]
*Press the Speed button [SPEED]
*Dial the 2 digit Speed dial code number (84-99)
*Dial the number of the outside line to be used for dialing (1 to 6)
*Dial the telephone number (up to 30 digits)
*Press the Speed button (SPEED) to end the operation
The telephone will proceed to the next speed dial code number.
To register additional station speed dial numbers, repeat the above operation.
*Hang up when you are finished entering station speed dial numbers.

You can enter the following data in the telephone number:

0-9, * or # = dialed number

[FEAT] + [*] = Dial Reverse (the system will automatically change all dialing which follows: from dial pulse to DTMF). The symbol "R" will appear in the display.

[FEAT] + [FLASH] = Short Flash, for access to Centrex services or a PBX. This timing is set in the system installer programming. The symbol "S" will appear in the display.

[HOLD/DND] = Pause before dialing the next digit. This timing is set in the system installer programming. The symbol "n" will appear in the display.

To Speed Dial a number (with automatic line access):
*Lift the receiver
*Press the Speed button [SPEED]
*Dial the speed dial code number (00-83 for system speed dial numbers, or 84-99 for station speed dial numbers)
The system will automatically select the outside line and dial the registered number.

To Speed Dial a number (with outside line manual selection):
*Lift the receiver
*Press the button of the outside line to be used for dialing
*Press the Speed button [SPEED]
*Dial the Speed Dial Code Number (00-83 for system speed dial numbers, or 84-99 for station speed dial numbers)
The system will automatically dial the registered number.

TELEPHONE NUMBER IDENTIFICATION

If your telephone has a display, you can display the extension number.

When the telephone is idle (not in use):
*Do not lift the receiver
*Press the Feature button [FEAT]
*Dial pound [#] +[4]
The extension number of that telephone will be displayed.

TONE/VOICE CALLING

The ZT-S System has two intercom calling modes. In intercom tone calling, the called extension rings when there is an incoming intercom call. The called party must lift the receiver or turn on the speakerphone to answer the call. In intercom voice calling, a tone is heard through the speaker of the called telephone, then the calling party's voice is heard through the speaker. The called person can answer an intercom voice call by simply speaking into the telephone microphone.

The system installer can select the primary calling mode, either tone or voice, in the system programming.

A telephone making an intercom call can change the calling mode after dialing the extension number or pressing the DSS button.

When you make an intercom call, and want to change the calling mode:
*Lift the receiver
*Dial the desired extension number
Or
Press the desired DSS button (if assigned)
*Wait to hear ringing or the burst tone
*Press the Pound button [#]

The calling mode will change to the other mode. To change the mode back, dial pound [#] again.

WALL MOUNTING

ZT-S Telephones can be mounted on the wall, using the optional pedestal unit (IX-STPD). This unit is mounted on the back of the telephone. By mounting the pedestal in the reverse position on the back of the telephone, you can raise the angle of a telephone used on a desktop, if desired.

ZT-S SYSTEM PROGRAMMING

Table of Contents

ZT-S 616 SYSTEM PROGRAMMING

INTRODUCTION

Many of the features in the ZT-S System are programmable, so that your system can be tailored to suit the needs of your office.

All system programming may be performed by your system installer, if desired. However, there are several programming items which can be programmed and changed by the system administrator as needed.

This section lists all programming items and describes system administrator programming procedures.

READ THIS SECTION THROUGH CAREFULLY BEFORE ATTEMPTING TO PROGRAM THE ZT-S SYSTEM.

If you have any questions regarding this information, please contact your authorized IWATSU distributor for more information.

SYSTEM INSTALLER PROGRAMMING

Certain items, especially timing parameters for various features, can only be programmed by your system installer. The following chart shows each item, the settings available, and the initial value set in the system at the factory. Contact your system installer if you need to have any of those settings changed.

Note: Your system installer can perform all system programming, including system administrator programming, if desired.

Programming Item	Range of Values	Initial Value
1. Outside Line Outgoing Restriction	-Allow outgoing calls -Deny outgoing calls	Allow outgoing calls on all lines
2. Outside Line Pickup Restriction	-Allow use of the line -Deny use of the line	Allow use of all outgoing lines
3. Toll Restriction of System Speed Dial Numbers	-System speed dialing is controlled by the telephone's toll restriction plan. -System speed dialing is not controlled by the telephone's toll restriction plan.	System speed dialing is not restricted
4. System Speed Dial Access	-Allow telephones use of System Speed Dial -Deny telephones use of System Speed Dial	Allow all telephones use of System Speed Dial
5. Master KT (Telephone to perform programming and Night Transfer	Any extension number	Extension Number 20
6. DTMF Lines: Sender Timer	100ms. to 500ms.	100ms.
7. Dial Pulse Line: Percent Break (Off Time) Min. Pause Time	60%,61%,or 67% 300ms. to 2400ms.	61%

Programming Item	Range of Values	Initial Value
8. Dial Interdigit Timeout (time between digits)	1 to 24 sec.	6sec.
9. Dial First Digit Guard Time	100 to 24,000ms.	1sec.
10. Outside Line Disconnect Signal Detection Timer	100ms. to 3000ms.	700ms.
11. Facsimile Ringing Timer	5 to 240 sec.	20sec.
12. Dial Pause Time in Speed Dial	1 to 9 sec.	3sec.
13. Long Flash Timing (Dial Tone Reorder)	200ms. to 24,000 ms.	1sec.
14. Centrex Flash Timing	50 to 200ms.	600ms.
15. Paging Circuit Timeout	10 to 240 sec.	20sec.
16. Dialing on outside lines after call is answered	-Deny all dialing out -Allow dialing out	Deny all dialing
17. Conference Lamp Indication	-Add lamp flashes during a conference -No lamp indication	No lamp indication
18. Primary Intercom Call Mode	-Tone calling (telephone rings) -Voice calling (tone, followed by the caller's voice through the speaker)	Voice
19. Outside Lines Installed	-Outside line connected to the line installed circuit -No outside line connected	Outside line connected to the line installed

Programming Item	Range of Values	Initial Value
20. Dial Pulse Dialing speed	10pps.	10pps.
21. Type of Dial Signaling on Each Line	-Dial Pulse -Dual Tone Multifrequency (DTMF)	DTMF for all Lines
22. Optional Speakerphone	-Installed in the telephone -Not installed	Not installed
23. Barge-in station	-Barge-in telephone -Telephone denied barge-in	Barge-in denied for all telephones
24. Hold Recall (Unanswered calls on hold will recall that telephone	-Allow recalls to the telephone -Deny recalls to the telephone	Allow recalls for all telephones
25. Facsimile Line Identification	-Outside Line number where facsimile is connected (1 to 6)	No facsimile installed
26. Conditions for Detection of Disconnect on Outside Lines	-Disconnect detection when loop open signal is detected -No disconnect detection	No disconnect detection
27. PBX Lines and PBX Access Codes	-Dial number to access the PBX for each outside line connected to a PBX	No PBX Lines installed
28. Toll Restriction Parameters to each telephone	-Assign toll restriction level for day and night modes (0 to 7)	All telephones are unrestricted
29. Dialing to be Controlled For Each Toll Restriction Plan	-Assign actual dialing to be controlled under each toll restriction plan	Blank
30. Equal Access Data	-Enter access numbers and PIN codes for four other common carriers for automatic dialing	Blank

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SYSTEM ADMINISTRATOR PROGRAMMING

THE PROGRAMMING TERMINAL

The telephone which has been designated as the "Master KT" by the system installer is the only telephone which can be used to program the ZT-S system. In the initial factory setting, Extension 20 is the Master KT.

A display telephone should always be installed in the location designated as the Master KT.

Read this section carefully to familiarize yourself with system administrator programming procedures, then, follow the programming instructions to enter the programming data, using the planning sheets at the end of this section to record all information programmed.

PROGRAMMING FUNCTION BUTTONS

When you enter the programming mode, the feature buttons and dial pad buttons become programming function buttons and data entry buttons. The following charts show the functions assigned to each button and describe the functions in detail.

ICM	MIC OFF	SPEED
Next Item	Back Item	Next Element

SPKR	SPEED	ADD	FLASH
Multiple Data	Next Element	Back Element	Not Used

TRAN			DELETE
Copy	1	2 ABC	3 DEF

FEAT			
Class	4 GHI	5 JKL	6 MNO

HOLD/DND	7 PRS	8 TUV	9 WXY
Enter	* Next Screen	0 OPER	# Back Screen

FIGURE 5 - TELEPHONE PROGRAMMING FUNCTION BUTTONS

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Button Name	Programming Mode	Programming Function
ICM	Next Item	proceed to the next item in a class.
MIC OFF	Back Item	Go back to the previous item in a class.
SPEED	Next Element	proceed to the next element in a class.
ADD	Back Element	Go back to the previous element in a class.
PAGE	Delete	Deletes the class number, item number, element number, or data which was just entered.
SPKR	Multiple Data	Displays data with multiple values.
TRAN	Copy	Copies the data entered for one element number to a different element number.
FEAT	Class	Used to select class, item, and element numbers.
* (Star)	Next Screen	Used during multiple data entry or copying operations. Proceed to the next screen.
# (Pound)	Back Screen	Used during multiple data entry or copying operations. Go back to the previous screen.

During the programming operation, the buttons which can be used for the next step in whatever operation you are performing will be lit or flashing.

If you press another button which is not lit or flashing during the operation, nothing will happen.

PROGRAMMING CLASSES AND ITEMS

The ZT-S database is divided into several main groups, or **Classes** according to the different types of data. Classes are comprised of **Items**, which are the individual programming parameters for each feature. Several items are further divided into Elements.

The classes and items which can be accessed in system administrator programming are listed below.

Class	Item	Description
Class 0		System Programming
	0 - 1	Calendar Setting
Class 1		System Parameters
	1 - 1	Camp-On Recall Timer
	1 - 2	Hold Recall Timer
Class 2		System Features
	2 - 1	Outside Line Off-Hook Signalling
Class 3		Outside Line/Extension Data
	3 - 1	Ringing Telephones - Day Mode
	3 - 2	Ringing Telephones - Night Mode
	3 - 3	Do Not Disturb
	3 - 4	Paging Access
	3 - 5	Paging Call - Receiving Telephones
	3 - 6	Auto Dial Button Assignment

Additionally, the Master KT can enter 84 frequently dialed telephone numbers for System Speed Dialing, and set the system clock.

The procedures for programming each of the above items, setting the system clock and setting system speed dial numbers are explained in Programming Items.

BASIC PROGRAMMING FUNCTIONS

1. Entering and Exiting the Programming Mode

To enter the programming mode, the Master KT must be idle (no incoming calls ringing, no calls in progress, and no calls placed on hold at the telephone).

(1) Lift the receiver out of the cradle. When you hear the dial tone:

The following display appears:

```
Input password
```

(2) Press the following sequence:
[FEAT] + [#] + [1]

(3) Enter the password:
[8][7][3]

The display shows:

```
User's Program
```

(4) Hang up the receiver.

(5) Press the Feature button [FEAT].

The following display appears:

```
Class 0
```

You are now ready to select programming classes, items, and elements.

To exit the programming mode, simply lift the receiver out of the cradle, then hang up again. The telephone will return to normal operation, and the display will change back to the clock and calendar display.

2. Selecting a Programming Class and Item

For example, to select Class 1 Item 2, Hold Recall Timer:

When the display shows any Class Number, for example:

```
Class 0
```

(1) Enter the desired class number (If that class number is already displayed, you can skip this step).
[1] (System Parameters)

The display shows the class number you have entered.

```
Class 1
```

(2) Press the Feature button again. The first item in that class will be displayed.
[FEAT]

The display shows the item number you have entered.

```
Item 1
```

(3) Press the desired item number (If that item number is already displayed, you can skip this step).
[2]

```
Item 2
```

(4) When you have entered the desired class and item numbers, press the Feature button again.
[FEAT]

The data entry for that programming item will be displayed.

```
1-2    120
```

4-9

(5) Enter the desired data. For example, if you want calls on hold to recall the telephone if not answered within 3 minutes, enter 180, for 180 seconds.

[1][8][0]

The data you have entered will be displayed.

1-2 180

(6) Press the Hold button to enter the information.
[HOLD/DND]

To select a different class, press the Feature button. To move to the next item in the same class (if possible), press the Intercom button. To move to the previous item in the class, press the Microphone button.

---

3. Selecting Items With Elements

Certain programming items are subdivided into Elements. When you wish to program an item which has elements, after selecting the item, you must go on to select an element before entering any data.

For example, to set the tenth button on Extension 25 as the first Autodial button:

When you are in the programming mode and the Class display is shown, follow the sequence shown below:

Class 0

(1) Enter the desired class number.
[3]

The display shows the class number you have entered.

Class 3

(2) Press the Feature button.
[FEAT]

The first item in that class will be displayed.

Item 1

(3) Enter the desired item number.
[6] (Autodial Button Assignment)

The display shows the item number you have entered.

Item 6

(4) Press the Feature button again.
[FEAT]

Now the first element for that item will be displayed.

Elem 1

(5) Enter the desired element number. In this example, data is being entered for Extension 25, which is the sixth telephone connected to the system. Therefore, you should enter [6] for Element 6.

```
Elem 6
```

The display shows the element number you have entered.

(6) Press the Feature button again.
[FEAT]

Now the data currently entered for that element will be displayed. In the factory setting, no Autodial buttons are assigned, so the initial value is 0. This means that the first sixteen buttons on Extension 25 will function as DSS buttons (DSS 20 to DSS 35).

```
3-6-6        0
```

(7) Enter the number of the first button that is to be an Autodial button. In this example, the tenth through sixteenth buttons are to be assigned as Autodial buttons, so the number "10" should be entered.

[1][0]

The new data you have entered will be displayed.

```
3-6-6       10
```

(8) Press the Hold button to enter the information.
[HOLD/DND]

Now buttons 1 to 9 on Extension 25 will function as DSS buttons to call Extensions 20 to 28. Buttons 10 to 16 will function as Autodial buttons for one touch dialing of Station Speed Dial Numbers 93 to 99, respectively. To select another class, press the Feature button. To move to the next element, press the [SPEED] button. To move to the previous element, press the [ADD] button.

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4. Copying Data

For any programming items which have elements, you can copy the data entered for one element to other elements.

For example, if you have set the tenth button on Extension 25 as the first Autodial button, and you also want the tenth button on Extensions 21, 23 and 31 to be the first Autodial button:

(1) Follow the procedure in Number 3 to enter the data for Autodial Button Assignment for Extension 25. After you have pressed the Hold button to enter the data, you can begin the copy operation.
[HOLD/DND]

```
3-6-6       10
```

(2) Press the Transfer button to start the copy operation.
[TRAN]

The display shows the data for the first nine elements of this item (circuits 01 to 09, or Extensions 20 to 28).

```
0      .........
```

(3) Press the numbers corresponding to the ones digits for any telephone circuit numbers (Extension numbers 20 to 28), to which you want to copy the data. In this example, the data is to be copied to circuits 02 and 04 (Extensions 21 and 23), so press 2 and 4.
[2] + [4]

The display changes to indicate the numbers you have entered, in place of the dots. The data will be copied to these numbers.

```
0    .2.4.....
```

If you make a mistake, or want to change your entry, press the button for that number again, and the number displayed will change back to a dot.

4-13

(4) The second 7 extension numbers (Extensions 29 to 35) are displayed on a second screen. To move to the second screen, press the Pound (#) button.

[#]

The second screen will be displayed. The dots correspond to the ones digits for circuits 10 to 15 (Extensions 29 to 35).

| 1 ...... |

(5) Press the numbers corresponding to the ones digits for the extension numbers to which you want to copy the data. In this example, the data is to be copied to circuits 11 and 12 (Extensions 30 and 31), so press 1 and 2.

[1] + [2]

The display changes to indicate the numbers you have entered.

| 1 .12...... |

(If you need to go back to the first screen, press the Star button [*]).

(6) Press the Hold button and the Transfer button to enter and copy the data.

[HOLD/DND] + [TRAN]

The display will change back to the element from which the data was copied.

| 3-6-6   10 |

5. Entering Multiple Data

Programming items 1 to 5 in Class 3 have multiple data values which must be entered for each element. To enter multiple data values for any of the elements in these programming items, use the following procedure.

For example, when you want to assign Extensions 20, 21, 22, and 30 to ring when there is an incoming call on outside line 2 when the system is in the Night Mode:

When you are in the programming mode and the Class display is shown, follow the sequence shown below.

(1) Enter the desired Class Number.
[3] (Outside Line/Extension Data)

The display shows the class number you have entered.

| Class 3 |

(2) Press the Feature button.
[FEAT]

The first item in the class will be displayed.

| Item 1 |

(3) Enter the desired item number.
[2] (Night Mode Ringing Telephones)

The display shows the item number you have entered.

| Item 2 |

(4) Press the Feature button.
[FEAT]

The first element for that item will be displayed.

| Elem 1 |

(5) Enter the desired element number.
[2] (Outside Line 2)

The display shows the number you have entered.

| Elem 2 |

(6) Press the Feature button.
[FEAT]

The following display appears.

| 3-2-2 Multiple |

(7) Press the Speaker button to begin the multiple data entry operation.
[SPKR]

The display shows the current data values for the first nine telephones (circuits 01 to 09, or Extensions 20 to 28.)

| 0   1........ |

(8) Press the numbers for the ones digits of the telephones you want to ring in the Night Mode. In this example, Extensions 20, 21, and 22 are to ring, and circuit 01 (Extension 20) is already assigned to ring. Press the numbers 2 and 3, for circuits 02 and 03 (Extensions 21 and 22).
[2] + [3]

The display changes to indicate the numbers you have entered in place of the dots.

| 0   123...... |

(9) Press the Pound button to move to the second screen.
[#]

The second screen displays the data for circuits 10 to 16 (Extensions 29 to 35).

| 1   .... |

If you make a mistake, or want to change your entry, press the button for that number again, and the number displayed will change back to a dot.

(10) Press the numbers for the ones digits of the telephones you want to ring in the Night Mode.
[1] (circuit 11, for Extension 30)

The display changes to indicate the numbers you have entered in place of the dots.

| 1   .1...... |

(11) Press the Hold button to enter the data and the Speaker button to end the multiple data entry operation.
[HOLD/DND] + [SPKR]

The display changes back to the original item display.

| 3-2-2 Multiple |

6. Deleting an Incorrect Entry

When you are entering any data for a programming item, the PAGE lamp is lit, signalling that this button can be used to delete the data.

Each time the Page button is pressed, the last digit of the data will be deleted.

If you enter incorrect data, after you press the Hold button to enter the data, the following display appears:

```
Illegal entry
```

Press the Page button to delete the entry, and the display changes back to the data previously entered for that item.

PROGRAMMING ITEMS

Once you have practiced and understand the basic programming procedures, you are ready to program your ZT-S system.

First, read through the descriptions of each programming item in this section. As you read this information, use the System Planning Sheets provided at the end of this section to write in the data you want to program for each item. Then, follow the steps to program each item.

It is important that you complete the System Planning Sheets and keep a copy available for easy reference.

SETTING THE TIME

To set the system clock, perform the following operation when the Master KT is idle.

<u>Operation</u>

(1) Lift the receiver, and listen for the dial tone.

(2) Press the following buttons:
   [FEAT] + [#] + [2]

(3) Enter the time in four digits, using the **twenty four hour clock**.

   For example, to enter 1:35pm (13:35 hrs.)
   [1] + [3] + [3] + [5]

(4) Hang up.

Now all display telephones will show the correct time.

CLASS 0 SYSTEM CONFIGURATION

ITEM 1 Calendar Setting

<u>Description</u>: This item sets the year, month, day, and day of the week.

<u>Data Entry</u>:

(1) Last two digits of the calendar year
(2) Month, from 01 (January) to 12 (December)
(3) Day of the month, from 01 to 31
(4) Day of the week: 1 = Sunday,   2 = Monday,   3 = Tuesday,
   4 = Wednesday, 5 = Thursday, 6 = Friday,
   7 = Saturday

<u>Initial Factory Setting</u>: None

<u>How to Program</u>: To set the calendar to Wednesday, March 5, 1990:

<u>Operation</u>

When you have accessed this item:

<u>Display</u>

YYMMDDW:

(1) Enter the last two digits of
   the year.
   [9][0]

YYMMDDW:90

(2) Enter two digits for the month of the year.

[0][3]

`YYMMDDW:9003`

(3) Enter two digits for day of the month.

[0][5]

`YYMMDDW:900305`

(4) Enter one digit for the day of the week.

[4]

`YYMMDDW:9003053`

(5) Press the Hold button to enter the data.

[HOLD/DND]

`YYMMDDW:9003053`

CLASS 1 SYSTEM PARAMETERS

ITEM 1 Camp-On Recall Timer

Description:

This item sets the length of time a call will remain "camped-on", or transferred to a busy extension. Once the time programmed for this item has elapsed, the camp-on call will recall the telephone that performed the camp-on operation.

Data Entry:

Camp-On time in seconds, from 10sec. to 240sec.

How to Program:

To set the camp-on recall timer to 1 minute:

Initial Factory Setting: 20sec.

Operation

When you have accessed this item:

Display

| 1-1 | 20 |

(1) Enter the time in seconds.

[6][0]

| 1-1 | 60 |

(2) Press the Hold button to enter the data.

[HOLD/DND]

| 1-1 | 60 |

ITEM 2 Hold Recall Timer

Description:

This item sets the length of time a call will remain on system or exclusive hold. After a call has been on hold for this amount of time, the call will recall the telephone which placed the call on hold.

Data Entry:

Hold time in seconds, from 10 sec. to 240 sec.

Initial Factory Setting: 120 sec.

How to Program:

To set the hold recall timer to 3 minutes:

Operation

When you have accessed this item:

Display

1-2	120

(1) Enter the time in seconds.
[1][8][0]

1-2	180

(2) Press the Hold button to enter the data.
[HOLD/DND]

1-2	180

CLASS 2 SYSTEM FEATURES

ITEM 1 Busy Override Signalling

Description:

This item allows you to choose whether all telephones in the system will hear a busy override signal through the telephone speaker when they are busy on a call and receive a second call. If this feature is denied, there will be no signal and the calling telephone will hear a busy signal. Note that this feature is allowed/denied for the entire system; it is not possible to allow or deny by individual telephones.

Data Entry:

0 = Deny busy override signalling
1 = Allow busy override signalling

Initial Factory Setting: Allow busy override signalling

How to Program:

To deny busy override signalling in the system:

Operation

When you have accessed this item:

Display

2-1	1

(1) Press 0 to deny the feature.
[0]

2-1	0

(2) Press the Hold button to enter the data.
[HOLD/DND]

2-1	0

CLASS 3 OUTSIDE LINE/EXTENSION DATA

ITEM 1 Ringing Telephones - Day Mode

Description:

This item determines which telephones will ring when there is an incoming call on each outside line while the system is in the Day Mode.

This item is divided into six elements. Elements 1 to 6 correspond to outside lines 1 to 6. For each line or element, you must select the circuit numbers of the telephones to ring when there is an incoming call.

This item displays multiple data for each element. You must enter the last digit of the circuit number of the telephone(s).

Data Entry:

Telephone connected circuit Number	Is Extension Number	Telephone connected circuit Number	Is Extension Number	Telephone connected circuit Number	Is Extension Number
01	20	09	28		
02	21	10	29		
03	22	11	30		
04	23	12	31		
05	24	13	32		
06	25	14	33		
07	26	15	34		
08	27	16	35		

A dot = not a ringing telephone
A number = ringing telephone

If you want to enter the same data for more than one outside line, you can use the copy operation to copy the data from one element to others.

Initial Factory Setting:
The telephone connected to Circuit 01 (Extension 20) will ring for incoming calls on any outside lines in the day mode.

How to Program:
To set Extensions 21, 22, 25 and 30 to receive ringing for incoming calls on Outside line 2, in the Day Mode:

Operation
When you have accessed this item:

Display

(1) Select an element.
[2]

Elem 1

(Outside Line 2)

Elem 2

(2) Press the Feature button.
[FEAT]

3-1-2   Multiple

(3) Press the Speaker button to begin the multiple data entry operation.
[SPKR]

0 1..........

Screen 1 will be displayed.

(Circuits 01 to 09, or Extensions 20 to 28)

(4) Press the buttons for the last digit of each number for which you want to change the data.

[1]+[2]+[3]+...

Circuit 01 (Extension 20) will become a non ringing telephone. Circuits 02, 03, and 06 (Extensions 21, 22, and 25) will become ringing telephones.

(5) Press the Pound button to move to Screen 2.

[#]

(Circuits 10 to 16, or Extensions 29 to 35)

(6) Press the buttons for the last digit of each number for which you want to change the data entry.

[1]

Circuit 11 (Extension 30) will become a ringing telephone.

(7) Press the Hold button to enter the data.

[HOLD/DND]

(8) Press the Speaker button to end the multiple data entry operation.

[SPKR]

Now you can either press the Speed button to move to the next element, and manually enter the data for the next outside line, or you can copy the data already entered to other elements, using the copy operation.

ITEM 2 Ringing Telephones - Night Mode

Description:

This item determines which telephones will ring when there is an incoming call on an outside line while the system is placed in the Night Mode.

This item is divided into six elements. Elements 1 to 6 correspond to outside lines 1 to 6. For each line or element, you must select the circuit numbers of the telephones to ring when there is an incoming call.

Data Entry:

This item displays multiple data for each element. You must enter the last digit of the circuit number of the telephone(s).

Telephone connected Circuit Number	Is Extension Number	Telephone connected Circuit Number	Is Extension Number	Telephone connected Circuit Number	Is Extension Number
01	20	09	28		
02	21	10	29		
03	22	11	30		
04	23	12	31		
05	24	13	32		
06	25	14	33		
07	26	15	34		
08	27	16	35		

A dot = not a ringing telephone
A number = ringing telephone

If you want to enter the same data for more than one outside line, you can use the copy operation to copy the data from one element to others.

Initial Factory Setting: The telephone connected to Circuit 01 (Extension 20) will ring for incoming calls on any outside lines in the Night mode.

How to Program:

To set Extensions 21, 22, 25 and 30 to receive ringing for incoming calls on Outside line 2 in the Night Mode:

Operation

When you have accessed this item:

Display

(1) Select an element.
[2]

Elem 2

(Outside Line 2)

(2) Press the Feature button.
[FEAT]

3-1-2   Multiple

(3) Press the Speaker button to begin the Multiple data entry operation.
[SPKR]

Screen 1 will be displayed.

0   1.........

(Circuits 01 to 09, or Extensions 20 to 28)

(4) Press the buttons for the last digit of each number for which you want to change the data.
[1]+[2]+[3]+[6]

0   .23..6...

Circuit 01 (Extension 20) will become a non ringing telephone. Circuits 02, 03, and 06 (Extensions 21, 22, and 25) will become ringing telephones.

(5) Press the Pound button to move to Screen 2.
[#]

```
| ........ |
```

(Circuits 10 to 16, or Extensions 29 to 35)

(6) Press the buttons for the last digit of each number for which you want to change the data entry.
[1]

```
| ........ |
```

Circuit 11 (Extension 30) will become a ringing telephone.

(7) Press the Hold button to enter the data.
[HOLD/DND]

```
| ........ |
```

(8) Press the Speaker button to end the multiple data entry operation. [SPKR]

```
| 3-1-2    Multiple |
```

Now you can either press the Speed button to move to the next element, and manually enter the data for the next outside line, or you can copy the data already entered to other elements, using the copy operation.

4-32

ITEM 3 Do Not Disturb

Description:

By setting this item, you can allow or deny each telephone use of the Do Not Disturb feature. This allows you to prevent a telephone such as a secretarial position from placing itself in the Do Not Disturb Mode.

Data Entry:

This item displays multiple data. You must enter the last digit of the circuit number of the telephones for which you want to change the data entry.

Telephone connected Circuit Number	Is Extension Number	Telephone connected Circuit Number	Is Extension Number
01	20	09	28
02	21	10	29
03	22	11	30
04	23	12	31
05	24	13	32
06	25	14	33
07	26	15	34
08	27	16	35

A dot = Do Not Disturb is denied to the telephone.
A number = Do Not Disturb is allowed to the telephone.

4-33

Initial Factory Setting: All telephones are denied use of the Do Not Disturb feature.

To set Extensions 23 to 35 to allow them to use Do Not Disturb:

How to Program:

Operation

When you have accessed this item:

Display

(1) **Press** the Speaker button to begin the **multiple** data entry operation.

[SPKR]

3-3	Multiple

Screen 1 will be displayed.

0	....

(Circuits 01 to 09, or Extensions 20 to 28)

(2) **Press** the numbers for the last digit of each circuit number to change the data.

[4] + [5] + [6] + [7] + [8] + [9]

0	...456789

(3) **Press** the Pound button to move to **Screen 2.**

[#]

1	....

(Circuits 10 to 16, or Extensions 29 to 35)

(4) **Press** the numbers for the last digit of each circuit number to change the data.

[0] + [1] + [2] + [3] + [4] + [5] + [6]

1	0123456

(5) **Press** the Hold button to enter the data.

[HOLD/DND]

1	0123456

(6) **Press** the Speaker button to end the multiple data entry operation.

[SPKR]

3-3	Multiple

ITEM 4 Paging Access

Description:

This item sets the telephones which are allowed to make paging announcements.

Data Entry:

This item displays multiple data. You must enter the last digit of the circuit number of the telephones for which you want to change the data entry.

Telephone connected Circuit Number	Is Extension Number	Telephone connected Circuit Number	Is Extension Number	Telephone connected Circuit Number	Is Extension Number
01	20	09	28		
02	21	10	29		
03	22	11	30		
04	23	12	31		
05	24	13	32		
06	25	14	33		
07	26	15	34		
08	27	16	35		

A dot = Paging not allowed from the telephone.
A number = Telephone is allowed to use paging.

Initial Factory Setting:

All telephones are allowed to make paging announcements.

To allow Extensions 20 to 32 use of paging, and deny paging from Extensions 33, 34, and 35.

How to Program:

Operation
When you have accessed this item:

Display

(1) Press the Speaker button to begin the multiple data entry operation.

[SPKR]

Screen 1 will be displayed.

| 3-4 | Multiple |

(Circuits 01 to 09, or Extensions 20 to 28)

| 0 | 123456789 |

(2) If you do not need to change the data for Screen 1, press the Pound button to move to Screen 2.

[#]

| 1 | 0123456 |

(3) Press the numbers for the last digit of each circuit number to change the data.

[4] + [5] + [6]

| 1 | 0123... |

(4) Press the Hold button to enter the data.

[HOLD/DND]

| 1 | 0123... |

(5) Press the Speaker button to end the multiple data entry operation.

[SPKR]

| 3-4 | Multiple |

ITEM 5 Paging Call - Receiving Telephones

Description:

This item determines the telephones that will receive paging announcements.

Data Entry:

This item displays multiple data. You must enter the last digit of the circuit number of the telephones for which you want to change the data entry.

Telephone connected Circuit Number	Is Extension Number
01	20
02	21
03	22
04	23
05	24
06	25
07	26
08	27
09	28
10	29
11	30
12	31
13	32
14	33
15	34
16	35

A dot = Paging not allowed from the telephone.
A number = Telephone is allowed to use paging.

Initial Factory Setting: All telephones will receive paging announcements when not in use.

How to Program: To prevent Extensions 30 and 31 from receiving paging announcements:

Operation   Display

When you have accessed this item:

```
3-5    Multiple
```

(1) Press the Speaker button to begin the multiple data entry operation.
[SPKR]

```
0    123456789
```
(Circuits 01 to 09, or Extensions 20 to 28)

Screen 1 will be displayed.

(2) Since you do not need to change the data for Screen 1, press the Pound button to move to Screen 2.
[#]

```
1    0123456
```
(Circuits 10 to 16, or Extensions 29 to 35)

(3) Press the numbers for the last digit of the circuit numbers to change the data.

[1] + [2]

```
1    0..3456
```

Extensions 30 and 31 will not receive paging announcements.

(4) Press the Hold button to enter the data.
[HOLD/DND]

```
1    0..3456
```

ITEM 6 Auto Dial Button Assignment

Description:

The first sixteen buttons on the ZT-S telephones can be used as Direct Station Selection (DSS) buttons, or as Autodial buttons. This item specifies the first button which will be assigned as an Autodial button on each telephone. The assigned button and all higher buttons will automatically become Autodial buttons.

This item is divided into elements. Elements 1 to 16 correspond to the telephones connected to circuits 01 to 16, or Extensions 20 to 35 respectively.

Data Entry:

Enter the number of the first button to be used as an Autodial button.
1 to 16 = Buttons 1 to 16
0 = No Autodial buttons; the first 16 buttons are all DSS buttons.

Button No.	If DSS Button, Calls Extension No.	If Autodial Button, Calls Station Speed Dial No.
1	20	84
2	21	85
3	22	86
4	23	87
5	24	88
6	25	89
7	26	90
8	27	91
9	28	92
10	29	93
11	30	94
12	31	95
13	32	96
14	33	97
15	34	98
16	35	99

Note: All DSS buttons are automatically assigned in order of the telephone circuit numbers. So, DSS button 1 will call Extension 20, DSS button 2 will call Extension 21, etc. This assignment is fixed, and cannot be changed.

Initial Factory Setting:
"0", or the first sixteen buttons on all telephones are DSS to DSS 35.

How to Program:

To program the tenth button on the telephone connected to circuit 11 (Extension 30) as the first autodial button:

Operation
When you have accessed this item:

Display
Item 6

(1) Press the Feature button.
[FEAT]

Elem 1

(2) Press the number to select the desired element.
[1][1]

Elem 11

(3) Press the Feature button.
[FEAT]

3-6-11   0

(4) Enter the number of the first button to be assigned as an Autodial button.
[1][0]

3-6-11   10

(5) Press the Hold button to enter the data.

[HOLD/DND]

```
3-6-11   10
```

The first 9 buttons on Extension 30 will become DSS buttons for calling Extensions 20 to 28.

The next 7 buttons will become Autodial buttons for one touch dialing of Station Speed Dial Numbers 93 to 99.

You can copy this assignment to other telephones, using the copying operation, if desired.

PROGRAMMING SYSTEM SPEED DIAL NUMBERS

The Master KT can register up to 84 frequently dialed numbers for system speed dialing by all telephones in the ZT-S system. System speed dial code numbers are 00 to 83.

This operation must be performed when the Master KT is idle, and not in the programming mode. It is always necessary to enter the number of the outside line to be used for dialing system speed dial numbers.

For example, to register 935-8580 for System Speed Dialing, using outside line 3:

<u>Operation</u>

When the Master KT is idle and not in the programming mode:

<u>Display</u>

```
(clock&calendar)
```

(1) Lift the receiver and listen for the dial tone.
(The Speaker button cannot be used).

(2) Press the Feature and Speed buttons.
[FEAT] + [SPEED]

(3) Dial the System Speed Dial Code Number.

For example: [0][0]

The display shows the code number, and CO (Outside Line 0).

```
00  coo
```

If a number was previously registered under this code number, the outside line and telephone numbers will be displayed.

4-42

4-43

(4) Enter the number of the outside line to be used for dialing. (from 1 to 6, for outside lines 1 to 6)

[3]

```
        00  C03
```

(5) Enter the number to be dialed. (up to 30 digits)

[9][3][5][8][5][8][0]

```
        00  C03  9358580
```

You can enter the following data, in the telephone number.

0-9, * or # = dialed number

[FEAT] + [*] = Dial Reverse (the system will automatically change all dialing which follows from dial pulse to DTMF). The symbol "R" will appear in the display.

[FEAT] + [FLASH] = Short Flash, for access to Centrex services or a PBX. This timing is set in the system installer programming. The symbol "S" will appear in the display.

[HOLD/DND] = Pause before dialing the next digit. This timing is set in the system installer programming. The symbol "-n" will appear in the display.

(6) **Press** the Speed button to enter the number.
[SPEED]

```
        00  C03  9358580
```

(7) To enter another number, go back to step 3, enter another Speed Dial Code Number and repeat steps 4, 5, and 6.

(8) When you are finished entering system speed dial numbers, hang up the receiver to end the operation.

4-44

ZT-S SYSTEM PLANNING SHEETS

Be sure to complete these sheets before performing any system administrator programming. Keep the completed sheets available for reference for programming additions or changes.

Class 0 System Programming

Class	Item	Description	Data Entry	Initial Value
0	1	Calendar Setting	Year ___ (00-99) Month ___ (01-12) Day ___ (01-31) Day of ___ (0-6) Week 1=Sun 5=Thurs 2=Mon 6=Fri 3=Tues 7=Sat 4=Wed	0001010 (1900,Jan,01,Sun)

Class 1 System Parameters

Class	Item	Description	Data Entry	Initial Value
1	1	Camp-On Recall	(___) (10-240)	20 sec.
	2	Hold Recall Timer	(___) (10-240)	120 sec.

Class 2 System Features

Class	Item	Description	Data Entry	Initial Value
2	1	Busy Override Hook Signalling	___ (0 or 1) 0= Deny 1= Allow	1 (Allow)

4-45

Class 3 Outside Line/Extension Data

Class	Item	Description	Elements	Data Entry (Check all telephones to ring)																Initial Value
3	1	Ringing Telephones - Day Mode	Outside Line	Tel 01 Ext 20	02 21	03 22	04 23	05 24	06 25	07 26	08 27	09 28	10 29	11 30	12 31	13 32	14 33	15 34	16 35	Tel. 01 (Ext.20) is the only telephone which rings on all lines in the day mode.
			1																	
			2																	
			3																	
			4																	
			5																	
			6																	

Class 3 Outside Line/Extension Data - continued

Class	Item	Description	Elements	Data Entry (Check all telephones to ring)																Initial Value
3	2	Ringing Telephones - Night Mode	Outside Line	Tel 01 Ext 20	02 21	03 22	04 23	05 24	06 25	07 26	08 27	09 28	10 29	11 30	12 31	13 32	14 33	15 34	16 35	Tel. 01 (Ext.20) is the only telephone which rings on all lines in the night mode.
			1																	
			2																	
			3																	
			4																	
			5																	
			6																	

Class 3 Outside Line/Extension Data - continued

Class	Item	Description	Enter A (Allow) or D (Deny) use of Do Not Disturb																Initial Value
3	3	Do Not Disturb	Tel 01 Ext 20	02 21	03 22	04 23	05 24	06 25	07 26	08 27	09 28	10 29	11 30	12 31	13 32	14 33	15 34	16 35	All telephones are denied use of Do Not Disturb.
			Data Entry																

Class	Item	Description	Enter A (Allow) or D (Deny) use of Paging																Initial Value
3	4	Paging Access	Tel 01 Ext 20	02 21	03 22	04 23	05 24	06 25	07 26	08 27	09 28	10 29	11 30	12 31	13 32	14 33	15 34	16 35	All telephones are allowed to make paging announcements.
			Data Entry																

Class	Item	Description	Enter A (Allow) or D (Deny) use of Paging																Initial Value
3	5	Paging Call - Receiving Telephones	Tel 01 Ext 20	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	All telephones are allowed to receive paging announcements.
			Data Entry																

Class 3 Outside Line/Extension Data - continued

Class	Item	Description	Elements	Data Entry (Enter the button number of the first Autodial button (1 to 16, or 0)	Initial Value
3	6	Autodial Button Assignment	Tel.01 (Ext.20)		0 = The first 16 buttons on all telephones are DSS buttons (DSS 20 to DSS 35)
			Tel.02 (Ext.21)		
			Tel.03 (Ext.22)		
			Tel.04 (Ext.23)		
			Tel.05 (Ext.24)		
			Tel.06 (Ext.25)		
			Tel.07 (Ext.26)		
			Tel.08 (Ext.27)		
			Tel.09 (Ext.28)		
			Tel.10 (Ext.29)		
			Tel.11 (Ext.30)		
			Tel.12 (Ext.31)		
			Tel.13 (Ext.32)		
			Tel.14 (Ext.33)		
			Tel.15 (Ext.34)		
			Tel.16 (Ext.35)		

SYSTEM SPEED DIAL NUMBERS

Enter the numbers (up to 30 digits) for dialing by all telephones using System Speed dialing. Note that an outside line number (1 to 6) corresponding to outside line buttons 1 to 6 must always be entered before the telephone number.

The following symbols may be used in entering telephone numbers for system speed dialing. Each symbol uses one digit.

1-9, 0, *, # = telephone numbers

[FEAT]+[*] = Dial reverse - 1 digit (change all the following dialing from dial pulse to touch tone). The symbol "R" appears in the display.

[FEAT]+[FLASH] = Short flash - 1 digit (enters a pause after a centrex access code or PBX access code). The symbol "S" appears in the display.

[HOLD/DND] = Pause - 2 digits (enters a longer pause).The symbol "-n" appears in the display.

System Speed Dial Code No.	Outside Line No. (1 - 6)	Telephone Number (up to 30 digits)
00	—	
01	—	
02	—	
03	—	
04	—	
05	—	
06	—	
07	—	
08	—	
09	—	
10	—	
11	—	

System Speed Dial Code No.	Outside Line No. (1 - 6)	Telephone Number (up to 30 digits)		
12	—			
13	—			
14	—			
15	—			
16	—			
17	—			
18	—			
19	—			
20	—			
21	—			
22	—			
23	—			

System Speed Dial Code No.	Outside Line No. (1 - 6)	Telephone Number (up to 30 digits)		
24	—			
25	—			
26	—			
27	—			
28	—			
29	—			
30	—			
31	—			
32	—			
33	—			
34	—			
35	—			

System Speed Dial Code No.	Outside Line No. (1 - 6)	Telephone Number (up to 30 digits)		
36	—			
37	—			
38	—			
39	—			
40	—			
41	—			
42	—			
43	—			
44	—			
45	—			
46	—			
47	—			

System Speed Dial Code No.	Outside Line No. (1 - 6)	Telephone Number (up to 30 digits)		
48	—			
49	—			
50	—			
51	—			
52	—			
53	—			
54	—			
55	—			
56	—			
57	—			
58	—			
59	—			

System Speed Dial Code No.	Outside Line No. (1 - 6)	Telephone Number (up to 30 digits)		
60	—			
61	—			
62	—			
63	—			
64	—			
65	—			
66	—			
67	—			
68	—			
69	—			
70	—			
71	—			

System Speed Dial Code No.	Outside Line No. (1 - 6)	Telephone Number (up to 30 digits)		
72	—			
73	—			
74	—			
75	—			
76	—			
77	—			
78	—			
79	—			
80	—			
81	—			
82	—			
83	—			

ZT-S SYSTEM SPECIFICATIONS

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ZT-S SYSTEM SPECIFICATIONS

1. **System Capacities**

   Outside (CO/PBX) Lines

   3 lines standard, 6 lines with expansion unit (ZS-EXPU)

   Intercom Lines   4 lines

   Extensions   8 sets standard, 16 sets with expansion unit (ZS-EXPU)

   Paging Circuits   1 line

   MOH Source   1 external

2. **Switch Parameters**

   Space division switching using CMOS cross-point switches

   Speech paths: Non-blocking, single stage connection

   Stored Program Control

   ROM Capacity: 64K-bytes

   RAM Capacity: 32K-bytes

3. Software

System Speed Dial: 84 telephone numbers, 30 digits/number

Station Speed Dial: 16 telephone numbers/telephone, 30 digits/number

Extension Numbering Plan: 20 to 35 (fixed)

Database: All system database programming can be performed by the system installer. Several of these items can also be programmed by the end user.

Programming Terminal: Extension Number 20 (Master KT)

CO Incoming Ringing Assignment: Programmable, up to 16 extensions for each outside line in the day and night modes.

4. Trunk Specifications

Types of Lines: Loop start trunks, PBX extensions

Loop Current: 20-130 mA DC

Loop Resistance: 1600 ohms maximum (from the central office)

Dial Signalling Methods: Dial Pulse (DP) or dual tone multifrequency (DTMF), can be set individually for each line.

Signalling Characteristics

DP Speed: 10 +/- 1pps
61 +/- 3%

Break ratio:

Minimum pause: 700ms

DTMF Transmitting frequency: Conforms to the CCITT standard

Deviation: +1.5%

Sending Level: Low Group: -4 +/- 2dBm
High Group: -2 +/- 2dBm

Cycle Time: Programmable, from 100ms to 500ms in 100ms increments

Minimum Pause: Automatically set to the same value as the sending time.

Disconnect Detection: loop open disconnect signal detection. Detection time is programmable, from 150ms to 900ms in 50ms increments.

5. Key Telephone Specifications

Types of Extensions: Display Key Telephones (ZS-6KTD)
Key Telephones Without Display (ZS-6KTS)

Keys: 6 line keys, 16 DSS/Autodial keys, 2 fixed Autodial keys, 10 feature keys

Cabling: 2 pair twisted cabling (22 to 24 AWG)

Maximum Distance from KSU: 40 ohms or less approximately 980 ft. (300 m)

Display: 16 digit alphanumeric Liquid Crystal Display (LCD) with adjustable contrast.

6. Power Supply

AC Input Voltage: 90-135VAC

AC Input Frequency: 48-63 Hz, single phase

Maximum Input Current: 1.6 Amperes

Power Consumption: 120 Watts maximum

7. Power Failure Backup

A single line telephone can be connected to the ZS-MAIN card to switch outside line 1 (CO 1) to that telephone in the event of a commercial power failure.

The lithium battery installed in the KSU protects the system memory when power is off. Battery life is approximately 10 years under continuous operating conditions.

8. Physical

Dimensions
KSU: 3.8 "H x 14.2 W x 16.5" D
Stations: 4.5 "H x 8.9 "W x 9"D

Weight
KSU (fully loaded): 10 lbs.
Stations: 2 lbs.

9. Environmental

Operating Temperature:	32 to 104 degrees F/0 to 40 degrees C
Storage Temperature:	14 to 122 degrees F/-10 to 5° degrees C
Relative Humidity (non-condensing):	10 to 90%
Heat Dissipation:	380 BTU

10. Government Registration

The ZT-S 616 Key Telephone System is registered under the FCC standard Part 68 as a fully protected key telephone system.

FCC Registration Number: BD6USA-61651-KF-E

All of the ZT-S stations are equipped with hearing aid compatible handset's, in accordance with the FCC regulations regarding the hearing impaired.

Ringer Equivalence Number: 0.4A/0.8B

11. Safety Approvals

KSU:	UL Listed
	CSA Approved
Power Supply Unit:	UL Recognized
	CSA Approved

12. ZT-S Signal Characteristics

Tone	Frequency	Signal Pattern
ICM Dial Tone	440 Hz.	Continuous
ICM Ringback Tone	440/480 Hz.	1 sec. on, 3 sec. off repeated
Busy Tone	440/620 Hz.	0.5 sec. on, 0.5 sec. off repeated
Warning Tone	440/620 Hz.	0.2 sec. on, 0.2 sec. off repeated
Incoming CO Ringing	440/480 Hz.	1 sec. on, 3 sec. repeated
Incoming ICM Ringing	440 Hz.	1 sec. on, 3 sec. off repeated
CO Recall	440/480 Hz.	0.4 sec. on, 0.2 sec. off, 0.4 sec. on
ICM Recall	440/480 Hz.	3 sec. off repeated 0.4 sec. on, 0.2 sec. off, 0.4 sec. on,
ICM Busy Override	1 KHz.	3 sec. off repeated 0.2 sec. on, 20 sec. repeated
CO Busy Override	1 KHz.	0.2 sec. on,0.2 sec. off 0.2 sec. on, 20 sec. off repeated
ICM Voice Call (Burst Tone)	440 Hz.	0.1 sec. on, 0.1 sec. off, 5 bursts

13. Key Telephone Lamp Indications

Status	Lamp Indication
I-use (CO, ICM, SPKR, ADD)	0.1 sec. on, 0.1 sec. off repeated (fast flash)
I-hold (CO, ICM, HOLD/DND)	0.5 sec. on, 0.1 sec. off 0.1 sec. on, 0.1 sec. off, 0.1 sec. on repeated (fast and short flash)
System Hold, Privacy Release (CO, ADD)	0.9 sec. on, 0.1 sec. off repeated
Incoming CO/PBX call	0.1 sec. on 0.9 sec. off, repeated
Incoming ICM Call, Camp-on, Recall, Call Forward (ICM, TRAN)	0.1 sec. on, 0.1 sec. off, 0.1 sec. on, 0.7 sec. off repeated
Busy	continuously on