

TONE COMMANDER SYSTEMS, INC.
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Redmond, Washington 98073-1039
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SIMPLEX 10
Technical Instructions
Doc. #13-101476 Rev. J
September 1984

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Federal Communications Commission
(FCC) Regulations

1.04 To comply with FCC regulations, the following requirements must be met:

- The FCC registration number of this unit AHI-9V9-11936-KN-E must be reported to the telephone company.
- This equipment complies with the requirements in Part 15 of FCC Rules for a "Class A" computing device. Operation of this equipment in a residential area may cause unacceptable interference to radio and TV reception requiring the operator to take whatever steps are necessary to correct the interference.
- This unit must be installed by telephone company personnel or agents authorized under Part 68 of FCC Rules and Regulations.
- This unit must not be installed on coin-operated or multi-party telephone lines.
- If this unit malfunctions, the telephone company may disconnect service temporarily. If disconnection is necessary, the telephone company must attempt to notify the user in advance, if possible. If not, they must notify the user as soon as they are able.
- Repair work on this unit must be done by TCS.

1. GENERAL INFORMATION

Description of Product

1.01 Simplex 10 is a self-contained, 10 station micro-processor controlled electronic key system. Simplex 10 contains:

- 4 line circuits with music on hold
- power supply
- common-talkpath intercom with call progress signaling
- 2 zone paging amplifier
- interrupter
- cross-connect field
- low voltage signaling

Related Documentation

1.02 #14-101476 Simplex 10 Users Guide

Manual Changes

1.03 To add fuse ratings to specifications, add information on proper grounding and voltage protection, and correct Application Note 5 relay voltage ratings from 10VAC to 12VAC.

1. GENERAL INFORMATION (cont'd.)

Service Information

- 1.05 If service is ever needed on this product contact:

CUSTOMER SERVICE ENGR. DEPT.
TONE COMMANDER SYSTEMS, INC.
P. O. Box 97039
4320 150th Avenue N.E.
Redmond, Washington 98073-9739
Telephone: (206) 883-3600
Telex: 15-2246

Warranty Information

See Addendum for warranty statement.

Consumer Comment

- 1.08 TCS is interested in comments and criticism regarding our equipment and literature. Please address remarks to the Customer Service Engineering Department.

2. SPECIFICATIONS

- 2.01 Ringer Equivalence: 1.1B
- 2.02 Station Loop Length:
50 ohms max.
- 2.03 Maximum Number of Stations:
10; six button key telephone sets
- 2.04 Station Lamps:
10VAC, 60Hz, short circuit protected
- 2.05 Station Buzzers:
10VAC, 60Hz, short circuit protected
- 2.06 C.O. Range:
20 - 100 ma loop
- 2.07 Maximum C. O. Lines:
4; loop start
- 2.08 C.O. Ringing (station signaling):
Single burst, 4 second ring cycle
- 2.09 Intercom:
Dial tone: 437Hz, continuous
Busytone: 437Hz,
0.5 sec ON, 0.5 sec. OFF
Ringback: 437Hz,
1 sec ON, 3 sec OFF
- 2.10 Intercom Ringing:
Double burst, 4 second ring cycle
- 2.11 Music Input: High Impedance,
30-1000mV rms (1000Hz sine wave)
- 2.12 Paging Outputs:
1.5W rms into 8 ohms (nom.)
2.5W rms into 4 ohms (nom.)
4 ohm load minimum
- 2.13 Power Supply Input:
115VAC -10%, 60Hz 80VA (max.)
- 2.14 Fuse Ratings:
F1 - AGC 5A
F2 - AGC 2A
- 2.15 Physical Size:
15"H x 10"W x 4"D

2. SPECIFICATIONS (cont'd.)

- 2.16 Weight:
less than 15 lbs.
- 2.17 Environment:
0 to 50°C operating
-20 to +80°C storage
5 - 95% relative humidity (non-condensive)

3. TELEPHONE MODIFICATIONS

3.01 The system will not ring bridged ringers, it requires the use of low voltage (10VAC) buzzers. These buzzers are easily mounted in standard key telephones and connect to a spare pair, typically the YEL-ORN pair.

NOTE: Some users prefer Floyd Bell Assoc. PBX 1H or 1L tone ringers over 10VAC buzzers.

3.02 The BL connections at the system provide an indication to stop ringing on the intercom line (ring trip). There are two ways to properly terminate the BL leads. The first method returns busy to calling stations when the called station is off-hook on any line. It requires modifying every station that is to have off-hook busy indication. The second method will allow called stations to ring if off-hook on any line except intercom. NOTE: Intercom ringing will not trip without an appropriate BL termination.

Method 1. Consult the key telephone's schematic (available from its manufacturer). It shows various modifications that can be made. Make a diode busy lamp conversion. Connect the BL leads as shown in Figure 3.

Method 2. At the system block, connect station cable BLK-BRN (A-lead) to appropriate intercom BL terminal only. Do not daisy chain between the intercom A-lead terminal and BL terminal. Do not terminate station cable YEL-BRN to system.

Long Loops

3.03 On loops greater than 30 ohms, many key phones will have dim lamps. To correct this problem, connect the Lamp Grounds from lines 2, 3, 4 and intercom (RED-BLU, RED-BRN, BLK-ORN, BLK-SLT) to the GRD connection of the Simplex 10. This will greatly increase the brightness of the line lamps on long loops.

4. MOUNTING

4.01 Refer to Fig. 1. Loosen the two locking screws and swing the front panel open carefully.

4.02 Secure unit on wall, using hardware suitable for the wall material.

4.03 Central Office Timing - - The Simplex 10 is designed to respond to loop current interruptions during the hold state. This feature allows the unit to release the C.O. line when the held party hangs up.

Two timing options are provided. Long (nominal release time of 450msec) for ESS exchanges and short (nominal release time 25 msec) for all other exchanges. To select the long option, open option switches S1-S4. Refer to Fig. 2.

4.04 Close unit, and tighten locking screws.

4. MOUNTING

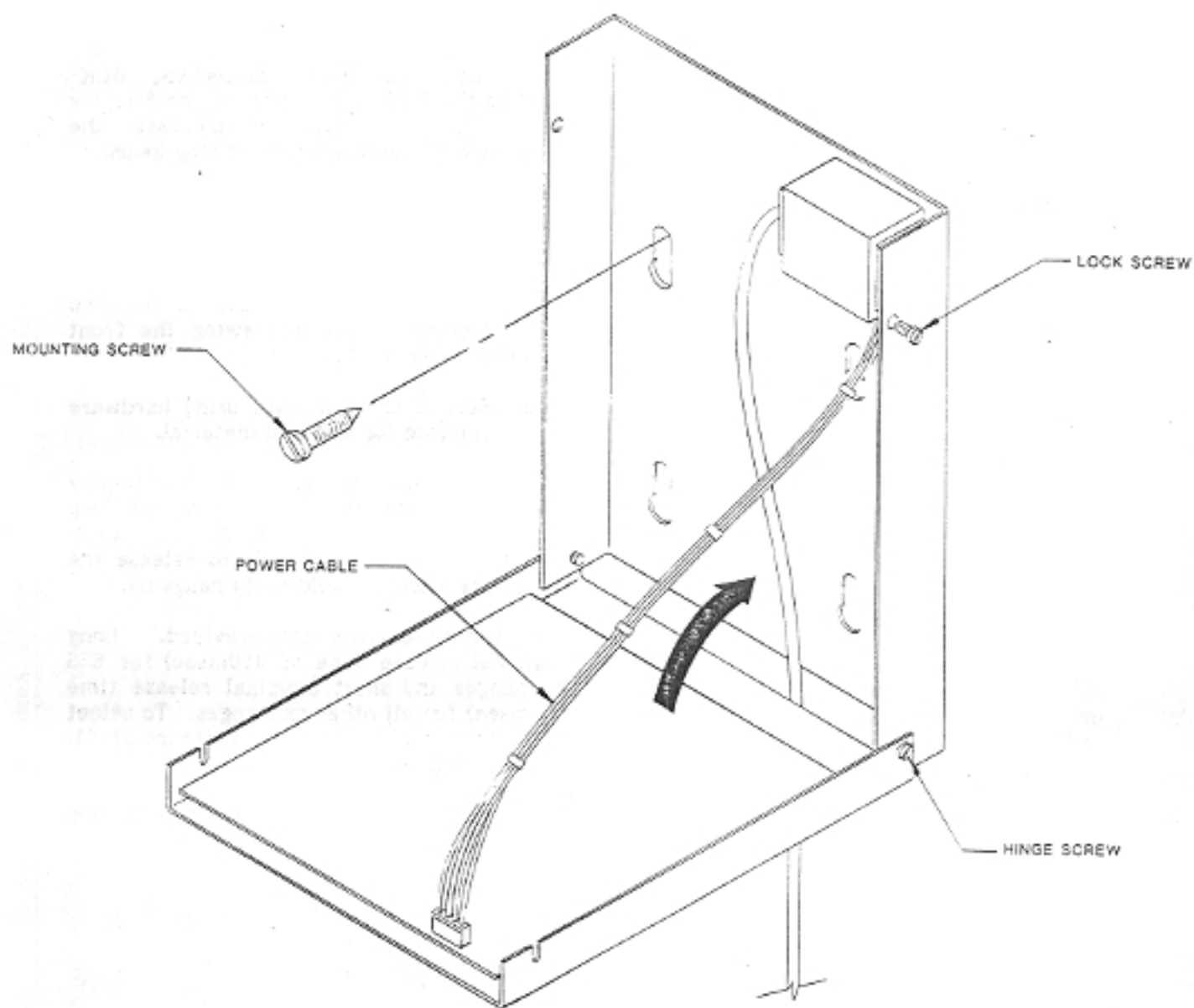


Fig. 1 -- Mounting Diagram

4. MOUNTING

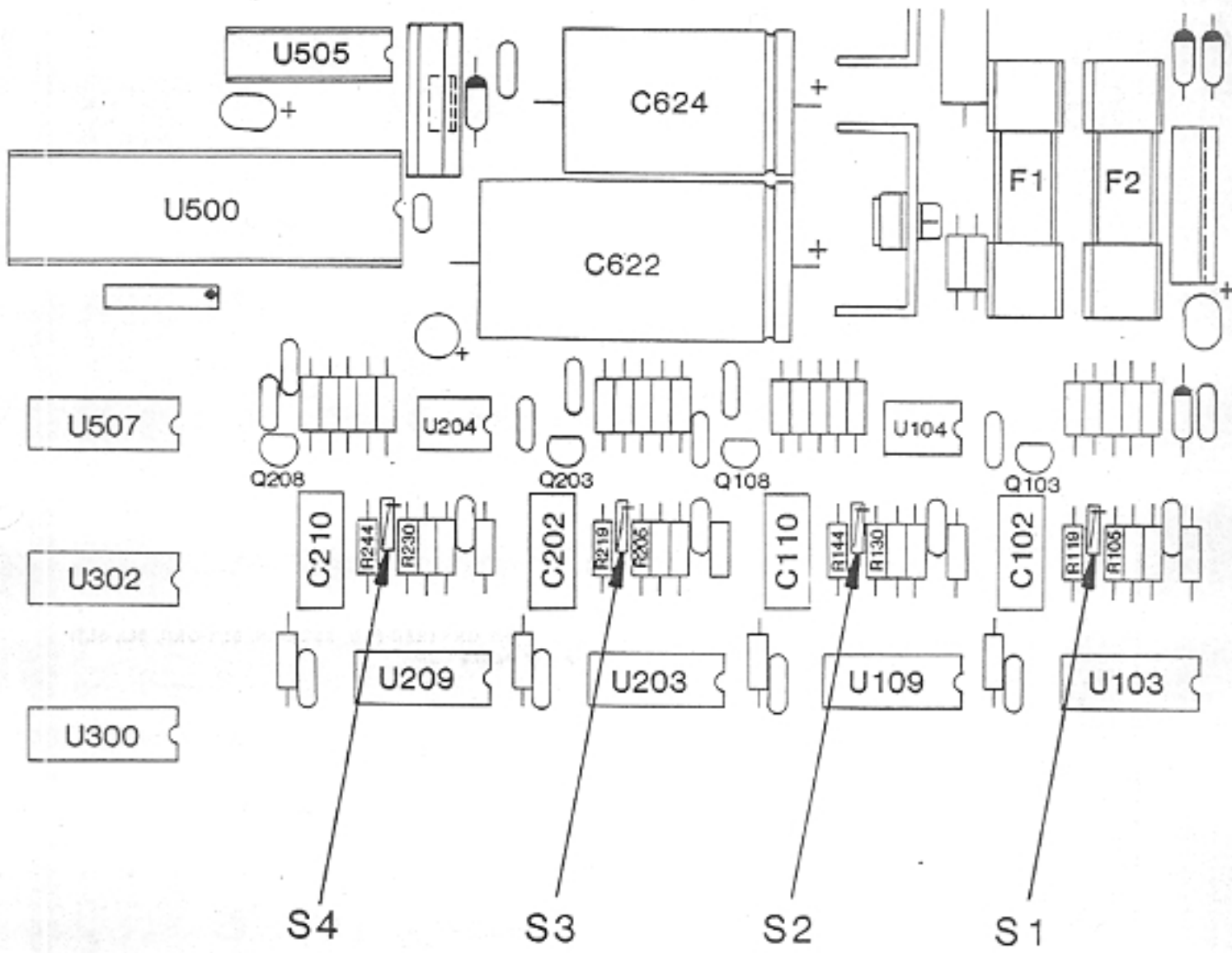


Fig. 2 -- Switch Locations