

Micro-Key®

by **VIKING ELECTRONICS, INC.**

**A Low Cost Electronic Telephone System
For Enhanced Business Communications**



MODEL 3-8B MICRO-KEY®

- Touch Tone® intercom with one-way paging
- Built-in paging amplifier
- Fast flash for calls on hold too long
- Music on hold adapter
- Night bell over paging amplifier
- Contemporary electronic warble on incoming ring
- Simple installation using standard key telephones
- Standard "RING" and "HOLD" lamp indication
- Compact 3 line, 8 station KSU*
Includes: Power Supply —
Interrupter — Line Circuits —
Intercom — Music On Hold —
Paging Amplifier — Micro-processor

* Expandable to 4 lines 10 stations

INSTALLATION PRACTICE 1083

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MICRO-KEY MK 3-8B

1.0 GENERAL

1.1 Description

The Micro-Key Electronic Computerized Control Unit provides all the "Hold", "In-Use" and "Ringing" features of a Standard Key System when used with 6 or 10 button Touch-Tone® telephones. Up to 3 standard phone lines and up to 8 key telephones can be accommodated.* An electronic warble in speaker equipped phones provides audible on "ringing". In addition, a built-in paging amplifier allows users to advise others of an incoming call or to pick up the intercom for a private conversation. The music on hold adapter input can be connected to any radio, tape player or background music source. Finally, a special fast-flash feature, normally available only on Call Sequencers costing thousands of dollars, reminds the user that a caller has been on hold too long.

The Micro-Key is completely self-contained and includes power supply, interrupter, 3 line circuits, 7 station Touch-Tone® intercom with one-way paging, paging amplifier, music on hold adapter, "On Hold" sequencer and external tape music on hold source control circuitry.

1.2 Other Standard Features

1.2.1 7 Station Touch-Tone® Intercom with One-Way Paging

The intercom on Line 5 allows the user to dial 1-7 and call any other station and advise the called party via one-way paging to "Pick up Line 2" or "Pick up the intercom" for a private conversation. The intercom lamp goes from "flash" to steady when the second party picks up the phone. To signal the attendant flash the intercom once. All stations which are equipped to hear common audible will receive a one second tone burst.

1.2.2 Built In Paging Amplifier

The Micro-Key 3-8B has a built in 1 watt paging amplifier which can be accessed by dialing "*" on the intercom (Line 5). If a second party picks up the intercom, the paging amplifier is turned off and the intercom lamp goes from "flash" to steady. This "meet-me" page feature is designed as a **people locator** or for general announcing.

1.2.3 Electronic Night Bell

By closing a switch at the attendant phone or flashing the intercom 5 times from any phone, the incoming ring will be broadcast over the paging amplifier. If night bell has been set by flashing 5 times, the intercom lamp will show a "fast flash" and can be reset by flashing the intercom once.

1.2.4 Fast Flash

This feature reminds the attendant that a call has been on hold too long. The oldest call on hold longer than 60 seconds will go from lamp hold wink to **fast flash** and the attendant will hear an **optional** audible tone. This feature, normally available only on call sequencers costing thousands of dollars, helps to eliminate costly hang-ups and will impress your callers by your efficient and professional call processing.

1.2.5 Built in Music on Hold adapter can turn the frustration of being "On Hold" into an asset for your business. Callers will be impressed by the consideration and courtesy you have shown them. A special output allows the key system to control an external tape player which can provide commercial free music or promotional messages to your "On Hold" callers.

1.2.6 Background music can be broadcast over the paging amplifier when it is not being used for paging. A separate volume control is provided. The music is the same as that used for music on hold.

1.3 Optional Features

1.3.1 4th Line Card * (Model 38B-4L)

A plug-in card can be added to expand the system to 4 lines and up to 10 phones. The card can be field installed in just a few minutes and includes an additional power supply.

1.3.2 Auxiliary 1 watt amplifier (Model MK-AxA)

This amplifier can be used to provide increased volume when you require more than one paging area by connecting it to an intercom station output. It can also be used to increase the number of speakers used on the main page amplifier or to increase the volume on the common audible.

1.3.3 Speaker Kits (Model 25SP029)

This kit provides a 100 ohm speaker, mounting hardware, resistors, and instructions for mounting and use on common audible or intercom.

2.0 INSTALLATION

2.1 Micro-Key Components

The Micro-Key Kit includes the following:

- (1) Electronic key service unit
- (1) Speaker kit #25SP029
- (7) 4.7K resistors
- (3) #6 x 1/2 Mounting Screws

2.2 Mounting

Locate a place convenient to both A.C. power and the RJ14C modular jacks. Mount the electronic control unit on the wall or backboard.

2.3 Cabling

25 Pair cables ⑦ can be pulled through false ceilings below floors or mounted along walls. **Note** when "pulling" cables, the male end must terminate at the key service unit. Once the mounting position has been located determine the length of the cables required. If 2 phones are located close together or more than 4 phones are used, a "C.P.C." ⑤ block should be used as shown in Figure 2. When plugging cables together note that connectors can mate only in one direction. Secure the connectors with built-in screws.

2.4 Paging Speakers

Use 8 OHM speakers ①. 2 or 3 speakers may be employed. Figure 1.A provides maximum volume for both speakers while Figure 1.B provides maximum volume for 1 speaker and reduced volume for 2 speakers. Mount the speakers and bring the wire to the Micro-Key Control unit terminal strip as shown in Figure 2.

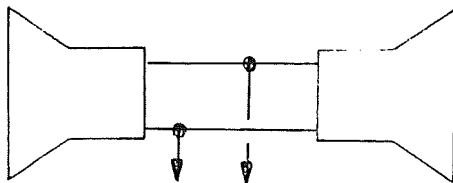


Figure 1.A

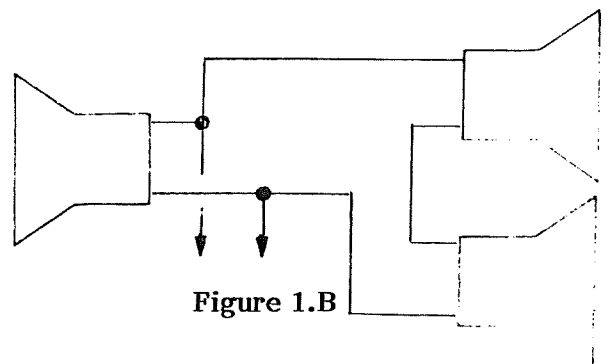


Figure 1.B

2.5 Music on Hold

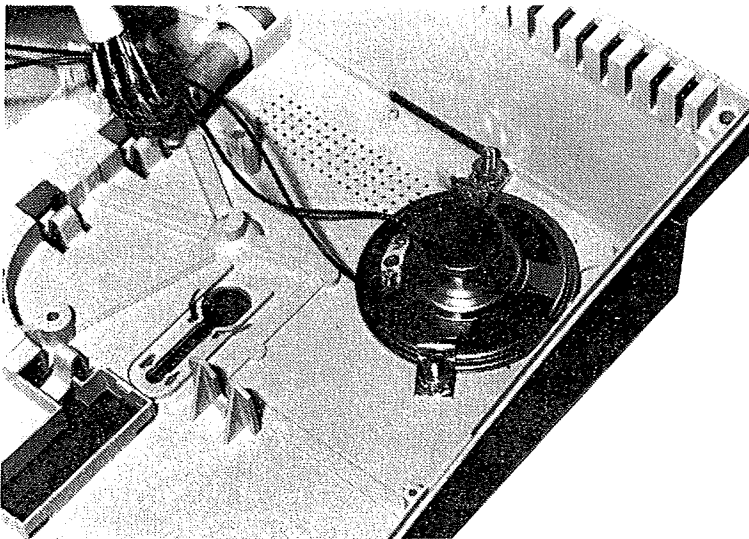
Connect a pair of wires to the output of a radio or background music speaker and then connect those wires to the terminal strip as shown in Figure 2.

2.9 Cable Running List

J4 is wired for use with Station 7, attendant phones and punch down blocks, if used.

Figure 3 Cable Running List, J4 (for use with punch down blocks).

Pin#	Color	Circuit	Pin#	Color	Circuit	Pin#	Color	Circuit
26	W-BL	1T	32	R-O	3T	38	BK-G	5T1
1	BL-W	1R	7	O-R	3R	13	G-BK	5R1
27	W-O	1A	33	R-G	3A	39	BK-BR	5A
2	O-W	A1	34	R-BR	3LG	40	BK-S	5LG
28	W-G	1LG	9	BR-R	3L	15	S-B	5L
3	G-W	1L						
			35	R-S	4T	20	S-Y	IC. #7
29	W-BR	2T	10	S-R	4R	45	Y-S	IC. Com
4	BR-W	2R	36	BK-BL	4A	22	O-V	IC. #1
30	W-S	2A	37	BK-O	4LG	41	Y-BL	IC. #2
31	R-BL	2LG	12	O-BK	4L	47	V-O	IC. #3
6	BL-R	2L				16	BL-Y	IC. #4
						50	V-S	IC. #5
						25	S-V	IC. #6
						44	Y-BR	-12V
						42	Y-O	Nite Bell
						17	O-Y	Com. Audible



3.0 Modification of Telephones

3.1 Installing the speakers for common audible and/or paging.

3.1.1 Maxcom 3528D 6 Button Phone

Remove the bell and mount a 2 ¼" 100 ohm speaker in the right rear as shown if your phone is not factory equipped with a 45 ohm speaker under the handset. If you wish both call announcing and common audible in a phone, you must use two speakers.

3.1.2 I.T.T. 2564 6 button phone

Use a 100 ohm 2 ½" speaker as provided in our #25SP029 Speaker Kit. Remove the bell and mount the speaker in the left rear corner of the telephone base using the mounting clip, screw and nut provided.

3.2 Wiring the speakers for common audible or one-way call announcing.

Locate the yellow-orange, orange-yellow and yellow-slate, slate-yellow spares and connect as shown in Figure 4. Be sure that the wires are not connected to any terminal already connected to another circuit, except the common audible which has one side connected to system "A1" lead. To reduce the volume, insert a 47 to 470 ohm resistor in series with the speaker.

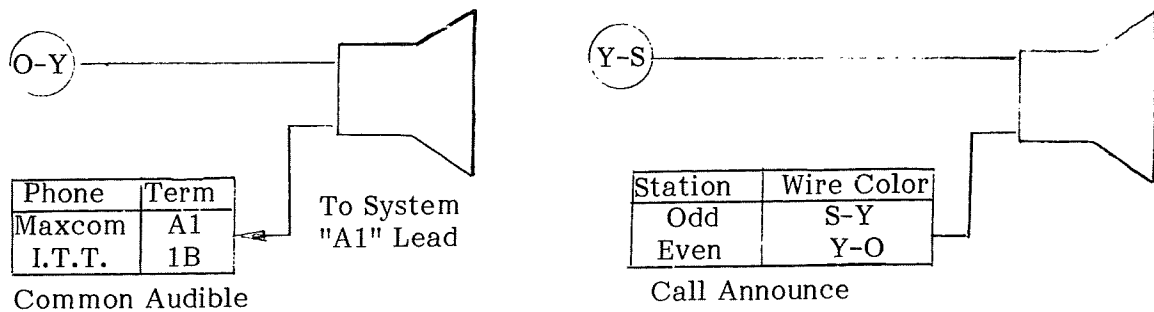


Figure 4

3.3 Wiring the telephones for call announce.

If you wish to use the one-way call announce feature and the paging amplifier, a 4.7K resistor must be inserted in the "A" lead for Line 5 between and key switch and the hold button or in the "A1" lead between the hold button and the hook switch or key strip. If the 4.7K resistor is not inserted, the called party will only hear a short tone burst over the speaker.

3.3.1 In the Maxcom splice a 4.7K resistor into the orange wire between terminal "AG" and "S2".

3.3.2 In the ITT 2564 splice a 4.7K resistor into the slate-green wire between terminal "N" and the hook switch.

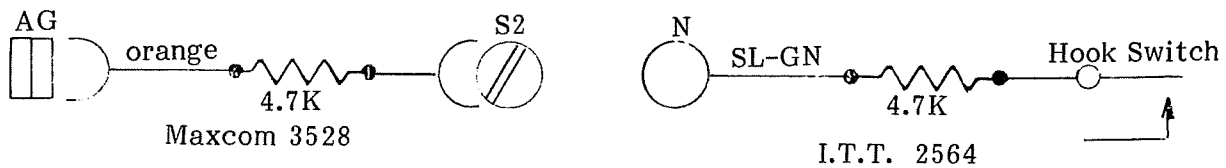


Figure 5

3.4 Wiring the phone for night bell.

Any phone connected to the 4th amphenol can incorporate a switch between the yellow-orange and the orange-white wire to activate the night bell feature.

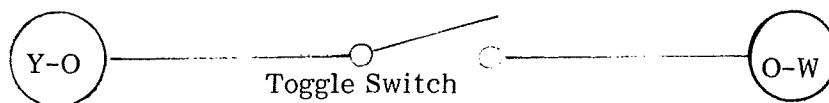
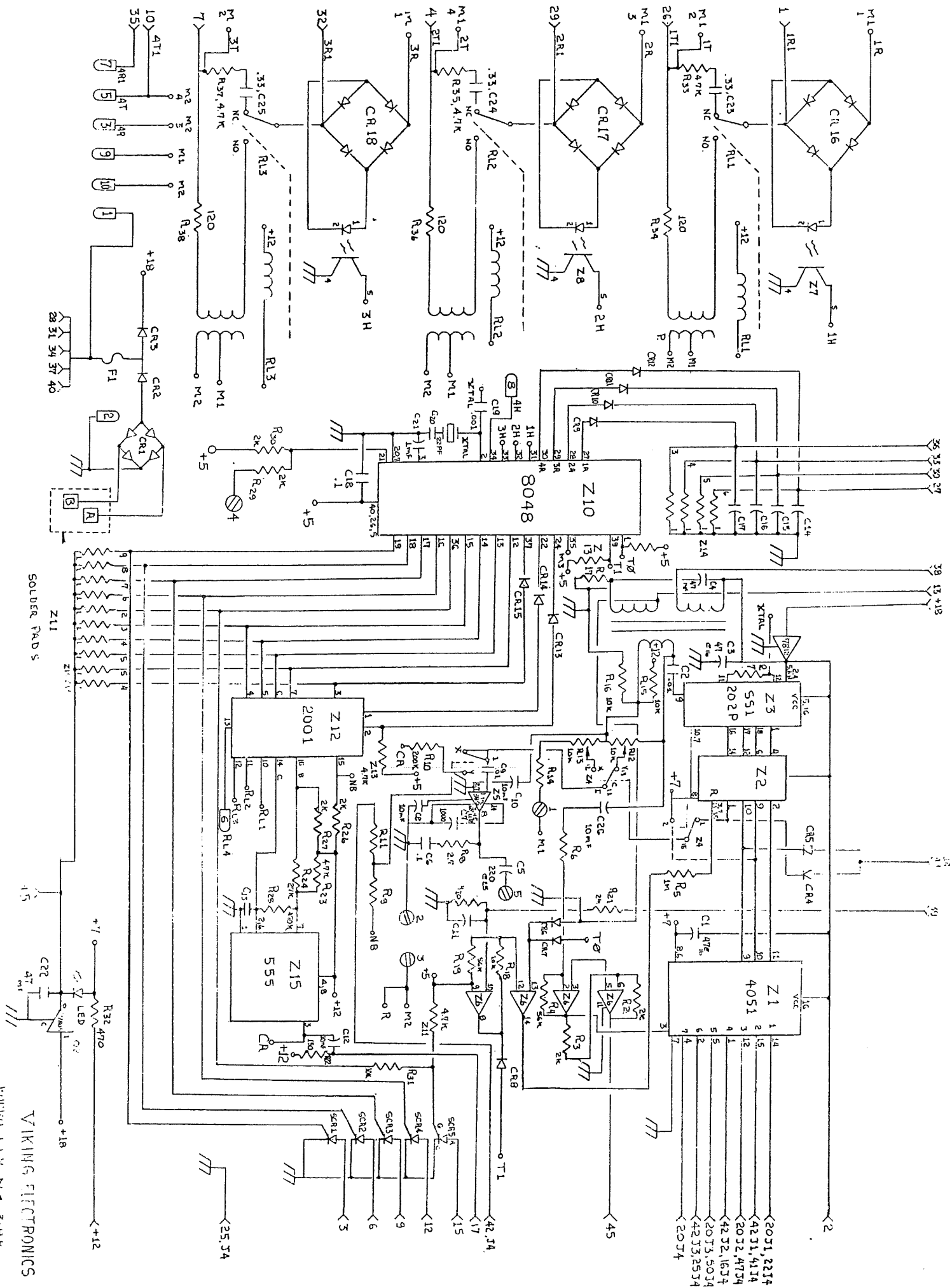


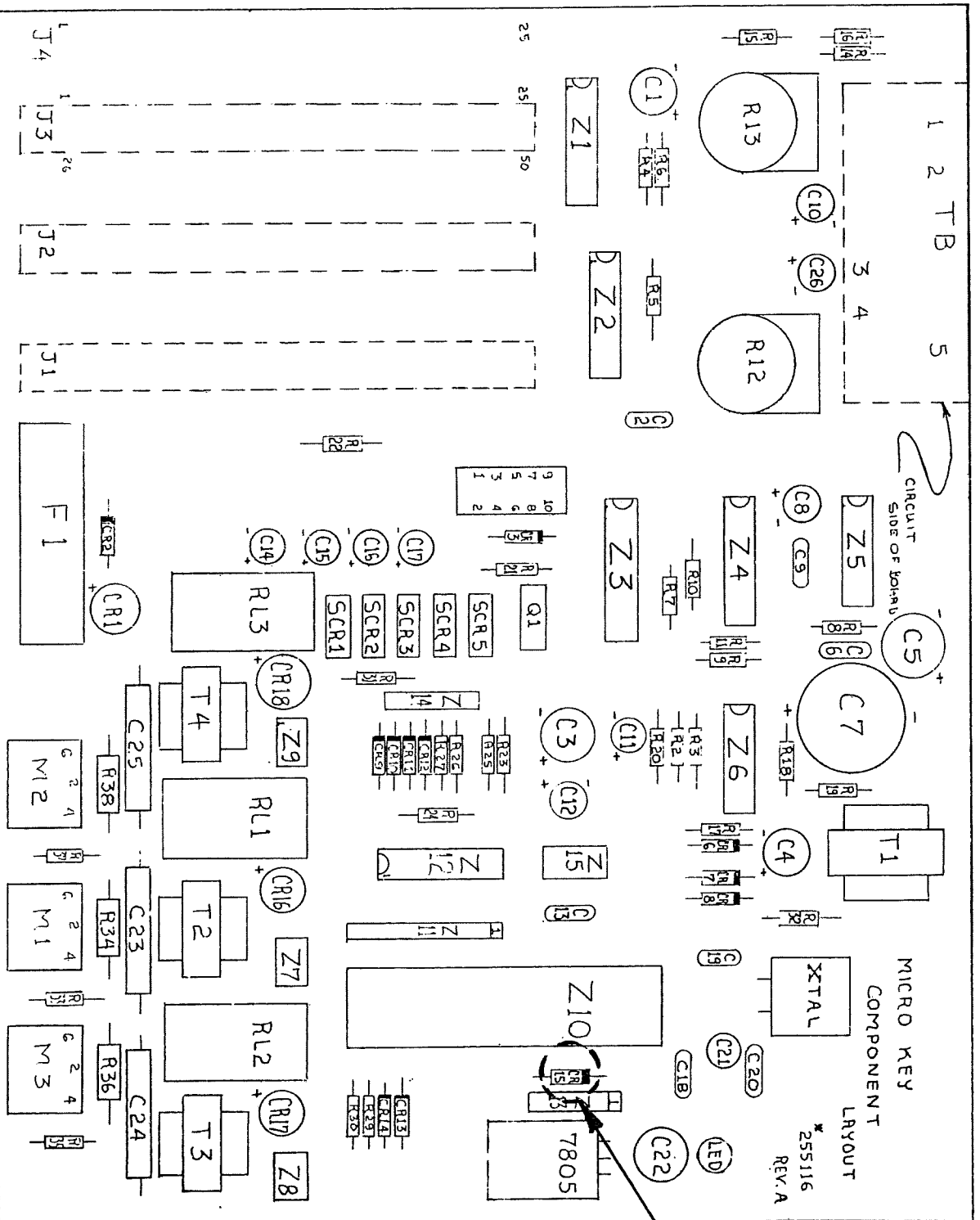
Figure 6

4.0 Trouble Shooting

If you have an installation problem, please check your line fuse, lamp fuse (on circuit board) and that you have power to the unit prior to calling. Our engineers are available to assist you from 9:00 a.m. to 4:30 p.m. Central Time. Phone (612) 436-7204. If a unit stops operating (all lights off, or on) disconnect power for 5 seconds to reset. This latch-up may occur during an electrical storm or momentary power failure.



5.0 SCHEMATICS AND CIRCUIT BOARD LAYOUT



6.0 F.C.C. Information

6.1 F.C.C. Registration

Complies with Part 68, F.C.C. Rules Registration #AH397D-70375-KN-E,
Ringer Equivalence: 0.2A
U.S.O.C. Jack Required: RJ-14C

6.2 Agency Agreement

Prior to scheduling your first installation, you must fill in the agency agreement letter. In Paragraph 4 fill in the names of those members of your organization you wish to supervise installations and fill in your company name and address. At the bottom of the page fill in the current date. Make three copies of the agency agreement and:

1. Return (1) copy to Viking Electronics, P. O. Box 362, Hudson, WI 54016.
2. File (1) copy with your telephone company (s).
3. Retain (1) copy for your own records.

As this is a non-protected system, you may also be required to fill in a blanket affidavit which is obtained from your local telephone company C.O.G. Group.

If you have no registered engineer in your company, fill in the name of your chief technical supervisor.

7.0 Maintenance

There are no user serviceable parts. See Paragraph 4.0.

8.0 Recommended spare parts

- 1.) 1.5 Amp 3 AG Fuses
- 2.) 10 Volt Lamps
- 3.) Lamp Pullers

LIMITED WARRANTY

The MICRO-KEY is warranted to be free from defects in workmanship and materials. If the unit fails to function properly within the first year after purchase, it may be returned prepaid along with \$5.00 for return postage and handling and will be repaired free of charge provided the unit has not in our opinion been damaged through improper usage. There may be an additional charge for units which are physically damaged or which, in our opinion have been damaged through improper usage. This warranty extends only to the repair or replacement of our own products. No other representation or warranty is made or implied.

viking electronics, inc.

511 2nd St., Hudson, WI 54016 . . . 715-386-8861 or 612-436-7204 (Mpls./St. Paul)

MODIFICATION OF NORTHERN TELECOM LOGIC 6 AND 10 TELEPHONES

NOTE: Before attempting to do the following modification, please make sure your telephone is equipped with the following line cord. (#D34 QH for Logic 6 and #D50 QJ for Logic 10)

1. Remove colored panel.
2. Remove 2 screws holding telephone together and disassemble.
3. Unscrew ringer from telephone, unplug ringer wires and remove.
4. On Logic 10 remove red wire connected between terminals C5 and C9.
5. Splice a 4.7K (yellow, violet, red) resistor into the slate-brown wire between terminal D8 and the hook switch. (See Figure 3).
6. Locate Diode CR1 on back terminal board of telephone. CR1 is the top component. (See Figure 1).
7. Cut the bottom of CR1 (Anode) from board.
8. For common audible and odd intercom stations connect speakers as shown in Figures 4 and 5.

Additional modification for even stations.

- A. Connect one end of installed speaker lead to terminal D5. Then cut the spade terminal from other speaker lead and strip back insulation 1/4".
- B. Solder the stripped speaker lead to the top banded end (cathode) of CR1. (See Figure 2). Make sure steps 6 and 7 have been done.

Additional modification for 2200A4X Series phones.

- A. Remove jumper from B7 to B9 and discard.
- B. Resistor in Step 5 above should terminate between B8 and D8 with slate-brown wire on B8.
- C. Switch underneath phone should be switched to the right (the normal position). If the switch has been removed a jumper from C1 to L2 and D1 to L1 should be installed.

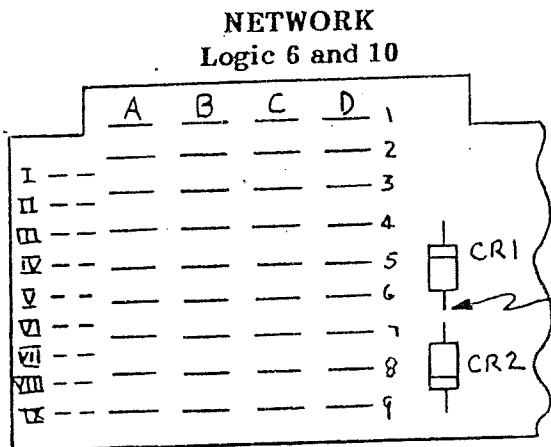


Figure 1

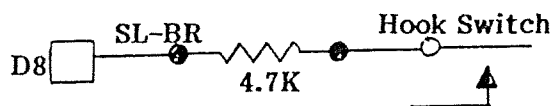


Figure 3

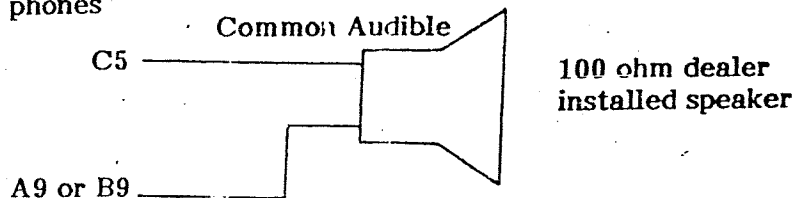


Figure 4

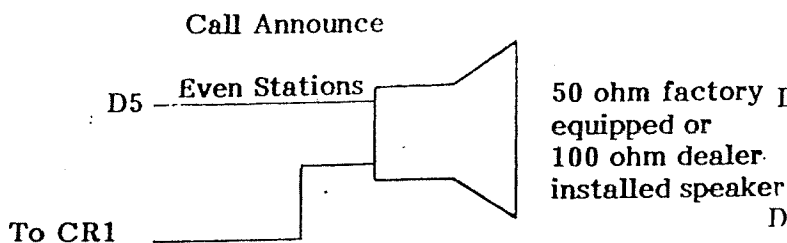


Figure 2

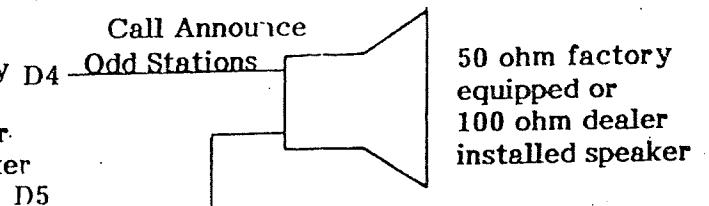


Figure 5