

BOGEN[®]

COMMUNICATIONS, INC.

FM/AM MONO RECEIVER

MODEL RM150A

The Bogen Model RM150A is a 15-watt FM/AM mono receiver which may also be used as a multi-purpose amplifier. Public address, telephone paging, and background music may be channeled to local and/or remote speakers, as detailed herein. Microphone precedence circuitry is provided (actuated by an external switch).

Multiple outputs allow connections to a booster amplifier, 4-, and 8-ohm speakers, and 25V or 70V constant-voltage systems. A rear-panel jack is provided for uninterrupted tape output.

OPERATING INSTRUCTIONS

POWER

The power on/off switch is part of the POWER/SPEAKER switch. The receiver is turned on in all positions except POWER OFF.

SPEAKER SELECTION

Rotate the POWER/SPEAKER switch to LOCAL or REMOTE, depending on which speakers you wish to use. If you want all speakers to operate, set the switch to LOCAL REMOTE.

FM RECEPTION

Set the FUNCTION switch to FM MUTE. Turn the TUNING knob until the pointer indicates the desired station on the FM (top) dial. Carefully adjust the TUNING knob until the TUNING Meter is at the green (center) LED.

NOTE

Muting removes the annoying noise between FM stations. The muting circuitry may not distinguish a very weak signal from interstation noise. To tune in very weak stations, defeat the MUTE circuit by setting the FUNCTION switch to FM.

AM RECEPTION

Set the FUNCTION switch to AM. Turn the TUNING knob until the pointer indicates the desired station on the AM (bottom) dial; ad-

just until the LEDs on the SIGNAL STRENGTH meter indicate the peak has been reached.

AUXILIARY SELECTION

To select tape/cassette player, TV audio, or other source connected to the AUX INPUT jack, set the FUNCTION switch to the AUX position.

FUNCTION OFF

When the FUNCTION switch is in the OFF position, only microphone- and telephone-originated announcements will be heard. Note that this switch position **does not remove power to the receiver.**

VOLUME

The VOLUME control is used for all program sources except microphone. To increase or decrease the volume, rotate the control clockwise or counterclockwise, respectively.

TONE

The BASS and TREBLE controls determine the overall tonal balance. With the controls in the mid-position (detented), the audio response is normal or "flat." To increase or decrease BASS or TREBLE, rotate the appropriate control clockwise or counterclockwise, respectively.

MICROPHONE

The microphone volume control should be set for the desired microphone volume level and can be left in that position even when the microphone is not in use.

The MIC PREC REMOTE terminals must be used in order to mute any program inputs and turn on the microphone input. (See Audio Inputs.)

NOTE

It is not necessary to adjust any other controls when using the microphone. The TAPE OUTPUT will not be muted while the microphone is in use.

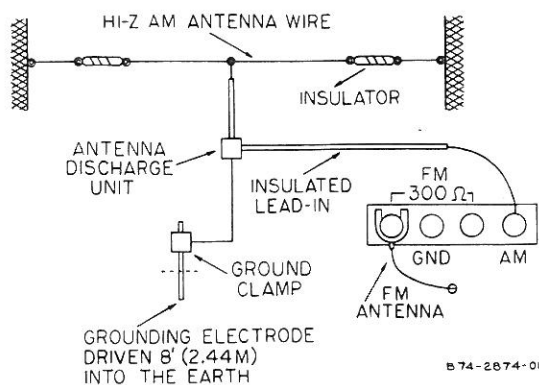


Figure 1—Connecting Outdoor AM and FM-Line Antennas

INSTALLATION

UNPACKING

The receiver has been carefully checked before leaving the factory. Inspect the unit and shipping container carefully for indications of improper handling. If the unit has been damaged, make an immediate claim to the distributor from whom it was purchased. If the receiver was shipped to you, notify the carrier without delay and place your claim.

POWER

LINE CORD. The AC line cord has a three-prong plug which should be plugged into a three-wire grounded 120VAC, 60Hz outlet. Where a three-wire outlet is not available, use an adapter (e.g., Leviton No. 5017) and connect the grounding pigtail to the screw securing the wall plate. If the wall plate screw is not grounded, connect a wire from the GND terminal of the receiver to a suitable ground.

A circuit breaker is mounted on the rear panel. Allow the unit to cool before resetting.

ANTENNAS

FM-LINE ANTENNA. The RM150A line cord may be used as an internal FM-line antenna for receiving FM broadcasts. (See Figure 1.) For improved reception, particularly in weak signal areas or for tuners mounted in consoles or racks, installation of an outdoor FM or "T" antenna is necessary.

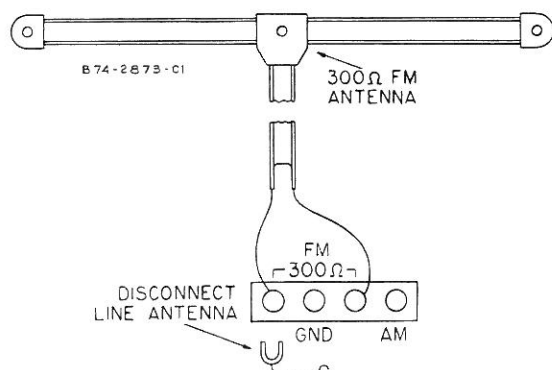


Figure 2—Connecting an Indoor FM Antenna; 300-Ohm System

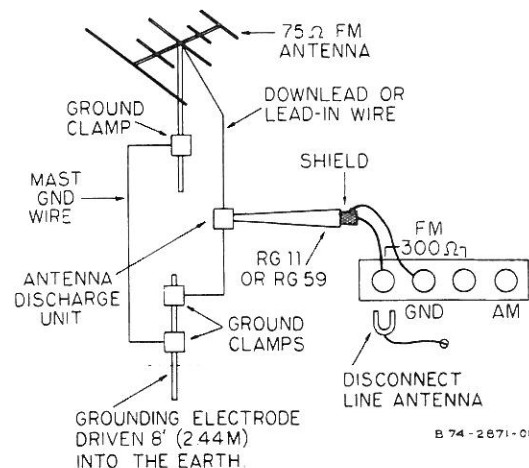


Figure 3—Connecting an Outdoor FM Antenna; 75-Ohm System

EXTERNAL FM ANTENNA. Always disconnect the FM-line antenna when using an external FM antenna.

To install a standard 300-ohm antenna system, connect the twin-lead transmission line as shown in Figures 2 and 4. If conditions require use of a coaxial transmission line, such as RG-11 or RG-59, connect the cable as shown in Figure 3. Coaxial cable must be used when the transmission is run in conduit.

For optimum performance, a separate FM antenna is recommended. If a TV antenna must be used for both FM and TV reception, install an FM signal splitter at the end of the transmission line, as shown in Figure 4.

The RM150A is designed for connection to various antenna systems, as illustrated in Figures 1 to 4.

CAUTION

Use No. 8 AWG aluminum wire, or larger, as ground wires for both mast and lead-in and secure them to the building structure with insulators spaced from 4 to 6 feet (1.22 to 1.83m.) apart. Mount an antenna discharge unit as close as possible to where the lead-in enters the building structure.

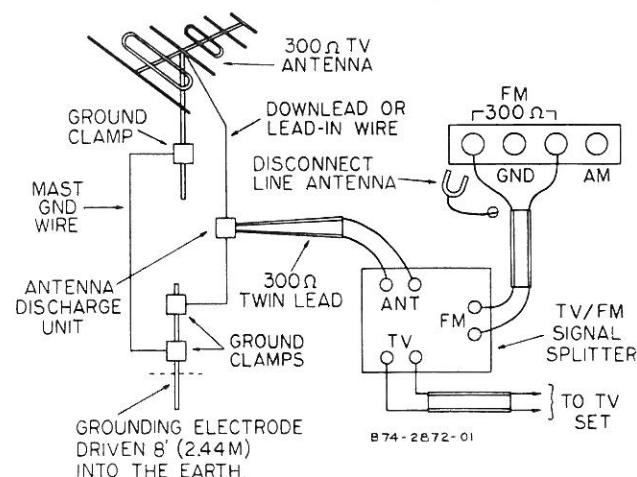
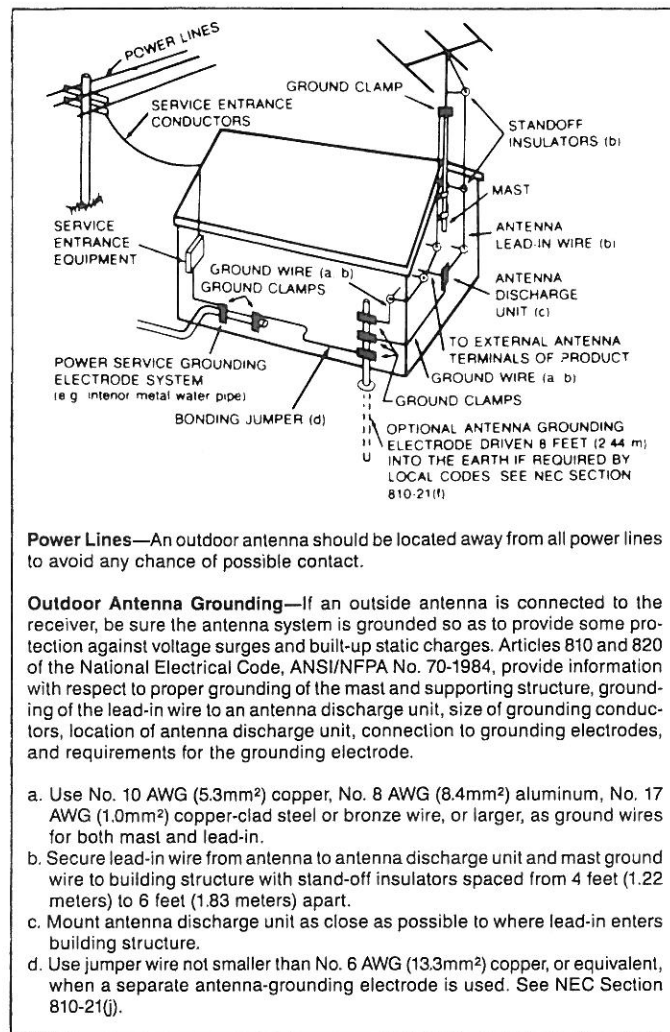


Figure 4—Connecting an Outdoor TV/FM Antenna



AM ANTENNA. A high-Q ferrite loopstick antenna, located on the rear of the RM150A, provides normal or strong AM signal reception. **Rotate the antenna in a horizontal plane only to avoid damage to the mechanical linkage.** No connections are necessary for AM reception with this antenna. For weak signal areas or for receivers enclosed in a metal rack, connect a standard outdoor antenna to the AM terminal, as shown in Figure 1.

AUDIO INPUTS

WARNING

Removal of the cover presents an electrical shock hazard. Only a qualified technician should perform this installation.

AUX INPUT. This jack is designed to receive an input from a high-level (0.1V) source, such as a tape recorder having a built-in

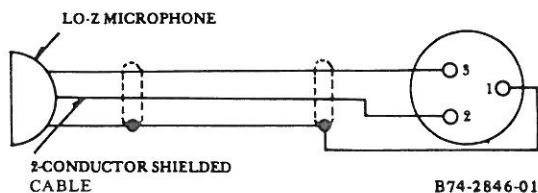


Figure 5—Connecting a Lo-Z Microphone

preamplifier or the audio output of a TV receiver. Use a single-conductor shielded cable terminated in a standard phono plug.

MICROPHONE/MIC PRECEDENCE. A low-impedance microphone may be connected to the receiver, as shown in Figure 5. An extra pair of leads, controlled by an external switch, must be connected to the MIC PREC REMOTE terminals in order to mute the program during paging or announcements. Some microphones, such as the Bogen Model MBS-510, are designed for this type of installation.

STANDARD TELEPHONE PAGING. To connect a standard telephone line, a matching transformer (Bogen Model WMT-1, or equivalent) is required. To install, see WMT-1 Installation Instructions (54-5215) and make the necessary modifications for microphone input described therein. An additional pair of wires is required to provide a contact closure when the access number is dialed. These are connected at the MIC PREC REMOTE terminals, and are used to mute the program and turn on the microphone input.

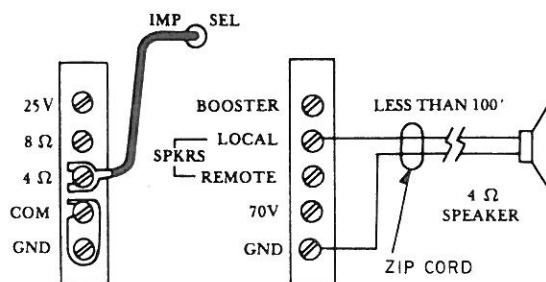
AUDIO OUTPUTS

CABLES. Low-impedance speakers may be connected with flexible line cord (zip cord) for distances up to 100 feet, or with unshielded twisted pair cable.

SPEAKERS. There are two terminal strips on the rear of the RM150A that permit connections to conventional 4- or 8-ohm speakers, or 25V or 70V constant-voltage distribution systems. Refer to the paragraph applicable to your system.

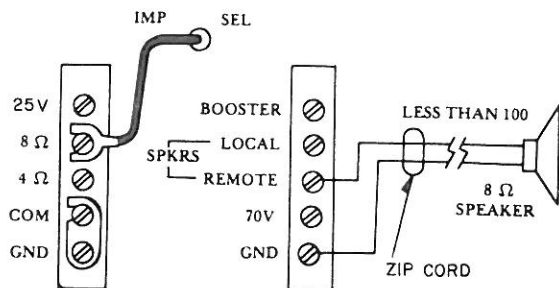
4- and 8-Ohm SPEAKERS.

1. Connect the IMP SEL lead to the terminal that corresponds to the impedance of your speaker. Figure 6 shows the impedance connection for a 4-ohm speaker and Figure 7 shows the connection for an 8-ohm speaker.
2. Connect one speaker lead to either the LOCAL or REMOTE terminal on the other terminal strip. Your choice will determine the front panel POWER/SPEAKER switch position to be used for speaker operation. Connect the other speaker lead to GND. Figure 6 shows a 4-ohm speaker connected for LOCAL operation; Figure 7 shows an 8-ohm speaker connected for REMOTE operation.
3. For standard conditions with unbalanced lines with one line grounded, the link between COM and GND is closed, as shown in Figures 6 and 7. If you wish to use two-conductor shielded cable, remove (open) the link, connect the cable shield to GND, and the second speaker lead to COM, **not GND**.



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Figure 6—4-Ohm Local Speaker Connections



A74-2841-01

Figure 7—8-Ohm Remote Speaker Connections

25V and 70V SYSTEMS.

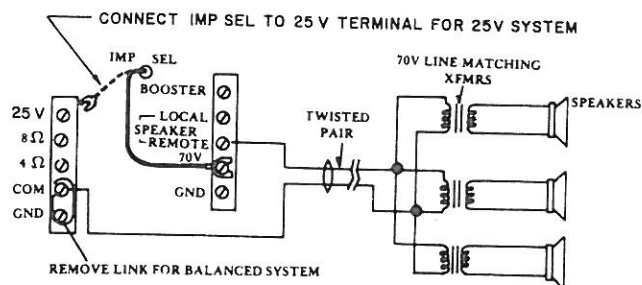
1. Connect the IMP SEL lead to the terminal that corresponds to the appropriate (25V or 70V) constant-voltage system to be used. (Figure 8 illustrates 25V with dotted lines and 70V with solid lines).
2. Connect one speaker lead to either the LOCAL or REMOTE terminal on the other terminal strip. Your choice will determine the front panel POWER/SPEAKER switch position to be used for speaker operation. Connect the other speaker lead to GND. Figure 8 illustrates connections for REMOTE operation.
3. For standard conditions with unbalanced lines with one line grounded, the link between COM and GND is closed, as shown in Figures 6 and 7. If you wish to use two-conductor shielded cable, remove (open) the link, connect the cable shield to GND, and the second speaker lead to COM, **not GND**.

PROGRAM OUTPUT. The TAPE OUT jack on the rear panel may be used to record programs from the receiver. To do so, connect this jack to the input of a tape recorder, using a single-conductor shielded cable terminating in standard phono plugs.

The TAPE OUT jack may also be used with a Bogen GA-2 amplifier and suitable telephone equipment to provide music-on-hold.

BOOSTER OUTPUT. If more than 15 watts output power is required, the booster output may be applied to the auxiliary input of a standard public address amplifier or the Hi-Z input of a booster amplifier. The booster output is under control of the RM150A VOLUME, BASS, and TREBLE controls and will provide a maximum of 5V to a high-impedance input.

To use the booster output, connect a single-conductor shielded cable from the BOOSTER terminal to the public address or booster amplifier. Ground the cable shield to the GND terminal. The RM150A may then continue to be loaded to its full power and the added amplifier may also be simultaneously loaded to its rated output.



B74 2842 01

Figure 8—Matching 25V or 70V Constant-Voltage Systems to Remote Speakers

RACK PANEL KIT

The RM150A may be installed in a 19-inch sound equipment rack, using the optional Bogen Model RPK47 Rack Mounting Brackets.

MAINTENANCE

CAUTION

There are no user-serviceable parts within the receiver. To avoid an electric shock hazard, have all internal servicing performed by qualified service personnel only.

The warranty will become void if repairs are made by other than the Bogen Service Department or an authorized service agency.

BOGEN SERVICE

We are interested in the maintenance of your Bogen equipment. In the event of any difficulty, do not hesitate to ask our advice or assistance. Information can be obtained by writing to Service Department, Bogen Communications, Inc., P.O. Box 575, Ramsey, NJ 07446.

When communicating with us, give the model number and series designation of your unit. Describe the difficulty encountered and include details on the electrical connections to associated equipment. We will send you information if the remedy appears simple. If service is required, we will send you the name and address of the nearest authorized Bogen Service Agency.

When shipping your unit, pack it well, using the original shipping carton or a similar container and filler material to prevent damage in transit. Send the unit, fully insured and prepaid, via UPS or any responsible carrier. It will be promptly repaired and returned to you collect (or prepaid while in warranty).

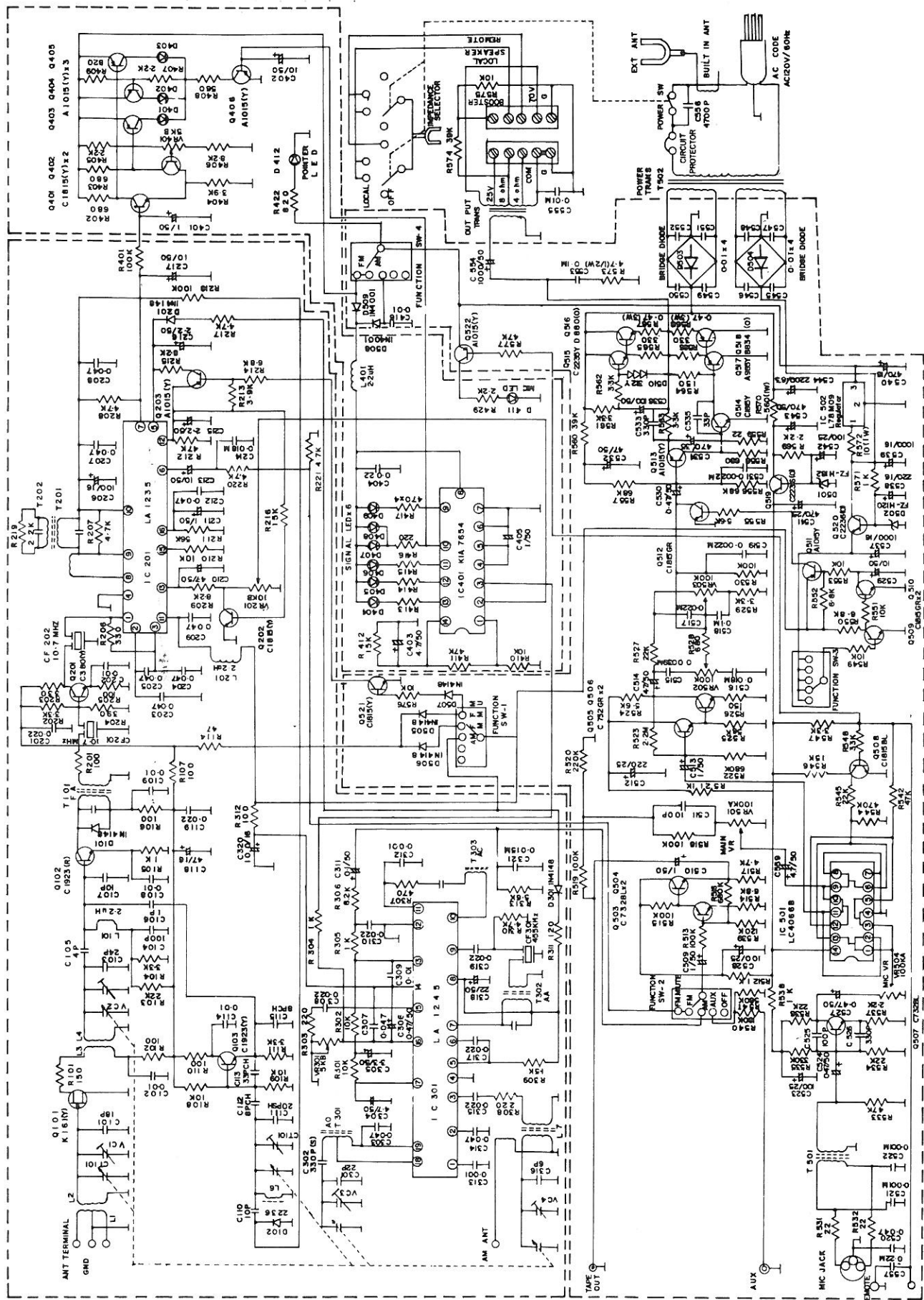


Figure 9—Model RM150A—Schematic Diagram

EXPLANATION OF GRAPHIC SYMBOLS

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE



This symbol is used to warn the user that uninsulated "dangerous" voltage within the unit may have sufficient magnitude to cause electric shock.



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



This symbol is used to alert the user that important operating and maintenance instructions accompany this unit. Read them carefully.