RCA

Mobile Communication Equipment

Station Description

Series 1000

Remote Control Base, Repeater, and Control Repeater Stations

AA795M

IB-8028377

N3LKL

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INTRODUCTION

SCOPE OF THE INSTRUCTION BOOK

This instruction book contains information regarding the use of RCA 1000 Series Mobile Communications Equipment in three specific applications: (1) Remote Control Base Station; (2) Single Channel Repeater Station; (3) Control Repeater Station. Individual component assemblies are described sufficiently to provide a basic understanding of their functions within the system; however, detailed descriptions and servicing information for most items will be found in separate instruction books. These books are listed in the System Index.

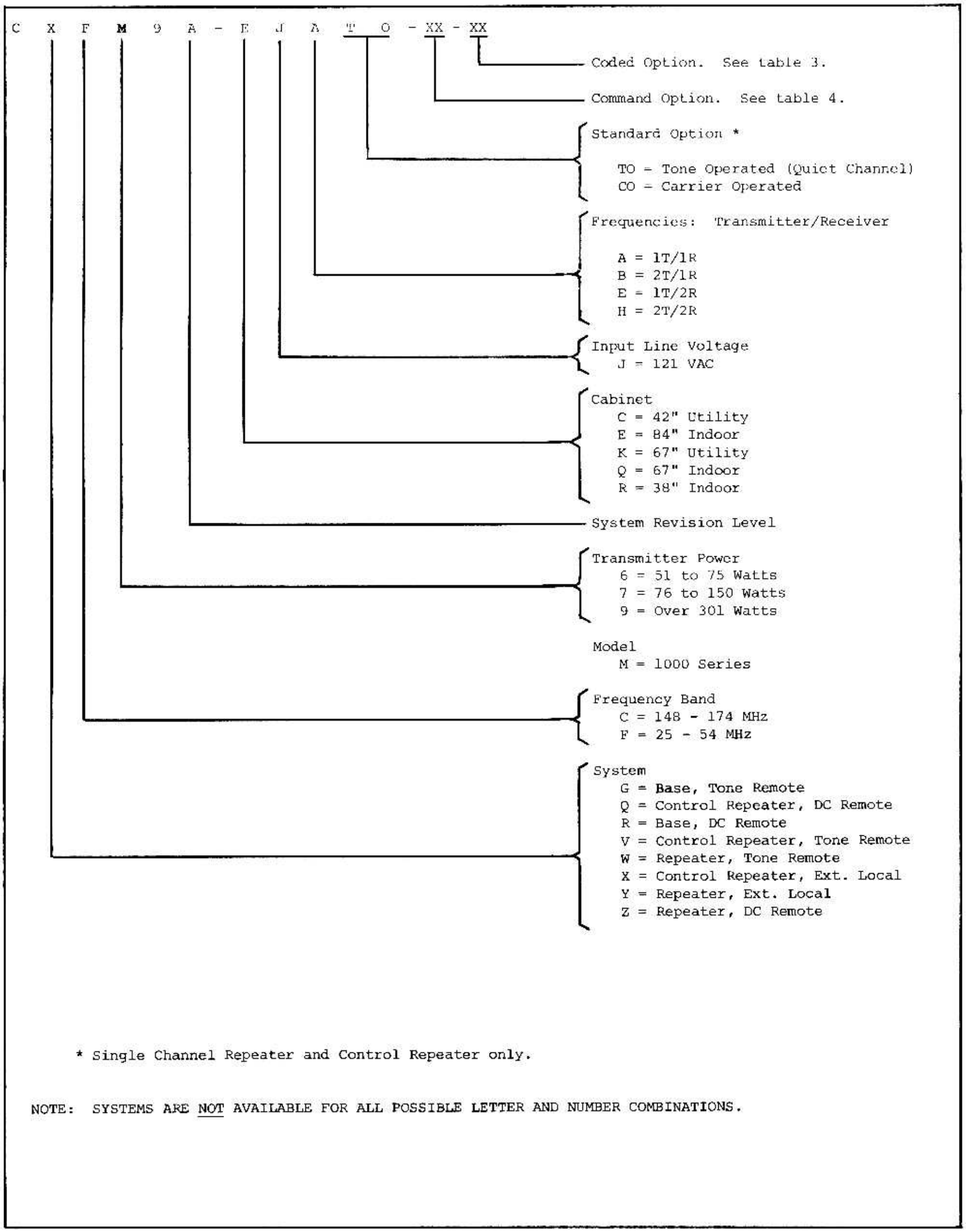
SYSTEM IDENTIFICATION

The model number of an RCA 1000 Series Communications System not only identifies the unit, but also provides coded information regarding the operating characteristics of the station. Table 1, Model Number Definition, shows how to interpret the coded information contained in the model number.

Table 2 is composed of four System Charts: (1) 30-50 MHz, Medium Power; (2) 148-174 MHz, Medium Power; (3) 30-50 MHz, High Power; (4) 148-174 MHz, High Power. Each of these charts has two sections. The upper section itemizes operating features and component assemblies which characterize a specific model; the lower section lists items which are common to all the models featured on that page.

Options that may be added to a system to meet a variety of custom requirements are listed in table 3, Coded Options, and table 4, Command Options.

TABLE 1. MODEL NUMBER DEFINITION



* Single Channel Repeater and Control Repeater only.

NOTE: SYSTEMS ARE NOT AVAILABLE FOR ALL POSSIBLE LETTER AND NUMBER COMBINATIONS.

TABLE 2. SYSTEM CHARTS

SYSTEM CHART
SERIES 1000
30-50 MHz
MEDIUM POWER

NOTES:
1. 1 SYSTEM USES ONE OF THIS ITEM.
   X SYSTEM USES ONE OR MORE OF THIS ITEM.
2. ALL SYSTEMS 50/100/110 WATTS RF POWER.
3. SYSTEM TYPE:
   A - BASE STATION
   B - REPEATER STATION (SINGLE CHANNEL)
   C - CONTROL REPEATER
4. * (BASIC SYSTEM MODELS) ALL MODELS AVAILABLE IN FIVE DIFFERENT CABINETS. SEE MODEL NUMBER DEFINITION ON A PRECEEDING PAGE.
   * (REFERENCE) FREQUENCY SELECTIVE ITEM.

BASIC SYSTEM MODEL	SYSTEM TYPE	TYPE OF SQUELCH	CONTROL METHOD
CRFM7-A-*JA	A	CARRIER	DC REMOTE
CGFM7-A-*JA	A	CARRIER	TONE REMOTE
CYFM7-A-*JACO	B	CARRIER	EXT. LOCAL
CYFM7-A-*JATC	B	QC TONE	EXT. LOCAL
CZFM7-A-*JACO	B	CARRIER	DC REMOTE
CZFM7-A-*JATO	B	QC TONE	DC REMOTE
CWFM7-A-*JACO	B	CARRIER	TONE REMOTE
CWGM7-A-*JATO	B	QC TONE	TONE REMOTE
CXFM7-A-*JACC	C	CARRIER	EXT. LOCAL
CXFM7-A-*JATC	C	QC TONE	EXT. LOCAL
CQFM7-A-*JACO	C	CARRIER	DC REMOTE
CQFM7-A-*JATO	C	QC TONE	DC REMOTE
CVFM7-A-*JACO	C	CARRIER	TONE REMOTE
CVFM7-A-*JATO	C	QC TONE	TONE REMOTE

REFERENCE	DESCRIPTION
MI-559227	QUIET CHANNEL (3C)
3723469-*	QC ENCODER REED
3723469-*	QC DECODER REED
MI-559417	CARRIER OPERATED SWITCH (COS)
MI-559273	TONE OPERATED SWITCH (TOS)
MI-559421	EXCITER AUDIO BALANCE KIT
MI-559419	REPEATER MODULE
MI-559446-1	DRIVER MODULE
MI-559415-1	DC LINE TERMINATION MODULE
MI-559690	STEERING DIODE NETWORK MODULE
MI-559692	TONE LINE TERMINATION MODULE
MI-559612	GUARD TONE DECODER MODULE

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												1	1
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		1	1	1	1			1		1			
					1			1				1	1
		1	1	1	1			1				1	1
					1		1	1	X		1		
		1	1	1	1	1	1	1	X		1		
					1		1	1	X	1	1		
		1	1	1	1	1	1	1	X	1	1		
					1		1	1	X		1	1	1
		1	1	1	1	1	1	1	X		1	1	1

ITEMS COMMON TO ALL SYSTEM ON THIS PAGE

QUANTITY	REFERENCE	DESCRIPTION
1	MI-559495	INDICATOR PANEL (67" and 84" INDOOR CABINETS ONLY)
1	MI-559411	POWER DISTRIBUTION PANEL (ALL CABINETS EXCEPT 38")
1	MI-559504-*	TRANSMITTER PANEL, 30-50 MHz
2	MI-559230-*	TCXO, 5PPM
1	MI-559498-*	RECEIVER/EXCITER PANEL, 30-50 MHz
1	MI-559472	POWER SUPPLY PANEL
1	MI-559543	CONTINUOUS DUTY KIT
1	MI-559412-2	CONTROL TERMINATION PANEL

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TABLE 2. SYSTEM CHARTS (Continued)

SYSTEM CHART
SERIES 1000
30-50 MHz
HIGH POWER

NOTES:
1. 1 USES ONE OF THIS ITEM.
   X USES ONE OR MORE OF THIS ITEM.
2. ALL SYSTEMS UP TO 350 WATTS RF POWER.
3. SYSTEM TYPE:
   A - BASE STATION
   B - REPEATER STATION, SINGLE CHANNEL.
   C - CONTROL REPEATER STATION.
4. * (BASIC SYSTEM MODEL) ALL SYSTEMS AVAILABLE IN 84" and 67" INDOOR CABINETS, AND IN 67" UTILITY CABINET.

   * (REFERENCE) FREQUENCY SELECTIVE ITEM.

BASIC SYSTEM MODEL	SYSTEM TYPE	TYPE OF SQUELCH	CONTROL METHOD	ANTENNA RELAY PANEL (DUPLEX)	ANTENNA RELAY PANEL (SIMPLEX	QUIET CHANNEL (QC)	QC ENCODER REED	QC DECODER REED	CARRIER OPERATED SWITCH (COS)	TONE OPERATED SWITCH (TOS)	EXCITER AUDIO BALANCE KIT	REPEATER MODULE	DRIVER MODULE	DC LINE TERMINATION MODULE	STEERING DIODE NETWORK KIT	TONE LINE TERMINATION MODULE	GUARD TONE DECODER MODULE
REFERENCE				MI-559527-A	MI-559527	MI-559227	3723469-*	3723469-*	MI-559417	MI-559273	MI-559424	MI-559419	MI-559446-1	MI-559415-1	MI-559690	MI-559692	MI-559612
CRFM9-B-*JA	A	CARRIER	DC REMOTE		1									1			
CGFM9-B-*JA	A	CARRIER	TONE REMOTE		1											1	1
CYFM9-B-*JACO	B	CARRIER	EXT. LOCAL	1					1			1					
CYFM9-B-*JATO	B	QC TONE	EXT. LOCAL	1		1	1	1	1			1					
CZFM9-B-*JACO	B	CARRIER	DC REMOTE	1					1			1		1			
CZDN9-B-*JATO	B	QC TONE	DC REMOTE	1		1	1	1	1			1		1			
CWFM9-B-*JACO	B	CARRIER	TONE REMOTE	1					1			1				1	1
CWFM9-B-*JATO	B	QC TONE	TONE REMOTE	1		1	1	1	1			1				1	1
CXFM9-B-*JACO	C	CARRIER	EXT. LOCAL						1		1	1	X		1		
CXFM9-B-*JATO	C	QC TONE	EXT. LOCAL	1		1	1	1	1	1	1	1	X		1		
CQFM9-B-*JACO	C	CARRIER	DC REMOTE	1					1		1	1	X	1	1		
CVFM9-B-*JACO	C1	QC TONE	DC REMOTE	1		1	1	1	1	1	1	1	X	1	1		
CVFM9-B-*JACO	C	CARRIER	TONE REMOTE	1					1		1	1	X		1	1	1
CVFM9-B-*JATO	C	QC TONE	TONE REMOTE	1		1	1	1	1	1	1	1	X		1	1	1

ITEMS COMMON TO ALL SYSTEMS ON THIS PAGE

QUANTITY	REFERENCE	DESCRIPTION
1	MI-559411	POWER DISTRIBUTION PANEL
1	MI-559504-*	TRANSMITTER PANEL, 30-50 MHz
2	MI-559230-*	TCXO, 5 PPM
1	MI-559498-*	RECEIVER/EXCITER PANEL, 30-50 MHz
1	MI-559472	POWER SUPPLY PANEL
1	MI-559515	METER PANEL, EXTERNAL (INDOOR CABINETS ONLY)
1	MI-559098	METER PANEL, INTERNAL (UTILITY CABINETS ONLY
1	MI-559088-A	POWER AMPLIFIER, 50 MHz
1	MI-559078	HIGH VOLTAGE POWER SUPPLY
1	MI-559543	CONTINUOUS DUTY KIT
1	MI-559444	FAN KIT
1	MI-17717-*	FILTER, 30-50 MHz
1	MI-559413	INTERLOCK SWITCH KIT
1	MI-559412-2	CONTROL TERMINATION PANEL

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TABLE 2. SYSTEM CHARTS (Continued)

SYSTEM CHART
SERIES 1000
148-174 MHz
MEDIUM POWER

NOTES:
1. 1 SYSTEM USES ONE OF THIS ITEM.
   X SYSTEM USES ONE OR MORE OF THIS ITEM.
2. ALL SYSTEMS 75 WATTS RF POWER.
3. SYSTEM TYPE:
   A - BASE STATION
   B - REPEATER STATION, SINGLE CHANNEL
   C - CONTROL REPEATER STATION
4. * (BASIC SYSTEM MODEL) ALL MODELS AVAILABLE IN FIVE DIFFERENT CABINETS. SEE MODEL NUMBER DEFINITION ON A PRECEEDING PAGE.

   * (REFERENCE) FREQUENCY SELECTIVE ITEM.

BASIC SYSTEM MODEL	SYSTEM TYPE	TYPE OF SQUELCH	CONTROL METHOD
CRCM6-B-*JA	A	CARRIER	DC REMOTE
CGCM6-B-*JA	A	CARRIER	TONE REMOTE
CYCM6-B-*JACO	B	CARRIER	EXT. LOCAL
CYCM6-B-*JATO	B	QC TONE	EXT. LOCAL
CZCM6-B-*JACO	B	CARRIER	DC REMOTE
CECM6-B-*JATO	B	QC TONE	DC REMOTE
CWCM6-B-*JACO	B	CARRIER	TONE REMOTE
CWCM6-B-*JATO	B	QC TONE	TONE REMOTE
CXCM6-B-*JACO	C	CARRIER	EXT. LOCAL
CXCM6-B-*JATO	C	QC TONE	EXT. LOCAL
CQM6-B-*JACO	C	CARRIER	DC REMOTE
CQM6-B-*JATO	C	QC TONE	DC REMOTE
CVM6-B-*JACO	C	CARRIER	TONE REMOTE
CVM6-B-*JATO	C	QC TONE	TONE REMOTE

REFERENCE	DESCRIPTION
MI-559227	QUIET CHANNEL (QC)
3723469*	QC ENCODER REED
3723469-*	QC DECODER REED
MI-559417	CARRIER OPERATED SWITCH (COS)
MI-559273	TONE OPERATED SWITCH (TOS)
MI-559424	EXCITER AUDIO BALANCE KIT
MI-559419	REPEATER MODULE
MI-559446-1	DRIVER MODULE
MI-559415-1	DC LINE TERMINATION MODULE
MI-559690	STEERING DIODE NETWORK MODULE
MI-559692	TONE LINE TERMINATION MODULE
MI-559612	GUARD TONE DECODER MODULE

				1							1		
												1	1
			1				1						
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			1			1				1			
1	1	1	1			1				1			
			1			1						1	1
1	1	1	1			1						1	1
			1		1	1	X		1				
1	1	1	1	1	1	1	X	1	1				
			1		1	1	X	1	1				
1	1	1	1	1	1	1	X	1	1				
			1		1	1	X		1	1	1		
1	1	1	1	1	1	1	X		1	1	1		

ITEMS COMMON TO ALL SYSTEMS ON THIS PAGE

QUANTITY	REFERENCE	DESCRIPTION
1	MI-559495	INDICATOR PANEL (67" and 84" INDOOR CABINETS ONLY)
1	MI-559411	POWER DISTRIBUTION PANEL (ALL CABINETS EXCEPT 38")
1	MI-559505-A	TRANSMITTER PANEL, 150 MHz
2	MI-559230-*	TCXO, 5 PPM
1	MI-559272-1	RECEIVER/EXCITER PANEL, 150 MHz
1	MI-559472	POWER SUPPLY PANEL
1	MI-559543	CONTINUOUS DUTY KIT
1	MI-559412-2	CONTROL TERMINATION PANEL

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TABLE 2. SYSTEM CHARTS (Continued)

SYSTEM CHART
SERIES 1000
148-174 MHz
HIGH POWER

NOTES:
1. 1 USES ONE OF THIS ITEM.
   X USES ONE OR MORE OF THIS ITEM.
2. ALL SYSTEMS UP TO 350 WATTS RF POWER.
3. SYSTEM TYPE:
   A - BASE STATION
   B - REPEATER STATION, SINGLE CHANNEL
   C - CONTROL REPEATER STATION
4. * (BASIC SYSTEM MODEL) ALL SYSTEMS AVAILABLE IN 84" AND 67" INDOOR CABINETS, AND IN 67" UTILITY CABINET.
   * (REFERENCE) FREQUENCY SELECTIVE ITEM.

BASIC SYSTEM MODEL	SYSTEM TYPE	TYPE OF SQUELCH	CONTROL METHOD	ANTENNA RELAY PANEL (DUPLEX) MI-559527-A	ANTENNA RELAY PANEL (SIMPLEX) MI-559527-D	QUIET CHANNEL (QC) MI-559227	QC ENCODER REED 3723469-*	QC DECODER REED 3723469-*	CARRIER OPERATED SWITCH (COS) MI-559417	TONE OPERATED SWITCH (TOS) MI-559273	EXCITER AUDIO BALANCE KIT MI-559424	REPEATER MODULE MI-559419	DRIVER MODULE MI-559446-1	DC LINE TERMINATION MODULE MI-559415-1	STEERING DIODE NETWORK MODULE MI-559690	TONE LINE TERMINATION MODULE MI-559692	GUARD TONE DECODER MODULE MI-559612
CRCM9-B-*JA	A	CARRIER	DC REMOTE		1									1			
CGCM9-B-*JA	A	CARRIER	TONE REMOTE		1											1	1
CYCM9-B-*JACO	B	CARRIER	EXT. LOCAL	1					1			1					
CYCM9-B-*JATO	B	QC TONE	EXT. LOCAL	1		1	1	1	1			1					
CZCM9-B-*JACO	B	CARRIER	DC REMOTE	1					1			1		1			
CZCM9-B-*JATO	B	QC TONE	DC REMOTE	1		1	1	1	1			1		1			
CWCM9-B-*JACO	B	CARRIER	TONE REMOTE	1					1			1				1	1
CXCM9-B-*JACO	C	CARRIER	EXT. LOCAL	1					1		1	1	X		1		
CXCM9-B-*JATO	C	QC TONE	EXT. LOCAL	1		1	1	1	1	1	1	1	X		1		
CQCM9-B-*JACO	C	CARRIER	DC REMOTE	1					1		1	1	X	1	1		
CQCM9-B-*JATO	C	QC TONE	DC REMOTE	1		1	1	1	1	1	1	1	X	1	1		
CVCM9-B-*JACO	C	CARRIER	TONE REMOTE	1					1		1	1	X		1	1	1
CVCM9-B-*JATO	C	QC TONE	TONE REMOTE	1		1	1	1	1	1	1	1	X		1	1	1
CWCM9-B-*JATO	B	QC TONE	TONE REMOTE	1		1	1	1	1			1				1	1

ITEMS COMMON TO ALL SYSTEMS ON THIS PAGE

QUANTITY	REFERENCE	DESCRIPTION
1	MI-559411	POWER DISTRIBUTION PANEL
1	MI-559505-A	TRANSMITTER PANEL, 150 MHz
2	MI-559230-*	TCXO, 5 PPM
1	MI-559272-1	RECEIVER/EXCITER PANEL, 150 MHz
1	MI-559472	POWER SUPPLY PANEL
1	MI-559515	METER PANEL, EXTERNAL (INDOOR CABINETS ONLY)
1	MI-559098	METER PANEL, INTERNAL (UTILITY CABINETS ONLY)
1	MI-559090-A	POWER AMPLFIFIER, 150 MHz
1	MI-559078	HIGH VOLTAGE POWER SUPPLY
1	MI-559543	CONTINUOUS DUTY KIT
1	MI-559444	FAN KIT
1	MI-17692-A	FILTER, 150 MHz
1	MI-559413	INTERLOCK SWITCH KIT
1	MI-559412-2	CONTROL TERMINATION PANEL

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TABLE 3. CODED OPTIONS

CODE*	DESCRIPTION
AA1 (1)	RF PRE-AMPLIFIER, 150 MHz
AA2 (1)	RF PRE-AMPLIFIER, 450 MHz
CF (2)	FAN KIT
CO	CARRIER OPERATED SWITCH (COS)
DA (3)	DUPLEXER INSTALLATION
DR	DUAL CHANNEL MONITOR
LK (4)	INTERLOCK KIT
LO	PHONE LINE SURGE SUPPRESSION KIT
LP1	AC POWER LINE SURGE SUPPRESSION KIT
LT2	TRANSMIT TIME LIMITER
MP	TEST METER PANEL
NC	NOISE CLIPPER, 50 and 150 MHz RECEIVER
QC (5)	QUIET CHANNEL (QC), RECEIVER AND TRANSMITTER
QR	QC RECEIVER ONLY
QT	QC TRANSMITTER ONLY
RA (6)	2ND RECEIVER, 50 MHz
RB	2nd RECEIVER WITH QC, 50 MHz
RJ (6)	2nd RECEIVER, 150 MHz
RK (6)	2nd RECEIVER WITH QC, 150 MHz
RO	2nd RECEIVER, 450 MHz
RP (6)	2nd RECEIVER WITH QC, 450 MHz
RT1 (5)	CABLE, SIGNAL DIVIDER, 50 MHz
RT2 (5)	CABLE, SIGNAL DIVIDER, 150 AND 450 MHz
TT1 (5)	CENTER TUNING CRYSTAL, TRANSMITTER
TT2 (5)	CENTER TUNING CRYSTAL, RECEIVER
TS1	TONE OPERATED SWITCH (TOS)
TS2	TONE OPERATED SWITCH (TOS)

NOTES:

(1) Improves receiver sensitivity.

(2) Not available with 38" cabinets.

(3) Provides RF connectors, cable, and system test required to install a duplexer.

(4) For 42" and 67" utility cabinets.

(5) Specify frequency.

(6) The 2nd receiver options require a 2nd speaker in the extended local control units.

* These options as listed are factory installed. For availability as field installed options, contact an RCA sales representative.

TABLE 4. COMMAND OPTIONS

CODE (1)	DESCRIPTION
B01	Comparator Relays - 65K1 (2)
B02	Comparator Relays - 65K1, 65K2 (2)
B03	Comparator Relays - 65K1, 65K3 (2)
B04	Comparator Relays - 65K1, 65K2, 65K3 (2)
B05	Comparator Relays - 65K1, 65K3, 65K4 (2)
B06	Comparator Relays - 65K1, 65K2, 65K3, 65K4 (2)
B07	Function Tone Decoders - 1950 Hz (3)
B08	Function Tone Decoders - 1850 Hz, 1950 Hz (3)
B09	Function Tone Decoders - 1950 Hz, 2050 Hz (3)
B10	Function Tone Decoders - 1850 Hz, 1950 Hz, 2050 Hz (3)
B11	Function Tone Decoders - 1750 Hz, 1950 Hz, 2050 Hz (3)
B12	Function Tone Decoders - 1750 Hz, 1850 Hz, 1950 Hz 2050 Hz (3)
B13	Latching relay. Used with extended local control only
B14	Driver Module (4)
B15	Matrix Module, Cable, and 8 Diodes (4)
B16-1	Separate Receiver/Transmitter Audio Phone Lines (5)
B16-2	Separate 2nd Receiver Audio Phone Line (5)
B17-1	Function Tone Decoders - 1250 Hz, 1350 Hz (3)
B17-2	Function Tone Decoders - 1050 Hz, 1150 Hz (3)
B17-3	Function Tone Decoders - 1450 Hz, 1550 Hz (3)

NOTES:

(1) B01 through B13 always carry a letter suffix (example: B01Y). This suffix specifies required control wiring modifications and the presence or absence of latching relay 61K2. These codes are fully defined in the applicable Remote Control System instruction book.

(2) 65K1 through 65K4 are used in conjunction with the DC Comparator Module to decode the command signals in a DC Remote Control System. The usual relay assignments are as follows:

Relay	Signal	Command
65K1	+10mA	Transmit Command #1 (F1)
65K2	+ 5mA	Transmit Command #2 (F2)
65K3	-10mA	Non-Transmit Command #1 (MON 1)
65K4	- 5mA	Non-Transmit Command #2 (MON 2)

(3) The Function Tone Decoder Modules are used in conjunction with the Guard Tone Decoder Module to decode the command signals in a Tone Remote Control System. The usual decoder frequency assignments are as follows:

Frequency	Command
2050 Hz	Non-Transmit Command #1 (MON 1)
1950 Hz	Transmit Command #1 (F1)
1850 Hz	Transmit Command #2 (F2)
1750 Hz	Non-Transmit Command #2 (MON 2)
1650 Hz	Unassigned
1550 Hz	Assigned to Code B17-3
1450 Hz	Assigned to Code B17-3
1350 Hz	Assigned to Code B17-1
1250 Hz	Assigned to Code B17-1
1150 Hz	Assigned to Code B17-2
1050 Hz	Assigned to Code B17-2

(4) Used in a Repeater Station to provide multiple-function control capability.

(5) Uses a 4-Wire Audio Adapter Module and a Receive/Transmit Amplifier Module to provide 4-wire audio capability.

GENERAL DESCRIPTION

SYSTEM FEATURES

For an RF power level of up to 110 watts, RCA 1000 Series stations are completely solid-state. A single, efficient vacuum-tube PA stage extends the power level to 350 watts.

Transmitter excitation and receiver local oscillator frequenices are both held in close tolerance with Temperature Compensated Crystal Oscillators (TCXO's). Standard units provide tolerances of 5 ppm, and, if greater precision is required, optional TCXO's are available with 2 ppm tolerances.

The Continuous Duty Kit, a system of large-surface-area heatsinks, provides all the necessary cooling required for continuous duty operation in the medium power station (up to 110 watts RF power). A small, quiet fan provides the cooling for the PA tube in the high-power station (up to 350 watts).

All RCA 1000 Series stations operate from standard, 120 VAC, single-phase line voltage. The highest DC voltage in a medium power station is 13.8 volts. A separate high-voltage power supply provides plate and screen voltages for the PA in the high-power systems.

For the safety of servicing personnel, all areas where hazardous voltages exist are conspicuously labeled. In thie high-power stations, door-interlock switches disable all power supplies when a rear door is opened.

SERVICING FEATURES

Solid-state circuitry and modular construction provide a compact system in an uncrwded cabinet, allowing easy access to all component assemblies. Plug-in cable connectors provide interconnection between component assemblies. Connections to circuit boards are made with push-on type connectors. This interconnection method results in a maximum adaptability of components with a minimum of wiring.

The Control Termination Panel provides facilities for checking and calibrating audio levels between the remote control units and the receiver/transmitter components. For details, refer to the Control Termination panel Servicing Information manual. Audio level adjustment procedures are given in the Control System Description books (DC or Tone).

A connector on the Transmitter Panel and one on the Receiver/Exciter Panel provide access to several signal measurement points. These points may be monitored with the CX-40 Test Adapter (for use with Simpson model 260 or 270 multimeters), the portable TM-868 Test Meter, or the optional rack-mounted MI-559420 Test Meter Panel.

EQUIPMENT DESCRIPTION

RECEIVER/EXCITER PANEL

The Receiver/Exciter Panel houses the complete receiver, including the 5-Watt audio amplifier, plus the exciter stage for the transmitter. Options that may be added to this panel are: Quiet Channel (QC), Tone Operated Switch (TOS), Carrier Operated Switch (COS), Noise Clipper, Receiver RF Preamplifier, Government Band Conversion Kits, and special tolerance Temperature Compensated Crystal Oscillators (2 ppm, TCXO). Refer to the Receiver Unit Tuning and Servicing instruction book for more detailed information.

TRANSMITTER PANEL

The Transmitter Panel houses the transmitting RF multipliers, the power amplifier (PA), the output power regulators, and the antenna switching circuitry (simplex operation) for up to 110 watts of RF output power. The Continuous Duty Kit provides adequate heat sinking to permit continuous transmitter keying for an indefinite period of time. For more detailed information, refer to the Transmitter Unit Tuning and Servicing Instruction book.

HIGH POWER AMPLIFIER PANEL

The High Power Amplifier Panel houses an efficient, vacuum-tube RF power amplifier stage to provide an output power level of up to 350 watts. As a part of the system, the power amplifier requires a Meter Panel (external or internal), a High Voltage Power Supply Panel, and an Antenna Relay Panel. For more detailed information, refer to the Power Amplifier and Power Supply Tuning and Servicing instruction book.

CONTROL TERMINATION PANEL

The Control Termination Panel contains circuitry essential to the control of a station. It is composed of a loudspeaker, front panel control devices, a group of basic modules, optional modules for adapting the system to a specific application, and the necessary interconnecting wiring. For more detailed information, refer to the Control Terination Panel Servicing Information instruction book.

POWER SUPPLY PANEL

The Power Supply Panel produces the operating voltages for the station transmitter (excluding the High Power Amplifier), the receiver, and the control circuitry. The unit develops a regulated 13.8 (nominal) VDC at 5 amps full load and an unregulated 12.8 (nominal) VDC at 22 amps full load. For more detailed information, refer to the Power Supply Panel Description and Adjustment instrution book.

AUXILIARY ITEMS AND OPTIONS

Indicator Panel and Meter Panels

The Indicator Panel is supplied with medium power stations using the 67-inch and 84-inch indoor cabinets. Two indicator lamps, when lit, indicate that AC power is applied to the cabinet (green lens), and that the transmitter is being keyed (red lens). Servicing information for the Indicator panel is located at the back of this book.

In the high power stations using the 67-inch and 84-inch indoor cabinets, the same two indicator lamps are located on the External Meter Panel. Also on this panel is a PLATE ON indciator (yellow lens). Both the Internal and the External Meter Panels include three meters that indicate: (1) PA plate current (2) PA plate voltage, and (3) PA grid current. Servicing information for the Meter Panels is located in the Power Amplifier and Power Supply Tuning and Servicing instruction book.

Power Distribution Panel

The Power Distribution Panel consists of a 3-1/2" rack-mounting panel with a terminal board, an on/off switch, and AC utility outlets. The terminal board provides the interconnecting junction points for the 120 VAC power line. Servicing information for the Power Distribution panel is located at the back of this book.

Options

To comply with the special needs of each two-way communications system, a large number of optional items are available for the RCA 1000 Series stations. Tables 3 and 4 list most of these optional items which may be used singly or in a variety of combinations.

Those stations outlined in the Systems Charts (table 2) cover the majority of installation requirements. When an installation becomes more specialized than these basic systems, instruction book supplements are provided; thus, descriptive and servicing information is tailored to fit the equipment.

STATION DESCRIPTION

BASIC CIRCUITRY

The information in this section applies to the use of RCA 1000 Series Mobile Communications Equipment in systems of three specific types: Remote Control Base Station Models, Single Channel Repeater Models, and Control Repeater Models.

As shown in the System Charts at the front of this book, all RCA 1000 Series stations are available in various output power ranges and carrier frequency bands. What distinguishes one system type from another is the optional features ordered for the Control Termination Panel.

Figures 1 through 3 are individual block diagrams, one for each of the three system types. The Control Termination panel is represented as a large block in the left-hand portion of each diagram; smaller blocks depict the functions performed.

The basic modules of the Control Termination Panel provide a LOCAL TEST CONTROL point and AUDIO PROCESSING facilities for monitoring and adjusting transmit/receive audio levels. Additionally, the PRIORITY INTERLOCKING AND CONTROL SIGNAL PROGRAMMING portion determines the priority and distribution of all control inputs from all sources. Thus, the Control Termination Panel processes and routes the control outputs necessary for the operation of the specific type of system in use.

REMOTE CONTROL BASE STATION MODELS

Figure 1 is a block diagram representation of a typical RCA 1000 Series Remote Control Base Station. The primary requirement of a Remote Control Base Station is to provide a fixed location two-way communications link to vehicular units equipped with mobile radio gear.

The block diagram shows that extended local and remote control units may be connected into the control system. The extended local control unit is wired directly into the system, but the remote control unit requires that its signals be interpreted. Depending on whether the remote control unit uses DC or tone signalling, the method of interpretation must employ either DC comparator relays or tone decoders.

As many as four control signal inputs may be required to operate the Remote Control Base Station. To distinguish between the separate control signal inputs, regardless of the function that they ultimately perform, they are referred to as TRANSMIT and NON-TRANSMIT COMMANDS. On the block diagram these are shown as TX COM #1, TX COM #2, NON-TX COM #1 and NON-TX COM #2. TRANSMIT COMMANDS are generally used to select carrier frequency and key the transmitter; NON-TRANSMIT COMMAND are used to perform all other functions.

The Control Termination Panel may produce as many as four control signal outputs. These are labeled on the block diagram as: RECEIVER MUTE, F1 SELECT, F2 SELECT, and TX KEYING. The actual use of these control signals depends on the requirements of a particular Remote Control Base Station (refer to the appropriate Control System instruction book for details).

SINGLE CHANNEL REPEATER STATION MODELS

Figure 2 is a block diagram representation of a typical RCA 1000 Series Single Channel Repeater Station. The primary requirement of a Single Channel Repeater Station is to extend the transmission range between a vehicular unit equipped with mobile radio gear and a base station.

The block diagram shows that extended local and remote control units may be connected into the control system. The extended local control unit is wired directly into the system, but the remote control unit requires that its signals be interpreted. Depending on whether the remote control unit uses DC or tone signalling, the method of interpretation must employ either DC comparator relays or tone decoders.

As many as four control signal inputs may be required to operate the Control Repeater Station. To distinguish between the separate control signal inputs, regardless of the function that they ultimately perform, they are referred to as TRANSMIT and NON-TRANSMIT COMMANDS. On the block diagram these are shown as TX COM #1, TX COM #2, NON-TX COM #1 and NON-TX COM #2. TRANSMIT COMMANDS are generally used to select carrier frequency and to key the transmitter; NON-TRANSMIT COMMANDS are used to perform all other functions.

The Control Termination Panel may produce as many as five control signal outputs. These are labled on the block diagram as: RECEIVER MUTE, COS DISABLE, TOS DISABLE, QC ENCODER ENABLE, and TX KEYING. The actual use of these control signals depends on the requirements of a particular Single Channel Repeater Station (refer to the appropriate Control System instruction book for detils).

CONTROL REPEATER STATION MODELS

Figure 3 is a block diagram representation of a typical RCA 1000 Series Control Repeater Station. The primary requirement of a Control Repeater Station is to control a base station or another repeater station.

The block diagram shows that extended local and remote control units may be connected into the control system. The extended local control unit is wired directly into the system, but the remote control unit requires that its signals be interpreted. Depending on whether the remote control unit uses DC or tone signalling, the method of interpretation must employ either DC comparator relays or tone decoders.

As many as four control signal inputs may be required to operate the Control Repeater Station. To distinguish between the separate control signal inputs, regardless of the function that they ultimately perform, they are referred to as TRANSMIT and NON-TRANSMIT COMMANDS. On the block diagram these are shown as TX COM #1, TX COM #2, NON-TX COM #1 and NON-TX COM #2. TRANSMIT COMMANDS are generally used to select carrier frequency and to key the transmitter; NON-TRANSMIT COMMANDS are used to perform all other functions.

The Control Termination Panel may produce as many as five control signal outputs. These are labeled on the block diagram as: RECEIVER MUTE, TOS DISABLE, COS DISABLE, QC ENCODER ENABLE, and TX KEYING. The actual use of these control signals depends on the requirements of a particular Control Repeater Station (refer to the appropriate Control System instruction book for details).

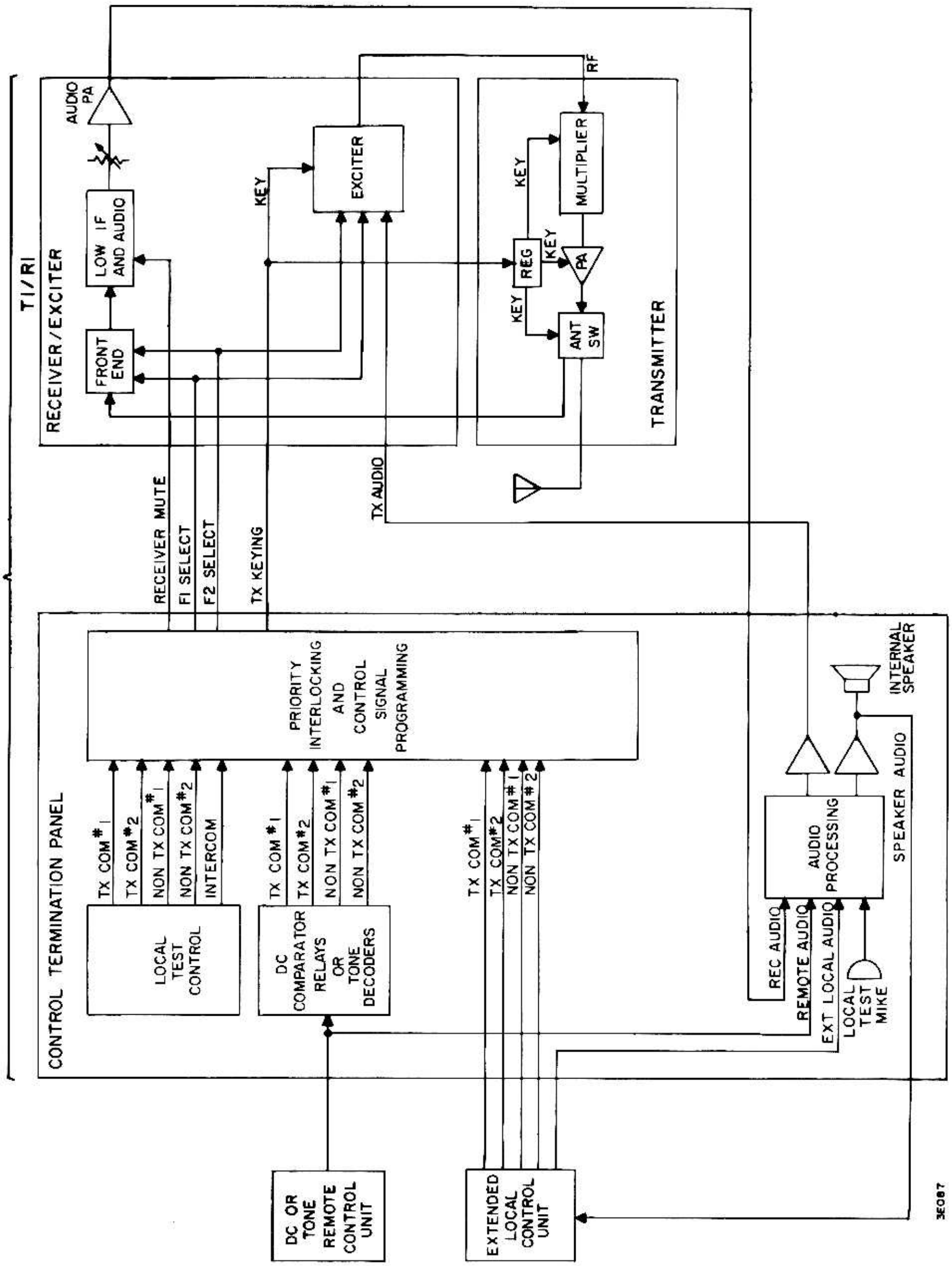
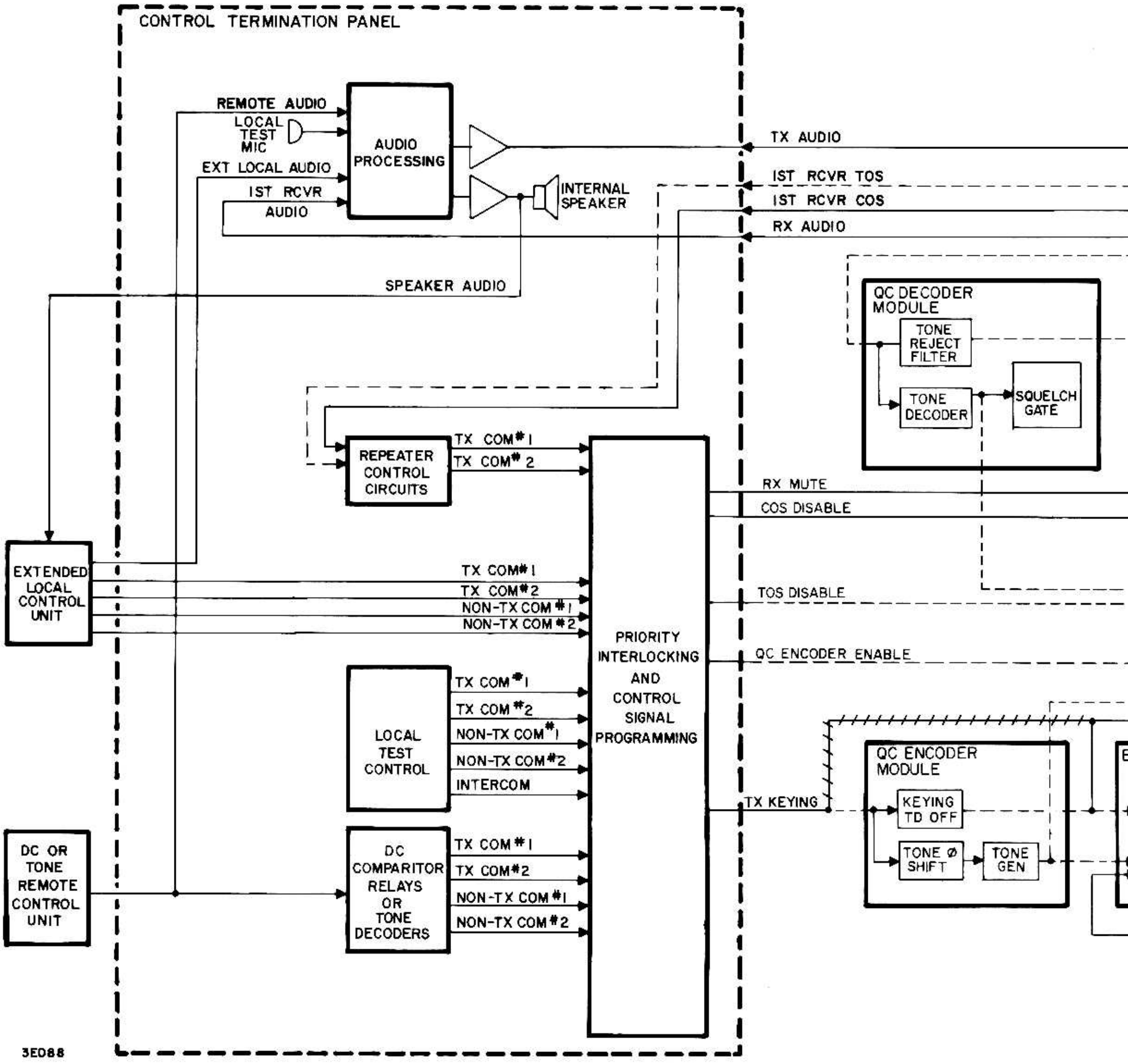


Figure 1. Block Diagram, Remote Control Control Base Station


CONTROL TERMINATION PANEL
REMOTE AUDIO
LOCAL TEST MIC
EXT LOCAL AUDIO
IST RCVR AUDIO
AUDIO PROCESSING
INTERNAL SPEAKER
SPEAKER AUDIO
TX AUDIO
IST RCVR TOS
IST RCVR COS
RX AUDIO
QC DECODER MODULE
TONE REJECT FILTER
TONE DECODER
SQUELCH GATE
REPEATER CONTROL CIRCUITS
TX COM#1
TX COM#2
RX MUTE
COS DISABLE
EXTENDED LOCAL CONTROL UNIT
TX COM#1
TX COM#2
NON-TX COM#1
NON-TX COM#2
TOS DISABLE
PRIORITY INTERLOCKING AND CONTROL SIGNAL PROGRAMMING
QC ENCODER ENABLE
LOCAL TEST CONTROL
TX COM#1
TX COM#2
NON-TX COM#1
NON-TX COM#2
INTERCOM
QC ENCODER MODULE
TX KEYING
KEYING TD OFF
TONE Ø SHIFT
TONE GEN
DC OR TONE REMOTE CONTROL UNIT
DC COMPARITOR RELAYS OR TONE DECODERS
TX COM#1
TX COM#2
NON-TX COM#1
NON-TX COM#2
3E088

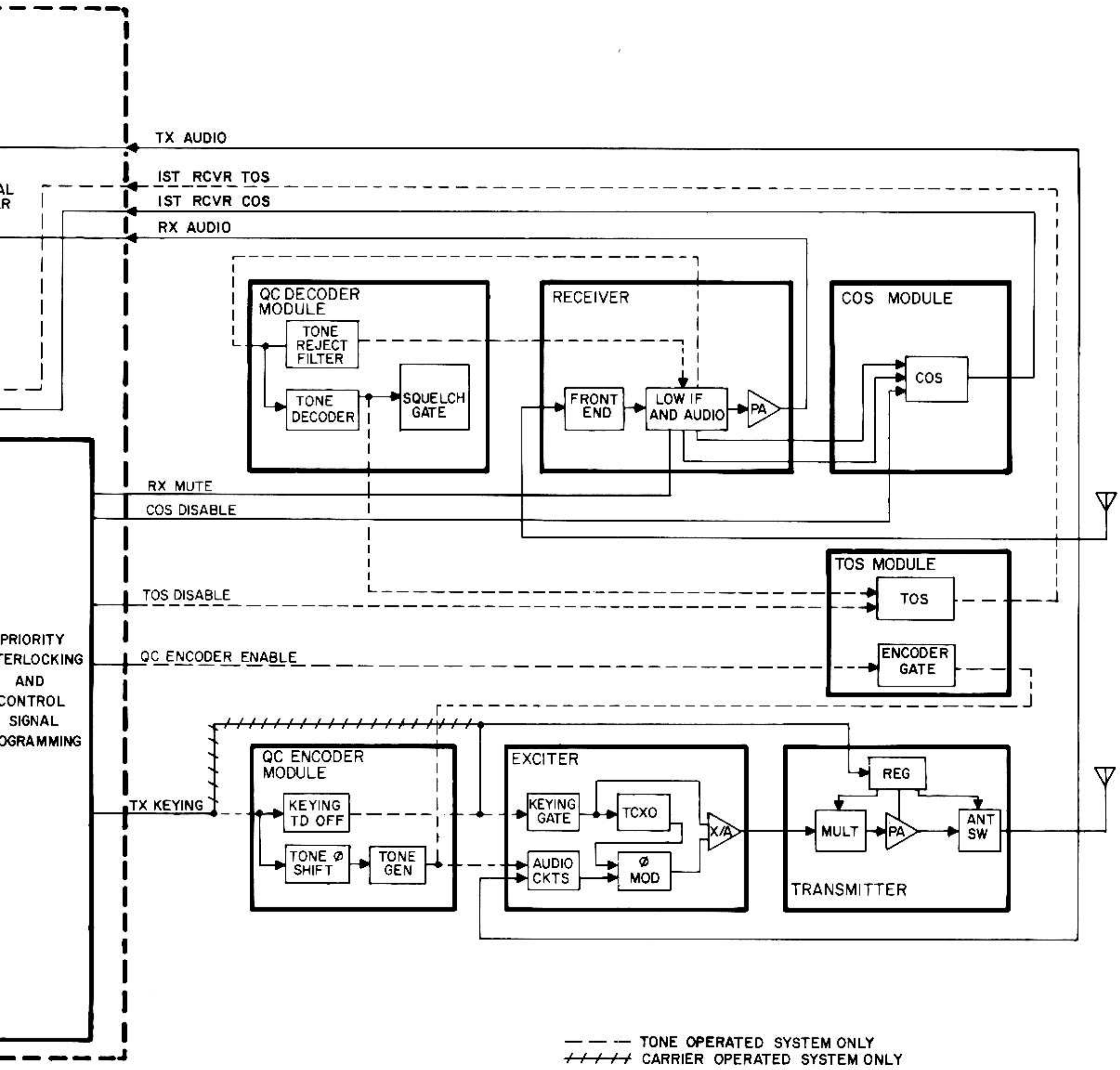


Figure 2. Block Diagram, Single Channel Repeater Station

CONTROL TERMINATION PANEL

REMOTE AUDIO
LOCAL TEST MIC
EXT LOCAL AUDIO
IST RCVR AUDIO
AUDIO PROCESSING
INTERNAL SPEAKER
SPEAKER AUDIO

TX AUDIO
IST RCVR TOS
IST RCVR COS
RX AUDIO

QC DECODER MODULE
TONE REJECT FILTER
TONE DECODER
SQUELCH GATE

RECEIVER
FRONT END
LOW IF AND AUDIO
PA

COS MODULE
COS

REPEATER CONTROL CIRCUITS
TX COM* 1
TX COM* 2

RX MUTE
COS DISABLE

TOS MODULE
TOS
ENCODER GATE

TOS DISABLE
QC ENCODER ENABLE

TX COM*1
TX COM*2
NON-TX COM*1
NON-TX COM*2

PRIORITY INTERLOCKING AND CONTROL SIGNAL PROGRAMMING

LOCAL TEST CONTROL
TX COM*1
TX COM*2
NON-TX COM*1
NON-TX COM*2
INTERCOM

DC COMPARITOR RELAYS OR TONE DECODERS
TX COM*1
TX COM*2
NON-TX COM*1
NON-TX COM*2

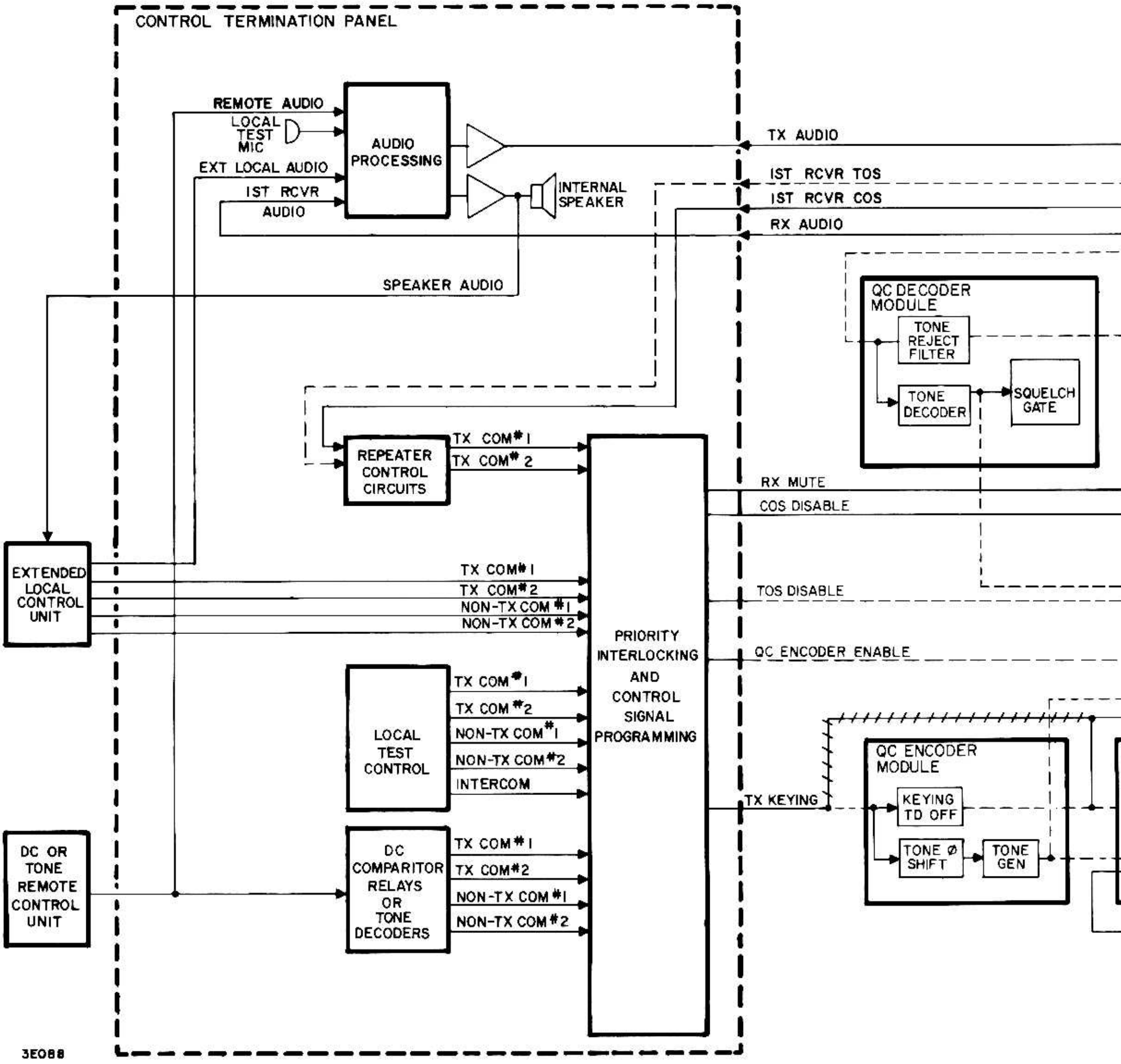
TX KEYING

QC ENCODER MODULE
KEYING TD OFF
TONE Ø SHIFT
TONE GEN

EXCITER
KEYING GATE
TCXO
AUDIO CKTS
Ø MOD
X/A

TRANSMITTER
REG
MULT
PA
ANT SW

— — — TONE OPERATED SYSTEM ONLY
//////// CARRIER OPERATED SYSTEM ONLY


CONTROL TERMINATION PANEL
REMOTE AUDIO
LOCAL TEST MIC
EXT LOCAL AUDIO
IST RCVR AUDIO
AUDIO PROCESSING
INTERNAL SPEAKER
SPEAKER AUDIO
TX AUDIO
IST RCVR TOS
IST RCVR COS
RX AUDIO
QC DECODER MODULE
TONE REJECT FILTER
TONE DECODER
SQUELCH GATE
REPEATER CONTROL CIRCUITS
TX COM# 1
TX COM# 2
RX MUTE
COS DISABLE
EXTENDED LOCAL CONTROL UNIT
TX COM# 1
TX COM# 2
NON-TX COM # 1
NON-TX COM # 2
TOS DISABLE
PRIORITY INTERLOCKING AND CONTROL SIGNAL PROGRAMMING
QC ENCODER ENABLE
LOCAL TEST CONTROL
TX COM # 1
TX COM # 2
NON-TX COM # 1
NON-TX COM # 2
INTERCOM
QC ENCODER MODULE
KEYING TD OFF
TONE Ø SHIFT
TONE GEN
TX KEYING
DC OR TONE REMOTE CONTROL UNIT
DC COMPARITOR RELAYS OR TONE DECODERS
TX COM # 1
TX COM#2
NON-TX COM # 1
NON-TX COM # 2
3E088

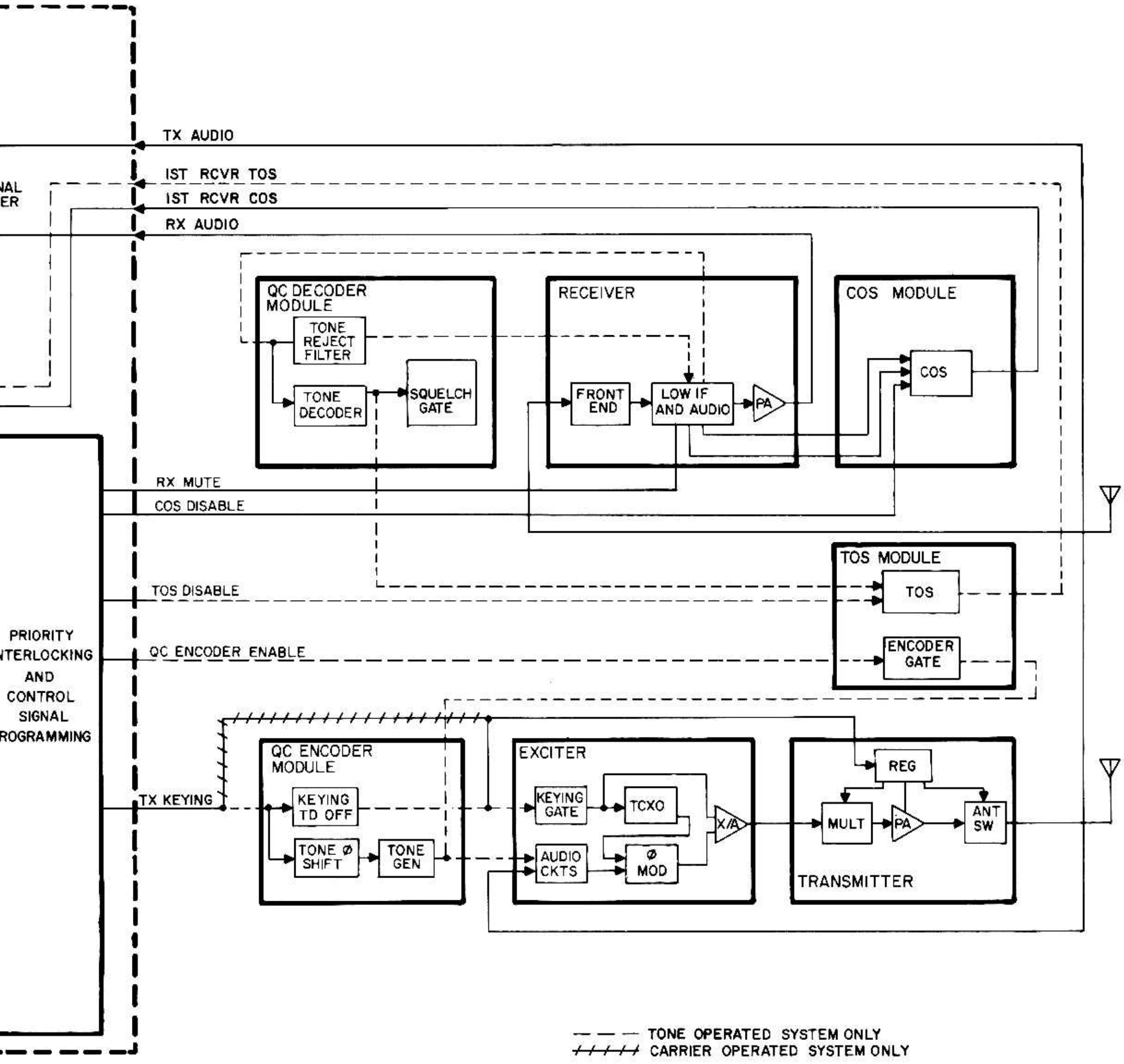


Figure 2. Block Diagram, Single Channel Repeater Station

CONTROL TERMINATION PANEL

REMOTE AUDIO
LOCAL TEST MIC
EXT LOCAL AUDIO
IST RCVR AUDIO
AUDIO PROCESSING
INTERNAL SPEAKER
SPEAKER AUDIO

TX AUDIO
IST RCVR TOS
IST RCVR COS
RX AUDIO

QC DECODER MODULE
TONE REJECT FILTER
TONE DECODER
SQUELCH GATE

RECEIVER
FRONT END
LOW IF AND AUDIO
PA

COS MODULE
COS

REPEATER CONTROL CIRCUITS
TX COM* 1
TX COM* 2

RX MUTE
COS DISABLE

TOS MODULE
TOS
ENCODER GATE

TOS DISABLE
QC ENCODER ENABLE

TX COM* 1
TX COM* 2
NON-TX COM* 1
NON-TX COM* 2

LOCAL TEST CONTROL
TX COM* 1
TX COM* 2
NON-TX COM* 1
NON-TX COM* 2
INTERCOM

DC COMPARITOR RELAYS OR TONE DECODERS
TX COM* 1
TX COM* 2
NON-TX COM* 1
NON-TX COM* 2

PRIORITY INTERLOCKING AND CONTROL SIGNAL PROGRAMMING

TX KEYING

QC ENCODER MODULE
KEYING TD OFF
TONE Ø SHIFT
TONE GEN

EXCITER
KEYING GATE
TCXO
X/A
AUDIO CKTS
Ø MOD

REG
MULT
PA
ANT SW
TRANSMITTER

— — — TONE OPERATED SYSTEM ONLY
/////// CARRIER OPERATED SYSTEM ONLY

Figure 2. Block Diagram, Single

SERVICING INFORMATION

Most of the material in this section pertains to the RCA 1000 Series Stations as complete systems. The only component assemblies covered here are the Indicator Panel, the Power Distribution panel, and cable assemblies. All other component assemblies are covered in separate instruction books which are listed in the System Index.

REPLACEMENT PARTS

Symbol	*Stock No.*	*Drawing No.*	*Description*
			CABLE ASSEMBLY
	640196	3457886-506	MI-559274-E CONTROL TERMINATION PANEL TO FIRST RECEIVER/EXCITER PANEL
4P1	245500	3464559-044	CONNECTOR - 12 PIN HOUSING, YELLOW
4P2	245496	3464559-049	CONNECTOR - 12 PIN HOUSING, BLACK
4P3	243752	3464559-040	CONNECTOR - 12 PIN HOUSING, NATURAL
4P4	245497	3464559-047	CONNECTOR - 12 PIN HOUSING, VIOLET
	242753	3464559-201	PIN
	640197	3457886-507	MI-559274-F CONTROL TERMINATION PANEL TO SECOND RECEIVER/EXCITER PANEL
4J1	247835	3464559-141	CONNECTOR - 12 SOCKET HOUSING, BROWN
4J2	247836	3464559-148	CONNECTOR - 12 SOCKET HOUSING, GREY
4J3	245481	3464559-143	CONNECTOR - 12 SOCKET HOUSING, ORANGE
4P1	245499	3464559-045	CONNECTOR - 12 PIN HOUSING, GREEN
4P2	245500	3464559-044	CONNECTOR - 12 PIN HOUSING, YELLOW
4P3	243752	3464559-041	CONNECTOR - 12 PIN HOUSING, BROWN
4P4	240225	3464559-048	CONNECTOR - 12 PIN HOUSING, GREY
	242753	3464559-201	PIN
	241513	3464559-301	SOCKET
	640198	3457886-508	MI-559274-H DC/TONE LINE TERMINATION MODULE TO CONTROL TERMINATION PANEL
6P1	245498	3464559-046	CONNECTOR - 12 PIN HOUSING, BLUE
6P2	245496	3464559-049	CONNECTOR - 12 PIN HOUSING, BLACK
	228192	3450825-001	RECEPTACLE
	241513	3464559-301	SOCKET
	640609	3457886-509	MI-559274-J REPEATER MODULE TO CONTROL TERMINATION PANEL
6P1	245498	3464559-046	CONNECTOR - 12 PIN HOUSING, BLUE
6P2	245502	3464559-042	CONNECTOR - 12 PIN HOUSING, RED
	228192	3450825-001	RECEPTACLE
	242753	3464559-201	PIN
	640199	3457886-510	MI-559274-K DC/TONE LINE TERMINATION MODULE & REPEATER MODULE TO CONTROL TERMINATION PANEL
6P1	245498	3464559-046	CONNECTOR - 12 PIN HOUSING, BLUE
6P2	245502	3464559-042	CONNECTOR - 12 PIN HOUSING, RED
6P3	245496	3464559-049	CONNECTOR - 12 PIN HOUSING, BLACK
	228192	3450825-001	RECEPTACLE
	242753	3464559-201	PIN

REPLACEMENT PARTS (Continued)

Symbol	*Stock No.*	*Drawing No.*	*Description*
	640610	3720604-501	MI-559274-L (PART OF COMMAND OPTION B15) MATRIX MODULE (OPTION) TO REPEATER MODULE TO CONTROL TERMINATION PANEL
6P1	243752	3464559-040	CONNECTOR - 12 PIN HOUSING, NATURAL
6P2	245501	3464559-043	CONNECTOR - 12 PIN HOUSING, ORANGE
	242753	3464559-201	PIN
	228192	3450825-001	RECEPTACLE
	640200	3720604-504	MI-559274-R TRANSMITTER PANEL TO FIRST RECEIVER/EXCITER PANEL
40P1	245502	3464559-042	CONNECTOR - 12 PIN HOUSING, RED
40P2	245499	3464559-045	CONNECTOR - 12 PIN HOUSING, GREEN
	242753	3464559-201	PIN
	641294	3720604-509	MI-559274-S STEERING DIODE NETWORK MODULE TO CONTROL TERMINATION PANEL
6P2	245501	3464559-043	CONNECTOR - 12 PIN HOUSING, ORANGE
	242753	3464559-201	PIN
	228192	3450825-001	RECEPTACLE
	640202	3720604-506	MI-559274-U HIGH POWER CABLE
		3457230-001	TERMINAL, SPADE TONGUE, #6 STUD, 22-16 AWG
		3463394-017	TERMINAL, RING TONGUE, #10 STUD, 22-16 AWG
	640613	3720604-507	MI-559274-V INTERNAL METER PANEL TO HIGH POWER AMPLIFIER
		3457230-001	TERMINAL, SPADE TONGUE, #6 STUD, 22-16 AWG
	641309	3727086-501	MI-559274-Y CONTROL TERMINATION PANEL - INTERNAL WIRING
4J1	247835	3464559-141	CONNECTOR - 12 SOCKET HOUSING, BROWN
4J2	247836	3464559-148	CONNECTOR - 12 SOCKET HOUSING, GREY
4J3	245481	3464559-143	CONNECTOR - 12 SOCKET HOUSING, ORANGE
	228192	3450825-001	RECEPTACLE
	242161	3450797-002	CONTACT PIN
	241513	3464559-301	SOCKET

MAIN TRANSMITTER-RECEIVER SYSTEM

HIGH POWER SYSTEMS ONLY

ALL SYSTEMS

INTERNAL METER PANEL MI-559098

EXTERNAL METER PANEL MI-559515

HIGH VOLTAGE POWER SUPPLY MI-559078

ANTENNA RELAY PANEL
MI-559527-A (DUPLEX)
MI-559527 (SIMPLEX, 50MHz)
MI-559527-D (SIMPLEX, 150MHz)

HIGH POWER AMPLIFIER
MI-559088-A (50MHz)
MI-559090-A (150MHz)

POWER DISTRIBUTION PANEL MI-559411

INDICAT PANEL MI-5594

96 — 96TBI

98

3 — 3TBI

27 — 27TBI

22 — 22TBI

42 — 42TBI

(-) PLATE VOLTS 3

(-) PLATE VOLTS → 1

M2 (+) PLATE VOLTS → 6

(+) PLATE VOLTS 2

(-) GRID CURRENT 7

(-) GRID CURRENT → 2

M1 (+) GRID CURRENT → 3

(+) GRID CURRENT 6

(+) PLATE CURRENT 4

STANDBY FILAMENT VOLTAGE → 18

STANDBY FILAMENT VOLTAGE ← 19

(+) PLATE CURRENT → 1

M3 (-) PLATE CURRENT → 2

(-) PLATE CURRENT 5

1, 8, 9 NC

MI-559274-V

COMMON FROM FILAMENT SUPPLY CIRCUIT BREAKER → 8 → 9

COMMON TO FILAMENT SUPPLY CIRCUIT BREAKER ← 7 ← 8

LINE VOLTAGE DS1 GRN — 11 — +13.8 VDC

METER LAMP DS4 — 14 COMMON → 22

METER LAMP DS5 — 1 COMMON

METER LAMP DS6 — COMMON

16 SCREEN GRID VOLTAGE ADJUST (LO) ← 10

17 SCREEN GRID VOLTAGE ADJUST (ARM) ← 11

18 SCREEN GRID VOLTAGE ADJUST (HI) ← 17

3 +150 TO +250 VOLT SCREEN GRID SUPPLY → 20

E1 +2000 VDC SUPPLY → E1

4 — 5

PLATE ON DS3 YEL — (+) 13.8 VDC — 12

10 BLOWER AC SUPPLY (117 V) → 21

TRANSMIT DS2 RED — (+) 13.8 VDC — 9 BLOWER AC SUPPLY (117 V) → 16

1 — 5

COMMON — 4

13 117 V AC → 6

117 V AC ← — 2

26 117 V AC → 7

117 V AC ←

MI-559274-U

4, 5, 6, 15 NC

19 — 20

21, 22, 23, 24, 25 NC

(NC) 7

FILAMENT SUPPLY POWER TRANSFORMER: 12; 13 (125V); 14 (117V); 15 (105V)

NC: 23, 24

3 — 4 — /2

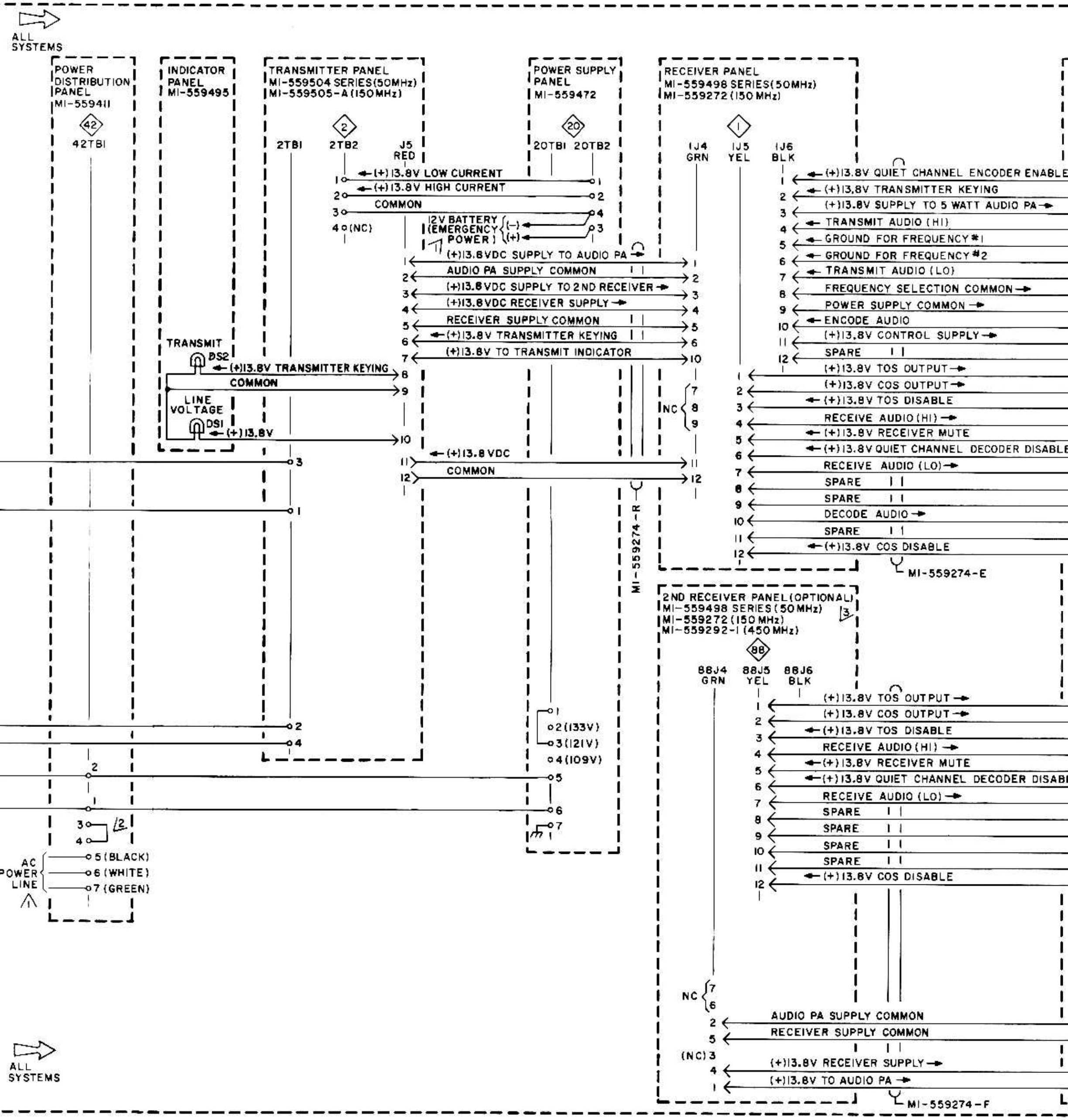
AC POWER LINE: 5 (BLACK); 6 (WHITE); 7 (GREEN)

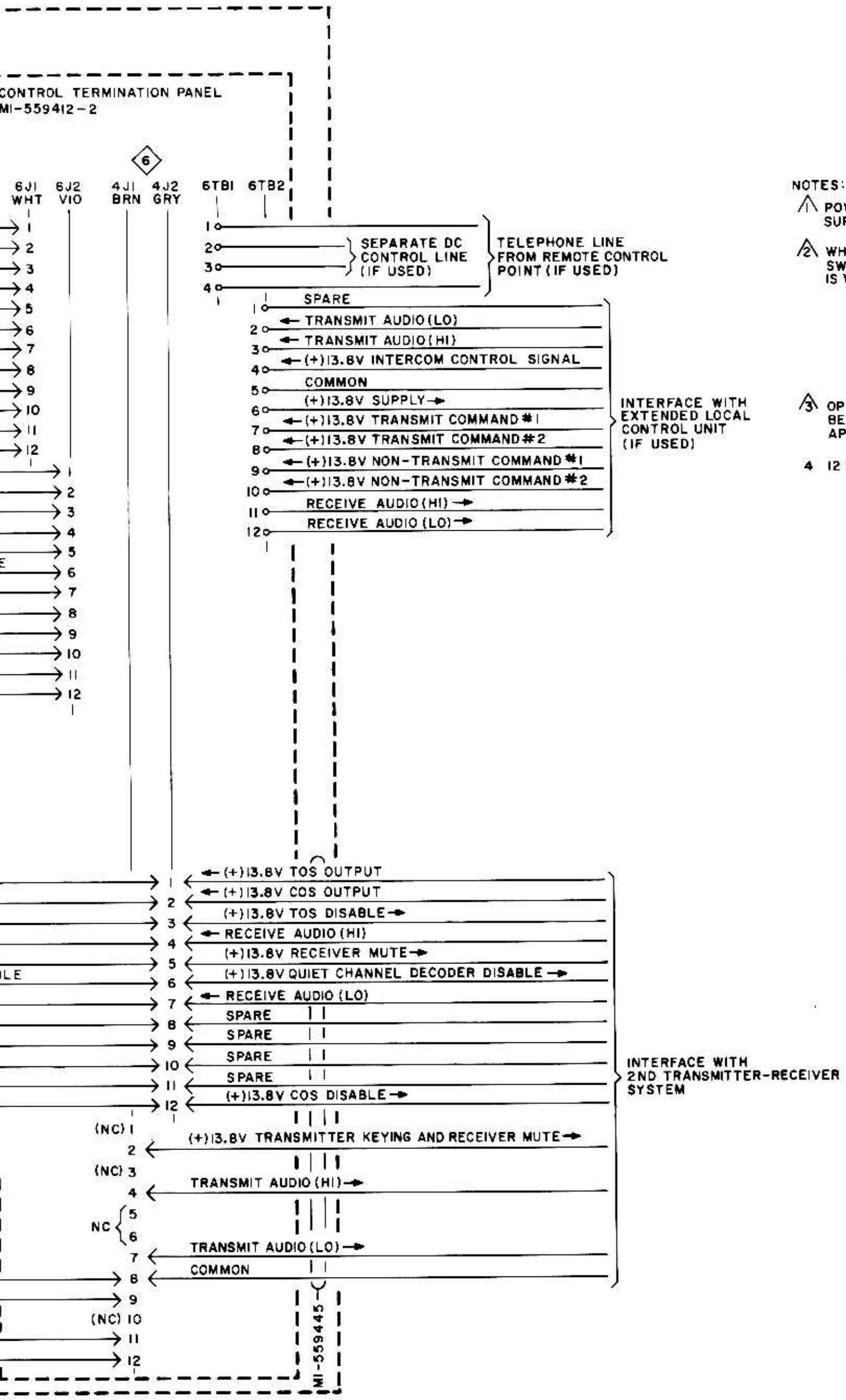
TRANSM

LINE VOLTAG

HIGH POWER SYSTEMS ONLY

ALL SYSTEMS

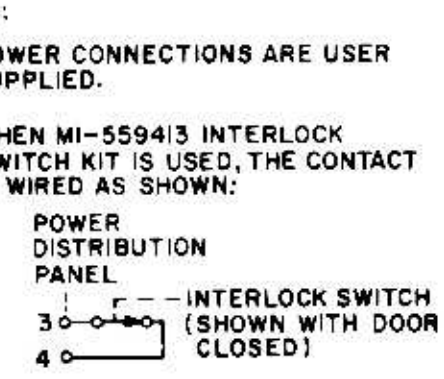

ALL SYSTEMS
POWER DISTRIBUTION PANEL MI-559411
42
42TB1
INDICATOR PANEL MI-559495
TRANSMITTER PANEL MI-559504 SERIES(50MHz) MI-559505-A(150MHz)
2
2TB1
2TB2
J5 RED
(+)13.8V LOW CURRENT
(+)13.8V HIGH CURRENT
COMMON
4 (NC)
12V BATTERY (EMERGENCY POWER) (-) (+)
POWER SUPPLY PANEL MI-559472
20
20TB1 20TB2
(+)13.8VDC SUPPLY TO AUDIO PA
AUDIO PA SUPPLY COMMON
(+)13.8VDC SUPPLY TO 2ND RECEIVER
(+)13.8VDC RECEIVER SUPPLY
RECEIVER SUPPLY COMMON
(+)13.8V TRANSMITTER KEYING
(+)13.8V TO TRANSMIT INDICATOR
NC 7 8 9
TRANSMIT DS2
(+)13.8V TRANSMITTER KEYING
COMMON
LINE VOLTAGE DS1
(+)13.8V
(+)13.8 VDC
COMMON
RECEIVER PANEL MI-559498 SERIES(50MHz) MI-559272(150 MHz)
1
1J4 GRN
1J5 YEL
1J6 BLK
(+)13.8V QUIET CHANNEL ENCODER ENABLE
(+)13.8V TRANSMITTER KEYING
(+)13.8V SUPPLY TO 5 WATT AUDIO PA
TRANSMIT AUDIO (HI)
GROUND FOR FREQUENCY #1
GROUND FOR FREQUENCY #2
TRANSMIT AUDIO (LO)
FREQUENCY SELECTION COMMON
POWER SUPPLY COMMON
ENCODE AUDIO
(+)13.8V CONTROL SUPPLY
SPARE
(+)13.8V TOS OUTPUT
(+)13.8V COS OUTPUT
(+)13.8V TOS DISABLE
RECEIVE AUDIO (HI)
(+)13.8V RECEIVER MUTE
(+)13.8V QUIET CHANNEL DECODER DISABLE
RECEIVE AUDIO (LO)
SPARE
SPARE
DECODE AUDIO
SPARE
(+)13.8V COS DISABLE
MI-559274-E
MI-559274-R
2ND RECEIVER PANEL (OPTIONAL) MI-559498 SERIES (50 MHz) MI-559272 (150 MHz) MI-559292-1 (450 MHz)
3
88
88J4 GRN
88J5 YEL
88J6 BLK
(+)13.8V TOS OUTPUT
(+)13.8V COS OUTPUT
(+)13.8V TOS DISABLE
RECEIVE AUDIO (HI)
(+)13.8V RECEIVER MUTE
(+)13.8V QUIET CHANNEL DECODER DISABL
RECEIVE AUDIO (LO)
SPARE
SPARE
SPARE
SPARE
(+)13.8V COS DISABLE
NC 7 6
AUDIO PA SUPPLY COMMON
RECEIVER SUPPLY COMMON
(NC) 3
(+)13.8V RECEIVER SUPPLY
(+)13.8V TO AUDIO PA
MI-559274-F
3
1
2
4
2
5
6
3 4 12
AC POWER LINE
5 (BLACK)
6 (WHITE)
7 (GREEN)
1
2 (133V)
3 (121V)
4 (109V)
5
6
7
ALL SYSTEMS



NOTES:

1. POWER CONNECTIONS ARE USER SUPPLIED.

2. WHEN MI-559413 INTERLOCK SWITCH KIT IS USED, THE CONTACT IS WIRED AS SHOWN:



3. OPTIONAL 2ND RECEIVER CANNOT BE USED IN CONTROL REPEATER APPLICATIONS.

4. 12 PIN JACK TERMINAL DIAGRAM:

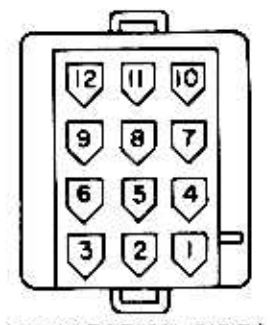
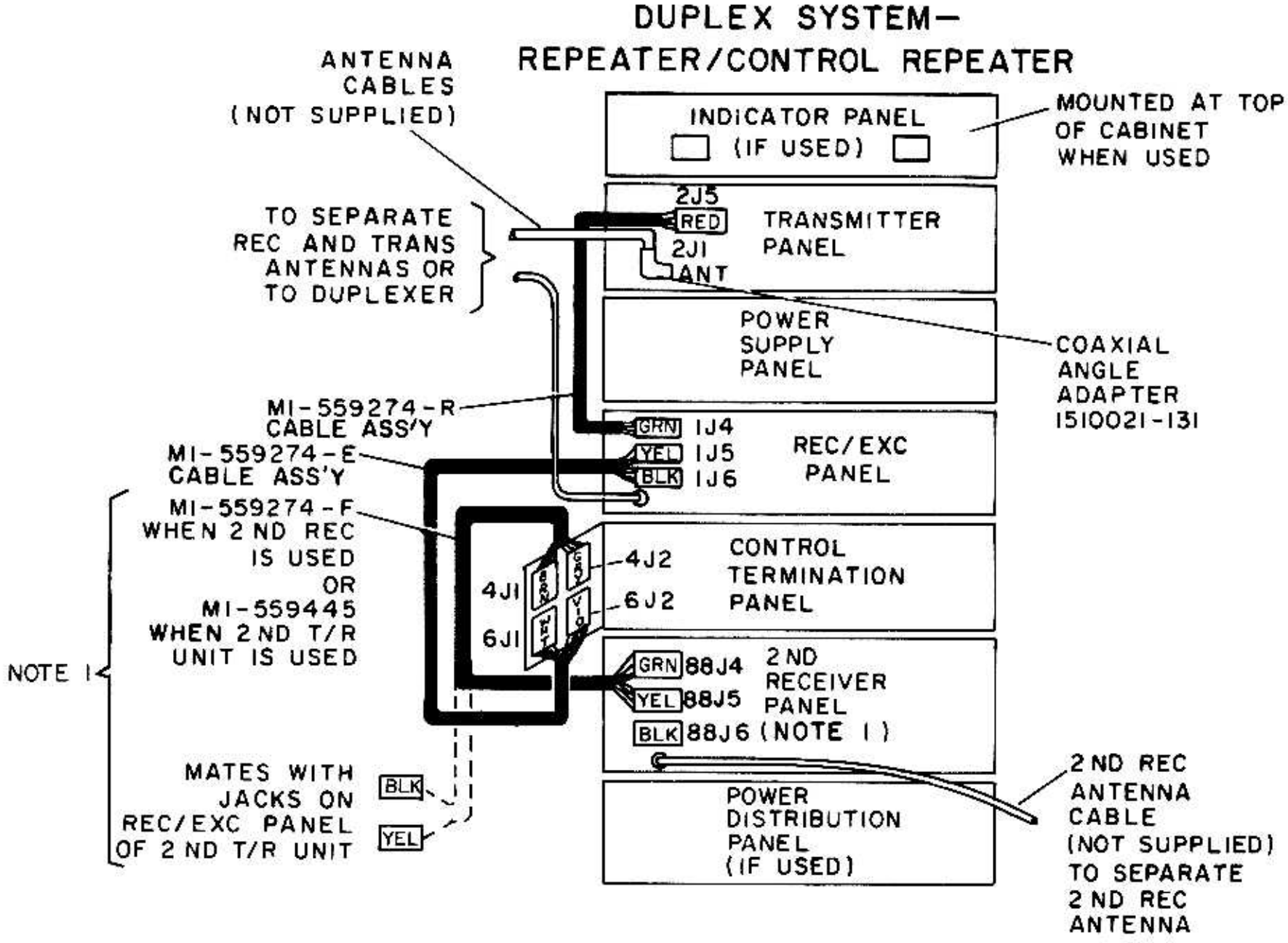
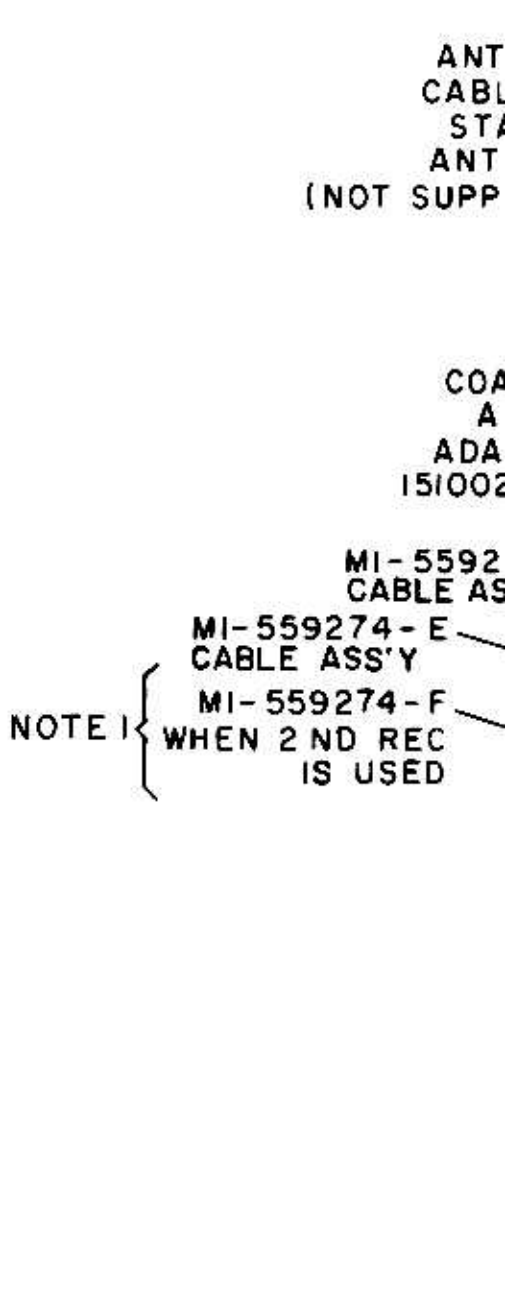


Figure 4. System Interconnection Wiring Diagram

DUPLEX SYSTEM— REPEATER/CONTROL REPEATER

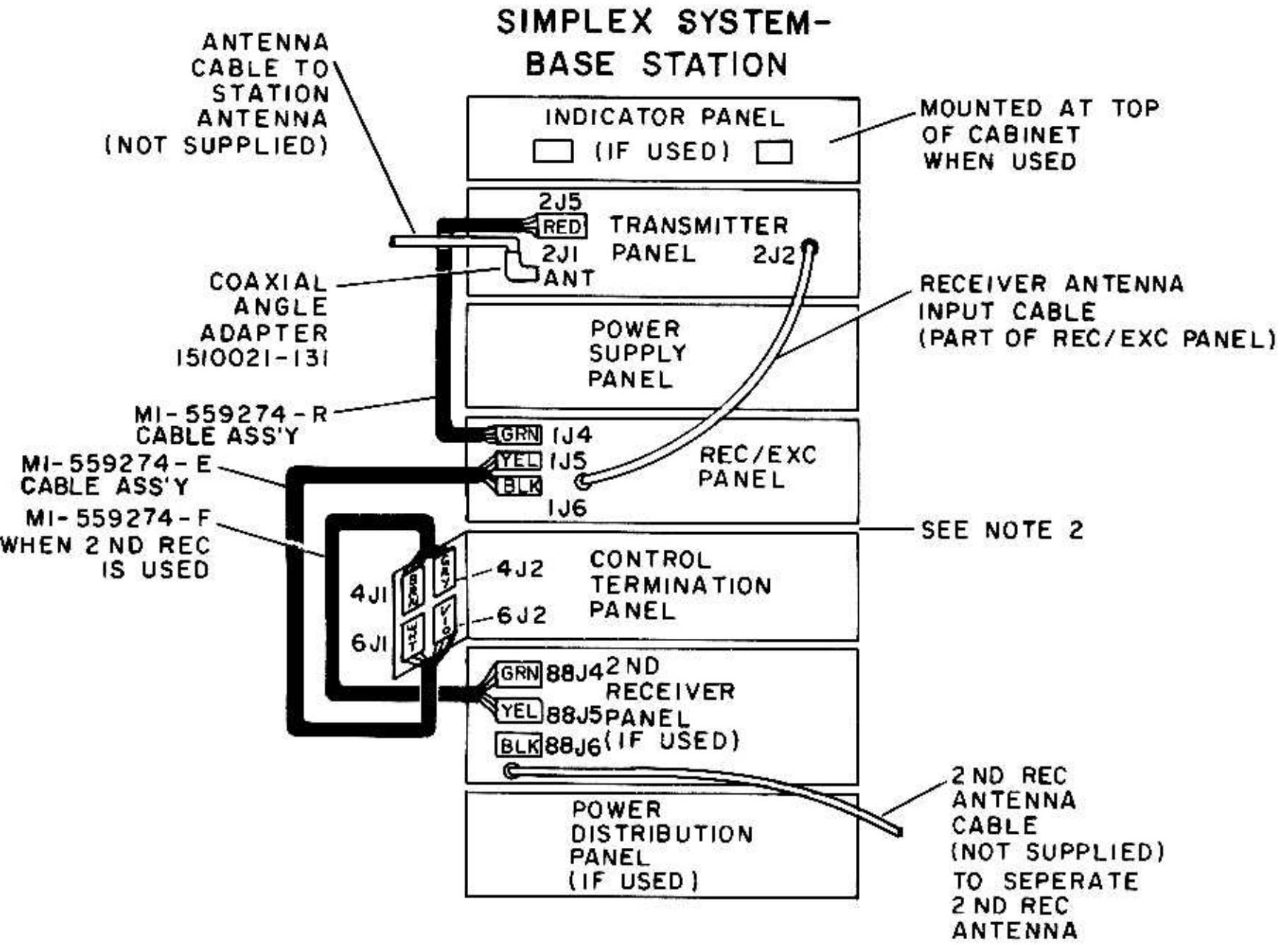




NOTES:

1. IN CONTRO
   CONNECT
   SYSTEM.
   EXTERNAL
   A 2ND R
   4J2 MAY
2. THE MI-5
   CONTROL

2E084



NOTES:

1. IN CONTROL REPEATER SYSTEMS, JACKS 4J1 AND 4J2 ON THE CONTROL TERMINATION PANEL, ARE USED TO CONNECT THE 2ND T/R UNIT OF A REPEATER-CONTROLLED BASE OR A REPEATER-CONTROLLED REPEATER SYSTEM. THIS CONNECTION IS MADE BY MEANS OF A 25 FOOT CABLE ASSEMBLY (PART OF MI-559445 — EXTERNAL INTERCONNECT KIT) WHICH IS SUPPLIED WITH THE CONTROLLED SYSTEM. IN SUCH APPLICATIONS, A 2ND REC. PANEL CANNOT BE USED. IF THE SYSTEM IS OTHER THAN A CONTROL REPEATER, JACKS 4J1 AND 4J2 MAY BE USED FOR CONNECTION OF A 2ND REC. BY MEANS OF CABLE ASSEMBLY MI-559274-F.
2. THE MI-559420 TEST METER PANEL (IF USED) IS MOUNTED BETWEEN THE REC/EXC PANEL AND THE CONTROL TERMINATION PANEL:

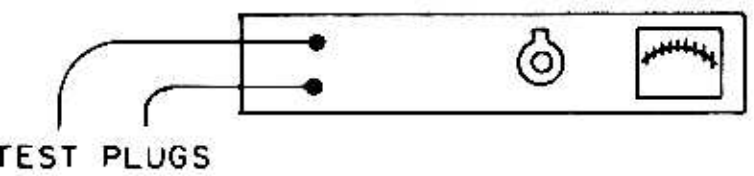


Figure 5. Cabinet Wiring Layout, Medium Power Station

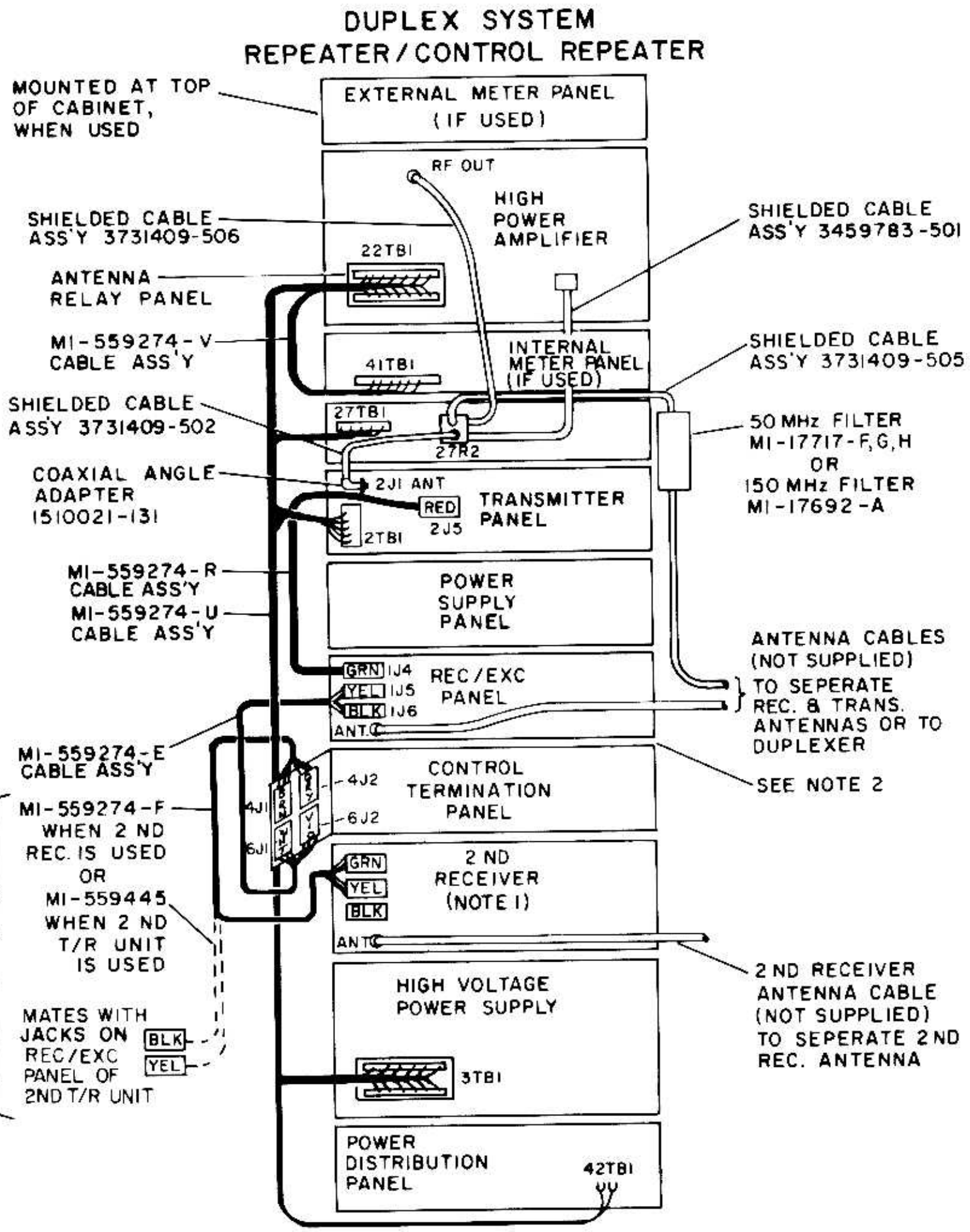
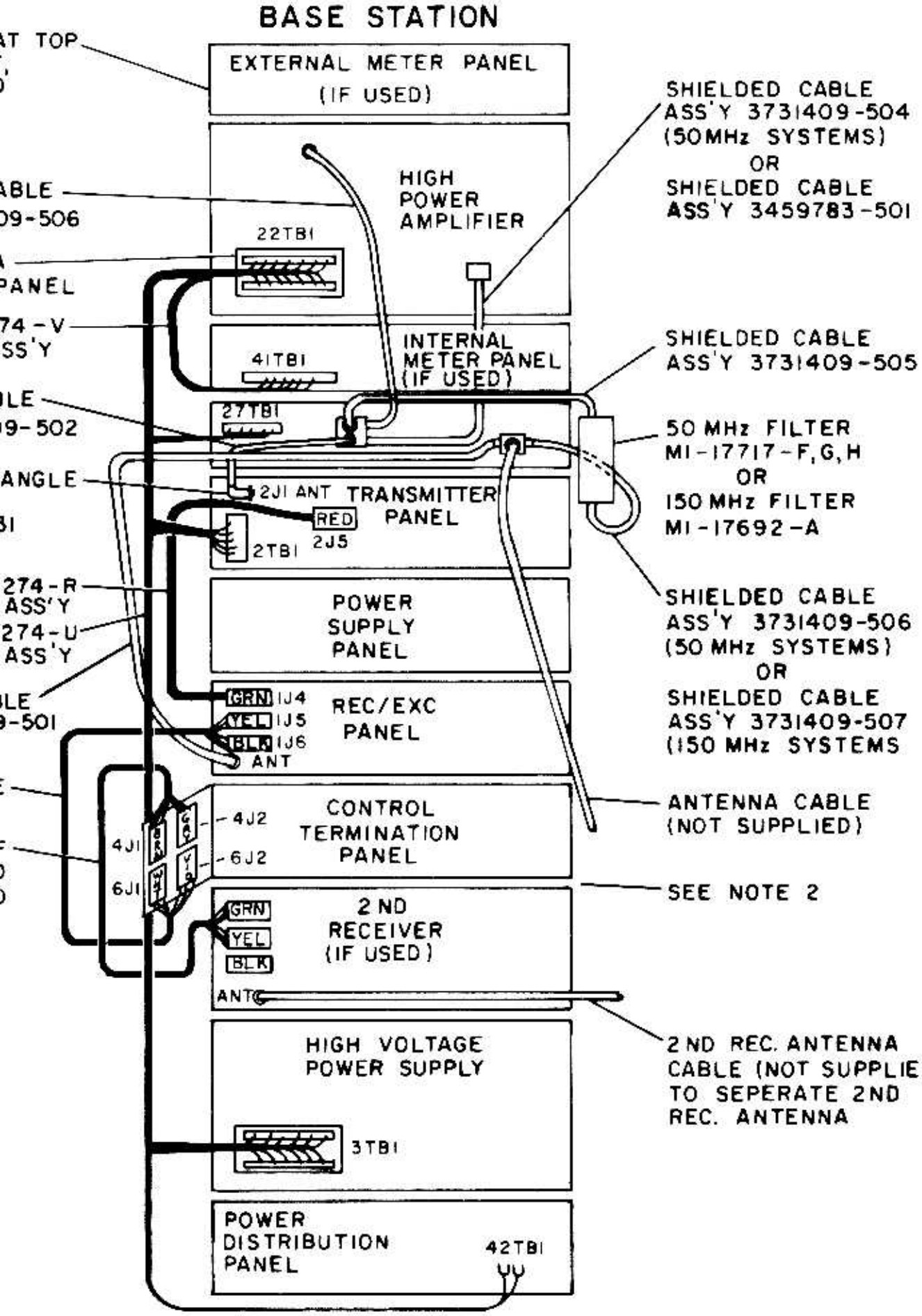


Figure 6. Cabinet Wiring Layout, High Power Station

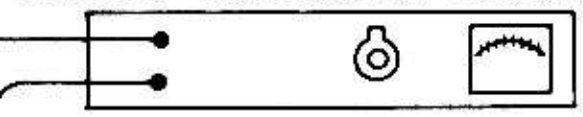
SIMPLEX SYSTEM– BASE STATION



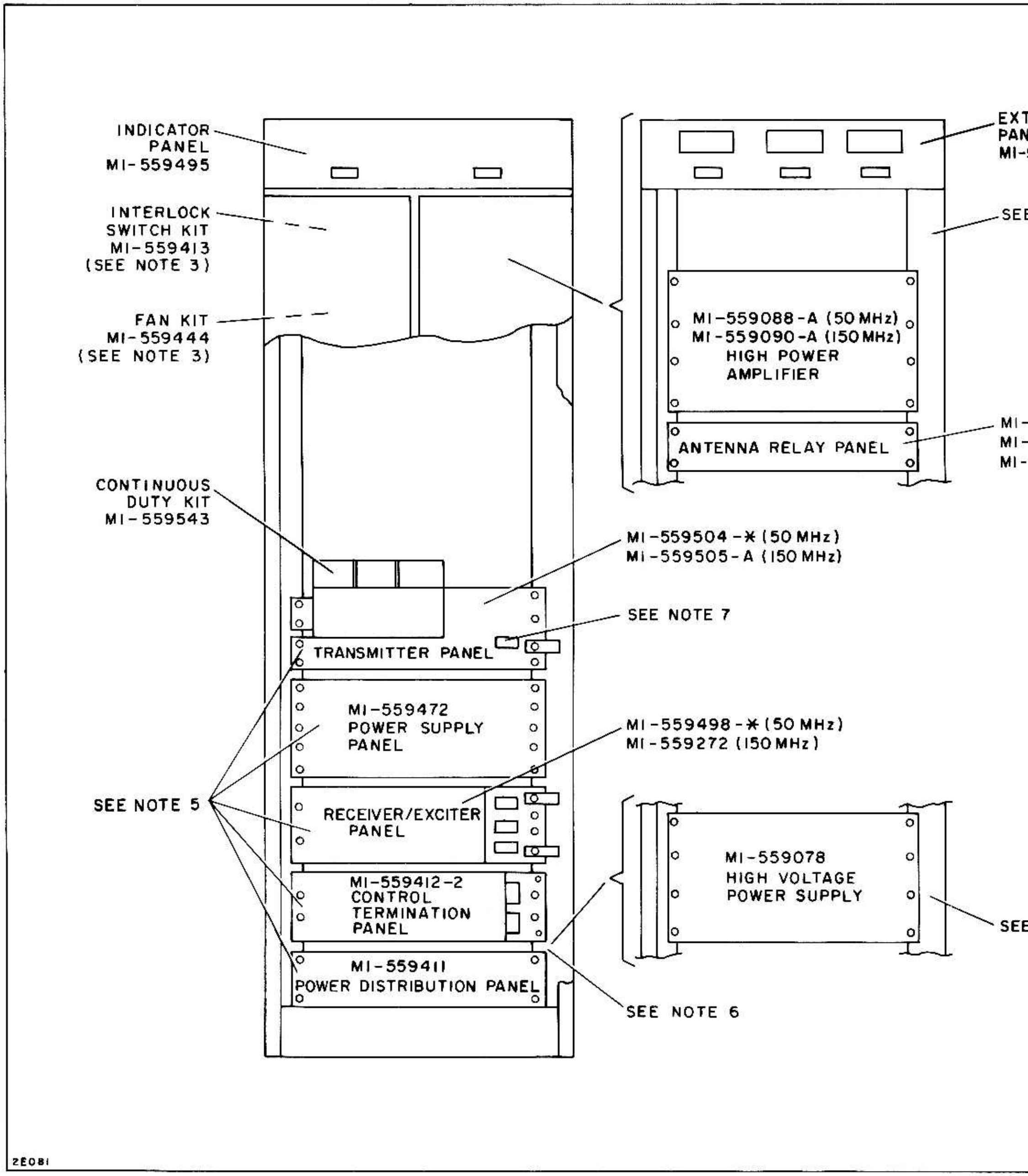
ES:

IN CONTROL REPEATER SYSTEMS, JACKS 4JI AND 4J2 ON THE CONTROL TERMINATION PANEL, ARE USED TO CONNECT THE 2ND T/R UNIT OF A REPEATER-CONTROLLED BASE OR A REPEATER-CONTROLLED REPEATER SYSTEM. THIS CONNECTION IS MADE BY MEANS OF A 25 FOOT CABLE ASSEMBLY (PART OF MI-559445 – EXTERNAL INTERCONNECT KIT) WHICH IS SUPPLIED WITH THE CONTROLLED SYSTEM. IN SUCH APPLICATIONS, A 2ND REC. PANEL CANNOT BE USED. IF THE SYSTEM IS OTHER THAN A CONTROL REPEATER, JACKS 4JI AND 4J2 MAY BE USED FOR CONNECTION OF A 2ND REC. BY MEANS OF CABLE ASSEMBLY MI-559274-F.

THE MI-559420 TEST METER PANEL (IF USED) IS MOUNTED BETWEEN THE REC/EXC PANEL AND THE CONTROL TERMINATION PANEL:



UGS


INDICATOR PANEL MI-559495
INTERLOCK SWITCH KIT MI-559413 (SEE NOTE 3)
FAN KIT MI-559444 (SEE NOTE 3)
CONTINUOUS DUTY KIT MI-559543
SEE NOTE 5
EXT PAN MI-
SEE
MI-559088-A (50 MHz)
MI-559090-A (150 MHz)
HIGH POWER AMPLIFIER
ANTENNA RELAY PANEL
MI-
MI-
MI-
MI-559504-* (50 MHz)
MI-559505-A (150 MHz)
SEE NOTE 7
TRANSMITTER PANEL
MI-559472 POWER SUPPLY PANEL
MI-559498-* (50 MHz)
MI-559272 (150 MHz)
RECEIVER/EXCITER PANEL
MI-559412-2 CONTROL TERMINATION PANEL
MI-559411 POWER DISTRIBUTION PANEL
MI-559078 HIGH VOLTAGE POWER SUPPLY
SEE
SEE NOTE 6
2E081

EXTERAL METER
PANEL
MI-559515

SEE NOTE 1 & 5

MI-559527-A (DUPLEX)
MI-559527 (SIMPLEX, 50 MHz)
MI-559527-D (SIMPLEX, 150 MHz)

NOTES:

1. HIGH POWER SYSTEMS ONLY.
2. IN HIGH POWER SYSTEM, THE FOUR PANELS SHOWN ABOVE THE POWER DISTRIBUTION PANEL ARE MOVED UP TO ACCOMMODATE THE HIGH VOLTAGE POWER SUPPLY.
3. STANDARD WITH HIGH POWER SYSTEMS; OPTIONAL WITH MEDIUM POWER SYSTEMS.
4. MI-559497, 67" INDOOR CABINET (66.7" ACTUAL HEIGHT) MI-559004-A, 84" INDOOR CABINET, (84"ACTUAL HEIGHT). HIGH POWER SYSTEMS AND MEDIUM POWER SYSTEMS IN EITHER CABINET SIZE.
5. ALL PANELS ARE SECURED WITH STANDARD RACK-MOUNTING HARDWARE.
6. IF USED, 2ND RECEIVER IS LOCATED BETWEEN POWER DISTRIBUTION PANEL AND CONTROL TERMINATION PANEL.
7. FOR CABLING DETAILS, SEE WIRING LAYOUT DIAGRAMS.
   * SEE SYSTEM CHARTS.

SEE NOTES 1,2&5

Figure 7. Basic Equipment Arrangement, 84" and 67" Indoor Cainbets

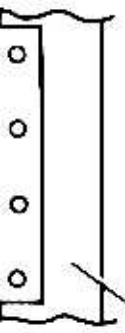
SEE NOTES 1 & 5

MI-559527-A (DUPLEX)
MI-559527 (SIMPLEX, 50 MHz)
MI-559527-D (SIMPLEX, 150 MHz)

NOTES:

1. HIGH POWER SYSTEMS ONLY.
2. IN HIGH POWER SYSTEM, THE FOUR PANELS SHOWN ABOVE THE POWER DISTRIBUTION PANEL ARE MOVED UP TO ACCOMMODATE THE HIGH VOLTAGE POWER SUPPLY.
3. STANDARD WITH HIGH POWER SYSTEMS; OPTIONAL WITH MEDIUM POWER SYSTEMS.
4. MI-559004-B, 42" UTILITY CABINET (42.29" ACTUAL HEIGHT), MI-559004-C, 67" UTILITY CABINET (66.73" ACTUAL HEIGHT). HIGH POWER SYSTEMS IN 67" CABINET ONLY; MEDIUM POWER SYSTEM, EITHER SIZE CABINET.
5. ALL PANELS ARE SECURED WITH STANDARD RACK-MOUNTING HARDWARE.
6. IF USED, 2ND RECEIVER IS LOCATED BETWEEN POWER DISTRIBUTION PANEL AND CONTROL TERMINATION PANEL.
7. FOR CABLING DETAILS, SEE WIRING LAYOUT DIAGRAMS.

* SEE SYSTEM CHARTS.



SEE NOTES 1,2 & 5

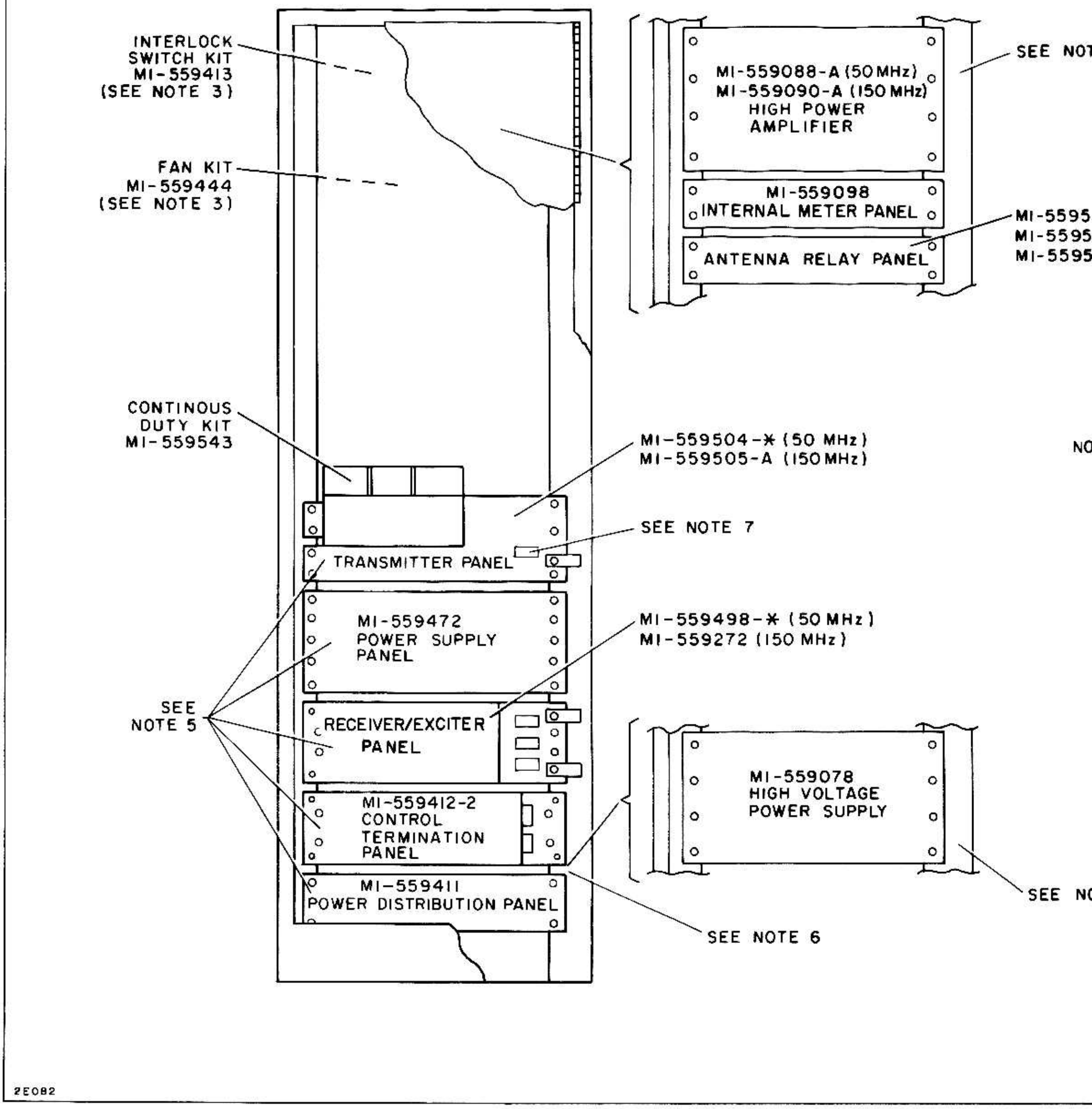


Figure 8. Basic Equipment Arrangement, 67" and 42" Outdoor Utility

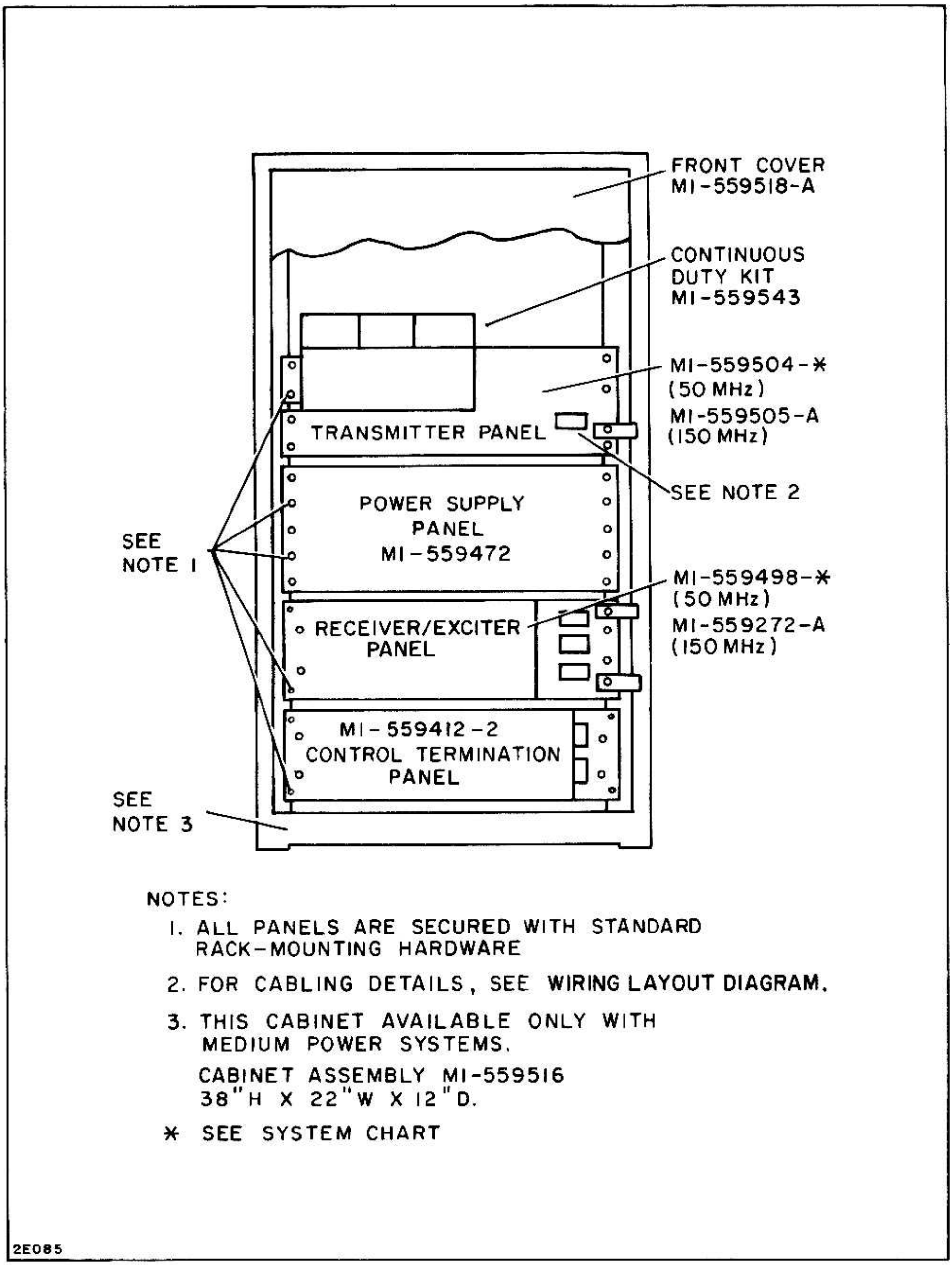


Figure 9. Basic Equipment Arrangement, 38" Indoor Cabinet