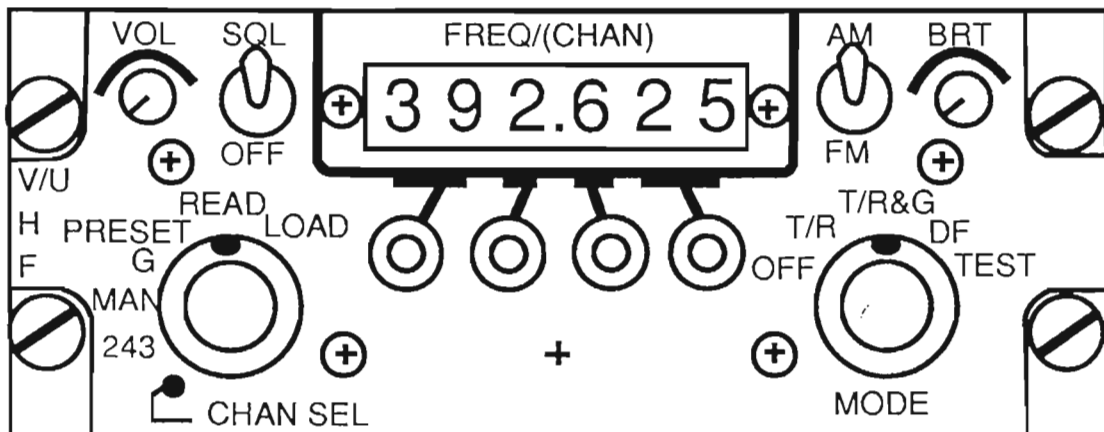


FUNKTION, HANDHAVANDE FR 48



Önskemål

- Ange kapitel på första sidan övre högra hörnet.
- Sidnumrering övre högra hörnet
- Fylligare text och snyggare layout på sidorna med svensk text.

/a/h

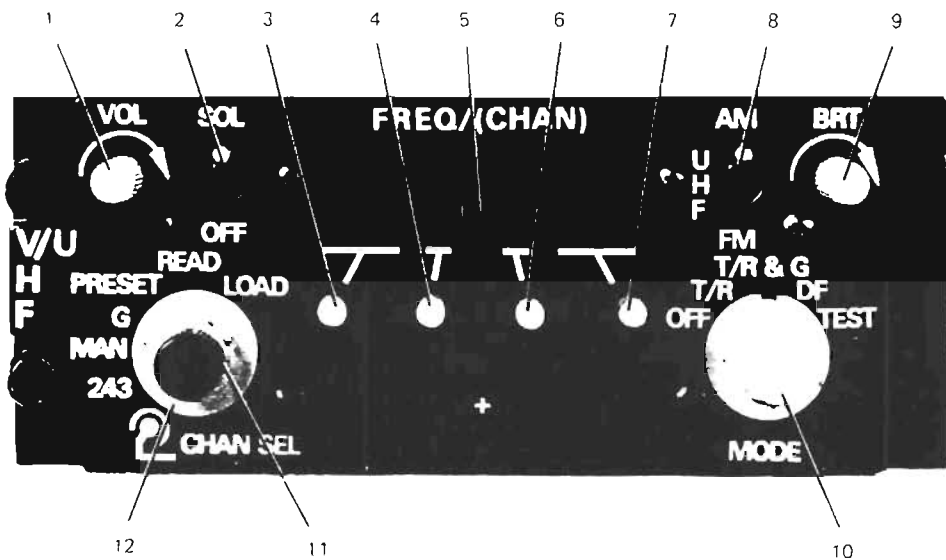
operation

1. GENERAL

Only normal operating procedures for the control are covered in detail in this section. The particular operation of the unit is determined by intended usage as governed by local or national regulation.

2. CONTROLS AND INDICATORS

All operating controls are located on the front panel of the unit. Figure 1 shows the location of controls and indicators. An explanation of each is listed in table 1.



TPA-2051-017

C-10319()/ARC, C-10776()/ARC, and C-11131/ARC Controls and Indicators
Figure 1

Table 1. Controls and Indicators.

ITEM NO (FIG 1)	CONTROL/INDICATOR	FUNCTION
1	VOL (R1)	Potentiometer. Adjust audio output level.
2	SQL/OFF (S5)	Toggle switch. Enables main receiver squelch in SQL position. Disables squelch in OFF position.

Table 1. Controls and Indicators (Cont).

ITEM NO (FIG 1)	CONTROL/INDICATOR	FUNCTION
12 (Cont)	READ	Permits display of frequency of preset operating channel instead of channel number. Displayed frequency may be altered by use of frequency control switches, but stored frequency will not change.
	LOAD	Loads frequency selected in READ mode into memory to alter preset channel frequency. No change in stored preset frequency unless frequency has been changed while frequency mode selector has been set to READ.

Note

If the frequency mode selector is set to PRESET or READ and then back to GUARD, the guard frequency displayed will be the one appropriate for the frequency band of the preset channel. If the frequency mode selector is then set to MAN and back to GUARD, the guard frequency displayed will be the one appropriate for the frequency band of the manually selected frequency.

MODE	DISPLAY	FAULT	INTERPRETATION
RCV	•	RT LOL OR RMT CONT	SELECT TEST MODE
XMT	•	REDUCED PWR, HIGH VSWR	SELECT TEST MODE
TEST	0 0 0 . 0 0 0	NONE	RT AND CONTROL . OK
TEST	0 0 1	VSWR	RT OR ANTENNA SYSTEM
TEST	0 5 1	FWD PWR	MODULES A6, A5, OR A1 FAULT
TEST	2 2 1	LOL	MODULES A2 OR A1 FAULT
TEST	1 5 7	RT	MODULES A1, A5 OR FUSE FAULT
TEST	3 3 3	RT	MODULE A3 FAULT
TEST	3 3 2	RT	MODULE A3 OR A2 FAULT
TEST	3 2 4	RT	MODULE A3, A2 OR A4 FAULT
TEST	1 5 7	INTFCE OR RT	NO RESPONSE
TEST	•	RMT CONT	DEFECTIVE CONTROL

TPA-2983-013

Samples of BIT Readouts
Figure 2

3. OPERATING PROCEDURES

3.1 Loading Preset Channels

The control can store 30 preset channel frequencies. If unauthorized operating frequencies (below 30.000 MHz, 88.000 through 107.975 MHz, 174.000 through 224.975 MHz and above 399.975 MHz) are selected,

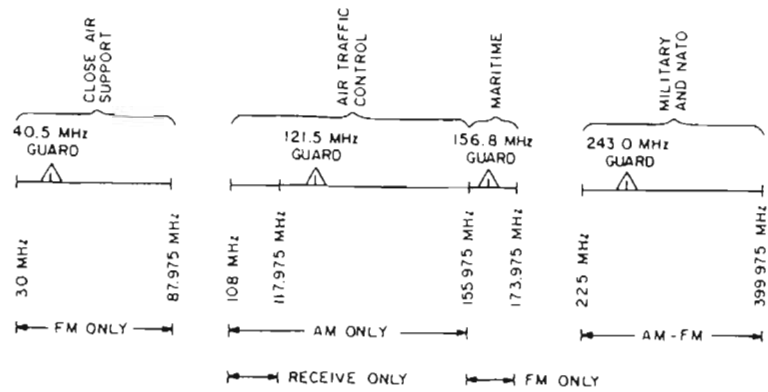
the receiver-transmitter will not tune. For this reason, do not attempt to load an unauthorized frequency.

To load preset channels, proceed as follows:

- a. Apply primary power to the control.
- b. Set operational MODE selector to T/R.

- n. Set operational MODE selector to T/R. Tune receiver-transmitter to an unused channel. Monitor headset and set squelch control to OFF; noise is heard in headset. Set squelch control to SQL; noise stops.
- o. Set operational MODE selector to TEST. After a few seconds, **FREQ/(CHAN)** display shows

888.888. Examples of built-in test (BIT) readouts are shown in figure 2. A fault in the control is indicated by the display being blank except for the decimal point. The BIT will isolate faults in the receiver-transmitter to one module 90% of the time, to two modules 95% of the time, and to three modules 100% of the time.



TPA-1492-012

Frequency Bands
Figure 1

Table 5. RT 622-6323-001 and RT 622-7730-001 Equipment Specifications.

CHARACTERISTIC	SPECIFICATION																					
General																						
Frequency coverage, modulation type, and number of channels	<table border="1"> <thead> <tr> <th>FREQ (MHz)</th> <th>MOD</th> <th>NO OF CHANNELS</th> </tr> </thead> <tbody> <tr> <td>30.000 to 87.975</td> <td>FM</td> <td>2 320</td> </tr> <tr> <td>108.000 to 117.975</td> <td>AM (Rec only)</td> <td>400</td> </tr> <tr> <td>118.000 to 155.975</td> <td>AM</td> <td>1 520</td> </tr> <tr> <td>156.000 to 173.975</td> <td>FM</td> <td>720</td> </tr> <tr> <td>225.000 to 399.975</td> <td>AM/FM</td> <td>7 000</td> </tr> <tr> <td colspan="2">Total</td> <td>11 960</td> </tr> </tbody> </table>	FREQ (MHz)	MOD	NO OF CHANNELS	30.000 to 87.975	FM	2 320	108.000 to 117.975	AM (Rec only)	400	118.000 to 155.975	AM	1 520	156.000 to 173.975	FM	720	225.000 to 399.975	AM/FM	7 000	Total		11 960
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156.000 to 173.975	FM	720																				
225.000 to 399.975	AM/FM	7 000																				
Total		11 960																				
Maritime offset	Offset capability of +4.6 or -4.6 MHz is available on selected channels in the 156- to 173.975-MHz band by grounding an assigned pin on J2.																					
Guard receiver	Four frequencies 40.5 MHz FM, 121.5 MHz AM, 156.80 MHz FM, and 243.0 MHz AM available and selected automatically by main receiver operating band.																					
Automatic relay	Can provide automatic retransmit capability when two receiver-transmitters are used.																					

Table 5. RT 622-6323-001 and RT 622-7730-001 Equipment Specifications (Cont).

CHARACTERISTIC	SPECIFICATION
Scan/SATCOM (RT 622-7730-001 only)	
Scan	Scanning consists of 4 channels, command channel 23 and preset channels 24 thru 26.
SATCOM	SATCOM consists of 2 SATCOM pairs, channels 27, 28 SATCOM A and channels 29, 30 SATCOM B.
Automatic direction finding	
ADF	Can provide uhf ADF when used with an ARA-50 or equivalent. Vhf and uhf ADF in the 108- to 399.975-MHz range is possible when using a DF-301E or equivalent.
Guard precedence	Operated from external source. Ground provided on assigned pin causes radio to turn on and tune main receiver and transmitter to 243.000 MHz (AM).
Secure voice	Operated from external source. Ground provided on assigned pin enables secure voice operation when interfaced with KY-28/KY-58 or equivalent.
ECCM, antijam (AJ) mode	Receiver-transmitter will operate in the AJ mode when controlled by a Magnavox Radio Set Control C-11128/ARC, C-11129/ARC, or C-11130/ARC.
Frequency shift keying (FSK)	FSK of 50 b/s to 10 kb/s with deviation of ± 20 kHz (± 20 kHz vs ± 5.6 kHz can be achieved with a strapping modification).
Primary power	+28.0 \pm 0.5 V dc, NMT 20 W receive and NMT 150 W transmit
Tuning method	Electronic
Main receiver	
Sensitivity	
30.0 to 87.975 MHz	-112 dBm for NLT 10 dB s+n/n (input frequency modulated by 1.0 kHz and with ± 2.4 -kHz deviation)
108.0 to 155.975 MHz	-103 dBm for NLT 10 dB (s+n)/n (input amplitude modulated 30% at 1 kHz)
156.0 to 173.975 MHz	-110 dBm for NLT 10 dB (s+n)/n (input frequency modulated by 1 kHz and with ± 2.4 -kHz deviation)
225.0 to 399.975 MHz	AM mode: -103 dBm for NLT 10 dB (s+n)/n (input amplitude modulated 20% at 1 kHz) FM mode: -110 dBm for NLT 10 dB (s+n)/n (input frequency modulated by 1 kHz and with ± 2.4 -kHz deviation)
Sensitivity control	Grounding pin 15 reduces sensitivity by 10 dB in the 108.000- to 173.975-MHz range.
Selectivity	
Normal bandwidth	± 17 -kHz minimum at -6 dB points; ± 35 -kHz maximum at -60 dB points

Table 5. RT 622-6323-001 and RT 622-7730-001 Equipment Specifications (Cont).

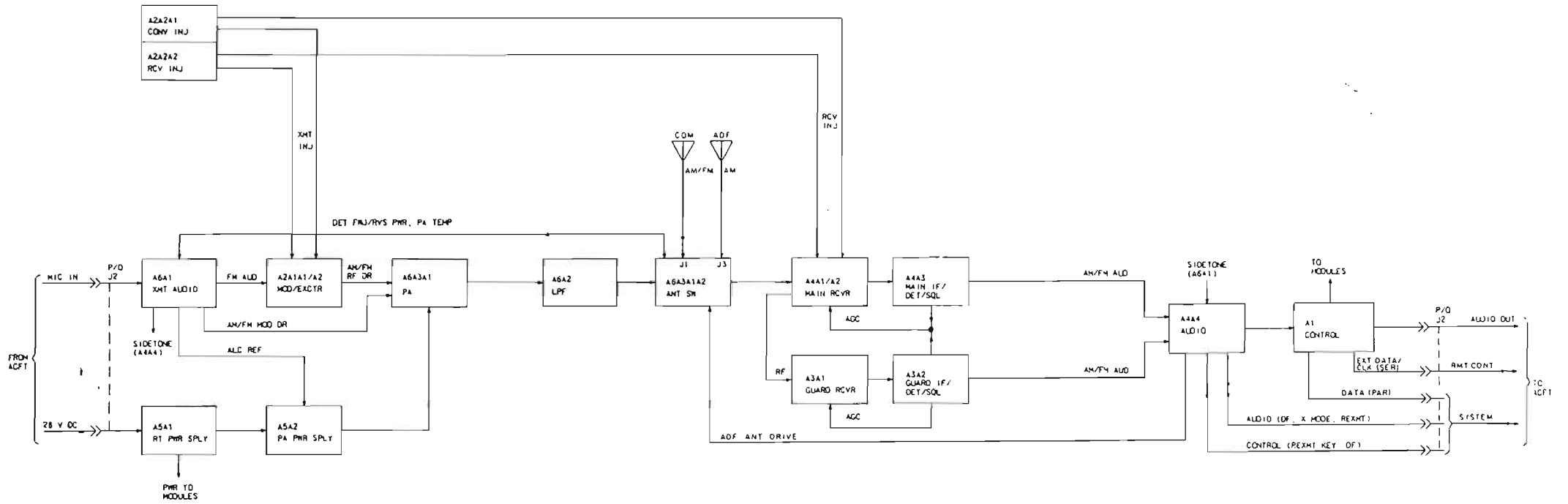
CHARACTERISTIC	SPECIFICATION																																																
Internal spurious	Will meet sensitivity requirements on 99% of available channels. Will provide at least 10 dB (s+n)/n ratio for an input signal level of -91 dBm (6 μ V) on the 119 (1% of 11960) degraded channels with the following exceptions: <table border="1"> <thead> <tr> <th><u>LOW VHF-FM</u></th> <th><u>VHF-AM</u></th> <th><u>VHF-FM</u></th> <th><u>UHF</u></th> </tr> </thead> <tbody> <tr><td>42.900</td><td>108.450</td><td>156.675</td><td>322.425</td></tr> <tr><td>44.450</td><td>114.200</td><td>161.750</td><td></td></tr> <tr><td>51.000</td><td>117.800</td><td>164.800</td><td></td></tr> <tr><td>57.100</td><td>123.600</td><td>173.500</td><td></td></tr> <tr><td>62.600</td><td>127.675</td><td></td><td></td></tr> <tr><td>66.675</td><td>132.500</td><td></td><td></td></tr> <tr><td>74.625</td><td>135.400</td><td></td><td></td></tr> <tr><td>81.875</td><td>135.750</td><td></td><td></td></tr> <tr><td>85.500</td><td>147.000</td><td></td><td></td></tr> <tr><td>85.650</td><td>149.700</td><td></td><td></td></tr> <tr><td>85.800</td><td>154.500</td><td></td><td></td></tr> </tbody> </table>	<u>LOW VHF-FM</u>	<u>VHF-AM</u>	<u>VHF-FM</u>	<u>UHF</u>	42.900	108.450	156.675	322.425	44.450	114.200	161.750		51.000	117.800	164.800		57.100	123.600	173.500		62.600	127.675			66.675	132.500			74.625	135.400			81.875	135.750			85.500	147.000			85.650	149.700			85.800	154.500		
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156.8 MHz	-110 dBm for NLT 10 dB (s+n)/n (input frequency modulated by 1 kHz and with \pm 2.4-kHz deviation)																																																
243.0 MHz	-103 dBm for NLT 10 dB (s+n)/n (input signal modulated 30% at 1 kHz)																																																
Selectivity	\pm 14-kHz minimum at -6 dB points; \pm 40-kHz maximum at 60-dB points																																																
Squelch	Carrier-to-noise type with (s+n)/n adjustable over range of 5 to 15 dB																																																
Squelch isolation audio outputs																																																	
Normal audio	Same as main receiver																																																
Low-level audio out	Between 0.15 and 0.45 V rms into a 600-ohm load for -53 dBm input (1 kHz at 30% AM or 1 kHz at 2.4 kHz deviation FM) with fidelity of \pm 1. -3 dB from 500 to 3500 Hz and NMT 5% distortion																																																

Table 5. RT 622-6323-001 and RT 622-7730-001 Equipment Specifications (Cont).

CHARACTERISTIC	SPECIFICATION															
Intermediate frequency rejection	Intermediate frequency rejection is as follows: <table border="1"> <thead> <tr> <th><u>FREQUENCY</u> (MHz)</th> <th><u>FIRST IF</u> (28.045 MHz)</th> <th><u>SECOND IF</u> (500 kHz)</th> </tr> </thead> <tbody> <tr> <td>40.500</td> <td>NLT 80 dB</td> <td>NLT 90 dB</td> </tr> <tr> <td>121.500</td> <td>NLT 80 dB</td> <td>NLT 90 dB</td> </tr> <tr> <td>156.800</td> <td>NLT 80 dB</td> <td>NLT 90 dB</td> </tr> <tr> <td>243.000</td> <td>NLT 80 dB</td> <td>NLT 90 dB</td> </tr> </tbody> </table>	<u>FREQUENCY</u> (MHz)	<u>FIRST IF</u> (28.045 MHz)	<u>SECOND IF</u> (500 kHz)	40.500	NLT 80 dB	NLT 90 dB	121.500	NLT 80 dB	NLT 90 dB	156.800	NLT 80 dB	NLT 90 dB	243.000	NLT 80 dB	NLT 90 dB
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156.800	NLT 80 dB	NLT 90 dB														
243.000	NLT 80 dB	NLT 90 dB														
Transmitter																
Unmodulated power output (AM)	NLT 10 W carrier into 50-Ω load over the frequency ranges of 118.0 through 155.975 MHz and 225.0 through 399.975 MHz at 55 °C, NMT 3 dB turndown at +71 °C.															
Unmodulated power output (FM)	NLT 15 W carrier into 50-Ω load over the frequency ranges of 30.0 through 87.975 MHz, 156.0 through 173.975 MHz, and 225.0 through 399.975 MHz at 55 °C, NMT 3 dB turndown at +71 °C.															
Modulation (AM) normal or wide band	NLT 80% upward and between 90 and 100% downward (adjustable)															
Modulation FM	±5.6-kHz deviation															
Modulation distortion	NMT 5% total harmonic distortion in demodulated signal															
Audio response (AM)																
Normal (voice)	500 to 3500 Hz (demodulated carrier audio within +1 to -3 dB of 1000-Hz reference)															
Wide band	300 to 20 000 Hz (demodulated carrier audio within +1, -3 dB of 1000-Hz reference)															
Narrow band	16 Hz to 10 kHz															

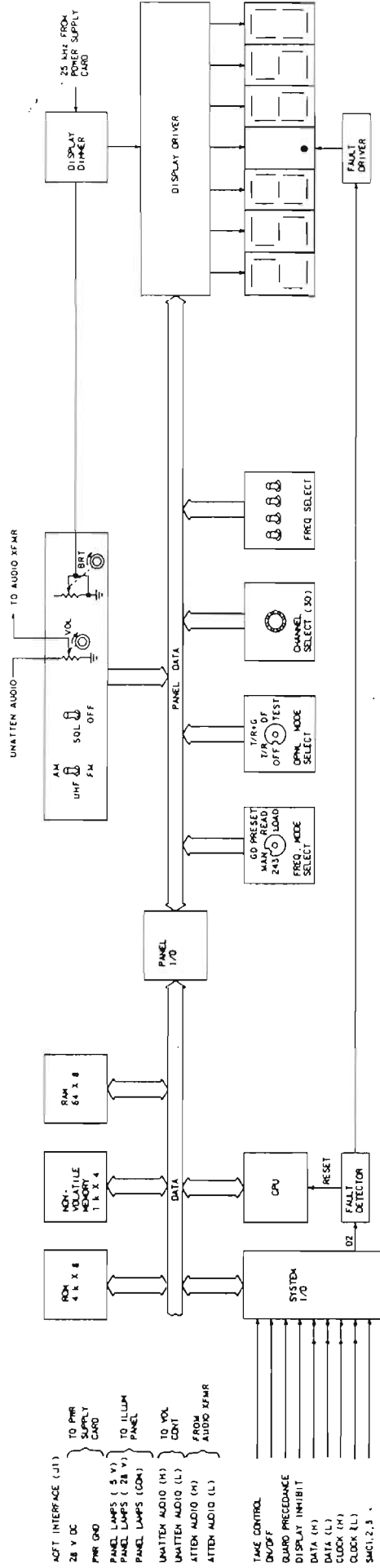
Table 5. RT 622-6323-001 and RT 622-7730-001 Equipment Specifications (Cont).

CHARACTERISTIC	SPECIFICATION
Carrier noise (FM)	At least 30 dB below detected audio of a 1000-Hz tone having a deviation of ± 5.6 kHz measured in a 3-kHz audio bandwidth.
Tone modulation	
Squelch tone	150 Hz $\pm 2\%$ tone transmitted along with normal voice modulation when operation is in the 30- to 87.975-MHz frequency band (vhf FM).
Tone	1020 Hz $\pm 10\%$ tone for amplitude modulating transmitter on any AM band. Modulation percentage is NLT 60% and NMT 90%. Tone is activated by grounding rear connector pin.
Voltage standing wave ratio	Can withstand open or short circuit at rf output terminal without damage.
Duty cycle	1-minute transmit 5-minute receive
Environmental	
Temperature	-54 °C (-65 °F) to +71 °C (+159.0 °F)
Altitude	To 21 336 m (70 000 ft)
Vibration	MIL-E-5400 curve IIIB
Height	123.83 mm (4.875 in) maximum
Width	127.0 mm (5.0 in) maximum
Depth	241.3 mm (9.5 in) maximum
Weight	4.5 kg (10.0 lb) maximum



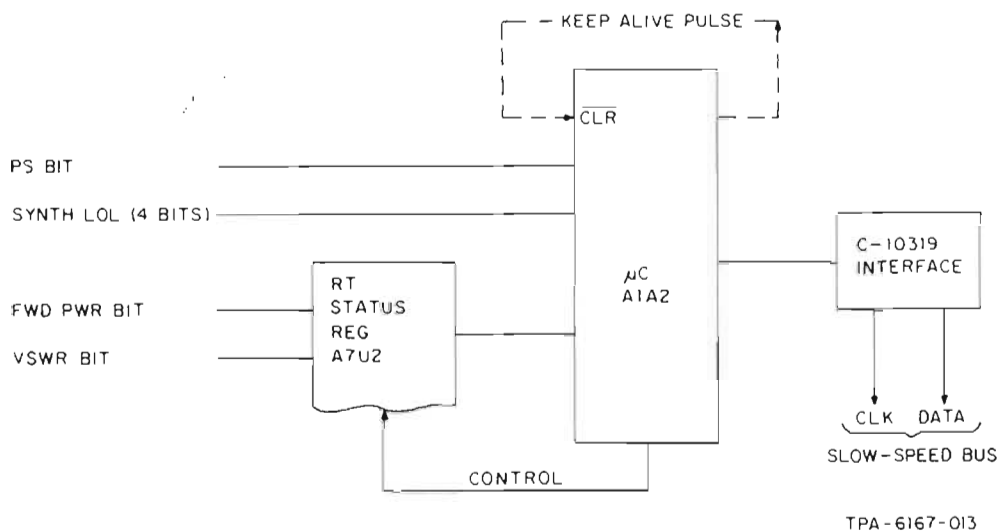
TPA-3585-014

Overall Block Diagram
Figure 1

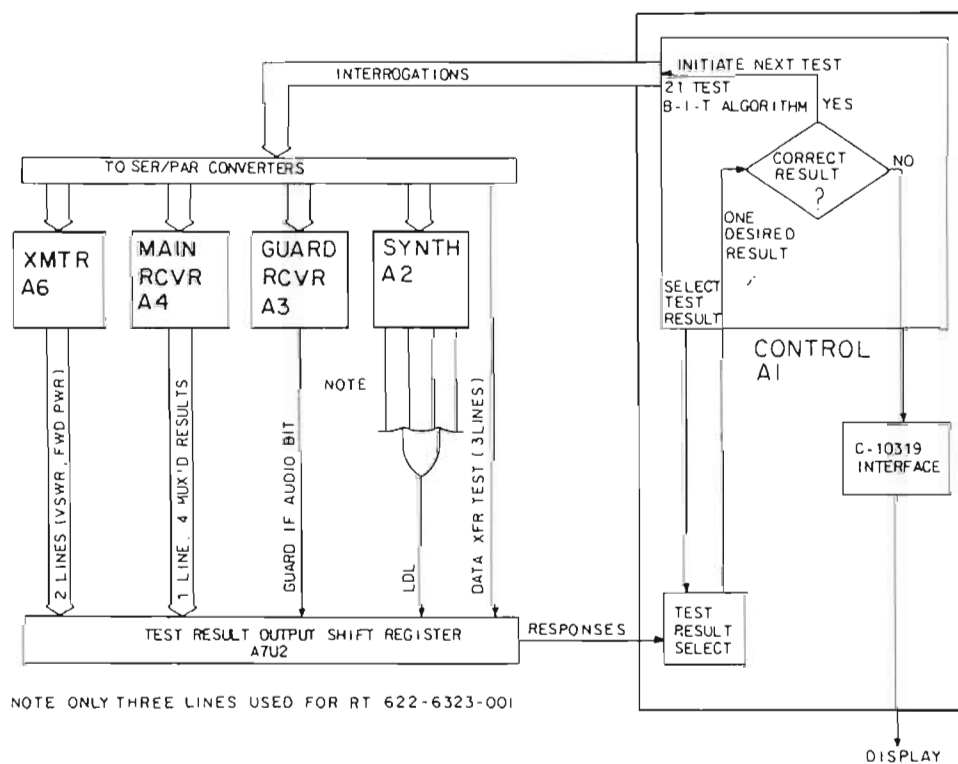


TPA 1834-D14

Pictorial Block Diagram
Figure 1

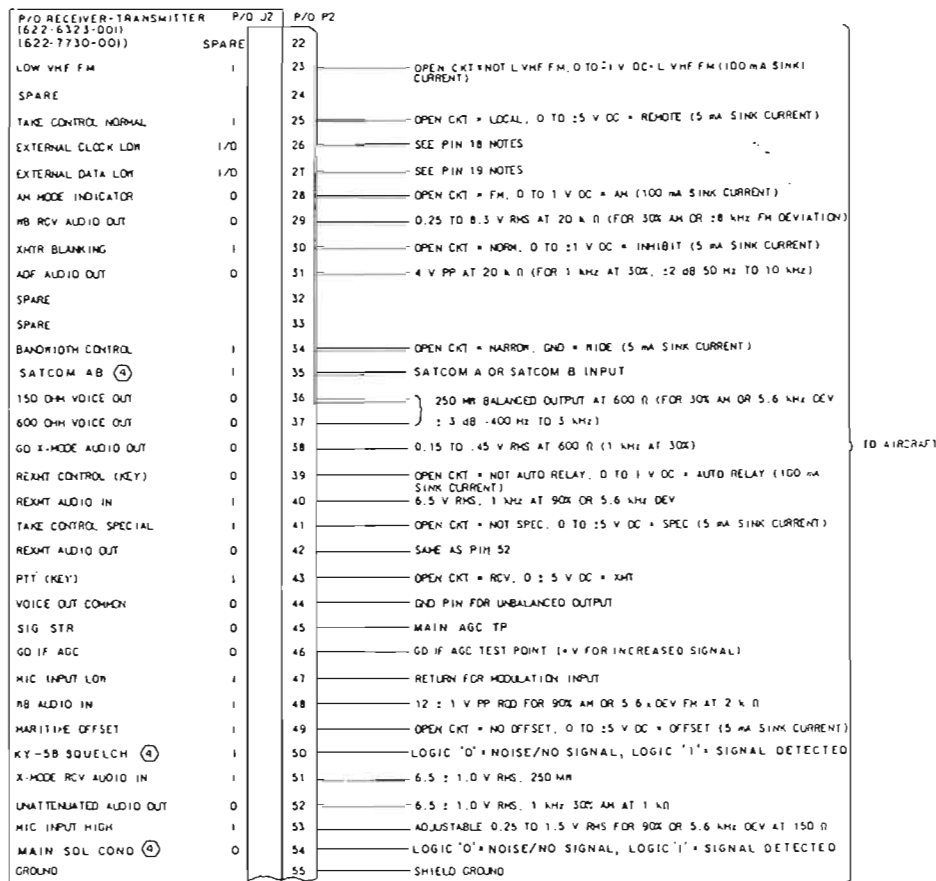
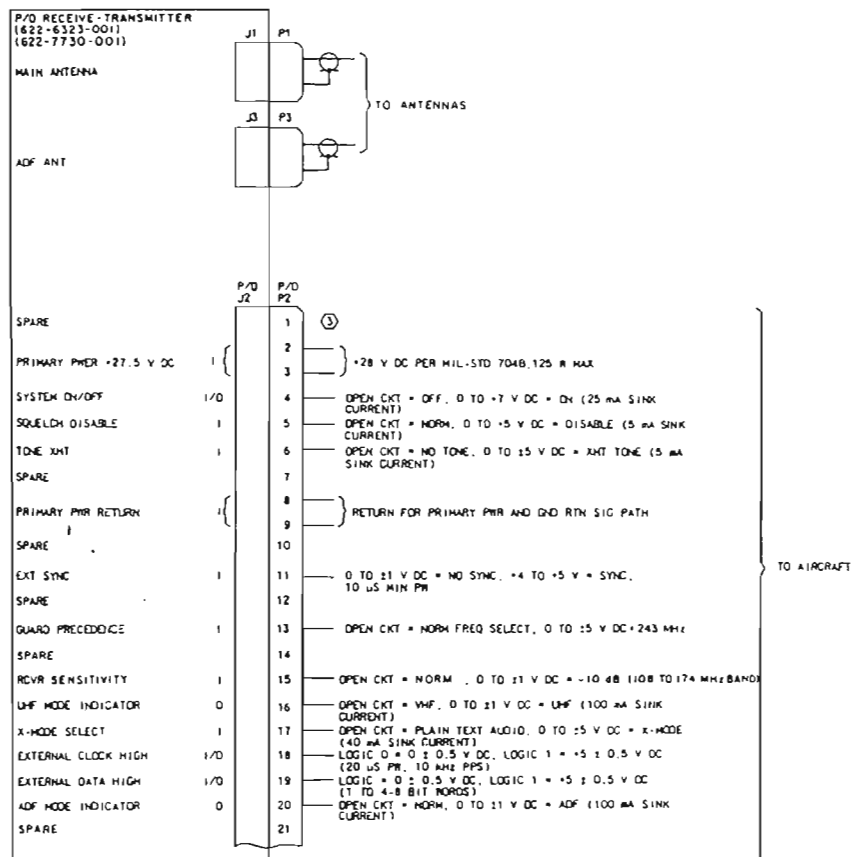


BIT Continuous Monitor
 Figure 6



BIT Block Diagram
 Figure 7

TPA-6605-013



Pin-Out Diagram
Figure 2 (Sheet 2)

Förklaringar till funktion för stift på kontakten J2

1	Reserv	
2	Drivspänning	+28V
3	Drivspänning	+28V
4	ON/OFF	0-7V=ON
5	Squelch	0-5V=OFF
6	150 Hz ton	0-5V ON
7	Reserv	
8	Jord	
9	Jord	
10	Reserv	
11	Extern synk	4-5V ON
12	Reserv	
13	Nödfrekvensöppnare	0-5V startar radion i läge 243 MHz
14	Reserv	
15	Mott. känslighet	0-1V -10dB
16	UHF indikering	0-1V UHF
17	X-MODE val	0-5V X-MODE
18	Extern klockpuls (hög)	0-5V=0 +5±0,5V=1
19	Extern data (hög)	0-5V=0 +5±0,5V=1
20	ADF funk indikator	0-1V ADF
21	Reserv	
22	Reserv	
23	Låg UHF FM	0-1V=L UHF FM
24	Reserv	
25	Kontroll	0-5V remote
26	Extern klock (låg)	se 18
27	Extern data (låg)	se 19
28	AM funk indikator	0-1V AM
29	WB Mottagning LF ut	0,25-8,3V RMS
30	Sändar utsläckning	0-1V omöjliggör
31	ADF LF ut	4V t-t 20 kΩ
32	Reserv	
33	Reserv	
34	Bandbredds kontroll	jord=Wide
35	Reserv	
36	150 Ω LF ut	250 mW balanserad utgång
37	600 Ω LF ut	±3dB -400Hz--3kHz
38	Nöd X-MODE LF ut	0,15-0,45V RMS 600 Ω
39	Relästation (ut)	0-1 V reläfunktion
40	Relästation (in)	6,5 V RMS 1kHz 90% el. 5,6 kHz dev
41	Ta kontroll spec.	0-5 V=spec.
42	Relästation LF (ut)	se 52
43	S/M Nyckel	0-5V=sändning

44	LF ut jord	jord för obalanserad utg.
45	Signal nivå	AGC test
46	Nöd MF AGC	testpunkt
47	Mic. in (låg)	
48	WB LF in	12 ±1V t-t för 90% AM el. 5,6kHz
49	Marinkänaler	0-5V =ej funk
50	Reserv	
51	X-MODE mott. LF in	6,5±1V RMS, 250 mW
52	Odämpad LF ut	6,5±1 RMS, 1kHz 30% AM
53	Mic in (hög)	justerbar 0.25-1,5V RMS för 90% el 5,6 kHz
54	Reserv	
55	JORD	chassi jord

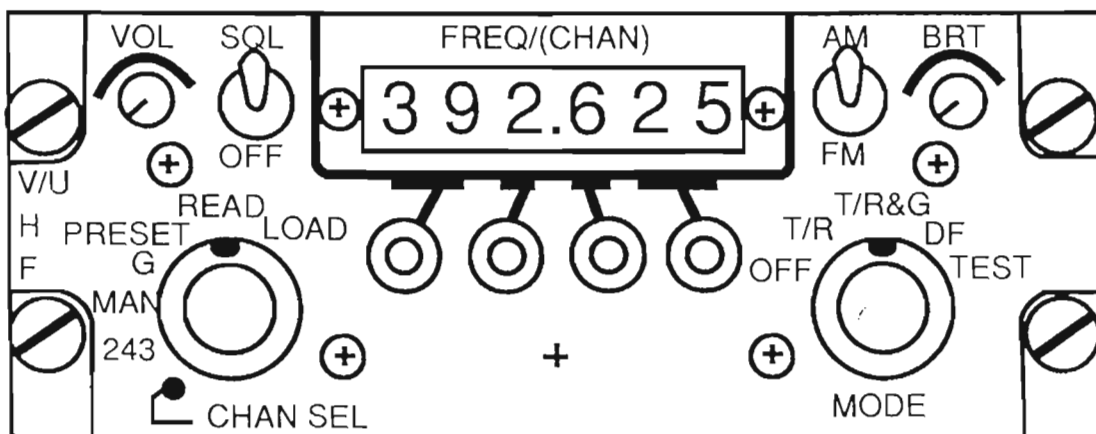
- R använder sig av två stycken skydd för att inte skada sig.
 - 1) Vid högre SVF än 3/2 stänger radion för att inte bränna utgången.
 - 2) Vid hög temperatur sänker den uteffekten tills den går under 2-2,5W då den släcker displayen. Om den har stängt sig så måste man stänga av R för att åter slå på den när den har blivit kallare.
- "Internal spurious" = frekvenser som kanske inte håller spec:en. (de flesta ligger i VHF) Radion är en utpräglad UHF radio.
- Squelchen är av typen Carrier-to-noise. Öppnar när $c/n > 10$ dB (mäts med omodulerad signal)
- Vid sändning på otillåtna frekvenser går styrspänningen till förförstärkaren ner till 0 el. neg. spänning för att vara säker på att ingen signal styrs ut.
- Uteff. min: FM 15 Watt, AM 10 Watt.
- Larmfrekvenserna använder sig av fyra st. kristaller.
- Som referens använder sig R av 8 kHz för att mäta grundbruset.
- R är helt elektrisk förutom ett relä som öppnar uteff. vid BIT.
- För kommunikation mellan r/t och control används digitala (långsamma) klockpulser. Efter tre misslyckade försök släcker den ner de två sista siffrorna.
- När man skall ändra insignal vid bänkkörning koppla loss R för att inte bränna PA:n (= en dyraste komponenten i R).
- När man kör BIT går ingen signal ut för att inte man skall röja sig.
- När man använder sig av "maritime" så ligger sändar/mott. frek $\pm 4,6$ MHz från varandra.
- Vid BIT körning isoleras R från flygplanet.
- Vid BIT (TEST) svarar R med 888.888 och en 961 Hz ton i headsetet vid funktion.
- Om synten slutar fungera så låser sig μP och ingen eff. går ut.

- R använder sig av fyra st syntar.
- Fins det tillräckligt med eff. så går den direkt ut på "sidetone".
- Om man ligger och sänder på ex. AM och under sändning byter till FM så ligger R kvar på AM tills man bryter sändningen och nycklar igen.
- Vid användandet av marinkanalernas larmfrekvenser reserverar den frekvenser från 156,7625 till 156,8375 MHz.
- Marinkanalerna 15 och 17 använder sig av max 1 W.
- Om man får 1 1 1 till svar vid BIT så undersök att s/t erhåller spänning.
- Om man programmerar in frekvenser vänta ca: två sekunder innan man vrider tillbaka switchen så radion hinner lagra (detta beror på den långsamma bithastighet som överföringen mellan s/t och kontrollen använder sig av).
- Vid användandet av maritimekanalerna visas frekvensen inte kanalnummren.
- Vid sändning på en olovlig frekvens släcks displayen ner förutom decimalpunkten.
- Det är normalt att höra AM signaler i FM mode och tvärtom.
- FR48 "kan" använda sig av full-duplex med hjälp av ett yttre duplexfilter.
- Om R vid BIT visar ex 5 4 0 menar den att det med störst sannolighet att det är fel på Stömförsörjnings modulen, näst störst sannolikhet fel på mottagar modulen och därefter chassi=något fel utanför R, då troligen antennen.
- Visar den vis BIT 6 6 6 är R till 99,9% säker på att det är fel på sändaren.
- LOL=Loss of lock
- VSWR=Voltage standing wave ratio

Fel vid BIT:

1	Control	Kontrollen
2	Synthesizer	Synten
3	Guard reciver	Larmmottagaren
4	Main reciver	Mottagaren
5	Power supply	Strömförsörjningen
6	Transmitter	Sändaren
(7	Chassis	Panelen om man har panelmonterad R)
0	Antenna system	Ngt. utanför radion

FUNKTION, HANDHAVANDE FR 48



Önskemål

- Ange kapitel på första sidan över högra hörnet.
 - Sidnumrering över högra hörnet
 - Fylligare text och snyggare layout på sidorna med svensk text.
- /Bh

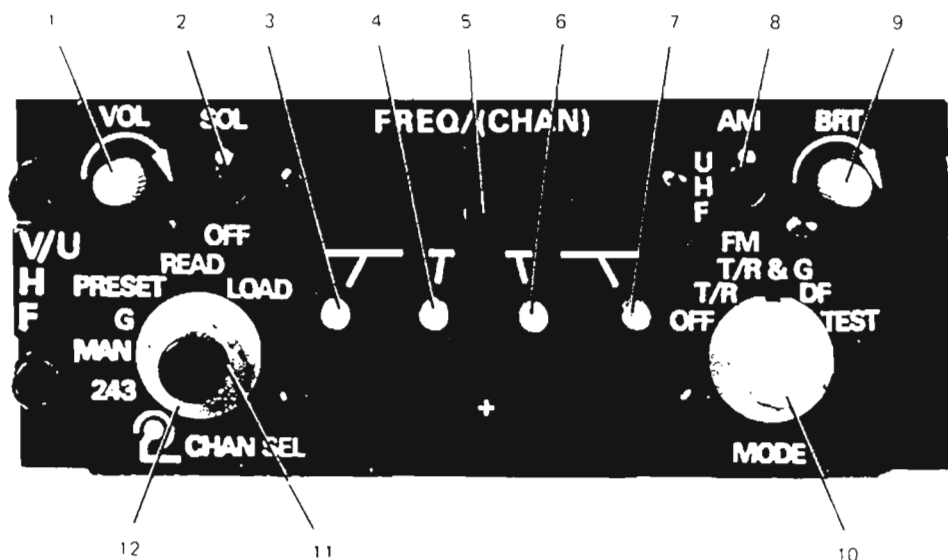
operation

1. GENERAL

Only normal operating procedures for the control are covered in detail in this section. The particular operation of the unit is determined by intended usage as governed by local or national regulation.

2. CONTROLS AND INDICATORS

All operating controls are located on the front panel of the unit. Figure 1 shows the location of controls and indicators. An explanation of each is listed in table 1.



TPA 2051-017

C-10319()/ARC, C-10776()/ARC, and C-11131/ARC Controls and Indicators
Figure 1

Table 1. Controls and Indicators.

ITEM NO (FIG 1)	CONTROL/INDICATOR	FUNCTION
1	VOL (R1)	Potentiometer. Adjust audio output level.
2	SQL/OFF (S5)	Toggle switch. Enables main receiver squelch in SQL position. Disables squelch in OFF position.

Table 1. Controls and Indicators (Cont).

ITEM NO (FIG 1)	CONTROL/INDICATOR	FUNCTION
12 (Cont)	READ	Permits display of frequency of preset operating channel instead of channel number. Displayed frequency may be altered by use of frequency control switches, but stored frequency will not change.
	LOAD	Loads frequency selected in READ mode into memory to alter preset channel frequency. No change in stored preset frequency unless frequency has been changed while frequency mode selector has been set to READ.

Note

If the frequency mode selector is set to PRESET or READ and then back to GUARD, the guard frequency displayed will be the one appropriate for the frequency band of the preset channel. If the frequency mode selector is then set to MAN and back to GUARD, the guard frequency displayed will be the one appropriate for the frequency band of the manually selected frequency.

MODE	DISPLAY	FAULT	INTERPRETATION
RCV	•	RT LOL OR RMT CONT	SELECT TEST MODE
XMT	•	REDUCED PWR, HIGH VSWR	SELECT TEST MODE
TEST	0 0 0 . 0 0 0	NONE	RT AND CONTROL, OK
TEST	0 0 1	VSWR	RT OR ANTENNA SYSTEM
TEST	0 0 1	FWD PWR	MODULES A6, A5, OR A1 FAULT
TEST	2 2 1	LOL	MODULES A2 OR A1 FAULT
TEST	1 0 7	RT	MODULES A1, A5 OR FUSE FAULT
TEST	3 3 3	RT	MODULE A3 FAULT
TEST	3 3 2	RT	MODULE A3 OR A2 FAULT
TEST	3 2 4	RT	MODULE A3, A2 OR A4 FAULT
TEST	1 0 7	INTFCE OR RT	NO RESPONSE
TEST	•	RMT CONT	DEFECTIVE CONTROL

TPA-2983-013

Samples of BIT Readouts
Figure 2

3. OPERATING PROCEDURES

3.1 Loading Preset Channels

The control can store 30 preset channel frequencies. If unauthorized operating frequencies (below 30.000 MHz, 88.000 through 107.975 MHz, 174.000 through 224.975 MHz and above 399.975 MHz) are selected,

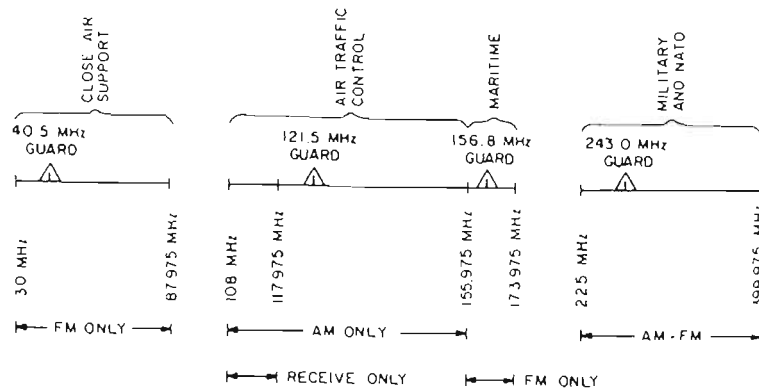
the receiver-transmitter will not tune. For this reason, do not attempt to load an unauthorized frequency.

To load preset channels, proceed as follows:

- a. Apply primary power to the control.
- b. Set operational MODE selector to T/R.

- n. Set operational MODE selector to T/R. Tune receiver-transmitter to an unused channel. Monitor headset and set squelch control to OFF; noise is heard in headset. Set squelch control to SQL; noise stops.
- o. Set operational MODE selector to TEST. After a few seconds, `FREQ/(CHAN)` display shows

888.888. Examples of built-in test (BIT) readouts are shown in figure 2. A fault in the control is indicated by the display being blank except for the decimal point. The BIT will isolate faults in the receiver-transmitter to one module 90% of the time, to two modules 95% of the time, and to three modules 100% of the time.



TPA-1492-012

Frequency Bands
Figure 1

Table 5. RT 622-6323-001 and RT 622-7730-001 Equipment Specifications.

CHARACTERISTIC	SPECIFICATION																					
General																						
Frequency coverage, modulation type, and number of channels	<table border="1"> <thead> <tr> <th>FREQ (MHz)</th> <th>MOD</th> <th>NO OF CHANNELS</th> </tr> </thead> <tbody> <tr> <td>30.000 to 87.975</td> <td>FM</td> <td>2 320</td> </tr> <tr> <td>108.000 to 117.975</td> <td>AM (Rec only)</td> <td>400</td> </tr> <tr> <td>118.000 to 155.975</td> <td>AM</td> <td>1 520</td> </tr> <tr> <td>156.000 to 173.975</td> <td>FM</td> <td>720</td> </tr> <tr> <td>225.000 to 399.975</td> <td>AM/FM</td> <td>7 000</td> </tr> <tr> <td colspan="2">Total</td> <td>11 960</td> </tr> </tbody> </table>	FREQ (MHz)	MOD	NO OF CHANNELS	30.000 to 87.975	FM	2 320	108.000 to 117.975	AM (Rec only)	400	118.000 to 155.975	AM	1 520	156.000 to 173.975	FM	720	225.000 to 399.975	AM/FM	7 000	Total		11 960
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225.000 to 399.975	AM/FM	7 000																				
Total		11 960																				
Maritime offset	Offset capability of +4.6 or -4.6 MHz is available on selected channels in the 156- to 173.975-MHz band by grounding an assigned pin on J2.																					
Guard receiver	Four frequencies 40.5 MHz FM, 121.5 MHz AM, 156.80 MHz FM, and 243.0 MHz AM available and selected automatically by main receiver operating band.																					
Automatic relay	Can provide automatic retransmit capability when two receiver-transmitters are used.																					

Table 5. RT 622-6323-001 and RT 622-7730-001 Equipment Specifications (Cont).

CHARACTERISTIC	SPECIFICATION
Scan/SATCOM (RT 622-7730-001 only)	
Scan	Scanning consists of 4 channels, command channel 23 and preset channels 24 thru 26.
SATCOM	SATCOM consists of 2 SATCOM pairs, channels 27, 28 SATCOM A and channels 29, 30 SATCOM B.
Automatic direction finding	
ADF	Can provide uhf ADF when used with an ARA-50 or equivalent. Vhf and uhf ADF in the 108- to 399.975-MHz range is possible when using a DF-301E or equivalent.
Guard precedence	Operated from external source. Ground provided on assigned pin causes radio to turn on and tune main receiver and transmitter to 243.000 MHz (AM).
Secure voice	Operated from external source. Ground provided on assigned pin enables secure voice operation when interfaced with KY-28/KY-58 or equivalent.
ECCM, antijam (AJ) mode	Receiver-transmitter will operate in the AJ mode when controlled by a Magnavox Radio Set Control C-11128/ARC, C-11129/ARC, or C-11130/ARC.
Frequency shift keying (FSK)	FSK of 50 b/s to 10 kb/s with deviation of ± 20 kHz (± 20 kHz vs ± 5.6 kHz can be achieved with a strapping modification).
Primary power	+28.0 ± 0.5 V dc, NMT 20 W receive and NMT 150 W transmit
Tuning method	Electronic
Main receiver	
Sensitivity	
30.0 to 87.975 MHz	-112 dBm for NLT 10 dB s+n/n (input frequency modulated by 1.0 kHz and with ± 2.4 -kHz deviation)
108.0 to 155.975 MHz	-103 dBm for NLT 10 dB (s+n)/n (input amplitude modulated 30% at 1 kHz)
156.0 to 173.975 MHz	-110 dBm for NLT 10 dB (s+n)/n (input frequency modulated by 1 kHz and with ± 2.4 -kHz deviation)
225.0 to 399.975 MHz	AM mode: -103 dBm for NLT 10 dB (s+n)/n (input amplitude modulated 20% at 1 kHz) FM mode: -110 dBm for NLT 10 dB (s+n)/n (input frequency modulated by 1 kHz and with ± 2.4 -kHz deviation)
Sensitivity control	Grounding pin 15 reduces sensitivity by 10 dB in the 108.000- to 173.975-MHz range.
Selectivity	
Normal bandwidth	± 17 -kHz minimum at -6 dB points; ± 35 -kHz maximum at -60 dB points

Table 5. RT 622-6323-001 and RT 622-7730-001 Equipment Specifications (Cont).

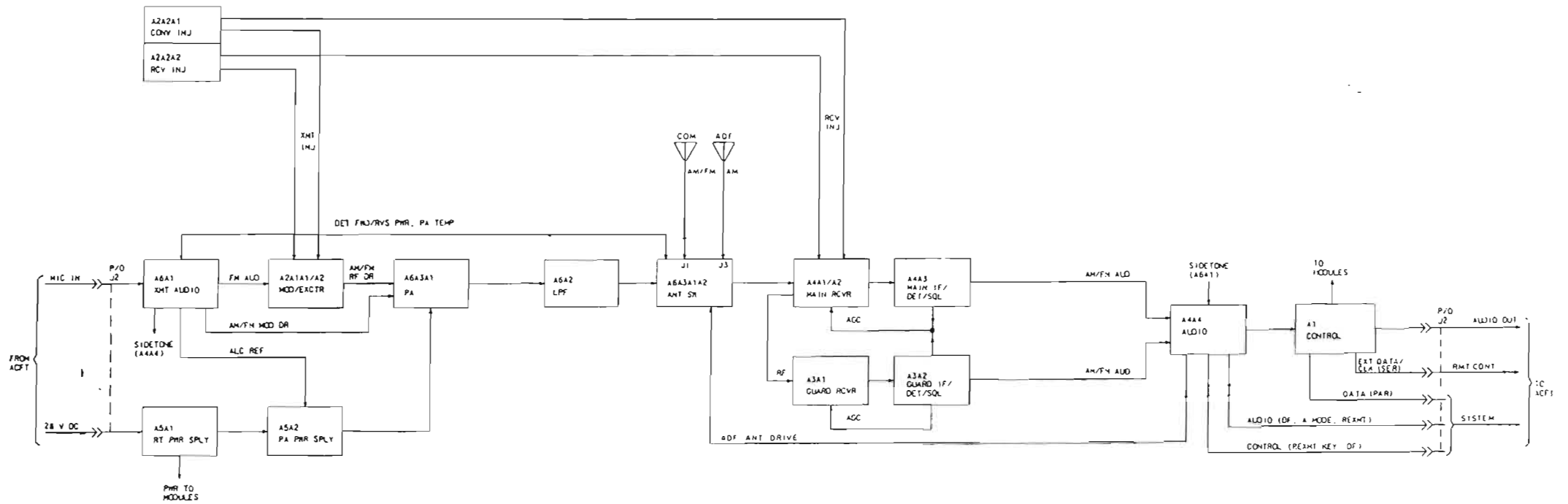
CHARACTERISTIC	SPECIFICATION																																																
Internal spurious	<p>Will meet sensitivity requirements on 99% of available channels. Will provide at least 10 dB (s+n)/n ratio for an input signal level of -91 dBm (6 μV) on the 119 (1% of 11960) degraded channels with the following exceptions:</p> <table border="1"> <thead> <tr> <th>LOW VHF-FM</th> <th>VHF-AM</th> <th>VHF-FM</th> <th>UHF</th> </tr> </thead> <tbody> <tr> <td>42.900</td> <td>108.450</td> <td>156.675</td> <td>322.425</td> </tr> <tr> <td>44.450</td> <td>114.200</td> <td>161.750</td> <td></td> </tr> <tr> <td>51.000</td> <td>117.800</td> <td>164.800</td> <td></td> </tr> <tr> <td>57.100</td> <td>123.600</td> <td>173.500</td> <td></td> </tr> <tr> <td>62.600</td> <td>127.675</td> <td></td> <td></td> </tr> <tr> <td>66.675</td> <td>132.500</td> <td></td> <td></td> </tr> <tr> <td>74.625</td> <td>135.400</td> <td></td> <td></td> </tr> <tr> <td>81.875</td> <td>135.750</td> <td></td> <td></td> </tr> <tr> <td>85.500</td> <td>147.000</td> <td></td> <td></td> </tr> <tr> <td>85.650</td> <td>149.700</td> <td></td> <td></td> </tr> <tr> <td>85.800</td> <td>154.500</td> <td></td> <td></td> </tr> </tbody> </table>	LOW VHF-FM	VHF-AM	VHF-FM	UHF	42.900	108.450	156.675	322.425	44.450	114.200	161.750		51.000	117.800	164.800		57.100	123.600	173.500		62.600	127.675			66.675	132.500			74.625	135.400			81.875	135.750			85.500	147.000			85.650	149.700			85.800	154.500		
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Intermediate frequency rejection	<p>Intermediate frequency rejection is as follows:</p> <table border="1"> <thead> <tr> <th>CHANNEL</th> <th>FIRST IF (29 MHz)</th> <th>SECOND IF (455 kHz)</th> </tr> </thead> <tbody> <tr> <td>30 to 40 MHz</td> <td>NLT 55 dB</td> <td>NLT 90 dB</td> </tr> <tr> <td>40 to 88 MHz</td> <td>NLT 65 dB</td> <td>NLT 90 dB</td> </tr> <tr> <td>108 to 174 MHz</td> <td>NLT 80 dB</td> <td>NLT 90 dB</td> </tr> <tr> <td>225 to 400 MHz</td> <td>NLT 80 dB</td> <td>NLT 90 dB</td> </tr> </tbody> </table>	CHANNEL	FIRST IF (29 MHz)	SECOND IF (455 kHz)	30 to 40 MHz	NLT 55 dB	NLT 90 dB	40 to 88 MHz	NLT 65 dB	NLT 90 dB	108 to 174 MHz	NLT 80 dB	NLT 90 dB	225 to 400 MHz	NLT 80 dB	NLT 90 dB																																	
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121.5 MHz	-103 dBm for NLT 10 dB (s+n)/n (input frequency modulated 30% at 1 kHz)																																																
156.8 MHz	-110 dBm for NLT 10 dB (s+n)/n (input frequency modulated by 1 kHz and with \pm 2.4-kHz deviation)																																																
243.0 MHz	-103 dBm for NLT 10 dB (s+n)/n (input signal modulated 30% at 1 kHz)																																																
Selectivity	\pm 14-kHz minimum at -6 dB points; \pm 40-kHz maximum at 60-dB points																																																
Squelch	Carrier-to-noise type with (s+n)/n adjustable over range of 5 to 15 dB																																																
Squelch isolation audio outputs																																																	
Normal audio	Same as main receiver																																																
Low-level audio out	Between 0.15 and 0.45 V rms into a 600-ohm load for -53 dBm input (1 kHz at 30% AM or 1 kHz at 2.4 kHz deviation FM) with fidelity of \pm 1, -3 dB from 500 to 3500 Hz and NMT 5% distortion																																																

Table 5. RT 622-6323-001 and RT 622-7730-001 Equipment Specifications (Cont).

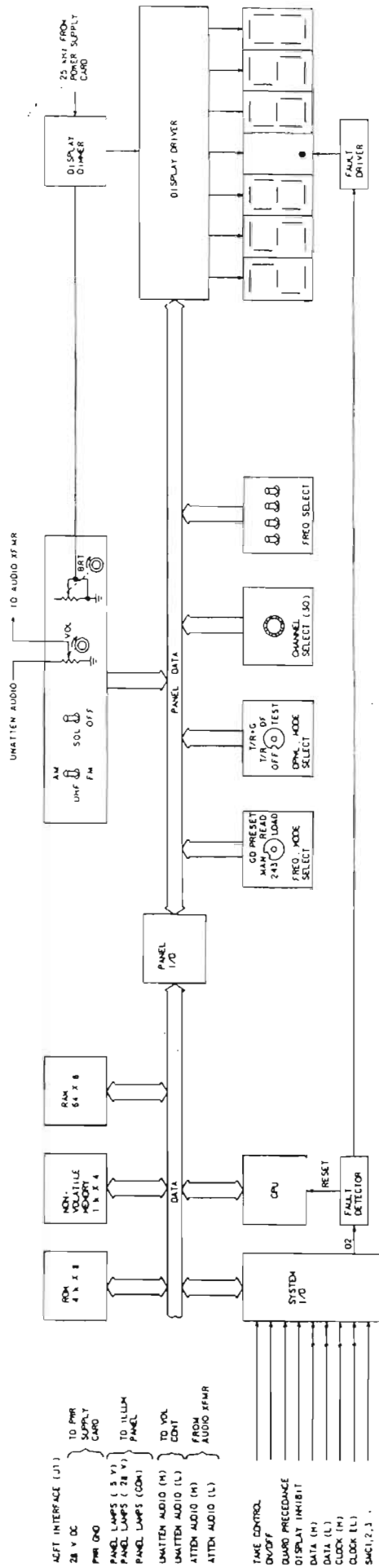
CHARACTERISTIC	SPECIFICATION															
Intermediate frequency rejection	Intermediate frequency rejection is as follows: <table border="1"> <thead> <tr> <th>FREQUENCY (MHz)</th> <th>FIRST IF (28.045 MHz)</th> <th>SECOND IF (500 kHz)</th> </tr> </thead> <tbody> <tr> <td>40.500</td> <td>NLT 80 dB</td> <td>NLT 90 dB</td> </tr> <tr> <td>121.500</td> <td>NLT 80 dB</td> <td>NLT 90 dB</td> </tr> <tr> <td>156.800</td> <td>NLT 80 dB</td> <td>NLT 90 dB</td> </tr> <tr> <td>243.000</td> <td>NLT 80 dB</td> <td>NLT 90 dB</td> </tr> </tbody> </table>	FREQUENCY (MHz)	FIRST IF (28.045 MHz)	SECOND IF (500 kHz)	40.500	NLT 80 dB	NLT 90 dB	121.500	NLT 80 dB	NLT 90 dB	156.800	NLT 80 dB	NLT 90 dB	243.000	NLT 80 dB	NLT 90 dB
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121.500	NLT 80 dB	NLT 90 dB														
156.800	NLT 80 dB	NLT 90 dB														
243.000	NLT 80 dB	NLT 90 dB														
Transmitter																
Unmodulated power output (AM)	NLT 10 W carrier into 50- Ω load over the frequency ranges of 118.0 through 155.975 MHz and 225.0 through 399.975 MHz at 55 °C. NMT 3 dB turndown at +71 °C.															
Unmodulated power output (FM)	NLT 15 W carrier into 50- Ω load over the frequency ranges of 30.0 through 87.975 MHz, 156.0 through 173.975 MHz, and 225.0 through 399.975 MHz at 55 °C. NMT 3 dB turndown at +71 °C.															
Modulation (AM) normal or wide band	NLT 80% upward and between 90 and 100% downward (adjustable)															
Modulation FM	\pm 5.6-kHz deviation															
Modulation distortion	NMT 5% total harmonic distortion in demodulated signal															
Audio response (AM)																
Normal (voice)	500 to 3500 Hz (demodulated carrier audio within +1 to -3 dB of 1000-Hz reference)															
Wide band	300 to 20 000 Hz (demodulated carrier audio within +1, -3 dB of 1000-Hz reference)															
Narrow band	16 Hz to 10 kHz															

Table 5. RT 622-6323-001 and RT 622-7730-001 Equipment Specifications (Cont).

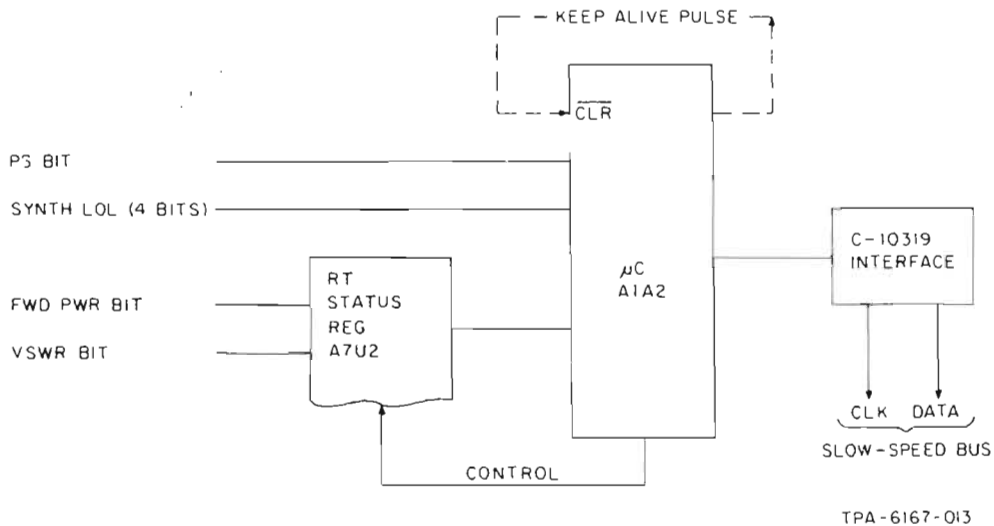
CHARACTERISTIC	SPECIFICATION
Carrier noise (FM)	At least 30 dB below detected audio of a 1000-Hz tone having a deviation of ± 5.6 kHz measured in a 3-kHz audio bandwidth.
Tone modulation	
Squelch tone	150 Hz $\pm 2\%$ tone transmitted along with normal voice modulation when operation is in the 30- to 87.975-MHz frequency band (vhf FM).
Tone	1020 Hz $\pm 10\%$ tone for amplitude modulating transmitter on any AM band. Modulation percentage is NLT 60% and NMT 90%. Tone is activated by grounding rear connector pin.
Voltage standing wave ratio	Can withstand open or short circuit at rf output terminal without damage.
Duty cycle	1-minute transmit 5-minute receive
Environmental	
Temperature	-54 °C (-65 °F) to +71 °C (+159.0 °F)
Altitude	To 21 336 m (70 000 ft)
Vibration	MIL-E-5400 curve III B
Height	123.83 mm (4.875 in) maximum
Width	127.0 mm (5.0 in) maximum
Depth	241.3 mm (9.5 in) maximum
Weight	4.5 kg (10.0 lb) maximum



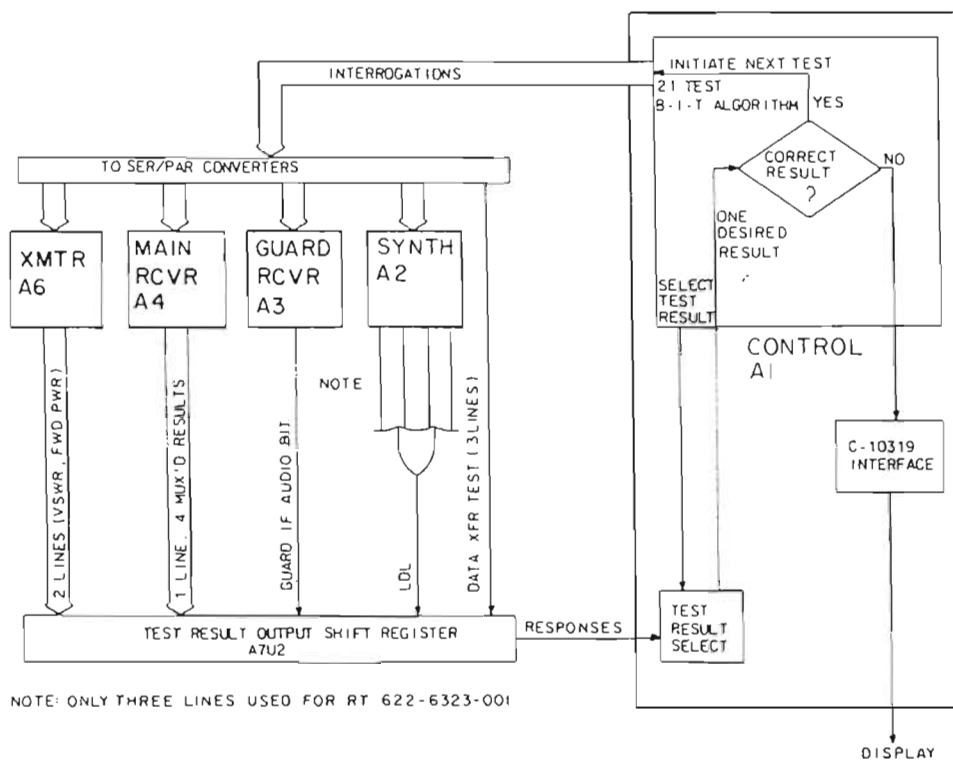
Overall Block Diagram
Figure 1



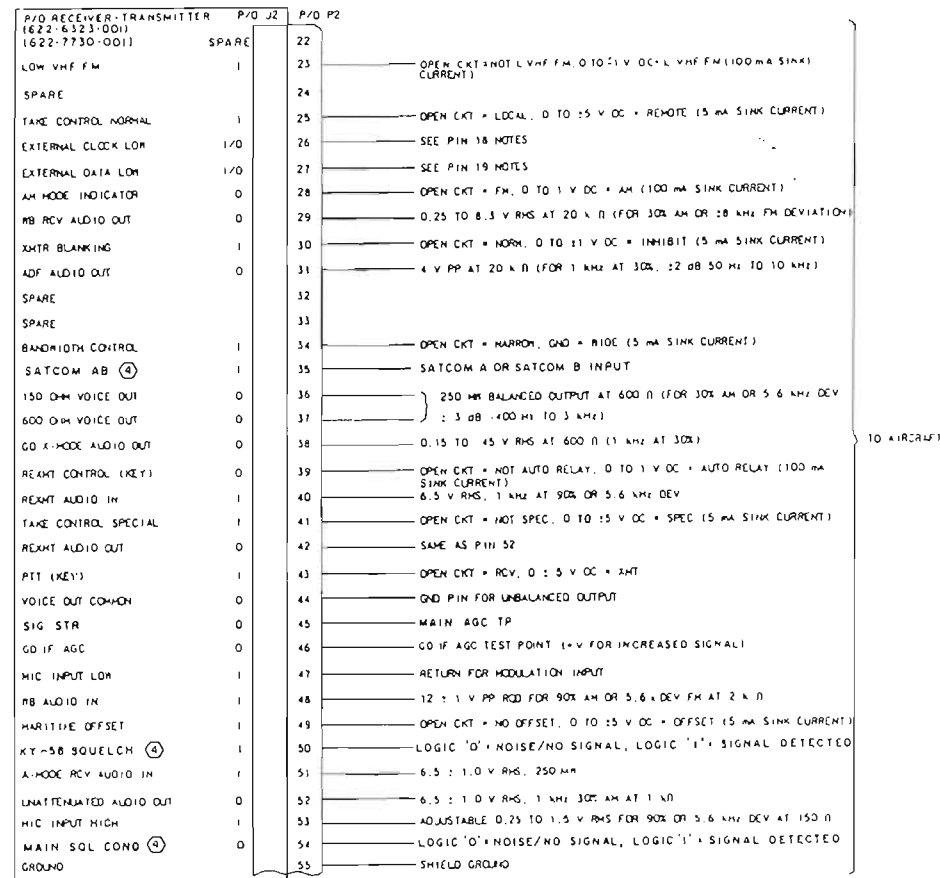
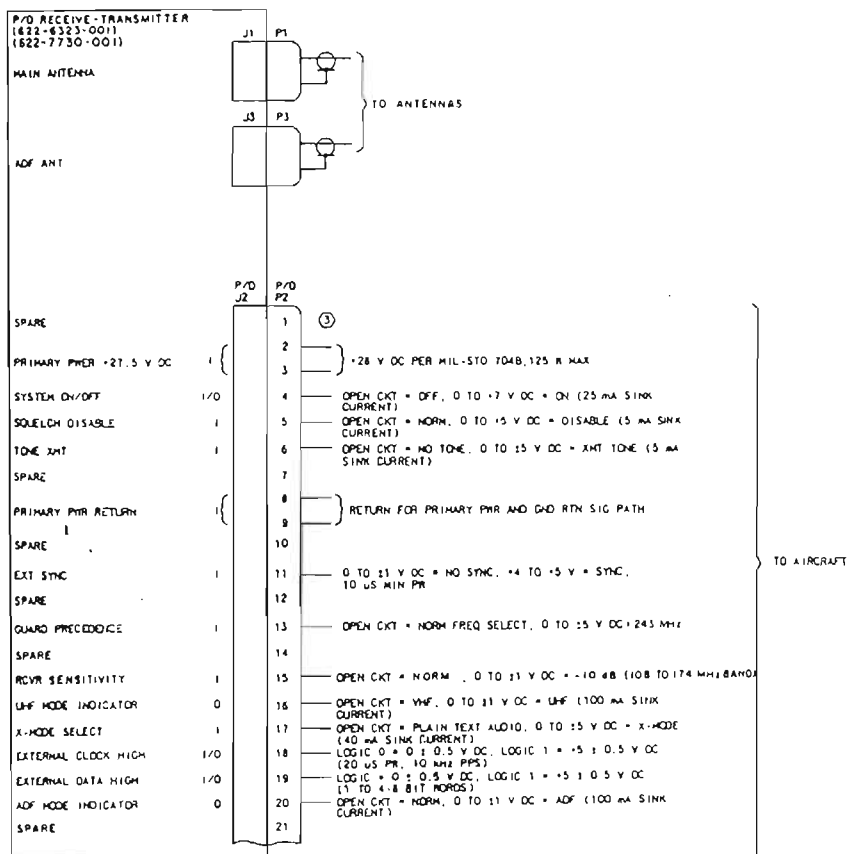
Pictorial Block Diagram
Figure 1



BIT Continuous Monitor
Figure 6



BIT Block Diagram
Figure 7



Pio-Out Diagram
Figure 2 (Sheet 2)