

# HF-8014A Exciter (622-3473-211)



Rockwell  
International

supplement

Collins Defense Communications Division

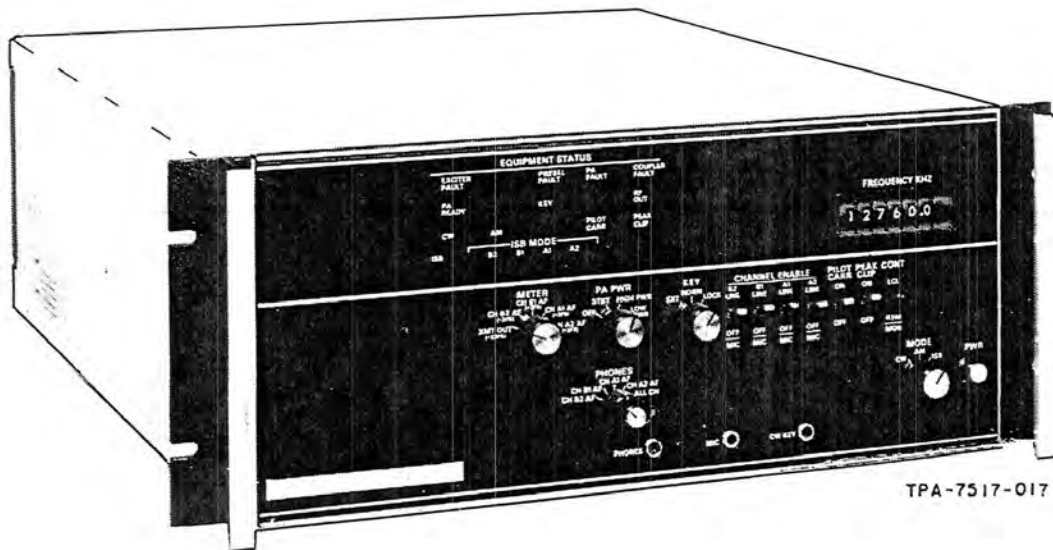
523-0773476-01221A

1 July 1984

Printed in USA

## GENERAL

The purpose of this supplement is to provide information for HF-8014A Exciter, Rockwell-Collins part number 622-3473-211 (figure 1). When used with the HF-8014( ) Exciter Instruction Book (523-0770718), this supplement provides the user with a complete instruction book on the HF-8014A Exciter.



HF-8014A Exciter (622-3473-211)  
Figure 1

**FRONT MATTER**

In the list of instruction books, place the following entry to correspond with the physical placement of the supplement.

HF-8014A Exciter (622-3473-211) Supplement

523-0773476

**INTRODUCTION**

The introduction in the HF-8014( ) Exciter instruction book is applicable to the HF-8014A Exciter (622-3473-211), with the exception that the exciter is a 2-channel exciter, and with the addition of the following design features.

- The HF-8014A Exciter (622-3473-211) is capable of utilizing: 1) serial input data from a remote control to control all receiver functions, 2) parallel binary coded decimal (bcd) data for frequency control, 3) parallel/binary weighted data for rf gain control, 4) parallel coded-frequency data for frequency control, or 5) the front panel controls while in the local mode.

**DESCRIPTION (523-0770719-002218)**

**1. GENERAL**

Add the following paragraph between the first and second paragraphs.

The HF-8014A Exciter (622-3473-211) provides an rf output for AM (AME), CW, and 2-channel ISB signals over the frequency range of 1.6000 to 29.9999 MHz in 1-Hz steps. The exciter may be locally controlled from the front panel or remotely controlled using a compatible remote control or a compatible processor. The frequency of the HF-8014A Exciter (622-3495-211) may be additionally controlled by parallel data inputs from a compatible parallel formatted remote control or processor. Options available include an external frequency standard.

**2. EQUIPMENT SUPPLIED**

Replace table 1 with table 1 supplied.

Table 1. HF-8014A Exciter Equipment Supplied.

SUBASSEMBLY/CIRCUIT CARD		EXCITER			DESCRIPTION/FUNCTION
TITLE	PART NUMBER*	HF-8014 622-3472-001	HF-8014A 622-3473-( )		
			-001	-211	
Main chassis	634-8177-001	X	X	X	
Bottom cover	634-8179-001	X	X	X	
Top cover	634-8180-002	X	X		
	634-8181-002		X	X	

Table 1. HF-8014A Exciter Equipment Supplied (Cont).

SUBASSEMBLY/CIRCUIT CARD		EXCITER			DESCRIPTION/FUNCTION
TITLE	PART NUMBER*	HF-8014 622-3472-001	HF-8014A 622-3473-( )		
			-001	-211	
Rear panel	635-9611-003	X	X		
	652-7266-001			X	
Wiring harness	642-2408-001	X	X	X	Interconnects TB1.
	642-2407-001	X	X	X	Interconnects TB2.
Rf cable assembly, 450-kHz if	642-2454-001	X	X	X	Interconnects J50, J51, J52, and J53 (450-kHz if from channel A1 if).
Rf cable assembly J22/J26	637-1525-004	X	X	X	Interconnects J22 and J26 (xmt output).
Rf cable assembly J27/J36	637-1526-003	X	X	X	Interconnects J27 and J36 (9.45-MHz output).
Power supply A1	635-9649-001	X	X	X	Input can be switched for 100, 115, 215, or 230 V ac (47 to 420 Hz).
Front panel assembly A2	634-8199-001	X	X		100-Hz tuning
	634-8199-002				100-Hz tuning with frequency display
	634-8199-003			X	10-Hz tuning with frequency display
LED status display A2A1	635-0825-012	X	X	X	
Switch mounting board A2A2	638-6597-001	X	X	X	
Frequency switchboard A2A3	635-0830-001	X	X		100-Hz tuning
	635-0830-002			X	10-Hz tuning
Frequency display A2A5	637-1781-006				100-Hz display
	637-1781-007			X	10-Hz display
Transmit audio A3 (A2-B2)	638-6476-003	X	X		Same as 638-6476-001 except MIC select circuits removed.
Transmit audio A4 (A1-B1)	638-6476-001	X	X	X	

Table 1. HF-8014A Exciter Equipment Supplied (Cont).

SUBASSEMBLY/CIRCUIT CARD		EXCITER			DESCRIPTION/FUNCTION
TITLE	PART NUMBER*	HF-8014 622-3472-001	HF-8014A 622-3473-( )		
			-001	-211	
Channel B2 if A5	638-6636-003	X	X		Includes 2.85-kHz LLSB if filter (channel B2).
Channel A2 if A6	638-6636-002	X	X		Includes 2.85-kHz UUSB if filter (channel A2).
Channel B1 if A7	638-6636-001	X	X		Includes 2.85-kHz LSB if filter (channel B1).
Channel A1 if A8	638-6659-001	X	X	X	Includes 2.85-kHz USB if filter (channel A1).
	638-6659-002				
Rf translator A9	637-1768-002	X	X		Broadband, high performance
Control A10	638-6622-001	①	③		
	638-6622-002				
	638-6622-003	②	④		
	638-6622-004			X	
Parallel input A11	642-3135-001		X		
	642-3135-002			X	
Parallel output A12	642-3137-001		X		
	642-3137-002			X	
Serial interface A13	638-6896-001		X	X	Can be switched for 7-bit ASCII or 8-bit character data format.  Can be switched for various serial controls: FSK; EIA RS-232C/RS-422 (CCITT V.24); or MIL-STD-188C.
Synthesizer voltage regulator A14	635-0656-001	X	X		
Synthesizer subcarrier generator A15	638-6962-001	X	X		



Table 1. HF-8014A Exciter Equipment Supplied (Cont).

SUBASSEMBLY/CIRCUIT CARD		EXCITER			DESCRIPTION/FUNCTION
TITLE	PART NUMBER*	HF-8014 622-3472-001	HF-8014A 622-3473-( )		
			-001	-211	
Synthesizer reference A16	642-2451-001	X	X		Can be strapped for an internal (INT) or external (EXT) frequency standard. If strapped EXT, external phase lock must be installed.
External phase-lock A16A4	635-0655-001		X		Can be strapped for 100-kHz, 1-MHz, or 5-MHz external frequency standard. Part of AC-8012 Oven Standard Kit (622-3460-001) and AC-8013 External Standard Kit (622-3461-001).
Synthesizer end decade	635-0657-001	X	X		Installed as A18 provides 10-Hz tuning. Installed as A19 provides 100-Hz tuning. With appropriate decades added, installed as A17 provides 1-Hz tuning.
Synthesizer 100/10-Hz decade A19	623-2080-004				Installed as A19 for 10-Hz tuning. Not installed for 100-Hz tuning. Two installed, one as A19 and one as A18, for 1-Hz tuning. Part of AC-8017 100-Hz to 10-Hz Conversion Kit, AC-8018 10-Hz to 1-Hz Conversion Kit, and AC-8019 100-Hz to 1-Hz Conversion Kit.
Synthesizer 1-kHz decade A20	623-2080-003	X	X		
Synthesizer 10-kHz decade A21	623-2080-002	X	X		
Synthesizer 100-kHz decade A22	623-2080-001	X	X		
Synthesizer output A23	635-4930-002	X	X		
Rfi filter A24	637-2712-001	X	X		
Rfi filter modified A24	654-2053-001			X	
Sideboard assembly A25	634-8211-001	X	X		
	634-8211-002			X	
Sideboard (P/O A25)	638-6617-001	X	X	X	

Table 1. HF-8014A Exciter Equipment Supplied (Cont).

SUBASSEMBLY/CIRCUIT CARD		EXCITER			DESCRIPTION/FUNCTION
TITLE	PART NUMBER*	HF-8014 622-3472-001	HF-8014A 622-3473-( )		
			-001	-211	
Cable assembly (P/O A25)	634-8210-001	X	X	X	Interconnects P2 and P11 with J13 (frequency control).
	634-8212-001	X	X	X	Interconnects P3, P4, P5, and P6 with J12 (status control and display).
Synthesizer chassis assembly A27	634-8201-001	X	X		
Rf cable assembly J43/J24 (P/O A27)	637-1526-003	X	X	X	Interconnect J43 and J24 (118.8-MHz inj in).
Rf cable assembly J45/J28 (P/O A27)	637-1526-003	X	X	X	Interconnects J45 and J28 (variable inj in).
Rf cable assembly J44/J32 (P/O A27)	637-1526-006	X	X	X	Interconnects J44 and J32 (9.9-MHz inj in).
Rf cable assembly A1-if (P/O A27)	637-1529-001	X	X		Interconnects A27-E1 and J34 (450-kHz inj in).
Rf cable assembly B1-if (P/O A27)	637-1529-001	X	X		Interconnects A27-E1 and J39 (450-kHz inj in).
Rf cable assembly A2-if (P/O A27)	637-1529-001	X	X		Interconnects A27-E7 and J54 (456.29-kHz inj in).
Rf cable assembly B2-if (P/O A27)	637-1529-001	X	X		Interconnects A27-E5 and J55 (443.71-kHz inj in).
Synthesizer sideboard (P/O A27)	638-6973-001	X	X		
Synthesizer chassis (P/O A27)	634-8178-001	X	X		
Synthesizer bottom cover (P/O A27)	634-8186-001	X	X		
Synthesizer top cover	642-2409-001	X	X		
Direct Digital Synthesizer A27	652-6615-001			X	

Table 1. HF-8014A Exciter Equipment Supplied (Cont).

SUBASSEMBLY/CIRCUIT CARD		EXCITER			DESCRIPTION/FUNCTION
TITLE	PART NUMBER*	HF-8014 622-3472-001	HF-8014A 622-3473-( )		
			-001	-211	
Rf cable assembly (P/O A27)	652-7514-001			X	Interconnects J61 and P2 (A1 if).
Rf cable assembly (P/O A27)	652-7398-001			X	Interconnects J63 and P2 (B1 if).
DDS sideboard (P/O A27)	646-6259-002			X	
DDS chassis board (P/O A27)	652-7263-001			X	
DDS bottom cover (P/O A27)	651-4499-001			X	
DDS top cover (P/O A27)	651-4302-001			X	
Oven standard, oscillator assembly A29	637-9135-001				1-MHz oven standard. Part of AC-8012 Oven Standard Kit (622-3460-001)
				X	Part of Oven Oscillator/Frequency Standard Switch Kit (652-1966-001)
Frequency standard switch A30	646-6558-001				Can be switched for 100-kHz, 1-MHz, or 5-MHz external frequency standard. Automatically switches over from an external frequency reference input to the oven standard upon loss of the external frequency standard. Can be used only if oven standard is installed. Part of AC-8015 Frequency Standard Switch Kit (622-3499-001).
				X	Part of Oven Oscillator/Frequency Standard Switch Kit (652-1966-001)
Parallel interface A31	646-6329-001			X	Provides interface between parallel format inputs and exciter.
Frequency standard/power supply A32 (P/O A27)	646-5930-001			X	
VFO/VCO module A33 (P/O A27)	652-1015-002			X	
DDS Control interface A34 (P/O A27)	646-5905-003			X	

Table 1. HF-8014A Exciter Equipment Supplied (Cont).

SUBASSEMBLY/CIRCUIT CARD		EXCITER			DESCRIPTION/FUNCTION
TITLE	PART NUMBER*	HF-8014 622-3472-001	HF-8014A 622-3473-( )		
			-001	-211	
Injection blanker assembly A35	652-6861-001			X	
Blanker A1 (P/O A35)	646-6314-001			X	
Power cable	426-1034-010	X	X	X	
Maintenance kit	637-1769-001	X	X	X	2-A fuse installed for 100- or 115-V ac operation. 1-A fuse installed for 215- or 230-V ac operation.
Hexwrench, 0.062 in (1)	024-0058-000				
Hexwrench, 0.050 in (1)	024-0057-000				
2-A fuse (5)	264-0305-000				
1-A fuse (5)	264-4280-000				
Lamps (2)	262-1106-000				
Instruction sheet	637-1777-001				
<p>*All part numbers are Rockwell-Collins.</p> <p>① Effective through REV B.</p> <p>② Effective REV C and above.</p> <p>③ Effective through REV M.</p> <p>④ Effective REV N and above.</p>					

3. ASSOCIATED EQUIPMENT

Add the following listings to table 2.

Table 2. Associated Equipment (Cont).

EQUIPMENT	TYPE	FUNCTION	CHARACTERISTICS
Exciter control	Any compatible	Provide parallel data frequency control signals to the HF-8014A Exciter (622-3473-211) in remote applications (not used in any other HF-8014( ) Exciters).	Provides frequency data in binary coded decimal format, compatible with the HF-8014A Exciter (622-3473-211).
Exciter processor	Any compatible	Provide parallel coded-frequency data directly to the direct digital synthesizer for frequency changes.	Provide parallel coded-frequency signals compatible with the HF-8014A Exciter (622-3473-211).

**4. ACCESSORIES**

Add the following manual to the list of manuals.

<u>TITLE</u>	<u>PART NUMBER</u>
HF Radio Set Cabinet	523-0773552

**5. OPTIONS**

Currently there are no options available for the HF-8014A Exciter (622-3473-211).

**9. EQUIPMENT SPECIFICATIONS**

Add the following sentence to the paragraph and place table 4A behind table 4.

Specifications for the HF-8014A Exciter (622-3473-211) that are different from the HF-8014( ) are listed in table 4A.

Table 4A. Equipment Specifications (622-3473-211).

CHARACTERISTIC	SPECIFICATION
Frequency tune time	100 $\mu$ s to $\pm$ 1000 Hz
Parallel frequency control	Capability of parallel bed frequency input and parallel coded-frequency input through the rear panel. The parallel bed inputs control the standard bed bus lines in the receiver. The parallel coded-frequency inputs control the direct digital synthesizer and ignore all other frequency information. To operate the parallel bed or binary frequency control, the unit has to be in remote control.

**SUPPLEMENT (523-0770720-002218)**

Not applicable.

**SUPPLEMENT (523-0770721-002218)**

**2. DESCRIPTION**

Replace table 1 with table 1 to follow.

Table 1. HF-8014A Exciter Characteristics.

CHARACTERISTICS	HF-8014A EXCITER 622-3473- ( )									
	-001	-002	-003	-004	-005	-006	-007	-009	-010	-211
Tuning										
100 Hz	X	X	X	X	X			X	X	
10 Hz						X	X			
1 Hz										X

Table 1. HF-8014A Exciter Characteristics (Cont).

CHARACTERISTICS	HF-8014A EXCITER 622-3473- ( )									
	-001	-002	-003	-004	-005	-006	-007	-009	-010	-211
Modes										
CW	X	X	X	X	X	X	X	X	X	X
ISB	X	X	X	X	X	X	X	X	X	X
AM	X	X	X	X	X	X	X	X	X	X
Bandwidths (kHz)										
USB — A1	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85
UUSB — A2	2.85	2.85			2.85					
LSB — B1	2.85	2.85	2.85		2.85	2.85	2.85	2.85	2.85	2.85
LLSB — B2	2.85	2.85			2.85					
16	X	X	X	X	X	X	X	X	X	
ISB										
2-channel			X			X	X	X	X	X
4-channel	X	X			X					
Remote control	X	X	X	X	X	X	X	X	X	
Oven standard		X	X	X	X	X	X			X
External standard		X	X	X	X	X		X	X	X
Frequency standard switch		X	X	X	X	X				
Frequency display		X	X	X	X	X	X	X		

3. DIFFERENCE DATA

Replace table 2 with table 2 provided.



Table 2. HF-8014A Exciter Equipment Supplied/Configuration.

SUBASSEMBLY/CIRCUIT CARD		HF-8014A EXCITER 622-3473-( )									
TITLE	PART NUMBER*	-001	-002	-003	-004	-005	-006	-007	-009	-010	-211
Main chassis	634-8177-001	X	X	X	X	X	X	X	X	X	X
Bottom cover	634-8179-001	X	X	X	X	X	X	X	X	X	X
Top cover	634-8181-002	X	X	X	X	X	X	X	X	X	X
Rear panel	635-9611-003	X	X	X	X	X	X	X	X	X	
	652-7266-001										X
Wiring harness	642-2407-001	X	X	X	X	X	X	X	X	X	X
	642-2408-002	X	X	X	X	X	X	X	X	X	X
Rf cable assembly, 450-kHz if	642-2454-001	X	X	X	X	X	X	X	X	X	X
Rf cable assembly J22/J26	637-1525-004	X	X	X	X	X	X	X	X	X	X
Rf cable assembly J27/J36	637-1526-003	X	X	X	X	X	X	X	X	X	X
Power supply A1	635-9649-001	X	X	X	X	X	X	X	X	X	X
Front panel assembly A2	634-8199-001	X								X	
	634-8199-002		X	X	X	X			X		
	634-8199-003						X	X			X
LED status display A2A1	635-0825-012	X	X	X	X	X	X	X	X	X	X
Switch mounting board A2A2	638-6597-001	X	X	X	X	X	X	X	X	X	X
Frequency switchboard A2A3	635-0830-001	X	X	X	X	X			X	X	
	635-0830-002						X	X			X
Frequency display A2A5	637-1781-006		X	X	X	X			X		
	637-1781-007						X	X			X
Transmit audio A3 (A2-B2)	638-6476-003	X	X			X					
Transmit audio A4 (A1-B1)	638-6476-001	X	X	X	X	X	X	X	X	X	X
Channel B2 if A5	638-6636-003	X	X			X					

Table 2. HF-8014A Exciter Equipment Supplied/Configuration (Cont).

SUBASSEMBLY/CIRCUIT CARD		HF-8014A EXCITER 622-3473-( )									
TITLE	PART NUMBER*	-001	-002	-003	-004	-005	-006	-007	-009	-010	-211
Channel A2 if A6	638-6636-002	X	X			X					
Channel B1 if A7	638-6636-001	X	X	X		X	X	X	X	X	X
Channel A1 if A8	638-6659-001	X	X	X	X	X	X		X	X	X
	638-6659-002							X			
Rf translator A9	637-1768-002	X	X	X	X	X	X	X	X	X	X
Control A10	638-6622-001	③	③	①	①	③	③				
	638-6622-002			②	②						
	638-6622-003	④	④	④	④	④	④	X	X	X	
	638-6622-004										X
Parallel input A11	642-3135-001	X	X	X	X	X	X	X	X	X	
	642-3135-002										X
Parallel output A12	642-3137-001	X	X	X	X	X	X	X	X	X	
	642-3137-002										X
Serial interface A13	638-6896-001	X	X	X	X		X	X	X	X	X
	638-6896-002					X					
Synthesizer voltage regulator A14	635-0656-001	X	X	X	X	X	X	X	X	X	
Synthesizer subcarrier generator A15	638-6962-001	X	X			X					
Synthesizer reference A16	642-2451-001	X	X	X	X	X	X	X	X	X	
External phase-lock A16A4	635-0655-001		X	X	X	X	X	X			
Synthesizer end decade	635-0657-001	A19	A19	A19	A19	A19	A18	A18	A19	A19	
Synthesizer 100/10-Hz decade A19	623-2080-004						X	X			
Synthesizer 1-kHz decade A20	623-2080-003	X	X	X	X	X	X	X	X	X	

Table 2. HF-8014A Exciter Equipment Supplied/Configuration (Cont).

SUBASSEMBLY/CIRCUIT CARD		HF-8014A EXCITER 622-3473-( )									
TITLE	PART NUMBER*	-001	-002	-003	-004	-005	-006	-007	-009	-010	-211
Synthesizer 10-kHz decade A21	623-2080-002	X	X	X	X	X	X	X	X	X	
Synthesizer 100-kHz decade A22	623-2080-001	X	X	X	X	X	X	X	X	X	
Synthesizer output A23	635-4930-002	X	X	X	X	X	X	X			
	635-4930-003								X	X	
Rfi filter A24	637-2712-001	X	X	X	X	X	X	X	X	X	
Rfi filter modified A24	659-2053-001										X
Sideboard assembly A25	634-8211-001	X	X	X	X	X	X	X	X	X	
	634-8211-002										X
Sideboard (P/O A25)	638-6617-001	X	X	X	X	X	X	X	X	X	X
Cable assembly (P/O A25)	634-8210-001	X	X	X	X	X	X	X	X	X	X
	634-8212-001	X									X
Synthesizer chassis assembly A27	634-8201-001	X	X	X	X	X	X	X	X	X	
Rf cable assembly J43/J24 (P/O A27)	637-1526-003	X	X	X	X	X	X	X	X	X	X
Rf cable assembly J45/J28 (P/O A27)	637-1526-003	X	X	X	X	X	X	X	X	X	X
Rf cable assembly J44/J32 (P/O A27)	637-1526-006	X	X	X	X	X	X	X	X	X	X
Rf cable assembly A1-if (P/O A27)	637-1529-001	X	X	X	X	X	X	X	X	X	
Rf cable assembly B1-if (P/O A27)	637-1529-001	X	X	X	X	X	X	X	X	X	
Rf cable assembly A2-if (P/O A27)	637-1529-001	X	X	X	X	X	X	X	X	X	
Rf cable assembly B2-if (P/O A27)	637-1529-001	X	X	X	X	X	X	X	X	X	

Table 2. HF-8014A Exciter Equipment Supplied/Configuration (Cont).

SUBASSEMBLY/CIRCUIT CARD		HF-8014A EXCITER 622-3473-( )									
TITLE	PART NUMBER*	-001	-002	-003	-004	-005	-006	-007	-009	-010	-211
Synthesizer sideboard (P/O A27)	638-6973-001	X	X	X	X	X	X	X	X	X	
Synthesizer chassis (P/O A27)	634-8178-001	X	X	X	X	X	X	X	X	X	
Synthesizer bottom cover (P/O A27)	634-8186-001	X	X	X	X	X	X	X	X	X	
Synthesizer top cover	642-2409-001	X	X	X	X	X	X	X	X	X	
Direct Digital Synthesizer A27	652-6615-001										X
Rf cable assembly (P/O A27)	652-7514-001										X
	652-7398-001										X
DDS sideboard (P/O A27)	646-6259-002										X
DDS chassis assembly (P/O A27)	652-7263-001										X
DDS bottom cover (P/O A27)	651-4499-001										X
DDS top cover (P/O A27)	651-4302-001										X
Oven standard, oscillator assembly A29	637-9135-001		X	X	X	X	X	X			X
Frequency standard switch A30	646-6558-001		X	X	X	X	X				X
Parallel interface A31	646-6329-001										X
Frequency standard/power supply A32 (P/O A27)	646-5930-001										X
VFO/VCO module A33 (P/O A27)	652-1015-002										X
DDS Control interface A34 (P/O A27)	646-5905-003										X
Injection blanker assembly A35	652-6861-001										X
Blanker A1 (P/O A35)	646-6314-001										X

Table 2. HF-8014A Exciter Equipment Supplied/Configuration (Cont).

SUBASSEMBLY/CIRCUIT CARD		HF-8014A EXCITER 622-3473-( )									
TITLE	PART NUMBER*	-001	-002	-003	-004	-005	-006	-007	-009	-010	-211
Power cable	426-1034-010	X	X	X	X	X	X	X	X	X	X
Maintenance kit	637-1769-001	X	X	X	X	X	X	X	X	X	X
<p>*All part numbers are Rockwell-Collins.</p> <p>① Effective through REV J.</p> <p>② Effective REV K through REV M.</p> <p>③ Effective through REV M.</p> <p>④ Effective REV N and above.</p>											

**INSTALLATION (523-0770722-002218)**

**1. GENERAL**

Add the following entry to listing of equipment books.

<u>TITLE</u>	<u>PART NUMBER</u>
HF Radio Set Cabinet	523-0773552

**3. PREINSTALLATION CHECK AND REQUIREMENTS**

Add the following paragraph after paragraph 3.1.2.

**3.1.2A Remote Control (Parallel Format Input)**

When binary coded decimal (bcd) frequency data is input at the J57/A31P1 PARALLEL INPUT connector at the rear panel, it is latched by the parallel interface A31 and placed on the frequency control bus. In direct control, from the J58/A31P2 DDS INPUT connector, the parallel coded-frequency data is placed directly on the synthesizer control bus. When direct control is used, the parallel interface latches are driven to a high impedance state.

**3.1.4.1 Internal Standard**

Not applicable.

**3.1.4.2 Oven Standard**

Not applicable.

### **3.1.4.3 External Frequency Standard**

Add the following paragraph after the first paragraph, and place figure 5A behind figure 5.

For HF-8014A Exciter (622-3473-211), the switch S1 on the frequency standard/power supply A32 must be set to EXT and the strap positioned to correspond with the frequency of the external frequency standard (100 kHz, 1 MHz, or 5 MHz). Refer to figure 5A for placement of straps.

### **3.1.4.4 Frequency Standard Switch**

Not applicable.

## **4. CABLING**

Place figure 6A after figure 6 and add the following paragraph after paragraph 4.7.

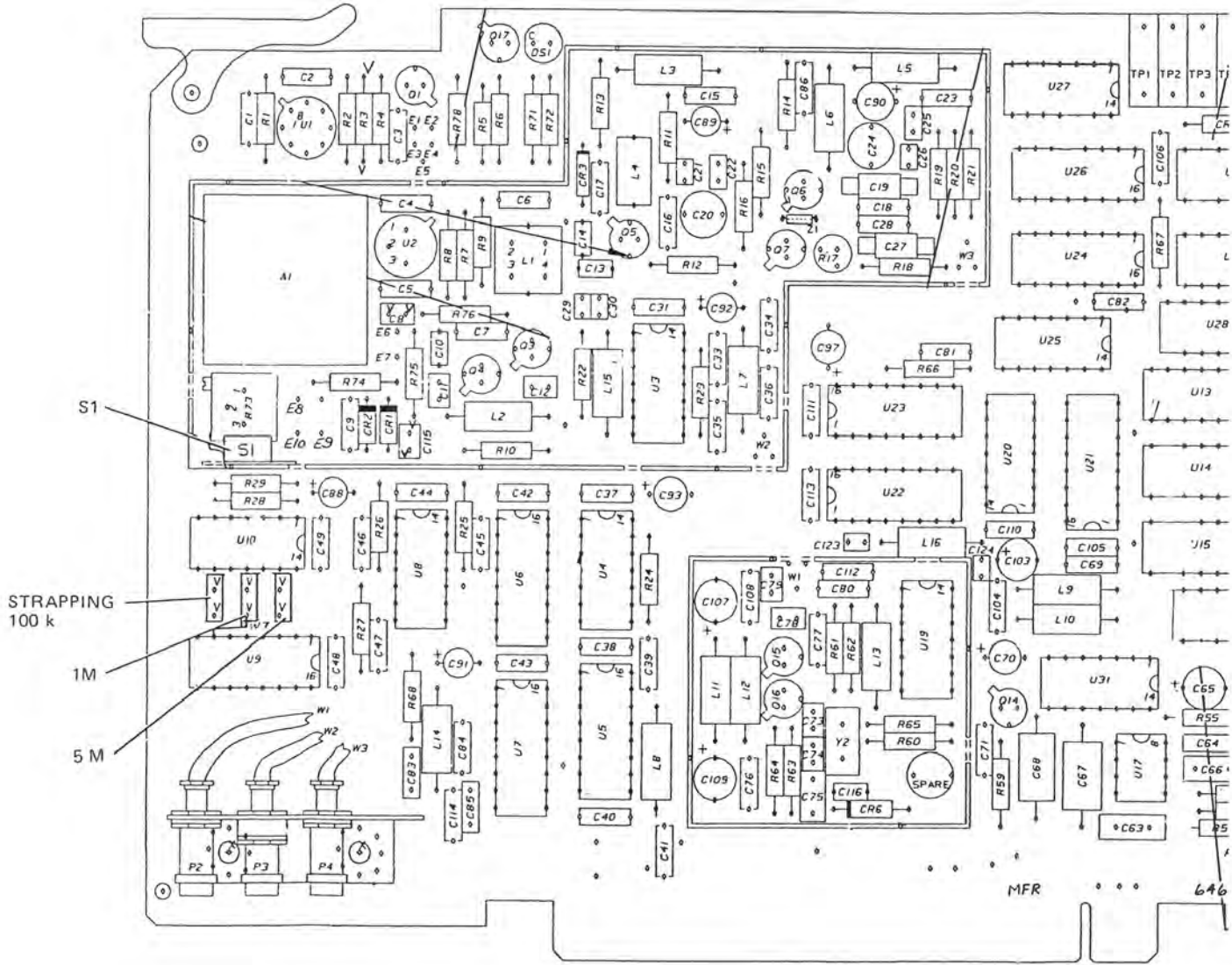
### **4.8 Exciter to Parallel Format Devices**

Separation between the exciter and any parallel format input device should be kept as short as possible. If the parallel format device operates in binary coded decimal (bcd), then it should be connected to J57/A31P1 PARALLEL INPUT. If the parallel format device operates in parallel coded-frequency, then the device should be connected to the J58/A31P2 DDS INPUT at the rear of the exciter. This connection gives direct control over the direct digital synthesizer. Either connection requires a 50-pin connector. Refer to figure 6A for HF-8014A Exciter (622-3473-211) typical installation diagram.

## **5. INSTALLATION PROCEDURES**

Replace figure 7 with figure 7 attached.





S1

STRAPPING  
100 k

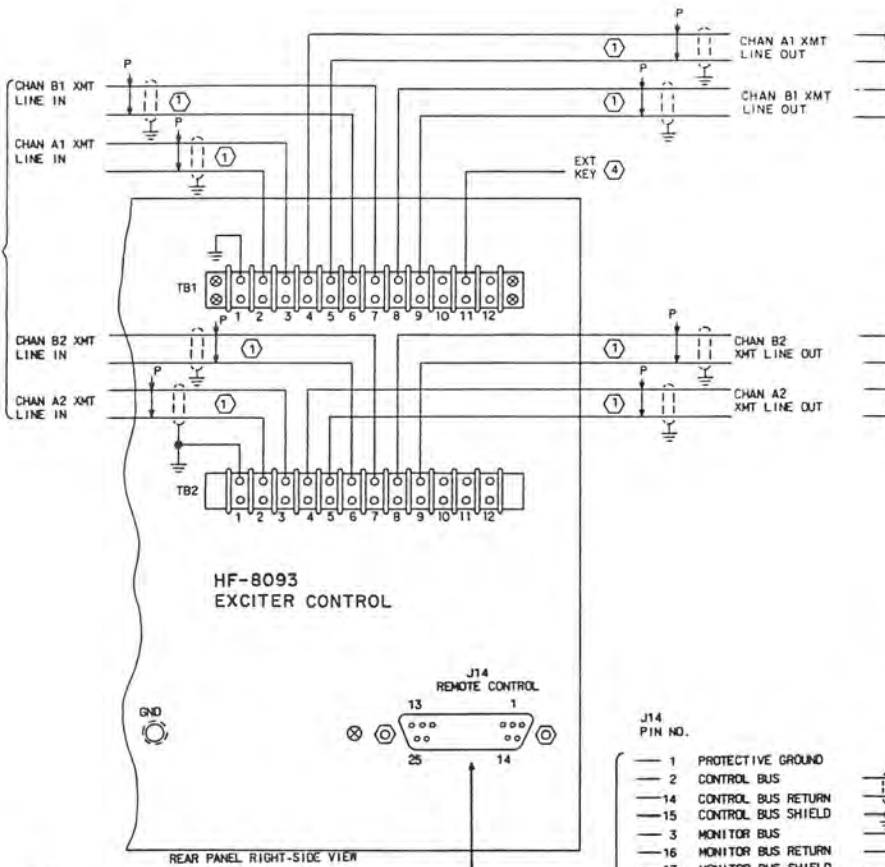
1M

5 M

MFR

646

EXTERNAL LINE AUDIO INPUTS



**HF-8093  
EXCITER CONTROL**

REAR PANEL RIGHT-SIDE VIEW

**NOTES:**

- ① NO. 22 AWG TWISTED, SHIELDED PAIR CABLE IS RECOMMENDED FOR THESE CIRCUITS.
- ② THESE ADDRESS BITS ARE CONTROLLED BY THE ADDRESS SELECTOR THUMBWHEEL SWITCH ON THE EXCITER CONTROL FRONT PANEL AND ARE BROUGHT OUT TO THE REMOTE CONTROL CONNECTOR FOR CONVENIENCE. NO STRAPPING IS REQUIRED ON THESE LINES.
- ③ THE EXCITER ADDRESS LINES MUST BE STRAPPED TO CORRESPOND TO AN ADDRESS SELECTED ON THE EXCITER CONTROL ADDRESS SWITCH.
- ④ SEE THE INSTALLATION SECTION FOR A DESCRIPTION OF KEY LINE OPERATION.
- ⑤ EXCITER CONTROL NOT USED WITH HF-8014 EXCITER (USED ONLY WITH HF-8014A EXCITER.)
- ⑥ IF PRESELECTOR NOT USED, CONNECTED DIRECTLY TO POWER AMPLIFIER.
- ⑦ CONNECT PA INTERLOCK LINE TO GROUND TO RESTRICT EXCITER OPERATION TO 2 TO 29.9999 MHz. LEAVE PA INTERLOCK LINE OPEN TO PERMIT 1.6 TO 29.9999 MHz OPERATION.

**J14  
PIN NO.**

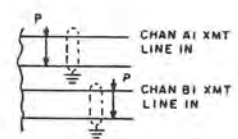
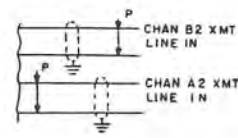
- 1 PROTECTIVE GROUND
- 2 CONTROL BUS
- 14 CONTROL BUS RETURN
- 15 CONTROL BUS SHIELD
- 3 MONITOR BUS
- 16 MONITOR BUS RETURN
- 17 MONITOR BUS SHIELD
- 4 SPARE
- 5 SPARE
- 6 SPARE
- 7 SIGNAL GROUND
- 8 SPARE
- 9 ADDRESS BIT 1
- 10 ADDRESS BIT 2
- 11 ADDRESS BIT 3
- 12 ADDRESS BIT 4
- 13 SPARE
- 18 SPARE
- 19 SPARE
- 20 SPARE
- 21 GROUND
- 22 ADDRESS GROUND 1
- 23 EXTERNAL CLOCK
- 24 ADDRESS GROUND 2
- 25 GROUND



**J14  
PIN NO.**

- 1 PROTECTIVE GROUND
- 2 CONTROL BUS
- 14 CONTROL BUS RETURN
- 15 CONTROL BUS SHIELD
- 3 MONITOR BUS
- 16 MONITOR BUS RETURN
- 17 MONITOR BUS SHIELD
- 4 SPARE
- 5 SPARE
- 6 SPARE
- 7 SIGNAL GROUND
- 8 SPARE
- 9 ADDRESS BIT 1
- 10 ADDRESS BIT 2
- 11 ADDRESS BIT 3
- 12 ADDRESS BIT 4
- 13 ADDRESS BIT 5
- 18 SPARE
- 19 SPARE
- 20 SPARE
- 21 GROUND
- 22 ADDRESS GROUND 1
- 23 EXTERNAL CLOCK
- 24 ADDRESS GROUND 2
- 25 GROUND

**A31P1  
PIN NO.**



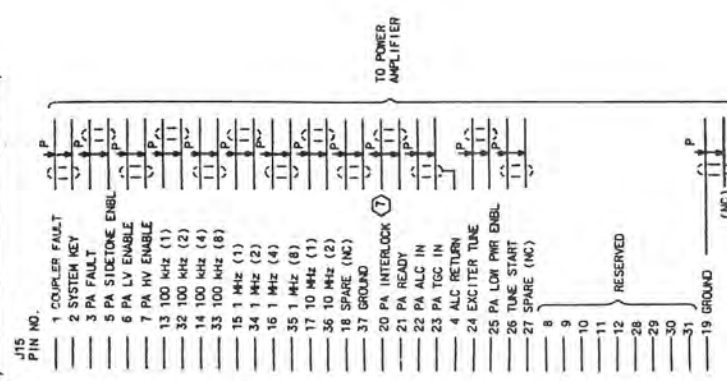
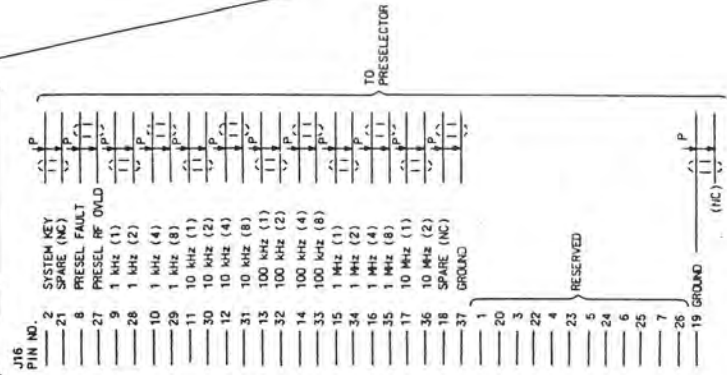
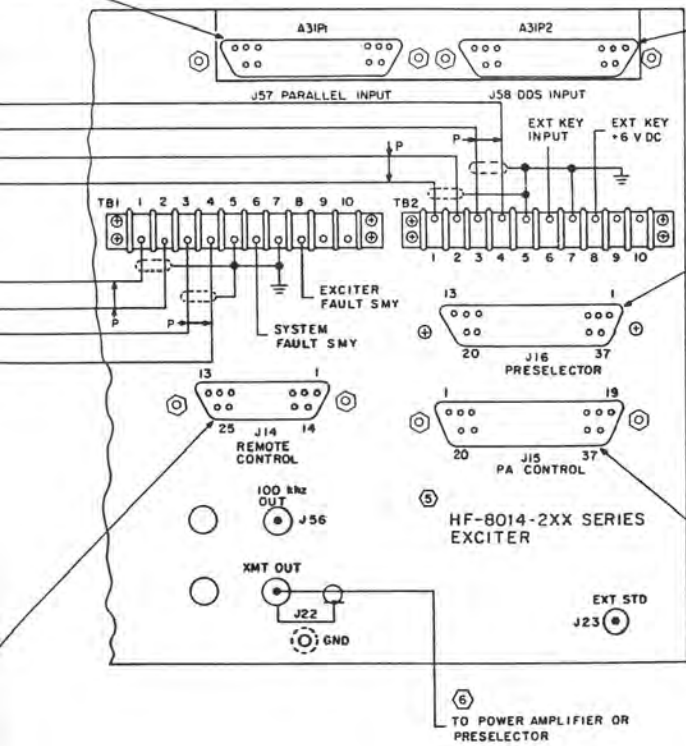
TO PARALLEL  
LAMP DRIVE

TO PARALLEL INPUT DEVICE

- 21 80 KHZ
- 22 1 MHZ
- 23 TSE3
- 24 TSE2
- 25 4 KHZ
- 26 400 KHZ
- 27 4 MHZ
- 28 10 MHZ
- 29 20 KHZ
- 30 20 HZ
- 31 800 HZ
- 32 1 HZ
- 33 40 HZ
- 34 TPEL
- 35 TSOVARD
- 36 PRFGE
- 37 PRFG-16
- 38 PRFG-8
- 39 PRFG-4
- 40 PRFG-2
- 41 PRFG-1
- 42 GND
- 43 GND
- 44 1 KHZ
- 45 400 HZ
- 46 100 HZ
- 47 80 HZ
- 48 2 HZ
- 49 2 KHZ
- 50 TSE4

TO PARALLEL INPUT DEVICE

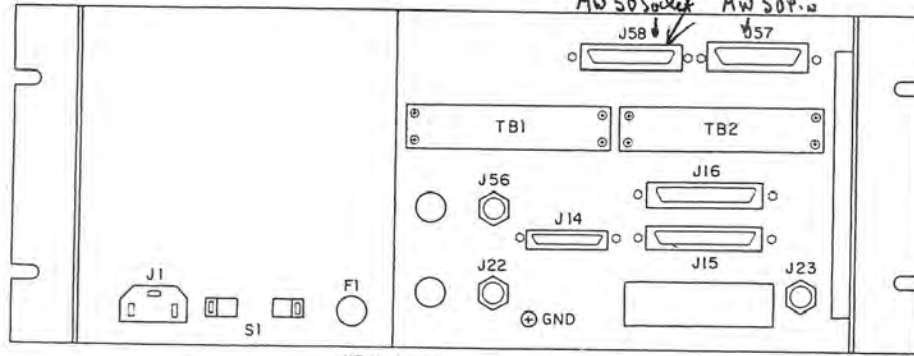
- 1 NFA-EXT
- 2 GPO-2
- 3 SPARE
- 4 CRQ
- 5 FN17
- 6 FN19
- 7 GPO-1
- 8 SPARE
- 9 FN15
- 10 FN05
- 11 FN16
- 12 FN00
- 13 FN09
- 14 FN03
- 15 FN10
- 16 CRG
- 17 FN14
- 18 TBE
- 19 BLKG ENBL
- 20 GPI-1
- 21 SPARE
- 22 FN12
- 23 SPARE
- 24 NFS
- 25 GPI-2
- 26 CR1
- 27 FN02
- 28 FN04
- 29 FN01
- 30 FN07
- 31 FN06
- 32 FN18
- 33 CR2
- 34 SPARE
- 35 SPARE
- 36 SPARE
- 37 SPARE
- 38 SPARE
- 39 SPARE
- 40 SPARE
- 41 GND
- 42 GND
- 43 GP1-3
- 44 FN13
- 45 CBS
- 46 CS4
- 47 CR7
- 48 CH3
- 49 FN11
- 50 FN08



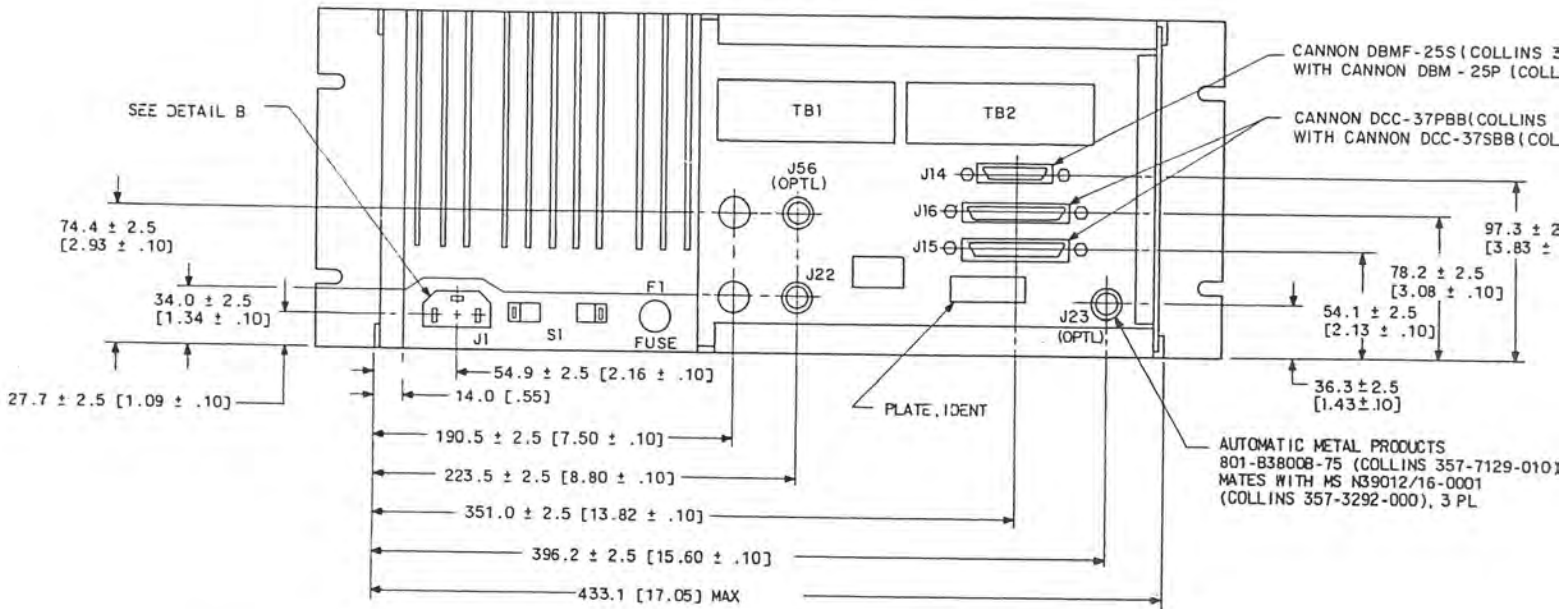
TPA-7524-015

HF-8014A Exciter (622-3473-211),  
Typical Installation  
Figure 6A

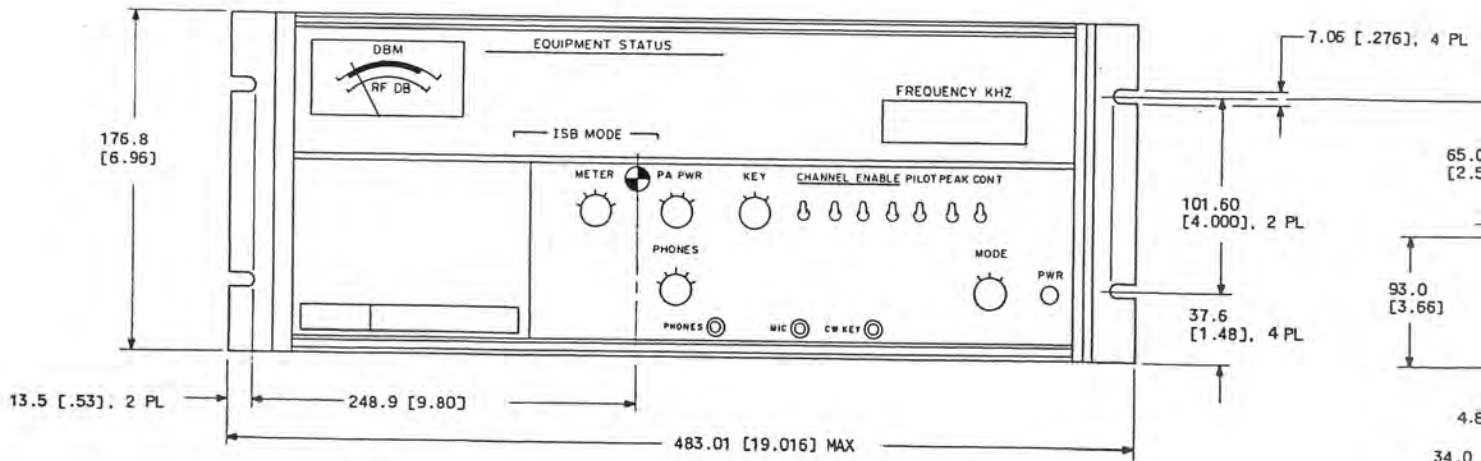
THIS IS: MATING CONNECTOR?  
 50 Pin Cannon / 50 Pin Cannon  
 MW 50 Socket / MW 50 Pin



VIEW A-A  
 622-3473 - 211 ONLY



VIEW A-A

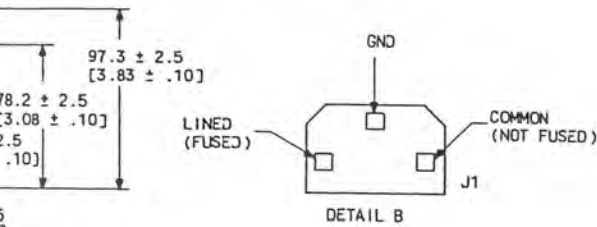


NOTES:

1. UNLESS OTHERWISE SPECIFIED; DIMENSIONS ARE IN MILLIMETRES [INCHES].
2. WEIGHT: 21.3 ± 1.4 kg [47 ± 3 LB].
3. MATING CONNECTORS ARE FOR REF ONLY. WEIGHT AND CENTER OF GRAVITY DOES NOT INCLUDE MATING CONNECTORS.
4. NO EXTERNAL COOLING AIR REQUIRED.
5. PRIMARY POWER REQUIREMENTS: 100/115/215/230 V AC ± 10%; SINGLE PHASE 47-420 Hz ± 5%; MAX POWER CONSUMPTION: 80 WATTS.
6. ⊕ INDICATES CENTER OF GRAVITY.

MF-25S (COLLINS 371-0166-000) MATES  
 IN DBM - 25P (COLLINS 371-0170-000)

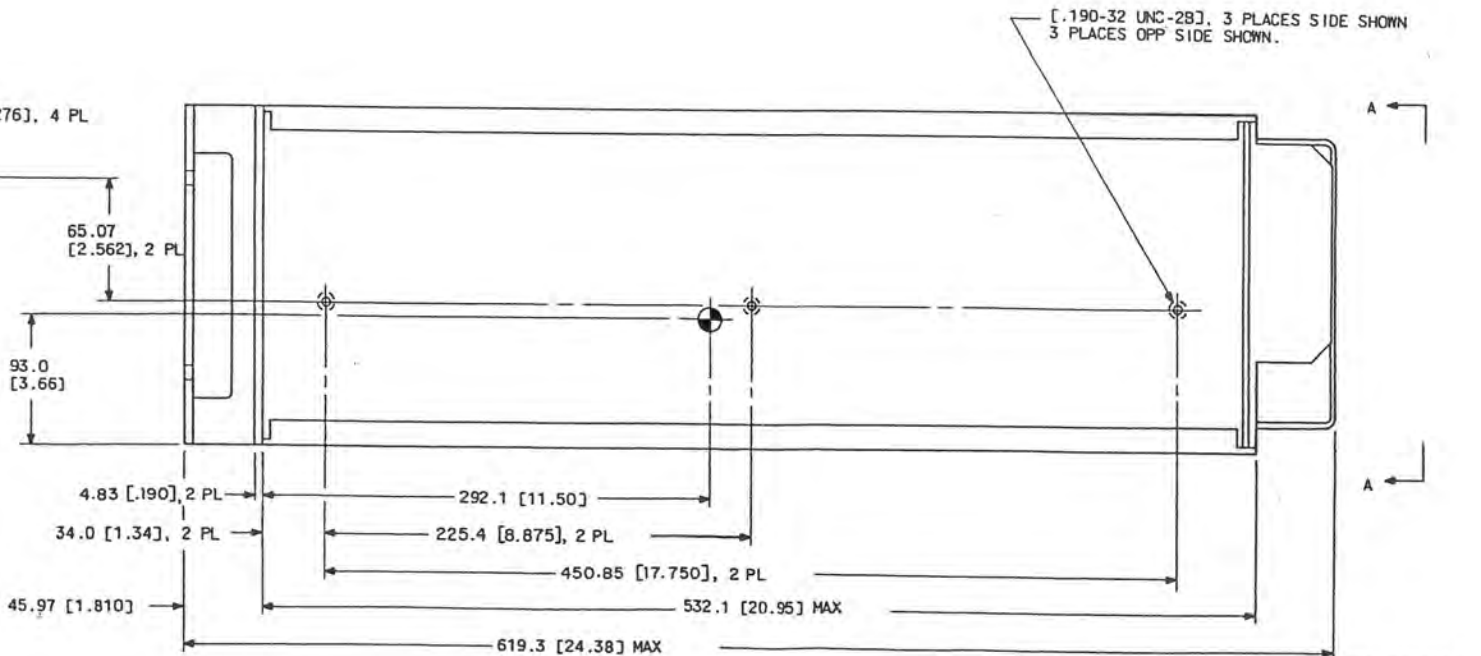
MF-37PBB(COLLINS 371-0385-0001) MATES  
 ON DCC-37SBB(COLLINS 371-0386-090)



CONN NO	HF-8014 EXCITER 622-3472-( )	HF-8014A EXCITER 622-3473-( )
J14	1	1
J15	1	1
J16	1	1
J22	1	1
J23	OPTL	OPTL
J56	OPTL	OPTL
J57		- 211 ONLY
J58		- 211 ONLY

PRODUCTS  
 (INS 357-7129-010)  
 12/16-0001  
 000), 3 PL

0.06 [.276], 4 PL



HF-8014( ) Exciter, Outline and Mounting Diagram  
 Figure 7

**OPERATION (523-0770723-002218)****4. REMOTE OPERATION (HF-8014A only)**

Add the following paragraphs after paragraph 4.3.7.5.

**4.4 Remote Control Operation for HF-8014A Exciter (622-3473-211)**

Control data from the remote control or processor is applied to the exciter at one of the three inputs depending upon the type of data applied. Serial format data is connected to J14 as in other series HF-8014A exciters. Parallel format frequency data in binary coded decimal is applied to J57/A31P1 PARALLEL INPUT at the rear panel. Parallel format data used to directly control the direct digital synthesizer must be in the proper hexadecimal code and applied to J58/J31P2 DDS INPUT on the rear panel.

Input to J14 uses the ASCII on 8-bit format code as covered in the manual with changes as follows. Word 3, character 2, bit 1 becomes the serial parallel frequency select bit (0 = serial and 1 = parallel). Word 3, character 4, bits 1 through 8 are used for parallel rf gain enable, parallel bcd enable, serial tune start override, and general purpose inputs and outputs. In word 4, character 3, bits 1 through 8, the fault statuses have changed to reflect the new direct digital synthesizer faults. The serial bcd frequency inputs are converted to the parallel bcd frequency data by the parallel output card A12 and applied to the direct digital synthesizer. In the direct digital synthesizer, the parallel bcd frequency information is changed to the parallel coded-frequency data input required by the VFO/VCO module in DDS control interface A33.

**4.5 Tune Start Enable Control**

In the HF-8014A Exciter (622-3473-211), there are five separate tune start pulses generated in the exciter. These signals are then sent out to the associated equipment (power amplifier preselector) by way of the rear panel connectors. These tune starts are individually controllable through input logic gates so that all equipment will tune, or just selected equipment. Exactly when these tune start signals will be initiated by the exciter is covered in the theory section of the supplement.

**THEORY (523-0770724-002218)****1. GENERAL**

Place the following paragraph after the second paragraph.

The HF-8014A Exciter (622-3473-211) can be controlled in three ways: locally through front panel controls, remotely by a compatible remote control in serial format, or in frequency only by either parallel input. This section will provide the functional theory of the exciter to the circuit card/module level where it differs from any other HF-8014A exciter.

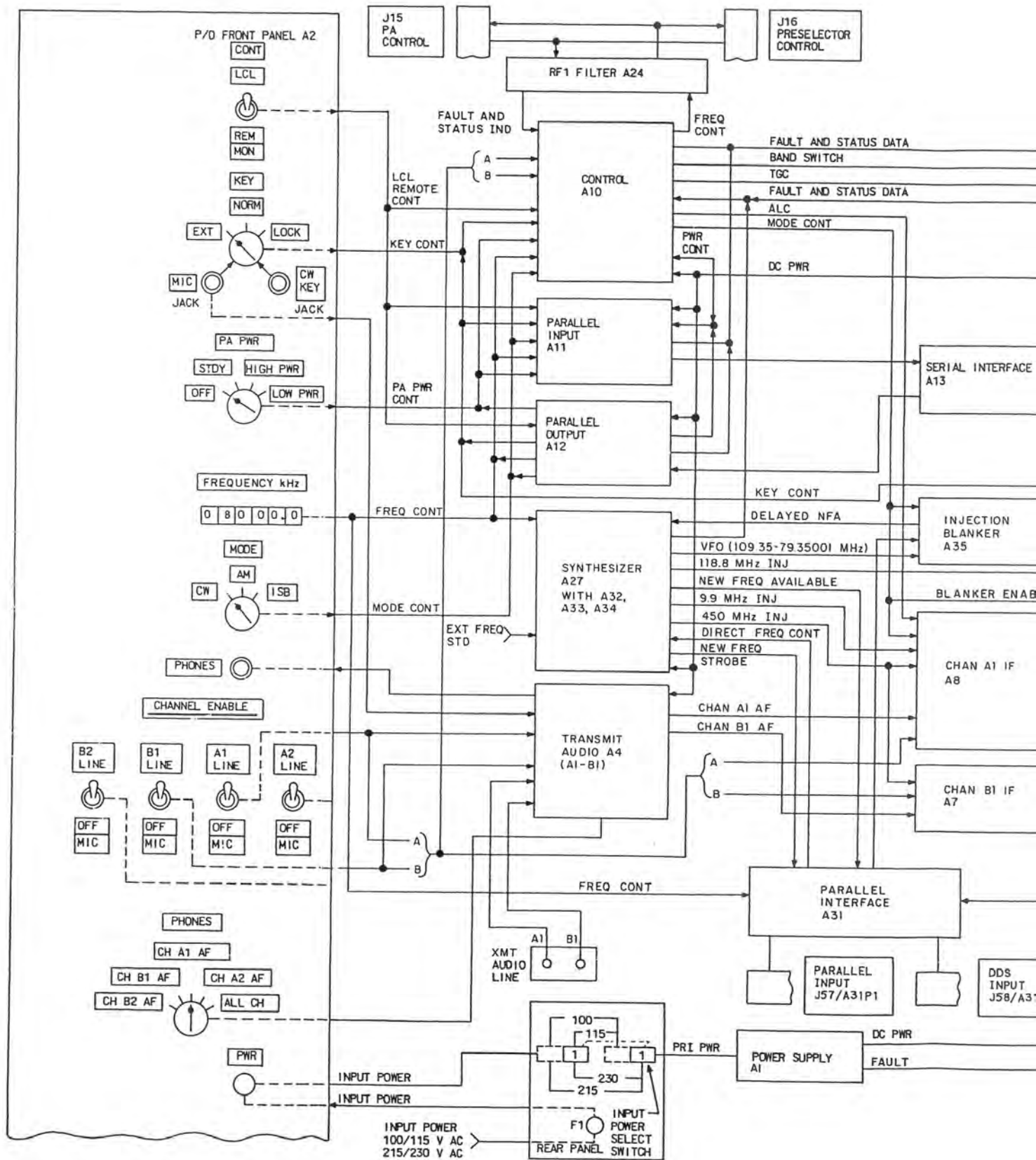
**2. FUNCTIONAL THEORY**

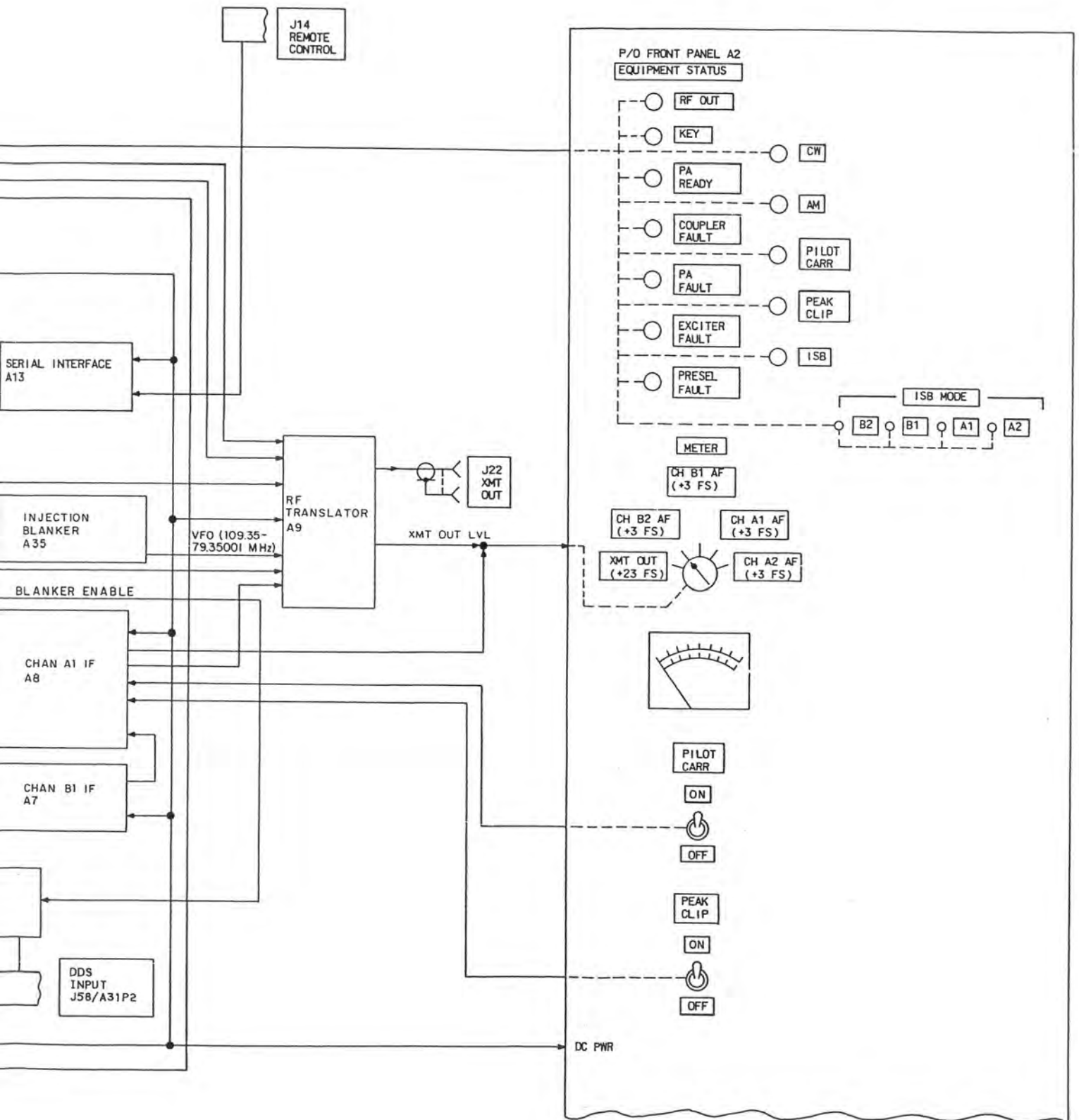
Not applicable. Add the following paragraph heading and text just prior to paragraph 2.1; add figure 1A immediately following figure 1.

**2A. FUNCTIONAL THEORY (HF-8014A Exciter, 622-3473-211) (Refer to figure 1A)**

The HF-8014A Exciter (622-3473-211) is frequency controlled directly from the front panel. Binary coded decimal (bcd) frequency data from the front panel is applied directly to direct digital synthesizer A27 and control A10. The bcd frequency data is used to establish the frequency of the vfo output (79.350 01 to 109.35 MHz) from the synthesizer and to control the preselector and pa outputs from control A10. Refer to figure 1A.







TPA-7731-014

HF-8014A Exciter (622-3473-211),  
Block Diagram  
Figure 1A

The HF-8014A Exciter (622-3473-211) operating mode is controlled directly from the front panel. Mode signals from the front panel are applied directly to control A10 and to selected audio and if cards. This controls all mode switching in the exciter and provides necessary mode signals for the associated power amplifier.

The transmit audio signals are applied at either the MIC jack on the front panel or the channel A1 and channel B1 line inputs on the rear panel. These signals are applied to transmit audio A4 where the audio channel is determined by the setting of the front panel CHANNEL ENABLE switches in conjunction with the MODE switch. The audio output from the transmit audio A4 is applied to if amplifiers A7 and A8. In the if amplifiers, the audio signal is converted to the first if signal and then mixed with 9.9 MHz to produce the 9.45-MHz second if signal that is supplied to rf translator A9.

The first if signal is obtained by mixing the audio signal with 450 kHz on the channel A1 and channel B1 if amplifiers. All first if signals are then passed to channel A1 if A8 and mixed with 9.9 MHz to create the 9.45-MHz second if. The 9.45-MHz signal applied to rf translator A9 is mixed with the fixed 118.8-MHz injection signal and the variable frequency injection signal to provide an rf output signal to drive the power amplifier. During system tuning, the variable frequency injection is attenuated off by injection blanker A35 until the direct digital synthesizer has tuned to the new frequency. During normal transmissions, the rf output level is controlled by the ALC signal.

## 2.1 Transmit Function

Not applicable. Add paragraph heading and text immediately after the eighth paragraph. Add figure 2A behind figure 2.

### 2.1A Transmit Function (HF-8014A Exciter, 622-3473-211) (Refer to figure 2A)

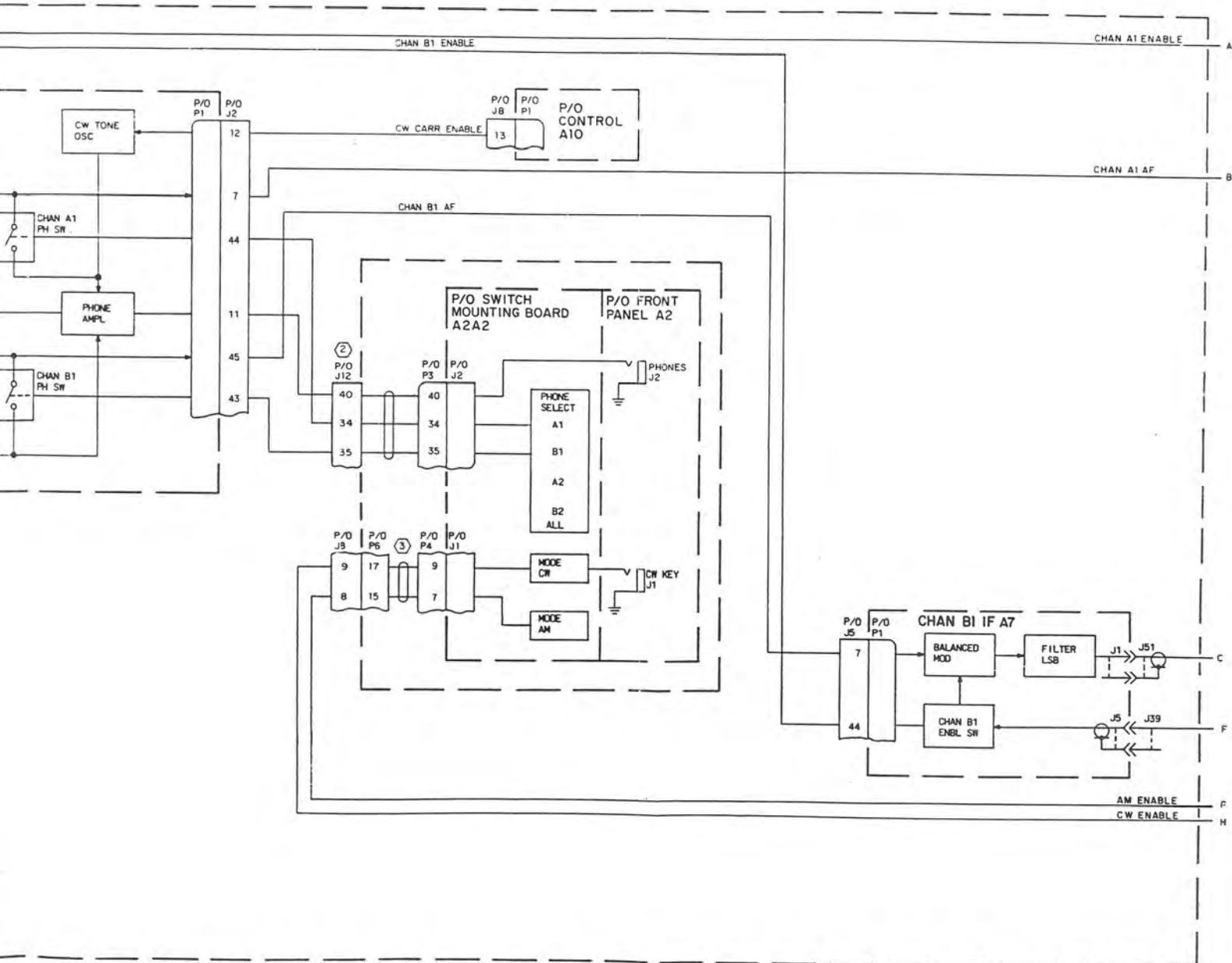
In the AM and CW modes, only the channel A1 if A18 circuits are active and provide outputs. In ISB operation, channel A1 input signals are upper sideband signals and channel B1 input signals are lower sideband signals. Channel B1 if (A7) is used only during ISB operation.

When a system key and an audio signal is applied, the enabled sideband is transmitted in the following manner. Transmit audio signals are applied to transmit audio A4. The transmit audio (A4) output is applied to channel A1 if (A8) and channel B1 if (A7). In channel B1 if, the audio is mixed with a 450-kHz signal from the direct digital synthesizer (A27) and applied to channel A1 if (A8). The channel A1 audio is mixed with the same 450-kHz injection signal and is then applied through a bandpass filter with the channel B1 if signal to a 9.9-MHz mixer-amplifier circuit on the A8 card. The 9.9-MHz fixed injection signal from the direct digital synthesizer mixes with the if signals to provide a 9.45-MHz if signal which is supplied to the rf translator A9. The 9.45-MHz if signal is mixed with the 118.8-MHz fixed injection signal from the direct digital synthesizer. The resultant 109.35-MHz output is applied through a crystal filter to the second difference mixer with the vfo injection frequency (79.350 01 to 109.35 MHz) from the direct digital synthesizer.

The variable injection frequency is supplied by direct digital synthesizer A27 through injection blanker A35 to the second difference mixer in rf translator A9. During transmission, the variable injection frequency is passed through the injection blanker with virtually no loss to the rf translator. During a frequency change, the injection blanker gates off the variable injection frequency, stopping all transmission during the frequency change. When direct digital synthesizer A27 has stabilized at the new frequency, the injection blanker is ungated and the variable injection frequency for the new frequency is sent to the rf translator. This prevents the transmission of spurious signals during a frequency change.

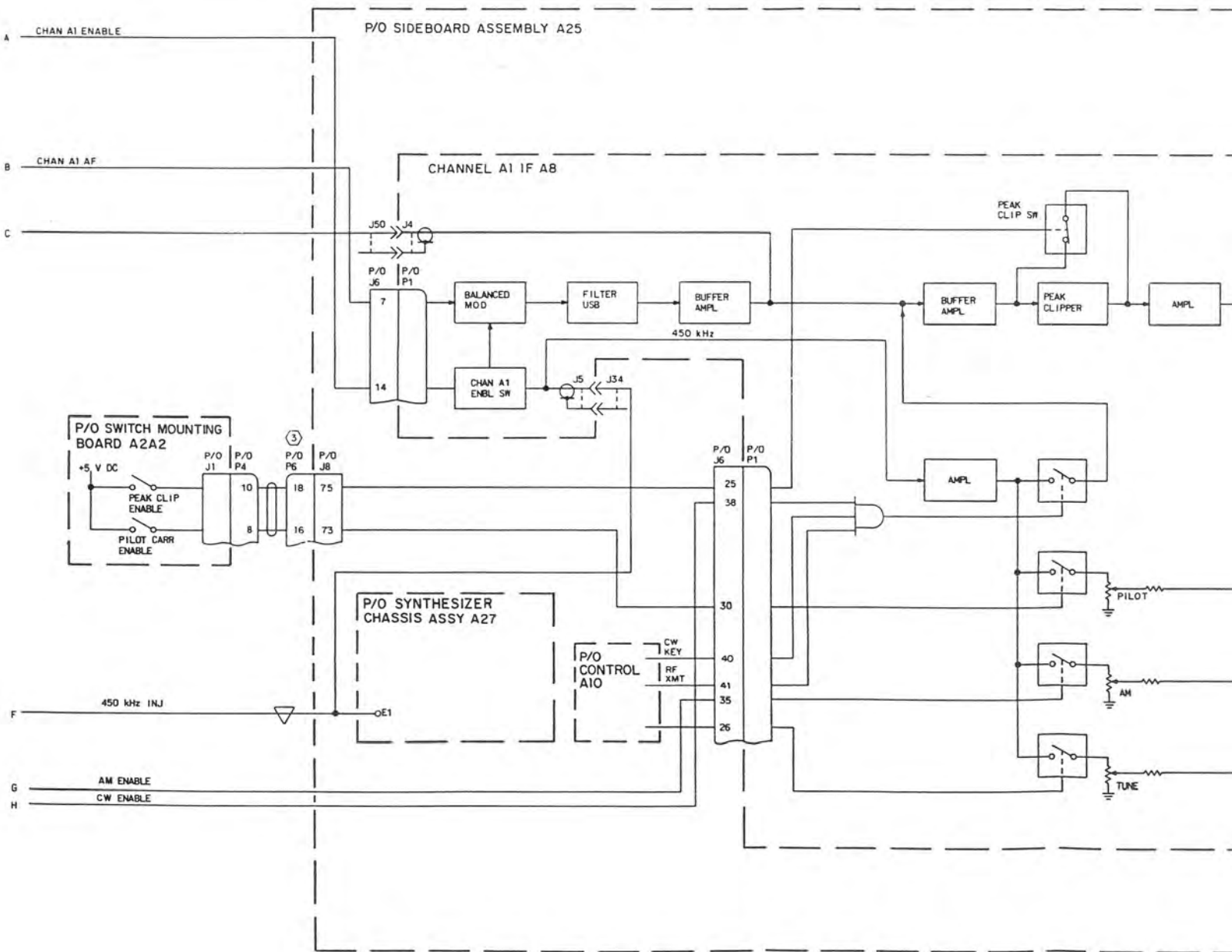
The output of the second mixer (1.600 to 29.9999 MHz) is amplified and sent to XMT OUT connector J22 on the rear panel.



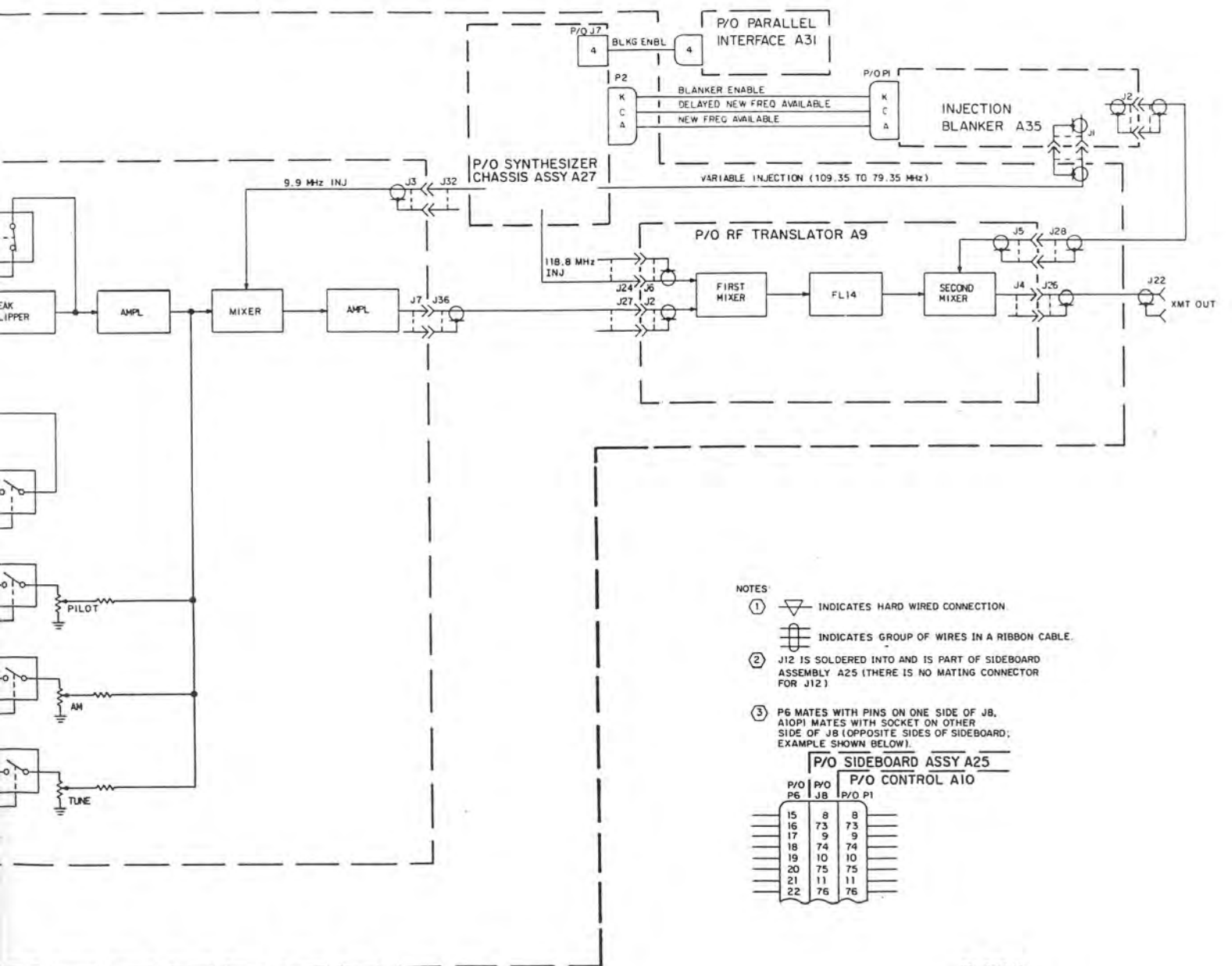


TPA-7725-025

HF-8014A Exciter (622-3473-211),  
Transmit Function, Block Diagram  
Figure 2A (Sheet 1 of 2)







NOTES

- ① INDICATES HARD WIRED CONNECTION
- ② INDICATES GROUP OF WIRES IN A RIBBON CABLE.
- ③ J12 IS SOLDERED INTO AND IS PART OF SIDEBOARD ASSEMBLY A25 (THERE IS NO MATING CONNECTOR FOR J12)
- ④ P6 MATES WITH PINS ON ONE SIDE OF J8, A10P1 MATES WITH SOCKET ON OTHER SIDE OF J8 (OPPOSITE SIDES OF SIDEBOARD; EXAMPLE SHOWN BELOW).

P/O SIDEBOARD ASSY A25		P/O CONTROL A10	
P/O P6	P/O J8	P/O P1	
15	8	8	
16	73	73	
17	9	9	
18	74	74	
19	10	10	
20	75	75	
21	11	11	
22	76	76	

TPA-7725-025

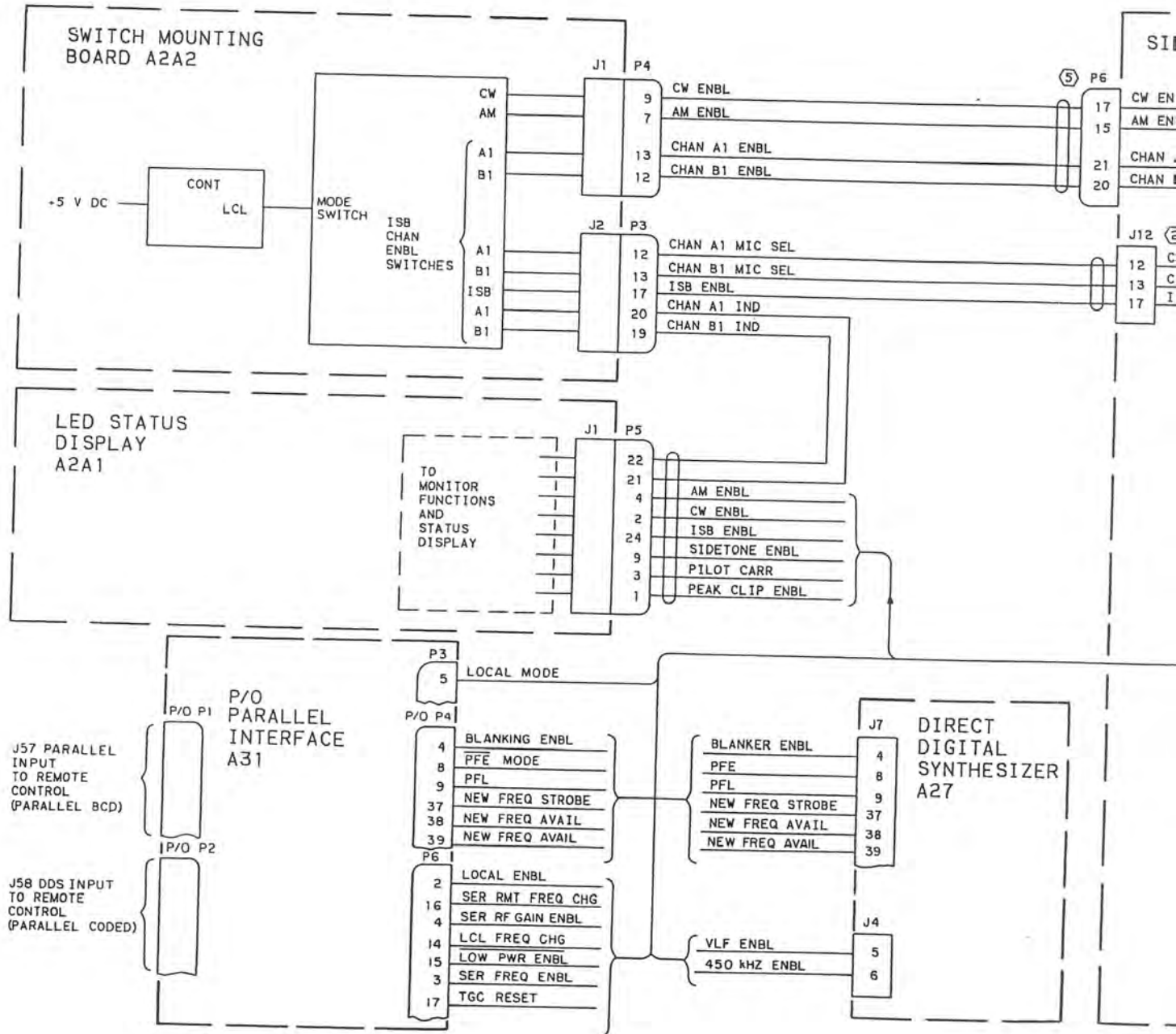
HF-8014A Exciter (622-3473-211),  
Transmit Function, Block Diagram  
Figure 2A (Sheet 2)

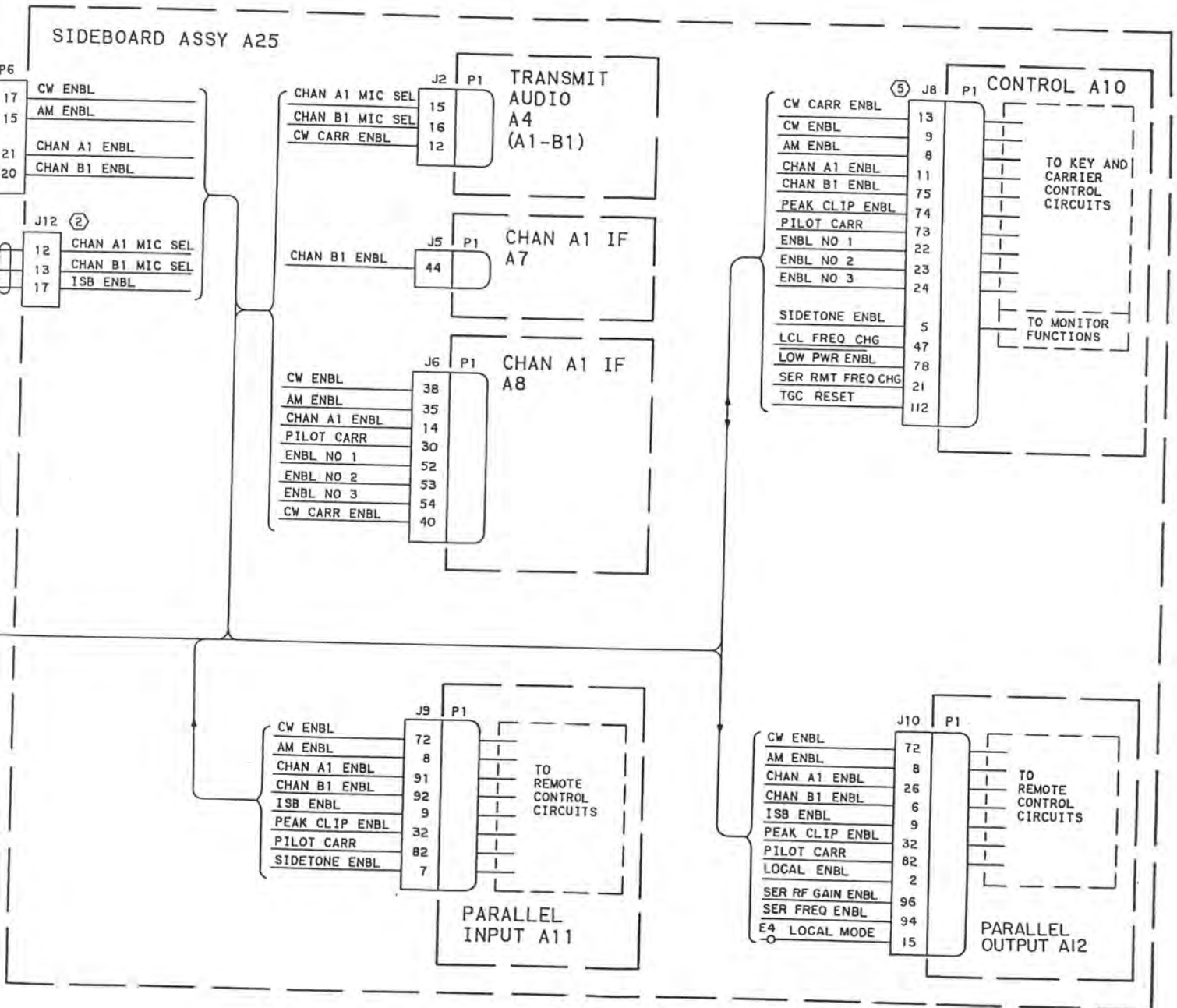
### 2.2.1 Mode Selection

Add the following text after the ninth paragraph; add figure 4A behind figure 4.

When an external control device is used with the HF-8014A Exciter (622-3473-211), the mode and bandwidth control signals applied are in serial data format. The serial data is applied through J14 to serial interface A13. Refer to figure 4A.

The serial interface sends the data to parallel output A12 where the frequency data is converted from serial data to parallel bcd data. The output of parallel output A12 are sent to the DDS control interface A34 and control A10 for use. Parallel bcd frequency inputs are applied to J57/A31P1 and parallel interface A31. The parallel interface outputs are applied to the same bus as parallel output A12 and the signals are sent to the same assemblies. If the input is parallel coded-frequency data, it is applied to J58/A31P2 and parallel interface A31. The parallel interface circuits are latches that store the data, and upon request, send it directly to direct digital synthesizer VFO/VCO module A33. Parallel bcd data inputs to DDS control interface A34 are converted to the hexadecimal code and applied to VFO/VCO module A33.

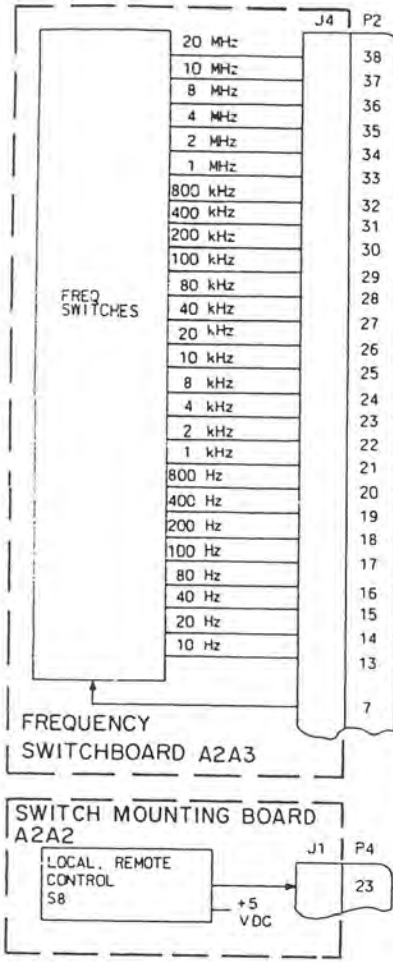
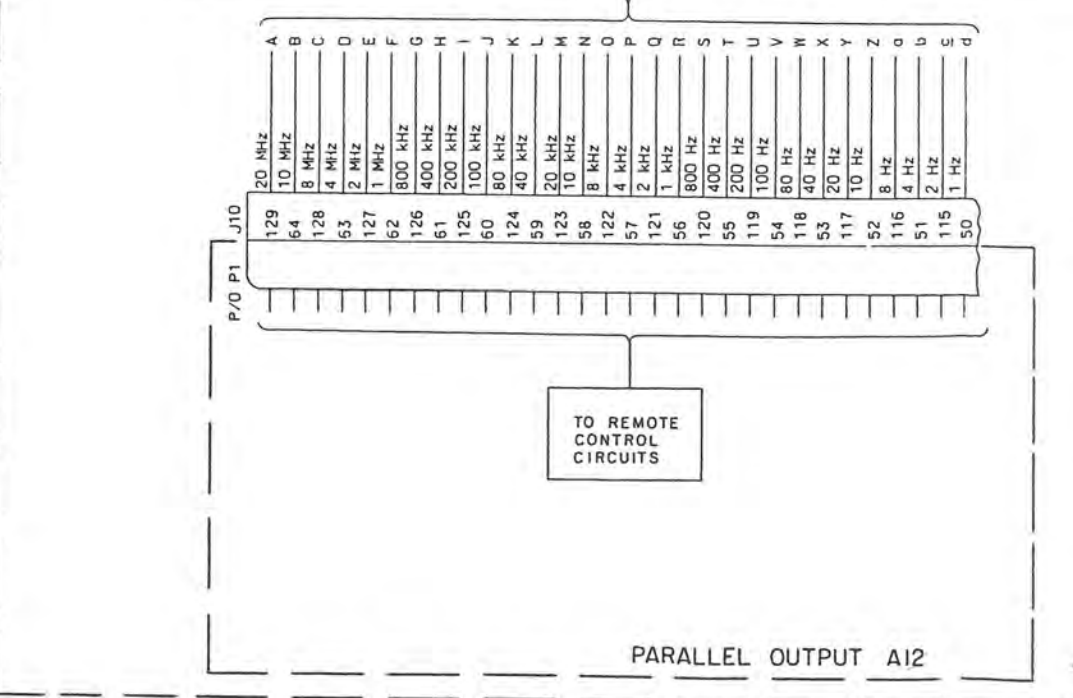
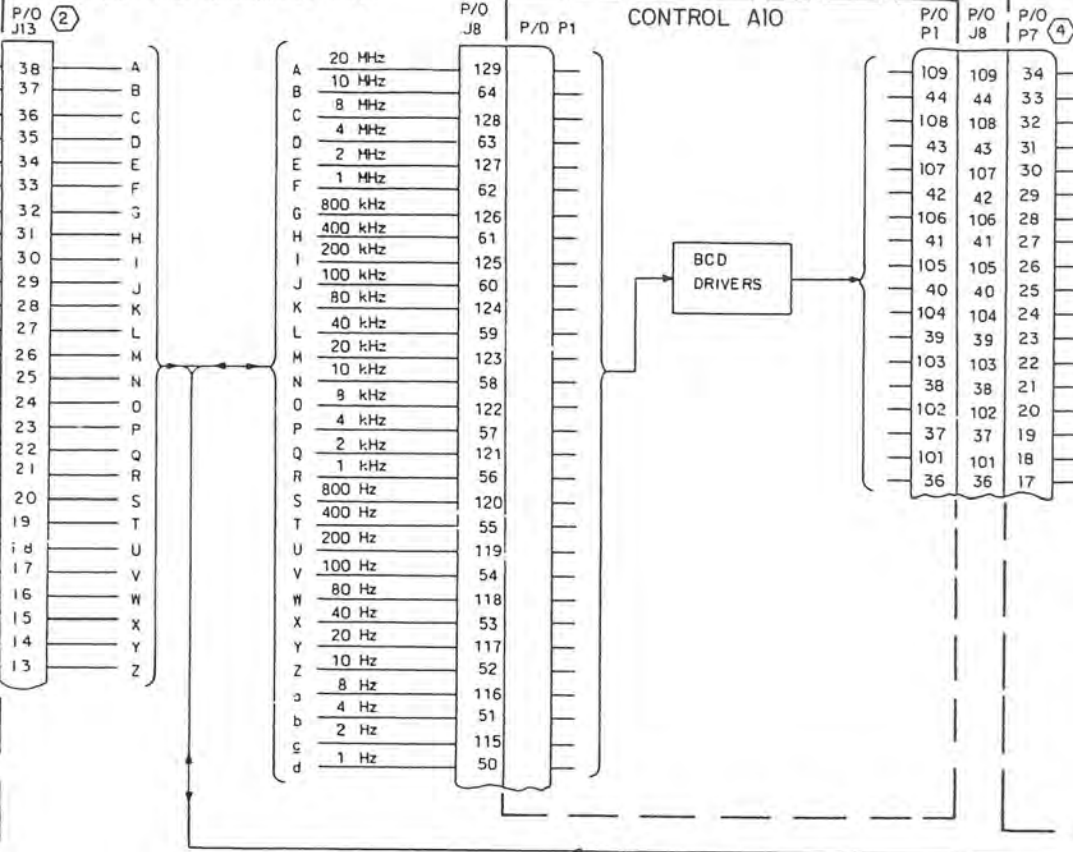




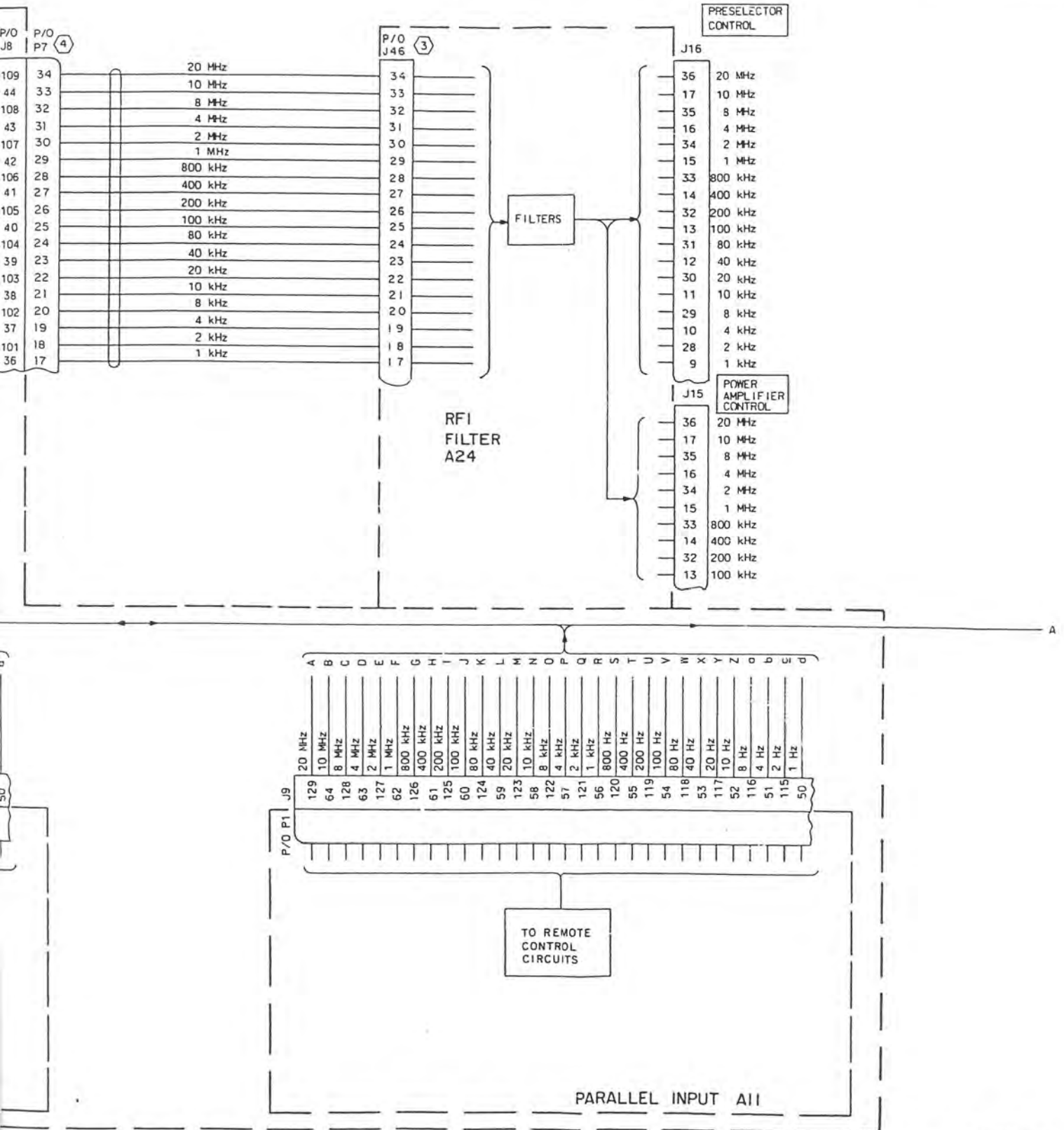
TPA-7729-034

HF-8014A Exciter (622-3473-211),  
 Mode Selection and Control,  
 Block Diagram  
 Figure 4A (Sheet 1 of 3)

P/O SIDEBORD ASSEMBLY A25



PARALLEL OUTPUT A12



HF-8014A Exciter (622-3473-211),  
 Mode Selection and Control,  
 Block Diagram  
 Figure 4A (Sheet 2)

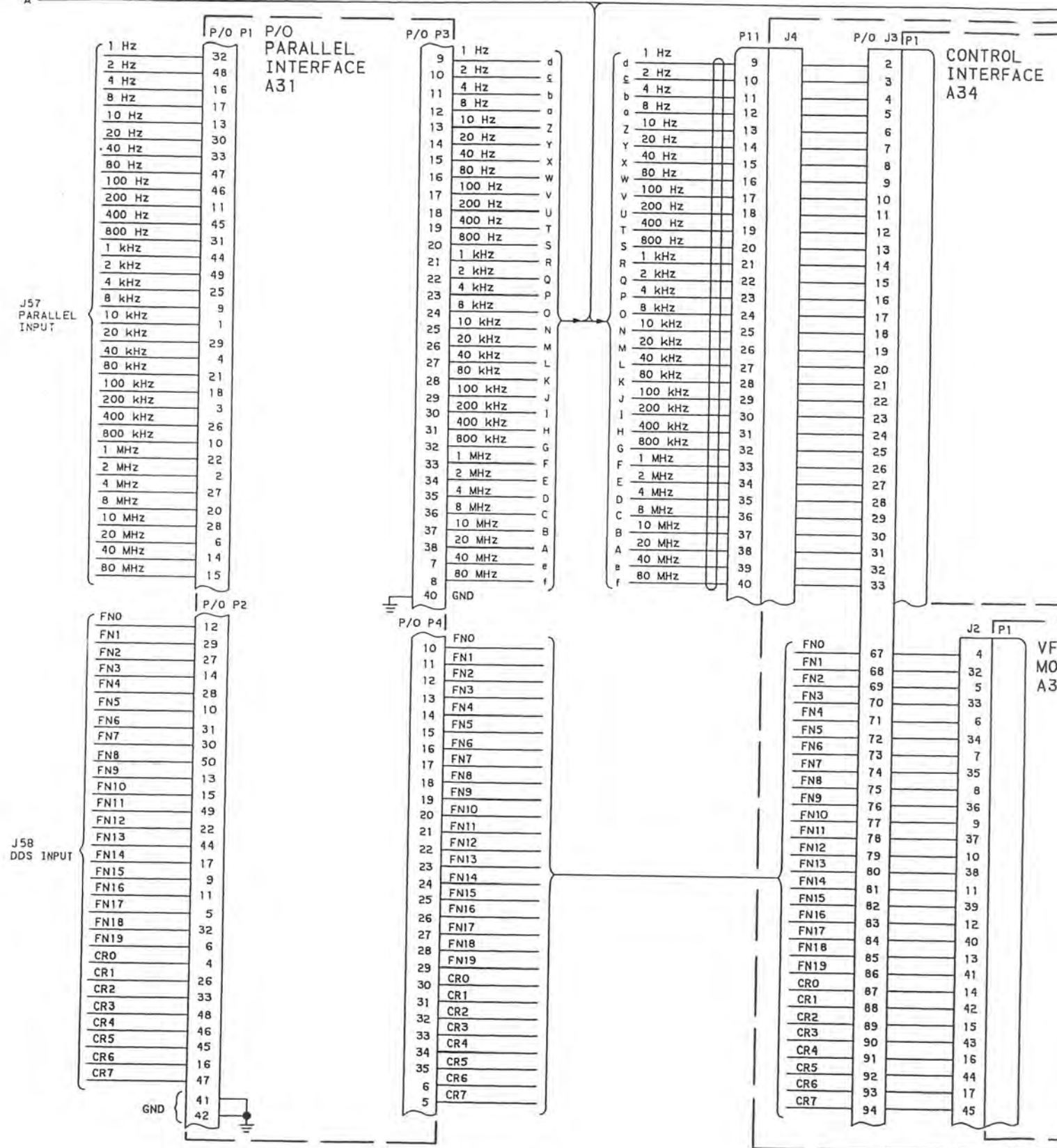
TPA-7729-034

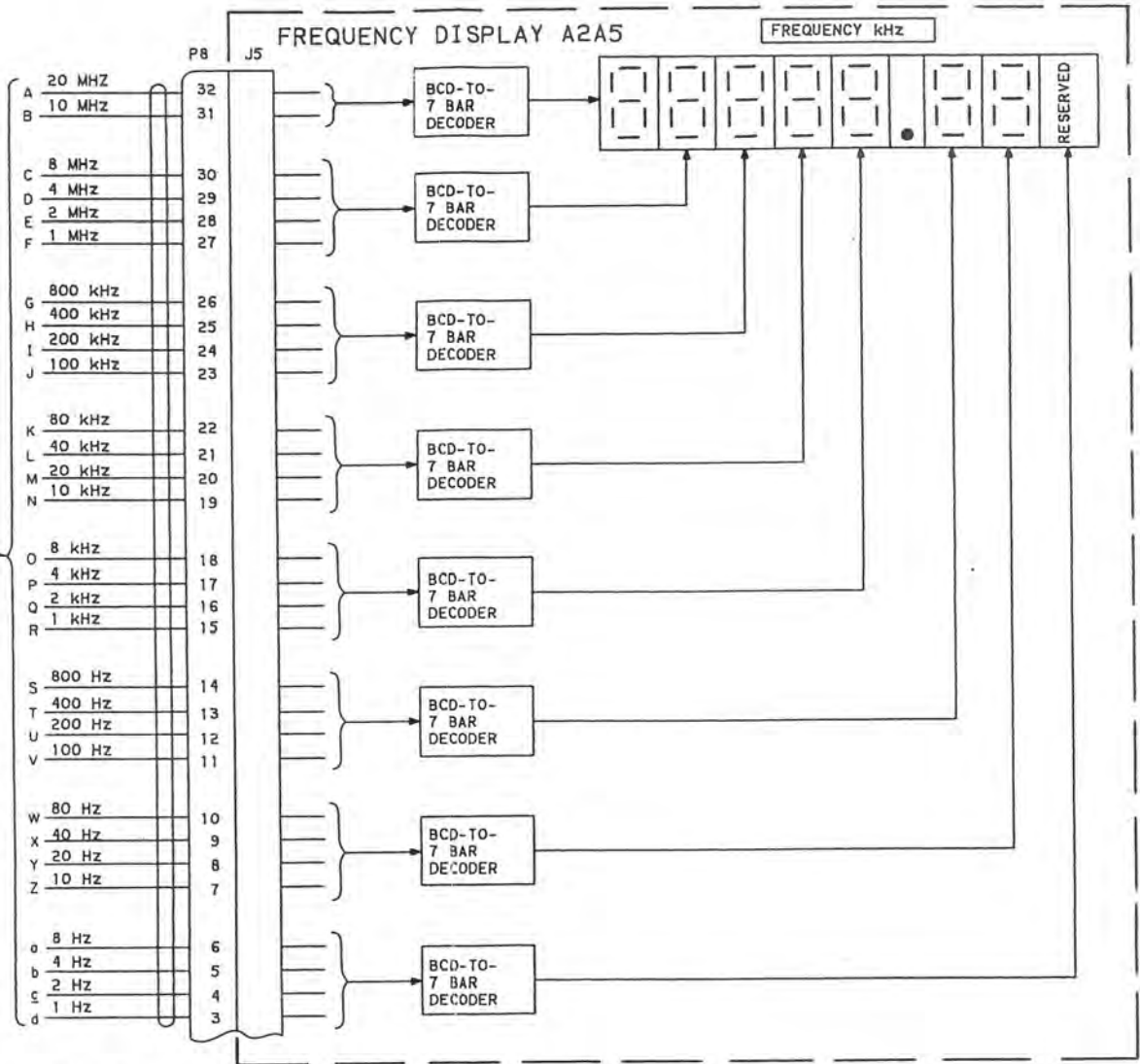
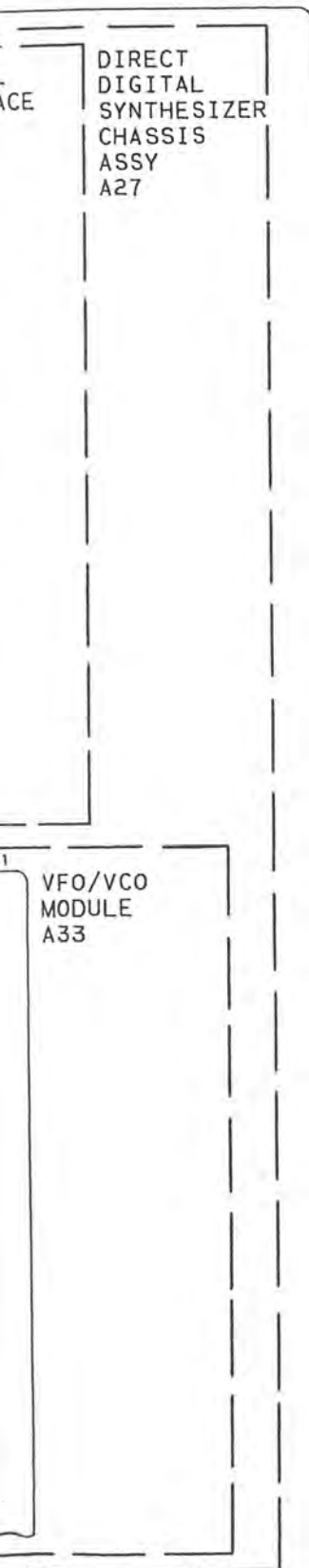


Rev 6.4.1 12/20/85  
 MARK HENSLER  
 D-22120 By BehmLauder  
 2-18-85

TESTER FOR  
 S 905 154AA  
 S.O.A @ TELONORITO

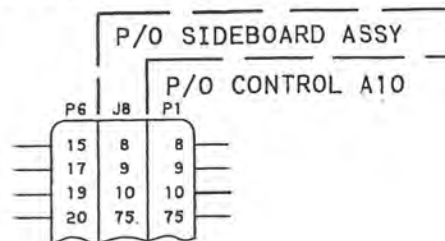
A





NOTES:

- ① INDICATES GROUP OF WIRES IN A RIBBON CABLE.
- ② J12 AND J13 ARE SOLDERED INTO AND ARE PART OF SIDEBOARD ASSEMBLY A25 (THERE ARE NO MATING CONNECTORS FOR J12 AND J13).
- ③ J46 IS SOLDERED INTO AND IS PART OF RFI FILTER A24 (THERE IS NO MATING CONNECTOR FOR J46).
- ④ P7 MATES WITH PINS ON ONE SIDE OF J8, A10P1 MATES WITH SOCKET ON OTHER SIDE OF J8 (OPPOSITE SIDES OF SIDEBOARD; AS SHOWN IN DIAGRAM).
- ⑤ P6 MATES WITH PINS ON ONE SIDE OF J8, A10P1 MATES WITH SOCKET ON OTHER SIDE OF J8 (OPPOSITE SIDES OF SIDEBOARD; EXAMPLE SHOWN).



TPA-7729-034

HF-8014A Exciter (622-3473-211),  
Mode Selection and Control,  
Block Diagram  
Figure 4A (Sheet 3)

**2.2.4 ALC/TGC and Tune Start (Refer to figure 7)**

Add the following paragraph after paragraph 2.2.4.3.

**2.2.4.3A Tune Starts**

There are five tune start signals originated in the HF-8014A Exciter (622-3473-211), and they all exit from the rear panel connectors identified as PA CONTROL J15 and PRESELECTOR CONTROL J16. Each tune start pulse is individually adjustable from approximately 10 microseconds to over 1 second. The nominal pulse widths and destinations are shown in table 1A. These pulses are generated automatically by the exciter whenever a valid frequency change is initiated locally or at a remote control device, the frequency control changes from one bus to another, or a power level request is received. The pulses may not be output, however, because in remote control there are four tune start enable (TSE) pulses that may be used to inhibit one or all the pulses. These tune start enable pulses are available at the rear panel of the PARALLEL INPUT jack J57 as TSE 1 through TSE 4. Which tune start pulse is controlled by which tune start enable is shown in table 1A.

This control of the tune starts permits selection of which associated devices will change frequency and which will not. In the local control, all five tune starts are output, and all associated equipment is tuned to the new frequency.

There are two tune start override signals that can be applied to the exciter which will alter how the tune start signals are output. One tune start override is applied by way of the REMOTE CONTROL jack J14 and the other by way of the PARALLEL INPUT jack J57/A31P1. Either pulse can control the output of all five tune starts depending upon the setting of the CONT switch A2S12. If the CONT switch is in the remote (REM) position, the tune start override applied to the REMOTE CONTROL jack J14 can cause all five tune starts to be output. The tune starts are output regardless of the state of the tune start enable (TSE) signals. When the CONT switch is in the local (LCL) position, the tune start override applied to the PARALLEL INPUT J57/A31P1 can cause all five tune starts to be output regardless of the state of the tune start enable (TSE) signals. Both tune start override signals use zero logic state to produce the override condition.

Table 1A. Tune Starts.

TUNE START NUMBER	REAR PANEL JACK/PIN	PULSE WIDTH (ms)	DESTINATION	ASSOCIATED TUNE START ENABLE
TS 1	J15/26	250	HF-8023	TSE 1
TS 2	J15/8	250	HF-8040	TSE 2
TS 3	J15/9	250	HF-8061	TSE 3
TS 4	J16/26	1 (remote) 250 (local)	HF-8064	TSE 4
TS 5	J16/1	0.01 (remote) 250 (local)	HF-8064	TSE 4

## **2.3 Remote Control Operation**

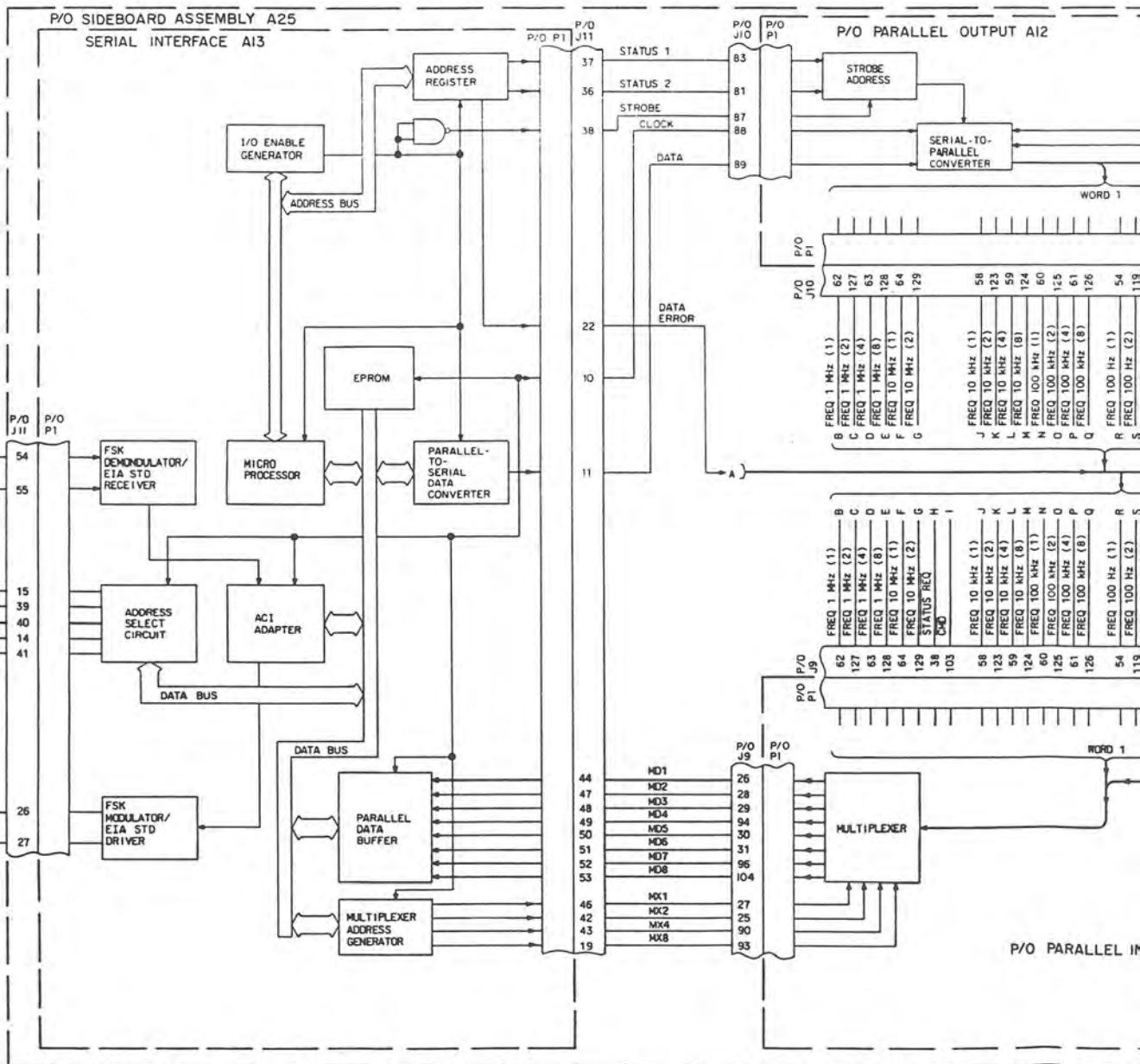
Place figure 9A behind figure 9. Place paragraph 2.3.3 after paragraph 2.3.2.2.

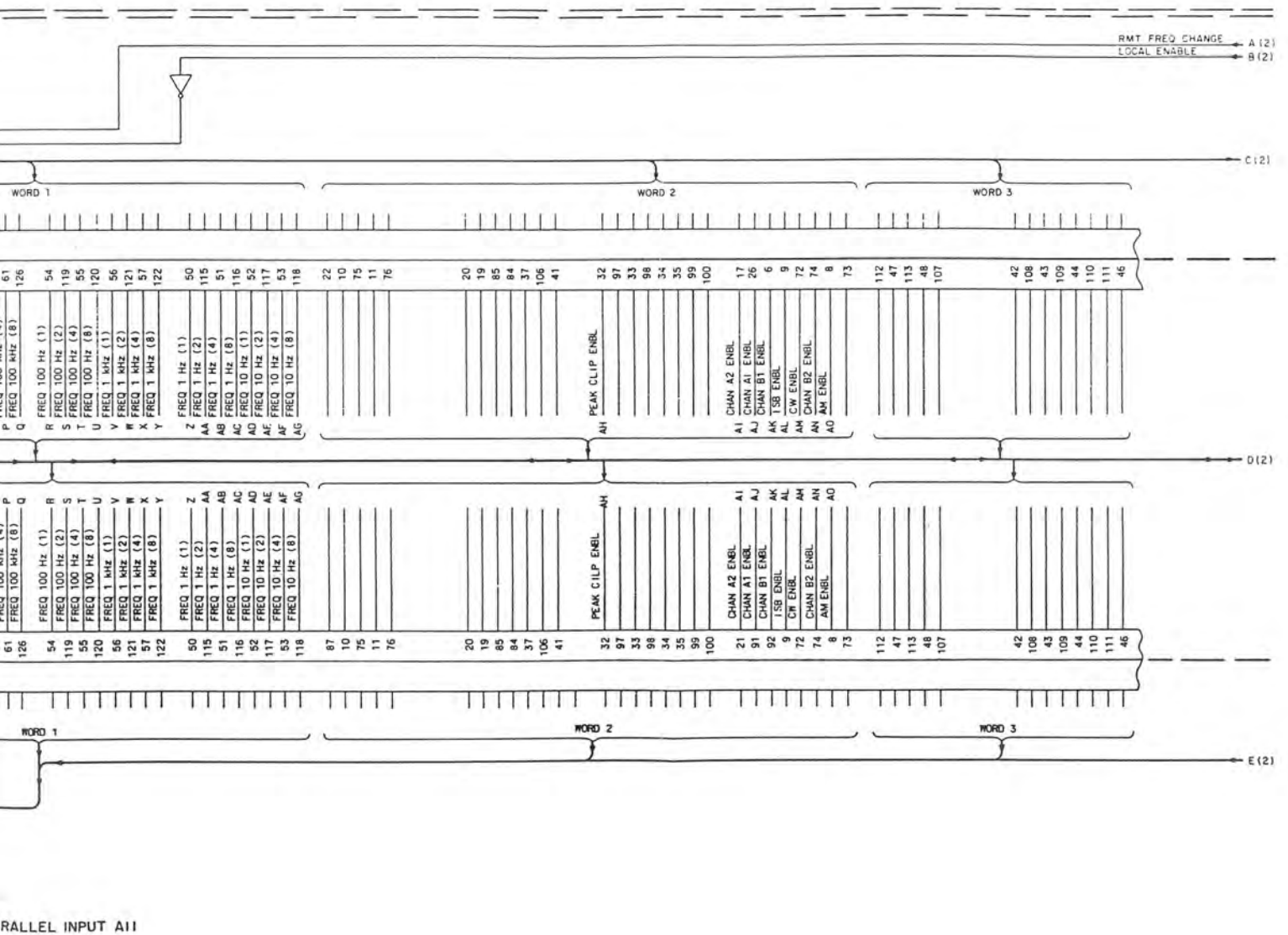
### **2.3.3 Exciter Parallel Control Operation (Refer to figure 9A)**

The frequency of operation can be controlled by parallel formatted data input at J57/A31P1 PARALLEL INPUT or J58/A31P2 DDS INPUT. The input at J57/A31P1 PARALLEL INPUT must be in binary coded decimal. This input is latched and applied to the frequency bus at the direction of DDS control interface A34. From this point on the data is used the same as bcd data from parallel output card A12. Frequency data applied to J58/A31P2 DDS INPUT must be in the parallel coded format used by VFO/VCO module A33 of direct digital synthesizer A27. This data is applied directly to the VFO/VCO module and, thereby, the frequency of the exciter. Data applied to J58/A31P2 DDS INPUT does not cause any display change or any data output to any remote control device.

## **2.4 Frequency Synthesizer**

Not applicable. Add the following paragraph heading and text following paragraph 2.4.6. Place figure 10A behind figure 10. Figure 11 is not applicable.





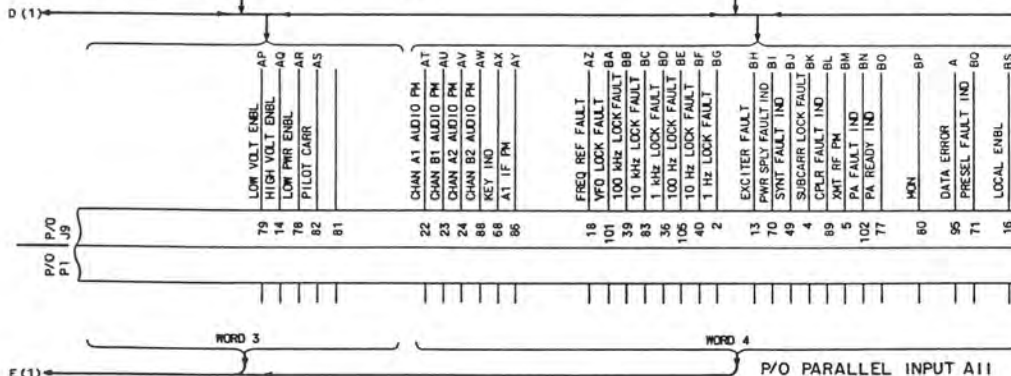
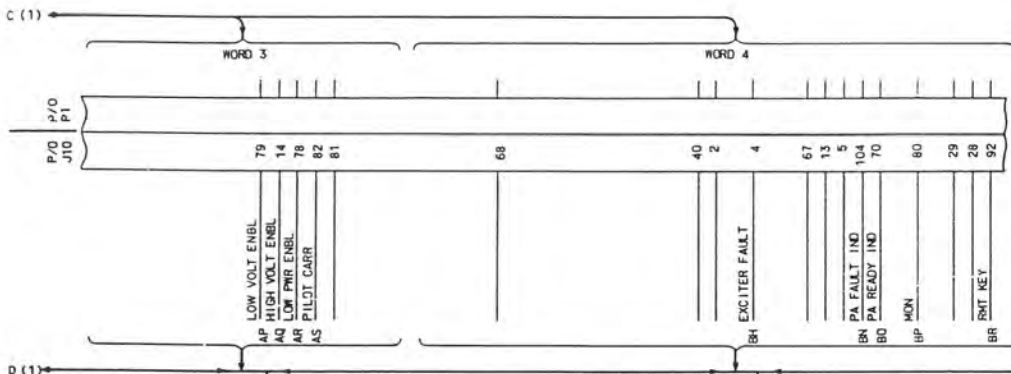
PARALLEL INPUT A11

Remote Control Function.  
Block Diagram  
Figure 9A (Sheet 1 of 4)

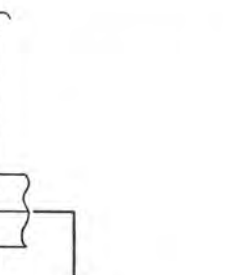
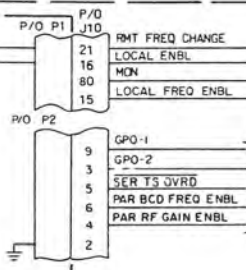


A (1) RMT FREQ CHANGE  
 B (1) LOCAL ENBL

P/O PARALLEL OUTPUT A12

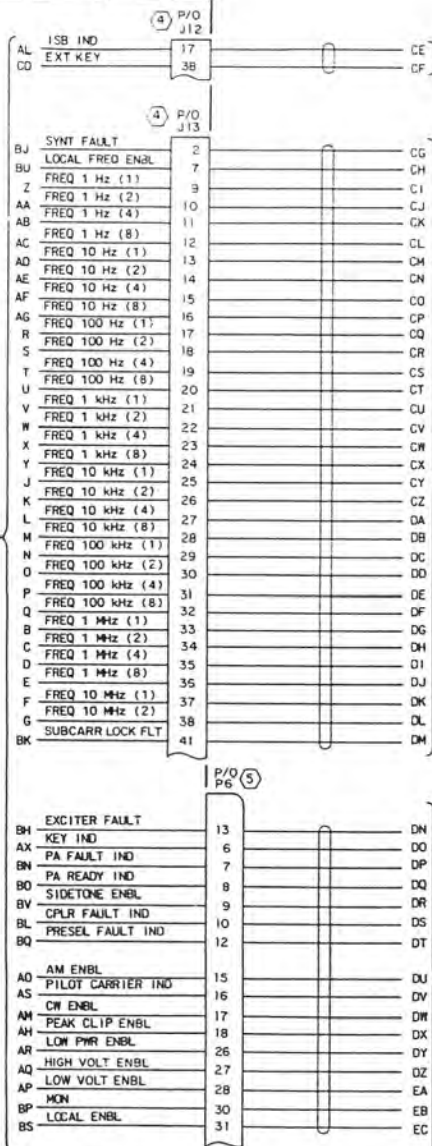


E (1) P/O PARALLEL INPUT A11

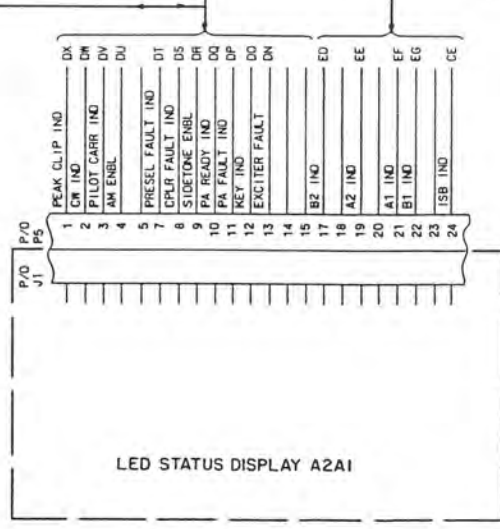
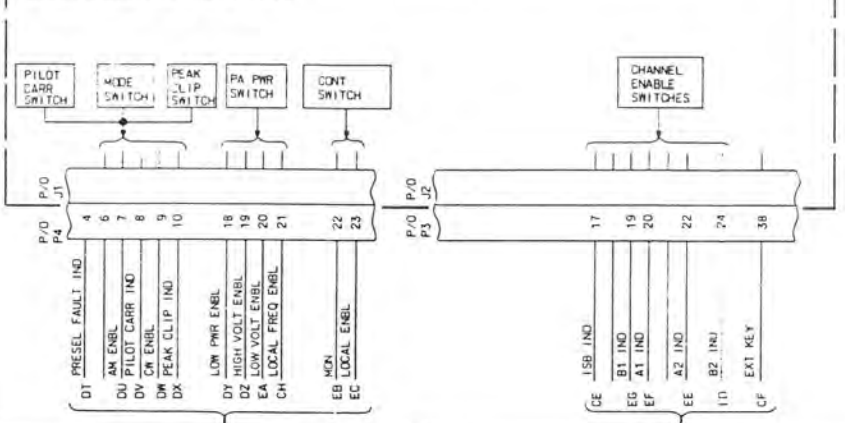




P/O  
SIDEBOARD  
ASSEMBLY  
A25

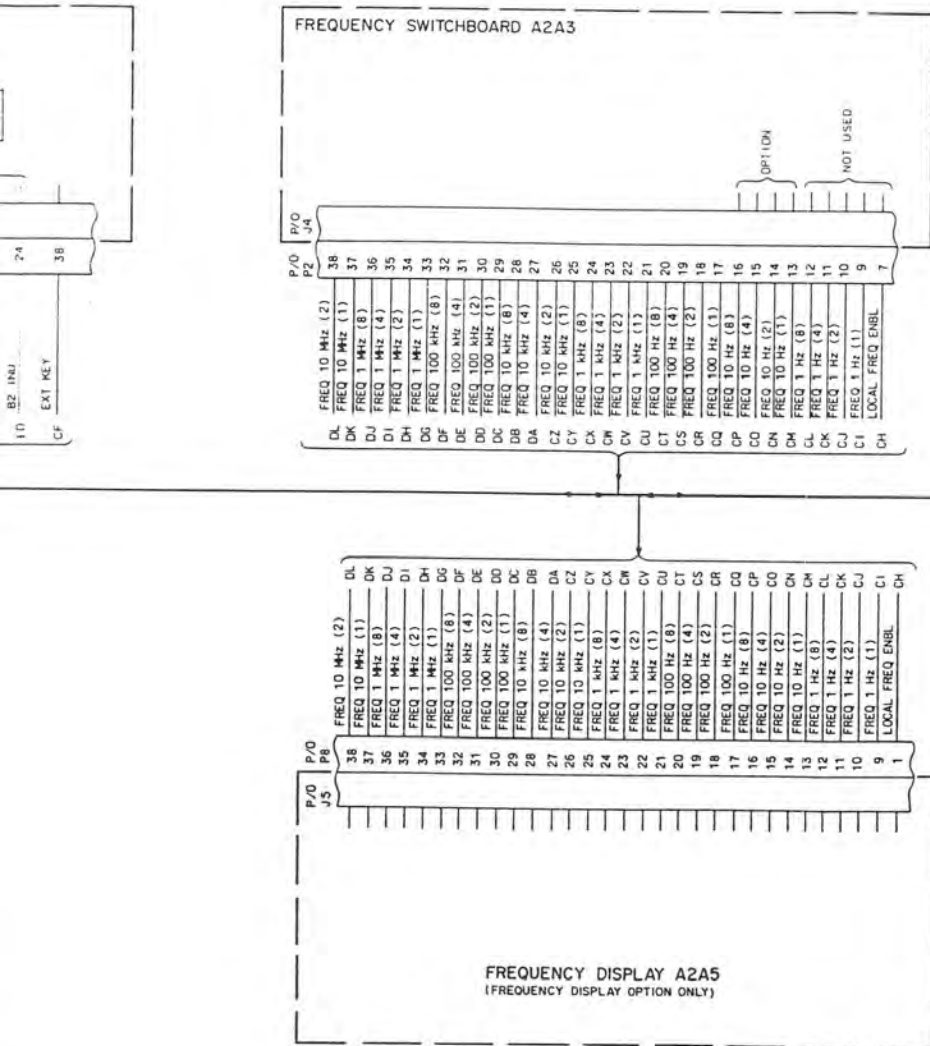


SWITCH MOUNTING BOARD A2A2



LED STATUS DISPLAY A2A1

H(2)  
I(2)

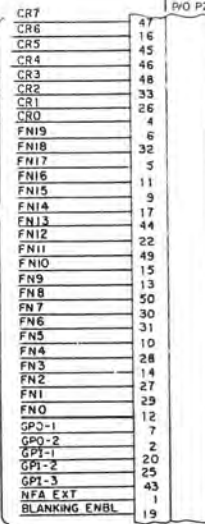


TPA-7800-045

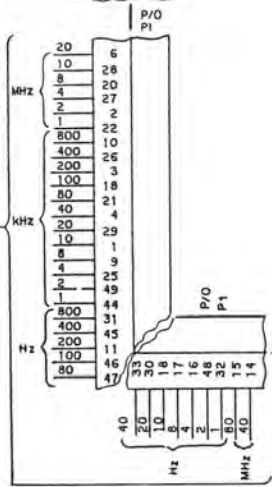
Remote Control Function.  
Block Diagram  
Figure 9A (Sheet 3)

G(3)

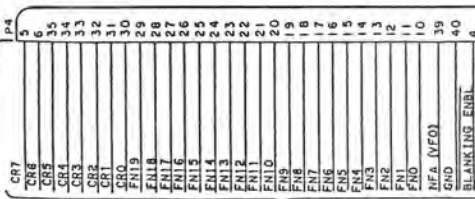
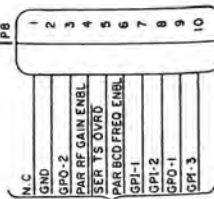
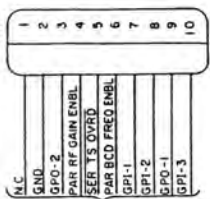
J58 DDS INPUT FROM REMOTE CONTROL PROCESSOR



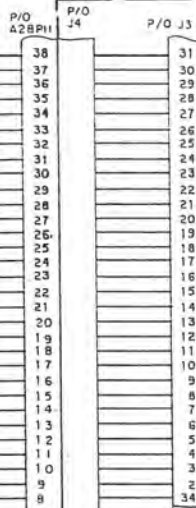
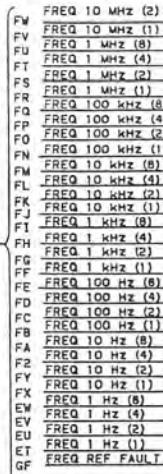
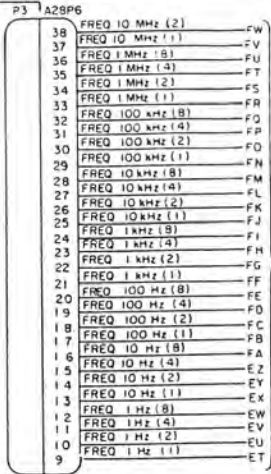
J57 PARALLEL INPUT FROM PARALLEL FORMAT REMOTE CONTROL DEVICE

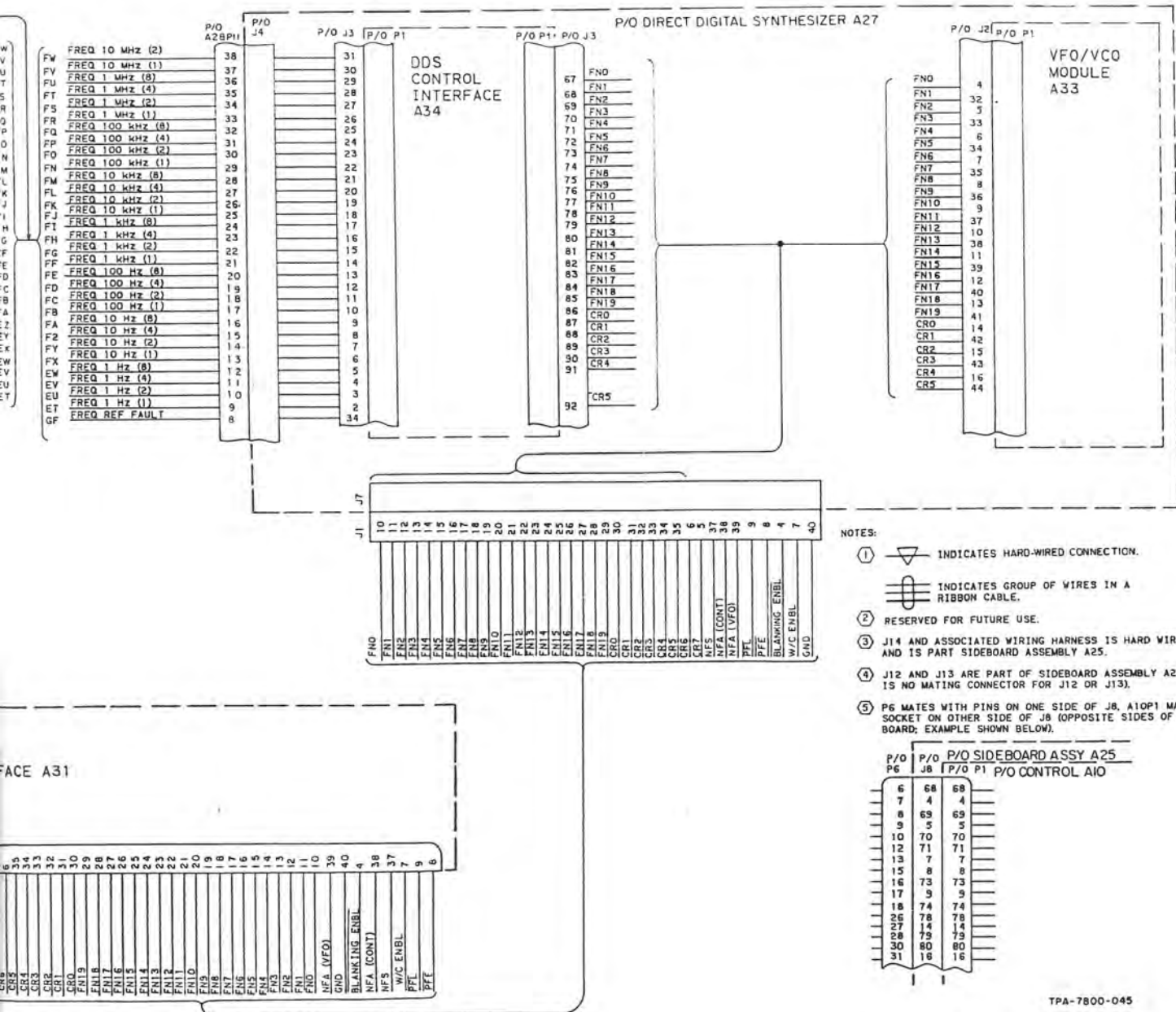


H(3)  
I(3)



PARALLEL INTERFACE A31

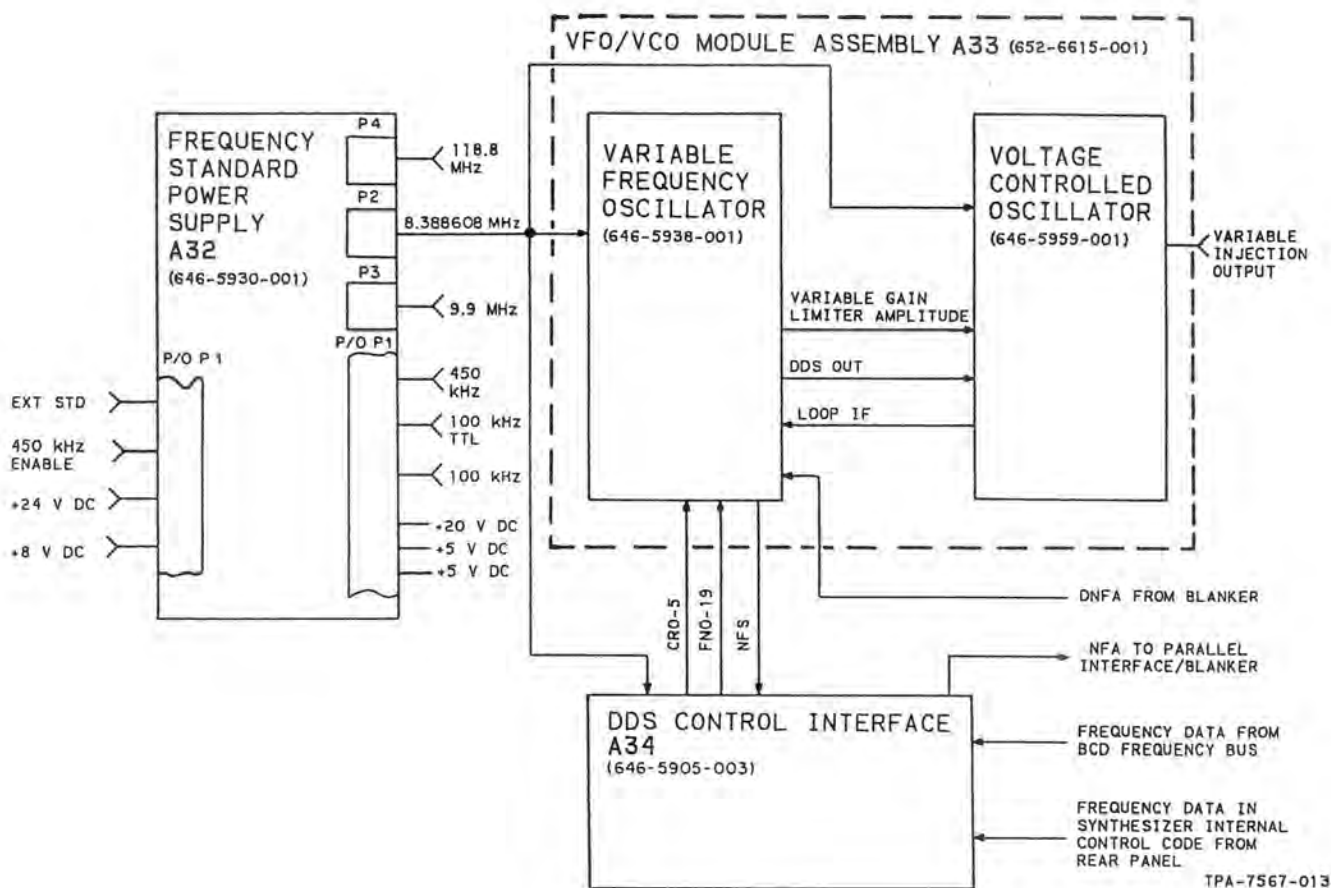




TPA-7800-045

Remote Control Function.  
Block Diagram  
Figure 9A (Sheet 1)





Direct Digital Synthesizer,  
Block Diagram  
Figure 10A

#### 2.4A Direct Digital Synthesizer (Refer to figure 10A)

Direct digital synthesizer A27 is comprised of three circuit cards/modules mounted in a card cage. The direct digital synthesizer will provide all frequencies required by the exciter. The three circuit cards/modules are frequency standard A32, VFO/VCO module A33, and DDS control interface A34.

DDS control interface A34 receives the frequency data from the parallel bcd data bus and converts it to the parallel hexadecimal code required by the VFO/VCO module. The DDS control interface also initiates a new frequency available (NFA) pulse anytime the frequency is changed on the parallel bcd data bus. This NFA pulse is sent to parallel interface A31 and from there to the injection blanker A35 where it causes the rf output to be tuned off during the actual frequency change. In the injection blanker, the NFA pulse is delayed and returned to the VFO/VCO module as a delayed new frequency available (DNFA). This returned pulse is synchronized with 8.388 608 MHz injection frequency and sent to the control interface (A34) to enable data from the DDS control interface to the VFO/VCO module. The signal generated by the VFO/VCO module is called new frequency strobe (NFS). All circuits on the DDS control interface are clocked at the system clock rate of 8.388 608 MHz from frequency standard A32.

VFO/VCO module A33 is comprised of the VFO circuit card on which the direct digital synthesizer and a phase-lock loop reside and the VCO circuit card on which the voltage control oscillator, first and second mixers, the tracking bandpass filter, and the output amplifiers are mounted. The system clock rate of 8.388 608 MHz from the frequency standard is utilized as the frequency and phase reference throughout the VFO/VCO module. The

frequency data is applied to the VFO circuit card as coarse and fine frequency information. The course data is applied to the variable gain limiter amplifier along with the output of the phase-lock loop. These two signals react to form an ac signal with a dc component. This signal is applied to the VCO circuit card where it is used to control the voltage-controlled oscillator. The fine frequency data is applied to the direct digital synthesizer where the time varying phase information is converted to time varying amplitude information. The direct digital synthesizer is clocked at 8.388 608 MHz so the output of the direct digital synthesizer will be a signal of between 1.048 576 to 2.097 152 MHz dependent upon the frequency control input. The output of the direct digital synthesizer and system clock is input to the first translator mixer on the VCO circuit card. The output of the first translator mixer will be from 9.437 184 to 10.485 760 MHz. This signal is fed to the second translator mixer along with the output of the voltage-controlled oscillator. The result of this heterodyning is a 69.206 016- to 99.614 72-MHz signal which is passed by the tracking bandpass filter to output amplifier and onto the VFO programmable divider. The signal is divided by 66 to 95 to result in a signal that is phase detected using a divided sample of the system clock. The output of this phase detector feeds into the variable gain limiter amplifier to correct the voltage-controlled oscillator. The output of the voltage-controlled oscillator is amplified and output at P3 as the variable injection out (79.350 010 to 109.35 MHz).

Frequency standard A32 contains the master crystal oscillator, external standard circuitry, frequency multiplier, several frequency dividers, and the 8.388 608-MHz crystal oscillator which is phase locked to master crystal. The master crystal oscillator is voltage controllable and oscillates at 39.6 MHz. This signal is then frequency divided to provide 9.9-MHz, 450-kHz, and 100-kHz signals. The 39.6 MHz is also tripled to obtain the 118.8-MHz fixed injection signal. The 100-kHz signal is utilized to phase lock the 8.388 608-MHz crystal oscillator to the master crystal. Switches and jumper provide the means to use an external frequency standard of 5 MHz, 1 MHz, or 100 kHz to control the master crystal oscillator. The outputs of the frequency standard are output to various circuits within the exciter.

## **2.5 Monitor Functions (Refer to figure 12)**

Add the following sentence to the end of the text.

In the HF-8014A Exciter (622-3473-211), the direct digital synthesizer contains fault monitors on the individual cards.

### **2.5.1 Fault and Status Indicators**

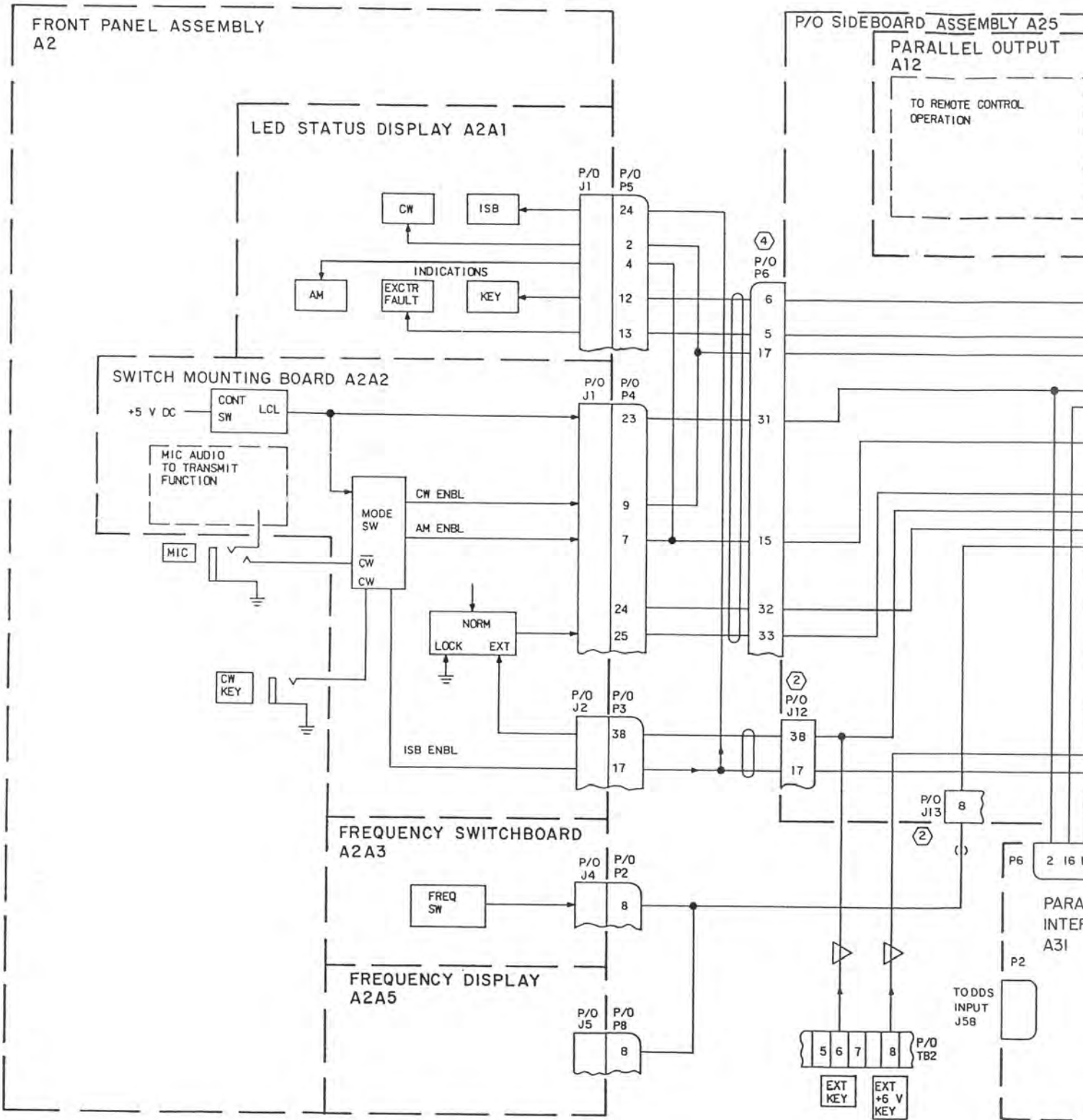
Add the following text after paragraph p; place figure 12A behind figure 12.

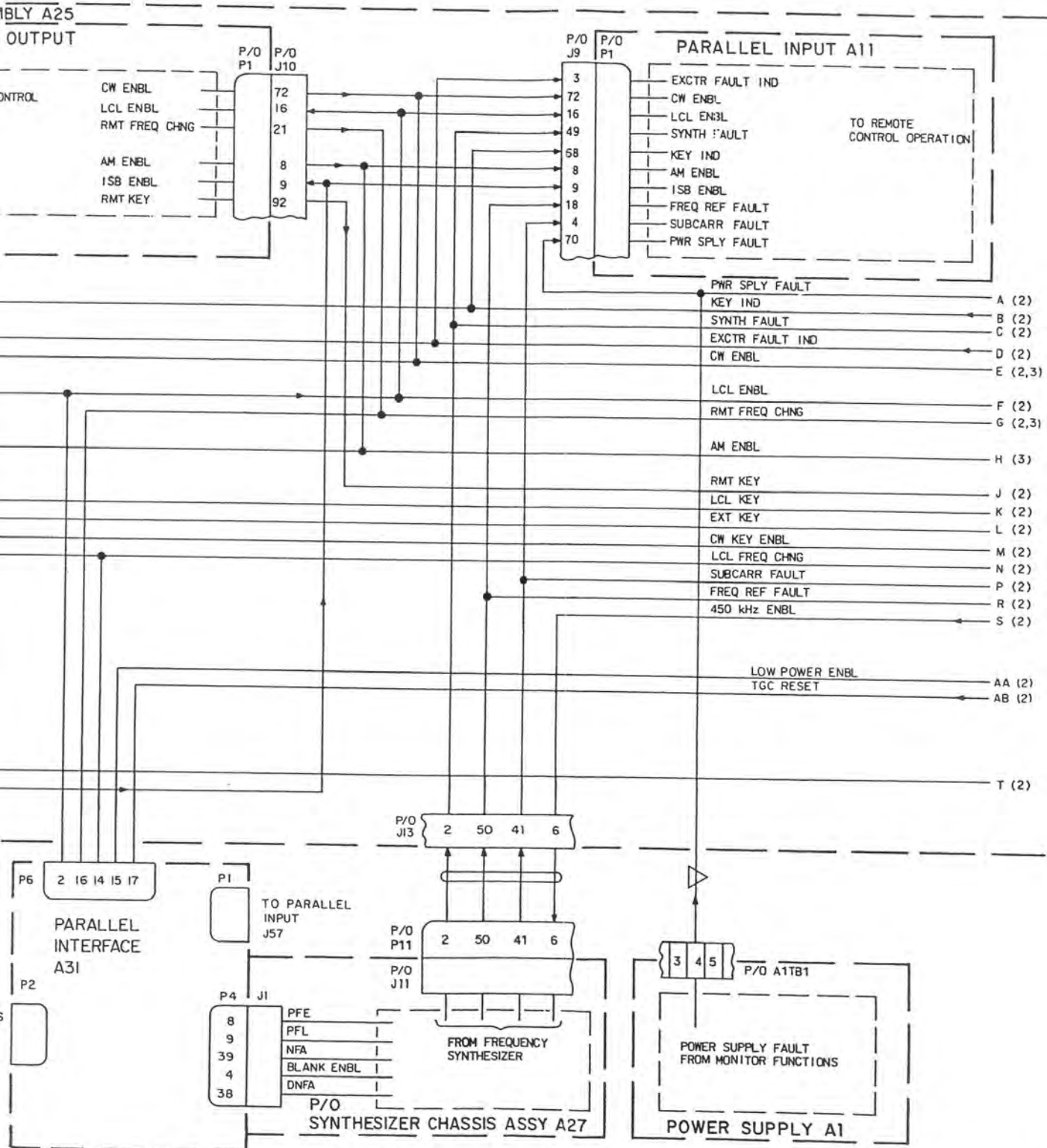
Each card of the direct digital synthesizer contains a fault indicator particular to that card. The DDS control interface card summarizes the faults from the frequency standard/power supply, the VFO/VCO module, and the DDS control interface for output to control A10 and parallel input A11. From the synthesizer, there are four outputs to signal faults: the summary fault signal from the DDS control interface, the DDS control interface fault, the VFO/VCO fault, and the reference fault from the frequency standard/power supply. These faults will light the LED status indicator on that particular card and, by way of control A10 and parallel input A11, EXCITER FAULT DS5 on the exciter and the appropriate fault indicator on the remote control.

## **2.6 Power Distribution (Refer to figure 13)**

Add the following paragraph after the last paragraph; place 13A behind figure 13. The fifth paragraph is not applicable to HF-8014A Exciter (622-3473-211).

In the direct digital synthesizer, the +8-volt dc input is regulated to +5 volts dc on the DDS control interface for use in logic circuits. The +24-volt dc input is regulated to +20 volts dc and to +5 volts dc in the frequency standard/power supply for use in the frequency standard. The +20 volts dc is also distributed to the VFO/VCO module. The +8-volt dc input is regulated to +5 volts dc in the frequency standard/power supply for use in this card and distribution to the VFO/VCO module.



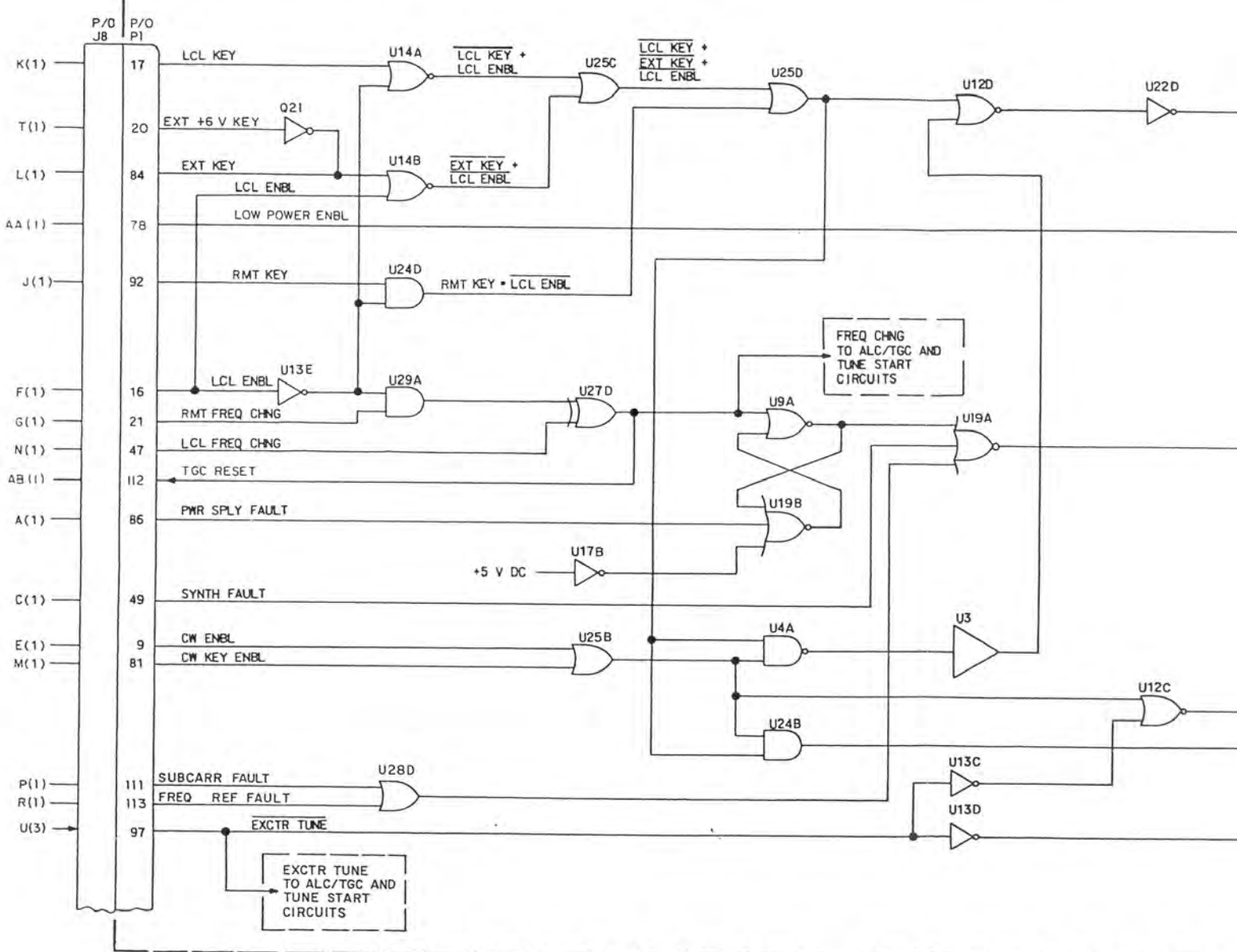


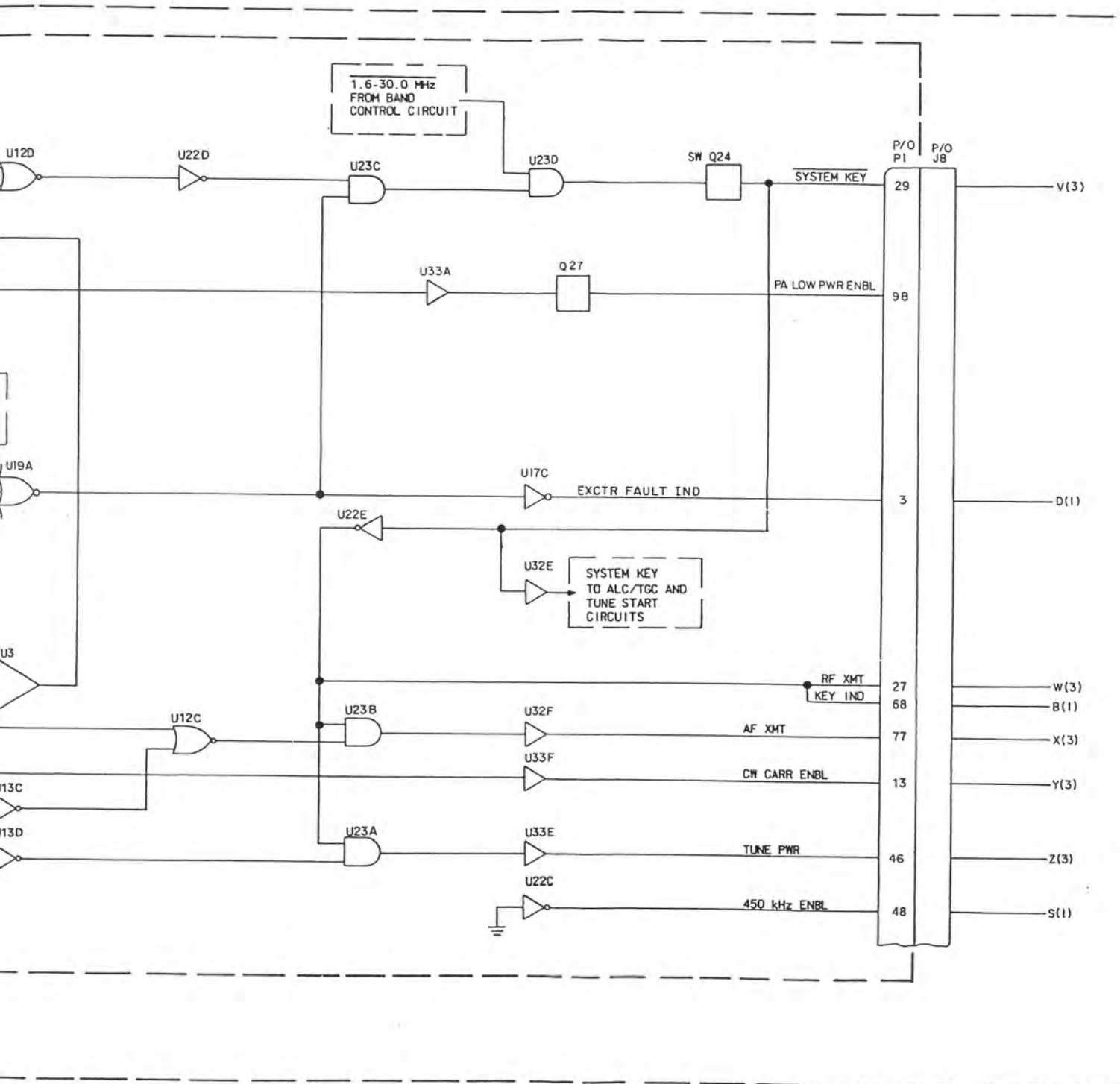
TPA-7730-034

HF-8014A Exciter (622-3473-211),  
 Fault and Status Indicators,  
 Block Diagram  
 Figure 12A (Sheet 1 of 3)

P/O SIDEBOARD ASSEMBLY A25

CONTROL AIO





TPA-7730 - 034

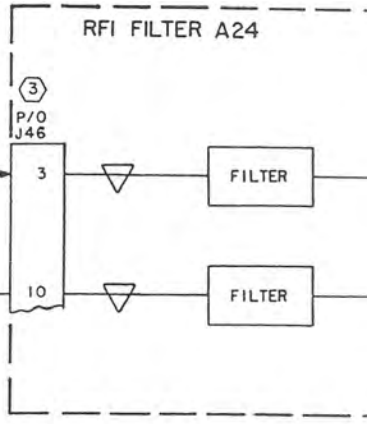
HF-8014A Exciter (622-3473-211),  
 Fault and Status Indicators,  
 Block Diagram  
 Figure 12A (Sheet 2)



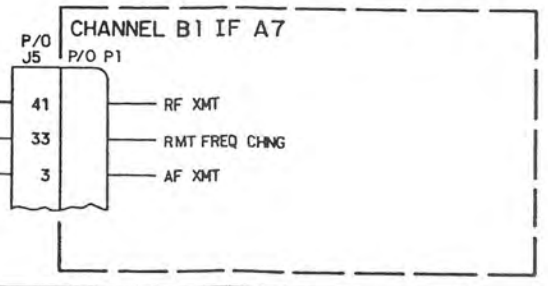
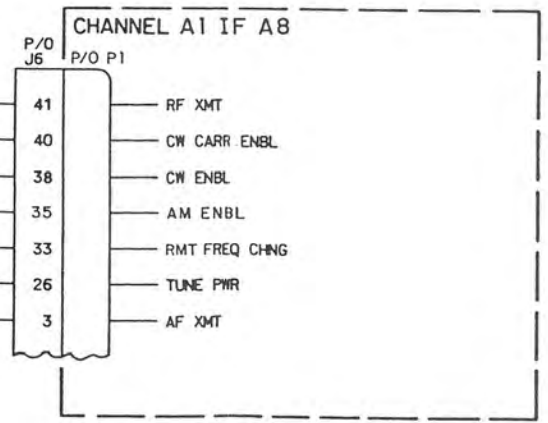
P/O SIDEBOARD ASSEMBLY A25

SYSTEM KEY



EXCTR TUNE

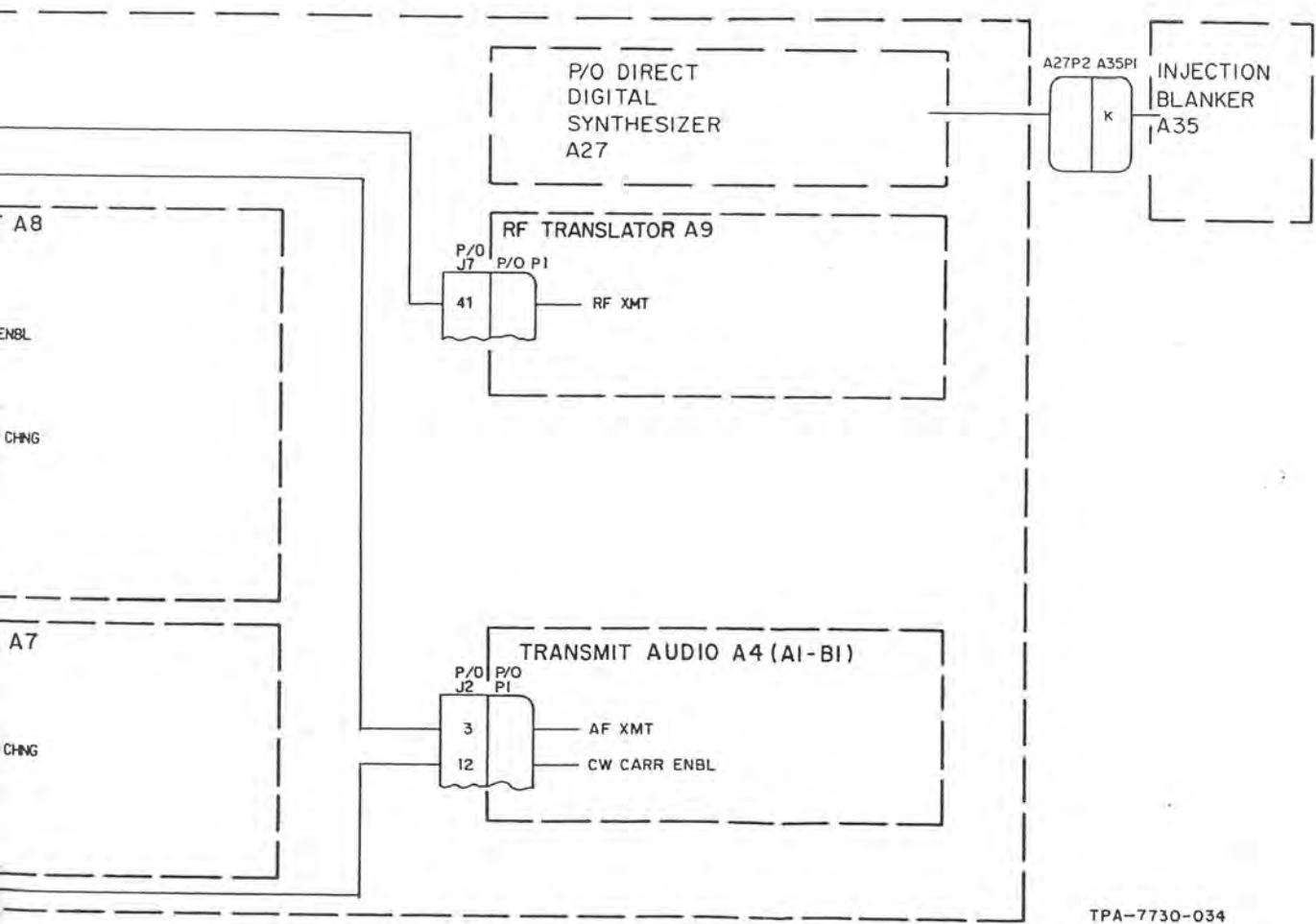
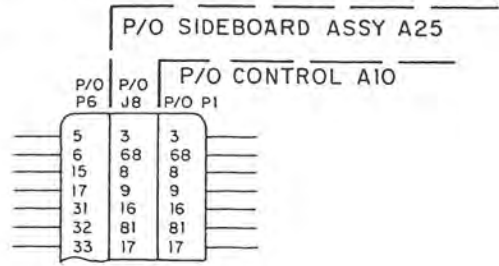
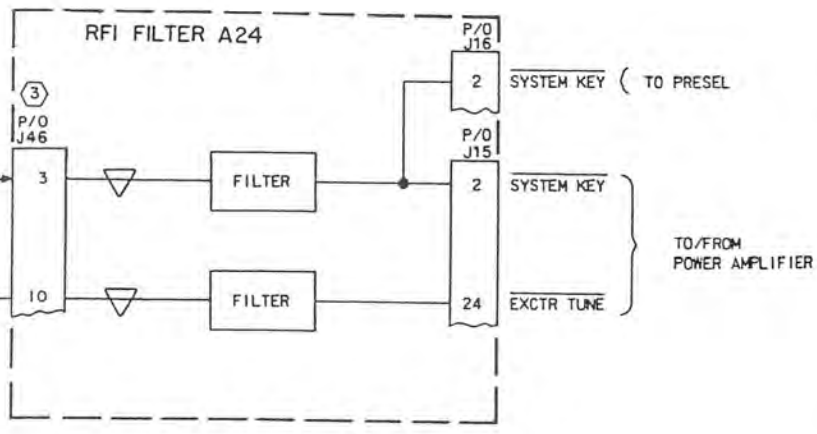


TUNE PWR  
RMT FREQ CHNG  
CW ENBL  
AM ENBL  
RF XMT  
CW CARR ENBL  
AF XMT



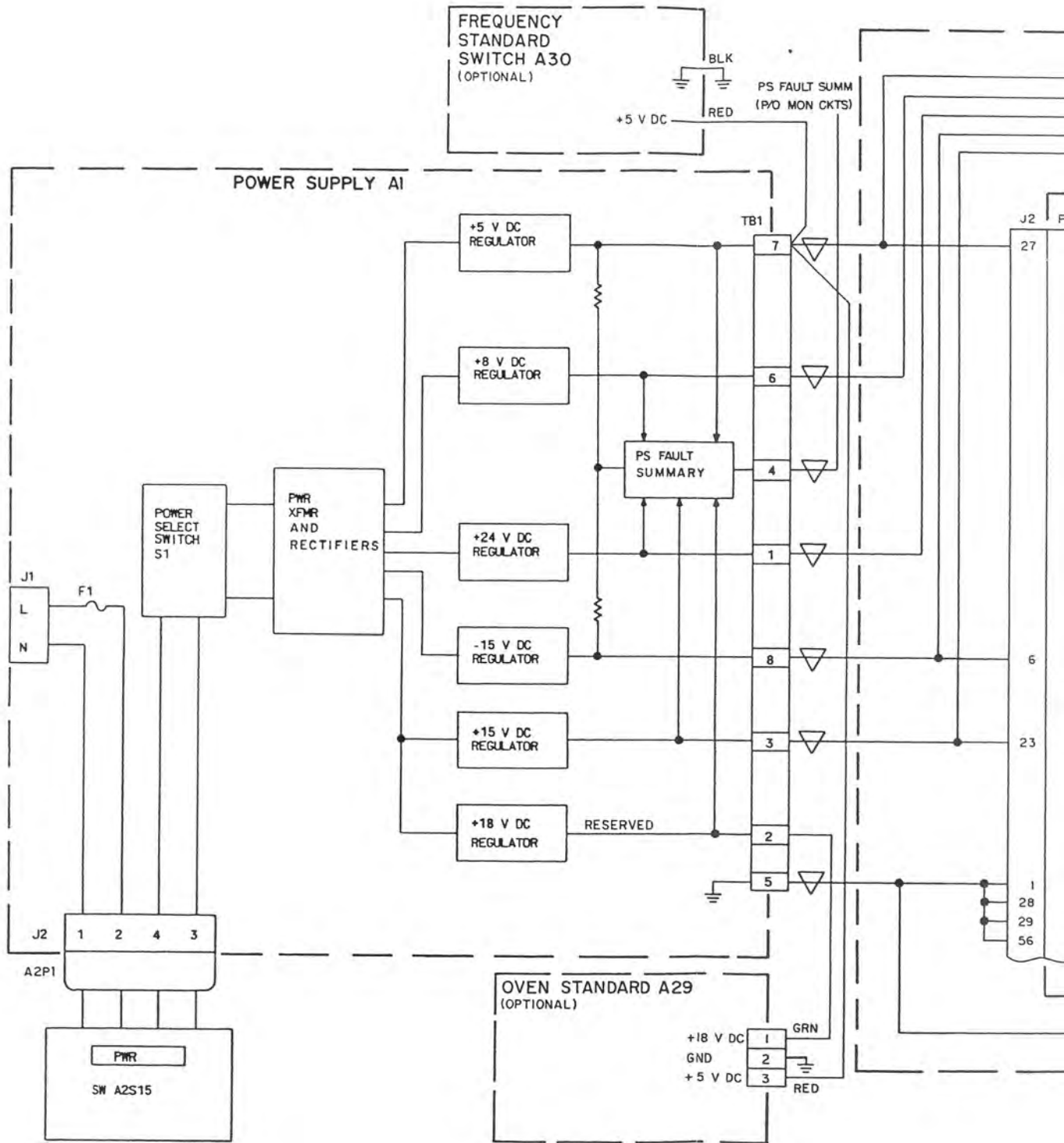
NOTES:

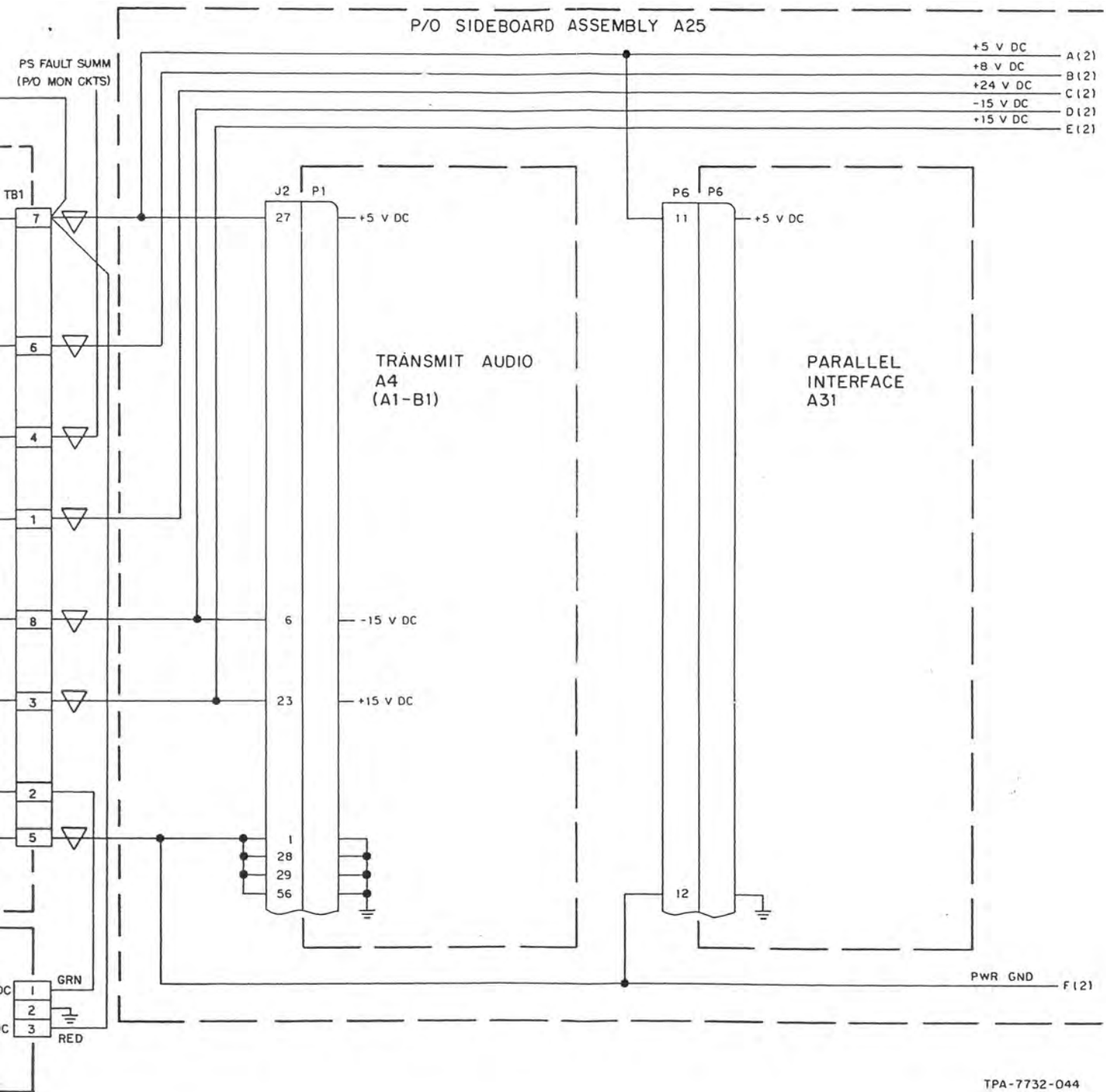
- ①  INDICATES HARD WIRED CONNECTION.
-  INDICATES GROUP OF WIRES IN A RIBBON CABLE.
- ② J12 AND J13 ARE SOLDERED INTO AND ARE PART OF SIDEBOARD ASSEMBLY A25 (THERE IS NO MATING CONNECTOR FOR J12 OR J13).
- ③ J46 IS SOLDERED INTO AND IS PART OF RFI FILTER A24 (THERE IS NO MATING CONNECTOR FOR J46).
- ④ P6 AND P7 MATE WITH PINS ON ONE SIDE OF J8. A10P1 MATES WITH SOCKET ON OTHER SIDE OF J8 (OPPOSITE SIDES OF SIDEBOARD; EXAMPLE SHOWN BELOW).



TPA-7730-034

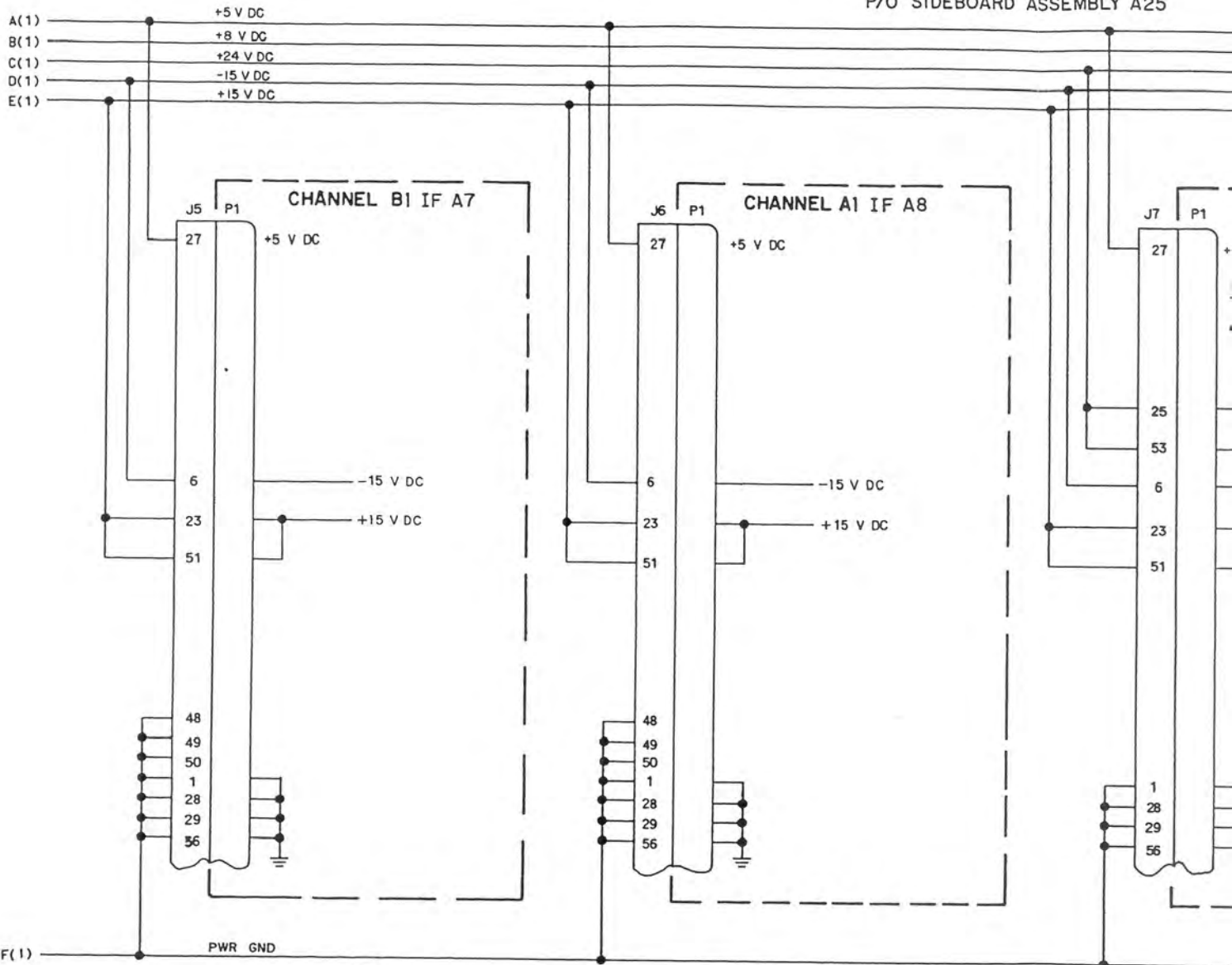
HF-8014A Exciter (622-3473-211),  
Fault and Status Indicators,  
Block Diagram  
Figure 12A (Sheet 3)



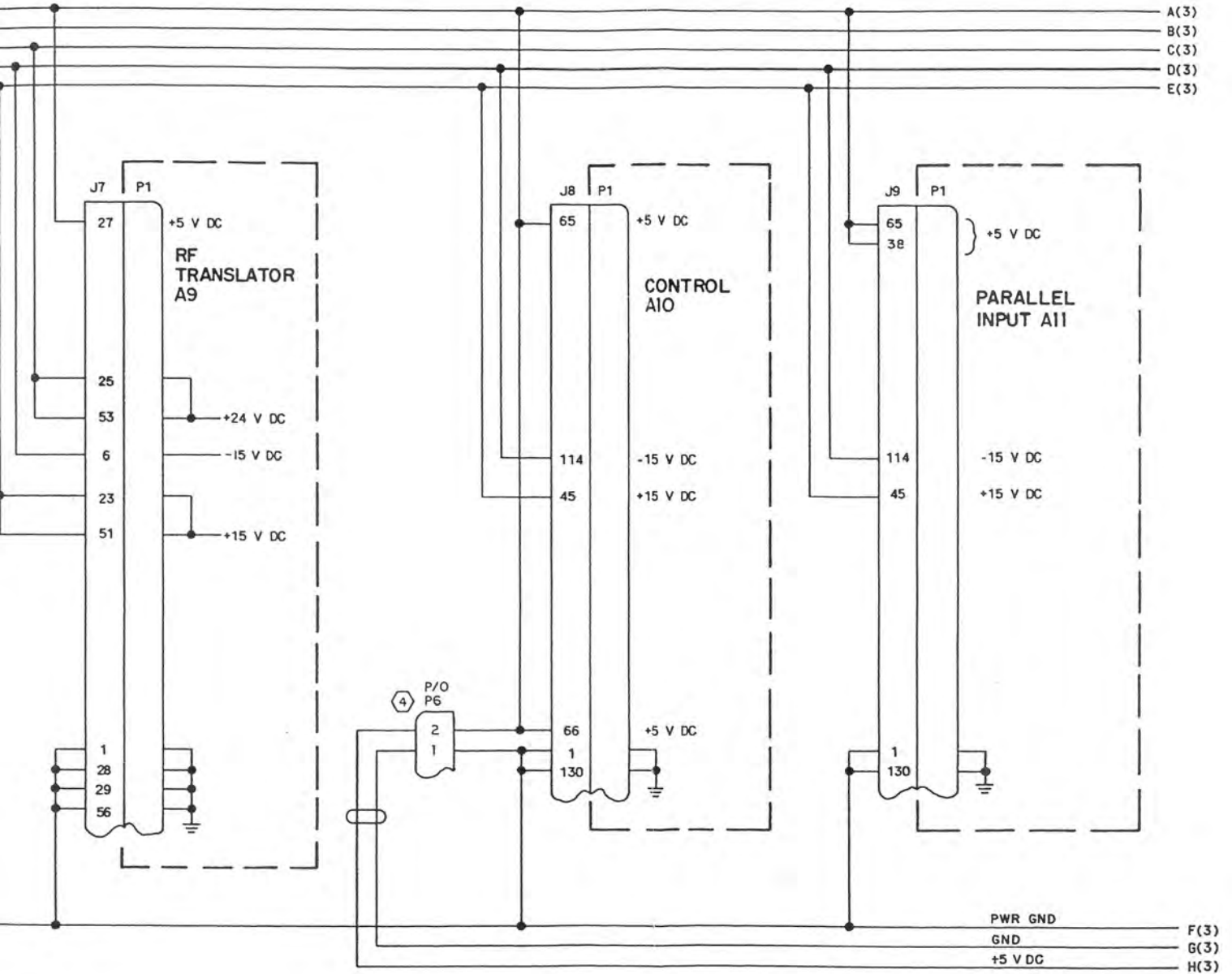


HF-8014A Exciter (622-3473-211),  
 Power Distribution, Block Diagram  
 Figure 13A (Sheet 1 of 4)

P/O SIDEBOARD ASSEMBLY A25



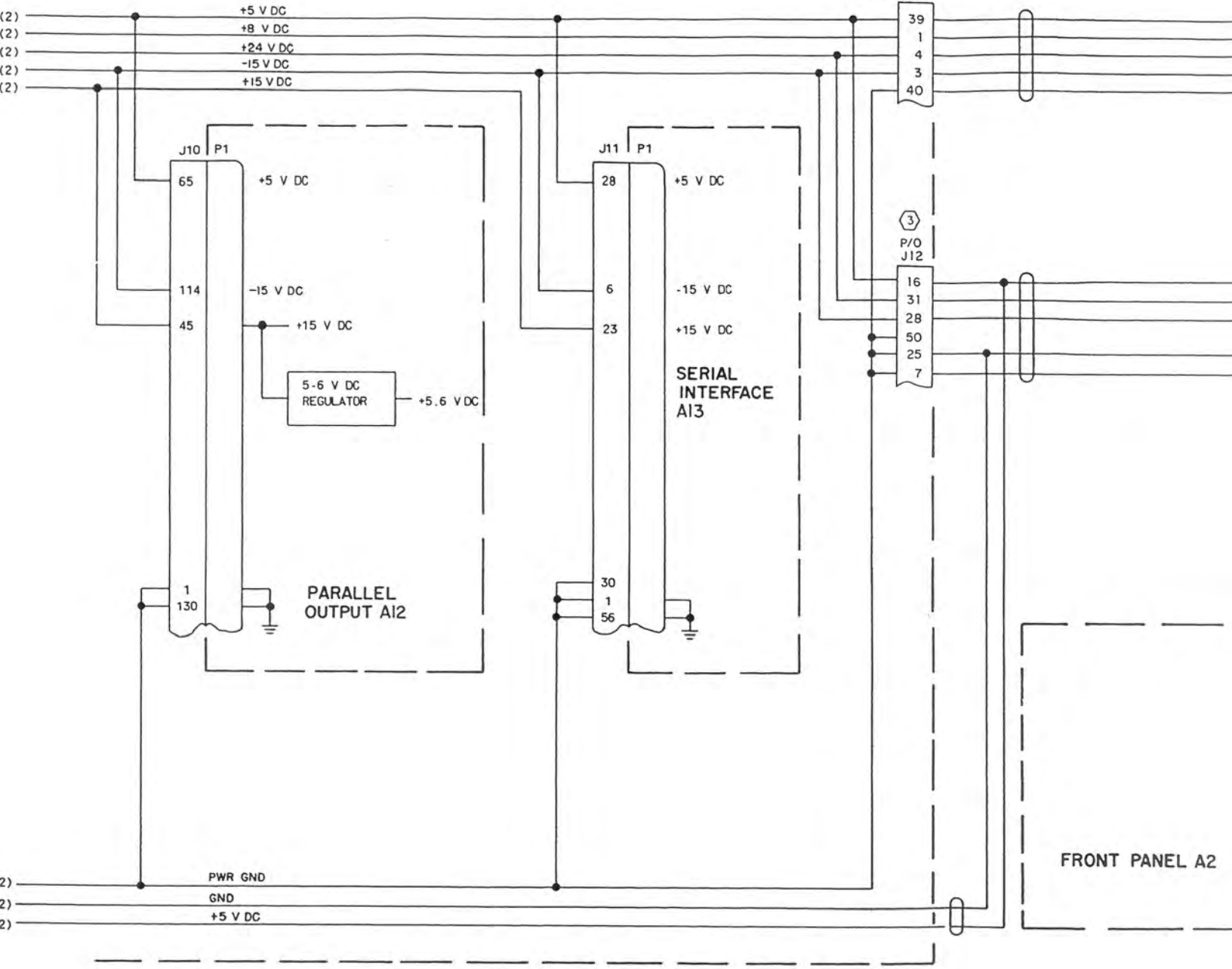
SEMBLY A25



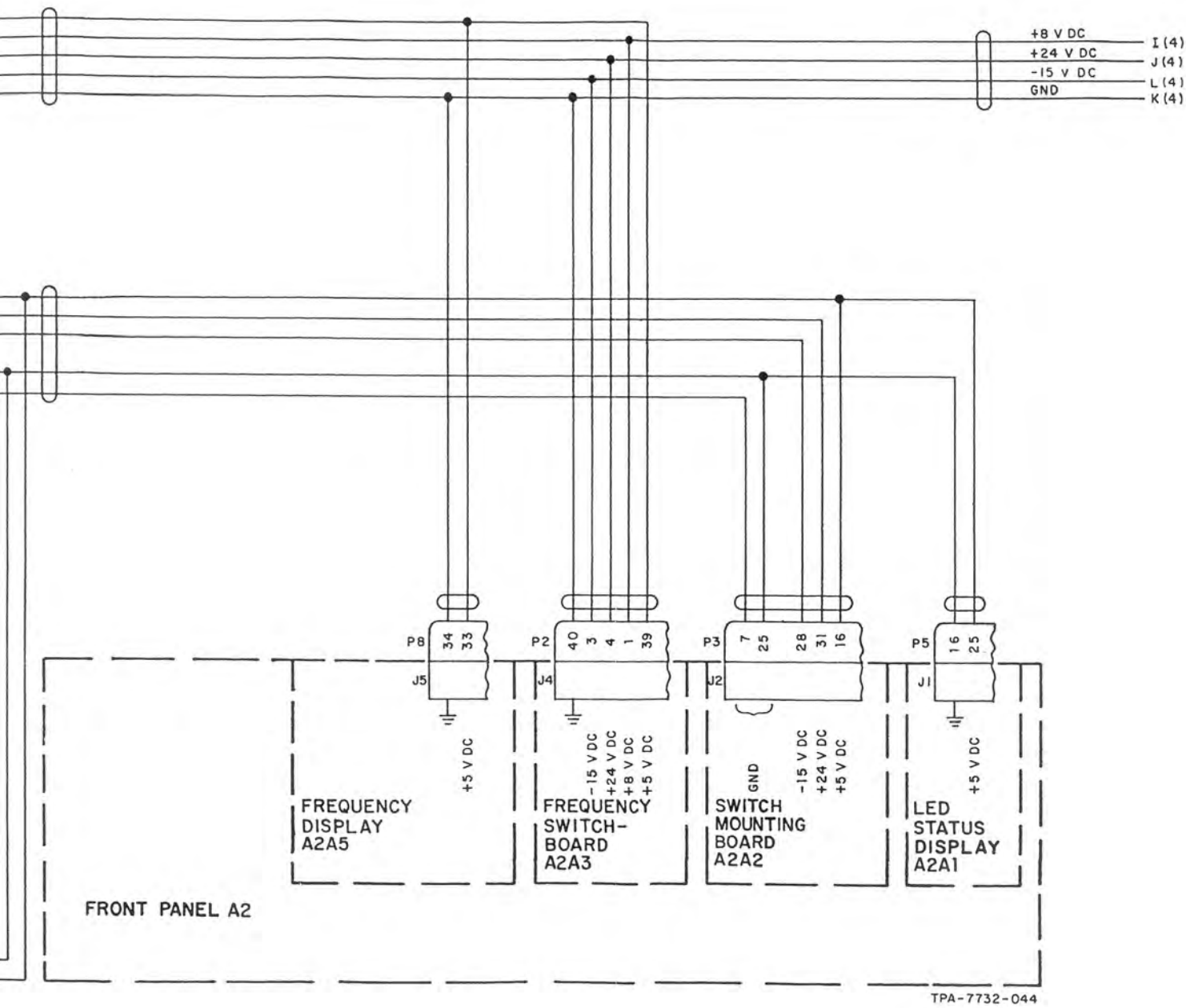
TPA-7732-044

HF-8014A Exciter (622-3473-211),  
Power Distribution, Block Diagram  
Figure 13A (Sheet 2)

P/O SIDEBOARD ASSEMBLY A25

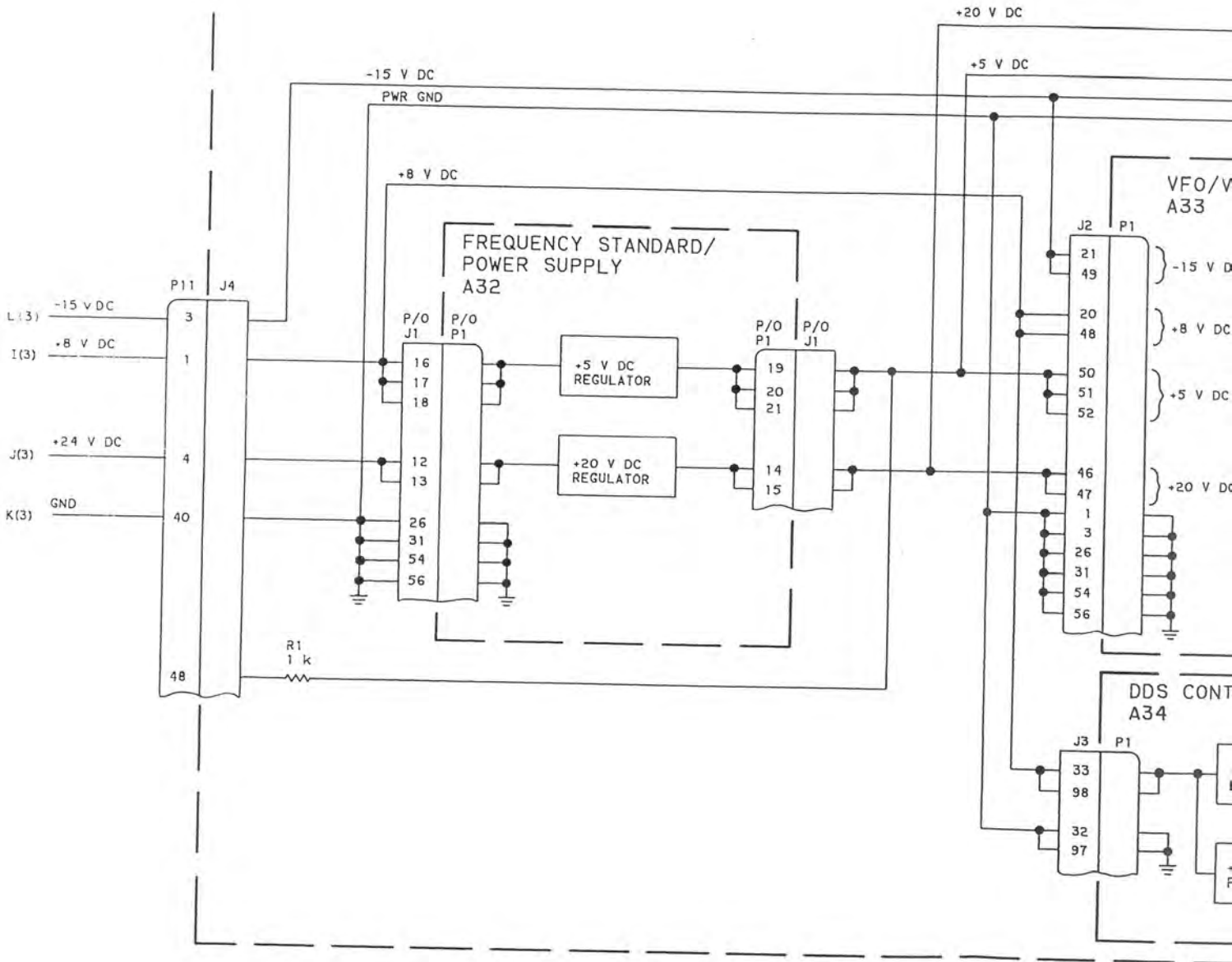


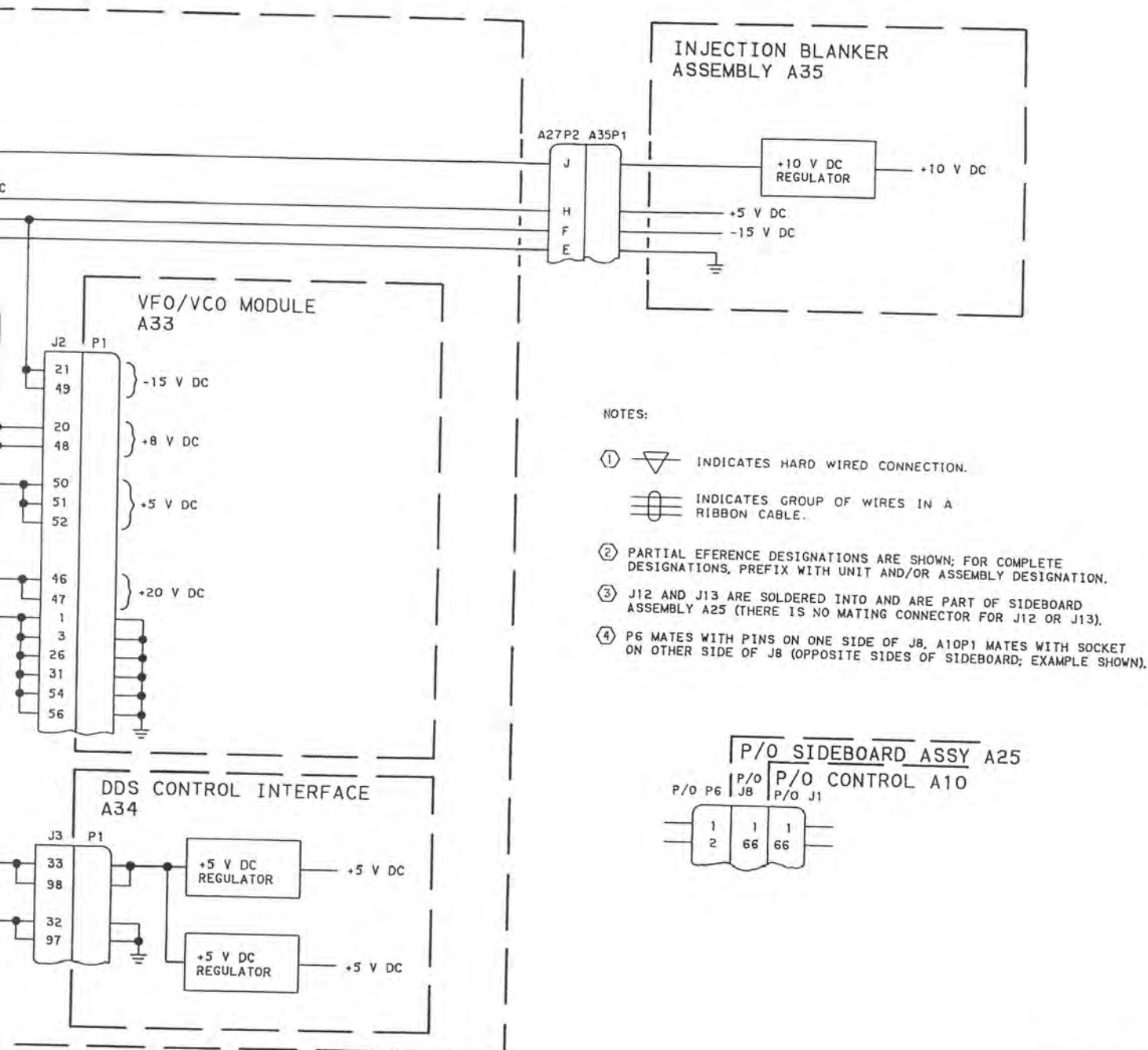






HF-8014A Exciter (622-3473-211),  
Power Distribution, Block Diagram  
Figure 13A (Sheet 3)

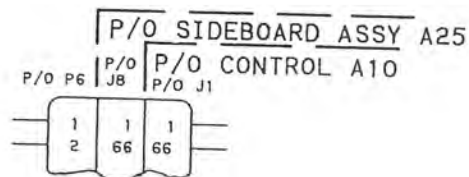
DIRECT DIGITAL SYNTHESIZER  
A27





NOTES:

- ①  INDICATES HARD WIRED CONNECTION.
-  INDICATES GROUP OF WIRES IN A RIBBON CABLE.
- ② PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATIONS, PREFIX WITH UNIT AND/OR ASSEMBLY DESIGNATION.
- ③ J12 AND J13 ARE SOLDERED INTO AND ARE PART OF SIDEBOARD ASSEMBLY A25 (THERE IS NO MATING CONNECTOR FOR J12 OR J13).
- ④ P6 MATES WITH PINS ON ONE SIDE OF J8, A10P1 MATES WITH SOCKET ON OTHER SIDE OF J8 (OPPOSITE SIDES OF SIDEBOARD; EXAMPLE SHOWN).



TPA-7732-044

HF-8014A Exciter (622-3473-211),  
 Power Distribution, Block Diagram  
 Figure 13A (Sheet 4)

**MAINTENANCE (523-0770725-002218)**

**1. GENERAL**

Change last sentence in paragraph to the following; add figure 1A behind figure 1.

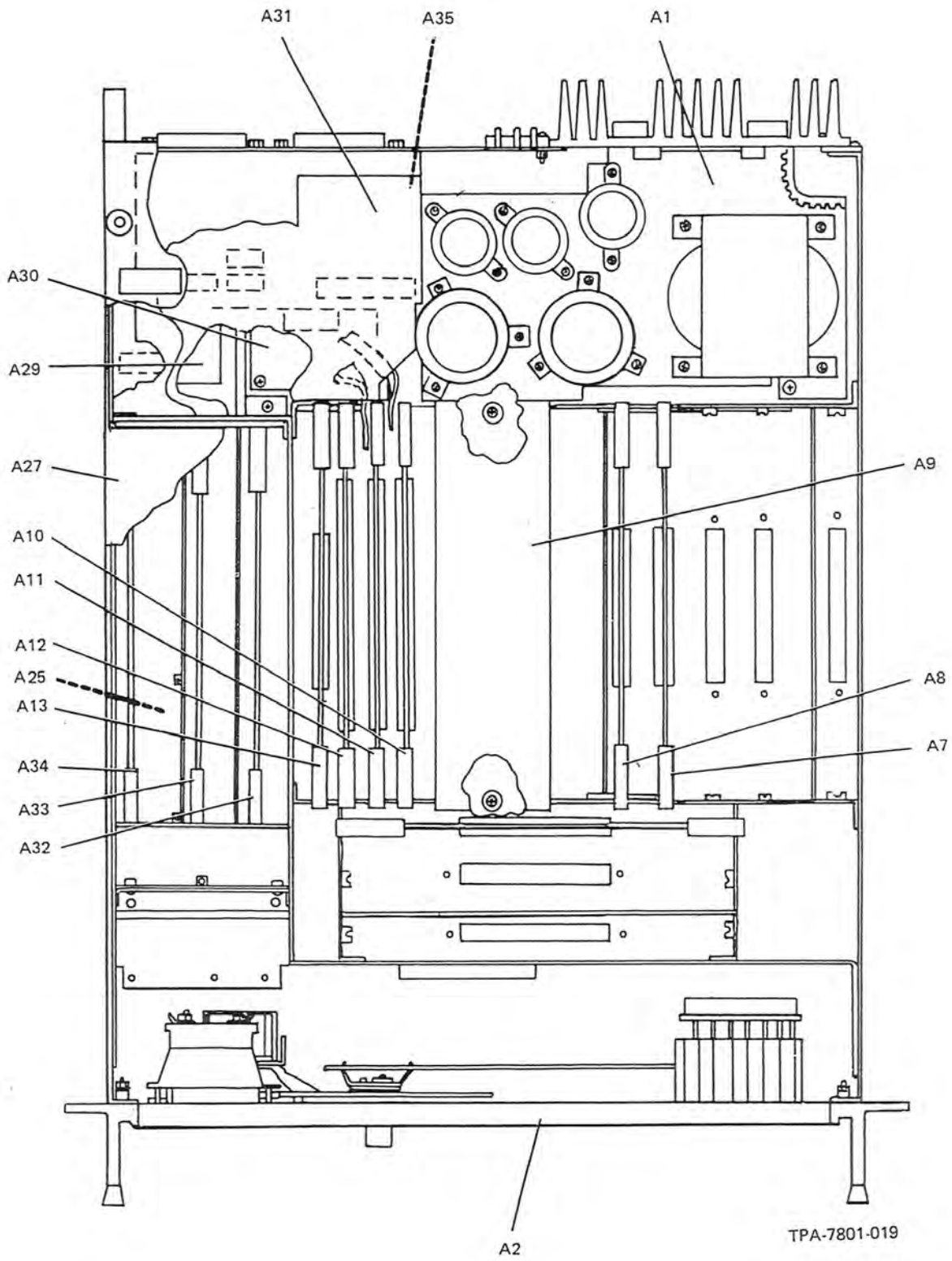
Figure 1 shows the location of HF-8014( ) Exciter subassemblies except for part number 622-3473-211, and figure 1A shows the HF-8014A Exciter subassemblies for part number 622-3473-211.

**3.1 Fault Isolation**

Substitute the appropriate steps in table 2 with the following steps for the HF-8014A Exciter (622-3473-211):

Table 2. Fault Isolation.

INDICATION	ISOLATION OF APPARENT FAILURE
<p>Exciter fault indicator lights</p> <p>No transmit rf output</p>	<p>c. Remove top cover from exciter and direct digital synthesizer.</p> <p>d. Monitor fault lights on synthesizer cards.</p> <p>e. If more than one card has indicator lighted, replace all cards with lighted indicator except DDS control interface. If fault does not clear, replace DDS control interface.</p> <p>a. Check for proper setup (local control, correct key, correct mode, correct frequency, etc).</p> <p>Set MODE switch to CW, PA PWR switch to STBY and KEY switch to LOCK. Change frequency to reset TGC circuit.</p> <p>With METER switch to XMIT OUT, meter should indicate full scale. If not, check that rf output cable is terminated properly and not damaged. If meter does not read full scale, replace rf translator A9. If fault still remains, replace channel A1 if AS.</p> <p>If meter does read full scale but no rf is output, replace injection blanker A35.</p>



HF-8014 Exciter (622-3473-211),  
Subassembly Location  
Figure 1A

### 3.2 Test Point, Voltage and Signal Levels

Replace the last sentence of Note with the sentence below. In table 3, none of the test points for cards/modules A14, A15, or A16 are applicable. Add the following test points to table 3.

In addition, to check direct digital synthesizer signal levels on cards A32 through A34, the synthesizer top cover must be removed.

Table 3. Test Point, Voltage, and Signal Levels.

CARD/MODULE	TEST POINT	FUNCTION	SIGNAL, DESCRIPTION
DDS Control interface A34	TP1	Clock summary fault	Fault = 0 V dc No fault = +5 V dc
	TP2	Processor fault out	Fault = 0 V dc No fault = +5 V dc
	TP3	Output loop fault	Fault = 0 V dc No fault = +5 V dc
	TP4	8-MHz fault	Fault = 0 V dc No fault = +5 V dc
	TP5	Fault summary	Fault = +5 V dc No fault = 0 V dc
	TP6	+5 V dc	+5 V dc
	TP7	Halt	+5 V dc
	TP8	Memory ready	+5 V dc
	TP9	IRQ	+5 V dc
	TP10	NMI	+5 V dc
	TP11	RAME	+5 V dc
Frequency standard/power supply A32	TP1	Ground	Ground
	TP2	LOL	Fault = +5 V dc No fault = 0 V
	TP3	+5 V dc	+5 V dc
	TP4	+20 V dc	+20 V dc
	TP5	+5 V dc	+5 V dc
Injection blanker A35	TP1		Disabled — approx 0.5 to 1 V dc. Enabled — triangular waveform with 300-400 $\mu$ s dead time between pulse, approx 5 V amplitude.
	TP2		Disabled — approx 0.8 V dc. Enabled — inverted TP1 signal with amplitude approx 0.8 V dc.
	TP3		Disabled — approx 0.8 V dc. Enabled — inverted TP2 signal.

**3.3 Testing/Troubleshooting Procedures**

Add tests 14A, 15A, 15B, and 17A immediately following tests 14, 15, and 17, respectively.

**Note**

Since the HF-8014A Exciter (622-3473-211) is a 2-channel exciter, disregard all references in table 5 to A2 or B2 if channels or transmit audio A3.

**Table 5. HF-8014A Exciter (622-3473-211), Detailed Performance Test Procedures (Cont).**

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
14A. Frequency accuracy	a. Set front panel controls as follows:		
	PWR                   On		
	METER                XMT OUT		
	PA PWR              OFF		
	KEY                   EXT		
	PEAK CLIP           OFF		
	PILOT CARR         OFF		
	MODE                CW		
	CHANNEL ENABLE    A1 OFF B1 OFF		
	CONT                LCL		
	b. Connect frequency counter through a 50-ohm adapter to XMT OUT jack J22 on rear panel.		
	c. Set KEY to LOCK and check frequency accuracy at each of the following frequencies:		Check direct digital synthesizer A27 and frequency switchboard A2A3.
	FREQUENCY kHz	FREQUENCY COUNTER DISPLAY	
		kHz	ACCURACY*
	10 000.0	10 000.00	±1 Hz at all frequencies.
	11 111.1	11 111.10	
	22 222.2	22 222.20	
	3 333.3	3 333.30	
	4 444.4	4 444.40	
	5 555.5	5 555.50	
	6 666.6	6 666.60	
(Cont)			



Table 5. HF-8014A Exciter (622-3473-211), Detailed Performance Test Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
14A. (Cont)	FREQUENCY kHz	FREQUENCY COUNTER DISPLAY	
		kHz	ACCURACY*
	7 777.7 8 888.8 29 999.9	7 777.70 8 888.80 29 999.90	
	*This accuracy is only for those exciters equipped with direct digital synthesizer (652-6615-001).		
	d. Press PWR switch to turn exciter OFF.		
15A. Remote control	<p>a. Set front panel controls as follows:</p> <p>PWR Off</p> <p>METER XMT OUT</p> <p>PA PWR OFF</p> <p>KEY EXT</p> <p>PEAK CLIP OFF</p> <p>PILOT CARR OFF</p> <p>MODE CW</p> <p>CHANNEL ENABLE A1 OFF B1 OFF</p> <p>CONT LCL</p> <p>b. Connect a compatible remote control and parallel input device to unit under test.</p> <p>c. Set exciter PWR to ON and initiate a FREQUENCY change to clear the EXCITER fault.</p> <p>d. Set remote control PWR to ON and make changes to the following exciter control front panel controls:</p> <p>MODE switch</p> <p>CHANNEL ENABLE switches</p> <p>PILOT CARR switch</p> <p>PEAK CLIP switch</p> <p>KEY switch</p>	<p>EXCITER fault indicator is extinguished.</p> <p>Changing of exciter control front panel controls has no effect on the unit under test displays/ indicators.</p>	<p>Check control A10 and LED status display A2A5.</p> <p>Check parallel input A11, parallel output A12, and serial interface A13.</p>
(Cont)			

Table 5. HF-8014A Exciter (622-3473-211), Detailed Performance Test Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
15A. (Cont)	<p>e. Set the remote control front panel controls as follows:</p> <p>PWR to ON            CONT to NORM            PEAK CLIP to OFF            PILOT CARR to OFF            CHANNEL ENABLE                A1 to OFF                A2 to OFF                B1 to OFF                B2 to OFF            KEY to NORM            MODE to AM</p> <p>f. Set exciter CONT switch to REM.</p> <p>g. Make changes to the following exciter controls:</p> <p>MODE switch            PEAK CLIP switch            PILOT CARR switch            KEY switch            FREQUENCY KHZ switches</p> <p>h. Change remote control FREQUENCY switches.</p> <p>i. Place remote control PILOT CARR switch to ON.</p> <p>j. Place remote control PEAK CLIP to ON.</p> <p>k. Place remote control MODE switch to ISB.</p> <p>l. Place remote control CHANNEL ENABLE switches:</p> <p>    A1 to LINE                B1 to LINE</p> <p>m. Initiate frequency change from parallel input device.</p>	<p>Faults do not light. AM indicator lights.</p> <p>Changing of unit under test controls has no effect on the unit under test displays/indicators.</p> <p>Unit under test display changes with change in setting of FREQUENCY switches.</p> <p>Unit under test PILOT CARR indicator lights.</p> <p>Unit under test PEAK CLIP indicator lights.</p> <p>Unit under test ISB indicator lights.</p> <p>The following unit under test ISB MODE indicators light:</p> <p>A1            B1</p> <p>Unit under test display changes to new frequency.</p>	<p>Same as step d.</p> <p>Same as step d.</p> <p>Check serial interface A13 and parallel output A12.</p> <p>Same as step h.</p> <p>Same as step h.</p> <p>Same as step h.</p> <p>Same as step h.</p> <p>Check parallel interface A31, control A10, direct digital synthesizer A27.</p>
(Cont)			

Table 5. HF-8014A Exciter (622-3473-211), Detailed Performance Test Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL																								
15A. (Cont)	<p>n. Initiate mode change from parallel input device.</p> <p>o. Repeat step h.</p> <p>p. Initiate PILOT CARR to ON from parallel input device.</p> <p>q. Initiate PEAK CLIP to ON from parallel input device.</p> <p>r. Initiate MODE to AM from parallel input device.</p> <p>s. Turn off power to remote control, parallel input device, and exciter.</p>	<p>Unit under test display changes to mode selected.</p> <p>Same as step h.</p> <p>Unit under test PILOT CARR indicator lights.</p> <p>Unit under test PEAK CLIP indicator lights.</p> <p>Unit under test AM indicator lights, ISB MODE indicators extinguish.</p>	<p>Same as step m.</p> <p>Check control A10, serial interface A13, parallel interface A31.</p> <p>Check control A10, parallel interface A31.</p> <p>Same as step p.</p> <p>Same as step p.</p>																								
15B. Processor control	<p>a. Set front panel controls as follows:</p> <table style="margin-left: 40px;"> <tr> <td>PWR</td> <td>Off</td> </tr> <tr> <td>METER</td> <td>XMT OUT</td> </tr> <tr> <td>PA PWR</td> <td>OFF</td> </tr> <tr> <td>KEY</td> <td>EXT</td> </tr> <tr> <td>PEAK CLIP</td> <td>OFF</td> </tr> <tr> <td>PILOT CARR</td> <td>OFF</td> </tr> <tr> <td>MODE</td> <td>CW</td> </tr> <tr> <td>CHANNEL ENABLE</td> <td>A1 OFF</td> </tr> <tr> <td></td> <td>B1 OFF</td> </tr> <tr> <td></td> <td>B2 OFF</td> </tr> <tr> <td></td> <td>A2 OFF</td> </tr> <tr> <td>CONT</td> <td>LCL</td> </tr> </table> <p>b. Connect frequency counter to XMT OUT jack J22 on rear panel. Apply power to frequency counter.</p> <p>c. Connect a compatible processor to J58/A31P2 DDS INPUT.</p>	PWR	Off	METER	XMT OUT	PA PWR	OFF	KEY	EXT	PEAK CLIP	OFF	PILOT CARR	OFF	MODE	CW	CHANNEL ENABLE	A1 OFF		B1 OFF		B2 OFF		A2 OFF	CONT	LCL		
PWR	Off																										
METER	XMT OUT																										
PA PWR	OFF																										
KEY	EXT																										
PEAK CLIP	OFF																										
PILOT CARR	OFF																										
MODE	CW																										
CHANNEL ENABLE	A1 OFF																										
	B1 OFF																										
	B2 OFF																										
	A2 OFF																										
CONT	LCL																										
(Cont)	d. Turn processor ON.																										

Table 5. HF-8014A Exciter (622-3473-211), Detailed Performance Test Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
15B. (Cont)	e. Set the exciter control front panel controls as follows: PWR to ON CONT to NORM PEAK CLIP to OFF PILOT CARR to OFF CHANNEL ENABLE A1 to OFF A2 to OFF B1 to OFF B2 to OFF KEY to NORM MODE to CW  f. Set unit under test CONT switch to REM.  g. Initiate a frequency change with processor.  h. Repeat step g over entire frequency spectrum.  i. Turn off power to exciter and frequency counter.	     Faults do not light. AM indicator lights.  Frequency counter should reflect new frequency.  Same as step g.	     Check parallel interface A31 and control A10.  Check parallel interface A31, control A10, direct digital synthesizer A27.  Same as step g.
17A. Tune starts	a. Set front panel controls as follows:  PWR                      Off METER                  XMT OUT PA PWR                OFF KEY                    EXT PEAK CLIP            OFF PILOT CARR            OFF MODE                  CW  CHANNEL ENABLE      A1 OFF B1 OFF B2 OFF A2 OFF		
(Cont)	CONT                   LCL		

Table 5. HF-8014A Exciter (622-3473-211), Detailed Performance Test Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL										
17A. (Cont)	<p>b. Connect an oscilloscope to J15 pin 26.</p> <p>c. Apply power to exciter. Change frequency on front panel controls.</p> <p>d. Connect oscilloscope to the following pins, then change frequency on the front panel:</p> <p style="margin-left: 40px;">J15 pin 8</p> <p style="margin-left: 40px;">J15 pin 9</p> <p style="margin-left: 40px;">J15 pin 26</p> <p style="margin-left: 40px;">J16 pin 1</p> <p>e. Ground pin 8 of J57/A31P1 on rear panel.</p> <p>f. Monitor J15 pin 26 with oscilloscope while changing frequency on front panel.</p> <p>g. Ground the following pins of J57/A31P1 while monitoring the pins listed:</p> <table style="margin-left: 40px; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>GROUND PIN</u> <u>OF J57/A31P1</u></th> <th style="text-align: left;"><u>MONITOR PIN</u></th> </tr> </thead> <tbody> <tr> <td>24</td> <td>J15 pin 8</td> </tr> <tr> <td>23</td> <td>J15 pin 9</td> </tr> <tr> <td>50</td> <td>J15 pin 26</td> </tr> <tr> <td>50</td> <td>J16 pin 1</td> </tr> </tbody> </table> <p>h. Turn off power to exciter.</p>	<u>GROUND PIN</u> <u>OF J57/A31P1</u>	<u>MONITOR PIN</u>	24	J15 pin 8	23	J15 pin 9	50	J15 pin 26	50	J16 pin 1	<p>A tune start pulse should appear on scope.</p> <p>Same as step c.</p> <p>No tune start pulse should appear.</p> <p>Same as step f.</p>	<p>Check direct digital synthesizer A27.</p> <p>Same as step c.</p> <p>Check parallel interface A31.</p> <p>Same as step f.</p>
<u>GROUND PIN</u> <u>OF J57/A31P1</u>	<u>MONITOR PIN</u>												
24	J15 pin 8												
23	J15 pin 9												
50	J15 pin 26												
50	J16 pin 1												

**4.1.3 CHAN A2 XMT LINE ADJ (A3R53)**

Not applicable.

**4.1.4 CHAN B2 XMT LINE ADJ (A3R130)**

Not applicable.

**4.5 Frequency Adjustment (Synthesizer Reference A16)**

Not applicable.

**4.6.2 Transmit Audio Meter Adjustments (Transmit Audio A3)**

Not applicable.

## 5.1 Disassembly

Add the following text at the end of first paragraph. Add paragraph 5.1.6 between paragraphs 5.1.5 and 5.2.

The circuit card/modules of the direct digital synthesizer may be removed by removing the top cover of the direct digital synthesizer and extracting the circuit card/modules as any other plug-in circuit card.

### 5.1.6 Parallel Interface A31

- a. Remove unit top cover.
- b. Remove two attaching screws and associated hardware.
- c. Disconnect jacks from P3, P4, P6, P7, and P8. Be sure to properly label jacks.
- d. Carefully remove circuit card from exciter.

## 5.2 Assembly

Add paragraph 5.2.5 after paragraph 5.2.4.

### 5.2.5 Parallel Interface A31

- a. Carefully slide circuit card into position in retaining bracket, ensuring proper positioning of A31P1 and A31P2 on rear of exciter.
- b. Connect all appropriate jacks to P3, P4, P5, P6, P7, and P8.
- c. Install and tighten six attaching screws and hardware.
- d. Install top cover on exciter.

## 6. REPAIR

Replace existing paragraph with following text.

Repair of the HF-8014( ) Exciter consists of replacing subassemblies and chassis-mounted components. Use standard shop practices to replace chassis-mounted components. For circuit card repair, refer to the Circuit Card Repair Instructions (523-0772831) of the HF-80 Exciters, Receivers, and Controls Depot Maintenance instruction book (523-0772963).

### PARTS LIST (523-0770726-002218)

Differences in the parts list for HF-8014A Exciter, 622-3473-211, from those presently listed for the existing statuses are described below.

#### 1.7 Manufacturer's Code, Name, and Address

Correct the name and address for manufacturer's code 13499 and add the remaining manufacturer's codes, names, and addresses.

<u>MFR CODE</u>	<u>MANUFACTURER'S NAME AND ADDRESS</u>	<u>MFR CODE</u>	<u>MANUFACTURER'S NAME AND ADDRESS</u>
02660	Bunker Ramo-Eltra Corp Amphenol Div 2801 S 25th Ave Broadview, IL 60153	77969	Rubbercraft Corp of Calif Ltd 1800 W 220th St P O Box B Torrance, CA 90507
13499	Rockwell International Corporation Defense Electronics Operations Collins Defense Communications Division 350 Collins Road NE Cedar Rapids, IA 52498	79807	Wrought Washer Mfg Inc 2100 S Bay St Milwaukee, WI 53207
55616	Elfab Corp 4200 Wiley Post Rd P O Box 34555 Dallas, TX 75234	80205	National Aerospace Standard
55943	Transcon Mfg Co Amrad Div 349 Bonham St P O Box 876 Paris, TX 75460	81349	Military Specifications
57863	North American Specialties Corp 120-12 28th Ave Flushing, NY 11354	81483	International Rectifier 9220 Sunset Blvd P O Box 2321 Terminal Annex Los Angeles, CA 90454
77250	Allied Products Corp Pheoll Mfg Co Div 5700 W Roosevelt Rd Chicago, IL 60650	96906	Military Standards
		98291	Seaelectro Corp 225 Hoty Mamaroneck, NY 10544

### 1.8 Reference Designation Prefixes

Add the following reference designators, part numbers, and figure references to the existing list.

<u>PREFIX</u>	<u>UNIT PART NUMBER</u>	<u>FIG-ITEM</u>
A10	638-6622-004	1A-9
A11	642-3135-002	1A-8
A12	642-3137-002	1A-7
A24	659-2053-001	1A-76
A25	634-8211-002	1A-36
A27	652-6615-001	1A-33
A31	646-6329-001	1A-5A
A32	646-5930-001	1A-33D
A33	652-1015-002	1A-33C
A34	646-5905-003	1A-33B
A35	652-6861-001	1A-36A



### 1.9 Configuration Identifiers

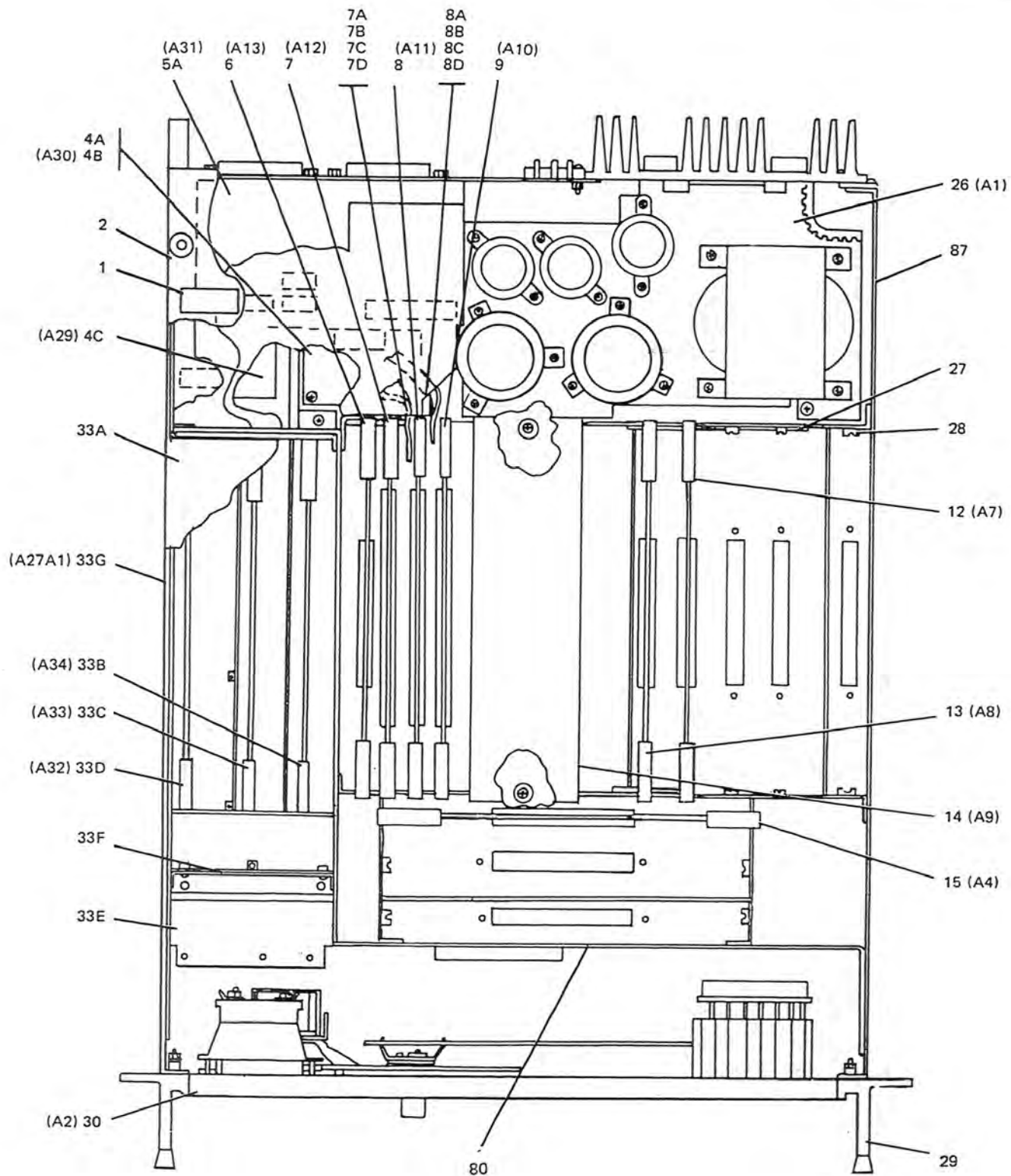
Add the following configuration identifiers, part numbers, and figure references to the existing list.

<u>CI/REV</u> <u>LETTER</u>	<u>UNIT</u> <u>PART NUMBER</u>	<u>FIG-ITEM</u>
AF	622-3473-211	1A-
B	652-7263-001	4A-

### 2. GROUP ASSEMBLY PARTS LIST

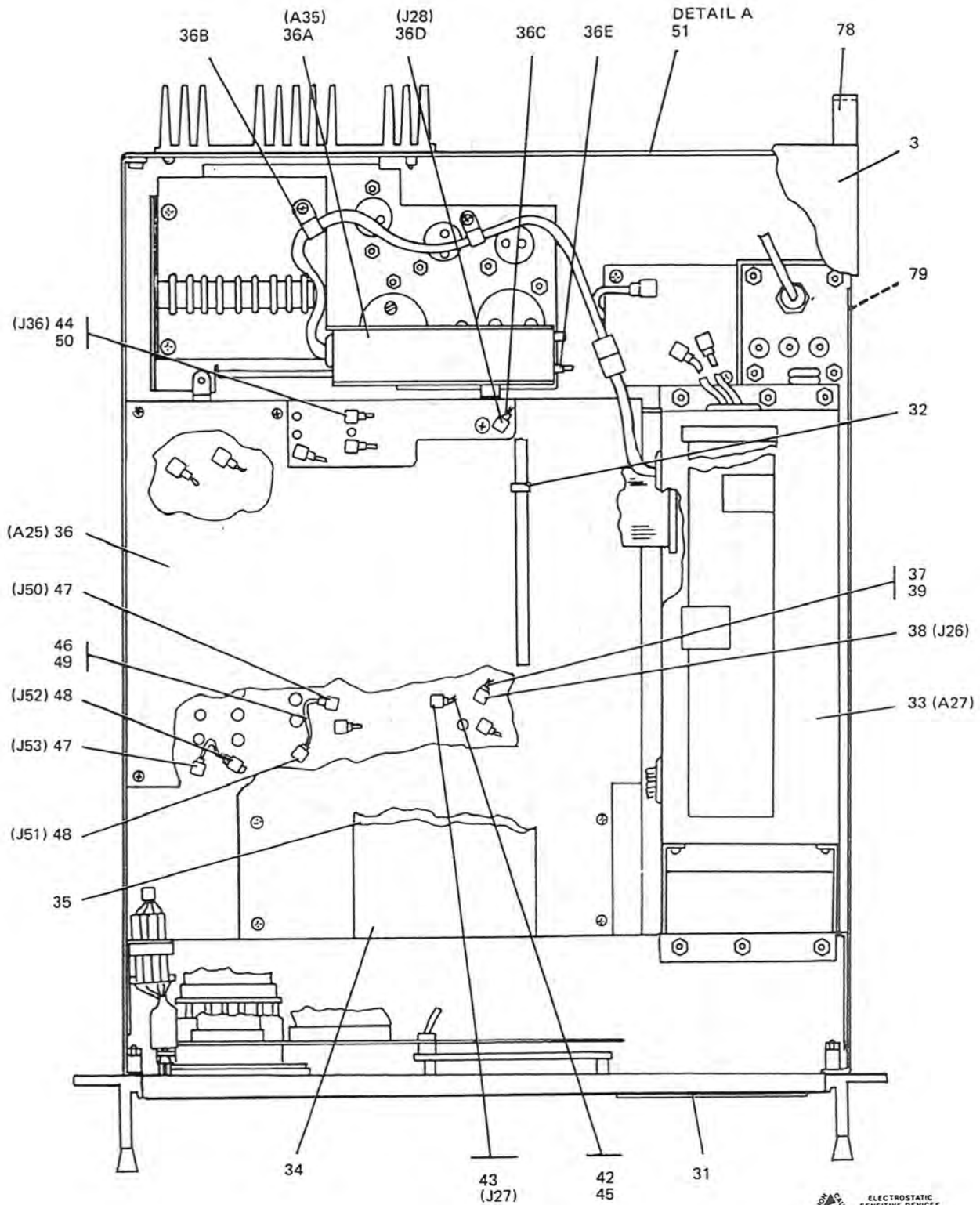
Add Figure 1A and associated Group Assembly Parts List for HF-8014A Exciter, 622-3473-211.

Add Figure 4A and associated Group Assembly Parts List for DDS Chassis Assembly A27A1, 652-7263-001.




 ELECTROSTATIC SENSITIVE DEVICES  
 OBSERVE PRECAUTIONS FOR HANDLING  
 TPA-7692-049

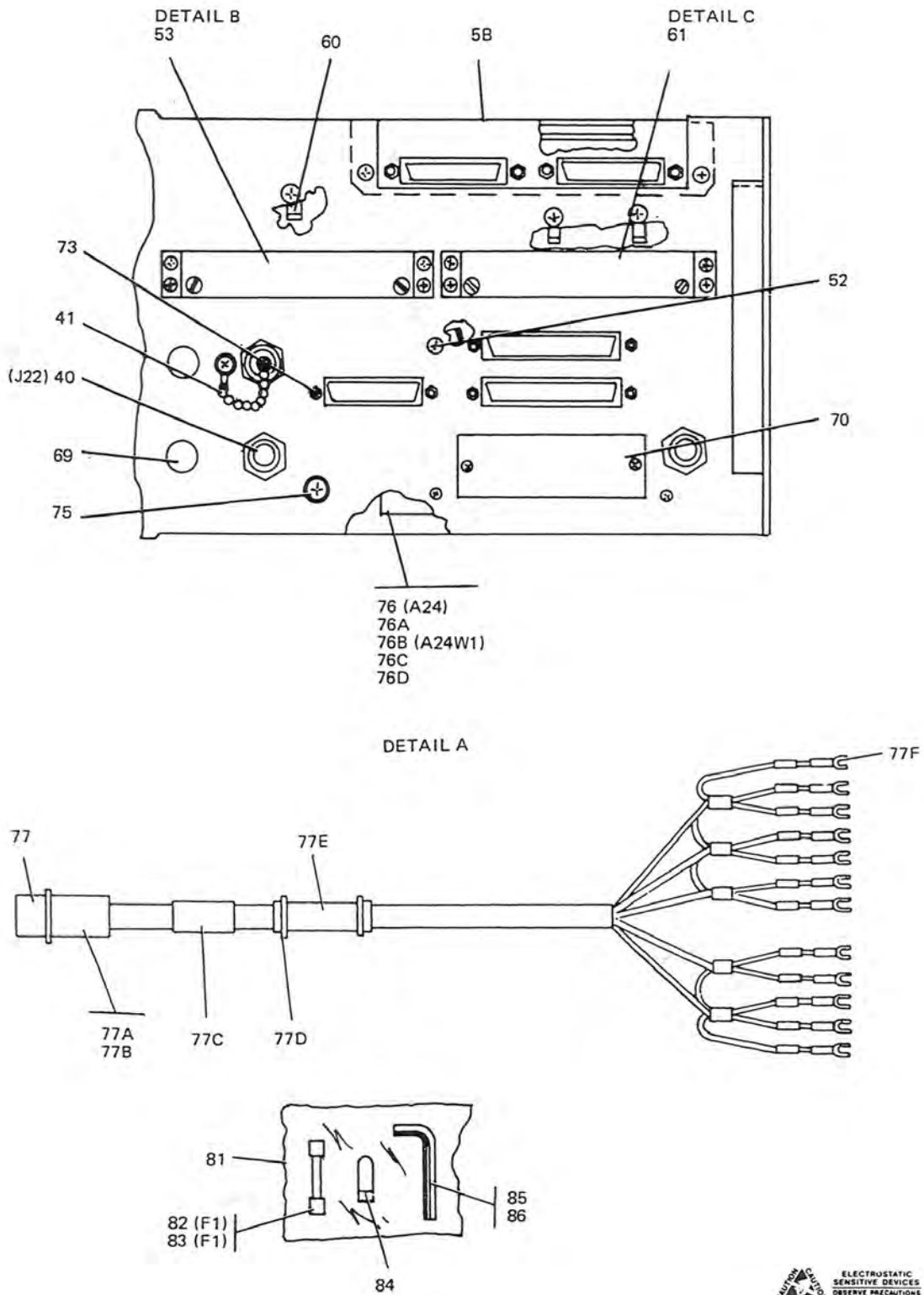
HF-8011A Exciter (622-3473-211)  
 Figure 1A (Sheet 1 of 4)



CAUTION  
ELECTROSTATIC SENSITIVE DEVICES  
OBSERVE PRECAUTIONS  
FOR HANDLING

TPA-7692-049

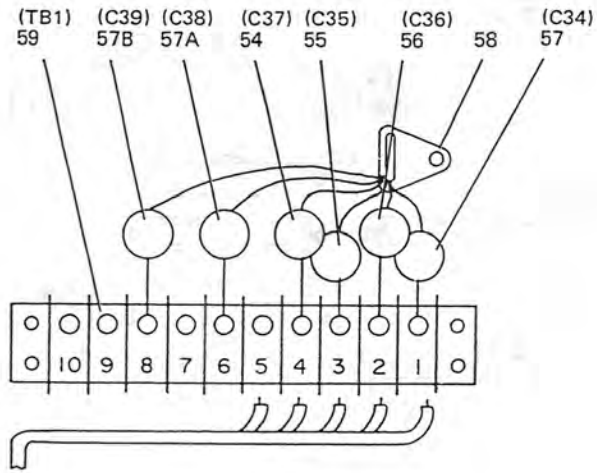
HF-8011A Exciter (622-3473-211)  
Figure 1A (Sheet 2)



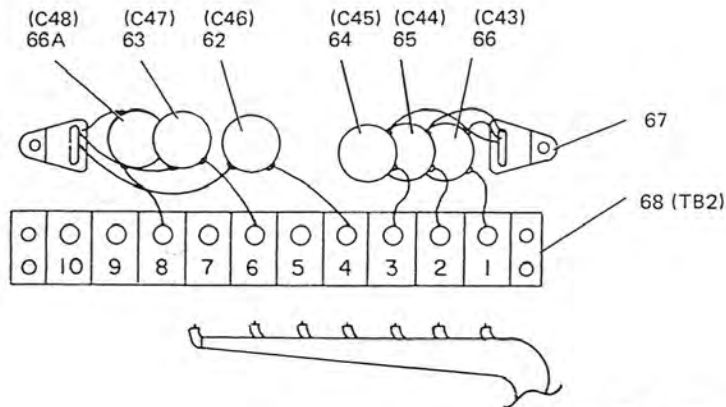
**CAUTION** ELECTROSTATIC SENSITIVE DEVICES OBSERVE PRECAUTIONS FOR HANDLING

TPA-7692-049

HF-8014A Exciter (622-3473-211)  
Figure 1A (Sheet 3)



DETAIL B



DETAIL C

CAUTION  
ELECTROSTATIC SENSITIVE DEVICES  
OBSERVE PRECAUTIONS  
FOR HANDLING

TPA-7692-049

HF-8014A Exciter (622-3173-211)  
Figure 1A (Sheet 4)

## GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDEX	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
1A-	622-3473-211		1 EXCITER,HF-8014A	1	
1	280-1368-350		2 LABEL,PRESSURE (12998)	1	
2	634-8181-002		2 COVER, TOP	1	
3	634-8179-001		2 COVER, BOTTOM	1	
	MS51957-28		2 SCREW, MACH SST, 6-32 X 3/8 (96906) 343-0169-000 (AP FOR 2,3)	13	
	MS51957-30		2 SCREW, MACH SST, 6-32 X 1/2 (96906) 343-0171-000 (AP FOR 2)	2	
4			NOT USED		
4A	652-1966-001		2 KIT, OVEN OSCILLATOR/FREQUENCY STANDARD SWITCH	1	
4B	646-6558-001		3 SWITCH, FREQUENCY STANDARD A30	1	
4C	637-9135-001		3 OSCILLATOR, OVEN A29	1	
	NAS671C6		3 NUT, PLAIN, HEXAGON CRES, 0.138-32 (80205) 313-0045-000 (AP)	3	
	MS35338-98		3 WASHER, SPRING CD PL BRZ, 0.141 ID X 0.250 OD (96906) 310-0096-000 (AP)	3	
	MS51957-28		3 SCREW, MACHINE CRES, 0.138-32 X 0.375IN (96906) 343-0169-000 (AP)	1	
	MS51959-28		3 SCREW, MACHINE CRES, 6-32 X 3/8 (96906) 342-0062-000 (AP)	2	
5			NOT USED		
5A	646-6329-001		2 INTERFACE, PARALLEL (ESDS) A31	1	
	M24308/26-1		2 SCREW, ASMBLD CLIP (81349) 371-0062-000 (AP)	2	
	MS51957-15		2 SCREW, MACH STL, 4-40 X 3/8 (96906) 343-0135-000 (AP)	2	
	MS35338-135		2 WASHER, LOCK SST, 0.115 ID X 0.209 OD (96906) 310-0279-000 (AP)	2	
	CRES 0.125IDX0.281OD		2 WASHER, FLAT CRES, 0.125 ID X 0.281 OD (79807) 310-6340-000 (AP)	2	
5B	652-7372-001		2 SUPPORT, CIRCUIT CARD	1	
	MS51957-28		2 SCREW, MACHINE CRES, 0.138-32 X 0.375IN (96906) 343-0169-000 (AP)	2	
6	638-6896-001		2 SERIAL INTERFACE (ESDS) A13	1	
7	642-3137-002		2 OUTPUT, PARALLEL (ESDS) A12	1	
7A	652-7408-001		2 CABLE, RIBBON	1	
7B	499568-1		3 CONNECTOR, PLUG ELEC (00779) 372-2648-020	1	
7C	499568-1		3 CONNECTOR, PLUG ELEC (00779) 372-2648-020	1	
7D	86286-1		3 PLUG, KEYING (00779) 372-2641-010	1	
8	642-3135-002		2 INPUT, PARALLEL (ESDS) A11	1	
8A	652-7408-001		2 CABLE, RIBBON	1	
8B	499568-1		3 CONNECTOR, PLUG ELEC (00779) 372-2648-020	1	
8C	499568-1		3 CONNECTOR, PLUG ELEC (00779) 372-2648-020	1	
8D	86286-1		3 PLUG, KEYING (00779) 372-2641-010	1	
9	638-6622-004		2 CONTROL (ESDS) A10	1	
10			NOT USED		
11			NOT USED		
12	638-6636-001		2 CHANNEL B1 IF (ESDS) A7	1	
13	638-6659-001		2 CHANNEL A1 IF (ESDS) A8	1	
14	637-1768-002		2 RF TRANSLATOR A9	1	
15	638-6476-001		2 A1-B1 TRANSMIT AUDIO (ESDS) A4	1	
16			NOT USED		
17			NOT USED		
18			NOT USED		
19			NOT USED		
20			NOT USED		
21			NOT USED		
22			NOT USED		
22A			NOT USED		
23			NOT USED		
24			NOT USED		
25			NOT USED		
26	635-9649-001		2 POWER SUPPLY A1	1	
27	634-8176-001		2 SHEET, CARD GUIDE	2	
	MS35649-244		2 NUT, PLAIN, HEX SST, 4-40 (96906) 313-0043-000 (AP)	8	

## GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	IDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
1A-	MS35338-135	2	WASHER, LOCK SST, 0.115 ID X 0.209 OD (96906) 310-0279-000 (AP)	8	
	CRES 0.112-40X0.31L	2	SCREW, MACHINE CRES, 0.112-40 X 0.31 (77250) 330-2291-000 (AP)	8	
	MS51957-13	2	SCREW, MACH STL, 4-40 X 1/4 (96906) 343-0133-000 (AP)	14	
28	23071-4	2	CARD GUIDE, PC (18677) 150-0810-040	16	
29	635-9616-001	2	FLANGE, CHASSIS	2	
	541-6106-002	2	SPACER, SLV (AP)	4	
	334-0268-000	2	NUT, HEXAGON, PLAIN PSVT CRES, 0.190-32 (AP)	4	
	MS35338-138	2	WASHER, LOCK SST, 0.194 ID X 0.334 OD (96906) 310-0284-000 (AP)	4	
	P312-0116-000	2	STUD, CONT THD STL, 10-32 X 1 (77250) 312-0116-000 (AP)	4	
30	634-8199-003	2	PANEL, FRONT A2 (SEE FIG 2)	1	
31	634-8192-001	2	INSERT, IDENT	1	
32	025-0250	2	CLAMP, CABLE (34785) 150-0873-010	8	
33	652-6615-001	2	SYNTHESIZER, DIRECT DIGITAL (ESDS) A27 (SEE FIG 4)	1	
	P313-0045-000	2	NUT, PLAIN, HEX SST, 6-32 (77250) 313-0045-000 (AP)	6	
	310-0071-000	2	WASHER, LOCK SST, 0.151 ID X 0.239 OD (79807) (AP)	6	
	CRES-.147IDX.312 ODX.032TH	2	WASHER, FLAT CRES, 0.147 ID X 0.312 OD (79807) 310-0046-000 (AP)	6	
	MS51957-28	2	SCREW, MACH SST, 6-32 X 3/8 (96906) 343-0169-000 (AP)	3	
	MS51957-30	2	SCREW, MACHINE CRES, 0.138-32 X 0.500IN (96906) 343-0171-000 (AP)	3	
33A	651-4502-001	3	COVER, TOP	1	
	MS51957-3	3	SCREW, MACH CD PL STL, 2-56 X 1/4 (96906) 343-0124-000 (AP)	4	
	MS35338-134	3	WASHER, LOCK SST, 0.088 ID X 0.172 OD (96906) 310-0275-000 (AP)	4	
33B	646-5905-003	3	INTERFACE, DDS CONTROL (ESDS) A34	1	
33C	652-1015-002	3	VFO/VCO MODULE (ESDS) A33	1	
33D	646-5930-001	3	FREQUENCY STANDARD/ POWER SUPPLY (ESDS) A32	1	
33E	651-4506-001	3	BRACKET, EXTENDER	1	
	NAS671C6	3	NUT, PLAIN, HEXAGON CRES, 0.138-32 (80205) 313-0045-000 (AP)	4	
	CRES-.145IDX.236 OD	3	WASHER, LOCK CRES, 0.145 ID X 0.236 OD (79807) 310-0071-000 (AP)	4	
	CRES-.147IDX.312 ODX.032TH	3	WASHER, FLAT CRES, 0.147 ID X 0.312 OD (79807) 310-0046-000 (AP)	4	
	MS51957-28	3	SCREW, MACHINE CRES, 0.138-32 X 0.375IN (96906) 343-0169-000 (AP)	4	
33F	280-2745-040	3	LABEL, WARNING (12998)	1	
33G	652-7263-001	3	CHASSIS ASSEMBLY, DDS A27A1 (SEE FIG 4A)	1	
34	642-2455-001	2	GUARD, CABLE	1	
35	630-2189-001	2	GUARD, CABLE	1	
	115-0260-003	2	SPACER (74970) 150-1012-030 (AP FOR 34,35)	4	
36	634-8211-002	2	SIDEBOARD ASSEMBLY A25	1	
	MS51957-13	2	SCREW, MACH STL, 4-40 X 1/4 (96906) 343-0133-000 (AP)	16	
	MS35338-135	2	WASHER, LOCK SST, 0.115 ID X 0.209 OD (96906) 310-0279-000 (AP)	16	
	310-6340-000	2	WASHER, FLAT SST, 0.125 ID X 0.281 OD (79807) (AP)	8	
	540-9039-003	2	POST, ELEC-MECH (AP)	8	
36A	652-6861-001	2	BLANKER ASSEMBLY, INJECTION A35	1	
36B	610-0005	2	CLAMP, LOOP (55943) 150-1542-000	2	
	MS51957-31	2	SCREW, MACHINE CRES, 0.138-32 X 0.625IN (96906) 343-0173-000 (AP)	1	
	MS51958-63	2	SCREW, MACHINE CRES, 0.190-32 X 0.500IN (96906) 343-0228-000 (AP)	1	
	CRES-.147IDX.312 ODX.032TH	2	WASHER, FLAT CRES, 0.147 ID X 0.312 OD (79807) 310-0046-000 (AP)	1	
36C	652-7398-001	2	CABLE, RF	1	
36D	52-312-9040	3	CONNECTOR, RCPT ELEC (98291) 357-7207-220 J28	1	
36E	M39012-55-3006	3	CONNECTOR, PLUG ELEC (81349) 357-7499-020	1	

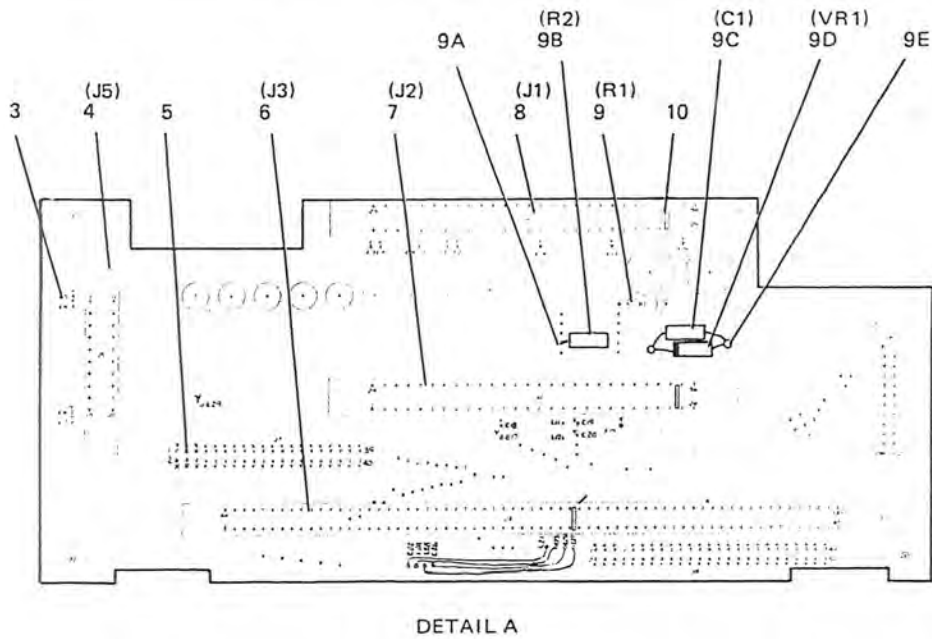
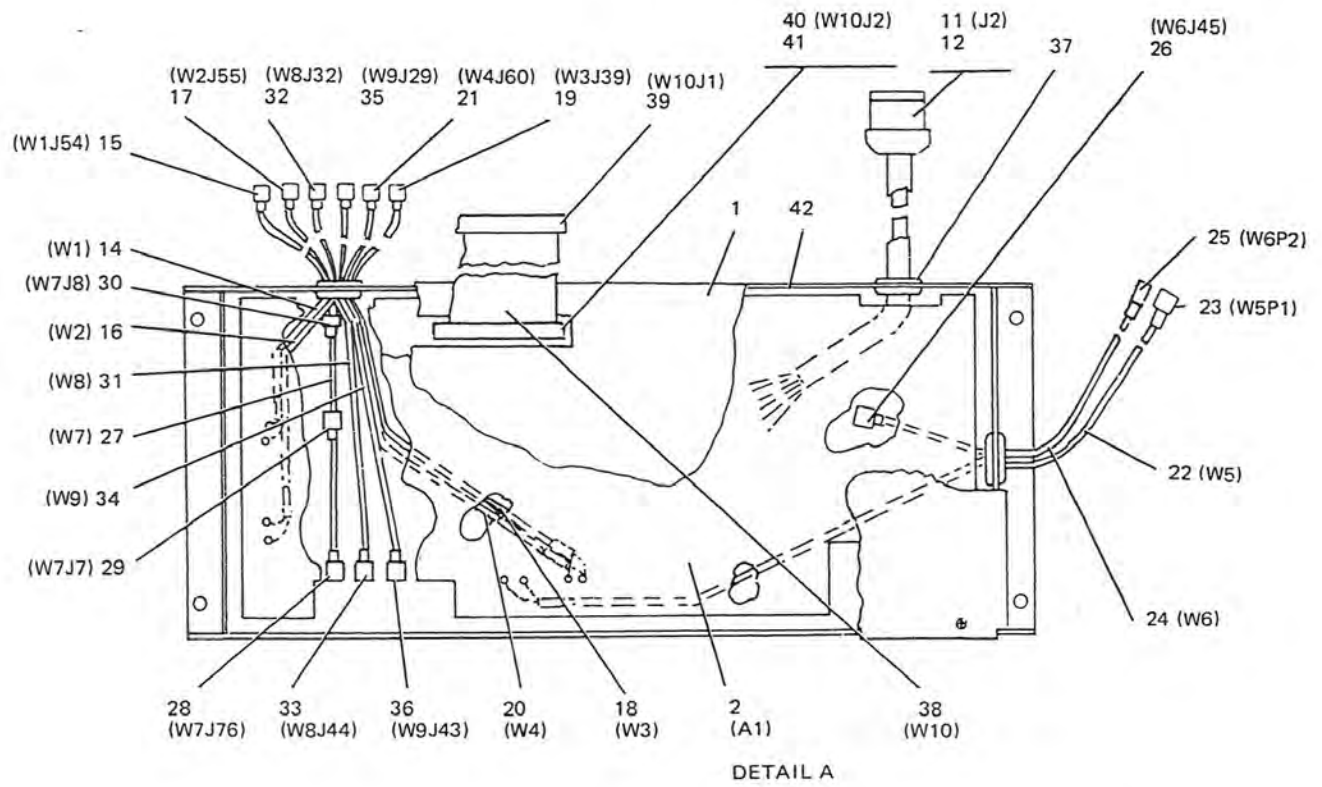


## GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
1A-37	637-1525-004	2	CABLE ASSY, RF COAXIAL	1	
38	52-312-9040	3	CONNECTOR,RCPT ELEC (98291) 357-7207-220 J26	1	
39	RG178BU	3	CABLE,RF (81349) 425-1538-000	AR	
40	801-B3800B75	3	CONNECTOR,RCPT ELEC (94375) 357-7129-010 J22	1	
41	M39012-25-0006	2	COVER-CHAIN (81349) 357-9069-000	1	
	MS51957-29	2	SCREW,MACH SST, 6-32 X 7/16 (96906) 343-0170-000 (AP)	1	
	310-6340-000	2	WASHER,FLAT SST, 0.125 ID X 0.281 OD (79807) (AP)	1	
	310-0071-000	2	WASHER,LOCK SST, 0.151 ID X 0.239 OD (79807) (AP)	1	
	P313-0045-000	2	NUT,PLAIN,HEX SST, 6-32 (77250) 313-0045-000 (AP)	1	
42	637-1526-003	2	CABLE ASSY, RF COAXIAL	1	
43	52-312-9040	3	CONNECTOR,RCPT ELEC (98291) 357-7207-220	1	
44	52-312-9040	3	CONNECTOR,RCPT ELEC (98291) 357-7207-220	1	
45	RG178BU	3	CABLE,RF (81349) 425-1538-000	AR	
46	642-2454-001	2	CABLE ASSY	1	
	055-905-0069	2	FLOAT,CONNECTOR (98291) 357-8985-020 (AP)	2	
47	51-330-3188	3	CONNECTOR,RCPT ELEC (98291) 357-7374-010 J50 J53	2	
48	51-071-0019	3	CONNECTOR,TEE (98291) 357-7533-010 J51 J52	2	
49	12-954	3	CABLE,RF (27478) 425-0217-010	AR	
50	623-1379-001	2	BUSHING,COAX	15	
51	652-7266-001	2	PANEL,REAR	1	
	MS51957-29	2	SCREW,MACH SST, 6-32 X 7/16 (96906) 343-0170-000 (AP)	7	
	MS51958-61	2	SCREW,MACH SST, 10-32 X 3/8 (96906) 343-0226-000 (AP)	2	
52	403	2	TERMINAL,LUG (79963) 304-1089-000	1	
	NAS671C6	2	NUT,PLAIN,HEXAGON CRES, 0.138-32 (80205)	1	
			313-0045-000 (AP)		
	CRES-.145IDX.236	2	WASHER,LOCK CRES, 0.145 ID X 0.236 OD (79807)	1	
	OD		310-0071-000 (AP)		
	MS51957-28	2	SCREW,MACHINE CRES, 0.138-32 X 0.375IN (96906)	1	
			343-0169-000 (AP)		
53	642-2408-001	2	HARNES, WIRING	1	
	P313-0045-000	2	NUT,PLAIN,HEX SST, 6-32 (77250) 313-0045-000 (AP)	2	
	310-0071-000	2	WASHER,LOCK SST, 0.151 ID X 0.239 OD (79807) (AP)	2	
	MS51957-28	2	SCREW,MACHINE CRES, 0.138-32 X 0.375IN (96906)	4	
			343-0169-000 (AP)		
54	CK63AW103M	3	CAPACITOR,FXD CER DIE, 10000PF, 20%, 500V (81349)	1	
			913-1188-000 C37		
55	CK63AW103M	3	CAPACITOR,FXD CER DIE, 10000PF, 20%, 500V (81349)	1	
			913-1188-000 C35		
56	CK63AW103M	3	CAPACITOR,FXD CER DIE, 10000PF, 20%, 500V (81349)	1	
			913-1188-000 C36		
57	CK63AW103M	3	CAPACITOR,FXD CER DIE, 10000PF, 20%, 500V (81349)	1	
			913-1188-000 C34		
57A	CK63AW103M	3	CAPACITOR,FXD CER DIE, 10000PF, 20%, 500V (81349)	1	
			913-1188-000 C38		
57B	CK63AW103M	3	CAPACITOR,FXD CER DIE, 10000PF, 20%, 500V (81349)	1	
			913-1188-000 C39		
58	403	3	TERMINAL,LUG (79963) 304-1089-000	1	
59	353-18-10-001	3	TERMINAL STRIP (71785) 367-0018-000 TBI	1	
60	403	2	TERMINAL,LUG (79963) 304-1089-000	3	
	NAS671C6	2	NUT,PLAIN,HEXAGON CRES, 0.138-32 (80205)	3	
			313-0045-000 (AP)		
	CRES-.145IDX.236	2	WASHER,LOCK CRES, 0.145 ID X 0.236 OD (79807)	3	
	OD		310-0071-000 (AP)		
	MS51957-28	2	SCREW,MACHINE CRES, 0.138-32 X 0.375IN (96906)	3	
			343-0169-000 (AP)		
61	642-2407-001	2	HARNES, WIRING	1	
	P313-0045-000	2	NUT,PLAIN,HEX SST, 6-32 (77250) 313-0045-000 (AP)	6	
	310-0071-000	2	WASHER,LOCK SST, 0.151 ID X 0.239 OD (79807) (AP)	6	
	MS51957-30	2	SCREW,MACH SST, 6-32 X 1/2 (96906) 343-0171-000 (AP)	4	
62	CK63AW103M	3	CAPACITOR,FXD CER DIE, 10000PF, 20%, 500V (81349)	1	
			913-1188-000 C46		
63	CK63AW103M	3	CAPACITOR,FXD CER DIE, 10000PF, 20%, 500V (81349)	1	
			913-1188-000 C47		

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	IN-IDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
1A-64	CK63AW103M	3	CAPACITOR,FXD CER DIEI, 10000PF, 20%, 500V (81349) 913-1188-000 C45	1	
65	CK63AW103M	3	CAPACITOR,FXD CER DIEI, 10000PF, 20%, 500V (81349) 913-1188-000 C44	1	
66	CK63AW103M	3	CAPACITOR,FXD CER DIEI, 10000PF, 20%, 500V (81349) 913-1188-000 C43	1	
66A	CK63AW103M		CAPACITOR,FXD CER DIEI, 10000PF, 20%, 500V (81349) 913-1188-000 C48		
67	403	3	TERMINAL,LUG (79963) 304-1089-000	2	
68	353-18-10-001	3	TERMINAL STRIP (71785) 367-0018-000 TB2	1	
69	P500	2	BUTTON,PL PLSTC (28520) 308-0312-020	2	
70	642-0020-000	2	PLATE, IDENT	1	
	MS51957-11	2	SCREW,MACH STL, 4-40 X 1/8 (96906) 343-0131-000 (AP)	2	
71			NOT USED		
72			NOT USED		
73	M24308-26-1	2	SCREW ASSY (81349) 371-0062-000	1	
74			NOT USED		
75	P343-0311-000	2	SCREW,MACH NP BRS, 8-32 X 1/2 (77250) 343-0311-000	1	
	MS35338-99	2	WASHER,SPRING CD PL BRZ, 0.168 ID X 0.293 OD (96906) 310-0098-000 (AP)	1	
	310-0057-000	2	WASHER,FLAT BRS, 0.172 ID X 0.375 OD (79807) (AP)	1	
76	659-2053-001	2	FILTER,RFI-MODIFIED A24	1	
	540-9006-003	2	POST,ELEC-MECH (AP)	2	
	MS51957-3	2	SCREW,MACH CD PL STL, 2-56 X 1/4 (96906) 343-0124-000 (AP)	4	
	MS35338-134	2	WASHER,LOCK SST, 0.088 ID X 0.172 OD (96906) 310-0275-000 (AP)	2	
	M24308/26-1	2	SCREW,ASMBLD CLIP (81349) 371-0062-000 (AP)	2	
76A	637-2712-001	3	FILTER,RFI (SEE FIG 6)	1	
76B	652-2222-001	3	CABLE,RIBBON A24W1	1	
76C	499568-1	4	CONNECTOR,PLUG ELEC (00779) 372-2648-020	1	
76D	86286-1	4	PLUG,KEYING (00779) 372-2641-010	1	
77	652-7203-001	2	CABLE,INTERFACE - EXCITER TERMINAL BOARD	1	
77A	MS3121F14-19S	3	CONNECTOR,PLUG ELEC (96906) 359-0062-230	1	
77B	M39029/32-259	3	CONTACT,SOCKET (81349) 359-0032-020	19	
77C	651-7856-081	3	MARKER,IDENT	1	
77D	MS3367-5-9	3	CLAMP LOOP (96906) 435-0002-090	2	
77E	652-7217-009	3	MARKER,IDENT	1	
77F	52929	3	TERMINAL,LUG (00779) 304-1531-030	12	
78	637-9121-001	2	SUPPORT	1	
	P325-0051-000	2	SCREW,MACH STL, 10-32UNF-2A X 1/2 (77250) 325-0051-000 (AP)	2	
79	637-9295-001	2	LABEL,FEATURE	1	
80	280-2745-020	2	LABEL,PRESS SENS (12998)	1	
81	637-1769-001	2	KIT,MAINTENANCE	1	
82	AGC250-1	3	FUSE,CRTG (71400) 264-0721-000 (F1)	5	
83	AGC250-2	3	FUSE,CRTG (71400) 264-0723-000 (F1)	5	
84	MS25237-327-15	3	LAMP,INCAND (96906) 262-1106-000	1	
85	024-0057-000	3	KEY,SCH SCR (08664)	1	
86	024-0058-000	3	KEY,SCH SCR (08664)	1	
87	634-8177-001	2	CHASSIS	1	



TPA-7726-019

DDS Chassis Assembly A27A1  
Figure 4A

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDEX	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
4A-	652-7263-001	1	CHASSIS ASSEMBLY, DDS A27A1 (SEE FIG 1-33G FOR NHA)	REF	
1	651-4499-001	2	COVER, DDS BOTTOM	1	
	MS51957-3	2	SCREW,MACH CD PL STL, 2-56 X 1/4 (96906)	6	
	MS35338-134	2	WASHER,LOCK SST, 0.088 ID X 0.172 OD (96906)	6	
			310-0275-000 (AP)		
2	646-6259-002	2	SIDEBBOARD, DDS A27A1A1	1	
	MS51957-15	2	SCREW,MACH STL, 4-40 X 3/8 (96906) 343-0135-000 (AP)	8	
	MS35338-135	2	WASHER,LOCK SST, 0.115 ID X 0.209 OD (96906)	8	
			310-0279-000 (AP)		
3	NA1104-026	3	CONTACT,ELECTRICAL (57863) 372-2601-026	17	
4	BS1225F10PFF	3	CONNECTOR,RCPT ELEC (55616) 372-7515-090 A27A1A1J5	1	
5	NA1104-046	3	CONTACT,ELECTRICAL (57863) 372-2601-046	90	
6	BS1020F65PAF010	3	CONNECTOR,RCPT ELEC (55616) 372-2274-050 A27A1A1J3	1	
7	BS1225F28PFF	3	CONNECTOR,RCPT ELEC (55616) 372-7515-010 A27A1A1J2	1	
8	BS1225F28PFF	3	CONNECTOR,RCPT ELEC (55616) 372-7515-010 A27A1A1J1	1	
9	RCR07G102KS	3	RESISTOR,FIXED CMPSN, 1K, 10%, 1/4W (81349)	1	
			745-0749-000 A27A1A1R1		
9A	NA1104-027	3	CONTACT,ELECTRICAL (57863) 372-2601-027	1	
9B	RCR32G331KS	3	RESISTOR,FIXED CMPSN, 330 OHMS, 10%, 1W (81349)	1	
			745-3331-000 A27A1A1R2		
9C	M39003/01-2257	3	CAPACITOR,FIXED ELCTLT, 33UF, 10%, 10V (81349)	1	
			184-9086-170 A27A1A1C1		
9D	IN756A	3	SEMICONV DEVICE (81483) 353-2720-000 A27A1A1VR1	1	
9E	012-3401-000599W	3	TERMINAL,FEEDTHRU (98291) 306-1851-000	2	
	HT				
10	5000-1710	3	CONNECTOR,RCPT ELEC (55616) 372-7600-280	3	
11	126-1082	2	CONNECTOR,RCPT ELEC (02660) 372-1539-000 A27A1J2	1	
12	126-1063	2	COVER,CONNECTOR (02660) 372-1159-000	1	
13			NOT USED		
14	637-1529-001	2	CABLE ASSY,COAXIAL RF A27A1W1	1	
15	52-312-9040	3	CONNECTOR,RCPT ELEC (98291) 357-7207-220 A27A1W1J54	1	
16	637-1529-001	2	CABLE ASSY,COAXIAL RF A27A1W2	1	
17	52-312-9040	3	CONNECTOR,RCPT ELEC (98291) 357-7207-220 A27A1W2J55	1	
18	637-1529-002	2	CABLE,RF A27A1W3	1	
19	52-312-9040	3	CONNECTOR,RCPT ELEC (98291) 357-7207-220 A27A1W3J39	1	
20	637-1529-003	2	CABLE,RF A27A1W4	1	
21	52-312-9040	3	CONNECTOR,RCPT ELEC (98291) 357-7207-220 A27A1W4J60	1	
22	652-7514-001	2	CABLE, RF A27A1W5	1	
23	M39012-73-0003	3	CONNECTOR,PLUG ELEC (81349) 357-9600-000 A27A1W5P1	1	
24	652-7398-001	2	CABLE, RF A27A1W6	1	
	623-1379-001	2	ADAPTER,CONN (AP)	1	
25	52-312-9040	3	CONNECTOR,RCPT ELEC (98291) 357-7207-220 A27A1W6P2	1	
26	M39012-55-3006	3	CONNECTOR,PLUG ELEC (81349) 357-7499-020 A27A1W6J45	1	
27	651-4504-001	2	CABLE, RF A27A1W7	1	
	623-1379-001	2	ADAPTER,CONN (AP)	3	
28	52-312-9040	3	CONNECTOR,RCPT ELEC (98291) 357-7207-220 A27A1W7J6	1	
29	51-071-0019	3	CONNECTOR,TEE (98291) 357-7533-010 A27A1W7J7	1	
30	52-312-9040	3	CONNECTOR,RCPT ELEC (98291) 357-7207-220 A27A1W7J8	1	
31	637-1526-005	2	CABLE, RF A27A1W8	1	
	623-1379-001	2	ADAPTER,CONN (AP)	1	
32	52-312-9040	3	CONNECTOR,RCPT ELEC (98291) 357-7207-220 A27A1W8J32	1	
33	52-312-9040	3	CONNECTOR,RCPT ELEC (98291) 357-7207-220 A27A1W8J44	1	
34	637-1526-003	2	CABLE, RF A27A1W9	1	
	623-1379-001	2	ADAPTER,CONN (AP)	1	
35	52-312-9040	3	CONNECTOR,RCPT ELEC (98291) 357-7207-220 A27A1W9J29	1	
36	52-312-9040	3	CONNECTOR,RCPT ELEC (98291) 357-7207-220 A27A1W9J43	1	
37	7-50-60	2	GROMMET,RBR (77969) 201-0088-000	3	
38	652-7365-001	2	CABLE, RIBBON A27A1W10	1	
39	1-499566-0	3	CONNECTOR,PLUG ELEC (00779) 372-2648-070 A27A1W10J1	1	
40	1-499566-0	3	CONNECTOR,PLUG ELEC (00779) 372-2648-070 A27A1W10J2	1	
41	86286-1	3	PLUG,KEYING (00779) 372-2641-010	1	
42	651-4497-001	2	CHASSIS	1	

**DIAGRAMS (523-0770727-002218)**

**2. CONFIGURATION EFFECTIVITY**

Add the following entries to the list of units/subassemblies.

<u>UNIT/SUBASSEMBLY</u>	<u>PART NUMBER</u>	<u>LATEST EFFECTIVITY</u>
HF-8014A Exciter	622-3473-211	AF
RFI Filter Modified	659-2053-001	B
Sideboard Assembly A25	634-8211-002	D
Direct Digital Synthesizer A27	652-6615-001	A
DDS Sideboard A27A1 (P/O A27)	646-6259-002	E
RF Cable Assembly (P/O A27)	652-7514-001	—
RF Cable Assembly (P/O A27)	652-7398-001	—

Figure 1. Chassis, Main Sideboard and Ribbon Cabling, Schematic Diagram

Place figure 1A behind figure 1.

Figure 3. Synthesizer Sideboard A27A1 (638-6973-001)

Place figure 3A behind figure 3.

Figure 6. Remote Control Word Format and Pin Assignment

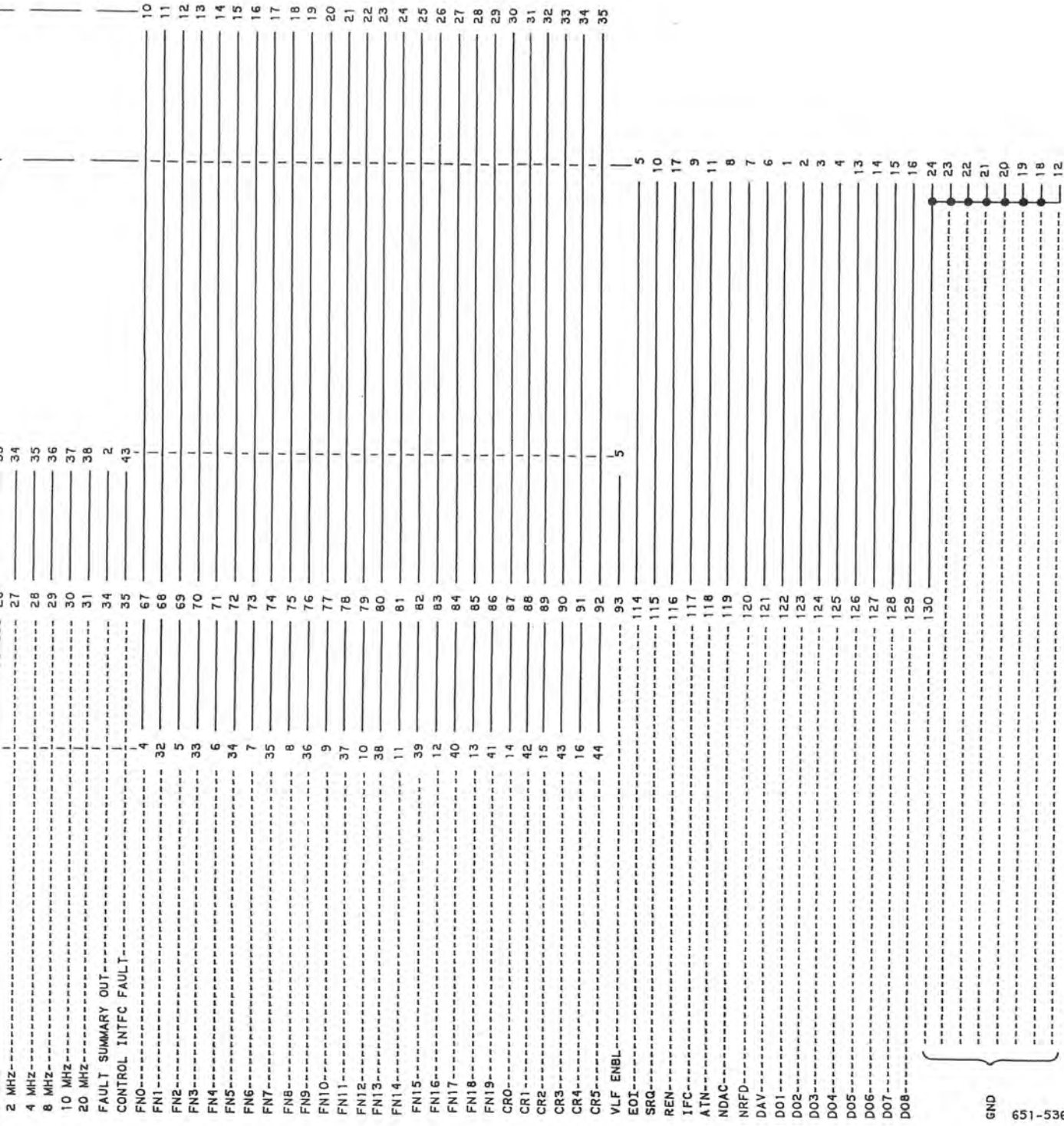
Replace figure 6 with figure 6 attached.

Illustration Not Available

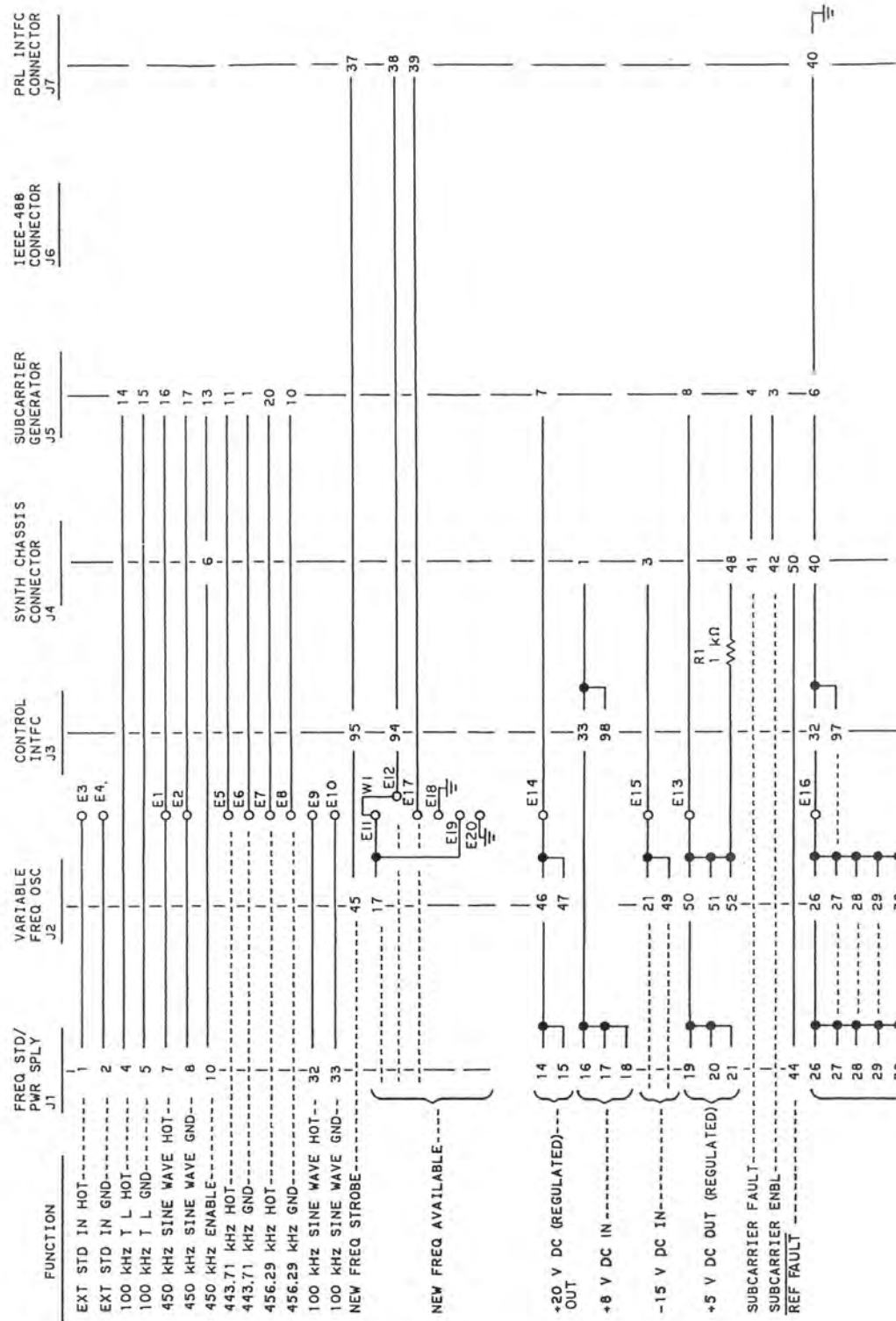
HF-8014A Exciter (622-3473-211), Chassis, Main Sideboard and Ribbon  
Cable, Schematic Diagram  
Figure 1A

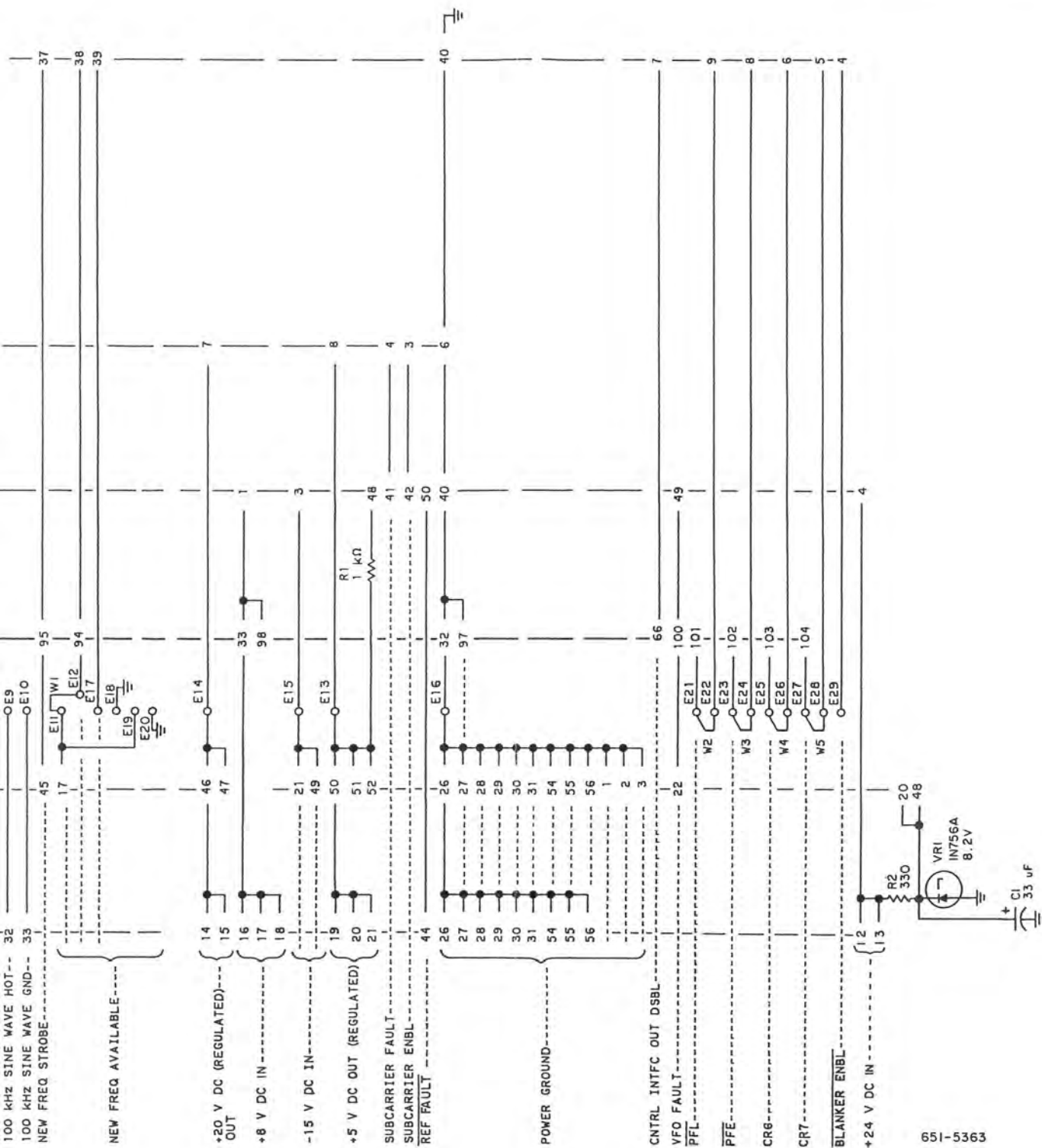
FUNCTION	FREQ STD/ PWR SPLY J1	VARIABLE FREQ OSC J2	CONTROL INTFC J3	SYNTH CHASSIS CONNECTOR J4	SUBCARRIER GENERATOR J5	IEEE-488 CONNECTOR J6	PRL INTFC CONNECTOR J7
REFERENCE FAULT	46		99				
1 HZ			2	9			
2 HZ			3	10			
4 HZ			4	11			
8 HZ			5	12			
10 HZ			6	13			
20 HZ			7	14			
40 HZ			8	15			
80 HZ			9	16			
100 HZ			10	17			
200 HZ			11	18			
400 HZ			12	19			
800 HZ			13	20			
1 KHZ			14	21			
2 KHZ			15	22			
4 KHZ			16	23			
6 KHZ			17	24			
10 KHZ			18	25			
20 KHZ			19	26			
40 KHZ			20	27			
80 KHZ			21	28			
100 KHZ			22	29			
200 KHZ			23	30			
400 KHZ			24	31			
800 KHZ			25	32			
1 MHZ			26	33			
2 MHZ			27	34			
4 MHZ			28	35			
8 MHZ			29	36			
10 MHZ			30	37			
20 MHZ			31	38			
FAULT SUMMARY OUT			34	2			
CONTROL INTFC FAULT			35	43			
FN0	4		67	1			10
FN1	32		68	1			11
FN2	5		69	1			12
FN3	33		70	1			13
FN4	6		71	1			14
FN5	34		72	1			15
FN6	7		73	1			16
FN7	35		74	1			17
FN8	8		75	1			18
FN9	36		76	1			19
FN10	9		77	1			20
FN11	37		78	1			21
FN12	10		79	1			22
FN13	38		80	1			23
FN14	11		81	1			24
FN15	39		82	1			25
FN16	12		83	1			26





Synthesizer Sideboard A27A1  
 (646-6254-002)  
 Figure 3A (Sheet 1 of 2)





Synthesizer Sideboard A27A1  
 (646-6254-002)  
 Figure 3A (Sheet 2).

PIN FUNCTION (SIGNAL NAME) TABLE

CONTROL / STATUS BIT				EQUIPMENT TYPE				CONTROL / STATUS BIT															
WORD FORMAT				HF-BOX 2-CHANNEL RADIOS AND HF-BOX 2-CHANNEL CONTROLS				8515-1/2, HF-8095				4-CHANNEL EXCITER, AND 4-CHANNEL EXCITER CONTROL				4-CHANNEL RECEIVER, AND 4-CHANNEL RECEIVER CONTROL				WORD FORMAT			
HF-80 8-BIT		ASCII 7-BIT		PARALLEL OUTPUT PIN NO.	PARALLEL INPUT PIN NO.	FUNCTION	PARALLEL OUTPUT PIN NO.	PARALLEL INPUT PIN NO.	FUNCTION	PARALLEL OUTPUT PIN NO.	PARALLEL INPUT PIN NO.	FUNCTION	PARALLEL OUTPUT PIN NO.	PARALLEL INPUT PIN NO.	FUNCTION	HF-80 8-BIT		ASCII 7-BIT					
WORD NO.	CHARACTER NO.	BIT NO.	WORD NO.													CHARACTER NO.	BIT NO.	WORD NO.	CHARACTER NO.	BIT NO.	WORD NO.	CHARACTER NO.	BIT NO.
1	2	8	1	6	8	103	COMMAND (C)	103	COMMAND (C)	NOT USED	NOT USED	NOT USED	129	129	FREQ 10 MHz (2)	3	2	8	3	6			
1	2	7	1	6	4	38	STATUS REQUEST (S)	38	STATUS REQUEST (S)	NOT USED	NOT USED	NOT USED	64	64	FREQ 10 MHz (1)	3	2	7	3	6			
1	2	6	1	6	2	129	FREQ 10 MHz (2)	129	FREQ 10 MHz (2)	129	129	FREQ 10 MHz (2)	129	129	FREQ 10 MHz (2)	3	2	6	3	6			
1	2	5	1	6	1	64	FREQ 10 MHz (1)	64	FREQ 10 MHz (1)	128	128	FREQ 1 MHz (8)	128	128	FREQ 1 MHz (8)	3	2	5	7	6			
1	2	4	1	7	8	128	FREQ 1 MHz (8)	128	FREQ 1 MHz (8)	128	128	FREQ 1 MHz (8)	128	128	FREQ 1 MHz (8)	3	2	4	3	7			
1	2	3	1	7	4	63	FREQ 1 MHz (4)	63	FREQ 1 MHz (4)	127	127	FREQ 1 MHz (4)	127	127	FREQ 1 MHz (4)	3	2	3	3	7			
1	2	2	1	7	2	127	FREQ 1 MHz (2)	127	FREQ 1 MHz (2)	127	127	FREQ 1 MHz (2)	127	127	FREQ 1 MHz (2)	3	2	2	3	7			
1	2	1	1	7	1	62	FREQ 1 MHz (1)	62	FREQ 1 MHz (1)	127	127	FREQ 1 MHz (1)	127	127	FREQ 1 MHz (1)	3	2	1	3	7			
1	3	8	1	8	8	126	FREQ 100 kHz (8)	126	FREQ 100 kHz (8)	126	126	FREQ 100 kHz (8)	126	126	FREQ 100 kHz (8)	3	3	8	3	8			
1	3	7	1	8	4	61	FREQ 100 kHz (4)	61	FREQ 100 kHz (4)	126	126	FREQ 100 kHz (4)	126	126	FREQ 100 kHz (4)	3	3	7	3	8			
1	3	6	1	8	2	125	FREQ 100 kHz (2)	125	FREQ 100 kHz (2)	125	125	FREQ 100 kHz (2)	125	125	FREQ 100 kHz (2)	3	3	6	3	8			
1	3	5	1	8	1	60	FREQ 100 kHz (1)	60	FREQ 100 kHz (1)	125	125	FREQ 100 kHz (1)	125	125	FREQ 100 kHz (1)	3	3	5	3	8			
1	3	4	1	9	8	124	FREQ 10 kHz (8)	124	FREQ 10 kHz (8)	124	124	FREQ 10 kHz (8)	124	124	FREQ 10 kHz (8)	3	3	4	3	9			
1	3	3	1	9	4	59	FREQ 10 kHz (4)	59	FREQ 10 kHz (4)	124	124	FREQ 10 kHz (4)	124	124	FREQ 10 kHz (4)	3	3	3	3	9			
1	3	2	1	9	2	123	FREQ 10 kHz (2)	123	FREQ 10 kHz (2)	123	123	FREQ 10 kHz (2)	123	123	FREQ 10 kHz (2)	3	3	2	3	9			
1	3	1	1	9	1	58	FREQ 10 kHz (1)	58	FREQ 10 kHz (1)	123	123	FREQ 10 kHz (1)	123	123	FREQ 10 kHz (1)	3	3	1	3	9			
1	4	8	1	10	8	122	FREQ 1 kHz (8)	122	FREQ 1 kHz (8)	122	122	FREQ 1 kHz (8)	122	122	FREQ 1 kHz (8)	3	4	8	3	10			
1	4	7	1	10	4	57	FREQ 1 kHz (4)	57	FREQ 1 kHz (4)	122	122	FREQ 1 kHz (4)	122	122	FREQ 1 kHz (4)	3	4	7	3	10			
1	4	6	1	10	2	121	FREQ 1 kHz (2)	121	FREQ 1 kHz (2)	121	121	FREQ 1 kHz (2)	121	121	FREQ 1 kHz (2)	3	4	6	3	10			
1	4	5	1	10	1	56	FREQ 1 kHz (1)	56	FREQ 1 kHz (1)	121	121	FREQ 1 kHz (1)	121	121	FREQ 1 kHz (1)	3	4	5	3	10			
1	4	4	1	11	8	120	FREQ 100 Hz (8)	120	FREQ 100 Hz (8)	120	120	FREQ 100 Hz (8)	120	120	FREQ 100 Hz (8)	3	4	4	3	11			
1	4	3	1	11	4	55	FREQ 100 Hz (4)	55	FREQ 100 Hz (4)	120	120	FREQ 100 Hz (4)	120	120	FREQ 100 Hz (4)	3	4	3	3	11			
1	4	2	1	11	2	119	FREQ 100 Hz (2)	119	FREQ 100 Hz (2)	119	119	FREQ 100 Hz (2)	119	119	FREQ 100 Hz (2)	3	4	2	3	11			
1	4	1	1	11	1	54	FREQ 100 Hz (1)	54	FREQ 100 Hz (1)	119	119	FREQ 100 Hz (1)	119	119	FREQ 100 Hz (1)	3	4	1	3	11			
1	5	8	1	12	8	118	FREQ 10 Hz (8)	118	FREQ 10 Hz (8)	118	118	FREQ 10 Hz (8)	118	118	FREQ 10 Hz (8)	3	5	8	3	12			
1	5	7	1	12	4	53	FREQ 10 Hz (4)	53	FREQ 10 Hz (4)	118	118	FREQ 10 Hz (4)	118	118	FREQ 10 Hz (4)	3	5	7	3	12			
1	5	6	1	12	2	117	FREQ 10 Hz (2)	117	FREQ 10 Hz (2)	117	117	FREQ 10 Hz (2)	117	117	FREQ 10 Hz (2)	3	5	6	3	12			
1	5	5	1	12	1	52	FREQ 10 Hz (1)	52	FREQ 10 Hz (1)	117	117	FREQ 10 Hz (1)	117	117	FREQ 10 Hz (1)	3	5	5	3	12			
1	5	4	1	13	8	116	FREQ 1 Hz (8)	116	FREQ 1 Hz (8)	116	116	FREQ 1 Hz (8)	116	116	FREQ 1 Hz (8)	3	5	4	3	13			
1	5	3	1	13	4	51	FREQ 1 Hz (4)	51	FREQ 1 Hz (4)	116	116	FREQ 1 Hz (4)	116	116	FREQ 1 Hz (4)	3	5	3	3	13			
1	5	2	1	13	2	115	FREQ 1 Hz (2)	115	FREQ 1 Hz (2)	115	115	FREQ 1 Hz (2)	115	115	FREQ 1 Hz (2)	3	5	2	3	13			
1	5	1	1	13	1	50	FREQ 1 Hz (1)	50	FREQ 1 Hz (1)	115	115	FREQ 1 Hz (1)	115	115	FREQ 1 Hz (1)	3	5	1	3	13			
2	2	8	2	6	8	103	COMMAND (C)	103	COMMAND (C)	NOT USED	NOT USED	NOT USED	75	75	RF GAIN (16)	4	2	8	4	6			
2	2	7	2	6	4	38	STATUS REQUEST (S)	38	STATUS REQUEST (S)	NOT USED	NOT USED	NOT USED	11	11	RF GAIN (8)	4	2	7	4	6			
2	2	6	2	6	2	76	NOT USED	76	NOT USED	76	76	RF GAIN (16)	76	76	RF GAIN (16)	4	2	6	4	6			
2	2	5	2	6	1	11	RF GAIN (8)	11	RF GAIN (8)	75	75	RF GAIN (8)	75	75	RF GAIN (8)	4	2	5	4	6			
2	2	4	2	7	8	75	RF GAIN (4)	75	RF GAIN (4)	10	10	RF GAIN (4)	10	10	RF GAIN (4)	4	2	4	4	7			
2	2	3	2	7	4	10	RF GAIN (2)	10	RF GAIN (2)	10	10	RF GAIN (2)	10	10	RF GAIN (2)	4	2	3	4	7			
2	2	2	2	7	2	22	RF GAIN (1)	22	RF GAIN (1)	22	22	RF GAIN (1)	22	22	RF GAIN (1)	4	2	2	4	7			
2	2	1	2	7	1	87	RF GAIN (1)	87	RF GAIN (1)	22	22	RF GAIN (1)	22	22	RF GAIN (1)	4	2	1	4	7			
2	3	8	2	8	8	3	NOT USED	3	NOT USED	3	12	NOT USED	3	12	FL7 (E) ENBL	4	3	8	4	8			
2	3	7	2	8	4	41	VBFO ENBL	41	VBFO ENBL	106	106	RESERVED	41	41	FL6 (D) ENBL	4	3	7	4	8			
2	3	6	2	8	2	106	AFC ENBL	106	AFC ENBL	106	106	RESERVED	106	106	FL5 (G) ENBL	4	3	6	4	8			
2	3	5	2	8	1	37	AGC CROWBAR ENBL	37	AGC CROWBAR ENBL	37	37	AGC CROWBAR ENBL	37	37	FL4 (B) ENBL	4	3	5	4	8			
2	3	4	2	9	8	84	USB AGC OFF	84	USB AGC OFF	84	84	USB AGC OFF	84	84	B2 AGC (2)	4	3	4	4	9			
2	3	3	2	9	4	85	USB AGC FAST	85	USB AGC FAST	85	85	USB AGC FAST	85	85	B2 AGC (1)	4	3	3	4	9			
2	3	2	2	9	2	19	LSB AGC OFF	19	LSB AGC OFF	19	19	LSB AGC OFF	19	19	A2 AGC (2)	4	3	2	4	9			
2	3	1	2	9	1	20	LSB AGC FAST	20	LSB AGC FAST	20	20	LSB AGC FAST	20	20	A2 AGC (1)	4	3	1	4	9			
2	4	8	2	10	8	100	FL8 ENBL	100	FL8 ENBL	100	100	NOT USED	100	100	FL3 (A) ENBL	4	4	8	4	10			
2	4	7	2	10	4	99	FL7 ENBL	99	FL7 ENBL	99	99	NOT USED	99	99	FL1 (16 kHz) ENBL	4	4	7	4	10			
2	4	6	2	10	2	35	FL6 ENBL	35	FL6 ENBL	35	35	NOT USED	35	35	VBFO ENBL	4	4	6	4	10			
2	4	5	2	10	1	34	FL5 ENBL	34	FL5 ENBL	34	34	NOT USED	34	34	AFC ENBL	4	4	5	4	10			
2	4	4	2	11	8	98	FL4 ENBL	98	FL4 ENBL	98	98	NOT USED	98	98	B1 AGC (2)	4	4	4	4	11			
2	4	3	2	11	4	33	FL3 ENBL	33	FL3 ENBL	33	33	NOT USED	33	33	B1 AGC (1)	4	4	3	4	11			
2	4	2	2	11	2	97	FL2 ENBL	97	FL2 ENBL	97	97	NOT USED	97	97	A1 AGC (2)	4	4	2	4	11			
2	4	1	2	11	1	32	FL1 ENBL	32	FL1 ENBL	32	32	NOT USED	32	32	A1 AGC (1)	4	4	1	4	11			
2	5	8	2	12	8	73	FM ENBL	73	FM ENBL	73	73	NOT USED	73	73	DATA NET ENBL	4	5	8	4	12			
2	5	7	2	12	4	8	AM ENBL	8	AM ENBL	8	8	AM ENBL	8	8	AM ENBL	4	5	7	4	12			
2	5	6	2	12	2	72	SSB ENBL	72	SSB ENBL	72	72	SSB ENBL	72	72	AM ENBL	4	5	6	4	12			
2	5	5	2	12	1	9	DM ENBL	9	DM ENBL	9	9	DM ENBL	9	9	B2 ENBL	4	5	5	4	12			
2	5	4	2	13	8	74	LSB ENBL	74	LSB ENBL	74	74	LSB ENBL	74	74	B2 ENBL	4	5	4	4	13			
2	5	3	2	13	4	6	RESERVED	6	RESERVED	6	6	RESERVED	6	6	B1 ENBL	4	5	3	4	13			
2	5	2	2	13	2	26	RESERVED	26	RESERVED	26	26	RESERVED	26	26	A1 ENBL	4	5	2	4	13			
2	5	1	2	13	1	17	RESERVED	17	RESERVED	17	17	RESERVED	17	17	A2 ENBL	4	5	1	4	13			

PIN FUNCTION (IGNAL NAME) TABLE

FUNCTION	CONTROL / STATUS BIT				EQUIPMENT TYPE				
	WORD FORMAT				8515-1/2, HF-8095				
	HF-90 WORD NO. CHARACTER NO. BIT NO.	8-BIT	ASCHI WORD NO. CHARACTER NO. BIT WT.	7-BIT	PARALLEL OUTPUT PIN NO. PARALLEL INPUT PIN NO.	FUNCTION	PARALLEL OUTPUT PIN NO. PARALLEL INPUT PIN NO.	FUNCTION	
COMMAND	103	EDMARD	(C)	103	COMMAND	(C)	103	COMMAND	(C)
STATUS REQUEST	38	STATUS REQUEST	(5)	38	STATUS REQUEST	(5)	38	STATUS REQUEST	(5)
NOT USED		NOT USED			NOT USED			NOT USED	
VBFO SIGN	107	VBFO SIGN	(8)	107	VBFO SIGN	(8)	107	VBFO SIGN	(8)
VBFO FREQ 1 kHz	113	VBFO FREQ 1 kHz	(4)	113	VBFO FREQ 1 kHz	(4)	113	VBFO FREQ 1 kHz	(4)
	47		(2)	47		(2)	47		(2)
	112		(1)	112		(1)	112		(1)
VBFO FREQ 100 Hz	46	VBFO FREQ 100 Hz	(8)	46	VBFO FREQ 100 Hz	(8)	46	VBFO FREQ 100 Hz	(8)
	111		(4)	111		(4)	111		(4)
	110		(2)	110		(2)	110		(2)
	44		(1)	44		(1)	44		(1)
VBFO FREQ 10 Hz	109	VBFO FREQ 10 Hz	(8)	109	VBFO FREQ 10 Hz	(8)	109	VBFO FREQ 10 Hz	(8)
	43		(4)	43		(4)	43		(4)
	108		(2)	108		(2)	108		(2)
	42		(1)	42		(1)	42		(1)
NOT USED	7	NOT USED		7	NOT USED		7	NOT USED	
	8			8			8		
	10			10			10		
	9			9			9		
	3			3			3		
	5			5			5		
	6			6			6		
	4			4			4		
NOT USED		NOT USED			NOT USED			NOT USED	
	18			18			18		
	82			82			82		
PILOT CARRIER ENBL	78	PA L PWR ENBL		78	PA LO PWR ENBL		78	PA LO PWR ENBL	
	14	PA HV ENBL		14	PA HV ENBL		14	PA HV ENBL	
	79	PA LV ENBL		79	PA LV ENBL		79	PA LV ENBL	
COMMAND	103	EDMARD	(C)	103	COMMAND	(C)	103	COMMAND	(C)
STATUS REQUEST	38	STATUS REQUEST	(5)	38	STATUS REQUEST	(5)	38	STATUS REQUEST	(5)
NOT USED		NOT USED			NOT USED			NOT USED	
REMOTE KEY (MON)	92	REMOTE KEY (MON)	(16)	92	REMOTE KEY (MON)	(16)	92	REMOTE KEY (MON)	(16)
NOT USED		NOT USED			NOT USED			NOT USED	
AF LOCK	2	AF LOCK		2	NOT USED		2	NOT USED	
EXCTR RF MON	40	EXCTR RF MON		40	NOT USED		40	NOT USED	
CHAN A XMT AF MON	105	CHAN A XMT AF MON		105	NOT USED		105	NOT USED	
CHAN A RCV AF MON	36	CHAN A RCV AF MON		36	NOT USED		36	NOT USED	
CHAN A AGC MON	83	CHAN A AGC MON		83	NOT USED		83	NOT USED	
CHAN B XMT MON	39	CHAN B XMT MON		39	NOT USED		39	NOT USED	
CHAN B RCV MON	101	CHAN B RCV MON		101	NOT USED		101	NOT USED	
CHAN B AGC MON	18	CHAN B AGC MON		18	NOT USED		18	NOT USED	
PA RDY	69	PA RDY		69	NOT USED		69	NOT USED	
PA FLT	77	PA FLT		77	NOT USED		77	NOT USED	
PA RF MON	5	PA RF MON		5	NOT USED		5	NOT USED	
CPLR FLT	70	CPLR FLT		70	NOT USED		70	NOT USED	
RF OVLDT FLT	67	RF OVLDT FLT		67	NOT USED		67	NOT USED	
SYNTH FLT	49	SYNTH FLT		49	NOT USED		49	NOT USED	
PS FLT	86	PS FLT		86	NOT USED		86	NOT USED	
RCVR/EXCTR FLT	3	RCVR/EXCTR FLT		3	NOT USED		3	NOT USED	
NOT USED	70	NOT USED		70	NOT USED		70	NOT USED	
NOT USED	104	NOT USED		104	NOT USED		104	NOT USED	
VBFO SYNTH FLT	7	VBFO SYNTH FLT		7	NOT USED		7	NOT USED	
NOT USED	92	NOT USED		92	NOT USED		92	NOT USED	
PRESEL FLT	71	PRESEL FLT		71	NOT USED		71	NOT USED	
DATA ERROR	95	DATA ERROR		95	NOT USED		95	NOT USED	
LOCAL CONTROL	16	LOCAL CONTROL		16	NOT USED		16	NOT USED	
MONITOR	80	MONITOR		80	NOT USED		80	NOT USED	
NOT USED	7	NOT USED		7	NOT USED		7	NOT USED	
NOT USED	89	NOT USED		89	NOT USED		89	NOT USED	
PRESEL FLT	71	PRESEL FLT		71	NOT USED		71	NOT USED	
DATA ERROR	95	DATA ERROR		95	NOT USED		95	NOT USED	
LOCAL CONTROL	16	LOCAL CONTROL		16	NOT USED		16	NOT USED	
MONITOR	80	MONITOR		80	NOT USED		80	NOT USED	
NOT USED	77	NOT USED		77	NOT USED		77	NOT USED	
PA FLT	102	PA FLT		102	NOT USED		102	NOT USED	
PA RF MON	7	PA RF MON		7	NOT USED		7	NOT USED	
CPLR FLT	89	CPLR FLT		89	NOT USED		89	NOT USED	
PRESEL FLT	71	PRESEL FLT		71	NOT USED		71	NOT USED	
DATA ERROR	95	DATA ERROR		95	NOT USED		95	NOT USED	
LOCAL CONTROL	16	LOCAL CONTROL		16	NOT USED		16	NOT USED	
MONITOR	80	MONITOR		80	NOT USED		80	NOT USED	
NOT USED	69	NOT USED		69	NOT USED		69	NOT USED	
SUBCARRIER LOCK FLT	77	SUBCARRIER LOCK FLT		77	NOT USED		77	NOT USED	
EXCTR RF MON	5	EXCTR RF MON		5	NOT USED		5	NOT USED	
EXCTR PS FLT	70	EXCTR PS FLT		70	NOT USED		70	NOT USED	
NOT USED	67	NOT USED		67	NOT USED		67	NOT USED	
EXT STANDARD	49	EXT STANDARD		49	NOT USED		49	NOT USED	
A1 IF MON	86	A1 IF MON		86	NOT USED		86	NOT USED	
NOT USED	3	NOT USED		3	NOT USED		3	NOT USED	
PA READY	77	PA READY		77	NOT USED		77	NOT USED	
EXT STANDARD	102	EXT STANDARD		102	NOT USED		102	NOT USED	
AF LOCK MON	7	AF LOCK MON		7	NOT USED		7	NOT USED	
RF PERF MON	89	RF PERF MON		89	NOT USED		89	NOT USED	
PRESEL FLT	71	PRESEL FLT		71	NOT USED		71	NOT USED	
DATA ERROR	95	DATA ERROR		95	NOT USED		95	NOT USED	
LOCAL CONTROL	16	LOCAL CONTROL		16	NOT USED		16	NOT USED	
MONITOR	80	MONITOR		80	NOT USED		80	NOT USED	

TPA-8092-015

Remote Control Word Formats and Pin Assignments  
Figure 6



**Rockwell  
International**

**supplement**

**HF-8014A Exciter (622-3473-211)  
and HF-8054A Receiver  
(622-3475-210)**

Collins Defense Communications Division

523-0773478-001211

1 September 1984

Printed in USA

**GENERAL**

This supplement, when used in conjunction with the HF-80 Exciter, Receivers, and Controls Depot Maintenance Instruction Book (Rockwell-Collins part number 523-0772963), will provide complete depot maintenance coverage of the circuit cards in the HF-8014A Exciter (622-3473-211) and HF-8054A Receiver (622-3475-210). These equipments differ from previous configurations in that they contain a direct digital synthesizer (DDS) and parallel data input for control of the frequency synthesizer.

Circuit cards/modules in HF-8014A Exciter (622-3473-211) and HF-8054A Receiver (622-3475-210) are either new, modified versions of those used in non-DDS configurations, or the same as those used in non-DDS configurations. Also, some circuit cards/modules used in non-DDS configurations are not used in the two DDS configurations described in this supplement.

**VOLUME 1 CHANGES**

**FRONT MATTER**

In the list of instruction books on the title page, change entry entitled Control (638-6622-001) 523-0770731 to read:

Control (638-6622-001, -002, -003, -004)

523-0770731



**INTRODUCTION**

**TEST EQUIPMENT AND TOOLS**

Change the entries listed in the table titled "Test Equipment Usage Chart" as shown.

Test Equipment Usage Chart (Cont).

TEST EQUIPMENT CIRCUIT CARD/MODULE	Audio Oscillator	Audio Voltmeter	Frequency Counter	RF Voltmeter	Digital Multimeter	Signal Generator	6-dB Pad	EXTENDERS						Oscilloscope	Switching Device	Variable Attenuator	Pulse Generator	Hybrid Transformer	Line Matching Transformer	Spectrum Analyzer	Distortion Analyzer	40-dB Impedance Matching Pad (638-6476-001, -003)
								(1) 635-0913-001	(1) 635-0915-001	(1) 635-0915-002	(1) 637-2843-001	(7) 635-9686-001	(1) 635-9686-002									
								Control (638-6622-001, -002, -003, -004)					X									
Parallel Input (642-3135-001, -002)					X		X						X									
Parallel Output (642-3137-001, -002)					X		X															

Add the following entries to the end of the table titled "Test Equipment Usage Chart."

Test Equipment Usage Chart (Cont).

TEST EQUIPMENT CIRCUIT CARD/MODULE	Audio Oscillator	Audio Voltmeter	Frequency Counter	RF Voltmeter	Digital Multimeter	Signal Generator	6-dB Pad	EXTENDERS						Oscilloscope	Switching Device	Variable Attenuator	Pulse Generator	Hybrid Transformer	Line Matching Transformer	Spectrum Analyzer	Distortion Analyzer	40-dB Impedance Matching Pad (638-6476-001, -003)
								(1) 635-0913-001	(1) 635-0915-001	(1) 635-0915-002	(1) 637-2843-001	(7) 635-9686-001	(1) 635-9686-002									
								Volume 3														
Parallel Interface (646-6329-001)					X								X									
Frequency Standard/Power Supply (646-5930-001)			X		X		X													X		
DDS Control Interface (646-5905-001)					X								X									
VFO/VCO Module (652-1015-001)			X				X													X		
Injection Blanker Assembly (652-6861-001)	X												X			X						



**EQUIPMENT USED IN**

Change the entries listed in the table titled "HF-80 Exciters, Receivers, and Controls Circuit Card Usage Table" as shown.

HF-80 Exciters, Receivers, and Controls Circuit Card Usage Table (Cont).

EQUIPMENT CIRCUIT CARD/MODULE	HF-8010	HF-8010A	HF-8014	HF-8014A	HF-8050	HF-8050A	HF-8054	HF-8054A	HF-8070	HF-8070A	HF-8090	HF-8091	HF-8092	HF-8093	HF-8094
	622-3389-( )	622-3395-( )	622-3472-( )	622-3473-( )	622-3385-( )	622-3393-( )	622-3474-( )	622-3475-( )	622-3387-( )	622-3394-( )	622-3390-( )	622-3391-( )	622-3392-( )	622-3476-( )	622-3477-( )
Control (638-6622-001, -002, -003, -004)			X	X											
Parallel Input (642-3135-001, -002)		X		X		X		X		X	X	X	X	X	X
Parallel Output (642-3137-001, -002)		X		X		X		X		X	X	X	X	X	X

Add the following entries to the end of the table titled "HF-80 Exciter, Receivers, and Controls Circuit Card Usage Table."

HF-80 Exciters, Receivers, and Controls Circuit Card Usage Table (Cont).

EQUIPMENT CIRCUIT CARD/MODULE	HF-8010	HF-8010A	HF-8014	HF-8014A	HF-8050	HF-8050A	HF-8054	HF-8054A	HF-8070	HF-8070A	HF-8090	HF-8091	HF-8092	HF-8093	HF-8094
	622-3389-( )	622-3395-( )	622-3472-( )	622-3473-( )	622-3385-( )	622-3393-( )	622-3474-( )	622-3475-( )	622-3387-( )	622-3394-( )	622-3390-( )	622-3391-( )	622-3392-( )	622-3476-( )	622-3477-( )
Volume 3															
Parallel Interface (646-6329-001)				X											
Frequency Standard/Power Supply (646-5930-001)				X				X							
DDS Control Interface (646-5905-001)				X				X							
VFO/VCO Module (652-1015-001)				X				X							
Injection Blanker Assembly (652-6861-001)															

**CONTROL (638-6622-001, -002, -003, -004) (523-0770731-101211)**

Change the heading of the instructions section as shown above.

**2.1 General**

Step f is not applicable to -004 status.

In figure 2, for -004 status, delete U27D and term FREQ CHG. U29A output is left unterminated. Paragraph 2.4 and figure 3 are not applicable for -004 status.

**2.7 ALC/TGC**

For -004 status, change the first sentence of the second paragraph to read: The TGC amplifier and control circuit (refer to figure 4) receives reference TGC and produces an output TGC control voltage that is referenced to exciter tune, TGC reset, and rf transmit signals.

In figure 5, for -004 status, delete U27D. Connect U9A bottom lead to an added term at the left entitled "TGC Reset." Terminate U29A output as an open wire. Delete lead from U13E input to "TO TUNE START CIRCUIT." Delete bracket and phrase "TO TUNE START CIRCUIT."

In table 2 (Control, Testing and Troubleshooting Procedures), test 3.g, IF INDICATION IS ABNORMAL column: U27 references are not applicable to -004 status. Test 24, Tune Start, is not applicable for -004 status. This test can be performed, but the tune start signal is actually developed by the parallel interface (646-6329-001). Every place in this test where reference is made to U27, disregard the reference because U27 is not used in -004 status.

**5. REPAIR**

Substitute the following paragraph for the existing one.

Repair of the control card is accomplished using the procedures in Circuit Card Repair instructions (523-0772831) contained elsewhere within this manual.

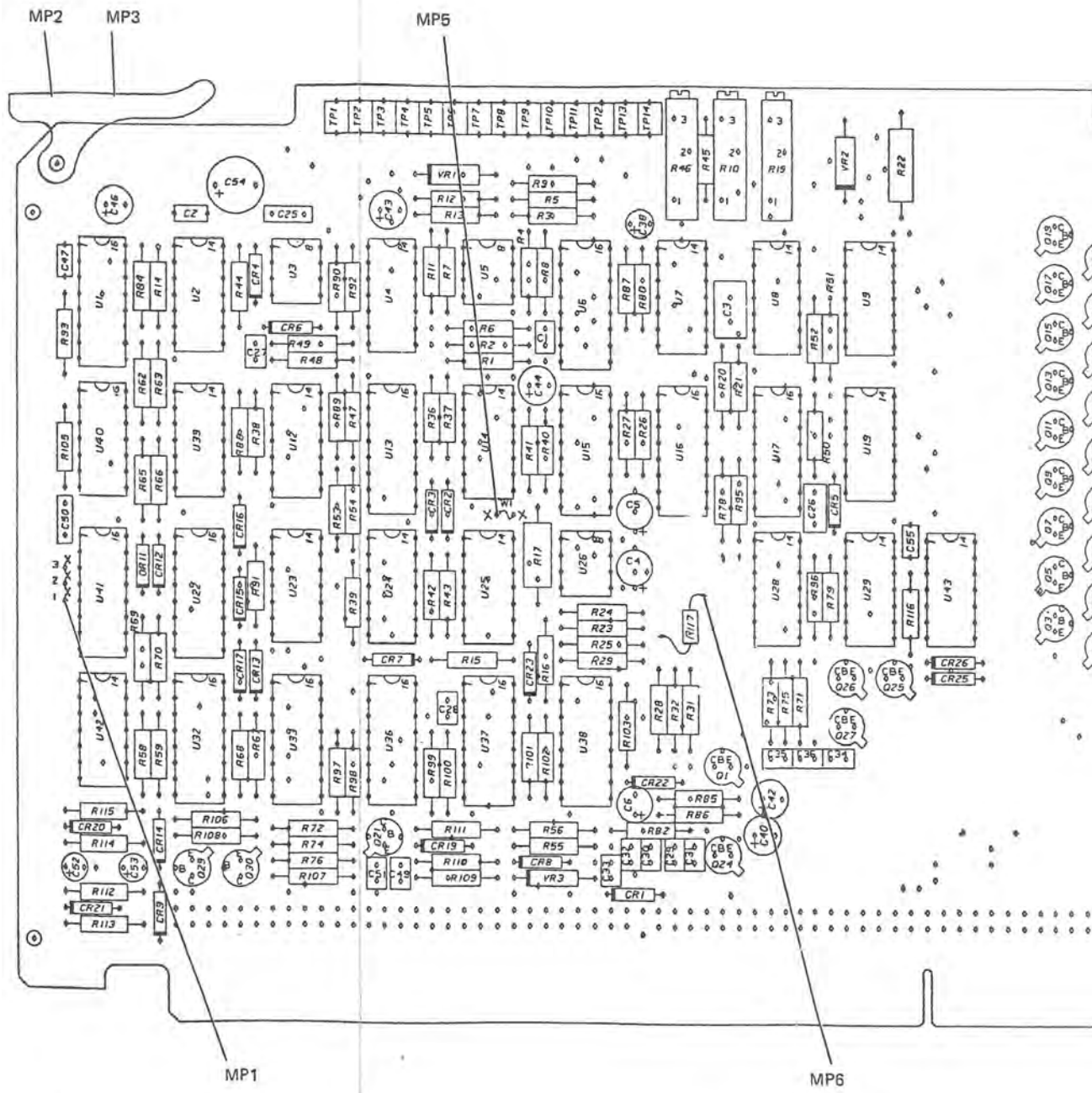
**6. PARTS LIST/DIAGRAMS**

**6.3 Equipment Covered**

Add the following entry to the list:

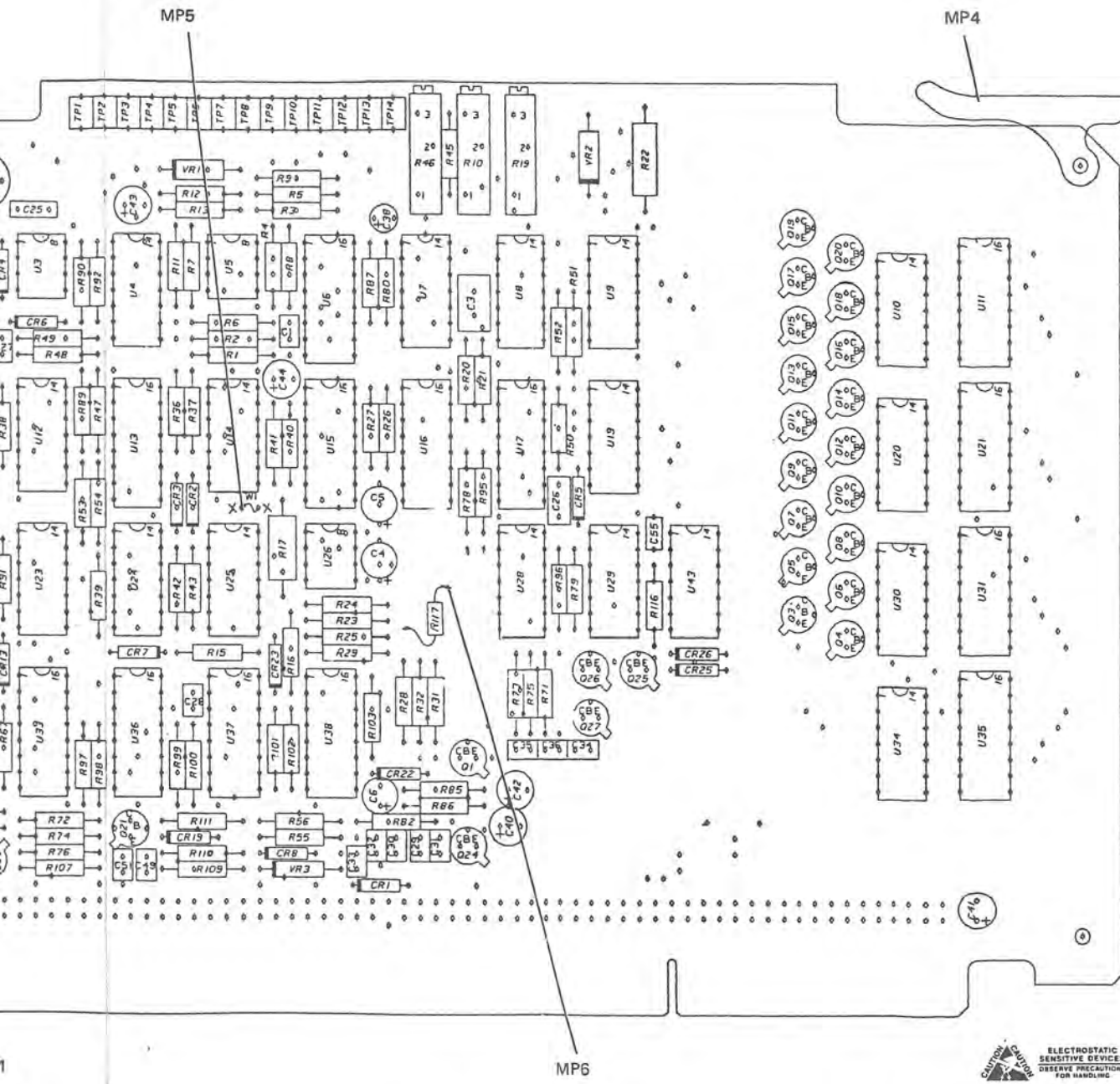
<u>CIRCUIT CARD/ SUBASSEMBLY</u>	<u>COLLINS PART NUMBER</u>	<u>LATEST EFFECTIVITY</u>
Control	638-6622-004	REV N

Add figures 11 and 12 following figure 10.



(-004)

Control (63)  
 Locat  
 Figure 1



(-004)

TPA-7749-019

Control (638-6622-004), Parts  
Location Diagram  
Figure 11 (Sheet 1 of 2)

The parts list for Control (638-6622-004) is the same as that for Control (638-6622-003), except for the following differences.

The listed components are NOT USED on 638-6622-004.

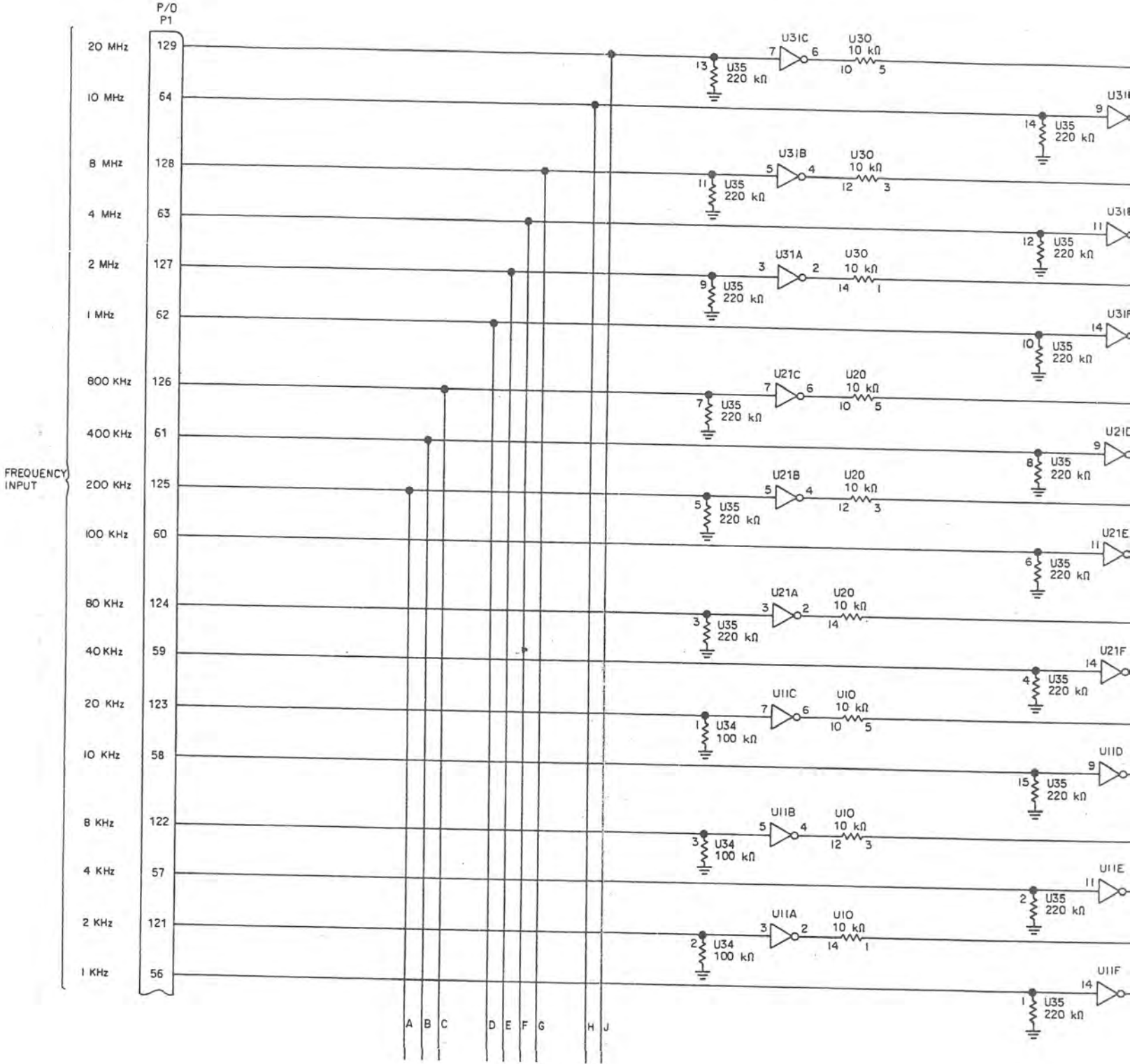
C37  
C39  
C45  
Q28  
R77  
R81  
R83  
U27

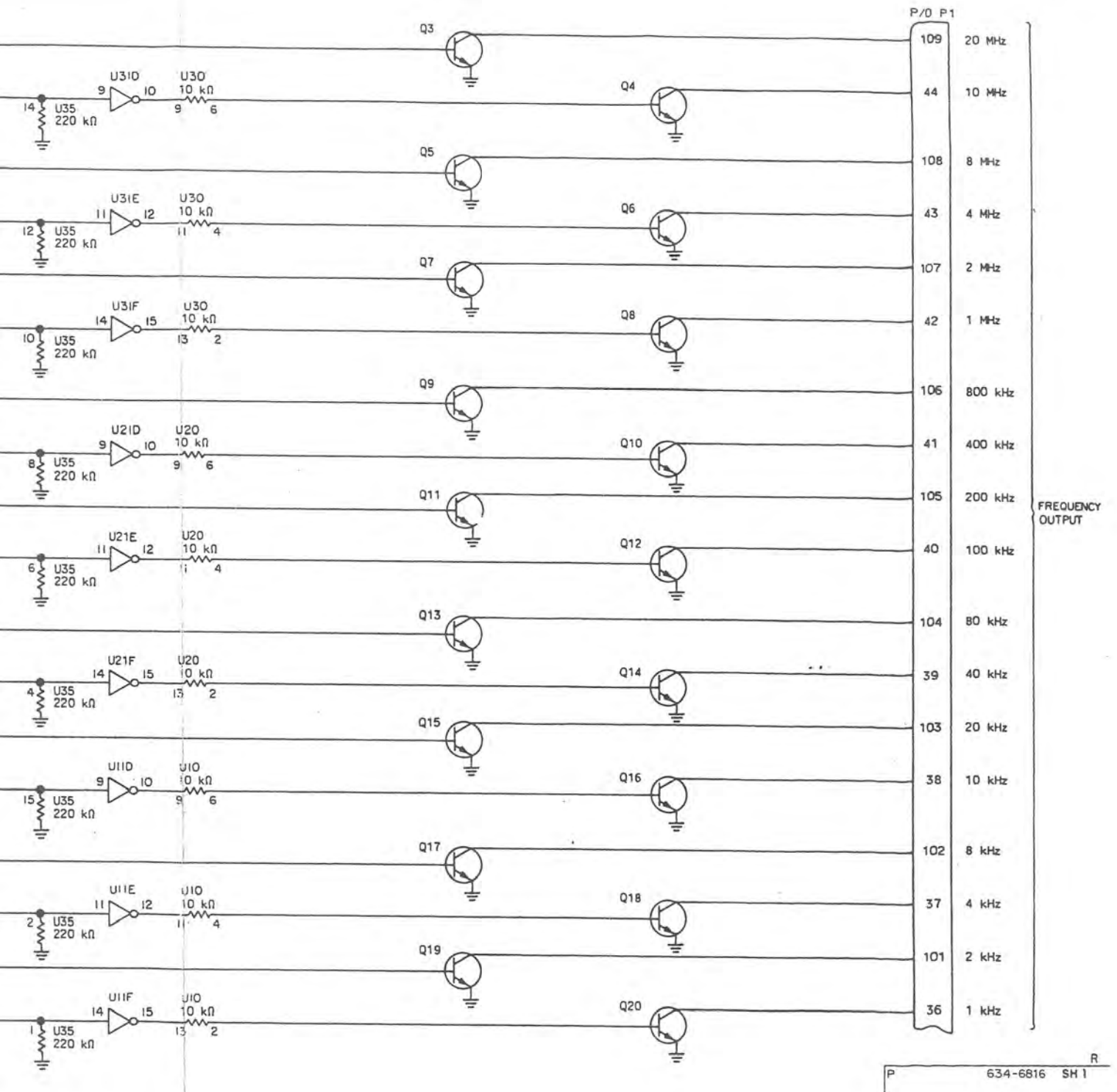
The following components are added to 638-6622-004:

MP6	CONTACT, ELECTRICAL (QTY 1)	372-2601-030
R117	RESISTOR, FIXED CMPSN, 1 MEGO, 10%, 1/4W	745-0857-000

The following components should be changed on both 638-6622-003 and 638-6622-004:

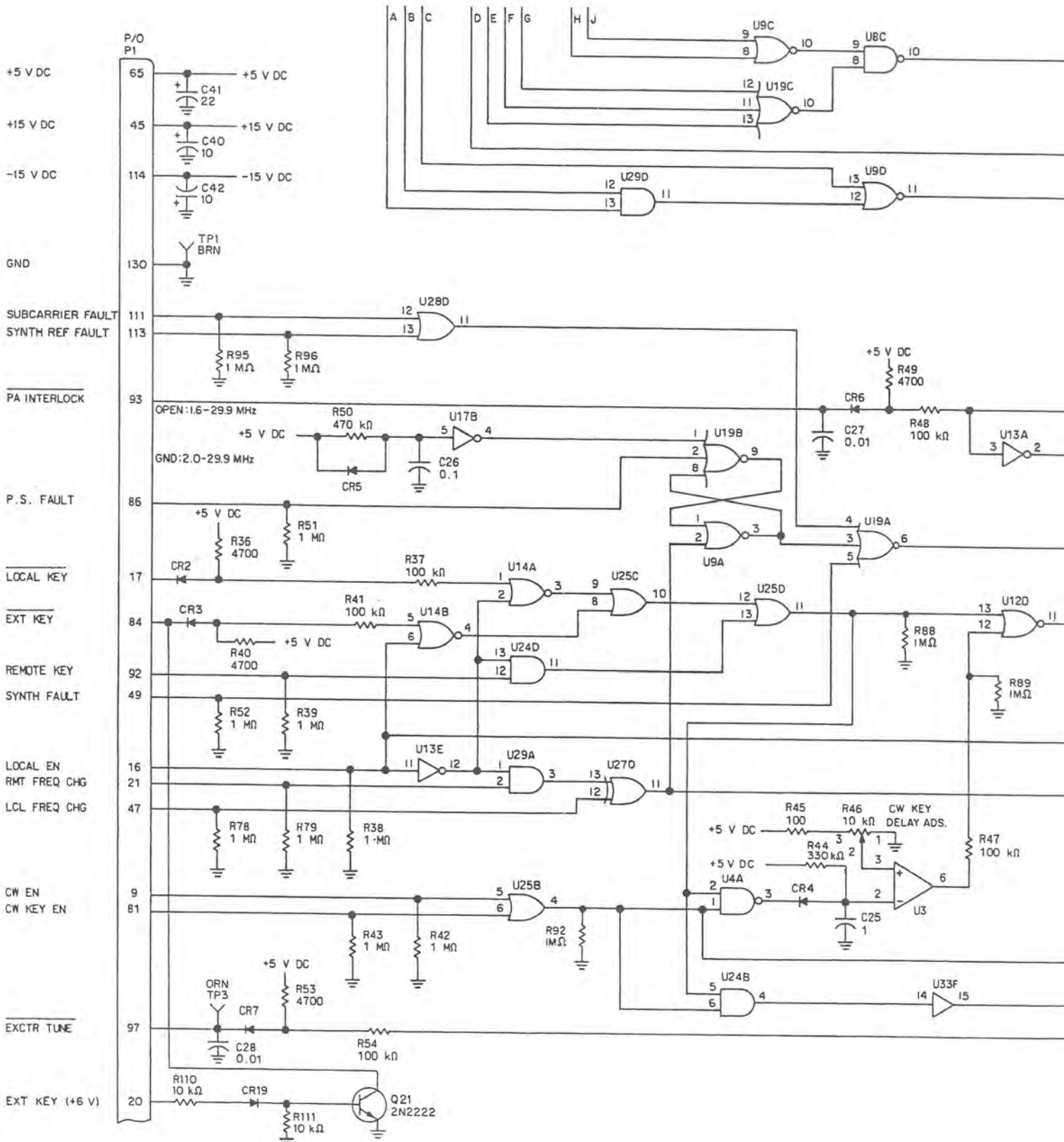
R28	RESISTOR, FIXED CMPSN, 0.18 MEGO, 5%, 1/4W	745-0829-000
-----	--	--------------

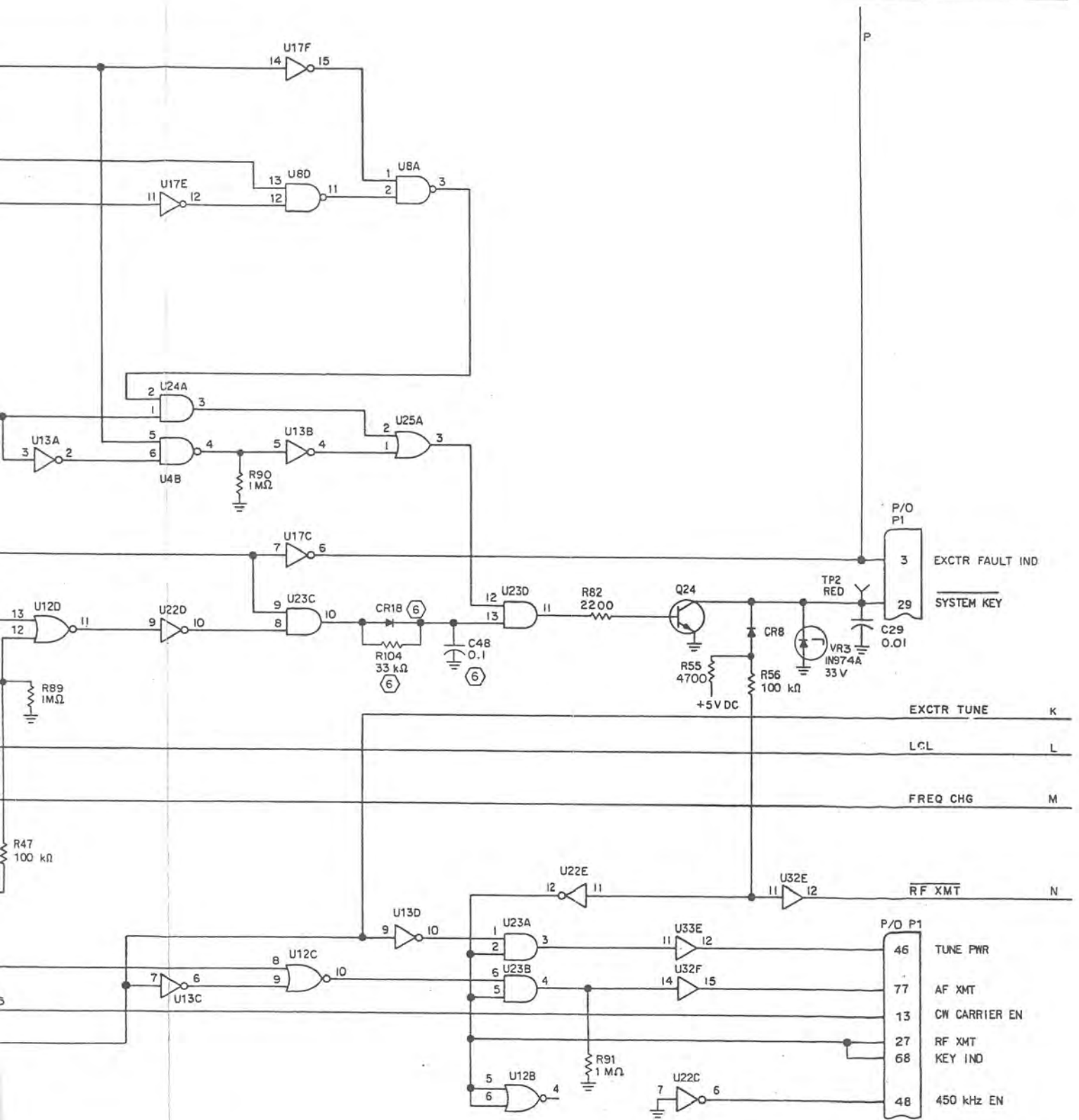




Control (638-6622-004),  
Schematic Diagram  
Figure 12 (Sheet 1 of 4)

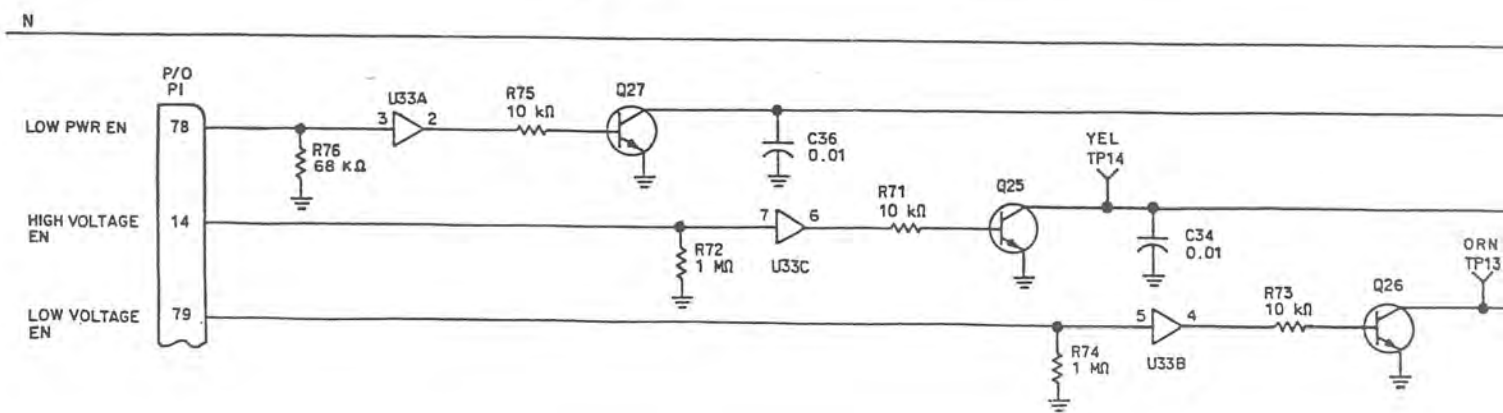
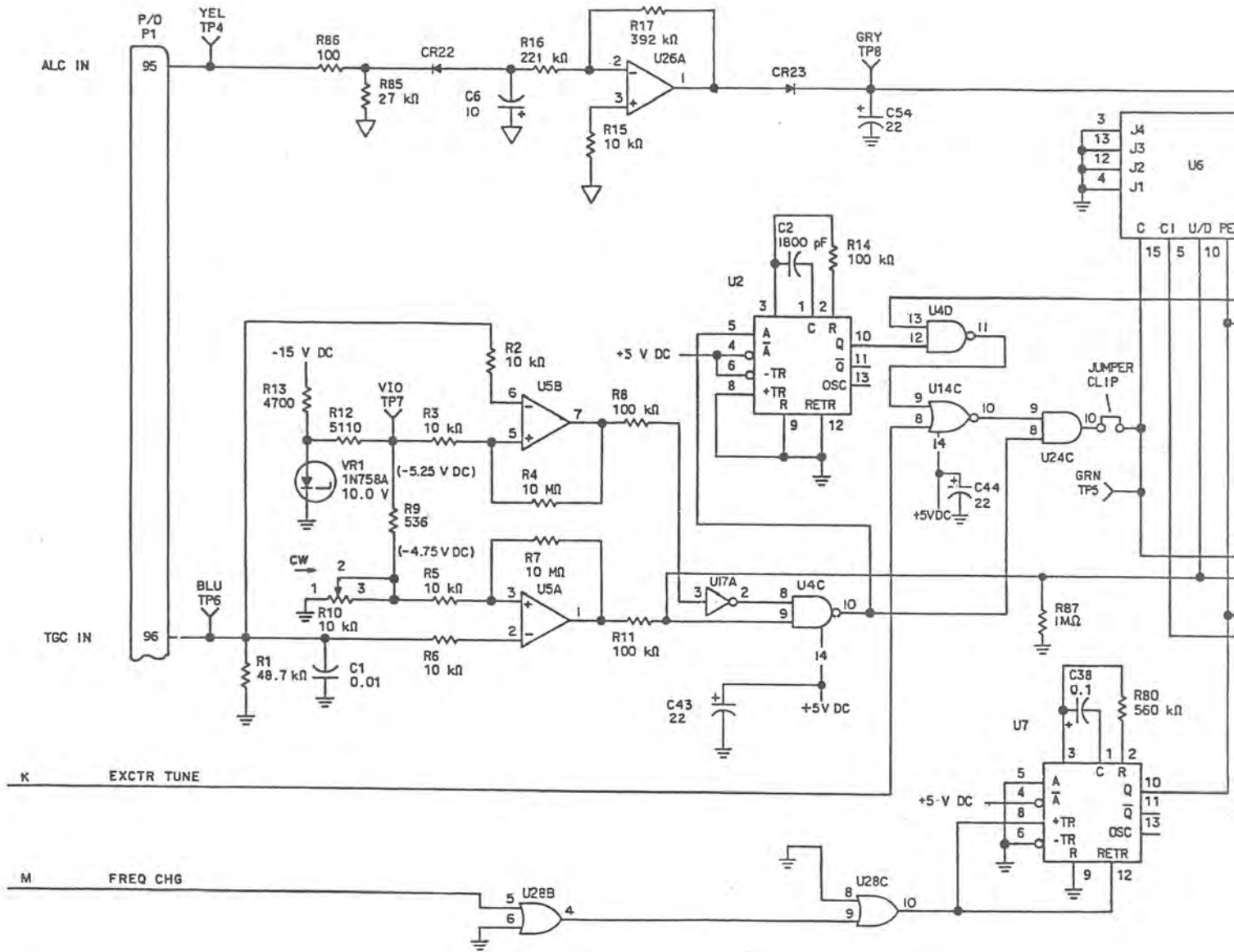


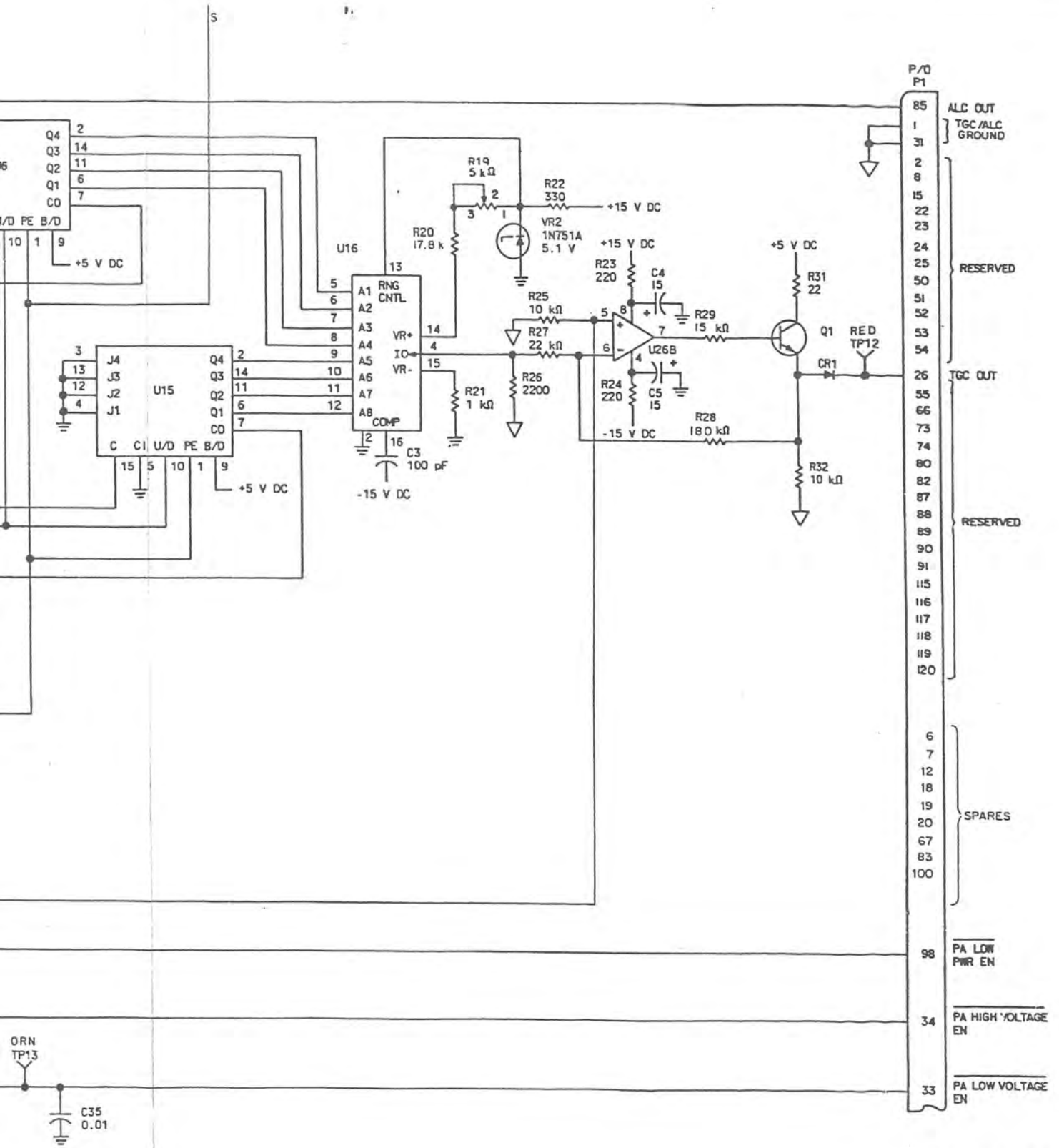




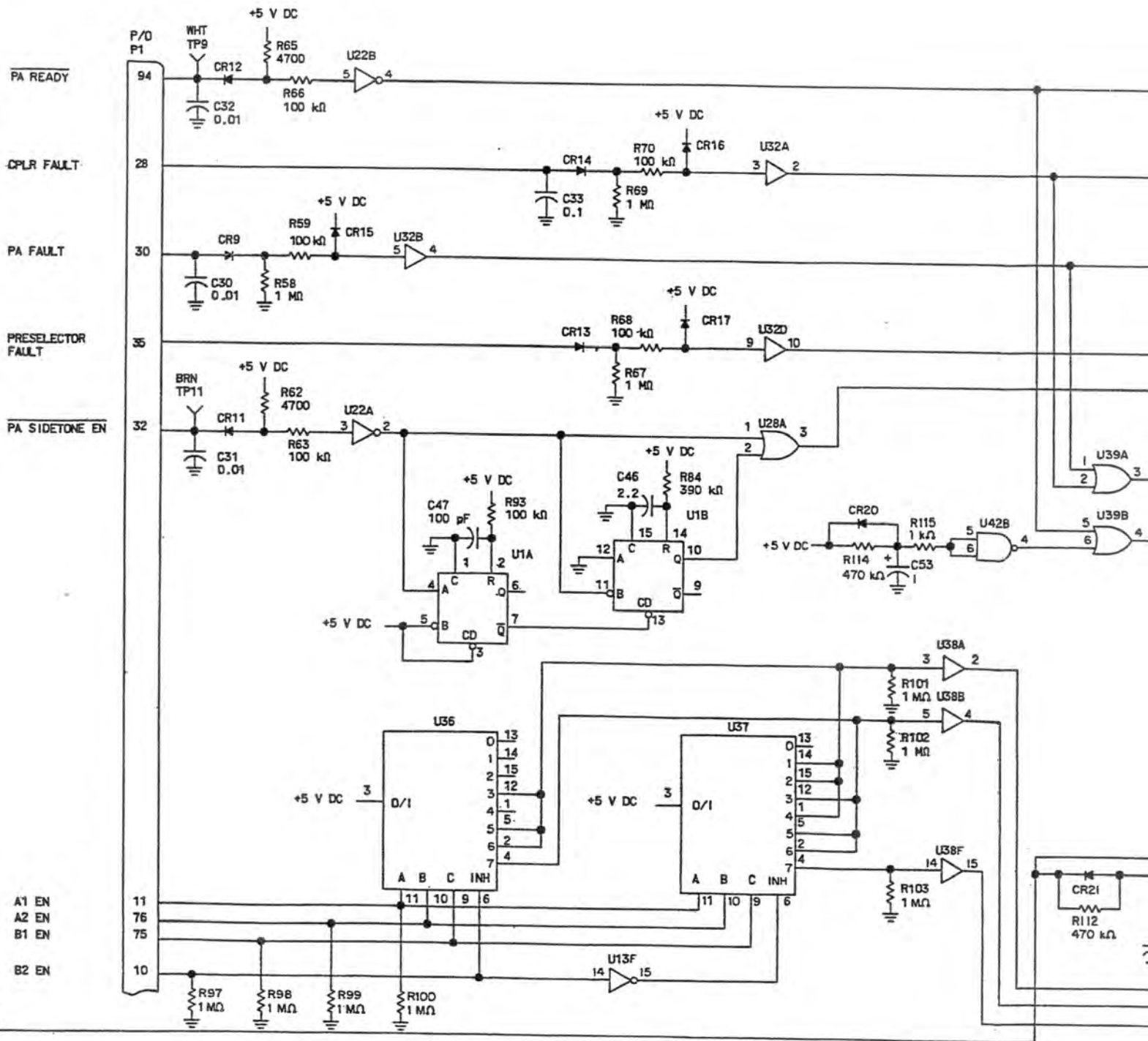
634-6816 SH 2

Control (638-6622-004),  
Schematic Diagram  
Figure 12 (Sheet 2)

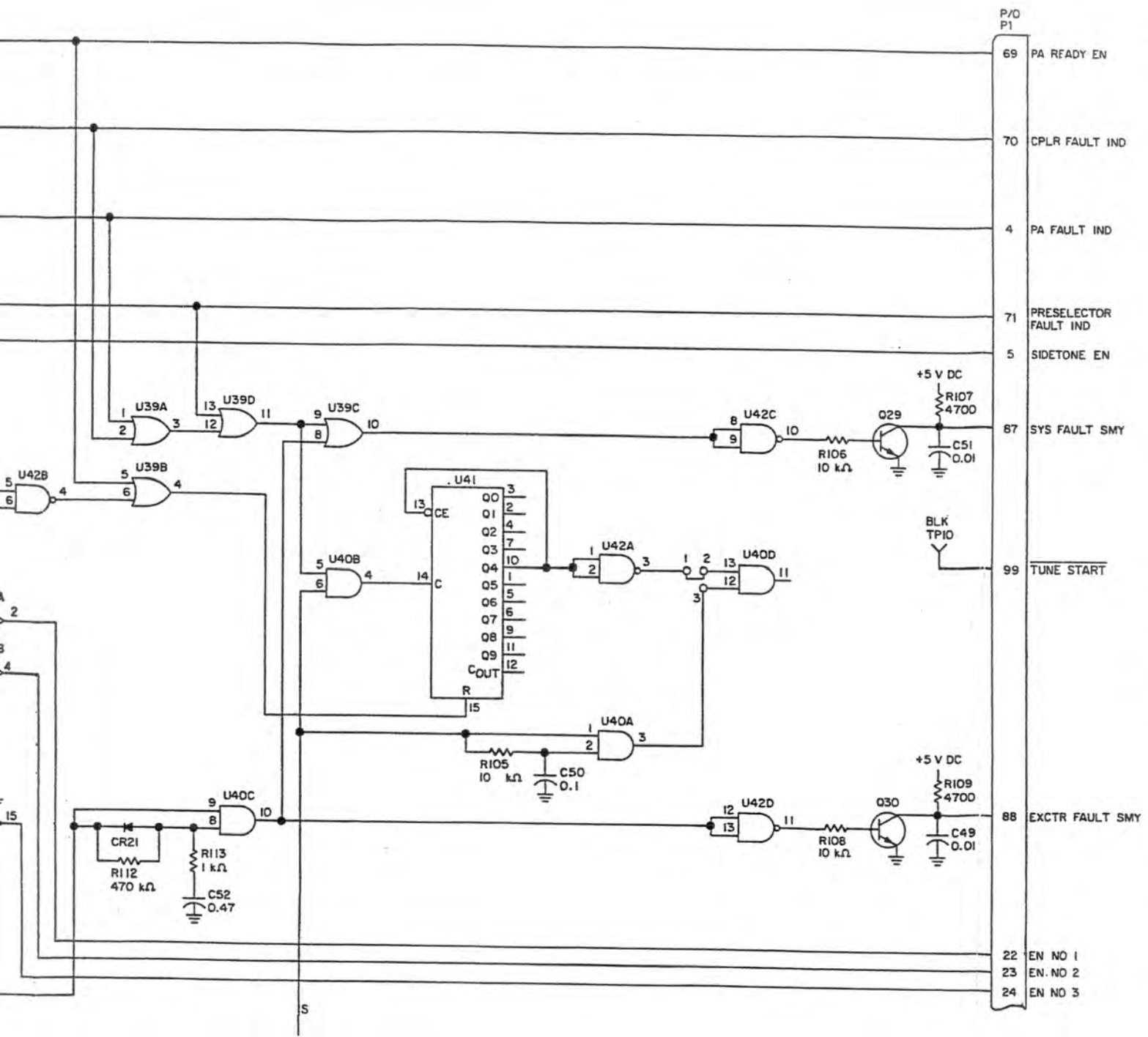




Control (638-6622-004),  
Schematic Diagram  
Figure 12 (Sheet 3)



R

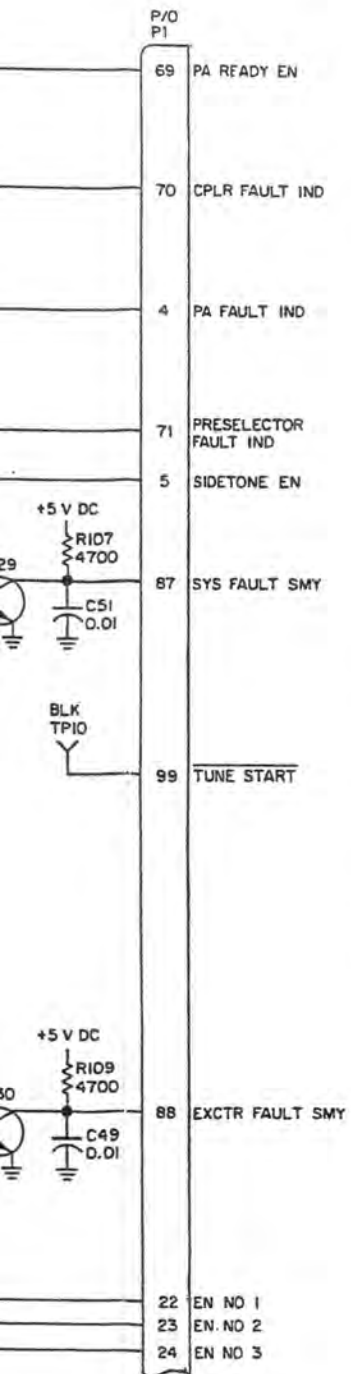


NOTE

- (1)
- (2)
- (3)
- (4)
- (5)

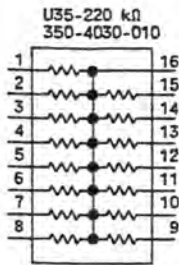
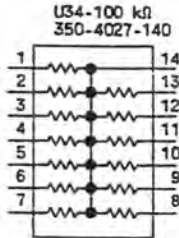
(5)

(5)



NOTES:

- ① UNLESS OTHERWISE SPECIFIED; RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES ARE IN MICROFARADS, DIODES ARE TYPE 1N4454 AND TRANSISTORS ARE TYPE 2N2222A.
- ② PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION, PREFIX WITH UNIT AND/OR ASSEMBLY DESIGNATION.
- ③ TYPE DESIGNATIONS SHOWN MAY BE GENERIC IN FORM AND ARE FOR REFERENCE ONLY. SEE APPLICABLE PARTS LIST FOR REPLACEMENT PARTS.
- ④ THIS EQUIPMENT CONTAINS ELECTROSTATIC DISCHARGE SENSITIVE (ESDS) DEVICES, SPECIAL HANDLING METHODS AND MATERIALS MUST BE USED TO PREVENT EQUIPMENT DAMAGE.
- ⑤ RESISTOR ARRAYS:  
 U10, U20, U30-10 kΩ  
 350-4027-09D -



MICROCIRCUIT INFORMATION

REF DES	COMMON DEVICE	PWR (V DC)				SPARE SECTIONS
		+15	-15	+5	GND	
U1	4528B			16	8	
U2	CD4047B			14	7	
U3	UA1741TC		4	7		
U4	MC14011B			14	7	
U5	MC1458P1	8	4			
U6	F4029B			16	8	
U7	CD4047B			14	7	
U8	MC14011B			14	7	B
U9	MC14001B			14	7	B
⑤ U10						
U11	CD4049B			1	8	
U12	MC14001B			14	7	A
U13	F4049B			1	8	
U14	MC14001B			14	7	D
U15	F4029B			16	8	
U16	MC1408L-B		3		2	
U17	F4049B			1	8	D
U18	NOT USED					
U19	MC14025B			14	7	
⑤ U20						
U21	F4049B			1	8	

REF DES	COMMON DEVICE	PWR (V DC)				SPARE SECTIONS
		+15	-15	+5	GND	
U22	F4049B			1	8	F
U23	MC14081B			14	7	
U24	MC14081B			14	7	
U25	MC14071B			14	7	
U26	MC1458P1					
U27	NOT USED					
U28	MC14071B			14	7	
U29	MC14081B			14	7	B,C
⑤ U30						
U31	F4049B			1	8	
U32	F4050B			1	8	C
U33	F4050B			1	8	D
⑤ U34				14		
U35				16		
U36	CD4051B			16	7,8	
U37	CD4051B			16	7,8	
U38	F4050B			1	8	C,D,E
U39	MC14071B			14	7	
U40	MC14081B			14	7	
U41	MC14017B			16	8	
U42	MC14011B			14	7	
U43	CD4047B			14	7	

634-6816 SH 4

Control (638-6622-004),  
Schematic Diagram  
Figure 12 (Sheet 4)



**VOLUME 2 CHANGES**

**FRONT MATTER**

Add the following entry to the end of the list on the right-hand side:

Injection Blanker Assembly (652-6861-001) 523-0773489

Add the above-mentioned section to the manual following RF Translator (637-1768-( )) 523-0767960-203211.

**VOLUME 3 CHANGES**

**FRONT MATTER**

In the list of instructions books on the title page, change:

Parallel Input (642-3135-001) 523-0770711

to

Parallel Input (642-3135-001, -002) 523-0770711

and change:

Parallel Output (642-3137-001) 523-0770712

to

Parallel Output (642-3137-001, -002) 523-0770712

Add the following entries after the last entry on the right-hand side:

Frequency Standard/Power Supply (646-5930-001) 523-0773484

DDS Control Interface (646-5905-003) 523-0773485

VFO/VCO Module (652-1015-002) 523-0773487

Parallel Interface (646-6329-001) 523-0773488

Add these sections to the manual in the order listed above after section entitled Frequency Standard Switch (646-6558-001) 523-0770716.

**Parallel Input (642-3135-001, -002) (523-0770711-001211)**

Change title as shown above.

**1. DESCRIPTION**

Add -002 right after part number 642-3135-001 in the first line of the first paragraph.

**VOLUME 2 CHANGES**

**FRONT MATTER**

Add the following entry to the end of the list on the right-hand side:

Injection Blanker Assembly (652-6861-001) 523-0773489

Add the above-mentioned section to the manual following RF Translator (637-1768-( )) 523-0767960-203211.

**VOLUME 3 CHANGES**

**FRONT MATTER**

In the list of instructions books on the title page, change:

Parallel Input (642-3135-001) 523-0770711

to

Parallel Input (642-3135-001, -002) 523-0770711

and change:

Parallel Output (642-3137-001) 523-0770712

to

Parallel Output (642-3137-001, -002) 523-0770712

Add the following entries after the last entry on the right-hand side:

Frequency Standard/Power Supply (646-5930-001) 523-0773484

DDS Control Interface (646-5905-003) 523-0773485

VFO/VCO Module (652-1015-002) 523-0773487

Parallel Interface (646-6329-001) 523-0773488

Add these sections to the manual in the order listed above after section entitled Frequency Standard Switch (646-6558-001) 523-0770716.

**Parallel Input (642-3135-001, -002) (523-0770711-001211)**

Change title as shown above.

**1. DESCRIPTION**

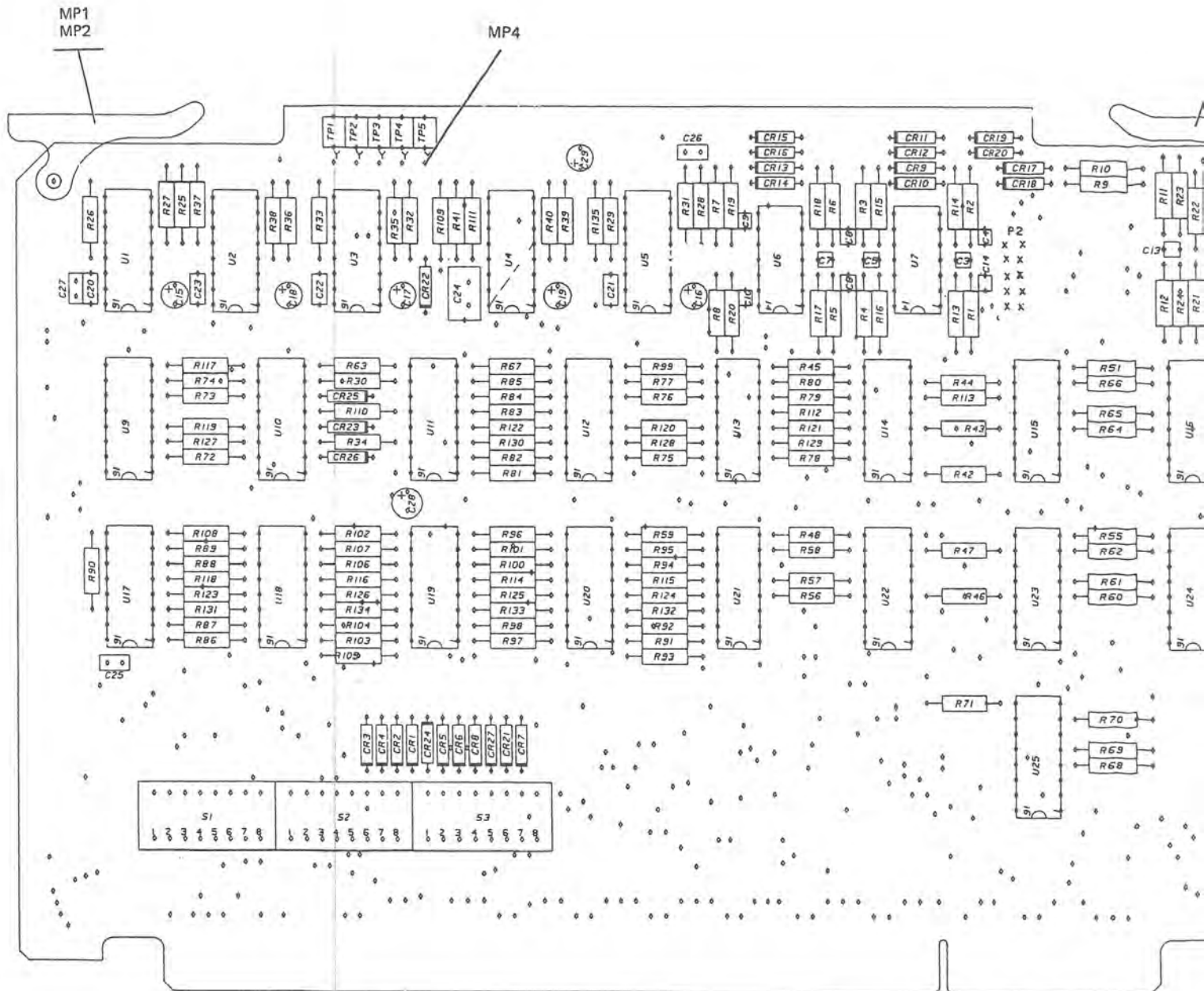
Add -002 right after part number 642-3135-001 in the first line of the first paragraph.

**5.3 Equipment Covered**

Add the following to the list:

<u>CIRCUIT CARD/ SUBASSEMBLY</u>	<u>COLLINS PART NUMBER</u>	<u>LATEST EFFECTIVITY</u>
Parallel Input	642-3135-002	REV H

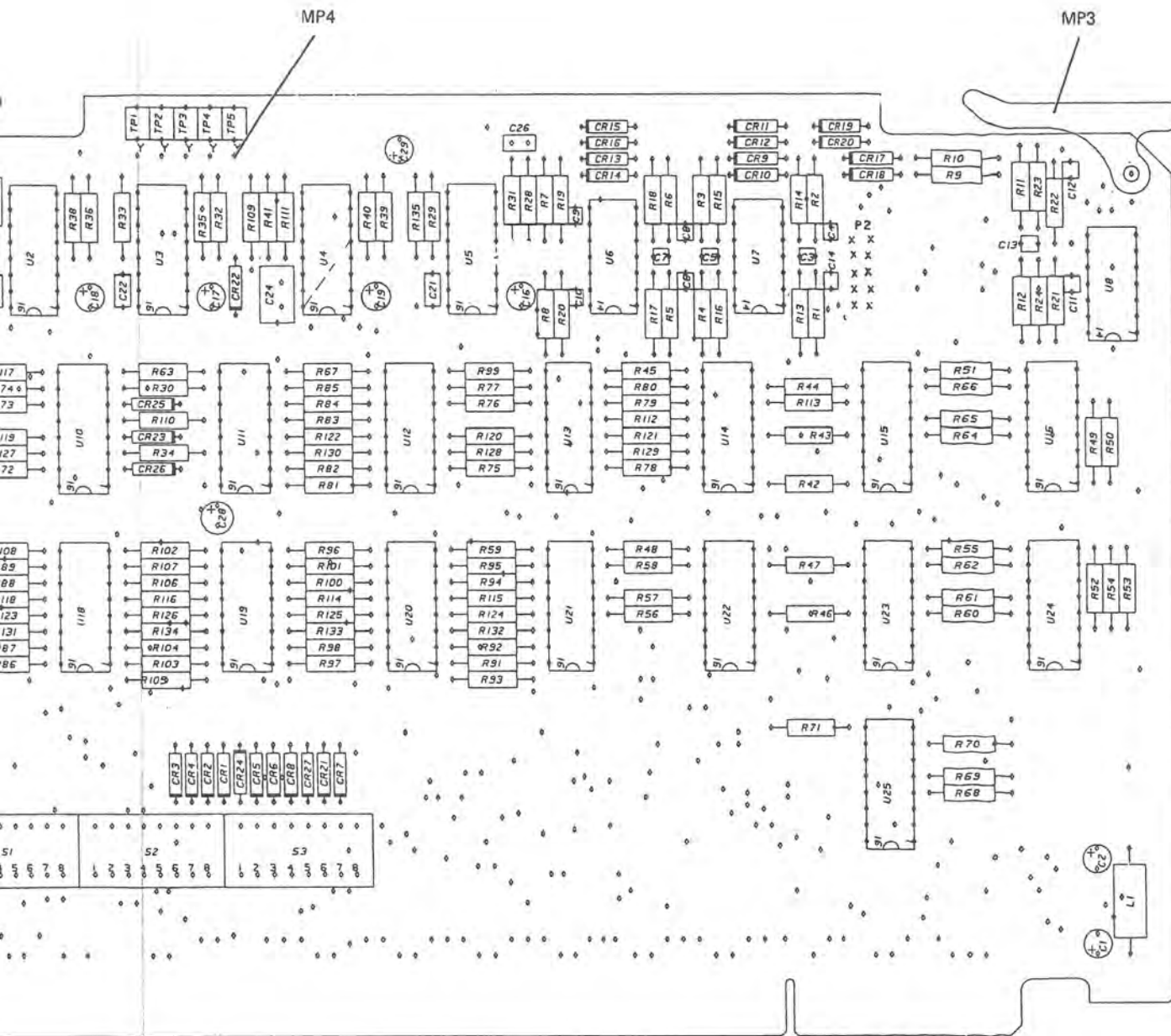
In figure 3, Parallel Input, Schematic Diagram (Sheet 1 of 6), change the title to read sheet 1 of 9. Add sheets 2A and 2B behind sheet 2 and sheet 7 behind sheet 6.



(-002)



Parallel Input, Schematic Diagram  
Figure 3 (Sheet 2A)



(-002)



TPA-7748-019

Parallel Input, Schematic Diagram  
Figure 3 (Sheet 2A)

The parts list for Parallel Input (642-3135-002) is the same as that for Parallel Input (642-3135-001), except for the following differences.

For 642-3135-002 only, add:

P2	CONTACTS (QTY 10)	372-2601-045
----	-------------------	--------------

For both 642-3135-001 and 642-3135-002, add:

MP1	LABEL, WARNING	280-2745-040
MP2	EXTRACTOR, SCREENED (QTY 1)	637-2987-001
MP3	EXTRACTOR, SCREENED (QTY 1)	635-0883-001
MP4	CONTACT, ELECTRICAL (QTY 5)	372-2601-037

CONTROL / STATUS BIT

WORD FORMAT			WORD FORMAT		
WORD NO.	CHARACTER NO.	BIT NO.	WORD NO.	CHARACTER NO.	BIT WT.
1	2	8	1	6	8
1	2	7	1	6	4
1	2	6	1	6	2
1	2	5	1	6	1
1	2	4	1	7	8
1	2	3	1	7	4
1	2	2	1	7	2
1	2	1	1	7	1
1	3	8	1	8	8
1	3	7	1	8	4
1	3	6	1	8	2
1	3	5	1	8	1
1	3	4	1	9	8
1	3	3	1	9	4
1	3	2	1	9	2
1	3	1	1	9	1
1	4	8	1	10	8
1	4	7	1	10	4
1	4	6	1	10	2
1	4	5	1	10	1
1	4	4	1	11	8
1	4	3	1	11	4
1	4	2	1	11	2
1	4	1	1	11	1
1	5	8	1	12	8
1	5	7	1	12	4
1	5	6	1	12	2
1	5	5	1	12	1
1	5	4	1	13	8
1	5	3	1	13	4
1	5	2	1	13	2
1	5	1	1	13	1
2	2	8	2	6	8
2	2	7	2	6	4
2	2	6	2	6	2
2	2	5	2	6	1
2	2	4	2	7	8
2	2	3	2	7	4
2	2	2	2	7	2
2	2	1	2	7	1
2	3	8	2	8	8
2	3	7	2	8	4
2	3	6	2	8	2
2	3	5	2	8	1
2	3	4	2	9	8
2	3	3	2	9	4
2	3	2	2	9	2
2	3	1	2	9	1
2	4	8	2	10	8
2	4	7	2	10	4
2	4	6	2	10	2
2	4	5	2	10	1
2	4	4	2	11	8
2	4	3	2	11	4
2	4	2	2	11	2
2	4	1	2	11	1
2	5	8	2	12	8
2	5	7	2	12	4
2	5	6	2	12	2
2	5	5	2	12	1
2	5	4	2	13	8
2	5	3	2	13	4
2	5	2	2	13	2
2	5	1	2	13	1

HF-BOXX 2-CHANNEL RADIOS AND HF-BOXX 2-CHANNEL CONTROLS		FUNCTION
PARALLEL OUTPUT PIN NO.	PARALLEL INPUT PIN NO.	
103	38	COMMAND (C) STATUS REQUEST (S)
129	129	FREQ 10 MHz (2)
64	64	FREQ 10 MHz (1)
128	128	FREQ 1 MHz (8)
63	63	(4)
127	127	(2)
62	62	(1)
126	126	FREQ 100 kHz (8)
61	61	(4)
125	125	(2)
60	60	(1)
124	124	FREQ 10 kHz (8)
59	59	(4)
123	123	(2)
58	58	(1)
122	122	FREQ 1 kHz (8)
57	57	(4)
121	121	(2)
56	56	(1)
120	120	FREQ 100 Hz (8)
55	55	(4)
119	119	(2)
54	54	(1)
118	118	FREQ 10 Hz (8)
53	53	(4)
117	117	(2)
52	52	(1)
116	116	FREQ 1 Hz (8)
51	51	(4)
115	115	(2)
50	50	(1)
103	38	COMMAND (C) STATUS REQUEST (S) NOT USED
76	76	RF GAIN (16)
11	11	(8)
75	75	(4)
10	10	(2)
22	87	(1)
3		NOT USED
41	41	VBFO ENBL
106	106	AFC ENBL
37	37	AGC CROWBAR ENBL
84	84	USB AGC OFF
85	85	USB AGC FAST
19	19	LSB AGC OFF
20	20	LSB AGC FAST
100	100	FL8 ENBL
99	99	FL7 ENBL
35	35	FL6 ENBL
34	34	FL5 ENBL
98	98	FL4 ENBL
33	33	FL3 ENBL
97	97	FL2 ENBL
32	32	FL1 ENBL
73	73	FM ENBL
8	8	AM ENBL
72	72	SSB ENBL
9	9	CW ENBL
74	74	ISB ENBL
6	92	RESERVED
26	91	RESERVED
17	21	RESERVED

EQUIPMENT TYPE

851S-1/2, HF-8095		FUNCTION
PARALLEL OUTPUT PIN NO.	PARALLEL INPUT PIN NO.	
103	38	COMMAND (C) STATUS REQUEST (S)
129	129	FREQ 10 MHz (2)
64	64	FREQ 10 MHz (1)
128	128	FREQ 1 MHz (8)
63	63	(4)
127	127	(2)
62	62	(1)
126	126	FREQ 100 kHz (8)
61	61	(4)
125	125	(2)
60	60	(1)
124	124	FREQ 10 kHz (8)
59	59	(4)
123	123	(2)
58	58	(1)
122	122	FREQ 1 kHz (8)
57	57	(4)
121	121	(2)
56	56	(1)
120	120	FREQ 100 Hz (8)
55	55	(4)
119	119	(2)
54	54	(1)
118	118	FREQ 10 Hz (8)
53	53	(4)
117	117	(2)
52	52	(1)
116	116	FREQ 1 Hz (8)
51	51	(4)
115	115	(2)
50	50	(1)
103	38	COMMAND (C) STATUS REQUEST (S) NOT USED
76	76	RF GAIN (16)
11	11	(8)
75	75	(4)
10	10	(2)
22	87	(1)
3		NOT USED
41	41	VBFO ENBL
106	106	RESERVED
37	37	AGC CROWBAR ENBL
84	84	USB AGC OFF
85	85	USB AGC FAST
19	19	LSB AGC OFF
20	20	LSB AGC FAST
100	100	FL8 ENBL
99	99	FL7 ENBL
35	35	FL6 ENBL
34	34	FL5 ENBL
98	98	FL4 ENBL
33	33	FL3 ENBL
97	97	FL2 ENBL
32	32	FL1 ENBL
73	73	FM ENBL
8	8	AM ENBL
72	72	SSB ENBL
9	9	CW ENBL
74	74	ISB ENBL
6	92	RESERVED
26	91	RESERVED
17	21	RESERVED

4-CHANNEL EXCITER, AND 4-CHANNEL EXCITER CONTROL		FUNCTION
PARALLEL OUTPUT PIN NO.	PARALLEL INPUT PIN NO.	
		NOT USED
		NOT USED
129	129	FREQ 10 MHz (2)
64	64	FREQ 10 MHz (1)
128	128	FREQ 1 MHz (8)
63	63	(4)
127	127	(2)
62	62	(1)
126	126	FREQ 100 kHz (8)
61	61	(4)
125	125	(2)
60	60	(1)
124	124	FREQ 10 kHz (8)
59	59	(4)
123	123	(2)
58	58	(1)
122	122	FREQ 1 kHz (8)
57	57	(4)
121	121	(2)
56	56	(1)
120	120	FREQ 100 Hz (8)
55	55	(4)
119	119	(2)
54	54	(1)
118	118	FREQ 10 Hz (8)
53	53	(4)
117	117	(2)
52	52	(1)
116	116	FREQ 1 Hz (8)
51	51	(4)
115	115	(2)
50	50	(1)
		NOT USED
76	76	(16)
11	11	(8)
75	75	(4)
10	10	(2)
22	87	(1)
3	12	NOT USED
41	41	VBFO ENBL
106	106	RESERVED
37	37	AGC CROWBAR ENBL
84	84	USB AGC OFF
85	85	USB AGC FAST
19	19	LSB AGC OFF
20	20	LSB AGC FAST
100	100	NOT USED
99	99	NOT USED
35	35	NOT USED
34	34	NOT USED
98	98	NOT USED
33	33	NOT USED
97	97	NOT USED
32	32	PEAK CLIPPER ENBL
73	73	NOT USED
8	8	AM ENBL
72	72	CW ENBL
9	9	ISB ENBL
74	74	B2 ENBL
6	92	B1 ENBL
26	91	A1 ENBL
17	21	A2 ENBL

4-CHANNEL RECEIVER, AND 4-CHANNEL RECEIVER CONTROL		FUNCTION
PARALLEL OUTPUT PIN NO.	PARALLEL INPUT PIN NO.	
		NOT USED
		NOT USED
129	129	FREQ 10 MHz (2)
64	64	FREQ 10 MHz (1)
128	128	FREQ 1 MHz (8)
63	63	(4)
127	127	(2)
62	62	(1)
126	126	FREQ 100 kHz (8)
61	61	(4)
125	125	(2)
60	60	(1)
124	124	FREQ 10 kHz (8)
59	59	(4)
123	123	(2)
58	58	(1)
122	122	FREQ 1 kHz (8)
57	57	(4)
121	121	(2)
56	56	(1)
120	120	FREQ 100 Hz (8)
55	55	(4)
119	119	(2)
54	54	(1)
118	118	FREQ 10 Hz (8)
53	53	(4)
117	117	(2)
52	52	(1)
116	116	FREQ 1 Hz (8)
51	51	(4)
115	115	(2)
50	50	(1)
		NOT USED
76	76	NOT USED
11	11	RF GAIN (16)
75	75	(8)
10	10	(4)
22	87	(2)
22	87	(1)
3	12	FL7 (E) ENBL
41	41	FL6 (D) ENBL
106	106	FL5 (C) ENBL
37	37	FL4 (B) ENBL
84	84	B2 AGC (2)
85	85	B2 AGC (1)
19	19	A2 AGC (2)
20	20	A2 AGC (1)
100	100	FL3 (A) ENBL
99	99	FL1 (16 kHz) ENBL
35	35	VBFO ENBL
34	34	AFC ENBL
98	98	B1 AGC (2)
33	33	B1 AGC (1)
97	97	A1 AGC (2)
32	32	A1 AGC (1)
73	73	DATA NET ENBL
8	8	AM ENBL
72	72	CW ENBL
9	9	ISB ENBL
74	74	B2 ENBL
6	92	B1 ENBL
26	91	A1 ENBL
17	21	A2 ENBL



CTION (SIGNAL NAME) TABLE

CONTROL / STATUS BIT					
WORD FORMAT					
HF-80 8-BIT			ASCII 7-BIT		
WORD NO.	CHARACTER NO.	BIT NO.	WORD NO.	CHARACTER NO.	BIT WT.
3	2	8	3	6	8
3	2	7	3	6	4
3	2	6	3	6	2
3	2	5	3	6	1
3	2	4	3	7	8
3	2	3	3	7	4
3	2	2	3	7	2
3	2	1	3	7	1
3	3	8	3	8	8
3	3	7	3	8	4
3	3	6	3	8	2
3	3	5	3	8	1
3	3	4	3	9	8
3	3	3	3	9	4
3	3	2	3	9	2
3	3	1	3	9	1
3	4	8	3	10	8
3	4	7	3	10	4
3	4	6	3	10	2
3	4	5	3	10	1
3	4	4	3	11	8
3	4	3	3	11	4
3	4	2	3	11	2
3	4	1	3	11	1
3	5	8	3	12	8
3	5	7	3	12	4
3	5	6	3	12	2
3	5	5	3	12	1
3	5	4	3	13	8
3	5	3	3	13	4
3	5	2	3	13	2
3	5	1	3	13	1
4	2	8	4	6	8
4	2	7	4	6	4
4	2	6	4	6	2
4	2	5	4	6	1
4	2	4	4	7	8
4	2	3	4	7	4
4	2	2	4	7	2
4	2	1	4	7	1
4	3	8	4	8	8
4	3	7	4	8	4
4	3	6	4	8	2
4	3	5	4	8	1
4	3	4	4	9	8
4	3	3	4	9	4
4	3	2	4	9	2
4	3	1	4	9	1
4	4	8	4	10	8
4	4	7	4	10	4
4	4	6	4	10	2
4	4	5	4	10	1
4	4	4	4	11	8
4	4	3	4	11	4
4	4	2	4	11	2
4	4	1	4	11	1
4	5	8	4	12	8
4	5	7	4	12	4
4	5	6	4	12	2
4	5	5	4	12	1
4	5	4	4	13	8
4	5	3	4	13	4
4	5	2	4	13	2
4	5	1	4	13	1

HF-BOXX 2-CHANNEL RADIOS, AND HF-BOXX 2-CHANNEL CONTROLS		
PARALLEL OUTPUT PIN NO.	PARALLEL INPUT PIN NO.	FUNCTION
103	103	COMMAND (C)
38	38	STATUS REQUEST (S)
107	107	VBFO SIGN
48	48	VBFO FREQ 1 kHz (8)
113	113	(4)
47	47	(2)
112	112	(1)
46	46	VBFO FREQ 100 Hz (8)
111	111	(4)
110	110	(2)
44	44	(1)
109	109	VBFO FREQ 10 Hz (8)
43	43	(4)
108	108	(2)
42	42	(1)
7	7	NOT USED
8	8	NOT USED
10	10	NOT USED
9	9	NOT USED
3	3	NOT USED
5	5	NOT USED
6	6	NOT USED
4	4	NOT USED
18	81	NOT USED
82	82	PILOT CARRIER ENBL
78	78	PA L PWR ENBL
14	14	PA HV ENBL
79	79	PA LV ENBL
103	103	COMMAND (C)
38	38	STATUS REQUEST (S)
NOT USED	NOT USED	NOT USED
92	68	REMOTE KEY (MON)
NOT USED	NOT USED	NOT USED
(2)	2	AFC LOCK
(40)	40	EXCTR RF MON
105	105	CHAN A XMT AF MON
36	36	CHAN A RCV AF MON
83	83	CHAN A AGC MON
39	39	CHAN B XMT MON
101	101	CHAN B RCV MON
18	18	CHAN B AGC MON
(69)	69	PA RDY
(77)	4	PA FLT
(5)	5	PA RF MON
(13)	70	CPLR FLT
(67)	67	RF OVLD FLT
49	49	SYNTH FLT
86	86	PS FLT
(12)	3	RCVR/EXCTR FLT
(70)	NOT USED	NOT USED
(104)	NOT USED	NOT USED
(27)	7	VBFO SYNTH FLT
(92)	NOT USED	NOT USED
(28)	71	PRESEL FLT
(29)	95	DATA ERROR
(95)	16	LOCAL CONTROL
(30)	80	MONITOR

EQUIPMENT TYPE		
851S - 1/2, HF-8095		
PARALLEL OUTPUT PIN NO.	PARALLEL INPUT PIN NO.	FUNCTION
103	103	COMMAND (C)
38	38	STATUS REQUEST (S)
107	107	VBFO SIGN
48	48	VBFO FREQ 1 kHz (8)
113	113	(4)
47	47	(2)
112	112	(1)
46	46	VBFO FREQ 100 Hz (8)
111	111	(4)
110	110	(2)
44	44	(1)
109	109	VBFO FREQ 10 Hz (8)
43	43	(4)
108	108	(2)
42	42	(1)
7	7	NOT USED
8	8	NOT USED
10	10	NOT USED
9	9	NOT USED
3	3	NOT USED
5	5	NOT USED
6	6	NOT USED
4	4	NOT USED
18	81	NOT USED
82	82	VBFO TUNE
78	78	VBFO PARALLEL ENBL
14	14	FINE TUNE
79	79	RESERVED
103	103	COMMAND (C)
38	38	STATUS REQUEST (S)
27	105	UP/DOWN
92	68	TUNE RATE (16)
28	4	(8)
29	39	(4)
95	5	(2)
30	70	(1)
(2)	2	NOT USED
(40)	40	NOT USED
105	105	NOT USED
36	36	CHAN A AF MON
83	83	CHAN A AGC MON
39	39	NOT USED
101	101	CHAN B AF MON
18	18	CHAN B AGC MON
(69)	69	NOT USED
(77)	4	NOT USED
(5)	5	NOT USED
(13)	70	RF OVLD FLT
(67)	67	SYNTH
49	49	PS FLT
86	86	RCVR FLT
(12)	3	NOT USED
(70)	NOT USED	NOT USED
(104)	NOT USED	NOT USED
(27)	7	VBFO SYNTH FLT
(92)	NOT USED	NOT USED
(28)	71	PRESEL FLT
(29)	95	DATA ERROR
(95)	16	LOCAL CONTROL
(30)	80	MONITOR

4-CHANNEL EXCITER, AND 4-CHANNEL EXCITER, CONTROL		
PARALLEL OUTPUT PIN NO.	PARALLEL INPUT PIN NO.	FUNCTION
NOT USED	NOT USED	NOT USED
107	107	VBFO SIGN
48	48	VBFO FREQ 1 kHz (8)
113	113	(4)
47	47	(2)
112	112	(1)
NOT USED	NOT USED	NOT USED
7	7	GPI-1 (1)
8	8	GPI-2
10	10	GPI-3
9	9	GPO-1
3	3	GPO-2
5	5	SER TS OVDR
6	6	PAR BCD ENBL
4	4	PAR RF GAIN ENBL
NOT USED	NOT USED	NOT USED
18	81	PILOT CARRIER ENBL
82	82	PA LO PWR ENBL
78	78	PA HV ENBL
14	14	PA LV ENBL
79	79	RESERVED
(12)	13	EXCTR FLT
92	68	SYSTEM KEY
(68)	88	B2 AF MON
23	23	B1 AF MON
22	22	A1 AF MON
24	24	A2 AF MON
(2)	2	NOT USED
(40)	40	NOT USED
105	105	NOT USED
36	36	NOT USED
83	83	NOT USED
39	39	CONT INTFC FLT (DDS)
101	101	VFO FAULT (DDS)
18	18	RF FAULT (DDS)
(69)	69	NOT USED
(77)	4	SUBCARRIER LOCK FLT
(5)	5	EXCTR RF MON
(13)	70	EXCTR PS FLT
(67)	67	NOT USED
49	49	EXT STANDARD
86	86	A1 IF MON
(105)	3	NOT USED
(70)	77	PA READY
(104)	102	PA FLT
(27)	7	PA RF MON
(92)	89	CPLR FLT
(28)	71	PRESEL FLT
(29)	95	DATA ERROR
(95)	16	LOCAL CONTROL
(30)	80	MONITOR

4-CHANNEL RECEIVER, AND 4-CHANNEL RECEIVER CONTROL		
PARALLEL OUTPUT PIN NO.	PARALLEL INPUT PIN NO.	FUNCTION
NOT USED	NOT USED	NOT USED
107	107	VBFO SIGN
48	48	VBFO FREQ 1 kHz (8)
113	113	(4)
47	47	(2)
112	112	(1)
46	46	VBFO FREQ 100 Hz (8)
111	111	(4)
110	110	(2)
44	44	(1)
109	109	VBFO FREQ 10 Hz (8)
43	43	(4)
108	108	(2)
42	42	(1)
7	7	GPI-1 (1)
8	8	GPI-2
10	10	GPI-3
9	9	GPO-1
3	3	GPO-2
5	5	SER TS OVDR
6	6	SER BCD ENBL
4	4	SER RF GAIN ENBL
NOT USED	NOT USED	NOT USED
18	81	B2 AGC BUS
82	82	B1 AGC BUS
78	78	A1 AGC BUS
14	14	A2 AGC BUS
79	79	RESERVED
(12)	13	RCV FLT
92	68	RF OVLD FLT
(68)	88	B2 AF MON
23	23	B1 AF MON
22	22	A1 AF MON
24	24	A2 AF MON
(2)	2	NOT USED
(40)	40	NOT USED
105	105	NOT USED
36	36	NOT USED
83	83	NOT USED
39	39	CONT INTFC FLT (DDS)
101	101	VFO FAULT (DDS)
18	18	RF FAULT (DDS)
(69)	69	NOT USED
(77)	4	SUBCARRIER LOCK FLT
(5)	5	VBFO SYNTH FLT
(13)	70	RCVR PS FLT
(67)	67	B2 AGC MON
49	49	B1 AGC MON
86	86	A1 AGC MON
(105)	3	A2 AGC MON
(70)	77	NOT USED
(104)	102	EXT STANDARD
(27)	7	AFC LOCK MON
(92)	89	RF PERF MON
(28)	71	PRESEL FLT
(29)	95	DATA ERROR
(95)	16	LOCAL CONTROL
(30)	80	MONITOR

Parallel Input, Schematic Diagram Figure 3 (Sheet 7)

**Parallel Output (642-3137-001, -002) (523-0770712-001211)**

Change title as shown above.

**1. DESCRIPTION**

Add -002 behind part number 642-3137-001 in the first line of the first paragraph.

**2.3 Serial-to-Parallel Shift Registers**

Add the following sentence to the end of the first paragraph: For part number 642-3137-002, refer to the table on the schematic diagram (figure 4).

**3.2 Testing**

Add the following steps to table 2, test 4.

Table 2. Parallel Output, Testing and Troubleshooting Procedures (Cont).

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
4. (Cont)	<p style="text-align: center;"><b>Note</b></p> <p style="text-align: center;">Steps l and m are applicable only to 642-3137-002 circuit boards.</p> <p>l. Connect a processor to the local unit.</p> <p>m. Address word 3, character 4, and type all ones. Monitor the pins of P2 for the following indications.</p>		
	PARALLEL P2 PIN NO	LOGIC PRESENT	IF ABNORMAL, CHECK
	3	1	U13
	4	1	
	5	1	
	6	1	
	7	1	
	8	1	
	9	1	
	10	1	

**6.3 Equipment Covered**

Add the following entry to the equipment list:

CIRCUIT CARD/  
SUBASSEMBLY

COLLINS  
PART NUMBER

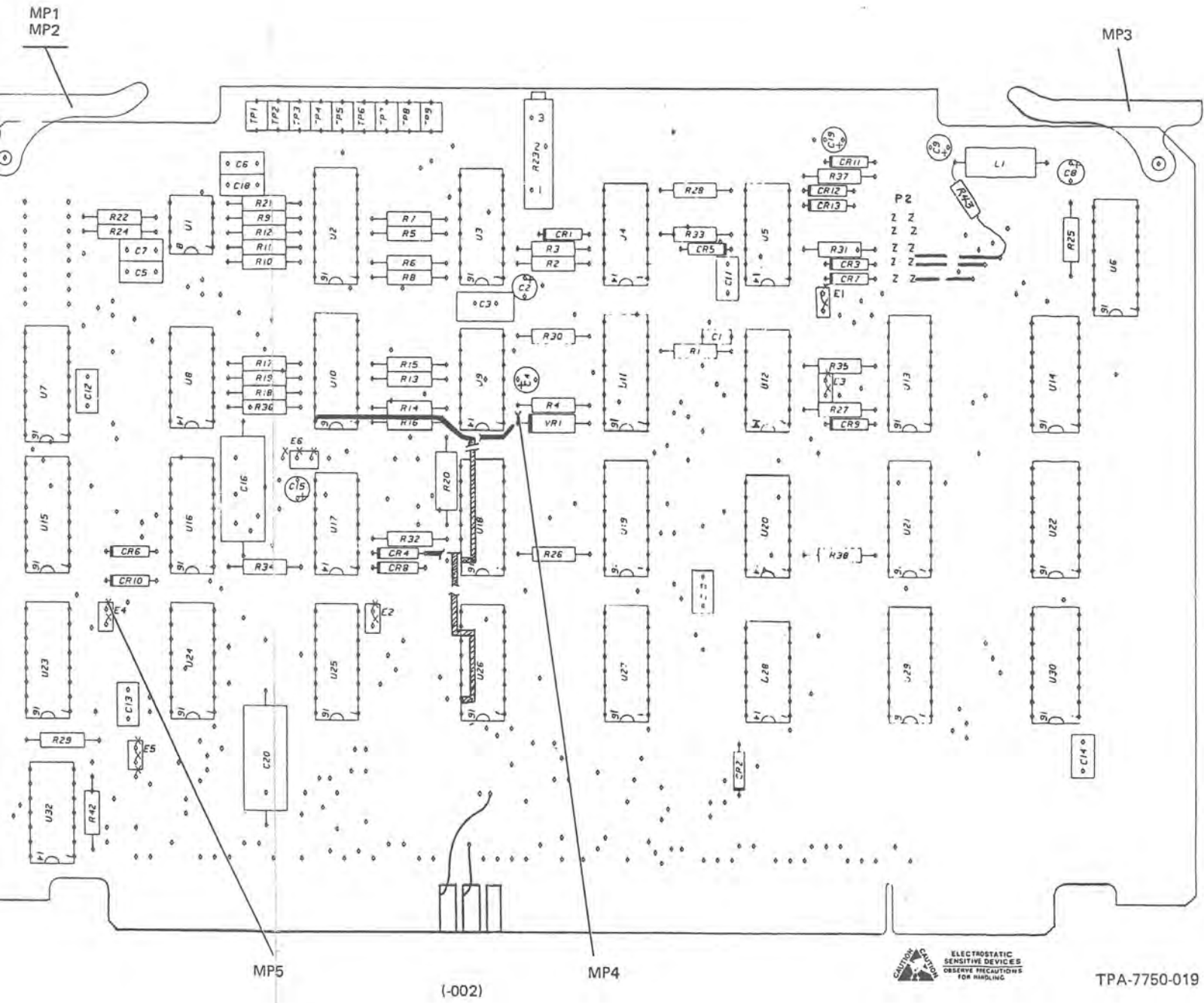
LATEST  
EFFECTIVITY

Parallel Output

642-3137-002

REV L

Add figure 4 behind figure 3.



CAUTION CAUTION  
ELECTROSTATIC SENSITIVE DEVICES  
OBSERVE PRECAUTIONS FOR HANDLING

TPA-7750-019

Parallel Output (642-3137-002),  
Schematic Diagram  
Figure 4 (Sheet 1 of 6)

The parts list for Parallel Output (642-3137-002) is the same as that for Parallel Output (642-3137-001), except for the following differences.

For 642-3137-002 only, add:

E1	NOT USED	
E2-E6	CONNECTOR, JMPR SYS	372-0046-010
P2	CONTACT, ELECTRICAL (QTY 10)	372-2601-045
R43	RESISTOR, FIXED CMPSN, 1 MEGO, 10%, 1/4 W	745-0857-000

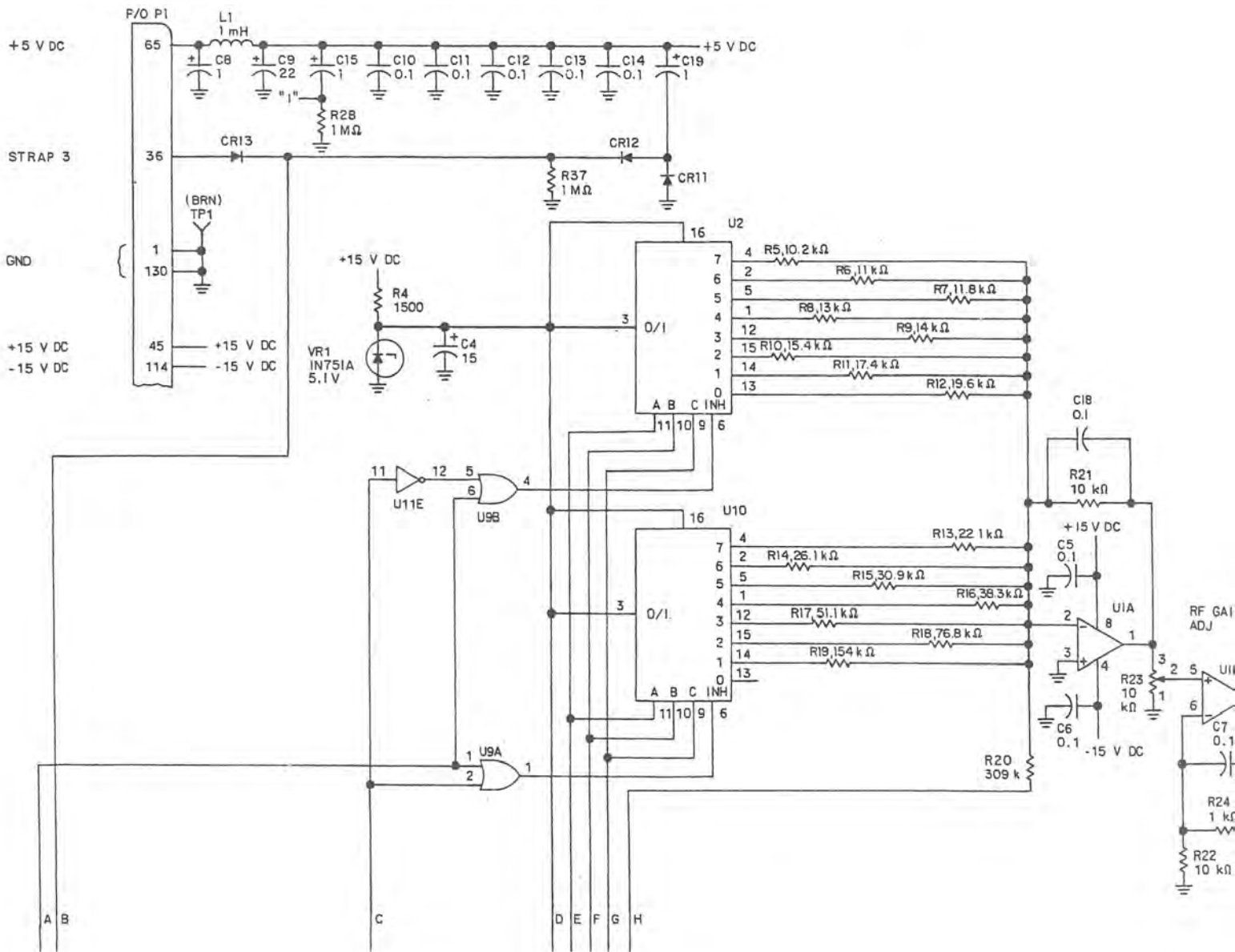
For both 642-3137-001 and 642-3137-002, add:

MP1	LABEL, WARNING (QTY 1)	280-2745-040
MP2	EXTRACTOR, SCREENED (QTY 1)	637-2988-001
MP3	EXTRACTOR, SCREENED (QTY 1)	635-0884-001
MP4	CONTACT, ELECTRICAL (QTY 3)	372-2601-030
MP5	CONTACT, ELECTRICAL (QTY 15)	372-2601-037

NOTES:

- ① UNLESS OTHERWISE SPECIFIED, RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE VALUES ARE IN MICROFARADS.
- ② PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION, PREFIX WITH UNIT AND/OR ASSEMBLY DESIGNATION.
- ③ TYPE DESIGNATION SHOWN MAY BE GENERIC IN FORM AND ARE FOR REFERENCE ONLY. SEE APPLICABLE PARTS LIST FOR REPLACEMENT PARTS.
- ④ UNLESS OTHERWISE SPECIFIED; DIODES ARE TYPE IN4454.
- ⑤ P2 IS A CABLE CONNECTOR FIELD. THIS CABLE CONNECTOR (372-0043-010) IS NOT IN 642-3137-001 CONFIGURATION.
- ⑥ THE FOLLOWING PARTS PROVIDE FOR REMOTE CONTROL OF LOCAL/REMOTE IN A RADIO AND ARE NOT IN 642-3137-001 CONFIGURATION: R39, R40, R41, Q1, Q2, AND U31.

- ⑦ SIGNAL NAMES ARE NOT SHOWN FOR P1 AND P2 PINS THAT ARE ASSOCIATED WITH CONTROL/STATUS BITS. THESE PINS HAVE DIFFERENT SIGNAL NAMES ON THE EQUIPMENT THIS CARD IS USED IN. REFER TO TABLE FOR PIN FUNCTION NAMES). ALL PIN NUMBERS IN TABLE ARE ON P1, EXCEPT WORD 3, WHICH ARE ON P2
- ⑧ NONSTANDARD ABBREVIATION; FLT= FAULT
- ⑨ PIN NUMBERS IN PARENTHESIS IN TABLE ARE STATUS OUTPUTS IN CONFIGURATION
- ⑩ THIS EQUIPMENT CONTAINS ELECTROSTATIC DISCHARGE SENSITIVE (ESD) COMPONENTS. SPECIAL HANDLING METHODS AND MATERIALS MUST BE USED TO PREVENT DAMAGE.



MICROCIRCUIT INFORMATION

REF DES	COMMON DEVICE OR COLLINS PN	PWR (V DC)	
		+5	GND
U1	MC1456P1		
U2	F4051PC	16	8, 7
U3	MC14538BCP	16	8
U4	MC14011CP	14	7
U5	F4013BPC	14	7
U6	CD4094BE	16	8
U7	F4051PC	16	8, 7
U8	CD4047AE	14	7
U9	MC14071BCP	14	7
U10	F4051PC	16	8, 7
U11	F4049BPC	1	8
U12	MC14070BCP	14	7
U13	CD4094BE	16	8
U14	CD4094BE	16	8
U15	CD4094BE	16	8
U16	CD4094BE	16	8

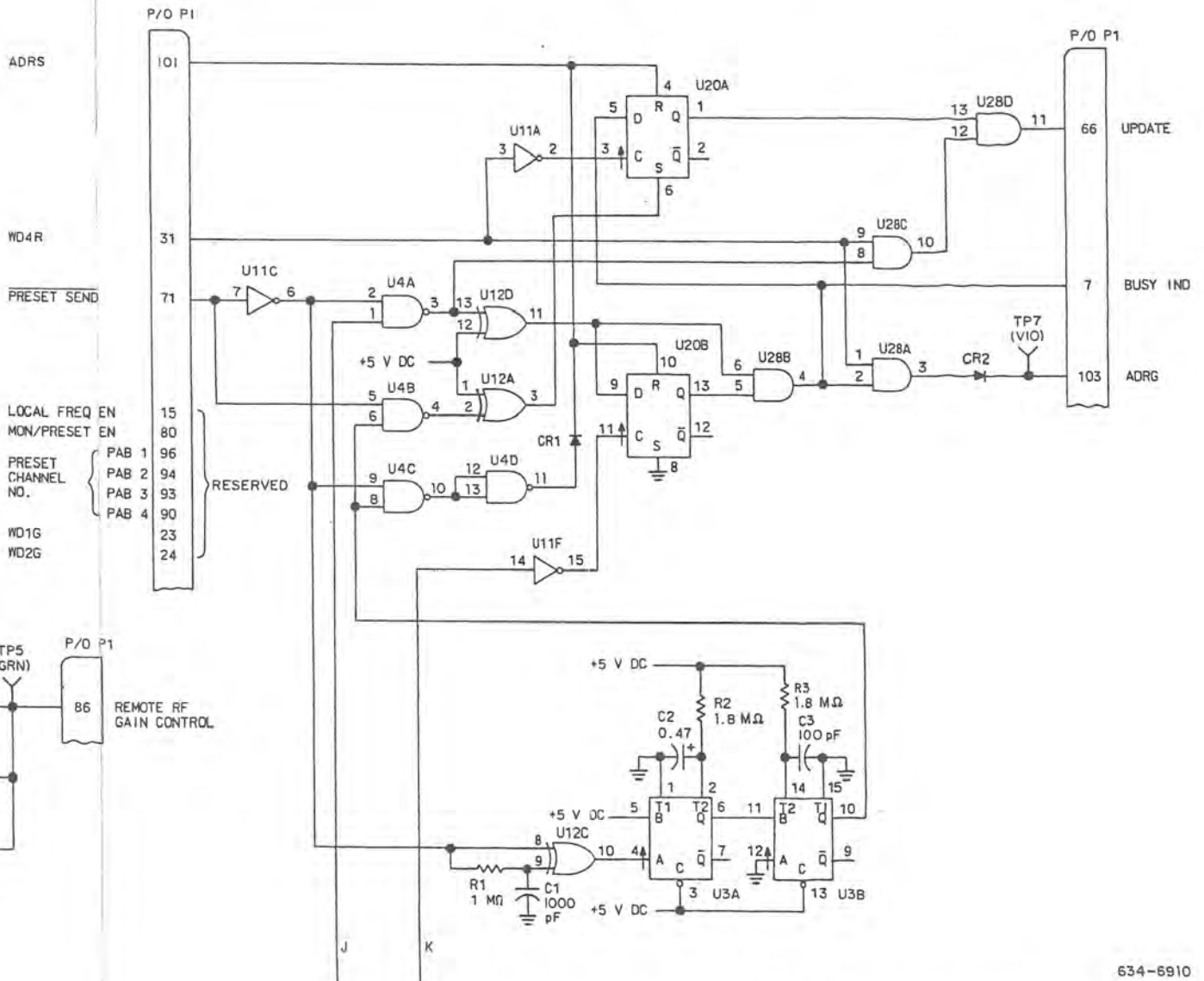
MICROCIRCUIT INFORMATION

REF DES	COMMON DEVICE OR COLLINS PN	PWR (V DC)	
		+5	GND
U17	F4013BPC	14	7
U18	CD4094BE	16	8
U19	CD4094BE	16	8
U20	F4013BPC	14	7
U21	CD4094BE	16	8
U22	CD4094BE	16	8
U23	CD4094BE	16	8
U24	CD4094BE	16	8
U25	CD4094BE	16	8
U26	CD4094BE	16	8
U27	CD4094BE	16	8
U28	MC14081BCP	14	7
U29	CD4094BE	16	8
U30	CD4094BE	16	8
U31	CD4094BE	16	8
U32	CD4047AE	14	7

ASSOCIATED WITH  
L NAMES DEPENDING ON  
OR PIN FUNCTIONS (SIGNAL  
ORD 3, CHARACTER 4

UTS IN CONTROL UNITS ONLY.

SITIVE (ESDS) DEVICES.  
O TO PREVENT EQUIPMENT



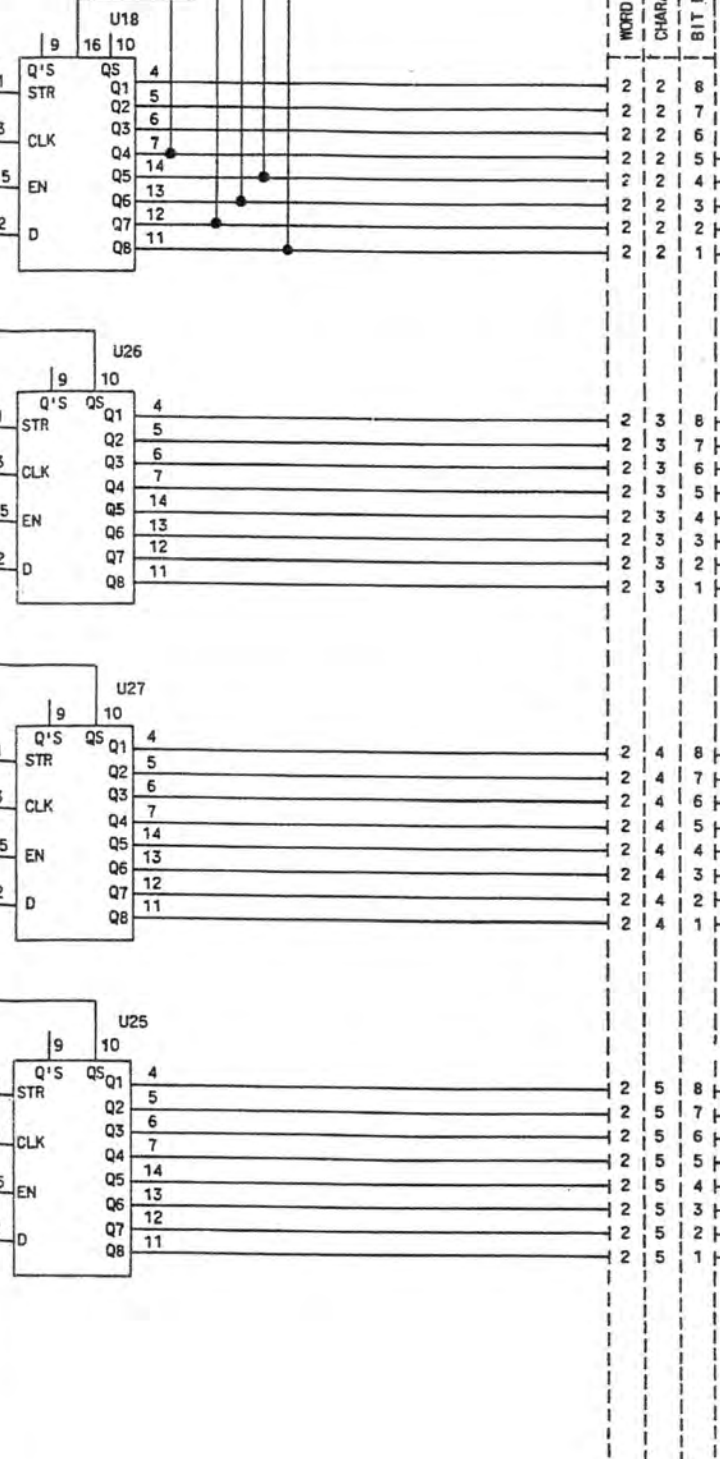
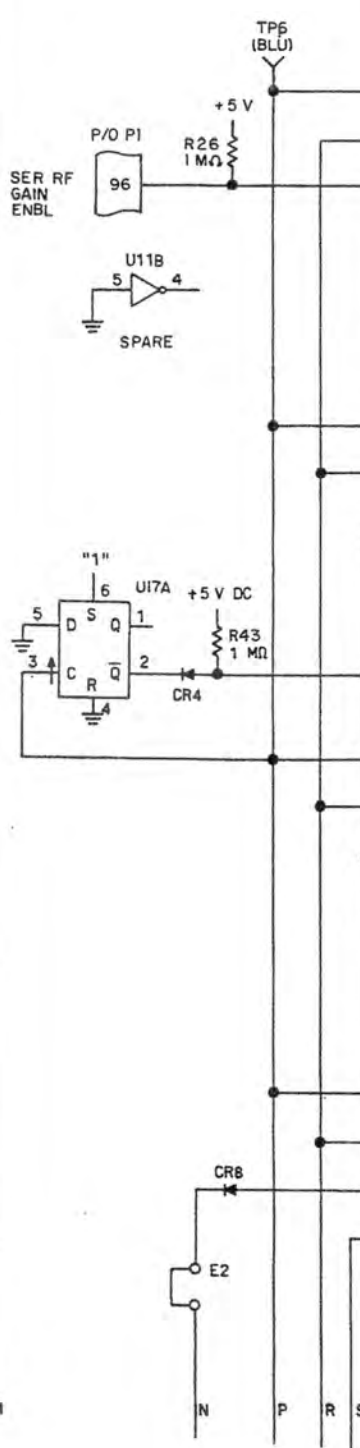
Parallel Output (642-3137-002),  
Schematic Diagram  
Figure 4 (Sheet 3)

634-6910

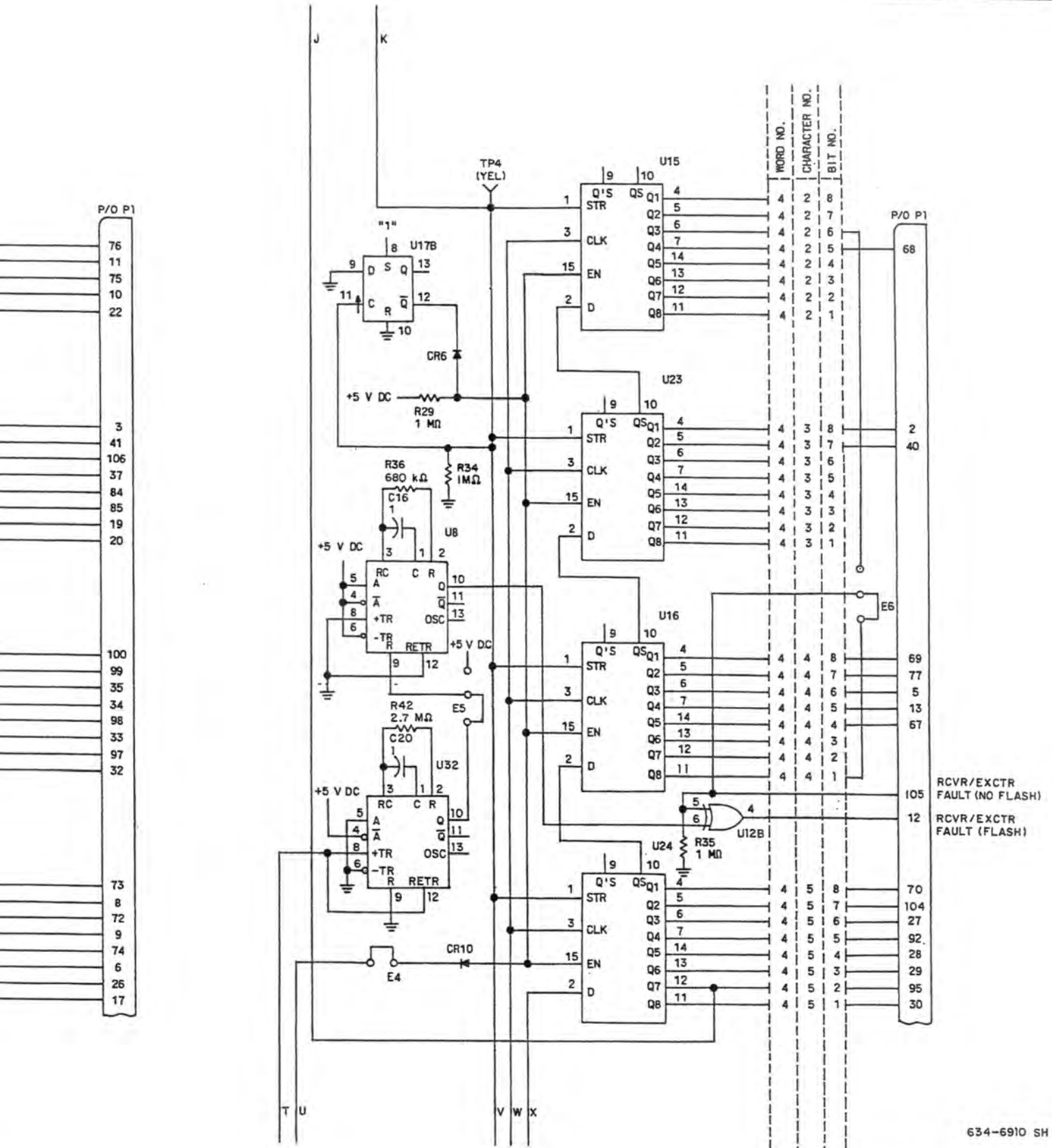


A B  
L M

C  
D E F G H  
N P R S

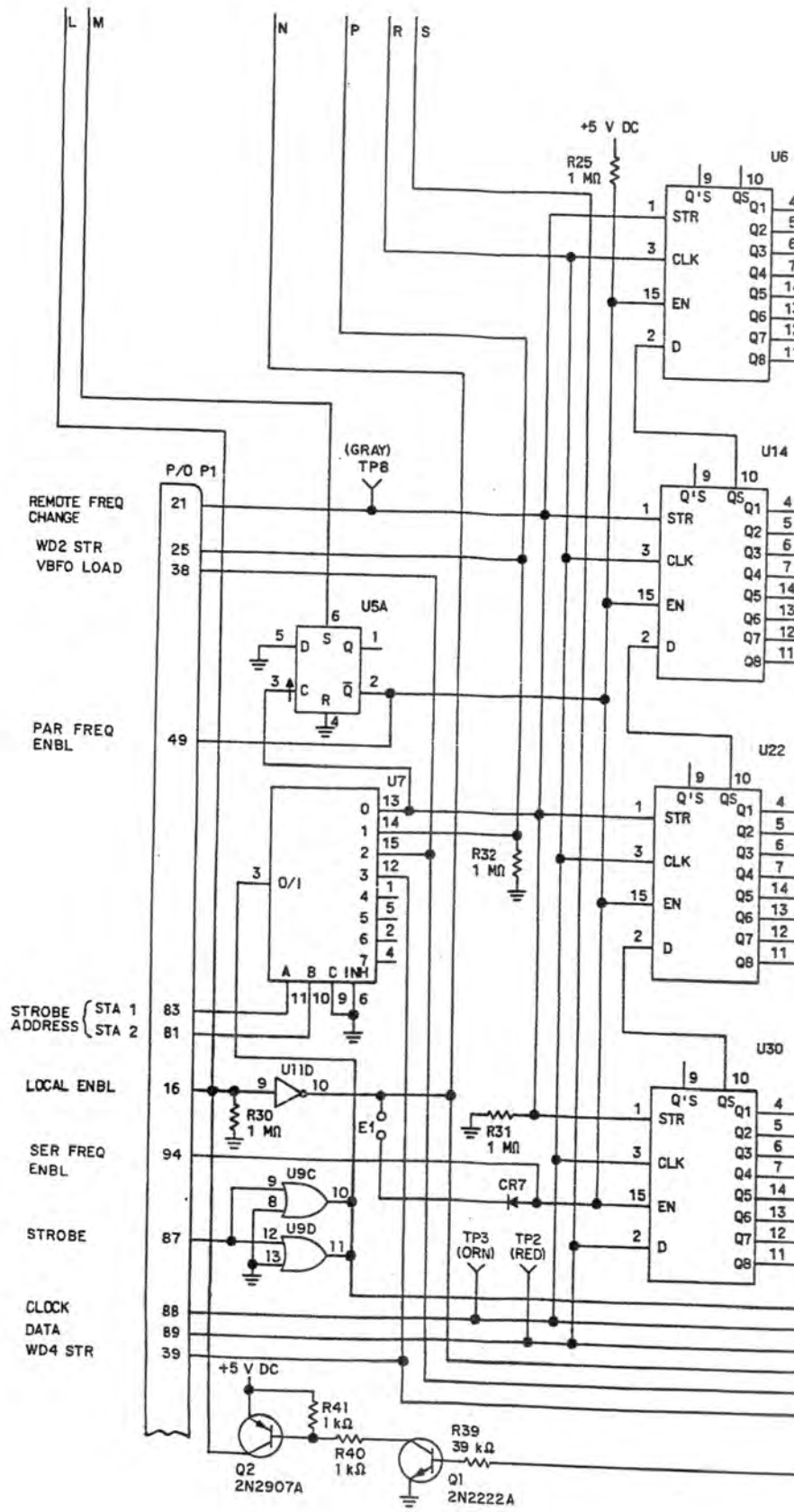


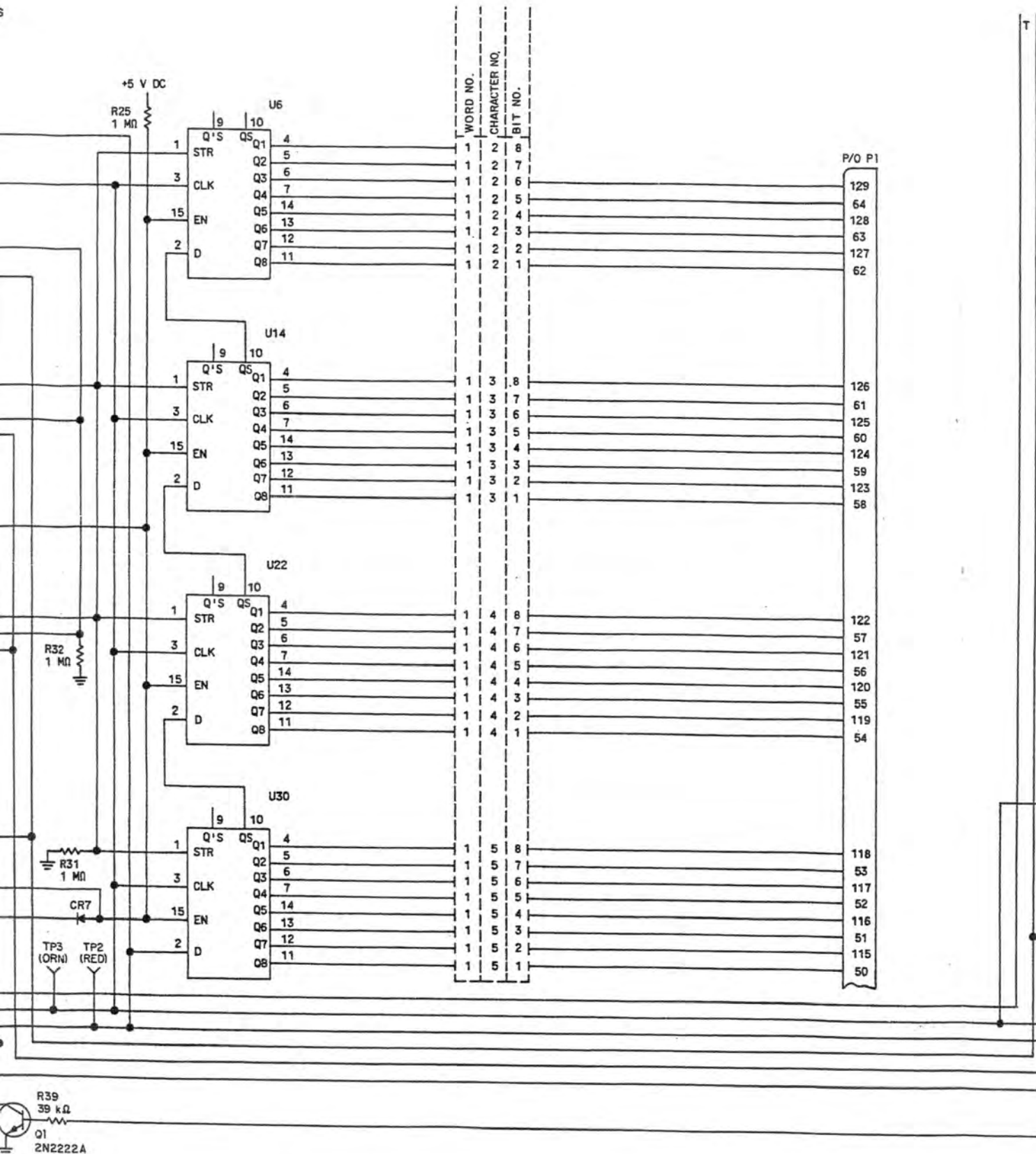
WORD NO.	CHARACTER NO.	BIT NO.
2	2	8
2	2	7
2	2	6
2	2	5
2	2	4
2	2	3
2	2	2
2	2	1
2	3	8
2	3	7
2	3	6
2	3	5
2	3	4
2	3	3
2	3	2
2	3	1
2	4	8
2	4	7
2	4	6
2	4	5
2	4	4
2	4	3
2	4	2
2	4	1
2	5	8
2	5	7
2	5	6
2	5	5
2	5	4
2	5	3
2	5	2
2	5	1



Parallel Output (642-3137-002),  
Schematic Diagram  
Figure 4 (Sheet 4)

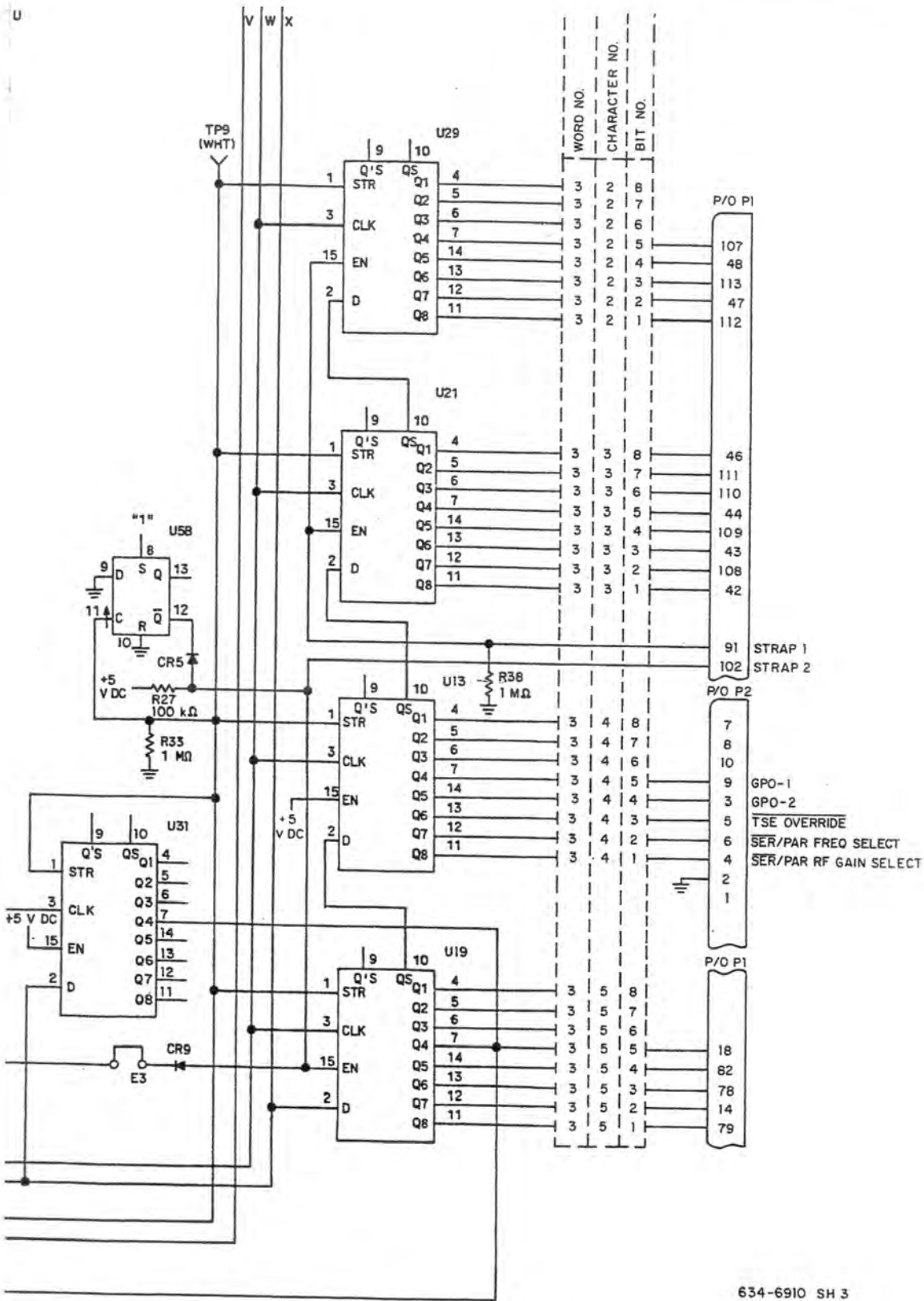
634-6910 SH 2





R39  
39 kΩ  
Q1  
2N2222A

T



634-6910 SH 3

Parallel Output (642-3137-002),  
Schematic Diagram  
Figure 4 (Sheet 5)

CONTROL / STATUS BIT

WORD FORMAT					
HF-80 8-BIT			ASCII 7-BIT		
WORD NO.	CHARACTER NO.	BIT NO.	WORD NO.	CHARACTER NO.	
				BIT WT.	
1	2	8	1	6	8
1	2	7	1	6	4
1	2	6	1	6	2
1	2	5	1	6	1
1	2	4	1	7	8
1	2	3	1	7	4
1	2	2	1	7	2
1	2	1	1	7	1
1	3	8	1	8	8
1	3	7	1	8	4
1	3	6	1	8	2
1	3	5	1	8	1
1	3	4	1	9	8
1	3	3	1	9	4
1	3	2	1	9	2
1	3	1	1	9	1
1	4	8	1	10	8
1	4	7	1	10	4
1	4	6	1	10	2
1	4	5	1	10	1
1	4	4	1	11	8
1	4	3	1	11	4
1	4	2	1	11	2
1	4	1	1	11	1
1	5	8	1	12	8
1	5	7	1	12	4
1	5	6	1	12	2
1	5	5	1	12	1
1	5	4	1	13	8
1	5	3	1	13	4
1	5	2	1	13	2
1	5	1	1	13	1
2	2	8	2	6	8
2	2	7	2	6	4
2	2	6	2	6	2
2	2	5	2	6	1
2	2	4	2	7	8
2	2	3	2	7	4
2	2	2	2	7	2
2	2	1	2	7	1
2	3	8	2	8	8
2	3	7	2	8	4
2	3	6	2	8	2
2	3	5	2	8	1
2	3	4	2	9	8
2	3	3	2	9	4
2	3	2	2	9	2
2	3	1	2	9	1
2	4	8	2	10	8
2	4	7	2	10	4
2	4	6	2	10	2
2	4	5	2	10	1
2	4	4	2	11	8
2	4	3	2	11	4
2	4	2	2	11	2
2	4	1	2	11	1
2	5	8	2	12	8
2	5	7	2	12	4
2	5	6	2	12	2
2	5	5	2	12	1
2	5	4	2	13	8
2	5	3	2	13	4
2	5	2	2	13	2
2	5	1	2	13	1

HF-80XX 2-CHANNEL RADIOS AND HF-80XX 2-CHANNEL CONTROLS			FUNCTION	
PARALLEL OUTPUT PIN NO.	PARALLEL INPUT PIN NO.			
103		COMMAND (C)		
38		STATUS REQUEST (S)		
129	129	FREQ 10 MHz (2)		
64	64	FREQ 10 MHz (1)		
128	128	FREQ 1 MHz (8)		
63	63	↓ (4)		
127	127	↓ (2)		
62	62	↓ (1)		
126	126	FREQ 100 kHz (8)		
61	61	↓ (4)		
125	125	↓ (2)		
60	60	↓ (1)		
124	124	FREQ 10 kHz (8)		
59	59	↓ (4)		
123	123	↓ (2)		
58	58	↓ (1)		
122	122	FREQ 1 kHz (8)		
57	57	↓ (4)		
121	121	↓ (2)		
56	56	↓ (1)		
120	120	FREQ 100 Hz (8)		
55	55	↓ (4)		
119	119	↓ (2)		
54	54	↓ (1)		
118	118	FREQ 10 Hz (8)		
53	53	↓ (4)		
117	117	↓ (2)		
52	52	↓ (1)		
116	116	FREQ 1 Hz (8)		
51	51	↓ (4)		
115	115	↓ (2)		
50	50	↓ (1)		
103		COMMAND (C)		
38		STATUS REQUEST (S)		
76	76	NOT USED		
11	11	RF GAIN (16)		
75	75	↓ (8)		
10	10	↓ (4)		
22	87	↓ (2)		
87	22	↓ (1)		
3		NOT USED		
41	41	VBFO ENBL		
106	106	AFC ENBL		
37	37	AGC CROWBAR ENBL		
84	84	USB AGC OFF		
85	85	USB AGC FAST		
19	19	LSB AGC OFF		
20	20	LSB AGC FAST		
100	100	FL8 ENBL		
99	99	FL7 ENBL		
35	35	FL6 ENBL		
34	34	FL5 ENBL		
98	98	FL4 ENBL		
33	33	FL3 ENBL		
97	97	FL2 ENBL		
32	32	FL1 ENBL		
73	73	FM ENBL		
8	8	AM ENBL		
72	72	SSB ENBL		
9	9	CW ENBL		
74	74	ISB ENBL		
6	92	RESERVED		
26	91	RESERVED		
17	21	RESERVED		

EQUIPMENT TYPE

851S-1/2, HF-8095			FUNCTION	
PARALLEL OUTPUT PIN NO.	PARALLEL INPUT PIN NO.			
103		COMMAND (C)		
38		STATUS REQUEST (S)		
129	129	FREQ 10 MHz (2)		
64	64	FREQ 10 MHz (1)		
128	128	FREQ 1 MHz (8)		
63	63	↓ (4)		
127	127	↓ (2)		
62	62	↓ (1)		
126	126	FREQ 100 kHz (8)		
61	61	↓ (4)		
125	125	↓ (2)		
60	60	↓ (1)		
124	124	FREQ 10 kHz (8)		
59	59	↓ (4)		
123	123	↓ (2)		
58	58	↓ (1)		
122	122	FREQ 1 kHz (8)		
57	57	↓ (4)		
121	121	↓ (2)		
56	56	↓ (1)		
120	120	FREQ 100 Hz (8)		
55	55	↓ (4)		
119	119	↓ (2)		
54	54	↓ (1)		
118	118	FREQ 10 Hz (8)		
53	53	↓ (4)		
117	117	↓ (2)		
52	52	↓ (1)		
116	116	FREQ 1 Hz (8)		
51	51	↓ (4)		
115	115	↓ (2)		
50	50	↓ (1)		
103		COMMAND (C)		
38		STATUS REQUEST (S)		
76	76	NOT USED		
11	11	RF GAIN (16)		
75	75	↓ (8)		
10	10	↓ (4)		
22	87	↓ (2)		
87	22	↓ (1)		
3		NOT USED		
41	41	VBFO ENBL		
106	106	RESERVED		
37	37	AGC CROWBAR ENBL		
84	84	USB AGC OFF		
85	85	USB AGC FAST		
19	19	LSB AGC OFF		
20	20	LSB AGC FAST		
100	100	FL8 ENBL		
99	99	FL7 ENBL		
35	35	FL6 ENBL		
34	34	FL5 ENBL		
98	98	FL4 ENBL		
33	33	FL3 ENBL		
97	97	FL2 ENBL		
32	32	FL1 ENBL		
73	73	FM ENBL		
8	8	AM ENBL		
72	72	SSB ENBL		
9	9	CW ENBL		
74	74	ISB ENBL		
6	92	RESERVED		
26	91	RESERVED		
17	21	RESERVED		

4-CHANNEL EXCITER, AND 4-CHANNEL EXCITER CONTROLS			FUNCTION	
PARALLEL OUTPUT PIN NO.	PARALLEL INPUT PIN NO.			
		NOT USED		
		NOT USED		
129	129	FREQ 10 MHz (2)		
64	64	FREQ 10 MHz (1)		
128	128	FREQ 1 MHz (8)		
63	63	↓ (4)		
127	127	↓ (2)		
62	62	↓ (1)		
126	126	FREQ 100 kHz (8)		
61	61	↓ (4)		
125	125	↓ (2)		
60	60	↓ (1)		
124	124	FREQ 10 kHz (8)		
59	59	↓ (4)		
123	123	↓ (2)		
58	58	↓ (1)		
122	122	FREQ 1 kHz (8)		
57	57	↓ (4)		
121	121	↓ (2)		
56	56	↓ (1)		
120	120	FREQ 100 Hz (8)		
55	55	↓ (4)		
119	119	↓ (2)		
54	54	↓ (1)		
118	118	FREQ 10 Hz (8)		
53	53	↓ (4)		
117	117	↓ (2)		
52	52	↓ (1)		
116	116	FREQ 1 Hz (8)		
51	51	↓ (4)		
115	115	↓ (2)		
50	50	↓ (1)		
		NOT USED		
76	76	↓		
11	11	↓		
75	75	↓		
10	10	↓		
22	87	↓		
87	22	↓		
3	12	NOT USED		
41	41	↓		
106	106	↓		
37	37	↓		
84	84	↓		
85	85	↓		
19	19	↓		
20	20	↓		
100	100	NOT USED		
99	99	↓		
35	35	↓		
34	34	↓		
98	98	↓		
33	33	↓		
97	97	↓		
32	32	↓		
73	73	NOT USED		
8	8	AM ENBL		
72	72	CW ENBL		
9	9	ISB ENBL		
74	74	B2 ENBL		
6	92	B1 ENBL		
26	91	A1 ENBL		
17	21	A2 ENBL		



PIN FUNCTION (SIGNAL NAME) TABLE

IPMENT TYPE

CONTROL / STATUS BIT

EO

4-CHANNEL EXCITER, AND 4-CHANNEL EXCITER CONTROL		FUNCTION
PARALLEL OUTPUT PIN NO.	PARALLEL INPUT PIN NO.	
(C)		NOT USED
(5)		NOT USED
(2)	129	FREQ 10 MHz (2)
(1)	64	FREQ 10 MHz (1)
(8)	128	FREQ 1 MHz (8)
(4)	63	FREQ 1 MHz (4)
(2)	127	FREQ 1 MHz (2)
(1)	62	FREQ 1 MHz (1)
(8)	126	FREQ 100 kHz (8)
(4)	61	FREQ 100 kHz (4)
(2)	125	FREQ 10 kHz (2)
(1)	60	FREQ 10 kHz (1)
(8)	124	FREQ 10 kHz (8)
(4)	59	FREQ 10 kHz (4)
(2)	123	FREQ 1 kHz (2)
(1)	58	FREQ 1 kHz (1)
(8)	122	FREQ 1 kHz (8)
(4)	57	FREQ 1 kHz (4)
(2)	121	FREQ 100 Hz (2)
(1)	56	FREQ 100 Hz (1)
(8)	120	FREQ 100 Hz (8)
(4)	55	FREQ 100 Hz (4)
(2)	119	FREQ 10 Hz (2)
(1)	54	FREQ 10 Hz (1)
(8)	118	FREQ 10 Hz (8)
(4)	53	FREQ 1 Hz (4)
(2)	117	FREQ 1 Hz (2)
(1)	52	FREQ 1 Hz (1)
(8)	116	FREQ 1 Hz (8)
(4)	51	FREQ 1 Hz (4)
(2)	115	FREQ 1 Hz (2)
(1)	50	FREQ 1 Hz (1)
(C)		NOT USED
(5)		NOT USED
(16)	76	RF GAIN (16)
(8)	11	RF GAIN (8)
(4)	75	RF GAIN (4)
(2)	10	RF GAIN (2)
(1)	22	RF GAIN (1)
(3)	12	FL7 (E) ENBL
(41)	41	FL6 (D) ENBL
(106)	106	FL5 (C) ENBL
(37)	37	FL4 (B) ENBL
(84)	84	B2 AGC (2)
(85)	85	B2 AGC (1)
(19)	19	A2 AGC (2)
(20)	20	A2 AGC (1)
(100)	100	FL3 (A) ENBL
(99)	99	FL1 (16 kHz) ENBL
(35)	35	VBFO ENBL
(34)	34	AFC ENBL
(98)	98	B1 AGC (2)
(33)	33	B1 AGC (1)
(97)	97	A1 AGC (2)
(32)	32	A1 AGC (1)
(73)	73	DATA NET ENBL
(8)	8	AM ENBL
(72)	72	CW ENBL
(9)	9	ISB ENBL
(74)	74	B2 ENBL
(6)	92	B1 ENBL
(26)	91	A1 ENBL
(17)	21	A2 ENBL

4-CHANNEL RECEIVER, AND 4-CHANNEL RECEIVER CONTROL		FUNCTION
PARALLEL OUTPUT PIN NO.	PARALLEL INPUT PIN NO.	
(C)		NOT USED
(5)		NOT USED
(2)	129	FREQ 10 MHz (2)
(1)	64	FREQ 10 MHz (1)
(8)	128	FREQ 1 MHz (8)
(4)	63	FREQ 1 MHz (4)
(2)	127	FREQ 1 MHz (2)
(1)	62	FREQ 1 MHz (1)
(8)	126	FREQ 100 kHz (8)
(4)	61	FREQ 100 kHz (4)
(2)	125	FREQ 10 kHz (2)
(1)	60	FREQ 10 kHz (1)
(8)	124	FREQ 10 kHz (8)
(4)	59	FREQ 10 kHz (4)
(2)	123	FREQ 1 kHz (2)
(1)	58	FREQ 1 kHz (1)
(8)	122	FREQ 1 kHz (8)
(4)	57	FREQ 1 kHz (4)
(2)	121	FREQ 100 Hz (2)
(1)	56	FREQ 100 Hz (1)
(8)	120	FREQ 100 Hz (8)
(4)	55	FREQ 100 Hz (4)
(2)	119	FREQ 10 Hz (2)
(1)	54	FREQ 10 Hz (1)
(8)	118	FREQ 10 Hz (8)
(4)	53	FREQ 1 Hz (4)
(2)	117	FREQ 1 Hz (2)
(1)	52	FREQ 1 Hz (1)
(8)	116	FREQ 1 Hz (8)
(4)	51	FREQ 1 Hz (4)
(2)	115	FREQ 1 Hz (2)
(1)	50	FREQ 1 Hz (1)
(C)		NOT USED
(5)		NOT USED
(16)	76	RF GAIN (16)
(8)	11	RF GAIN (8)
(4)	75	RF GAIN (4)
(2)	10	RF GAIN (2)
(1)	22	RF GAIN (1)
(3)	12	FL7 (E) ENBL
(41)	41	FL6 (D) ENBL
(106)	106	FL5 (C) ENBL
(37)	37	FL4 (B) ENBL
(84)	84	B2 AGC (2)
(85)	85	B2 AGC (1)
(19)	19	A2 AGC (2)
(20)	20	A2 AGC (1)
(100)	100	FL3 (A) ENBL
(99)	99	FL1 (16 kHz) ENBL
(35)	35	VBFO ENBL
(34)	34	AFC ENBL
(98)	98	B1 AGC (2)
(33)	33	B1 AGC (1)
(97)	97	A1 AGC (2)
(32)	32	A1 AGC (1)
(73)	73	DATA NET ENBL
(8)	8	AM ENBL
(72)	72	CW ENBL
(9)	9	ISB ENBL
(74)	74	B2 ENBL
(6)	92	B1 ENBL
(26)	91	A1 ENBL
(17)	21	A2 ENBL

WORD FORMAT			
HF-80 8-BIT		ASCII 7-BIT	
WORD NO.	CHARACTER NO. / BIT NO.	WORD NO.	CHARACTER NO. / BIT WT.
3	2 8	3	6 8
3	2 7	3	6 4
3	2 6	3	6 2
3	2 5	3	6 1
3	2 4	3	7 8
3	2 3	3	7 4
3	2 2	3	7 2
3	2 1	3	7 1
3	3 8	3	8 8
3	3 7	3	8 4
3	3 6	3	8 2
3	3 5	3	8 1
3	3 4	3	9 8
3	3 3	3	9 4
3	3 2	3	9 2
3	3 1	3	9 1
3	4 8	3	10 8
3	4 7	3	10 4
3	4 6	3	10 2
3	4 5	3	10 1
3	4 4	3	11 8
3	4 3	3	11 4
3	4 2	3	11 2
3	4 1	3	11 1
3	5 8	3	12 8
3	5 7	3	12 4
3	5 6	3	12 2
3	5 5	3	12 1
3	5 4	3	13 8
3	5 3	3	13 4
3	5 2	3	13 2
3	5 1	3	13 1
4	2 8	4	6 8
4	2 7	4	6 4
4	2 6	4	6 2
4	2 5	4	6 1
4	2 4	4	7 8
4	2 3	4	7 4
4	2 2	4	7 2
4	2 1	4	7 1
4	3 8	4	8 8
4	3 7	4	8 4
4	3 6	4	8 2
4	3 5	4	8 1
4	3 4	4	9 8
4	3 3	4	9 4
4	3 2	4	9 2
4	3 1	4	9 1
4	4 8	4	10 8
4	4 7	4	10 4
4	4 6	4	10 2
4	4 5	4	10 1
4	4 4	4	11 8
4	4 3	4	11 4
4	4 2	4	11 2
4	4 1	4	11 1
4	5 8	4	12 8
4	5 7	4	12 4
4	5 6	4	12 2
4	5 5	4	12 1
4	5 4	4	13 8
4	5 3	4	13 4
4	5 2	4	13 2
4	5 1	4	13 1

HF-80XX 2-CHANNEL RADIOS, AND HF-80XX 2-CHANNEL CONTROLS		FUNCTION
PARALLEL OUTPUT PIN NO.	PARALLEL INPUT PIN NO.	
	103	COMMAND (C)
	38	STATUS REQUEST (S)
107	107	NOT USED
48	48	VBFO SIGN
113	113	VBFO FREQ 1 kHz (8)
47	47	(4)
		(2)
112	112	(1)
46	46	VBFO FREQ 100 Hz (8)
		(4)
111	111	(4)
110	110	(2)
44	44	(1)
109	109	VBFO FREQ 10 Hz (8)
		(4)
43	43	(4)
108	108	(2)
42	42	(1)
7	7	NOT USED
8	8	NOT USED
10	10	NOT USED
9	9	NOT USED
3	3	NOT USED
5	5	NOT USED
6	6	NOT USED
4	4	NOT USED
18	81	NOT USED
82	82	PILOT CARRIER ENBL
78	78	PA L PWR ENBL
14	14	PA HV ENBL
79	79	PA LV ENBL
103	38	COMMAND (C)
		STATUS REQUEST (S)
92	68	REMOTE KEY (MON)
		NOT USED
(2)	2	AFC LOCK
(40)	40	EXCTR RF MON
		CHAN A XMT AF MON
		CHAN A RCV AF MON
		CHAN A AGC MON
		CHAN B XMT MON
		CHAN B RCV MON
		CHAN B AGC MON
(69)	69	PA RDY
(77)	4	PA FLT
(5)	5	PA RF MON
(13)	70	CPLR FLT
(67)	67	RF OVLD FLT
		SYNTH FLT
		PS FLT
(12)	3	RCVR/EXCTR FLT
(70)		NOT USED
(104)		NOT USED
(27)	7	VBFO SYNTH FLT
(92)		NOT USED
(28)	71	PRESEL FLT
(29)	95	DATA ERROR
(95)	16	LOCAL CONTROL
(30)	80	MONITOR

851S - 1/2, HF-8095		FUNCTION
PARALLEL OUTPUT PIN NO.	PARALLEL INPUT PIN NO.	
	103	COMMAND
	38	STATUS REQUEST
107	107	NOT USED
48	48	VBFO SIGN
113	113	VBFO FREQ 1 kHz
47	47	
112	112	
46	46	VBFO FREQ 100 Hz
111	111	
110	110	
44	44	
109	109	VBFO FREQ 10 Hz
43	43	
108	108	
42	42	
7	7	NOT USED
8	8	NOT USED
10	10	NOT USED
9	9	NOT USED
3	3	NOT USED
5	5	NOT USED
6	6	NOT USED
4	4	NOT USED
18	81	NOT USED
82	82	VBFO TUNE
78	78	VBFO PARALLEL
14	14	FINE TUNE
79	79	RESERVED
103	38	COMMAND
		STATUS REQUEST
27	105	UP/DOWN
92	68	TUNE RATE
28	4	
29	39	
95	5	
30	70	
(2)	2	NOT USED
(40)	40	NOT USED
		NOT USED
		CHAN A AF MON
		CHAN A AGC MON
		NOT USED
		CHAN B AF MON
		CHAN B AGC MON
(69)	69	NOT USED
(77)	4	
(5)	5	
(13)	70	RF OVLD FLT
(67)	67	SYNTH
		PS FLT
(12)	3	RCVR FLT
(70)		NOT USED
(104)		NOT USED
(27)	7	VBFO SYNTH FLT
(92)		NOT USED
(28)	71	PRESEL FLT
(29)	95	DATA ERROR
(95)	16	LOCAL CONTROL
(30)	80	MONITOR



EQUIPMENT TYPE

XX 2-CHANNEL RADIOS, AND XX 2-CHANNEL CONTROLS		B5IS - 1/2, HF-8095		4-CHANNEL EXCITER, AND 4-CHANNEL EXCITER, CONTROL		4-CHANNEL RECEIVER, AND 4-CHANNEL RECEIVER CONTROL	
INPUT PIN NO.	FUNCTION	PARALLEL OUTPUT PIN NO.	PARALLEL INPUT PIN NO.	PARALLEL OUTPUT PIN NO.	PARALLEL INPUT PIN NO.	PARALLEL OUTPUT PIN NO.	PARALLEL INPUT PIN NO.
03	COMMAND (C)	103	103				
38	STATUS REQUEST (S)	38	38				
107	NOT USED	107	107	107	107	107	107
48	VBFO SIGN	48	48	48	48	48	48
113	VBFO FREQ 1 kHz (8)	113	113	113	113	113	113
47	(4)	47	47	47	47	47	47
112	(2)	112	112	112	112	112	112
46	VBFO FREQ 100 Hz (8)	46	46			46	46
111	(4)	111	111			111	111
110	(2)	110	110			110	110
44	(1)	44	44			44	44
109	VBFO FREQ 10 Hz (8)	109	109	109	109	109	109
43	(4)	43	43	43	43	43	43
108	(2)	108	108	108	108	108	108
42	(1)	42	42	42	42	42	42
7	NOT USED	7	7	7	7	7	7
8		8	8	8	8	8	8
10		10	10	10	10	10	10
9		9	9	9	9	9	9
3		3	3	3	3	3	3
5		5	5	5	5	5	5
6		6	6	6	6	6	6
4		4	4	4	4	4	4
18	PILOT CARRIER ENBL	18	81	18	81	18	81
82	PA L PWR ENBL	82	82	82	82	82	82
78	PA HV ENBL	78	78	78	78	78	78
14	PA LV ENBL	14	14	14	14	14	14
79		79	79	79	79	79	79
103	COMMAND (C)	103	103				
38	STATUS REQUEST (S)	38	38				
27	UP/DOWN	105	105	(12)	13	(12)	13
92	TUNE RATE (16)	68	68	92	68	92	68
28	(8)	4	4	88	88	88	88
29	(4)	39	39	23	23	23	23
95	(2)	5	5	22	22	22	22
30	(1)	70	70	24	24	24	24
2	NOT USED	2	2	(2)	2	(2)	2
40	NOT USED	40	40	(40)	40	(40)	40
105	NOT USED	105	105	105	105	105	105
36	CHAN A AF MON	36	36	36	36	36	36
83	CHAN A AGC MON	83	83	83	83	83	83
39	NOT USED	39	39	39	39	39	39
101	CHAN B AF MON	101	101	101	101	101	101
18	CHAN B AGC MON	18	18	18	18	18	18
(69)	NOT USED	(69)	69	(69)	69	(69)	69
(77)		(77)	4	(77)	4	(77)	4
(5)		(5)	5	(5)	5	(5)	5
(13)		(13)	70	(13)	70	(13)	70
(67)		(67)	67	(67)	67	(67)	67
(86)		(86)	86	(86)	86	(86)	86
(12)		(12)	3	(105)	3	(105)	3
(70)	NOT USED	(70)	77	(70)	77	(70)	77
(104)	NOT USED	(104)	102	(104)	102	(104)	102
(27)	VBFO SYNTH FLT	(27)	7	(27)	7	(27)	7
(92)	NOT USED	(92)	89	(92)	89	(92)	89
(28)	PRESEL FLT	(28)	71	(28)	71	(28)	71
(29)	DATA ERROR	(29)	95	(29)	95	(29)	95
(95)	LOCAL CONTROL	(95)	16	(95)	16	(95)	16
(30)	MONITOR	(30)	80	(30)	80	(30)	80

TPA-8092-015

Parallel Output (642-3137-002),  
Schematic Diagram  
Figure 4 (Sheet 6)

FUNCTION	A31 PARALLEL INTERFACE								A28 SIDEBORD ASSEMBLY			A11 PARALLEL INPUT BOARD P2	A12 PARALLEL OUTPUT BOARD P2	A24 DIRECT DIGITAL SYNTH		
	P1 (J67)	P2 (J66)	P3	P4	P5	P6	P7	P8	JT	J9	J11			J2	J4	JT
80 MHz	15		8							9						
40 MHz	14		7							7						
20 MHz	6		38							38						
10 MHz	28		37							37						
8 MHz	20		36							36						
4 MHz	27		35							35						
2 MHz	2		34							34						
1 MHz	22		33							33						
800 KHZ	10		32							32						
400 KHZ	26		31							31						
200 KHZ	3		30							30						
100 KHZ	18		29							29						
80 KHZ	49		28							28						
40 KHZ	4		27							27						
20 KHZ	29		26							26						
10 KHZ	1		25							25						
8 KHZ	9		24							24						
4 KHZ	25		23							23						
2 KHZ	48		22							22						
1 KHZ	44		21							21						
800 Hz	31		20							20						
400 Hz	45		19							19						
200 Hz	11		18							18						
100 Hz	46		17							17						
80 Hz	47		16							16						
40 Hz	33		15							15						
20 Hz	30		14							14						
10 Hz	13		13							13						
8 Hz	17		12							12						
4 Hz	16		11							11						
2 Hz	48		10							10						
1 Hz	32		9							9						
TSE1	30															
TSE3	23															
TSE2	24															
TSE1	8															
PRFGL	12															
PRFE	19															
PRFL	34															
TSOVRD	35															
PRFGE	36															
PRFG16	37															
PRFG8	38															
PRFG4	39															
PRFG2	40															
PRFG1	41															
FN19	6		29													29
FN18	32		28													28
FN17	5		27													27
FN16	11		26													26
FN15	9		25													25
FN14	17		24													24
FN13	44		23													23
FN12	22		22													22
FN11	49		21													21
FN10	15		20													20
FN9	13		19													19
FN8	50		18													18
FN7	30		17													17
FN6	31		16													16
FN5	10		15													15
FN4	28		14													14
FN3	14		13													13
FN2	27		12													12
FN1	29		11													11
FN0	12		10													10
CR7	47		5													5
CR6	16		6													6
CR5	45		35													35
CR4	46		34													34
CR3	48		33													33
CR2	33		32													32
CR1	26		31													31
CR0	4		30													30
GP13	43															30
GP12	25															30
GP11	20															30

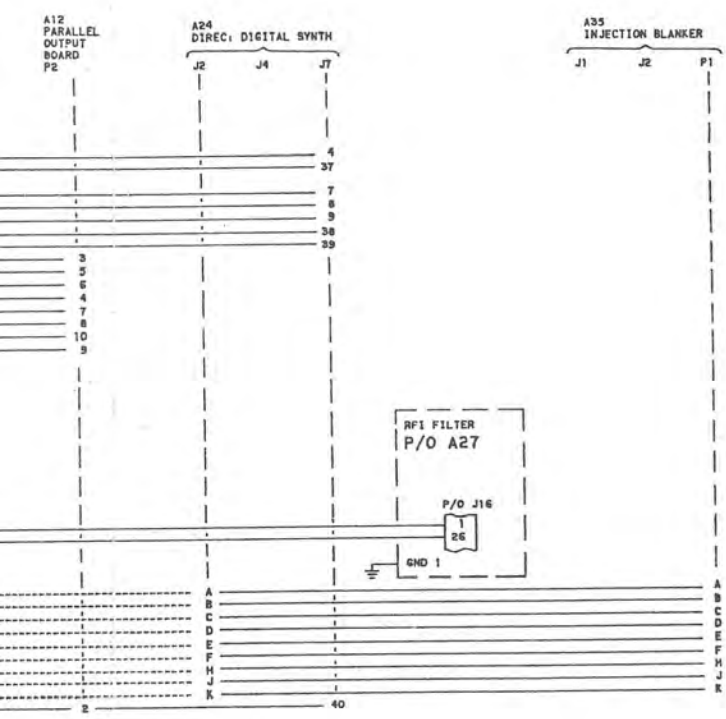
1 1/2 x 8 1/2

2 1/2 x 17	150	50			
IMAGE AREA W X H	LTR SIZE	PAGE INCR	PCT		
PUSH NO.					
FOR COLLINS DIVISIONS					

MATERIAL: NONE  
FINISH: NONE

FUNCTION	A31 PARALLEL INTERFACE								A28 SIDECBOARD ASSEMBLY			A11 PARALLEL INPUT BOARD	A12 PARALLEL OUTPUT BOARD	A24 DIREC. DIGITAL	
	P1 (J87)	P2 (J86)	P3	P4	P5	P6	P7	P8	J7 (8)	J9 (8)	J11 (8)	P2	P2	J2	J4
GP02		2													
GP01		7													
NFA EXT		1													
BFE		18													
BLANKER ENBL		19													
NFS		24													
LCL FREQ ENBL			5												
V/C ENBL				7											
PFE MODE				8											
PFL				9											
NFA CONT				38											
NFA VFO				39											
V3C11B8				3								3			
V3C11B4				5								5			
V3C11B2				6								6			
V3C11B1				4								4			
V3C10B8				7								7			
V3C10B4				8								8			
V3C10B2				10								10			
V3C10B1				9								9			
SFE										16					
SRFGE										34					
RF6										36					
RF8										76					
RF4										11					
RF2										75					
RF1										10					
+5 V DC										22					
LFE										65					
SRFC										47					
TSC5										21					
TSC4															
TSC3															
TSC2															
TSC1															
NFA															A
DNFA															B
DNFA															C
PWR GND															D
+20.8 V DC															E
-5.2 V DC															F
-15 V DC															G
BLANKER ENBL															H
GND	42	41	40	40	2	12	5	2	40	130	40	2	2		I
SPARE	43	42			1	1	1	1							J
SPARE	5	3	1	1		1	7		1						K
	7	8	2	2		5	8		2						
		21	3	3		13	9		3						
		23	4			18	10		36						
		34	6			19									
		35	39			20									
		36													
		37													
		38													
		39													
		40													

REVISIONS			
LTR	DESCRIPTION	DATE	APVD
	SEE SHEET 1		



659-7090

MATERIAL NONE		UNLESS OTHERWISE SPECIFIED, DUAL DIMENSIONED DWGS ARE IN MILLIMETRES (INCHES), SINGLE DIMENSIONED DWGS ARE IN INCHES. <b>METRIC</b> TOL ON METRIC DIM: X±0.5, XX±0.2 HOLE DIAMETERS UNDER 6.35±0.13-0.13 6.35 TO 12.7±0.15-0.15 OVER 12.7±0.20-0.15 ANGLES: ±1.0° CONCENTRICITY BETWEEN DIA ON A COMMON AXIS TO BE WITHIN 0.25 & PART SHALL COMPLY TO 580-5400-001--THIRD ANGLE PROJECTION		<b>US CUSTOMARY</b> TOL ON C J DIM: .XX±.02, .XX3±.008 HOLE DIAMETERS: UNDER .25±.005-.005 .25 TO .500±.008-.005 OVER .500±.008-.005 ANGLES: ±1.0° CONCENTRICITY BETWEEN DIA ON A COMMON AXIS TO BE WITHIN .010 &		CONTRACT NO. PREP A. SIPPY 84/6/23 J. WITMER 84/6/23 APVD C. ERRINGTON		ROCKWELL INTERNATIONAL CORPORATION COLLINS GROUPS DALLAS, TEX 75207 MEMPHIS, TENN 38103 SEASIDE, CALIF 92082 INTERCONNECT DIAGRAM- CHASSIS 9, HF-8041/ HF-8054A, 622-3475-210							
IMAGE AREA W X H 28 1/2 x 13 1/2		LTR SIZE 120		PAGE INCR 50		PUBN NO. FOR COLLINS DIVISIONS		SIZE E 13499		FSCM 659-7090		DWG NO. 659-7090		REV LTR B	
FINISH NONE		SCALE NONE		SHEET 9		659-7090		9		659-7090		9			

-001

659-7090

RECEIVER CABLE/ASSEMBLY CONFIGURATIONS

CABLE/ASSEMBLY	PART NUMBER	HF-8054 RECEIVER			
		-001			
SIDEBOARD ASSEMBLY A28	634-8224-001	X			
	634-8224-002				
SIDEBOARD	638-6627-001	X			
CABLE ASSEMBLY	634-8210-001	X			
CABLE ASSEMBLY	634-8228-001	X			
CABLE ASSEMBLY W1	634-8226-001	X			
CABLE ASSEMBLY W2	634-8227-001	X			
CABLE ASSEMBLY W3	634-8225-001	X			
RF1 FILTER A27	637-2712-003	X			
SPECIAL PURPOSE CABLE	637-9313-001	X			
OVEN STANDARD, OSC ASSY A29	637-9135-001				
FREQ STANDARD SWITCH A30	646-6558-001				
FREQ DISPLAY CABLE A2V1	634-8269-001				
SYNTHESIZER CHASSIS ASSY A24	634-8201-001	X			
SYNTHESIZER SIDEBOARD A24A1	638-6973-001	X			
SYNTHESIZER A24	652-6615-001				
SIDEBOARD A28	634-8224-003				

HF-8054A RECEIVER							FUNCTION
-001	-002	-003	-004	-005	-006	-007	
X	X		X	X	X		STANDARD SIDEBOARD ASSEMBLY
		X				X	INCLUDES WIRING FOR YBFO AND AFC
X	X	X	X	X	X	X	MAIN SIDEBOARD
X	X	X	X	X	X	X	INCLUDES A28J11, A28P2, AND A28P11
X	X	X	X	X	X	X	INCLUDES A28J19, A28J12, A28P3, A28P4, AND A28P5
X	X	X	X	X	X	X	INCLUDES T81 AND ASSOCIATED WIRING
X	X	X	X	X	X	X	INCLUDES T82 AND ASSOCIATED WIRING
X	X	X	X	X	X	X	INCLUDES J47, T83, AND AUDIO CONNECTIONS (SPEAKER CABLE)
X	X	X	X	X	X	X	RF1 FILTER, INCLUDES J15 AND J16
X	X	X	X	X	X	X	INCLUDES A27J46 AND A27P7
		X	X	X	X	X	
		X	X	X	X	X	
		X	X	X	X	X	
		X	X	X	X	X	
		X	X	X	X	X	
X	X	X	X	X	X	X	P/O AC-8014 INCLUDES A2W1P8 AND A2W1P2A
X	X	X	X	X	X	X	
						X	
						X	

RF CABLES

CABLE/ASSEMBLY	PART NUMBER	-001			
RF CABLE ASSY	637-1925-002	X			
RF CABLE ASSY	637-1925-003	X			
RF CABLE ASSY	637-1925-003	X			
RF CABLE ASSY	637-1925-003	X			
RF CABLE ASSY	637-1925-003	X			
RF CABLE ASSY	637-1926-002	X			
RF CABLE ASSY	637-1926-003				
RF CABLE ASSY	637-1926-003	X			
RF CABLE ASSY	637-1926-003	X			
RF CABLE ASSY	637-1926-006	X			
RF CABLE ASSY	637-1929-001	X			
RF CABLE ASSY	637-1929-001	X			
RF CABLE ASSY	637-1929-001	X			
RF CABLE ASSY	637-1929-001	X			
RF CABLE ASSY	646-2454-001	X			
RF CABLE ASSY	637-9136-001				
RF CABLE ASSY	P/O A29				
RF CABLE ASSY	P/O A30				
RF CABLE ASSY	P/O A30				
RF CABLE ASSY	P/O A30				
RF CABLE ASSY	P/O A30				

-001	-002	-003	-004	-005	-006	-007	FUNCTION
X	X	X	X	X	X	X	INTERCONNECTS J40 AND J22 (RCY ANT)
X	X	X	X	X	X	X	INTERCONNECTS J36 AND J23 (CH B2 1F OUT)
X	X	X	X	X	X	X	INTERCONNECTS J37 AND J24 (CH A2 1F OUT)
X	X	X	X	X	X	X	INTERCONNECTS J36 AND J25 (CH B1 1F OUT)
X	X	X	X	X	X	X	INTERCONNECTS J35 AND J26 (CH A1 1F OUT)
X	X	X	X	X	X	X	INTERCONNECTS J41 AND J42 (9.45 MHz 1F)
		X			X	X	INTERCONNECTS J54 AND J55 (450 KHZ 1F FROM YBFO)
		X					INTERCONNECTS J38 AND J39 (9.9 MHz 1F FROM AFC)
X	X	X	X	X	X	X	INTERCONNECTS J28 AND J43 (118.8 MHz INJ)
X	X	X	X	X	X	X	INTERCONNECTS J28 AND J45 (VAR INJ)
X	X	X	X	X	X	X	INTERCONNECTS J32 AND J44 (9.9 MHz INJ)
		X					INTERCONNECTS J44 AND J57 (9.9 MHz INJ TO AFC)
X	X	X	X	X	X	X	INTERCONNECTS A24E1 AND J34 (450 KHZ INJ)
		X			X		INTERCONNECTS A24E1 AND J60 (450 KHZ INJ TO YBFO)
X	X	X	X	X	X	X	INTERCONNECTS A24E1 AND J39 (450 KHZ INJ)
X	X	X	X	X	X	X	INTERCONNECTS A24E7 AND J54 (456.29 MHz INJ)
X	X	X	X	X	X	X	INTERCONNECTS A24E5 AND J55 (443.71 MHz INJ)
X	X	X	X	X	X	X	INTERCONNECTS J50, J51, J52, AND J53 (450 KHZ 1F)
		X					INTERCONNECTS J50, J51, J52, J53, AND J56 (450 KHZ 1F FOR AFC)
		X					P/O AC-8013 INTERCONNECTS A24E3 AND J27 (EXT STD)
X	X	X	X	X	X	X	P/O AC-8012 INTERCONNECTS A24E3 AND A29W11 (1 MHz STD)
X	X	X	X	X	X	X	P/O AC-8015 INTERCONNECTS A30P1 AND A29J11 (1 MHz STD)
X	X	X	X	X	X	X	P/O AC-8015 INTERCONNECTS A30J1 AND A29W11 (100 KHZ REF)
X	X	X	X	X	X	X	P/O AC-8015 INTERCONNECTS A30J2 AND J27 (EXT STD)
X	X	X	X	X	X	X	P/O AC-8015 INTERCONNECTS A30J3 AND J65 (1.00 MHz REF OUT)

NOTES:  
 ① RE  
 ② UN  
 ③ PA  
 ④ J1  
 ⑤ AR  
 ⑥ AS  
 ⑦ AR7P7  
 1  
 2  
 3  
 4  
 5  
 6  
 7  
 8  
 9  
 10  
 11  
 12  
 13  
 14  
 15  
 16  
 17  
 18  
 19  
 20  
 21  
 22  
 23  
 24  
 25  
 26  
 27  
 28  
 29  
 30  
 31  
 32  
 33  
 34  
 ⑦ J1  
 ⑧ RE  
 ⑨ P1P

REVISIONS			
LTR	DESCRIPTION	DATE	APVD
	SEE SHEET 1		

FUNCTION
D AFC
A28P11
P3, A28P4, AND A28P5
WIRING
WIRING
CONNECTIONS (SPEAKER CABLE)
D J16
B AND A2W12A
RCY ANT)
CH B2 IF OUT)
CH A2 IF OUT)
CH B1 IF OUT)
CH A1 IF OUT)
9.45 MHz IF)
450 KHZ IF FROM VBFO)
9.9 MHz IF FROM JFC)
118.8 MHz INJ)
VAR INJ)
9.9 MHz INJ)
9.9 MHz INJ TO AFC)
(450 KHZ INJ)
(450 KHZ INJ TO VBFO)
(450 KHZ INJ)
(456.25 KHZ INJ)
(443.71 KHZ INJ)
ND J53 (450 KHZ IF)
J53, AND J56 (450 KHZ IF FOR AFC)
A24E3 AND J27 (EXT STD)
A24E3 AND A29W1F1 (1 MHz STD)
A30P1 AND A25J1 (1 MHz STD)
A30J1 AND A29W1F1 (100 KHZ REF)
A30J2 AND J27 (EXT STD)
A30J3 AND J65 (100 KHZ REF OUT)

NOTES:

- ① REFER TO CONFIGURATION TABLE FOR CABLES/ASSEMBLIES USED IN EACH RECEIVER. INCLUDED IN THIS TABLE ARE ONLY THE CABLES/ASSEMBLIES SHOWN ON THIS SCHEMATIC.
- ② UNLESS OTHERWISE SPECIFIED, CAPACITANCE VALUES ARE 0.01 MICROFARADS AND INDUCTANCE VALUES ARE 100 MICROHENRYS.
- ③ PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION, PREFIX WITH UNIT AND/OR ASSEMBLY DESIGNATION.
- ④ J11, J12, J17, J18 AND J19 ARE SOLDERED INTO AND ARE PART OF SIDEBOARD ASSEMBLY A28 (THERE IS NO MATING CONNECTOR FOR J11, J12, J17, J18, AND J19).
- ⑤ A27J46 IS SOLDERED INTO AND IS PART OF RFI FILTER A27 (THERE IS NO MATING CONNECTOR FOR A27J46).
- ⑥ A27P7 MATES WITH PINS ON ONE SIDE OF JT, A10P1 MATES WITH SOCKET ON OTHER SIDE OF JT (OPPOSITE SIDES OF SIDEBOARD; PIN NUMBERING SHOWN BELOW).

	P/O JT	P/O A10P1
1	28	28
2	93	93
3	23	23
4	94	94
5	30	30
6	95	95
7	31	31
8	96	96
9	32	32
10	97	97
11	33	33
12	98	98
13	34	34
14	99	99
15	35	35
16	100	100
17	36	36
18	101	101
19	37	37
20	102	102
21	38	38
22	103	103
23	39	39
24	104	104
25	40	40
26	105	105
27	41	41
28	106	106
29	42	42
30	107	107
31	43	43
32	108	108
33	44	44
34	109	109

- ⑦ J14 HARDWIRED TO AND IS PART OF SIDEBOARD ASSEMBLY A28.
- ⑧ REFERENCE DESIGNATOR IN PARENTHESIS INDICATES MATING CONNECTOR.
- ⑨ PINS DUPLICATED FOR CLARITY.

659-7090

-001

MATERIAL NONE		UNLESS OTHERWISE SPECIFIED, DUAL DIMENSIONED DWGS ARE IN MILLIMETRES (INCHES). SINGLE DIMENSIONED DWGS ARE IN INCHES.		CONTRACT NO.		ROCKWELL INTERNATIONAL CORPORATION COLLINS GROUPS	
31 X 14 1/2 IMAGE AREA W X H		METRIC TOL ON METRIC DIM: ±.05, .XX±.02 HOLE DIAMETERS UNDER: 5.288±.013-0.13 6.38 TO 12.78±.013-0.13 OVER: 12.78±.020-0.13 ANGLES: 3:10°		US CUSTOMARY [ ] TOL ON [ ] DIM: .XX±.02, .XXX±.008 HOLE DIAMETERS: UNDER: .258±.005-.005 .251 TO .5008±.006-.005 OVER: .5008±.008-.005 ANGLES: 3:10°		DALLAS TEX 75207 NEWPORT BEACH CALIF 92643 CEDAR RAPIDS IA 52405	
FINISH NONE		CONCENRICITY BETWEEN DIA ON A COMMON AXIS TO BE WITHIN 0.25 &		PREP A. SIPPY 84/B/21 CHK J. WITMER 84/B/21 APVD C. ERRINGTON		INTERCONNECT DIAGRAM- CHASSIS, HF-8054/HF-8054A (622-3475-210)	
PUBN NO. FOR COLLINS DIVISIONS		CONCENRICITY BETWEEN DIA ON A COMMON AXIS TO BE WITHIN .010 &		SIZE E 13499		DWG NO. 659-7090	

659-7090



PVO A28 SIDEBORD ASSEMBLY

FUNCTION	A4 DVBFD J1 (A4P1)	RSVD J2	RSVD J3	A7 CH B1 IF J4 (A7P1)	A8 CH A1 IF J5 (A8P1)	A9 RF XLTR J6 (A9P1)	A10 CONT J7 (A10P1)	A11 PARALLEL INPUT J8 (A11P1)	A12 PARALLEL OUTPUT J9 (A12P1)	A13 SERIAL INTFC J10 (A13P1)	④ J11	⑤ J12	RSVD J13 (A13P1)	A25 RCV AF 1 J14 (A25P1)	RSVD J15	④ J17	④ J18	④ J19	⑤ A27P7	
CH A1 PHONES												19		14						
CH B1 PHONES												13		15						
RESERVED												14		14						
RESERVED												24		46		46				
SQUELCH ENBL												12		12						
PHONES AF1												22		47		47				
SQUELCH THRESHOLD												11		9		12				
RESERVED												36		9						
CH A1 SPKR AF												36		21						
CH B1 SPKR AF												50		9						
RESERVED												48		21						
RESERVED												5		3						
CH A1 METER												9		52						
CH B1 METER												3		1		3				
RESERVED												2		52						
RESERVED												37		48		48				
SQUELCH AF												21		45		45				
SPKR LEVEL												1		24		24				
PHONES LEVEL														34						
CH A1 SSB AF					24									35						
CH A1 AM AF					8									7						
CH A1 FM AF					7									50						
CH B1 AF				34																
RESERVED			34																	
RESERVED	34																			
LOCAL RF GAIN	39	39	39	39	39															
REMOTE RF GAIN	11	11	11	11	11				85											
RF AGC	18	18	18	18	18	18														
AGC METER					12							10								
RF OVLD FLT						68	68													2
RCV FAULT						13	13													3
PRESELECT FAULT						71	71													5
APC LOCK MON						66	7						2							1
CK ENBL					38		72	72	72					39						10
DATA NET ENBL	37	37	37	37	37		73	73	73											6
AM ENBL					35		8	8	8					37						4
1SB ENBL							9	9	9											15
A1 ENBL					36		25	91	25											12
B1 ENBL					36		6	92	6					44						13
RESERVED			36				17	21	17											11
RESERVED	36						74	74	74											11
1 (16 KHz)(ENBL)							14	99	99			34								
2 (LSB)(ENBL)							42													
3 (A)(ENBL)							15													
4 (B)(ENBL)							43		37	37		28								
5 (C)(ENBL)							16		106	106		27								
6 (D)(ENBL)							45		41	41		32								
7 (E)(ENBL)							17		12	3		31								
APC ENBL								34	34			29			7	50				
FM ENBL							10													7
RCV RF OVLD							3	12								10				
RC PS FLT							70	70												
FAULT SUMMARY OUT							49													2
SUBCARRIER FAULT							4	4												41
SUBCARRIER ENBL							7													42
CONTROL INTERFACE FAULT									39											43
UNUSED									83											44
UNUSED									36											45
UNUSED									105											46
METER BUS	12	12	12	12	40															



LTR	REVISIONS	
	DESCRIPTION	DATE
A	D20708-(CODE 16) REV SH 1,2,9.	84-12-3
B	D21799-(CODE 16) REV SH 1 THRU 10.	85-220

REV'D	④	④	④	⑤	A1 PWR SPLY A1TB1	A2A3 FREQ SWRD A2BP2 OR A2WIP2A (A2A3J4)	A2A2 SWITCH MOUNTING BOARD A2BP3 (A2A2J2)	A2BP4 (A2A2J1)	A2A1 STATUS DISPLAY A2BP5 (A2A1J1)	A2A5 FREQ DISPLAY FREQ A2WIP8 (A2A5J5)	YBFO A2WIP2 (A2A5J8)	A2A4 DYBFO DYBFO A2A4J8	A2A6 PRESET SW A2BP10 (A2A6J7)	A2A DIRECT DIGITAL SYNTH A2BP11 (A2A4J4)
1														
14														
15														
46														
47														
12														
9														
21														
3														
52														
48														
45														
24														
35														
50														
41														
2														
3														
9														
5														
1														
10														
6														
4														
15														
12														
13														
37														
44														
17														
23														
24														
19														
20														
22														
44														
7														
4														
2														
41														
42														
43														
44														
45														
46														

659-7090

659-7090

-001

REV STATUS	REV	BY	DATE
OF SHEETS	1	2	3
	4	5	6
	7	8	9
	10		

IMAGE AREA	LTR	PAGE	PCT
35 X 17	120	50	
W X H	SIZE	INCR	
PUBN NO.			
FOR COLLINS DIVISIONS			

MATERIAL	UNLESS OTHERWISE SPECIFIED, DUAL DIMENSIONED DWGS ARE IN MILLIMETRES (INCHES). SINGLE DIMENSIONED DWGS ARE IN INCHES.
NONE	
	<b>METRIC</b>
	TOL ON METRIC DIM: .X±.02, .XX±.02
	HOLE DIAMETERS
	UNDER .635±.015-.013
	.635 TO 12.78±.015-.013
	OVER 12.78±.020-.015
	ANGLES: 21.0°
	CONCENTRICITY BETWEEN DIA ON A COMMON AXIS TO BE WITHIN .005
	PART SHALL COMPLY TO 580-5400-001--THIRD ANGLE PROJECTION
	<b>US CUSTOMARY</b>
	TOL ON [ ] DIM: .XX±.02, .XXX±.008
	HOLE DIAMETERS
	UNDER .254±.005-.005
	.251 TO .508±.008-.005
	OVER .508±.008-.005
	ANGLES: 21.0°
	CONCENTRICITY BETWEEN DIA ON A COMMON AXIS TO BE WITHIN .005

CONTRACT NO.	PREP A. SIPPY 84/8/21
	CHK J. WITMER 84/8/21
	APYD C. ERRINGTON

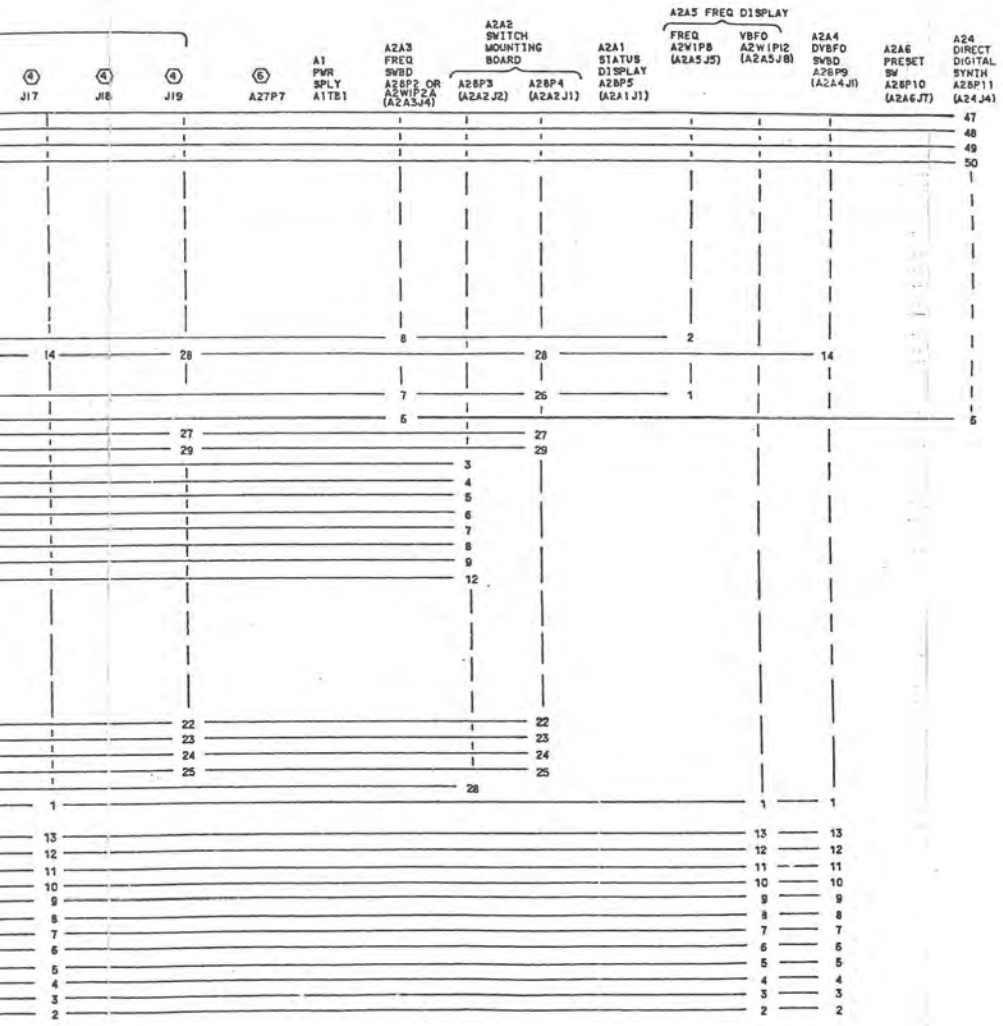
ROCKWELL INTERNATIONAL CORPORATION COLLINS GROUPS			
INTERCONNECT DIAGRAM- CHASSIS, HF-8054/HF-8054A (622-2475-210)			
SIZE	FIG	DWG NO.	REV
E	13499	659-7090	LTR B
SCALE NONE			SHEET 1 OF 10

P/O A28 SIDEBOARD ASSEMBLY

FUNCTION	A4 DVBFO J1 (A4P1)	RSVD J2	RSVD J3	A7 CH B1 IF J4 (A7P1)	A8 CH A1 IF J5 (A8P1)	A9 RF RLTR J6 (A9P1)	A10 CONT J7 (A10P1)	A11 PARALLEL INPUT J8 (A11P1)	A12 PARALLEL OUTPUT J9 (A12P1)	A13 SERIAL INTFC J10 (A13P1)	J11	J12	RSVD J13 (A3P1)	A25 RCV AF 1 J14 (A25P1)	RSVD J15	J17	J18	J19	A27P7
UNUSED																			
DOS ID (DOS+LOGIC)* (*)																			
YFO FAULT (DOS)																			
REF FAULT (DOS)																			
A1 AGC MON					2														
B1 AGC MON				2															
RESERVED																			
RESERVED		2	2																
A1 AF MON																			
B1 AF MON																			
RESERVED																			
RESERVED																			
RF FM						3													
REMOTE FREQ CHANGE																			
LCL FREQ CHANGE																			
LCL CONT	59																		
A1/CN	51																		
LCL FREQ D'SBL (PRESET/STORE)																			
450 kHz ENBL																			
MONITOR (PRESET ENBL)																			
PRESET SEND																			
A1 AGC 1					4														
A1 AGC 2					32														
B1 AGC 1				4															
B1 AGC 2				32															
RESERVED				4															
RESERVED				32															
RESERVED				4															
RESERVED				32															
MD1																			
MD2																			
MD3																			
MD4																			
MD5																			
MD6																			
MD7																			
MD8																			
A1 AGC BUS				7															
B1 AGC BUS				8															
RESERVED				9															
RESERVED				10															
VBFO ENBL	46																		
VBFO SIG	18																		
VBFO SYNT	34																		
8 kHz	54																		
4 kHz	26																		
2 kHz	53																		
1 kHz	25																		
800 Hz	32																		
400 Hz	24																		
200 Hz	22																		
100 Hz	49																		
80 Hz	21																		
40 Hz	48																		
20 Hz	20																		
10 Hz	47																		
DATA ERROR																			
STRAP 1																			

102

REVISIONS		DATE	APVD
LTR	DESCRIPTION		
	SEE SHEET 1		



659-7090

659-7090

-001

MATERIAL NONE		UNLESS OTHERWISE SPECIFIED, DUAL DIMENSIONED DIMS ARE IN MILLIMETRES (INCHES), SINGLE DIMENSIONED DIMS ARE IN INCHES.		CONTRACT NO.		ROCKWELL INTERNATIONAL CORPORATION COLLINS GROUPS	
35 X 16 1/2 120 50		METRIC		US CUSTOMARY		INTERCONNECT DIAGRAM - CHASSIS, HF-8054 / HF-8054A (622-3475-210)	
IMAGE AREA W X H LTR SIZE PAGE INCH PCT		TOL ON METRIC DIM .XX±0.5, .XX±0.2		TOL ON [ ] DIM .XX±0.02, .XXX±0.008		PREP A. SIPPY 84/B/21	
PUBN NO.		HOLE DIAMETERS UNDER 6.38+0.15-0.13		HOLE DIAMETERS UNDER .250+0.005-0.005		CHK J. WITMER 84/B/21	
FOR COLLINS DIVISIONS INTERNAL PUBLICATIONS USE ONLY		OVER 6.38 TO 12.78+0.15-0.13		251 TO .500+0.006-0.005		APVD C. ERRINGTON	
		ANGLES: 21.0°		ANGLES: 21.0°		SIZE FSCM DWG NO. REV LTR	
		CONCENTRICITY BETWEEN DIA ON A COMMON AXIS TO BE WITHIN 0.25 Ø		CONCENTRICITY BETWEEN DIA ON A COMMON AXIS TO BE WITHIN 0.10 Ø		E 13499 659-7090 5	
		PART SHALL COMPLY TO 580-3400-001--THIRD ANGLE PROJECTION				SCALE NONE SHEET 2	

FOR COLLINS DIVISIONS INTERNAL PUBLICATIONS USE ONLY

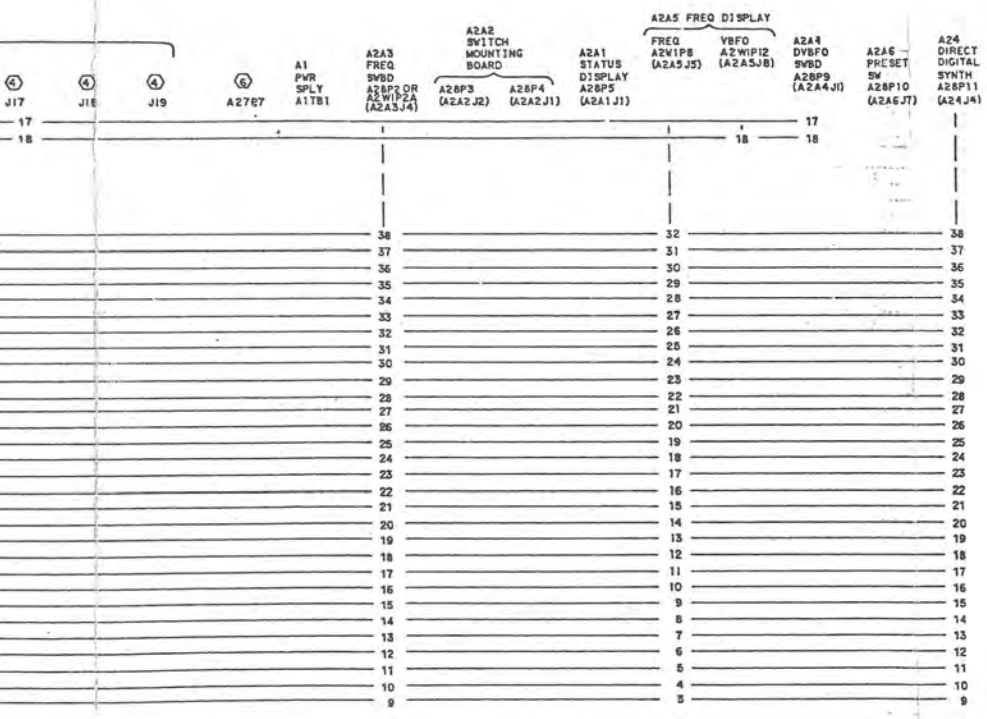
WFO A28 SIDEBOARD ASSEMBLY

FUNCTION	A4 DYBFO J1 (A4P1)	RSVD J2	RSVD J3	A7 CH B1 IF J4 (A7P1)	A8 CH A1 IF J5 (A8P1)	A9 RF XLTR J6 (A9P1)	A10 CONT J7 (A10P1)	A11 PARALLEL INPUT J8 (A11P1)	A12 PARALLEL OUTPUT J9 (A12P1)	A13 SERIAL INTFC J10 (A13P1)	④ J11	④ J12	RSVD J13 (A3P1)	A25 RCV AF 1 J14 (A25P1)	RSVD J15	④ J17	④ J18	④ J19	
VBFO FREQ CHANGE							46												17
VBFO DISPLAY ENBL	55																		18
REMOTE RF GAIN	16							76	76										
	8							11	11										
	4							75	75										
	2							10	10										
	1							87	22										
FREQUENCY																			
20 kHz							129	129	129										38
10 kHz							64	64	64										37
8 kHz							128	128	128										36
4 kHz							63	63	63										35
2 kHz							127	127	127										34
1 kHz							62	62	62										33
800 kHz							126	126	126										32
400 kHz							61	61	61										31
200 kHz							125	125	125										30
100 kHz							60	60	60										29
80 kHz							124	124	124										28
40 kHz							59	59	59										27
20 kHz							123	123	123										26
10 kHz							58	58	58										25
8 kHz							122	122	122										24
4 kHz							57	57	57										23
2 kHz							121	121	121										22
1 kHz							56	56	56										21
800 Hz							120	120	120										20
400 Hz							55	55	55										19
200 Hz							119	119	119										18
100 Hz							54	54	54										17
80 Hz							118	118	118										16
40 Hz							53	53	53										15
20 Hz							117	117	117										14
10 Hz							52	52	52										13
8 Hz							116	116	116										12
4 Hz							51	51	51										11
2 Hz							115	115	115										10
1 Hz							50	50	50										9
1 (0-0.56)							31	18	--1										
2 (0.56-1.6)							32	19	--2										
3 (1.6-2)							33	20	--3										
4 (2-3)							34	22											
5 (3-4)							5	87											
6 (4-5)							7	23											
7 (6-8)							35	88											
8 (8-12)							8	24											
9 (12-16)							36	89											
10 (16-24)							9	25											
11 (24-30)							38	90											

BAND (STD  
BANDPASS  
FILTERING)

BAND  
(HALF-  
OCTAVE  
FILTER-  
ING)

REVISIONS			
LTR	DESCRIPTION	DATE	APVD
	SEE SHEET 1		



659-7090

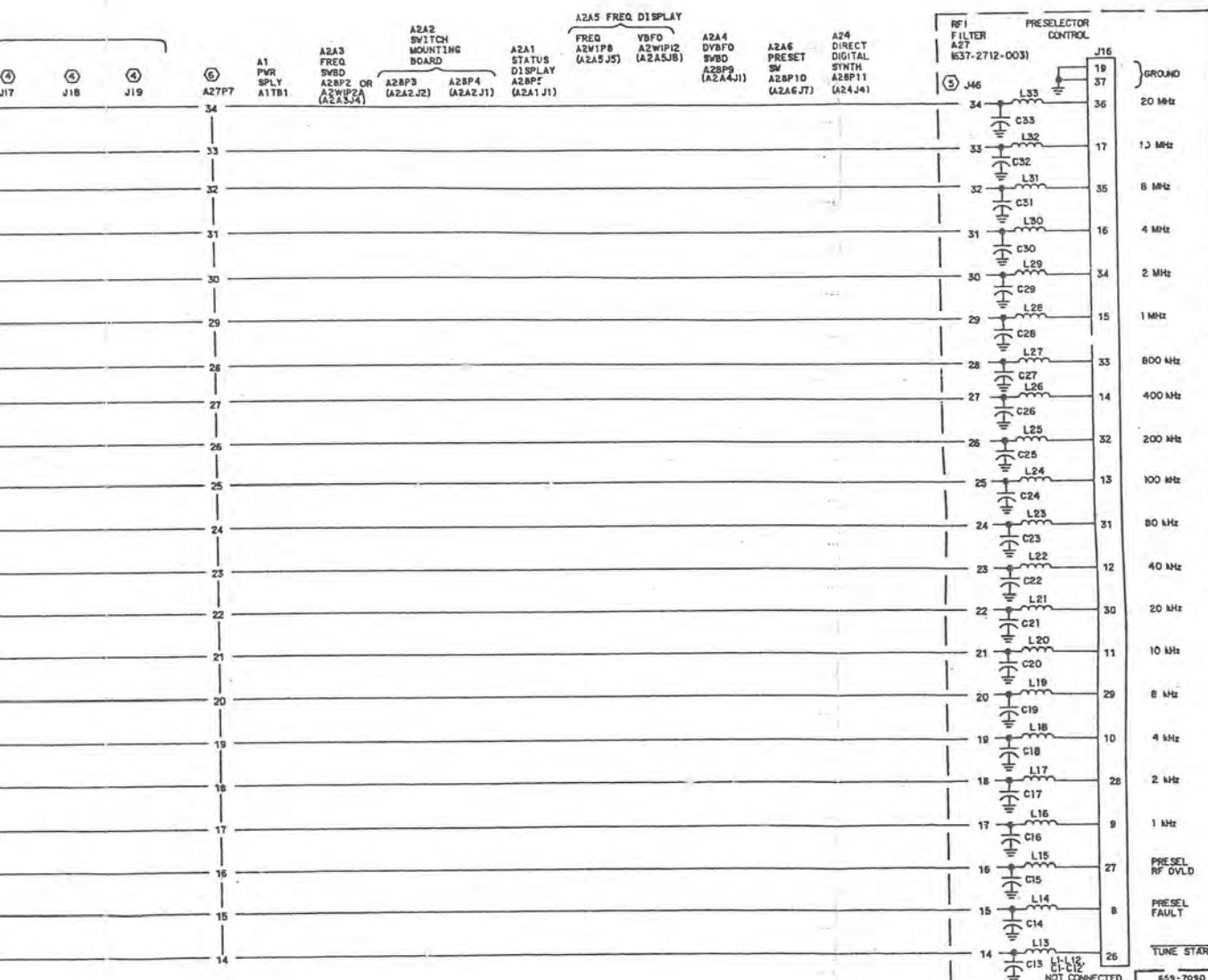
843

MATERIAL NONE		UNLESS OTHERWISE SPECIFIED, DUAL DIMENSIONED DIMS ARE IN MILLIMETRES (INCHES) SINGLE DIMENSIONED DIMS ARE IN INCHES. <b>METRIC</b> TOL ON METRIC DIM: X±.005, XX±0.2 HOLE DIAMETERS UNDER .250" +0.13-0.13 .25 TO .500" +0.13-0.13 OVER .500" +0.20-0.13 ANGLES: 21.0° CONCENTRICITY BETWEEN DIA ON A COMMON AXIS TO BE WITHIN 0.25 &		<b>US CUSTOMARY</b> TOL ON I.D. DIM: .XX±.02, .XX±.008 HOLE DIAMETERS UNDER .250" +.005-.005 .25 TO .500" +.006-.006 OVER .500" +.008-.008 ANGLES: 21.0° CONCENTRICITY BETWEEN DIA ON A COMMON AXIS TO BE WITHIN .010 &		CONTRACT NO. PREP A.SIPPY 84/8/21 CHK J. WITMER 84/8/21 APVDC. ERRINGTON	ROCKWELL INTERNATIONAL CORPORATION COLLINS GROUPS INTERCONNECT DIAGRAM - CHASSIS, HF-8054/HF-8054A (622-3475-210) SIZE E FSCW 13499 DWG NO. 659-7090 REV LTR B
IMAGE AREA W X H 35 1/4 x 17 3/4 LTR SIZE 120 PAGE INCR 50 PCT PUBN NO. FOR COLLINS DIVISIONS		FINISH NONE		17 1/8 x 1 1/2			

659-7090



REVISIONS			
LTR	DESCRIPTION	DATE	APVD
	SEE SHEET 1		

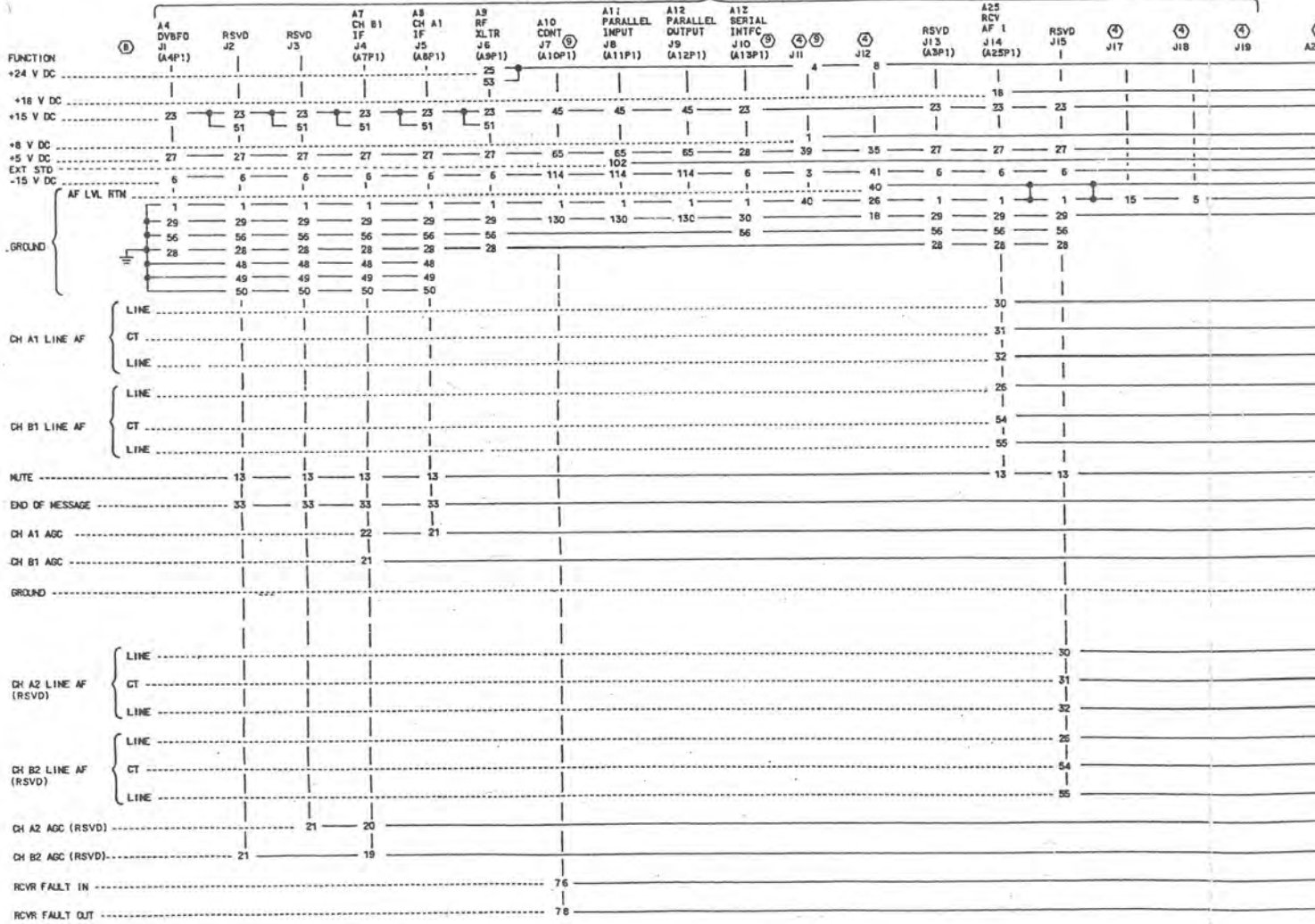


MATERIAL NONE				UNLESS OTHERWISE SPECIFIED, DUAL DIMENSIONED DIMS ARE IN MILLIMETRES (INCHES), SINGLE DIMENSIONED DIMS ARE IN INCHES.				CONTRACT NO.				ROCKWELL INTERNATIONAL CORPORATION COLLINS GROUPS			
20% x 8%				METRIC				US CUSTOMARY ( )				DALLAS TEX 75207 NEWPORT BEACH CALIF 92643 CERRA RANCHO TX 75248			
41 X 17	120	50		TOL ON METRIC DIM X+0.5, X+0.2	TOL ON ( ) DIM XX+0.02, XXX+0.008	PREP A. SIPPY 84/8/21	INTERCONNECT DIAGRAM-	CHASSIS, HF-8054/HF-8054A		METRIC					
IMAGE AREA	LTR	FACE	PCT	HOLE DIAMETERS	HOLE DIAMETERS	CHK J. WITMER 84/8/21	(622-3475-210)		SCALE NONE		REV LTR 8				
				UNDER 6.3MM +0.15-0.13	UNDER .250" +.005-.005	APVC C. ERRINGTON	SIZE E 13499		DWG NO. 659-7090		SHEET 4				
				OVER 12.76 +0.20-0.15	OVER .500" +.008-.005		CONCENTRICITY BETWEEN DIA ON A COMMON AXIS TO BE WITHIN .015 &								
				ANGLES: 21.0°	ANGLES: 21.0°		CONCENTRICITY BETWEEN DIA ON A COMMON AXIS TO BE WITHIN .015 &								
PUBN NO.				CONCENTRICITY BETWEEN DIA ON A COMMON AXIS TO BE WITHIN .025 &											
FOR COLLINS DIVISIONS															

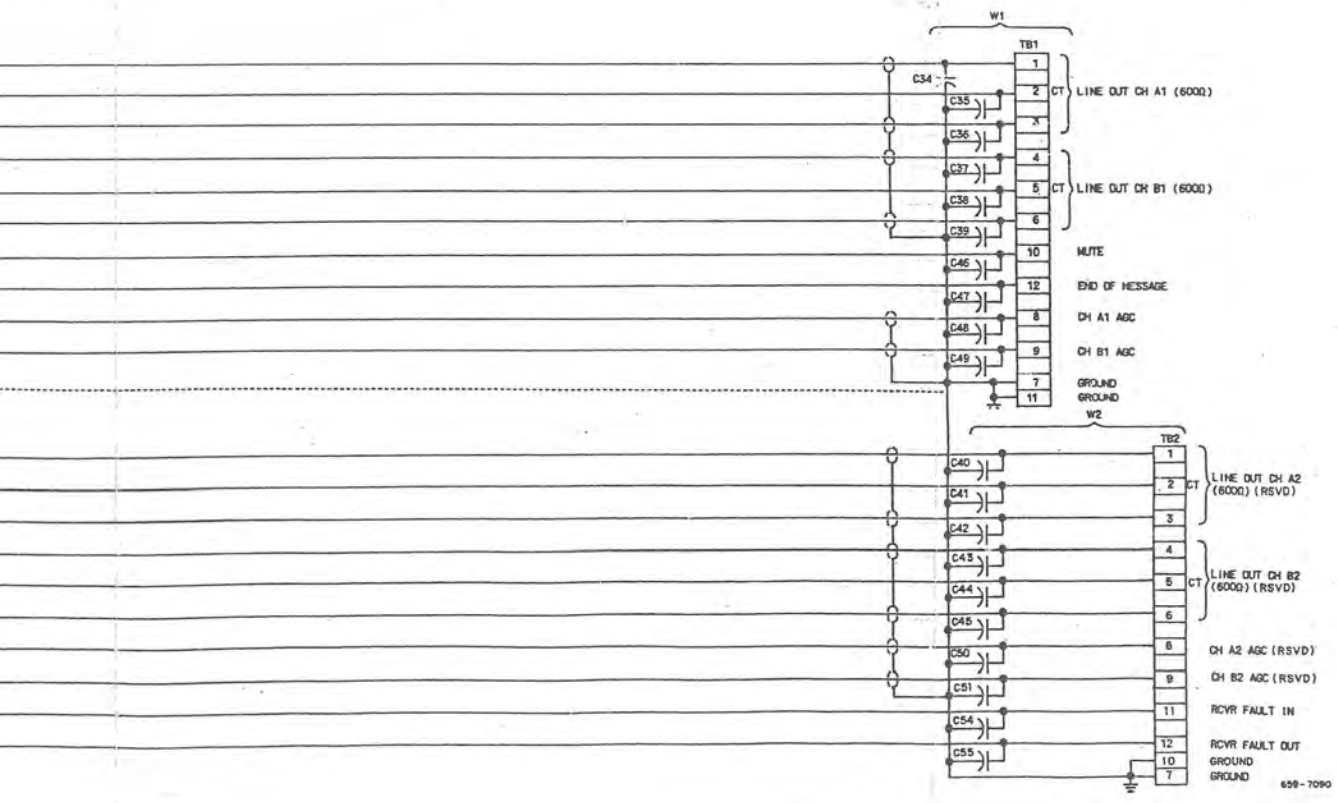
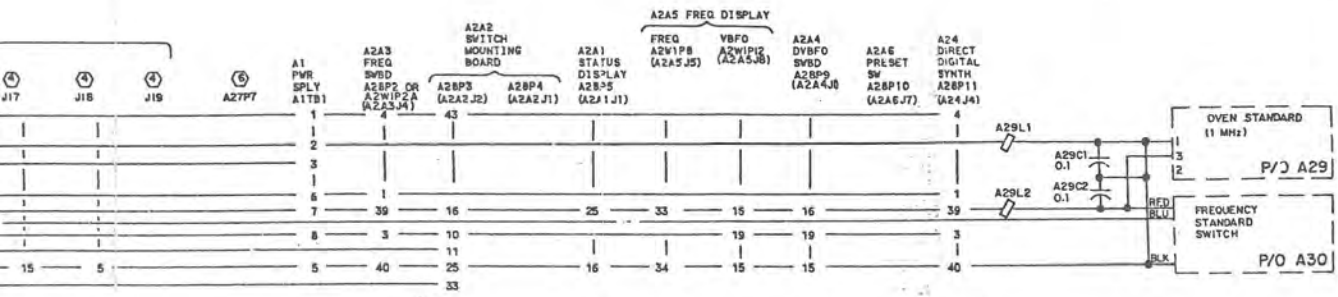
659-7090



P/O A28 SIDEBARD ASSEMBLY



REVISIONS			
LTR	DESCRIPTION	DATE	APVD
	SEE SHEET 1		



40 1/2 x 17	120	50
IMAGE AREA W x H	LTR SIZE	PAGE PCT
PUB. NO.		
FOR COLLINS DIVISIONS INTERNAL PUBLICATIONS USE ONLY.		

MATERIAL NONE	UNLESS OTHERWISE SPECIFIED DUAL DIMENSIONED DWGS ARE IN MILLIMETERS [INCHES]. SINGLE DIMENSIONED DWGS ARE IN INCHES.
	METRIC
	US CUSTOMARY
TOL ON METRIC DIM: .XX±0.5, .XX±0.2	TOL ON C/D DIM: .XX±0.02, .XX±0.008
HOLE DIAMETERS UNDER 6.388+0.13-0.13	HOLE DIAMETERS UNDER .250+0.005-0.005
6.38 TO 12.76+0.13-0.13	.251 TO .500+0.008-0.005
OVER 12.76+0.20-0.13	OVER .500+0.008-0.005
ANGLES: 3:10°	ANGLES: 3:10°
CONCENTRICITY BETWEEN DIA ON A COMMON AXIS TO BE WITHIN 0.25 A	CONCENTRICITY BETWEEN DIA ON A COMMON AXIS TO BE WITHIN 0.10 B
PART SHALL COMPLY TO 580-5400-001--THIRD ANGLE PROJECTION	

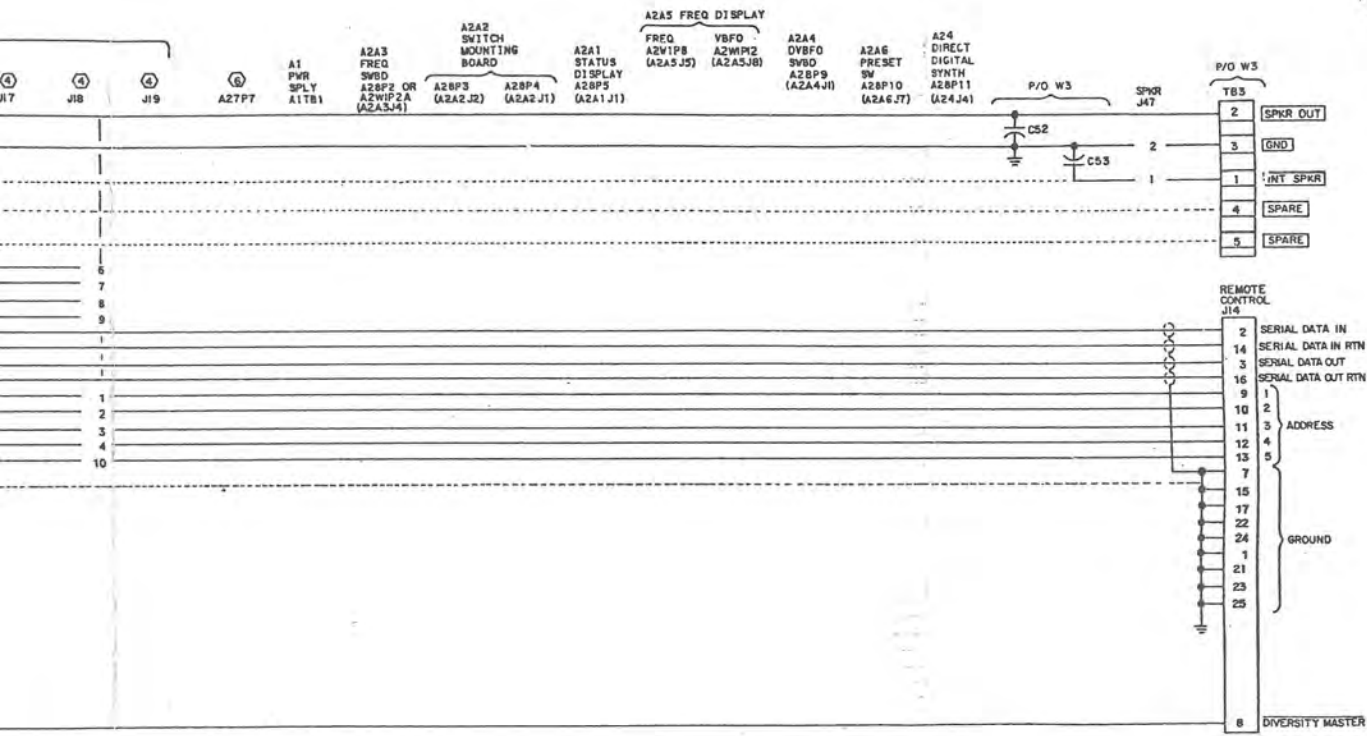
CONTRACT NO.	ROCKWELL INTERNATIONAL CORPORATION COLLINS GROUPS
PREP A. SIPPY 84/8/21	INTERCONNECT DIAGRAM- CHASSIS, HF-8054/HF-8054A (622-3475-210)
CHK J. WITMER 84/8/21	APVDC ERRINGTON
SIZE E	FSCM 13499
SCALE NONE	DWG NO. 659-7090
	REV LTR 8
	SHEET 5

659-7090  
 5  
 204 x 8 1/2

-001

P/O A28 SIDEROARD ASSEMBLY

FUNCTION	(E) A4 DVBFO J1 (A4P1)	RSVD J2	RSVD J3	A7 CH B1 IF J4 (A7P1)	A8 CH A1 IF J5 (A8P1)	A9 RF XLTR J6 (A9P1)	A10 CONT J7 (A10P1)	A11 PARALLEL INPUT J8 (A11P1)	A12 PARALLEL OUTPUT J9 (A12P1)	A13 SERIAL INTFC J10 (A13P1)	(G) J11	(G) J12	RSVD J13 (A3P1)	A25 RCV AF 1 J14 (A25P1)	RSVD J15	(G) J17	(G) J18	(G) J19
SPKR ALD10														19				
SPKR RTN														17				
INT SPKR																		
SPARE																		
SPARE																		
PRESET ADDRESS																		
1									96									6
2									94									7
3									93									8
4									90									9
SERIAL DATA IN														54				
SERIAL DATA IN RTN														55				1
SERIAL DATA OUT														26				1
SERIAL DATA OUT RTN														27				1
ADDRESS																		
1														41				1
2														14				2
3														40				3
4														39				4
5														15				10
GROUND																		
KX1									27					46				
KX2									25					42				
KX4									90					43				
KXB									93					19				
STA 1														81				36
STA 2														83				37
DATA														89				11
CLOCK														88				10
STROBE														87				38
DIVERSITY MASTER									38									17



659-7090

-001

41 X 12	120	20 1/2 X 6	50
IMAGE AREA W X H	LTR SIZE	PAGE INCH	PC1
PUB. NO.			
FOR COLLINS DIVISIONS INTERNAL PUBLICATIONS USE ONLY			

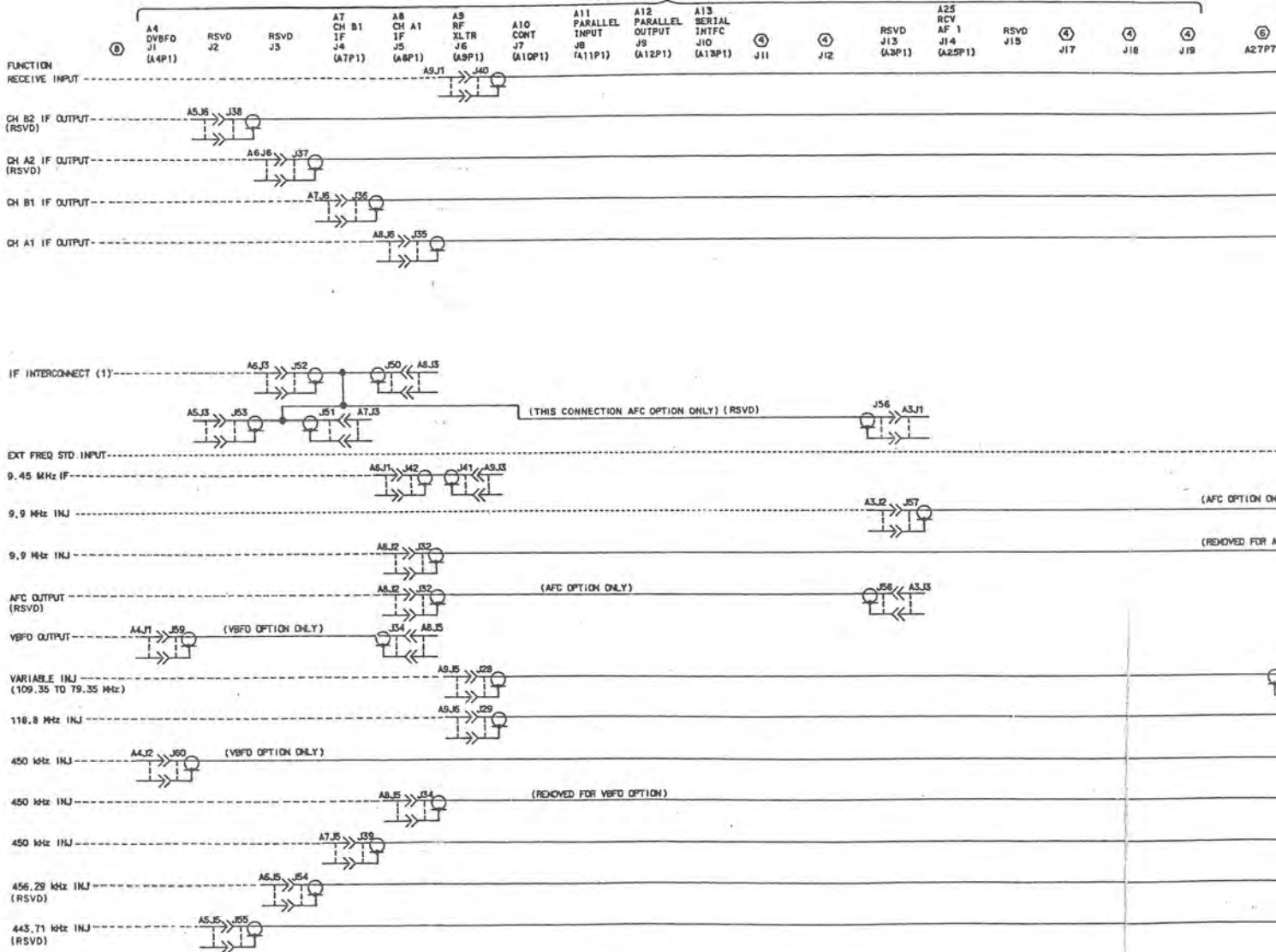
MATERIAL NONE
FINISH NONE

UNLESS OTHERWISE SPECIFIED, DUAL DIMENSIONED DIMS ARE IN MILLIMETRES (INCHES), SINGLE DIMENSIONED DIMS ARE IN INCHES.	
METRIC	US CUSTOMARY [ ]
TOL ON METRIC DIM: X ± 0.2, XX ± 0.2	TOL ON [ ] DIM: .XX ± 0.02, XXX ± 0.008
HOLE DIAMETERS: UNDER 6.35 ± 0.13 - 0.13	UNDER 25.4 ± 0.05 - 0.05
6.35 TO 12.7 ± 0.13 - 0.13	25.4 TO 50.8 ± 0.06 - 0.05
OVER 12.7 ± 0.20 - 0.13	OVER 50.8 ± 0.08 - 0.05
ANGLES: 21.0°	ANGLES: 21.0°
CONCENTRICITY BETWEEN DIA ON A COMMON AXIS TO BE WITHIN 0.25 R.	CONCENTRICITY BETWEEN DIA ON A COMMON AXIS TO RP WITHIN .010 R.
PART SHALL COMPLY TO 580-5400-001--THIRD ANGLE PROJECTION	

CONTRACT NO.	ROCKWELL INTERNATIONAL CORPORATION COLLINS GROUPS
PREP A. SIPPY 84/8/21	DALLAS, TEX 75207 NEWPORT BEACH, CALIF 92643 CLEVELAND, OH 44130
CHK J. WITMER 84/8/21	INTERCONNECT DIAGRAM - CHASSIS, HF-8054/HF-8054A (622-3475-210)
APVD C. ERRINGTON	SIZE FSCM DWG NO. REV E 13499 659-7090 8
	SCALE NONE SHEET 6

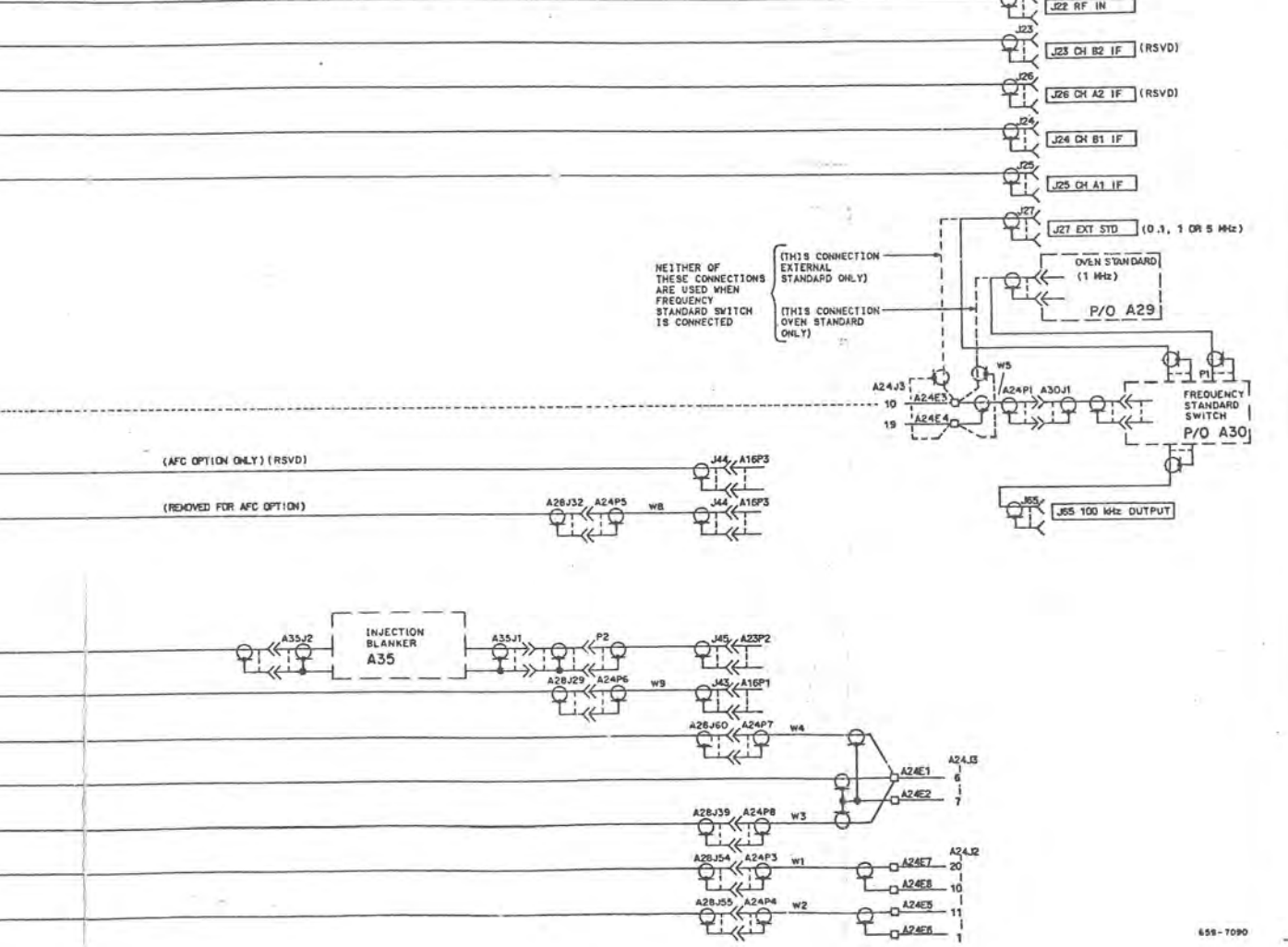
659-7090

P/O A28 SIDEBORD ASSEMBLY



		REVISIONS	
LTR	DESCRIPTION	DATE	APVD
	SEE SHEET 1		

(1) J17	(2) J18	(3) J19	(5) A27P7	A1 PWR SPLY A11B1	A2A3 FREQ SWBD A28P2 OR A2WIP2A (A2A3J4)	A2A2 SWITCH MOUNTING BOARD A28P3 (A2A2J2) A28P4 (A2A2J1)	A2A1 STATUS DISPLAY A28P5 (A2A1J1)	A2A5 FREQ DISPLAY FREQ A2W1P8 (A2A5J5) VBFO A2W1P2 (A2A5J6)	A2A4 DVFBFO SWBD A28P9 (A2A4J1)	A2A6 PRESET SW A28P10 (A2A6J7)	A24 CIRCUIT DIP SW A28P11 (A24J4)
---------	---------	---------	-----------	----------------------------	---	--	---	---	--	---	---



40 1/2 x 17 1/2 1/20	120	118	LTR	PAGE	PCT
			SIZE	INCR	
PUBN NO.					
FOR COLLINS DIVISIONS INTERNAL PUBLICATIONS USE ONLY					

MATERIAL NONE	UNLESS OTHERWISE SPECIFIED, DUAL DIMENSIONED DWGS ARE IN MILLIMETERS (INCHES). SINGLE DIMENSIONED DWGS ARE IN INCHES.
FINISH NONE	METRIC TOL ON METRIC DIM .XX±.02, .XX±.02, .XX±.02 HOLE DIAMETERS UNDER 8.388+0.15-0.15 8.38 TO 12.78+0.15-0.15 OVER 12.78+0.20-0.15 ANGLES: 21.0°
	US CUSTOMARY TOL ON [ ] DIM .XX±.02, .XX±.02, .XX±.02 HOLE DIAMETERS UNDER 5.08±.008-.008 5.08 TO 5.08±.008-.008 OVER 5.08±.008-.008 ANGLES: 21.0°
	CONCENTRICITY BETWEEN DIA ON A COMMON AXIS TO BE WITHIN 0.25 mm PART SHALL COMPLY TO 380-5400-001-THIRD ANGLE PROJECTION

CONTRACT NO.		ROCKWELL INTERNATIONAL CORPORATION COLLINS GROUPS DALLAS TEX 75207 NEWPORT BEACH CALIF 92645 LITTLE ROCK ARK 72114	
PREP A SIPPY 84/8/21	CHK J. WITMER 84/8/21	INTERCONNECT DIAGRAM- CHASSIS, HF-8054/HF-8054A (622-3475-210)	METRIC
APVD C. ERRINGTON		SIZE E	REV LTR
		PSCM 13499	659-7090
		DWG NO.	659-7090
		SCALE NONE	SHEET 7

659-7090