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

Rockwell International

supplement

Collins Defense Communications Division

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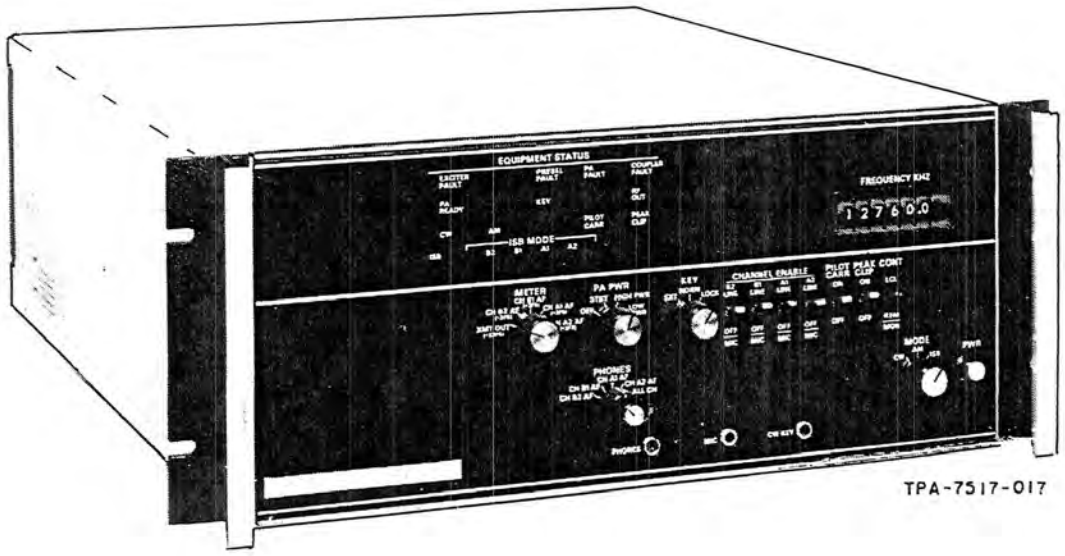
GENERAL

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				

*All part numbers are Rockwell-Collins.

⟨1⟩ Effective through REV B.

⟨2⟩ Effective REV C and above.

⟨3⟩ Effective through REV M.

⟨4⟩ Effective REV N and above.

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.

TITLE	PART NUMBER
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 μs to ±1000 Hz
Parallel frequency control	Capability of parallel bcd frequency input and parallel coded-frequency input through the rear panel. The parallel bcd inputs control the standard bcd 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 bcd 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

*All part numbers are Rockwell-Collins.

(1) Effective through REV J.

(2) Effective REV K through REV M.

(3) Effective through REV M.

(4) Effective REV N and above.

INSTALLATION (523-0770722-002218)

1. GENERAL

Add the following entry to listing of equipment books.

TITLE	PART NUMBER
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

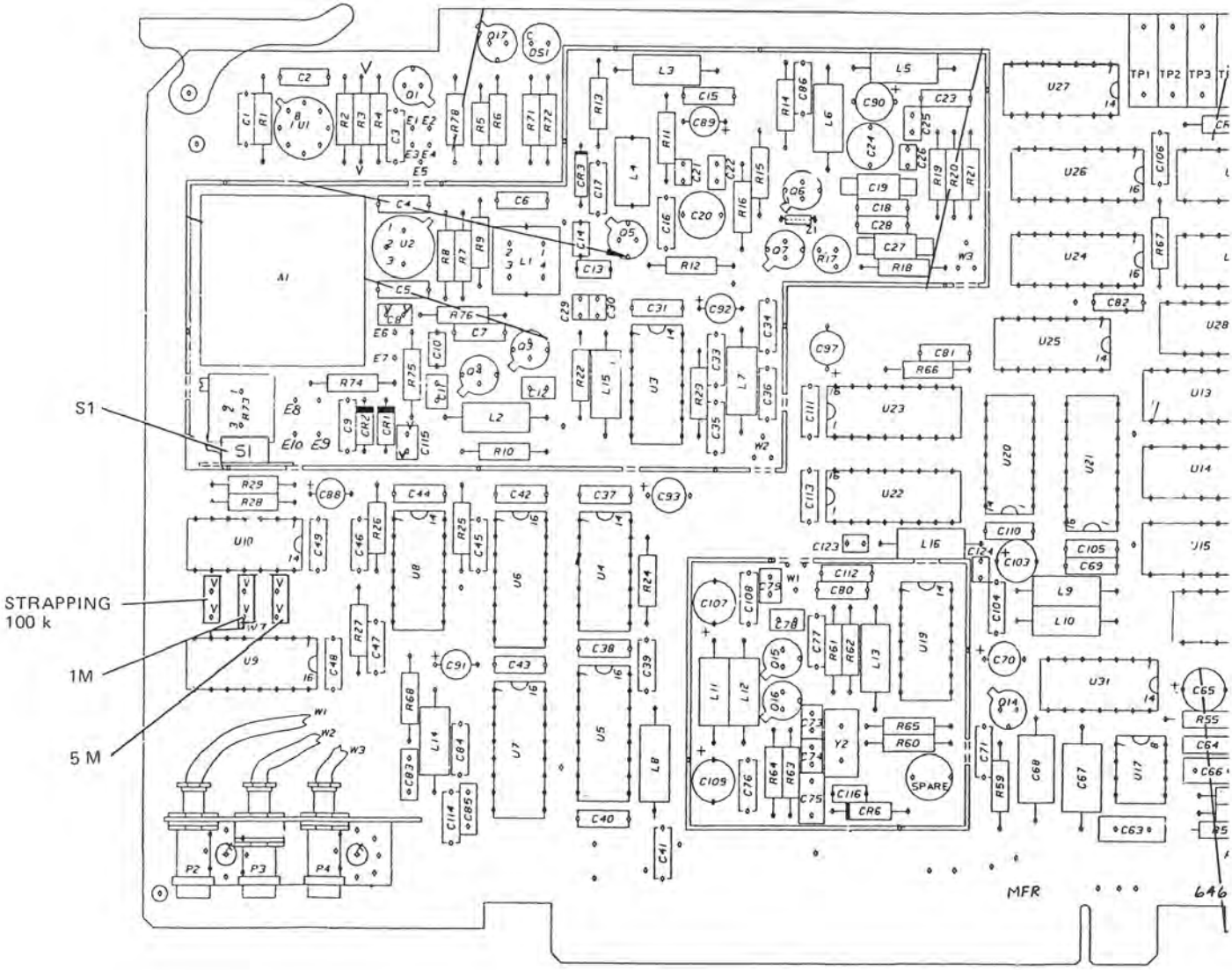
Place figure 6A after figure 6 and add the following paragraph after paragraph 4.7.

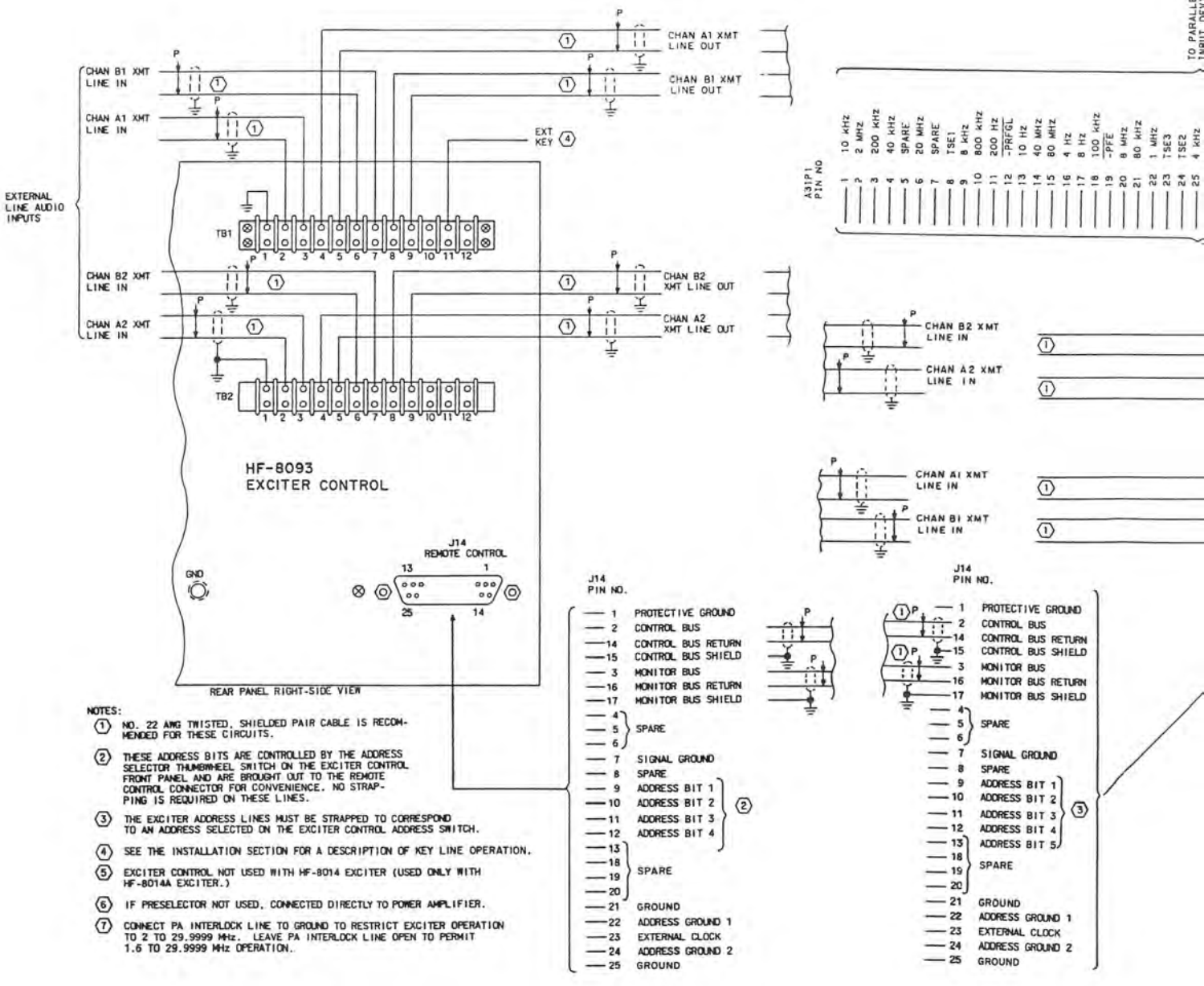
4.8 Exciter to Parallel Format Devices

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

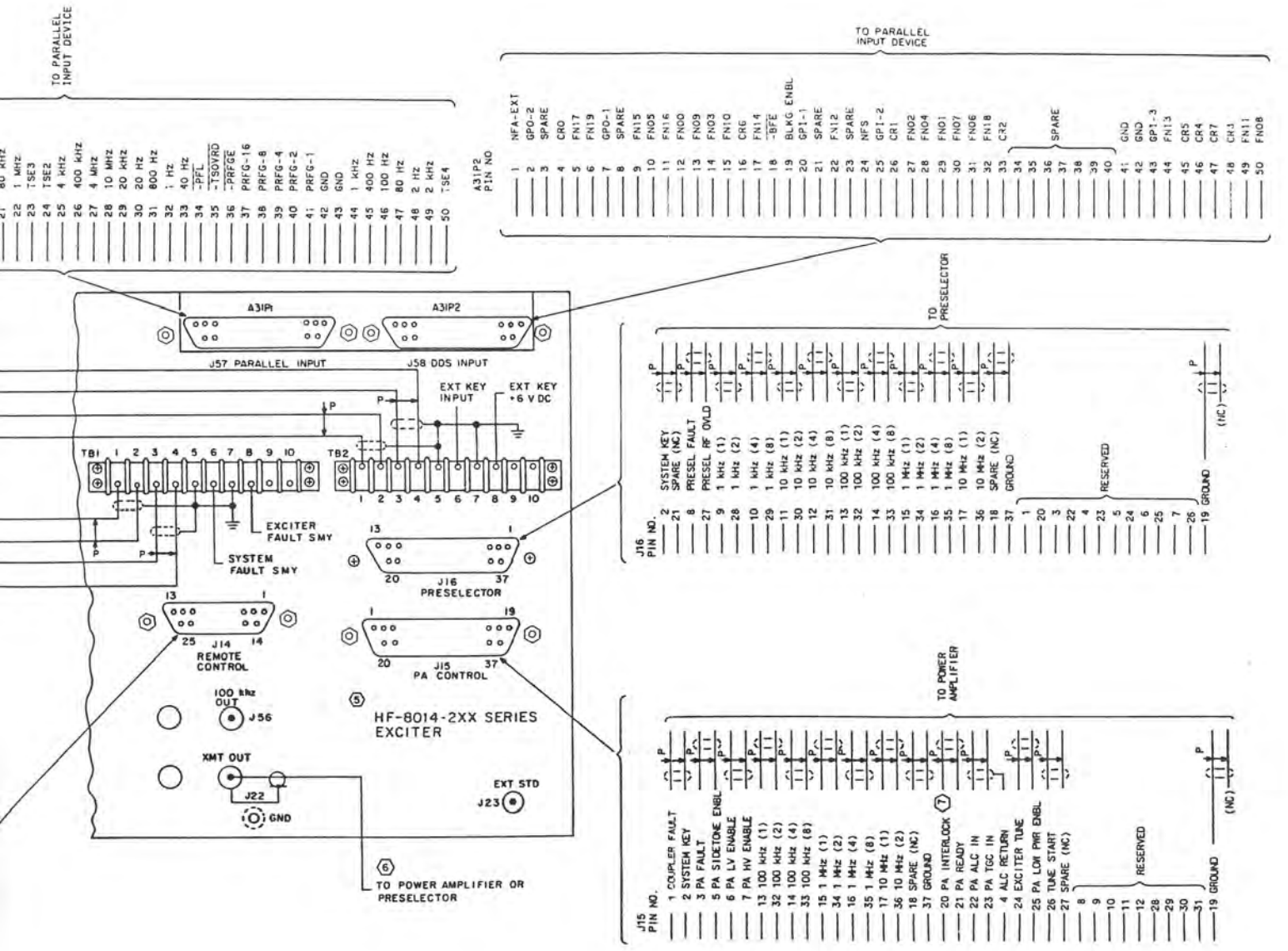
Replace figure 7 with figure 7 attached.


S1
STRAPPING
100 k
1M
5 M
MFR
646



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.

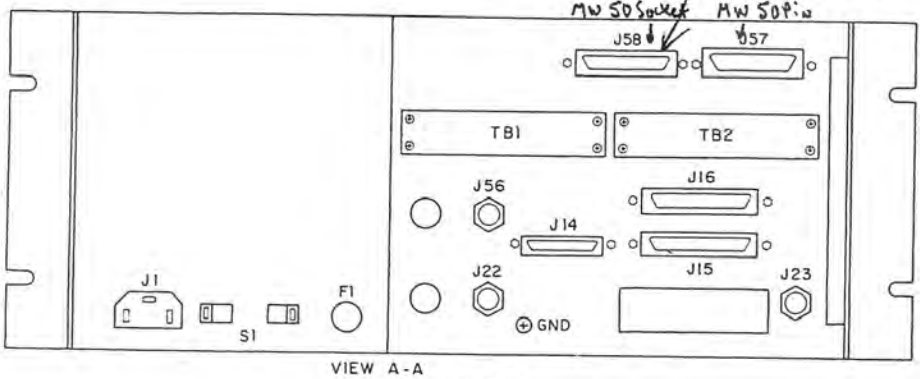


TPA-7524-015

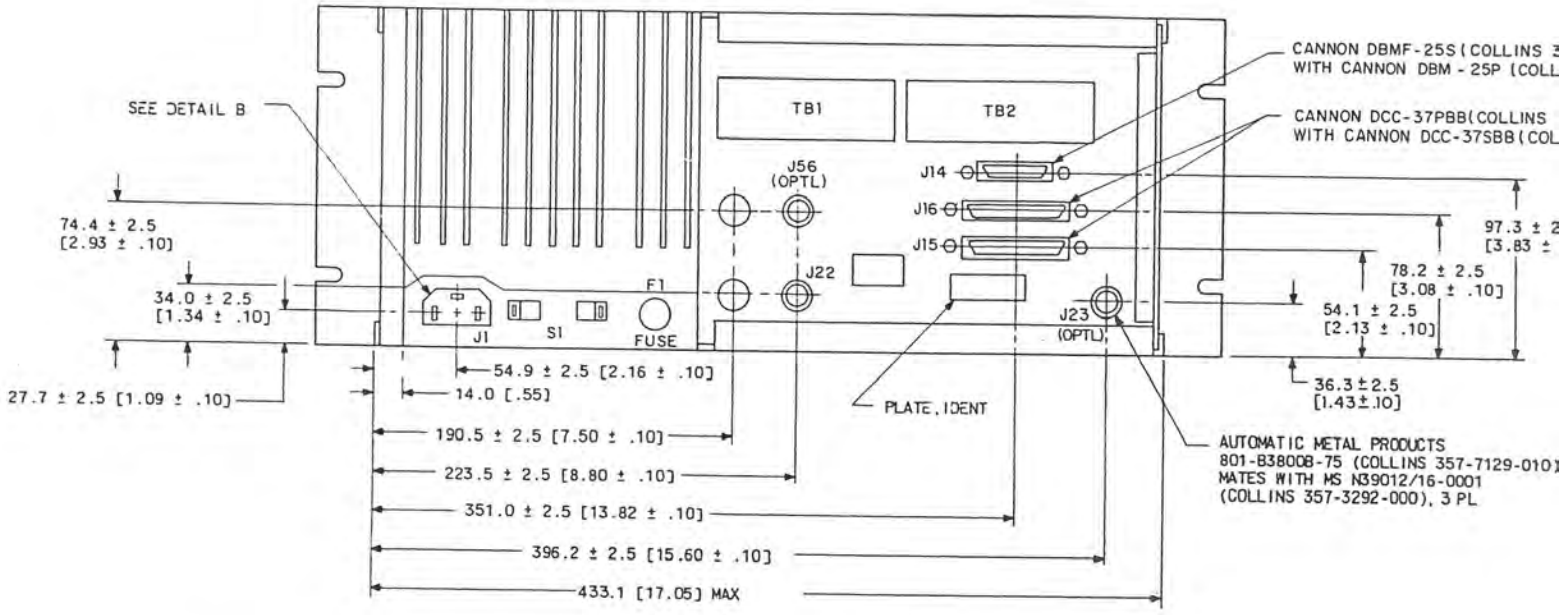
HF-8014A Exciter (622-3473-211), Typical Installation
Figure 6A

MATING CONNECTOR?

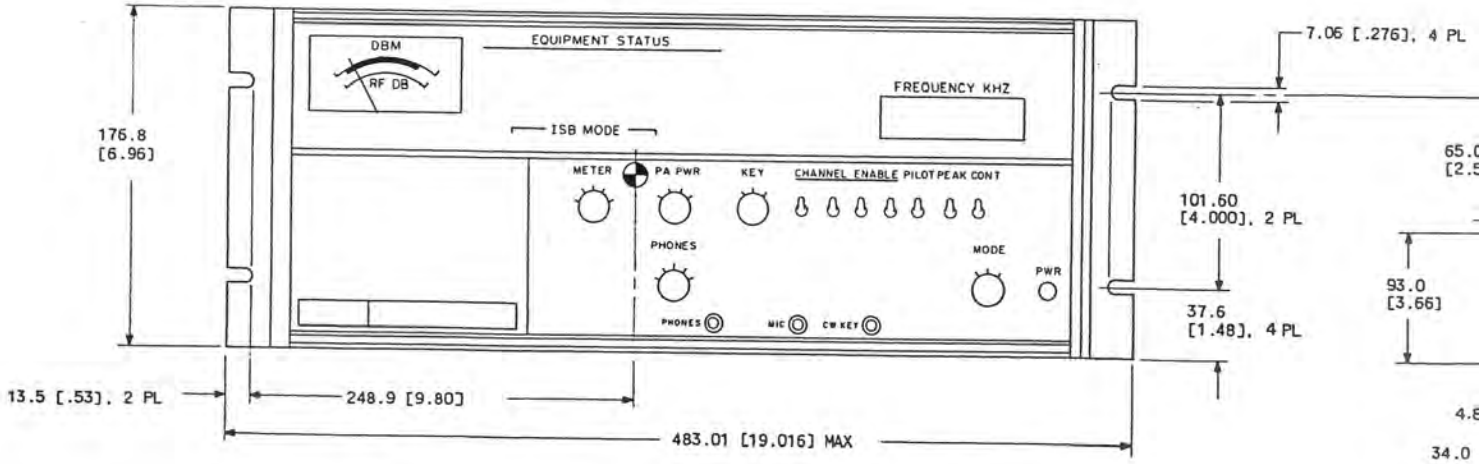
This is:
50 Pin Cannon M/W 50 Socket
50 Backshell Cannon M/W 50 Pin



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
N DBM-25P (COLLINS 371-0170-000)

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

97.3 ± 2.5
[3.83 ± .10]

78.2 ± 2.5
[3.08 ± .10]

2.5
.10]

GND

LINED
(FUSED)

COMMON
(NOT FUSED)

J1

DETAIL B

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

ODUCTS
LINS 357-7129-010)
12/16-0001
000), 3 PL

[.190-32 UNC-2B], 3 PLACES SIDE SHOWN
3 PLACES OPP SIDE SHOWN.

.06 [.276], 4 PL

A

65.07
[2.562], 2 PL

93.0
[3.66]

4.83 [.190], 2 PL

292.1 [11.50]

34.0 [1.34], 2 PL

225.4 [8.875], 2 PL

450.85 [17.750], 2 PL

45.97 [1.810]

532.1 [20.95] MAX

619.3 [24.38] MAX

A

TPA-7797-014

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.

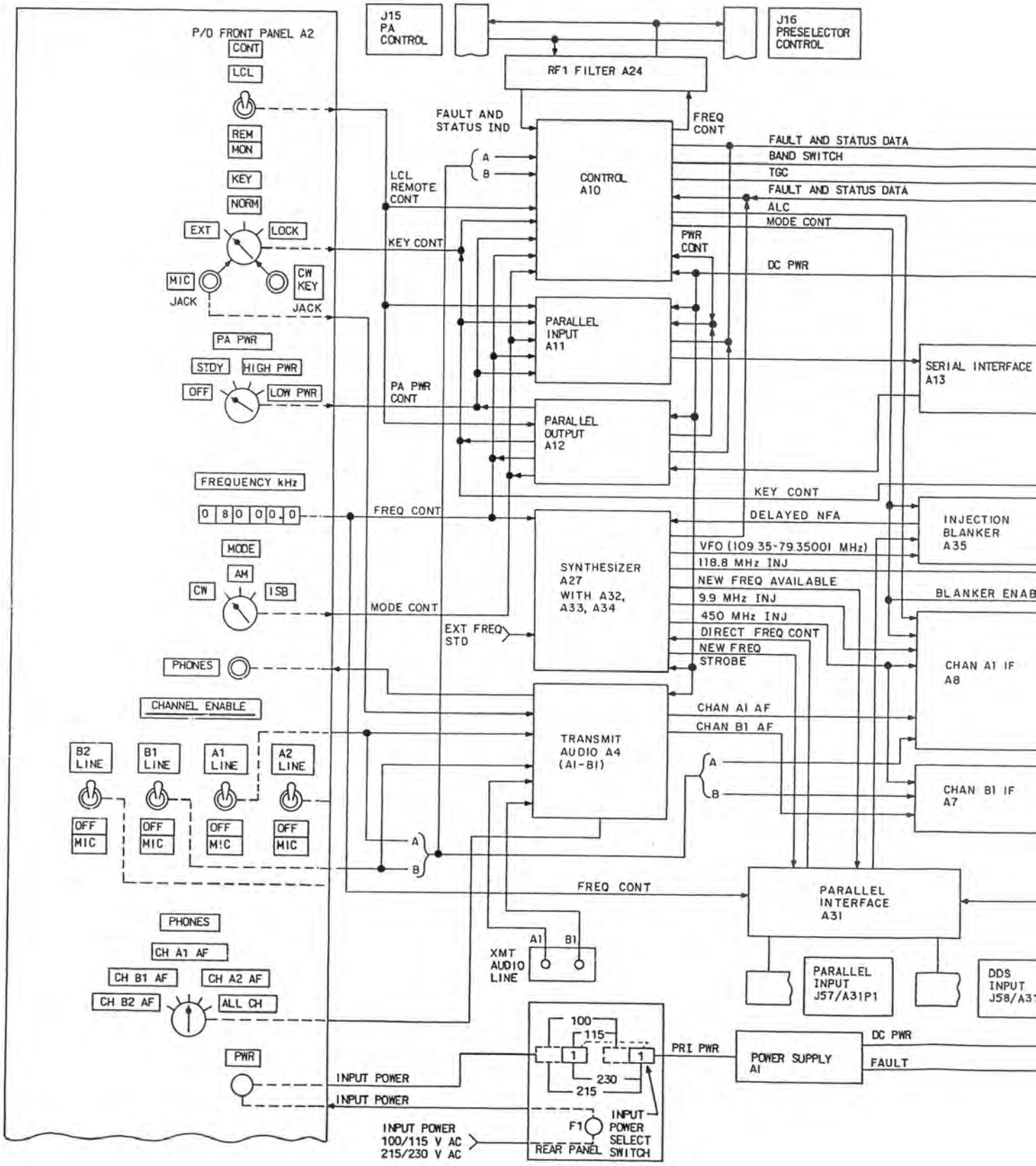
The HF-8014A Exciter (622-3473-211) can be controlled in three ways: locally through front panel controls, remotely by a compatible remote control in serial format, or in frequency only by either parallel input. This section will provide the functional theory of the exciter to the circuit card/module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

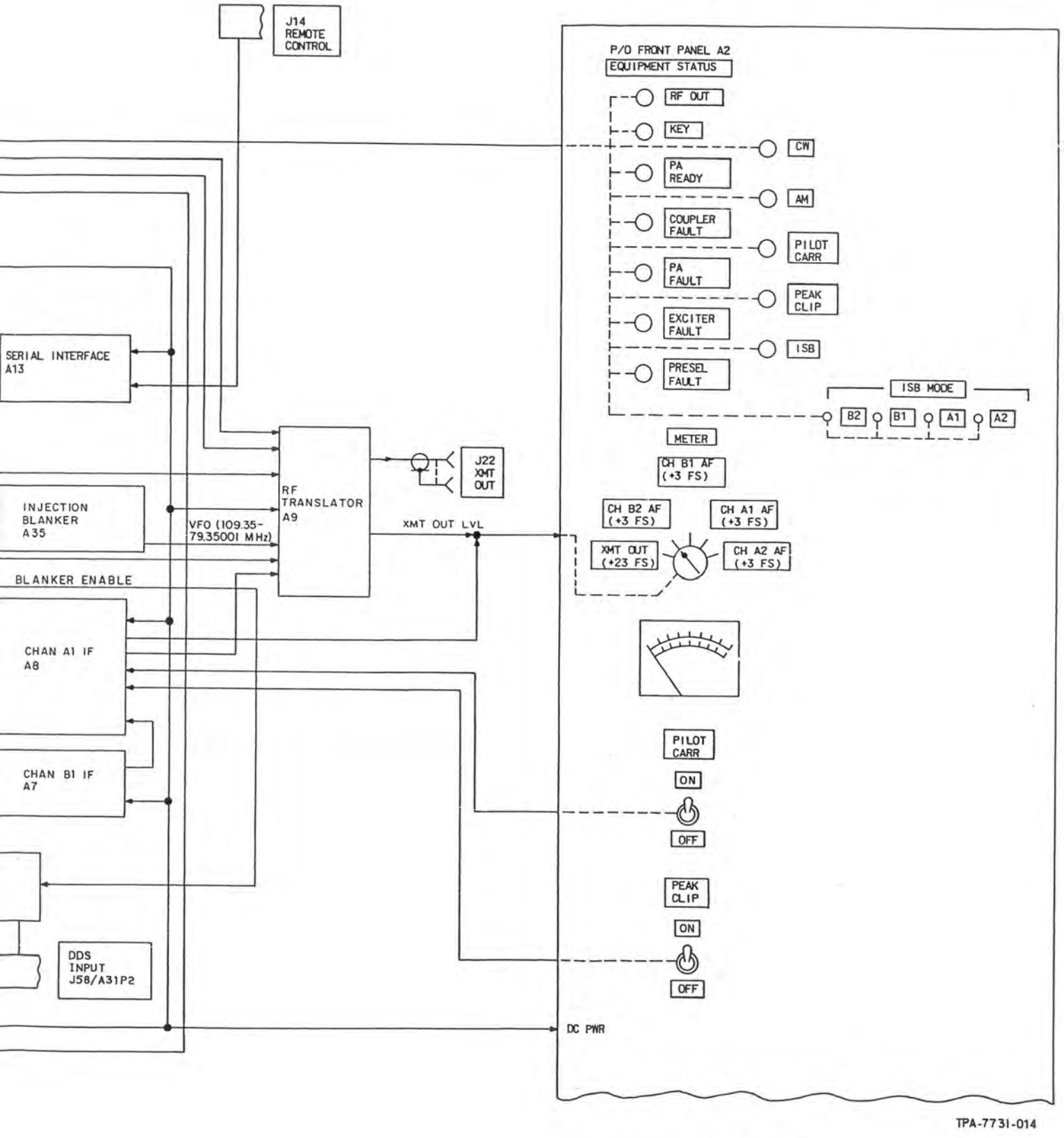
2. FUNCTIONAL THEORY

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.


P/O FRONT PANEL A2
CONT
LCL
REM
MON
KEY
NORM
EXT
LOCK
MIC
JACK
CW
KEY
JACK
PA PWR
STDY
HIGH PWR
OFF
LOW PWR
FREQUENCY kHz
0 8 0 0 0 0
MODE
AM
CW
LSB
PHONES
CHANNEL ENABLE
B2 LINE
B1 LINE
A1 LINE
A2 LINE
OFF
MIC
PHONES
CH A1 AF
CH B1 AF
CH A2 AF
CH B2 AF
ALL CH
PWR
INPUT POWER
INPUT POWER
J15
PA
CONTROL
J16
PRESELECTOR
CONTROL
RF1 FILTER A24
FAULT AND
STATUS IND
FREQ
CONT
A
B
LCL
REMOTE
CONT
KEY CONT
PA PWR
CONT
MODE CONT
EXT FREQ
STD
FREQ CONT
CONTROL
A10
PARALLEL
INPUT
A11
PARALLEL
OUTPUT
A12
SYNTHESIZER
A27
WITH A32,
A33, A34
TRANSMIT
AUDIO A4
(A1-B1)
FAULT AND STATUS DATA
BAND SWITCH
TGC
FAULT AND STATUS DATA
ALC
MODE CONT
PWR
CONT
DC PWR
KEY CONT
DELAYED NFA
VFO (109.35-79.35001 MHz)
118.8 MHz INJ
NEW FREQ AVAILABLE
9.9 MHz INJ
450 MHz INJ
DIRECT FREQ CONT
NEW FREQ
STROBE
CHAN A1 AF
CHAN B1 AF
A
B
FREQ CONT
A1
B1
XMT
AUDIO
LINE
PARALLEL
INTERFACE
A31
PARALLEL
INPUT
J57/A31P1
DDS
INPUT
J58/A31
SERIAL INTERFACE
A13
INJECTION
BLANKER
A35
BLANKER ENAB
CHAN A1 IF
A8
CHAN B1 IF
A7
100
115
230
215
1
1
PRI PWR
POWER SUPPLY
A1
DC PWR
FAULT
F1
INPUT
POWER
SELECT
REAR PANEL SWITCH
INPUT POWER
100/115 V AC
215/230 V AC



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.

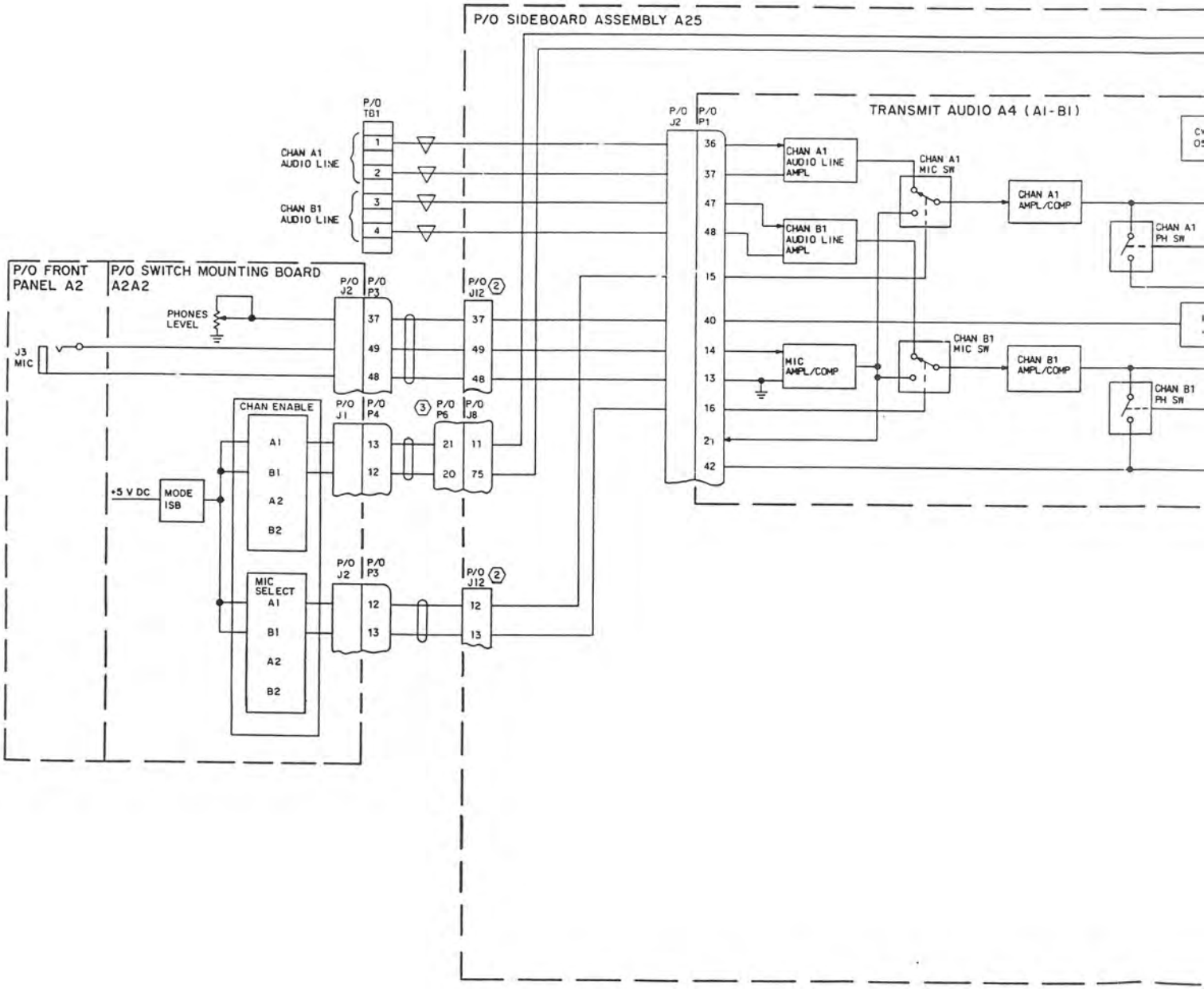
2.1A Transmit Function (HF-8014A Exciter, 622-3473-211) (Refer to figure 2A)

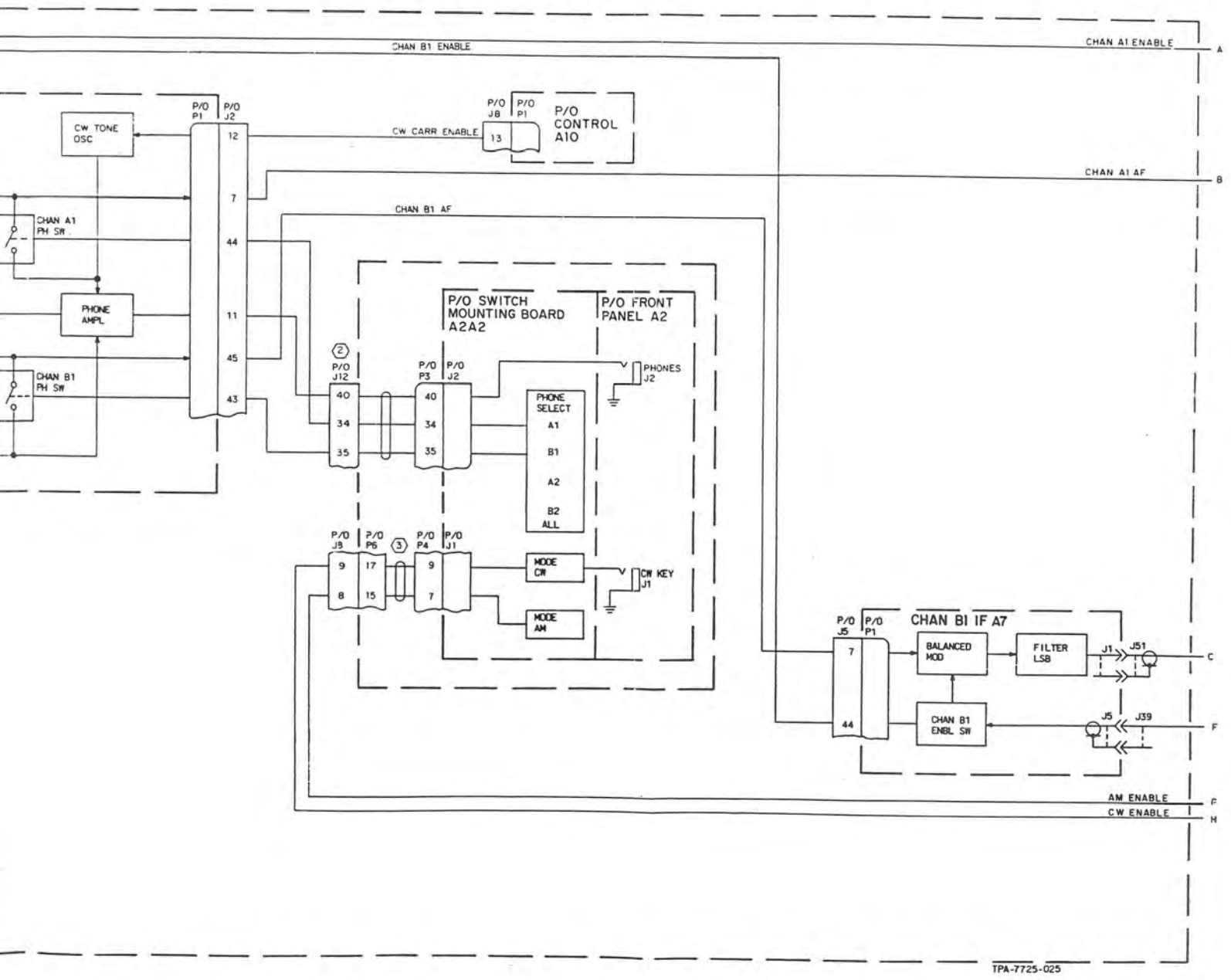
In the AM and CW modes, only the channel A1 if A18 circuits are active and provide outputs. In ISB operation, channel A1 input signals are upper sideband signals and channel B1 input signals are lower sideband signals. Channel B1 if (A7) is used only during ISB operation.

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.

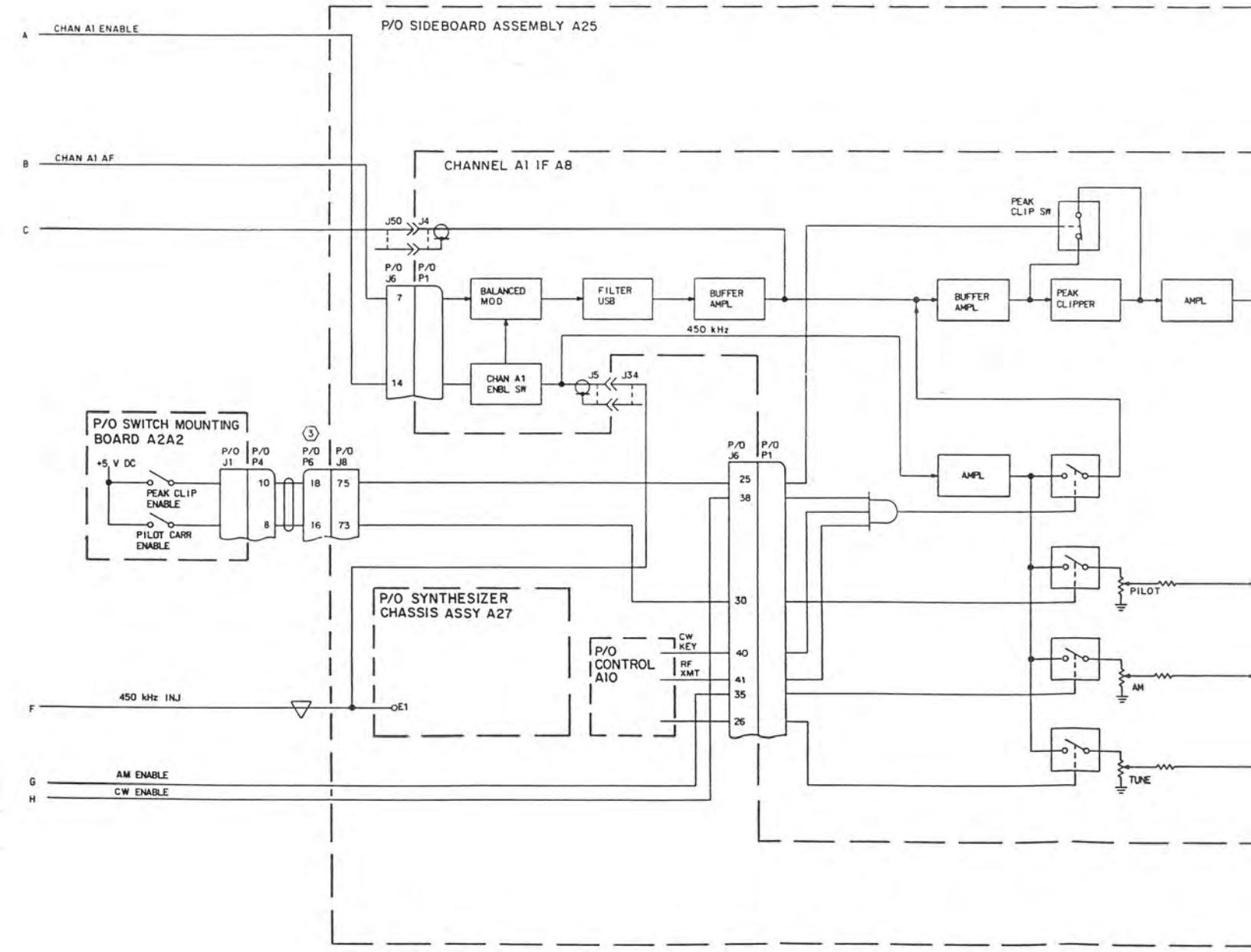
The variable injection frequency is supplied by direct digital synthesizer A27 through injection blanker A35 to the second difference mixer in rf translator A9. During transmission, the variable injection frequency is passed through the injection blanker with virtually no loss to the rf translator. During 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.

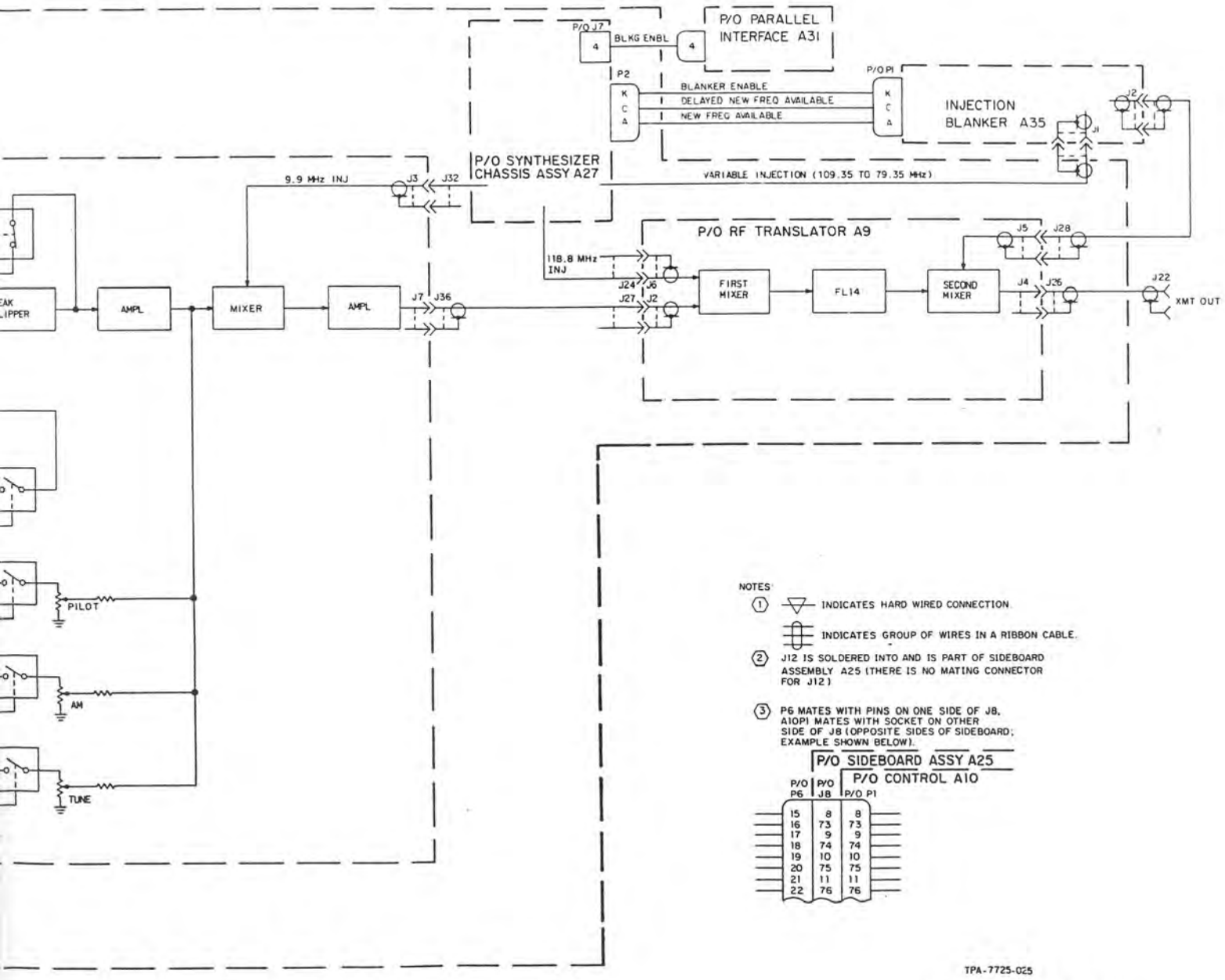
The output of the second mixer (1.600 to 29.9999 MHz) is amplified and sent to XMT OUT connector J22 on the rear panel.


P/O SIDEBOARD ASSEMBLY A25
TRANSMIT AUDIO A4 (A1-B1)
P/O FRONT PANEL A2
P/O SWITCH MOUNTING BOARD A2A2
P/O TB1
CHAN A1 AUDIO LINE
CHAN B1 AUDIO LINE
PHONES LEVEL
J3 MIC
CHAN ENABLE
A1
B1
A2
B2
+5 V DC
MODE ISB
MIC SELECT
CHAN A1 AUDIO LINE AMPL
CHAN B1 AUDIO LINE AMPL
MIC AMPL/COMP
CHAN A1 MIC SW
CHAN B1 MIC SW
CHAN A1 AMPL/COMP
CHAN B1 AMPL/COMP
CHAN A1 PH SW
CHAN B1 PH SW



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


P/O SIDEBOARD ASSEMBLY A25
A
CHAN A1 ENABLE
B
CHAN A1 AF
C
CHANNEL A1 IF A8
J50
J4
P/O J6
P/O P1
7
14
BALANCED MOD
FILTER USB
BUFFER AMPL
450 kHz
CHAN A1 ENBL SW
J5
J34
PEAK CLIP SW
BUFFER AMPL
PEAK CLIPPER
AMPL
P/O SWITCH MOUNTING BOARD A2A2
+5 V DC
PEAK CLIP ENABLE
PILOT CARR ENABLE
P/O J1
P/O P4
P/O P6
P/O J8
10
8
18
16
75
73
3
P/O J6
P/O P1
25
38
30
40
41
35
26
AMPL
PILOT
AM
TUNE
P/O SYNTHESIZER CHASSIS ASSY A27
P/O CONTROL A10
CW KEY
RF XMT
F
450 kHz INJ
E1
G
AM ENABLE
H
CW ENABLE



NOTES:

1. INDICATES HARD WIRED CONNECTION.
   INDICATES GROUP OF WIRES IN A RIBBON CABLE.
2. J12 IS SOLDERED INTO AND IS PART OF SIDEBOARD ASSEMBLY A25 (THERE IS NO MATING CONNECTOR FOR J12).
3. 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

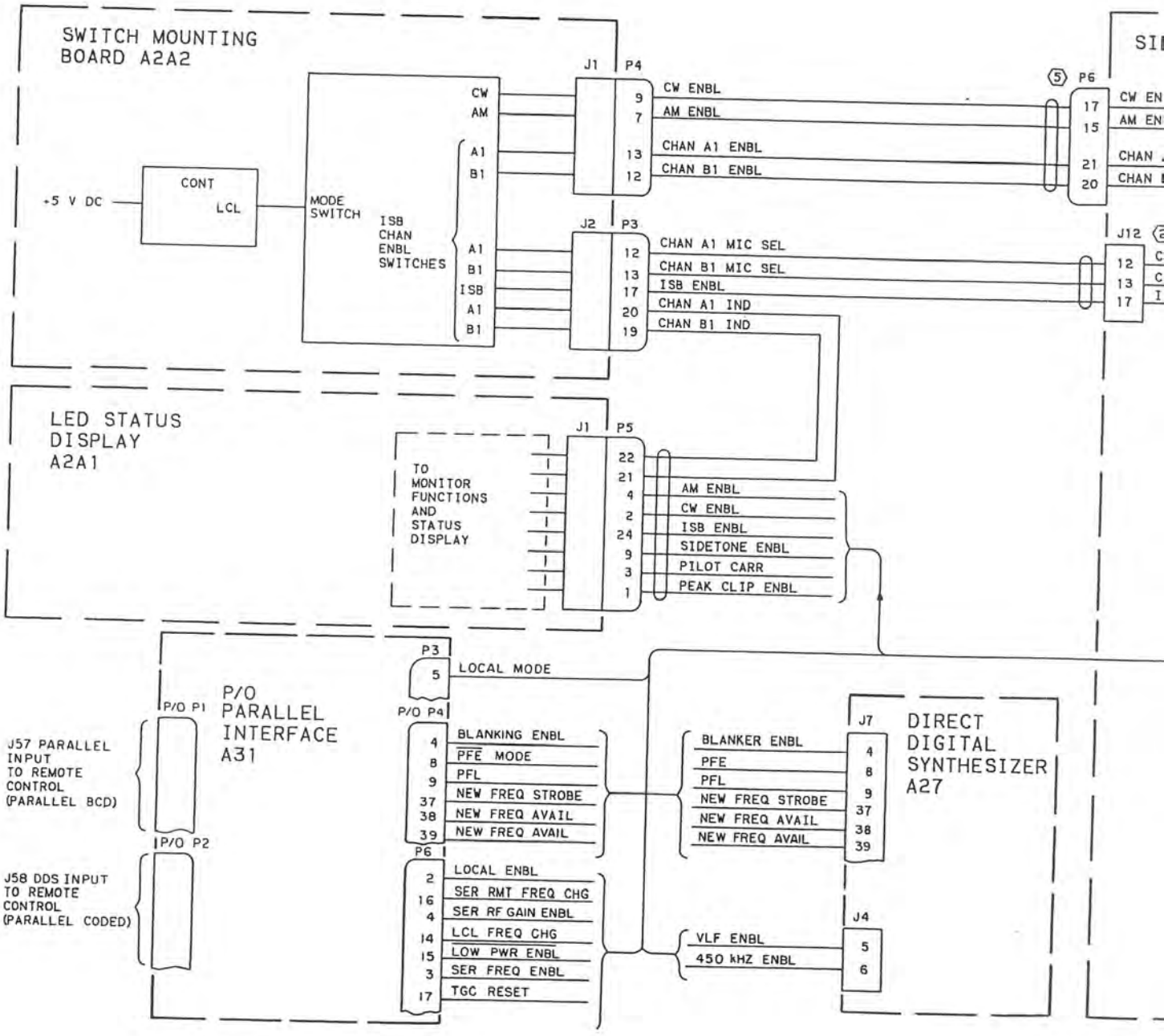
HF-8014A Exciter (622-3473-211), Transmit Function, Block Diagram Figure 2A (Sheet 2)

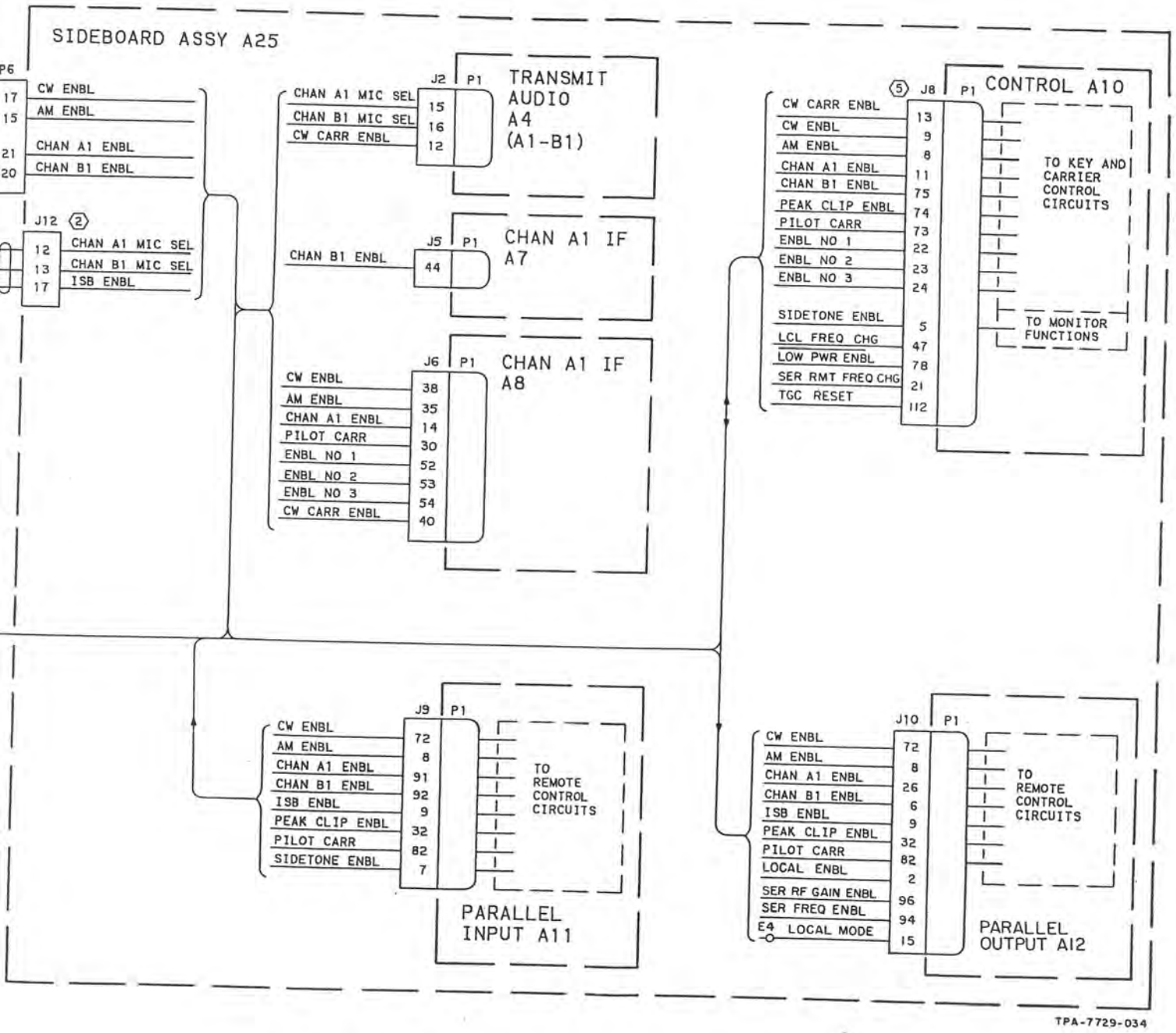
2.2.1 Mode Selection

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

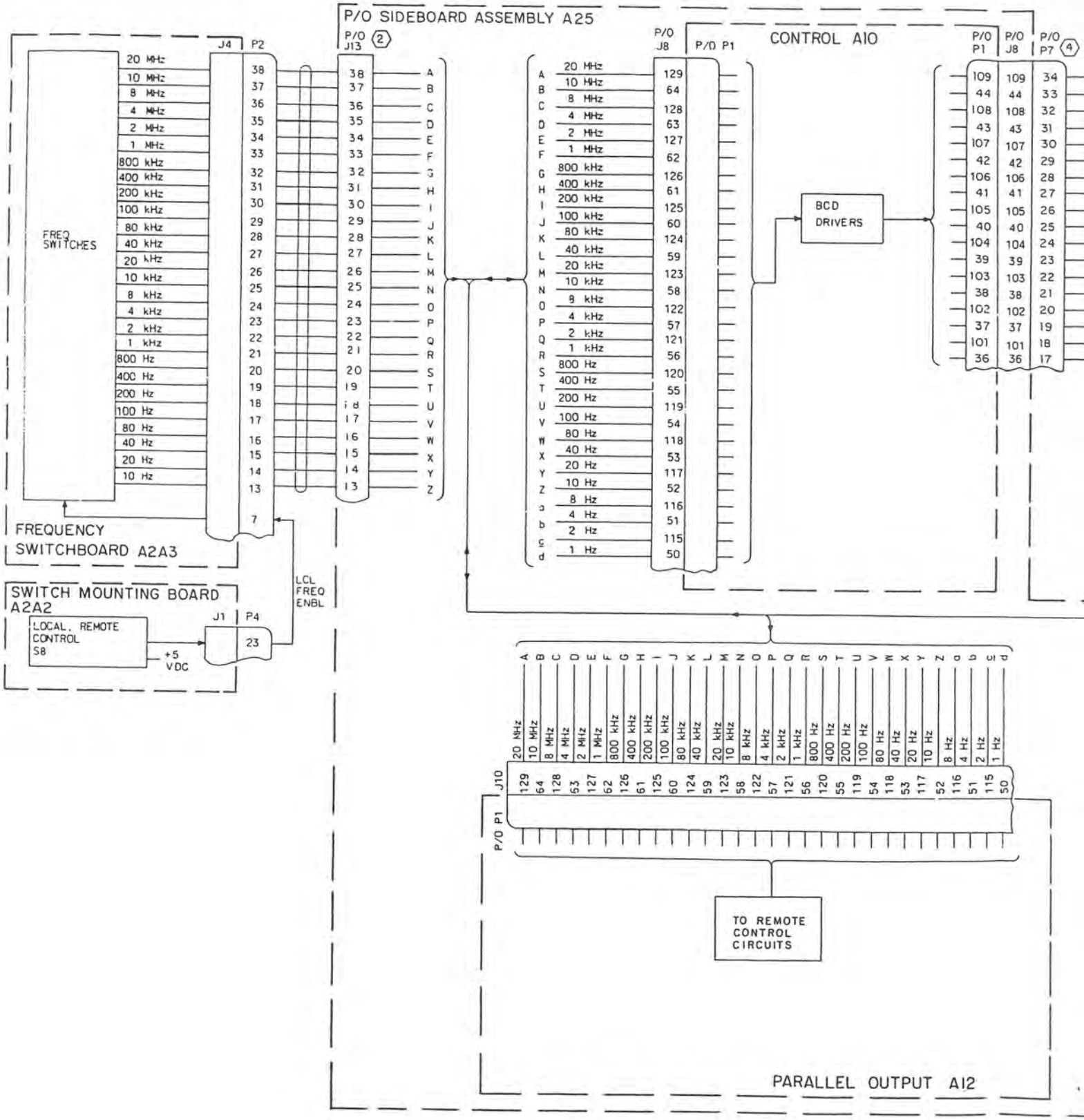
When an external control device is used with the HF-8014A Exciter (622-3473-211), the mode and bandwidth control signals applied are in serial data format. The serial data is applied through J14 to serial interface A13. Refer to figure 4A.

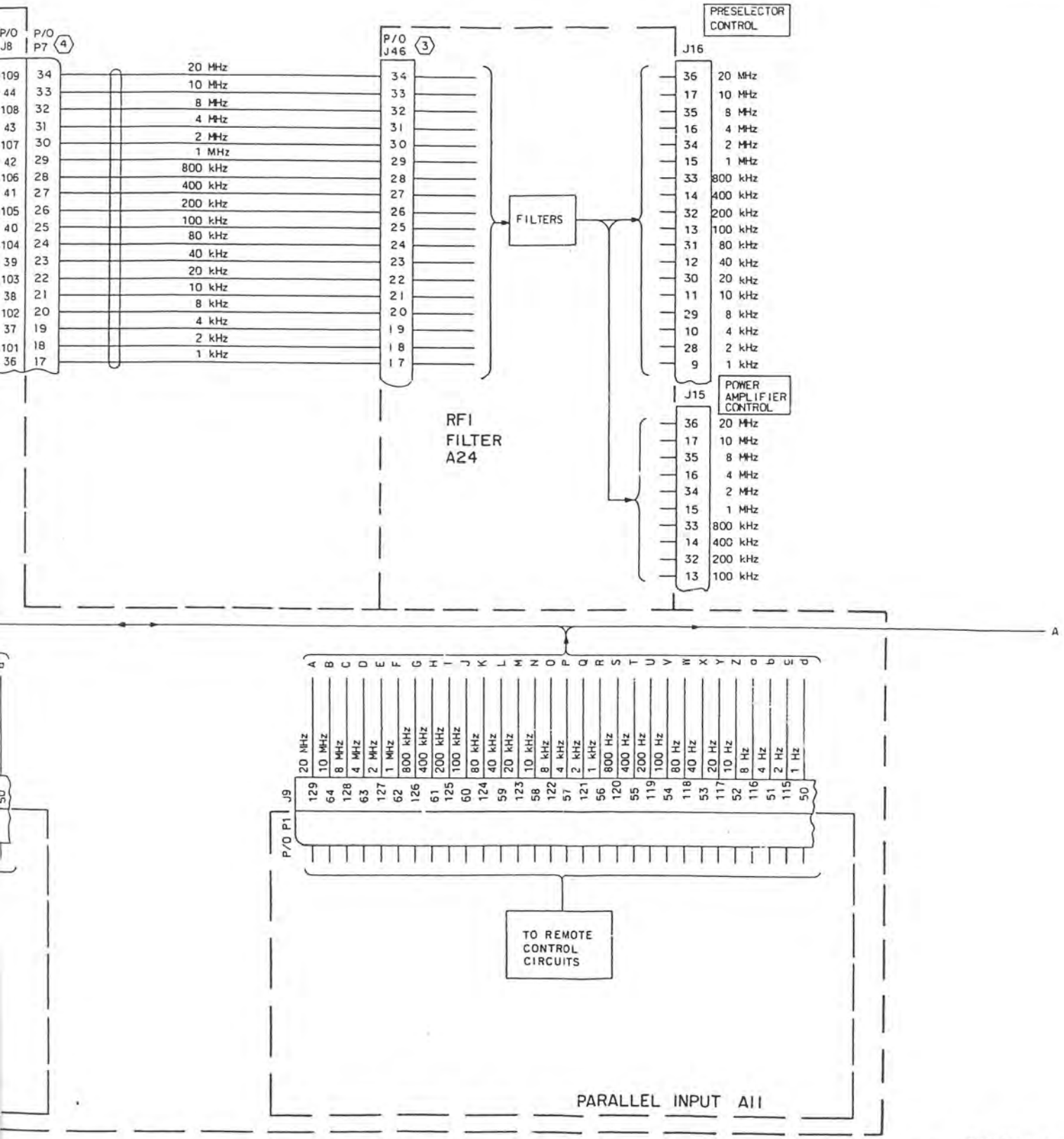
The serial interface sends the data to parallel output A12 where the frequency data is converted from serial data to parallel bcd data. The output of parallel output A12 are sent to the DDS control interface A34 and control A10 for use. Parallel bcd frequency inputs are applied to J57/A31P1 and parallel 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.


SWITCH MOUNTING BOARD A2A2
+5 V DC
CONT
LCL
MODE SWITCH
ISB CHAN ENBL SWITCHES
CW
AM
A1
B1
A1
B1
ISB
A1
B1
J1
P4
9
7
13
12
CW ENBL
AM ENBL
CHAN A1 ENBL
CHAN B1 ENBL
J2
P3
12
13
17
20
19
CHAN A1 MIC SEL
CHAN B1 MIC SEL
ISB ENBL
CHAN A1 IND
CHAN B1 IND
5
P6
17
15
21
20
J12
LED STATUS DISPLAY A2A1
TO MONITOR FUNCTIONS AND STATUS DISPLAY
J1
P5
22
21
4
2
24
9
3
1
AM ENBL
CW ENBL
ISB ENBL
SIDETONE ENBL
PILOT CARR
PEAK CLIP ENBL
P3
5
LOCAL MODE
P/O P1
P/O PARALLEL INTERFACE A31
J57 PARALLEL INPUT TO REMOTE CONTROL (PARALLEL BCD)
P/O P2
J58 DDS INPUT TO REMOTE CONTROL (PARALLEL CODED)
P/O P4
4
8
9
37
38
39
BLANKING ENBL
PFE MODE
PFL
NEW FREQ STROBE
NEW FREQ AVAIL
NEW FREQ AVAIL
P6
2
16
4
14
15
3
17
LOCAL ENBL
SER RMT FREQ CHG
SER RF GAIN ENBL
LCL FREQ CHG
LOW PWR ENBL
SER FREQ ENBL
TGC RESET
BLANKER ENBL
PFE
PFL
NEW FREQ STROBE
NEW FREQ AVAIL
NEW FREQ AVAIL
J7
4
8
9
37
38
39
DIRECT DIGITAL SYNTHESIZER A27
VLF ENBL
450 kHZ ENBL
J4
5
6



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


P/O SIDEBOARD ASSEMBLY A25
CONTROL A10
FREQ SWITCHES
FREQUENCY SWITCHBOARD A2A3
SWITCH MOUNTING BOARD A2A2
LOCAL, REMOTE CONTROL S8
+5 VDC
LCL FREQ ENBL
BCD DRIVERS
TO REMOTE CONTROL CIRCUITS
PARALLEL OUTPUT A12



TPA-7729-034

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

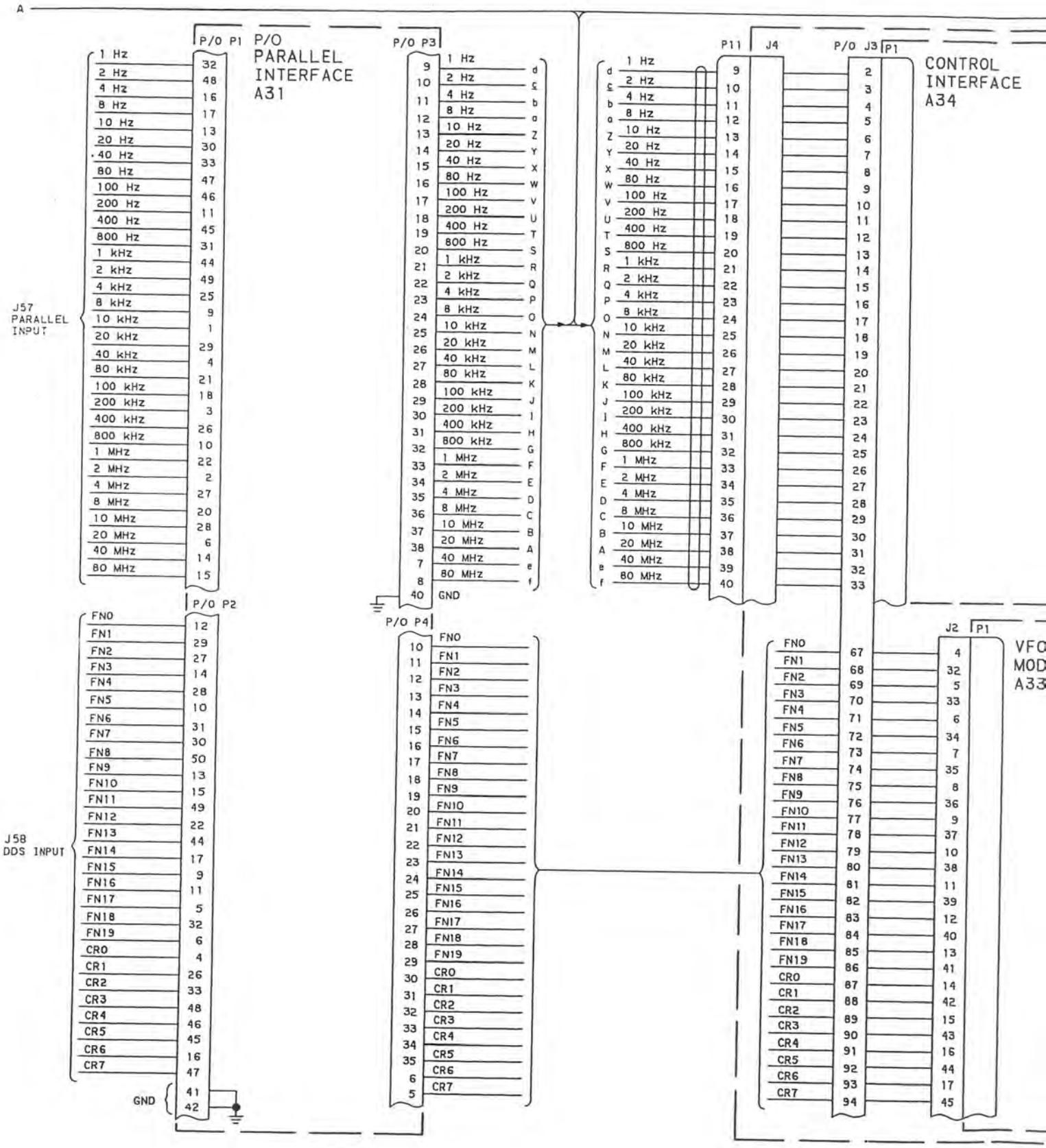
Rev G+H work

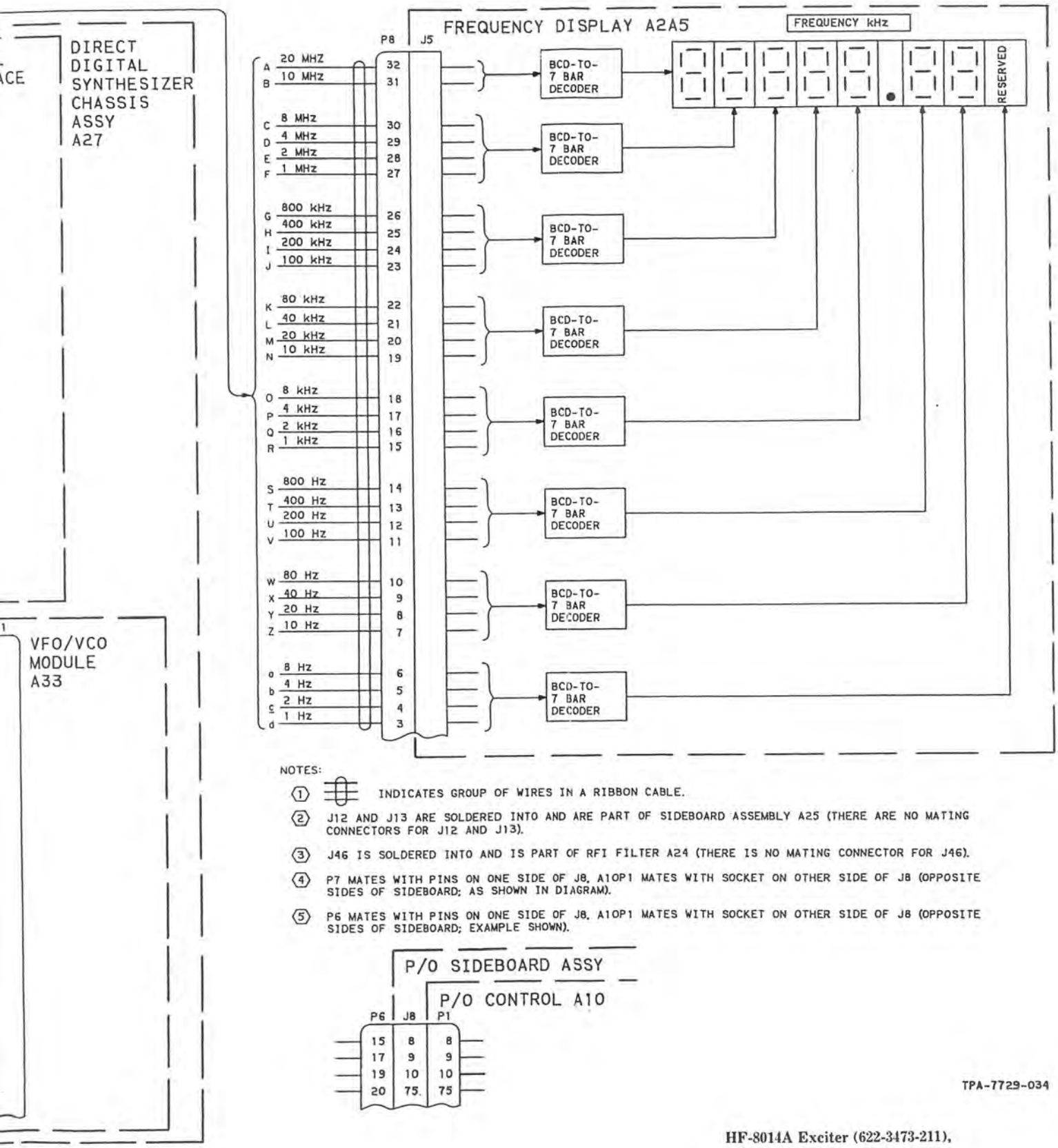
MARK HENSLEY

D-22120 By Bekmlander

2-18-85

TESTER FOR 5905 BOARD SOLD @ TORONTO





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

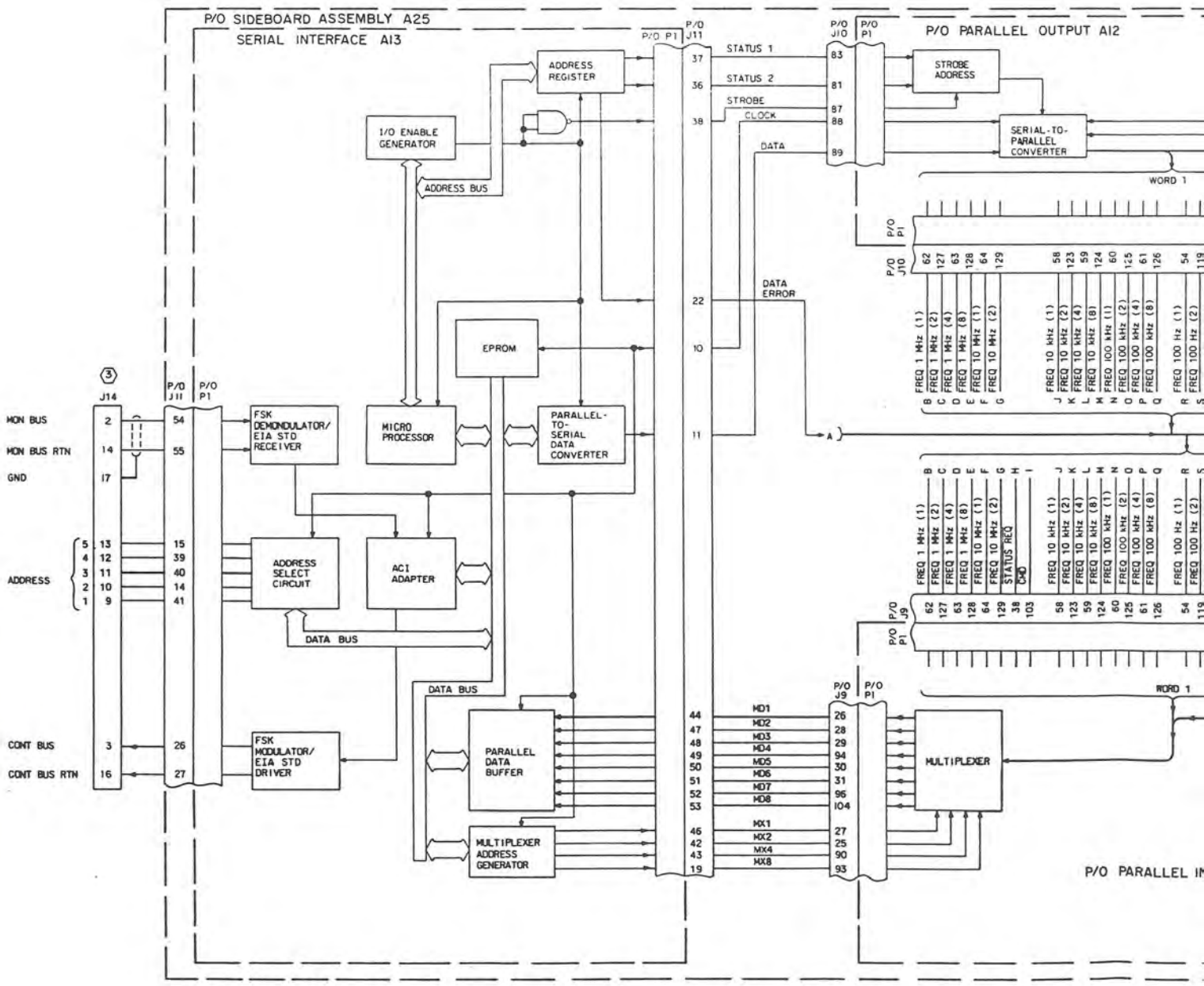
Place figure 9A behind figure 9. Place paragraph 2.3.3 after paragraph 2.3.2.2.

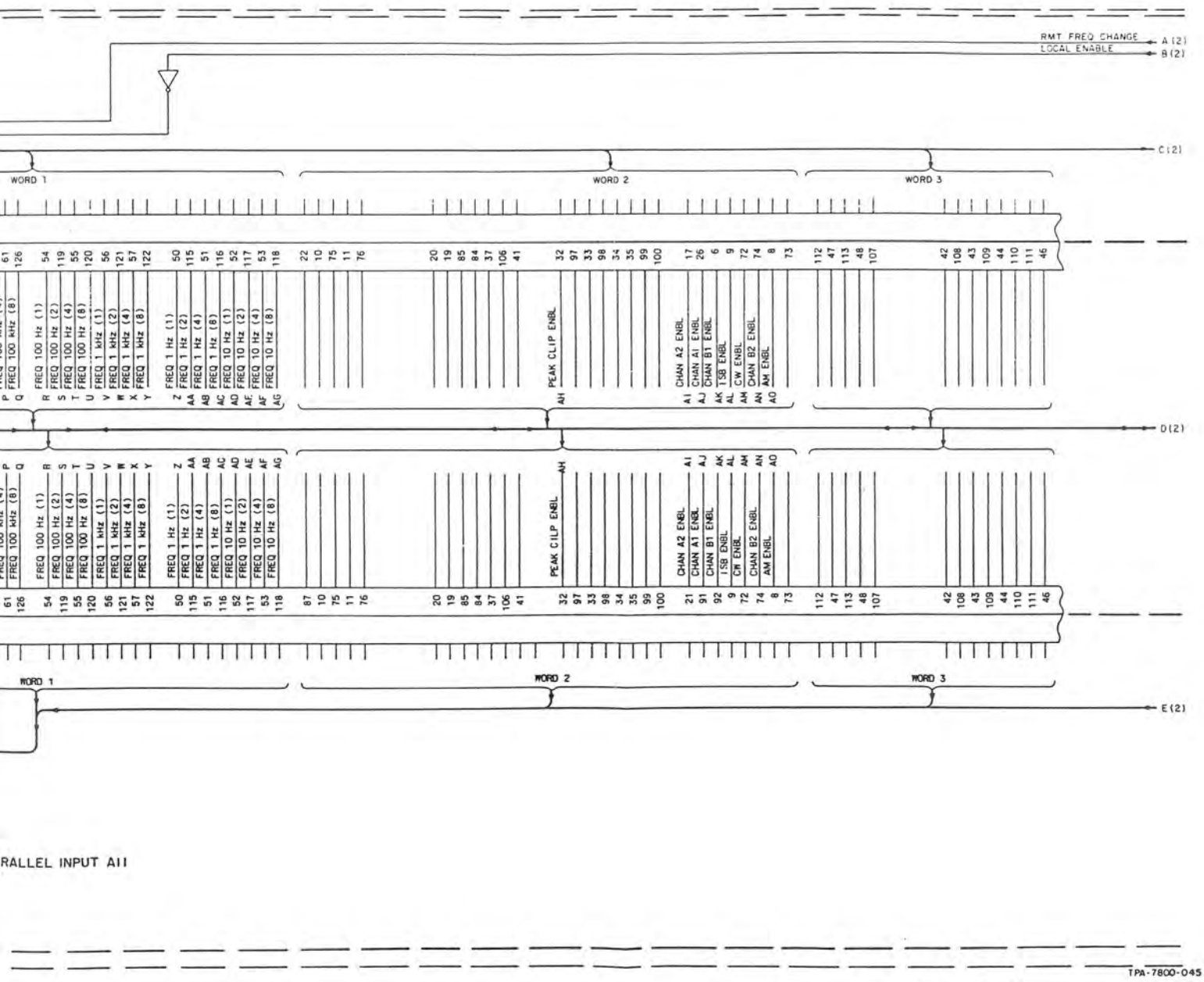
2.3.3 Exciter Parallel Control Operation (Refer to figure 9A)

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.

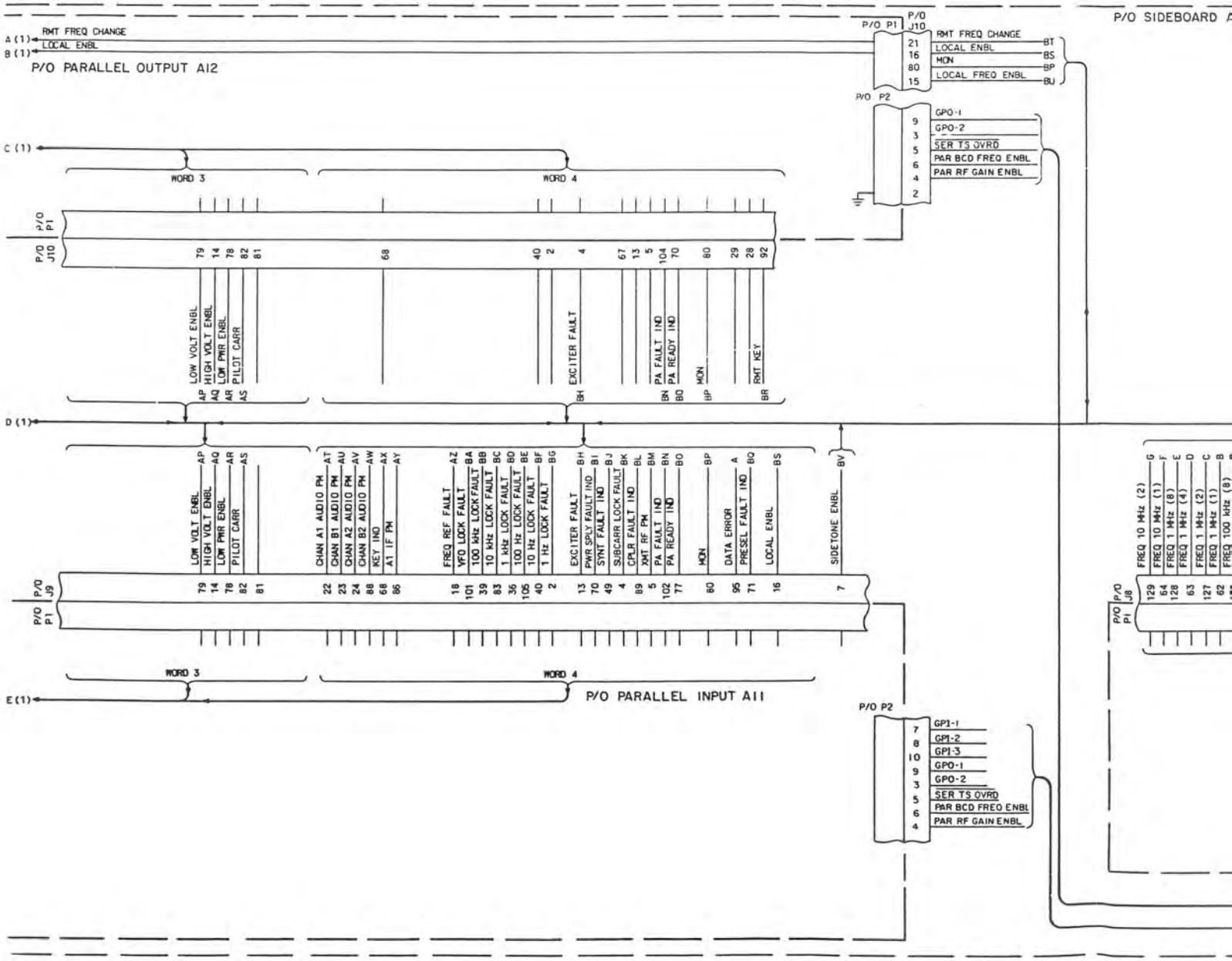

P/O SIDEBOARD ASSEMBLY A25
SERIAL INTERFACE AI3
P/O PARALLEL OUTPUT AI2
ADDRESS REGISTER
I/O ENABLE GENERATOR
ADDRESS BUS
STATUS 1
STATUS 2
STROBE
CLOCK
DATA
STROBE ADDRESS
SERIAL-TO-PARALLEL CONVERTER
WORD 1
DATA ERROR
EPROM
MICRO PROCESSOR
PARALLEL-TO-SERIAL DATA CONVERTER
FSK DEMODULATOR/ EIA STD RECEIVER
MON BUS
MON BUS RTN
GND
ADDRESS
ADDRESS SELECT CIRCUIT
ACI ADAPTER
DATA BUS
CONT BUS
CONT BUS RTN
FSK MODULATOR/ EIA STD DRIVER
PARALLEL DATA BUFFER
MULTIPLEXER ADDRESS GENERATOR
MD1
MD2
MD3
MD4
MD5
MD6
MD7
MD8
MX1
MX2
MX4
MX8
MULTIPLEXER
STATUS REQ
CMD
FREQ 1 MHz (1)
FREQ 1 MHz (2)
FREQ 1 MHz (4)
FREQ 1 MHz (8)
FREQ 10 MHz (1)
FREQ 10 MHz (2)
FREQ 10 kHz (1)
FREQ 10 kHz (2)
FREQ 10 kHz (4)
FREQ 10 kHz (8)
FREQ 100 kHz (1)
FREQ 100 kHz (2)
FREQ 100 kHz (4)
FREQ 100 kHz (8)
FREQ 100 Hz (1)
FREQ 100 Hz (2)
P/O PARALLEL IN

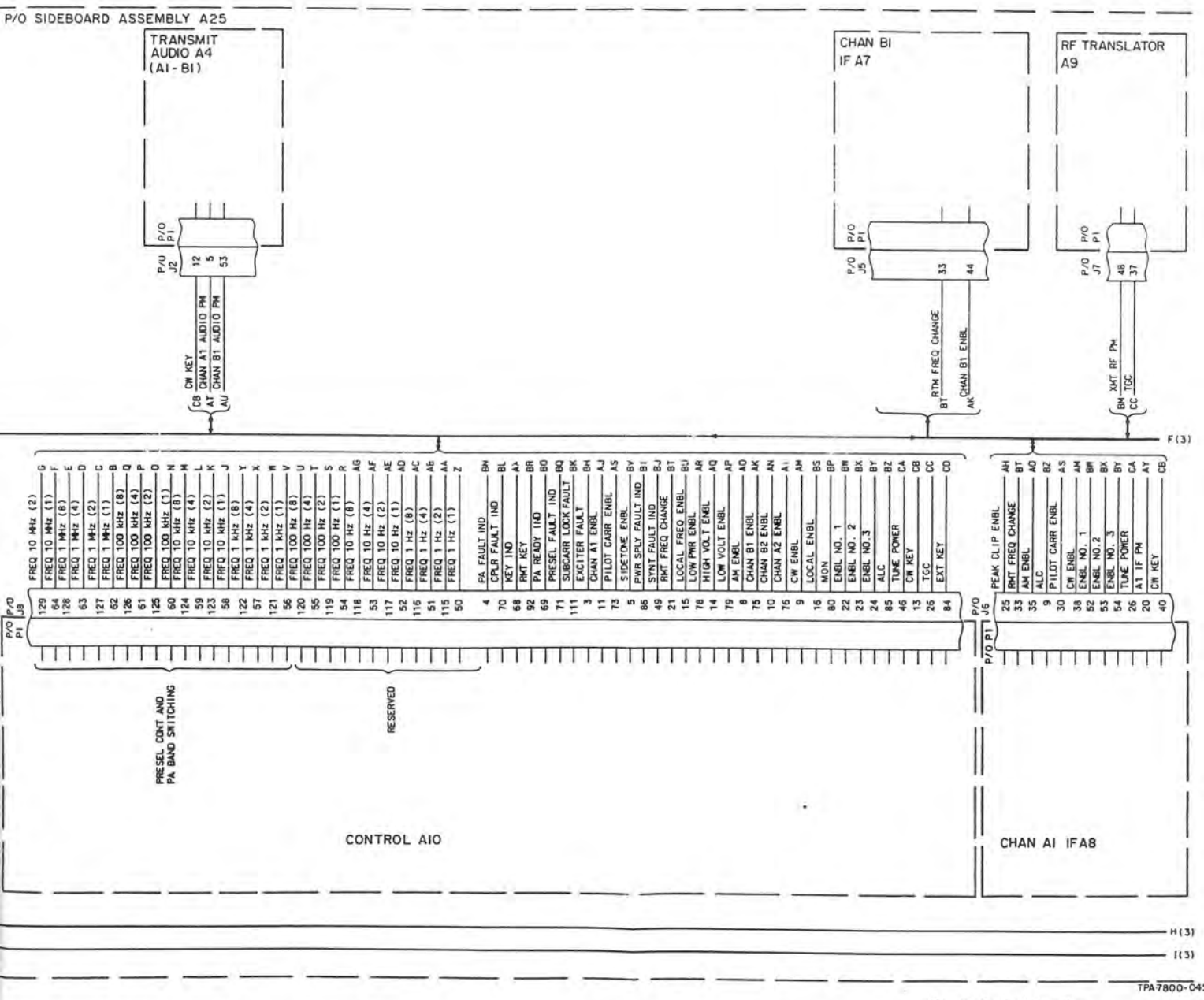


RALLEL INPUT A11

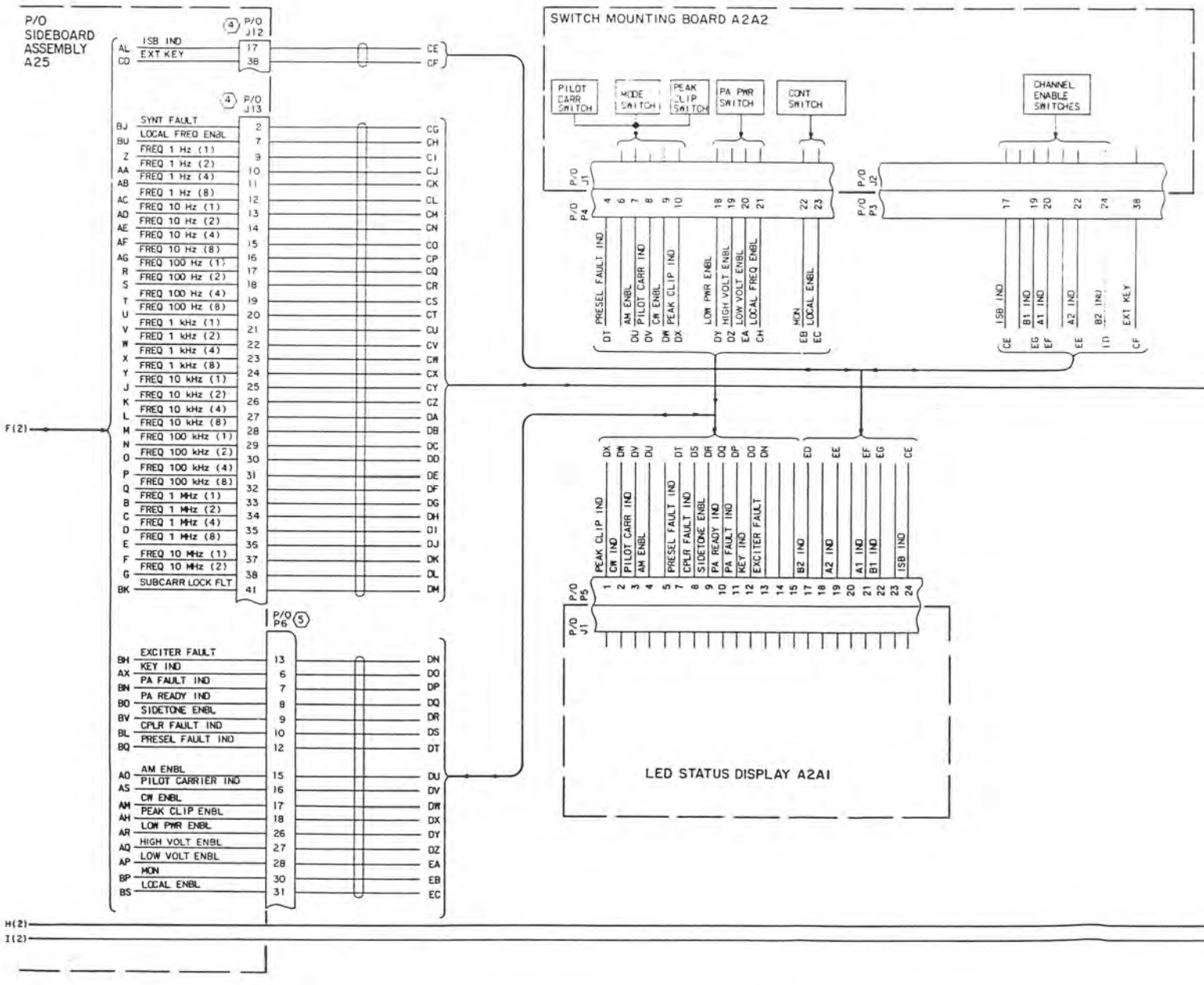
TPA-7800-045

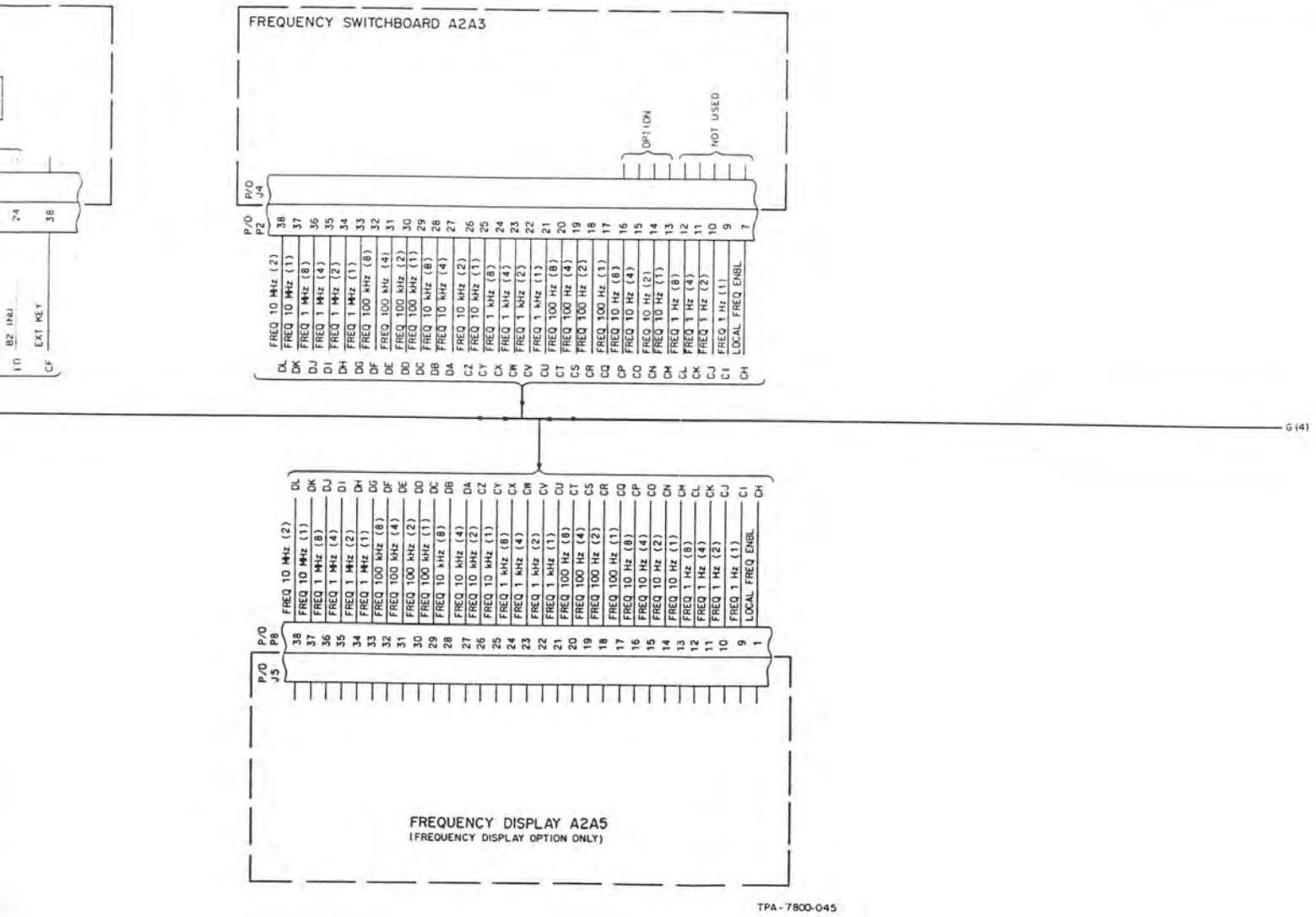
Remote Control Function, Block Diagram
Figure 9A (Sheet 1 of 4)


P/O SIDEBOARD A
A (1)
B (1)
RMT FREQ CHANGE
LOCAL ENBL
P/O PARALLEL OUTPUT A12
P/O P1
P/O J10
RMT FREQ CHANGE
LOCAL ENBL
MON
LOCAL FREQ ENBL
P/O P2
GPO-1
GPO-2
SER TS OVRD
PAR BCD FREQ ENBL
PAR RF GAIN ENBL
C (1)
WORD 3
WORD 4
LOW VOLT ENBL
HIGH VOLT ENBL
LOW PWR ENBL
PILOT CARR
EXCITER FAULT
PA FAULT IND
PA READY IND
MON
RMT KEY
D (1)
CHAN A1 AUDIO PM
CHAN B1 AUDIO PM
CHAN A2 AUDIO PM
CHAN B2 AUDIO PM
KEY IND
A1 IF PM
FREQ REF FAULT
VFO LOCK FAULT
100 kHz LOCK FAULT
10 kHz LOCK FAULT
1 kHz LOCK FAULT
100 Hz LOCK FAULT
10 Hz LOCK FAULT
1 Hz LOCK FAULT
PWR SPLY FAULT IND
SYNT FAULT IND
SUBCARR LOCK FAULT
CPLR FAULT IND
XMT RF PM
DATA ERROR
PRESEL FAULT IND
SIDETONE ENBL
FREQ 10 MHz (2)
FREQ 10 MHz (1)
FREQ 1 MHz (8)
FREQ 1 MHz (4)
FREQ 1 MHz (2)
FREQ 1 MHz (1)
FREQ 100 kHz (8)
P/O J9
P/O J8
E (1)
P/O PARALLEL INPUT A11
GP1-1
GP1-2
GP1-3
GPO-1
GPO-2
SER TS OVRD
PAR BCD FREQ ENBL
PAR RF GAIN ENBL



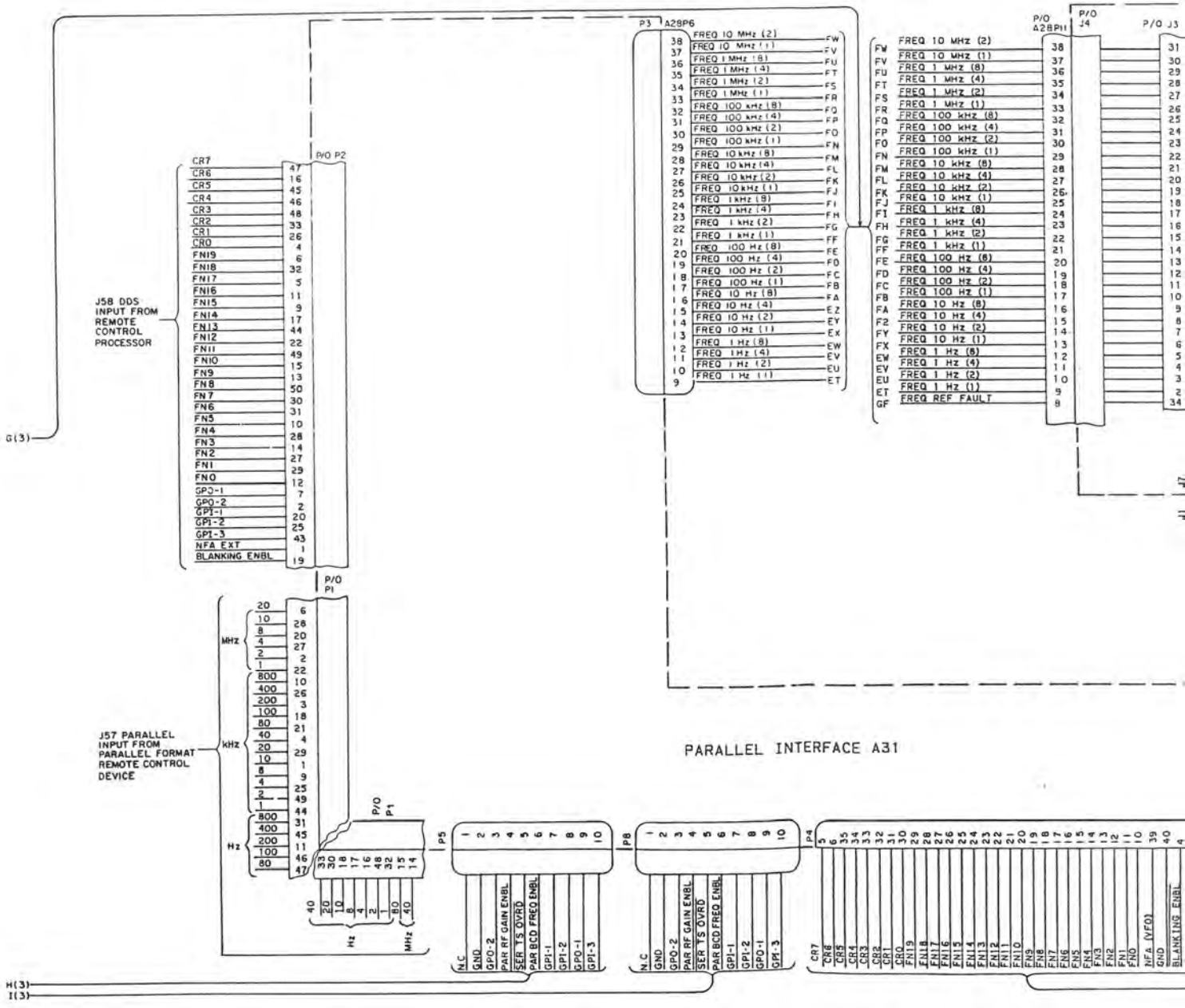
Remote Control Function, Block Diagram
Figure 9A (Sheet 2)

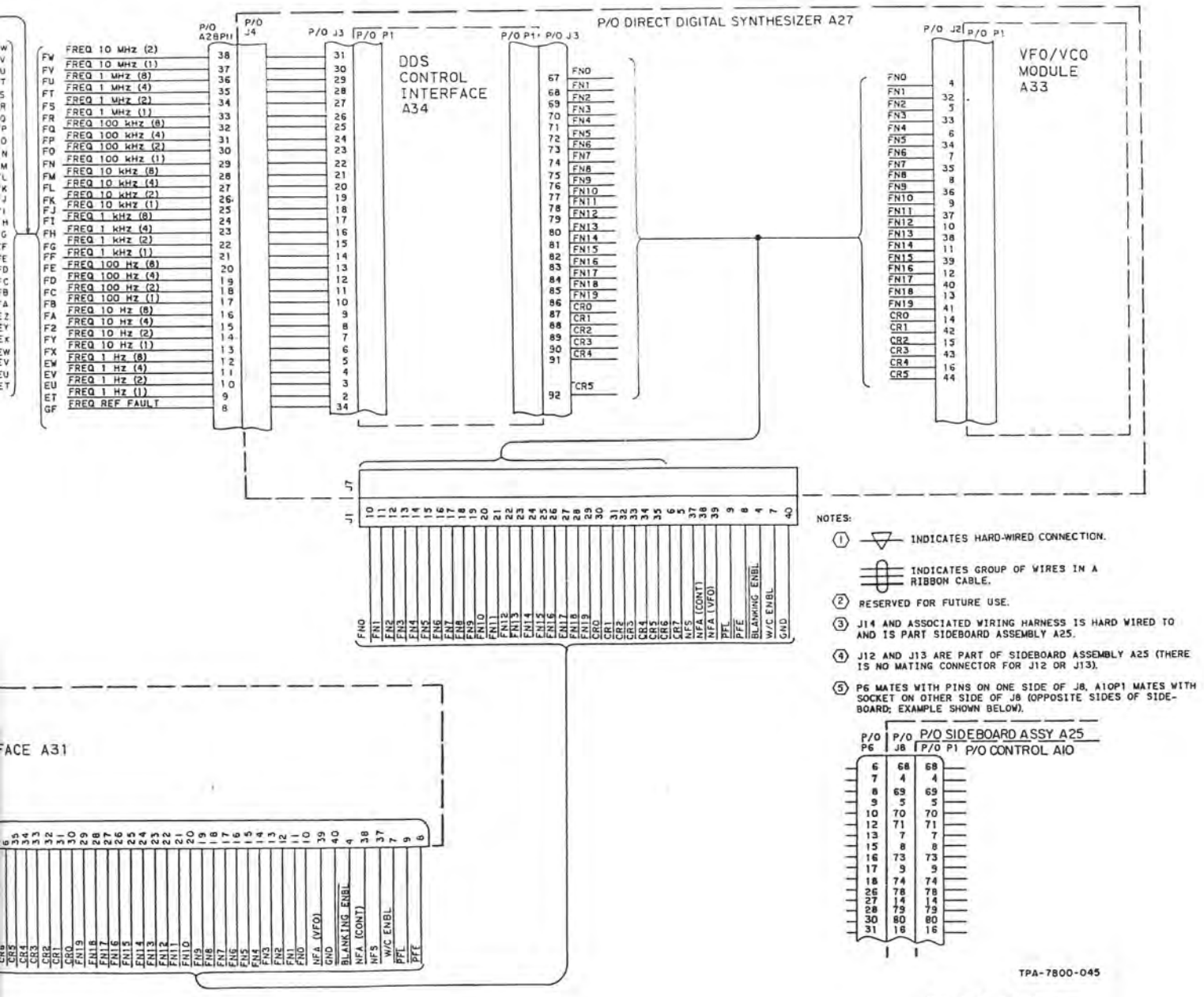

P/O SIDEBOARD ASSEMBLY A25
SWITCH MOUNTING BOARD A2A2
PILOT CARR SWITCH
MODE SWITCH
PEAK CLIP SWITCH
PA PWR SWITCH
CONT SWITCH
CHANNEL ENABLE SWITCHES
LED STATUS DISPLAY A2A1
ISB IND
EXT KEY
SYNT FAULT
LOCAL FREQ ENBL
FREQ 1 Hz (1)
FREQ 1 Hz (2)
FREQ 1 Hz (4)
FREQ 1 Hz (8)
FREQ 10 Hz (1)
FREQ 10 Hz (2)
FREQ 10 Hz (4)
FREQ 10 Hz (8)
FREQ 100 Hz (1)
FREQ 100 Hz (2)
FREQ 100 Hz (4)
FREQ 100 Hz (8)
FREQ 1 kHz (1)
FREQ 1 kHz (2)
FREQ 1 kHz (4)
FREQ 1 kHz (8)
FREQ 10 kHz (1)
FREQ 10 kHz (2)
FREQ 10 kHz (4)
FREQ 10 kHz (8)
FREQ 100 kHz (1)
FREQ 100 kHz (2)
FREQ 100 kHz (4)
FREQ 100 kHz (8)
FREQ 1 MHz (1)
FREQ 1 MHz (2)
FREQ 1 MHz (4)
FREQ 1 MHz (8)
FREQ 10 MHz (1)
FREQ 10 MHz (2)
SUBCARR LOCK FLT
EXCITER FAULT
KEY IND
PA FAULT IND
PA READY IND
SIDETONE ENBL
CPLR FAULT IND
PRESEL FAULT IND
AM ENBL
PILOT CARRIER IND
CW ENBL
PEAK CLIP ENBL
LOW PWR ENBL
HIGH VOLT ENBL
LOW VOLT ENBL
MON
LOCAL ENBL
F(2)
H(2)
I(2)



TPA-7800-045

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


J58 DDS INPUT FROM REMOTE CONTROL PROCESSOR
J57 PARALLEL INPUT FROM PARALLEL FORMAT REMOTE CONTROL DEVICE
G(3)
H(3)
I(3)
P/O P2
P/O P1
P3 A28P6
P/O A28P11
P/O J4
P/O J3
P5
P8
P4
MHz
kHz
Hz
CR7
CR6
CR5
CR4
CR3
CR2
CR1
CR0
FN19
FN18
FN17
FN16
FN15
FN14
FN13
FN12
FN11
FN10
FN9
FN8
FN7
FN6
FN5
FN4
FN3
FN2
FN1
FN0
GPO-1
GPO-2
GPI-1
GPI-2
GPI-3
NFA EXT
BLANKING ENBL
FREQ 10 MHz (2)
FREQ 10 MHz (1)
FREQ 1 MHz (8)
FREQ 1 MHz (4)
FREQ 1 MHz (2)
FREQ 1 MHz (1)
FREQ 100 kHz (8)
FREQ 100 kHz (4)
FREQ 100 kHz (2)
FREQ 100 kHz (1)
FREQ 10 kHz (8)
FREQ 10 kHz (4)
FREQ 10 kHz (2)
FREQ 10 kHz (1)
FREQ 1 kHz (8)
FREQ 1 kHz (4)
FREQ 1 kHz (2)
FREQ 1 kHz (1)
FREQ 100 Hz (8)
FREQ 100 Hz (4)
FREQ 100 Hz (2)
FREQ 100 Hz (1)
FREQ 10 Hz (8)
FREQ 10 Hz (4)
FREQ 10 Hz (2)
FREQ 10 Hz (1)
FREQ 1 Hz (8)
FREQ 1 Hz (4)
FREQ 1 Hz (2)
FREQ 1 Hz (1)
FREQ REF FAULT
N.C
GND
GPO-2
PAR RF GAIN ENBL
SER TS OVRD
PAR BCD FREQ ENBL
GPI-1
GPI-2
GPO-1
GPI-3
PARALLEL INTERFACE A31

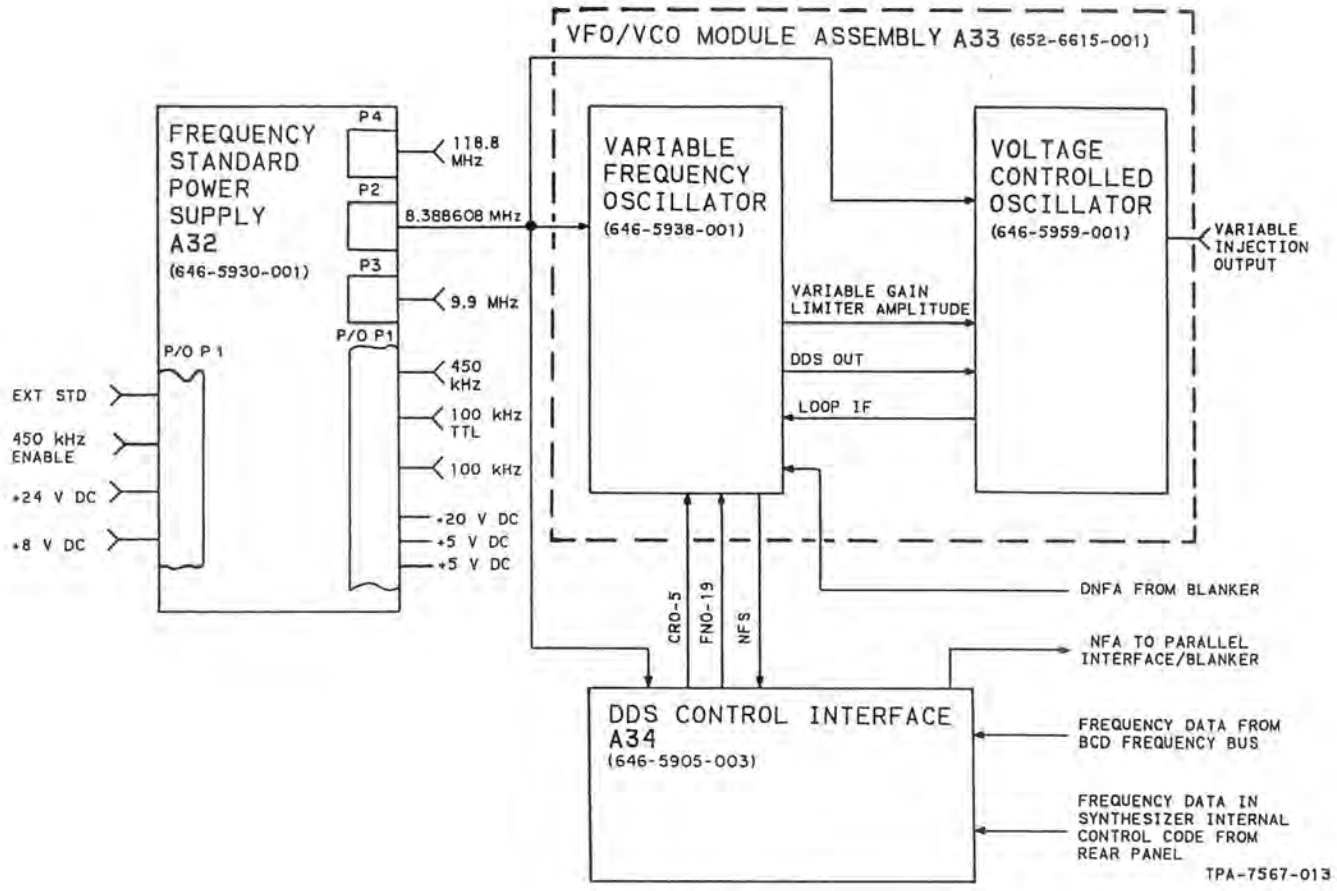


NOTES:

1. INDICATES HARD-WIRED CONNECTION.
   INDICATES GROUP OF WIRES IN A RIBBON CABLE.
2. RESERVED FOR FUTURE USE.
3. J14 AND ASSOCIATED WIRING HARNESS IS HARD WIRED TO AND IS PART SIDEBOARD ASSEMBLY A25.
4. J12 AND J13 ARE PART OF SIDEBOARD ASSEMBLY A25 (THERE IS NO MATING CONNECTOR FOR J12 OR J13).
5. P6 MATES WITH PINS ON ONE SIDE OF J8, A1OP1 MATES WITH SOCKET ON OTHER SIDE OF J8 (OPPOSITE SIDES OF SIDEBOARD; EXAMPLE SHOWN BELOW).

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

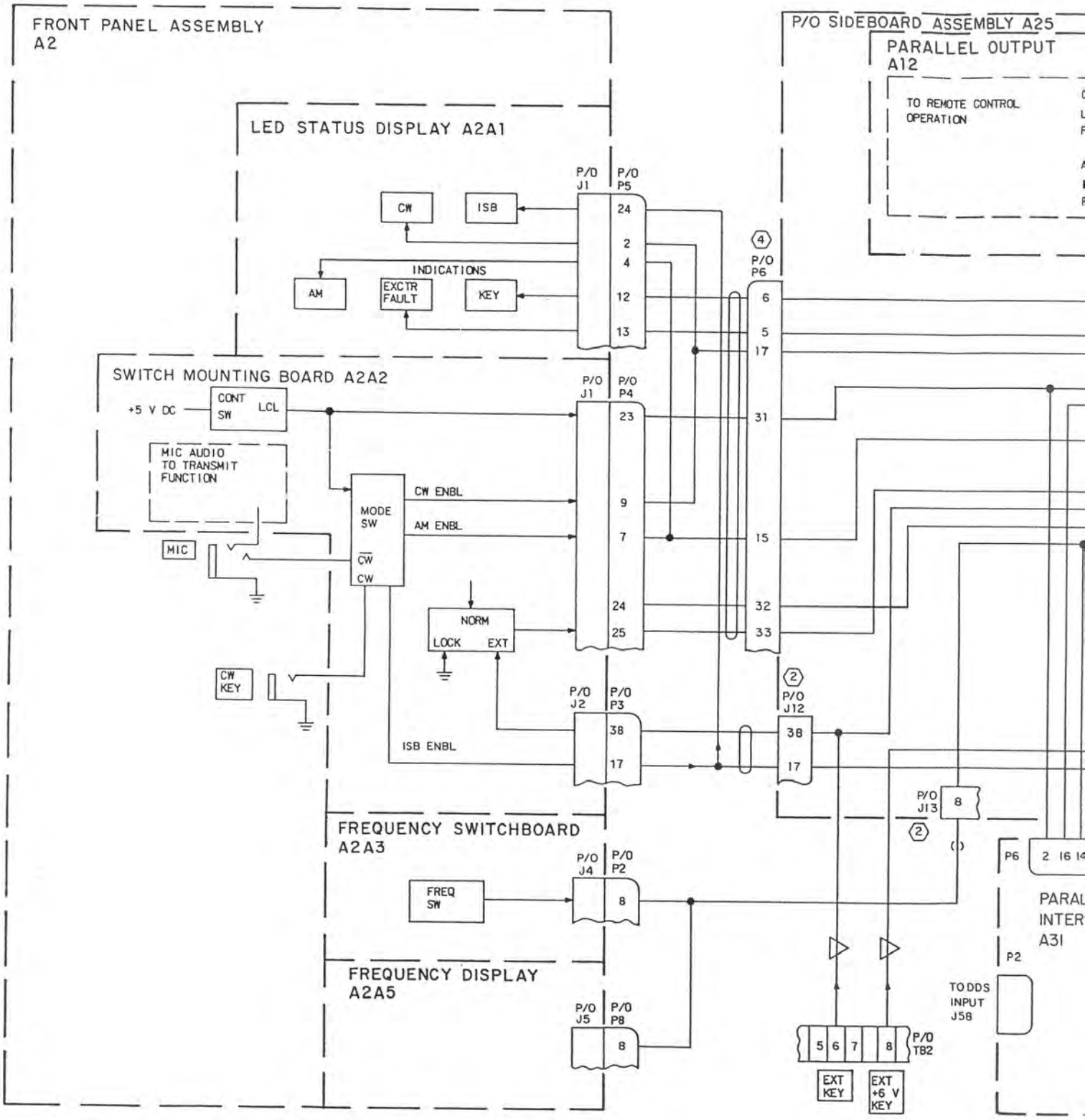
Add the following text after paragraph p; place figure 12A behind figure 12.

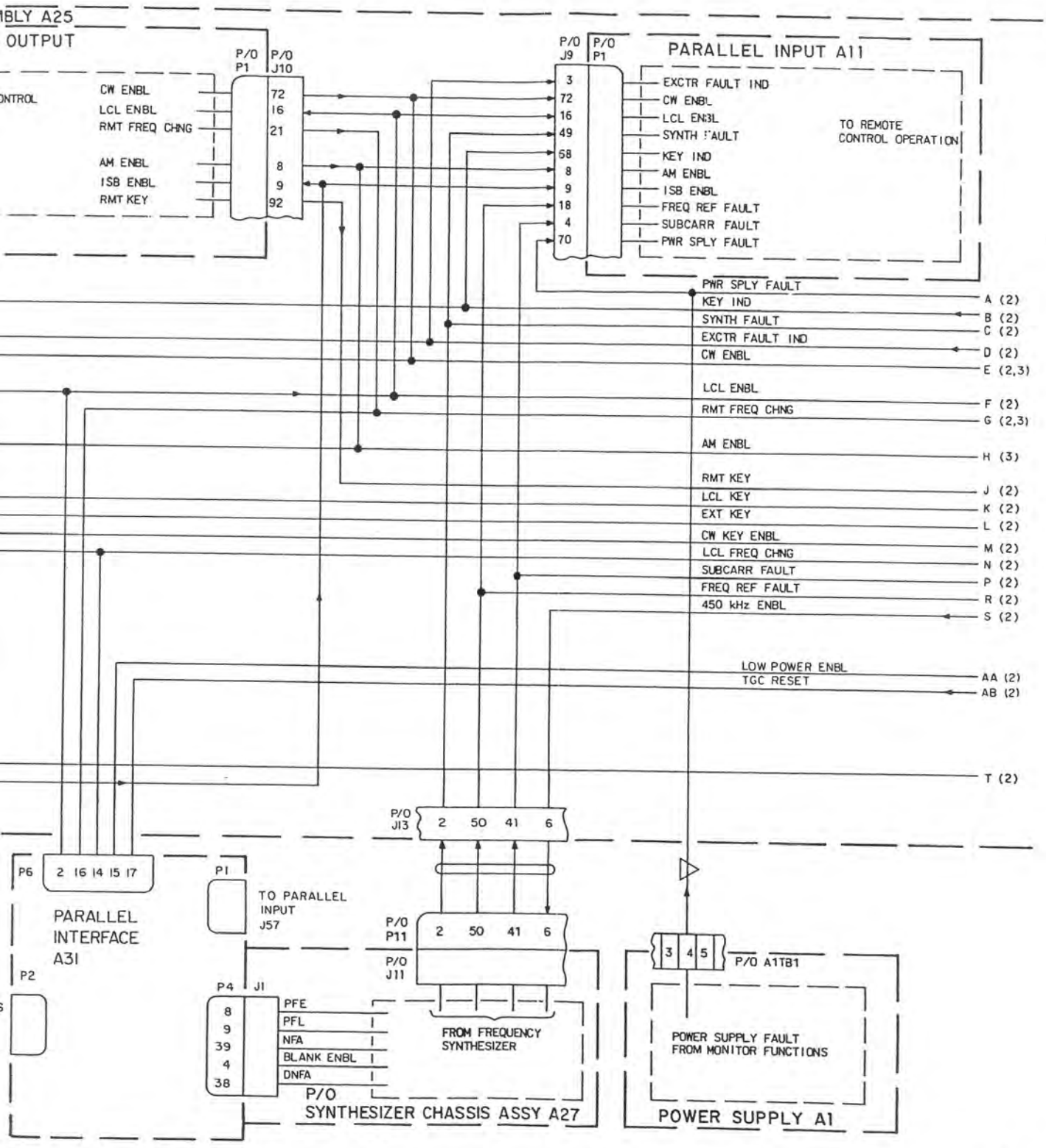
Each card of the direct digital synthesizer contains a fault indicator particular to that card. The DDS control interface card summarizes the faults from the frequency standard/power supply, the VFO/VCO module, and the DDS control interface for output to control A10 and parallel input A11. From the synthesizer, 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).

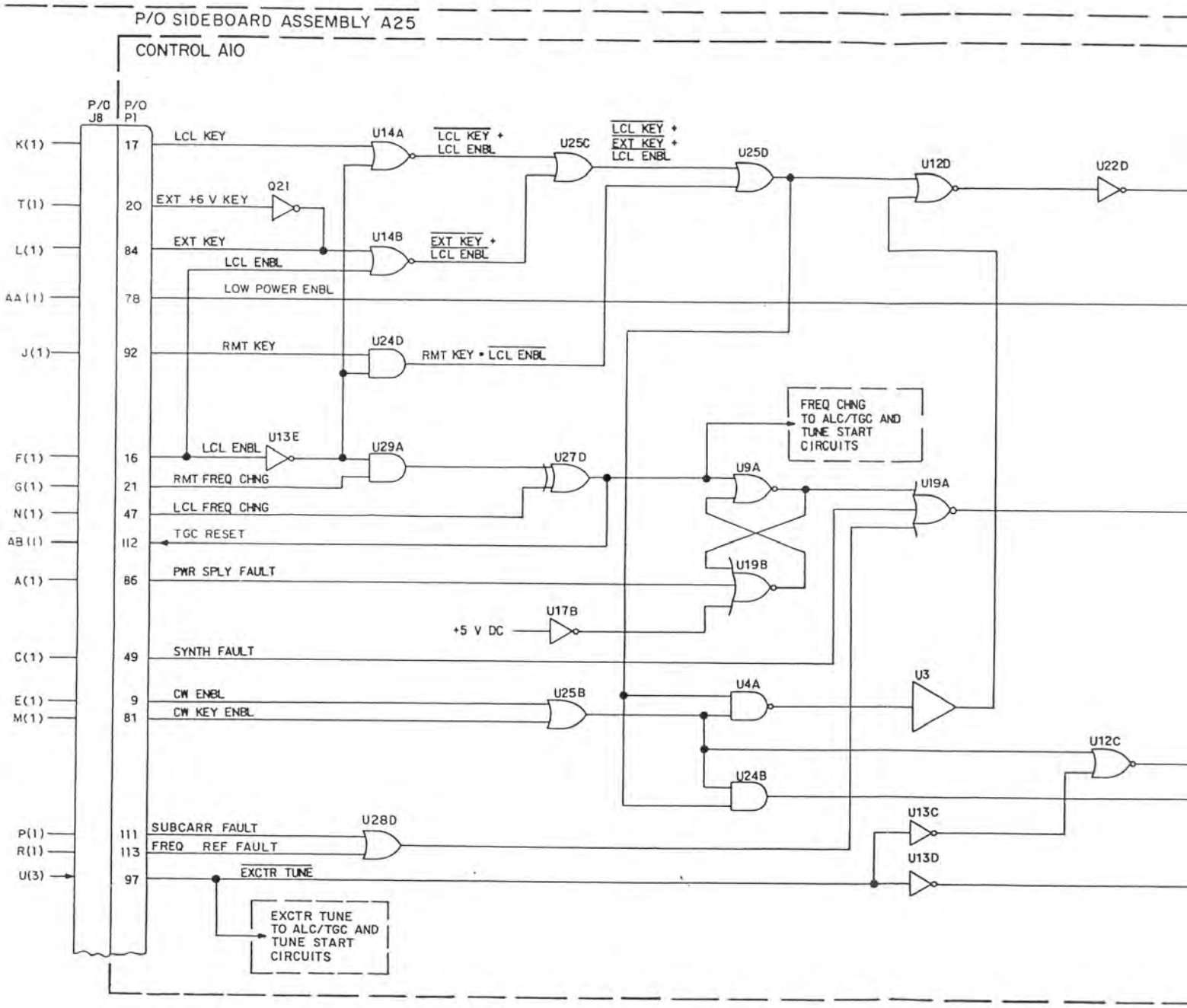
In the direct digital synthesizer, the +8-volt dc input is regulated to +5 volts dc on the DDS control interface for use in logic circuits. The +24-volt dc input is regulated to +20 volts dc and to +5 volts dc in the frequency standard/power supply for use in the frequency standard. The +20 volts dc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

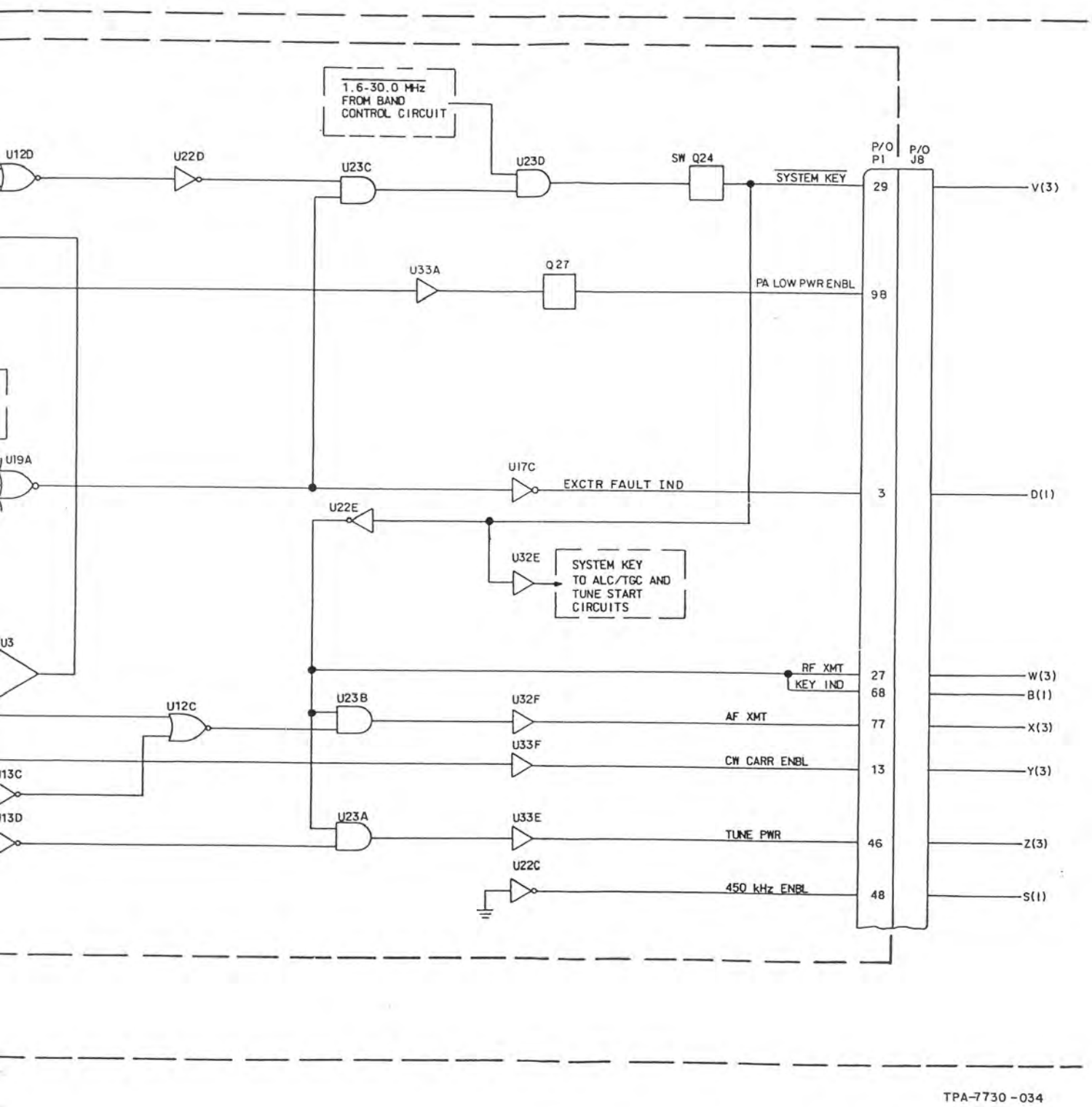

FRONT PANEL ASSEMBLY
A2
LED STATUS DISPLAY A2A1
P/O SIDEBOARD ASSEMBLY A25
PARALLEL OUTPUT
A12
TO REMOTE CONTROL
OPERATION
P/O J1
P/O P5
CW
ISB
INDICATIONS
AM
EXCTR FAULT
KEY
24
2
4
12
13
4
P/O P6
6
5
17
SWITCH MOUNTING BOARD A2A2
+5 V DC
CONT SW
LCL
P/O J1
P/O P4
23
31
MIC AUDIO
TO TRANSMIT
FUNCTION
MODE SW
CW ENBL
AM ENBL
9
7
15
MIC
CW
CW
NORM
LOCK
EXT
24
25
32
33
CW KEY
2
P/O J12
P/O J2
P/O P3
38
17
38
17
ISB ENBL
P/O J13
8
2
FREQUENCY SWITCHBOARD
A2A3
P/O J4
P/O P2
FREQ SW
8
P6
2 16 14
PARAL
INTER
A31
P2
FREQUENCY DISPLAY
A2A5
TO DDS
INPUT
J58
P/O J5
P/O P8
8
5 6 7 8
P/O TB2
EXT KEY
EXT +6 V KEY



TPA-7730-034

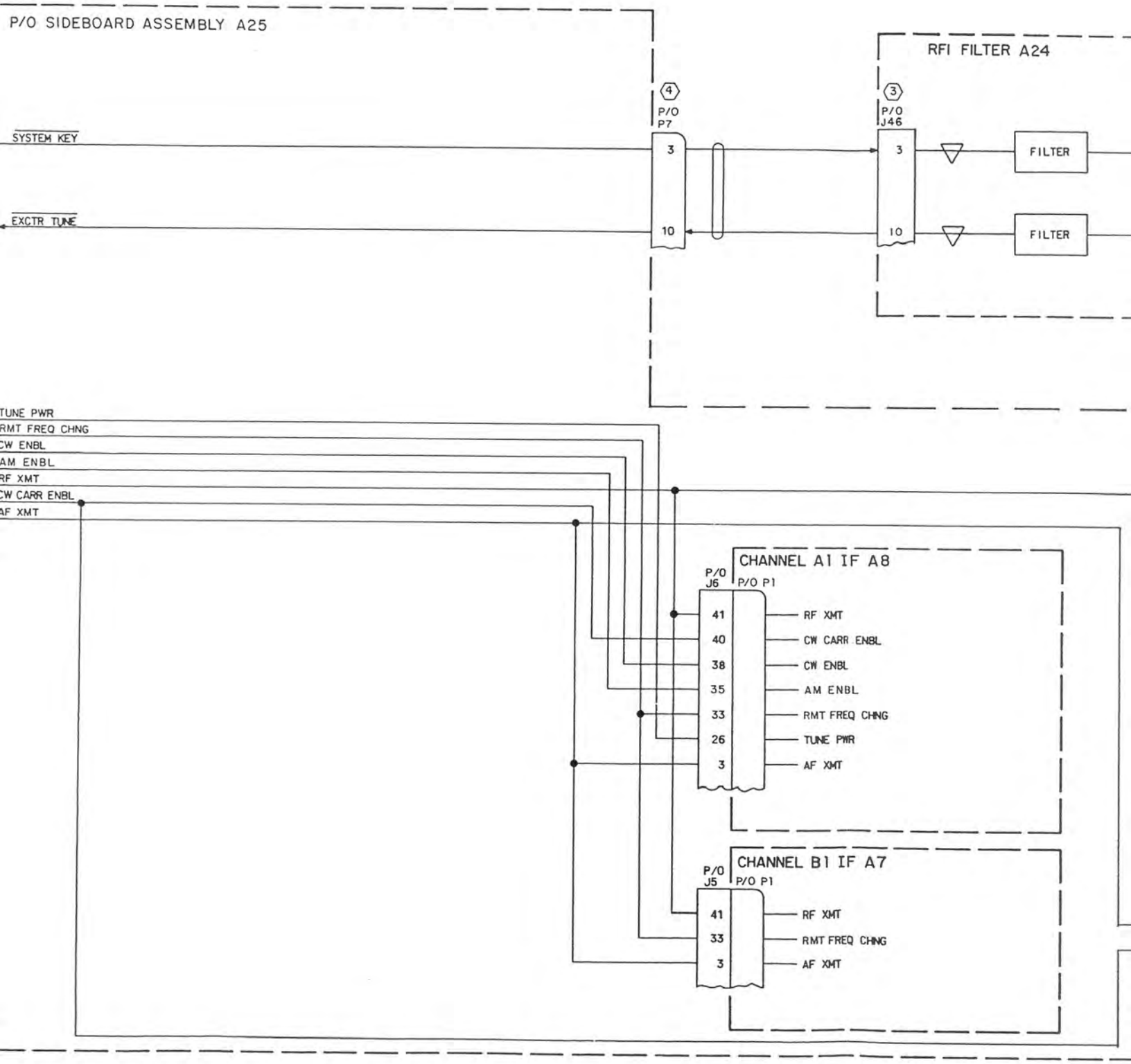
HF-8014A Exciter (622-3473-211), Fault and Status Indicators, Block Diagram Figure 12A (Sheet 1 of 3)


P/O SIDEBOARD ASSEMBLY A25
CONTROL AIO
P/O J8
P/O P1
K(1)
17
LCL KEY
U14A
LCL KEY + LCL ENBL
U25C
LCL KEY + EXT KEY + LCL ENBL
U25D
U12D
U22D
T(1)
20
EXT +6 V KEY
Q21
L(1)
84
EXT KEY
LCL ENBL
U14B
EXT KEY + LCL ENBL
AA(1)
78
LOW POWER ENBL
J(1)
92
RMT KEY
U24D
RMT KEY • LCL ENBL
FREQ CHNG TO ALC/TGC AND TUNE START CIRCUITS
F(1)
16
LCL ENBL
U13E
U29A
U27D
U9A
U19A
G(1)
21
RMT FREQ CHNG
N(1)
47
LCL FREQ CHNG
AB(1)
112
TGC RESET
U19B
A(1)
86
PWR SPLY FAULT
U17B
+5 V DC
C(1)
49
SYNTH FAULT
E(1)
9
CW ENBL
M(1)
81
CW KEY ENBL
U25B
U4A
U3
U12C
U24B
P(1)
111
SUBCARR FAULT
R(1)
113
FREQ REF FAULT
U28D
U13C
U13D
U(3)
97
EXCTR TUNE
EXCTR TUNE TO ALC/TGC AND TUNE START CIRCUITS



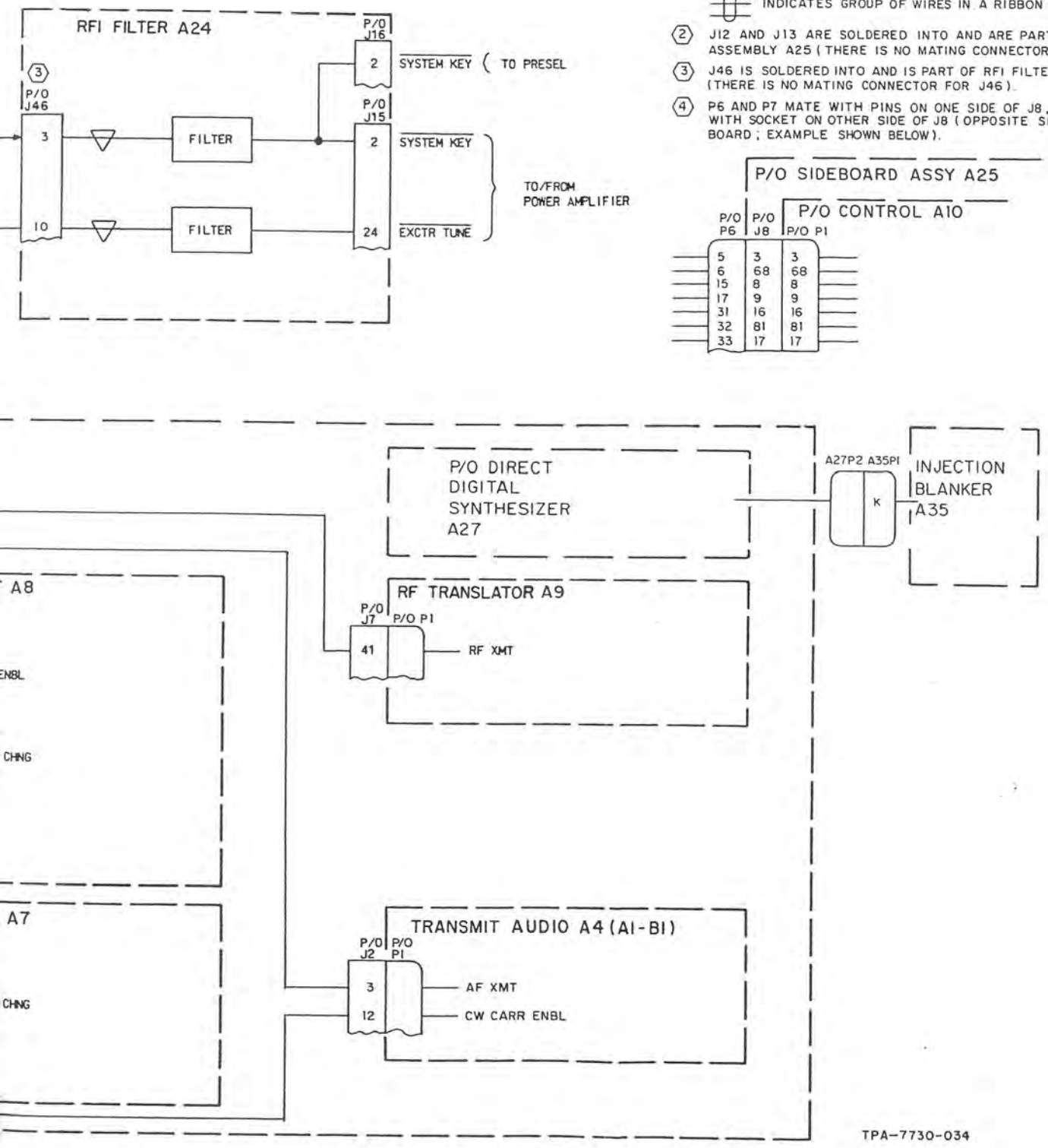
TPA-7730-034

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

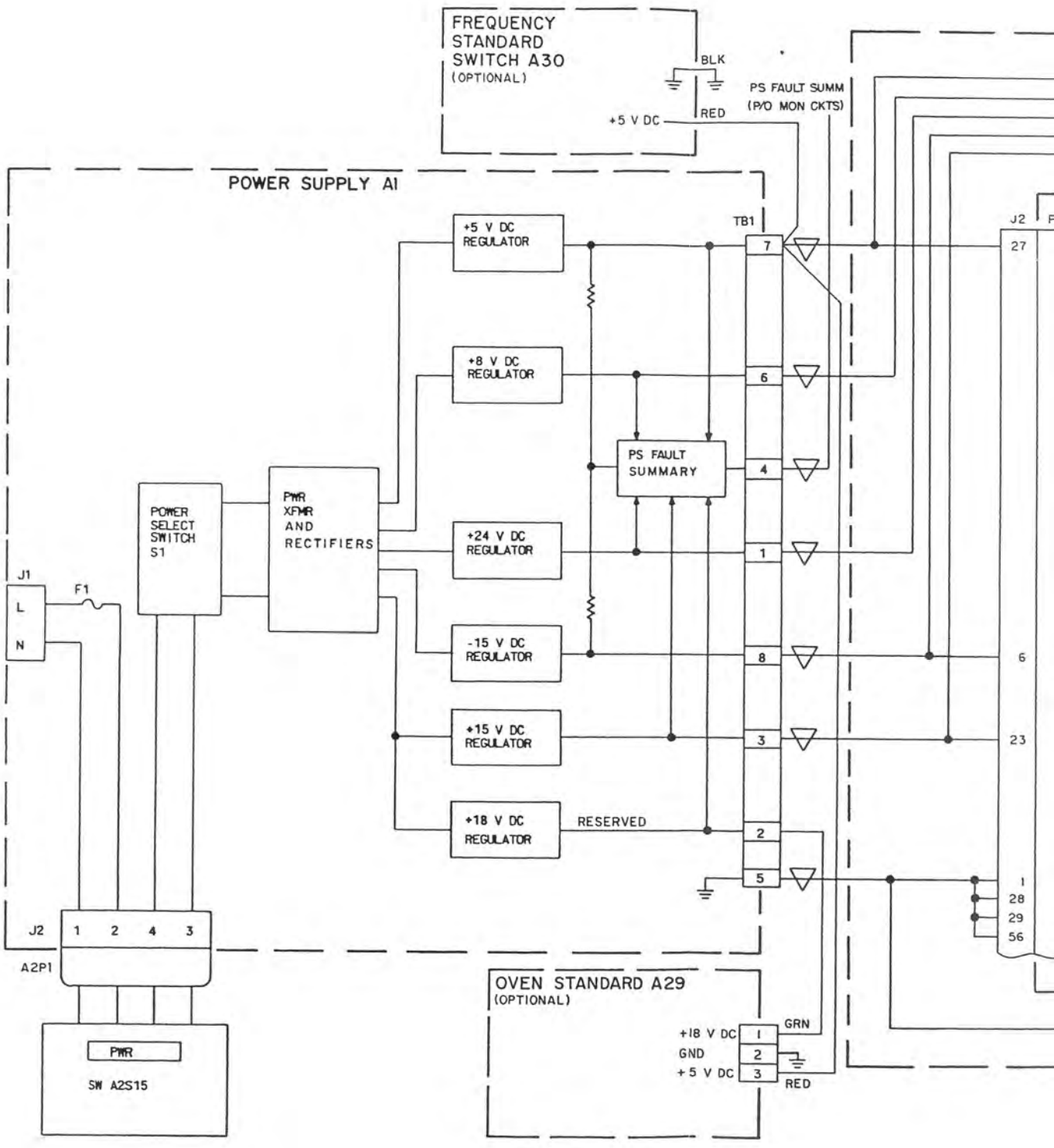

P/O SIDEBOARD ASSEMBLY A25
RFI FILTER A24
4
P/O P7
3
P/O J46
SYSTEM KEY
3
FILTER
EXCTR TUNE
10
10
FILTER
TUNE PWR
RMT FREQ CHNG
CW ENBL
AM ENBL
RF XMT
CW CARR ENBL
AF XMT
CHANNEL A1 IF A8
P/O J6
P/O P1
41
RF XMT
40
CW CARR ENBL
38
CW ENBL
35
AM ENBL
33
RMT FREQ CHNG
26
TUNE PWR
3
AF XMT
CHANNEL B1 IF A7
P/O J5
P/O P1
41
RF XMT
33
RMT FREQ CHNG
3
AF XMT

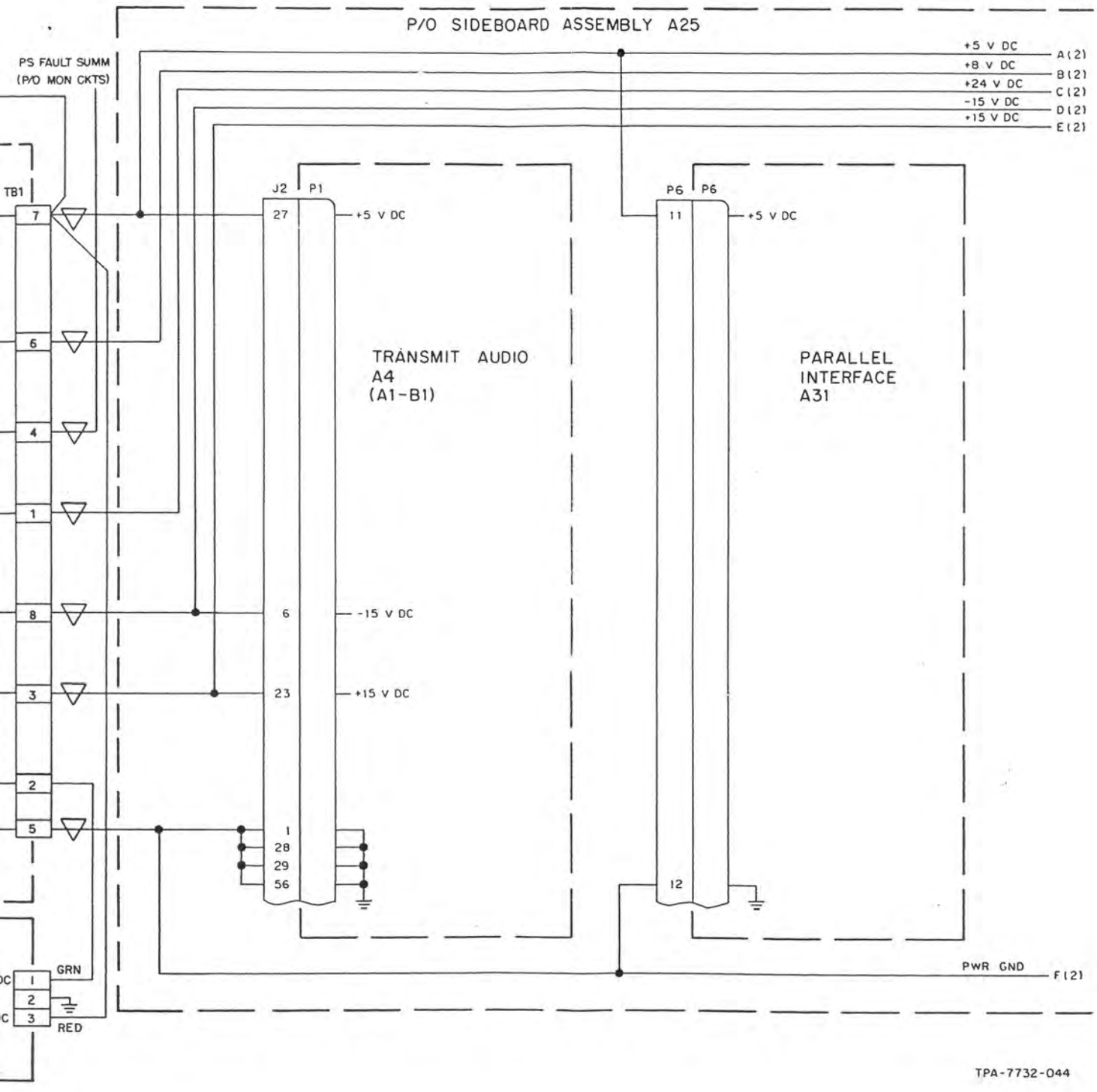
NOTES:

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 SIDE-BOARD ; EXAMPLE SHOWN BELOW).

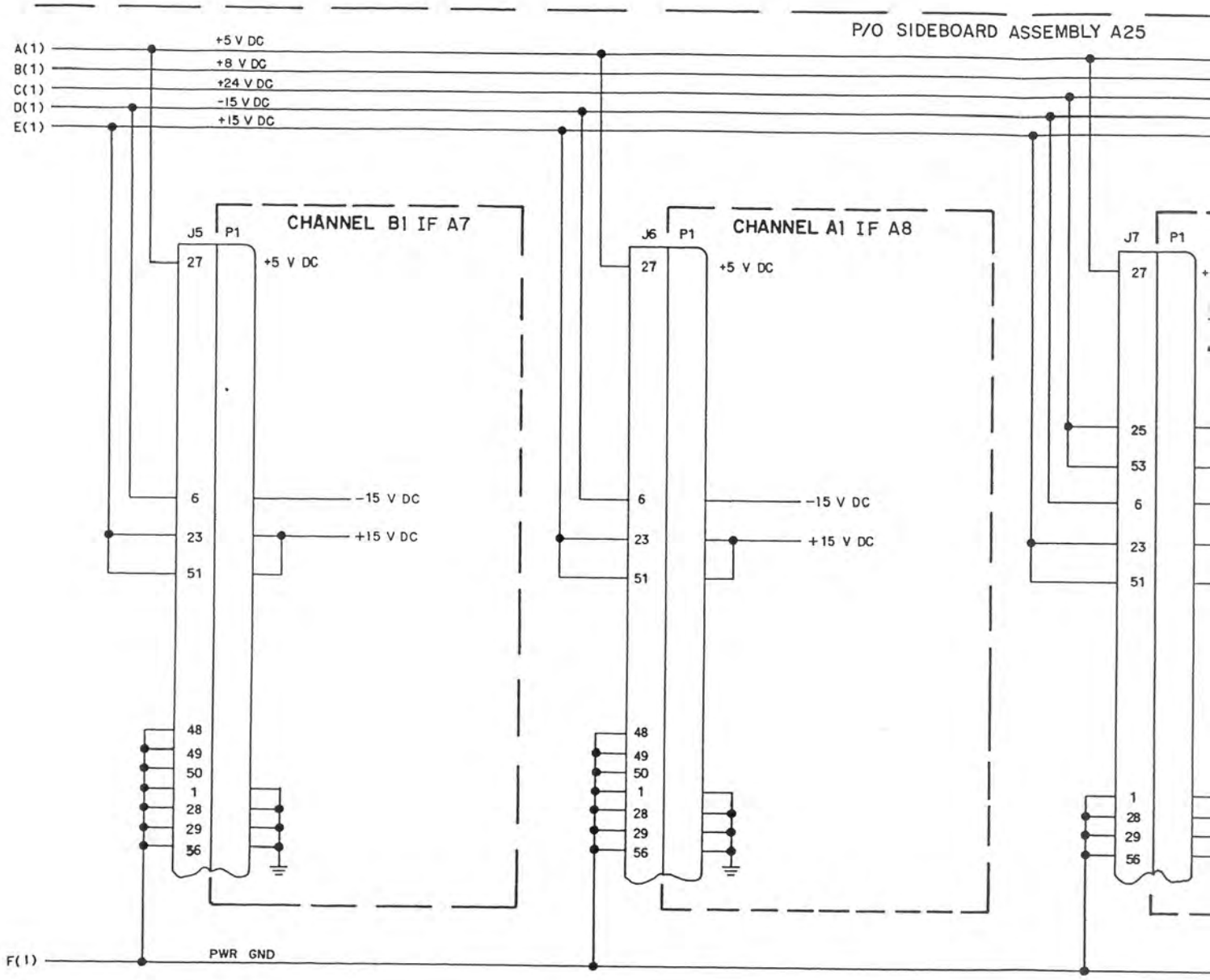


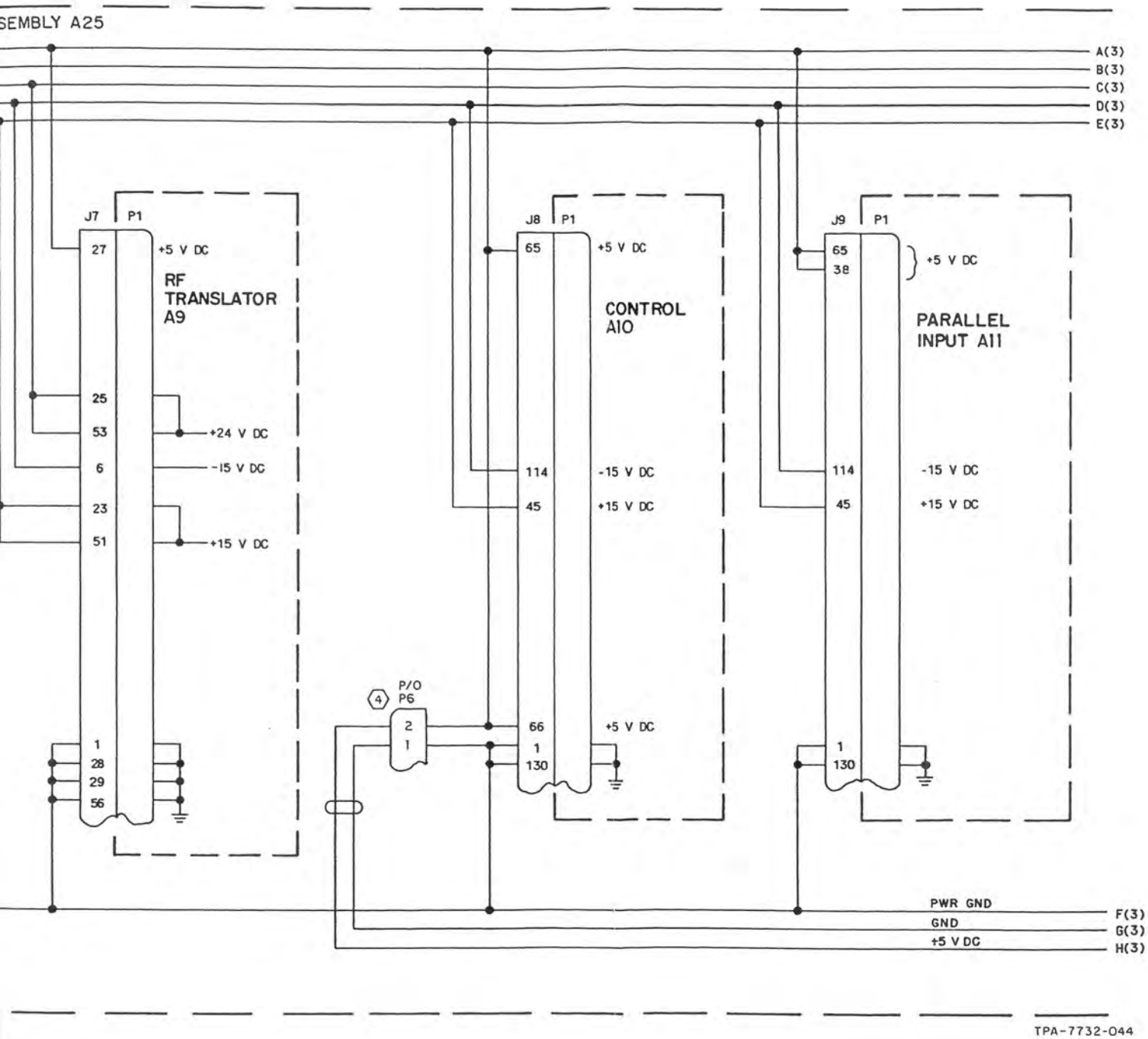
HF-8014A Exciter (622-3473-211), Fault and Status Indicators, Block Diagram
Figure 12A (Sheet 3)


FREQUENCY STANDARD SWITCH A30 (OPTIONAL)
BLK
RED
+5 V DC
PS FAULT SUMM (P/O MON CKTS)
POWER SUPPLY A1
TB1
+5 V DC REGULATOR
+8 V DC REGULATOR
PS FAULT SUMMARY
+24 V DC REGULATOR
-15 V DC REGULATOR
+15 V DC REGULATOR
+18 V DC REGULATOR
RESERVED
POWER SELECT SWITCH S1
PWR XFMR AND RECTIFIERS
J1
L
N
F1
J2
A2P1
1 2 4 3
PWR
SW A2S15
J2
27
6
23
1
28
29
56
OVEN STANDARD A29
(OPTIONAL)
+18 V DC
GND
+5 V DC
GRN
RED

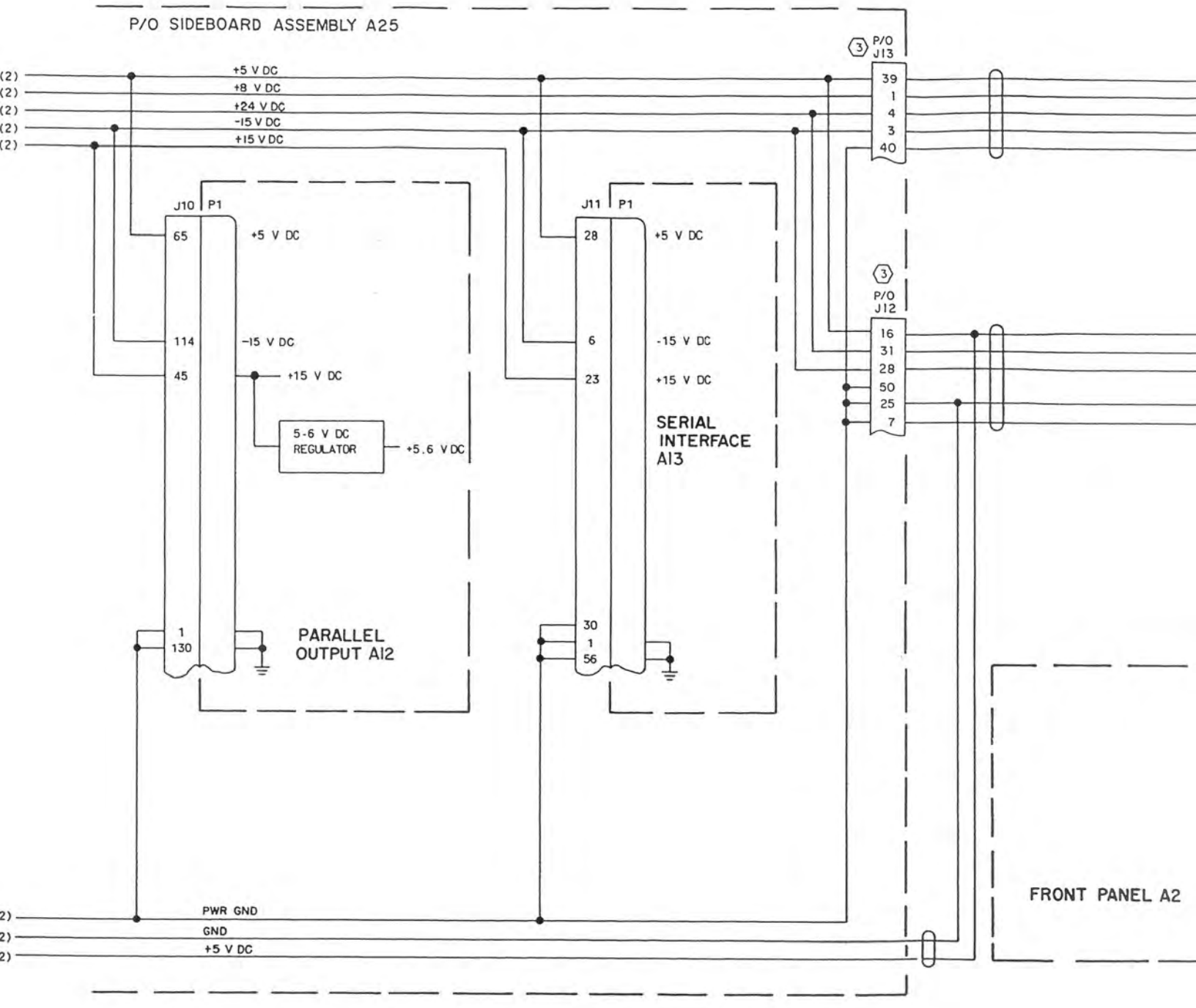


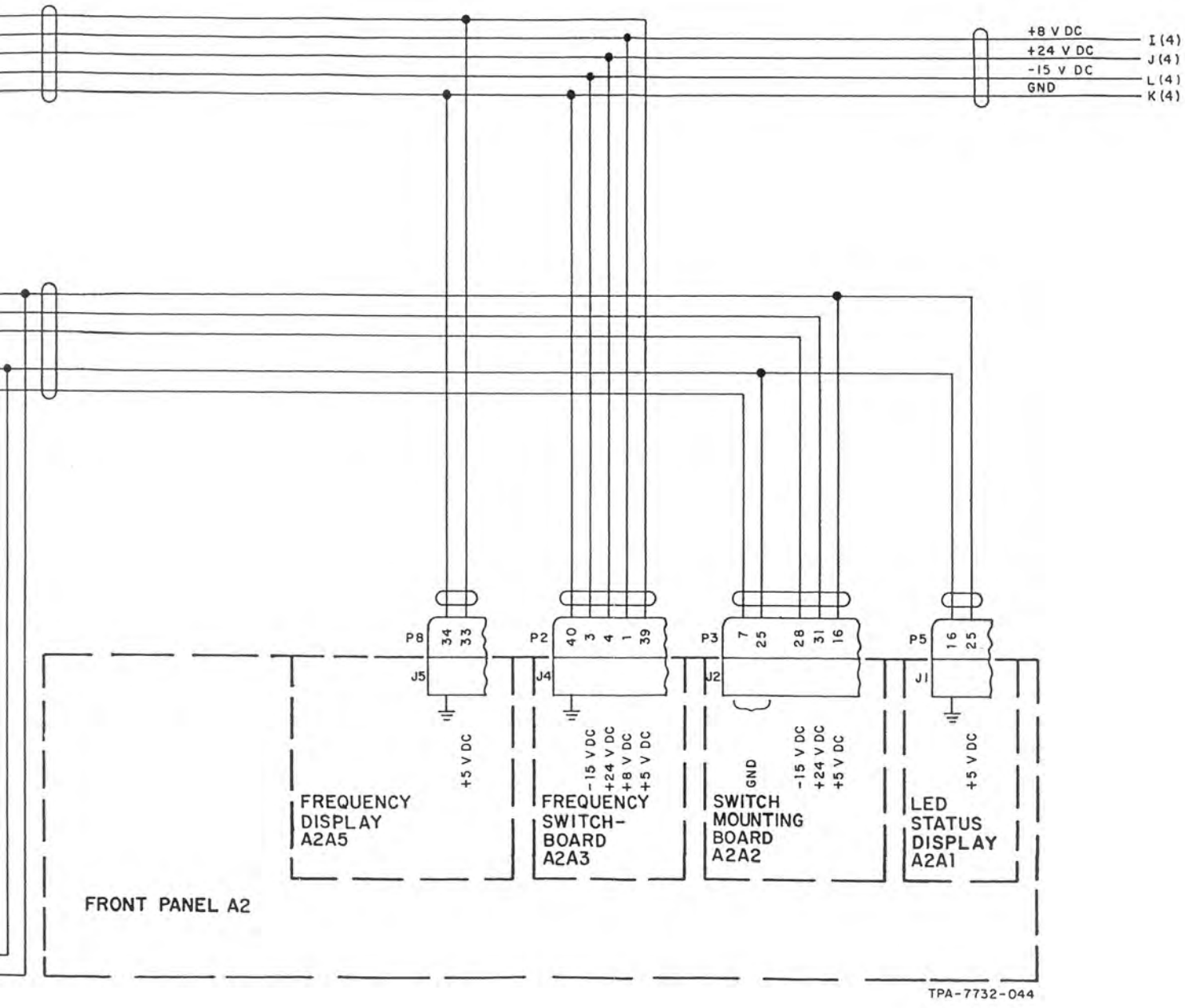
HF-8014A Exciter (622-3473-211),
Power Distribution, Block Diagram
Figure 13A (Sheet 1 of 4)


P/O SIDEBOARD ASSEMBLY A25
A(1)
B(1)
C(1)
D(1)
E(1)
+5 V DC
+8 V DC
+24 V DC
-15 V DC
+15 V DC
CHANNEL B1 IF A7
J5
P1
27
+5 V DC
6
-15 V DC
23
+15 V DC
51
48
49
50
1
28
29
56
CHANNEL A1 IF A8
J6
P1
27
+5 V DC
6
-15 V DC
23
+15 V DC
51
48
49
50
1
28
29
56
J7
P1
27
25
53
6
23
51
1
28
29
56
F(1)
PWR GND

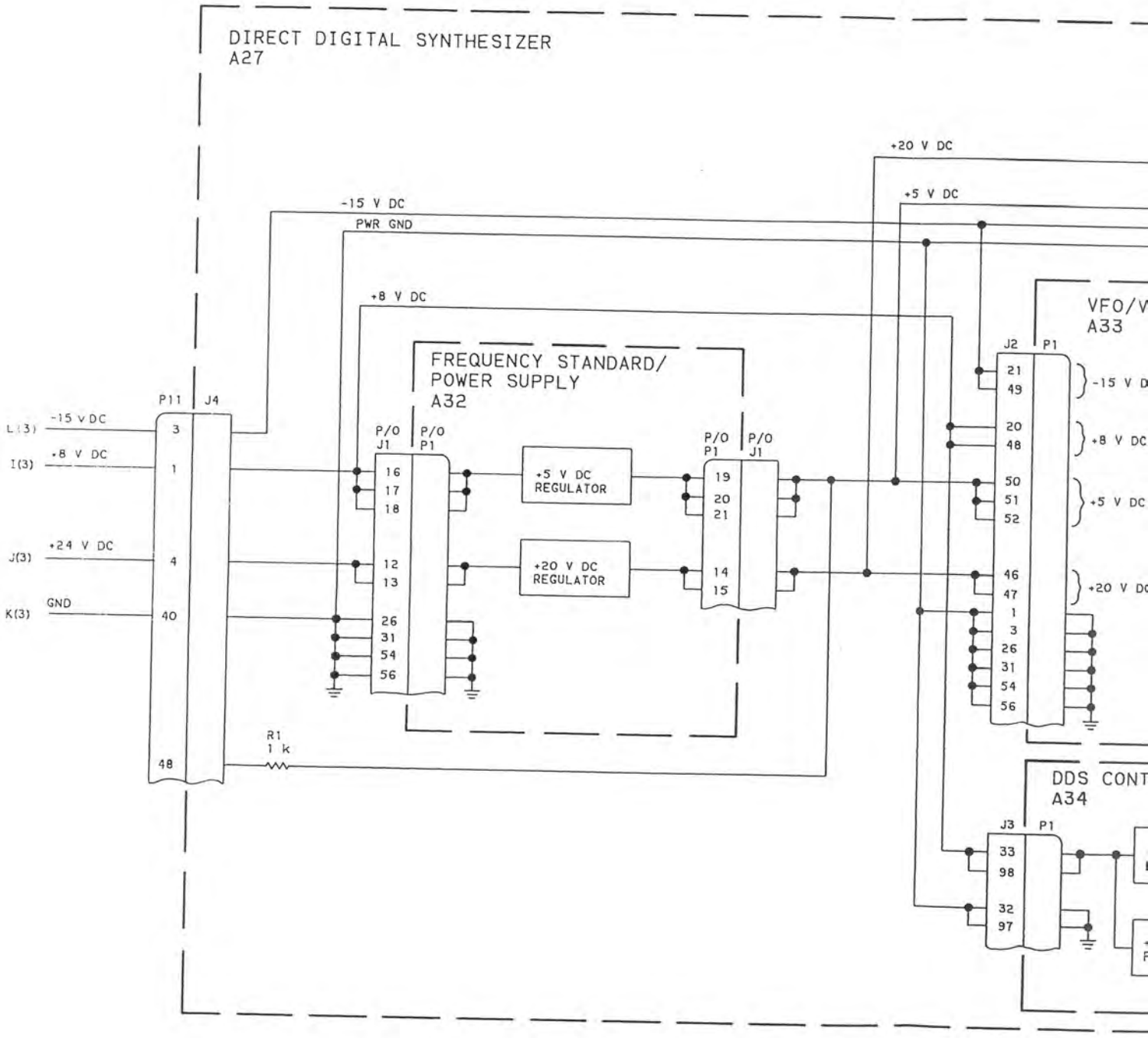


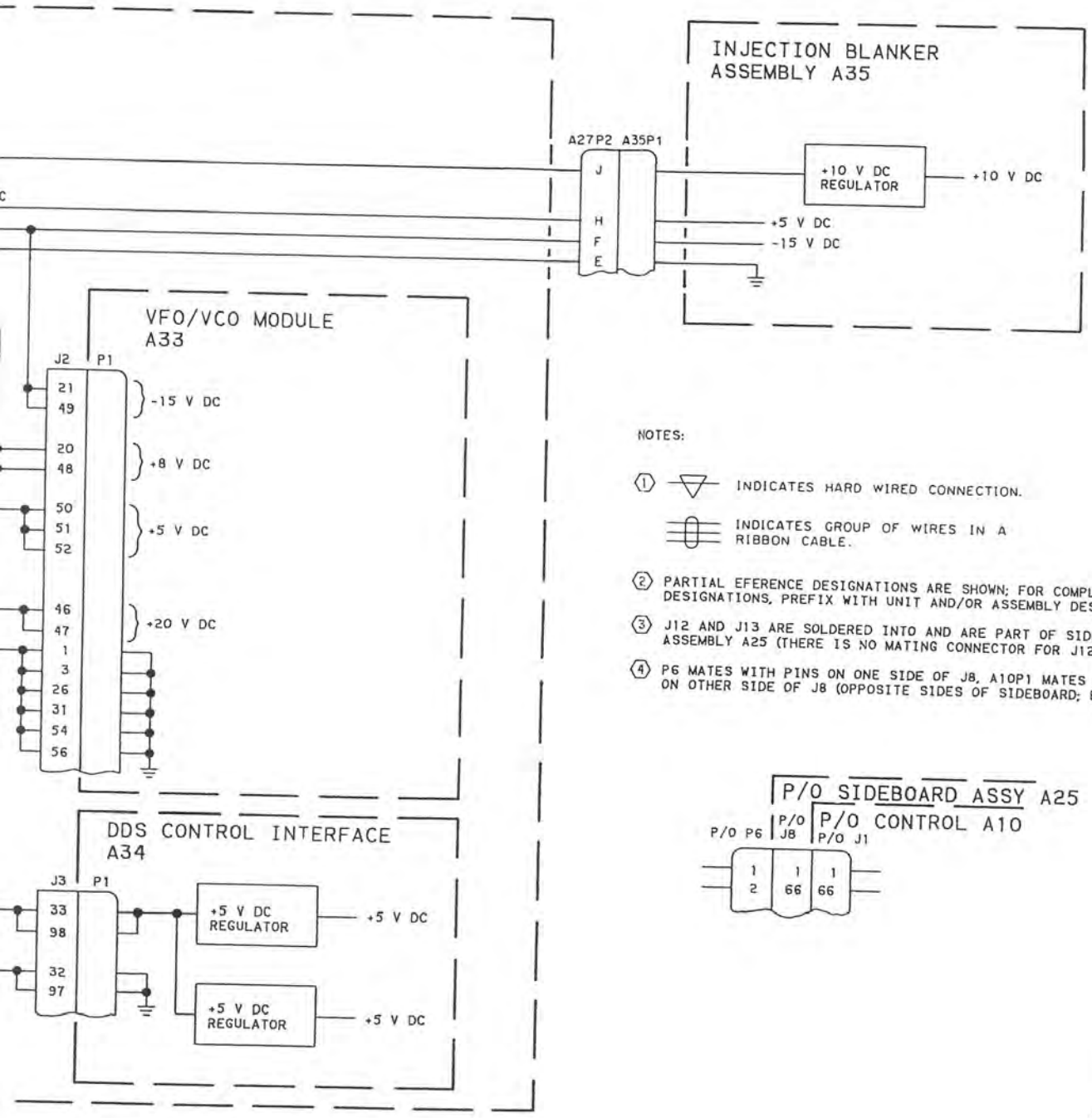
HF-8014A Exciter (622-3473-211),
Power Distribution, Block Diagram
Figure 13A (Sheet 2)


P/O SIDEBOARD ASSEMBLY A25
(2)
(2)
(2)
(2)
(2)
+5 V DC
+8 V DC
+24 V DC
-15 V DC
+15 V DC
3 P/O J13
39
1
4
3
40
J10 P1
65
+5 V DC
114
-15 V DC
45
+15 V DC
5-6 V DC REGULATOR
+5.6 V DC
1
130
PARALLEL OUTPUT A12
J11 P1
28
+5 V DC
6
-15 V DC
23
+15 V DC
SERIAL INTERFACE A13
30
1
56
3 P/O J12
16
31
28
50
25
7
FRONT PANEL A2
(2)
(2)
(2)
PWR GND
GND
+5 V DC



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


DIRECT DIGITAL SYNTHESIZER
A27
+20 V DC
+5 V DC
-15 V DC
PWR GND
+8 V DC
VFO/V
A33
FREQUENCY STANDARD/
POWER SUPPLY
A32
P11
J4
L(3)
-15 V DC
I(3)
+8 V DC
J(3)
+24 V DC
K(3)
GND
3
1
4
40
48
P/O
J1
P/O
P1
16
17
18
12
13
26
31
54
56
+5 V DC
REGULATOR
+20 V DC
REGULATOR
P/O
P1
P/O
J1
19
20
21
14
15
R1
1 k
J2
P1
21
49
20
48
50
51
52
46
47
1
3
26
31
54
56
-15 V D
+8 V DC
+5 V DC
+20 V DC
DDS CONT
A34
J3
P1
33
98
32
97



NOTES:

(1) INDICATES HARD WIRED CONNECTION.

INDICATES GROUP OF WIRES IN A RIBBON CABLE.

(2) PARTIAL EFERENCE 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.

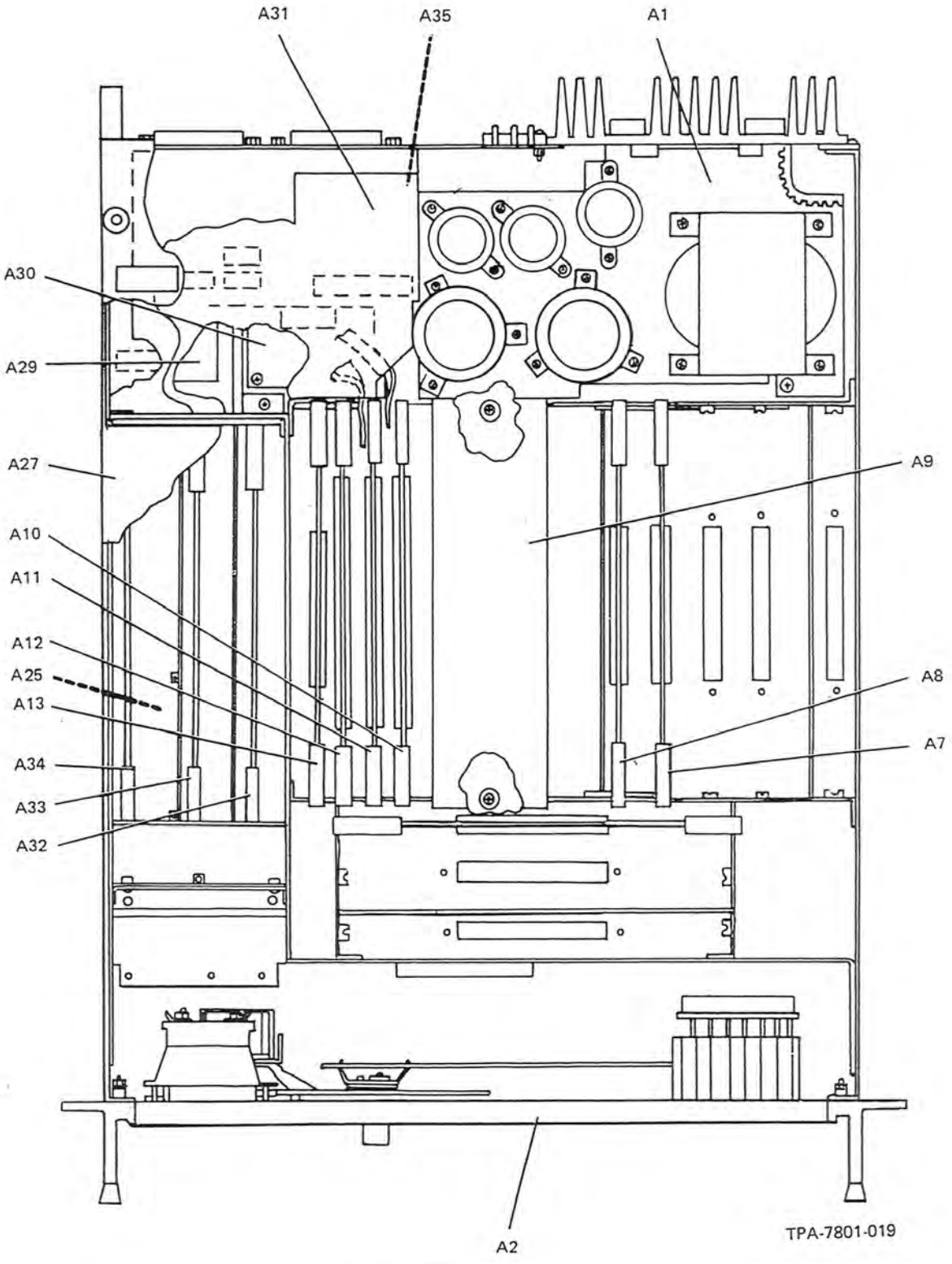
Figure 1 shows the location of HF-8014( ) Exciter subassemblies except for part number 622-3473-211, and figure 1A shows the HF-8014A Exciter subassemblies for part number 622-3473-211.

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
Exciter fault indicator lights	c. Remove top cover from exciter and direct digital synthesizer. d. Monitor fault lights on synthesizer cards. 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.
No transmit rf output	a. Check for proper setup (local control, correct key, correct mode, correct frequency, etc). Set MODE switch to CW, PA PWR switch to STBY and KEY switch to LOCK. Change frequency to reset TGC circuit. 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 A8. If meter does read full scale but no rf is output, replace injection blanker A35.



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 µs 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).

<table>
<tr><th>TEST</th><th>PROCEDURE</th><th>NORMAL INDICATION</th><th>IF INDICATION IS ABNORMAL</th></tr>
<tr><td>14A. Frequency accuracy

(Cont)</td><td>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:

FREQUENCY kHz: 10 000.0; 11 111.1; 22 222.2; 3 333.3; 4 444.4; 5 555.5; 6 666.6
FREQUENCY COUNTER DISPLAY — kHz: 10 000.00; 11 111.10; 22 222.20; 3 333.30; 4 444.40; 5 555.50; 6 666.60
FREQUENCY COUNTER DISPLAY — ACCURACY*: ±1 Hz at all frequencies.</td><td></td><td>Check direct digital synthesizer A27 and frequency switchboard A2A3.</td></tr>
</table>

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 / 7 777.70; 8 888.8 / 8 888.80; 29 999.9 / 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	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; CONT: LCL		
	b. Connect a compatible remote control and parallel input device to unit under test.		
	c. Set exciter PWR to ON and initiate a FREQUENCY change to clear the EXCITER fault.	EXCITER fault indicator is extinguished.	Check control A10 and LED status display A2A5.
	d. Set remote control PWR to ON and make changes to the following exciter control front panel controls: MODE switch; CHANNEL ENABLE switches; PILOT CARR switch; PEAK CLIP switch; KEY switch	Changing of exciter control front panel controls has no effect on the unit under test displays/ indicators.	Check parallel input A11, parallel output A12, and serial interface A13.
(Cont)			

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

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

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

TEST	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
15A. (Cont)	n. Initiate mode change from parallel input device.	Unit under test display changes to mode selected.	Same as step m.
	o. Repeat step h.	Same as step h.	Check control A10, serial interface A13, parallel interface A31.
	p. Initiate PILOT CARR to ON from parallel input device.	Unit under test PILOT CARR indicator lights.	Check control A10, parallel interface A31.
	q. Initiate PEAK CLIP to ON from parallel input device.	Unit under test PEAK CLIP indicator lights.	Same as step p.
	r. Initiate MODE to AM from parallel input device.	Unit under test AM indicator lights, ISB MODE indicators extinguish.	Same as step p.
	s. Turn off power to remote control, parallel input device, and exciter.		
15B. Processor control	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 — LCL		
	b. Connect frequency counter to XMT OUT jack J22 on rear panel. Apply power to frequency counter.		
	c. Connect a compatible processor to J58/A31P2 DDS INPUT.		
(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.	Faults do not light. AM indicator lights.	Check parallel interface A31 and control A10.
	g. Initiate a frequency change with processor.	Frequency counter should reflect new frequency.	Check parallel interface A31, control A10, direct digital synthesizer A27.
	h. Repeat step g over entire frequency spectrum.	Same as step g.	Same as step g.
	i. Turn off power to exciter and frequency counter.		
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)	b. Connect an oscilloscope to J15 pin 26.		
	c. Apply power to exciter. Change frequency on front panel controls.	A tune start pulse should appear on scope.	Check direct digital synthesizer A27.
	d. Connect oscilloscope to the following pins, then change frequency on the front panel: J15 pin 8 J15 pin 9 J15 pin 26 J16 pin 1	Same as step c.	Same as step c.
	e. Ground pin 8 of J57/A31P1 on rear panel.		
	f. Monitor J15 pin 26 with oscilloscope while changing frequency on front panel.	No tune start pulse should appear.	Check parallel interface A31.
	g. Ground the following pins of J57/A31P1 while monitoring the pins listed: GROUND PIN OF J57/A31P1 — MONITOR PIN 24 — J15 pin 8 23 — J15 pin 9 50 — J15 pin 26 50 — J16 pin 1	Same as step f.	Same as step f.
	h. Turn off power to exciter.		

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.

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

PREFIX	UNIT PART NUMBER	FIG-ITEM
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

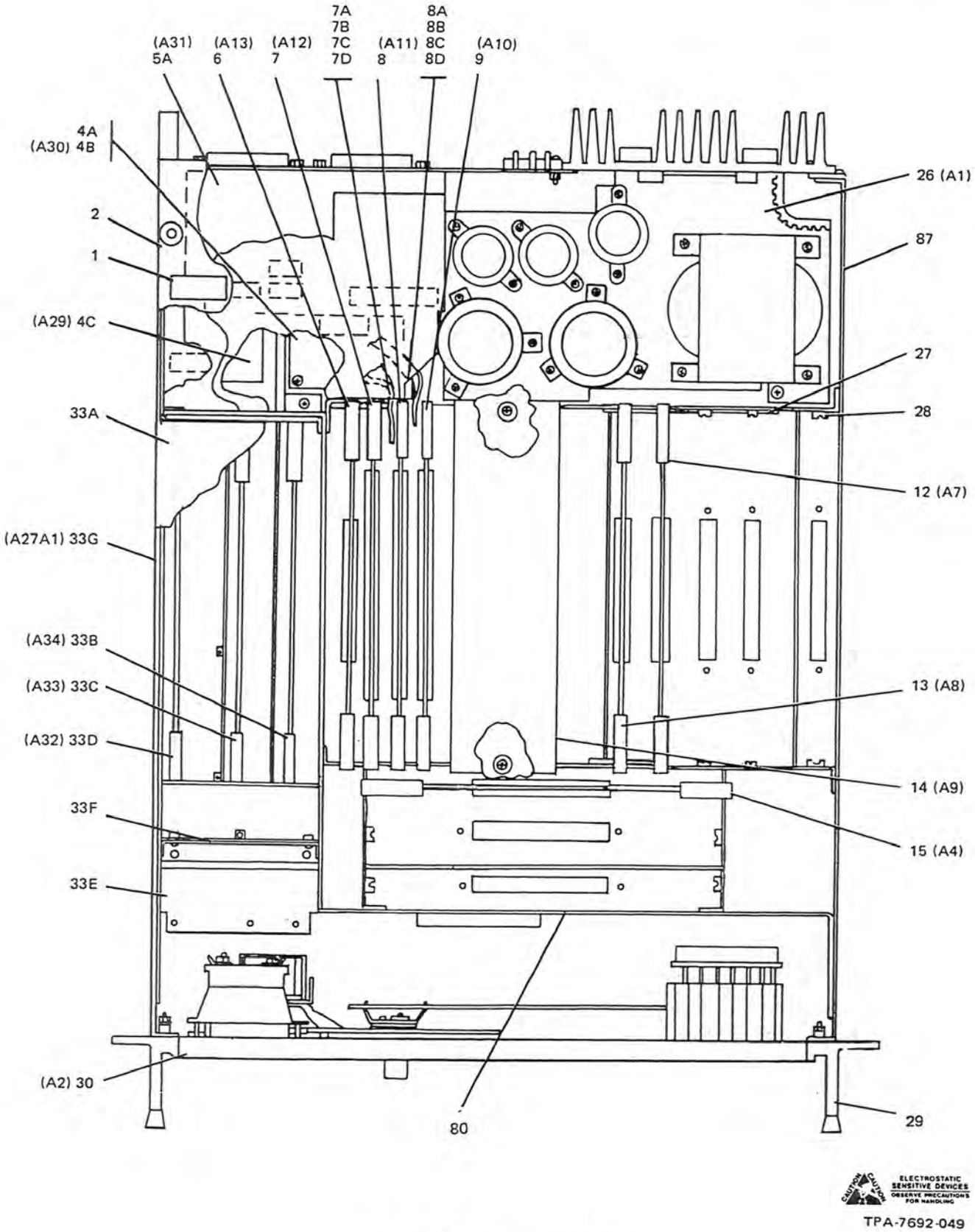
Add the following configuration identifiers, part numbers, and figure references to the existing list.

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

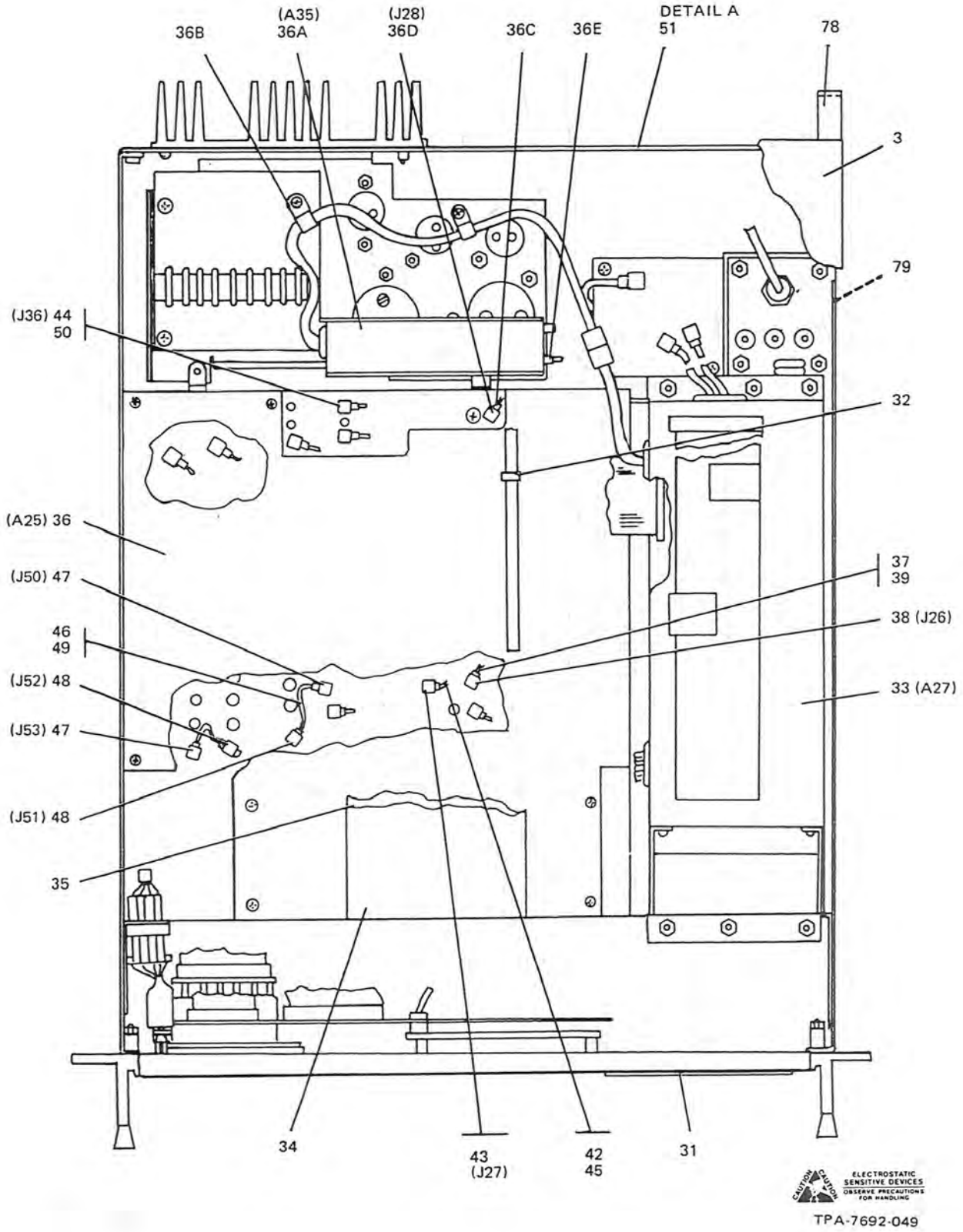
2. GROUP ASSEMBLY PARTS LIST

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

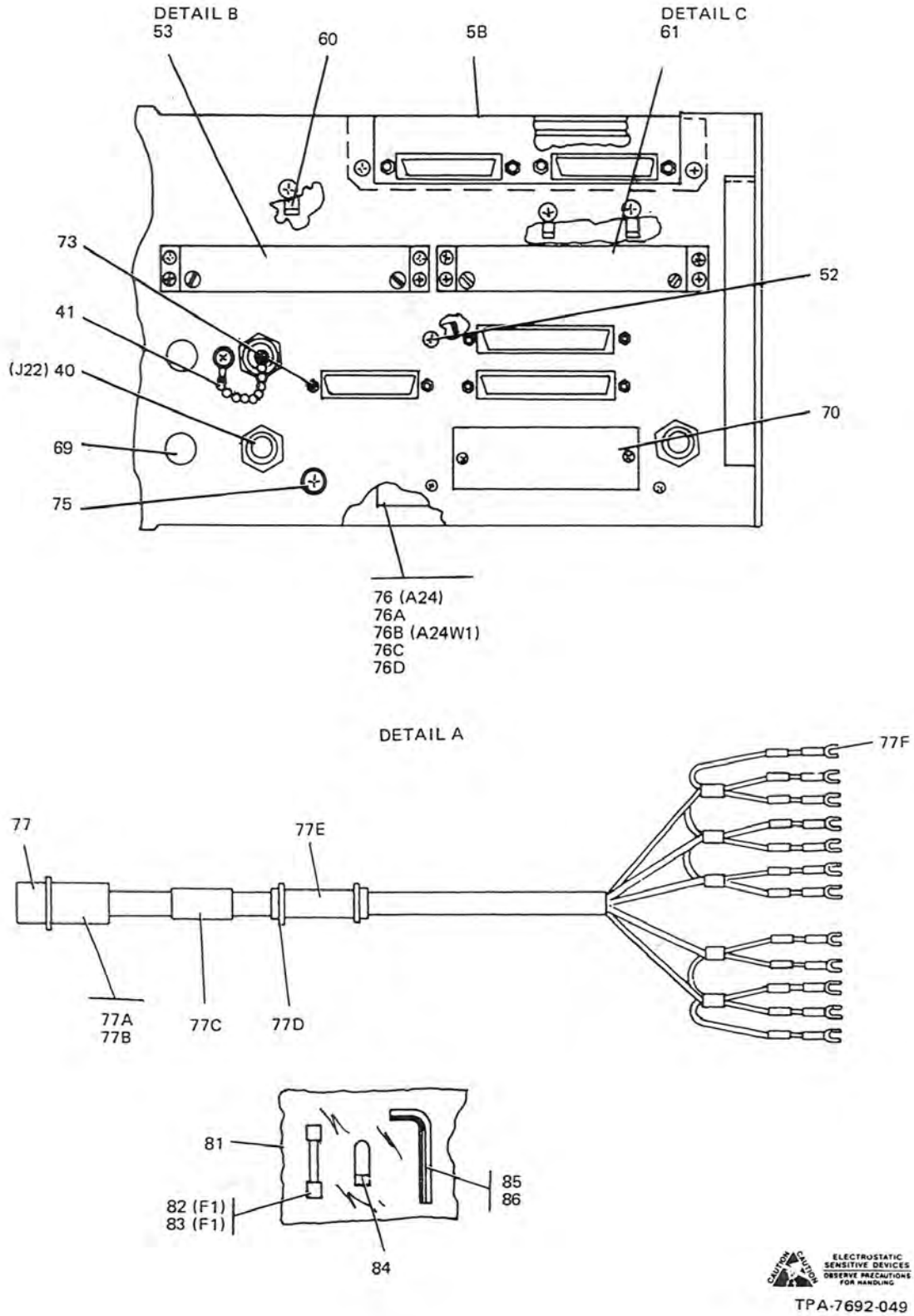
Add Figure 4A and associated Group Assembly Parts List for DDS Chassis Assembly A27A1, 652-7263-001.



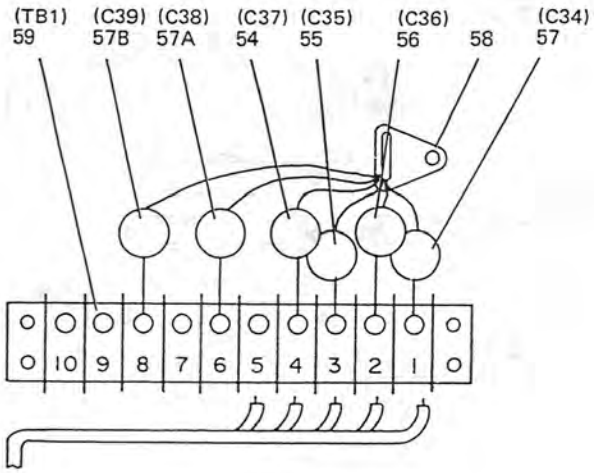
HF-8011A Exciter (622-3473-211)
Figure 1A (Sheet 1 of 4)



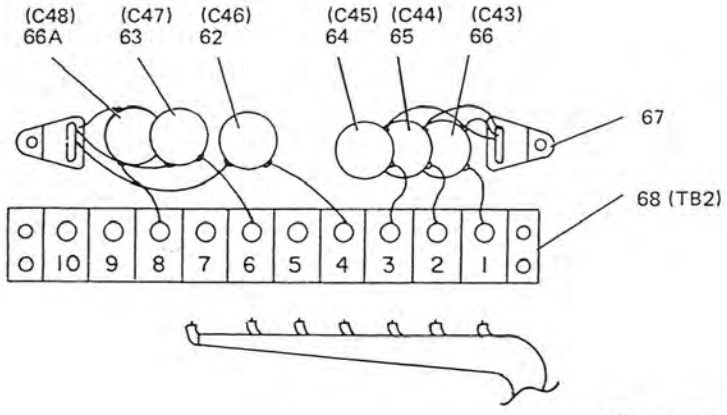
HF-8014A Exciter (622-3473-211)
Figure 1A (Sheet 2)



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



DETAIL B



DETAIL C

TPA-7692-049

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

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	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 0.125IDX0.2 810D	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

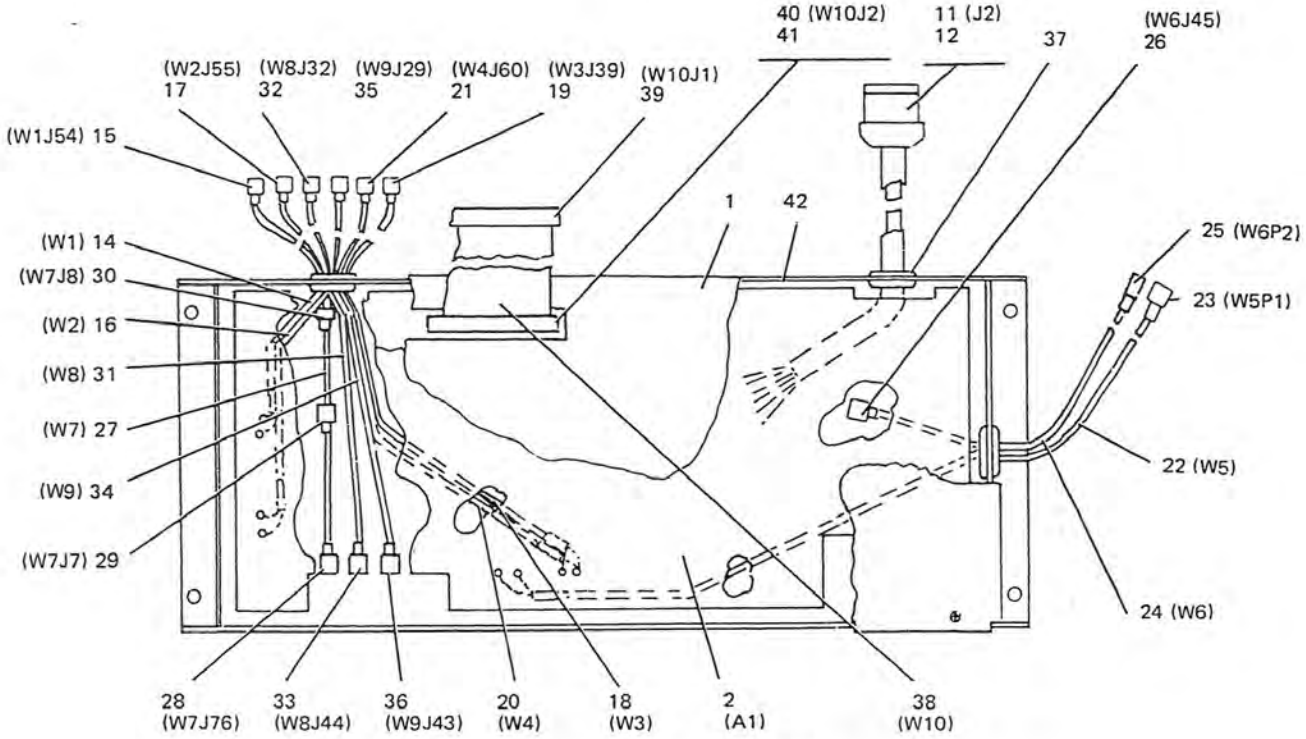
FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
1A-	MS35338-135	2	WASHER,LOCK SST, 0.115 ID X 0.209 OD (96906) 310-0279-000 (AP)	8	
	CRES 0.112-40X0.31L	2	SCREW,MACHINE CRES, 0.112-40 X 0.31 (77250) 330-2291-000 (AP)	8	
	MS51957-13	2	SCREW,MACH STL, 4-40 X 1/4 (96906) 343-0133-000 (AP)	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.312ODX.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.236OD	3	WASHER,LOCK CRES, 0.145 ID X 0.236 OD (79807) 310-0071-000 (AP)	4	
	CRES-.147IDX.312ODX.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.312ODX.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

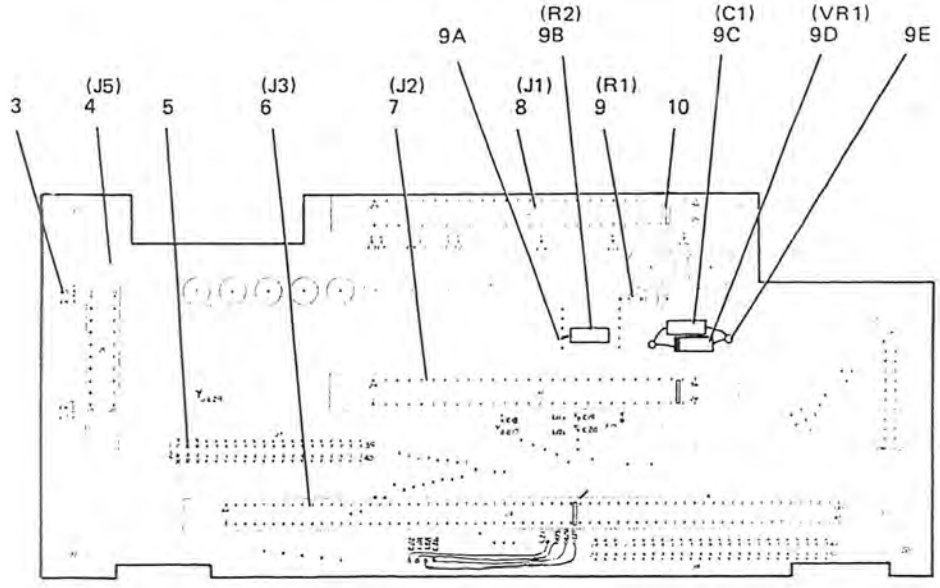
FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
1A-37	637-1525-004	2	CABLE ASSY, RF COAXIAL	1	
38	52-312-9040	3	CONNECTOR,RCPT ELEC (98291) 357-7207-220 J26	1	
39	RG178BU	3	CABLE,RF (81349) 425-1538-000	AR	
40	801-B3800B75	3	CONNECTOR,RCPT ELEC (94375) 357-7129-010 J22	1	
41	M39012-25-0006	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) 313-0045-000 (AP)	1	
	CRES-.145IDX.236 OD	2	WASHER,LOCK CRES, 0.145 ID X 0.236 OD (79807) 310-0071-000 (AP)	1	
	MS51957-28	2	SCREW,MACHINE CRES, 0.138-32 X 0.375IN (96906) 343-0169-000 (AP)	1	
53	642-2408-001	2	HARNESS,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) 343-0169-000 (AP)	4	
54	CK63AW103M	3	CAPACITOR,FXD CER DIEL, 10000PF, 20%, 500V (81349) 913-1188-000 C37	1	
55	CK63AW103M	3	CAPACITOR,FXD CER DIEL, 10000PF, 20%, 500V (81349) 913-1188-000 C35	1	
56	CK63AW103M	3	CAPACITOR,FXD CER DIEL, 10000PF, 20%, 500V (81349) 913-1188-000 C36	1	
57	CK63AW103M	3	CAPACITOR,FXD CER DIEL, 10000PF, 20%, 500V (81349) 913-1188-000 C34	1	
57A	CK63AW103M	3	CAPACITOR,FXD CER DIEL, 10000PF, 20%, 500V (81349) 913-1188-000 C38	1	
57B	CK63AW103M	3	CAPACITOR,FXD CER DIEL, 10000PF, 20%, 500V (81349) 913-1188-000 C39	1	
58	403	3	TERMINAL,LUG (79963) 304-1089-000	1	
59	353-18-10-001	3	TERMINAL STRIP (71785) 367-0018-000 TB1	1	
60	403	2	TERMINAL,LUG (79963) 304-1089-000	3	
	NAS671C6	2	NUT,PLAIN,HEXAGON CRES, 0.138-32 (80205) 313-0045-000 (AP)	3	
	CRES-.145IDX.236 OD	2	WASHER,LOCK CRES, 0.145 ID X 0.236 OD (79807) 310-0071-000 (AP)	3	
	MS51957-28	2	SCREW,MACHINE CRES, 0.138-32 X 0.375IN (96906) 343-0169-000 (AP)	3	
61	642-2407-001	2	HARNESS,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 DIEL, 10000PF, 20%, 500V (81349) 913-1188-000 C46	1	
63	CK63AW103M	3	CAPACITOR,FXD CER DIEL, 10000PF, 20%, 500V (81349) 913-1188-000 C47	1	

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
1A-64	CK63AW103M	3	CAPACITOR,FXD CER DIEL, 10000PF, 20%, 500V (81349) 913-1188-000 C45	1	
65	CK63AW103M	3	CAPACITOR,FXD CER DIEL, 10000PF, 20%, 500V (81349) 913-1188-000 C44	1	
66	CK63AW103M	3	CAPACITOR,FXD CER DIEL, 10000PF, 20%, 500V (81349) 913-1188-000 C43	1	
66A	CK63AW103M		CAPACITOR,FXD CER DIEL, 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	



DETAIL A



DETAIL A

TPA-7726-019

DDS Chassis Assembly A27A1
Figure 4A

GROUP ASSEMBLY PARTS LIST

FIG-ITEM	PART NO	INDENT	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) 343-0124-000 (AP)	6	
	MS35338-134	2	WASHER,LOCK SST, 0.088 ID X 0.172 OD (96906) 310-0275-000 (AP)	6	
2	646-6259-002	2	SIDEBOARD, 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) 310-0279-000 (AP)	8	
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) 745-0749-000 A27A1A1R1	1	
9A	NA1104-027	3	CONTACT,ELECTRICAL (57863) 372-2601-027	1	
9B	RCR32G331KS	3	RESISTOR,FIXED CMPSN, 330 OHMS, 10%, 1W (81349) 745-3331-000 A27A1A1R2	1	
9C	M39003/01-2257	3	CAPACITOR,FIXED ELCTLT, 33UF, 10%, 10V (81349) 184-9086-170 A27A1A1C1	1	
9D	1N756A	3	SEMICOND DEVICE (81483) 353-2720-000 A27A1A1VR1	1	
9E	012-3401-000599W HT	3	TERMINAL,FEEDTHRU (98291) 306-1851-000	2	
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.

UNIT/SUBASSEMBLY	PART NUMBER	LATEST EFFECTIVITY
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)

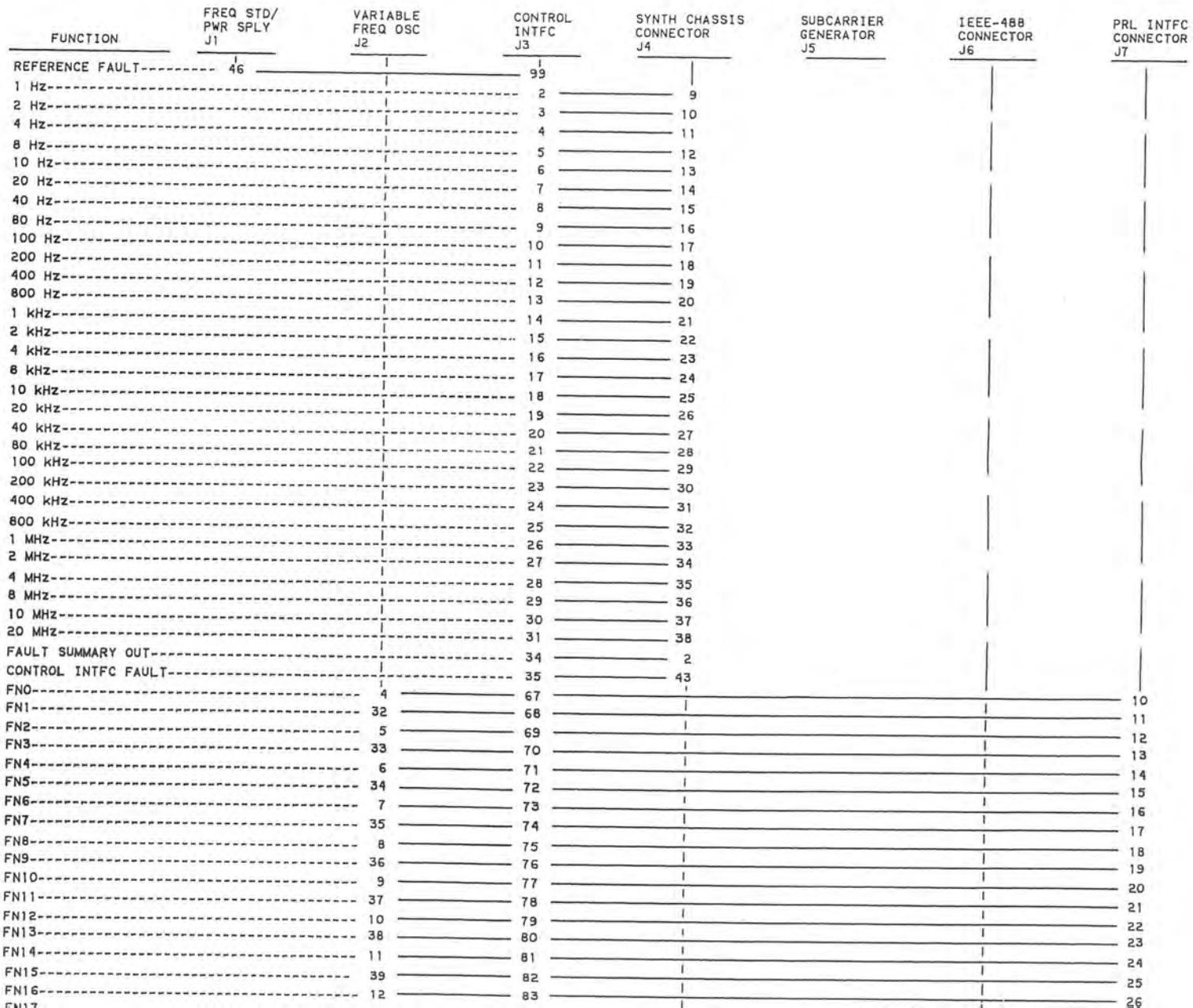
Place figure 3A behind figure 3.

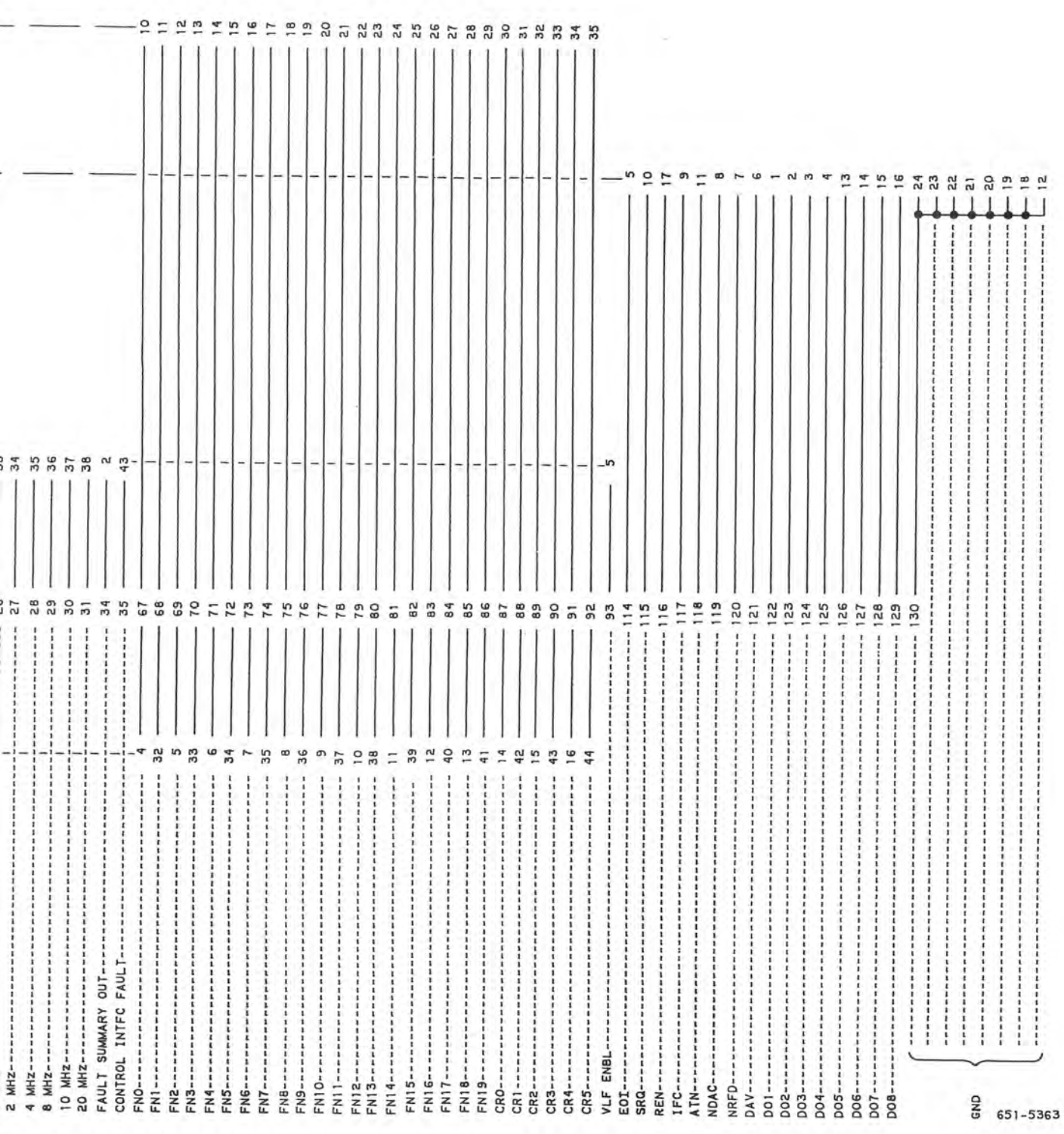
Figure 6. Remote Control Word Format and Pin Assignment

Replace figure 6 with figure 6 attached.

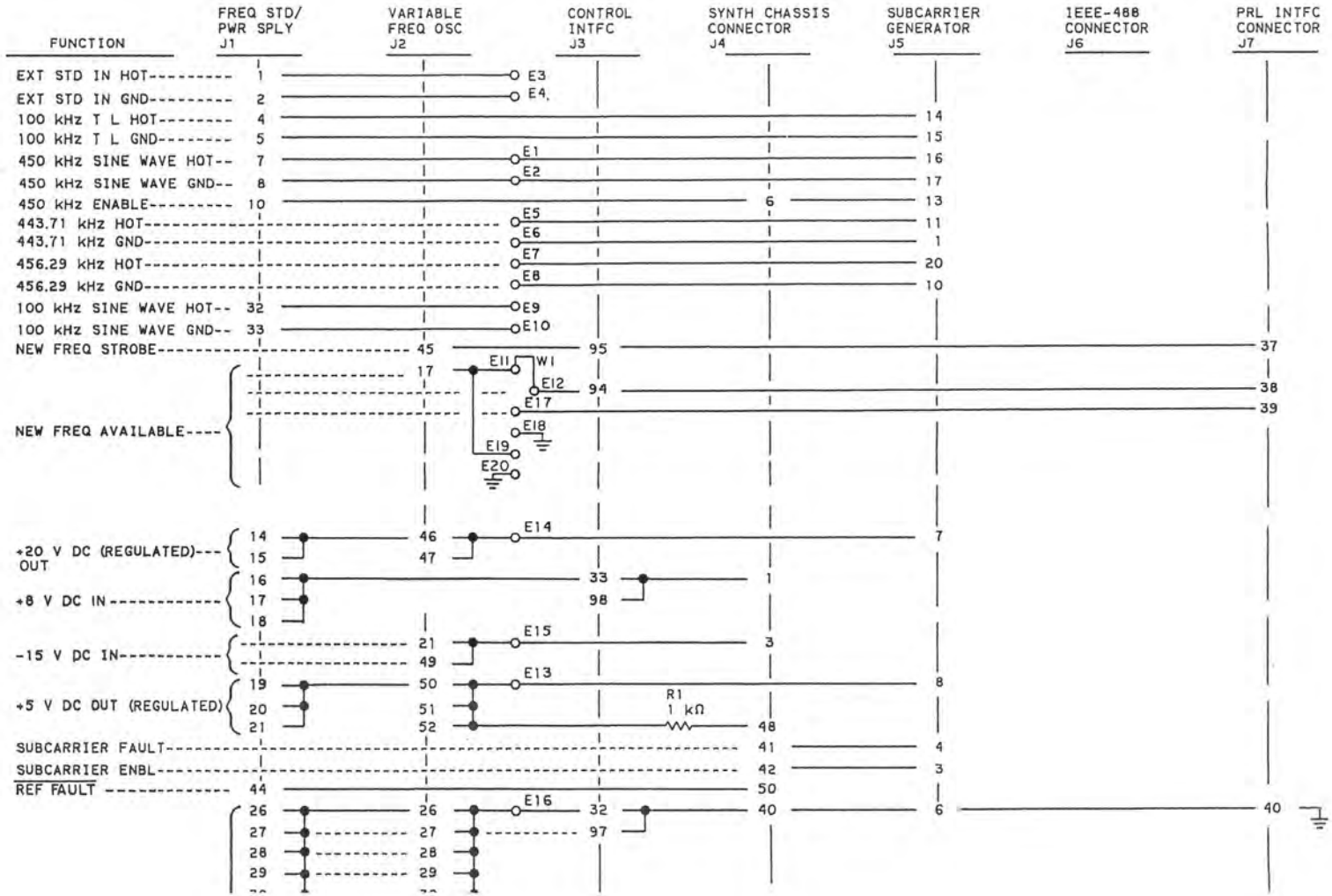
Illustration Not Available

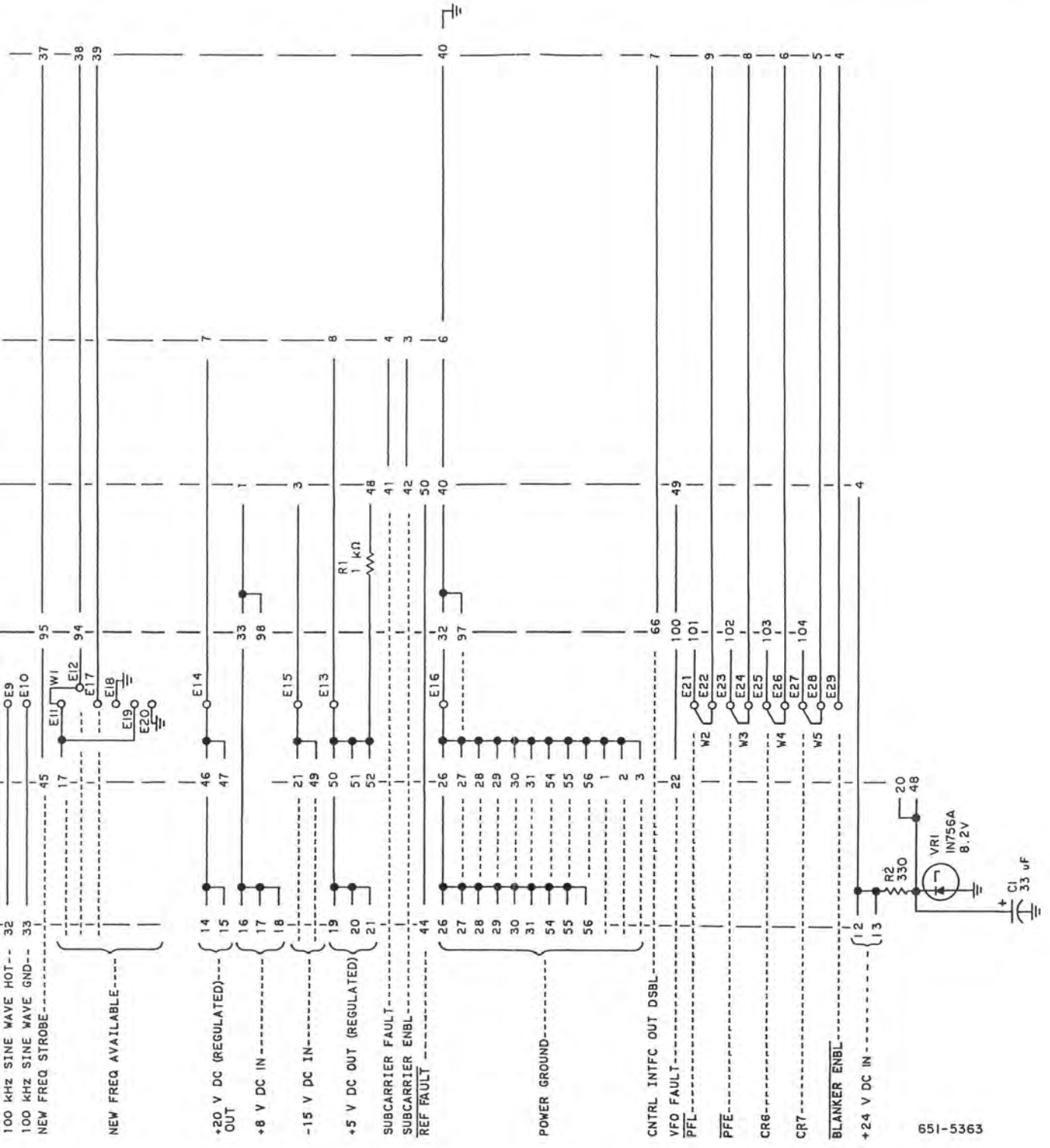
HF-8014A Exciter (622-3473-211), Chassis, Main Sideboard and Ribbon Cable, Schematic Diagram
Figure 1A


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
8 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 10
FN1 32 68 11
FN2 5 69 12
FN3 33 70 13
FN4 6 71 14
FN5 34 72 15
FN6 7 73 16
FN7 35 74 17
FN8 8 75 18
FN9 36 76 19
FN10 9 77 20
FN11 37 78 21
FN12 10 79 22
FN13 38 80 23
FN14 11 81 24
FN15 39 82 25
FN16 12 83 26
FN17



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


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
EXT STD IN HOT
EXT STD IN GND
100 kHz T L HOT
100 kHz T L GND
450 kHz SINE WAVE HOT
450 kHz SINE WAVE GND
450 kHz ENABLE
443.71 kHz HOT
443.71 kHz GND
456.29 kHz HOT
456.29 kHz GND
100 kHz SINE WAVE HOT
100 kHz SINE WAVE GND
NEW FREQ STROBE
NEW FREQ AVAILABLE
+20 V DC (REGULATED) OUT
+8 V DC IN
-15 V DC IN
+5 V DC OUT (REGULATED)
SUBCARRIER FAULT
SUBCARRIER ENBL
REF FAULT
E1
E2
E3
E4
E5
E6
E7
E8
E9
E10
E11
E12
E13
E14
E15
E16
E17
E18
E19
E20
W1
R1
1 kΩ



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

PIN FUNCTION (SIGNAL NAME) TABLE

CONTROL / STATUS BIT — WORD FORMAT — HF-80 8-BIT: WORD NO.	HF-80 8-BIT: CHARACTER NO.	HF-80 8-BIT: BIT NO.	ASCII 7-BIT: WORD NO.	ASCII 7-BIT: CHARACTER NO.	ASCII 7-BIT: BIT WT.	HF-80XX 2-CHANNEL RADIOS AND HF-80XX 2-CHANNEL CONTROLS: PARALLEL OUTPUT PIN NO.	PARALLEL INPUT PIN NO.	FUNCTION	851S-1/2, HF-8095: PARALLEL OUTPUT PIN NO.	PARALLEL INPUT PIN NO.	FUNCTION	4-CHANNEL EXCITER, AND 4-CHANNEL EXCITER CONTROL: PARALLEL OUTPUT PIN NO.	PARALLEL INPUT PIN NO.	FUNCTION	4-CHANNEL RECEIVER, AND 4-CHANNEL RECEIVER CONTROL: PARALLEL OUTPUT PIN NO.	PARALLEL INPUT PIN NO.	FUNCTION
1	2	8	1	6	8		103	$\overline{COMMAND}$ ($\overline{C}$)		103	$\overline{COMMAND}$ ($\overline{C}$)			NOT USED			NOT USED
1	2	7	1	6	4		38	$\overline{STATUS\ REQUEST}$ ($\overline{S}$)		38	$\overline{STATUS\ REQUEST}$ ($\overline{S}$)			NOT USED			NOT USED
1	2	6	1	6	2	129	129	FREQ 10 MHz (2)	129	129	FREQ 10 MHz (2)	129	129	FREQ 10 MHz (2)	129	129	FREQ 10 MHz (2)
1	2	5	1	6	1	64	64	FREQ 10 MHz (1)	64	64	FREQ 10 MHz (1)	64	64	FREQ 10 MHz (1)	64	64	FREQ 10 MHz (1)
1	2	4	1	7	8	128	128	FREQ 1 MHz (8)	128	128	FREQ 1 MHz (8)	128	128	FREQ 1 MHz (8)	128	128	FREQ 1 MHz (8)
1	2	3	1	7	4	63	63	↓ (4)	63	63	↓ (4)	63	63	↓ (4)	63	63	↓ (4)
1	2	2	1	7	2	127	127	↓ (2)	127	127	↓ (2)	127	127	↓ (2)	127	127	↓ (2)
1	2	1	1	7	1	62	62	↓ (1)	62	62	↓ (1)	62	62	↓ (1)	62	62	↓ (1)
1	3	8	1	8	8	126	126	FREQ 100 kHz (8)	126	126	FREQ 100 kHz (8)	126	126	FREQ 100 kHz (8)	126	126	FREQ 100 kHz (8)
1	3	7	1	8	4	61	61	↓ (4)	61	61	↓ (4)	61	61	↓ (4)	61	61	↓ (4)
1	3	6	1	8	2	125	125	↓ (2)	125	125	↓ (2)	125	125	↓ (2)	125	125	↓ (2)
1	3	5	1	8	1	60	60	↓ (1)	60	60	↓ (1)	60	60	↓ (1)	60	60	↓ (1)
1	3	4	1	9	8	124	124	FREQ 10 kHz (8)	124	124	FREQ 10 kHz (8)	124	124	FREQ 10 kHz (8)	124	124	FREQ 10 kHz (8)
1	3	3	1	9	4	59	59	↓ (4)	59	59	↓ (4)	59	59	↓ (4)	59	59	↓ (4)
1	3	2	1	9	2	123	123	↓ (2)	123	123	↓ (2)	123	123	↓ (2)	123	123	↓ (2)
1	3	1	1	9	1	58	58	↓ (1)	58	58	↓ (1)	58	58	↓ (1)	58	58	↓ (1)
1	4	8	1	10	8	122	122	FREQ 1 kHz (8)	122	122	FREQ 1 kHz (8)	122	122	FREQ 1 kHz (8)	122	122	FREQ 1 kHz (8)
1	4	7	1	10	4	57	57	↓ (4)	57	57	↓ (4)	57	57	↓ (4)	57	57	↓ (4)
1	4	6	1	10	2	121	121	↓ (2)	121	121	↓ (2)	121	121	↓ (2)	121	121	↓ (2)
1	4	5	1	10	1	56	56	↓ (1)	56	56	↓ (1)	56	56	↓ (1)	56	56	↓ (1)
1	4	4	1	11	8	120	120	FREQ 100 Hz (8)	120	120	FREQ 100 Hz (8)	120	120	FREQ 100 Hz (8)	120	120	FREQ 100 Hz (8)
1	4	3	1	11	4	55	55	↓ (4)	55	55	↓ (4)	55	55	↓ (4)	55	55	↓ (4)
1	4	2	1	11	2	119	119	↓ (2)	119	119	↓ (2)	119	119	↓ (2)	119	119	↓ (2)
1	4	1	1	11	1	54	54	↓ (1)	54	54	↓ (1)	54	54	↓ (1)	54	54	↓ (1)
1	5	8	1	12	8	118	118	FREQ 10 Hz (8)	118	118	FREQ 10 Hz (8)	118	118	FREQ 10 Hz (8)	118	118	FREQ 10 Hz (8)
1	5	7	1	12	4	53	53	↓ (4)	53	53	↓ (4)	53	53	↓ (4)	53	53	↓ (4)
1	5	6	1	12	2	117	117	↓ (2)	117	117	↓ (2)	117	117	↓ (2)	117	117	↓ (2)
1	5	5	1	12	1	52	52	↓ (1)	52	52	↓ (1)	52	52	↓ (1)	52	52	↓ (1)
1	5	4	1	13	8	116	116	FREQ 1 Hz (8)	116	116	FREQ 1 Hz (8)	116	116	FREQ 1 Hz (8)	116	116	FREQ 1 Hz (8)
1	5	3	1	13	4	51	51	↓ (4)	51	51	↓ (4)	51	51	↓ (4)	51	51	↓ (4)
1	5	2	1	13	2	115	115	↓ (2)	115	115	↓ (2)	115	115	↓ (2)	115	115	↓ (2)
1	5	1	1	13	1	50	50	↓ (1)	50	50	↓ (1)	50	50	↓ (1)	50	50	↓ (1)
2	2	8	2	6	8		103	$\overline{COMMAND}$ ($\overline{C}$)		103	$\overline{COMMAND}$ ($\overline{C}$)			NOT USED			NOT USED
2	2	7	2	6	4		38	$\overline{STATUS\ REQUEST}$ ($\overline{S}$)		38	$\overline{STATUS\ REQUEST}$ ($\overline{S}$)			↓			NOT USED
2	2	6	2	6	2			NOT USED			NOT USED			↓			NOT USED
2	2	5	2	6	1	76	76	RF GAIN (16)	76	76	RF GAIN (16)	76	76	↓	76	76	RF GAIN (16)
2	2	4	2	7	8	11	11	↓ (8)	11	11	↓ (8)	11	11	↓	11	11	↓ (8)
2	2	3	2	7	4	75	75	↓ (4)	75	75	↓ (4)	75	75	↓	75	75	↓ (4)
2	2	2	2	7	2	10	10	↓ (2)	10	10	↓ (2)	10	10	↓	10	10	↓ (2)
2	2	1	2	7	1	22	87	↓ (1)	22	87	↓ (1)	22	87	↓	22	87	↓ (1)
2	3	8	2	8	8	3		NOT USED	3		NOT USED	3	12	NOT USED	3	12	FL7 (E) ENBL
2	3	7	2	8	4	41	41	VBFO ENBL	41	41	VBFO ENBL	41	41	↓	41	41	FL6 (D) ENBL
2	3	6	2	8	2	106	106	AFC ENBL	106	106	RESERVED	106	106	↓	106	106	FL5 (C) ENBL
2	3	5	2	8	1	37	37	AGC CROWBAR ENBL	37	37	AGC CROWBAR ENBL	37	37	↓	37	37	FL4 (B) ENBL
2	3	4	2	9	8	84	84	USB AGC OFF	84	84	USB AGC OFF	84	84	↓	84	84	B2 AGC (2)
2	3	3	2	9	4	85	85	USB AGC FAST	85	85	USB AGC FAST	85	85	↓	85	85	B2 AGC (1)
2	3	2	2	9	2	19	19	LSB AGC OFF	19	19	LSB AGC OFF	19	19	↓	19	19	A2 AGC (2)
2	3	1	2	9	1	20	20	LSB AGC FAST	20	20	LSB AGC FAST	20	20	↓	20	20	A2 AGC (1)
2	4	8	2	10	8	100	100	FL8 ENBL	100	100	FL8 ENBL	100	100	NOT USED	100	100	FL3 (A) ENBL
2	4	7	2	10	4	99	99	FL7 ENBL	99	99	FL7 ENBL	99	99	↓	99	99	FL1 (16 kHz) ENBL
2	4	6	2	10	2	35	35	FL6 ENBL	35	35	FL6 ENBL	35	35	↓	35	35	VBFO ENBL
2	4	5	2	10	1	34	34	FL5 ENBL	34	34	FL5 ENBL	34	34	↓	34	34	AFC ENBL
2	4	4	2	11	8	98	98	FL4 ENBL	98	98	FL4 ENBL	98	98	↓	98	98	B1 AGC (2)
2	4	3	2	11	4	33	33	FL3 ENBL	33	33	FL3 ENBL	33	33	↓	33	33	B1 AGC (1)
2	4	2	2	11	2	97	97	FL2 ENBL	97	97	FL2 ENBL	97	97	↓	97	97	A1 AGC (2)
2	4	1	2	11	1	32	32	FL1 ENBL	32	32	FL1 ENBL	32	32	PEAK CLIPPER ENBL	32	32	A1 AGC (1)
2	5	8	2	12	8	73	73	FM ENBL	73	73	FM ENBL	73	73	NOT USED	73	73	DATA NET ENBL
2	5	7	2	12	4	8	8	AM ENBL	8	8	AM ENBL	8	8	AM ENBL	8	8	AM ENBL
2	5	6	2	12	2	72	72	SSB ENBL	72	72	SSB ENBL	72	72	CW ENBL	72	72	CW ENBL
2	5	5	2	12	1	9	9	CW ENBL	9	9	CW ENBL	9	9	ISB ENBL	9	9	ISB ENBL
2	5	4	2	13	8	74	74	ISB ENBL	74	74	ISB ENBL	74	74	B2 ENBL	74	74	B2 ENBL
2	5	3	2	13	4	6	92	RESERVED	6	92	RESERVED	6	92	B1 ENBL	6	92	B1 ENBL
2	5	2	2	13	2	26	91	RESERVED	26	91	RESERVED	26	91	A1 ENBL	26	91	A1 ENBL
2	5	1	2	13	1	17	21	RESERVED	17	21	RESERVED	17	21	A2 ENBL	17	21	A2 ENBL

CONTROL / STATUS B

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

PIN FUNCTION (SIGNAL NAME) TABLE

CONTROL / STATUS BIT WORD FORMAT								HF-80XX 2-CHANNEL RADIOS AND HF-80XX 2-CHANNEL CONTROLS			EQUIPMENT TYPE: 8515-1/2, HF-8095			4-CHANNEL EXCITER, AND 4-CHANNEL EXCITER, CONTROL			4-CHANNEL RECEIVER, AND 4-CHANNEL RECEIVER CONTROL		
HF-80 8-BIT				ASCII 7-BIT															
WORD NO.	CHARACTER NO.	BIT NO.		WORD NO.	CHARACTER NO.	BIT WT.		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
3	2	8		3	6	8			103	COMMAND (C)		103	COMMAND (C)			NOT USED			NOT USED
3	2	7		3	6	4			38	STATUS REQUEST (S)		38	STATUS REQUEST (S)						NOT USED
3	2	6		3	6	2				NOT USED			NOT USED						NOT USED
3	2	5		3	6	1		107	107	VBFO SIGN	107	107	VBFO SIGN	107	107		107	107	VBFO SIGN
3	2	4		3	7	8		48	48	VBFO FREQ 1 kHz (8)	48	48	VBFO FREQ 1 kHz (8)	48	48		48	48	VBFO FREQ 1 kHz (8)
3	2	3		3	7	4		113	113	(4)	113	113	(4)	113	113		113	113	(4)
3	2	2		3	7	2		47	47	(2)	47	47	(2)	47	47		47	47	(2)
3	2	1		3	7	1		112	112	(1)	112	112	(1)	112	112		112	112	(1)
3	3	8		3	8	8		46	46	VBFO FREQ 100 Hz (8)	46	46	VBFO FREQ 100 Hz (8)			NOT USED	46	46	VBFO FREQ 100 Hz (8)
3	3	7		3	8	4		111	111	(4)	111	111	(4)				111	111	(4)
3	3	6		3	8	2		110	110	(2)	110	110	(2)				110	110	(2)
3	3	5		3	8	1		44	44	(1)	44	44	(1)				44	44	(1)
3	3	4		3	9	8		109	109	VBFO FREQ 10 Hz (8)	109	109	VBFO FREQ 10 Hz (8)				109	109	VBFO FREQ 10 Hz (8)
3	3	3		3	9	4		43	43	(4)	43	43	(4)				43	43	(4)
3	3	2		3	9	2		108	108	(2)	108	108	(2)				108	108	(2)
3	3	1		3	9	1		42	42	(1)	42	42	(1)				42	42	(1)
3	4	8		3	10	8		7	7	NOT USED	7	7	NOT USED	7	7	GPI-1 (1)	7	7	GPI-1 (1)
3	4	7		3	10	4		8	8		8	8		8	8	GPI-2	8	8	GPI-2
3	4	6		3	10	2		10	10		10	10		10	10	GPI-3	10	10	GPI-3
3	4	5		3	10	1		9	9		9	9		9	9	GPO-1	9	9	GPO-1
3	4	4		3	11	8		3	3		3	3		3	3	GPO-2	3	3	GPO-2
3	4	3		3	11	4		5	5		5	5		5	5	SER TS OVRD	5	5	SER TS OVRD
3	4	2		3	11	2		6	6		6	6		6	6	PAR BCD ENBL	6	6	SER BCD ENBL
3	4	1		3	11	1		4	4		4	4		4	4	PAR RF GAIN ENBL	4	4	SER RF GAIN ENBL
3	5	8		3	12	8				NOT USED			NOT USED			NOT USED			NOT USED
3	5	7		3	12	4													
3	5	6		3	12	2		18	81		18	81		18	81		18	81	
3	5	5		3	12	1		82	82	PILOT CARRIER ENBL	82	82	VBFO TUNE	82	82	PILOT CARRIER ENBL	82	82	B2 AGC BUS
3	5	4		3	13	8		78	78	PA L PWR ENBL	78	78	VBFO PARALLEL ENBL	78	78	PA LO PWR ENBL	78	78	B1 AGC BUS
3	5	3		3	13	4		14	14	PA HV ENBL	14	14	FINE TUNE	14	14	PA HV ENBL	14	14	A1 AGC BUS
3	5	2		3	13	2		79	79	PA LV ENBL	79	79	RESERVED	79	79	PA LV ENBL	79	79	A2 AGC BUS
4	2	8		4	6	8			103	COMMAND (C)		103	COMMAND (C)			$\overline{C}$			$\overline{C}$
4	2	7		4	6	4			38	STATUS REQUEST (S)		38	STATUS REQUEST (S)			$\overline{S}$			$\overline{S}$
4	2	6		4	6	2				NOT USED	27	105	UP/DOWN	(12)	13	EXCTR FLT	(12)	13	RCV FLT
4	2	5		4	6	1		92 (68)	68	REMOTE KEY (MON)	92	68	TUNE RATE (16)	92 (68)	68	SYSTEM KEY	92 (68)	68	RF OVLD FLT
4	2	4		4	7	8				NOT USED	28	4	(8)		88	B2 AF MON		88	B2 AF MON
4	2	3		4	7	4					29	39	(4)		23	B1 AF MON		23	B1 AF MON
4	2	2		4	7	2					95	5	(2)		22	A1 AF MON		22	A1 AF MON
4	2	1		4	7	1					30	70	(1)		24	A2 AF MON		24	A2 AF MON
4	3	8		4	8	8		(2)	2	AFC LOCK	(2)	2	NOT USED	(2)	2	NOT USED	(2)	2	NOT USED
4	3	7		4	8	4		(40)	40	EXCTR RF MON	(40)	40	NOT USED	(40)	40	NOT USED	(40)	40	NOT USED
4	3	6		4	8	2			105	CHAN A XMT AF MON		105	NOT USED		105	NOT USED		105	NOT USED
4	3	5		4	8	1			36	CHAN A RCV AF MON		36	CHAN A AF MON		36	NOT USED		36	NOT USED
4	3	4		4	9	8			83	CHAN A AGC MON		83	CHAN A AGC MON		83	NOT USED		83	NOT USED
4	3	3		4	9	4			39	CHAN B XMT MON		39	NOT USED		39	CONT INTFC FLT (DDS)		39	CONT INTFC FLT (DDS)
4	3	2		4	9	2			101	CHAN B RCV MON		101	CHAN B AF MON		101	VFO FAULT (DDS)		101	VFO FAULT (DDS)
4	3	1		4	9	1			18	CHAN B AGC MON		18	CHAN B AGC MON		18	RF FAULT (DDS)		18	RF FAULT (DDS)
4	4	8		4	10	8		(69)	69	PA RDY	(69)	69	NOT USED	(69)	69	NOT USED	(69)	69	NOT USED
4	4	7		4	10	4		(77)	4	PA FLT	(77)	4		(77)	4	SUBCARRIER LOCK FLT	(77)	4	SUBCARRIER LOCK FLT
4	4	6		4	10	2		(51)	5	PA RF MON	(5)	5		(5)	5	EXCTR RF MON	(5)	5	VBFO SYNTH FLT
4	4	5		4	10	1		(13)	70	CPLR FLT	(13)	70		(13)	70	EXCTR PS FLT	(13)	70	RCVR PS FLT
4	4	4		4	11	8		(67)	67	RF OVLD FLT	(67)	67	RF OVLD FLT	(67)	67	NOT USED	(67)	67	B2 AGC MON
									49	SYNTH FLT		49	SYNTH		49	EXT STANDARD		49	B1 AGC MON
4	4	3		4	11	4			86	PS FLT		86	PS FLT		86	A1 IF MON		86	A1 AGC MON
4	4	2		4	11	2		(12)	3	RCVR/EXCTR FLT	(12)	3	RCVR FLT	(105)	3	NOT USED	(105)	3	A2 AGC MON
4	4	1		4	11	1		(70)		NOT USED	(70)		NOT USED	(70)	77	PA READY	(70)	77	NOT USED
4	5	8		4	12	8		(104)		NOT USED	(104)		NOT USED	(104)	102	PA FLT	(104)	102	EXT STANDARD
4	5	7		4	12	4		(27)	7	VBFO SYNTH FLT	(27)	7	VBFO SYNTH FLT	(27)	7	PA RF MON	(27)	7	AFC LOCK MON
4	5	6		4	12	2		(92)		NOT USED	(92)		NOT USED	(92)	89	CPLR FLT	(92)	89	RF PERF MON
4	5	5		4	12	1		(28)	71	PRESEL FLT	(28)	71	PRESEL FLT	(28)	71	PRESEL FLT	(28)	71	PRESEL FLT
4	5	4		4	13	8		(29)	95	DATA ERROR	(29)	95	DATA ERROR	(29)	95	DATA ERROR	(29)	95	DATA ERROR
4	5	3		4	13	4		(95)	16	LOCAL CONTROL	(95)	16	LOCAL CONTROL	(95)	16	LOCAL CONTROL	(95)	16	LOCAL CONTROL
4	5	2		4	13	2		(30	80	MONITOR	(30)	80	MONITOR	(30)	80	MONITOR	(30)	80	MONITOR
4	5	1		4	13	1													

TPA-8092-015

Remote Control Word Formats and Pin Assignments
Figure 6