ARMY TM 11-5895-833-12
NAVY 0697-LP-550-1010
AIR FORCE TO 31R5-2TSC54-91

OPERATOR'S AND ORGANIZATIONAL MAINTENANCE MANUAL

FREQUENCY CONVERSION SUBSYSTEM
FOR
SATELLITE COMMUNICATION TERMINAL
AN/TSC-54

This copy is a reprint which includes current pages from Change 1.

DEPARTMENT OF THE ARMY, THE NAVY, AND THE AIR FORCE

JUNE 1977

The following are general safety precautions that are not related to any specific procedures; therefore, do not appear elsewhere in this publication. These are recommended precautions that personnel must understand and apply during many phases of operation and maintenance

WARNING

Operator and maintenance personnel should be familiar with the safety precautions before attempting installation or operation of the equipment covered in this manual. Failure to follow requirements and observe safety precautions could result in injury or DEATH.

WARNING

Do not operate the equipment without a suitable ground connection. Electrical defects in the unit, loadlines, or load equipment can cause DEATH by electrocution when contact is made with an ungrounded system.

WARNING

For the successful destruction of equipment involving the use of demolition materials, all personnel should be familiar with the provisions of FM 5-25.

WARNING

HIGH VOLTAGE is used in this equipment. DEATH ON CONTACT may result if safety precautions are not observed.

WARNING

NEVER adjust the cesium beam frequency standard C-field , open the phase lock, or change the time of the clock without a directive from the US Naval Observatory.

TECHNICAL MANUAL
No. 11-5895-833-12
NAVY
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TECHNICAL ORDER
No. 31R5-2TSC54-91

DEPARTMENTS OF THE ARMY, THE
AND THE AIR FORCE
WASHINGTON, DC 3 June 1977

OPERATOR'S AND ORGANIZATIONAL MAINTENANCE MANUAL
FREQUENCY CONVERSION SUBSYSTEM
FOR
SATELLITE COMMUNICATION TERMINAL AN/TSC-54
(NSN 5895-937-4993)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in back of this manual direct to: Commander, US Army Communications and Electronics Materiel Readiness Command, ATTN: DRSEL-ME-MQ, Fort Monmouth, NJ 07703.

For Air Force submit AFTO Form 22 (Technical Order System Publication Improvement Report and Reply) in accordance with paragraph 6-5, Section VI, T.O.00-5-1.Forward direct to prime ALC/MST.

For Navy, mail comments to the Commander, Naval Electronics Systems Command, Training and Publications Management Office, ELEX04FS, P.O. Box 80337, San Diego, California, 92138.

In any case, a reply will be furnished direct to you.

LIST OF ILLUSTRATIONS

LIST OF TABLES

CHAPTER 1
INTRODUCTION

Section I.GENERAL

1-1.Scope

a. This manual describes the frequency conversion subsystem for Satellite Communication Terminal ANPrSC-54 and includes instructions for installation, operation, and organizational maintenance. Through- out this manual other publications are referenced, where appropriate, for detailed information covering the major operating components of Satellite Communication Terminal ANT'SC-54.

b. Appendix A contains a list of publications applicable to this equipment. Appendix C contains the assignment of maintenance functions and repair operations to be performed at the appropriate maintenance category. A list of the repair parts and special tools authorized to be kept on hand by organizational units performing maintenance on the equipment is contained in TM 11-5895-833-20P.

1-2.Indexes of Publications

*a. DA Pam 310-4.*Refer to the latest issue of DA Pam 310-4 to determine whether there are new editions, changes, or additional publications pertaining to the equipment.

*b. DA Pam 310-7.*Refer to DA Pam 310-7 to determine whether there are modification work orders (MWO's) pertaining to the equipment.

1-3.Forms and Records

a. Reports of Maintenance and Unsatisfactory Equipment. Maintenance forms, records, and reports which are to be used by maintenance personnel at all maintenance levels are listed in and prescribed by TM 38-750 (Army).Air Force personnel will use AFM 66-1 for maintenance reporting and TO-00-35D54 for unsatisfactory equipment reporting. Navy personnel will report maintenance performed utilizing the Maintenance Data Collection Subsystem (MDCS) IAW OPNAVINST 4790.2, Vol 3 and unsatisfactory material/conditions (UR submissions) IAW OPNAVINST 4790.2, Vol 2, chapter 17.

b. Report of Packaging and Handling Deficiencies. Fill out and forward DD Form 6 (Packaging Improvement Report) as prescribed in AR 700-581 NAVSUPINST 4030.29/AFR 71-13/MCO P4030.29A, and DSAR 4145.8.

c. Discrepancy in Shipment Report (DISREP) (SF 361). Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 55-38/NAVSUPINST 4610.33A/AFR 75-18/MCO P4610.19B and DSAR 4500.15.

1-4.Reporting Equipment Improvement Recommendations (EIR)

a. Army. EIR's will be prepared using DA Form 2407, Maintenance Request. Instructions for preparing EIR's are provided in TM 38-750, The Army Maintenance Management System. EIR's should be mailed direct to Commander, US Army Electronics Command, ATTN: DRSEL-MA-Q, Fort Monmouth, New Jersey 07703.A reply will be furnished direct to you.

b. Air Force. Air Force personnel are encouraged to submit EIR's in accordance with AFM 900-4.

c. Navy. Navy personnel are encouraged to submit EIR's through their local Beneficial Suggestion Program.

1-5.Administrative Storage

Administrative storage of equipment issued to and used by Army activities shall be in accordance with TM 740-90-1.

1-6. Destruction of Army Electronics Materiel

Destruction of Army electronics materiel to prevent enemy use shall be in accordance with TM 750-244-2.

Section II. DESCRIPTION AND DATA

1-7.Purpose and Use

a. The frequency conversion subsystem provides increased frequency agility and increased number of transmit and receive carriers for Satellite Communications Terminal ANfISC-54.The frequency conversion subsystem essentially consists of two equipment cabinets grouped to provide two general types of frequency conversion. Transmit 70-Mega-

Hertz (MHz) signals from the AN/TSC-54 modulation equipment are up-converted by the frequency conversion subsystem to radio-frequency (rf) carrier signals in the 7.9- to 8.4-GigaHertz (GHz) band. Receive carrier frequencies in the 7.25- to 7.75-GHz band from the AN/TSC-54 low-noise preamplifier equipment are down-converted to 70-MHz intermediate frequency (if.) signals for application to the AN/TSC-54 demodulation equipment.

b. Optional use frequency conversion equipment is available that will permit wide-band if access at 700 MHz. The use of this equipment, not a part of the AN/TSC-54 frequency conversion subsystem, will permit up-conversion of 700-MHz signals to the specified rf carrier signals, and down-conversion of specified carriers to 700-MHz if. signals.

1-8.Description of Equipment

(fig.1-1)

a. The frequency conversion subsystem permits the configuration of individual ANITSC-54 terminals with up to three transmit and receive carriers. The reconfiguration of any terminal is accomplished by the addition or removal of frequency converters and associated frequency synthesizers.

b. Each configuration provides the same carrier characteristics except for the numbers of transmit and receive carriers provided and consists of a combination of the equipments described in (1) through (13) below. The cabinets are prewired for any desired configuration. Cabinet blowers are provided on the frequency conversion subsystem cabinets and each cabinet contains provisions for an air filter at the bottom on the outer side. Each cabinet includes a utility outlet on the top cover panel front. All equipment is of unitized construction and individually drawer-mounted so that maintenance can be performed from the front or the assembly can be withdrawn for replacement and maintenance in Electronic Equipment Maintenance Shelter S-483PTSC-54 or other prescribed maintenance areas. Extender tracks are used throughout to facilitate ac- cess to components. Meters, indicators, and auditory devices are used throughout the equipment to monitor operation.

(1) *Converter, Frequency, Electronic CV-3084/MSC-46(V).*Each Electronic Frequency Converter CV-3084/MSC-46(V) (up-converter) converts a 70-MHz if signal from the associated AN/TSC-54 modulation equipment or a 700-MHz IF Test signal to the 7.9- to 8.4-GHz transmit carrier signals.The 7.9- to 8.4-GHz output of each up-converter is applied to a microwave signal combiner ((3) below); The 700 MHz IF TEST inputs are terminated at jacks on the top of the frequency converter cabinets.

(2) *Converter, Frequency, Electronic CV-3084A/-MSC-46(V) (optional).*This converter is directly interchangeable with Electronic Frequency Converter CV-3084/MSC-46(V) and converts either a 70-MHz if. or 700 MHz-if.signal from the associated modulation equipment into 7.9- to 8.4-GHz transmit carrier signals. Differences between Electronic Frequency Converter CV-30841MSC-46(V) and Electronic Frequency Converter CV-3084A/MSC-46(V) are defined within the applicable paragraphs of this technical manual. Unless otherwise specified, the data contained herein will apply to both converter configurations.

(3) *Microwave signal combiner.* The microwave signal combiner, connected to the rf output of each up-converter ((1) above), combines the rf outputs of the individual up-converters.The composite rf output of the signal combiner is applied to the ANPTSC-54 output waveguide interface.

(4) *Test translator.*The test translator, mounted in the down-converter cabinet, permits back-to-back testing of the frequency conversion subsystem without the use of a satellite. The test translator accepts the 7.9- to 8.4-GHz transmit signal output of an up-con- verter ((1) above) and translates this signal to provide a 7.25- to 7.75-GHz signal. The test translator also pro- vides 5- and 70-MHz signals. The 5-MHz signal is used as a backup for the 5-MHz signal from the cesium beam frequency standard and the 70-MHz signal serves as an up-converter test input.

(5) *Converter,Frequency,Electronic CV-3085/MSC-46(V).*Each Electronic Frequency Converter CV-3085/MSC-46(V) (down-converter) converts the 7.25- to 7.75-GHz rf carrier signal into a 700- MHz if. test output and the 70-MHz IF signal. The 70- MHz IF signal outputs of each down-converter are applied to the associated AN/ITSC-54 demodulation equipment.

(6) *Converter,Frequency,Electronic CV-3085A/MSC-46(V) (Optional).*This converter is directly interchangeable with Electronic Frequency Converter CV-3085/MSC-46(V) and converts 7.25- to 7.75-GHz rf carrier signals into 70 MHz if. or 700 MHz if. for application to the associated demodulation equipment. Differences between Electronic Frequency Converter CV-30851MSC-46(V) and Electronic Frequency Converter CV-3085AIMSC-46(V) are defined within the applicable paragraphs of this technical manual. Unless otherwise specified, the data contained herein will apply to both converter configurations.

(7) *Microwave signal divider.* The microwave signal divider, connected between the receive output termination of the system waveguide interface and the rf inputs of the individual down-converters, applies the composite 7.25- to 7.75-GHz receive signal to Electronic Frequency Converters CV-3085/MSC-46(V).

(8) *Synthesizer, Electrical Frequency*

0-16568/ C-46().Each Electrical Frequency Synthesizer 0-1658/MSC-46(V) (frequency synthesizer) generates the standard and variable frequency signals which provide precise frequency control over the local oscillators in the associated up- or down-converter.

(9) Equalizer, Group Delay CN-1425/MSC-46(V). The Group Delay Equalizer CN-1426/MSC-46(V) (not shown) provides the 50- to 90-MHz linear and parabolic delays required to compensate for nonlinearities in equipment external to the frequency conversion subsystem. The group delay equalizer is mounted external to the frequency conversion subsystem cabinets for optional use when required.

(10) Amplifier, Radio Frequency AM-6631- M.C-46(V.Radio Frequency Amplifier AM-66311 MSC-46(V) (distribution amplifier), mounted in the up-converter cabinet, receives the 1- and 5-MHz standard frequency outputs of the terminal frequency standard and provides four 1-MHz and twenty-six 5-MHz isolated outputs for distribution to the various frequency conversion subsystem components.

(11) Time base patch panel. The time base patch panel, mounted in the up-converter cabinet, provides the 'patching facilities required for connecting the 1- and 5-MHz outputs of the terminal frequency standard to the input of the distribution amplifier ((10) above), and the 5-MHz outputs of the distribution amplifier to the various frequency conversion subsystem components.

(12) If. interface facilities. The if. interface facilities located at the top of the frequency conversion subsystem cabinet, provides the facilities required for connecting the 70-MHz inputs and outputs of the ANPrSC-54 modulation and demodulation equipment to the converters.

(13) Access panels. A single access panel is mounted at the top of each up- and down-converter cabinet.

1-9. Differences Between Subsystem Configurations

The main difference between the three configurations of the frequency conversion subsystem is in the quantity of up-converters, down-converters, frequency synthesizers and associated blank panels. The converter and frequency synthesizer quantities for each configuration are as follows:

Configu-ration	Figure reference	Unit quantities		
		Up-converter	Down converter	Frequency synthesizers
1	1-1(sh1)	2	3	5
2	1-1(sh 2)	3	3	6
3	1-1(sh3)	2	2	4

1-10. Tabulated Data

a. Frequency Conversion Subsystem.

Operating conditions:

Input power requirements	115 vac, 50 to 400 Hz
Temperature	+45°F to + 1000F (+ 7.2°C to +37.8°C)
Elevation	Up to 10, 000 feet above sea level.
Relative humidity	Tropical conditions including fungus-laden air.

Nonoperating conditions:

Temperature	-65°F to +155°F (-54°C to +68.40C)
Relative humidity	5% at + 120°F (+ 48.9°C) or as high as 100% from -25°F to +85F(-31.70C to +29, 40C) with condensation at all temperatures lower than +85°F (+29, 4°C).
Elevation	Up to 40, 000 feet above sea level.
Salt atmosphere	As encountered during coastal service,
Transportation	Military transportation methods on
rail	hydrocushion), highways and unimproved roads, and C-130E aircraft.

b. Down-Conversion Equipment.

Input:

Frequency band	7.25 to 7.75 GHz.
Bandwidth	500 MHz at 0.5 decibels.
regference	
Level	43 to - 103 decibels reference to 1 mw (dbm).
Vswr	Less than 1.2:1 over band.
Impedance	60 ohms.

Output:

Frequency output (Electronic Frequency Converter CV-1085/ MSC:46(V))	70 MHz
Frequency output Electronic Frequency Converter CV-3085A/ MSC-46(V))	70 and 700 MHz
Bandwidth (Electronic Frequency Converter CV-3086/MSC-46(V))	40 MHz
Bandwidth (Electronic Frequency Converter CV-3085/MSC-46(V))	125MHz
Level (Electronic Frequency Converter CV-3085MSC-46(V))	0 dBm ± 0.5 db for 70 MHZ input signal of. put signal of - 43 dbm.
Level (Electronic Frequency Converter CV-30856AMSC-46(V))	0 dBm + 2.5 db for 700 MHz input signal of - 43 dbm.
Vswr	Less than 1.15:1 from 50 to 90 MHz.
Compression	Less than 0.5 dB at + 10 dbm output.
Impedance	50 ohms.
If.	700 MHz (special application with Electronic Frequency Converter CV-3085/MSC-46V)
Noise figure	16.5 db maximum

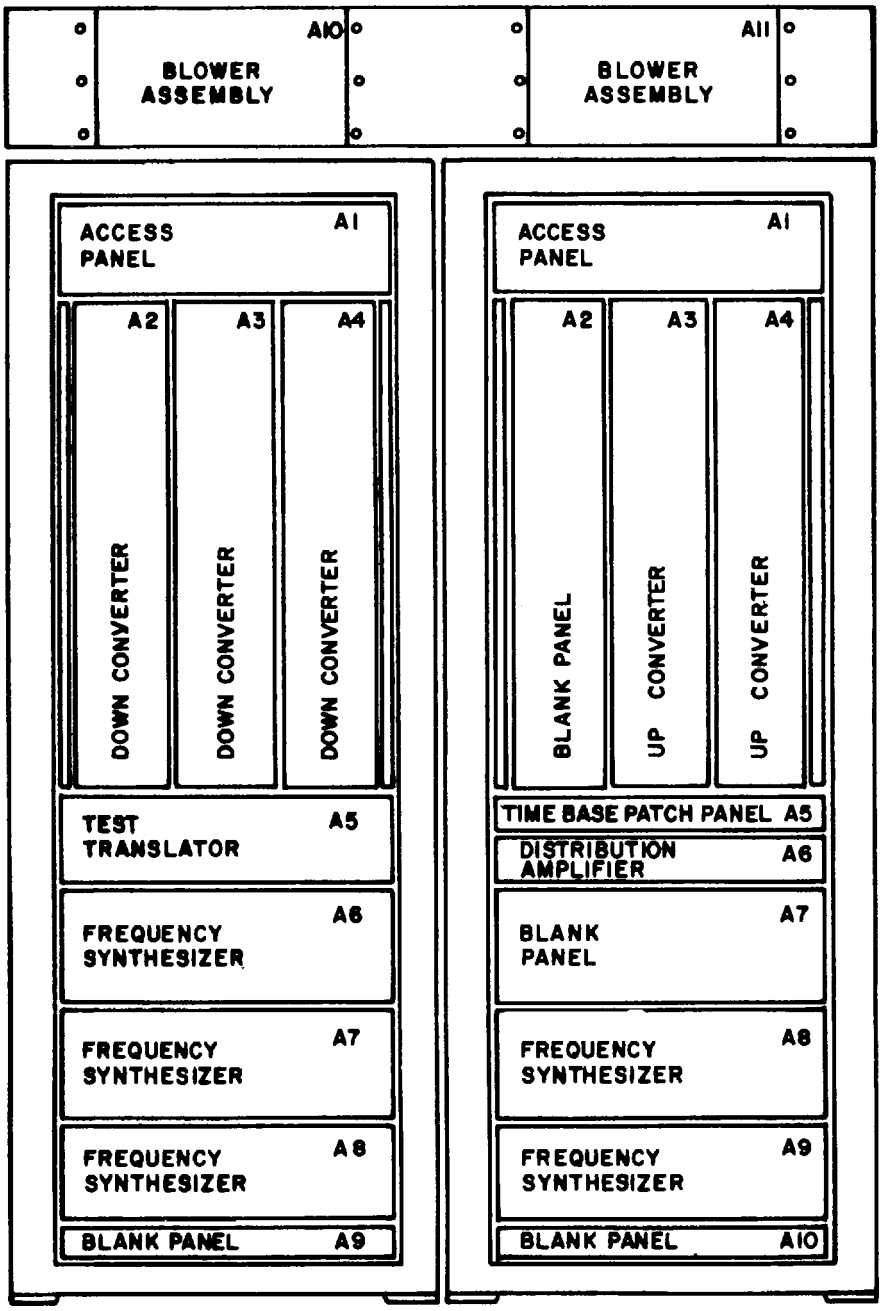

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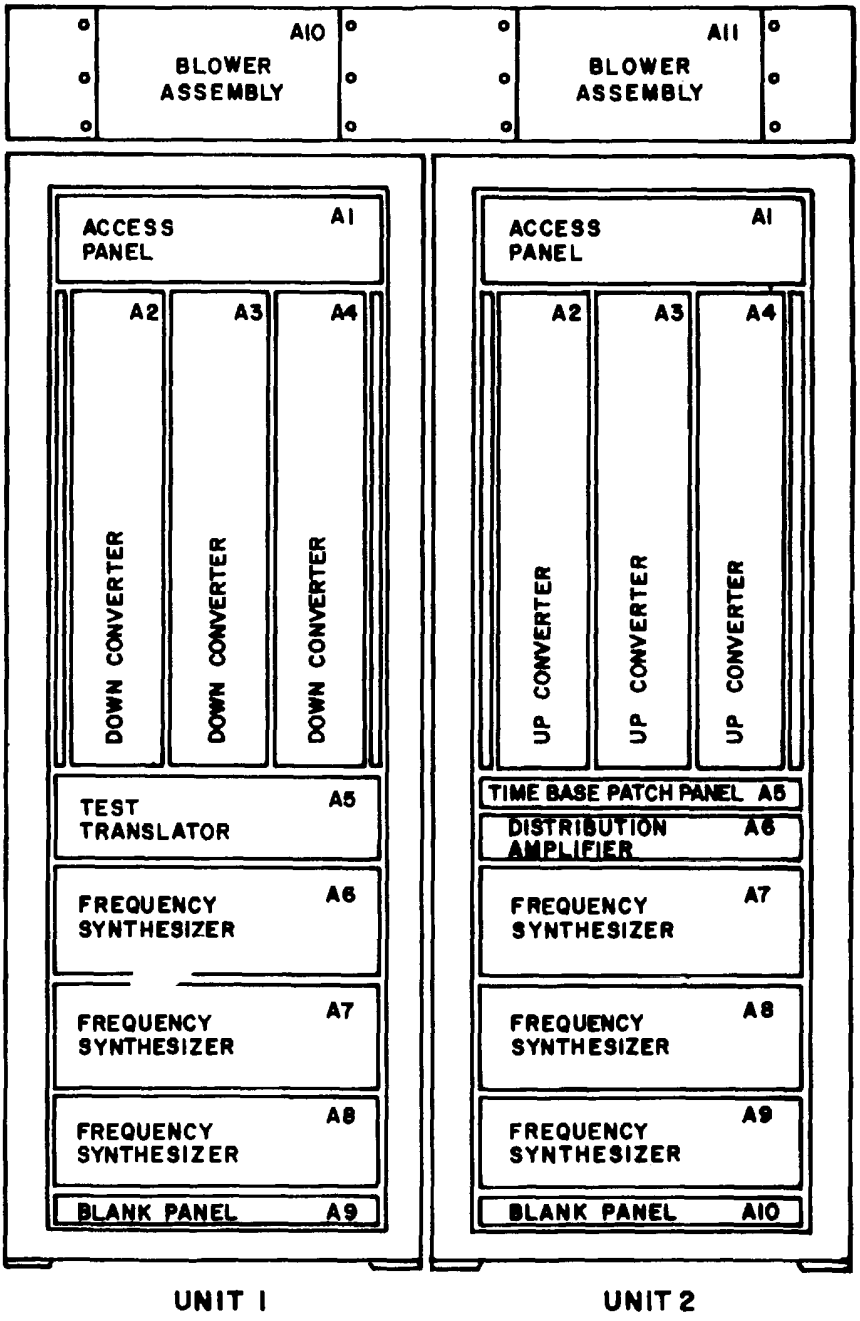
Figure 1-1①. Frequency Conversion Subsystem (sheet I of 3).

Gain (70 MR: if.)	43 t 0.5 db.	Amplitude response (Electronic Frequency Converter CV-3085A/ MSC-46(V))	0.5 db maximum over the range 70 f 5 MHz and t 1.0 db maximum over the range 70 ± 20 MHz for the 70-MHz output.t 0.6 dB maximum over the range 70030 MHz and 1.0 db maximum over the range 700 62.5 MHz for
Image protection	Attenuated by more than 75 db relative to image carrier level.		
Spurious output	Less than - 70 dbm.		
Amplitude response (Electronic Frequency Converter CV-3085/ MSC-46(V))	±0.5 db maximum over the output frequency range t 5 MHz and 1.0 db over the output frequency range ± 20 MHz.		

	the 700-MHz output.	Long term	±1 x 10^{-11} for life of terminal frequency standard.
Gain stability:			
Long term	1.0 db maximum in any 24-hour period with simultaneous change in temperature up to ± 50°F (± 10°C).	Short term	±1 x 10^{-11} with 0.1 second averaging time.
Short term	Less than 0.1 db per minute.	Frequency stability (slaved to associated frequency synthesizer standard)	
Frequency stability (slaved to terminal Frequency standard):		Long term	1 part in 10⑩ per 24 hours.
		Short term	1 part in 10 ⑩ with 0.1 second. averaging time.



CONFIGURATION 2

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Figure 1-1②. Frequency conversion Subsystem (sheet 2 of 3).

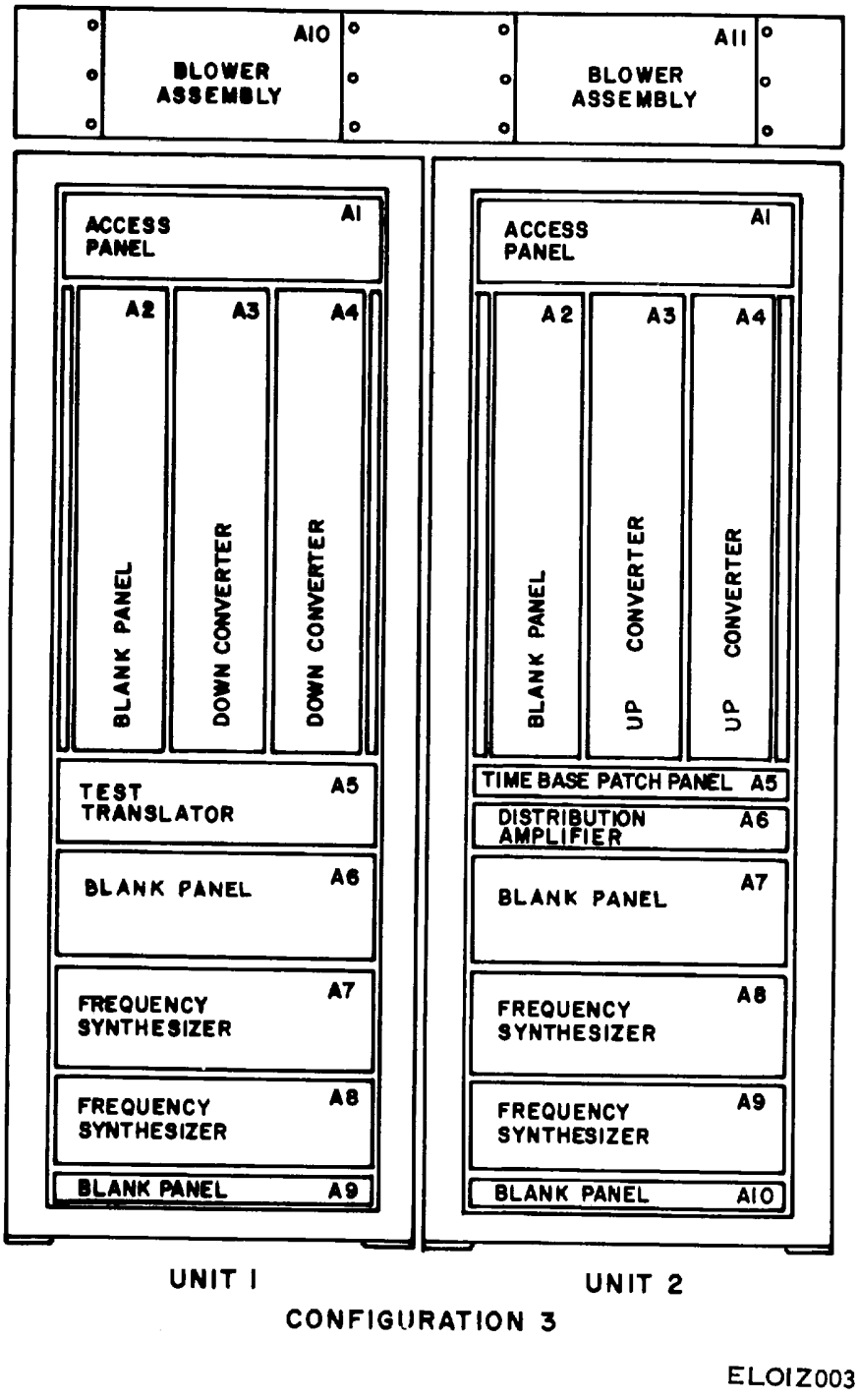

Figure 1-1(3). Frequency Conversion Subsystem (sheet 3 of 3).

c. Up-Conversion Equipment.

Input:	
Frequency input (Electronic Frequency Converter CV-3084/MSC-46(V))	70 MHz.
Frequency input (Electronic Frequency Converter CV-3084A/MSC-46(V))	70 or 700 MHz.
Bandwidth	40 MHz.
Level	-10 to + 10 dbm.
Vswr	1.25:1 or less.
If.	700 MHz (special application with Electronic Frequency Converter CV-304MSC-46(V)).
Impedance	50 ohms.

Amplitude response (Electronic Frequency CV-3084/ MSC-46(V))	±0.5 db maximum over the output frequency range ± 5 MHz and ±1.0 db over the output frequency range 20 MHz
Amplitude response (Electronic Frequency Converter CV-3084A/ MSC-46(V))	±0.5 db maximum over the range 70 ±5MHz and ± 1.0 db maximum over the range 70 ±20 MHz for the 70-MHz input. ±0.5 db maximum over the range 700 ± 30 MHz and ±1.0 db maximum over the range 700 ± 62.5 MHz for the 700-MHz range.
Gain stability	
Long term	1.0 db maximum in any 24-hour period with simultaneous changes within the operating temperature range.
Short term	Less than 0.1 db per minute.
Extraneous outputs.	
Spurious emissions	80 db below output carrier.
Harmonically related emissions	Average power of any Converter harmonically related spurious emissions is 66 db below output carrier.
Frequency stability (slaved to associated frequency synthesizer standard):	
Long term	1 part in 10^9 per 24 hours.
Short term	1 part in 10^{10} with 0.1 second averaging time.

1-11. Items Comprising an Operable Frequency Conversion Subsystem

Table 1-1 lists the major items of equipment compris ing the frequency conversion subsystem and defines their physical characteristics.

Table 1-1. Major Component, Frequency Conversion Subsystem

Item	Quantity per configuration -1 -2 -3	Dimensions (in.) Height	Depth	Width	weight (lb)
Frequency Conversion Subsystem for Satellite Communication					
Terminal AN/TSC - 54:					
Down-conuerter cabinet (unit 1)	1 1 1	66	24	24	285
Signal divider (4 way)	1 1 1	3	6.2	$12^1/_2$	5'½
Blower assembly	1 1 1	$7^1/_4$	12	12	11
Access panel	1 1 1	$5^1/_4$	$^1/_4$	19	2
Converter, Frequency, Electronic CV-3085/MSC-46(V) (NSN 5895 - 00 - 100 - 4311)	3 3 2	29^3/4	$23^1/_2$	5.96	68
Converter, Frequency, Electronic CV-3085A/MSC-46(V) (NSN 5895 - 00 - 614 - 9575)	Optional use	29^3/4	$23^1/_2$	5.96	75
Panel, blank	0 0 1	$29^3/_4$	$^{3/4}$	6	3
Test translator	1 1 1	5'/4	16½	19	35
Synthesizer, Electrical Frequency 0-1658/ MSC-46(V)(NSN 5895 - 00 - 127 - 4825)	3 3 2	7	19.88	19	50
Panel, blank	0 0 1	7	$^1/_4$	19	2
Panel, blank	1 1 1	2	¼	19	1.8
Cabinet air filter (left side of cabinet)	1 1 1	7	$^I/_2$	19	$1^1/_2$
Equalizer, Group Delay CN-1425/ MSC-46(V) (NSN 5820 - 155 - 8572)	1 1 1	7	12	19	18
Up-converter cabinet (unit 2)	1 1 1	66	24	24	285
Signal combiner	1 1 1	4	5.3	11.8	5.2
Blower assembly	1 1 1	71/4	12	12	11
Access panel	1 1 1	61/4	¼	19	2
Converter, Frequency, Electronic CV-3084/ MSC-46(V) (NSN 5895 - 00 - 100 - 4314)	2 3 2	293/4	231/2	5.96	60
Converter, Frequency, Electronic CV-3084A/ MSC-46(V) (NSN 5895 - 00 - 614 9593)	Optional use	29%	23*½	*5.96*	80
Panel, blank	1 0 1	29d	'/4	6	3
Time base patch panel	1 1 1	1 3/	1/	19	I/
Amplifier, Radio Frequency AM-6631/ MSC-46(V) (NSN 5820 - 00 - 155 - 8574)	1 1 1	3/	16	19	21
Synthesizer, Electrical Frequency 0-1658/ MSC-46(V) (NSN 5895 - 00 - 127 - 4825)	2 3 2	7	19.88	19	50
Panel, blank	1 0 1	7	¼	19	2
Cabinet air filter (left side of cabinet)	1 1 1	7	½	19	12
Equalizer, Group Delay CN-1425/MSC-46(V) (NSN 5820-00-155-8572)	1 1 1	7	12	19	18

1-12.Official Nomenclature and Common Names. The official nomenclature and common name for major items of equipment comprising the frequency conversion subsystem are listed in the chart below

Offical nomenclature	*Common name*
Microwave signal divider	Signal divider
Converter, Frequency, Electronic CV-3085/MSC-46(V)	Down-converter
Converter, Frequency, Electronic CV-3085AIMSC-46(V) (Optional use)	Down-converter (wideband if.)
Synthesizer, Electrical Frequency 0- 1658/MSC-46(V)	Frequency synthesizer
Equalizer, Group Delay CN-1425/MSC-46(V)	Group delay equalizer
Amplifier, Radio Frequency AM-6631/MSC-46(V)	Distribution amplifier
Converter, Frequency, Electronic CV-3084/MSC-46(V)	Up-converter
Converter, Frequency, Electronic CV-3084A/MSC-46(V) (Optional use)	Up-converter (wide-band if.)
Microwave signal combiner	Signal combiner

CHAPTER 2
SERVICE UPON RECEIPT AND INSTALLATION

2-1.Packaging Data

a. When prepared for shipment, the components and accessories of the frequency conversion subsystem are usually packed in one to seven plywood sheathed crates. The total number of crates depends on the quantity of up-converters, down-converters, and frequency synthesizers supplied for a specific subsystem configuration. Dimensions, weight, volume, and contents of the packed containers are given in tables 2-1, 2-2, and 2-3.Typical packaging arrangements are shown in figures 2-1, 2-2, and 2-3.

2-2.Checking Unpacked Equipment

a. Inspect the equipment for damage that may have been incurred during shipment. Report damages in accordance with paragraph 1-3.

b.Check to see that the equipment is complete as listed on the packing slip. If a packing slip is not available, check the equipment against the table of components. Report all discrepancies in accordance with TM 38-750.The equipment should be placed in service even though a minor assembly or part that does not affect proper functioning is missing.

c. If the equipment has been used or reconditioned, check to see whether the equipment has been changed by a modification work order (MWO). Equipment which has been modified has the MWO number on the front panel, near the nomenclature plate. Check also to see whether the MWO number (if any) and the appropriate notations concerning the modification have been entered in the equipment manual.

NOTE

Current MWO's applicable to the equipment are listed in DA Pam 310-7.

Table 2-1. Dash One(-I)Configuration

Container number	Dimensions (in)	Volume (cu ft)	Weight (lb)	Contents
1	34 x 34 x 80	53.5	500	Up-converter cabinet
2	34 x 34 x 80	53.5	410	Down-converter cabinet
3	39 x 33 x 29	21.0	230	Up-converters (maximum 2)
4	96 x 40 x 17	37.8	350	Down-converters (maximum 3)
5	94 x 31 x 21	35.35	385	Frequency synthesizers (maximum 3)
6	60 x 31 x 21	12.4	260	Frequency synthesizers (maximum 2)
7	22 x 27 x 11	12.0	78	Group delay equalizers (2 each)
signal				combiner and signal divider (1 each)

NOTE

Item 7 is normally packed in a carton, padded and placed within item 1.

Table 2-2. Dash Two(-2)Configuration

Container number	Dimensions (in)	Volume (cu ft)	Weight (lb)	Contents
1	34 x 34 x 80	53.5	500	Upconverter cabinet
2	34 x 34 x 80	53.5	410	Down-converter cabinet
3	39 x 33 x 47	37.8	375	Up-converters (maximum 3)
4	96 x 40 x 17	37.8	350	Down-converters (maximum 3)
5	94 x 31 x 21	35.35	385	Frequency synthesizers (maximum 3)
6	94 x 31 x 21	35.35	385	Frequency synthesizers (maximum 3)
7	22 x 27 x 11	12.0	78	Group delay equalizers (2 each)signal signal combiner and signal divider (1 each)

NOTE

Item 7 is normally packed in a carton, padded and placed within item 1.

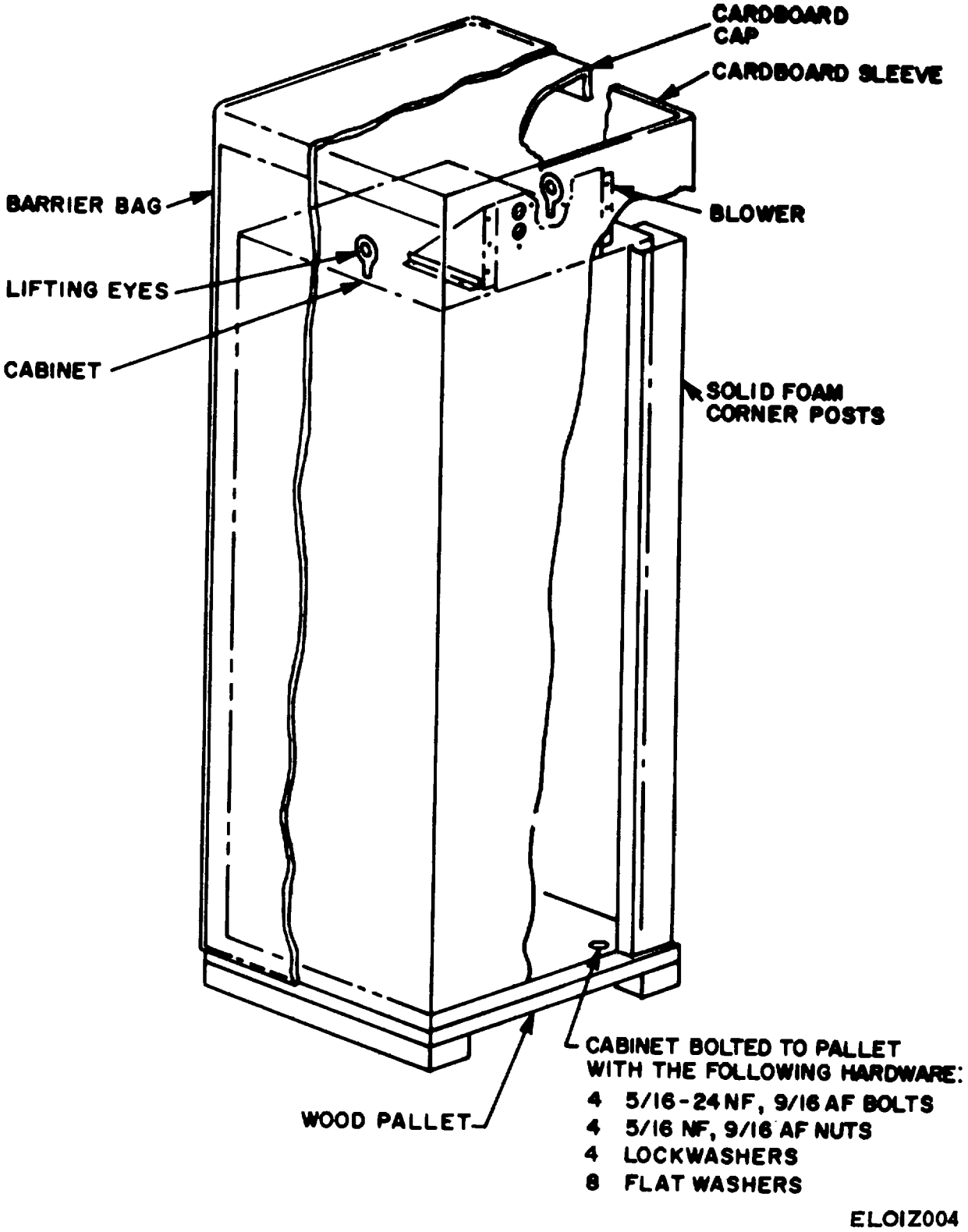

Figure 2-1. Typical cabinet packing diagram.

Table 2-3. Dash Three (-3) Configuration

Container number	Dimensions (in)	Volume (cu ft)	Weight (lb)	Contents
1	34 x 34 x 80	53.5	500	Upconverter cabinet
2	34 x 34 x 80	53.5	410	Down-converter cabinet
3	39 x 33 x 29	21.0	230	Up-converters (maximum 2)
4	39 x 33 x 29	21.0	230	Down-converters (maximum 2)
5	94 x 31 x 21	35.35	385	Frequency synthesizers (maximum 2)
6	33 x 31 x 21	12.4	135	Frequency synthesizers (maximum 2)
7	22 x 27 x 11	12.0	78	Group delay equalizers (2 each) signal combiner and signal divider (1 each)

NOTE

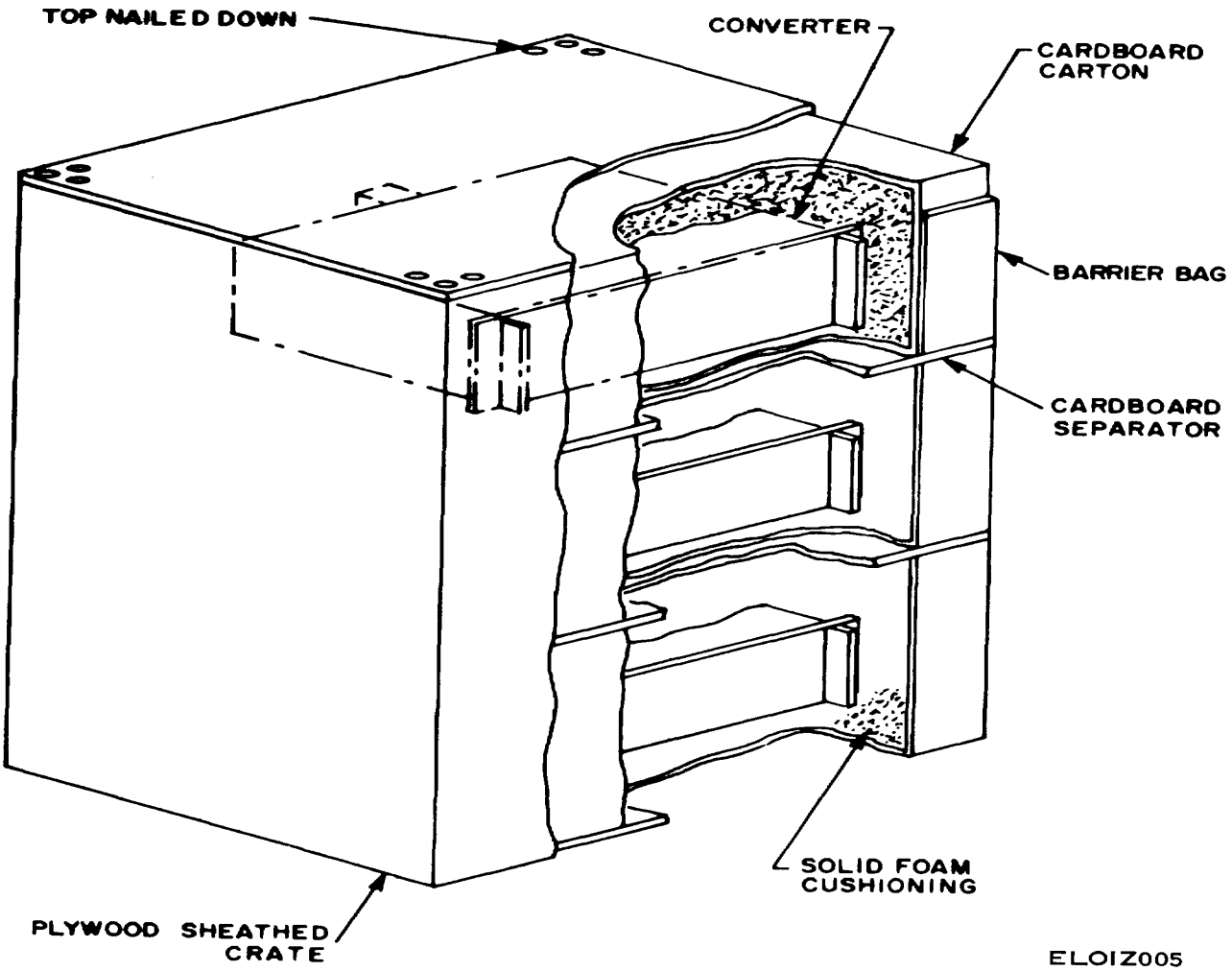

Figure 2-2. Typical triple-up and triple-down converter packing diagram

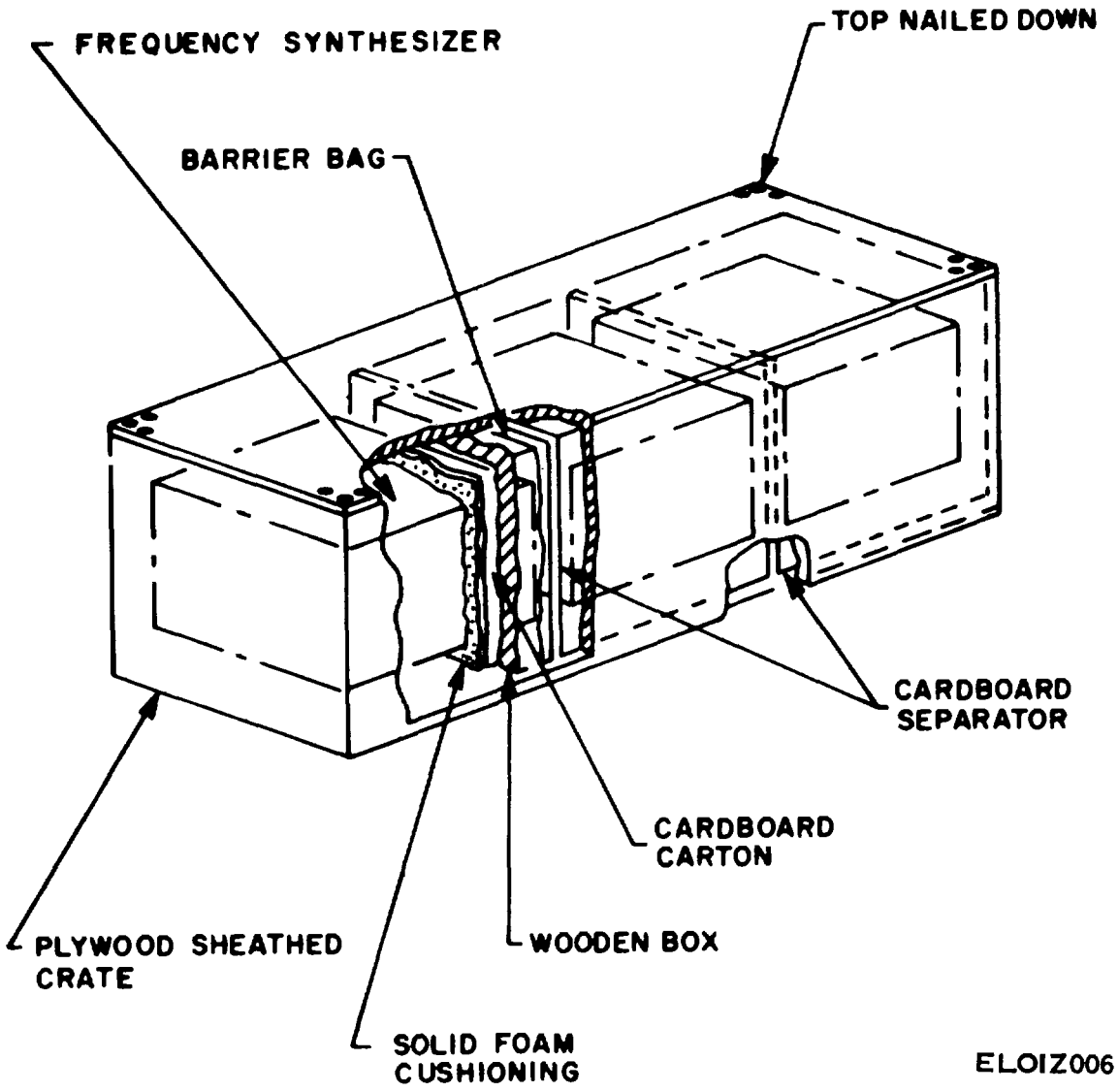

Figure 2-3. Typical triple frequency synthesizer packing diagram.

2-3. Fuse Data

Fuse data for the frequency conversion subsystem is tabulated in table 2-4.

Table 2-4. SubsystemFuaeData

Component	Fuse location		Fuse rating		Location
	Assembly	Fuse	Amps	Volts	
Synthesizer, Electrical Frequency 0-1658/MSC-46(V)	Transformer assembly	Spare for F1 and F2	$1^1/_2$	250	Tranformer assembly on rear panel
	SPARE 109231	F1 and F2	$1^1/_2$	250	Rear panel

2-4.Subsystem Interconnections Data

Tables 2-5, 2-6, and 2-7 contain the connection and interconnection data for the ANITSC-54 frequency conversion subsystem.

Table 2-5. Frequency Conversion Subsystem Unit 1 Intraconnections

Unit	Input/ output connector	Input/ output plug	Function(to/from)
1A2 Down-converter	J1		Rf input (from signal divider 1A11J1 via 1A12J4)
	J4	P4	700-MHz if.test output (via 1A12J9). 700-MHz if. output for down-converter (wide-band if.).
	J6	P5	70-MHz if. output (via 1A12J12)
	J8	P1	10 MHz standard input (from frequency synthesizer 1A6J8)
	J9	P2	Rf local oscillator input (from frequency synthesizer 1A6J9)
	J10	P3	Frequency control output (BCD) (to frequency synthesizer 1A6P1)
	J11	P1	Ac power 115 vac (from 1FL3)
1A3 Down-converter	J1		Rf input (from signal divider 1A11J2 via 1A12J5)
	J4	P7	700-MHz if. test output (via 1A12J14). 700-MHz if. output for down-converter (wide-band if.)
	J6	P10	70-MHz if. output (via 1A12J11)
	J8	P6	10 MHz standard input (from frequency synthesizer 1A7J8)
	J9	P8	Rf local oscillator input (from frequency synthesizer 1A7J9)
	J10	P9	Frequency control output (BCD) (to frequency synthesizer 1A7P1)
	J11	P2	Ac power 115 vac (from 1FL2)
	J4	P12	700-MHz if. test output (via 1A12J13).700-MHz if. output for down-converter
1A4 Down-converter	J1		Rf input (from signal divider 1A11J3 via 1A12J6) (wide-band if.)
	J6	P14	70-MHz if. output (via 1A12J10)
	J8	P11	10 MHz standard output (from frequency synthesizer 1A8J8)
	J9	P13	Rf local oscillator input (from frequency synthesizer 1A8J9)
	J10	P15	Frequency control output (BCD) (to frequency synthesizer 1A8P1)
	J11	P3	Ac power 115 vac (from 1FL1)
1A5 Test Translator	J3	P25	5-MHz input (from time base patch panel 2A5J6 via 1A12J7)
	J4	P27	Prime power input (from 1FL4TB1)
	J6	P26	5-MHz output test translator internal standard (to time base patch panel 2A5J17 via 1A12J2)
1A6 Frequency synthesizer	J6	P16	External standard input (via 1A12J13)
	J7		5-MHz output (50-ohm termination)
	J8	P17	10-MHz output (to down-converter 1A2J8)
	J9	P18	Variable output (rf lo output) (to down-converter 1A2J9)
	J10	P4	Prime power input (from 1FL3)
	P1	J4	Remote frequency control (BCD) input (from down-converter 1A2J10)
1A7 Frequency synthesizer	J6	P19	External standard input (via 1A12J2)
	J7		5-MHz output (50-ohm termination)
	J8	P20	10-MHz output (to down-converter 1A3J8)
	J9	P21	Variable output (rf lo output) (to down-converter 1A3J9)
	J10	P5	Prime power input (from 1FL2)
	P1	J5	Remote frequency control (BCD) input (from down-converter 1A3J10)
1A8 Frequency synthesizer	J6	P22	External standard input (via 1A12J1)
	J7		5-MHz output (50-ohm termination)
	J8	P23	10-MHz output (to down-converter 1A4J8)
	J9	P24	Variable output (rf lo output) (to down-converter 1A4J9)
	J10	P6	Prime power input (from 1FL1)
	P1	J6	Remove frequency control (BCD) input (from down-converter 1A4J10)

NOTE

The 700-MHz output is a test output on the down-converter and an operational output on the down-converter (wide-band if.).

Table 2-6. Frequency Conversion Subsystem Unit 2 Intraconnections

Unit	Input/ output connector	Input/ output plug	Function(to/from)
2A2 Up-converter	J1		Rf output (to signal combiner 2A12J1 via A13J4)
	J4	P4	700-MHz if. test input (from 2A13J15).700-MHz if. input for up-converter (wide-band if.)'
	J6	P5	70-MHz if. input (from 2A13J12)
	J8	P1	10-MHz standard input (from frequency synthesizer 2A7JS)
	J9	P2	Rf local oscillator input (from frequency synthesizer 2A7J9)
	J10	P3	Frequency control output (BCD) (to frequency synthesizer 2A7P1)
	J11	P1	AC power 115 vac (from 2FL3)
	J4	P7	700-MHz if. test input (from 2A13J14).700-MHz if. input for up-converter
2A3 Up-converter	J1		Rf output (to signal combiner 2A12J2 via A13J5) (wide-band if.)'
	J6	P10	70-MHz if. input (from 2A13J11)
	J8	P6	10-MHz standard input (from frequency synthesizer 2A8J8)
	J9	P8	Rf local oscillator input (from frequency synthesizer 2A8J9)
	J10	P9	Frequency control output (BCD) (to frequency synthesizer 2A8P1)
	J11	P2	Ac power 115 vac (from 2FL2)
2A4 Up-converter	J1		Rf output (to signal combiner 2A12J3 via A13J6) (wide-band if.)*
	J4	P12	700-MHz if. test input (from 2A13J13).700-MHz if. input for up-converter
	J6	P14	70-MHz if. input (from 2A13J10)
	J8	P11	10-MHz standard input (from frequency synthesizer 2A9J8)
	J9	P13	Rf local oscillator input (from frequency synthesizer 2A9J9)
	J10	P15	Frequency control output (BCD) (to frequency synthesizer 2A9P1)
	J11	P3	AC power 115 vac (from 2FL1)
2A5 Time base patch panel	J1		5-MHz input (from distribution amplifier 2A6J24)
	J2		5-MHz output (to unlit 2 cabinet top 2A13J3)
	J3		5-MHz input (from distribution amplifier 2A6J23)
	J4		5-MHz output (to unit 2 cabinet top 2A13J2)
	J5		5-MHz input (from distribution amplifier 2A6J20)
	J6		5-MHz output (to unit 2 cabinet top 2A13J1)
	J7		5-MHz input (from distribution amplifier 2A6J22)
	J8		External standard output (to frequency synthesizer 2A7J6)
	J9		5-MHz input (from distribution amplifier 2A6J19)
	J10		External standard output (to frequency synthesizer 2A8J6)
	J11		5-MHz input (from distribution amplifier 2A6J16)
	J12		External standard output (to frequency synthesizer 2A9J6)
	J13		1-MHz standard input (from unit 2 cabinet top 2A13J7)
	J14		1-MHz output (to distribution amplifier 2A6J32)
	J15		5-MHz output (to test translator 1A5J3)
	J16		5-MHz input (from test translator 1A5J6)
	J17		5-MHz standard input (from unit 2 cabinet top 2A13J9)
	J18	P31	5-MHz output (to distribution amplifier 2A6J31)
	J21		5-MHz input (from distribution amplifier 2A6J26)
	J23		1-MHz input (from distribution amplifier 2A6J28)
2A6 Distribution amplifier	J1 through J7		Not used
	J8	J9	Jumpered
	J9	J8	Jumpered
	J10 through J15		Not used
	J16	P16	5-MHz output (to time base patch panel 2A5J11)
	J17	P17	5-MHz output (to unit 2 cabinet top 2A13J20) (user access)
	J18		Not used
	J19	P19	5-MHz output (to time base patch panel 2A5J9
	J20	P20	5-MHz output (to time base patch panel 2A5J5)
	J21	P21	5-MHz output (to unit 2 cabinet top 2A13J21)
	J22	P22	5-MHz output (to time base patch panel 2A5J7)
	J23	P23	5-MHz output (to time base patch panel 2A5J3)
	J24	P24	5-MHz output (to time base patch panel 2A5J1)
	J25	J26	5-MHz output (to unit 2 cabinet top 2A13J8)
	J26	J26	5-MHz output (to time base patch panel 2A5J21)

*See note at end of table.

Unit	Input/ output connector	Input/ output plug	Function(to/from)
2A6 Distribution amplifier (continued)	J27	P27	1-MHz output (to unit 2 cabinet top 2A13J19)
	J28	P28	1-MHz output (to time base patch panel 2A5J23)
	J29	P29	1-MHz output (to unit 2 cabinet top 2A13J18)
	J30		Not used
	J31	P31	5-MHz input (from time base patch panel 2A5J18)
	J32	P32	1-MHz input (from time base patch pane l 2A5J14)
	J33	P33	Prime power input 115 Vac 41-65 Hz (from 2FL4)
2A7 Frequency synthesizer	J6	P16	External standard input (from time base patch panel 2A5J8)
	J7		5-MHz output (50-ohm termination)
	J8	P17	10-MHz output (to up- converter 2A2J8)
	J9	P18	Variable output (rf lo output) (to up-converter 2A2J9)
	J10	P4	Prime power input (2FL3)
	P1	J4	Remote frequency control (BCD) input (from up-converter 2A2J10)
2A8 Frequency synthesizer	J6	P19	External standard input (from time base patch panel 2A5J10)
	J7		5-MHz output (50-ohm termination)
	J8	P20	10-MHz output (to up-converter 2A3J8)
	J9	P21	Variable output (rf lo output) (to up-converter 2A3J9)
	J10	P5	Prime power input (2FL2)
	P1	J5	Remote frequency control (BCD) input (from up-converter 2A3J10)
2A9 Frequency synthesizer	J6	P22	External standard input (from time base patch panel 2A5J12)
	J7		5-MHz output (50-ohm termination)
	J8	P23	10-MHz output (to up-converter 2A4J8)
	J9	P24	Variable output (rf lo output) (to up-converter 2A4J9)
	J10	P6	Prime power input (2FL1)
	P1	J6	Remote frequency control (BCD) input (from up-converter 2A4J10)

NOTE

The 700-MHz input is a test input on the up-converter and an operational input on the up-converter (wide-band if.).

Table 2-7. *Frequency Conversion Subsystem Interunit Connections*

Input/output connection unit 1 located at top of cabinet	Input/output connection unit 2 located at top of cabinet	Function (to/from)
A12J1	A13J1	5 MHz (from time base patch panel 2A5J6 to frequency synthesizer 1A8J6)
A12J2	A13J2	5 MHz (from time base patch panel 2A5J4 to frequency synthesizer 1A7J6)
A12J3	A13J3	5 MHz (from time base patch panel 2A5J2 to frequency synthesizer 1A6J6)
A12J7	A13J16	5 MHz (from time base patch panel 2A5J15 to test translator 1A5J3)
A12J8	A13J17	6 MHz (to time base patch panel 2A5J16 from test translator 1A5J6

*Provides 5 MHz from test translator (1A5) standard which may be looped from A13J17 to A13J18 in the event of a cesium bean frequency standard failure.

CHAPTER 3

OPERATING INSTRUCTIONS

Section I. CONTROLS AND INDICATORS

3-1.Introduction

This section contains a functional description of all controls, indicators, and connectors used during normal operation of the AN/TSC-54 frequency conversion subsystem. The functional des criptions are keyed to supporting illustrations by equipment placarding.

Table 3-1. Converters, Frequency, Electronic CVJ084/MSC-46(V) and CV-3084A/MSC-46(V) Controls and Indicators.

Control, indicator or *connector (fig.3-1)*	Function
RF OUTPUT LEVEL ADJ control	Adjustments up-converter output signal level. Connects -up-converter output to signal combiner input. Disconnects up-converter output from signal combiner input and provides proper termination for up-converter output and signal combiner input.
RF OUTPUT ON LINE-OFF LINE waveguide switch: ON LINE OFF LINE	
POWER METER ZERO ADJ screwdriver adjustment	Provides zero adjustment of RF POWER meter. Adjusts level of signal applied to rf power monitor associated with RF POWER meter, for calibration purposes. Indicates power level of signal to rf power monitor. Monitors level selected by status selector switch. Provides fine tuning of rf oscillator frequency. Selects signal to be monitored by STATUS meter. Illuminated (red) to indicate low or high rf signal levels Lights red to indicate when rf phase-locked oscillator is out-of-lock. Flashes red to indicate unacceptable levels and quantities of phase noise bursts are being generated.
POWER MONITOR ATTENUATOR	
RF POWER meter	
STATUS meter	
TRANSMIT FREQ FINE TUNE DECR-INCR control	
Seven-position status selector rotary switch	
FAULT INDICATORS	
RF LEVEL indicator lamp	Illuminated (red) when if. phase-locked oscillator is out of phase lock.
RF LO indicator lamp	
IF LO indicator lamp	
TRANSMIT FREQUENCY SELECTOR MHz thumb-wheel switches	Selects up-converter transmit frequency.
RF POWER METER INPUT connector	Provides access to RF POWER meter.
POWER METER RANGE rotary switch	Sets full-scale sensitivity of RF POWER meter at 0 DBM, -10 DBM, or -20 DBM.
RF TEST OUTPUT connector	Provides 7.9- to 8.4-GHz test output.
RF POWER MONITOR connector	Provides access to rf power monitor unit.
RF LO SAMPLE connector	Provides sample of (7.2- to 7.7-GHz) local oscillator signal for test purposes. Provides sample of 630 MHz LO signal for test purposes. Used to deactivate RF AUDIBLE ALARM Provides attenuation of 0 to 21 db in 1-db steps to compensate for 70-MHz rf input levels between -10 and +10 dBm. Illuminates (white) to indicate presence of 24-volt dc power. Controls application of ac power to up-converter. Sounds to indicate high or low rf output level. Selects operation for frequency modulation (FM) or digital (DGTL) mode
IF LO SAMPLE connector	
AUDIBLE ALARM DEFEAT momentary pushbutton switch	
IF LEVEL ATTENUATOR	
POWER ON indicator lamp	
POWER ON-OFF circuit breaker	
RF AUDIBLE ALARM	
MODE SELECTOR switch	

3-2. Major Component Controls, Indicators and Connectors

The controls, indicators, and connectors for the major components comprising the frequency conversion subsystem are listed in tables 3-1 through 3-7, and shown in figures 3-1 through 3-7.

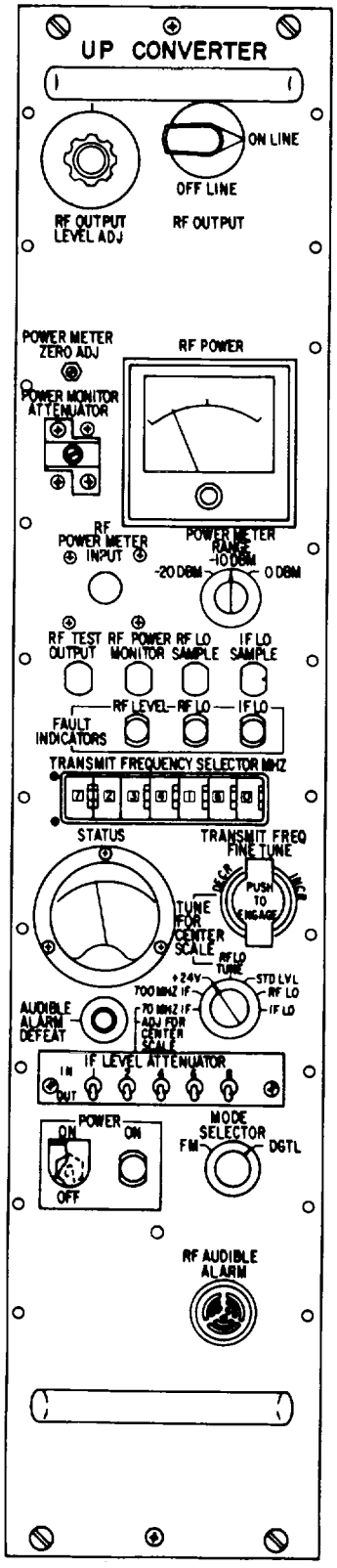

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Figure 3-1. Converters, Frequency, Electronic CV-3084/MSC-46(V) and CV-3084A/MSC-46(V), controls and indicators

Table 3-2. Converters, Frequency, Electronic CV-085/MSC-46(V) and CV-3085A/MSC-46(V) Controls and Indicators.

Controls/indicators or connector (fig. 3-2)	Function
RF POWER meter	Indicates power level of signal connected to RF POWER METER INPUT connector.
RF POWER METER INPUT connector	Provides access to RF POWER meter.
POWER METER RANGE rotary switch	Sets full-scale sensitivity of RF POWER meter at 0 DBM. --10 DBM or --20 DBM.
POWER METER ZERO ADJ screwdriver adjustment	Provides zero adjustment of RF POWER meter.
RF TEST INPUT connector	Provides for insertion of rf test signal in down-converter.
RF LO SAMPLE connector	Provides sample of 6.557.05-GHz LO signal for test purposes.
IF LO SAMPLE connector	Provides sample of 630-MHz LO signal for test purposes.
700 MHz Sample connector	Provides sample of 70-MHz down-converter if. output for test purposes.
FAULT INDICATORS	
RF LO indicator lamp	Lights red to indicate when rf phase-locked oscillator is out-of-lock. Flashes red to indicate unacceptable levels and quantities of phase noise bursts are being generated.
IF LO indicator lamp	Illuminates (red) when if. phase-locked oscillator is out of phase lock.
STATUS meter	Monitors level selected by STATUS SELECTOR switch.
STATUS SELECTOR rotary switch	Selects designated level to be monitored by STATUS meter.
RECEIVE FREQUENCY FINE TUNE DECREASE-INCREASE control	Provides fine tuning of rf phase-locked oscillator.
AUDIBLE ALARM DEFEAT momentary pushbutton switch	When pressed and held, deactivates LO AUDIBLE ALARM.
RECEIVE FREQUENCY SELECTOR MHz thumbwheel	Selects down-converter receive frequency.
POWER ON indicator lamp	Illuminates (white) to indicate presence of 24-volt de power.
POWER ON-OFF circuit breaker	Controls application of ac power to down-converter.
LO AUDIBLE ALARM	Sounds when rf or if. phase-locked oscillator is out of phase lock.
MODE SELECTOR switch	Selects operation for frequency modulation (FM) or digital (DGTL) mode.

Table 3-3.Synthesizer, Electrical Frequency 0-1868/MSC-46(V) Controls and Indicators.

Controls/indicator or connector (fig. 3-3)	Function
POWER indicator lamp	Illuminates (white) to indicate presence of operating voltages.
POWER ON-OFF toggle switch	Controls application of ac power to frequency synthesizer.
METER FUNCTION rotary switch	Selects designated power supply voltage to be monitored by meter.
Voltage meter	Monitors voltage selected by METER FUNCTION rotary switch.
REFERENCE FREQUENCY-INT STD OUT connector J1	Provides access to inte--al frequency standard.
REFERENCE FREQUENCY-SYNTH IN connector J2	Provides access to frequency synthesizer input circuit.
REFERENCE FREQUENCY-EXT STD OUT connector J3	Provides access to synthesizer input from external frequency standard.
MONITOR-1 MHz OUT connector J4	Provides access to output of 1-MHz circuits for test purposes.
MONITOR-SAMPLE OUT connector J6	Provides access to frequency synthesizer output circuit for test purposes.
REMOTE FREQUENCY CONTROL P1	Provides facility for connecting digital frequency control output of associated up- or down-converter to frequency synthesizer.
EXT STD IN connector J6	Provides facility for connecting frequency synthesizer to external frequency standard.
5 MHz OUT connector J7	Provides access to output of 5-MHz circuits for test purposes.

Controls/indicator or connector (fig. 3-3)	Function
10 MHz OUT connector J8	Provides access to output to 10-MHz circuits for test purposes.
VAR OUT connector J9	Provides facility for connecting output of frequency synthesizer to associated up- or down-converter.
115 VAC power input connector J10	Power connection input plug.
1.5A SB fuse	Spare fuse.
FUSE, F1 and F2	Protect internal transformer circuit.
GROUND log	Provides connection for internal ground.

Table 3-4. Test Translator Controls and Indicators

Controls/indicator or connector (fig. 3-4)	Function
LEVEL SET ATTEN-ATTEN 1 control	Adjusts output level of test translator between 0 to 50 dB.
LEVEL SET ATTEN-ATTEN 2 control	Adjusts output level of test translator between 0 and 10 dB.
725 MHz indicator lamp	Illuminates (white) to indicate operation of 725-MHz local oscillator circuit.
LO/SEI, toggle switch	Selects operation of 725-MHz (up) or 200-MHz (down) oscillator circuit.

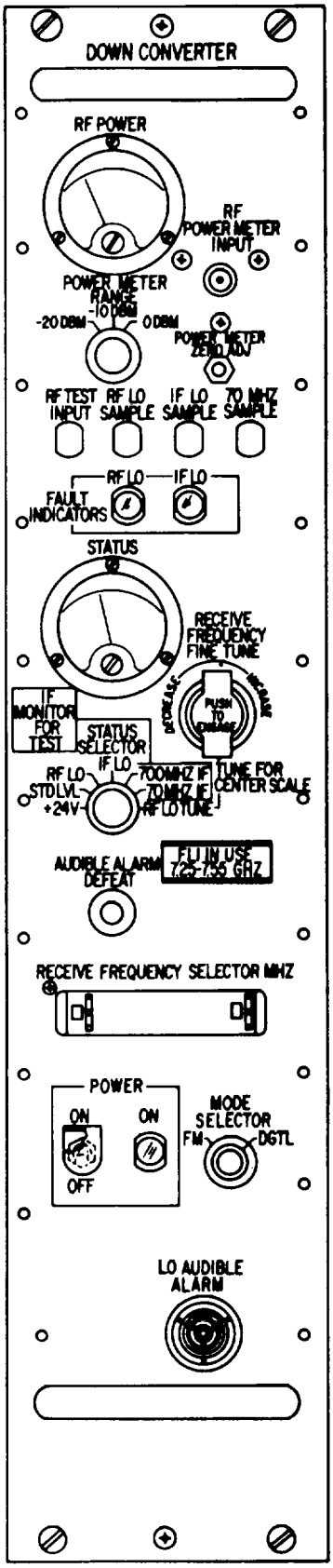

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Figure 3-2. Converters, Frequency, Electronic CV-3085/MSC-46(V) and CV-3085A/MSC-46(V), controls and indicators.

Controls/indicator or connector (fig. 3-4)	Function
200 MHz indicator lamp	Illuminates (white) to indicate operation of 200-MHz local oscillator circuit.
70 MHz TEST OUTPUT connector	Provides access to 70-MHz test output.
Eight-position STATUS SELECT rotary switch	Selects designated signal or voltage to be monitored by STATUS meter.
RF INPUT connector	Provides access to test translator 7.9- to 8.4-GHz rf input.
RF OUTPUT connector	Provides access to test translator 7.2F- to 7.75-GHz RF output.
70 MHz ON toggle switch	Applies power to internal 70-MHz test circuit.
5 MHz ON toggle switch	Applies power to internal 5-MHz test circuit.
STATUS meter	Monitors level of signal or voltage as selected by STATUS SELECT switch.
POWER ON indicator lamp	Illuminates (white) to indicate presence of 24-volt dc power.
POWER ON-OFF toggle switch	Controls application of ac power to test translator.

Table 3-5.Amplifier, Radio Frequency AM-6631/MSC-46(V) Controls and Indicators.

Controls/indicator or connector (fig. 3-4)	Function
POWER-ON indicator lamp	Illuminates (white) to indicate the presence of 24-volt dc power.
POWER ON-OFF toggle switch	Controls the application of ac power to distribution amplifier.
STATUS INDICATOR meter	Monitors level of signal or voltage selected by STATUS SELECT switch.
STATUS SELECT rotary switch	Selects designated signal or voltage to be monitored by STATUS INDICATOR meter.
5-MHz output connector J1	Provides access to 5-MHz output.
5-MHz output connector J2	Provides access to 5-MHz output.
5-MHz output connector J3	Provides access to 5-MHz output.
5-MHz output connector J4	Provides access to 5-MHz output.
5-MHz output connector J5	Provides access to 6-MHz output.
5-MHz output connector J6	Provides access to 5-MHz output.
5-MHz output connector J7	Provides access to 5-MHz output.
5-MHz output connector J8	Provides access to 5-MHz output.
5-MHz output connector J9	Provides access to 5-MHz output.
5-MHz output connector J10	Provides access to 5-MHz output.

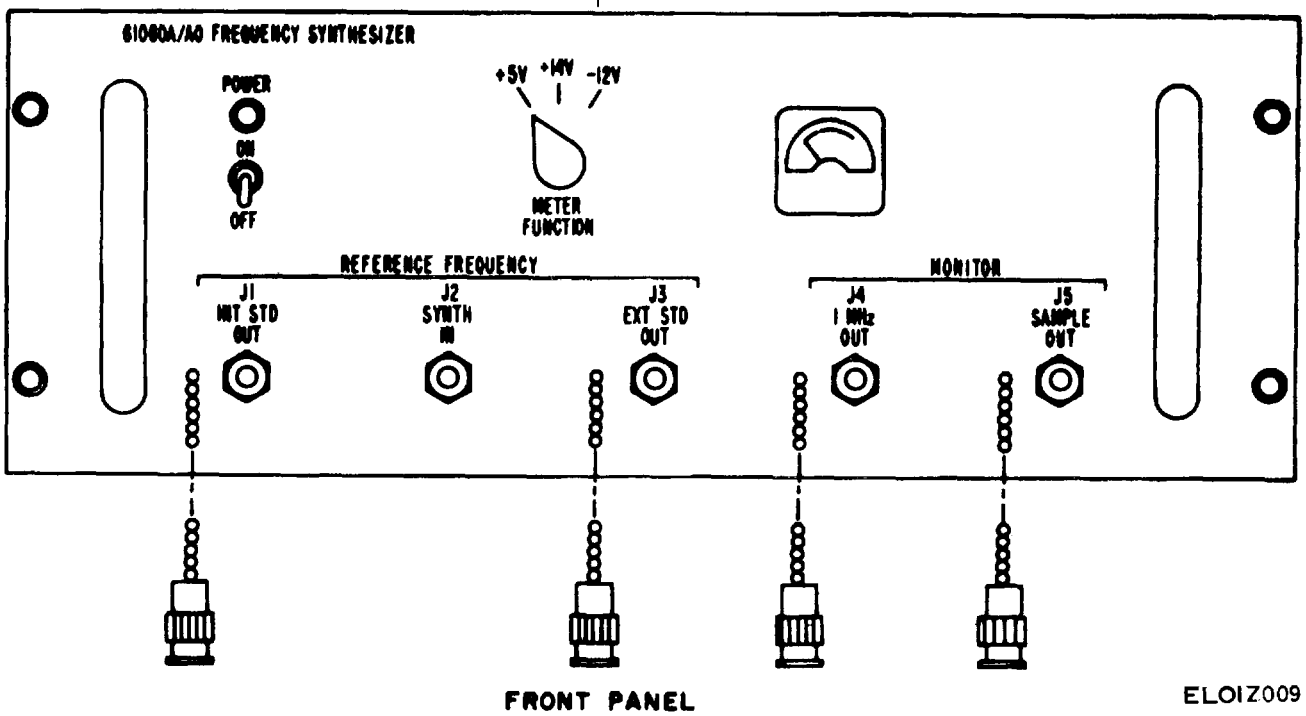


Figure 3-3(1). Synthesizer, Electrical Frequency O -- 1658/MSC-46(V) controls and indicators (sheet 1 of 2).

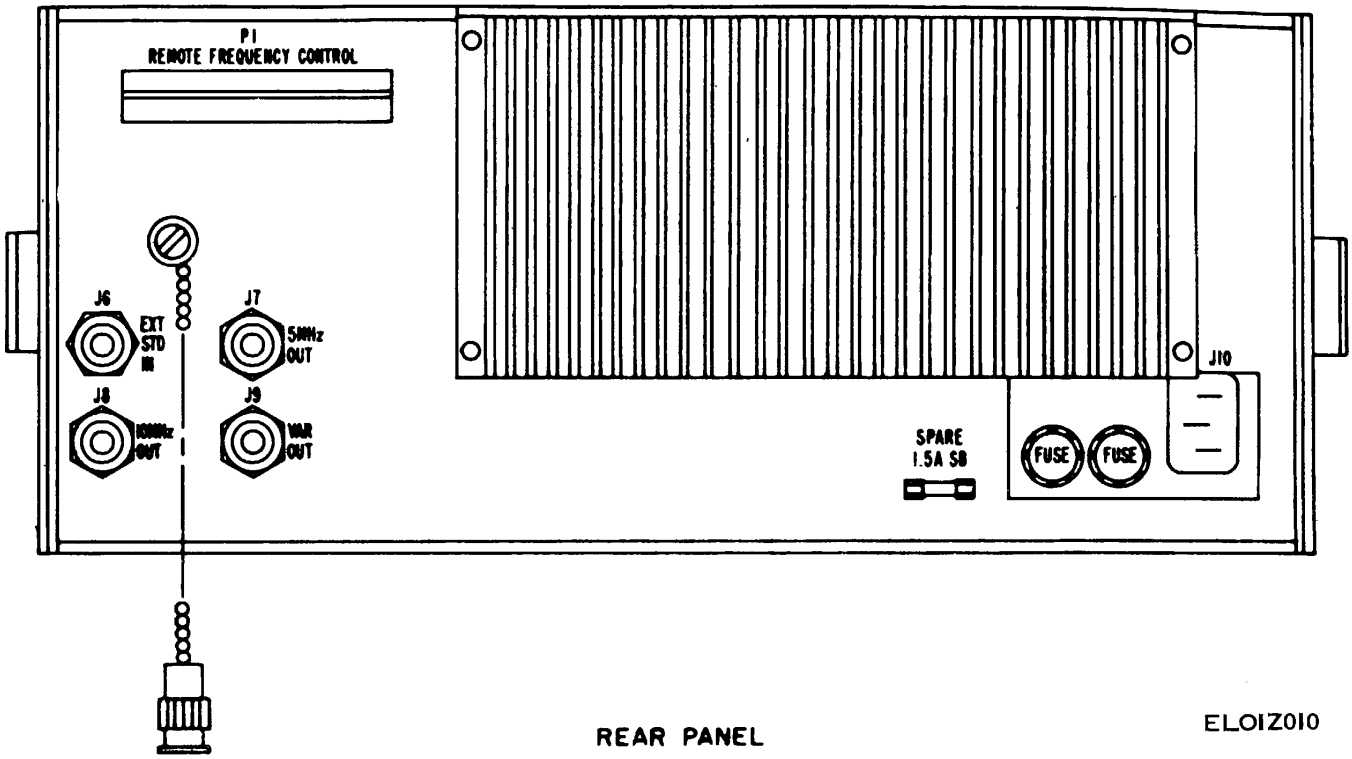


Figure 3-3 (2). Synthesizer, Electrical Frequency O - 1658/MSC - 46(V) controls and indicators (sheet 2 of 2).

Controls/indicator or connector (fig. 3-5)	Function
5-MHz output connector J11	Provides access to 5-MHz output.
5-MHz output connector J12	Provides access to 5-MHz output.
5-MHz output connector J13	Provides access to 5-MHz output.
5-MHz output connector J14	Provides access to 5-MHz output.
5-MHz output connector J15	Provides access to 5-MHz output.
5-MHz output connector J16	Provides access to 5-MHz output.
5-MHz output connector J17	Provides access to 5-MHz output.
5-MHz output connector J18	Provides access to 5-MHz output.
5-MHz output connector J19	Provides access to 5-MHz output.
5-MHz output connector J20	Provides access to 5-MHz output.
5-MHz output connector J21	Provides access to 5-MHz output.
5-MHz output connector J22	Provides access to 5-MHz output.
5-MHz output connector J23	Provides access to 5-MHz output.
5-MHz output connector J24	Provides access to 5.MHz output.
5-MHz output connector J25	Provides access to 5-MHz output.
5-MHz output connector J26	Provides access to 5-MHz output.
1-MHz output connector J27	Provides access to 1-MHz output.
1-MHz output connector J28	Provides access to 1-MHz output.
1-MHz output connector J29	Provides access to 1-MHz output.
1-MHz output connector J30	Provides access to 1-MHz output.
I-MHz INPUT connector J31	Provides access to 5-MHz input circuit.
1-MHz INPUT connector J32	Provides access to 1-MHz input circuit.
115 VAC 47-65 Hz connector J33	Provides input power connection.

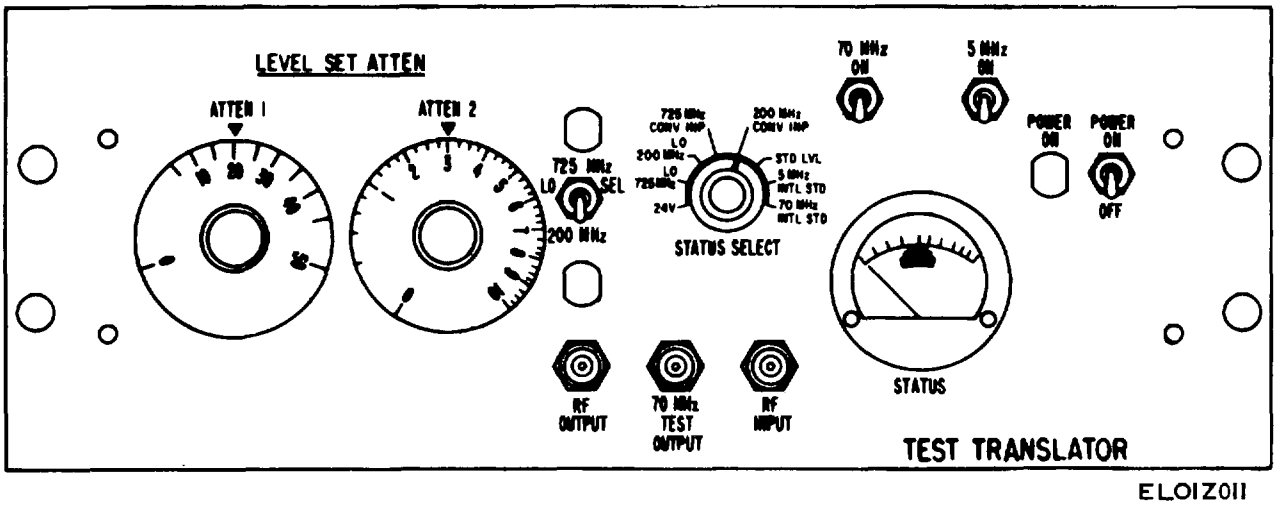


Figure 3-4. Test translator, controls and indicators

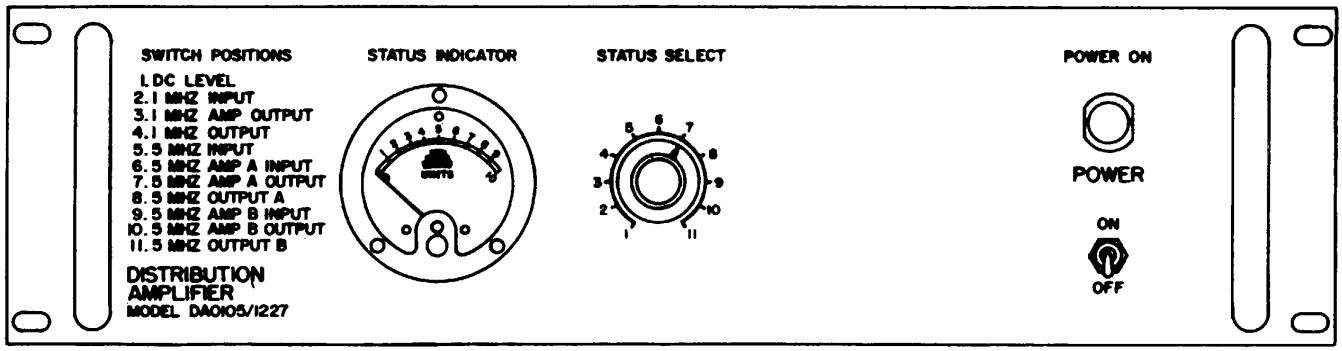


Figure 3-5 1. Amplifier, Radio Frequency AM - 6631/MSC - 46(V), controls and indicators (sheet 1 of 2).

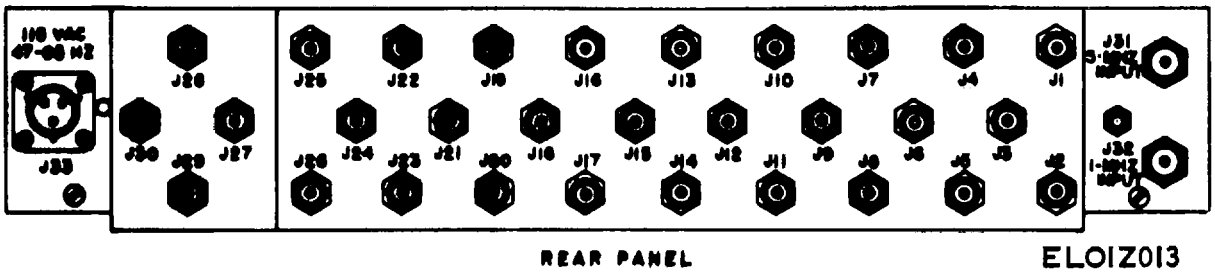


Figure 3-5 (2). Amplifier, Radio Frequency AM - 6631/MSC - 46(V), controls and indicators (sheet 2 of 2).

Table 3-6. Blower Assembly Controls and Indicators.

Controls/indicator or connector (fig. 3-6)	Function
Ac dual power receptable J1	Provides access to utility power circuit.
BLOWER FAILURE indicator lamp	Illuminates (red) to indicate inadequate airflow.

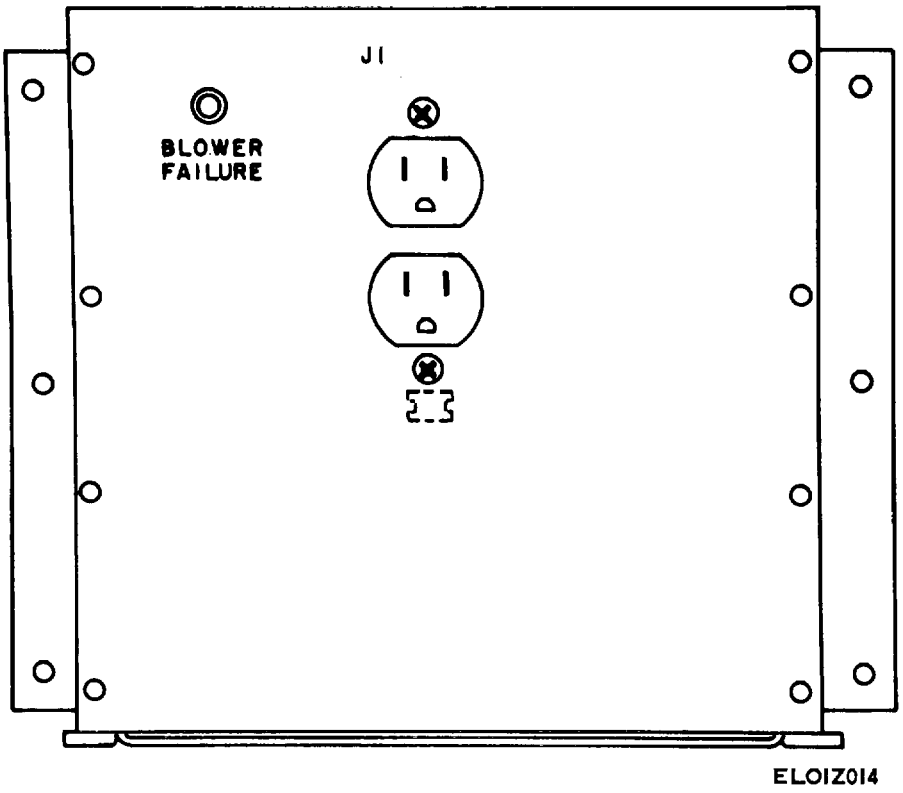
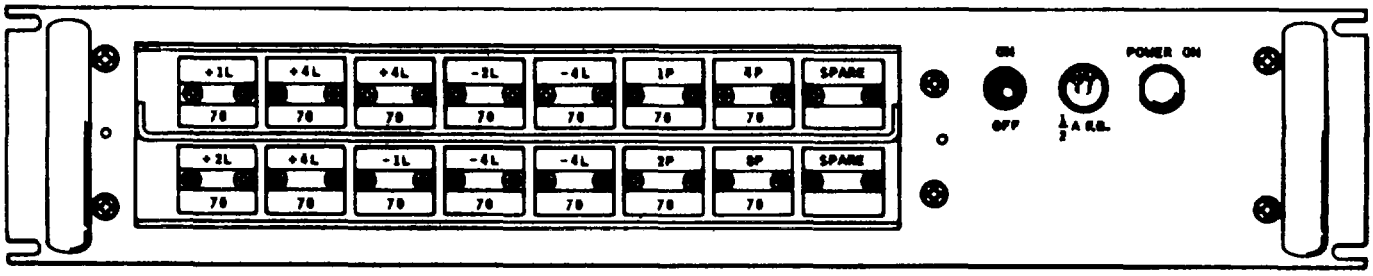


Figure 3-6. Blower assembly, controls and indicators.

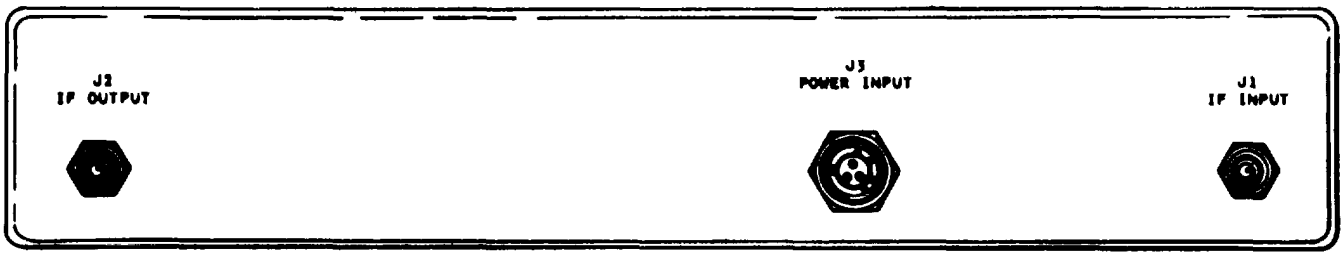
Table 3- 7. Equalizer, Group Delay CN-1425/MSC-46(V) Controls and Indicators.

Controls/indicator or connector (fig. 3-7)	Function
POWER-ON indicator lamp	Illuminates (white) to indicate presence of operating voltage.
ON/OFF toggle switch	Controls application of ac power to group delay equalizer.
IF input connector J1	Provides facility for connecting input signal.
IF output connector J2	Provides access to output of group delay equalizer.
115 VAC POWER INPUT connector J3	Power connection input plug.
+ 1L through + 4L modules	Inserts 1 to 4 nsec of positive linear equalization.
- 1L through - 4L modules	Inserts 1 to 4 nsec of negative linear equalization.
1P, 2P, 4P and 8P module	Inserts 1 to 8 nsec of parabolic equalization.
Spares	Provides a straight through path with no equalization to the signal.



ELOIZ015

Figure 3-7 (1). Equalizer, Group Delay CN - 1425/MSC - 46(V), controls and indicators (sheet 1 of 2).



ELOIZ016

Figure 3-7 (2). Equalizer, Group Delay CN - 1425/MSV - 46(V), controls and indicators (sheet 2 of 2).

3-3. Time Base Patch Panel and Cabinet Interconnections and Test Points

The interconnections and test points for the time base patch panel and the cabinet are given in table 3-8, 3-9, and 3-10, respectively. Interconnections and test points for unit 1 are given in table 3-9. Table 3-10 provides interconnections and test points for unit 2.

Table 3-8. Time Base Patch Pane Interconnection and Test Points

Jack identification (fig. 3-8)	References designation	Function
2A6	J1	Provides access to 5-MHz standard frequency output of distribution amplifier.
1A6	J2	Provides external standard input to frequency synthesizer 1A6.
2A6	J3	Provides access to 5-MHz standard frequency output of distribution amplifier
1A7	J4	Provides external standard input to frequency synthesizer 1A7
2A6	J5	Provides access to 5-MHz standard frequency output of distribution Amplifier
1A8	J6	Provides external standard input to frequency synthesizer 1A8
2A6	J7	Provides access to 5-MHz standard frequency output of distribution amplifier
2A7	J8	Provides external standard input to frequency synthesizer 2A7
2A6	J9	Provides access to 5-MHz standard frequency output of distribution amplifier
2A8	J10	Provides external standard input to frequency synthesizer 2A8
2A6	J11	Provides access to 5-MHz standard frequency output of distribution amplifier
2A9	J12	Provides external standard input to frequency synthesizer 2A9.
2J7	J13	Provides access to 1 MHz frequency From the frequency standard through Type “N” connector on top of cabinet 2 (2J7).
2A6	J14	Provides input to distribution amplifier connector (J32) for 1-MHz from standard.
1A5	J15	Provides input for 5 MHz standard from test translator 1A5 through type “N” connector on top of cabinet 2 (2J16).
1A5	J16	Provides output for 5 MHz standard to test translator 1A5 through Type “N” connector on top of cabinet 2 (2J17).
2J9	J17	Provides access to 5-MHz frequency from the frequency standard through Type “N” connector on top of cabinet 2 (2J9).
2A6	J18	Provides input to distribution amplifier connector (J31) for 5-MHz from frequency standard.
	J19	Spare access to distribution amplifier connector J26.
	J20	NC
2A6	J21	NC
	J22	NC
2A6	J23	Spare access to distribution amplifier connector (J28).
	J24	NC

Table 3-9. Unit 1, Cabinet Interconnections and Test Points

Connector (fig. 3-9)	Function
A12J1	5-MHz input from time base patch panel 2A5J6 to frequency synthesizer 1A8J6 EXT STD IN.
A12J2	5-MHz input from time base patch panel 2A5J4 to frequency synthesizer 1A7J6 EXT STD IN.
A12J3	5-MHz input from time base patch panel 2A5J2 to frequency synthesizer lA6J6 EXT STD IN.
A12J4	Signal divider A11J11 rf input to down-converter 1A2J RF INPUT.
A12J5	Signal divider A11J2 rf input to down-converter 1A3J1 RF INPUT.
A12J6	Signal divider A11J3 rf input to down-converter 1A4J1 RF INPUT.
A12J7	5-MHz input from time base patch panel 2A5J15 to test translator 1A5J3.
A12J8	5-MHz output to time base patch panel 2A5J16 from test translator (internal standard 1A5J6.
A12J9	700-MHz output from down-converter 1A2J4-CP3 700 MHZ IF OUTPUT*
A12J10	70-MHz output from down-converter 1A4J6 70 MHZ IF OUTPUT.
A12J11	70-MHz output from down-converter 1A3J6 70 MHZ IF OUTPUT.
A12J12	70-MHz output from down-converter 1A2J6 70 MHZ IF OUTPUT.
A12J13	700-MHz output from down-converter lA4J4-CP3 700 MHZ IF OUTPUT (see note)
A12J14	700-MHz output from down-converter 1A3J4-CP3 700 MHZ IF OUTPUT (see note)

NOTE

The 700MHz output is a test output on the down-converter and an operational output on the down-converter (wide-band if.).

Table 3-10. Unit 2, Cabinet Interconnections and Test Points

Connector (fig. 3-9)	Function
A13J1	5-MHz output from distribution amplifier to frequency synthesizer 1A8J6 EXT STD IN via time base patch panel A5J6.
A13J2	5-MHz output from distribution amplifier to frequency synthesizer 1A7J6 EXT STD IN via time base patch panel 2A5J4.
A13J3	5-MHz output from distribution amplifier to frequency synthesizer 1A6J6 EXT STD IN via time base patch panel 2A5J2.
A13J4	Rf output to signal combiner from up-converter A2J1 RF OUTPUT.
A13J5	Rf output to signal combiner from up-converter A3J1 RF OUTPUT.
A13J6	Rf output to signal combiner from up-converter A4J1 RF OUTPUT.
A13J7	1-MHz input from frequency standard.
A13J8	5-MHz spare output.
A13J9	5-MHz input from frequency standard.
A13J10	70-MHz input to up-converter 2A4J6 70 MHZ IF INPUT.

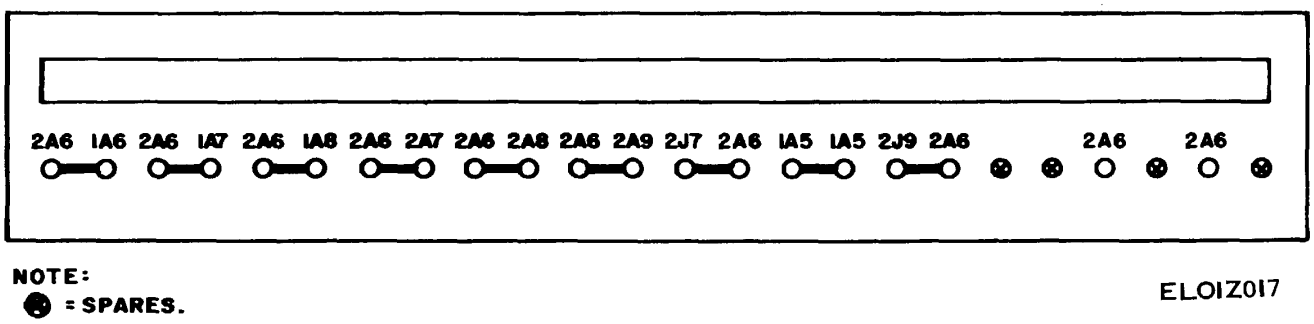


Figure 3-8. Time base patch panel interconnection and test points

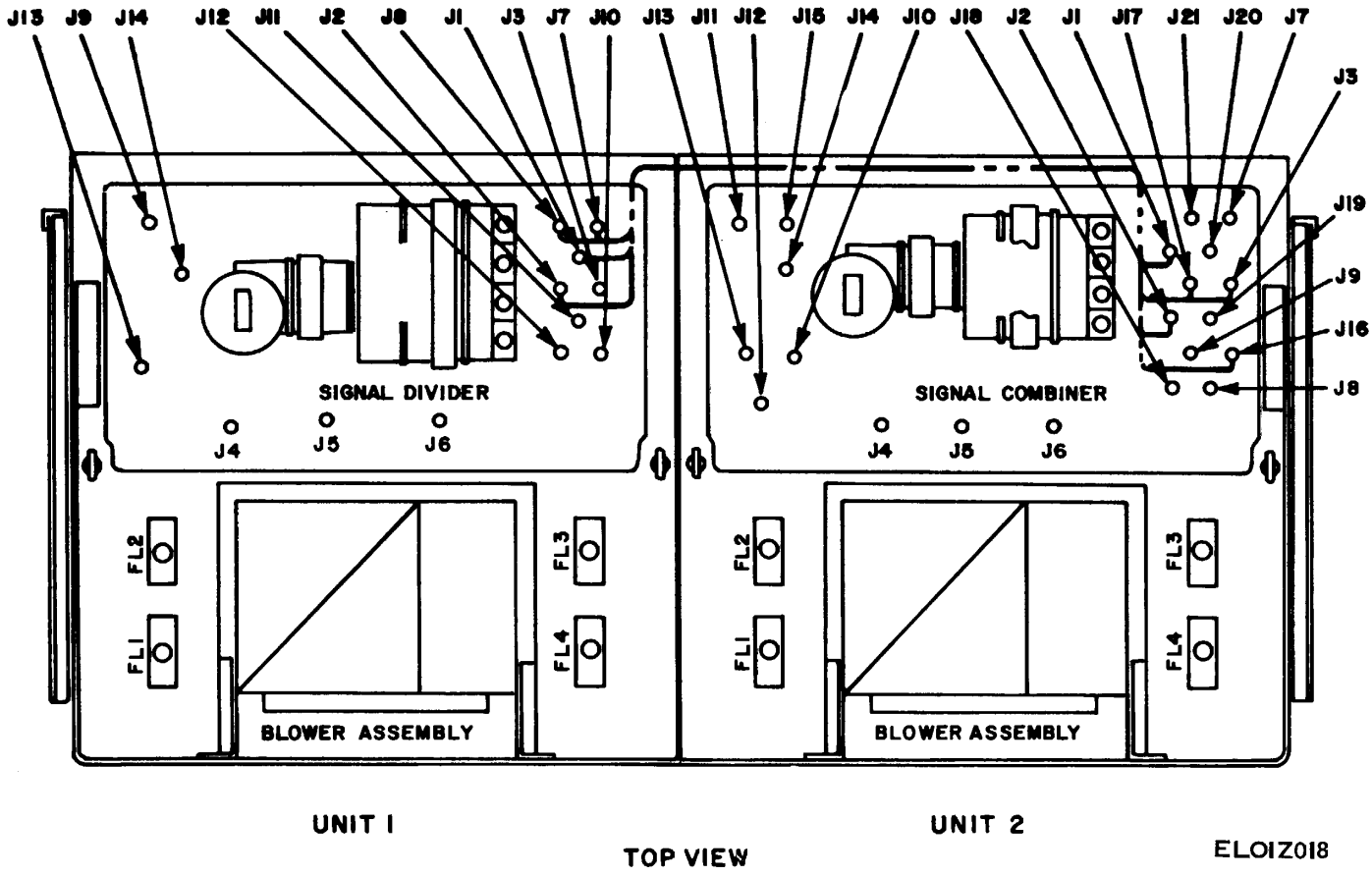


Figure 3-9. Cabinet interconnection and test points.

Table3-10. Unit2, Cabinet
Interconnections and Test Points - Continued

Connector (fig 3-9)	Function
A13J11	70-MHz input to up-converter 2A3J6 70 MHZ IF INPUT.
A13J12	70-MHz input to up-converter 2A2J6 70 MHZ IF INPUT.
A13J13	700-MHz input to up-converter 2A4J4-CP5 700-MHZ IF INPUT*
A13J14	700-MHz input to up-converter 2A3J4-CP5 700-MHZ IF INPUT'
A13J15	700-MHz input to up-converter 2A2J4-CP5 700-MHZ IF INPUT'
A13J16	5-MHz output to test translator 1A5J3 via time base patch panel 2A5J15.
A13J17	5-MHz from test translator standard 1A5J6 to time base patch panel A5J16.
A13J18	1-MHz spare outputs.
A13Jl9	1-MHz spare outputs.
A13J20	5-MHz spare outputs.
A13J21	5-MHz spare outputs.

*The 700-MHz input is a test input on the up-converter and an operational input on the up-converter (wide-band if.).

Section II. PRELIMINARY ADJUSTMENT OF EQUIPMENT

3-4. Preliminary Checks

a. Visually inspect all ground wires for defective connections and strained conductors. Tighten any loose connections.

b. Check to see that all plug-in items are firmly seated in their mating connectors.

c. Check to see that all cables are accurately attached to their mating connectors and terminals.

3-5. Preliminary Starting Procedure

a. Set down-converter (fig. 3-2) POWER ON-OFF circuit breakers to OFF.

b. Connect jumper cables on all frequency synthesizers (fig. 3-3, sheet 1) between REFERENCE FREQUENCY SYNTH IN connector J2 and EXT STD OUT connector J3.

c. Set frequency synthesizer, test translator (fig. 3-4), distribution amplifier (fig. 3-5), and up-converter (fig. 3-1) POWER ON-OFF toggle switches to OFF.

d. Apply power to cabinet blower assemblies (fig. 3-6).

NOTE

The BLOWER FAILURE indicator lamps on each cabinet blower assembly should illuminate and remain on for approximately 5 seconds. The indicator lamps should extinguish when proper airflow is achieved.

e. Set distribution amplifier POWER ON-OFF circuit breaker to ON. The POWER ON indicator lamp should illuminate.

f interconnect the jacks on the time base patch panel as shown in figure 3-8.

g. Set distribution amplifier STATUS SELECT switch to each position in turn, and observe that the STATUS INDICATOR meter reads in the blue scale.

h. Set each frequency synthesizer POWER ON-OFF switch to ON. The POWER indicator lamp should illuminate.

i. Set each frequency synthesizer METER FUNCTION switch to each position in turn and observe that the voltage meter indicates in the green area.

NOTE

A frequency synthesizer requires a 1-hour warmup period to achieve maximum stability.

j. Set test translator POWER ON-OFF circuit breaker to ON. The POWER ON indicator lamp should illuminate. Observe also that 725 MHz or 200 MHz indicator lamp illuminates.

k. Set test translator LO SEL switch to 725 MHz and observe that the 725 MHz indicator lamp illuminates.

l. Set test translator 70 MHz ON and 5 MHz ON switches to on (up) position.

m. Set test translator STATUS SELECT switch to each position and observe the following indications on the STATUS meter:

Position	*Indication*
+ 24V	Blue scale
725 MHz LO	Blue scale
200 MHz LO	O
725 MHz CONV INP	Blue scale
200 MHz CONV INP	Varies (ow)
STD LVL	Blue scale
5 MHz INTL STD	Blue scale
70 MHz INTL STD	Blue scale (must be 50 ohms terminated)

n. Set test translator LO SEL switch to 200 MHz; observe that the 725 MHz indicator lamp extinguishes and the 200 MHz indicator lamp illuminates.

o. Set test translator STATUS SELECT switch to each position and observe the following indications on the STATUS meter.

Position	*Indication*
+ 24V	Blue scale
725 MHz LO	O
200 MHz LO	Blue scale
725 MHz CONV INP	Varies (high)
200 MHz CONV INP	Blue scale

Position	*Indication*
STD LVL	Blue scale
5 MHz INTL STD	Blue scale
70 MHz INTL STD	Blue scale

p. Set up-converter RF OUTPUT switch to OFF-LINE.

q. Adjust RF POWER meter upper and lower limit controls to position limit pointers at upper and lower extremes of meter scale.

r. Set up-converter POWER ON-OFF circuit breaker to ON. The POWER ON indicator lamp should illuminate. The RF LO FAULT INDICATOR lamp may illuminate.

NOTES

The up-converter is operational as soon as it is turned on; however, a 1-hour warmup period should be allowed to achieve maximum stability.

Should RF LO FAULT INDICATOR lamp go on at loss of rf oscillator phase lock, when phase lock is reestablished light may flash for a period not to exceed 180 seconds before extinguishing.

s. Set up-converter TRANSMIT FREQUENCY SELECTOR MHz switch to 8250.000 and observe that the RF LO FAULT INDICATOR lamp illuminates. (Detune to assure that RF LO FAULT INDICATOR is operational.)

t. Set status selector switch to RF LO TUNE and adjust TRANSMIT FREQ FINE TUNE control for center-scale indication on STATUS meter.

u. Repeat the procedures outlined in p through t above for all remaining up-converters.

v. Set down-converter POWER ON-OFF circuit breaker to ON. The POWER ON indicator lamp should illuminate. The RF LO FAULT INDICATOR lamp may illuminate and the audible alarm may sound.

w. If necessary to silence the audible alarm, loosen captive screws, slide down-converter out of cabinet, and pull out audible alarm interlock switch S5 (located on extreme lower right-hand side of rear panel).

NOTE

The down-converter is operational as soon as it is turned on; however a 1-hour warmup period should be allowed to achieve maximum stability.

x. On down-converter front panel, set RECEIVE FREQUENCY SELECTOR MHz switch to 7525.00 (MHz) RF LO TUNE position and observe that the RF LO FAULT INDICATOR lamp illuminates.

NOTE

Detune to assure RF LO FAULT INDICATOR is operational.

y. Set STATUS SELECTOR switch to RF LO TUNE and adjust RECEIVE FREQUENCY FINE TUNE control for center-scale indication on STATUS meter. The RF LO FAULT INDICATOR lamp should extinguish.

z. If required, slide down-converter into cabinet and tighten captive screws.

aa. Repeat the procedures outlined in v through z above for all remaining down-converters.

3-6. Preliminary Subsystem Test

The preliminary subsystem test uses test translator 1A5 as a satellite substitute to simulate an operational situation. During the performance of the test, the 70-MHz test output of the test translator is applied to an up-converter where it is converted to a transmit band frequency. The transmit band output of the up-converter is translated to a receive band frequency by the test translator for application to a down-converter. The down-converter converts the receive band frequency to a 70-MHz signal. In the preliminary subsystem test, the transmit frequency of 8250 MHz is chosen so that the translated receive frequency of 7525 MHz will be accepted by either down-converter split band input filter A7FL1 or A7FL2.

NOTE

Although this test is performed with a 70 MHz if. test signal input, the tests may also be performed on wide-band if. converters. However, the 700-MHz if. converter circuits are not fully exercised. Complete testing of wide-band if. converters is accomplished at direct support maintenance.

a. Interconnect the test translator, the up-converter under test, and the down-converter under test as shown in figure 3-10.

b. Connect up-converter under test with at least 10 db of attenuation in the IF level attenuator and down-converter under test as shown in figure 3-10 using the up-converter test output jack J2 and down-converter test input Jack J3 (on the front panel).

CAUTION

Make sure that the power input signal to the equipment power meters do not ex-ceed 0 dbm for the down-converter or -14 dbm (equivalent to 0 dbm output) for the up-converter; otherwise, damage will result. Use suitable attenuation where necessary.

c. Set test translator controls as follows:

Control	*Position*
POWER ON-OFF switch	ON
LO SEL switch	725 MHz
LEVEL SET ATTEN-ATTEN 1 control	0 (fully cw)
LEVEL SET ATTEN-ATTEN 2 control	0 (fully cw)
70 MHz ON switch	ON (up)
5 MHz ON switch	ON (up)

d. Set controls on all up-converters as follows:

Control	*Position*
RF OUTPUT waveguide switch	OFF LINE
POWER ON-OFF circuit breaker	ON
TRANSMIT FREQUENCY SELECTOR MHz thumbwheel switches	8250.00
POWER METER RANGE switch	0 DBM
RF OUTPUT LEVEL ADJ control	30 (fully cw)

e. Set controls on all down converters as follows:

Control	*Position*
POWER ON-OFF circuit breaker	ON
RECEIVE FREQUENCY SELECTOR MHz thumbwheel switches	7525.00
POWER METER RANGE switch	0 DBM

NOTES

The MODE SELECTOR SWITCHES for the up- and down-converters should both be set to same position (either FM or DGTL). However, this does not affect the purpose of this test.

Changing MODE SELECTOR switch setting from FM to DGTL or DGTL to FM causes RF LO FAULT INDICATOR light to flash for a period not to exceed 180 seconds and then extinguishes. This indicates noise burst detection is operating properly.

f. Set up-converter STATUS SELECTOR switch to 70 MHz IF.

g. Adjust RF OUTPUT LEVEL ADJ control for -1.5 dbm indication on RF POWER meter.

h. Adjust RF POWER meter upper and lower limit controls to set pointers at -2.5 and -0.5 dbm, respectively.

i. Adjust the test translator LEVEL SET ATTEN-ATTEN 1 and -ATTEN 2 controls to obtain a reading of -10 dbm +3 db on the down-converter RF POWER meter.

NOTE

Do not change the settings of the test translator LEVEL SET ATTEN-ATTEN 1 and -ATTEN 2 controls throughout the remainder of the procedure.

j. Set up-converter STATUS SELECTOR switch to each position in turn and observe the following indications on the STATUS meter:

Position	*Indication*
70 MHz IF	Blue scale (readjust IF level attenuator, if necessary)
700 MHz IF	Blue scale
+ 24V	Green scale
RF LO TUNE	Red scale
STD LVL	Blue scale
RF LO	Blue scale
IF LO	Blue scale

k. Set down-converter STATUS SELECTOR to each position in turn and observe the following indications on the STATUS meter:

Position	*Indication*
+ 24V	Green scale
STD LVL	Blue scale
RF LO	Blue scale
IF LO	Blue scale
700 MHz IF	Approximately 0 to 3
700 MHz IF	Blue scale (applies to down-converter(wide-band if.) only)
70 MHz IF	Blue scale
RF LO TUNE	Red scale

l. Momentarily disconnect the up-converter if. test cable from jack J6 on rear of the up-converter. Observe that up-converter RF LEVEL indicator lamp illuminates and audible alarm activates.

m. Reconnect test cable to same jack on the rear of up-converter. Observe that up-converter RF LEVEL indicator lamp extinguishes and audible alarm deactivates.

n. Momentarily disconnect associated frequency synthesizer (associated with up-converter under test) cable from REFERENCE FREQUENCY SYNTH IN connector J2. Observe that up-converter RF LEVEL, RF LO FAULT and IF LO FAULT INDICATOR lamps illuminate and that audible alarm activates.

o. Reconnect cable to REFERENCE FREQUENCY SYNTH IN connector J2 (n above) and observe that RF LEVEL, RF LO FAULT and IF LO FAULT INDICATOR lamps extinguish and that audible alarm deactivates.

p. Momentarily disconnect associated frequency synthesizer (associated with down-converter under test) cable from REFERENCE FREQUENCY SYNTH IN connector J2. Observe that down-converter RF LO FAULT and IF LO INDICATOR lamps illuminate and that audible alarm activates.

q. Reconnect cable to REFERENCE FREQUENCY SYNTH IN connector J2 (p above) and observe that RF LO FAULT and IF LO FAULT INDICATOR lamps extinguish and that audible alarm deactivates.

r. Disconnect test cable from down-converter RF TEST INPUT connector and connect the test cable to RF TEST INPUT connector on the next down-converter to be tested.

s. Connect a test cable between 70 MHz SAMPLE and RF POWER METER INPUT connectors and observe that RF POWER meter reads -10 dbm +3 db.

t. Perform the procedures outlined in f, g, h, j, 1, m, n and o above.

u. Repeat the procedures outlined in v, f, g, h, j, 1, m, n, and o above until all remaining down-converters have been tested.

v. Disconnect up-converter test cable from up-converter RF TEST OUTPUT J2 and connect the test cable to RF TEST OUTPUT connector J2 on the next up-converter to be tested.

w. Perform the procedures outlined in f, g, h, ;, 1, m, n, and o above.

x. Repeat the procedures outlined in v, f, g, h, ;, 1, m, n, and o above until all remaining up-converters have been tested.

Section III. OPERATION

3-7. General Operating Instructions

a. The frequency conversion subsystem should be operated in accordance with the standard operating procedures established at the AN/TSC-54 communications site. Refer to the appropriate instruction manuals (app A) for detailed information on the application of equipment. Detailed operational data for the equipment is given in paragraphs 3-8 through 3-12.

b. Communication channels can be established following power application and preliminary set-up of operating controls (para 3-9) and normal operation can be executed following acquisition of the scheduled communications satellite. Optional types of operation and equipment substitutions can be accomplished by the use of various cable arrangements on equipment.

c. Immediate reporting of jamming, plus accurate and complete recording of any distortion, is an important responsibility of operating personnel. The initial reporting of unusual interference alerts command that countermeasures are being used; detailed records inform the higher authorities regarding the countermeasures capability of the enemy. Follow the standard instructions given in the local operating procedures for reporting and recording evidence of enemy countermeasures efforts.

3-8. Starting Procedure

The following procedure is based on the assumption that the 7.25- to 7.75-GHz rf and 70-MHz if. and/or 700-MHz if. input signals required by the frequency conversion subsystem are available at the communications site.

a. Apply power to blowers.

CAUTION

To avoid damage caused by equipment over-heating, always insure that blower circuit is ON when the frequency con-version subsystem is in operation.

NOTE

Observe that BLOWER FAILURE indi-cator lamps on the blower assembly located at top of each equipment cabinet is not illuminated. The BLOWER FAILURE indicator lamps should extinguish when proper airflow is achieved.

b. Set down-converter POWER ON-OFF circuit breakers to OFF.

c. Set frequency synthesizer unit POWER ON-OFF toggle switch to OFF.

d. Set test translator POWER ON-OFF circuit breaker to OFF.

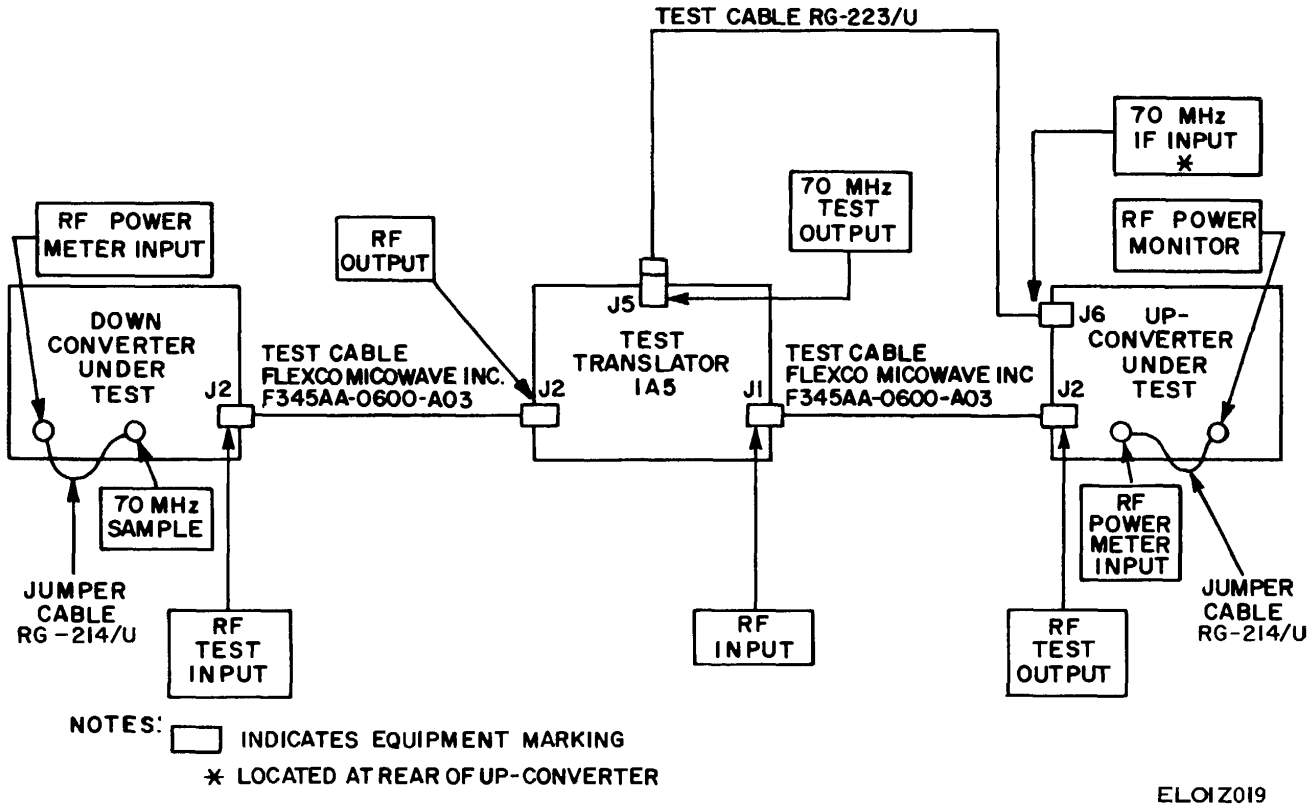


Figure 3-10. Preliminary subsystem test setup diagram.

e. Set distribution amplifier POWER ON-OFF circuit breaker to OFF.

f. Set up-converter POWER ON-OFF circuit breakers to OFF.

g. Set frequency synthesizer unit POWER ON-OFF toggle switch to OFF.

h. Insure that the looping plugs are connected between jacks of the time base patch panel (fig. 3-8).

i. Set distribution amplifier POWER ON-OFF circuit breaker to ON. The POWER ON indicator lamp should illuminate.

j. Set STATUS SELECT switch to each position in turn, and observe that the STATUS indicator meter reads in the blue scale.

k. Set each frequency synthesizer POWER ON-OFF toggle switch to ON. The POWER ON indicator lamps should illuminate.

l. Set METER FUNCTION switch to each position in turn and observe that the meter reads in the green scale.

m. Set up-converter POWER ON-OFF circuit breaker to ON, the POWER ON indicator lamp should illuminate, the RF LEVEL, RF LO FAULT INDICATOR lamps should be extinguished and the audible alarm should be silent.

NOTES

The RF LO FAULT and IF LO FAULT INDICATOR lamps may be momentarily illuminated and the audible alarm may sound for a short period of time.

Should RF LO FAULT INDICATOR lamp go on at loss of rf oscillator phase lock, when phase lock is reestablished light may flash for a period not to exceed 180 seconds before extinguishing.

n. Set STATUS SELECTOR switch to each position in turn and observe the following indications on STATUS meter.

Position	*Indication*
70 MHz IF	Blue scale
700 MHz IF	Blue scale
+ 24V	Green scale
RF LO TUNE	Red scale
STD LVL	Blue scale
RF LO	Blue scale
IF LO	Blue scale

NOTE

Set the MODE SELECTOR switch to FM or DGTL, depending upon the required carrier operation.

NOTE

Changing MODE SELECTOR switch setting from FM to DGTL or DGTL to FM causes RF LO FAULT INDICATOR lamp to flash for a period not to exceed 180 seconds and then extinguish. This indicates noise burst detection is operating properly.

o. Set RF OUTPUT switch to ON LINE.

NOTE

An up-converter is operational as soon as it is turned on; however, a 1-hour warm-up period should be allowed to achieve maximum stability.

p. Repeat the procedures outlined in m, n, and o above for all remaining up-converters.

q. Set down-converter POWER ON-OFF circuit breaker to ON; the POWER on indicator lamp should illuminate, the RF LO FAULT and IF LO FAULT INDICATOR lamps should b extinguished and the audible alarm should b silent.

NOTE

The RF LO FAULT and IF LO FAULT INDICATOR lamps may be momentarily illuminated and the audible alarm may sound for a short period of time.

r. Set STATUS SELECTOR switch to each position in turn and observe the following indications on STATUS meter:

Position	*Indication*
+ 24V	Green scale
STD LVL	Blue scale
RF LO	Blue scale
IF LO	Blue scale
700 MHz IF	Approximately 0 to 3
700 MHz IF	Varies with input signal (low scale) level (applies to down-converter (wide-band if.) only)
70 MHz IF	Varies with input signal (low scale) level
RF LO TUNE	Red scale

NOTES

Set the MODE SELECTOR switch to FM or DGTL, depending upon the required carrier operation.

The 700 MHz IF and 70 MHz IF positions of the STATUS SELECTOR switch are used primarily for maintenance due to the signal levels required to scale the STATUS meter in these positions.

s. Repeat the procedures outlined in g and r above for all remaining down-converters.

t. et test translator POWER ON-OFF circuit breaker to ON. The POWER ON light should illuminate.

NOTE

The test translator is not used in normal operation but provides self-test capabilities and an auxiliary 5-MHz frequency standard in case of emergency.

u. Set 70-MHz ON and 5-MHz ON switches to ON (up) position.

NOTE

The LO SEL switch is set to 725 MHz or 200 MHz depending on the frequency of the converters under test.

CAUTION

Do not use the 725-MHz local oscillator of the test translator to convert input frequencies of 7980 MHz and below because of the possible contamination of the loop test by the local oscillator's tenth harmonic. The 200-MHz local oscillator is used to translate up-converter frequencies from 7.9 GHz to 7.95 GHz.

3-9. Procedure for Changing Frequency

Under normal operating conditions, all up-converters and down-converters are pretuned to the desired operating frequency and are set for the required input and output signal levels and modulation modes. Perform the procedures given in a below for changing the frequency of an up-converter, and the procedures in b below for changing the frequency of a down-converter.

a. Up-Converter.

(1) Set RF OUTPUT switch to OFF-LINE.

(2) Set POWER ON-OFF circuit breaker to ON and observe that the POWER ON indicator lamp illuminates.

(3) Place STATUS SELECTOR switch to RF LO.

(4) Set TRANSMIT FREQUENCY SELECTOR MHz switch to new operating frequency.

NOTE

If frequency change is less than +12 MHz from previous frequency, the indicator lamp may not go on and alarm may not sound. Perform (6) below to maximize frequency phase lock.

Should RF LO FAULT INDICATOR lamp go on at loss of rf oscillator phase lock, when phase lock is reestablished light may flash for a period not to exceed 180 seconds before extinguishing.

(5) Observe that STATUS meter varies from original setting, the RF LEVEL and RF LO FAULT INDICATOR lamps illuminate and the audible alarm sounds.

(6) Press and hold AUDIBLE ALARM DEFEAT pushbutton and tune to center scale.

(7) Release AUDIBLE ALARM DEFEAT pushbutton and note that the audible alarm is silent.

(8) Observe that the RF LEVEL and RF LO FAULT INDICATOR lamps are extinguished.

NOTES

Set the MODE SELECTOR switch to FM or DGTL, depending upon the required carrier operation. Changing MODE SELECTOR switch setting from FM to DGTL or DGTL to FM causes RF LO FAULT INDICATOR light to flash for a period not to exceed 180 seconds and then extinguishes. This indicates noise burst detection is operating properly.

(9) Set STATUS SELECTOR switch to each position in turn and observe the following indications on the STATUS meter:

Portion	*Indication*
70 MHz IF	Blue scale
700 MHz IF	Blue scale
+ 24V	Green scale
RF LO TUNE	Red scale
STD LVL	Blue scale
RF LO	Blue scale
IF LO	Blue scale

(10) Set RF OUTPUT switch to ON-LINE.

b. Down-Converter.

(1) Check to see that proper filter is connected between connector J2 on rf input stripline assembly and connector J1 on rf conversion stripline assembly. Filter A7FL1 is required for receive frequencies between 7.25- and 7.55-GHz and filter A7FL2 is required for receive frequencies between 7.50- and 7.75-GIIz.

NOTE

To gain access to the filter assembly, loosen the captive screws securing the

down-converter in the cabinet, slide the down-converter out of the cabinet, loosen the captive screws securing the side cover to the down-converter, and remove the side cover. If the filter is changed, make certain that the placarding on the front of the unit agrees with the filter installed.

(2) Set POWER ON-OFF circuit breaker to ON and observe that the POWER ON indicator lamp illuminates.

(3) Set STATUS SELECTOR switch to RF LO TUNE and adjust RECEIVE FREQUENCY FINE TUNE control for a center-scale indication on STATUS meter.

(4) Set RECEIVE FREQUENCY SELECTOR MHz thumbwheel switch to new operating frequency.

(5) The RF LO indicator lamp will illuminate and the audible alarm sounds when the frequency change is greater than 6 to 10 MHz.

(6) Press and hold AUDIBLE ALARM DEFEAT pushbutton, if necessary, and adjust RECEIVE FREQUENCY FINE TUNE control for a center-scale indication on STATUS meter.

(7) Release AUDIBLE ALARM DEFEAT pushbutton and note that the audible alarm is silent.

(8) Observe that the RF LO indicator lamp is extinguished.

NOTE

Set the MODE SELECTOR switch to FM or DGTL, depending upon the required carrier operation.

(9) Set STATUS SELECTOR switch to each position in turn and observe the following indications on the STATUS meter:

Position	*Indication*
+ 24V	Green scale
STD LVL	Blue scale
RF LO	Blue scale
IF LO	Blue scale
700 MHz	Approximately 0 to 3
700 MHz	Varies with input signal level (applies to down-converter (wide-band if.) only)
70 MHz IF	Varies with input signal level
RF LO TUNE	Red scale

NOTE

The 700 MHz IF and 70 MHz IF positions of the STATUS SELECTOR switch are used primarily for maintenance caused by the signal levels required to scale the STATUS meter in these positions.

3-10. Up-Converter Input Signal Level Change Procedure

a. Set RF OUTPUT switch to OFF-LINE.

b. Set STATUS SELECTOR switch to 70 MHz IF and set IF LEVEL ATTENUATOR switches for center-scale indication on STATUS meter.

c. Observe that the RF LEVEL indicator lamp is extinguished.

d. Set STATUS SELECTOR switch to each position in turn and observe the following indications on the STATUS meter:

Position	*Indication*
70 MHz IF	Blue scale
700 MHz IF	Blue scale
+ 24V	Green scale
RF LO TUNE	Red scale
STD LVL	Blue scale
RF LO	Blue scale
IF LO	Blue scale

e. Set RF OUTPUT switch to ON-LINE.

3-11. Up-Converter Output Signal Level Change Procedure

a. Set RF OUTPUT switch to OFF-LINE.

b. Set RF OUTPUT LEVEL ADJ to new setting.

c. Set RF POWER meter upper and lower limit controls to position pointers at 1-db points on either side of new output level.

d. Observe that the RF LEVEL lamp is extinguished.

e. Set STATUS SELECTOR switch to each position in turn and observe the following indications on the STATUS meter:

Position	*Indication*
700 MHz IF	Blue scale
700 MHz IF	Blue scale
+ 24V	Green scale
RF LO TUNE	Red scale
STD LVL	Blue scale
RF LO	Blue scale
IF LO	Blue scale

f. Set RF OUTPUT switch to ON-LINE.

3-12. Equipment Shutdown Procedure

Stop the frequency conversion subsystem by turning off all equipment except cesium beam frequency standard.

Section IV. EMERGENCY OPERATION PROCEDURES

3-13. Operation with Down-Converter Failure

If a down-converter carrying high-priority traffic fails, an unused down-converter or a down-converter carrying low-priority traffic may be substituted for the defective unit as follows:

a. Patch substitute down-converter output to output line normally used by defective unit.

b. Check to see that proper filter is connected between connector J2 on rf input stripline assembly and connector J1 on rf conversion stripline assembly (para 3-9b).

c. On substitute down-converter front panel, set RECEIVE FREQUENCY SELECTOR MHz and MODE SELECTOR switches to the same frequency and mode settings as on the defective unit.

d. Perform the procedures outlined in paragraph 3-9b(4) through (9).

3-14. Operation with Up-Converter Failure

If an up-converter carrying high-priority traffic fails, an unused up-converter or an up-converter carrying low-priority traffic may be substituted for the defective unit as follows:

a. Set both up-converter RF OUTPUT switches to OFF-LINE.

b. Patch substitute up-converter input to input line normally used by defective unit.

c. Set TRANSMIT FREQUENCY SELECTOR MHz and MODE SELECTOR switches on substitute up-converter to the same frequency and mode settings as on the defective unit.

d. Perform the procedures outlined in paragraph 3-9a(4) through (10).

NOTE

The C-field and 1 pps of the cesium beam frequency standard should not be adjusted except by direction from NAVOBSY. Instruc-tions and procedures for the operation and reporting of data is contained in NAVOBSY TS/PTTI- O1M.

3-15. Operation with Cesium Beam Frequency Standard Failure

All communications channel frequency synthesizers are normally slaved to the 5-MHz standard frequency from the cesium beam frequency standard, providing coherent operation. The tracking receiver frequency synthesizer 1A5 and the test translator are normally driven by their internal 5-MHz signal sources, providing noncoherent operation. If the cesium beam frequency standard fails, and coherent operation of the communications channel frequency synthesizers must be maintained, perform the patching operations de-scribed in a below. If the cesium beam frequency standard fails and noncoherent operation of the com-munications channel frequency synthesizers is permitted, perform the patching operations described in *b* be-low.

a. Coherent Operation Patching.

(1) Disconnect coaxial looping plug connected between 2A9 jack J17 and 2A6 jack J18 (fig 3-8)

(2) Disconnect 50-ohm coaxial termination from 1A5 jack J1 (fig. 3-3).

(3) Connect patch cord between lA5 jack J1 ((2) above) and 2A6 jack ((1) above) J18.

b. Noncoherent Operation Patching.

(1) Disconnect jumper cable from frequency synthesizer EXT STD OUT connector J3.

(2) Connect open end of the jumper cable ((1) above) to INT STD OUT connector J1.

CHAPTER 4
ORGANIZATIONAL MAINTENANCE

Section I. PREVENTIVE MAINTENANCE

4-1. Scope of Organizational Maintenance

The maintenance duties assigned are listed below together with references to the paragraphs covering the specific maintenance functions. The duties assigned do not require tools or test equipment other than those issued with the equipment.

a. Daily preventive maintenance checks and services (para 4-5).
b. Corrective maintenance (para 4-13).
c. Clearing (para 4-8).
d. Replacement of fuses and indicator lamps (pars 4-9).

4-2. Tools, Materials, and Test Equipment Required

The only tools and test equipment required for organizational maintenance are issued as part of the AN/TSC-54. The materials required are as follows:

a. Trichloroethane.
b. Cloth, textile: cheesecloth, lint-free (NSN 8305-00-267-3015).
c. Abrasive sheet (NSN 5350-00-271-7939).
d. Tool Kit, Electronic Equipment TK-105/G (NSN 5180-00-610-8177).

4-3. Organizational Preventive Maintenance

Preventive maintenance is the systematic care, inspection, and servicing of equipment to maintain it in serviceable condition, prevent breakdowns, and assure maximum operational capability. Preventive maintenance is the responsibility of all categories of maintenance concerned with the equipment and includes inspection, testing, and repair or replacement of parts, subassemblies, or units that inspection and tests indicate would probably fail before the next scheduled periodic service.

4-4. Maintenance Intervals

a. Preventive maintenance checks and services of the frequency conversion subsystem at the organizational category of maintenance are made on a daily, weekly, or monthly interval unless otherwise directed by the Commanding Officer. The preventive maintenance checks and services should be scheduled concurrently with the periodic service schedule of the carrying vehicle for all vehicular installations. Maintenance forms and records to be used and maintained on this equipment are specified in TM 38-750.

b. Systematic Care. The procedures given in paragraphs 4-5 through 4-10 cover routine systematic care and cleaning essential to proper upkeep and operation of the equipment.

4-5. Preventive Maintenance Checks and Services Periods

Preventive maintenance checks and services of the frequency conversion subsystem must be accomplished daily and under the special conditions listed below:

a. When the equipment is initially installed.
b. When the equipment is reinstalled after removal for any reason.

4-6. Daily Maintenance

The preventive maintenance checks and services chart (para 4-7) outlines functions to be performed daily. These checks and services are to maintain military electronic equipment in a combat serviceable condition; that is, in good general (physical) condition and in good operating condition. To assist operators in maintaining combat serviceability, the chart indicates what to check, how to check, and the normal conditions; the References column lists the illustrations, paragraphs, or manuals that contain detailed repair or replacement procedures. If the defect cannot be remedied by the operator performing the corrective actions listed, higher category maintenance or repair is required. Records and reports of these checks and services must be made in accordance with TM 38-750.

4-7. Dally Preventive Maintenance Checks and Services Chart

Sequence number	Item to be inspected	Procedure	Reference
1	Completeness	Check that the equipment is complete	Para 1-8

Sequence number	Item to be inspected	Procedure	Reference
2	Exterior surfaces	Clean the exterior surface of the equipment.	Pars 4-8
3	Installation	Check to see that the equipment is properly installed.	
4	Connectors and binding poets	Check the tightness of all power connectors and binding posts.	
5	Grounding system	Check to see that the grounding system is properly installed. Tighten any loose ground connections.	
6	Signal cables and wires	Inspect cables for fraying or damaged insulation. Inspect for defective connections with strained wires. Tighten any loose plugs and connections.	
7	Hardware	Check the condition of all cable assemblies and insure that all connector pins are not damaged. Make sure that all threaded hardware is not nicked, burred, or otherwise marred.	
8	Controls and indicators	Observe that the mechanical action of each knob, dial and switch is smooth and free from external or internal binding and that no excessive looseness exists.	Tables 3-1 through 3-7
9	Operation	Operate the equipment according to appropriate instructions. Report any operational failure of equipment. Replace defective items for which running spares are authorized.	Pars 3-4 through 3-15.

4-8. Cleaning

Inspect the exterior of the equipment. The exterior surfaces should be clean, and free of dust, dirt, grease and fungus.

a. Remove dust and loose dirt with a clean, soft cloth.

WARNING

The fumes of trxchloroethane are toxic. Provide thorough ventilation whenever used. Do not use near an open flame. Trichloroethane is not flammable, but exposure of fumes to an open flame or hot metal surface forms highly toxic phosgene gas.

b. Remove grease, fungus, and ground-in dirt from the equipment cabinet. Use a cloth dampened (not wet) with trichloroethane.

c. Remove dust or dirt from plugs and terminal boards with a brush.

CAUTION

Do not press on any meter face (glass) when cleaning; the meter may become damaged.

d. Clean the front panel meters and control knobs with a soft, clean cloth. If dirt is difficult to remove, dampen the cloth with water; mild soap may be used for more effective cleaning.

e. If available, dry compressed air may be used to remove dust from inaccessible places. However, be careful not to exceed a line pressure of 60 pounds per square inch (psi) or mechanical damage from the air-blast may result.

4-9. Replacement of Fuses

Both indicating and nonindicating extractor-type fuses are used in the AN/TSC-54 frequency conversion subsystem. Fuses in extractor-type holders are re-leased by pushing in and turning the holder caps. In each case, the fuse and cap are then removed together, a new fuse is placed in the cap, and the combination is inserted in the holder. The removal and insertion procedure is similar to that used with a bayonet-type auto-mobile lamps.

CAUTION

Never replace a fuse with one of a higher current rating. Fuse ratings are normally marked on, or adjacent to, each fuseholder and each rating has been carefully chosen to protect the equipment. A fuse of higher current rating will remove this protection and endanger the equipment.

4-10. Replacement of Indicator Lamps

Two types of indicators are used in the frequency conversion subsystem; a jewel and lamp assembly. Replace the lamp in the jewel and lamp assembly as follows:

a. Unscrew jewel (because of snug fit, lamp remains in jewel assembly).

b. Grasp lamp at base and pull from jewel housing. Discard lamp.

c. Press new lamp into jewel and screw jewel into socket until hand-tight.

4-11. Monthly Maintenance

Perform the maintenance functions indicated in the organizational monthly preventive maintenance checks and services chart (para 4-12) once each month. A month is defined as approximately 30 calendar days of 8-hour-per-day operation. If the equipment is operated 16 hours a day, the monthly preventive maintenance checks and services should be performed at 15-day intervals. Adjustment of the maintenance interval must be made to compensate for any unusual

conditions. Equipment maintained in a standby (ready for immediate operation) condition must have monthly preventive maintenance checks and services performed on it. Equipment in limited storage (required service before operation) does not require monthly preventive maintenance. Air filters should be cleaned and/or replaced on a monthly basis, if inspection dictates a need for such action.

4-12. Organizational Monthly Preventive Maintenance Checks and Services Chart

Sequence number	Item to be Inspected	Procedures	References
1	Publications	Check to see that all publications are complete, serviceable, and current.	DA Pam 3104
2	Modifications	Check DA Pam 310-7 to determine if new applicable MWO's have been published. ALL URGENT MWO's must be applied immediately. All NORMAL MWO's must be scheduled.	DA Pam 310-7 and TM 38-750
3	Spare parts	Check all spare parts (together and organizational) for general condition and method of storage. No overstock should be evident and all shortages must be on valid requisitions.	TM 11-5895-833-20P
4	Equipment hardware	Tighten loose bolts, nuts, and screws that hold equipment. Replace missing bolts, screws, nuts, and washers. Replace all badly burred screws, bolts, and nuts which cannot be engaged or turned with a screwdriver or wrench.	
5	Signal and power cables and cords	Dress all cables and cords neatly.	
6	Miscellaneous items	Check to see that all items not required for immediate use are properly stored.	
7	Cable layout	Inspect cable layout and relocate cables as necessary so that they are not endangered by and are not dangerous to personnel.	

Section II. CORRECTIVE MAINTENANCE

4-13. Organizational Troubleshooting Information

The troubleshooting and repair work that can be performed at the organizational maintenance category is necessarily limited in scope by the tools, test equipment, replaceable parts issue, and the existing tactical situation. Accordingly, trouble-shooting is based on the performance of the equipment in response to a predictable set of conditions and the use of the senses in determining such troubles as burned-out indicator lamps, fuses, and loose connections. When an equipment trouble occurs, make a visual inspection of all equipment controls and cable connections before performing any detailed troubleshooting procedures. The following visual checks should be made by operational personel to determine the possible cause of malfunction.

a. Check all equipment controls for proper positioning.

b. Check to see that all signal and power cable connections are correctly located and secure.

c. Perform other visual checks as indicated in the appropriate technical manuals (app A).

d. If the trouble is not apparent, or the above checks (o not reveal the cause of malfunction, higher category of maintenance is required.

4-14. Report of High-Bit Error Rate

Report of a high-bit error rate from the Satellite Technical Controller, requires that the RF LO FAULT INDICATOR lamp on the up and down converter be monitored. A flashing indication is given if a series of phase noise bursts of excessive amplitude are being generated within a preset interval by the associated frequency synthesizer or frequency generator subsystem elements. These disturbances are not readily detected by conventional testing methods and are a critical factor in data transmission when they occur. Monitor the RF LO FAULT INDICATOR lamp of the converters. Record time and duration of any RF LO FAULT INDICATOR flashing and coordinate with the Satellite Technical Controller.

4-15. Touchup Painting Instructions

Remove rust and corrosion from metal surfaces by lightly sanding with sandpaper. Brush two coats of paint on the bare metal to protect it from further corrosion. Refer to the applicable cleaning and refinishing practices specified in TB 43-0118.

APPENDIX A
REFERENCES

DA Pam 310-4	Index of Technical Manuals, Technical Bulletins, Supply Manuals (Types 7, 8, and 9), Supply Bulletins, and Lubrication Orders.
DA Pam 310-7	US Army Equipment Index of Modification Work Orders.
FM 5-25	Explosives and Demolitions.
NAVOBSY TS/PTTI-O/M	Operating Procedures for PTTI Equipments.
SB 700-20	Army Adopted/Other Items Selected for Authorization/List of Reportable Items
TB 43-0118	Field Instructions for Painting and Preserving Electronics Command Equipment Including Camouflage Pattern Painting of Electrical Equipment Shelters.
TM 38-750	The Army Maintenance Management System (TAMMS).
TM 740-90-1	Administrative Storage of Equipment.
TM 750-244-2	Procedures for Destruction of Electronic Materiel to Prevent Enemy Use (Electronics Command).

APPENDIX C
MAINTENANCE ALLOCATION

Section I. INTRODUCTION

C-1. General

This appendix provides a summary of the maintenance operations for the Frequency Conversion Subsystem of the Satellite Communications Terminal AN/TSC-54. It authorizes categories of maintenance for specific maintenance functions on repairable items and components and the tools and equipment required to perform each function. This appendix may be used as an aid in planning maintenance operations.

C-2. Maintenance Function

Maintenance functions will be limited to and defined as follows:

a. Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination.

b. Test. To verify serviceability and to detect incipient failure by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. Service. Operations required periodically to keep an item in proper operating condition, i.e., to clean, preserve, drain, paint, or to replenish fuel/lubricants/hydraulic fluids or compressed air supplies.

d. Adjust. Maintain with prescribed limits by bringing into proper or exact position, or by setting the operating characteristics to the specified parameters.

e. Align. To adjust specified variable elements of an item to about optimum or desired performance.

f. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or test measuring and diagnostic equipment used in precision measurement. Consists of the comparison of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

g. Install. The act of emplacing, seating, or fixing into position an item, part, module (component or as-sembly) in a manner to allow the proper functioning of the equipment/system.

h. Replace. The act of substituting a serviceable like-type part, subassembly, model (component or as-sembly) for an unserviceable counterpart.

i. Repair. The application of maintenance services (inspect, test, service, adjust, align, calibrate, replace) or other maintenance actions (welding, grinding, riveting, straightening, facing, remachining, or resurfacing) to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module/component/assembly, end item or system.

j. Overhaul. That periodic maintenance effort (service/action) necessary to restore an item to a completely serviceable/operational condition as prescribed by maintenance standards (e.g., DWR) in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like-new condition.

k. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like-new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours, miles, etc.) considered in classifying Army equipment/components.

C-3. Column Entries

a. Column 1, Group Number. Column 1 lists group numbers, the purpose of which is to identify components, assemblies, subassemblies and modules with the next higher assembly.

b. Column 2, Component/Assembly. Column 2 contains the noun names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

c. Column 3, Maintenance Functions. Column 3 lists the functions to be performed on the item listed in column 2. Column 3 also specifies, by the listing of a "worktime" figure in the appropriate subcolumn(s), the lowest level of maintenance authorized to perform the function listed in column 3. This figure represents the active time required to perform that maintenance function at the indicated category of maintenance. If the number or complexity of the tasks within the listed maintenance function vary at different maintenance categories, appropriate "worktime" figures will be shown for each category. The number of man-hours specified by the "worktime" figure represents the average time required to restore an item (assembly, subassembly, component,

module, end item or system) to a serviceable condition under typical field operating conditions. This time includes preparation time, trouble-shooting time and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. Sub-columns of column 3 are as follows:

C-Operator/Crew
O-Organizational
F-Direct Support
H-General Support
D-Depot

d. Column 4, Tools and Equipment. Column 4 specifies by code, those common tools sets (not individual tools) and special tools, test, and support equipment required to perform the designated function.

e. Column 5, Remarks. Self explanatory.

NOTE

To be accomplished only when required tools and test equipment are available.

C-4. Tool and Test Equipment Requirements (Table C-1)

a. *Tool or Test Equipment Reference Code*. The numbers in this column coincide with the numbers used in the tools and equipment column of the MAC. The numbers indicate the applicable tool or test equipment for the maintenance function.

b. Maintenance Category. The codes in this column indicate the maintenance category allocated to the tool or test equipment.

c. Nomenclature. This column lists the noun name and nomenclature of the tools and test equipment required to perform the maintenance functions.

d. National Stock Number. This column lists the National stock number of the specific tool or test equipment.

e. Tool Number. Not used.

SECTIN II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
00	Frequency Conversion Subsystem for Satellite Communication Terminal AN/TSC-54	0 0.5												Daily and monthly inspections
				0 0.4									32	Cleaning
			0 0.1											Operational checkout
										0 0.2			32	Replacement of fuses and indicator lamps
			F 2.0										2,3,4,5,7,8,9, 10,11,12,21, 32 thru 36, 119	Performance tests See note
										F 1.0			30 thru 35, 120	See note. Replacement of defective subassemblies, cables, and connectors.
01	Cabinet Assembly Down Converter (Unit 1)	0 0.4												Daily and monthly inspections
				0 0.4									32	Cleaning
			0 0.5											Operational Checkout
										0 0.2			32	Replacement of Fuses
0110	Blower Assembly (1A10) (Fan Assembly, Tubeaxial)	0 0.1												Monthly inspection
				0 0.1									32	Cleaning
									F 0.7				32,33	See note. Replacement of motor and air flow switch
011001	Wiring Harness, Ac Power (1A10W2)	F 0.1								F 0.5			30,32,33	

SECTIN II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
0120	Microwave Signal Divider (1A11) (Divider, Microwave Signal)	0 0.1												Monthly Inspection
				0 0.3									32	Cleaning
			F 1.3										2,3,4,32,33,36	See note. Test to determine status
									D 2.0				32 thru 35	Replacement to be performed by depot. Depot disposition.
0130	Cabinet Subassembly, Down	F 0.5								F 1.5				Repair defective cables and harness.
013001	Wiring Harness, Ac Power (1W1)	F 0.1								F 0.5			30, 32, 33	
13002	Wiring Harness, Radio Frequency (1W2)	F								F			30, 32,33	
02	CONVERTER, FREQUENCY, ELECTRONIC CV-3085/MSC-46(V) (1A2, 1A3, 1A4)	0 0.5												Daily and monthly inspections
	AND													
	CONVERTER, FREQUENCY, ELECTRONIC CV-3085A/MSC-46(V)			0 0.2									32	Cleaning
			F 0.3										2,3,4,5,7,8,9,10,11,14, 15,16,17,18,19,21,22, 23,30,31,32,33,34,35, 36,37,38,39,40,43,46, 59,64,65,66,68,74,79, 91,97,103,108,110, 114,117,119	See note. Test to determine status.
					F 0.2								32,33	See note. Adjustment after module replacement.

SECTIN II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
										F 0.5			32, 33, 120	See note. Module replacement.
0210	70-MHz IF Amplifier (1A2AR2) and (1A2AR3)								F 0.5					See note. Tested at next higher assembly.
	(Amplifier, Intermediate Frequency)	F 0.2												Visual inspection
				D 0.1									32	Cleaning
			D 3.0										3, 4, 5, 8, 9, 14, 21, 31, 32, 33 37, 45, 53, 54, 55, 69, 78, 84, 89	Test to determine status.
									D 6.0					Depot disposition
9212	Wiring Harness, Interlock (1A2W31)	F 0.1							F 0.5				30, 32, 33	
0214	Cable Assembly, Radio Frequency (1A2W9)	F 0.1							F 0.5				30, 32, 33	
0216	Cable Assembly, Radio Frequency (1A2W8)	F 0.1							F 0.5				30, 32, 33	
0218	Cable Assembly, Radio Frequency (1A2W13)	F 0.1							F 0.5				30, 32, 33	
0220	Cable Assembly, Radio Frequency (1A2W16)	F 0.1							F 0.5					
0222	Cable Assembly, Radio Frequency (1A2W17)	F 0.1							F 0.5				30, 32, 33	
0224	IF Phase-Locked Oscillator (1A2Y2)								F 0.1					See note. Tested at next higher assembly.
	(Oscillator, Radio Frequency)	F 0.1												Visual inspection

SECTIN II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
				D 0.3									32	Cleaning
			D 4.0										3, 4, 5, 17, 21, 32, 33, 48, 53, 69, 78, 89, 114	Test to determine status
										D 10.5				Depot disposition
0226	700-MHz Bandpass Filter (1A2FL3) (Filter, Bandpass)								F 0.5					See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				D 0.1									32	Cleaning
			D 3.0										3, 4, 5, 7, 8, 10 17, 27, 31, 32 33, 37, 40, 41 53, 61, 89	Test to determine status
										D 4.0				Depot disposition
0228	700-MHz Amplifier (1A2AR1) (Amplifier, Intermediate Frequency)								F 0.3					See note. Tested at next higher assembly.
		F 0.2												Visual inspection
				D 0.2									32	Cleaning
			D 1.5										3, 4, 5, 7, 8, 10 13, 17, 27, 32 33, 41, 53, 55, 61, 69, 71, 72 78, 89, 97, 112	Test to determine status
										D 2.0				Depot disposition

SECTIN II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
0230	RF Conversion Stripline Assembly (1A2CR1) (Mixer, Stage, Frequency)								F 0.6					See note. Tested at next higher assembly.
		F 0.3												Visual Inspection
				D 0.3									32	Cleaning
			D 6.0										3, 4, 5, 6, 12, 17, 18, 19, 27, 30, 32, 33, 37, 40, 41, 50, 51, 55, 57, 59, 61, 65, 69, 71, 73, 78, 89, 114, 117, 118	Test to determine status
										D 8.0				Depot disposition
0234	IF Conversion Stripline Assembly (1A2CR2) (Mixer, Stage, Frequency)								F 0.7					See note. Tested at next higher assembly.
		F 0.1												
				D 0.2									32	Cleaning
			D 5.0										3, 4, 5, 8, 10, 14 17, 32, 33, 41, 50 thru 55, 59, 61, 67, 69, 71, 72, 78, 89, 114, 116	Test to determine status.
										D 9.0				Depot disposition
0236	Phase Equalizer (1A2EQ1) (Filter, Phase Compensating)								F 0.7					See note. Tested at next higher assembly.
		F 0.2												Visual Inspection

SECTIN II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
				D 0.3									32	Cleaning
			D 3.0										3, 4, 5, 8, 9, 12, 31, 32, 33, 38, 54, 69, 84, 89	Test to determine
										D 3.5				Depot disposition
0238	RF Input Stripline Assembly (1A2DC1) (Coupler, Directional)	F 0.1							F 0.6					See note. Tested at next higher assembly. Visual Inspection
				D 0.3									32	Cleaning
			D 0.6										3, 4, 5, 12, 18, 19, 32, 33, 37, 50, 51, 61., 73, 89, 117	Test to determine status.
										D 18.0				Depot disposition
0240	Wiring Harness, Interconnection (1A2W29)	F 0.1								F 0.5			30, 32, 33	
0242	Wiring Harness, Ac Prime Power (1A2W30)	F 0.1								F 0.5			30, 32, 33	
0244	Amplitude Step Attenuator (1A2AT5) (Attenuator Assembly)	F 0.1							F 0.6					See note. Tested at next higher assembly. Visual Inspection
				D 0.1									32	Cleaning
			D 1.5										3, 4, 14, 32, 33, 54, 61, 71, 89	Test to determine status.

SECTIN II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
							D 2.0							Performed at calibration facility
										D 3.0			32, 33, 71	Location of defect in module.
024401	Circuit Card Assembly (1A2AT5A1)	D 0.1								D 0.7			32, 33, 71	Tested at next higher assembly. Location of defect on card.
				D 0.1									32	Cleaning
024402	Circuit Card Assembly (1A2AT5A4)	D 0.1								D 0.7			32, 33, 71	Tested at next higher assembly. Location of defect on card.
				D 0.1									32	Cleaning
024403	Circuit Card Assembly (1A2AT5A3)	D 0.1								D 0.7			32, 33, 71	Tested at next higher assembly. Location of defect on card.
				D 0.1									32	Cleaning
024404	Circuit Card Assembly (1A2AT5A2)	D 0.1								D 0.7			32, 33, 71	Tested at next higher assembly. Location of defect on card.
				D 0.1									32	Cleaning
0246	Out-of-Lock Detector (1A2A4) (Circuit Card Assembly, Out-of-Lock Detector)								F 0.4					See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				D 0.1									32	Cleaning

SECTIN II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
				D 1.0									31, 32, 33, 67 69, 71, 89, 121, 122	Test to determine status.
										D 2.0			31, 32, 33, 71, 121, 122	Location of defect in module.
0248	Status Indicator Calibration (1A2A3) (Circuit Card Assy, Status Indicator Calibrator)								F 0.3					See note. Tested at next higher assembly.
					F 0.5									See note. Readjust after replacement of this module or any associated modules.
		F 0.1												Visual inspection
				D 0.1									32	Cleaning
			D 1.5										32, 33, 56, 69 71, 89	Test to determine status.
										D 1.5			30, 32, 33, 71	Location of defect in module.
0250	Filter Assembly, Bandpass (1A2A7)								F 0.3					See note. Tested at next higher assembly.
		F 0.1												Visual inspection.
				D 0.2									32	Cleaning
			D 1.0										3, 4, 5, 7, 18, 19, 32, 33, 37, 44, 50, 51, 61, 73, 89, 117	Test to determine status.
										D 4.0				Location of defect in module.
025001	Filter, Bandpass (1A2A7FL1)								D 0.8					

SECTIN II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
				D 1.0									32	Cleaning
			D 3.0										3, 4, 5, 7, 18, 19, 32, 33, 37, 44, 50, 51, 61, 73, 89, 117	Test to determine status.
										D 3.0				Depot disposition
025002	Filter, Bandpass (1A2A7FL2)								D 0.5					
				D 1.0									32	Cleaning
			D 3.0										3, 4, 5, 7, 18, 19, 32, 33, 37, 44, 50, 51, 61, 73, 89, 117	Test to determine status.
										D 3.0				Depot disposition
0252	Wiring harness, Frequency Control (1A2W26)									F 0.5			30, 32, 33	
0254	Panel Assembly, Front (1A2A2)	F 0.1								F 0.5			30, 32, 33	Tested at next higher assembly, Replacement of defective component.
				F 0.2										Cleaning
025401	Shunt, Tuning	F 0.1								F 0.5			30, 32, 33	Replacement of defective component.
				F 0.2									32	Cleaning

SECTIN II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
025402	RF Power Monitor (1A2A2CR4)								F 0.5					See note. Tested at next higher assembly.
		F 0.3												Visual inspection
				D 0.2									32	Cleaning
			D 1.0										2, 3, 4, 12, 14, 30, 32, 33, 69, 71, 73, 89, 94	Test to determine status.
										D 4.0				Depot disposition
0256	Power Supply Assembly (1A2A1)								F 0.6				32, 33	See note. Tested at next higher assembly.
										F 0.6			32, 33	See note. Replace defective heatsink or power supply 1A2PS1.
		F 0.3												Visual inspection
				F 0.2										Cleaning
025601	Power Supply (1A2A1PS1)								F 0.6					See note
		F 0.3												Visual inspection
				D 0.2									32	Cleaning
			D 0.1										30, 31, 32, 33, 60, 71, 89	Test to determine status.
										D 0.4				Depot disposition

SECTIN II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
0258	Cable Assembly, Radio Frequency (1A2W24)	F 0.1								F 0.5			30, 32, 33	
0260	Cable Assembly, Radio Frequency (1A2W25)	F 0.1								F 0.5			30, 32, 33	
0262	Cable Assembly, Radio Frequency (1A2W22)	F 0.1								F 0.5			30, 32, 33	
0264	RF Phase-Locked Oscillator (1A2Y1) (Oscillator, Radio Frequency)								F 0.1					See note. Tested at next higher assembly.
		F 0.3												Visual inspection
				D 0.3									32	Cleaning
			D 12.0										3, 4, 5, 15, 16, 17, 21, 31, 32, 33, 39, 40, 43, 45, 46, 64, 65, 66, 68, 69, 79, 89, 96, 97, 99, 100, 102, 103, 106, 108, 110, 114	Test to determine status.
										D 8.0			3, 4, 5, 15, 16, 17, 21, 31 32, 33, 39, 40, 43, 45, 46, 64, 65, 66, 68, 69, 79, 89, 96, 97, 99, 100, 102, 103, 106, 108, 110, 114	Location of defect in module
026401	RF Control Assembly (1A2Y1A1) (Circuit Card Assembly, RF Control)	D 0.3												Visual inspection
				D 0.3									32	Cleaning

SECTIN II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
				D									3, 4, 5, 31, 32, 33, 39, 40, 48, 69,, 89, 97, 99, 103, 105, 108, 110, 114	Test to determine status.
										D 4.0				Depot disposition
026402	Filter network Circuit Card Assembly (1A2Y1A5)	D 0.3												Visual inspection
				D 0.3									32	Cleaning
			D 0.5											Tested at next higher assembly.
										D 1.0				Depot disposition
026403	Phase Lock Control Circuit Card Assembly (1A2Y1A2)	D 0.3												Visual Inspection
				D 0.3									32	Cleaning
			D 3.0										3, 4, 5, 31, 32, 33, 39, 40, 69, 89, 97, 99, 103, 105, 114	Test to determine status
										D 4.0				Depot disposition
026404	L-Band Oscillator (1A2Y1A3) (Oscillator, Radio Frequency)	D 0.3												Visual inspection
				D 0.3									32	Cleaning
			D 3.0										3, 4, 5, 32, 33 46, 69, 89, 92	Test to determine status.
										D 4.0				Depot disposition

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
026405	Multiplier Assembly (1A2Y1A4) (Frequency Multiplier)	D 0.3												Visual inspection
				D 0.3									32	Cleaning
			D 3.0										3, 4, 5, 8, 9, 17, 31, 32, 33, 37, 39, 40, 41, 46, 82, 83, 89, 101	Test to determine status.
										D 4.0				Depot disposition
35890766	Wiring Harness, Oscillator (1A2W35)	F 0.1								F 0.5			30,32,33	
0268	Cable Assembly, Radio Frequency (1A2W12)	F 0.1								F 0.5			30,32,33	
0270	Cable Assembly, Radio Frequency (1A2W18)	F 0.1								F 0.5			30,32,33	
0272	Cable Assembly, Radio Frequency (1A2W20)	F 0.1								F 0.5			30,32,33	
0274	Wiring Harness, Oscillator (1A2W36)	F 0.1								F 0.5			30,32,33	
0276	700 MHz Amplifier (1A2AR4) (Amplifier, Intermediate Frequency)								F 0.5					See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				D 0.3									32	Cleaning
			D 3.0										3,4,5,6,7,8, 10,11,17,32, 33.40.41,46, 69,89,93,95, 97,100	Test to determine status.
										D 4.0				Depot disposition

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
0278	Directional Coupler (1A2DC3)								F 0.5					See note. Tested at next higher assembly.
		F 0.1												Visual Inspection
				D 0.3									32	Cleaning
			D 2.0										3, 4, 5, 8, 10, 11, 32, 33, 39, 41, 89	Test to determine status.
										D 2.5				Depot disposition
0280	Cable Assembly, Radio Frequency (1A2W32)	F 0.1								F 0.5			30, 32, 33	
0282	Bandpass Filter (1A2FL4)								F 0.5					See note. Tested at next higher assembly.
		F 0.1												Visual Inspection
				D 0.3									32	Cleaning
			D 3.0										3, 4, 5, 7, 8, 10, 11, 32, 33, 40, 89, 95	Test to determine status.
										D 3.5				Depot disposition
0284	Wiring Harness (1A2W37)	F 0.1								F 0.5			30,32,33	

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
03	TEST TRANSLATOR (1A5)	O 0.3												Daily and monthly inspections
				O 0.1									32	Cleaning
			F 0.6										3, 4, 5, 7, 13, 17 18,19,30 thru 33,36.37,70, 73, 74, 117	See note. Test to determine status.
					F 0.4								32,33	See note, Adjustment after module replacement
									F 0.7				32,33	See note. Module replacement.
0310	725-MHz Phase-Locked Oscillator (1A5Y1) (Oscillator, Radio Frequency, Phase Locked)								F 0.6					See note. Test at next higher assembly.
		F 0.1												Visual Inspectlon
				D 0.1									32	Cleaning
			D 2.0										3, 4, 5, 17, 21 30 thru 33, 40, 48, 59, 69, 78, 89, 114	Test to determine status.
										D 3.0				Depot disposition
0315	Cable Assembly, Radio Frequency (1A5W11)	F 0.1								F 0.5			30,32,33	
0320	Cable Assembly, Radio Frequency (1A5W12)	F 0.1								F 0.5			30,32,33	
0325	Cable Assembly, Radio Frequency (1A5W15)	F 0.1								F 0.5			30,32,33	
0330	Cable Assembly, Radio Frequency (1A5W9)	F 0.1								F 0.5			30.32,33	

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
0335	5-HHz Oscillator (1A5Y2) (Oscillator, Radio Frequency, 5-MHz)								F 0.6					See note. Tested at next higher assembly.
		F 0.1												Visual Inspectlon
				D 0.1									32	Cleaning
			D 1.5										5, 13, 17, 32, 33 48, 49, 53, 54, 69, 89, 115	Test to determine status.
										D 2.0				Depot disposition
0340	Power Supply (1A5PS1)													Same as Group 025601
0345	Wiring Harness, Special Purpose (1A516)	F 0.1								F 0.5			30, 32, 33	
0350	Cable Assembly, Radio Frequency (1A5W8)	F 0.1								F 0.5			30, 32, 33	
0355	Conversion Stripline Assembly (1A5CR4) (Mixer, Stage, Frequency)								F 0.6					See note. Tested at next higher assembly.
		F 0.1												Visual Inspection
				D 0.1									32	Cleaning
			D 4.0										3, 4, 5, 7, 13, 18, 19, 27, 32, 33, 37, 40, 48, 50, 51, 53, 55, 59, 61, 69, 71, 78, 85, 86, 89, 114, 117	Test to determine status.
										D 8.0				Depot disposition

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
0360	Attenuator, Variable (1A5AT1)								F 0.9					See note. Tested at next higher assembly. (Attenuators are a matched pair.)
		F 0.1												Visual Inspection
				D 0.1									32	Cleaning
			D 2.0										2, 3, 4, 17, 27 32, 33, 54, 61, 89	Test to determine status.
										D 3.0				Depot disposition
0365	Multiplier (1A5CR5) (Frequency Multiplier 200-MHz)								F 0.5					See note. Tested at next higher assembly.
		F 0.1												Visual Inspection
				D 0.1									32	Cleaning
			D 1.5										3, 4, 5, 17, 21, 30, 32, 33, 40, 48, 59, 69, 71 78, 89, 114	Test to determine status.
										D 2.5				Depot disposition
0370	Cable Assembly, Radio Frequency	F 0.1								F 0.5			30.32.33	
0375	Panel Assembly, Front	F 0.1								F 1.5			30, 32, 33	Tested at next higher assembly. Replacement of defective component.
				F 0.2										Cleaning

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
0380	Status Indicator Calibrator (1A5A1) (Circuit Card Assy, Status								F 0.4					See note. Tested at next higher assembly.
					F 0.5									See note. Readjust after replacement of this module or any associated modules.
		F 0.1												Visual Inspectlon
				D 0.1									32	Cleaning
			D 2.0										32, 33, 56, 69, 71, 89	Test to determine status.
										D 2.5			32, 33, 71	Location of defect in module.
04	SYNTHESIZER, ELECTRICAL FREQUENCY 0-1658/MSC-46(V) (1A6, 1A7, 1A8, 2A7, 2A8, 2A9)	O 0.3												Daily and monthly inspections
				0 0.3									32	Cleaning
			F 0.3										3, 4, 5, 27, 28 30 thru 33, 36, 48	See note. Test to determine status.
										F 0.5			32, 33	See note. Module replacement.
0410	10-MHz DU Main VCO (1A6A2) (Main VCO, 10-MHz Digital Unit)								F 0.4					See note. Tested at next higher assembly.
		F 0.1												Visual Inspectlon
				D 0.1									32	Cleaning
				D 3.0									5,28,32,33,70, 89	Test to determine status.

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
										D 3.5				Depot disposition
0412	10-MHz DW Main Phase Detector (1A6A3) (Main Phase Detector, 10-MHz Digital Unit)								F 0.4					See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				D 0.1									32	Cleaning
			D 3.1										5, 28, 32, 33, 70, 89	Test to determine status.
										D 3.5				Depot disposition
0114	10-MHz DU IF Mixer (1A6A4) (Mixer, Intermediate Frequency 10-MHz Digital Unit)								F 0.4					See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				D 0.1									32	Cleaning
			D 3.0										5, 28, 32, 33, 70, 89	Test to determine status.
										D 3.5				Depot disposition
0416	10-MHz DU Step Loop VCO (1A6A5) (Step Loop VCO, 10 MHz Digital Unit								F 0.4					See note. Tested at next higher assembly.
		F 0.1												Visual Inspection
				D 0.1									32	Cleaning
			D 3.1										5,28,32.33,70, 89	Test to determine status.

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
										D 3.5				Depot disposition
0418	10-MHz DU Step Loop Phase Detector (1A6A6) (Step Loop Phase Detector, 10-MHz Digital Unit)								F 0.4					See note. Tested at net higher assembly.
		F 0.1												Visual inspection
				D 0.1									32	Cleaning
			D 3.0										5, 28, 32, 33, 70, 89	Test to determine status
										D 3.5				Depot disposition
0422	Buffer Amplifier, 1- to 10-MHz (1A6A21)								F 0.4					See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				D 0.1									32	Cleaning
			D 3.0										3, 4, 5, 32, 33, 40, 70, 89	Test to determine status.
										D 3.0				Depot disposition
0424	1-100-kHz Digit Unit (1A6A16) (Circuit Board Assembly, Digit								F 0.4					See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				D 0.1									32	Cleaning
			D 3.1										5,28,32,33,70, 89	Test to determine status.

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
									D 3.5					Depot disposition
0426	Internal Frequency Standard (1A6A15) (Circuit Board Assy, Frequency Standard							F 0.4						See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				D 0.1									32	Cleaning
			D 3.5										5, 15, 16, 32.33, 66, 70, 89	Test to determine status.
										D 4.0				Depot disposition
0428	Oscillator, 5-MHz (1A6A15A1)								F 0.4					See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				D 0.1									32	Cleaning
			D 2.0										5, 32, 33, 46, 48, 49, 69, 89, 115	Test to determine status.
										D 2.0				Depot disposition
0430	Power Supply Assembly (1A6A12) (Circuit Board Assembly, Power Supply)								F 0.4					See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				D 0.1									32	Cleaning

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
			D 3.0										32, 33, 70	Test to determine status.
									D 3.1					Depot disposition
0432	Transformer Assembly (1A6A19)							F 1.0						See note. Tested at next higher assembly
		F 0.1												Visual inspection
				D 0.1									32	Cleaning
			D 4.0										32, 33, 70, 89	Test to determine status.
									D 4.0				30, 32, 33	Location of defect in module.
0434	Circuit Board Assembly, Mother-board (1A6A18)							F 0.7						See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				D 0.2									32	Cleaning
			D 5.0										5, 28, 32, 33, 70, 89	Test to determine status.
										D 5.0				Depot disposition
0436	Output Divider (1A6A11) (Output Assy, Output, Step Loop, 1-MHz Digital)								F 0.5					See note. Tested at next higher assembly.
		F												Visual inspection
				D 0.1									32	Cleaning

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
			D										3, 4, 5, 28, 32, 33, 70, 89	Test to determine status.
										D 3.5				Depot disposition
0438	1-MHz DU Step Loop (1A6A8) (Step Loop, 1-MHz Digital Unit)								F 0.4					See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				D 0.1									32	Cleaning
			D 3.2										5, 28, 32, 33, 70, 89	Test to determine status.
										D 3.5				Depot disposition
0440	1-MHz DU IF Mixer (1A6A9) (Mixer, Intermediate Frequency 1-MHz Digital Unit)								F 0.4					See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				D 0.1									32	Cleaning
			D 3.0										5, 28, 32, 33, 70, 89	Test to determine status.
										D 3.5				Depot disposition
0442	1-MHz DU Main Loop (1A6A10) (Main Loop, 1-MHz Digital Unit)								F 0.4					See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				D 0.1									32	Cleaning

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
			D 3.0										5, 28, 32, 33, 70, 89	Test to determine status.
										D 3.5				Depot disposition
	Panel Assembly, Front (1A6A1)	F 0.1								F 0.5			30,32,33	Tested at next higher assembly. Replacement of defective component.
				F 0.2									32	Cleaning
0446	Panel Assembly, Rear (1A6A20)	F 0.1								F 0.5			30, 32, 33	Tested at next higher assembly. Replacement of defective component.
				F 0.2									32, 33	Cleaning
044601	Heat Sink Assembly (1A6A20A1)			D 0.1									32, 33	Cleaning
			D 0.1										32, 33, 70	Test to determine status.
										D 2.0			32, 33, 71	Replacement of defective component.
0448	Input Filter Assembly (1A6A7) (Filter, Input)								F 0.4					See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				D 0.1									32	Cleaning
			D 3.2										3, 4, 28, 32, 33 43, 47, 63, 70, 89, 93, 106, 107, 109, 113, 114	Test to determine Status.
										D 3.5				Depot disposition

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
05	CABINET ASSEMBLY UP CONVERTER (UNIT 2)	O 0.4												Daily and monthly inspections
				O 0.4									32	Cleaning
			O 0.5											Operational checkout
										O 0.2			32	Replacement of fuses
0510	Blower Assembly (2A11) (Fan Assembly, Tubeaxial)	O 0.1												Monthly inspection
				O 0.1									32	Cleaning
									F 0.7				32,33	See note. Replacement of motor and air flow switch.
051001	Wiring Harness, Ac Power (2A11W2)													Same as Group 011001
0520	Combiner, Microwave Signal (2A12)	O 0.1												Monthly Inspection
				O 0.3									32	Cleaning
			F 1.6										2,3,4,32,33, 36	See note. Test to determine status.
									D 2.0				32 thru 35	Replacement to be performed by depot level personnel at site. Depot disposition.
0530	Cabinet Subassembly, Up Converter	F 0.5								F 1.5				Replace defective cables and harnesses.
053001	Wiring Harness, Ac Power (2W1)	F 0.1								F 0.5			30,32,33	

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
053002	Wiring Harness, Radio Frequency (2W2)	F 0.1								F 0.5			30, 32, 33	
06	CONVERTER, FREQUENCY, ELECTRONIC CV-3084/MSC-46(V) (2A2,2A3,2A4)	O 0.6												Daily and monthly inspections.
	AND													
	CONVERTER, FREQUENCY, ELECTRONIC CV-3084A/MsC-46(V)			O 0.3									32	Cleaning
			F 1.0										2, 3, 4, 5, 7, 8, 9, 10, 11, 14, 15, 16, 18, 19, 21, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 43, 46, 54, 59, 62, 64, 66, 68, 79, 80, 95.97, 103, 108, 110, 114, 117	See note. Test to determine status.
					F 0.3								32,33, 120	See note. Adjustments after module replacement.
										F 0.5			32,33	See note. Module replacement.
0610	Cable Assembly, Radio Frequency (2A2W35)	F 0.1								F 0.5			30,32,33	
0612	Cable Assembly, Radio Frequency (2A2W36)	F 0.1								F 0.5			30,32,33	
0614	Cable Assembly, Radio Frequency (2A2W37)	F 0.1								F 0.5			30,32,33	
0616	Cable Assembly, Radio Frequency (2A2W6)	F 0.1								F 0.5			30,32,33	
0618	Phase Equalizer (2AZEQ1) (Filter, Phase Compensating)													Same as Group 0236

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
0620	Cable Assembly, Radio Frequency (2A2W3)	F 0.1								F 0.5			30, 32, 33	
0622	Cable Assembly, Radio Frequency (2A2W2)	F 0.1								F 0.5			30, 32, 33	
0624	700-MHz Bandpass Filter (2A2FL2) (Filter, Bandpass)													Same as Group 0226
0628	Cable Assembly, Radio Frequency (2A2W33)	F 0.1								F 0.5			30.32.33	
0630	IF Conversion Stripline Assembly (2A2CR1) (Mixer Stage, Frequency)								F 0.7					See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				D 0.2									32	Cleaning
			D 3.0										3 thru 6, 8, 9, 17.32.33, 37, 40, 41, 50 thru 55, 59, 61, 67, 69, 71, 78, 84. 89, 114, 116	Test to determine status
										D 6.0				Depot disposition
0632	Cable Assembly, Radio Frequency (2A2W5)	F 0.1								F 0.5			30.32.33	
0634	Cable Assembly, Radio Frequency (2A2W4)	F 0.1								F 0.5			30, 32, 33	
0636	Wiring Harness, Interlock (2A2W47)	F 0.1								F 0.5			30, 32, 33	
0638	Cable Assembly, Radio Frequency (2A2W7)	F 0.1								F 0.1			30, 32, 33	

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
0640	630-MHz band Reject Filter (2A2FL1) (Filter, Band Suppression)								F 0.5					See note. Tested at next higher assembly.
			F 0.1											Visual inspection
				D 0.1									32	Cleaning
			D 5.0										3, 4, 5, 8, 10, 17, 31, 32. 33, 37, 40, 41, 53, 59, 61. 89, 91	Test to determine status.
										D 6.0				Depot disposition
0642	Wiring Harness, Ac Prime Power (2A2W46)	F 0.1								F 0.5			30, 32, 33	
0641	700-MHz Amplifier (2A2AR1) (Amplifier, Intermediate Frequency)								F 0.5					See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				D 0.1									32	Cleaning
			D 3.0										3, 4, 5, 7, 8, 10, 13, 17, 27, 32, 33, 41, 53, 55, 61, 69, 71, 72, 78, 89, 97, 112	Test to determine status.
										D 3.5				Depot disposition
0646	Wiring Harness, Frequency Control (2A2W38)	F 0.1								F 0.5			30,32,33	
0648	IF Phase-Locked Oscillator (2A2Y2) (Oscillator, Radio Frequency)													Same as Group 0224

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
0650	Cable Assembly, Radio Frequency (2A2W40)	F 0.1								F 0.5			30,32,33	
0652	Cable Assembly, Radio Frequency (2A2W34)	F 0.1								F 0.5			30,32,33	
0654	Converter, Radio Frequency to Direct Current (2A2A4)								F 0.9					See note. Tested at next higher assembly. (Replace power head and rf converter as a matched pair.)
		F 0.2												Visual inspection
				D 0.2									32	Cleaning
			D 3.0				D 3.0						2 thru 5, 12, 14, 18, 19, 30, 32, 33, 37, 50, 51, 69, 73, 89, 90, 117	Test to determine status. Calibrate as a matched pair.
										D 3.0			32, 33	Replace defective power head and rf converter. Depot disposition of defective component.
0656	Wiring Harness, Interconnection (2A2W45)	F 0.1								F 0.5			30,32,33	
0658	Cable Assembly, Radio Frequency (2A2W3)	F 0.1								F 0.5			30,32,33	
0660	70-MHZ Monitor Amplifier (2A2A9) (Amplifier Assembly, Intermediate Frequency)								F 0.5					Tested at next higher assembly.
		F 0.1												Visual inspection
				D 0.1									32	Cleaning

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
			D 3.0										5, 8, 9, 13, 21, 31, 32, 33, 37, 40, 45, 53, 54, 59, 69, 84, 89	Test to determine status.
									D 3.5				16, 32, 33, 66, 71	Location of defect In module.
066001	Circuit Card Assembly (2A2A9A1)	D 0.1								D 3.5			16, 32, 33, 66, 71	Tested at next higher assembly. Location of defect on card.
				D 0.1									32	Cleaning
0664	Amplitude Step Attenuator (2A2A79)													Same as Group 0244
066401	Circuit Card Assembly (2A2AT9A1)													Same as Group 024401
066402	Circuit Card Assembly (2A2AT9A4)													Same as Group 022402
066403	Circuit Card Assembly (2A2AT9A3)													Same as Group 024403
066404	Circuit Card Assembly (2A2AT9A2)													Same as Group 024404
0666	Microwave Assembly, Radio Frequency (2A2A3)								F 0.8					See note. Tested at next higher assembly.
		F 0.2												Visual inspection
			D 6.3										3, 4, 5, 7, 8, 10, 11, 32, 33, 40, 41, 42, 44, 59, 62, 69, 71, 89, 114	Test to determine status.
										D 10.0			32,33	Location of defect in module.
066601	RF Mixer (2A2A3CR2) (Mixer, Crystal Coaxial)								D 2.0					
		F 0.1												Visual inspection

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
				D 0.1									32	Cleaning
			D 2.5										2 thru 5,8,10, 17.30,32,33, 40,44,50,51, 59,62,69,71, 73,75,77,89, 114	Test to determine status.
										D 3.0				Depot disposition
066602	Filter, Bandpass (2A2A3FL3)								D 2.0					
		F 0.1												Visual inspection
				D 0.1										Cleaning
			D 3.0										3, 4, 5, 7, 18, 19 20, 27, 32, 33, 37, 50, 51, 61, 76, 77, 89, 117	Test to determine status.
										D 3.0				Depot disposition
066603	Filter, Bandpass (A2A3FL4)								D 2.0					
		F												Visual inspection
				D 0.1									32	Cleaning
			D 3.0										3, 4, 5, 7, 18, 19, 20, 27, 32, 33, 37, 50, 51, 61, 76, 77, 89, 117	Test to determine status.
										D 4.0				Depot disposition

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
0668	Panel Assembly, Front (2A2AII)	F 0.1								F 0.5			30, 32, 33	Tested at next higher assembly. Replacement of defective component.
				F 0.2									32	Cleaning
066801	IF Level Attenuator (2A2A2) (Attenuator Assembly)								F 0.5					See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				D 0.1									32	Cleaning
			D 2.0										3, 4, 14, 27, 32, 33, 54, 61, 71, 89	Test to determine status.
										D 3.0			32, 33, 71	Location of defect in module.
06680101	Circuit Card Assembly (2A2A2A1)	D 0.1								D 3.0			32, 33, 71	Tested at next higher assembly. Location of defect on card.
				D 0.1									32	Cleaning
0670	70-Mkz Detector (2AZA10) (Detector Assembly, Radio Frequency)								F 0.4					See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				D 0.1									32	Cleaning
			D 2.0										5, 8, 9, 12, 15, 16, 30, 31, 32 33, 50, 66, 78, 89	Test to determine status.

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
										D 2.0			30, 32, 33	Location of defect in module.
067001	Circuit Card Assembly (2A2A10A1)	D 0.1								D 2.0			30, 32, 33	Tested at next higher assembly. Location of defect on card.
				D 0.1									32	Cleaning
0672	Filter-Monitor Assembly (2AZA7)								F 0.5					See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				D 0.1									32	Cleaning
			D 4.0										3, 17, 30, 32, 33, 40, 44, 55, 59, 62, 69, 71, 73, 74, 78, 89, 114	Test to determine status.
										D 4.5			32, 33	Location of defect in module.
067201	Filter, Bandpass (2A7FL5)								D 0.8					
		F 0.1												Visual inspection
				D 1.0									32	Cleaning
			D 3.0										3, 4, 5, 7, 18, 19, 32, 33, 37, 44, 50, 51, 61, 73, 89, 117	Test to determine status.
										D 3.0				Depot disposition

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
0674	Out-of-Lock Detector (2A2A5) (Circuit Card Assembly, Out-of-Lock Detector)													Same as group 0246
0676	Status Indicator Calibrator (2A2A6) (Circuit Cad Assembly, Status Indicator Calibrator)													Same as Group 0248
0678	Power Supply Assembly (2A2A1)													Same as Group 0256
067801	Power Supply (2A2A1PS1)													Same as Group 025601
0680	Cable Assembly, Radio Frequency (2A2W48)	F O.1								F 0.5			30.32,33	
0682	Cable Assembly, Radio Frequency (2A2W22)	F 0.1								F 0.5			30.32.33	
0604	RF Phase-Locked Oscillator (2A2Y1) (Oscillator, Radio Frequency)								F 0.1					See note. Tested at next higher assembly.
		F 0.3												Visual inspection
				D 0.3									32	Cleaning
			D 12.0										3, 4, 5, 15, 16, 17, 21, 31, 32, 33, 39, 40, 43, 45, 46, 62, 64, 96, 97, 98, 99. 102, 103, 106, 107, 108, 110, 114	Test to determine status.
										D 8.0			3, 4, 5, 15, 16, 17, 2, 31, 32, 33, 39, 40, 43, 46, 62, 64, 65, 68, 69, 79, 89, 96.97, 98, 99, 102, 103.106, 107.108, 110., 114	Location of defect In module.

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
068401	RF Control Assembly (2A2Y1A1) (Circuit Card Assembly, RF Control)	D 0.3												Visual inspection
				D 0.3									32	Cleaning
			D 3.0										3, 4, 5, 31, 32, 33, 39, 40, 69, 89, 97, 99, 103, 104, 108, 110, 114	Test to determine status.
										D 4.0				Depot disposition
068402	Filter Network Circuit Card Assembly (2A2Y1A5)	D 0.3												Visual inspection
				D 0.3									32	Cleaning
			D 0.5											Tested at next higher assembly.
										D 1.0				Depot disposition
068403	Phase Lock Control Circuit Card Assembly (2A2Y1A2)	D 0.3												Visual inspection
				D 0.3									32	Cleaning
			D 3.0										3, 4, 5, 31, 32 33, 39, 40, 69, 89, 97, 99, 103, 104, 114	Test to determine status.
										D 4.0				Depot disposition

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
068404	L-Band Oscillator (2A2Y1A3) (Oscillator, Radio Frequency)	D 0.3												Visual inspection
				D 0.3									32	Cleaning
			D 0.3										3, 4, 5, 32, 33, 46, 69, 89, 92	Test to determine status.
										D 4.0				Depot disposition
068405	Multiplier Assembly (2A2Y1A4)	D 0.3												Visual inspection
				D 0.3									32	Cleaning
			D 3.0										3, 4, 5, 8, 9, 17, 31, 32, 33, 39 40, 41, 46, 69, 82, 83, 89, 101	Test to determine status.
										D 4.0				Depot disposition
0686	Wiring Harness, Oscillator (2A2W53)	F 0.1								F 0.5			30, 32, 33	
0688	Cable Assembly, Radio Frequency (2A2W32)	F 0.1								F 0.5			30, 32, 33	
0690	Wiring Harness, Oscillator (2A2W54)	F 0.1								F 0.5			30, 32, 33	
0692	Cable Assembly, Radio Frequency (2A2W30)	F 0.1								F 0.5			30, 32, 33	
0694	Circulator, Coaxial (2A2HY5)								F 0.5					See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				F 0.3									32	Cleaning

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
0696	Attenuator (2A2AT10)								F 0.5					See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				F 0.3									32	Cleaning
0698	700 MHz Amplifier (2A2AR1) (Amplifier, Intermediate Frequency)								F 0.5					See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				D 0.3									32	Cleaning
			D 3.0										3, 4, 5, 6, 7, 8, 10, 11, 17;32 33, 40, 41, 46, 69, 89, 93, 95, 97, 100	Test to determine status.
										D 4.0				Depot disposition
07	AMPLIFIER RADIO FREQUENCY AM-6631/MSC-46(V) (2A6)	O 0.5												Daily and monthly inspections
				O 0.4									32	Cleaning
			F 0.6										1, 15, 16, 17, 24, 25, 26, 30 thru 33, 36.37	See note. Test to de-determine status.
										F 0.6			32, 33	See note. Module replace-ment.

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
0710	26-Way Power Divider (2A6A6) (Divider, Power, Radio Frequency)								F 0.4					See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				D 0.1									32	Cleaning
			D 3.5										1, 15, 16, 32, 33, 43, 58, 66, 71, 81, 87, 89	Test to determine status.
										D 4.5				Depot disposition
0712	Four-Way Power Divider (2A6A7) (Divider, Power, Radio Frequency)								F 0.5					See note. Tested at next higher assembly.
		F												Visual inspection
				D 0.1									32	Cleaning
			D 4.0										1, 15, 16, 24, 32, 33, 43, 58, 66, 71, 88, 89	Test to determine status.
										D 4.0				Depot disposition
0714	Power Supply (2A6PS1)								F 0.4					See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				D 0.1									32	Cleaning
			D 1.6										30, 31, 32, 33, 60, 71, 89	Test to determine status
										D 8.0				Depot disposition

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
0716	Status Indicator Calibrator (2A6A5) (Circuit Card Assembly, Status Indicator Calibrator)								F 0.4					See note. Tested at next higher assembly
					F 0.5									See note. Readjust after replacement of this module or any associated modules.
		F 0.1												Visual inspection
				D 0.1									32	Cleaning
			D 2.0										30, 32, 33	Test to determine status.
										D 2.5			30, 32, 33	Location of defect in module.
0718	Two-Way Power Divider (2A6A4) (Divider, Power, Radio Frequency)								F 0.5					See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				D 0.1									32	Cleaning
			D 4.0										1, 32, 33, 43, 71, 78, 89	Test to determine status.
										D 4.5				Depot disposition
0720	1-MHz Power Amplifier (2A6A3) (Amplifier, Power)								F 0.4					See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				D 0.1									32	Cleaning

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
			D 4.0										1, 5, 15, 16, 24, 30, 32, 33, 43, 58, 66, 71, 78, 89	Test to determine status.
										D 4.5				Depot disposition
0722	5-Hz Power Amplifier (2A6A1, 2A6A2) (Amplifier, Power)								F 0.4					See note. Tested at next higher assembly.
		F 0.1												Visual inspection
				D 0.1									32	Cleaning
			D 4.0										1, 5, 30, 32, 33, 43, 58, 71, 78, 81, 89	Test to determine status.
										D 5.0				Depot disposition
08	EQUALIZER, GROUP DELAY CN-1425/MSC-46(V)	O 0.5												Daily and monthly inspections
				O 0.4									32	Cleaning
			F 0.6										3, 4, 5, 7, 8, 9, 11, 12, 17, 21, 30 thru 33, 36, 37	See note. Test to determine status.
										F 0.6			32, 33	See note. Module replacement.
0810	Wiring Harness, Electrical Equipment (W3)	F 0.1								F 0.5			30, 32, 33	

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
0820	Group Delay Equalizer Assembly (A1)	D 0.5												
			D 0.6										5, 8, 9, 21, 32, 33, 38, 40, 54, 59, 69, 89	Test to determine status.
				D 0.2									32	Cleaning
										D 0.7			32, 33	Location of defect in module.
082001	Cable Assembly, Radio Frequency (A1W2)	F 0.1								F 0.5			30, 32, 33	
082002	Group Delay Equalizer Subassembly (A1A1)								D 2.0				32, 33	
		F 0.1												Visual inspection
				D 0.2									32	Cleaning
082003	Cable Assembly, Radio Frequency (A1W1)	F 0.1								F 0.5			30, 32, 33	
082004	Cable Assembly, Radio Frequency (A1W3)	F 0.1								F 0.5			30, 32, 33	
082005 thru 082011	Phase Compensating Filters (Filter, Phase Compensating)								F 0.3				32, 33	See note. Replaced in conjunction with group delay measurement testing.
		F 0.1												Visual inspection
				D 0.1									32	Cleaning
			D 4.0										3, 4, 8, 9, 32, 33, 38, 89	Test to determine status.
										D 4.5				Depot disposition

SECTION II. MAINTENANCE ALLOCATION CHART - CONTINUED

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
082012	Amplifier, Intermediate Frequency (A1AR1)								D 1.5					
		F 0.1												Visual inspection
				D 0.1									32	Cleaning
			D 2.0										5, 8, 9, 13, 16, 21, 22, 23, 27, 29, 32, 33, 37, 40, 53, 54, 59, 61, 69, 84, 89	
				D 1.0										Gain bandwidth
										D 3.5				Depot disposition
082013	SEE GROUP 0d2005													
09	WIRING HARNESS, RADIO FREQUENCY (W1)	F 0.1								F 0.5			30, 32, 33	
10	CABLE ASSEMBLY, RADIO FREQUENCY (W1)	F 0.1								F 0.5			30, 32, 33	
11	CABLE ASSEMBLY, RADIO FREQUENCY (W3)	F 0.1								F 0.5			30, 32, 33	
														NOTE Will be accomplished only If required test equipment is available at this level.

TABLE C-1 TOOL AND TEST EQUPMENT REQIUREMENTS

EST T E	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL/NATO STOCK NUMBER	TOOL
	F, D	SIGNAL GENERATOR, TEK 191, AN/USM-272	6625-00-957-0421	
	F, D	SIGNAL CENERATOR, HP 620B, SG-944/U	6625-00-107-8173	
	F, D	POWER METER, BOONTON 42A		
	F, D	POWER DETECTOR, BOONTON 41-4B		
	F, D	FREQUENCY COUNTER, HP 5245L, CP772/U	6625-00-973-4873	
		AND		
	F, D	PLUG-IN UNIT, HP 5253B, CV2002/U	6625-00-226-3483	
	D	SIGNAL GENERATOR AN/URN-61 (HP 612A), OR EQUIVALENT		
	F, D	X-Y RECORDER, HP 7035B	6625-00-463-6042	
	F,.D	SWEEP GENERATOR, MX-8364/USM-308(V)	6625-00-928-0364	
	F,.D	PLUW-IN UNIT, PL-1315/USM308(V)	6625-00-686787	
	F, D	PLUG-IN UNIT, PL-1241A/USM-308(V)	6625-00-435-3143	
	F, D	DIRECTIONAL DETECTOR, KRAUSE 1025		
	F, D	DIRECTIONAL COUPLER, OLEKTRON B-D3-1OV		
	D	ATTENUATOR, FIXED, 20 DB, NARDA MODEL 757C-20 (2 REQ)		
	F, D	SIGNAL GENERATOR, TS-51OB/U 'HP 608E EQUIV)	6625-00-857-4352	
	F, D	ADAPTER, 50 OHM, BOONTON 91-8B	6625-00-973-2296	
	F, D	RF VOLTMETER, BOONTON 91C (AN/URM-145)	6625-00-817-8908	

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TABLE C-1 TOOL AND TEST EQUPMENT REQIUREMENTS

TOOLS OR TEST EQUIPMENT REF CODE	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL/NATO STOCK NUMBER	TOOL NUMBER
17	F	SPECTRUM ANALYZER AN/USM-366(V)1 (TEK491)	6625-00-494-2937	
		SEE ITEMS 8 THRU 10 ABOVE		
19	F.D	DIRECTIOIAL COUPLER, NARDA 3004-10	5985-00-788-6962	
20	D	VARIABLE ATTENUATOR C-1367/U, HP H382A	6625-00-679-0625	
21	F, D)	VARIABLE STEP ATTIIUATOR CN-970/U. HP 355C (2 REQ)	5985-00-993-1377	
22	F.D	NOISE FIGURE INDICATOR, AIL 07511-001		
23	F.D	NOISE GENERATOR, AIL 07616		
24	F, D	DIRECTIONAL COUPLER, MERRIMAC CR-10-2.5		
25	F	BANDPASS FILTER, 1 M8Z, COMTECH 400003292		
26	F	BANDPASS FILTER, 5 MNZ, COMTEC8 4040003293		
27	F, D	ATTENUATOR, 6 DB, NARDA MODEL 757C-6 (2 REQ)		
28	F, D	TEST FIXTURES, REMOTE FRRQUENCY CONTROL,		
		COMTECH 4040003461 AND		
		COMTECH 4040003462		
29	D	ATTENUATOR, 3 DB, NARDA MODEL 757C-3		
30	F, D	MULTIMETER AN/USM-210 (SIMPSON 260)	6625-00-019-0815	
31	F, D	OSCILLOSCOPE AN/USM 273 (TEK453)	6625-00-930-6637	
32	0, F, D	TOOL KIT, ELECTIONIC EQUIPMENT TK-105/G	5180-00-610-8177	
33	O, F, D	TOOL KIT, ELECTRONIC EQUIINT TK-100/G	5180-00-605-0079	
34	O, F.D	TOOL EQUIPMEIIT, TE 123	5180-00-408-1881	
35	O, F, D	TOOL EQUIPMENT, TE 50B	5180-00-356-4602	

Table C-1 **TOOL AND TEST EQUIPMENT REQUIREMENTS- continued**

TOOLS AND EQUIPMENT	MAINTENANCE CATEGORY	NOMENCLATURE	FEDERAL STOCK NUMBER	TOOL NUMBER
36	F	TEST LEADS AND ADAPTER KIT:		
		TEST CABLE, TROI4PETER PCX-96-50		
		TEST CABLE, TRONPETER PCX-144-50		
		TEST CABLE. TROMPETER PCS-24-50		
		TEST CABLE. TROWPETER PCX-48-50		
		TEST CABLE, COHTECH 2129003215-1 (2 REQ)		
		TEST CABLE, COMTECH 2129003215-2		
		TEST CABLE, COMTECH 2129003215-3		
		TEST CABLE, COHTECH 2129003216-1 (2 REQ)		
		TEST CABLE, COMTECH 2129003217-1 (6 REQ)		
		TEST, CABLE, CONTECH 2129003218-1 (2 REQ)		
		TEST CABLE, CONTECH 21, 29003219-1		
		TEST, CABLEI, COTECH 2129003220-1		
		TEST. CABLE, , COHTECH 2129003220-2		
		TEST CABLE, SMA-753582-1		
		TEST. CABLE, S9A-753582-2		
		TEST CABLE, OLITRON SOI-SOI-D-000.06.0 (2 REQ)		
		TEST, CABLE, SOLITRON SOI-SOI01-000.12.0 (2 REQ)		
		TEST. CABLE, SOLITRON SOI-SOI-D-000.24.0 (2 REQ)		
		TEST CABLE, SOLITRON SOI-SOl-D-000.36.0 (2 REQ)		
		TEST CABLE, FLUKE 205765 (2 REQ)		
		TEST CABLE, FLUKE 205799		

Table C-1 **TOOL AND TEST EQUIPMENT REQIUREMENTS -continued**

TOOLS AND EQUIPMENT	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
		TEST CABLE, FLUKE 205906		
		TEST CABLE, FLEXCO MICROWAVE F345AA-0600-(2 REQ)		
		ADAPTER, N MALE - N MALE, AMERICON 3081-0000 (2 REQ)		
		ADAPTER, N MALE - BNC FEMALE, AMERICON 3082-2320 (2 REQ)		
		ADAPTER, N MALE - N FEMALE RIGHT ANGLE, AMPHENOL 82-213		
		ADAPTER, N FEMALE - N FEMALE, AMERICON 3080-0000		
		ADAPTER, N FEMALE - BNC MALE, AMERICON 3082-2321		
		ADAPTER, BNC MALE - BNC MALE, AMERICON 3281--000 (2 REQ)		
		ADAPTER, N MALE - BNC FEMALE, AMERICON 3080-2320		
		ADAPTER, BNC FEMALE - TNC MALE, AMERICON 3182-2320		
-	-	ADAPTER, TROMPETER - BNC FEMALE, TROMPETER AD-1		
		ADAPTER, BNC FEMALE - BNC FEMALE, AMERICON 3280-0000		
		ADAPTER, SMA MALE - SMA FEMALE RIGHT ANGLE, SEALECTRO, 50-678-0000-31 (2 REQ)		
		ADAPTER, SMA MALE - N FEMALE, SEALECTRO 50-674-6701-89 (2 REQ)		
(		ADAPTER, SHA FEMALE - N FEMALE, SEALECTRO 50-672-6701-89(2 REQ)		
		ADAPTER, BNC FEMALE - CONHEX MALE, SEALECTRO 51-075-6801	5935-00988-5646	
		ADAPTER, TNC FEMALE - TNC FEMALE, AMERICON 3180-0000		
		ADAPTER, CONHEX TEE DOUBLE FEMALE/MALE, SEALECTRO 51-086-0000	5935-00-134-5304	
		ADAPTER, SHA MALE - BNC FEMALE, SEALECTRO 50-674-6801-89 (2 REQ)		
		WAVEGUIDE-TO-COAX ADAPTERS (2 EA) UG-1054/U, HP H-281	5985-00-295-9824	
		TERMINATION, AMERICON 3001-6100 (3 REQ)		
		TERMINATION, AHERICON 3101-6100		

TABLE C-1 TOOL AND TEST EOUIPMENT REQUIREMENTS

TOOLS OR TEST EQUIPMENT REF CODE	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL/NATO STOCK NUMBER	TOOL NUMBER
37	F, D	DETECTOR, RF 253/V, HP423A	6625-00-84978	
38	F, D	TEST SET, COMTECH STS 701		
39	F, D	ATTENUATOR, WEINSCHEL 1A-3		
40	F, D	ATTENUATOR, 10 DB, WEINSCHEL 1A-10, OR EQUIVALENTT (2 REQ)		
41	D	DIRECTIONAL COUPLER, HEWLETT-PACKARD 7780	5985-00-239-3215	
*42	D	BANDPASS FILTER, COMTECH 1130000031	5915-00-124-4713	
43	F, D	RMS VOLTMETER AN/USM-224, HP 3400A	6625-00-727-4706	
*44	D	ISOLATOR, COMTECH 1130000094		
45	D	STEP ATTENUATOR, 0-120 DB, CN-1128/U, HP 355D	5985-00-957-1860	
46	F, D	ATTENUATOR, WEINSCHEL 1A-20		
47	D	MIXER, HP 10534A		
48	F, D	CESIUM BEAM FREQUENCY STANDARD, HEWLETT-PACKARD 5061A	6625-00-575-6749	
49	D	VECTOR VOLTMETER, HEWIETT-PACKARD 8405A	6625-OO-403-1801	
50	D	SWEEP NETWORK ANALYZER, ALFRED 8000		
51	D	PLUG-IN UNIT, ALFRED 7051		
*52	D	BAND REJECT FILTER, 630 MHZ, COMTECH 1130000414	5915-00-124-5198	
53	D	ATTENUATOR (SMA), 20 DB, AMERICON 2082-6154		
54	F, D	DIRECTIONAL COUPLER, COMTECH 1130000089		
55	D	RESISTOR, RCR07G392J		
56	D	TEST FIXTURE, COMTECH TF35/436		
*57	D	BANDPASS FILTER, COMTECH 1130005788		
58	D	POWER SUPPLY, HP6265B		

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TABLE C-1 TOOL AND TEST EQUPMENT REQIUREMENTS

TOOLS OR TEST EQUIPMENT REF CODE	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL/NATO STOCK NUMBER	TOOL NUMBER
59	F.D	ATTENUATOR. 10 DB (SMA), AMERICON 2082-6153		
60	D	TEST FIXTURE, COMTECH TF97		
61	D	ATTENUATOR, 6 DB (SMA), AMERICON 2082-6152		
*62	F, D	PNASE-LOCKED OSCILLATOR, COMTECH 4049005322-1 (SM-D-754367-1)	5895-00-014-7826	
63	D	OSCILLOSCOPE, TEK R5030	5625-00-806-5929	
64	F, D	SELECTIVE VOLTMEER, HEWTT-PACKARD 312A	5625-00-689-7685	
65	F, D	PHASE-LOCKED OSCILLATOR, COMTECH 4049005322-2 (SM-D-754367-2)	5895-01-010-7819	
66	FD	RF PROBE, HIGH IMPEDANCE, BOONTON 91-12F		
67	D	PHASE-LOCKED OSCILLATOR, COMTECH 1130000042		
68	F, D	LOW PASS FILTER, CORMECN 4400005929		
69	D	POWER SUPPLY, COMTECH 1130000097	6130-00-124-4986	
70	F, D	SYNTHESIZER, ELECTRICAL FREQUENCY, 0-1658/msC-46(V)	5895-00-127-4825	
71	D	DIGITAL VOLTMETER, WESTON 1240		
*72	D	AMPLIFIER, 700 MHZ, COMTECH 1130000012 (SM-A-753268)		
73	F, D	DIRECTIONAL COUPLER, NARDA 3095		
74	F, D	VARIABLE ATTENUATOR, NARDA 795 FMI		
75	D	TEST FIXTURE, COMTECH TF 406		
76	D	DIRECTIONAL COUPLER HP H752C	5985-00-729-6971	
77	D	ISOLATOR, RAYTHEON CXN-135		
78	D	TEST FIXTURE, COCMTECH TF 4107		
79	F, D	TEST SET, COPMECN TS 702-1		

Table C-1 **TOOL AND TEST EQUIPMENT REQIUREMENTS -continued**

TOOLS AND EQUIPMENT	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
80	F	TEST SET, COMTECH TS 702-2		
81	D	TEST FIXTURE, COMTECH TF 1415		
82	D	DIRECTIONAL DETECTOR, KRUSE 1031		
83	D	VARIABLE ATTENUATOR, NARDA 700		
*84	D	70-MHZ AMPL, COMTECH 1130000044 (Sn-C-753575)		
*85	D	PHASE-LOCKED OSCILLATOR, CONTECH 1130000067		
*86	D	MULTIPLIER, X40, COMTECH 1130000068		
*87	D	5-MHt POWER AIMPLIFIER, MPD SK000102 (COMTECH 1130001415)		
*88	D	l-MHZ POWER AYPLIFIER, MPD SK000104 (COMTECH 1130001417)		
89	D	TEST ACCESSORY KIT:		
		ADAPTER, SEALECTRO 50-674-6701-89 (4 EACH)		
		ADAPTER, SEALECTRO 51-077-6801 (1 EACH)		
		ADAPTER; SEALECTRO 50-674-6801-89 (2 EACH)		
		ADAPTER, SEALECTRO 51-086-0000 (2 EACH)		
		ADAPTER, AMERICON 2081-0000 (2 EACH)		
		ADAPTER, AIERI'CON 2081-2301 (1 EACH		
		ADAPTER, SEALECTRO 50-672-6701-89 (1 EACH)		
		ADAPTER, ANERICON 3080-0000 (1 EACH)		
		ADAPTER, AMERICON 3080-2320 (I EACH)		
		ADAPTER, AMERICON 3081-0000 (2 EACH)		
		ADAPTER, AMERICON 2000-6253 (I EACH)		

Table C-1 **TOOL AND TEST EQUIPMENT REQIUREMENTS -continued**

TOOLS AND EQUIPMENT	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
		ADAPTER, AMERICON 2082-2300 (I EACH)		
		ADAPTER, AMERICON 2082-2301 (I EACH)		
		ADAPTER, AMERICON 3082-2321 (1 EACH)		
		ADAPTER, AMERICON 3082-2320 (I EACH)		
		ADAPTER. AMERICON 3280-0000 (I EACH)		
		ADAPTER. AMERICON 3281-0000 (I EACH)		
		ADAPTER, AMERICON 3280-2302 (I EACH)		
		ADAPTER, AMERICON 3282-2302 (I EACH)		
		ADAPTER, AMERICON 2081-2700 (I EACH)		
		ADAPTER, AMERICON 2082-2700 (I EACH)		
		ADAPTER, AMERICON 7082-2300 (2 EACH)		
		ADAPTER, AMERICON 7081-2301 (I EACH)		
		ADAPTER, BNC FEMALE - CONHEX MALE, SEALECTRO 51-075-6801 (2 EACH)	5935-00-988-5646	
		ADAPTER, CONHEX HALE-CONHEX MALE, SEALECTRO 52-072-0000 (1I EACH)		
		ADAPTER, HP H281A (3 EACH)		
		ADAPTER, POMONA 2630 (I EACH)		
		ADAPTER, AMERICON 2081-2321 (1 EACH)		
		ADAPTER, DAGE 3424-1 (I EACH)		
		ADAPTER, AMERICON 3182-2320 (3 EACH)		

Table C-1 **TOOL AND TEST EQUIPMENT REQIUREMENTS -continued**

TOOLS AND EQUIPMENT	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
		CABLE, COMTECH 2129003217-2 (7 EACH)		
		CABLE, COMTECH 2129003218-1 (2 EACH)		
		CABLE, COMTECH 2129003215- (3 EACH)		
		CABLE, SOLITRON SOI-SOI-D-00.06.0 (1 EACH)		
		CABLE, SOLITRON S01O-SOI-D-000.36.0 (1 EACH)		
		CABLE, SOLITRON S01-S01-D-000.24.0 (1EACH)		
		CABLE, SOLITRON S01-S01-D-000.12.0 (2 EACH)		
		CABLE, COMTECH 2129003217-3 (2 EACH)		
		CABLE, COMTECH 2129003216-2 (1 EACH)		
		CABLE, COMTECH 2129003219-1 (1 EACH)		
		CABLE, COMTECH 2129003215-3 (1 EACH)		
		CABLE, COMTECH 2129003220-1 (1 EACH)		
		CALE, COMTECH 129003222 (1 EACH)		
		CABLE. COMTECH 2129003220-3 (I EACH)		
		CABLE, COMTECH 2129003221		
		CAKE, SEALECTRO 6- 188-1283 (5 EACH)		
		CABLE, SEALECTRO 69-188-1285 (5 EACH)		
		TERMINATION, AMERICON 2021-6100 (i4 EACH)		
		TERMINATION, AMERICON 3101-6100 (I EACH)		
		TERMINATION, AMERICON 3001-6100 (15 EACH)		
		TERMINATION, SEALECTRO 61-001-000-89		

Table C-1 **TOOL AND TEST EQUIPMENT REQIUREMENTS -continued**

TOOLS AND EQUIPMENT	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
		TERMINATION, CONHEX, 50 OHM, SEALECTRO 62-002-0000-89 (2 EACH)		
		TERMINATION, AMERICON 3201-6100		
		SHORT, AMERICON 3002-1314 (1 EACH)		
		SHORT, AMERICON 7000-1314 (1 EACH)		
		SHORT, TNC, AMERICON 3101-1314 (2 EACH)		
		TERMINATION, HP H914A (1 EACH)		
		TERMINATION, DAGE 8105-3 (I EACH)		
		SHORT, HP H920A (1 EACH)		
		TERMINATION, AMERICON 2020-6100 (1 EACH)		
		RESISTOR, RCRO7GIO2JS (2 EACH)		
		RESISTOR, RCRO7G1O3JS (1 EACH)		
		RESISTOR, RCR07G392JS (1 EACH)		
		SHORT, AHERICON 2021-1314 (1 EACH)		
		RESISTOR, RCRO7G512JS (I EACH)		
		RESISTOR, RCRO7G101JS (2 EACH)		
		RESISTOR, RCR07G51OJS (I EACH)		
		RESISTOR, RCR07G39OJS (1 EACH)		
		RESISTOR, RCRO7GI30JS (1 EACH)		
		RESISTOR, RCRO7G602JS (I EACH)		
90	D	RF POWER MONITOR ASSY., COMTECH 1130000047		
91	F, D	ATTENUATOR, VEINSCHEL IA-30		

Table C-1 **TOOL AND TEST EQUIPMENT REQIUREMENTS -continued**

TOOLS AND EQUIPMENT	MAINTENANCE CATEGORY	NOMENCLATURE	FEDERAL STOCK NUMBER	TOOL NUMBER
92	D	L-BAND OSCILLATOR TEST FIXTURE, TF-5299		
93	D	ATTENUATOR, WEINSCHEL 1A-6		
94	D	TEST FIXTURE, COMTECH TF-38		
95	F, D	DIRECTIONAL COUPLER, COMTECH 1130000096		
96	D	LINE STRETCHER, GENERAL RADIO 874-LK2OL		
97	F, D	DIGITAL VOLTMETER, COMTECH STS-706-1/STS-706-2		
98	D	POWER SPLITTER, 3 DB HYBRID, NARDA 4029C		
99	D	FREQUENCY DIVIDER, COMTECH 3190006382		
100	D	AMPLIFIER, 700 MHZ, COMTECH 1130001472 (SM-A-754421)		
101	D	LINEAR AMPLIFIER, 1 WATT, MPD LAB 1-1020		
102	D	OSCILLOSCOPE MASK, PHASE DEVIATION, COMTECH 3190005964		
103	F, D	OSCILLATOR MODE SWITCH FIXTURE, COMTECH 1190005898		
104	D	OSCILLATOR TEST FIXTURE, COMTECH 4040005940		
105	D	OSCILLATOR TEST FIXTURE, COMTECH 4040005941		
106	D	VIBRATION SYSTEM CONSISTING OF:		
:		VIBRATION EXCITER, GILMORE/IB MODEL C40 : POWER AMPLIFIER, GILMORE/MB MODEL SS2000 DC FIELD SUPPLY, GILMORE/MB MODEL N604 CONTROL UNIT, GILMORE/MB MODEL N214 ACCELEROMETER, GILMORE/MB MODEL 304 ACCELEROMETER INTEG/AMPLIFIER, GILMORE/HMB MODEL N504		

TABLE C-1 TOOL AND TEST EQUPMENT REQIUREMENTS

TOOLS OR TEST EQUIPMENT REF CODE	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL/NATO STOCK NUMBER	TOOL NUMBER
		INTERCONNECTING CABLE, 15 FT		
		VIBRAGLIDE HORIZONTAL TEST TABLE, GILMORE/MB MODEL S3030		
107	D	VIBRATION FIXTURES, COMTECH 4190005926 AND 4190005947		
108	F, D	WIDE-BAND NOISE TEST SET, COMTECH STS-705		
109	D	PHASE SHIFTER, MERRIMAC PS-3-4-5		
110	F, D	MIXER, RHG DM1-12A		
111		NOT USED		
112	F, D	DIRECTIONAL COUPLER, COMTECH 1130004195		
113	D	VARIABLE ATTENUATOR, KAY MODEL 30-0		
114	F, D	SYNTHESIZER, ELECTRICAL FREQUENCY, FLUKE 6160A	5985-00-127-4825	
115	D	TEST FIXTURE, COMTECH TF-74		
116	D	ATTENUATOR, SMA, 3 DB, AMERICON 2082-6151		
117	F, D	DIRECTIONAL DETECTOR, KRUSE 1035 (CU-2154/U)	5985-00-327-0768	
118	F, D	CIRCULATOR, COMTECH 1130005787	5895-01-024-0394	
119	F	SIGNAL GENERATOR, HEWLETT-PACKARD HP618C		
120	F	Torque Wrench, 7 to 10 inch pounds, P/N 2098-5065, FMC 26805	5120-00-113-0042	
121	D	SIGNAL GES-ERATOR, AN/URM-127	6625-00-783-5965	
122	D	TEST FIXTURE, COMTECH 3u40014579, FOR OUT-OF-LOCK		
		DETECTOR CIRCUIT CARD ASSEMBL’		
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