

SECTION VI

PERFORMANCE CHECKS

6-1. INTRODUCTION

6-2. This section contains the performance check procedures listed in Table 6-1. These performance checks verify that the instrument meets the applicable performance specifications in Table 1-1. Performance Check Record Forms containing blanks for entering actual performance measurements are included at the end of this section. The blank forms should be duplicated, so that a new record can be made each time performance checks are conducted. Comparisons of these records will reveal any significant changes in performance which may indicate potential malfunctions or need for re-calibration of the instrument. Failure to meet performance specifications limits listed on the forms indicates a need for corrective action. All tests will be conducted under the following ambient conditions:

- (1) Temperature - Room Ambient $25^{\circ}\text{C} \pm 10^{\circ}\text{C}$ ($77^{\circ}\text{F} \pm 18^{\circ}\text{F}$)
- (2) Altitude - Normal ground
- (3) Vibration - None
- (4) Humidity - Room Ambient up to 90%
- (5) Power Source - 115 VRMS $\pm 10\%$ 60 Hz $\pm 5\%$
- (6) Attitude - Normal operating position

Table 6-1. Performance Checks

Paragraph No.	Check Procedure
6-5	Functional Check
6-6	Tuning Accuracy
6-7	Local Oscillator Stability
6-8	Scanwidth Accuracy
6-9	Resolution Accuracy, Optimum Resolution
6-10	Amplitude Display Accuracy
6-11	IF Attenuation Accuracy
6-12	Sensitivity
6-13	Frequency Response
6-14	Waveguide Mixer Checks

6-3. EQUIPMENT REQUIRED

6-4. Items of test equipment required to conduct performance checks are listed in Table 6-2.

Table 6-2. Performance Check Test Equipment

Item			Recommended Type*
1	Comb Generator	1, 10, 100 MHz	H. P. 6406A
2	Low Pass Filter	1.8 GHz	K&L Microwave 5L380-1800-0
3	Calibrated Signal Generators	10 MHz to 40 GHz	Various
4	Leveled Sweeper	0.01 - 12 GHz	Various
5	Power Meter		HP435A
6	Variable Attenuators	12.4 - 40 GHz	Various

*Equipment having equivalent characteristics may be substituted.

6-5. FUNCTIONAL TEST

A. Description

Display is set up with no external signal, using V and TRACE ALIGN controls. With signal from comb generator, display is adjusted, using H, ASTIG, FOCUS, and VERT GAIN (rear panel) controls. Various displays, synchronization, sweep, and video capabilities are checked.

B. Preliminary Control Settings

<u>Control</u>	<u>Setting</u>
SYNC	FREE RUN
STD SWEEP	3 msec/DIV
SWEEP VAR/MAN	CAL
BASELINE BLANKING	OFF
BAND SELECT	1
IF GAIN - VAR dB	60
IF ATTEN - dB	30
VIDEO DURATION - BW	OFF
LIN/LOG	LIN
STAB/OFF	OFF
SIG IDENT FULL SWEEP	OFF
SCANWIDTH/DIV	100 KHz
BANDWIDTH KHz	1
CAL	FULLY CW

C. Procedure

(1) Display Set-up

- (a) Adjust INTENSITY control for nominal visibility. Then adjust V control to position sweep trace exactly on bottom graticule division line. Adjust TRACE ALIGN control to align sweep trace parallel with horizontal line.
- (b) Connect comb generator (Item 1) and 1.8 GHz low pass filter (Item 2) to RF INPUT as shown in figure 6-1. Set comb generator for 100 MHz, full amplitude.

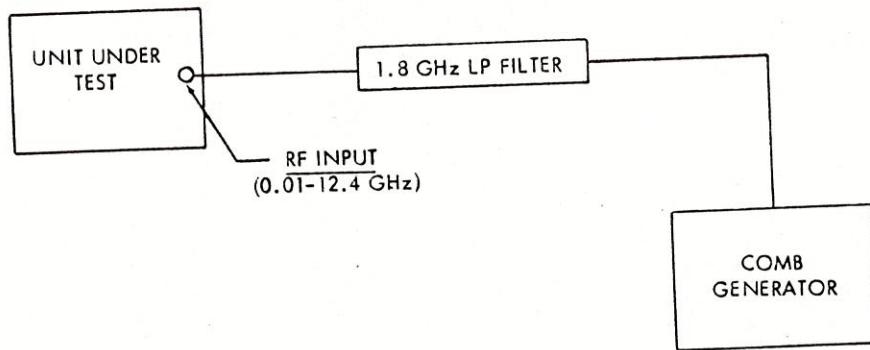


Figure 6-1. Performance Checks with Comb Generator

- (c) Set controls as follows:

<u>Control</u>	<u>Setting</u>
SIG IDENT FULL SWEEP	FULL SWEEP
BANDWIDTH KHz	1000
SCANWIDTH/DIV.	Any position in MHz range
LIN/LOG	LOG
(d) Observe that in full sweep mode the full comb is displayed. Set SIG IDENT/FULL SWEEP to OFF. SCANWIDTH DIV to 1 MHz. Select a line in the comb and continue to observe this line during the next operations. Use FREQUENCY TUNE to center the selected line.	
(e) Set SCANWIDTH/DIV to 200 MHz and use H control as necessary to re-center the selected line.	
(f) Set BANDWIDTH KHz to 100, SCANWIDTH/DIV to 100 KHz, use ASTIG and FOCUS controls together to obtain sharpest possible display.	

(2) Vertical Gain (rear panel control)

- (a) With 100 MHz full amplitude signal from comb generator, set STD SWEEP to 10 msec/DIV, IF ATTEN - dB to 0, VIDEO DURATION - BW to 1 KHz. Select convenient comb response using FREQUENCY TUNE and/or FINE TUNE controls. Adjust IF GAIN - VAR for a full scale display.
- (b) Use I. F. ATTEN - dB to add 30 to 40 dB attenuation in 10 dB steps. Note that signal level decreases in 10 dB steps as attenuation is increased.
- (c) Adjust VERT GAIN rear panel control to obtain accurate 10 dB steps as attenuation is applied.

(3) Signal Identifier

- (a) Set SCANWIDTH DIV to 1 MHz, and center the display. Then actuate SIG IDENT/FULL SWEEP to SIG IDENT and check the display. On alternate sweeps, signal will appear two divisions to the left and approximately 6 dB down in amplitude indicating that the correct band has been selected.
- (b) Set BAND SELECT to 2 and actuate SIG IDENT/FULL SWEEP to SIG IDENT, noting that on alternate sweeps the signal is now more than two divisions to the left, indicating that the harmonic number corresponding to the band selected is too high. (The signal will appear to the right if the harmonic number selected is in the + range.) Set Video Duration to OFF.

(4) Check the following functions:

- (a) Rotate BASELINE BLANKING control and note that at least the lower half of the display can be blanked.
- (b) Rotate GRAT ILLUM control and note that edge-lighted markings are intensified.
- (c) Place VIDEO DURATION - BW control to 1 KHz and note that noise in the display is smoothed. Return to OFF.
- (d) Actuate STD SWEEP pushbuttons 3, 1, .3, and .1 sec/DIV, and 30, 10, 3 msec/DIV, and note that sweep rate changes accordingly.
- (e) Activate SYNC pushbutton to LINE and note that sweep is controlled by 60 Hz power line frequency.
- (f) Actuate SYNC pushbutton to SGL/VIDEO, VIDEO TRIG ADJ to SGL, and push SINGLE SWEEP pushbutton, noting that a single sweep is produced.

- (g) Place SWEEP MODE to MAN and rotate SWEEP VAR/MAN control counterclockwise from the CAL position to run the spot across the CRT. Return to CAL.
- (h) Place SWEEP MODE to FAST. This position generates an amplitude-versus-time display of a signal.
- (i) Advance VIDEO TRIG ADJ control clockwise and note that sweep triggering occurs at some position of the control.

6-6. TUNING ACCURACY

A. Description

The signal from a comb generator is tuned across screen, and deviation between graticule reading and frequency dial reading is noted.

B. Preliminary Control Settings

<u>Control</u>	<u>Setting</u>
SYNC	FREE RUN
SWEEP MODE	STD
STD SWEEP	10 msec/DIV
SWEEP VAR/MAN	CAL
BAND SELECT	1
IF GAIN - VAR - dB	60
IF ATTEM - dB	20
VIDEO DURATION	OFF
LIN/LOG	LOG
STAB/OFF	OFF
SIG IDENT/FULL SWEEP	OFF
SCANWIDTH/DIV	5 MHz
BANDWIDTH KHz	100
CAL	FULLY CCW

C. Procedure

- (1) Connect comb generator (Item 1) and low pass filter (Item 2) to RF INPUT as shown in figure 6-1. Select 100 MHz signal and adjust amplitude to full on.
- (2) Adjust FREQUENCY TUNE control to center pointer on dial at zero. Adjust FINE TUNE to center zero beat on screen.
- (3) Advance FREQUENCY TUNE control from 0.2 to 2.0 GHz in 200 MHz increments and observe translation of markers to the left. Record frequency error of the respective marker as indicated on display.
- (4) Frequency error shall not exceed \pm (2 MHz \pm 1% of dial reading) at each position.

6-7. LOCAL OSCILLATOR STABILITY

A. Description

A 1.0 GHz signal from a comb generator is displayed screen center. FM stability is measured by observing peak deviation between sweeps.

B. Preliminary Control Settings

<u>Control</u>	<u>Setting</u>
SYNC	FREE RUN
STD SWEEP	3 msec/DIV
SWEEP VAR MAN	CAL
BAND SELECT	1
IF GAIN - VAR - dB	Adj. for full scale display
IF ATTEN - dB	0
VIDEO DURATION - BW	OFF
LIN/LOG	LIN
STAB/OFF	STAB
SIG IDENT/FULL SWEEP	OFF
FREQUENCY TUNE	1.0 GHz
BANDWIDTH KHz	1 KHz
SCANWIDTH/DIV	500 KHz and noted
CAL	FULLY CCW

C. Procedure

- (1) Connect comb generator (Item 1) as shown in figure 6-1. Set for 100 MHz, adjust level for full on.
- (2) Decrease SCANWIDTH/DIV setting to 1 KHz/DIV, using FINE TUNE control to keep signal centered on screen.
- (3) Check the frequency scale for peak deviation of the trace between sweeps. Peak deviation shall not exceed 300 Hz (0.3 division on frequency scale).

6-8. SCANWIDTH ACCURACY

A. Description

A comb generator is used to check each scanwidth setting by comparing the number of responses displayed with requirements.

B. Preliminary Control Settings

<u>Control</u>	<u>Setting</u>
SYNC	FREE RUN
STD SWEEP	10 msec/DIV
SWEEP VAR/MAN	CAL
BAND SELECT	1
IF GAIN - VAR - dB	60

<u>Control</u>	<u>Setting</u>
IF ATTEN - dB	20
VIDEO DURATION - BW	OFF
LIN/LOG	LOG
STAB/OFF	OFF
SIG IDENT/FULL SWEEP	OFF
SCANWIDTH/DIV	100 MHz and noted
BANDWIDTH KHz	AUTO
CAL	FULLY CCW

C. Procedure

(1) **General**

- (a) Connect comb generator (Item 1) and 1.8 GHz low pass filter (Item 2) to RF INPUT (see figure 6-1).
- (b) With comb generator set to indicated frequency, adjust FREQUENCY TUNE and/or FINE TUNE to position a vertical response on extreme left graticule marking.
- (c) Record the number of vertical responses displayed. Vertical responses shall number 10 to 12 in each instance.

(2) Operate analyzer and comb generator at the following settings, recording the results:

<u>SCANWIDTH/DIV</u>	<u>Comb Generator</u>
100 MHz	100 MHz
10 MHz	10 MHz
1 MHz	1 MHz

6-9. RESOLUTION ACCURACY, OPTIMUM RESOLUTION

A. Description

A signal is displayed at 4 IF bandwidth settings, and the display width is checked against specifications at 3 dB down from peak. With sweep rate and bandwidth controls set on AUTOMATIC, the bandwidth is checked at various dispersions for an appropriate display.

B. Preliminary Control Setting

<u>Control</u>	<u>Setting</u>
SYNC	FREE RUN
STD SWEEP	10 msec/DIV and noted
SWEEP VAR/MAN	CAL
BAND SELECT	1
IF GAIN - VAR - dB	40
IF ATTEN - dB	10
VIDEO DURATION - BW	1 KHz and noted

<u>Control</u>	<u>Setting</u>
LIN/LOG	LOG
STAB/OFF	STAB
SIG IDENT/FULL SWEEP	OFF
FREQUENCY TUNE	0.400 GHz
SCANWIDTH DIV	noted
BANDWIDTH KHz	noted
CAL	FULLY CCW

C. Procedure

(1) General

- (a) Connect calibrated signal generator (Item 3) to RF INPUT (see figure 6-2), and set for 400 MHz.
- (b) With indicated settings of analyzer, adjust signal level in each instance to obtain signal peak near full scale. Check the display. At 3 dB down from peak, width of display shall be 0.8 to 1.2 division ($\pm 20\%$).

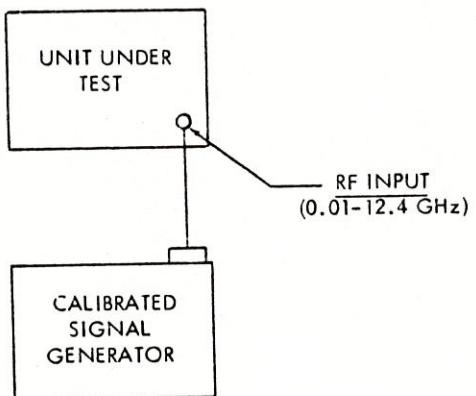


Figure 6-2. Performance Checks with Signal Generator

- (2) Operate analyzer and signal generator as follows, recording the display characteristics:

<u>BANDWIDTH KHz</u>	<u>SCANWIDTH/DIV</u>
1000	1 MHz
100	100 KHz
10	10 KHz
1	1 KHz

- (3) To check optimum control, proceed as follows:

- (a) Set STD SWEEP and BANDWIDTH KHz to AUTO, VIDEO DURATION BW to OFF. Using FINE TUNE control to

keep the signal centered, vary SCANWIDTH/DIV over the full range from 1 KHz to 200 MHz.

- (b) Check the display. A good signal with satisfactory resolution shall be obtained, indicating that bandwidth is changing to match the dispersion selected.

6-10. AMPLITUDE DISPLAY ACCURACY

A. Description

A signal is presented on the display. Input level and IF attenuation are changed in 10 dB steps. The display is monitored and the indicated response is compared with specification.

B. Preliminary Control Settings

<u>Control</u>	<u>Setting</u>
SYNC	FREE RUN
STD SWEEP	3 msec/DIV
SWEEP VAR/MAN	CAL
BAND SELECT	1
IF GAIN - VAR - dB	60
IF ATTEN - dB	0 and noted
VIDEO DURATION - BW	1 KHz
LIN/LOG	LOG
STAB/OFF	STAB
SCANWIDTH/DIV	20 KHz
BANDWIDTH KHz	10
FREQUENCY TUNE	0.400 GHz
CAL	FULLY CCW

C. Procedure

- (1) Connect signal generator (Item 3) at RF INPUT (figure 6-2) and apply 400 MHz signal. Adjust signal level to obtain -40 dB peak amplitude on LOG scale.
- (2) Increase the GENERATOR's OUTPUT level by 40 dB in 10 dB steps, recording display amplitude at each position.
- (3) Reset GENERATOR for -40 dB peak amplitude on LOG SCALE, and step IF ATTEN - dB to 10, 20, and 30, recording display amplitude at each position.
- (4) Signal peak shall shift in 10 dB increments, corresponding to attenuator settings. Deviation at each position shall not exceed ± 2 dB (± 0.2 division).

6-11. IF ATTENUATION ACCURACY

A. Description

The signal from a calibrated signal generator is varied to restore a set signal peak level on screen as increments of IF attenuation are stepped in. The signal generator level is compared with specification.

B. Preliminary Control Settings

<u>Control</u>	<u>Setting</u>
SYNC	FREE RUN
SWEEP MODE	STD
STD SWEEP	10 msec/DIV
SWEEP VAR/MAN	CAL
BAND SELECT	1
IF GAIN - VAR - dB	50 dB
IF ATTEN - dB	Noted
VIDEO DURATION - BW	1 KHz
LIN/LOG	LIN
STAB/OFF	STAB
SIG IDENT/FULL SWEEP	OFF
SCANWIDTH DIV	100 KHz
BANDWIDTH KHz	100 KHz
FREQUENCY TUNE	0.400 GHz
CAL	FULLY CCW

C. Procedure

- (1) Connect calibrated 400 MHz signal generator (Item 3) at RF INPUT (figure 6-2).
- (2) With IF ATTEN - dB all OUT, adjust and note signal generator signal level to obtain amplitude reading of signal peak on screen of 6 divisions.
- (3) Set IF ATTEN - dB to 1 dB, adjust input signal level on signal generator to restore signal peak reading of 6. Record incremental signal level from step 2 of signal generator.
- (4) Repeat step 3 for IF ATTEN - dB settings of 3, 7, 15, 31, and 51.
- (5) Incremental signal level for each step shall be within limits shown on record form.

6-12. SENSITIVITY

A. Description

The power output of a calibrated signal generator displayed in bands 1 through 4 is then checked to confirm a reading of 3 dB or greater above the analyzer noise level.

B. Test Equipment Required

<u>Test</u>	<u>Required Characteristics</u>
Signal Generators	0.8 - 2.4 GHz 1.8 - 4.2 GHz 7 - 11 GHz

C. Preliminary Control Settings

<u>Control</u>	<u>Setting</u>
SYNC	FREE RUN
SWEEP MODE	STD
STD SWEEP	10 msec/DIV
SWEEP VAR/MAN	CAL
BAND SELECT	1 and noted
IF GAIN - VAR - dB	60 dB
IF ATTEN - dB	0 dB
VIDEO DURATION - BW	1 KHz
Selector LIN/LOG	LOG
Selector STAB/OFF	STAB
SIG IDENT/FULL SWEEP	OFF
SCANWIDTH/DIV	100 KHz/DIV
BANDWIDTH KHz	100 KHz
FREQUENCY TUNE	Noted
CAL	FULLY CCW

D. Procedure

- (1) Connect the indicated signal sources to RF INPUT (figure 6-3).
- (2) With BAND SELECT set to 1, set FREQUENCY TUNE to 1.0 GHz.
- (3) Set signal source output power to apply -85 dBm to RF INPUT.
- (4) Observe the display. Signal displayed shall be 3 dB or greater above noise.
- (5) Set BAND SELECT to 2, FREQUENCY TUNE to 4.0 GHz.
- (6) Set signal source output power to apply -80 dBm to RF INPUT.
- (7) Repeat step 4.
- (8) Set BAND SELECT to 3, FREQUENCY TUNE to 8.0 GHz.
- (9) Set signal source output power to apply -75 dBm to RF INPUT.
- (10) Repeat step 4.

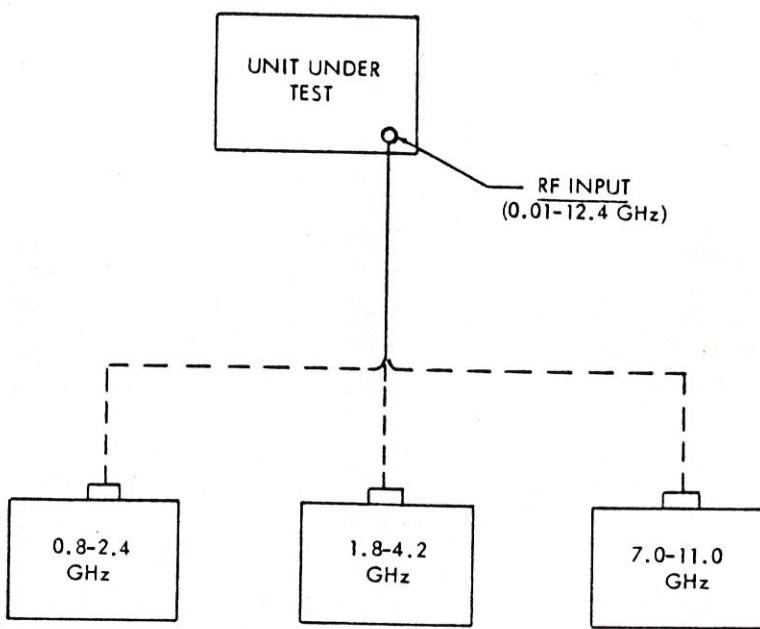


Figure 6-3. Sensitivity Test Set-up

- (11) Set BAND SELECT to 4, FREQUENCY TUNE to 12.0 GHz.
- (12) Set signal source output power to apply -70 dBm to RF INPUT.

6-13. FREQUENCY RESPONSE

A. Description

With center frequency adjusted at the center of each segment of interest, and the corresponding levelled sweeping signal source connected, each band is checked for amplitude deviation by tuning the signal across the band.

B. Preliminary Control Settings

<u>Control</u>	<u>Setting</u>
SYNC	FREE RUN
STD SWEEP	3 msec/DIV
SWEEP VAR/MAN	CAL
BAND SELECT	Noted
IF GAIN - VAR - dB	60
IF ATTEN - dB	10 dB
VIDEO DURATION - BW	OFF
LIN/LOG	LOG
STAB/OFF	OFF
SCANWIDTH/DIV	100 MHz
BANDWIDTH KHz	1000
CAL	FULLY CCW

C. Procedure

(1) General

- (a) Ensure that output of each sweeping signal source has been checked with a power meter and determined to be flat across the range to be swept.
- (b) Connect sweepers (Item 4) and power meter (Item 5) as shown in figure 6-4. Use external 20 dB pad and set signal source level to obtain -20 to -30 dBm level incident to RF INPUT connector.
- (c) Connect sweeper to RF INPUT and slowly tune across the indicated ranges and observe the display for amplitude variations.
- (d) Amplitude variation (flatness) shall be no greater than ± 3 dB/100 MHz.

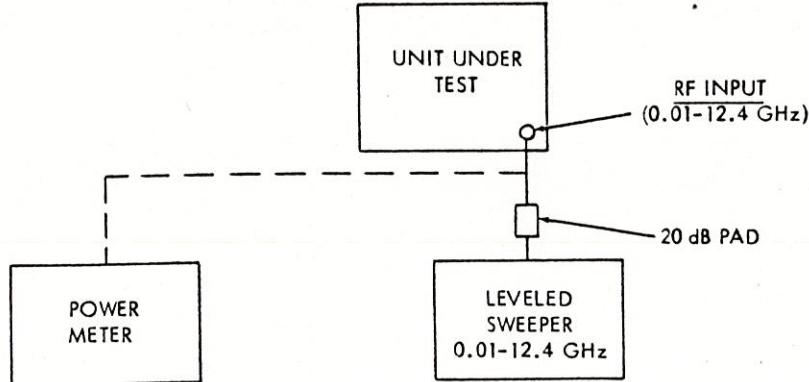


Figure 6-4. Frequency Response

(2) Operate analyzer and signal sources in the following ranges:

<u>BAND SELECT</u>	<u>FREQ. RANGE</u>
1	.01 - 2.0
2	2.1 - 5.0
3	4.75 - 9.25
4	9.0 - 12.4

6-14. WAVEGUIDE MIXERS CHECK

A. Description

The output of a leveled sweeper is swept across the frequency range of the respective mixer. Response flatness and sensitivity are checked.

NOTE: For band 5 (12.4 - 18 GHz) use Model 7120A mixer. For band 6 (18 - 26.0 GHz), use external mixer P/N 110571. For band 7 (26.0 - 40 GHz), use external mixer P/N 110571 with transition, 26.0 - 40 GHz, P/N 110572.

B. Response Flatness

- (1) Connect equipment as shown in Figure 6-5. Use a 110567 Cable Assy, Ext. Mixer, to connect the mixer to the analyzer EXT MXR. Be certain the cable end marked MIXER is connected to the mixer.
- (2) Set the sweep selector control in the sweep generator to CW. (Use appropriate procedure to ensure that Sweeper is leveled.) Calibrate Output level of Sweeper for 0 dBm.

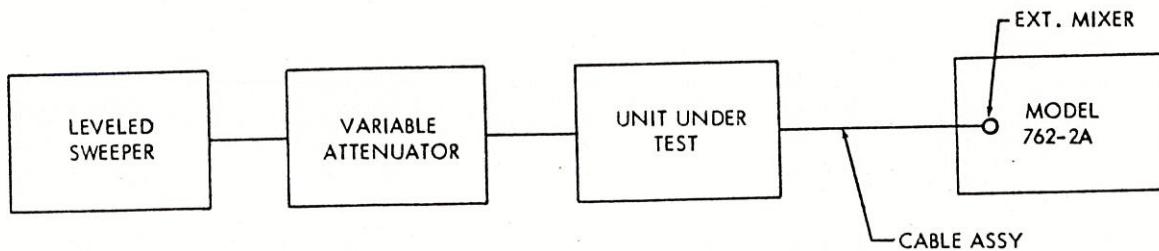


Figure 6-5. Waveguide Mixers Check

- (3) Set spectrum analyzer controls as follows:

<u>Control</u>	<u>Setting</u>
SCANWIDTH/DIV	100 MHz
BANDWIDTH KHz	1000
LIN/LOG	LOG
IF ATTEN - dB	10
SYNC	FREE
STD SWEEP	3 msec/DIV
VIDEO DURATION - BW	OFF
IF GAIN - VAR	60
BAND SELECT	5 (12.4 - 18 GHz) (4+) 6 (18 - 26.0 GHz) (6+) 7 (26.0 - 40 GHz) (10+)

- (4) Set frequency of sweep generator to the lowest frequency to be tested.
- (5) Set variable attenuator (Item 6) to 30 dB attenuation and adjust the FREQUENCY TUNE control to center the signal on the analyzer CRT. Adjust the analyzer mixer BIAS control for maximum signal on the analyzer CRT.
- (6) Increase the frequency of the sweep generator. The signal display on the CRT will traverse from left to right.

As signal generator is being increased in frequency, adjust FREQUENCY TUNE control of analyzer to keep signal display, as indicated by the CRT, visible. Maintain leveled output at -30 dBm. Amplitude of signal, as indicated by the CRT graticule, must not vary more than ± 6 dB over any 100 MHz sector of the mixer frequency band.

If the variation over a 100 MHz band is greater than ± 6 dB, readjust the BIAS control to minimize the variation in that band (bias set at one value only as frequency is varied) if the variation, for all bias settings exceeds ± 6 dB/100 MHz, the unit fails the check.

(7) Specification

Display Flatness $\leq \pm 6$ dB over any 100 MHz band, 12 to 40 GHz.

C. Sensitivity

- (1) Set up as in paragraph B.
- (2) Set the frequency of the sweep generator to the lowest frequency to be measured. Set FREQUENCY TUNE control to center the response on the analyzer CRT. Adjust Mixer BIAS to peak display. Adjust the variable attenuator (Item 6) until the signal level is 20 dB greater than the base line (center of noise signal). Average noise level is 20 dB plus dB setting of the variable attenuator (1000 KHz bandwidth*).

(3) Specifications

<u>Band</u>	<u>Freq. Range (GHz)</u>	<u>Max. Avg. Noise Level (100 KHz BW)</u>
5	12.4 - 18	-70 dBm
6	18 - 26.0	-60 dBm
7	26.0 - 40	-50 dBm

*Measured at 1000 KHz bandwidth due to instability of signal generators above 12 GHz.

Performance Check Record Form

Paragraph 6-5 Functional Check

PARAMETER	SETTING	MEAS.	SPEC. LIMITS
INTENSITY	Nominal	_____	OK
V	Bottom line	_____	OK
TRACE ALIGN	Parallel	_____	OK
SIG IDENT/FULL	FULL SWEEP	_____	Full comb
H	Centered 200 MHz	_____	OK
VECT GAIN ADJ	Logging Accuracy	_____	OK
SIG IDENT/FULL	SIG IDENT	_____	OK
			(In-band: 2±.2 division left, approx. 6 dB down, alternate sweeps)
BASELINE BLANKING	Advance	_____	OK
FRAT ILLUM	Advance	_____	OK
VIDEO DURATION - BW	1 KHz	_____	OK
STD SWEEP	3 sec/DIV	_____	OK
	1 sec/DIV	_____	OK
	.3 sec/DIV	_____	OK
	.1 sec/DIV	_____	OK
	30 msec/DIV	_____	OK
	10 msec/DIV	_____	OK
	3 msec/DIV	_____	OK
SYNC	LINE	_____	OK
	SGL/VIDEO	_____	Single sweep with VIDEO TRIG ADJ to SGL
			Sweep triggering when VIDEO TRIG ADJ advanced
SWEEP MODE	MAN	_____	Spot translates screen when SWEEP VAR/MAN advanced
	FAST	_____	OK

Paragraph 6-6 Tuning Accuracy

PARAMETER	SETTING	MEAS.	SPEC. LIMITS
FREQUENCY TUNE	0.200 GHz	_____	±4 MHz
	0.400 GHz	_____	±6 MHz
	0.600 GHz	_____	±8 MHz
	0.800 GHz	_____	±10 MHz
	1.000 GHz	_____	±12 MHz
	1.200 GHz	_____	±14 MHz
	1.400 GHz	_____	±16 MHz
	1.600 GHz	_____	±18 MHz
	1.800 GHz	_____	±20 MHz
	2.000 GHz	_____	±22 MHz

Paragraph 6-7 Local Oscillator Stability

PARAMETER	SETTING	MEAS.	SPEC. LIMITS
SCANWIDTH/DIV	1 KHz	_____ Div's	0.3 Division between sweeps

Paragraph 6-8 Scanwidth Accuracy

SCANWIDTH/DIV	SETTINGS	NO. RESPONSES	
	Comb Generator	MEAS.	SPEC. LIMITS
100 MHz	100 MHz	_____	10 - 12
10 MHz	10 MHz	_____	10 - 12
1 MHz	1 MHz	_____	10 - 12

Paragraph 6-9 Resolution Accuracy, Optimum Resolution

PARAMETER	SETTING	MEAS.	SPEC. LIMITS
		<u>3 dB down</u>	<u>3 dB down</u>
BANDWIDTH KHz	1000	____ Div.	
	100	____ Div.	
	10	____ Div.	
	1	____ Div.	0.8 - 1.2 Div.
BANDWIDTH KHz	AUTO		
SWEEP SPEED	AUTO	Appropriate Display	____ OK
SCANWIDTH/DIV		____	OK

Paragraph 6-10 Amplitude Display Accuracy

PARAMETER	SETTING	MEAS.	SPEC LIMITS
<u>Signal Level</u>	<u>INPUT LEVEL-dB</u>	<u>IF ATTEN-dB</u>	
	-40	0	____ dB
	-30	0	____ dB
	-20	0	____ dB
	-10	0	____ dB
	LOG REF	0	____ dB
	-40	10	____ dB
	-40	20	____ dB
	-40	30	____ dB

Paragraph 6-11 IF Attenuator Accuracy

PARAMETER	SETTING	MEAS.	SPEC. LIMITS
<u>IF ATTEN - dB</u>		<u>Power Level Increment</u>	
1		_____	0.9 to 1.1 dB
3		_____	2.7 to 3.3 dB
7		_____	6.3 to 7.7 dB
15		_____	14 to 15 dB
31		_____	30 to 32 dB
51		_____	49 to 53 dB

Paragraph 6-12 Sensitivity

PARAMETER	SETTING	MEAS.	SPEC. LIMITS
<u>BAND</u>		<u>SIGNAL ABOVE NOISE LEVEL</u>	
1		_____ dB	
2		_____ dB	
3		_____ dB	
4		_____ dB	
5		_____ dB	
6 }	External Mixers tested separately	\geq 3 dB above noise	
7			

Paragraph 6-13 Frequency Response

<u>PARAMETER</u>	<u>SETTING</u>	<u>MEAS.</u>	<u>SPEC. LIMITS</u>
<u>BAND SELECT</u>	<u>FREQUENCY RANGE (GHz)</u>	<u>Amplitude Variation (dB)</u>	
1	.01 - 2.0	_____	No greater than ±3 dB/100 MHz
2	2.1 - 5.0	_____	
3	4.75 - 9.25	_____	
4	9.0 - 12.4	_____	
5	External Mixers tested separately	_____	
6		_____	
7		_____	

Paragraph 6-14 Waveguide Mixer Checks

<u>PARAMETER</u>	<u>SETTING</u>	<u>MEAS.</u>	<u>SPEC. LIMITS</u>
<u>BAND</u>	<u>MIXER</u>	<u>FREQUENCY RANGE (GHz)</u>	<u>Amplitude Variation (dB)</u>
			Max. Avg. Noise Level 100 KHz BW
5	7120A	12.4 - 18	No greater than ±6 dB/100 MHz
6	110571	18 - 26.0	_____ -70 dBm
7	110571 with 110572 transition	26.0 - 40	_____ -60 dBm _____ -50 dBm