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PCM TELEMETRY FOR EARTH RESOURCES AIRCRAFT

END ITEM TEST REPORT

CONTRACT ITEM NUMBER 1

June 1969

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MARTIN MARIETTA CORPORATION
P. O. Box 179
Denver, Colorado 80201

I. INTRODUCTION

Martin Marietta Corporation has designed and produced the PCM Telemetry System for Earth Resources Aircraft, for the Manned Space Center of the National Aeronautics and Space Administration at Houston, Texas. This report describes the results of the electrical and environmental qualification tests performed on the first production system, and also describes the acceptance testing of the other system elements procured by NASA-MSC from MMC as contract item number 1 of Contract NAS9-8146. Item number 1 is comprised of one CCU, 2 MEU's and one set of spares for each.

The PCM Telemetry System consists of two basic units, the Control/Combiner Unit (CCU) and the Multiplexer Encoder Unit (MEU). A complete system is comprised of one CCU and up to four MEU's. The CCU provides the system timing signals and provides a flexible telemetry formatting capability via plug-in cards. Each MEU can accept 60 differential 0-5 volt analog signals which it converts to 10 bit binary words, and 60 differential bilevel signals grouped as six 10-bit words. The A/D conversion accuracy is $\pm$ 0.1%. The system was electrically tested to verify all specification requirements of the contract, including such tests as accuracy, input and output impedance, and frequency stability. The system was also subjected to vibration, temperature/altitude, and electromagnetic interference environments as specified in the contract to meet the requirements of MSD/IESD 28-52. The detailed test procedure is described in the Martin Marietta document MCR-68-10(Rev. B), PCM Telemetry System for Earth Resources Aircraft End Item Test and Inspection Procedure, October 1968.

One complete set of data will be sent to the NASA-MSC technical monitor, Mr. William Mallary, and the originals will remain in Quality Control's Log. This document summarizes the results, describes in detail any failures to meet specifications and any rework required to make the sytem conform to specifications.

II. PRE-ENVIRONMENTAL TESTS

Following assembly the system was tested, and modified where required to meet the specifications. There was substantial modification required since the duration of the contract was too short to allow for a complete breadboard to be built prior to ordering printed circuit boards. After the system functioned to the engineers' satisfaction, a formal pre-environment test was performed according to the test procedure. These tests are all run at room temperature and are used simply to verify a functional unit prior to environmental tests, so that any malfunctions following environments can be correlated more precisely to the environments. There were no failures during pre-environmental testing. The data sheets are in the Quality File, with one copy to the NASA Technical Monitor.

III. QUALIFICATION TESTS

III.1 Environmental Tests

One CCU (part number 1200-1-009), serial number 0000001, and one MEU (part number 100-1-009), serial number 0000001, were subjected to the environmental tests at the levels required for qualification of units for the Earth Resources Aircraft. These qualification tests are discussed in detail in the following sections. There were no part failures during any of the environmental testing, however, the original design did not meet the EMC requirements of EMC-10, a contractual requirement. The design problem was in the power supply. The power supply was redesigned and the original units modified accordingly. One MEU was then successfully retested to the EMC-10 requirements as modified for this contract. Since the power supplies for MEU and CCU are identical, it was not necessary to retest both of them.

III.1 A Vibration

1) The Multiplexer/Encoder Unit (MEU), while operational, was subjected to a 2 minute $\pm$ 1/2 g sine sweep from 5 to 2000 Hz in each of three axes. Resonant frequencies and levels were recorded on a data sheet included herein.

2) The MEU, while operational, was subjected to a 10 g sweep from 5 to 500 to 5 Hz in a total duration of 30 minutes. This sweep was performed in each of three axes.

3) The Control/Combiner Unit (CCU), while operational, was subjected to a 5 minute $\pm$ 1/2 g sine sweep from 5 to 500 Hz in each of three axes. Resonant frequencies and levels were recorded on a data sheet included herein.

4) The CCU, while operational, was subjected to a 2 g sweep from 5 to 500 to 5 Hz in a total duration of 15 minutes. This sweep was performed in each of three axes.

5) No performance degradations of either CCU or MEU were found during these vibration runs. The performance data is in the form of a strip chart. One set of these charts will be sent to the technical monitor.

III.1 B Temperature/Altitude Test

1) Two test items, a Multiplexer/Encoder Unit (MEU) and a Control/Combiner Unit (CCU) were simultaneously subjected to the specified temperature and altitude requirements. The items were placed in separate chambers.

2) The MEU, in nonoperating mode, was placed in a Murphy-Miller 4 x 4 Temperature-Altitude chamber. The chamber temperature was reduced to -65°F and allowed to stabilize for two hours.

III.1 B Temperature/Altitude Test - continued:

3) The CCU, in nonoperating mode was placed in a Tenney 3 x 3 Temperature/Altitude chamber. The chamber temperature was reduced to +30°F and allowed to stabilize for two hours.

4) At the end of the two-hour stabilization period an operational check was performed by R & D personnel.

5) After the operational check the test units were again deenergized. While maintaining the -65°F and +30°F temperatures in the respective chambers, the pressure in both chambers was reduced to 50,000 feet altitude equivalent (mm Hg). These temperature and altitude conditions were maintained for two hours. A second operational check was then performed on the test units by R & D personnel with no change in the temperature and altitude conditions.

6) After completion of the 2nd operational check, with the units deenergized, the temperature in the Murphy-Miller (MEU) chamber was increased gradually to 160°F and the temperature in the Tenney (CCU) chamber was increased to 110°F. Altitude in both chambers was maintained at 50,000 feet during the temperature change.

7) The 160°F and the 110°F temperatures and the 50,000 feet altitude condition was held for 24 hours after which a third operational check was performed on the test units.

8) Upon completion of the 3rd operational check the units were deenergized. The altitude was reduced to ambient in both chambers, while holding the temperatures of the chamber constant at the 160°F and 110°F respective levels. This temperature condition was maintained for four hours, after which a fourth operational check was performed by R & D personnel.

9) The temperature of both chambers was then allowed to return gradually to room ambient. After four hours at room ambient a final operational check was conducted.

10) The functional verification data is in the form of a strip chart. One set of these charts will be sent to the technical monitor.

VIBRATION TEST LOG

Test Unit MEU and CCU Date 12/5/68

Test Engineer Clough Technician Siemrzuch

TABULATION OF ITEM RESONANCES AND Q's

AXIS	MEU 30 MIN 5-500-5Hz FREQ.	Q.	MEU 15 MIN 5-500-5Hz FREQ.	Q
X	None		100	4
			171	3.5
			271	3.5
			343	3
			500	3
X	None		139	7
			289	9
			459	7
Z	None		163	10
			289	15

NNC QUALITY: L. Spurentine; CUSTOMER: E. Johnston, NASA/MSC

TEMPERATURE/ALTITUDE

Test Log

TEST UNIT MEU and CCU DATE 12/8/68

TEST ENGINEER Clough TECHNICIAN Siemrzoch

Test Events	Time	Date	Initial
Tenney 3x3 stabilized at +30°	1600	12-8-68	F.S.
Murphy-Miller 4x4 stabilized at -65°	1600	12-8-68	F.S.
Operational Check completed after 2 hours	1830	12-8-68	F.S.
Pressure Reduced to 50,000 ft equivalent	1830	12-8-68	D.C.
Operational Check completed after 2 hours	2100	12-8-68	D.C.
Tenney 3x3 stabilized at 110°F	2330	12-8-68	D.C.
Murphy-Miller Stabilized at 160°F	2330	12-8-68	D.C.
Operational Check completed after 24 hours	2345	12-9-68	D.C.
Pressure returned to ambient	0120	12-10-68	D.C.
Operational check completed after 4 hours	0530	12-10-68	D.C.
Temperature returned to ambient	0600	12-10-68	D.C.
Operational check completed after 4 hours	0800	12-10-68	D.C.

NAC QUALITY: [signature] CUSTOMER: E. Johnston, NASA/AF

EQUIPMENT LIST *(Temperature/Altitude):

Equipment Name	Manufacturer	Model	Serial No.	Cal Due Date
Temp./Alt. Chamber	Tenney	27	AF 575163	12-17-68
Temp./Alt. Chamber	Murphy-Miller	LTA-64	AF 575265	01-16-69
Recorder	Bristol	12P1G560	AF 700897	02-03-69
Recorder	Bristol	12P1G-560	AF 701402	03-12-69

* Equipment listed above does not include equipment used by R & D personnel for operation of the test items.

EQUIPMENT LIST* (Vibration)

Equipment Name	Manufacturer	Model	Serial #	Cal Due Date
Shaler	Ling Electronics	L-200	AF001146	03-03-69
Amplifier	Ling Electronics	90/140	AF001146	03-03-69
Accelerometer	Endevco	2225	CM071458	03-25-69
Accelerometer	Endevco	2225	CM071456	03-25-69
Accelerometer	Endevco	2225	CM071460	03-25-69
Accelerometer	Endevco	2225	CM071461	03-25-69
Accel. Amplifier	Endevco	2614	AF000069	05-01-69
Accel. Amplifier	Endevco	2614	AF000211	02-01-69
Accel. Amplifier	Endevco	2614	AF000099	05-01-69
Accel Amplifier	Endevco	2614	AF000057	05-01-69
VTVM	Hewlett Packard	400D	AF031743	02-22-69
VTVM	Hewlett Packard	400D	AF031744	02-04-69

* Equipment listed above does not include equipment used by R & D personnel for operation of the test items.

III.1 C EMC Test Results

The test was performed at the EMI Facilities located in the Environmental Test Laboratory. The facility consits of a solid shielded enclosure of 22 gage zinc clad steel with dimensions of 16' x 24' x 12' high. The inner walls and ceiling are covered with 12 inch thick microwave absorbent, B.F. Goodrich Type #100 cm., with additional material available to cover the entire floor. Two ground planes are available in sizes of 8' x 16' on the floor and a 2.5' x 10' copper covered table.

In order to improve the positioning of power leads to the test items the CCU and MEU locations were reversed on the ground plane from positioning shown in the test procedure.

Graphs of weasured impedance of the line stabilization networks used during this test appear in Figures III-1 and III-2.

Test frequencies were selected after scanning each frequency octave with measurements taken at the frequencies of maximum interference.

The system was operated in the external sync mode during both interference and susceptibility test. For the interference tests, the system was periodically monitored with the test tool to verify correct operation. During the susceptibility test, the system was continuously monitored with a decommutator to insure the detection of any transient malfunctions. The equipment list for this testing is given in section .

A photograph of the typical test setup is shown in Figure III-3.

1. Conducted Interference Test

The test was performed as outlined in paragraphs 3.3.4.1 and 3.3.4.2 of the test procedure.

Test unit operation was as described in paragraph 1.1.5 of this report.

Conducted interference data appears on E1 Data Sheets 1 through 14. With instrument internal noise measurements given on E1 Data Sheets 15 through 21.

Graphs of the conducted interference levels appear in Figures III-4 through III-13.

The tests were rerun on a MEU only following modification of the power supply. The results are given in Ei Data Sheets 22 through 28 and in graphs of Figures III-16 through III-21.

2. Radiated Interference Test

The test was performed as outlined in paragraph 3.3.4 of the test procedure.

Test unit operation was as described in paragraph 1.1.5 of this report.

Radiated interference data appears on E1 Data Sheets 29 through 32, with the associated ambient measurements on sheets 33, 34, and 35.

Graphs of measured radiated interference levels appear in Figures III-14 and III-15.

The tests were rerun on a MEU only, following modification of the power supply. The results are given in E1 data sheets 36 and 37 and in the graph of Figures III-22 and III-23.

Sample calculations showing how the measured level of radiated interference was obtained are as follows:

a) Interference measuring equipment — URM-6
Frequency of CW measurement — 20 KHz
Antenna factor (Short Rod) — + 6 db
Meter reading — 31 db
Interference level = meter reading + antenna Factor = 31 + 6 = 37 db above one microvolt per meter.

b) Interference measuring equipment — NF-105
Frequency of CW measurement — 310 KHz
Antenna factor (VA-105) — 16 db
Field intensity conversion factor — + 6 db
Meter reading — 26 db
Interference level = meter reading + antenna factor + field intensity conversion factor = 26 + 16 + 6 = 48 db above one microvolt per meter.

c) Interference measuring equipment — NF-105
Frequency of broadband measurement — 80 MHz
Antenna factor (DM-105) — + 2 db
Meter reading — 41 db
Interference level = meter reading + antenna factor = 41 + 2 = 43 db above one microvolt per megahertz per meter.

d)	Interference measuring equipment	NF-112
	Frequency of broadband measurement	1 GHz
	Antenna factor (FIM-CA-S)	22.4 db
	Cable loss factor	0.5 db
	Meter reading	21 db

Interference level = meter reading + antenna factor + cable loss factor = 21 + 22.4 + 0.5 = 43.9 db above one microvolt per megahertz per meter.

3. Audio Conducted Susceptibility Test

The test was performed as outlined in paragraph 3.3.5.1 of the test procedure.

Test unit operation was as described in paragraph 1.1.5 of this report.

Monitoring of test unit operation was as described in paragraph 1.1.6.

The test units showed no degradation of performance due to the applied susceptibility signals.

4. RF Conducted Susceptibility Test

The test was performed as outlined in paragraph 3.3.5.2 of the test procedure except that the test was repeated with the current probe clamped in turn around the positive lead to CCU, positive lead to MEU and negative lead to MEU.

Test unit operation was as described in paragraph 1.1.5 of this report.

Monitoring of test unit operation was as described in paragraph 1.1.6.

The test units showed no degradation of performance as a result of the applied susceptibility signals.

5. Transient Conducted Susceptibility Test

The test was performed as outlined in paragraph 3.3.5.3 of the test procedure.

Test unit operation was as described in paragraph 1.1.5 of this report.

Monitoring of test unit operation was as described in paragraph 1.1.6.

The test units showed no degradation of performance due to the application of the applied transients.

6. Radio Frequency Radiated Susceptibility Test

The test was performed as outlined in paragraph 3.3.5.4 of the test procedure.

Test unit operation was as described in paragraph 1.1.5 of this report.

Monitoring of test unit operation was as described in paragraph 1.1.6.

The test units showed no degradation of performance due to the radiated field.

7. Instrumentation

Instrumentation used to perform this test was as follows:

ITEM	MFG	MODEL	S/N	CAL DATE	CAL DUE DATE
Field Intensity Meter	Stoddart	NM-40A	AF030410	09-27-68	01-27-69
Field Intensity Meter	Stoddart	URM-6	AF-31046	08-06-68	12-06-68
Field Intensity Meter	Empire Devices	NF-105	AF030052	10-29-68	03-01-69
Field Intensity Meter	Empire Devices	NF-112	EQ520031	09-27-68	01-27-69
Current Probe	Gennistron	GCP-5120	345	———	———
Current Probe	Gennistron	GCP-5130	161	———	———
Antenna	Empire Devices	VA-105	184	———	———
Antenna	Empire Devices	DM-105	740	———	———
Antenna	Polarad	CA-S	111	———	———
	Polarad	CA-L	113	———	———
	Polarad	CA-M	116	———	———
	Polarad	CA-X	111	———	———
Power Supply	HP	6255A	EQ525916	11-08-68	05-08-69
Audio Amplifier	McIntoch	MC-60	ME104491	11-25-68	03-25-69
Test Oscillator	HP	651A	EQ521335	11-20-68	03-20-69
Audio Transformer	Solar	6220-1A	ME130971	———	———
Transient Generator	Solar	6254-5	EQ521092	09-05-68	09-05-69
Oscilloscope	Tektronix	531-S10	AF001137	09-26-68	01-26-69

ITEM	MFG	MODEL	S/N	CAL DATE	CAL DUE DATE
Plug-In	Tektronix	53/54C	AF003466	09-13-68	01-13-69
VTVM	Ballantine	320	EQ504944	11-27-68	03-27-69
VTVM	HP	410C	EQ526294	11-07-68	03-07-69
Signal Generator	GR	1001-A	AF030489	08-16-68	12-16-68
Signal Generator	HP	608C	AF701006	12-02-68	04-02-69
Signal Generator	HP	612A	AF031411	10-25-68	02-25-69
Power Oscillator	Airborne Instruments	A1L125	EQ521339	11-27-68	03-27-69
Signal Generator	HP	616A	AF030037	11-27-68	03-27-69
Signal Generator	HP	618B	AF030034	11-27-68	03-27-69
Signal Generator	HP	620A	AF031449	11-27-68	03-27-69
Signal Generator	HP	606A	EQ524079	10-15-68	02-15-69
Direct Writer	Martin	PD8309000020-1	002	_____	_____
Timer	Beckman	6146	EQ520544	09-05-68	03-05-69
Counter	Systron	1032	EQ590609	08-26-68	12-23-68
Voltage Current Calibrator	Fluke	328A	EQ521650	11-05-68	02-05-69
Power Supply	Ambitrol	TW-4005	EQ520498	08-21-68	02-21-69
Data Generator	Data Pulse	200	EQ520451	10-01-68	02-01-69
Universal PCM Demodulator System	EMR	285	EQ521004	_____	_____
PCM Signal Conditioner	EMR	219	EQ590813	_____	_____

III.2 Post Environmental Qualification Tests

Following environmental testing, a damage inspection was performed by Quality Assurance. No damage was found. Following the inspection, a complete functional acceptance test was run at all temperatures according to the test procedure MCR-68-10 (Rev. B). The data sheets for these acceptance tests were sent to NASA-MSC with the equipment. No failures occurred during the post environmental qualification tests.

IV. ACCEPTANCE TESTS

IV.1 Environmental Tests

One MEU (part number 1100-1-009), serial number 0000002 and the spare boards and power supply for one MEU and one CCU were subjected to the environmental tests at the levels required for acceptance testing for the Earth Resources Aircraft. These tests consisted of a vibration test as follows.

Vibration

1) The Multiplexer/Encoder Unit (MEU) and Control/Combiner Unit (CCU), while operational, were individually subjected to a 2 minute $\pm$ 1/2 g sine sweep from 5 to 2000 Hz in each of three areas. Resonant frequencies and levels were recorded on a data sheet included herein.

2) The MEU and CCU, while operational, were individually subjected to a 2 g sine sweep from 5 to 500 to 5 Hz in a total duration of 5 minutes. This sweep was performed in each of three axes.

3) No performance degradations of either CCU or MEU were noted during these vibration tests. The performance data is in the form of a strip chart. One set of these charts will be sent to the technical monitor.

4) One MEU, non-operating, was subjected to a 2 g sine sweep from 5 to 500 to 5 Hz in a total duration of 5 minutes.

IV.2 Post Environmental Acceptance Tests

One MEU (part number 110[illegible]1-009), serial number 0000002 and the spare boards and power supply for one CCU and one MEU were tested to the acceptance test performance levels per MCR-68-10 (Rev B). One A/D converter failed during high temperature testing. This unit was replaced, the MEU vibrated at acceptance test levels non-operating and then successfully passed all acceptance tests. No other failures occurred during acceptance testing. The A/D converter was returned to the vendor, Pastoriza Electronics Inc., for repair. Their report indicated a faulty wiper on the offset adjustment potentiometer. Two other A/D converters failed during receiving inspection tests at elevated temperatures. These units were returned to Pastoriza for repair. A low temperature range amplifier was mistakenly used in this wide temperature range unit. There were no other failures during acceptance testing.

VIBRATION TEST LOG

Test Unit MEU and CCU Date 12/12/68

Test Engineer Clough Technician Siemrzuch

TABULATION OF ITEM RESONANCES AND Q's

AXIS	2 MEU's 5 MIN 5-500-5Hz FREQ.	Q.	CCU 5 MIN 5-500-5Hz FREQ.	Q.
X	None		100 171 271 343 500	4 3.5 3.5 3 3
X	None		139 289 459	7 9 7
X	None		163 289	10 15

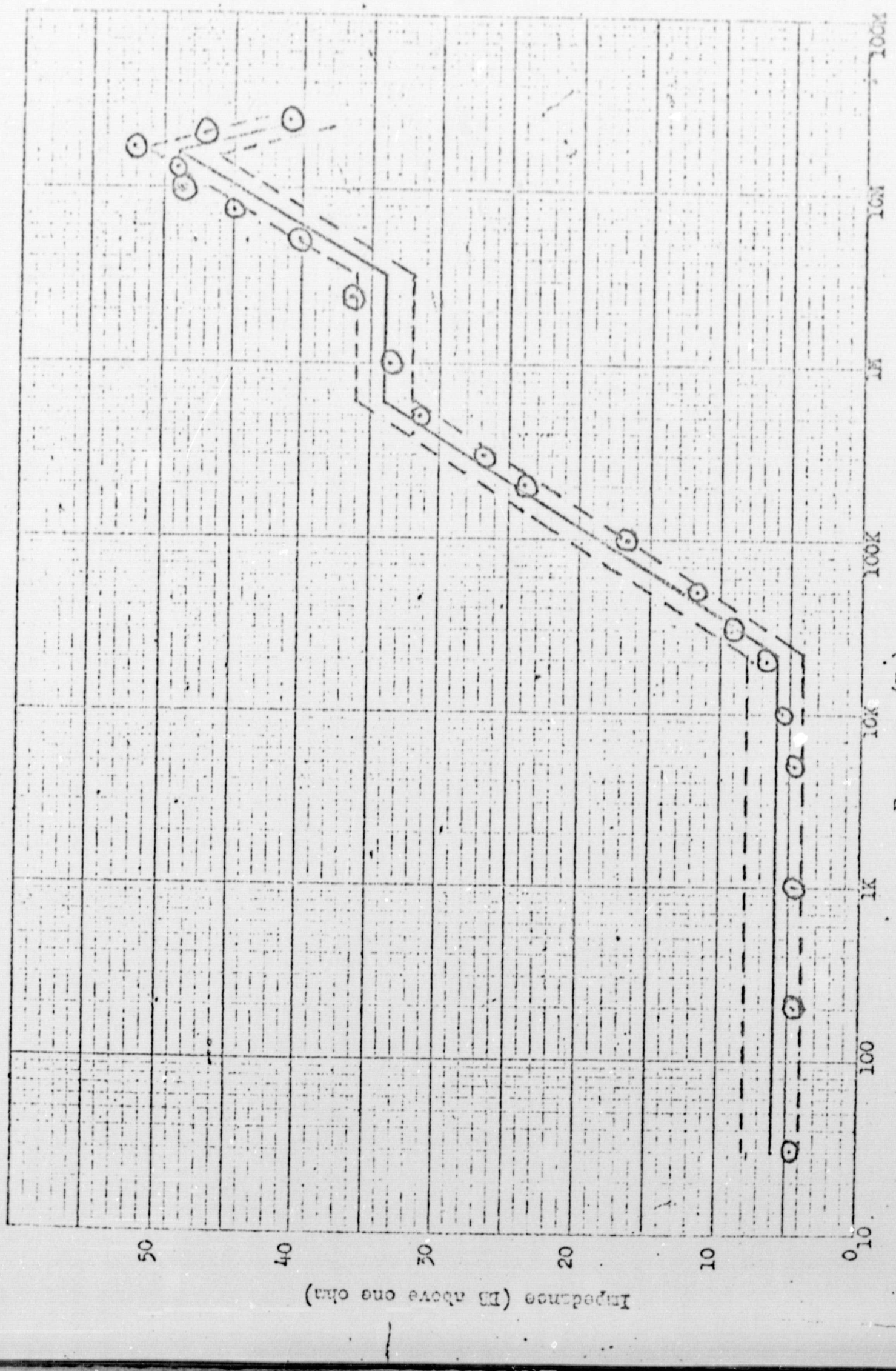
NMC QUALITY: F. Lourentzia CUSTOMER: E. Johnston, NASA/IAF

EQUIPMENT LIST* (Vibration)

Equipment Name	Manufacturer	Model	Serial #	Cal Due Date
Shaler	Ling Electronics	L-200	AF001146	03-03-69
Amplifier	Ling Electronics	90/140	AF001146	03-03-69
Accelerometer	Endevco	2225	CM071458	03-25-69
Accelerometer	Endevco	2225	CM071456	03-25-69
Accelerometer	Endevco	2225	CM071460	03-25-69
Accelerometer	Endevco	2225	CM071461	03-25-69
Accel. Amplifier	Endevco	2614	AF000069	05-01-69
Accel. Amplifier	Endevco	2614	AF000211	02-01-69
Accel. Amplifier	Endevco	2614	AF000099	05-01-69
Accel Amplifier	Endevco	2614	AF000057	05-01-69
VTVM	Hewlett Packard	400D	AF031743	02-22-69
VTVM	Hewlett Packard	400D	AF031744	02-04-69

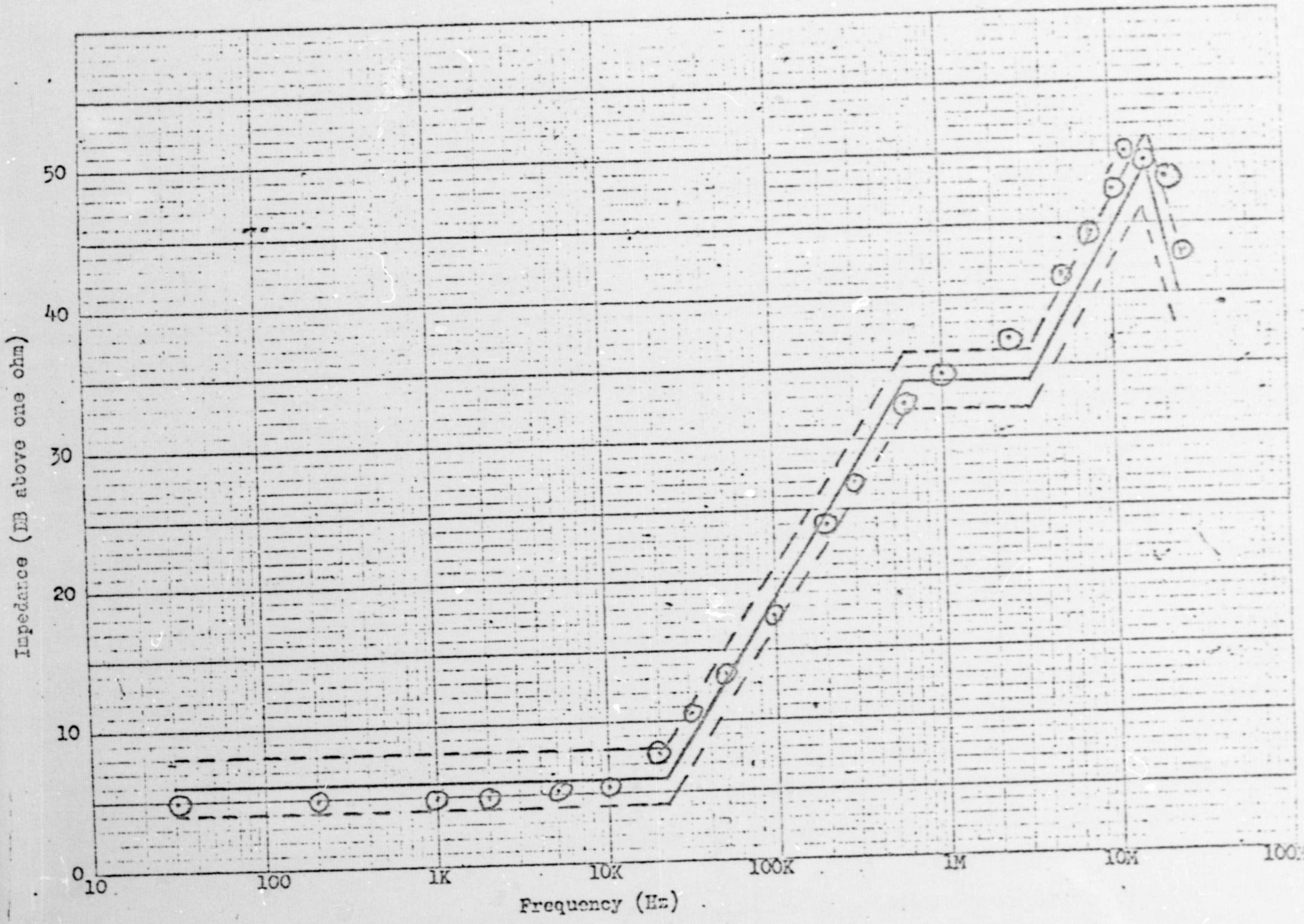
* Equipment listed above does not include equipment used by R & D personnel for operation of the test items.

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.



Impedance of DC Power Line Stabilization Network To CCU

FIGURE III-1



Impedance of DC Power Line Stabilization Network To MEU

FIGURE III-2

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

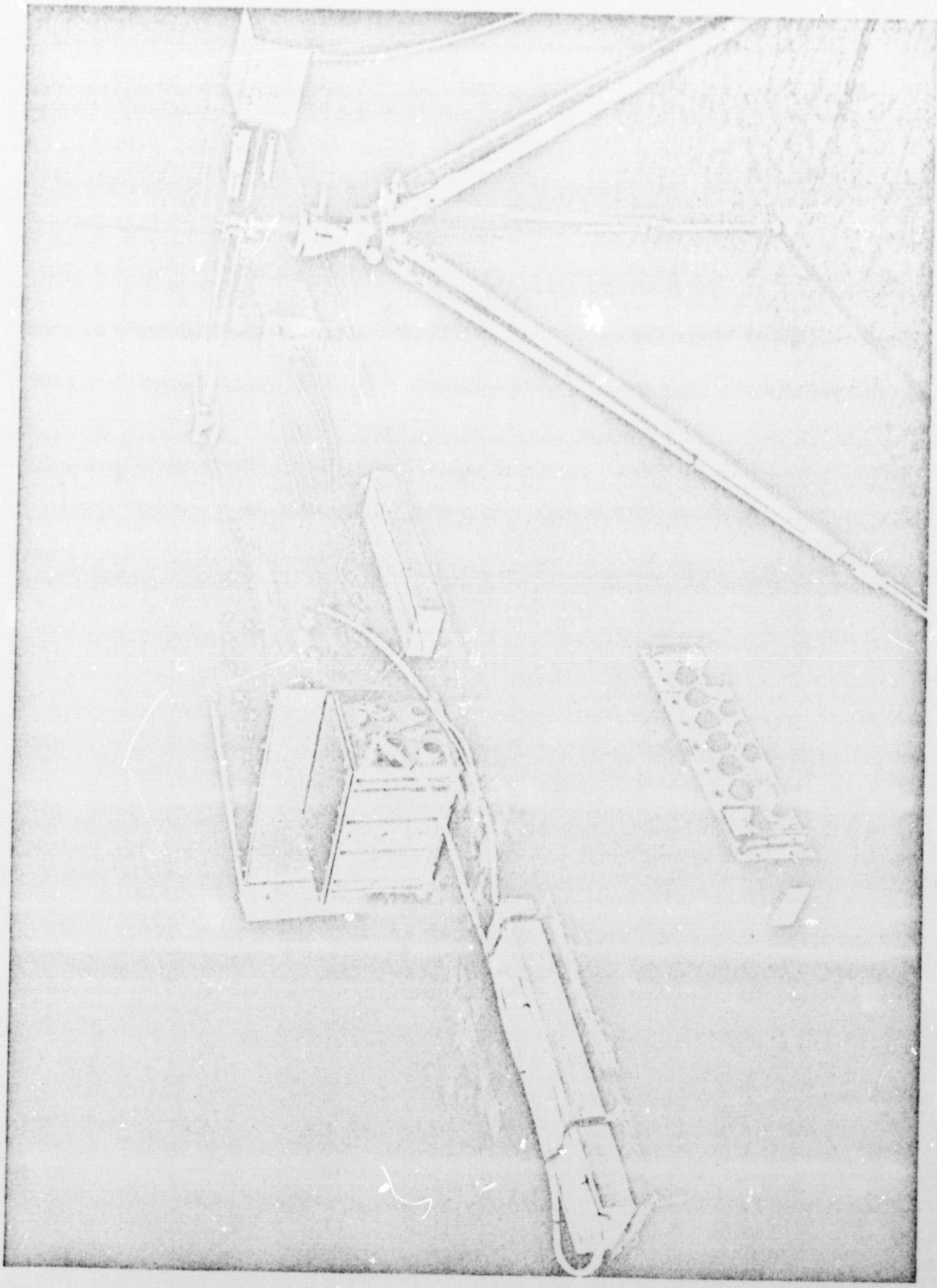


FIGURE III-3 - TYPICAL EMC TEST SETUP

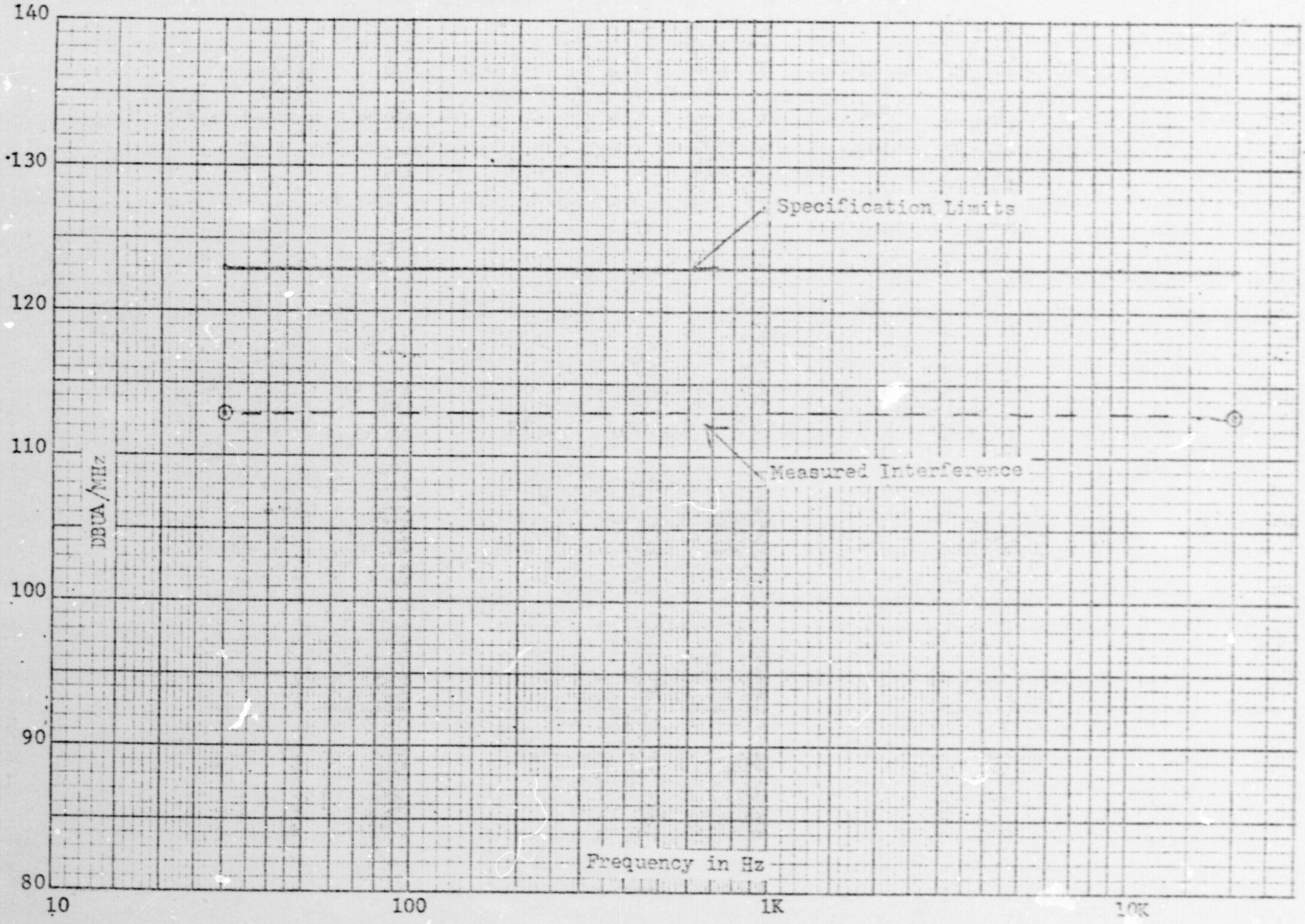


FIGURE III-4 BROADBAND CONDUCTED INTERFERENCE, ± 28 V LINE TO CCU

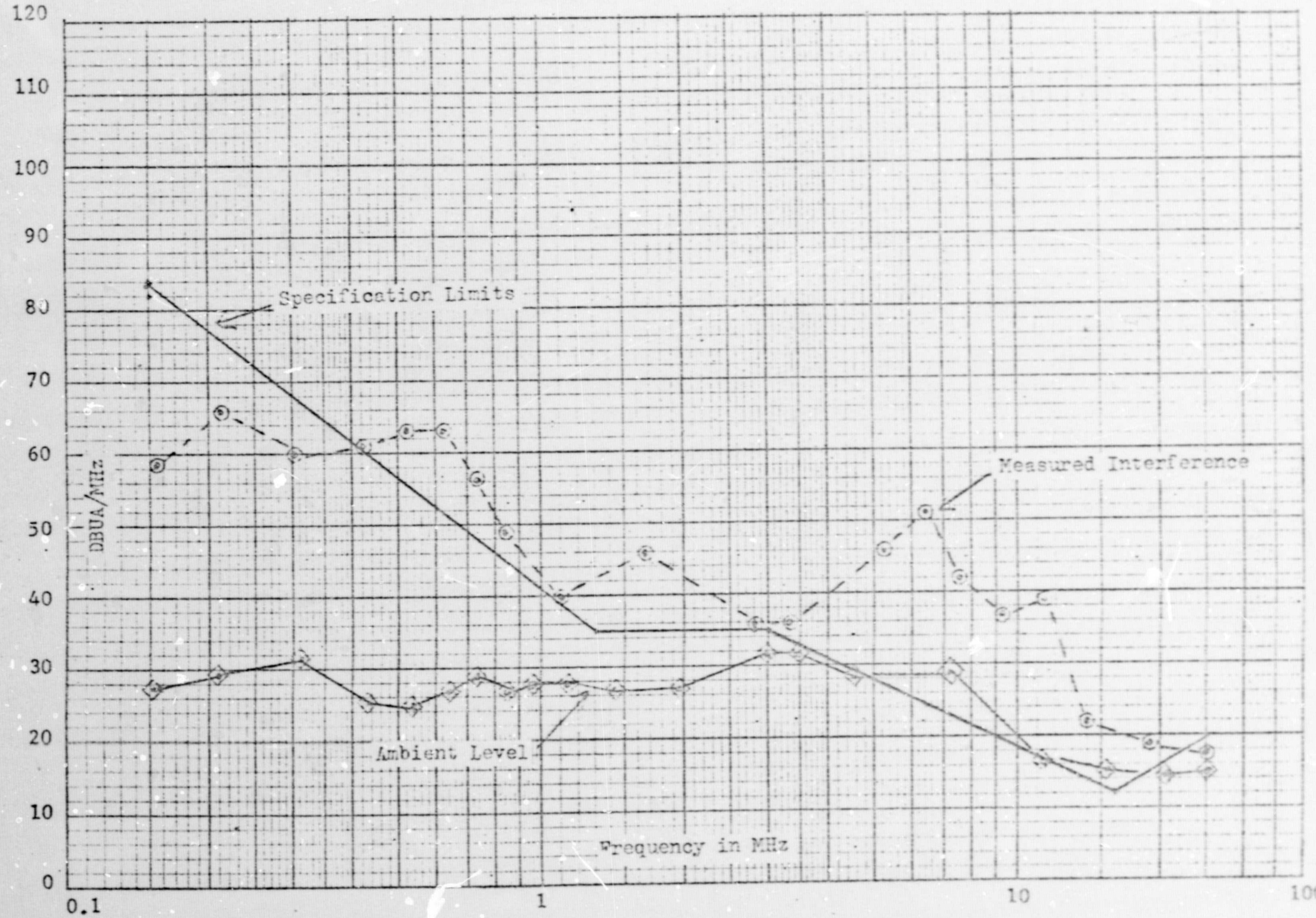


FIGURE III-5 BROADBAND CONDUCTED INTERFERENCE, + 28 V LINE TO CCU

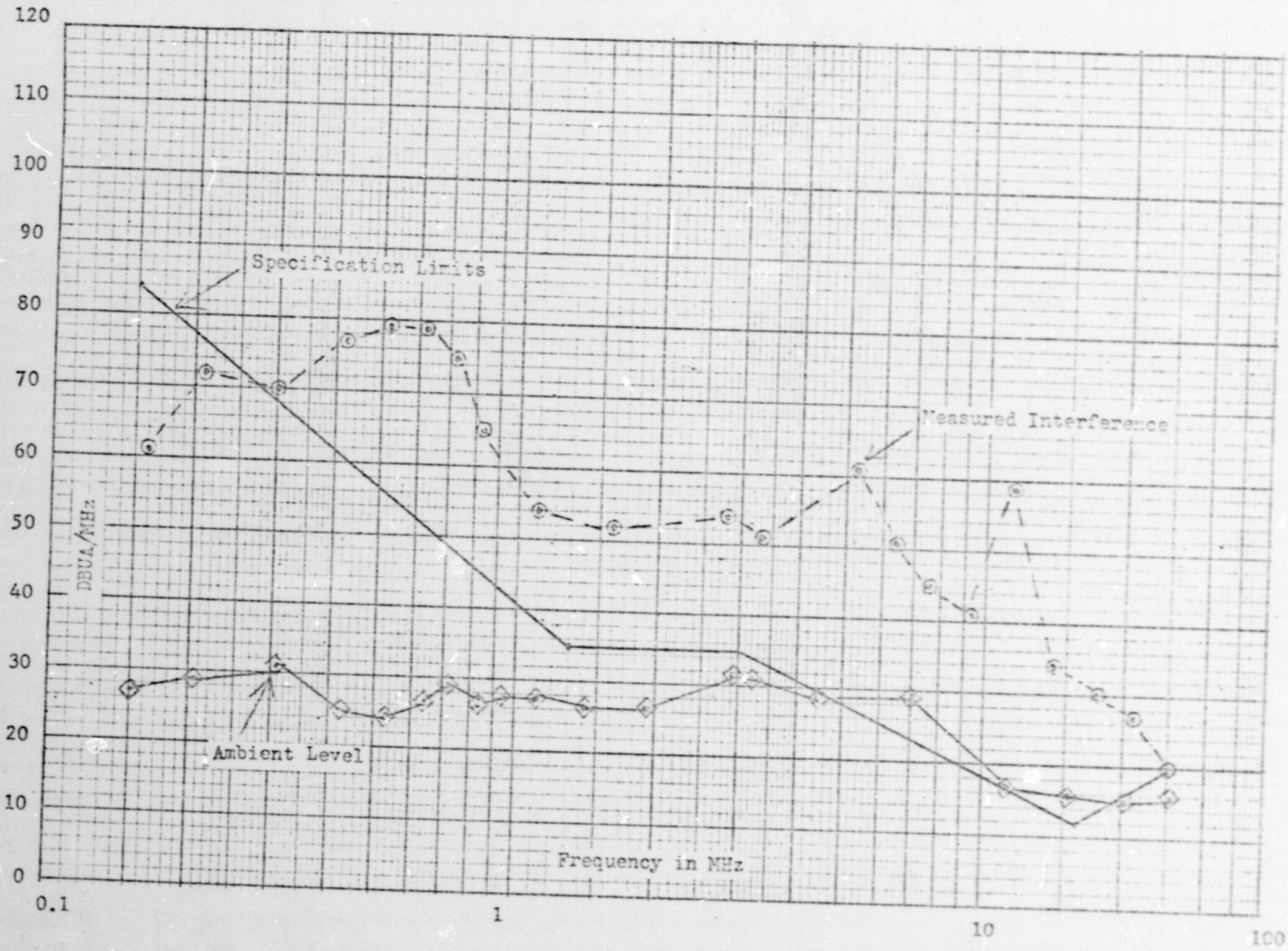


FIGURE III-6 BROADBAND CONDUCTED INTERFERENCE, -28 V LINE TO CCU

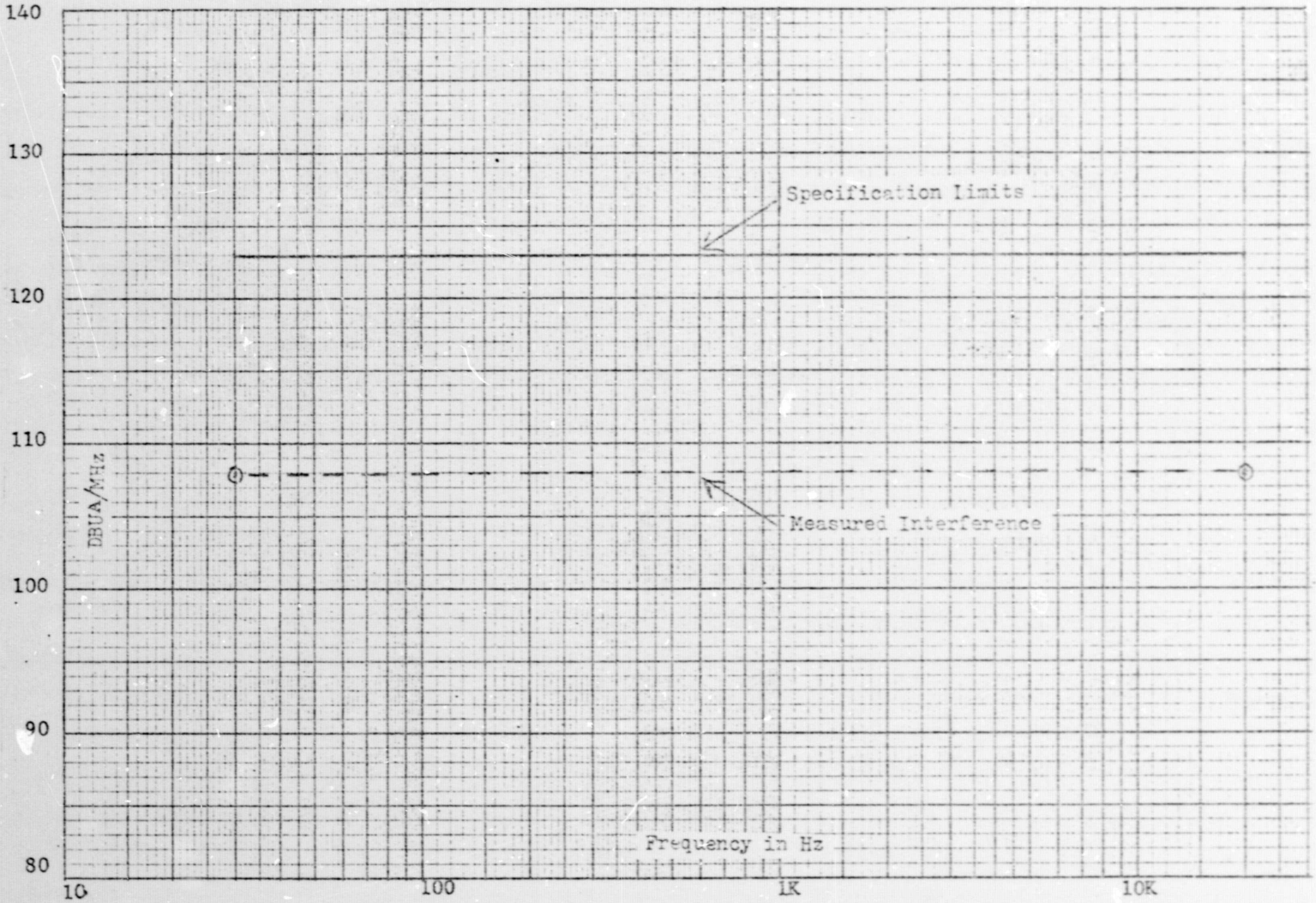


FIGURE III-6 BROADBAND CONDUCTED INTERFERENCE, ±28 V LINE TO MEU

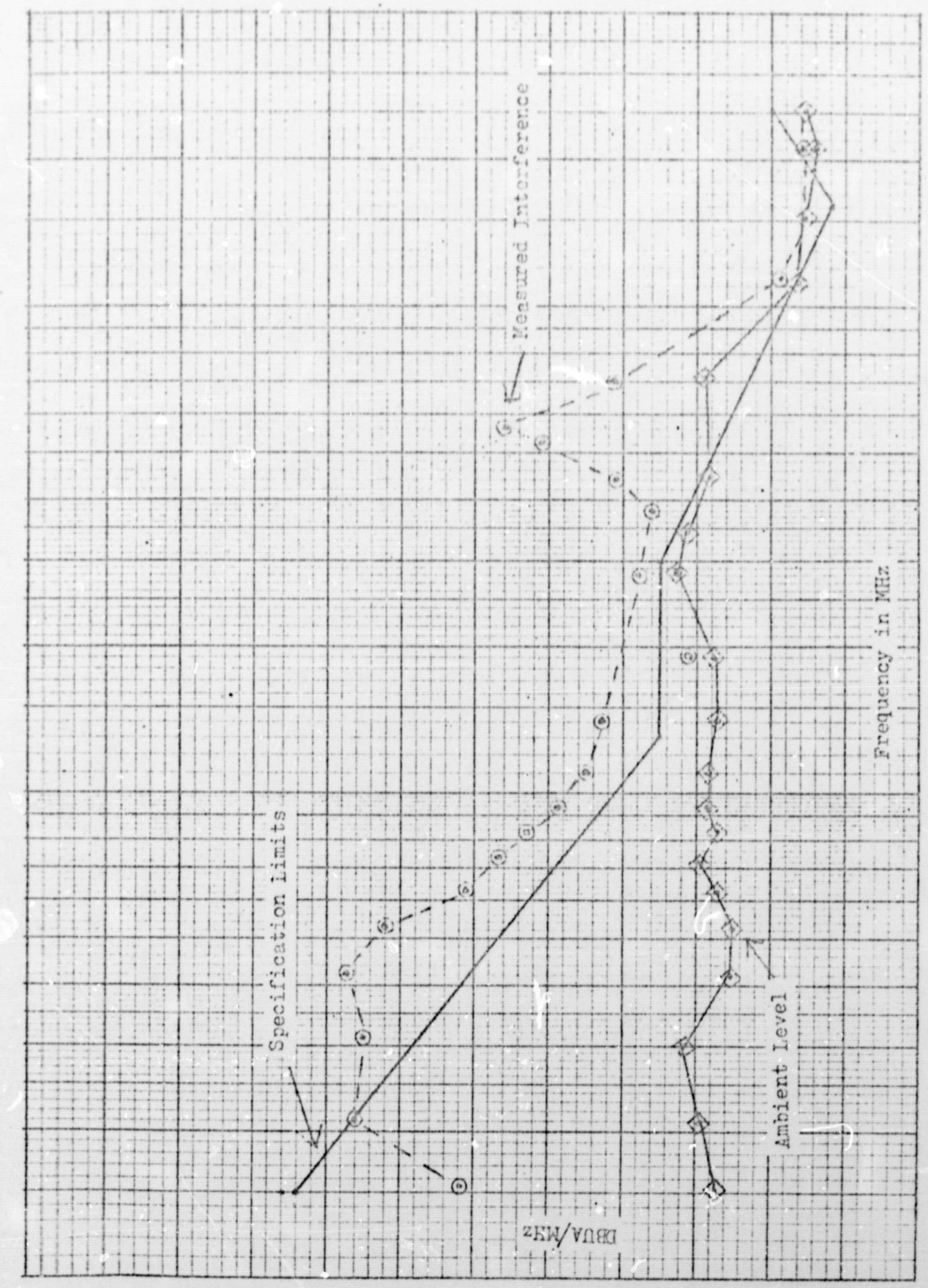


FIGURE III-8 BROADBAND CONDUCTED INTERFERENCE, +28 V LINE TO NEU

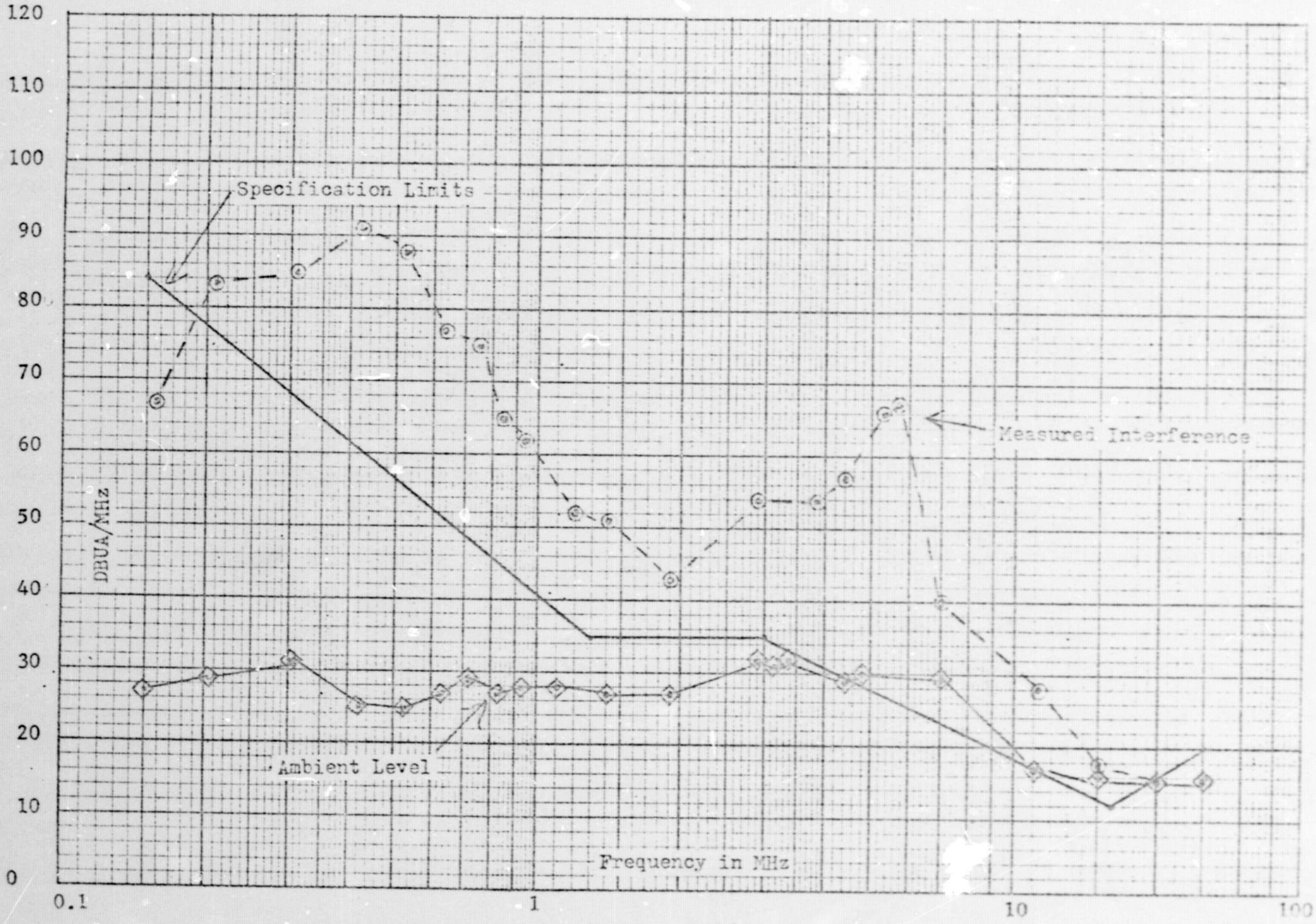


FIGURE III-9 BROADBAND CONDUCTED INTERFERENCE, -28 V LINE TO MEU

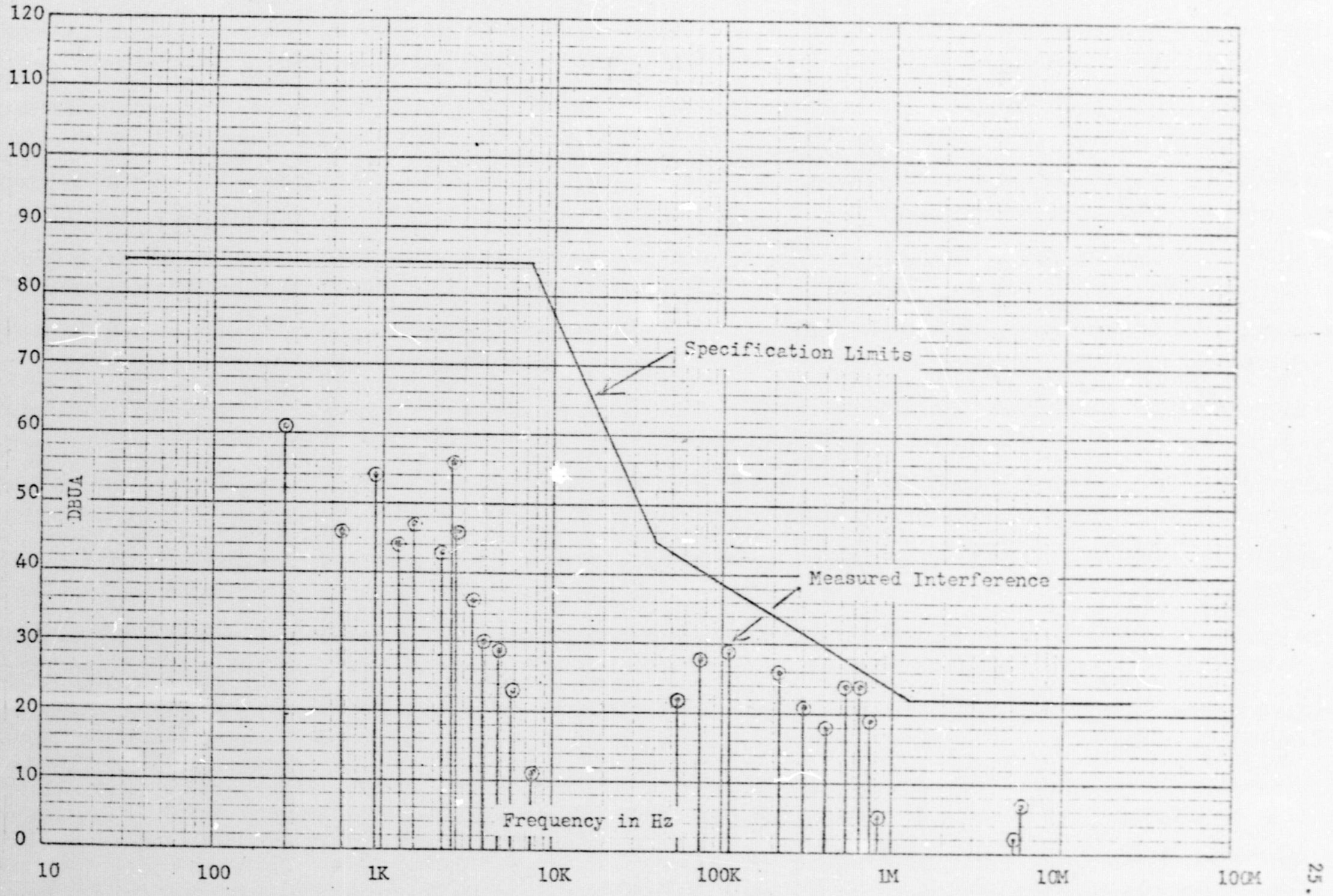


FIGURE III-10 CW CONDUCTED INTERFERENCE, +28 V LINE TO CCU

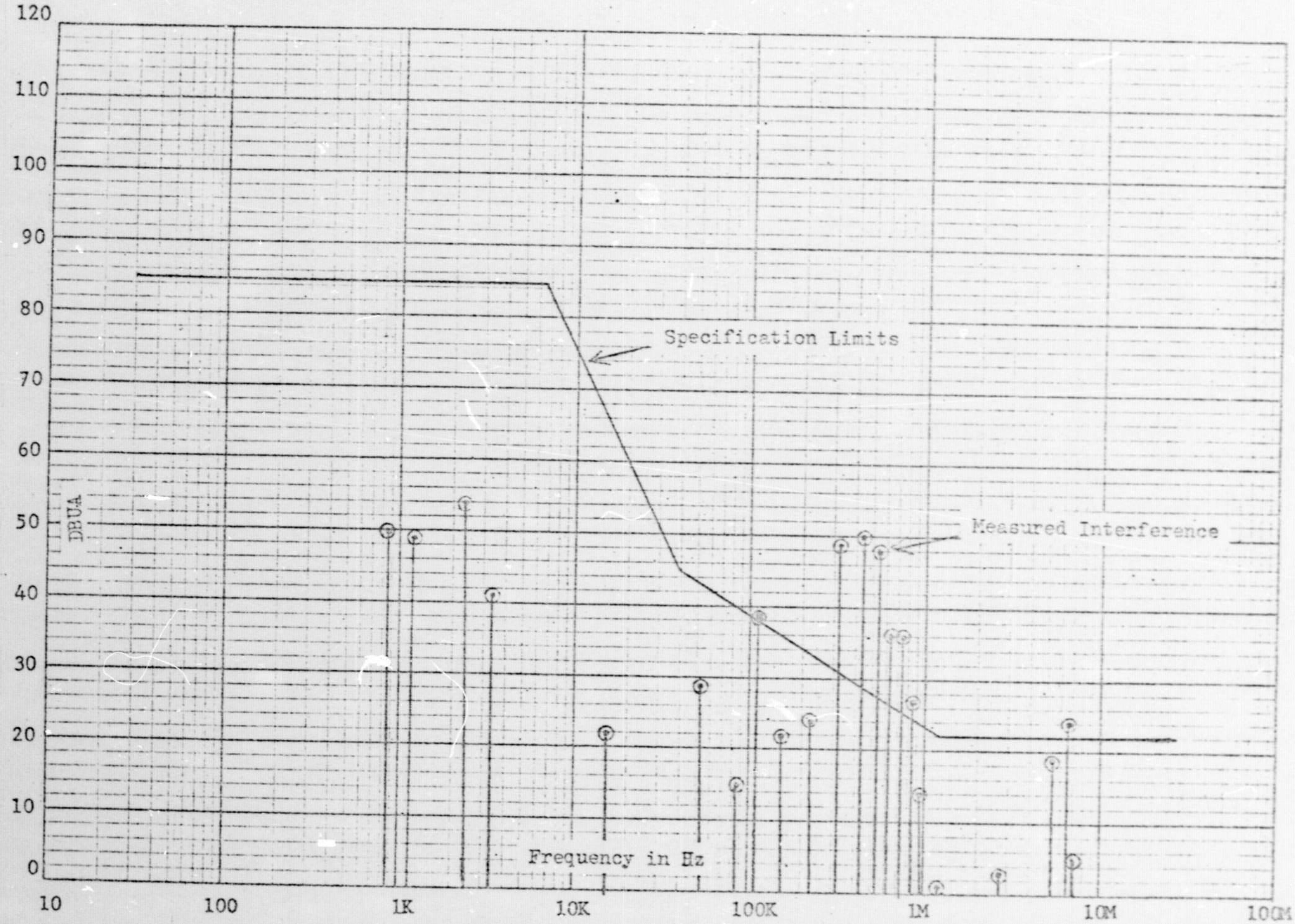


FIGURE III-11 CW CONDUCTED INTERFERENCE, -28V LINE TO CCU

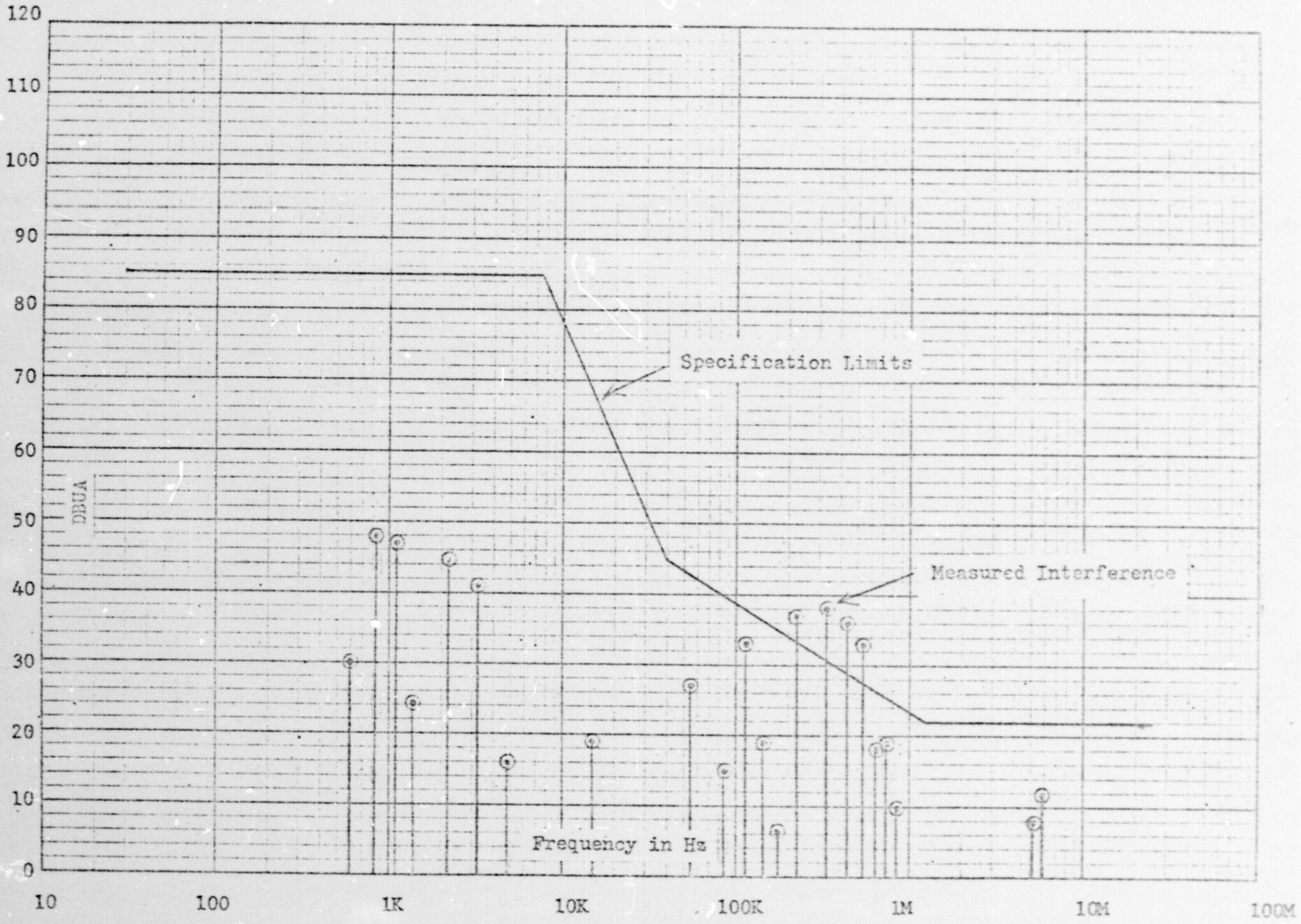


FIGURE III-12 CW CONDUCTED INTERFERENCE, +28 V LINE TO MEU

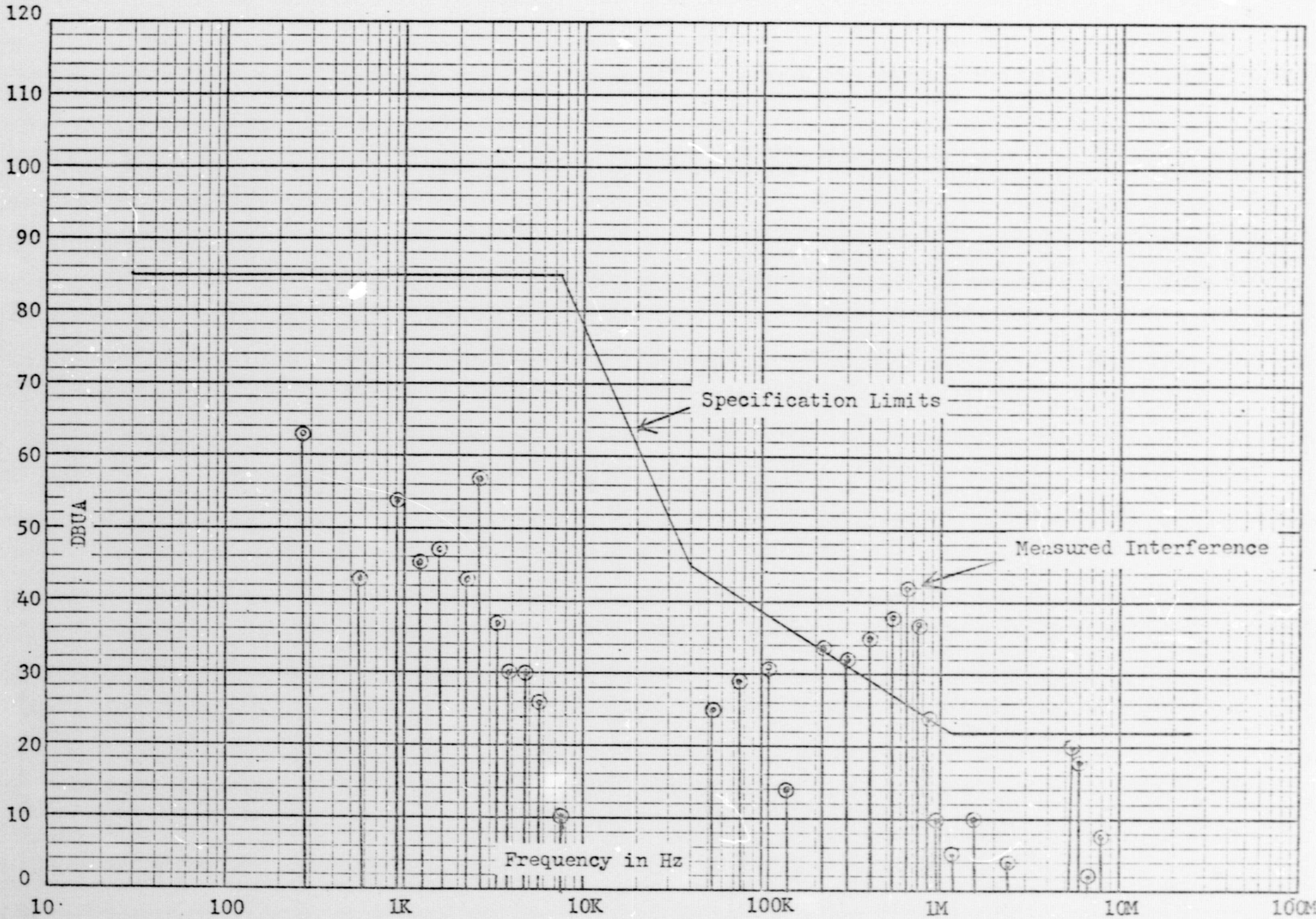


FIGURE III-13 CW CONDUCTED INTERFERENCE, -28 V LINE TO MEU

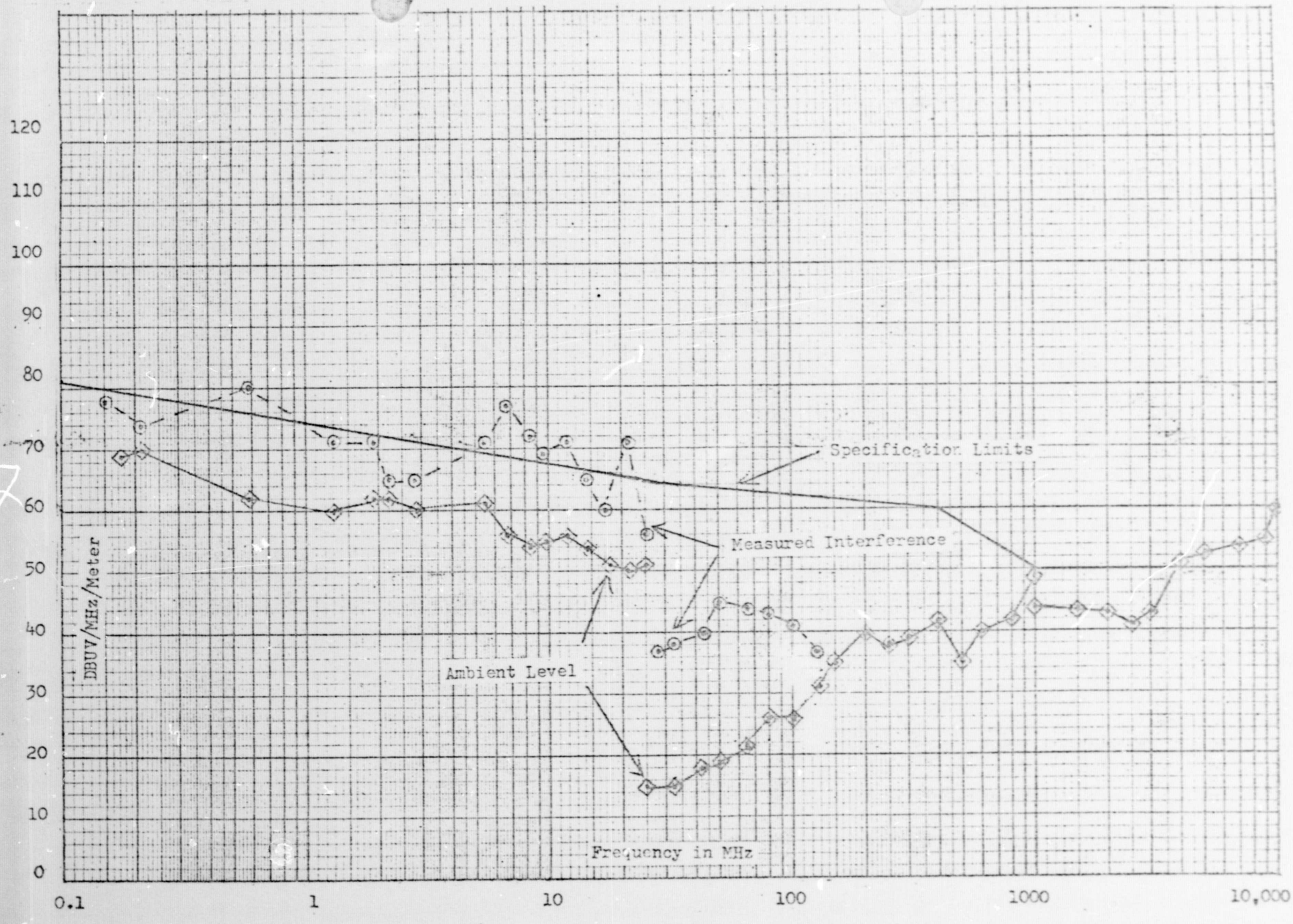


FIGURE III-14 BROADBAND RADIATED INTERFERENCE, MEU AND CCU

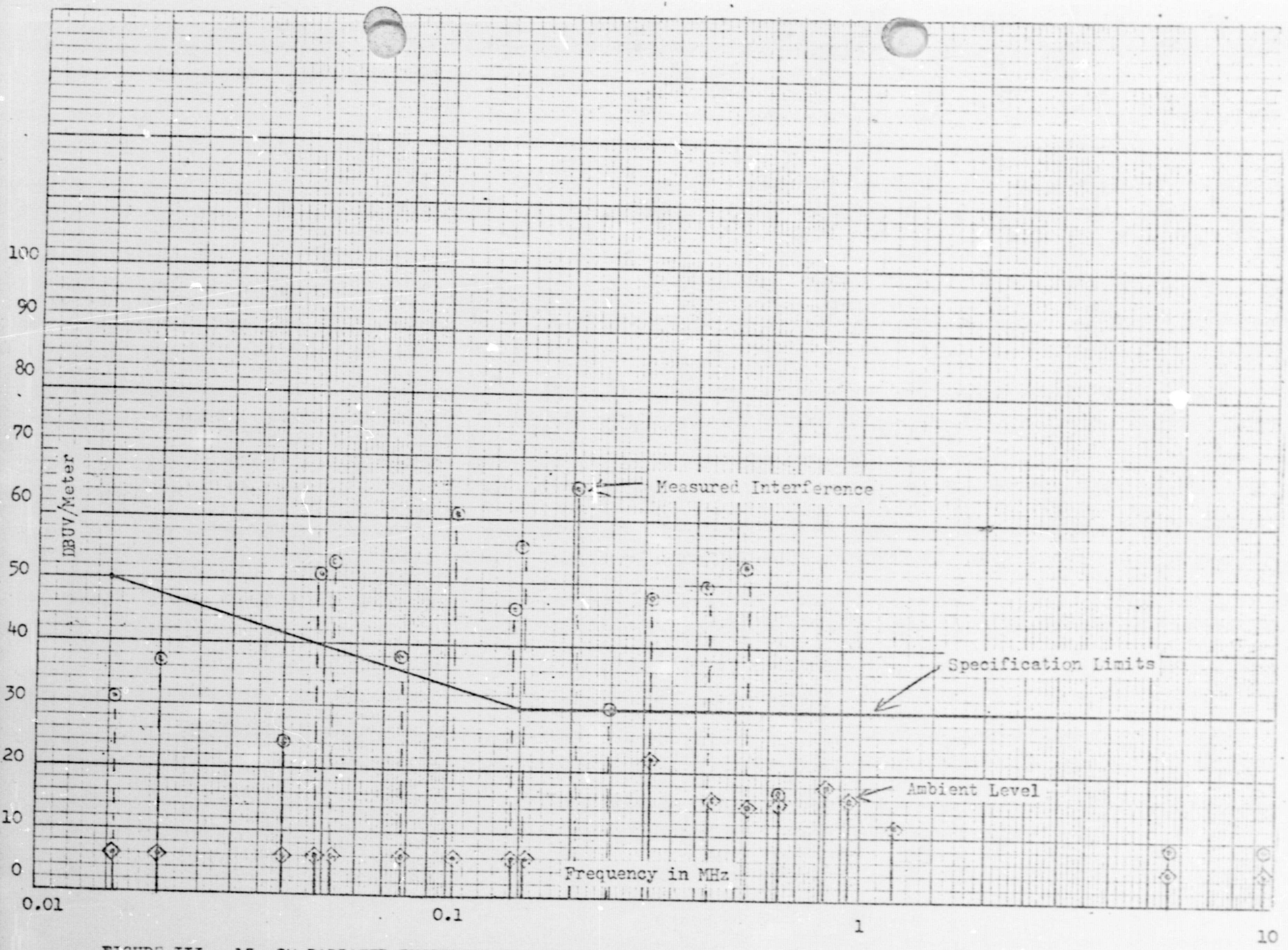


FIGURE III - 15 CW RADIATED INTERFERENCE, MEU AND CCU

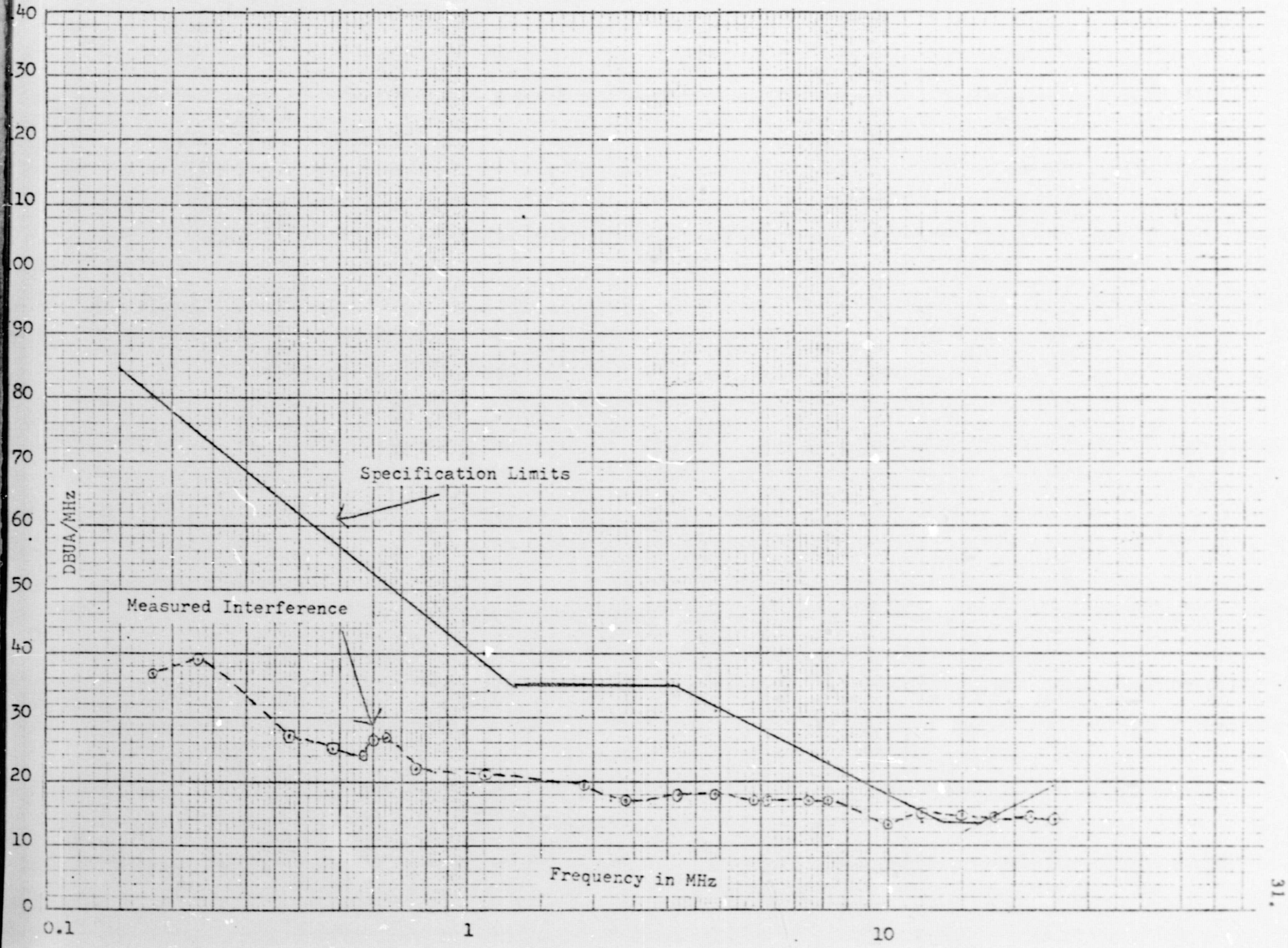


FIGURE III- 16 BROADBAND CONDUCTED INTERFERENCE, +28 V LINE TO MEU - POST MODIFICATION

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

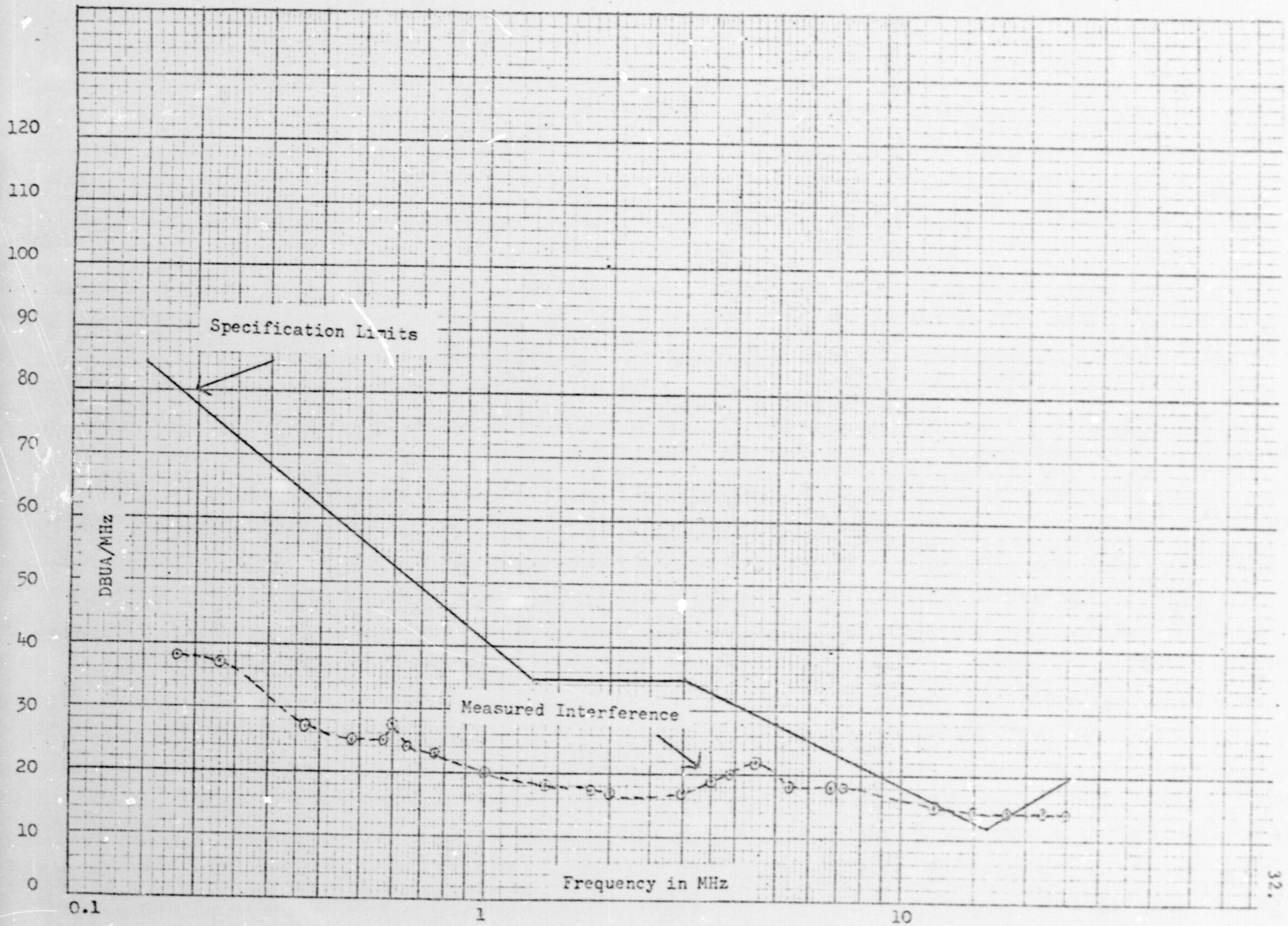


FIGURE III- 17 BROADBAND CONDUCTED INTERFERENCE, -28V LINE TO MEU - POST MODIFICATION

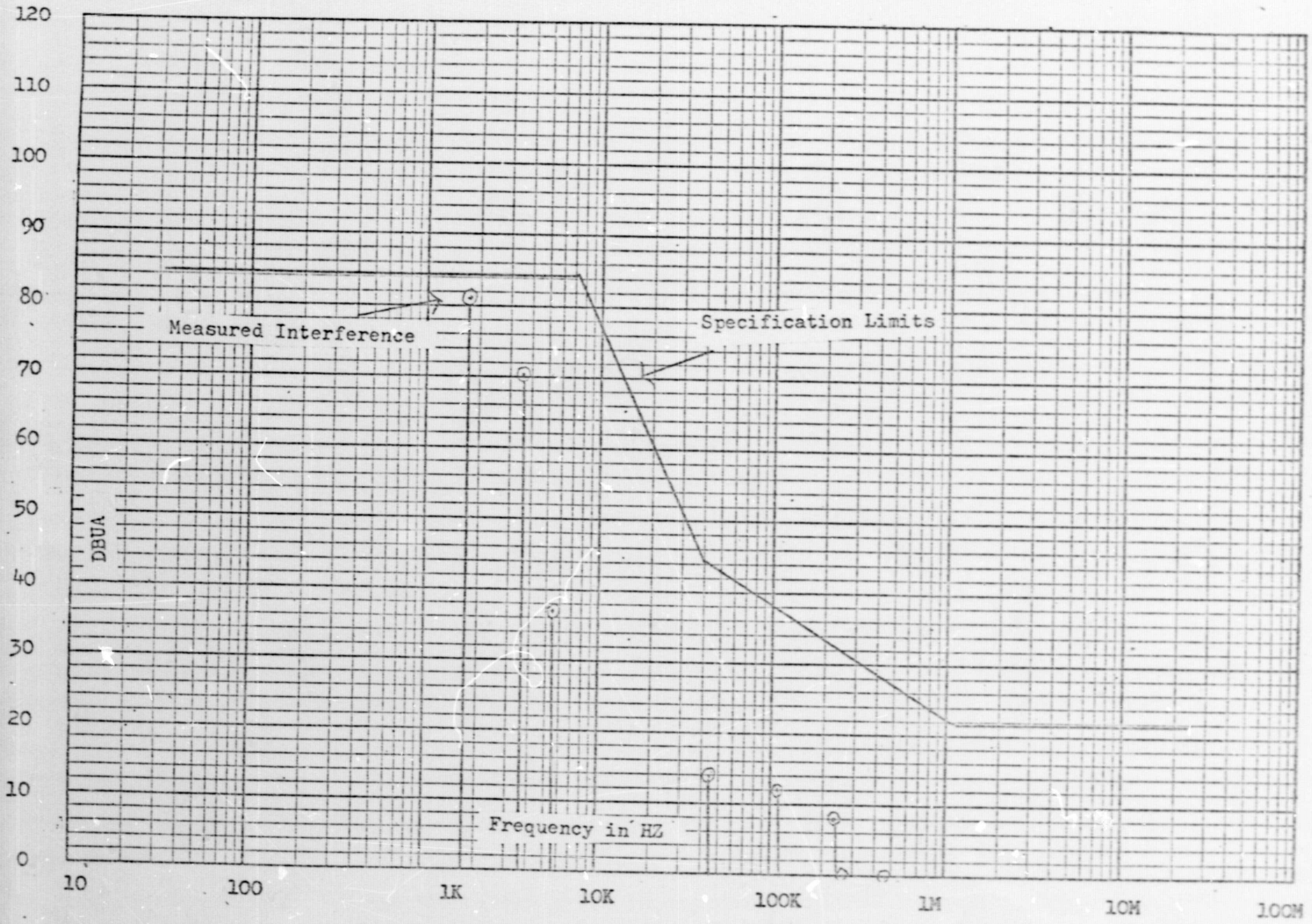


FIGURE III-18 CW CONDUCTED INTERFERENCE, + 28V LINE TO MEU-POST MODIFICATION

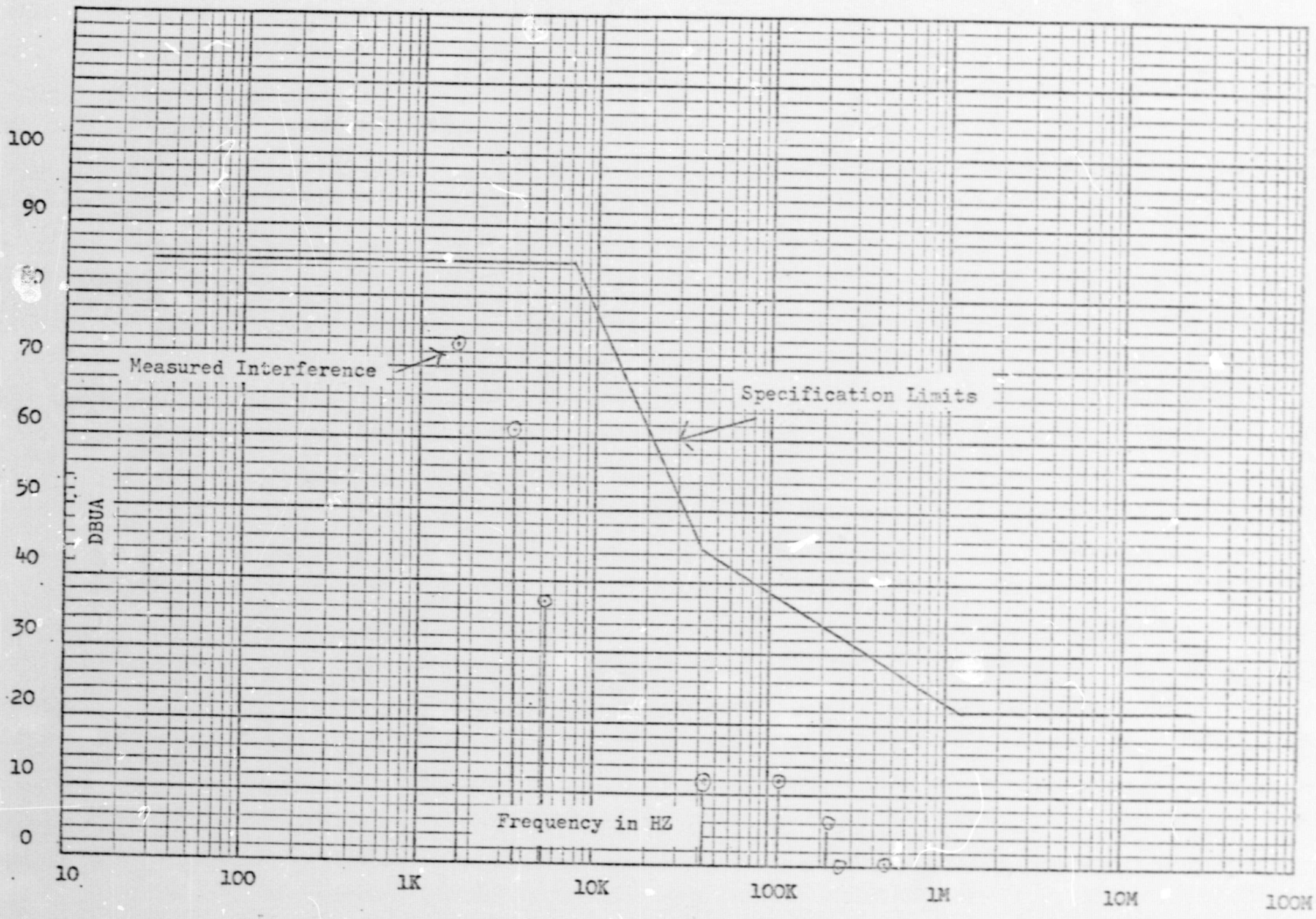


FIGURE III-19 CW CONDUCTED INTERFERENCE, -28V LINE TO MEU-POST MODIFICATION

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

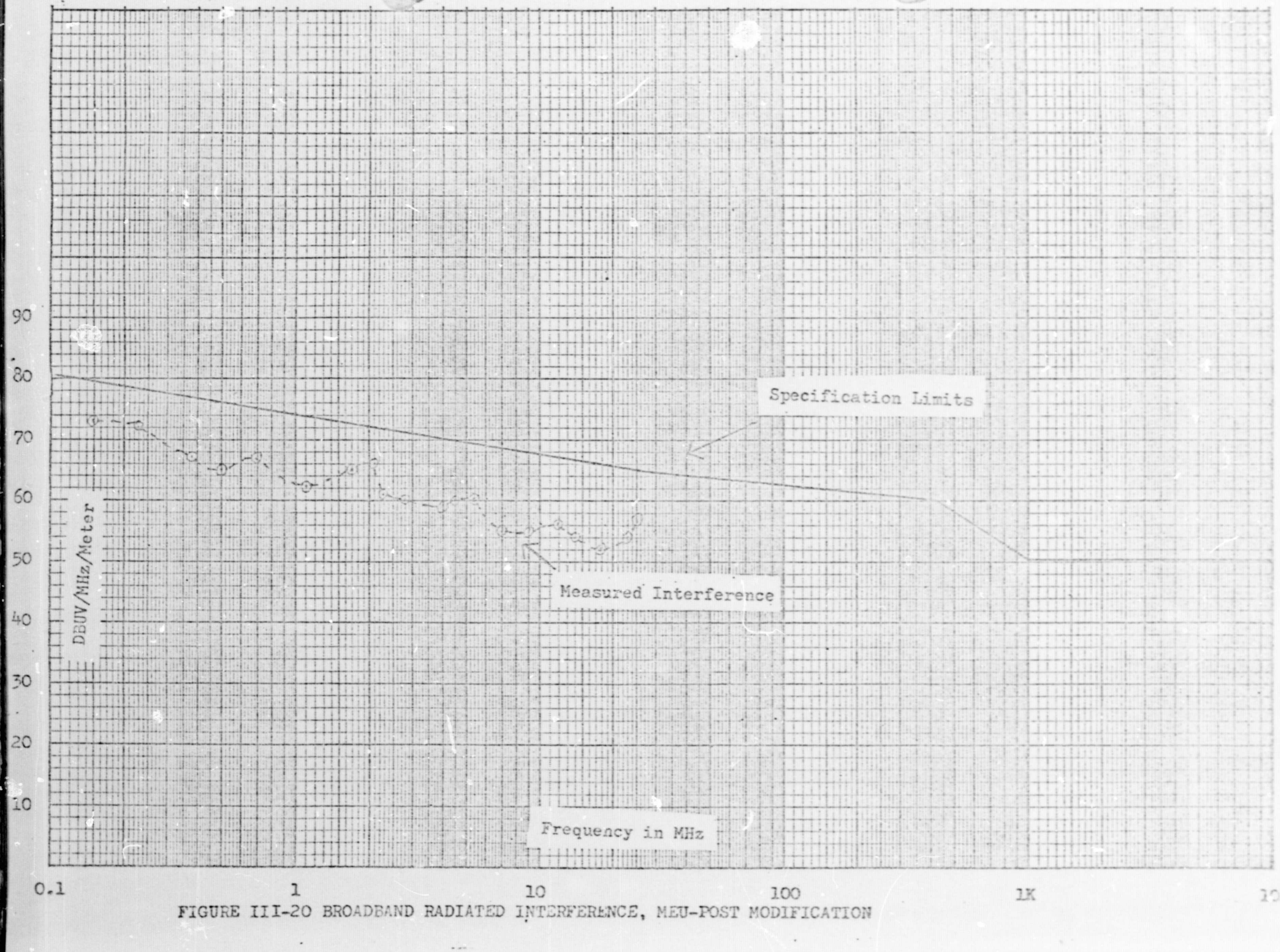


FIGURE III-20 BROADBAND RADIATED INTERFERENCE, MEU-POST MODIFICATION

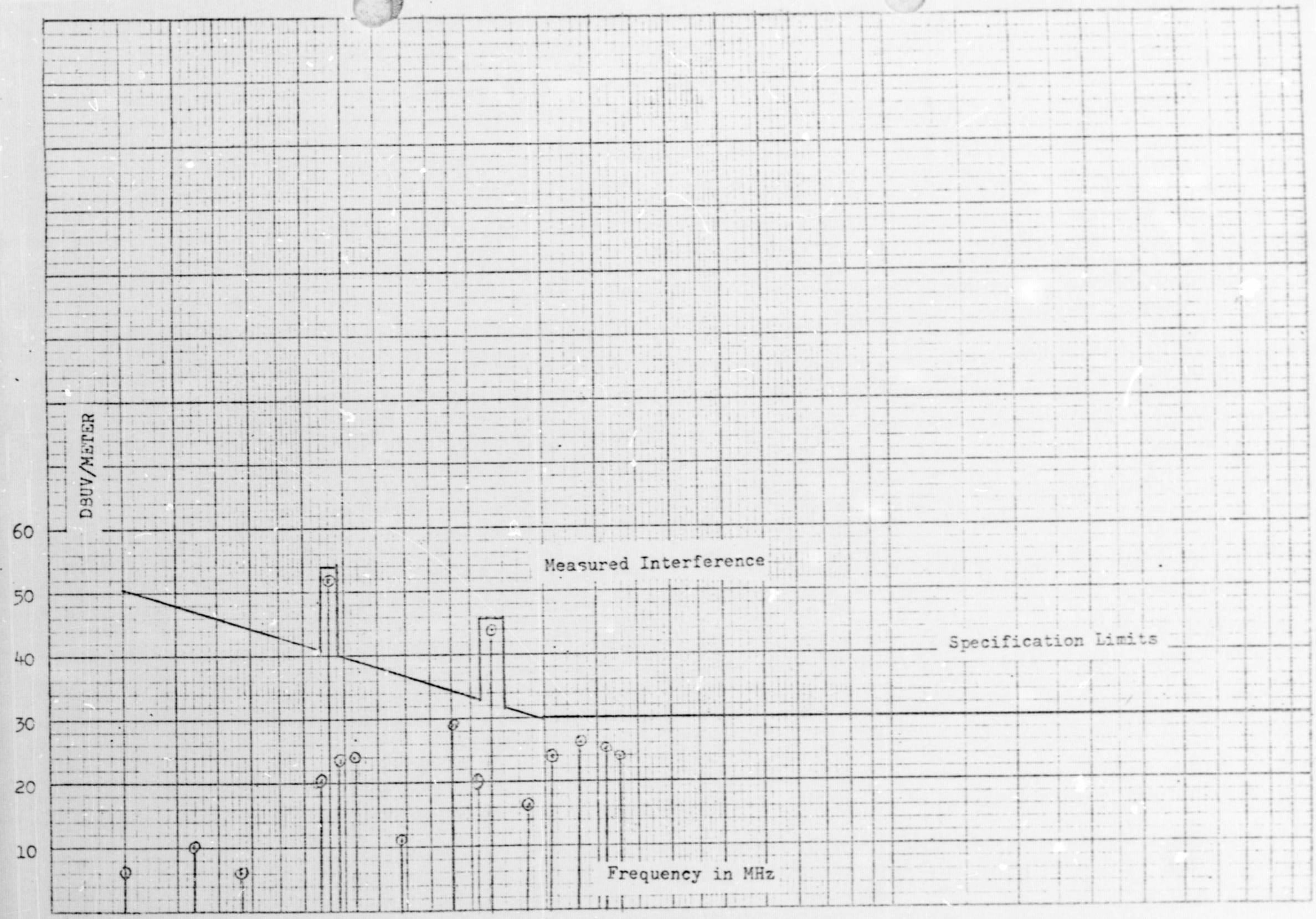


FIGURE III -21 CW RADIATED INTERFERENCE, MEU-POST MODIFICATION

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

ELECTRO-INTERFERENCE TEST DATA SHEET - 1

Item Tested: CCU	Type: Model:	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Fast: 2926	Pick Up Device: LISN	Test Site: Scr. Rm ✓ See Note	Type Test: BB Conducted Interference	
Appld. Voltage: 28 VDC	Test Spec.: TESD / EMC-10	Lead Tested: + To -		
Test Meter: NM-40A	Serial No: AF30410	Date Data Recorded: 12-2-68		

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq	Meter Band	Detc. Func.	Method	Am. ✓ In. x	Atten DB	Meter DB	Correction Factors DB	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail x
30Hz 10KHz	WB	PK	SB	✓	40	19	+20 +34	113	113	123	✓

Remarks:

Test Eng. R. Loveland

Recorded by "

Evaluated by "

Eqpt. Operator "

* Recorded levels are in standard units of: DBUV/MHz

WMC QUALITY: (A)

CUSTOMER: Johnston

E-52D (1-60)

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

ELECTRO-INTERFERENCE TEST DATA SHEET - 2

Item Tested: CCU	Type: Model:	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Rost: 2926	Pick Up Device: CP 345 9/161	Test Site	Scr.Rm ✓ Spec Notes	Type Tests: BB Conducted
Appld. Voltage: 28 VDC	Test Spec.: IESD/EMC-10	Lead Tested: +28 V		
Test Meter: NF-105	Serial No: AF 030052	Date Data Recorded: 12-2-68		

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq (MHz)	Meter Band	Detc. Func.	Method	Am. ✓ In. x	Meter DB	Meter dB	Correction Factors (DB) CP	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail x
.055	1	Peak	Vis Sub.	X	60	-1	0	59	59	83	✓
.204	1	↑	↑	X	60	6	↑	66	66	76	✓
.300	1			X	60	0		60	60	68	✓
.420	2			X	60	1		61	61	60	(X)
.520	2			X	60	3		63	63	55	(X)
.620	2			X	60	2		62	63	52	(X)
.720	2			X	50	6		56	56	48	(X)
.820	2			X	50	-1		49	49	45	(X)
1.1	3			X	46	0		40	40	40	✓
1.65	3			X	40	6		46	46	35	(X)
2.8	4			X	40	-4		36	36	35	(X)
3.3	4			X	40	-4		36	36	35	(X)
5.2	4			X	40	6		46	46	28	(X)
6.9	5			X	50	1		51	51	25	(X)
7.5	5			X	40	2	↓	42	42	24	(X)
9.2	5			X	40	-3	0	37	37	20	(X)
11.2	5			X	50	2	-13	39	39	14	(X)
14.0	6			X	40	-5	-13	22	22	14	(X)
19.0	6			X	40	-8	-13	19	19	15	(X)
25.0	6	↓	↓	X	40	-9	-13	18	18	20	✓

Remarks:

Test Eng. R. Loveland

Recorded by " "

Evaluated by " "

Eqpt. Operator " "

MMC Quality

* Recorded levels are in standard units of: DBUA/MHz Customer: Johnston

ELECTRO-INTERFERENCE TEST DATA SHEET-3

Item Tested	Type: Model:	Serial No: Dwg. No:	Mode of Oper:	Test No:
CCU				

Test Bgst: 2926	Pick Up Device: CP345E161	Test Site: Scr.Rm ✓ Spec Room	Type Test: BB Conducted Interference

Appld. Voltage: 28 VDC	Test Spec.: IESD/EMC-10	Lead Tested: -28V

Test Meter: NF-105	Serial No: AF03005 2	Date Data Recorded: 12-2-68

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq mHz	Meter Band	Detc. Func.	Met-hod	Am. ✓ In. ×	Atten DB	Meter DB	Correction Factors DB (EP)	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail ×
.159	1	Peak	Vis Sub	X	60	1	0	61	61	83	✓
.204	1	↑	↑	X	70	2	↑	72	72	76	✓
.300	1	↓	↓	X	70	0	↓	70	70	68	⊗
.420	2	↓	↓	X	80	-3	↓	77	77	60	⊗
.520	2	↓	↓	X	80	-1	↓	79	79	55	⊗
.620	2	↓	↓	X	80	-1	↓	79	79	52	⊗
.720	2	↓	↓	X	70	5	↓	75	75	48	⊗
.820	2	↓	↓	X	60	5	↓	65	65	45	⊗
1.1	3	↓	↓	X	50	4	↓	54	54	40	⊗
1.6	3	↓	↓	X	50	2	↓	52	52	35	⊗
2.8	4	↓	↓	X	50	4	↓	54	54	35	⊗
3.3	4	↓	↓	X	50	1	↓	51	51	35	⊗
5.2	4	↓	↓	X	60	1	↓	61	61	28	⊗
6.4	5	↓	↓	X	50	1	↓	51	51	25	⊗
7.5	5	↓	↓	X	40	5	↓	45	45	24	⊗
9.2	5	↓	↓	X	40	1	↓	41	41	20	⊗
(P161) 11.2	5	↓	↓	X	60	-1	0	59	59	18	⊗
14	6	↓	↓	X	40	7	-13	34	34	14	⊗
17.5	6	↓	↓	X	40	3	-13	30	30	14	⊗
21	6	↓	↓	X	40	0	-13	27	27	16	⊗
25	6	↓	↓	X	40	-7	-13	20	20	20	✓

Remarks:

Test Eng. R. Loveland

Recorded by "

Evaluated by "

Eqpt. Operator "

* Recorded levels are in standard units of: DBUA/meter

MMC Quality ⊗ Customer Evaluation

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

ELECTRO-INTERFERENCE TEST DATA SHEET — 4

Item Tested: MEU	Type: Model:	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Rqst: 2926	Pick Up Device: LISN	Test Site	Scr.Rm ✓ Spec Note	Type Test: BB CONDUCTED INTERFERENCE
Appld. Voltage: 28 VDC	Test Spec.: IESD/EMC-10		Lead Tested: + To —	
Test Meter: NM-40A	Serial No: AF-30410		Date Data Recorded: 12-2-68	

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq	Meter Band	Detc. Func.	Method	Am. ✓ In. X	Atten DB	Meter DB	Correction Factors DB	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail X
20MHz 21MHz	W-B	PEAK	SB	X	40	14	+20 +34	108	108	123	✓

Remarks: 1) ① ① ① ⑤ ① ① ⑤ ① ① ①

Test Eng. R. Loveland

Recorded by " "

Evaluated by " "

Eqpt. Operator " "

MMC Quality: Customer: E Johnson

* Recorded levels are in standard units of: DBUV/MHz

ELECTRO-INTERFERENCE TEST DATA SHEET – 5

Item Tested: MEU	Type: Model:	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Base: 2926	Pick Up Device: CP 395 & 161	Test Site: Scr. Rm [illegible]	Type Test: RS conducted Interference	
Appld. Voltage: 28 VDC	Test Spec.: IESD/EMC-10	Lead Tested: +28 V		
Test Meter: NF-105	Serial No: AF03005Z	Date Data Recorded: 12-2-68		

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq MHz	Meter Band	Detc. Func.	Method	Am. ✓ In. x	Atten DB	Meter DB	Correction Factors DB (CP)	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail x
.155	1	Peak	Vis Sub-	X	60	1	0	61	61	83	✓
.205	1	↑	↑	X	70	6	↑	76	76	76	✓
.310	1			X	70	3		73	73	68	(X)
.420	2			X	70	7		77	77	60	(X)
.530	2			X	70	2		72	72	55	(X)
.630	2			X	60	1		61	61	52	(X)
.730	2			X	50	7		57	57	48	(X)
.830	2			X	50	3		53	53	45	(X)
.930	3			X	50	-1		49	49	43	(X)
1.2	3			X	40	5		45	45	40	(X)
1.4	3			X	40	3		43	43	35	(X)
1.9	3			X	40	-9		31	31	35	✓
2.8	4			X	40	-2		38	38	35	(X)
3.8	4			X	40	-4		36	36	32	(X)
4.4	4			X	40	1		41	41	30	(X)
5.2	4			X	50	1		51	51	28	(X)
5.6	5			X	50	6	↓	56	56	26	(X)
7.0	5			X	40	1	0	41	41	24	(X)
11.2	5			X	40	-8	-13	19	19	17	(X)
15	6			✓	40	-10	-13	<17	<17	12	—
21	6			X	40	-9	-13	18	18	17	(X)
25	6	↓	↓	✓	40	-10	-13	<17	<17	20	✓

Remarks:

Test Eng. R. Loveland

Recorded by " "

Evaluated by " "

Eqpt. Operator " "

* Recorded levels are in standard units of: DBUA/MHz

MMC Quality (Customer) E Johnston

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

ELECTRO-INTERFERENCE TEST DATA SHEET - 6

Item Tested: MEU	Type: Model:	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Rast: 2926	Pick Up Device: CP345 #161	Test Site	Scr. Rm — See Note —	Type Test: BB Equipment Interference
Appld. Voltage: 28VDC	Test Spec.: JESD/EMC-10		Lead Tested: —28 V	
Test Meter: NF-105	Serial No: AF036052		Date Data Recorded: 12-2-68	

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq MHz	Meter Band	Detc. Func.	Method	Am. ✓ In. x	Atten DB	Meter DB	Correction Factors DB (CF)	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail x
155	1	Peak	Vis Cal.	X	60	7	0	67	67	83	✓
-205	1	↑	↑	X	80	4	↑	84	84	76	(X)
-310	1			X	80	5		85	85	68	(X)
-420	2			X	90	1		91	91	60	(X)
-530	2			X	90	-2		88	88	55	(X)
-630	2			X	70	7		77	77	52	(X)
-730	2			X	70	5		75	75	48	(X)
-830	2			X	60	5		65	65	45	(X)
-930	3			X	60	2		62	62	43	(X)
1.2	3			X	50	2		52	52	40	(X)
1.4	3			X	50	1		51	51	35	(X)
1.9	3			X	40	3		43	43	35	(X)
2.8	4			X	50	4		54	54	35	(X)
3.8	4			X	50	4		54	54	32	(X)
4.4	4			X	50	7		57	57	30	(X)
5.2	4			X	60	6		66	66	28	(X)
5.6	5			X	60	7	↓	67	67	26	(X)
7.0	5			X	40	0	0	40	40	24	(X)
11.2	5			X	40	2	-13	29	29	17	(X)
15	6			X	40	-9	-13	18	18	12	(X)
21	6			✓	40	-11	-13	16	16	17	—
25	6	↓	↓	✓	40	-11	-13	16	16	20	✓

Remarks:

Test Eng. R. Loveland

Recorded by "

Evaluated by "

Eqpt. Operator "

* Recorded levels are in standard units of: DBUA/mHz

NMC Quality Customer E. Johnston

E-529 (1-60)

ELECTRO-INTERFERENCE TEST DATA SHEET - 7

Item Tested: CCU	Type: Model:	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Rack: 2926	Pick Up Device: CP 345	Test Site: Scr. Rm ✓ Open Meter	Type Test: CW Conducted Interference	
Appln. Voltage: 28 VDC	Test Spec.: IESD / EMC-10	Lead Tested: +28 V		
Test Meter: NM-40A	Serial No: AF030410	Date Data Recorded: 12-2-68		

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq KHz	Meter Band	Detc. Func.	Method	Ant. ✓ In. ✗	Ant. DB	Meter DB	Correction Factors DB	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail ✗
.28	—	Select	Direct	CW	20	24	-20 +37	61	61	85	✓
.58	—	↑	↑	X	0	34	-20 32	46	46	85	✓
.90	—			X	20	24	-20 30	54	54	85	✓
1.18	—			X	20	16	-20 28	44	44	85	✓
1.5	—			X	20	20	-20 27	47	47	85	✓
2.1	—			X	20	19	-20 24	43	43	85	✓
2.36	—			X	20	33	-20 23	56	56	85	✓
2.7	—			X	20	20	-20 22	42	42	85	✓
3.25	—			X	20	15	-20 21	36	36	85	✓
3.9	—			X	20	10	-20 20	30	30	85	✓
4.8	—			X	20	10	-20 19	29	29	85	✓
5.9	—			X	20	5	-20 18	23	23	85	✓
7.2	—			X	0	15	-20 16	11	11	85	✓
11.0	—			X	0	4	-20 13	-3	-3	76	✓
15.0	—	↓	↓	✓	0	0	-20 12	-8	<-8	69	✓

Remarks:

Test Eng. R. Loveland

Recorded by " "

Evaluated by " "

Eqpt. Operator " "

* Recorded levels are in standard units of: DBUA

MMC Quality

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

ELECTRO-INTERFERENCE TEST DATA SHEET-8

Item Tested: CCU	Type: Model:	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Rqst: 2926	Pick Up Device: CP345 (161	Test Site	Scr. Rm ✓ See Notes	Type Cal Conducted Test: Interference
Appld. Voltage: 28 VDC	Test Spec.: IESD/EMC-10	Lead Tested: +28 V		
Test Meter: URM-6 NF-105	Serial No: AF 031046 AF 03[illegible]52	Date Data Recorded: 12-2-68		

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq MHz	Meter Band	Detc. Func.	Met-hod	Am. ✓ In. x	Atten DB	Meter DB	Correction Factors DB	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail x
.051	2	Select	Direct	X	0	18	4	22	22	43	✓
.077	3	↑	↑	X	0	26	2	28	28	41	✓
.101	3			X	0	29	1	29	29	39	✓
.154	4			X	0	9	0	9	9	36	✓
.209	4	↓		X	0	26	↑	26	26	34	✓
.300	1	Corr.		X	20	1		21	21	32	✓
.420	2	↑		X	0	18		18	18	29	✓
.520	2			X	20	2		24	24	28	✓
.620	2			X	20	2		24	24	27	✓
.720	2			X	0	19		19	19	26	✓
.820	2			X	0	5		5	5	25	✓
.920	3			X	0	0		0	0	24	✓
1.04	3			X	0	0		0	0	23	✓
1.7	3			X	0	0		0	0	22	✓
2.7	4			X	0	0		0	0	22	✓
3.9	4			X	0	0		0	0	22	✓
5.2	4			X	0	2		2	2	22	✓
6.6	5			X	0	7		7	7	22	✓
8.4	5			X	0	0	↓	0	0	22	✓
9.5	5			X	0	0	0	0	0	22	✓
11.2	5			X	0	2	-13	<0	<0	22	✓
14.0	6			✓	0	<0	-13	<0	<0	22	✓
19.0	6			✓	0	<0	-13	<0	<0	22	✓
25.0	6	↓	↓	✓	0	<0	-13	<0	<0	22	✓

Remarks:

Test Eng. R. Loveland

Recorded by "

Evaluated by "

Eqpt. Operator "

* Recorded levels are in standard units of: DBUA

MMC Quality: Customer: E. Johnston

E-52D (1-60)

ELECTRO-INTERFERENCE TEST DATA SHEET- 9

Item Tested	CCU	Type: Model:	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Past:	2926	Pick Up Levies:	CP 345	Test Site	Scr. Rm ✓ Env. Meter	Type Test:	CW Conducted Interference
Appld. Voltage:	28 VDC	Test Spec.:	IESD / EMC-10	Lead Tested:	-28 V
Test Meter:	NM-40A	Serial No:	AF030410	Date Data Recorded:	12-2-68

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq KHz	Meter Band	Detc. Func.	Method	Am. ✓ In. ×	Atten DB	Meter DB	Correction Factors DB	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail ×
.28	—	Select	Direct	X	20	26	-20 +37	63	63	85	✓
.58	—	↑	↑	X	20	11	-20 32	43	43	85	✓
.90	—			X	20	24	-20 30	54	54	85	✓
1.18	—			X	20	17	-20 28	45	45	85	✓
1.45	—			X	20	20	-20 27	47	47	85	✓
2.1	—			X	20	19	-20 24	43	43	85	✓
2.4	—			X	20	34	-20 23	57	57	85	✓
2.7	—			X	20	20	-20 22	42	42	85	✓
3.2	—			X	20	16	-20 21	37	37	85	✓
3.9	—			X	20	10	-20 20	30	30	85	✓
4.8	—			X	20	11	-20 19	30	30	85	✓
5.7	—			X	20	8	-20 18	26	26	85	✓
7.2	—			X	0	14	-20 16	10	10	85	✓
8.0	—			✓	0	0	-20 15	-5	< -5	84	✓
10.0	—			✓	0	0	-20 14	-6	< -6	78	✓
12.0	—			✓	0	0	-20 13	-7	< -7	74	✓
15.0	—	↓	↓	✓	0	0	-20 12	-8	< -8	69	✓

Remarks:

Test Eng. R. Loveland

Recorded by "

Evaluated by "

Eqpt. Operator "

* Recorded levels are in standard units of: DBUA

Acceptance Quality Customer Representative

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

ELECTRO-INTERFERENCE TEST DATA SHEET - 10

Item Tested: CCU	Type: Model:	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Post: 2426	Pick Up Device: CP345/161	Test Site:	Ser. Eq. See Notes	Type Test: CW Conducted Interference
Appld. Voltage: 28 VDC	Test Spec.: IESD/EMC-10	Load Tested: -28		
Test Meter: URM-6 NF-105	Serial No: AF031046 A1030052	Date Data Recorded: 12-2-68		

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq mHz	Meter Band	Detc. Func.	Method	Am. ✓ In. ×	Atten. DB	Meter DB	Correction Factors DB	Corr. Level	Interference Level #	Spec. Limit #	Pass ✓ Fail ×
.051	2	Select	Direct	X	0	21	4	25	25	43	✓
.077	3	↑	↑	X	0	27	2	29	29	42	✓
.101	3			X	0	31	1	31	31	39	✓
.154	4			X	0	14	0	14	14	36	✓
.204	4	↓		X	0	34	0	34	34	35	✓
.300	1	Carr		X	20	12	↑	32	32	33	✓
.420	2	↑		X	20	15		35	35	29	(X)
.560	2			X	20	18		38	38	28	(X)
.620	2			X	40	2		42	42	27	(X)
.720	2			X	20	15		37	37	26	(X)
.820	2			X	20	4		24	24	25	✓
.920	3			X	0	10		10	10	24	✓
1.04	3			X	0	5		5	5	23	✓
1.7	3			X	0	10		10	10	22	✓
2.7	4			X	0	4		4	4	22	✓
3.4	4			X	0	0		0	0	22	✓
5.2	4			X	0	19		19	19	22	✓
6.6	5			X	0	18		18	18	22	✓
8.6	5			X	0	2		2	2	22	✓
7.4	5			X	0	8	↓	8	8	22	✓
9.5	5			X	0	0	0	0	0	22	✓
14.0	6			X	0	6	-13	<0	<0	22	✓
19.0	6			✓	0	<0	-13	<0	<0	22	✓
25.0	6	↓	↓	✓	0	<0	-13	<0	<0	22	✓

NF-105

CP161

Remarks:

Test Eng. R. Loveland

Recorded by "

Evaluated by "

Eqpt. Operator "

* Recorded levels are in standard units of: DBUA

MMC (Quality) Lt. Col. E. Johnston

ELECTRO-INTERFERENCE TEST DATA SHEET - 11

Item Tested: MEU	Type: Model:	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Fcst: 2426	Pick Up Device: CP 345	Test Site: Scr. Rm ✓ See Note	Type Test: CW Conducted Interference	
Appld. Voltage: 28 VDC	Test Spec.: TESD/EMC-10	Lead Tested: -28 V		
Test Meter: NM-40A	Serial No: AF03404:0	Date Data Recorded: 12-2-68		

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq KHz	Meter Band	Detc. Func.	Met-hod	Am. ✓ In. X	Ant. DB	Meter DB	Correction Factors DB	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail X
.87	—	Select	Direct	X	20	20	-20 30	50	50	85	✓
1.1	—	↑	↑	X	20	20	-20 29	49	49	85	✓
2.3	—			X	20	20	-20 29	54	54	85	✓
3.2	—			X	20	18	-20 23	41	41	85	✓
5.0	—			✓	0	0	-20 18	-2	< -2	85	✓
7.0	—			✓	0	0	-20 16	-4	< -4	85	✓
9.0	—			✓	0	0	-20 15	-5	< -5	81	✓
12.0	—			✓	0	0	-20 13	-7	< -7	74	✓
15.0	—	↓	↓	✓	0	0	-20 12	-8	< -8	64	✓

Remarks:

Test Eng. R. Loveland

Recorded by " "

Evaluated by " "

Eqpt. Operator " "

* Recorded levels are in standard units of: DBUA

NAC Quality Customer E. Johnston

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

ELECTRO-INTERFERENCE TEST DATA SHEET - 12

Item Tested: MEU	Type: Model:	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Facil: 2926	Pick Up Device: CP345 & 161	Test Site	Scr.Rm ✓ Scr. Note:	Type Tests: CW Conducted Interference
Appld. Voltage: 28 VDC	Test Spec.: IESD/EMC-10	Lead Tested: -28 V		
Test Meter: URM-6 NF-105	Serial No: AF 031046 AF 030152	Date Data Recorded: 12-2-68		

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq MHz	Meter Band	Detc. Func.	Method	Am. ✓ In. x	Atten DB	Meter DB	Correction Factors DB	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail x
.017	1	FI	Dimt	X	0	11	11	22	22	66	✓
.651	2	↑	↑	X	0	25	4	29	29	43	✓
.685	3			X	0	13	2	15	15	40	✓
1.02	3			X	0	37	1	38	38	39	✓
1.55	4			X	0	22	0	22	22	36	✓
1.72	4			X	0	5	↑	5	5	35	✓
2.04	4	↓		X	0	24		24	24	34	✓
.310	1	Carr		X	40	9		49	49	32	⊗
.930	2	↑		X	40	10		50	50	29	⊗
.530	2			X	40	8		48	48	28	⊗
.630	2			X	20	16		36	36	27	⊗
.730	2			X	20	16		36	36	26	⊗
.830	2			X	20	7		27	27	25	⊗
.930	3			X	0	14		14	14	24	✓
1.2	3			X	0	1		1	1	23	✓
1.9	3			✓	0	<0		<0	<0	22	✓
2.7	4			X	0	3		3	3	22	✓
5.2	4			X	0	19		19	19	22	✓
5.6	5			X	20	4	↓	24	24	22	⊗
7.0	5			X	0	5	0	5	5	22	✓
11.2	5			✓	0	<0	-13	<0	<0	22	✓
16.0	6			✓	0	<0	-13	<0	<0	22	✓
20.0	6			✓	0	<0	-13	<0	<0	22	✓
25.0	6	↓	↓	✓	0	<0	-13	<0	<0	22	✓

Remarks:

Test. Eng. R. Loveland

Recorded by "

Evaluated by "

Eqpt. Operator "

* Recorded levels are in standard units of: DBUA

Mike Quality
Customer Negotiator

ELECTRO-INTERFERENCE TEST DATA SHEET - 13

Item Tested: MEU	Type: Model:	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Rqst: 2926	Pick Up Device: CP 345	Test Site	Scr. Rm ✓ Env. Note:	Type Test: Conducted Interference
Appld. Voltage: 28 VDC	Test Spec.: IESD/EMC-10	Lead Tested: +28 V		
Test Meter: NM-40A	Serial No: AF030410	Date Data Recorded: 12-2-68		

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq KHz	Meter Band	Detc. Func.	Met-hod	Am. ✓ In. x	Atten DB	Meter DB	Correction Factors DB	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail x
.60	—	Select	Direct	X	0	18	-20 32	30	30	85	✓
.87	—	↑	↑	X	20	18	-20 30	48	48	85	✓
1.08	—			X	20	18	-20 29	47	47	85	✓
1.48	—			X	0	17	-20 27	24	24	85	✓
2.12	—			X	20	20	-20 25	45	45	85	✓
3.22	—			X	20	18	-20 23	41	41	85	✓
4.58	—			X	0	18	-20 18	16	16	85	✓
7.0	—			✓	0	0	-20 16	-4	< -4	85	✓
9.0	—			✓	0	0	-20 15	-5	< -5	81	✓
12.6	—			✓	0	0	-20 13	-7	< -7	74	✓
15.0	—	↓	↓	✓	0	0	-20 12	-8	< -8	69	✓

Remarks:

Test Eng. R. Loveland
Recorded by " "
Evaluated by " "
Eqpt. Operator " "

* Recorded levels are in standard units of: DBUA

M. M. Duketz
Customer R. E. Johnston

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

ELECTRO-INTERFERENCE TEST DATA SHEET — 14

Item Tested: MEU	Type: / Model:	Serial No: / Dwg. No:	Mode of Oper:	Test No:
Test Host: 2926	Pick Up Device: CP 345/161	Test Site: Scr.Rm ✓ Env. Vault	Type Test: CW Conducted Interference	
Appld. Voltage: 28 VDC	Test Spec.: IESD/EMC-10	Lead Tested: +28v		
Test Meter: URM-6 NF-105	Serial No: AF03'046 AF 030052	Date Data Recorded: 12-2-68		

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq KHz	Meter Band	Detc. Func.	Method	Am. ✓ In. ×	Atten DB	Meter DB	Correction Factors DB	Corr. level	Interference Level *	Spec. Limit *	Pass ✓ Fail ×
16.8	1	Carr.	Direct	X	0	8	11	19	19	66	✓
51	2	↑	↑	X	0	23	4	27	27	13	✓
85	3			X	0	13	2	15	15	40	✓
102	3			X	0	32	1	33	33	39	✓
155	4			X	0	18	0	18	18	36	✓
172	4			X	0	6	.1	6	6	35	✓
204	4			X	0	37		37	37	34	X
.310	1			X	20	18		38	38	32	X
.430	2			X	20	16		36	36	27	X
.530	2			X	20	13		33	33	24	X
.630	2			X	0	18		18	18	27	✓
.730	2			X	0	19		19	19	26	✓
.830	2			X	0	10		10	10	25	✓
.930	3			X	0	0		0	0	24	✓
1.2	3			✓	0	<0		<0	<0	23	✓
1.9	3			✓	0	<0		<0	<0	22	✓
2.7	4			✓	0	<0		<0	<0	22	✓
5.2	4			X	0	8		8	8	22	✓
6.6	5			X	0	12	↓	12	12	22	✓
7.0	5			✓	0	<0	0	<0	<0	22	✓
11.0	5			✓	0	<0	-13	<0	<0	22	✓
16.0	6			✓	0	<0	-13	<0	<0	22	✓
20.0	6			✓	0	<0	-13	<0	<0	22	✓
25.0	6	↓	↓	✓	0	<0	-13	<0	<0	22	✓

Remarks:

Test Eng. R. Loveland

Recorded by "

Evaluated by "

Eqpt. Operator "

* Recorded levels are in standard units of: DBUA

MMC Quality
Customer E. Johnston

ELECTRO-INTERFERENCE TEST DATA SHEET - 15

Item Tested: MEU/CCU	Type: Model:	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Post: 2926	Pick Up Device: —	Test Site: Scr. Rm ✓ See Note	Type Test: Instrument Interna, Noise	
Appld. Voltage: —	Test Spec.: IESD/EMC-10		Lead Tested: —	
Test Meter: NM-40A	Serial No: AF030410		Date Data Recorded: 12-2-68	

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq KHz	Meter Band	Detc. Func.	Met-hod	Am. ✓ In. ×	Atten DB	Meter DB	Correction Factors	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail ×
.03	—	Select	Direct	✓	0	50	-20	30	30		
.05	—	↑	↑	✓	0	50	↑	30	30		
.08	—			✓	0	38		18	18		
.10	—			✓	0	30		10	10		
.15	—			✓	0	27		7	7		
.20	—			✓	0	19		-1	-1		
.30	—			✓	0	13		-7	-7		
.40	—			✓	0	8		-12	-12		
.50	—			✓	0	5		-15	-15		
.70	—			✓	0	3		-17	-17		
1.0	—			✓	0	2		-18	-18		
2.0	—			✓	0	0		-20	-20		
3.0	—			✓	0	0		-20	-20		
5.0	—			✓	0	0		-20	-20		
8.0	—			✓	0	0		-20	-20		
10.0	—			✓	0	0		-20	-20		
12.0	—			✓	0	0	↓	-20	-20		
15.0	—	↓	↓	✓	0	0	-20	-20	-20		

Remarks:

Test Eng. R. Loveland

Recorded by " "

Evaluated by " "

Eqpt. Operator " "

* Recorded levels are in standard units of: DBUV

Wm Q Quisby
Custom R.E. Johnston

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

ELECTRO-INTERFERENCE TEST DATA SHEET - 16

Item Tested: MEU/CCU	Type: Model:	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Rqst: 2926	Pick Up Device: —	Test Site: Scr.Rm ✓ See Note	Type Test: Instrument Interna Navig	
Appld. Voltage: —	Test Spec.: ICSD/EMC-10	Lead Tested: —		
Test Meter: VRM-6	Serial No: AF031046	Date Data Recorded: 12-3-68		

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq KHz	Meter Band	Detc. Func.	Method	Am. ✓ In. ×	Atten DB	Meter DB	Correction Factors	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail ×
17	1	FI	Direct	✓	0	<0	—	<0	<0		
51	2	↑	↑	✓	0	<0	—	<0	<0		
77	3			✓	0	<0	—	<0	<0		
85	3			✓	0	<0	—	<0	<0		
102	3			✓	0	<0	—	<0	<0		
155	4			✓	0	<0	—	<0	<0		
174	4			✓	0	<0	—	<0	<0		
209	4	↓	↓	✓	0	<0	—	<0	<0		

Remarks:

Test Eng. R. Loveland

Recorded by "

Evaluated by "

Eqpt. Operator "

* Recorded levels are in standard units of: DBUV

MMC Quality
Customer Representative

ELECTRO-INTERFERENCE TEST DATA SHEET-17

Item Tested MEU/CCU	Type: Model:	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Past: 2926	Pick Up Levice: —	Test Site Scr.Rm ✓ ~~See Note~~	Type Test: Instrument Interval Naval	
Appld. Voltage: —	Test Spec.: IESD/EMC-10	Lead Tested: —		
Test Meter: NF-105	Serial No: AF030052	Date Data Recorded: 12-2-68		

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq MHz	Meter Band	Detc. Func.	Met-hod	Am. ✓ In. ×	Atten DB	Meter DB	Correction Factors	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail ×
30	1	CARR	Direct	✓	0	<0		<0	<0		
.42	2	↑	↑	↑	↑	↑		↑	↑		
.52	2										
.62	2										
.72	2										
.82	2										
.92	3										
1.04	3										
1.2	3										
1.7	3										
1.9	3										
2.7	4										
3.4	4										
5.2	4										
5.6	5										
6.6	5										
7.4	5										
9.5	5										
11.2	5										
14.0	6										
16.8	6										
19.0	6										
20.0	6				↓	↓		↓	↓		
25.0	6	↓	↓	↓	0	<0		<0	<0		

Remarks:

Test Eng. R. Loveland

Recorded by 〃 〃

Evaluated by 〃 〃

Eqpt. Operator 〃 〃

* Recorded levels are in standard units of: DBUV

MMC Quality (Customer) Evaluation

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

ELECTRO-INTERFERENCE TEST DATA SHEET-18

Item Tested: MEU/CCU	Type: Model:	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Fast: 2926	Pick Up Device: —	Test Site: Scr.Rm	Type Test: Instrument Interconn. Verif.	
Appld. Voltage: —	Test Spec.: IESD/EMC-10	Lead Tested: —		
Test Meter: NF-105	Serial No: AF03005 2	Date Data Recorded: 12-2-68		

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq mHz	Meter Band	Detc. Func.	Method	Am. ✓ In. x		DB	Correction Factors	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail x
.155	1	Peak	Direct	✓		27			27		
.205	1	"	"	"		29			29		
.310	1					31			31		
.420	2					25			25		
.520	2					25			25		
.620	2					27			27		
.720	2					29			29		
.820	2					27			27		
.920	3					28			28		
1.1	3					28			28		
1.4	3					27			27		
1.6	3					28			28		
1.9	3					27			27		
2.8	4					32			32		
3.2	4					31			31		
3.8	4					32			32		
4.9	4					30			30		
7	5					31			31		
8.4	5					31			31		
7.5	5					30			30		
11.2	5					30			30		
14	6					30			30		
19	6					29			29		
21	6	↓	↓	↓		29			29		

Remarks:

Test Eng. R. Loreland

Recorded by " "

Evaluated by " "

Eqpt. Operator " "

* Recorded levels are in standard units of: DBUV/MHz (MNQ Quality: Customer E. Johnston)

E-52D (1-60)

ELECTRO-INTERFERENCE TEST DATA SHEET-19

Item Tested: MEU/CCU	Type: Model:	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Host: 2926	Pick Up Device: —	Test Site: Scr. Rm ✓ Sun Meter	Type Test: Instrument Internal Noise	
Appld. Voltage: —	Test Spec.: IESD/EMC-10	Lead Tested: —		
Test Meter: NF-105	Serial No: AF030052	Date Data Recorded: 12-3-69		

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq MHz	Meter Band	Detc. Func.	Method	Am. ✓ In. ×		DB	Correction Factors	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail ×
28	T-1-1	Peak	direct	✓		23			23		
32	T-1-1	〃	〃	〃		22			22		
44	T-1-1					22			22		
50	T-1-1					22			22		
65	T-1-2					22			22		
80	T-1-2					24			24		
95	T-1-2					24			24		
126	T-1-2					25			25		
150	T-1-2					27			27		
200	T-1-2					30			30		
250	T2					26			26		
300	T2					25			25		
400	T2					25			25		
500	T-3-1					16			16		
600	T-3-1					18			18		
800	T-3-2					17			17		
1000	T-3-2	↓	↓	↓		22			22		

Remarks:

Test Eng. R. Loveland
Recorded by 〃 〃
Evaluated by 〃 〃
Eqpt. Operator 〃 〃

* Recorded levels are in standard units of: DBUV/mHz

M/Sgt Bradley
USAF R. E. Johnston

E-520 (1-60)

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

ELECTRO-INTERFERENCE TEST DATA SHEET - 20

Item Tested: MEU/CCU	Type: Model:	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Rqst: 2426	Pick Up Device: —	Test Site:	Scr.Rm ✓ See Note	Type Test: Interface Intra / Noise
Appld. Voltage: —	Test Spec.: ICSD/EMC-10		Lead Tested: —	
Test Meter: NF-112	Serial No: EQ 520031		Date Data Recorded: 12-3-68	

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq GHz	Meter Band	Detc. Func.	Method	Am. ✓ In. x	Atten DB	Meter DB	Correction Factors	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail x
1.0	1	Pulse Bar	Direct	✓	0	21	—	21	21		
1.5	1	↑	↑	✓	0	20	—	20	20		
2.0	1			✓	0	18	—	18	18		
2.5	2			✓	0	18	—	18	18		
3.0	2			✓	0	20	—	20	20		
4.0	2			✓	0	28	—	28	28		
5.5	3			✓	0	30	—	30	30		
7.0	3			✓	0	31	—	31	31		
8.0	4			✓	0	34	—	34	34		
10.0	4	↓	↓	✓	0	37	—	37	37		

Remarks:

Test Eng. R. Loveland
Recorded by " "
Evaluated by " "
Eqpt. Operator " "

* Recorded levels are in standard units of: DBUV/MHz

M.M.C. Bradley
Customer E. Johnston

ELECTRO-INTERFERENCE TEST DATA SHEET #21

Item Tested: MEU/CCU	Type: Model:	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Rest: 2926	Pick Up Device: —	Test Site: Sce. Rm ~~Sce Room~~	Type Test: Instrument Interface / Noise	
Appld. Voltage: —	Test Spec.: IESD/EMC-10		Lead Tested: —	
Test Meter: NF-112	Serial No: EQ520331		Date Data Recorded: 12-3-68	

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq GHz	Meter Band	Detc. Func.	Method	Am. ✓ In. ×	Aten DB	Meter DB	Correction Factors	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail ×
1.0	1	CW AVE.	Direct	✓	0	14	—	14	14		
1.5	1	〃	〃	✓	0	14	—	14	14		
2.0	1			✓	0	14	—	14	14		
2.5	2			✓	0	14	—	14	14		
3.0	2			✓	0	14	—	14	14		
4.0	2			✓	0	20	—	20	20		
5.5	3			✓	0	22	—	22	22		
7.0	3			✓	0	23	—	23	23		
8.0	4			✓	0	27	—	27	27		
10.0	4	↓	↓	✓	0	30	—	30	30		

Remarks:

Test Eng. R. Loveland

Recorded by 〃

Evaluated by 〃

Eqpt. Operator 〃

* Recorded levels are in standard units of: DBUV

MRC Quality Customer: Johnston

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

ELECTRC-INTERFERENCE TEST DATA SHEET - 22

Item Tested: MEU	Type: Model: 1000-1	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Root: 2478	Pick Up Lexicn: LISN	Test Site	Scr.Rm ✓ Spec Noise	Type Test: BB Conducted Interference
Appld. Voltage: 28 VDC	Test Spec.: IESD/EMC-10	Lead Tested: + to — 28 VDC		
Test Meter: NM-40A	Serial No: AF030410	Date Data Recorded: 1969 February 11		

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq	Meter Band	Detc. Func.	Met-hod	Am. ✓ In. ✗	Atten DB	Meter DB	Correction Factors DB	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail ✗
30 Hz to 20 KHz	W.B.	Peak	Slide Back	X	20	20	+20 +34	94	94	123	✓

Remarks:

Test Eng. R. Loveland

Recorded by " "

Evaluated by " "

Eqpt. Operator " "

* Recorded levels are in standard units of: DB above one microvolt per megahertz

(M & Quality)

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

ELECTRO-INTERFERENCE TEST DATA SHEET - 23

Item Tested: MEU	Type: Model: 1000-1	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Post: 2978	Pick Up Device: CP 161	Test Site: Sat. Rm ✓ Sat. Dish	Type Test: BB Conducted Interference	
Appld. Voltage: 28 VDC	Test Spec.: IESD/EMC-12	Lead Tested: + 28V		
Test Meters: NF-105	Serial No: AF 030052	Date Data Recorded: 1969 February 12		

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq mHz	Meter Band	Dete. Func.	Met-hod	Am. ✓ In. x	Atten DB	Meter DB	Correction Factors DB	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail x
.18	1	Peak	Slide Back	X	40	-4	+1	37	37	80	✓
.23	1	"	"	X	40	-1	0	39	39	74	✓
.37	2	"	"	X	40	-9	-4	27	27	62	✓
.48	2	"	"	X	40	-9	-6	25	25	58	✓
.57	3	"	"	X	40	-9	-7	24	24	56	✓
.60	3	"	"	X	40	-6	-7.5	26.5	26.5	52	✓
.65	3	"	"	X	40	-5	-8	27	27	50	✓
.76	3	"	"	X	40	-9	-9	22	22	47	✓
1.1	3	"	"	X	40	-9	-10	21	21	40	✓
1.9	3	"	"	X	40	-9	-12.5	18.5	18.5	35	✓
2.4	4	"	"	✓	40	-10	-13	17	< 17	35	✓
3.2	4	"	"	X	40	-9	-13	18	18	35	✓
3.9	4	"	"	X	40	-9	-13	18	18	31	✓
4.8	4	"	"	✓	40	-10	-13	17	< 17	29	✓
5.2	4	"	"	✓	40	-10	-13	17	< 17	27	✓
6.5	5	"	"	✓	40	-10	-13	17	< 17	24	✓
7.2	5	"	Direct	✓	30	—	-13	17	< 17	23	✓
10.0	5	"	"	✓	26	—	-13	13	< 13	18	✓
12.0	6	"	"	✓	28	—	-13	15	< 15	13	✓
15.0	6	"	"	✓	27.5	—	-13	14.5	< 14.5	13	✓
18.0	6	"	"	✓	27.5	—	-13	14.5	< 14.5	14	✓
22.0	6	"	"	✓	27.5	—	-13	14.5	< 14.5	17	✓
25.0	6	"	"	✓	27	—	-13	14	< 14	20	✓

Remarks:

Test Eng. R. Loveland
Recorded by " "
Evaluated by " "
Eqpt. Operator " "

* Recorded levels are in standard units of: DB above one microampere per megahertz

E-52D (1-60)

ELECTRO-INTERFERENCE TEST DATA SHEET - 24

Item Tested: MEU	Type: Model: 1000-1	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Rest: 2178	Pick Up Device: CP 161	Test Site: Scr. Rm ✓ Screen Room	Type Tests: BB Conducted Interference	
Appld. Voltage: 28 VDC	Test Spec.: IESD/EMC-10	Lead Tested: -28 V DC		
Test Meter: NF-105	Serial No: AF130052	Date Data Recorded: 1969 February 12		

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq MHz	Meter Band	Detc. Func.	Met-hod	Am. ✓ In. x	Atten DB	Meter DB	Correction Factors DB	Corr. level	Interference Level *	Spec. Limit *	Pass ✓ Fail x
.18	1	Peak	Slide back	X	40	-3	+1	38	38	80	✓
.23	1	"	"	X	40	-3	0	37	37	74	✓
.37	1	"	"	X	40	-9	-4	27	27	62	✓
.48	2	"	"	X	40	-9	-6	25	25	58	✓
.57	2	"	"	X	40	-8	-7	25	25	56	✓
.60	2	"	"	X	40	-5	-7.5	27.5	27.5	52	✓
.65	2	"	"	X	40	-2	-8	24	24	50	✓
.76	2	"	"	X	40	-8	-9	23	23	47	✓
1.0	3	"	"	✓	40	-10	-10	20	< 20	40	✓
1.4	3	"	"	✓	40	-10	-12	18	< 18	35	✓
1.8	3	"	"	✓	40	-10	-12.5	17.5	< 17.5	35	✓
2.0	3	"	"	✓	40	-10	-13	17	< 17	35	✓
3.0	4	"	"	✓	40	-10	-13	17	< 17	35	✓
3.5	4	"	"	X	40	-8	-13	19	19	35	✓
3.9	4	"	"	X	40	-7	-13	20	20	31	✓
4.5	4	"	"	X	40	-5	-13	22	22	30	✓
5.4	5	"	"	X	40	-9	-13	18	18	27	✓
6.8	5	"	"	X	40	-9	-13	18	18	24	✓
7.3	5	"	"	X	40	-9	-13	18	18	23	✓
12.1	5	"	Direct	X	28	—	-13	15	15	16	✓
15.0	6	"	"	✓	27.5	—	-13	14.5	< 14.5	13	—
18.0	6	"	"	✓	27.5	—	-13	14.5	< 14.5	14	—
22.0	6	"	"	✓	27.5	—	-13	14.5	< 14.5	17	✓
25.0	6	"	"	✓	27	—	-13	14	< 14	20	✓

Remarks:

Test Eng. R Loveland

Recorded by " "

Evaluated by " "

Eqpt. Operator " "

* Recorded levels are in standard units of: DB above one microampere per megahertz

E-52D (1-60)

Mfg. Quality

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

ELECTRO-INTERFERENCE TEST DATA SHEET - 25

Item Tested: MEU	Type: Model: 1000-1	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Post: 2478	Pick Up Device: CP 345	Test Site: Scr. Rm ✓ See Notes	Type Test: CW Conducted Interference	
Appld. Voltage: 28 VDC	Test Spec.: IESD / EMC-10	Lead Tested: + 28 VDC		
Test Meter: NM-40 NF-105 VRM-6	Serial No: AP030410 GFP000225	Date Data Recorded: 1969 February 11		

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq KHz	Meter Band	Detc. Func.	Method	Am. ✓ In. ×	Atten DB	Meter DB	Correction Factors DB	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail ×
1.8	—	Sel.	Direct	X	20	35	26	81	81	85	✓
3.55	—	"	"	X	0	39	21	70	70	85	✓
5.3	—	"	"	X	0	18	19	37	37	85	✓
44.0	2	FI	"	X	0	10	4	14	14	44	✓
117	3	"	"	X	0	12	0	12	12	38	✓
235	4	"	"	X	0	8	0	8	8	33	✓
270	1	Carr	"	X	0	<0	0	<0	<0	32	✓
470	2	"	"	X	0	<0	0	<0	<0	29	✓

Remarks:

Test Eng. R. Loveland

Recorded by "

Evaluated by "

Eqpt. Operator "

* Recorded levels are in standard units of: DB above one microampere

M&Q. Quality (Inspection)

E-52D (1-60)

ELECTRO-INTERFERENCE TEST DATA SHEET-26

Item Tested: MEU	Type: Model: 1000-1	Serial No: Dwg. No:	Mode of Oper: / Test No:
Test Rost: 2978	Pick Up Device: CP 345	Test Site: Scr. Rm ✓ See Note	Type Test: cw Conducted Interference
Appld. Voltage: 28VDC	Test Spec.: IESD/EMC-10	Lead Tested: — 28 VDC	
Test Meter: NM-40A NF-105 VRM-6	Serial No: AF030410 GFP00025	Date Data Recorded: 1969 February 11	

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq KHz	Meter Band	Detc. Func.	Method	Am. ✓ In. x	Atten. DB	Meter DB	Correction Factors DB	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail x
1.75	—	Sel	Direct	X	20	27	26	73	73	85	✓
3.55	—	"	"	X	0	40	21	61	61	85	✓
5.3	—	"	"	X	0	18	19	37	37	85	✓
46	2	FI	"	X	0	8	4	12	12	44	✓
117	3	"	"	X	0	12	0	12	12	38	✓
235	4	"	"	X	0	6	0	6	6	33	✓
270	1	Carr	"	X	0	<0	0	<0	<0	32	✓
470	2	"	"	X	0	<0	0	<0	<0	29	✓

Remarks:

Test Eng. R. Loveland
Recorded by " "
Evaluated by " "
Eqpt. Operator " "

* Recorded levels are in standard units of: DB above one microampere

MM Quality [illegible] Schmitz

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

ELECTRO-INTERFERENCE TEST DATA SHEET - 27

Item Tested: MEU	Type: Model: 1000-1	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Base: 2978	Pick Up Device: Rod Ant.	Test Site: Ser. Rm ✓ ~~Gen. Mobs~~	Type Test: CW Radiated Interference	
Appld. Voltage: 28 VDC	Test Spec.: IESD/EMC-10	Lead Tested: ——		
Test Meter: UKM-6	Serial No: GFP00025	Date Data Recorded: 1969 February 12		

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq KHz	Meter Band	Detc. Func.	Method	Am. ✓ In. ×	Atten DB	Meter DB	Correction Factors DB	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail ×
15.0	1	FI	Direct	✓	0	<0	+6	<6	<6	50	✓
21.8	1	"	"	X	0	4	6	10	10	48	✓
28.2	1	"	"	X	0	<0	6	<6	<6	45	✓
44.0	2	"	"	X	0	14	6	20	20	41	✓
46.0	2	"	"	X	20	26	6	52	52	54	✓
48.8	2	"	"	X	0	17	6	23	23	39	✓
52.6	2	"	"	X	0	18	6	24	24	38	✓
68.0	3	"	"	X	0	5	6	11	11	37	✓
91.0	3	"	"	X	0	23	6	29	29	34	✓
109	3	"	"	X	0	14	6	20	20	33	✓
114	3	"	"	X	0	38	6	44	44	46	✓
138	4	"	"	X	0	10	6	16	16	30	✓
157	4	"	"	X	0	18	6	24	24	30	✓
184	4	"	"	X	0	20	6	26	26	30	✓
210	4	"	"	X	0	19	6	25	25	30	✓
228	4	"	"	X	0	18	6	24	24	30	✓

Remarks:

Test Eng. R. Loveland

Recorded by " "

Evaluated by " "

Eqpt. Operator " "

* Recorded levels are in standard units of: DB above one microvolt per meter

(MMC Quality 2009 Customer E Johnston)

ELECTRO-INTERFERENCE TEST DATA SHEET-28

Item Tested: MEU	Type: Model: 1000-1	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Base: 2978	Pick Up Device: Rod Ant.	Test Site: Sar.Rm ✓ Ferrite	Type Test: BB Radiated Interference	
Appld. Voltage: 28 VDC	Test Spec.: IESD/EMC-10	Lead Tested: ——		
Test Meter: NF-105	Serial No: AF030052	Date Data Recorded: 1969 February 12		

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq MHz	Meter Band	Detc. Func.	Method	Am. ✓ In. x	Atten DB	Meter DB	Correction Factors DB	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail x
.15	1	Peak	S-B	✓	40	-10	43	73	< 73	80	✓
.23	1	"	"	X	40	-9	41	72	72	79	✓
.38	1	"	"	X	40	-9	36	67	67	77	✓
.50	2	"	"	✓	40	-10	35	65	< 65	76	✓
.70	2	"	"	✓	40	-10	37	67	< 67	75	✓
1.1	3	"	"	✓	40	-10	32	62	< 62	74	✓
1.7	3	"	"	✓	40	-10	35	65	< 65	73	✓
2.1	3	"	"	X	40	-9	35	66	66	72	✓
2.3	4	"	"	X	40	-9	30	61	61	71	✓
2.8	4	"	"	X	40	-9	29	60	60	70-5	✓
4.0	4	"	"	✓	40	-10	29	59	< 59	70.4	✓
4.5	4	"	"	✓	40	-10	30	60	< 60	70.2	✓
5.2	4	"	"	✓	40	-10	30	60	< 60	70	✓
7.0	5	"	"	✓	40	-10	25	55	< 55	69.5	✓
9.0	5	"	"	✓	40	-10	25	55	< 55	69	✓
12.0	5	"	"	✓	40	-10	26	56	< 56	68	✓
14.0	6	"	"	✓	40	-10	24	54	< 54	67.5	✓
18.0	6	"	"	X	40	-9	21	52	52	67	✓
23.0	6	"	"	X	40	-8	22	54	54	66.5	✓
25.0	6	"	"	X	40	-5	22	57	57	66	✓

Remarks:

Test Eng. R. Loveland

Recorded by "

Evaluated by "

Eqpt. Operator "

* Recorded levels are in standard units of: DB above one microvolt per megahertz per meter

NMC Quality (H. Stone) Division

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

ELECTRO-INTERFERENCE TEST DATA SHEET -29

Item Tested: MEU/CCU	Type: Model:	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Point: 2926	Pick Up Device: Rod ANT	Test Site: Scr.Rm	Type Tests: CW Radiated Interference	
Appld. Voltage: 28 VDC	Test Spec.: IESD/EMC-10	Lead Tested: —		
Test Meter: VRM-6 NF-105	Serial No: AF031046 AF030052	Date Data Recorded: 12-3-68		

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq KHz	Meter Band	Detc. Func.	Met-hod	Am. ✓ In. x	Atten DB	Meter DB	Correction Factors DB	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail x
4.5	1	F.I.	Direct	X	0	25	6	31	31	50	✓
10	1	↑	↑	X	0	31	↑	37	37	48	✓
40	2			X	0	18		24	24	42	✓
48.5	2			X	20	25		51	51	40	(X)
51	2			X	20	27		53	53	40	(X)
77	3			X	0	32		38	38	36	(X)
101	3			X	20	35		61	61	34	(X)
159	4			X	20	20		46	46	30	(X)
200	4			X	20	30		56	56	30	(X)
205	4	↓		X	20	39	↓	65	65	30	(X)
250	4	F.I		X	0	24	6	30	30	30	✓
310	1	CARR.		X	20	6	22	48	48	30	(X)
420	2	↑		X	20	14	16	50	50	30	(X)
520	2			X	20	8	15	53	53	30	(X)
620	2			X	0	17	17	17	17	30	✓
720	2			X	0	<0	17	<17	<17	30	✓
820	2			X	0	<0	18	<18	<18	30	✓
920	3			X	0	<0	16	<16	<16	30	✓
1.2M	3			X	0	<0	12	<12	<12	30	✓
6.7M	4	↓		X	0	3	6	9	9	30	✓
7.5M	4	CARR	↓	X	0	4	5	9	9	30	✓

Remarks:

Test Eng. R. Loveland

Recorded by "

Evaluated by "

Eqpt. Operator "

* Recorded levels are in standard units of: DBUV/meter

W. C. Quality
Customer E. Johnston

ELECTRO-INTERFERENCE TEST DATA SHEET - 30

Item Tested	Type: Model:	Serial No: Dwg. No:	Mode of Oper:	Test No:
MEU/CCU				

Test Rqst:	Pick Up Device:	Test Site	Type Test:
2926	Rod Ant #184	Scr. Rm ✓ Open Note:	BE Rad Rfd Interference

Appld. Voltage:	Test Spec.:	Lead Tested:
—	IESD/EMC-10	—

Test Meter:	Serial No:	Date Data Recorded:
NF-105	AF 030052	12-3-68

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq MHz	Meter Band	Detc. Func.	Method	Am. ✓ In. ×	Atten DB	Meter DB	Correction Factors DB	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail ×
.175	1	Peak	Vis Sob	X	40	-4	42	78	78	80	✓
.22	1	〃	〃	X	40	-7	41	74	74	79	✓
.58	2	〃	〃	X	40	3	37	80	80	76	(X)
1.3	3	〃	〃	X	40	-1	32	71	71	74	✓
1.9	3	〃	〃	X	40	-4	35	71	71	73	✓
2.2	4	〃	〃	X	40	-5	30	65	65	72.5	✓
2.8	4	〃	〃	X	40	-3	28	65	65	72	✓
5.2	4	〃	〃	X	40	1	30	71	71	70	(X)
6.7	5	〃	〃	X	50	2	25	77	77	64.5	(X)
8.1	5	〃	〃	X	50	-2	24	72	72	69	(X)
9.8	5	〃	〃	X	40	4	25	69	69	68.5	(X)
12.0	5	〃	〃	X	40	5	26	71	71	68	(X)
14.5	6	〃	〃	X	40	1	24	65	65	67.5	✓
17.0	6	〃	〃	X	40	-2	22	60	60	67	✓
21.3	6	〃	〃	X	40	-4	21	57	71	66.5	✓
25.0	6	✓	✓	X	40	-6	22	56	56	66	✓

Remarks:

Test Eng. R. Loveland

Recorded by 〃 〃

Evaluated by 〃 〃

Eqpt. Operator 〃 〃

* Recorded levels are in standard units of: DBUV/mHz/Meter

MMC Quality (11-69)
Customer Engineer

E-52D (1-60)

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

ELECTRO-INTERFERENCE TEST DATA SHEET -31

Item Tested MEU/CCU	Type: Model:	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Host: 2926	Pick Up Device: Dipole	Test Site	Ser.Rm ✓ See Note	Type Test: 66 Radiated Interference
Appld. Voltage: 28 VDC	Test Spec.: IESD/EMC-10	Lead Tested: —		
Test Meter: NF-105	Serial No: AF030052	Date Data Recorded: 12-2-68		

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq Mhz	Meter Band	Detc. Func.	Method	Am. ✓ In. ×	Atten. DB	Meter DB	Correction Factors DB	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail ×
28	T-1-1	Peak	Vis Sub.	X	40	5	−8	37	37	66	✓
32	T-1-1	↑	↑	X	40	5	−7	38	38	65.5	✓
44	T-1-1			X	40	4	−4	40	40	65	✓
50	T-1-1			X	50	−2	−3	45	45	64	✓
65	T-1-2			X	40	4	0	44	44	63.5	✓
80	T-1-2			X	40	1	2	43	43	63	✓
95	T-1-2			X	40	−2	3	41	41	62.5	✓
126	T-1-2			X	40	−9	6	37	37	62	✓
150	T-1-2			✓		27	8	35	<35	61.5	✓
200	T-1-2			✓		30	10	40	<40	61	✓
250	T2			✓		26	12	38	<38	60.5	✓
300	T2			✓		25	14	39	<39	60.2	✓
400	T2			✓		25	17	42	<42	60	✓
500	T-3-1			✓		16	19	35	<35	58	✓
600	T-3-1			✓		18	22	40	<40	56	✓
800	T-3-2			✓		17	25	42	<42	54	✓
1000	T-3-2	↓	↓	✓		22	27	49	<49	50	✓

Remarks:

Test Eng. R. Loveland

Recorded by "

Evaluated by "

Eqpt. Operator "

* Recorded levels are in standard units of: DBUV/mHz/meter

MMC Quality Customer R. Johnson

E-52D (1-60)

ELECTRO-INTERFERENCE TEST DATA SHEET -32-

Item Tested: MEU/CCU	Type: Model:	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Post: 2926	Pick Up Device: Remarks	Test Site	Ser. Rm ✓ See Note	Type Test: EB Radiated Interference
Appld. Voltage: 28 VDC	Test Spec.: IESD/EMC-10		Lead Tested: —	
Test Meter: NF-112	Serial No: EQ		Date Data Recorded: 12-3-68	

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq GHz	Meter Band	Detc. Func.	Method	Am. ✓ In. ×	Ambient DB	Meter DB	Correction Factors DB	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail ×
1.0	1	Pulse Peak	Direct	✓	0	21	22.9	43.9	< 43.9	50	✓
1.5	1	↑	↑	✓	0	20	23.6	43.6	< 43.6	50	✓
2.0	1			✓	0	18	23.7	41.7	< 41.7	50	✓
2.5	2			✓	0	18	22.8	40.8	< 40.8	50	✓
3.0	2			✓	0	20	23.4	43.4	< 43.4	50	✓
4.0	2			✓	0	28	23.8	51.8	< 51.8	50	—
5.5	3			✓	0	30	22.7	52.7	< 52.7	50	—
7.0	3			✓	0	31	23.4	54.5	< 54.5	50	—
8.0	4			✓	0	34	22.2	56.8	< 56.8	50	—
10.0	4	↓	↓	✓	0	37	23.0	60.0	< 60.0	50	—

Remarks: 1) AMBIENT SAME AS ABOVE-

2) ANTENNAS FIM CA-S
CA-L
CA-M
CA-X

Test Eng. R. Loveland
Recorded by " "
Evaluated by " "
Eqpt. Operator " "

* Recorded levels are in standard units of: DB UV/MHz/Meter

And Quality Assurance Inspector

E-52D (1-60)

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

ELECTRO-INTERFERENCE TEST DATA SHEET -33

Item Tested: MEU/CCU	Type: / Model:	Serial No: / Dwg. No:	Mode of Oper:	Test No:
Test Part: 2926	Pick Up Device: Rob ANT	Test Site: Sec-Nate	Scr.En ✓	Type Test: AMBIENT - CW RADIA
Appld. Voltage: —	Test Spec.: IESD/EMC-10	Lead Tested: —		
Test Meter: UKM-6 NF-10 ✓	Serial No: 6F03104-6 NF03[illegible]2	Date Data Recorded: 12-3-68		

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq KHz	Meter Band	Detc. Func.	Method	Am. ✓ In. x	When DB	Meter DB	Correction Factors	Corr. Level	Interference Level *	Spec. limit *	Pass ✓ Fail x
16.5	1	FI	Direct	✓	0	0	6	6	6		
20	1	↑	↑	↑	↑	↑	6	6	6		
40	2						6	6	6		
48.5	2						6	6	6		
51	2						6	6	6		
77	3						6	6	6		
101	3						6	6	6		
154	4						6	6	6		
200	4						6	6	6		
205	4	↓					6	6	6		
250	1	FI					6	6	6		
310	1	CURR					22	22	22		
420	2						16	16	16		
520	2						15	15	15		
620	2						17	17	17		
720	2						17	17	17		
820	2						18	18	18		
920	3						16	16	16		
1.2M	3						12	12	12		
1.7M	4	↓		↓	↓	↓	6	6	6		
1.5M	4	CURR	↓	✓	0	0	5	5	5		

Remarks:

Test Eng. _____

Recorded by _____

Evaluated by _____

Eqpt. Operator _____

* Recorded levels are in standard units of:

MMC Quality
Customer: Johnston

ELECTRO-INTERFERENCE TEST DATA SHEET-3 1/

Item Tested	Type: Model:	Serial No: Dwg. No:	Mode of Oper:	Test No:
MEU/ECU				

Test Rest:	Pick Up Device:	Test Site	Ser.Rm	Type Test:
2926	Rod Ant			AMBIENT - RE radiated

Appld. Voltage:	Test Spec.:	Lead Tested:
—	IESD/EMC-10	—

Test Meter:	Serial No:	Date Data Recorded:
NF-105	AF03005 2	12-3-68

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq MHz	Meter Band	Detc. Func.	Met-hod	Am. ✓ In. x		DB	Correction Factors DB	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail x
.175	1	Peak	Vis Sub	✓		27	42	69	69		
.22	1	↑	↑	↑		29	41	70	70		
.58	2					25	37	62	62		
1.3	3					27	32	60	60		
1.9	3					27	35	62	62		
2.2	4					32	30	62	62		
2.8	4					32	28	60	60		
5.2	4					31	30	61	61		
6.7	5					31	25	56	56		
8.1	5					30	24	54	54		
9.8	5					30	25	55	55		
12.0	5					30	26	56	56		
14.5	6					30	24	54	54		
17.0	6					29	22	51	51		
21.0	6			↓		29	21	50	50		
25.0	6	↓	↓	✓		29	22	51	51		

Remarks:

Test Eng. R. Loveland

Recorded by " "

Evaluated by " "

Eqpt. Operator " "

* Recorded levels are in standard units of: DBUV/MHz/Meter

MMC Quality Customer Division

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

ELECTRO-INTERFERENCE TEST DATA SHEET - 35

Item Tested: MEU/CCU	Type: Model:	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Bed: 2926	Pick Up Device: Dipole	Test Site	Scr. Rm ✓ Bare Meter	Type Test: AMBIENT - 6B Radiated
Appld. Voltage: ———	Test Spec.: IECSD/EMC-10	Lead Tested: ———		
Test Meter: NF-105	Serial No: AF030052	Date Data Recorded: 12-3-68		

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq mHz	Meter Band	Detc. Func.	Met-hod	Am. ✓ In. ✗		DB	Correction Factors DB	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail ✗
28	T-1-1	Peak	V.S. Sub.	✓		23	-8	15	15		
32	T-1-1	〃	〃	〃		22	-7	15	15		
44	T-1-1					22	-4	18	18		
50	T-1-1					22	-3	19	19		
65	T-1-2					22	0	22	22		
80	T-1-2					24	2	26	26		
95	T-1-2					24	3	27	27		
126	T-1-2					25	6	31	31		
150	T-1-2					27	8	35	35		
200	T-1-2					30	10	40	40		
250	T2					26	12	38	38		
300	T2					25	14	39	39		
400	T2					25	17	42	42		
500	T-3-1					16	19	35	35		
600	T-3-1					18	22	40	40		
750	T-3-2			✓		17	25	42	42		
1000	T-3-2	✓	✓	✓		22	27	49	49		

Remarks:

Test Eng. R. Loveland

Recorded by 〃 〃

Evaluated by 〃 〃

Eqpt. Operator 〃 〃

* Recorded levels are in standard units of: DBUV/MHz/Meter

Quality Control E. Johnston

E-52D (1-60)

ELECTRO-INTERFERENCE TEST DATA SHEET -36

Item Tested: MEU	Type: Model: 1000-1	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Rept: 2978	Pick Up Device: Dipole	Test Site	Scr. Im ✓ Spec Notice	Type Test: BB Radiated Interference
Appld. Voltage: 28 VDC	Test Spec.: IESD/EMC-10	Lead Tested: ———		
Test Meter: NF-105	Serial No: AF 030052	Date Data Recorded: 1969 February 12		

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq MHz	Meter Band	Detc. Func.	Met-hod	An. ✓ In. X	Atten DB	Meter DB	Correction Factors DB	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail X
26.5	T1-1	Peak	S.B.	X	40	-9	-8	23	23	66	✓
33	T1-1	"	"	X	40	-3	-7	26	26	65.5	✓
37	T1-1	"	"	X	40	-9	-5	26	26	65	✓
40	T1-1	"	"	✓	40	-10	-4.5	25.5	< 25.5	64.5	✓
50	T1-1	"	"	✓	40	-10	-3	27	< 27	64.2	✓
58	T1-1	"	"	X	40	-8	-1	31	31	64	✓
65	T1-2	"	"	✓	40	-10	0	30	< 30	63.5	✓
75	T1-2	"	"	✓	40	-10	1	31	< 31	63.2	✓
89	T1-2	"	"	X	40	-9	3	34	34	63	✓
110	T1-2	"	"	✓	40	-10	4	34	< 34	62	✓
200	T2	"	"	✓	40	-10	10	40	< 40	61	✓
400	T2	"	"	✓	40	-10	17	47	< 47	60	✓
600	T3-1	"	"	✓	40	-10	20	50	< 50	56	✓
800	T3-2	"	"	✓	40	-10	25	55	< 55	54	—
1000	T3-2	"	"	✓	40	-10	27	57	< 57	50	—

Remarks:

Test Eng. R. Loveland

Recorded by "

Evaluated by "

Eqpt. Operator "

* Recorded levels are in standard units of: DB above one microvolt per megahertz per meter

E-52D (1-60)

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

ELECTRO-INTERFERENCE TEST DATA SHEET -37

Item Tested: MEU	Type: Model: 1000-1	Serial No: Dwg. No:	Mode of Oper:	Test No:
Test Post: 2978	Pick Up Device: CLP-18	Test Site: Scr. Rm — Anechoic	Type ES Radiated Test: Interference	
Appld. Voltage: 28 VDC	Test Spec.: IISD / EMC-10	Lead Tested: ———		
Test Meter: NF-112	Serial No:	Date Data Recorded: 1969 February 12		

Meter Operation					Meter Rdng.		Corrected Rdng.		Evaluation		
Freq GHz	Meter Band	Detc. Func.	Met-hod	Am. ✓ In. x	Atten DB	Meter DB	Correction Factors DB	Corr. Level	Interference Level *	Spec. Limit *	Pass ✓ Fail x
1.0	1	Peak	Dir.	✓	0	21	23	44	< 44	50	✓
2.0	1	"	"	✓	0	19	24	43	< 43	50	✓
3.0	2	"	"	✓	0	21	23	44	< 44	50	✓
4.0	2	"	"	✓	0	26	24	50	< 50	50	✓
5.0	3	"	"	✓	0	30	23	53	< 53	50	—
6.0	3	"	"	✓	0	30	23	53	< 53	50	—
7.0	3	"	"	✓	0	30	23	53	< 53	50	—
8.0	4	"	"	✓	0	35	23	58	< 58	50	—
9.0	4	"	"	✓	0	36	23	59	< 59	50	—
10.0	4	"	"	✓	0	37	23	60	< 60	50	—

Remarks:

Test Eng. R. Loveland

Recorded by " "

Evaluated by " "

Eqpt. Operator " "

R. M. Bradley

* Recorded levels are in standard units of: DB above one microvolt per megahertz per meter. Customer

FUNCTIONAL TEST EQUIPMENT LIST

ITEM	MANUFACTURER	MODEL
1. Power Supply *	Hewlett Packard	6255A
2. Digital Voltmeter *	Dana	5400
3. Sensitive D.C. Meter *	Booton Electronics Corp.	95A
4. Pulse Generator *	Data Pulse	200M
5. Oscilloscope *	Tektronix	555
6. Power Supply *	Power Designs Inc.	TW-4005
7. Voltage/Current Calibrator *	Fluke Mfg. Company	382A
8. Oscillator, Audio *	Hewlett Packard	202A
9. Counter *	Hewlett Packard	5245L
10. Ammeter *	Simpson	260
11. MEU Interface Test Tool	Martin-Marietta	--
12. CCU Interface Test Tool	Martin-Marietta	--
13. Stimulus Control Test Tool Switch	Martin-Marietta	--
14. Universal PCM * Demodulation System	EMR	285

* Equipment was withdrawn dates of normal condition cycles. Dates are not given since total time span of usage ecompasses several calibration cycles.