MIL STD 461E/ F

TEST REPORT

For

20.1 Multimedia LCD Monitor

Model Number:
WMRM920-PIP

Trade Name: iTech

Issued to

iTech Company LLC
41758 Christy Street,
Fremont CA 94538 USA

Issued by

Compliance Certification Services Inc.
No. 11, Wugong 6th Rd., Wugu Industrial Park
Taipei Hsien 248, Taiwan
http://www.ccsemc.com.tw
service@tw.ccsemc.com

TABLE OF CONTENTS

1. TEST RESULT CERTIFICATION

Applicant: iTech Company LLC
41758 Christy Street,
Fremont CA 94538 USA

Equipment Under Test: 20.1 Multimedia LCD Monitor

Trade Name: iTech

Model Number: WMRM920-PIP

Date of Test: August 24, 2009

APPLICABLE STANDARDS	
STANDARD	**TEST RESULT**
MIL STD 461E/ F	No non-compliance noted

Applicable Standard	Test Result
MIL STD 461E/ F	
CE101, conducted emissions, power leads, 30 Hz to 10 kHz.	No non-compliance noted
Deviation from Applicable Standard	
N/A	

The above equipment was tested by Compliance Certification Services Inc. for compliance with the requirements set forth in MIL STD 461E/ F. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Note: During the test, Dell PC and VGA cable are sealed by copper foil tape.

Approved by:

James Lee
Section Manager
Compliance Certification Services Inc.

Reviewed by:

Bruce Chen
Senior Engineer
Compliance Certification Services Inc.

2. EUT DESCRIPTION

Product	20.1 Multimedia LCD Monitor
Trade Name	iTech
Model Number	WMRM920-PIP
Model Discrepancy	
EUT Power Rating	MB: iTech / R2A Panel LCD: 20.1 AUO / M201UN02-V6 Power Board: Wearnes/ WDS080121 RS232 Port: Link PC /Touch

Remark: for more details, please refer to the User's manual of the EUT.

3. TEST METHODOLOGY

All tests were performed in accordance with the procedure documented in MIL STD 461E/ F.

4. INSTRUMENT AND CALIBRATION

4.1 MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

4.2 MEASUREMENT EQUIPMENT USED

Equipment Used for Emissions Measurement

CE101 (966 Chamber B)				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	MY43360131	02/25/2010
Coaxial Cable	Huber Suhner	SUCOFLEX	001	07/01/2010
LISN	R&S	AT/A38	8448773	10/27/2009
RF Current Probe	FCC	F-12	318	05/10/2010
Site NSA	CCS	N/A	N/A	01/02/2010
Software	Turbo C++			

5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at

☐ No.199, Chunghsen Road, Hsintien City, Taipei Hsien, Taiwan, R.O.C.
Tel: 886-2-2217-0894 / Fax: 886-2-2217-1029

☒ No.11, Wugong 6th Rd., Wugu Industrial Park, Taipei Hsien 248, Taiwan
Tel: 886-2-2299-9720 / Fax: 886-2-2299-9721

☐ No.81-1, Lane 210, Bade 2nd Rd., Luchu Hsiang, Taoyuan Hsien 338, Taiwan
Tel: 886-3-324-0332 / Fax: 886-3-324-5235

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

6. SETUP OF EQUIPMENT UNDER TEST

6.1 SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

6.2 PHOTOGRAPHS OF EUT

See test photographs attached in Appendix 2 for the EUT's internal structure.

6.3 SUPPORT EQUIPMENT

No.	Device Type	Brand	Model	Series No.	FCC ID	Data Cable	Power Cord
1	Notebook PC	DELL	PP19L	GH645 A03	E2KWM3945ABG	N/A	N/A

Remarks:

1. *All the above equipment/cables were placed in worse case positions to maximize emission signals during emission test.*
2. *Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.*

6.4 TEST SETUP

The equipment under test was configured in normal operation continuously. EUT tends to maximize its emission characteristics in a typical application for conducted emission measurement. The EUT was active during the conducted emission measurements.

7. MIL STD 461E/ F REQUIREMENTS

7.1 CE101, conducted emissions, power leads, 30 Hz to 10 kHz

This requirement is applicable for power leads, including returns, that obtain power from other sources not part of the EUT for surface ships, submarines, Army aircraft& (including flight line) and Navy aircraft*&

*For equipment intended to be installed on Navy aircraft, this requirement is applicable only for aircraft with Anti-Submarine Warfare (ASW) capability.

&For AC applications, this requirement is applicable starting at the second harmonic of the EUT power frequency.

Conducted emissions on power leads shall not exceed the applicable values shown on Figures CE101-1 through CE101-3, as appropriate, for submarines and Figure CE101-4 for Army aircraft (including flight line) and Navy ASW aircraft.

LIMIT

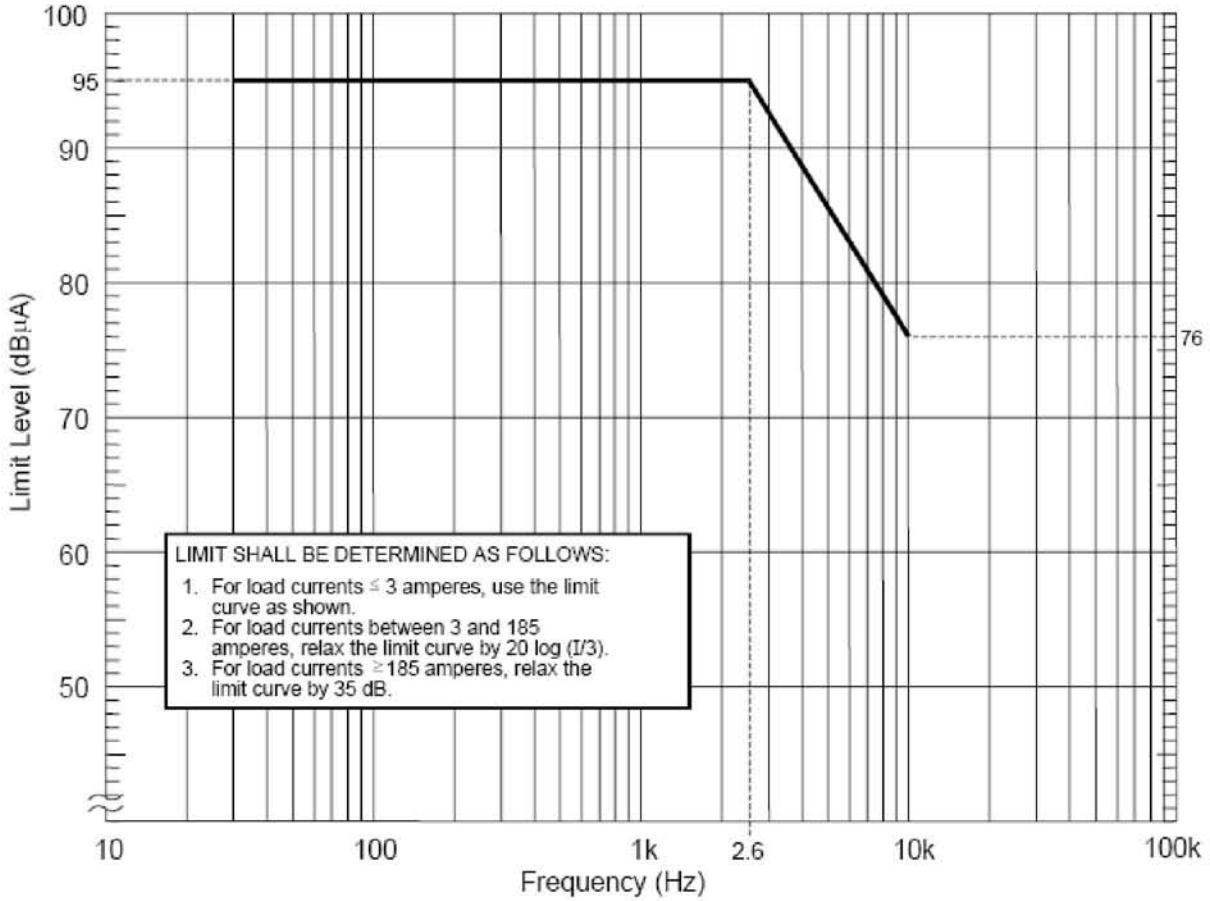


FIGURE CE101-1. CE101 limit for submarine applications, DC.

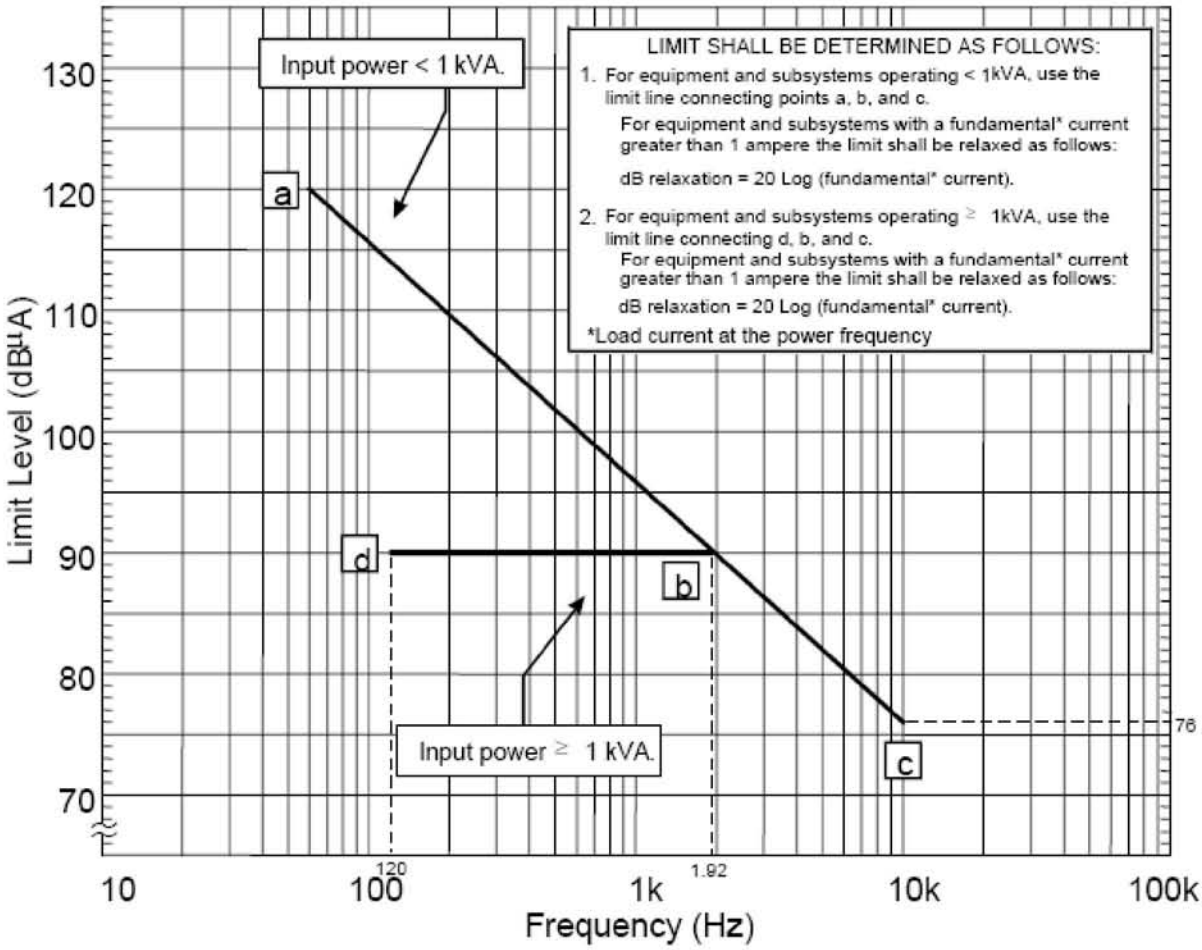


FIGURE CE101-2. CE101 limit for submarine applications, 60Hz.

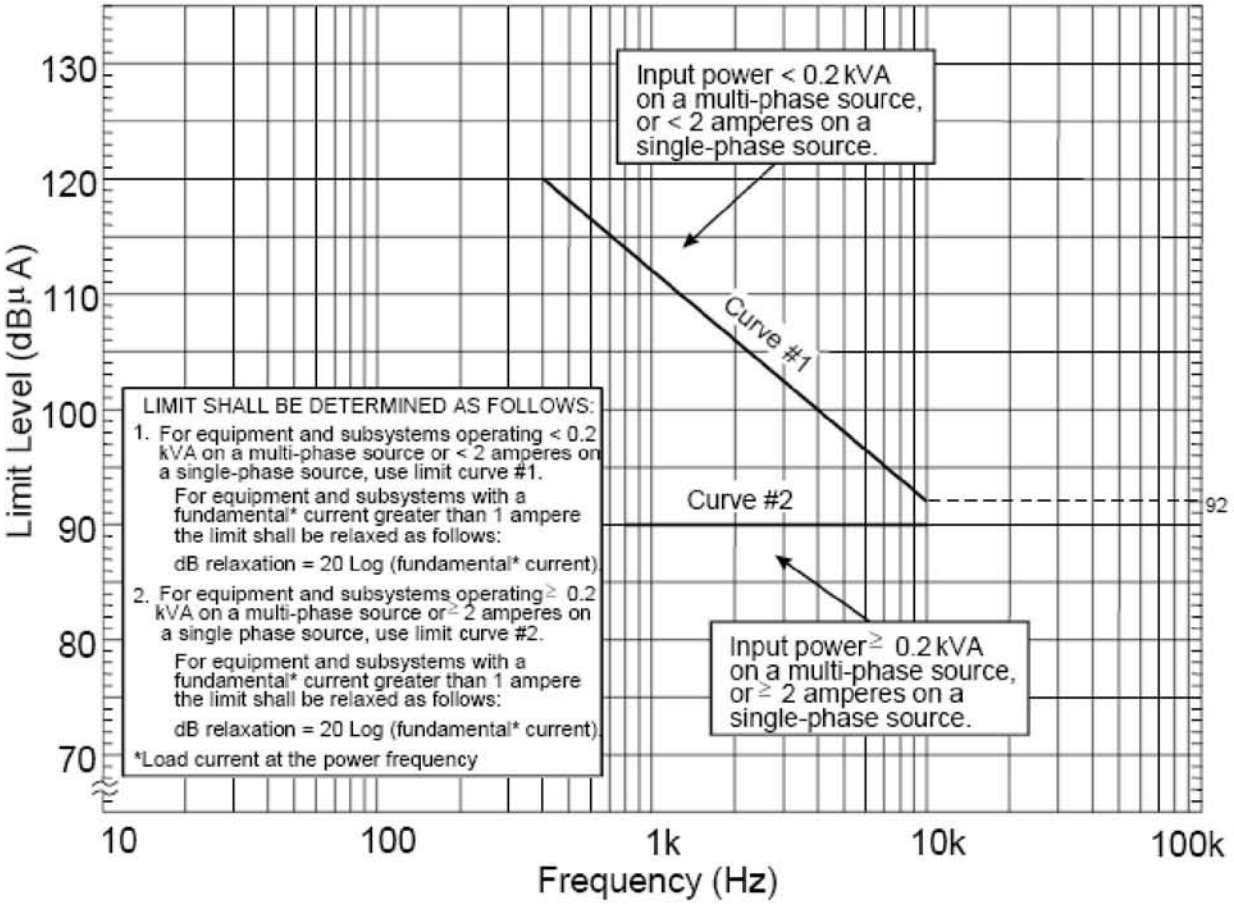


FIGURE CE101-3. CE101 limit for submarine applications, 400 Hz.

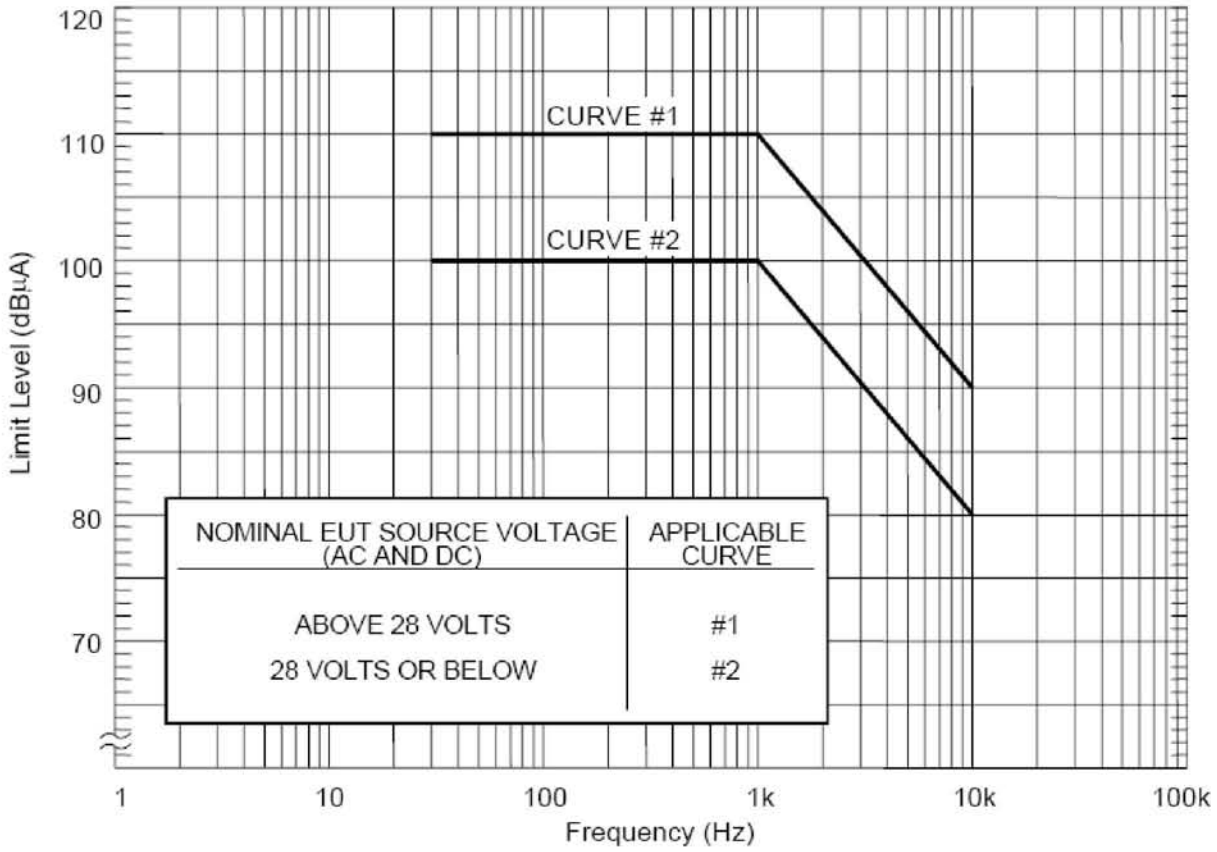


FIGURE CE101-4. CE101 limit for Navy ASW aircraft and Army aircraft (including flight line) applications.

TEST CONFIGURATION

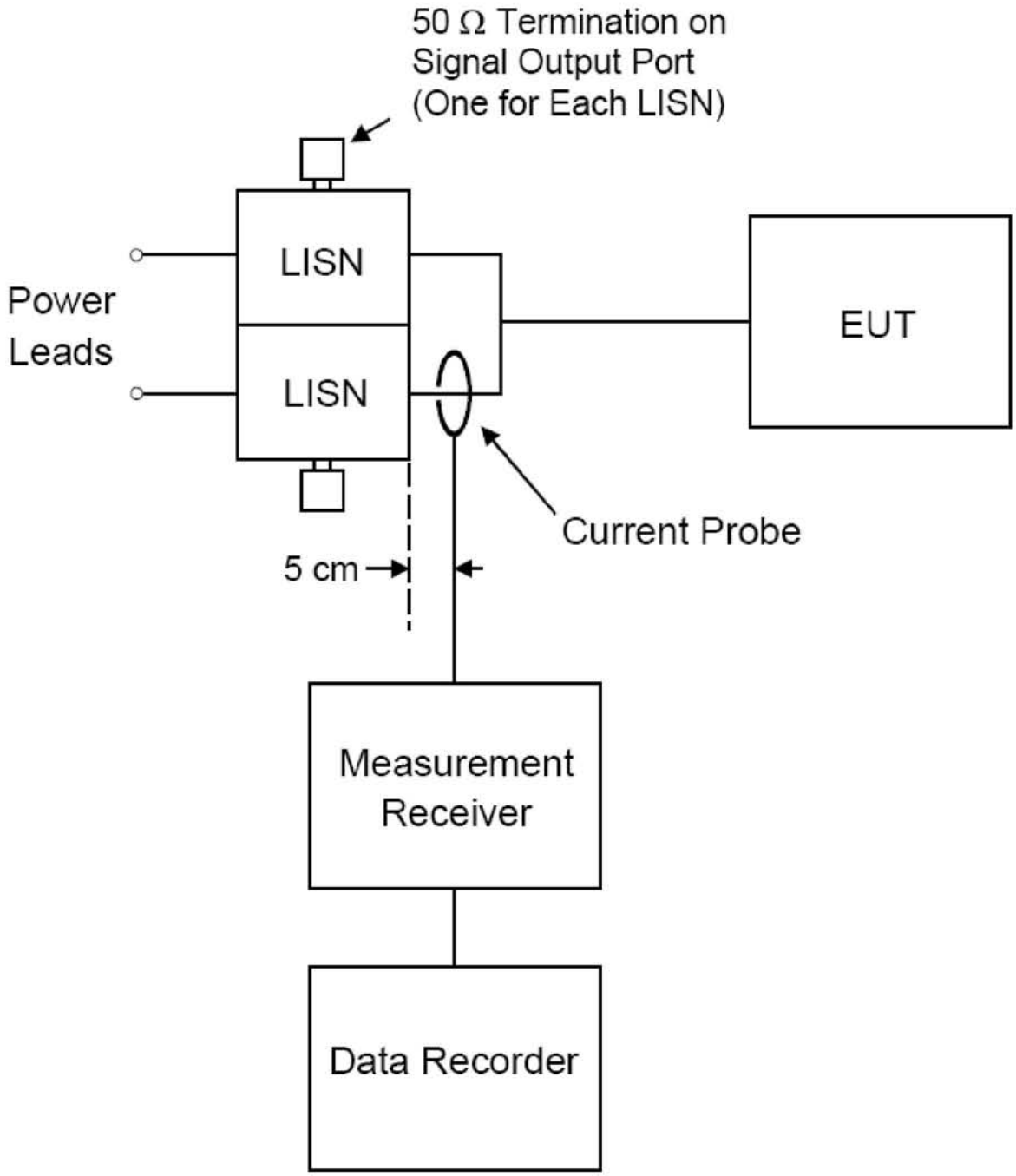


FIGURE CE101-5. Measurement setup.

TEST PROCEDURE

The magnetic emission of EUT representative of its type shall be tested by the method(s) according to MIL STD 461E/ F.

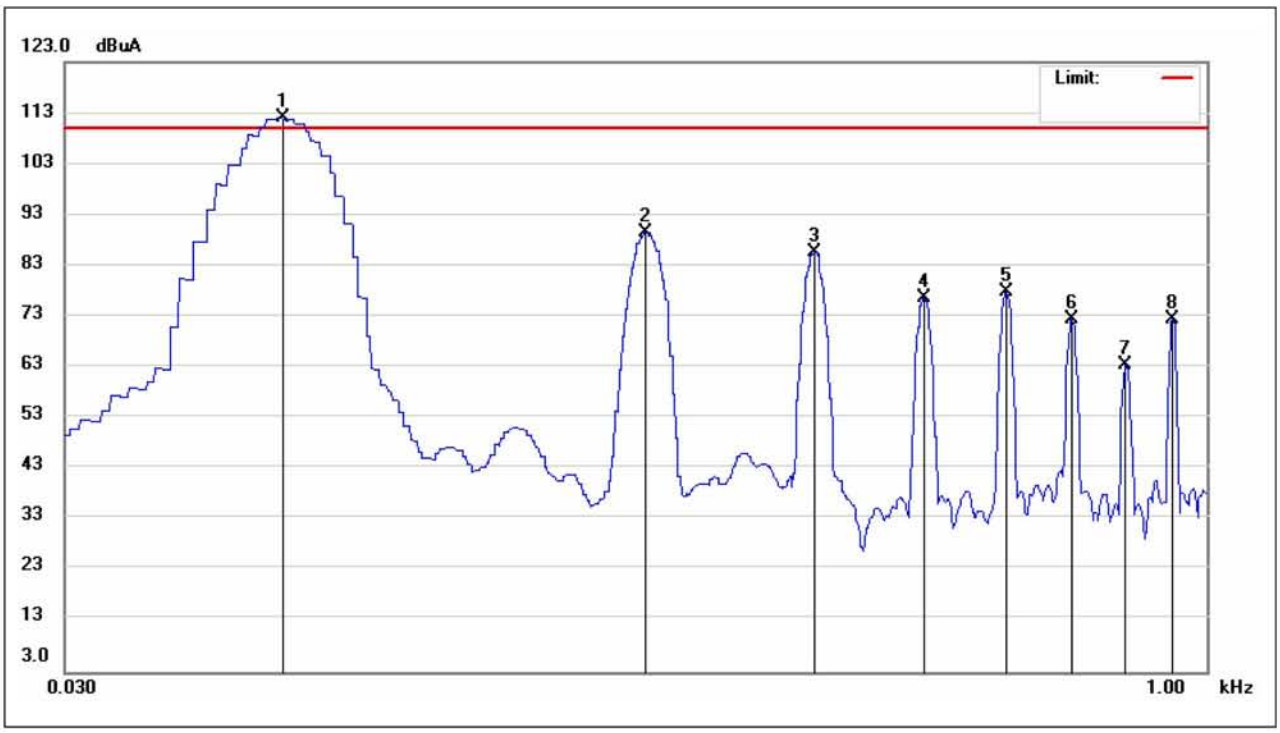
TEST RESULTS

No non-compliance noted

Test Data

30Hz-1kHz-L1

Job No.:	**90626003**	**Polarization:**	**N**
Standard:	**MIL-STD-461E/F CE101 Navy &army(above 28V)**	**Power Source:**	**AC 120V/60Hz**
Test item:	**Conduction Test**	**Date:**	**2009/8/24**
Temp.(℃)/Hum.(%):	**22(℃)/51%**	**Time:**	**上午 11:24:20**
Company:	**iTech Company LLC**	**Engineer Signature:**	**Chris**
Trade Name:	**iTech**	**Distance:**	**5cm**
Model:	**WMRM920-PIP**	**RBW: 0.01kHz**	**VBW: 0.01kHz**
Description:	**Dell PC+ VGA cable are sealed by copper foil tape**		



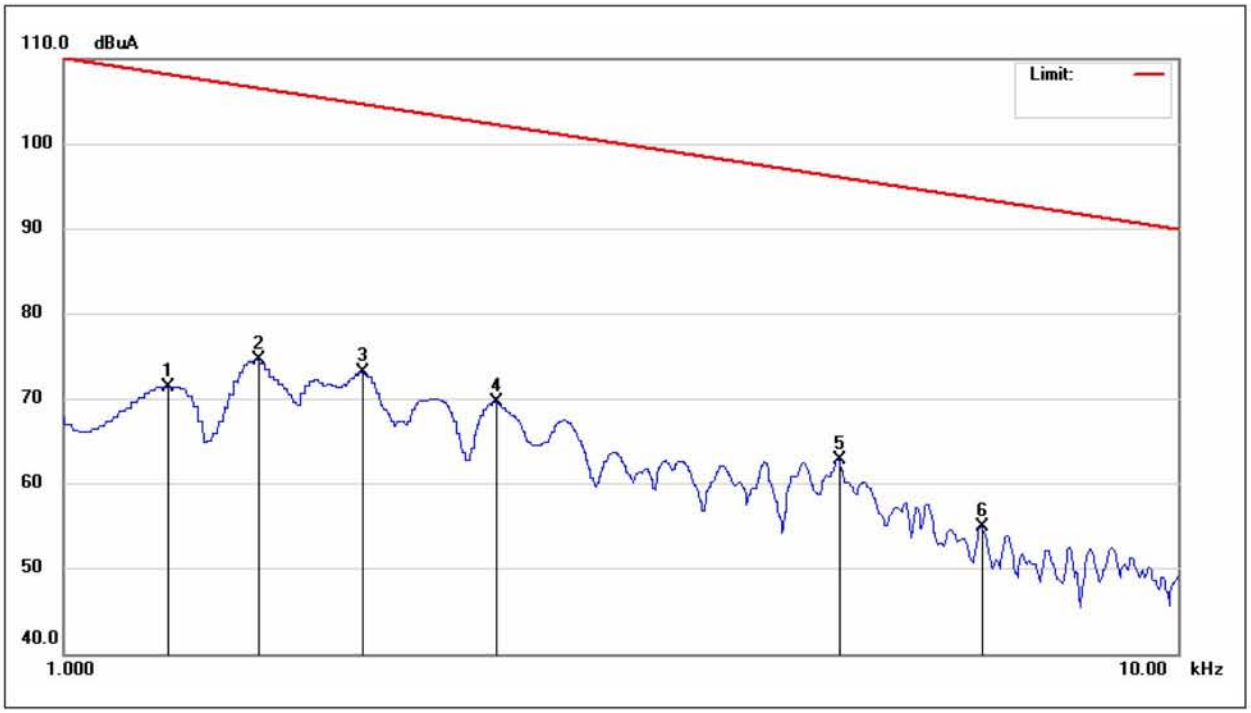
No.	Frequency	Reading	Factor	Result	Limit	Margin	Detector	P/F	Remark
	(KHz)	(dBuA)	(dB)	(dBuA)	(dBuA)	(dB)			
1	0.0590	45.95	66.02	111.97	110.00	1.97	peak	--	Main wave
2	0.1790	33.23	56.33	89.56	110.00	-20.44	peak	P	
3	0.3000	32.71	53.02	85.73	110.00	-24.27	peak	P	
4	0.4200	26.13	50.46	76.59	110.00	-33.41	peak	P	

5	0.5390	29.22	48.53	77.75	110.00	-32.25	peak	P	
6	0.6600	24.62	47.84	72.46	110.00	-37.54	peak	P	
7	0.7800	16.18	47.14	63.32	110.00	-46.68	peak	P	
8	0.9000	25.91	46.45	72.36	110.00	-37.64	peak	P	

Note: For AC applications, this requirement is applicable starting at the second harmonic of the EUT power frequency.

1kHz-10kHz-L1

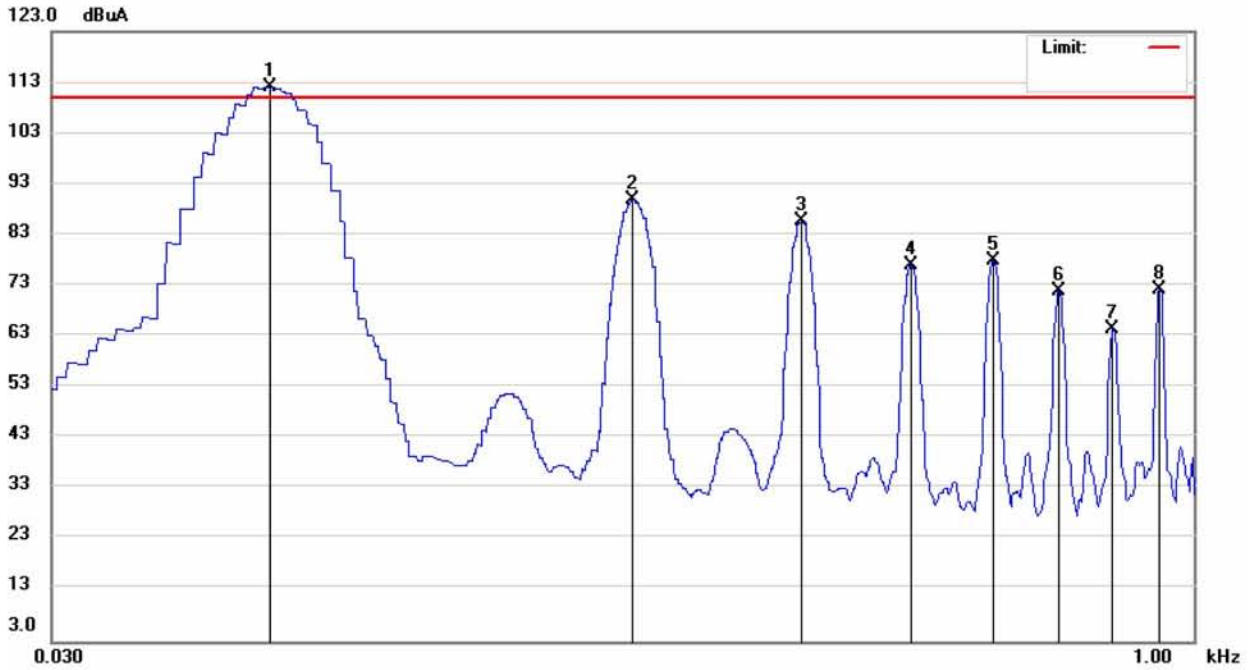
Job No.:	**90626003**	**Polarization:**	**N**
Standard:	**MIL-STD-461E/F CE101 Navy &army(above 28V)**	**Power Source:**	**AC 120V/60Hz**
Test item:	**Conduction Test**	**Date:**	**2009/8/24**
Temp.(℃)/Hum.(%):	**22(℃)/51%**	**Time:**	**上午 11:29:25**
Company:	**iTech Company LLC**	**Engineer Signature:**	**Chris**
Trade Name:	**iTech**	**Distance:**	**5cm**
Model:	**WMRM920-PIP**	**RBW: 0.1kHz**	**VBW: 0.1kHz**
Description:	**Dell PC+ VGA cable are sealed by copper foil tape**		



No.	Frequency (KHz)	Reading (dBuA)	Factor (dB)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector	P/F	Remark
1	1.2400	25.90	45.56	71.46	108.13	-36.67	peak	P	
2	1.4950	29.28	45.22	74.50	106.51	-32.01	peak	P	
3	1.8550	28.37	44.75	73.12	104.63	-31.51	peak	P	
4	2.4400	25.13	44.48	69.61	102.25	-32.64	peak	P	
5	4.9600	18.81	44.02	62.83	96.09	-33.26	peak	P	
6	6.6550	10.97	43.97	54.94	93.54	-38.60	peak	P	

30Hz-1kHz-L2

Job No.:	**90626003**	**Polarization:**	**N**
Standard:	**MIL-STD-461E/F CE101 Navy &army(above 28V)**	**Power Source:**	**AC 120V/60Hz**
Test item:	**Conduction Test**	**Date:**	**2009/8/24**
Temp.(℃)/Hum.(%):	**22(℃)/51%**	**Time:**	**上午 11:35:33**
Company:	**iTech Company LLC**	**Engineer Signature:**	**Chris**
Trade Name:	**iTech**	**Distance:**	**5cm**
Model:	**WMRM920-PIP**	**RBW: 0.01kHz**	**VBW: 0.01kHz**
Description:	**Dell PC+ VGA cable are sealed by copper foil tape**		

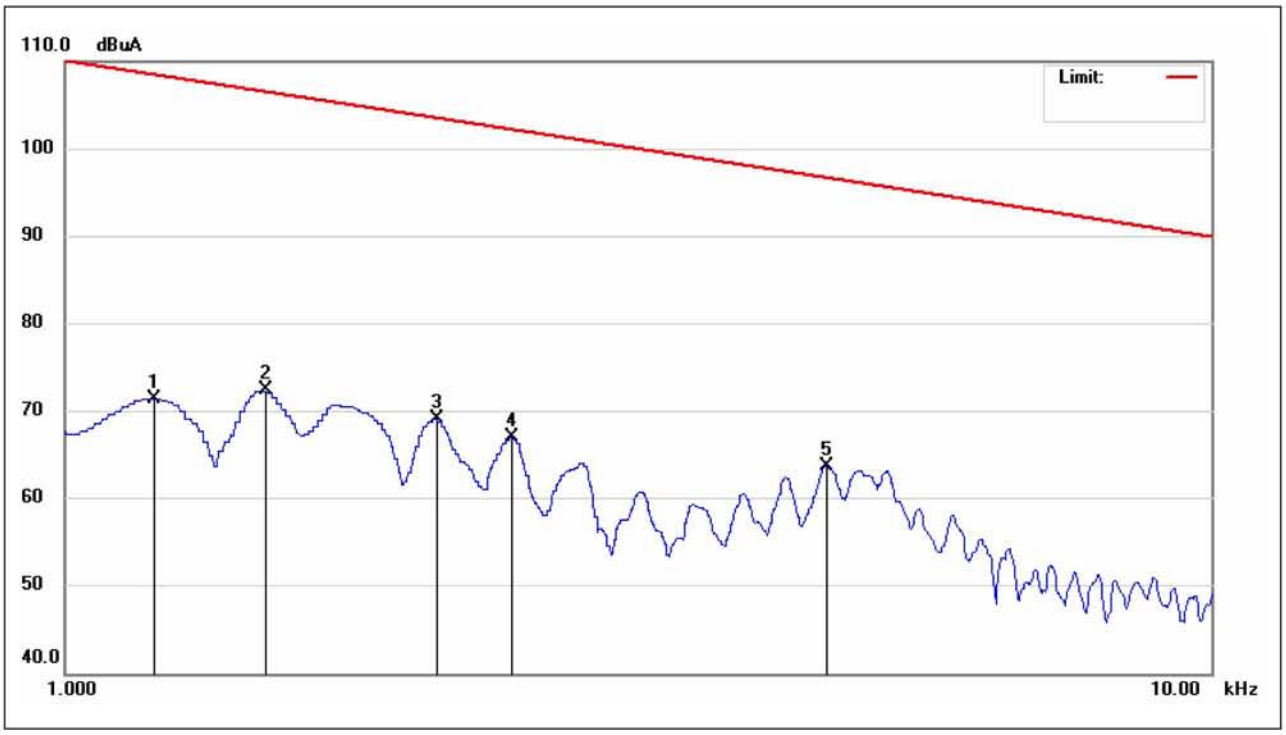


No.	Frequency (KHz)	Reading (dBuA)	Factor (dB)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector	P/F	Remark
1	0.0590	46.07	66.02	112.09	110.00	2.09	peak	--	Main wave
2	0.1790	33.49	56.33	89.82	110.00	-20.18	peak	P	
3	0.3000	32.55	53.02	85.57	110.00	-24.43	peak	P	
4	0.4200	26.37	50.46	76.83	110.00	-33.17	peak	P	
5	0.5390	29.35	48.53	77.88	110.00	-32.12	peak	P	
6	0.6600	24.04	47.84	71.88	110.00	-38.12	peak	P	
7	0.7800	17.35	47.14	64.49	110.00	-45.51	peak	P	
8	0.9000	25.68	46.45	72.13	110.00	-37.87	peak	P	

Note: For AC applications, this requirement is applicable starting at the second harmonic of the EUT power frequency.

1kHz-10kHz-L2

Job No.:	**90626003**	**Polarization:**	**N**
Standard:	**MIL-STD-461E/F CE101 Navy &army(above 28V)**	**Power Source:**	**AC 120V/60Hz**
Test item:	**Conduction Test**	**Date:**	**2009/8/24**
Temp.(℃)/Hum.(%):	**22(℃)/51%**	**Time:**	**上午 11:33:51**
Company:	**iTech Company LLC**	**Engineer Signature:**	**Chris**
Trade Name:	**iTech**	**Distance:**	**5cm**
Model:	**WMRM920-PIP**	**RBW: 0.1kHz**	**VBW: 0.1kHz**
Description:	**Dell PC+ VGA cable are sealed by copper foil tape**		



No.	Frequency	Reading	Factor	Result	Limit	Margin	Detector	P/F	Remark
	(KHz)	(dBuA)	(dB)	(dBuA)	(dBuA)	(dB)			
1	1.1950	25.80	45.61	71.41	108.45	-37.04	peak	P	
2	1.4950	27.16	45.22	72.38	106.51	-34.13	peak	P	
3	2.1100	24.55	44.54	69.09	103.51	-34.42	peak	P	
4	2.4550	22.50	44.48	66.98	102.20	-35.22	peak	P	
5	4.6150	19.61	44.08	63.69	96.72	-33.03	peak	P	

8. APPENDIX I
PHOTOGRAPHS OF TEST SETUP

CE101, conducted emissions, power leads, 30 Hz to 10 kHz