CERTiTEK

CERTiTEK Standards Laboratory Co., Ltd.
386-1, Ho-Dong, Yongin-City, Kyungki-Do, Korea 449-100
Tel: +82-31-339-9970 Fax: +82-31-339-9855
http://www.certitek.com/

EMC TEST REPORT For FCC

Test Report No.	:	2005090022
Date of Issue	:	September 21, 2005
FCC ID	:	RLXELLIPSIS
Model/Type No.	:	Ellipsis
Kind of Product	:	All-in-One PC(Computer)
Applicant	:	IDnet Co., Ltd.
Applicant Address	:	3F Hong Pa Building 712 Jegi-dong Dongdaemun-Gu, Seoul, Korea
Manufacturer	:	IDnet Co., Ltd.
Manufacturer Address	:	3F Hong Pa Building 712 Jegi-dong Dongdaemun-Gu, Seoul, Korea
Contact Person	:	Seong-Dong, Kang (Director)
Telephone	:	+82–2–3295-1155
Received Date	:	July 25, 2005
Test period	:	Start : September 5, 2005 End : September 6, 2005
Test Results	:	☒ **In Compliance** ☐ **Not in Compliance**

The test results presented in this report relate only to the object tested.

CERTiTEK Standards Laboratory Co., Ltd. is accredited by Korea Laboratory Accreditation Scheme (KOLAS) which signed the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the above test item(s) and test method(s).

Tested by

Eun-Won, Lee
EMC Test Engineer
Date: September 21, 2005

Reviewed by

James Hong
EMC Technical Manager
Date: September 21, 2005

REPORT REVISION HISTORY

Date	Revision	Page No
September 21, 2005	Issued (2005090022)	All

This report shall not be reproduced except in full, without the written approval of CERTiTEK Standards Laboratory Co., Ltd. This document may be altered or revised by CERTiTEK Standards Laboratory Co., Ltd. personnel only, and shall be noted in the revision section of the document. Any alteration of this document not carried out by CERTiTEK Standards Laboratory Co., Ltd. will constitute fraud and shall nullify the document.

TABLE OF CONTENTS

1.0 General Product Description

1.0.1 Tested Equipment

☒ Unless otherwise indicated, all tests were conducted on Model Ellipsis.
☐ Tests performed on Model _____ were considered to be representative of Model(s) _____.

1.0.2 Equipment Size, Mobility and Identification

Dimensions:	340(L) by 75(W) by 390(H)	☒ mm ☐ inch
Mobility:	☐ Hand-held ☒ Table-top ☐ Built-in	
	☐ Traveling ☐ Floor-standing	
Serial No.:	Prototype	

1.0.3 Electrical Ratings

Adaptor	Input:	100-240 Vac, 50-60 Hz, 1.5 A
	Output:	12 Vdc, 15 A, 180 W
EUT	Input:	12 Vdc
	Output:	-

1.0.4 Test Voltage & Frequency

Unless indicated otherwise on the individual data sheet or test results, the test voltage and frequency was as indicated below.

Voltage:	120 Vac
Frequency:	60 Hz

1.0.5 Clock & Other Frequencies Utilized

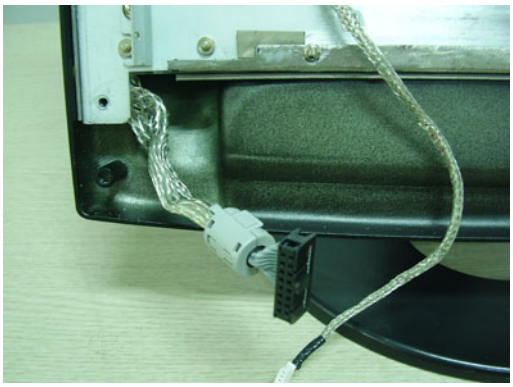
14.318 MHz, 24.576 MHz, 25 MHz, 28.6363 MHz, 32.768 MHz, 133 MHz, 533 MHz, 2 GHz

1.1 Model Differences

Not applicable

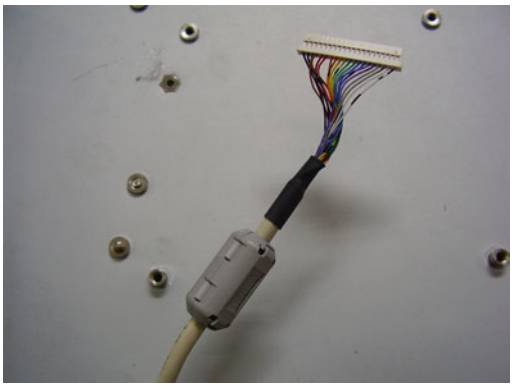
1.2 Device Modifications

The following modifications were necessary for compliance:



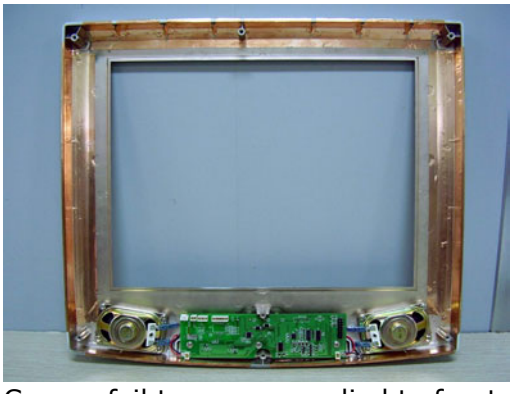
Core location	Manufacturer	Part No.
USB Cable	TDK Corporation	ZCAT1518-0730

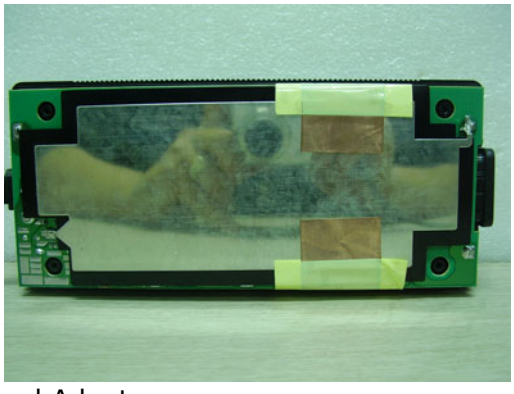
A Ferrite Core is applied to the cable.
The cable is connected between main board and Front panel



Core location	Manufacturer	Part No.
USB Cable	TDK Corporation	ZCAT1325-0530

A Ferrite Core is applied to the cable.
The cable is connected between main board and LCD panel.





Copper foil tapes are applied to front panel and Adaptor.

1.3 EUT Configuration(s)

See Appendix A for individual test set-up configuration(s). The following peripheral devices and/or interface cables were connected during the measurement:

☒ Peripheral Devices

Device	Manufacturer	Model No.	Serial No.	FCC ID or DoC
Adaptor	Hipro Electronics(Dongguan)Co., Ltd.	HP-AU180D43	151581511R03000022	-
Headset	-	-	-	-
Monitor	SAMSUNG	PG17HS	P0133H3NN703187	DoC
DVD Player	SAMSUNG	DVD-709	61KN400749	-
External hard drive	MAPOWER Electronics Co., Ltd.	MAP-S21X	C497274	DoC
Keyboard (PS/2 type)	Hewlett-Packard Company	5219	BN5017686	DoC
Mouse (PS/2 type)	KYE SYSTEMS CORP.	N3 Optical	K045205991	DoC
Mouse (USB type)	SAMSUNG	OMS3CB	0303009881	DoC
Mouse (USB type)	SAMSUNG	OMS3CB	0303009882	DoC
Mouse (USB type)	SAMSUNG	OMS3CB	0303009888	DoC
Mouse (USB type)	SAMSUNG	OMS3CB	0303009887	DoC
Mouse (USB type)	SAMSUNG	OMS3CB	0303009872	DoC
Mouse (Serial type)	SAMSUNG	BASM1	4476257-20000	DoC
Mouse (Serial type)	SAMSUNG	BASM1	4475951-20000	DoC
Printer (Parallel type)	Seiko Epson Corp.	Stylus Color 460	BWCE136524	DoC

☒ Cable Description

#	Description	Ferrite Core	Length (m)	Other Details
1	Adaptor Power Cable, Unshielded	No	1.8	Connect to AC power
2	DC In Cable, Unshielded	Yes	1.2	Between the EUT and Adaptor
3	IEEE 1394 Cable, Shielded	No	1.8	Between the EUT and External hard drive
4	Mouse Cable, Shielded	No	1.5	USB type
5	Mouse Cable, Shielded	No	1.5	USB type
6	Mouse Cable, Shielded	No	1.5	USB type
7	Mouse Cable, Shielded	No	1.5	USB type
8	Mouse Cable, Shielded	No	1.5	USB type
9	Printer Cable, Shielded	No	1.5	Between the EUT and Printer
10	AC power Cable, Unshielded	No	1.8	Connect to AC power
11	Video In Cable, Unshielded	No	1.5	Between the EUT and DVD Player
12	Audio In Cable, Unshielded	No	1.5	Between the EUT and DVD Player
13	Sound Out Cable, Unshielded	No	1.8	Between the EUT and Headset
14	MIC Cable, Unshielded	No	1.8	Between the EUT and Headset
15	Mouse Cable, Shielded	No	1.8	Serial type
16	Mouse Cable, Shielded	No	1.8	Serial type
17	Mouse cable, Shielded	No	1.5	PS/2 type
18	Keyboard cable, Shielded	No	1.5	PS/2 type
19	Monitor cable, Shielded	Yes	1.5	Between the EUT and Monitor
20	AC power Cable, Unshielded	No	1.8	Connect to AC power
21	AC power Cable, Unshielded	No	1.8	Connect to AC power
22	LAN Cable, Unshielded	No	20.0	Between the EUT and Ethernet Heb (Outside)

1.4 Test Software

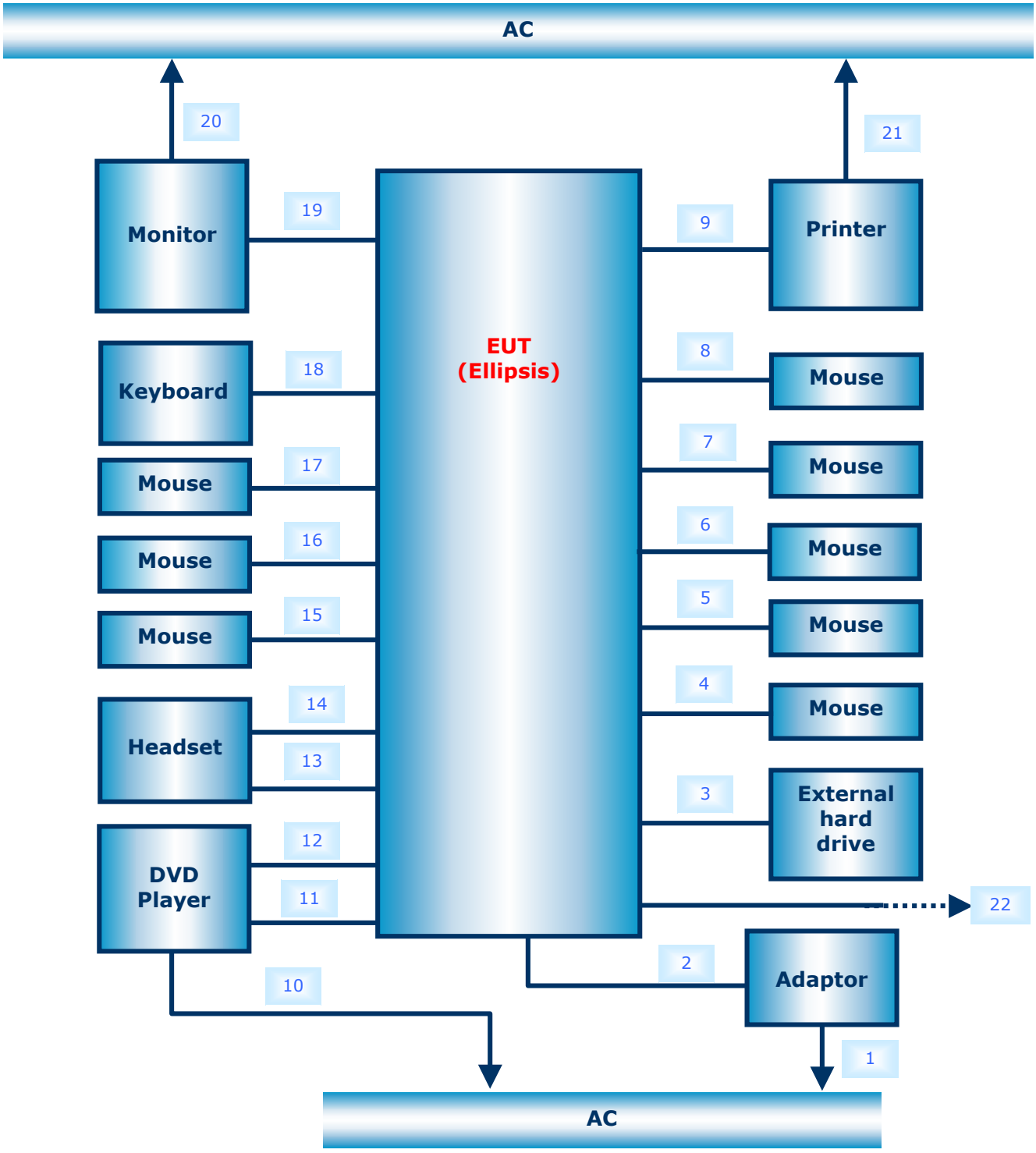
☒ EMC Test V 1.0
☐ Display Test Patterns – V1.5
☒ Ping.exe
☐ Not applicable

1.5 EUT Operating Mode(s)

Equipment under test was operated during the measurement under the following conditions:

☐ Standby
☐ Read / Write
☐ Display circles pattern
☒ Practice operation –
1) Communication mode via LAN
2) HDD, CD-ROM execution through a read-write-erase sequence
3) Music playing mode
4) "H" Scrolling display

1.6 Configuration



1.7 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less. All test equipment calibrations are traceable to the Korea Research Institute of Standards and Science (KRISS), therefore, all test data recorded in this report is traceable to KRISS.

1.8 Test Facility

The measurement facility is located at 386-1, Ho-Dong, Yongin-City, Kyungki-Do, Korea 449-100. The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

1.9 Measurement Procedure

Preliminary AC power line conducted emissions tests were performed shielded room. To find worst mode, several typical mode and typical cable position were tested.
Final AC power line conducted emissions test was performed shielded room. (location is same as Preliminary test)
Based on the preliminary tests of the EUT, final test was proceeded worst case test mode and cable configuration.

Preliminary radiated emissions test were performed anechoic chamber (Distance of antenna and EUT was 3 m). To find worst mode, several typical mode and typical cable position were tested and peak level and frequency were recorded.

Final radiated emissions test was performed Open Area Test Site. Based on the preliminary tests of the EUT, final test was proceeded worst case test mode and cable configuration.

* Measurement procedures was In accordance with ANSI C63.4-2001 7.2.3, 7.2.4, 8.3.1.1, 8.3.1.2

1.10 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
USA	**FCC**	3 & 10 meter Open Area Test Sites and one conducted site to perform FCC Part 15/18 measurements.	93250
JAPAN	**VCCI**	10 meter Open Area Test Site and one conducted site.	R-948, C-986
KOREA	**MIC**	EMI (10 meter Open Area Test Site and two conducted sites) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	No. 51, KR0025
International	**KOLAS**	EMC	
Europe	**GLAS**	EMC EN 55011, EN 55022, EN 61000-6-3, EN 61000-6-4, EN 61000-3-2, EN 61000-3-3, EN 61000-6-1, EN 61000-6-2, EN 50130-4, EN 55024, EN 61204-3, EN 60601-1-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11	No.13000796-02

2.0 Emissions Test Regulations

The emissions tests were performed according to following regulations:

☐ EN 61000-6-3:2001	☐ Class A	☐ Class B
☐ EN 61000-6-4:2001	☐ Class A	☐ Class B
☐ EN 50083-2:2001		
☐ EN 55011:1998 +A1:1999	☐ Group 1 ☐ Class A	☐ Group 2 ☐ Class B
☐ EN 55011:1998 +A1:1999 +A2:2002	☐ Group 1 ☐ Class A	☐ Group 2 ☐ Class B
☐ EN 55013:1990 +A12:1994 +A13:1996 +A14:1999 ☐ EN 55013:2001		
☐ EN 55014-1:2000 ☐ EN 55014-1:2000 +A1:2001		
☐ EN 55015:2000 ☐ EN 55015:2000 +A1:2001		
☐ EN 55022:1994 +A1:1995 +A2:1997	☐ Class A	☐ Class B
☐ EN 55022:1998	☐ Class A	☐ Class B
☐ EN 55022:1998 +A1:2000	☐ Class A	☐ Class B
☐ EN 55022:1998 +A1:2000 +A2:2003	☐ Class A	☐ Class B
☐ EN 61000-3-2:2000		
☐ EN 61000-3-3:1995 +A1:2001		
☐ VCCI V-3/2004.04	☐ Class A	☐ Class B
☐ AS/NZS 3548:1995 +A1:1997 +A2:1997	☐ Class A	☐ Class B
☒ FCC Part 15 Subpart B	☐ Class A	☒ Class B
☒ CISPR 22:1997	☐ Class A	☒ Class B
☐ CISPR 22:1997 +A1:2000	☐ Class A	☐ Class B

The unit was tested to CISPR 22 and complied with the alternate methods allowed by FCC under paragraphs 15.107 and 15.109.

2.1 Conducted Voltage Emissions

Test Date
September 5, 2005

Test Location
Shielded Room

Test Equipment

	Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
☒	Field Strength Meter	Rohde & Schwarz	ESHS30	828144/002	2006-02-01
☒	LISN	EMCO	3825/2	9607-2575	2006-09-03
☒	LISN	EMCO	3825/2	9409-2246	2006-09-03

Frequency Range of Measurement
150 kHz to 30 MHz

Test Results
The requirements are:

☒ MET

Frequency (MHz)	Measured Data (dBuV)	Margin (dB)	Remark
10.71	46.5	13.5	Quasi-peak

☐ NOT MET

Frequency (MHz)	Measured Data (dBuV)	Margin (dB)	Remark

☐ NOT APPLICABLE

Remarks
See Appendix A for test data.

2.2 Radiated Electric Field Emissions

Test Date
September 6, 2005

Test Location
☒ Testing was performed at a test distance of 3 & 10 meter Open Area Test Site

Test Equipment

	Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
☒	Field Strength Meter	Rohde & Schwarz	ESVS30	826638/008	2006-04-14
☒	ULTRA Broadband ANT	Rohde & Schwarz	HL562	361324/014	2006-05-27
☒	Double-Ridged wave Horn ANT	EMCO	3115	9811-5607	2006-02-29
☒	Pre-Amp	Agilent	8449B	3008A01535	2006-03-29
☒	EMC Analyzer	Agilent	E7403A	MY42000054	2006-01-15
☒	Spectrum Analyzer	Hewlett-Packard Company	8564E	3551A00410	2005-11-08

Frequency Range of Measurement
30 MHz to 1 GHz (10 meter Open Area Test Site)
1 GH to 10 GHz (3 meter Open Area Test Site)

Test Results
The requirements are:

(30 MHz to 1 GHz)
☒ MET

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
996.25	32.3	4.7	Quasi-peak

(1 GHz to 10 GHz)
☒ MET

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
1991.75	50.7	3.3	Quasi-peak

☐ NOT MET

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark

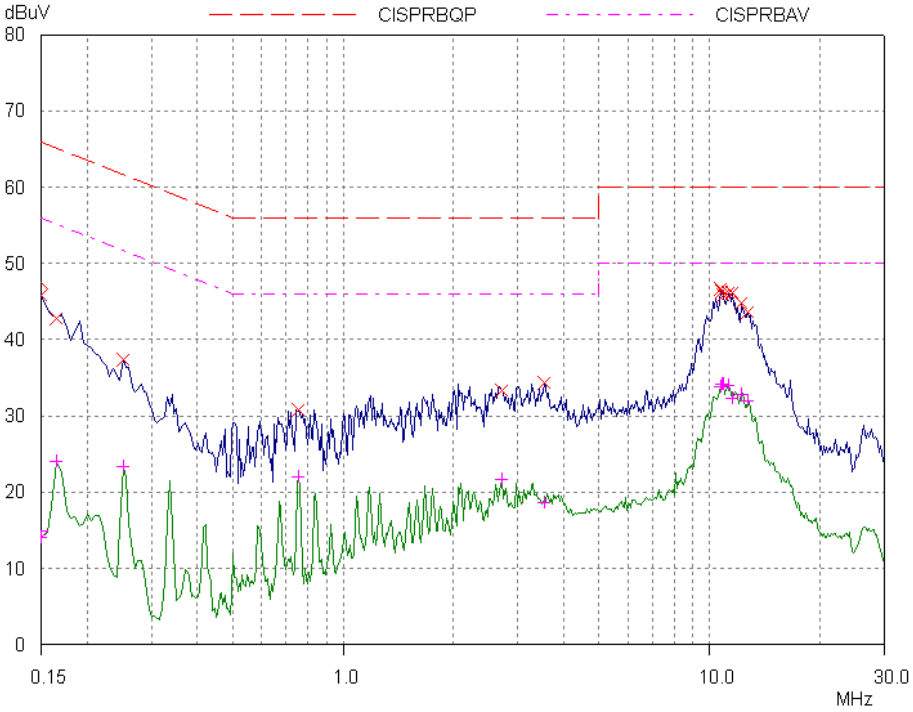
☐ NOT APPLICABLE

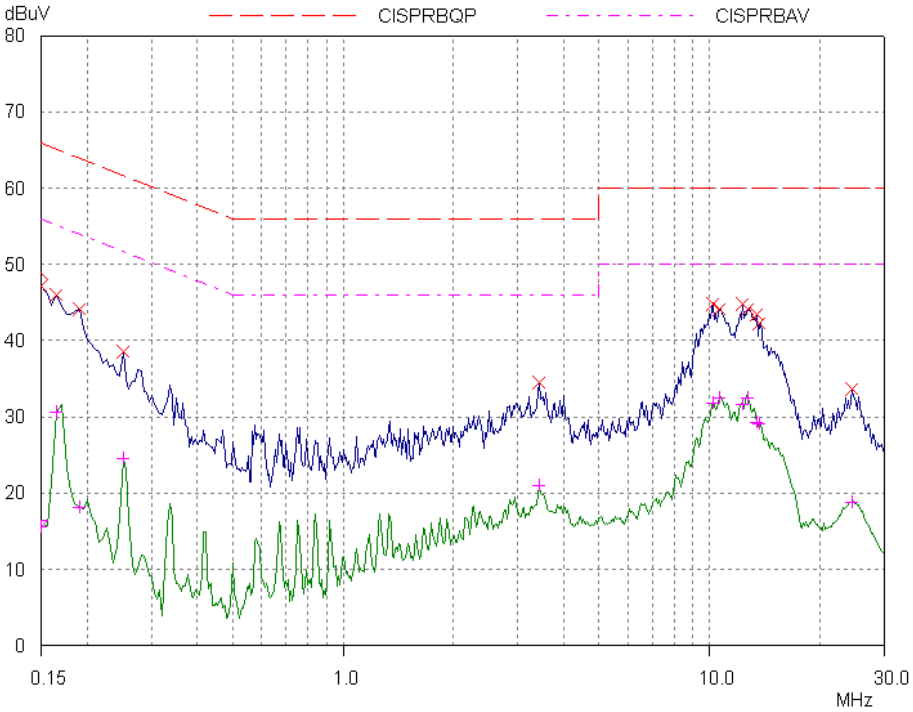
Remarks
See Appendix A for test data

APPENDIX A – TEST DATA

Conducted Voltage Emissions

Frequency	Correction Factor		Line	Quasi-peak				Average			
				Limit	Reading	Result	Margin	Limit	Reading	Result	Margin
[MHz]	LISN	Cable		[dBuV]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dB]
0.15	0.1	0.1	N	66.0	46.9	47.1	18.9	56.0	15.3	15.5	40.5
10.71	0.4	0.2	H	60.0	45.9	46.5	13.5	50.0	33.2	33.8	16.2
10.80	0.4	0.2	H	60.0	45.6	46.2	13.8	50.0	33.5	34.1	15.9
11.25	0.4	0.2	H	60.0	45.5	46.1	13.9	50.0	33.3	33.9	16.1
11.45	0.4	0.2	H	60.0	45.5	46.1	13.9	50.0	31.7	32.3	17.7
13.35	0.5	0.2	N	60.0	42.7	43.4	16.6	50.0	28.3	29.0	21.0





Radiated Electric Field Emissions

(30 MHz to 1 GHz)

Frequency [MHz]	Reading [dBuV/m]	Pol.	Height [m]	Correction Factor		Limits [dBuV/m]	Result [dBuV/m]	Margin [dB]
				Antenna	Cable			
77.91	15.6	V	1.0	7.4	1.6	30.0	24.6	5.4
597.00	8.9	H	4.0	17.1	4.7	37.0	30.7	6.3
763.75	5.4	H	1.8	19.1	5.3	37.0	29.8	7.2
863.25	5.1	H	4.0	19.8	5.7	37.0	30.6	6.4
959.75	2.0	V	2.0	20.7	6.2	37.0	28.9	8.1
996.25	4.7	H	2.3	21.2	6.4	37.0	32.3	4.7

(1 GHz to 10 GHz)

Frequency [MHz]	Reading [dBuV/m]	Pol.	Height [m]	Correction Factor		Limits [dBuV/m]	Result [dBuV/m]	Margin [dB]
				Antenna	Cable			
1062.25	17.6	H	3.8	24.50	2.75	54.0	44.8	9.2
1197.00	19.3	H	2.5	24.50	2.75	54.0	46.5	7.5
1230.04	19.2	H	3.5	25.40	2.30	54.0	46.9	7.1
1263.01	20.3	H	4.0	25.40	2.30	54.0	48.0	6.0
1296.25	19.1	H	3.0	25.40	2.30	54.0	46.8	7.2
1991.75	16.1	V	1.0	27.50	7.08	54.0	50.7	3.3