Test Report of FCC CFR 47 Part 15 Subpart B

On Behalf of

PANODIC ELECTRIC (HONG KONG) LIMITED

FCC ID:	**ZU5-MC300**
Product Description:	**Home Digital Media Center**
Model No.:	**MC300**
Supplementary Model:	**N/A**
Brand Name:	**CIK**
Prepared for:	**PANODIC ELECTRIC (HONG KONG) LIMITED** Unit 1703A,17/F,Nanyang Plaza,57 Hung To Road,Kwun Tong, Kowloon,Hong Kong
Prepared by:	**Shenzhen Bontek Compliance Testing Laboratory Co., Ltd.** 1/F, Block East H-3, OCT Eastern Ind. Zone, Qiaocheng East Road, Nanshan, Shenzhen, China Tel: 86-755-86337020 Fax: 86-755-86337028
Report No.:	BCT13CR084E -1
Issue Date:	June 26, 2013
Test Date:	March 27~June 26, 2013

Tested by: Lion Cai

Reviewed by: Kendy Wang

Approved by: Tony Wu

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	**PANODIC ELECTRIC (HONG KONG) LIMITED**
Address of Applicant:	Unit 1703A,17/F,Nanyang Plaza,57 Hung To Road,Kwun Tong, Kowloon,Hong Kong
Manufacturer:	**PANODIC ELECTRIC(SHENZHEN) LIMITED**
Address of Manufacturer:	C.&D/bl.Zhengchangda Ind.Park,Jian'an Road, Tangwei, FuYong, Baoan Dist.,Shenzhen, China

General Description of E.U.T

Items	Description
EUT Description:	Home Digital Media Center
Trade Name:	CIK
Model No.:	MC300
Supplementary Model:	N/A
Frequency Band:	IEEE 802.11b/g, IEEE 802.11n HT20 (ISM Band) : 2412MHz～2462MHz, IEEE 802.11n HT40 (ISM Band) : 2422MHz～2452MHz
Channel Spacing:	IEEE 802.11b/g, 802.11n HT20/HT40: 5MHz
Number of Channels:	IEEE 802.11b/g, 802.11n HT20:11 Channels IEEE 802.11n HT40 :7 Channels
Transmit Data Rate:	maximum of 150Mbps
Type of Modulation:	IEEE 802.11b：DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g：OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20/40：OFDM (64QAM, 16QAM, QPSK, BPSK)
Antenna Type:	Built-in Antenna
Antenna Gain:	2.0dBi
Power Supply:	DC12V 1.5A From Adapter
Adapter Information:	Model:SUN-1200150 Input:100-240V 50/60Hz 0.6A Max Output: 12VDC 1500mA

** The test data gathered are from the production sample provided by the manufacturer.*

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1.2 Test Standards

The report of EUT is prepared in accordance with FCC Rules and Regulations Part 15 Subpart B
The objective of the manufacturer is to demonstrate compliance with the described above standards.

1.3 Test Facility

All measurement required was performed at laboratory of Shenzhen Bontek Compliance Testing Laboratory Co., Ltd. at 1/F, Block East H-3, OCT Eastern Ind. Zone, Qiaocheng East Road, Nanshan, Shenzhen, China.

The test facility is recognized, certified, or accredited by the following organizations:

FCC – Registration No.: 338263

Shenzhen Bontek Compliance Testing Laboratory Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 338263, March 03, 2011.

IC Registration No.: 7631A

The 3m alternate test site of Shenzhen Bontek Compliance Testing Laboratory Co., Ltd. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.: 7631A on January 25, 2011.

CNAS - Registration No.: L3923

Shenzhen Bontek Compliance Testing Laboratory Co., Ltd. to ISO/IEC 17025:25 General Requirements for the Competence of Testing and Calibration Laboratories(CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing. The acceptance letter from the CNAS is maintained in our files: Registration: L3923,March 22,2012.

TUV - Registration No.: UA 50242657-0001

Shenzhen Bontek Compliance Testing Laboratory Co., Ltd. An assessment of the laboratory was conducted according to the"Procedures and Conditions for EMC Test Laboratories"with reference to EN ISO/IEC 17025 by a TUV Rheinland auditor. Audit Report NO. 17010783-003.

2. SYSTEM TEST CONFIGURATION

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

2.2 Support Equipments

The calibrated antennas used to sample the radiated field strength are mounted on a non-conductive, motorized antenna mast 3 or 10 meters from the leading edge of the turntable.

Support equipments or special accessories in test configuration：

AUX Description:	Manufacturer	Model No.	Certificate	CABLE
Host Computer	Dell	78MD82X	CE, FCC	1.5m Unshielded Power Cord
Monitor	Dell	E178Pc	CE, FCC	1.5m Unshielded Power Cord 1.8m shielded data Cable with core
Keyboard	Dell	L100	CE, FCC	1.8m shielded data Cable with core
Mouse	Dell	OCJ339	CE, FCC	1.8m shielded data Cable with core
Printer	EPSON	P330A	CE, FCC	1.2m Unshielded Power Cord 1.5m shielded data Cable

2.3 General Test Procedures

Conducted Emissions:The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 7.1 of ANSI C63.4-2009 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak detector mode.

Radiated Emissions: The EUT is a placed on as turntable, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4-2009.

2.4 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Parameter	Uncertainty
Power Line Conducted Emission	+/- 2.3 dB
Radiated Emission	+/- 3.4 dB

Uncertainty figures are valid to a confidence level of 95%.

2.5 List of Measuring Equipments Used

Test equipments list of Shenzhen Bontek Compliance Testing Laboratory Co., Ltd.

No.	Instrument no.	Equipment	Manufacturer	Model No.	S/N	Last Calculator	Due Calculator
1	BCT-EMC001	EMI Test Receiver	R&S	ESCI	100687	2013-4-16	2014-4-17
2	BCT-EMC002	EMI Test Receiver	R&S	ESPI	100097	2012-11-1	2013-10-31
3	BCT-EMC003	Amplifier	HP	8447D	1937A02492	2013-4-19	2014-4-18
4	BCT-EMC004	Single Power Conductor Module	R&S	NNBM 8124	242	2013-4-19	2014-4-18
5	BCT-EMC005	Single Power Conductor Module	R&S	NNBM 8124	243	2013-4-19	2014-4-18
6	BCT-EMC006	Power Clamp	SCHWARZBECK	MDS-21	3812	2012-11-5	2013-11-4
7	BCT-EMC007	Positioning Controller	C&C	CC-C-1F	MF7802113	N/A	N/A
8	BCT-EMC008	`Electrostatic Discharge Simulator	TESEQ	NSG437	125	2012-11-2	2013-11-1
9	BCT-EMC009	Fast Transient Burst Generator	SCHAFFNER	MODULA6150	34572	2013-4-16	2014-4-17
10	BCT-EMC010	Fast Transient Noise Simulator	Noiseken	FNS-105AX	10501	2012-6-26	2013-6-25
11	BCT-EMC011	Color TV Pattern Genenator	PHILIPS	PM5418	TM209947	N/A	N/A
12	BCT-EMC012	Power Frequency Magnetic Field Generator	EVERFINE	EMS61000-8K	608002	2013-4-16	2014-4-17
14	BCT-EMC014	Capacitive Coupling Clamp	TESEQ	CDN8014	25096	2013-4-16	2014-4-17
15	BCT-EMC015	High Field Biconical Antenna	ELECTRO-METRICS	EM-6913	166	2012-11-28	2013-11-27
16	BCT-EMC016	Log Periodic Antenna	ELECTRO-METRICS	EM-6950	811	2012-11-28	2013-11-27
17	BCT-EMC017	Remote Active Vertical Antenna	ELECTRO-METRICS	EM-6892	304	2012-11-28	2013-11-27
18	BCT-EMC018	TRILOG Broadband Test-Antenna	SCHWARZBECK	VULB9163	9163-324	2012-5-19	2014-5-18
19	BCT-EMC019	Horn Antenna	SCHWARZBECK	BBHA9120A	0499	2012-11-28	2013-11-27
20	BCT-EMC020	Teo Line Single Phase Module	SCHWARZBECK	NSLK8128	8128247	2012-11-1	2013-10-31
21	BCT-EMC021	Triple-Loop Antenna	EVERFINE	LLA-2	711002	2012-11-15	2013-11-14
22	BCT-EMC022	Electric bridge	Jhai	JK2812C	803024	N/A	N/A
23	BCT-EMC026	RF POWER AMPLIFIER	FRANKONIA	FLL-75	1020A1109	2012-4-17	2013-4-16
24	BCT-EMC027	CDN	FRANKONIA	CDN M2+M3	A3027019	2012-4-17	2013-4-16

25	BCT-EMC029	6DB Attenuator	FRANKONIA	N/A	1001698	2012-4-17	2013-4-16
26	BCT-EMC030	EM Injection clamp	FCC	F-203I-23mm	091536	2013-4-16	2014-4-17
27	BCT-EMC031	9kHz-2.4GHz signal generator 2024	MARCONI	10S/6625-99-457-8730	112260/042	2013-4-16	2014-4-17
28	BCT-EMC032	10dB attenuator	ELECTRO-METRICS	EM-7600	836	2013-4-16	2014-4-17
29	BCT-EMC033	ISN	TESEQ	ISN-T800	30301	2012-11-15	2013-11-14
30	BCT-EMC034	10KV surge generator	SANKI	SKS-0510M	048110003E 321	2012-11-01	2013-10-31
31	BCT-EMC035	HRMONICS&FLICK RE ANALYSER	VOLTECH	PM6000	200006700433	2012-11-20	2013-11-19
32	BCT-EMC036	Spectrum Analyzer	R&S	FSP	100397	2012-11-1	2013-10-31
33	BCT-EMC037	Broadband preamplifier	SCH WARZBECK	BBV9718	9718-182	2013-4-19	2014-4-18

3. SUMMARY OF TEST RESULTS

Standard	Test Items	Result
FCC Part 15 Subpart B	Conduction Emission, 0.15MHz to 30MHz	Pass
FCC Part 15 Subpart B	Radiation Emission, 30MHz to 1000MHz	Pass

4. TEST OF AC POWER LINE CONDUCTED EMISSION

4.1 Limit of AC Power Line Conducted Emission

Frequency Range (MHz)	Limits (dBuV)	
	Quasi-Peak	Average
0.150～0.500	66～56	56～46
0.500～5.000	56	46
5.000～30.00	60	50

4.2 EUT Setup

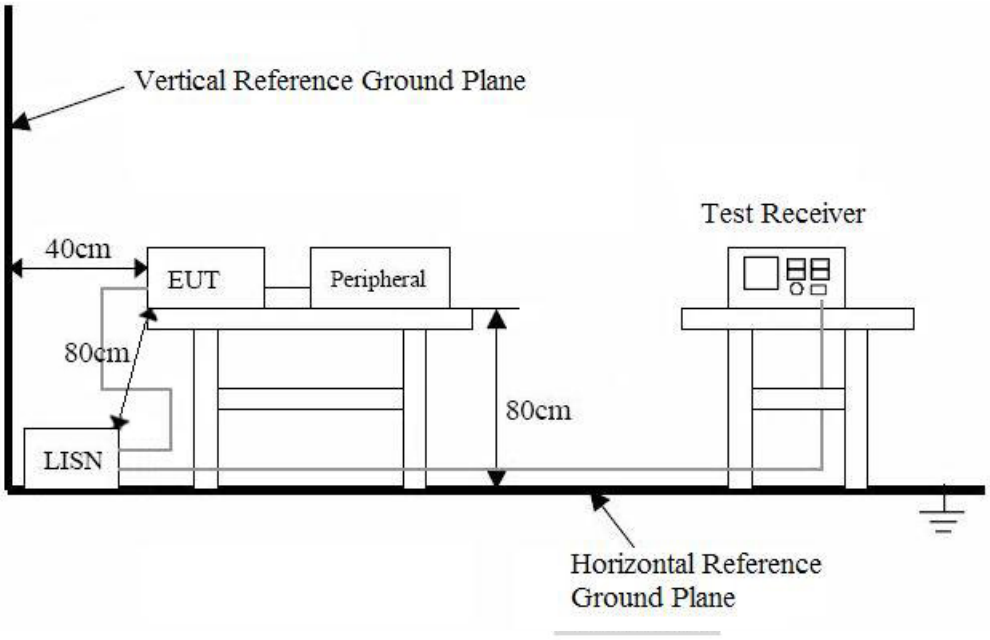
The setup of EUT is according with ANSI C63.4-2009 measurement procedure. The specification used was the FCC Rules and Regulations Part 15 Subpart B limits.

The EUT was placed center and the back edge of the test table.

The AV cables were draped along the test table and bundled to 30-40cm in the middle.

The spacing between the peripherals was 10 cm.

Maximum emission emitted from EUT was determined by manipulating the EUT, support equipment, interconnecting cables and varying the mode of operation and the levels in the final result of the test were recorded with the EUT running in the operating mode that maximum emission was emitted.



Remark: The EUT was connected to a 120VAC/ 60Hz power source.

4.3 Instrument Setup

The test receiver was set with the following configurations:

Test Receiver Setting:

Frequency Range……150 KHz to 30 MHz
Detector……..Peak & Quasi-Peak & Average
Sweep Speed……Auto
IF Band Width……..9 KHz

4.4 Test Procedure

During the conducted emission test, the EUT power cord was connected to the auxiliary outlet of the first Artificial Mains.

Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance using all installation combination.

All data was recorded in the peak detection mode. Quasi-peak and Average readings were only performed when an emission was found to be marginal (within -10 dBμV of specification limits). Quasi-peak readings are distinguished with a "QP". Average readings are distinguished with a "AV".

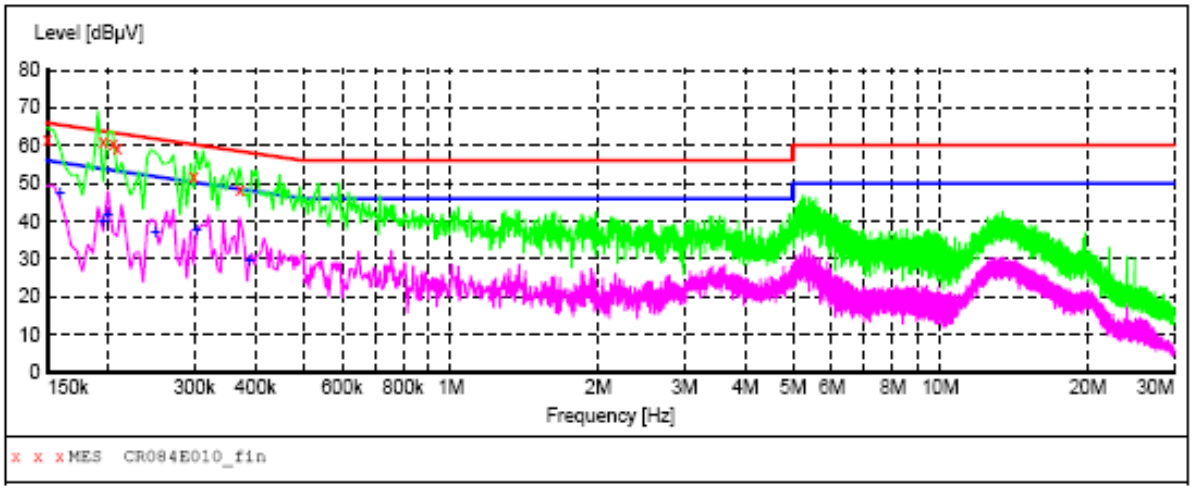
4.5 Test Result

Temperature (℃) : 22~23	EUT: Home Digital Media Center
Humidity (%RH): 50~54	M/N: MC300
Barometric Pressure (mbar): 950~1000	Operation Condition: Normal Operation

Conducted Emission:

EUT:	Home Digital Media Center
M/N:	MC300
Operating Condition:	Normal Operation
Test Site:	Shielded Room
Operator:	Yang
Test Specification:	AC 120V/60Hz for adapter
Comment:	L Line

SCAN TABLE: "Voltage(150K-30M)FIN"
Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "CR084E010_fin"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	61.50	13.4	66	4.5	QP	L1	GND
0.195000	61.30	11.5	64	2.5	QP	L1	GND
0.204000	60.20	11.3	63	3.2	QP	L1	GND
0.208500	59.30	11.3	63	4.0	QP	L1	GND
0.298500	51.60	11.0	60	8.7	QP	L1	GND
0.370500	48.60	10.8	59	9.9	QP	L1	GND

MEASUREMENT RESULT: "CR084E010_fin2"

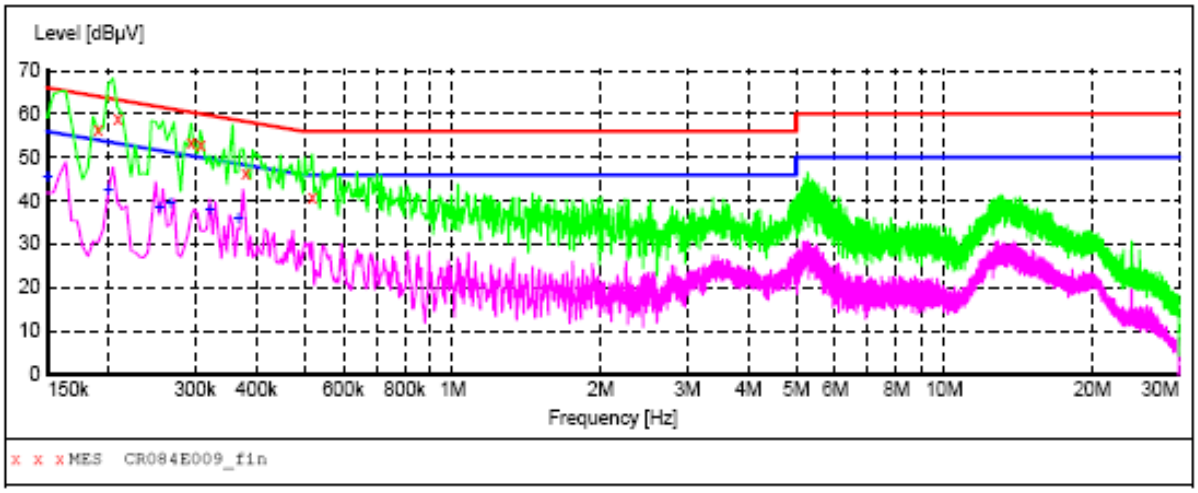
4/1/2013 10:39AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.159000	48.00	13.0	56	7.5	AV	L1	GND
0.195000	40.20	11.5	54	13.6	AV	L1	GND
0.199500	42.30	11.4	54	11.3	AV	L1	GND
0.249000	37.60	11.1	52	14.2	AV	L1	GND
0.303000	37.80	11.0	50	12.4	AV	L1	GND
0.388500	30.00	10.7	48	18.1	AV	L1	GND

Conducted Emission:

EUT:	Home Digital Media Center
M/N:	MC300
Operating Condition:	Normal Operation
Test Site:	Shielded Room
Operator:	Yang
Test Specification:	AC 120V/60Hz for adapter
Comment:	N Line

SCAN TABLE: "Voltage(150K-30M)FIN"
Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "CR084E009_fin"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.190500	56.40	11.7	64	7.6	QP	N	GND
0.208500	58.90	11.3	63	4.4	QP	N	GND
0.294000	53.50	11.0	60	6.9	QP	N	GND
0.307500	52.70	10.9	60	7.3	QP	N	GND
0.379500	46.30	10.7	58	12.0	QP	N	GND
0.519000	41.00	10.5	56	15.0	QP	N	GND

MEASUREMENT RESULT: "CR084E009_fin2"

4/1/2013 10:36AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	45.70	13.4	56	10.3	AV	N	GND
0.199500	42.60	11.4	54	11.0	AV	N	GND
0.253500	39.00	11.1	52	12.6	AV	N	GND
0.267000	39.60	11.1	51	11.6	AV	N	GND
0.321000	38.40	10.9	50	11.3	AV	N	GND
0.366000	36.20	10.8	49	12.4	AV	N	GND

5 - RADIATED DISTURBANCES

5.1 Limit of Radiated Disturbances

Frequency (MHz)	Distance (Meters)	Field Strengths Limits (dBμV/m)
30 ~ 88	3	40
88~216	3	43.5
216 ~ 960	3	46
960 ~ 1000	3	54

Note:
(1) The tighter limit shall apply at the edge between two frequency bands.
(2) Distance refers to the distance in meters between the test instrument antenna and the closest point of any part of the E.U.T.

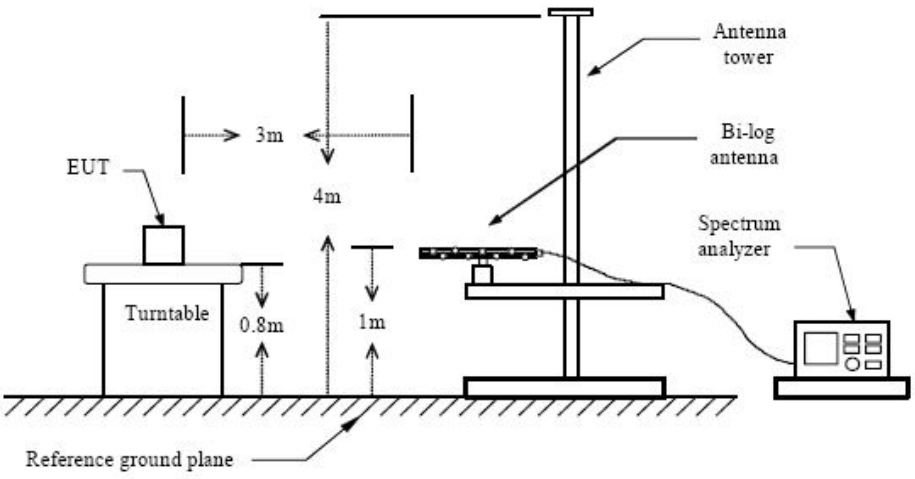
5.2 EUT Setup

The radiated emission tests were performed in the in the 3-meter anechoic chamber, using the setup accordance with the ANSI C63.4-2009. The specification used was the FCC Part 15 Subpart B limits.

The EUT was placed on the center of the test table.

Maximum emission emitted from EUT was determined by manipulating the EUT, support equipment, interconnecting cables and varying the mode of operation and the levels in the final result of the test were recorded with the EUT running in the operating mode that maximum emission was emitted.

Below 1 GHz



5.3 Test Receiver Setup

According to FCC Part 15 rule, the frequency was investigated from 30 to 1000 MHz. During the radiated emission test, the test receiver was set with the following configurations:

Test Receiver Setting:

Detector……..Peak & Quasi-Peak
IF Band Width……..120KHz
Frequency Range……30MHz to 1000MHz
Turntable Rotated……0 to 360 degrees

Antenna Position:

Height……1m to 4m
Polarity……...Horizontal and Vertical

5.4 Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the peak detection mode. Quasi-peak readings performed only when an emission was found to be marginal (within -10 dBμV of specification limits), and are distinguished with a "QP" in the data table.

5.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Indicated Reading + Antenna Factor + Cable Factor - Amplifier Gain

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dBμV means the emission is 7dBμV below the maximum limit for Subpart B. The equation for margin calculation is as follows:

Margin = Limit – Corr. Ampl.

5.6 Radiated Emissions Test Result

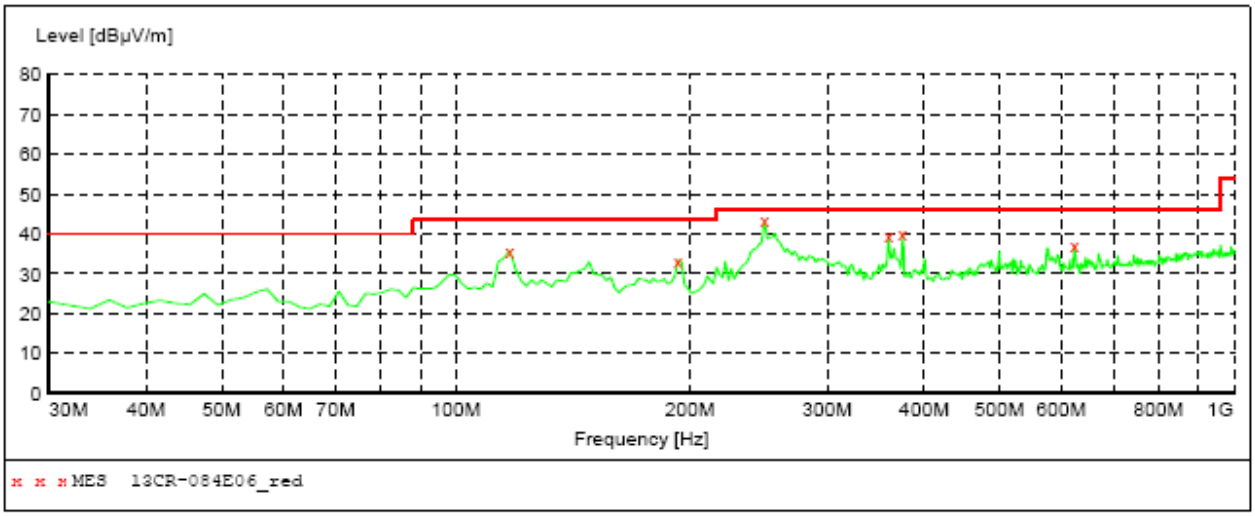
Temperature (℃) : 22~23	EUT: Home Digital Media Center
Humidity (%RH): 50~54	M/N: MC300
Barometric Pressure (mbar): 950~1000	Operation Condition: Normal Operation

Radiated Emission Test Data:

EUT:	Home Digital Media Center
M/N:	MC300
Operating Condition:	Normal Operation
Test Site:	3m CHAMBER
Operator:	Chen
Test Specification:	AC 120V/60Hz for adapter
Comment:	Polarization: Horizontal

SWEEP TABLE: "test (30M-1G)"

Short Description:			Field Strength		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	VULB9163 NEW



MEASUREMENT RESULT: "13CR-084E06_red"

4/8/2013 02:50

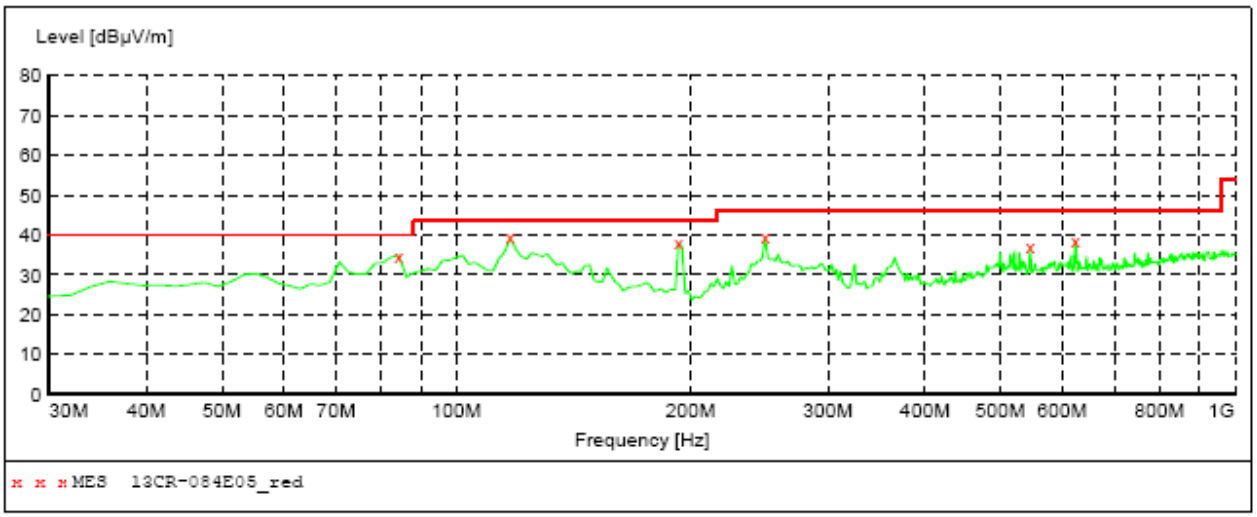
Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
117.300000	35.90	15.1	43.5	7.6	QP	100.0	0.00	HORIZONTAL
192.960000	33.40	14.8	43.5	10.1	QP	100.0	0.00	HORIZONTAL
249.220000	43.30	17.2	46.0	2.7	QP	100.0	0.00	HORIZONTAL
359.800000	39.40	20.6	46.0	6.6	QP	100.0	0.00	HORIZONTAL
375.320000	40.20	20.8	46.0	5.8	QP	100.0	0.00	HORIZONTAL
623.640000	37.30	26.1	46.0	8.7	QP	100.0	0.00	HORIZONTAL

Radiated Emission Test Data:

EUT:	Home Digital Media Center
M/N:	MC300
Operating Condition:	Normal Operation
Test Site:	3m CHAMBER
Operator:	Chen
Test Specification:	AC 120V/60Hz for adapter
Comment:	Polarization: Vertical

SWEEP TABLE: "test (30M-1G)"

Short Description:			Field Strength		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	VULB9163 NEW



MEASUREMENT RESULT: "13CR-084E05_red"

4/8/2013 02:48

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
84.320000	34.90	14.1	40.0	5.1	QP	100.0	0.00	VERTICAL
117.300000	39.30	15.1	43.5	4.2	QP	100.0	0.00	VERTICAL
192.960000	37.90	14.8	43.5	5.6	QP	100.0	0.00	VERTICAL
249.220000	39.40	17.2	46.0	6.6	QP	100.0	0.00	VERTICAL
546.040000	36.90	24.9	46.0	9.1	QP	100.0	0.00	VERTICAL
623.640000	38.70	26.1	46.0	7.3	QP	100.0	0.00	VERTICAL