FCC 47 CFR PART 15 SUBPART C: 2014 AND ANSI C63.10: 2013

TEST REPORT (Class II Permissive Change Report)

For

MPC with touch display

Model: MPC X

Data Applies to: ACV5

Brand: AKAI PROFESSIONAL

Issued for

inMusic Brands, Inc.
200 Scenic View Drive, Cumberland, RI 02864, U.S.A.

Issued by

Compliance Certification Services Inc.
Tainan Lab.
No.8, Jiucengling, Xinhua Dist., Tainan City 712, Taiwan (R.O.C.)
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Date of Issue: May 01, 2017

Testing Laboratory
1109

REVISION HISTORY

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	May 01, 2017	See the following note rev.00	ALL	Eva Lin

Note:

- *Rev.00: Revised Class II Permissive Change Report and the description is shown in page 6. (2.2 DESCRIPTION OF CLASS II CHANGE)*

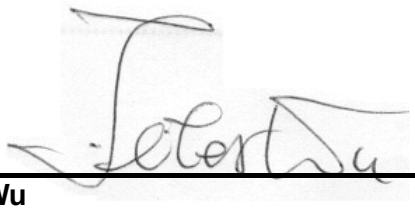
TABLE OF CONTENTS.

1. TEST REPORT CERTIFICATION

Applicant	:	**inMusic Brands, Inc.** 200 Scenic View Drive, Cumberland, RI 02864, U.S.A.
Manufacturer	:	**inMusic Brands, Inc.** 200 Scenic View Drive, Cumberland, RI 02864, U.S.A.
Equipment Under Test	:	MPC with touch display
Model	:	MPC X
Data Applies To	:	ACV5
Brand	:	AKAI PROFESSIONAL
Date of Test	:	March 22, 2017 ~ April 11, 2017

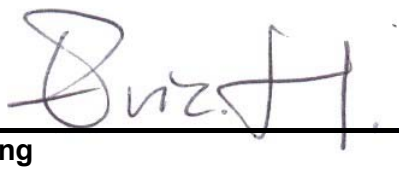
APPLICABLE STANDARD	
STANDARD	**TEST RESULT**
FCC Part 15 Subpart C: 2014 AND ANSI C63.10: 2013	No non-compliance noted

Approved by:



Jeter Wu
Assistant Manager

Reviewed by:



Eric Huang
Assistant Section Manager

2. EUT DESCRIPTION

2.1 DESCRIPTION OF EUT & POWER

Product Name	MPC with touch display
Model	MPC X
Data Applies To	ACV5
Brand	AKAI PROFESSIONAL
Received Date	July 13, 2016
Frequency Range	IEEE 802.11b/g, 802.11n HT20: 2412MHz~2462MHz Bluetooth 4.0: 2402MHz~2480MHz
Transmit Power	IEEE 802.11b Mode: 11.81dBm (15.171mW) IEEE 802.11g Mode: 16.61dBm (45.814mW) IEEE 802.11n HT20 Mode: 16.57dBm (45.394mW) Bluetooth 4.0 Mode: 2.06dBm (1.607mW)
Channel Spacing	IEEE 802.11b/g, 802.11n HT20: 5MHz Bluetooth 4.0: 2MHz
Channel Number	IEEE 802.11b/g, 802.11n HT20: 11 Channels Bluetooth 4.0 : 40 Channels
Transmit Data Rate	IEEE 802.11b Mode: 11, 5.5, 2, 1 Mbps IEEE 802.11g Mode: 54, 48 ,36, 24, 18, 12, 9, 6 Mbps IEEE 802.11n (HT20): 130, 117 ,104, 78, 65, 58.5, 52, 39, 26, 19.5,13, 6.5 Mbps Bluetooth 4.0: 1 Mbps
Type of Modulation	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK, BPSK) Bluetooth 4.0: GFSK
Frequency Selection	By software / firmware
Antenna Type	Type: PCB Antenna Model: WLA-EM-1508-0008-B Manufacturer: BRITO Gain: 4.6 dBi
Hardware Version	AZ01 CR PCB 9-40-0752-A 9-79-0752-A
Software Version	az01-productiontest-ACV5-1.33-2016-10-05-full-BTTEST-BCM4339_003.001.009.0108.0671
EUT Power Rating	19Vdc, 3.42A (Powered from adapter)
Temperature Range	25°C
Adapter Specification	Manufacturer: FSP GROUP INC. Model: FSP065-REBN2 I/P: 100-240Vac, 50-60Hz, 1.5A O/P: 19Vdc, 3.42A

REMARK:

1. The sample **(MPC X)** selected for test was engineering sample that approximated to production product and was provided by manufacturer.
2. This submittal(s) (test report) is intended for FCC ID: **Y4O-ACV5** filing to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.
3. For more details, please refer to the User's manual of the EUT.
4. The listed model (ACV5) is identical with the original model (MPC X) except the different model name and it is just for the marketing purpose.

2.2 DESCRIPTION OF CLASS II CHANGE

The major change filed under this application is:
Only updated the adapter and the CON and RAD(Below 1GHz) test data are modified for the EUT (model: MPC X).
The above changes not influence the RF characteristics. Since the above modification was not influence the RF characteristics. After authenticated, the testing items of the data were showed as original application document reports (report number: T160713N04-RP1)

3. DESCRIPTION OF TEST MODES

The EUT is a 11n router. It has two transmitter chains and two receive chains (2x2 configurations). The 2x2 configuration is implemented with two outside chains (Chain 0).

The RF chipset is manufactured by Realtek Corporation.

The antenna peak gain 4.6dBi (highest gain) were chosen for full testing.

IEEE 802.11 b, 802.11g, 802.11n HT20 mode (DTS Band)

The EUT had been tested under operating condition.

There are three channels have been tested as following:

Channel	Frequency (MHz)
Low	2412
Middle	2437
High	2462

IEEE 802.11b mode: 1Mbps long data rate (worst case) were chosen for full testing.

IEEE 802.11g mode: 6Mbps data rate (worst case) were chosen for full testing.

IEEE 802.11n HT20 mode: 6.5Mbps data rate (worst case) were chosen for full testing.

Bluetooth 4.0 (GFSK) mode

The EUT had been tested under operating condition.

There are three channels have been tested as following:

Channel	Frequency (MHz)
Low	2402
Middle	2442
High	2480

Bluetooth 4.0 (GFSK) mode: 1Mbps data rate (worst case) were chosen for full testing.

The worst-case data rates are determined according to the description above, based on the investigations by measuring the PSD, peak power and average power across all the data rates, bandwidths, modulations and spatial stream modes.

4. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10 and FCC CFR 47 15.207, 15.209 and 15.247.

5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

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

No.8, Jiucengling, Xinhua Dist., Tainan City 712, Taiwan (R.O.C.)

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10 and CISPR Publication 22.

5.2 EQUIPMENT

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, “Radio Interference Measuring Apparatus and Measurement Methods.”

5.3 LABORATORY ACCREDITATIONS LISTINGS

The test facilities used to perform radiated and conducted emissions tests are accredited by Taiwan Accreditation Foundation for the specific scope of accreditation under Lab Code: 1109 to perform Electromagnetic Interference tests according to FCC PART 15 AND CISPR 22 requirements. No part of this report may be used to claim or imply product endorsement by TAF or any agency of the Government. In addition, the test facilities are listed with Federal Communications Commission (registration no: TW-1037 and 455173).

5.4 TABLE OF ACCREDITATIONS AND LISTINGS

Our laboratories are accredited and approved by the following accreditation body according to ISO/IEC 17025.

Taiwan	TAF

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada	Industry Canada
Germany	TUV NORD
Taiwan	BSMI
USA	FCC

Copies of granted accreditation certificates are available for downloading from our web site, http://www.ccsrf.com

6. CALIBRATION AND UNCERTAINTY

6.1 MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

6.2 MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Radiated Emission, 30 to 200 MHz Test Site : OATS-6	±3.59dB
Radiated Emission, 200 to 1000 MHz Test Site : OATS-6	±3.27dB
Radiated Emission, 1 to 26.5 GHz	± 3.20dB
Power Line Conducted Emission	± 2.90dB

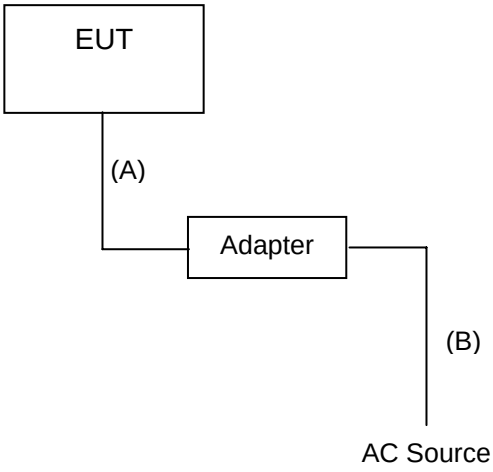
Uncertainty figures are valid to a confidence level of 95%, K=2

7. SETUP OF EQUIPMENT UNDER TEST

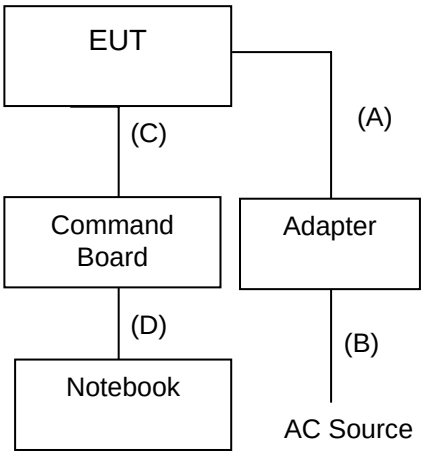
7.1 SETUP CONFIGURATION OF EUT

FOR RF TEST

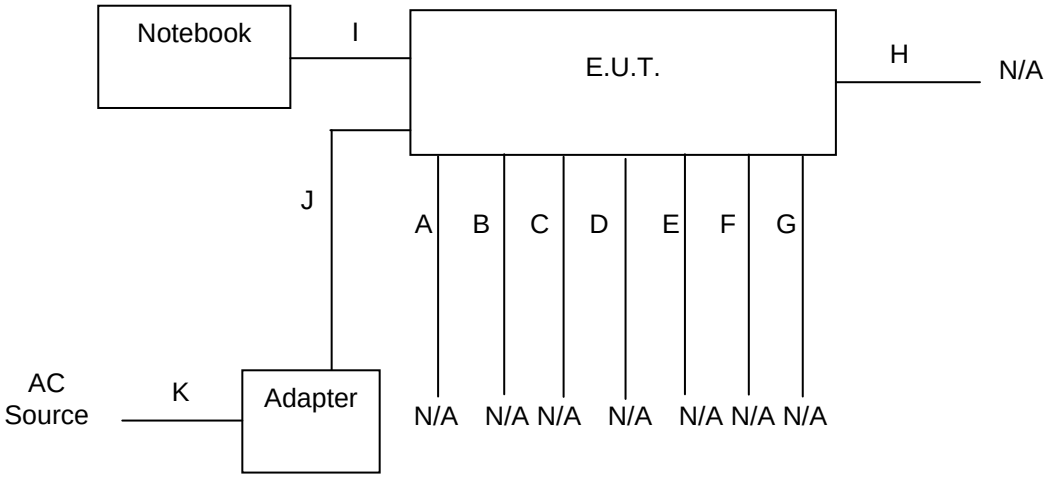
WIFI:



BLUETOOTH:



FOR EMI TEST



7.2 SUPPORT EQUIPMENT

RF test

No.	Product	Manufacturer	Model No.	Certify No.	Signal cable
1	Notebook	Acer	AS 3830TG	DOC	Power cable, unshd, 1.6m

No.	Signal cable description	
A	DC Power	Unshielded, 1.5m, 1pcs
B	AC Power	Unshielded, 1.4m, 1pcs.
C	Command	Unshielded, 0.4m, 1pcs.
D	USB	Shielded, 1.8m, 1pcs.

EMI test

No.	Product	Manufacturer	Model No.	Certify No.	Signal cable
1	Notebook	Acer	AS 3830TG	DOC	Power cable, unshd, 1.6m

No.	Signal cable description	
A	AC IN	Unshielded, 1.0m, 1pcs.
B	DC IN	Unshielded, 1.0m, 1.5pcs.
C	USB	Shielded, 1.8m, 1pcs.
D	Audio	Unshielded, 1.0m, 22pcs.
E	USB	Shielded, 1.8m, 2pcs.

REMARK:

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.
3. shd. = shielded; unshd. = unshielded

7.3 EUT OPERATING CONDITION

RF Setup

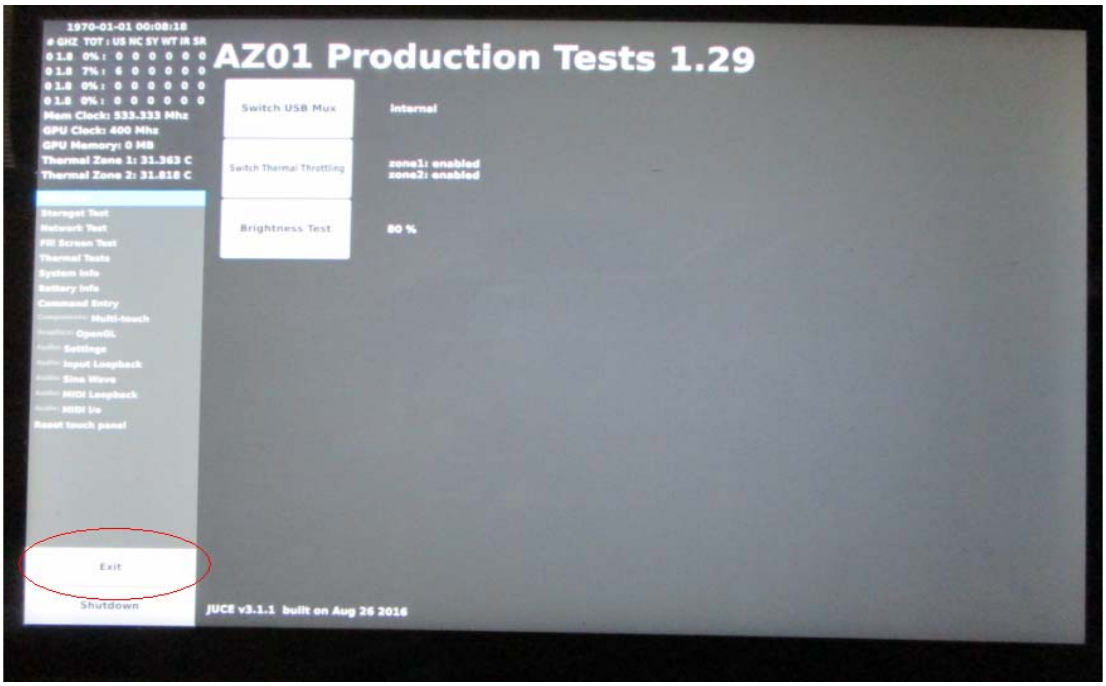
WIFI :

RF Setup

1. Set up a whole system as the setup diagram.

2. Turn on power and press “Exit”

3.Keyboard press Ctrl+Alt+F2 and key in “root”.



TX Mode **Key in**

B Mode : wl down

wl mpc 0

wl country ALL

wl band b

wl up

wl 2g_rate –r 01 –b 20

wl channel 01 (01,07,13)

wl phy_watchdog 0

wl scansuppress 1

wl phy_forcecal 1

wl phy_txpwrctrl 1

wl txpwr1 -0 –d 11

wl pkteng_start 00:90:4c:14:43:19 tx 100 1000 0

G Mode : wl down

wl mpc 0

wl country ALL

wl band b

wl up

wl 2g_rate –r 06 –b 20

wl channel 01 (01,07,13)

wl phy_watchdog 0

wl scansuppress 1

wl phy_forcecal 1

wl phy_txpwrctrl 1

wl txpwr1 -1

wl pkteng_start 00:90:4c:14:43:19 tx 100 1000 0

HT20 Mode : wl down

wl mpc 0

wl country ALL

wl band b

wl up

wl 2g_rate –h 0 –b 20

wl channel 01/20 (01,07,13)

wl phy_watchdog 0

wl scansuppress 1

wl phy_forcecal 1

wl phy_txpwrctrl 1

wl txpwr1 -1

wl pkteng_start 00:90:4c:14:43:19 tx 100 1000 0

RX Mode **Key in**

wl down

wl band auto

wl mpc 0

wl country ALL

wl channel 01 (01,07,13)

wl bi 65535

wl up

wl phy_watchdog 0

wl scansuppress 1

wl phy_forcecal 1

4. All of the function are under run.
5. Start test.

BLUETOOTH :

RF Setup

1. Set up a whole system as the setup diagram.
2. The “putty.exe” software was used for testing
3. Key in “root”.

TX Mode **Key in**

hciconfig hci0 up

hcitool cmd 0x03 0x0003

hcitool cmd 0x08 0X0001e 00(00,14,27) 25 00

RX Mode **Key in**

hciconfig hci0 up

hcitool cmd 0x03 0x0003

hcitool cmd 0x3f 0x0052 EE FF C0 88 00 00 E8 03 00(00,27,4E) 04 00 01 FF FF

4. All of the function are under run.
5. Start test.

BLUETOOTH:

RF Setup

1. Set up a whole system as the setup diagram.
2. The “putty.exe” software was used for testing
3. Key in “root”.

TX Mode **Key in**

hciconfig hci0 up

hcitool cmd 0x03 0x0003

hcitool cmd 0x08 0X0001e 00(00,14,27) 25 00

RX Mode **Key in**

hciconfig hci0 up

hcitool cmd 0x03 0x0003

hcitool cmd 0x3f 0x0052 EE FF C0 88 00 00 E8 03 00(00,27,4E) 04 00 01 FF FF

4. All of the function are under run.
5. Start test.

8. APPLICABLE LIMITS AND TEST RESULTS

8.1 RADIATED EMISSIONS

8.1.1 TRANSMITTER RADIATED SUPURIOUS EMSSIONS

LIMITS

§ 15.205 (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 -1710	10.6 -12.7
6.26775 - 6.26825	108 -121.94	1718.8 - 1722.2	13.25 -13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 – 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 -16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3338	36.43 - 36.5
12.57675 - 12.57725	322 -335.4	3600 - 4400	([2])
13.36 - 13.41			

[1] Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

[2] Above 38.6

§ 15.205 (b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown is Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

§ 15.209 (a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table :

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 - 88	100 **	3
88 - 216	150 **	3
216 - 960	200 **	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz, However, operation within these frequency bands is permitted under other sections of this Part, e-g, Sections 15.231 and 15.241.

§ 15.209 (b) In the emission table above, the tighter limit applies at the band edges.

TEST EQUIPMENTS

The following test equipments are utilized in making the measurements contained in this report.

☐ **Open Area Test Site # 5**

Open Area Test Site # 5				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Bi-Log Antenna	Sunol	JB1	A070506-1	07/22/2017
EMI Test Receiver	R&S	ESCI 7	100856	11/27/2017
Loop Antenna	COM-POWER	AL-130	121060	05/23/2017
Type N coxical cable	Suhner	RG_214_U/2X	5	01/16/2018
Software	e3 (5.04211j)			

☒ **Open Area Test Site # 7**

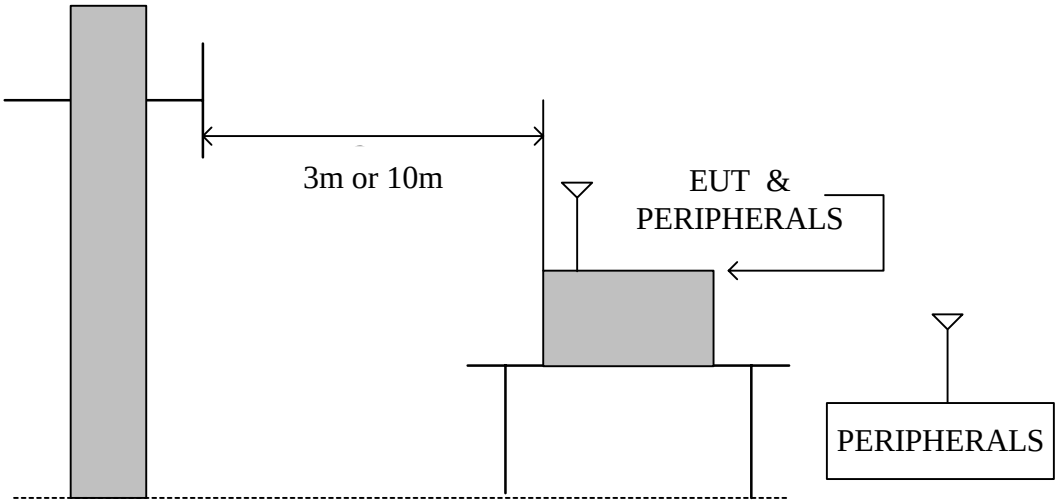
Open Area Test Site # 7				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Bi-Log Antenna	Sunol	JB1	A021306	09/24/2017
EMI Test Receiver	R&S	ESCI	101336	04/16/2018
Type N coxical cable	Suhner	RG_214_U/2X	7	01/19/2018
Software	e3 (5.04211j)			

☒ **Chamber 966 (Above 1GHz)**

Chamber 966				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Amplifier	HP	8447F	2443A01671	01/17/2018
Bi-Log Antenna	Sunol	JB1	A070506-2	07/22/2017
Cable	HUBER+SUHNER	SUCOFLEX 104PEA	SN25737 /4PEA	01/17/2018
EMI Test Receiver	R&S	ESCS 30	100294	12/01/2017
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY54430216	04/29/2017
Horn Antenna	Com-Power	AH-118	071032	02/08/2018
Pre-Amplifier	EMCI	EMC012645	980098	01/16/2018

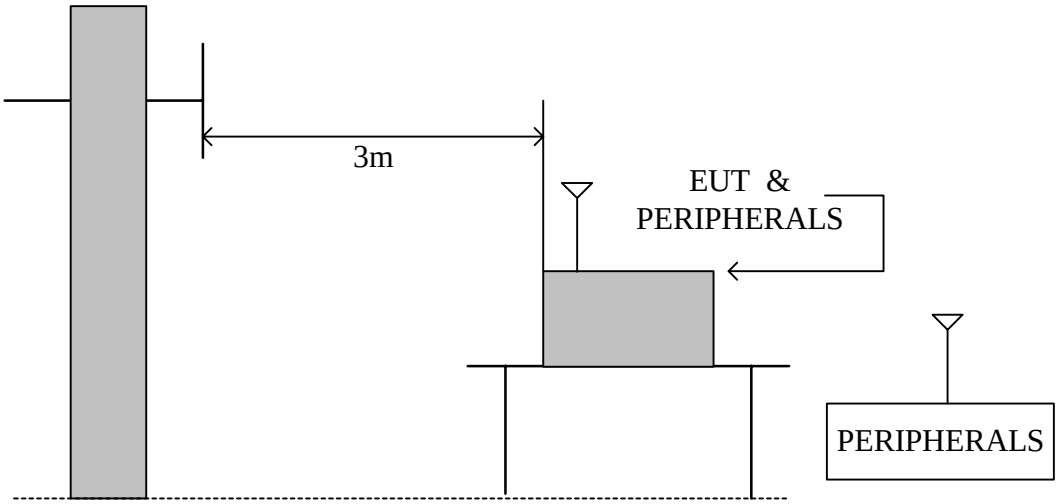
TEST SETUP

The diagram below shows the test setup that is utilized to make the measurements for emission from 30 to 1GHz.



Antenna Elevation Variable

The diagram below shows the test setup that is utilized to make the measurements for emission above 1GHz.



Antenna Elevation Variable

TEST PROCEDURE

a. The EUT was placed on the top of a rotating table 0.8/1.5 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.

b. White measuring the radiated emission below 1GHz, the EUT was set 3/10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. White measuring the radiated emission above 1GHz, the EUT was set 3 meters away from the interference-receiving antenna

c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarization of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

g. The tests were performed in accordance with 558074 D01 DTS Meas Guidance v03r03.

NOTE：

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 KHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.

2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection and frequency above 1GHz.

3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.

4. No emission is found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz)

TEST RESULTS

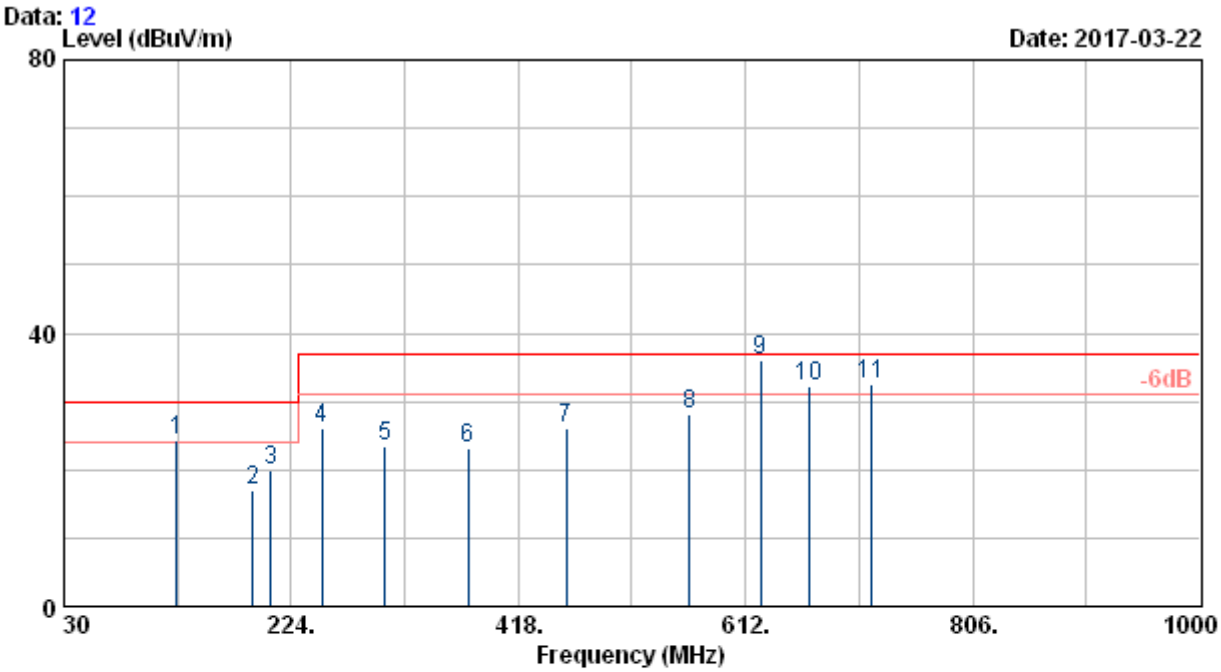
No non-compliance noted.

8.1.2 WORST-CASE RADIATED EMISSION BELOW 1 GHz

Product Name	MPC with touch display	Test Date	2017/03/22
Model	MPC X	Test By	Weici Lo
Test Mode	Normal Operation	TEMP& Humidity	26.8℃/54%

Horizontal

(The chart below shows the highest readings taken from the final data.)



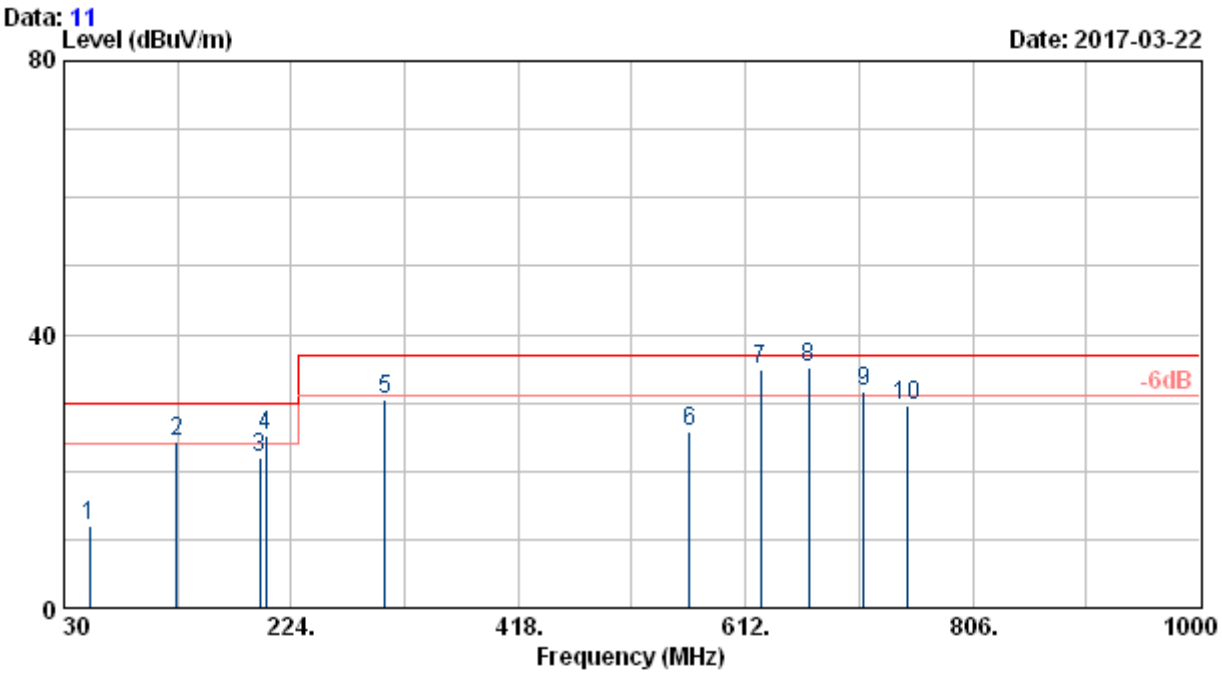
Freq. MHz	Reading Level dBuV	Antenna Factor dB/m	Cable Loss dB	Measure Level dBuV/m	Limit dBuV/m	Over Limit dBuV/m	Detector
126.00	8.31	13.10	2.85	24.26	30.00	-5.74	QP
191.64	2.66	10.82	3.63	17.11	30.00	-12.89	QP
206.68	6.06	10.19	3.78	20.03	30.00	-9.97	QP
250.00	11.45	10.49	4.19	26.13	37.00	-10.87	QP
304.00	6.34	12.44	4.66	23.44	37.00	-13.56	QP
375.00	3.79	14.02	5.26	23.07	37.00	-13.93	QP
458.88	4.34	15.95	5.89	26.19	37.00	-10.81	QP
564.48	3.99	17.55	6.65	28.19	37.00	-8.81	QP
625.02	10.59	18.41	7.05	36.06	37.00	-0.94	QP
666.00	6.02	18.94	7.32	32.27	37.00	-4.73	QP
720.08	5.45	19.49	7.67	32.61	37.00	-4.39	QP

Note: 1. QP= Quasi-peak Reading.
2. The other emission levels were very low against the limit

Product Name	MPC with touch display	Test Date	2017/03/22
Model	MPC X	Test By	Weici Lo
Test Mode	Normal Operation	TEMP& Humidity	26.8℃/54%

Vertical

(The chart below shows the highest readings taken from the final data.)



Freq. MHz	Reading Level dBuV	Antenna Factor dB/m	Cable Loss dB	Measure Level dBuV/m	Limit dBuV/m	Over Limit dBuV/m	Detector
52.00	3.41	6.94	1.74	12.09	30.00	-17.91	QP
126.00	8.48	13.10	2.85	24.43	30.00	-5.57	QP
196.86	6.84	11.35	3.69	21.88	30.00	-8.12	QP
202.14	10.25	11.11	3.74	25.10	30.00	-4.90	QP
304.00	13.26	12.44	4.66	30.37	37.00	-6.63	QP
564.46	1.73	17.55	6.65	25.93	37.00	-11.07	QP
625.02	9.51	18.41	7.05	34.97	37.00	-2.03	QP
666.00	9.03	18.94	7.32	35.29	37.00	-1.71	QP
712.67	4.48	19.41	7.62	31.52	37.00	-5.48	QP
750.06	2.02	19.75	7.88	29.65	37.00	-7.35	QP

Note: 1. QP= Quasi-peak Reading.
2. The other emission levels were very low against the limit

8.2 POWERLINE CONDUCTED EMISSIONS

LIMITS

§ 15.207 (a) Except as shown in paragraph (b) and (c) this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal.

The lower limit applies at the boundary between the frequency ranges.

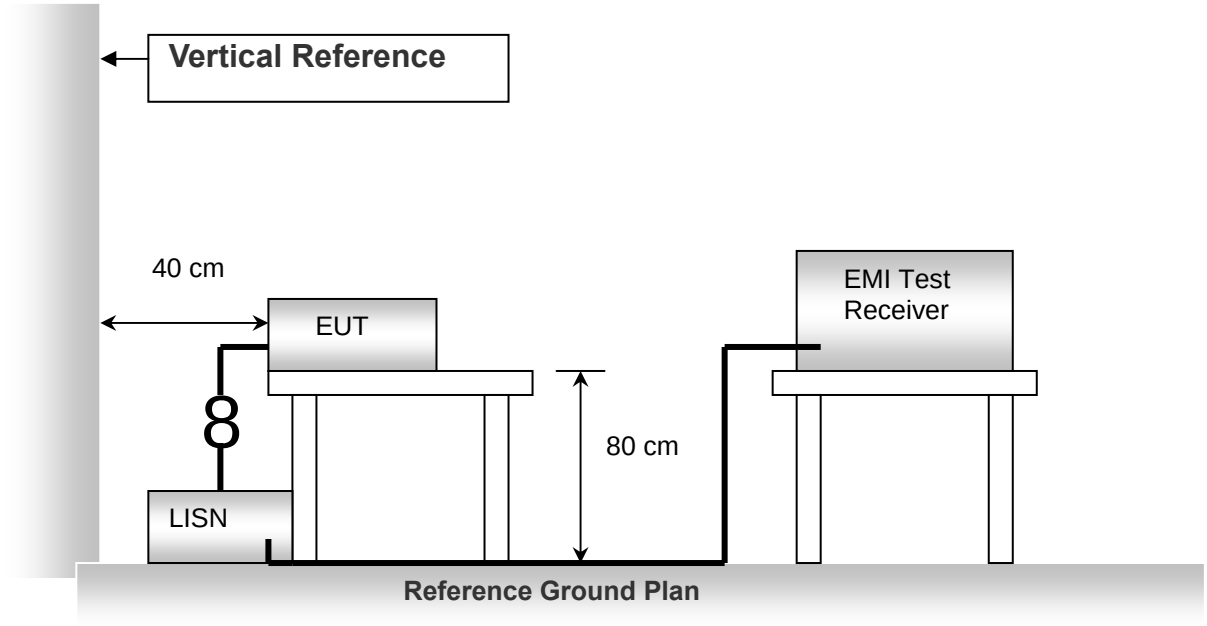
Frequency of Emission (MHz)	Conducted limit (dBμv)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56	56 to 46
0.5 - 5	56	46
5 - 30	60	50

TEST EQUIPMENTS

The following test equipments are used during the conducted power line tests：

Conducted Emission room #1				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
BNC Coaxial Cable	CCS	BNC50	11	01/12/2018
EMI Test Receiver	R&S	ESCS 30	100348	12/11/2017
LISN	SCHWARZBECK	NNLK8130	8130124	11/07/2017
LISN	FCC	FCC-LISN-50-32-2	08009	05/03/2017
Pulse Limiter	R&S	ESH3-Z2	100116	01/12/2018
Software	e-3 (5.04211j)			

TEST SETUP



TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80cm above the horizontal ground plane. The EUT IS CONFIGURED IN ACCORDANCE WITH ANSI C63.10.

The resolution bandwidth is set to 9 kHz for both quasi-peak detection and average detection measurements.

Line conducted data is recorded for both NEUTRAL and LINE.

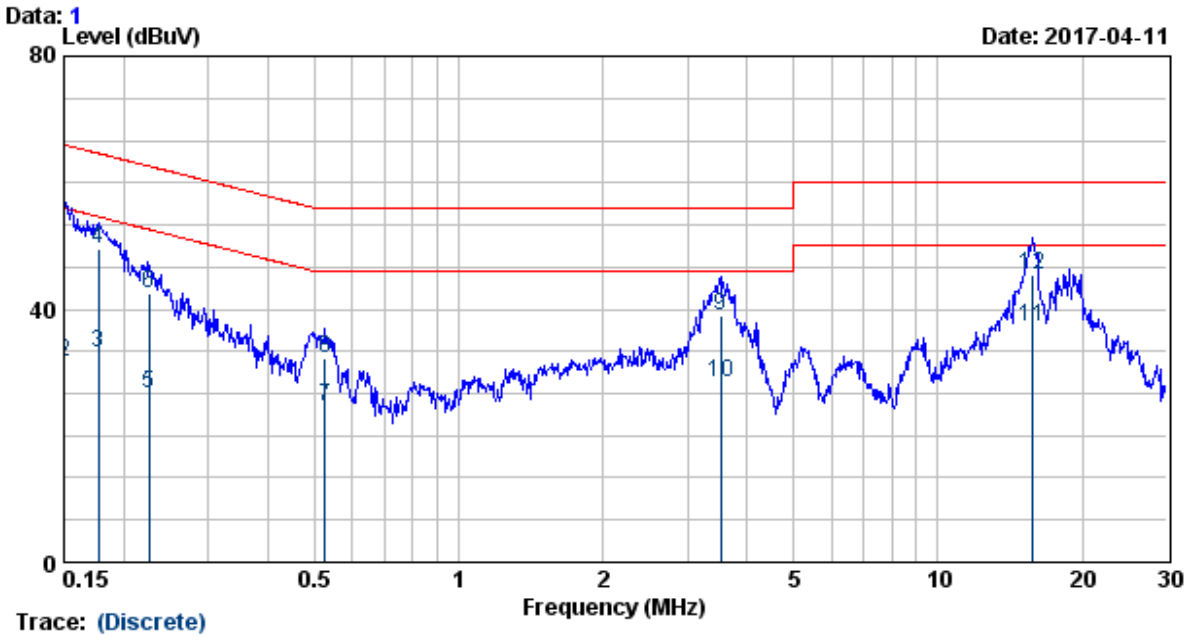
TEST RESULTS

No non-compliance noted.

Model No.	MPC X	**Test Mode**	Normal Operation
Environmental Conditions	26℃, 63% RH	**Resolution Bandwidth**	9 kHz
Tested by	Vision Chang		

Line

(The chart below shows the highest readings taken from the final data.)



Freq. MHz	LISN Factor dB	Cable Loss dB	Meter Reading dBuV	Measured Level dBuV	Limits dBuV	Over Limits dBuV	Detector
0.15	8.68	0.10	43.64	52.42	66.00	-13.58	QP
0.15	8.68	0.10	22.96	31.74	56.00	-24.26	AVERAGE
0.18	8.67	0.10	24.49	33.26	54.64	-21.38	AVERAGE
0.18	8.67	0.10	40.61	49.38	64.64	-15.26	QP
0.23	8.66	0.10	17.86	26.62	52.61	-25.99	AVERAGE
0.23	8.66	0.10	33.70	42.46	62.61	-20.15	QP
0.53	8.69	0.10	15.97	24.76	46.00	-21.24	AVERAGE
0.53	8.69	0.10	23.30	32.09	56.00	-23.91	QP
3.53	8.88	0.10	29.93	38.91	56.00	-17.09	QP
3.53	8.88	0.10	19.36	28.34	46.00	-17.66	AVERAGE
15.72	9.91	0.17	27.08	37.16	50.00	-12.84	AVERAGE
15.72	9.91	0.17	35.39	45.47	60.00	-14.53	QP

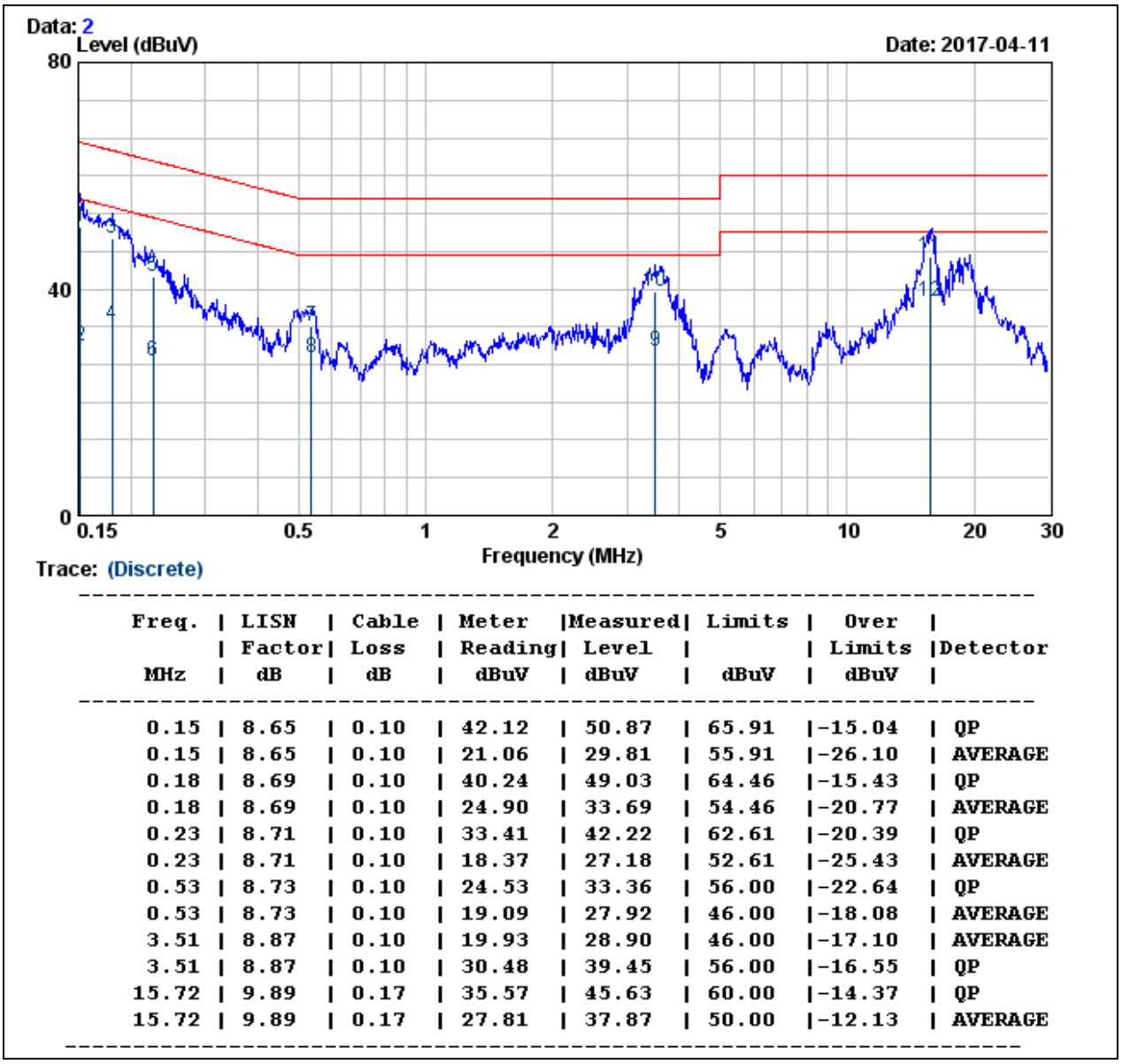
NOTE:

1. Measured Level (dBuV) = LISN Factor (dB) + Cable Loss (dB)+ Meter Reading (dBuV)
2. Over Limit (dBuV) = Measured Level (dBuV) – Limits (dBuV)

Model No.	MPC X	Test Mode	Normal Operation
Environmental Conditions	26℃, 63% RH	Resolution Bandwidth	9 kHz
Tested by	Vision Chang		

Neutral

(The chart below shows the highest readings taken from the final data.)



Freq. MHz	LISN Factor dB	Cable Loss dB	Meter Reading dBuV	Measured Level dBuV	Limits dBuV	Over Limits dBuV	Detector
0.15	8.65	0.10	42.12	50.87	65.91	-15.04	QP
0.15	8.65	0.10	21.06	29.81	55.91	-26.10	AVERAGE
0.18	8.69	0.10	40.24	49.03	64.46	-15.43	QP
0.18	8.69	0.10	24.90	33.69	54.46	-20.77	AVERAGE
0.23	8.71	0.10	33.41	42.22	62.61	-20.39	QP
0.23	8.71	0.10	18.37	27.18	52.61	-25.43	AVERAGE
0.53	8.73	0.10	24.53	33.36	56.00	-22.64	QP
0.53	8.73	0.10	19.09	27.92	46.00	-18.08	AVERAGE
3.51	8.87	0.10	19.93	28.90	46.00	-17.10	AVERAGE
3.51	8.87	0.10	30.48	39.45	56.00	-16.55	QP
15.72	9.89	0.17	35.57	45.63	60.00	-14.37	QP
15.72	9.89	0.17	27.81	37.87	50.00	-12.13	AVERAGE

NOTE:

1. Measured Level (dBuV) = LISN Factor (dB) + Cable Loss (dB)+ Meter Reading (dBuV)
2. Over Limit (dBuV) = Measured Level (dBuV) – Limits (dBuV)