

FCC

EMC

TEST REPORT

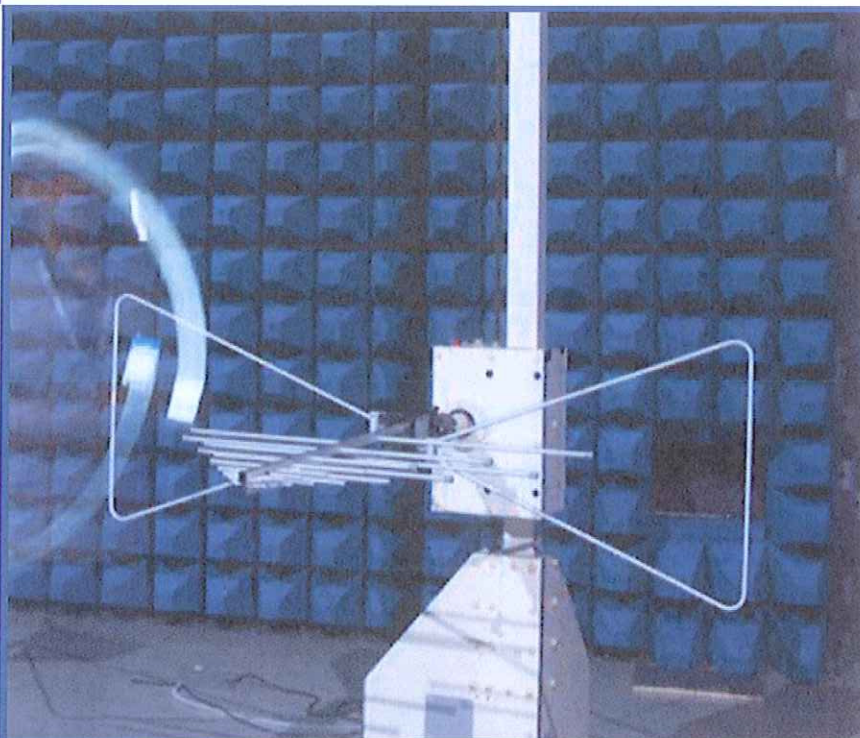
ISSUED BY
Shenzhen BALUN Technology Co., Ltd.



FOR
Portable Tablet Computer

ISSUED TO
LENOVO (SHANGHAI) ELECTRONICS TECHNOLOGY CO
LTD

NO 68 BUILDING 199 FENJU RD, CHINA (SHANGHAI) PILOT FREE
TRADE ZONE, SHANGHAI, 200131 CHINA



Tested by: Zhang Yanqing
Zhang Yanqing
(Engineer)

Date Feb. 2, 2016

Approved by: Wei Yanquan
Wei Yanquan
(Chief Engineer)

Date Feb. 2, 2016

Report No.: BL-SZ1610062-401

EUT Type: Portable Tablet Computer

Model Name: Lenovo TB3-X70F

Brand Name: Lenovo

Test Standard: 47 CFR Part 15 Subpart B

FCC ID: O57TB3X70F

Test conclusion: Pass

Test Date: Jan. 12, 2016 ~ Jan. 20, 2016

Date of Issue: Feb. 2, 2016

NOTE: This test report can be duplicated completely for the legal use with the approval of the applicant; it shall not be reproduced except in full, without the written approval of Shenzhen BALUN Technology Co., Ltd. BALUN Laboratory. Any objections should be raised within thirty days from the date of issue. To validate the report, please visit BALUN website.

Revision History

Version	Issue Date	Revisions Content
<u>Rev. 01</u>	<u>Feb. 2, 2016</u>	<u>Initial Issue</u>

TABLE OF CONTENTS

1	GENERAL INFORMATION	4
1.1	Identification of the Testing Laboratory	4
1.2	Identification of the Responsible Testing Location	4
1.3	Laboratory Condition	4
1.4	Announce	4
2	PRODUCT INFORMATION	6
2.1	Applicant Information	6
2.2	Manufacturer Information	6
2.3	Factory Information	6
2.4	General Description for Equipment under Test (EUT)	6
2.5	Ancillary Equipment	8
2.6	Technical Information	8
3	SUMMARY OF TEST RESULTS	9
3.1	Test Standards	9
3.2	Verdict	9
3.3	Test Uncertainty	9
4	GENERAL TEST CONFIGURATIONS	10
4.1	Test Environments	10
4.2	Test Equipment List	10
4.3	Test Enclosure list	11
4.4	Test Configurations	12
4.5	Test Setups	13
4.6	Test Conditions	15
5	TEST ITEMS	16
5.1	Emission Tests	16
ANNEX A	TEST RESULTS	18

A.1	Radiated Emission	18
A.2	Conducted Emission	30
ANNEX B	TEST SETUP PHOTOS	36
ANNEX C	EUT EXTERNAL PHOTOS	36
ANNEX D	EUT INTERNAL PHOTOS	36

1 GENERAL INFORMATION

1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100
Fax Number	+86 755 6182 4271

1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Accreditation Certificate	The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1. The laboratory has been listed by US Federal Communications Commission to perform electromagnetic emission measurements. The recognition numbers of test site are 832625. The laboratory has met the requirements of the IAS Accreditation Criteria for Testing Laboratories (AC89), has demonstrated compliance with ISO/IEC Standard 17025:2005. The accreditation certificate number is TL-588. The laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L6791.
Description	All measurement facilities used to collect the measurement data are located at Block B, FL 1, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China 518055

1.3 Laboratory Condition

Ambient Temperature	20°C~25°C
Ambient Relative Humidity	45% - 55%
Ambient Pressure	100 kPa - 102 kPa

1.4 Announce

- (1) The test report reference to the report template version v1.2.
- (2) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
- (3) The test report is invalid if there is any evidence and/or falsification.
- (4) The results documented in this report apply only to the tested sample, under the conditions and modes of

operation as described herein.

- (5) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.
- (6) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	LENOVO (SHANGHAI) ELECTRONICS TECHNOLOGY CO LTD
Address	NO 68 BUILDING 199 FENJU RD, CHINA (SHANGHAI) PILOT FREE TRADE ZONE, SHANGHAI, 200131 CHINA

2.2 Manufacturer Information

Manufacturer	Lenovo PC HK Limited.
Address	23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay, Hong Kong

2.3 Factory Information

Factory 1	BYD Precision Manufacture Co., Ltd.
Address 1	No.3001, Baohe Road, Baolong Industrial, Longgang, Shenzhen, P.R. China
Factory 2	Motorola (Wuhan) Mobility Technologies Communication Co., Ltd
Address 2	No.19, Gaoxin 4th Road, Wuhan East Lake High-tech Zone, Wuhan, China
Factory 3	Dong Guan Huabel Electronic Technology Co., Ltd
Address 3	No.9 Industrial Northern Road, National High-Tech Industrial Development Zone, SongShan Lake, Dong Guan City, China

2.4 General Description for Equipment under Test (EUT)

EUT Type	Portable Tablet Computer
Model Name	Lenovo TB3-X70F
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	A6604_MB_PCB_V2.0
Software Version	TB3-X70F_160108
Dimensions (Approx.)	247.4 mm × 171.5 mm × 9.4 mm
Weight (Approx.)	500 g(with battery)
Network and Wireless connectivity	Bluetooth, GPS, WIFI, GLONASS, NFC

EUT	Hardware	Manufacturer
EUT1	Speaker	JiaShan Haosheng Electronic CO., LTD.
	Vibrator	ShenZhen Hongzhifa Machinery&Electronic CO., LTD.
	LCD	BOE TECHNOLOGY GROUP CO., LTD.
	Camera	Front: Brodsands Electronics(ShenZhen)Co., Ltd. Back: NanChang O-Film TECH CO., LTD.
EUT2	Speaker	Jiangsu Midi Acoustics Technology CO., LTD.
	Vibrator	ChongQing LingLong Electronic CO., LTD.
	LCD	Innolux corporation
	Camera	Front: Shenzhen E-welly Electronic Co., LTD. Back: Q Technology Limited

Note: The EUT have two samples (EUT1 and EUT2), the difference between these two samples is to modify the hardware (Speaker, Camera, LCD and Vibrator), The Speaker, Camera, LCD and Vibrator with different manufacturers, details please refer to the product description.

2.5 Ancillary Equipment

Ancillary Equipment 1	Battery 1	
	Brand Name	Lenovo
	Model No.	L14D2P31
	Serial No.	N/A
	Capacitance	7000 mAh
	Rated Voltage	3.8 V
	Limit Charge Voltage	4.35 V
	Manufacturer	Sunwoda Electronic Co. Ltd
Ancillary Equipment 2	Battery 2	
	Brand Name	Lenovo
	Model No.	L14D2P31
	Serial No.	N/A
	Capacitance	7000 mAh
	Rated Voltage	3.8 V
	Limit Charge Voltage	SCUD (Fujian) Electronics Co., Ltd.
Ancillary Equipment 3	Charger 1	
	Brand Name	Lenovo
	Model Name.	C-P35
	Rated Input	100-240 V ~, 50/60 Hz, 0.5 A
	Rated Output	5.2 V ==, 2.0 A
	Manufacturer	SHENZHEN HUNTKEY ELECTRIC CO LTD
Ancillary Equipment 4	Charger 2	
	Brand Name	Lenovo
	Model Name.	C-P35
	Rated Input	100-240 V ~, 50/60 Hz, 0.3 A
	Rated Output	5.2 V ==, 2.0 A
	Manufacturer	Acbel Polytech Inc.
Ancillary Equipment 5	USB Cable 1 ^{Note 1}	
	Length(Approx.)	102 cm
	Manufacturer	SHIN AN WIRE&CABLE CO., LTD.
Ancillary Equipment 6	USB Cable 2 ^{Note 1}	
	Length(Approx.)	102 cm
	Manufacturer	SAIBO ELECTRON TECHNOLOGY (HK) CO., LTD.

Note 1: There tow USB cable only the manufacturer is different. All the USB cable were tested, but only the USB cable 1 was shown in this report.

Note 2: All the EUT1 and EUT 2 test configuration have been tested, only the worst configuration was recorded in this report.

2.6 Technical Information

N/A

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	FCC 47 CFR Part 15 Subpart B (10-1-14 Edition)	Unintentional Radiators
2	ANSI C63.4-2014	American National Standard for Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

3.2 Verdict

No.	Description	FCC Rule	Test Verdict	Result
1	Radiated Emission	15.109	Pass	Annex A .1
2	Conducted Emission, AC Ports	15.107	Pass	Annex A .2

3.3 Test Uncertainty

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Measurement	Value
Conducted emissions (9 kHz-30 MHz)	2.79 dB
Radiated emissions (30 MHz-1 GHz)	3.45 dB
Radiated emissions (1 GHz-18 GHz)	3.67 dB

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

Environment Parameter	Selected Values During Tests			
	Temperature	Voltage	Relative Humidity	Ambient Pressure
Normal Temperature, Normal Voltage (NTNV)	23°C~26°C	AC 110 V/60 Hz	50%-55%	100 to 102 kPa

4.2 Test Equipment List

Radiated Emission Test						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	ROHDE&SCHWARZ	ESRP	101036	2015.07.14	2016.07.13	☒
Test Antenna-Loop(9 kHz-30 MHz)	SCHWARZBECK	FMZB 1519	1519-037	2015.07.22	2017.07.21	☒
Test Antenna-Bi-Log(30 MHz-3 GHz)	SCHWARZBECK	VULB 9163	9163-624	2015.07.22	2017.07.21	☒
Test Antenna-Horn(1-18 GHz)	SCHWARZBECK	BBHA 9120D	9120D-1148	2015.07.22	2017.07.21	☒
Test Antenna-Horn(15-26.5 GHz)	SCHWARZBECK	BBHA 9170	9170-305	2015.07.22	2017.07.21	☐
Anechoic Chamber	RAINFORD	9 m*6 m*6 m	N/A	2015.02.28	2016.02.27	☒

Conducted disturbance Test						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	ROHDE&SCHWARZ	ESRP	101036	2015.07.14	2016.07.13	☒
LISN	SCHWARZBECK	NSLK 8127	8127-687	2015.07.14	2016.07.13	☒
AMN	SCHWARZBECK	NNBM8124	8124-509	2015.07.14	2016.07.13	☐
AMN	SCHWARZBECK	NNBM8124	8124-510	2015.07.14	2016.07.13	☐
ISN	TESEQ	ISN T800	34449	2015.07.14	2016.07.13	☐
Shielded Enclosure	ChangNing	CN-130701	130703	N/A	N/A	☒

4.3 Test Enclosure list

Description	Manufacturer	Model	Serial No.	Length	Description	Use
PC	N/A	N/A	N/A	N/A	Special Handled	☐
Printer	HP	DESKJET 1000	N/A	N/A	N/A	☐
Keyboard	Logitech	Y-BP62a	N/A	N/A	N/A	☐
Mouse	Logitech	M100	N/A	N/A	N/A	☐
USB disk	Kingston	N/A	N/A	N/A	N/A	☐
TF Card	Kingston	N/A	N/A	N/A	N/A	☒
VGA Cable	N/A	N/A	N/A	1.5 m	Shielded with core	☐
HDMI Cable	N/A	N/A	N/A	1.5 m	Shielded with core	☐
DVI Cable	N/A	N/A	N/A	1.5 m	Shielded with core	☐
Coaxial video cable	N/A	N/A	N/A	2.0 m	Shielded with core	☐
iPhone	APPLE	A1387	N/A	N/A	N/A	☐
Laptop	LENOVO	K29	N/A	N/A	N/A	☒
Earphone	OPPO	N/A	N/A	1.1m	N/A	☒

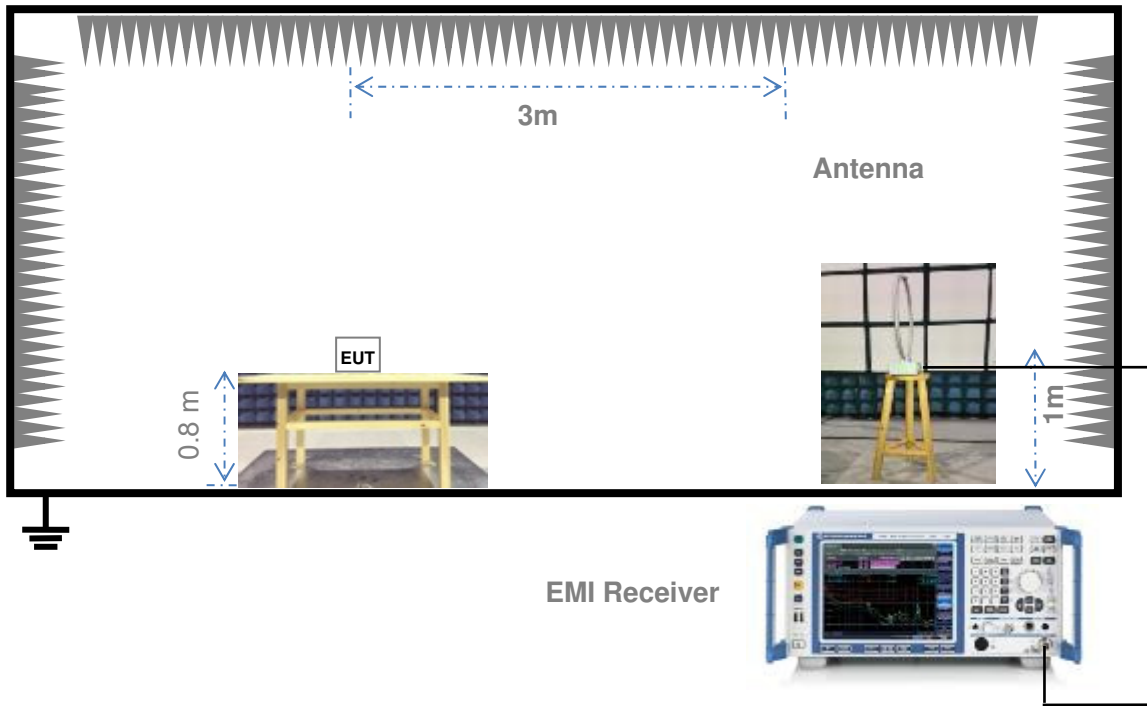
4.4 Test Configurations

Test Configurations (TC) No.	Description
TC01	<u>Video play mode (Internal memory + Adapter + Earphone)</u> The EUT configuration of the emission tests is EUT + Internal memory + Adapter + Earphone During the measurement, the EUT with earphone was powered by AC Power.
TC02	<u>Video play mode (TF card + Adapter + Earphone);</u> The EUT configuration of the emission tests is EUT + TF card + Adapter + Earphone During the measurement, the EUT with a TransFlash Card embedded was powered by AC Power.
TC03	<u>Front video record mode (Internal memory + Adapter + Earphone);</u> The EUT configuration of the emission tests is EUT + Internal memory + Adapter + Earphone During the measurement, The EUT powered by AC Power. It's front camera function was recording.
TC04	<u>Front video record mode (TF card + Adapter + Earphone);</u> The EUT configuration of the emission tests is EUT + TF card + Adapter + Earphone During the measurement, The EUT powered by AC Power, A communication link was established between the EUT and the Bluetooth Earphone. The EUT with a TransFlash Card embedded. It's front camera function was recording.
TC05	<u>Back video record mode (Internal memory + Adapter + Earphone)</u> The EUT configuration of the emission tests is EUT + Internal memory + Adapter + Earphone During the measurement, The EUT powered by AC Power, A communication link was established between the EUT and the Bluetooth Earphone. It's back camera function was recording.
TC06	<u>Back video record mode (TF card + Adapter + Earphone)</u> The EUT configuration of the emission tests is EUT TF card + Adapter + Earphone During the measurement, The EUT powered by AC Power, and the EUT with a TransFlash Card embedded it's back camera function was recording.
TC07	<u>Download mode (Connected to PC, Internal memory and TF card + Earphone)</u> The EUT configuration of the emission tests is EUT Connected to PC, Internal memory and TF card + Earphone During the measurement, The EUT powered by AC Power. During the measurement, the EUT with a TransFlash Card embedded was connected to a Laptop via a special USB cable, the data is transmitting between the PC and the TransFlash Card of the EUT.
TC08	<u>The Standby Test Mode</u> The EUT configuration of the emission tests is EUT + Battery During the measurement, the EUT was working in the Standby test mode.

Note: Based on the test situation, all of the EUT and its adapters processed the combination test.

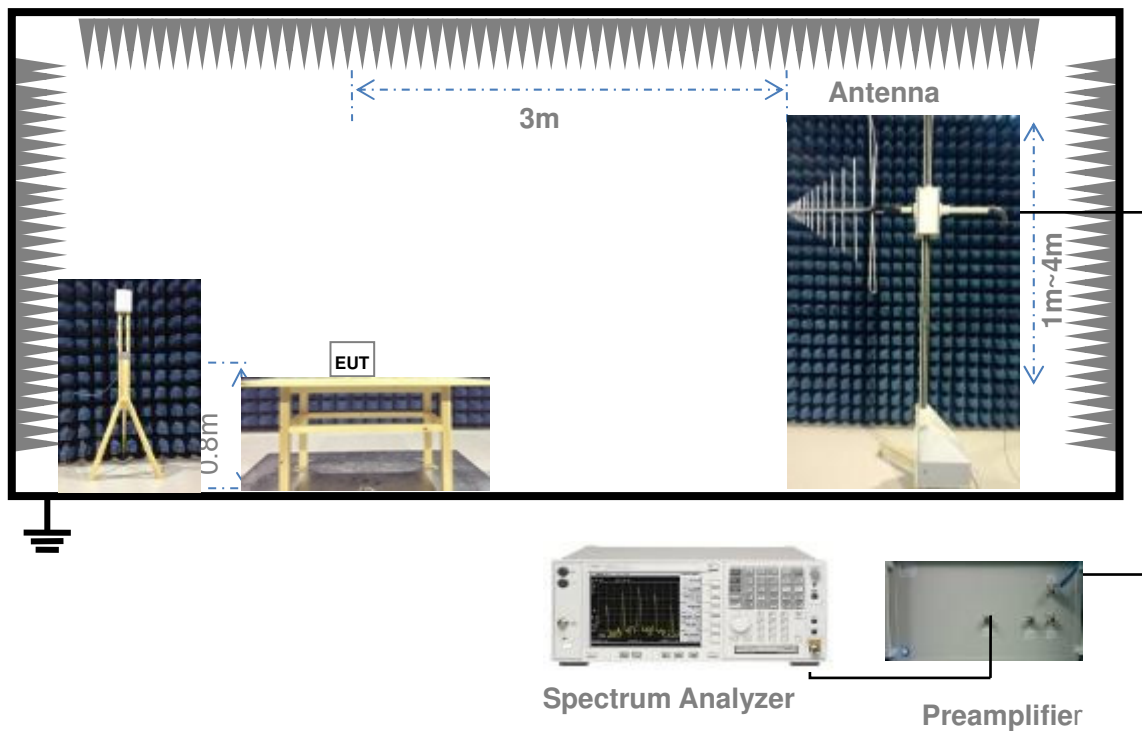
4.5 Test Setups

Test Setup 1



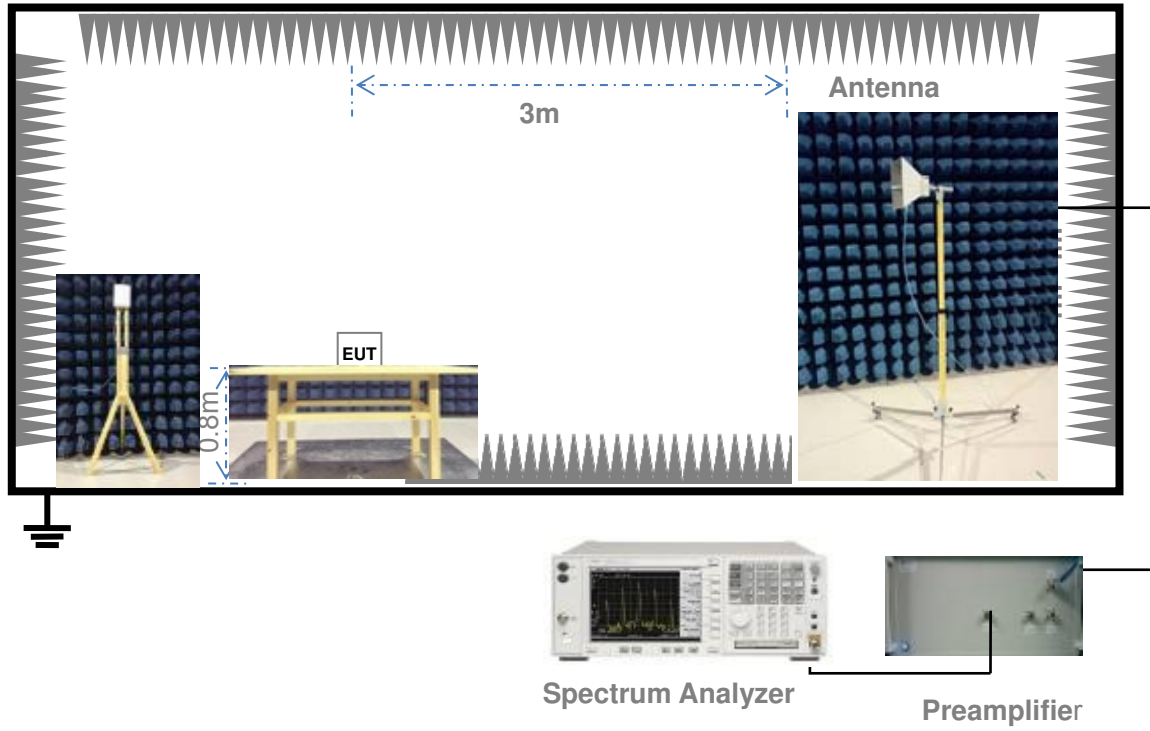
For Radiated Emission Test (Below 30 MHz))

Test Setup 2



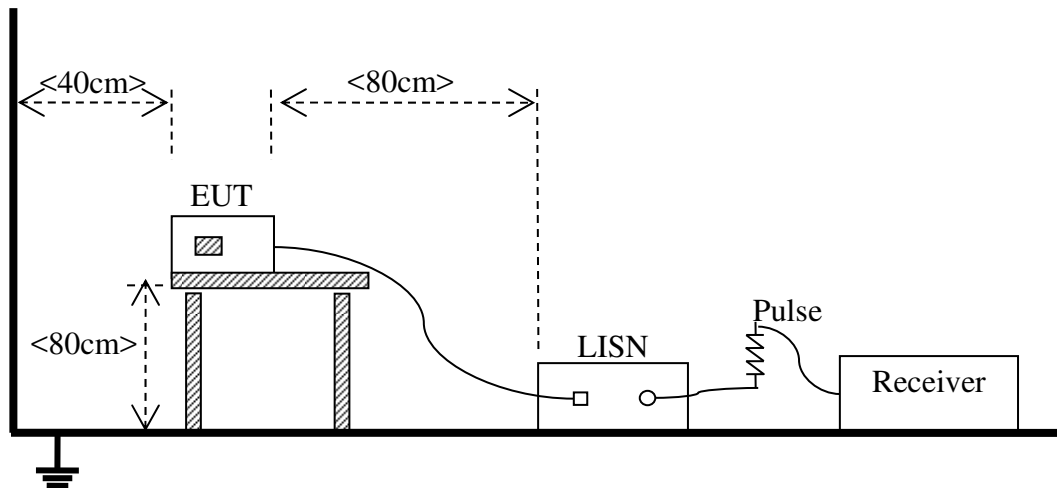
(For Radiated Emission Test (30 MHz-1 GHz))

Test Setup 3



(For Radiated Emission Test (above 1 GHz))

Test Setup 4



(For Conducted Emission, AC Ports Test)

4.6 Test Conditions

Test Case	Test Conditions	
Radiated Emission	Test Env.	NTNV
	Test Setup	Test Setup 1&3
	Test Configuration	TC01~TC08 ^{Note}
Conducted Emission, AC Ports	Test Env.	NTNV
	Test Setup	Test Setup 4
	Test Configuration	TC01~TC08 ^{Note}

Note: Based on client request, all normal using modes of the normal function were tested, but only the worst test data of test mode is reported in this report, and TC 06 (Back video record test mode) and TC 07 (Download mode) are the worst mode in this report.

5 TEST ITEMS

5.1 Emission Tests

5.1.1 Radiated Emission

5.1.1.1 Limit

Frequency (MHz)	Field Strength ($\mu\text{V/m}$)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

NOTE:

- 1) Field Strength (dB $\mu\text{V/m}$) = $20 \cdot \log [\text{Field Strength } (\mu\text{V/m})]$.
- 2) In the emission tables above, the tighter limit applies at the band edges.
- 3) For above 1000 MHz, limit field strength of harmonics: 54 dB $\mu\text{V/m}$ @3 m (AV) and 74 dB $\mu\text{V/m}$ @3 m (PK)

5.1.1.2 Test Setup

Refer to 4.5 section (test setups1 to test setups3) for radiated emission test, the photo of test setup please refer to ANNEX B.

5.1.1.3 Test Procedure

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

An initial pre-scan was performed in the chamber using the EMI Receiver in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by Bi-Log antenna with 2 orthogonal polarities.

5.1.1.4 Test Result

Please refer to ANNEX A.1.

5.1.2 Conducted Emission

5.1.2.1 Test Limit

Frequency range (MHz)	Conducted Limit (dB μ V)	
	Quasi-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

NOTE:

- 1) The limit is applicable to Class B ITE.
- 2) The lower limit shall apply at the band edges.
- 3) The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50 MHz.

5.1.2.2 Test Setup

Refer to 4.5 section test (test setup 4) for conducted emission, the photo of test setup please refer to ANNEX B.

5.1.2.3 Test Procedure

The EUT is connected to the power mains through a LISN which provides 50 Ω /50 μ H of coupling impedance for the measuring instrument. The test frequency range is from 150 kHz to 30 MHz. The maximum conducted interference is searched using Peak (PK), Quasi-peak (QP) and Average (AV) detectors; the emission levels that are more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed.

5.1.2.4 Test Result

Please refer to ANNEX A.2.

ANNEX A TEST RESULTS

A.1 Radiated Emission

Note 1: The symbol of “--” in the table which means not application.

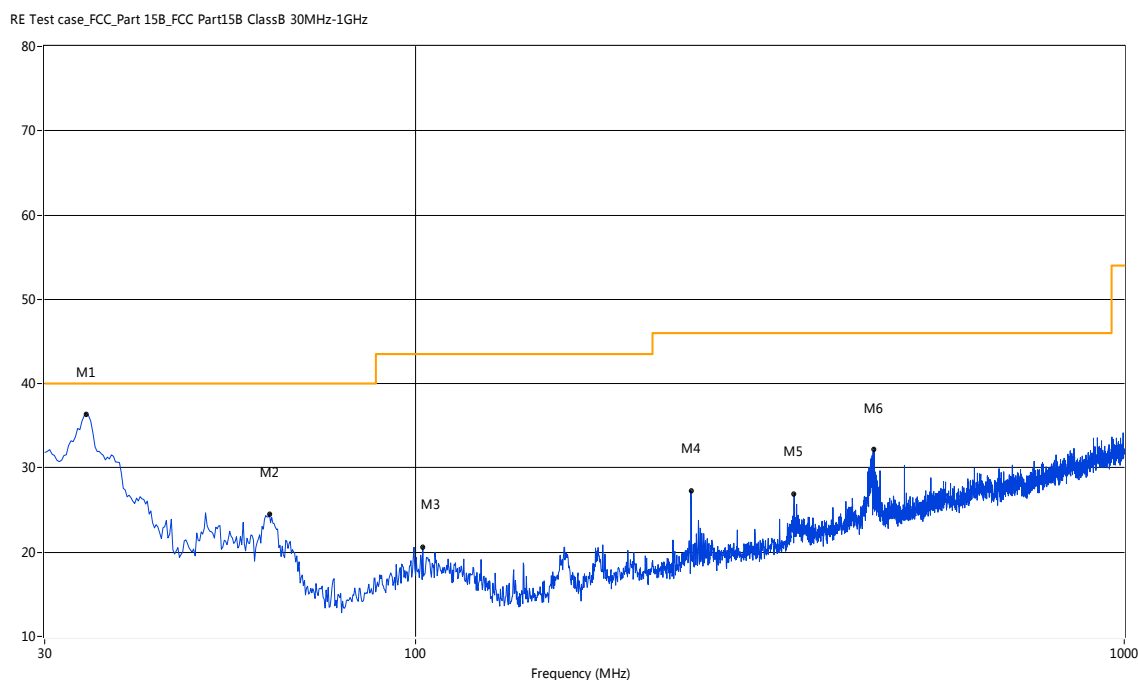
Note 2: For the test data above 1 GHz, according the ANSI C63.4-2014, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

Test Data and Plots (Below 1 GHz) (C-P35 Hunktey Charger and EUT1)

The worst test mode: Back video record mode (TF card + Adapter + Earphone):

The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31 (o) was not reported.

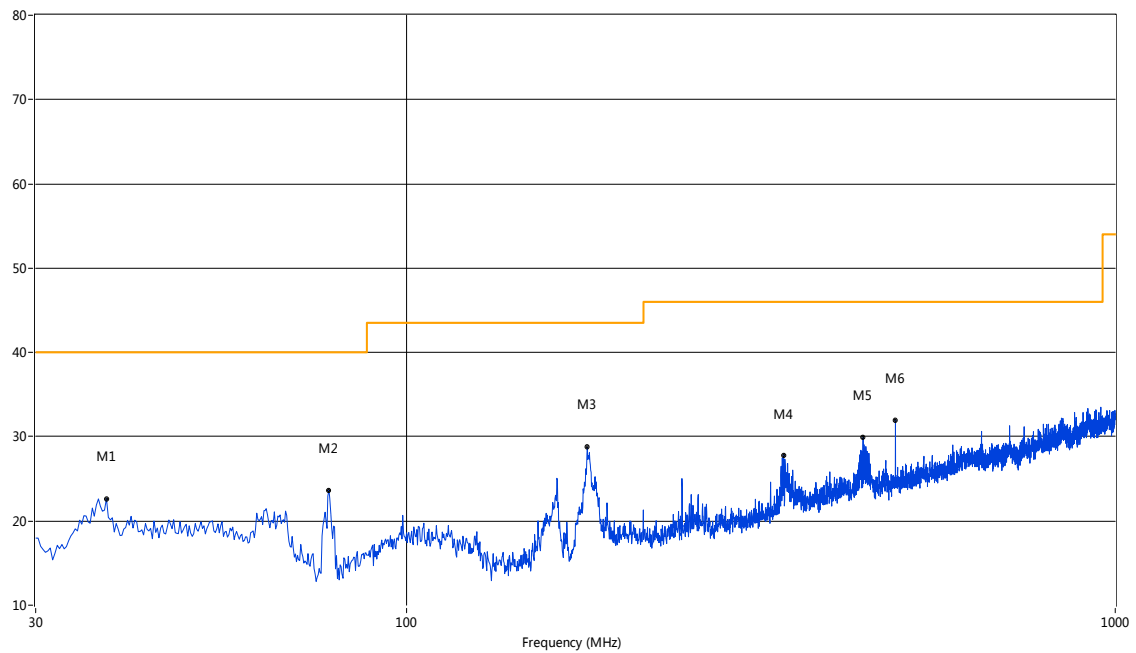
A.1.1 Test Antenna Vertical, 30 MHz – 1 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	34.36	36.42	-21.46	40.0	3.58	Peak	-0.00	100	Vertical	Pass
2	62.24	24.50	-20.30	40.0	15.50	Peak	215.80	100	Vertical	Pass
3	102.49	20.53	-20.25	43.5	22.97	Peak	75.20	100	Vertical	Pass
4	244.80	27.28	-19.00	46.0	18.72	Peak	0.30	100	Vertical	Pass
5	342.26	26.92	-16.33	46.0	19.08	Peak	35.20	100	Vertical	Pass
6	443.84	32.18	-14.53	46.0	13.82	Peak	44.90	100	Vertical	Pass

A.1.2 Test Antenna Horizontal, 30 MHz – 1 GHz

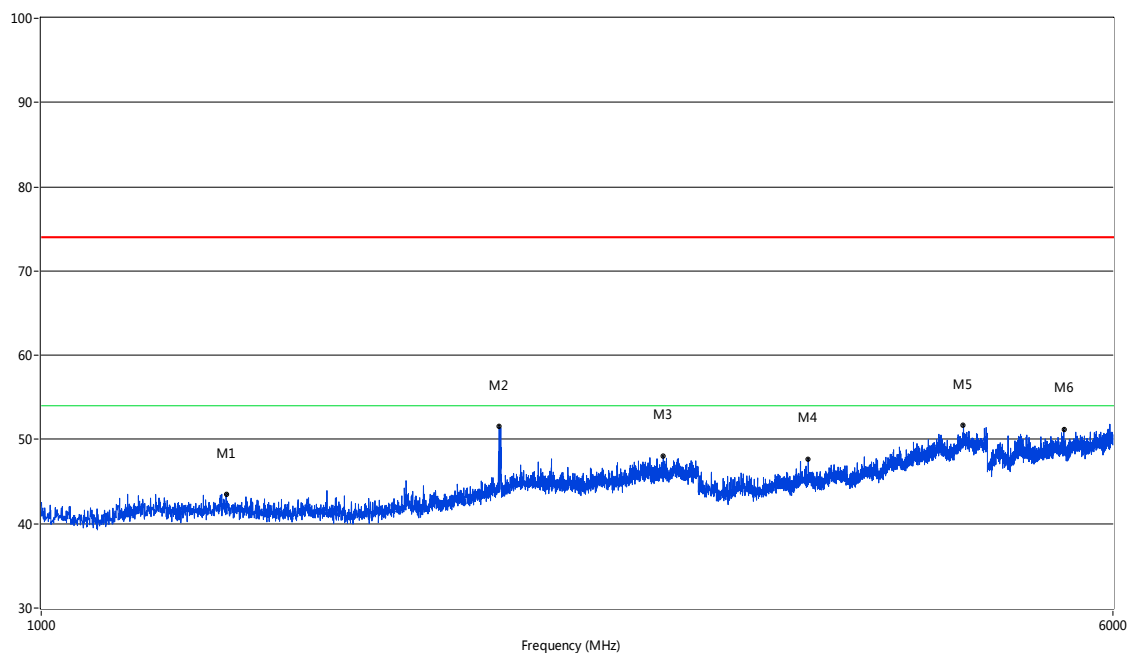
RE Test case_FCC_Part 15B_FCC Part15B ClassB 30MHz-1GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	37.76	22.65	-20.35	40.0	17.35	Peak	37.00	100	Horizontal	Pass
2	77.76	23.68	-24.58	40.0	16.32	Peak	2.10	100	Horizontal	Pass
3	180.07	28.77	-22.14	43.5	14.73	Peak	57.30	100	Horizontal	Pass
4	340.56	27.77	-16.34	46.0	18.23	Peak	107.10	100	Horizontal	Pass
5	440.93	29.93	-14.51	46.0	16.07	Peak	252.40	100	Horizontal	Pass
6	489.91	32.01	-13.45	46.0	13.99	Peak	313.20	100	Horizontal	Pass

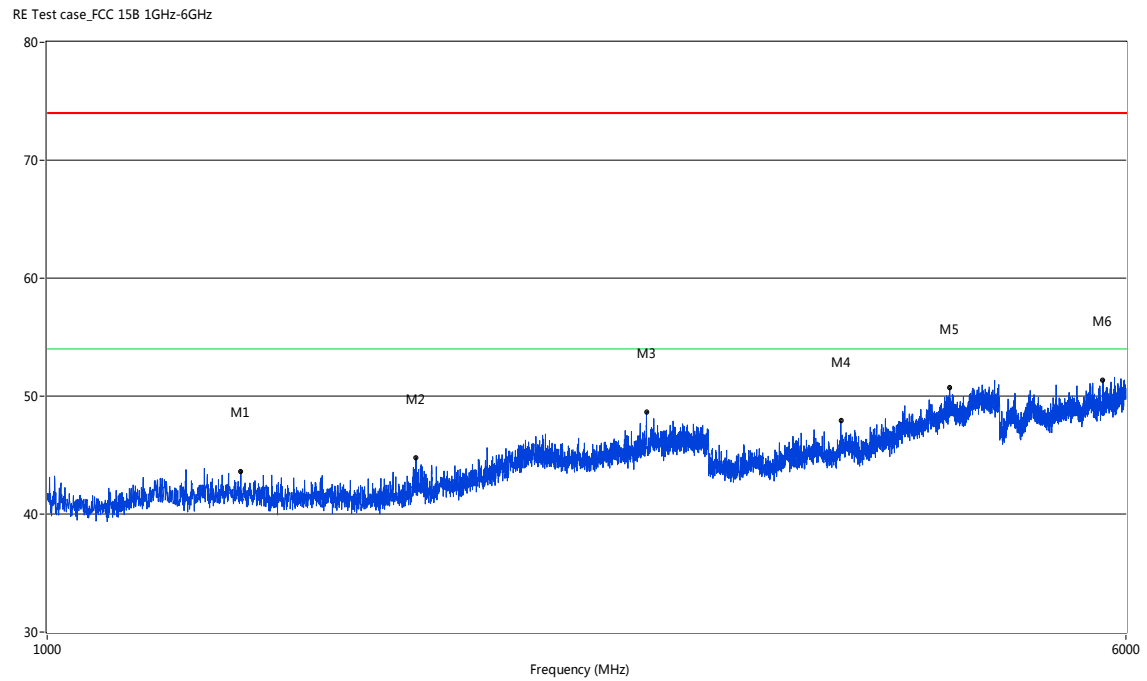
A.1.3 Test Antenna Vertical, 1 GHz – 6 GHz

RE Test case_FCC 15B 1GHz-6GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1362.41	43.48	-4.41	74.0	30.52	Peak	133.20	100	Horizontal	Pass
2	2150.71	51.52	-1.07	74.0	22.48	Peak	133.20	100	Horizontal	Pass
3	2829.04	48.00	1.93	74.0	26.00	Peak	281.30	100	Horizontal	Pass
4	3605.10	47.66	10.00	74.0	26.34	Peak	85.30	100	Horizontal	Pass
5	4673.58	51.65	13.17	74.0	22.35	Peak	244.10	100	Horizontal	Pass
6	5527.62	51.23	15.30	74.0	22.77	Peak	321.00	100	Horizontal	Pass

A.1.4 Test Antenna Horizontal, 1 GHz – 6 GHz



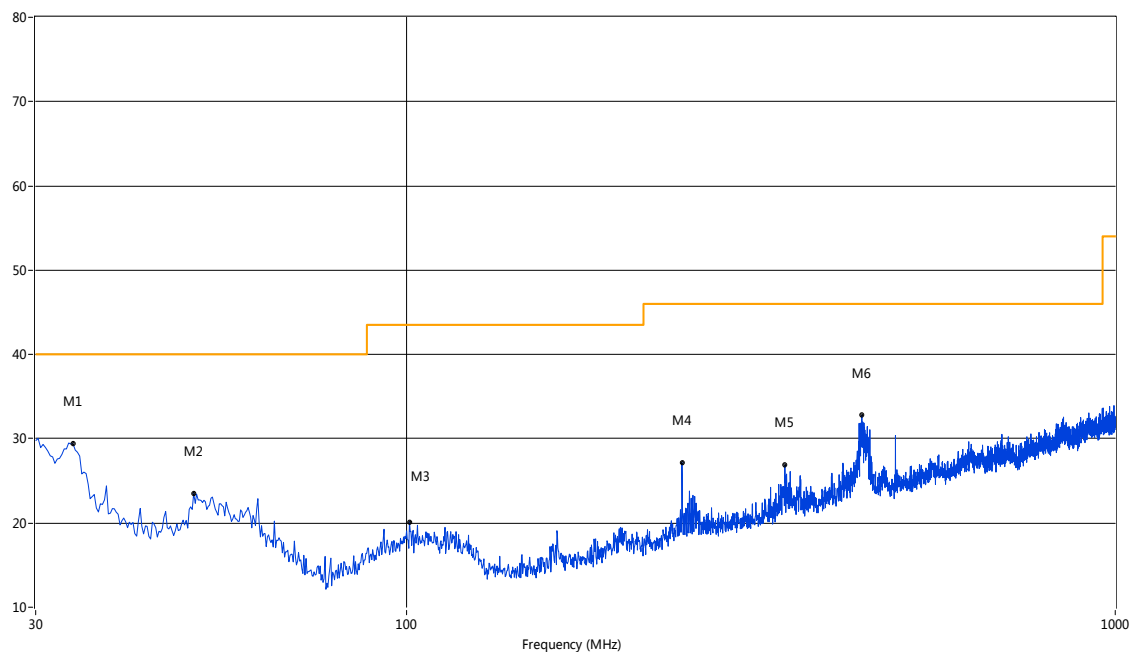
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1379.41	43.63	-4.44	74.0	30.37	Peak	266.50	100	Vertical	Pass
2	1845.29	44.79	-3.22	74.0	29.21	Peak	4.40	100	Vertical	Pass
3	2706.07	48.63	1.76	74.0	25.37	Peak	81.90	100	Vertical	Pass
4	3737.07	47.89	10.56	74.0	26.11	Peak	152.10	100	Vertical	Pass
5	4477.88	50.69	12.63	74.0	23.31	Peak	345.20	100	Vertical	Pass
6	5775.81	51.32	15.62	74.0	22.68	Peak	10.70	100	Vertical	Pass

Test Data and Plots (Below 1 GHz) (C-P35 Abcel Charger and EUT2)

The worst test mode: Back video record mode (TF card + Adapter + Earphone);

A.1.5 Test Antenna Vertical, 30 MHz – 1 GHz

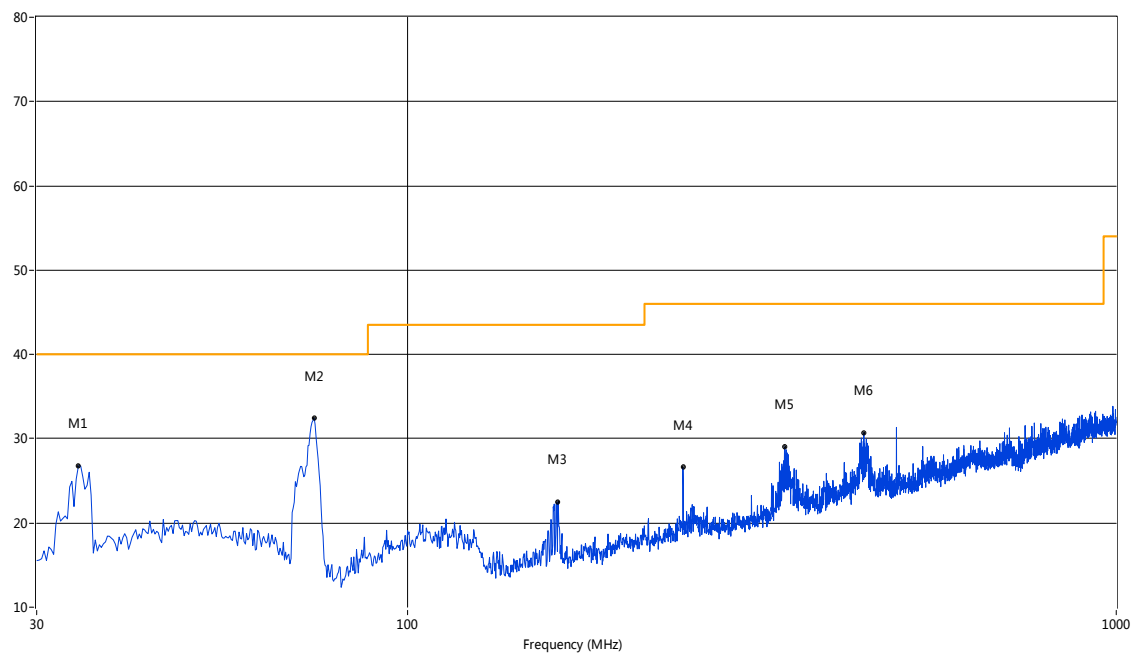
RE Test case_FCC_Part 15B_FCC Part15B ClassB 30MHz-1GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	33.88	29.41	-21.72	40.0	10.59	Peak	359.30	100	Vertical	Pass
2	50.12	23.49	-18.66	40.0	16.51	Peak	57.00	100	Vertical	Pass
3	101.03	20.13	-20.21	43.5	23.37	Peak	218.70	100	Vertical	Pass
4	244.80	27.19	-19.00	46.0	18.81	Peak	358.60	100	Vertical	Pass
5	342.02	26.89	-16.28	46.0	19.11	Peak	42.30	100	Vertical	Pass
6	439.00	32.78	-14.49	46.0	13.22	Peak	62.20	100	Vertical	Pass

A.1.6 Test Antenna Horizontal, 30 MHz – 1 GHz

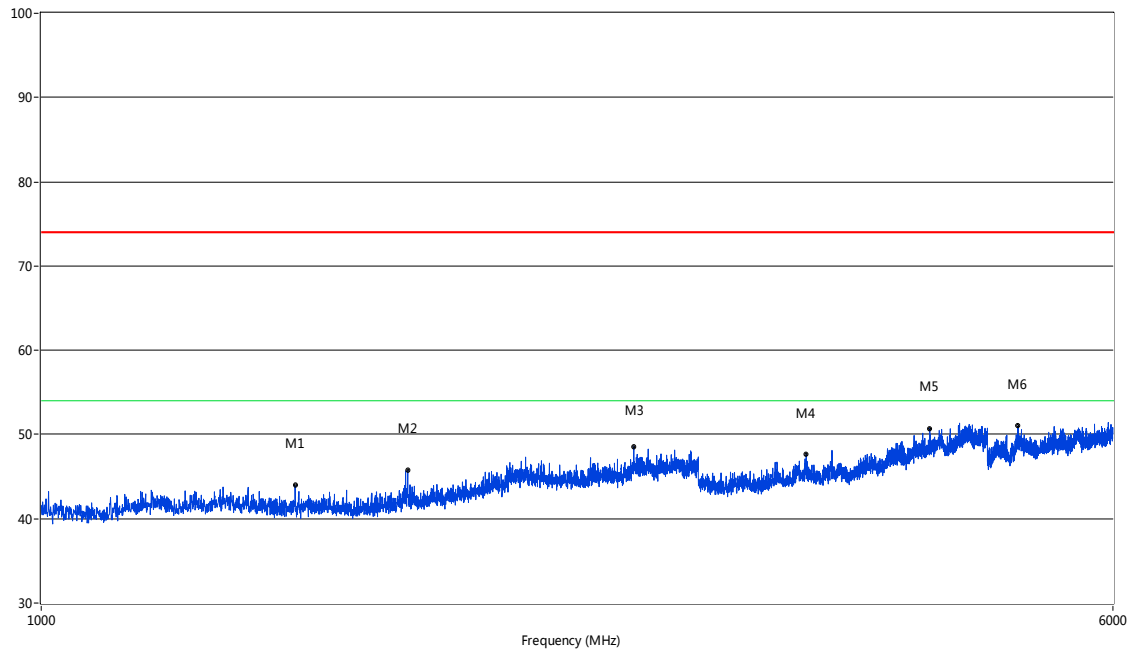
RE Test case_FCC_Part 15B_FCC Part15B ClassB 30MHz-1GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	34.36	26.78	-21.46	40.0	13.22	Peak	203.30	100	Horizontal	Pass
2	73.88	32.42	-24.09	40.0	7.58	Peak	359.70	100	Horizontal	Pass
3	163.10	22.50	-22.95	43.5	21.00	Peak	68.30	100	Horizontal	Pass
4	244.80	26.62	-19.00	46.0	19.38	Peak	233.00	100	Horizontal	Pass
5	340.56	29.03	-16.34	46.0	16.97	Peak	82.40	100	Horizontal	Pass
6	440.69	30.70	-14.56	46.0	15.30	Peak	38.20	100	Horizontal	Pass

A.1.7 Test Antenna Vertical, 1 GHz – 6 GHz

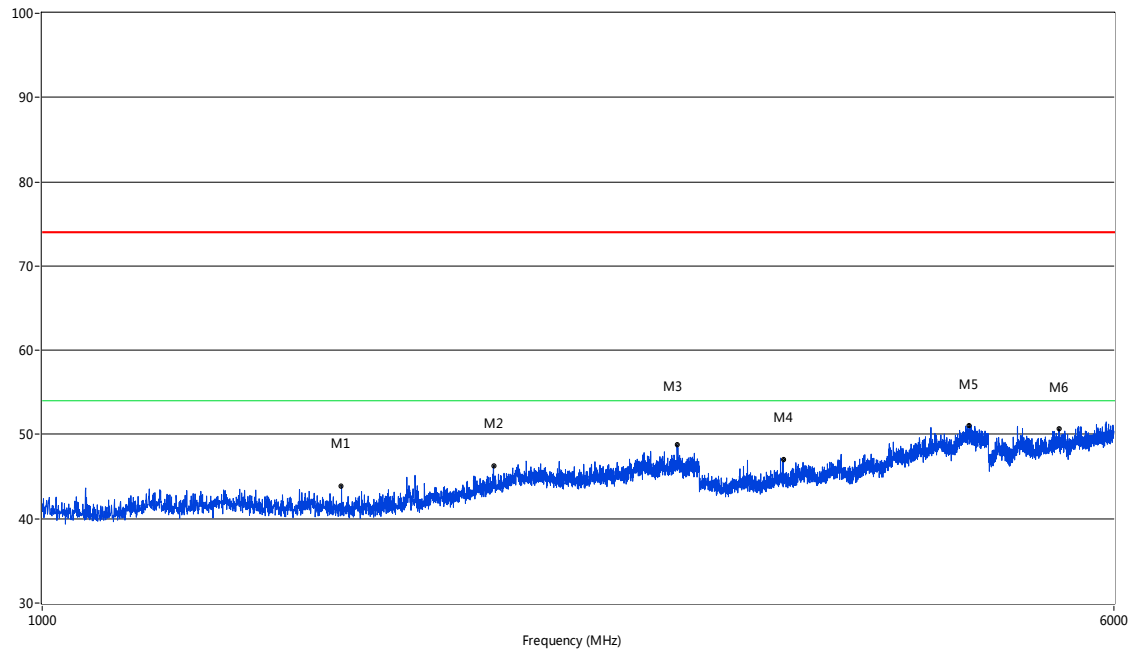
RE Test case_FCC 15B 1GHz-6GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1528.87	43.94	-4.32	74.0	30.06	Peak	270.00	100	Vertical	Pass
2	1845.79	45.74	-3.19	74.0	28.26	Peak	217.10	100	Vertical	Pass
3	2693.08	48.58	1.42	74.0	25.42	Peak	31.30	100	Vertical	Pass
4	3593.10	47.63	9.90	74.0	26.37	Peak	357.40	100	Vertical	Pass
5	4417.15	50.71	12.52	74.0	23.29	Peak	203.70	100	Vertical	Pass
6	5119.72	51.03	15.12	74.0	22.97	Peak	351.00	100	Vertical	Pass

A.1.8 Test Antenna Horizontal, 1 GHz – 6 GHz

RE Test case_FCC 15B 1GHz-6GHz



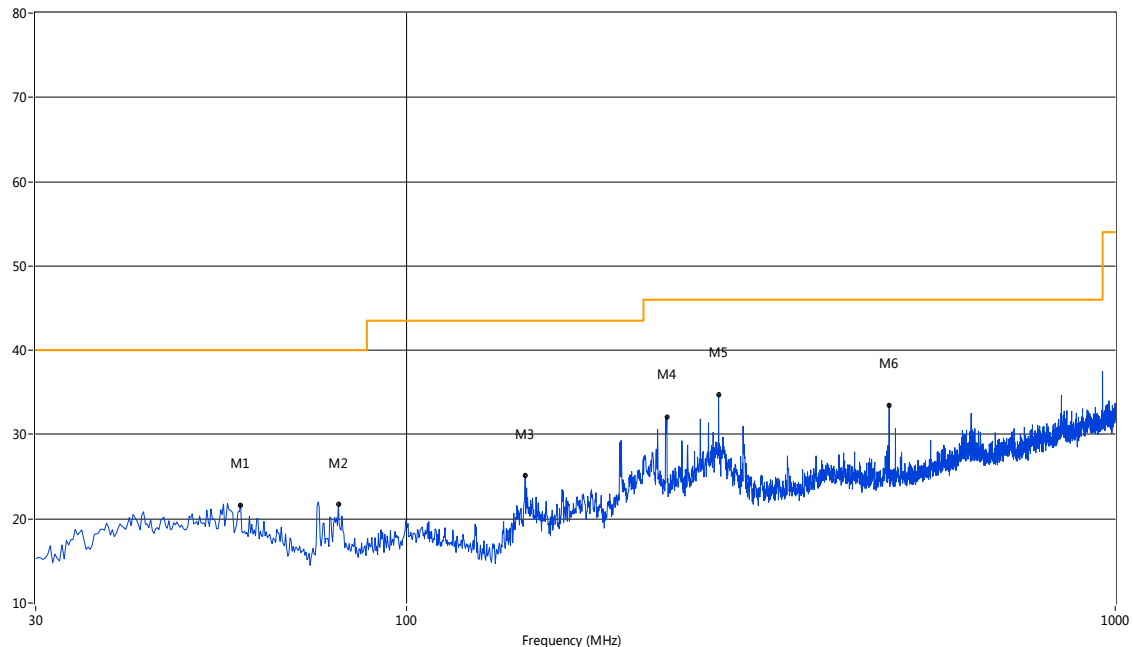
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1649.34	43.88	-4.08	74.0	30.12	Peak	44.80	100	Horizontal	Pass
2	2126.72	46.30	-0.98	74.0	27.70	Peak	187.50	100	Horizontal	Pass
3	2890.53	48.78	2.27	74.0	25.22	Peak	60.70	100	Horizontal	Pass
4	3452.89	47.00	9.56	74.0	27.00	Peak	0.50	100	Horizontal	Pass
5	4711.07	51.11	13.38	74.0	22.89	Peak	130.30	100	Horizontal	Pass
6	5474.38	50.63	14.90	74.0	23.37	Peak	-0.30	100	Horizontal	Pass

Test Data and Plots (Below 1 GHz)

The Download Test Mode (EUT1)

A.1.9 Test Antenna Vertical, 30 MHz – 1 GHz

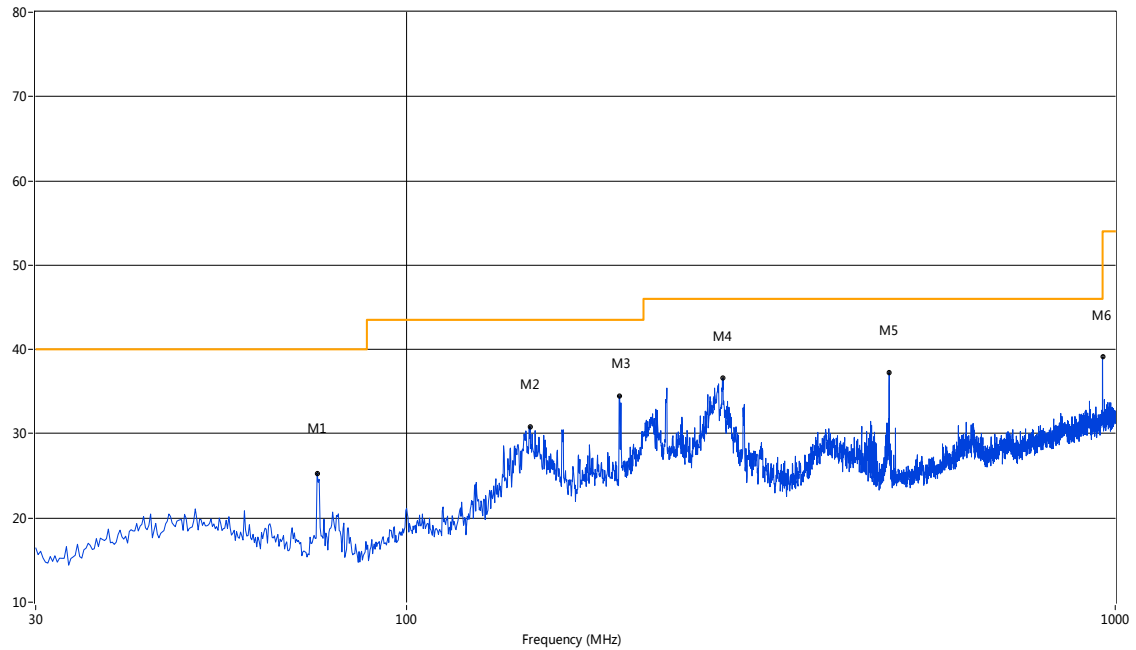
RE Test case_FCC_Part 15B_FCC Part15B ClassB 30MHz-1GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	58.37	21.67	-19.82	40.0	18.33	Peak	261.80	100	Vertical	Pass
2	80.18	21.67	-24.45	40.0	18.33	Peak	226.30	100	Vertical	Pass
3	147.10	25.09	-23.62	43.5	18.41	Peak	35.10	100	Vertical	Pass
4	233.16	32.10	-19.51	46.0	13.90	Peak	145.70	100	Vertical	Pass
5	275.83	34.71	-18.41	46.0	11.29	Peak	19.90	100	Vertical	Pass
6	479.97	33.47	-13.81	46.0	12.53	Peak	1.30	100	Vertical	Pass

A.1.10 Test Antenna Horizontal, 30 MHz – 1 GHz

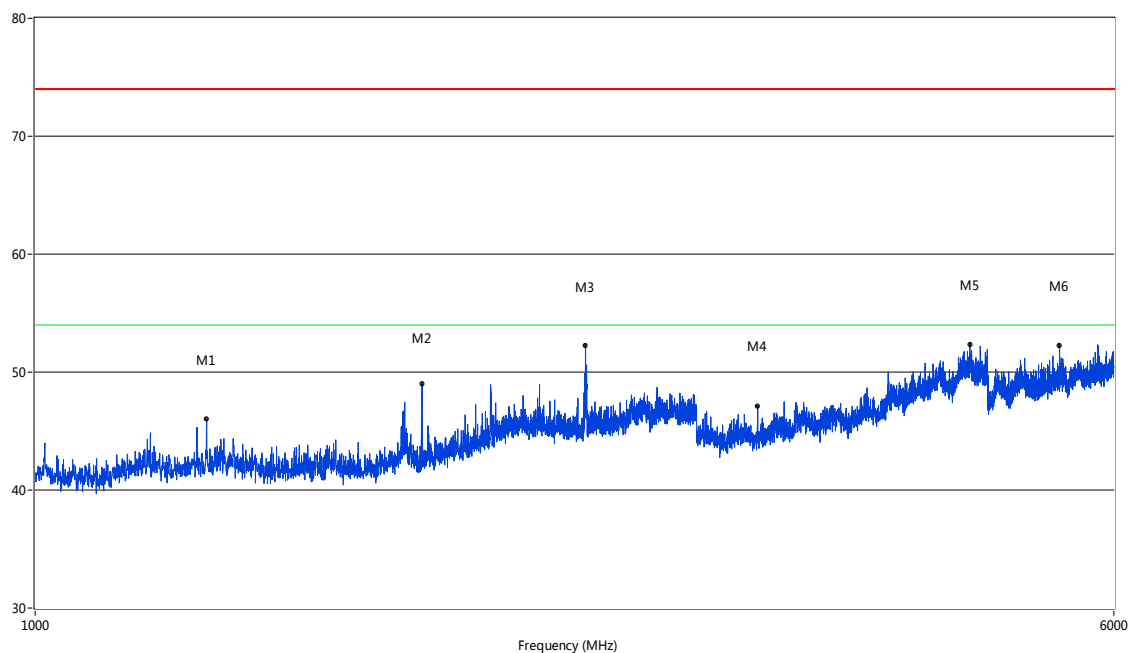
RE Test case_FCC_Part 15B_FCC Part15B ClassB 30MHz-1GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	74.85	25.30	-24.44	40.0	14.70	Peak	307.40	100	Horizontal	Pass
2	149.52	30.83	-23.48	43.5	12.67	Peak	354.70	100	Horizontal	Pass
3	199.71	34.50	-20.23	43.5	9.00	Peak	317.40	100	Horizontal	Pass
4	279.23	36.57	-18.43	46.0	9.43	Peak	237.00	100	Horizontal	Pass
5	479.97	37.29	-13.81	46.0	8.71	Peak	257.00	100	Horizontal	Pass
6	960.00	39.09	-5.08	46.0	6.91	Peak	65.00	100	Horizontal	Pass

A.1.11 Test Antenna Vertical, 1 GHz – 6 GHz

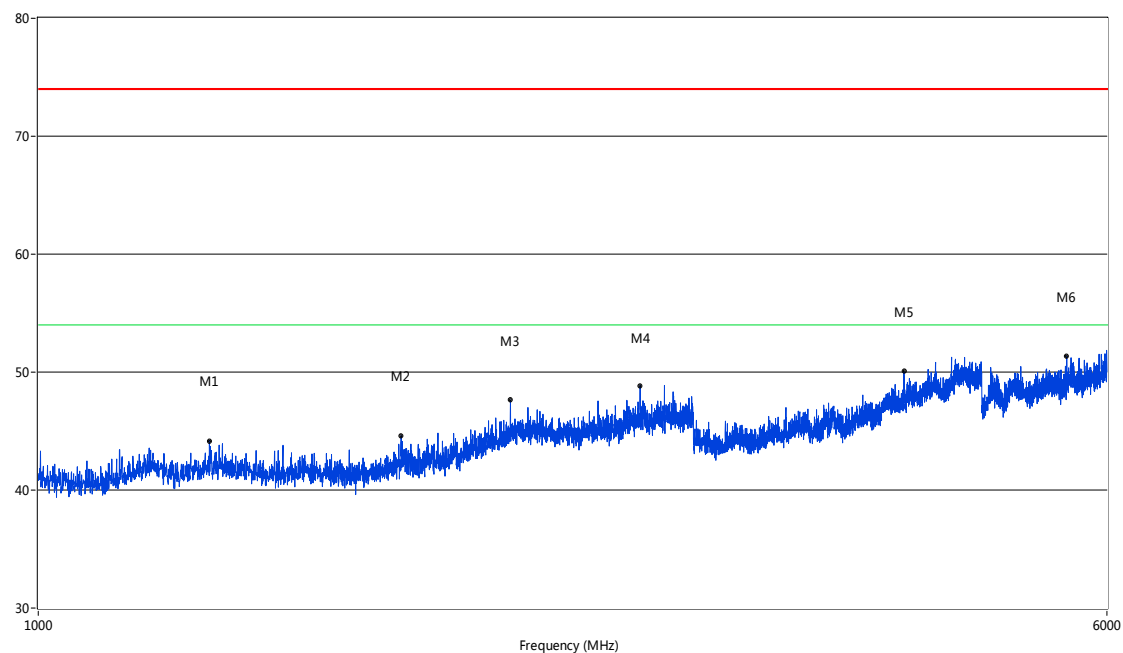
RE Test case_FCC 15B 1GHz-6GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1329.92	46.00	-4.52	74.0	28.00	Peak	83.80	100	Vertical	Pass
2	1901.77	48.98	-2.48	74.0	25.02	Peak	224.70	100	Vertical	Pass
3	2495.13	52.25	0.21	74.0	21.75	Peak	151.10	100	Vertical	Pass
4	3320.92	47.14	8.90	74.0	26.86	Peak	308.00	100	Vertical	Pass
5	4723.07	52.31	13.60	74.0	21.69	Peak	15.40	100	Vertical	Pass
6	5482.63	52.26	14.93	74.0	21.74	Peak	265.80	100	Vertical	Pass

A.1.12 Test Antenna Horizontal, 1 GHz – 6 GHz

RE Test case_FCC 15B 1GHz-6GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1332.42	44.19	-4.83	74.0	29.81	Peak	3.40	100	Horizontal	Pass
2	1837.29	44.61	-3.31	74.0	29.39	Peak	359.80	100	Horizontal	Pass
3	2207.20	47.63	-0.24	74.0	26.37	Peak	281.00	100	Horizontal	Pass
4	2743.06	48.87	1.61	74.0	25.13	Peak	356.90	100	Horizontal	Pass
5	4270.18	50.05	11.93	74.0	23.95	Peak	68.60	100	Horizontal	Pass
6	5610.10	51.35	15.33	74.0	22.65	Peak	68.60	100	Horizontal	Pass

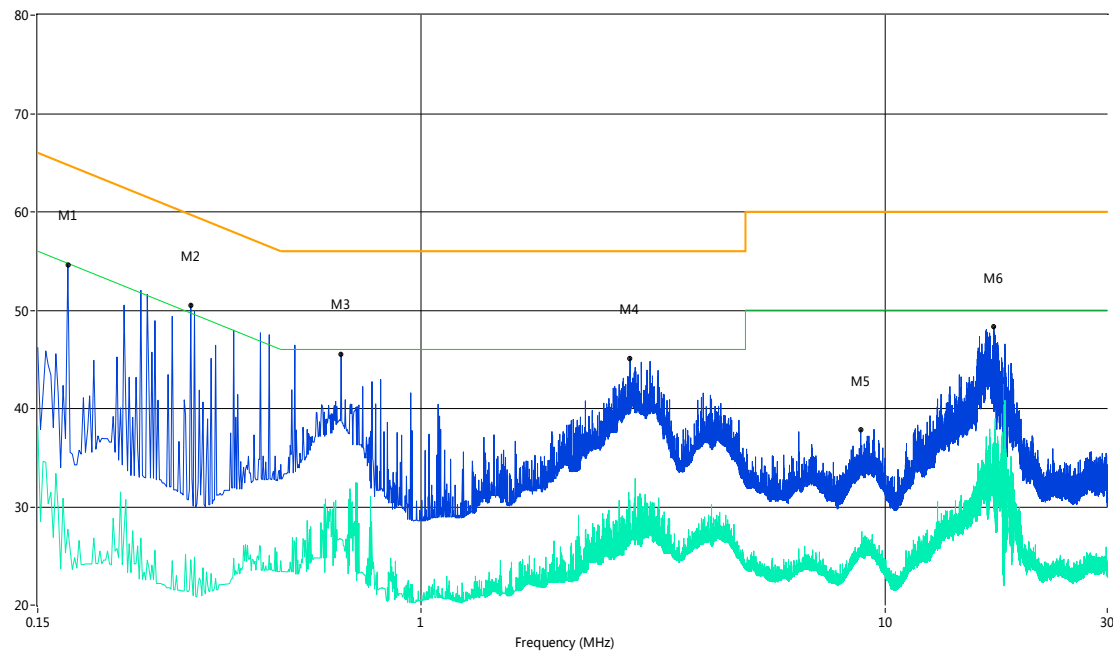
A.2 Conducted Emission

Test Data and Plots (Below 1 GHz) (C-P35 Hunktey Charger and EUT1)

The worst test mode: Back video record mode (TF card + Adapter + Earphone);

A.2.1 L Phase

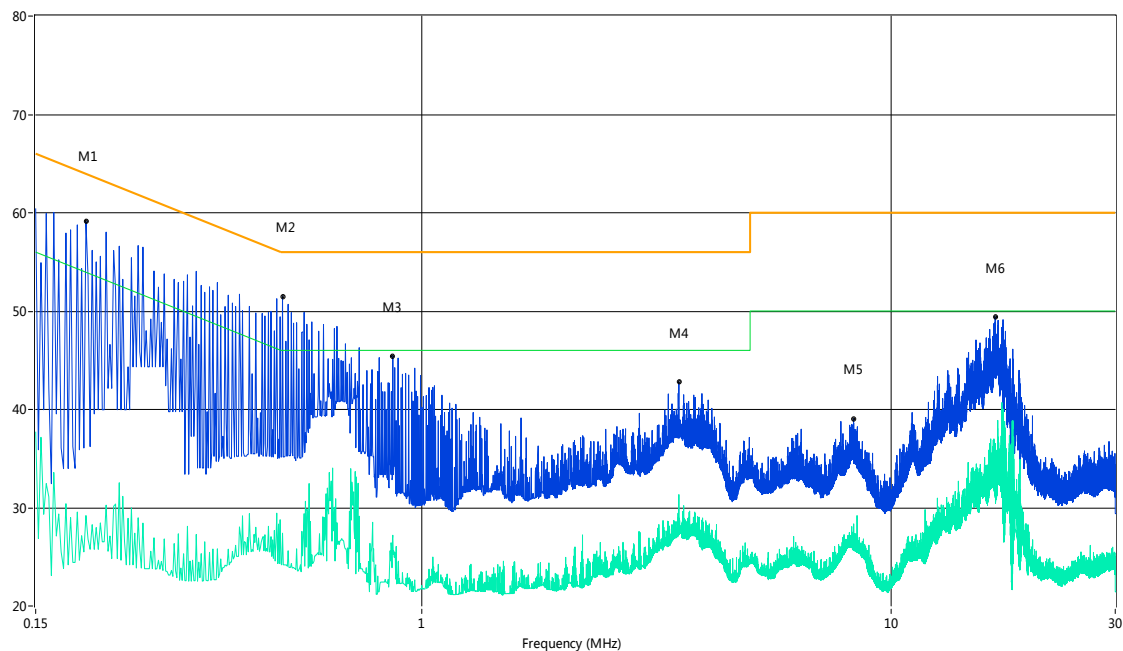
CE Test case_CE_FCC PART 15_ Class B



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.17	54.6	13.00	65.3	10.70	Peak	L Line	Pass
1**	0.17	27.7	13.00	55.3	27.60	AV	L Line	Pass
2	0.32	50.5	13.00	61.1	10.60	Peak	L Line	Pass
2**	0.32	24.6	13.00	51.1	26.50	AV	L Line	Pass
3	0.67	45.5	13.00	56.0	10.50	Peak	L Line	Pass
3**	0.67	22.4	13.00	46.0	23.60	AV	L Line	Pass
4	2.82	45.1	13.00	56.0	10.90	Peak	L Line	Pass
4**	2.82	28.1	13.00	46.0	17.90	AV	L Line	Pass
5	8.85	37.8	13.00	60.0	22.20	Peak	L Line	Pass
5**	8.85	25.4	13.00	50.0	24.60	AV	L Line	Pass
6	17.12	48.3	13.00	60.0	11.70	Peak	L Line	Pass
6**	17.12	36.5	13.00	50.0	13.50	AV	L Line	Pass

A.2.2 N Phase

CE Test case_FCC_CE_FCC PART 15_ Class B



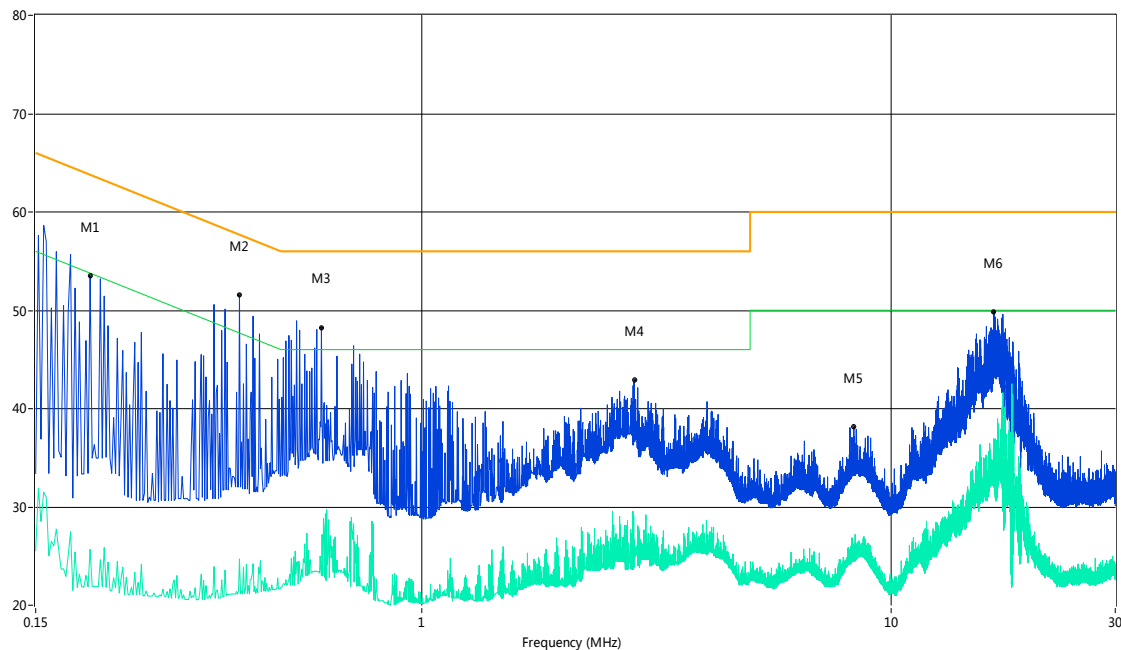
No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.19	59.1	13.00	64.8	5.70	Peak	N Line	Pass
1**	0.19	29.2	13.00	54.8	25.60	AV	N Line	Pass
2	0.50	51.5	13.00	56.0	4.50	Peak	N Line	Pass
2**	0.50	27.4	13.00	46.0	18.60	AV	N Line	Pass
3	0.87	45.4	13.00	56.0	10.60	Peak	N Line	Pass
3**	0.87	27.2	13.00	46.0	18.80	AV	N Line	Pass
4	3.52	42.8	13.00	56.0	13.20	Peak	N Line	Pass
4**	3.52	31.3	13.00	46.0	14.70	AV	N Line	Pass
5	8.31	39.0	13.00	60.0	21.00	Peak	N Line	Pass
5**	8.31	27.2	13.00	50.0	22.80	AV	N Line	Pass
6	16.66	49.4	13.00	60.0	10.60	Peak	N Line	Pass
6**	16.66	33.7	13.00	50.0	16.30	AV	N Line	Pass

Test Data and Plots (C-P35 Acbel Charger and EUT2)

The worst test mode: Back video record mode (TF card + Adapter + Earphone):

A.2.3 L Phase

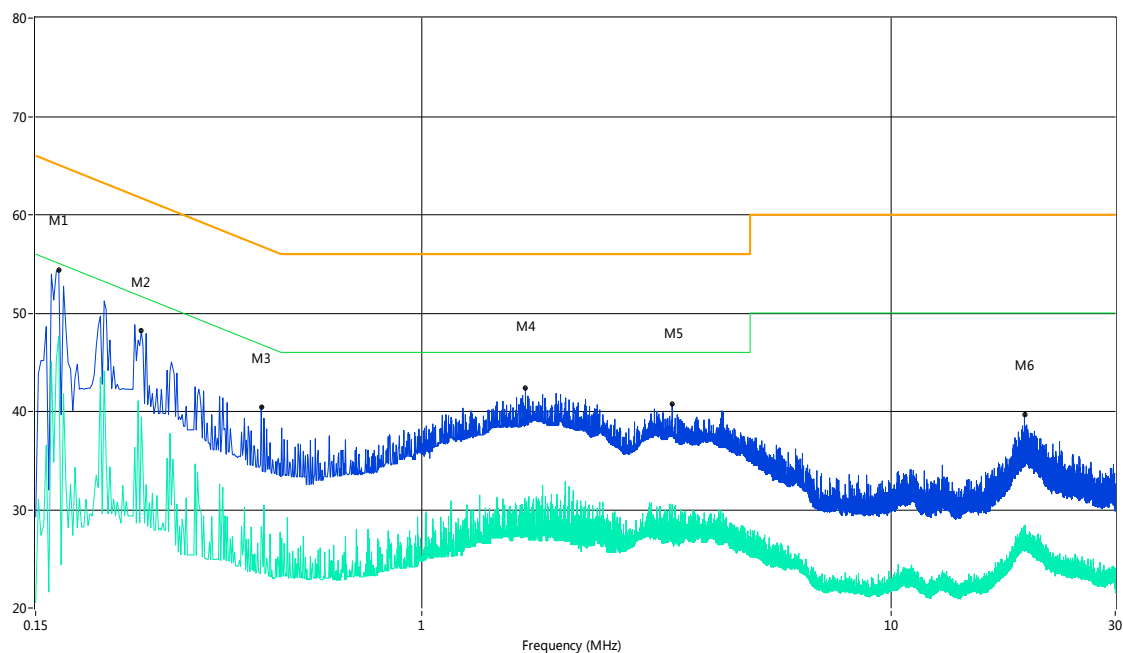
CE Test case_FCC_CE_FCC PART 15_ Class B



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.20	53.5	13.00	64.7	11.20	Peak	L Line	Pass
1**	0.20	25.7	13.00	54.7	29.00	AV	L Line	Pass
2	0.41	51.6	13.00	58.6	7.00	Peak	L Line	Pass
2**	0.41	24.7	13.00	48.6	23.90	AV	L Line	Pass
3	0.61	48.3	13.00	56.0	7.70	Peak	L Line	Pass
3**	0.61	22.5	13.00	46.0	23.50	AV	L Line	Pass
4	2.83	42.9	13.00	56.0	13.10	Peak	L Line	Pass
4**	2.83	25.6	13.00	46.0	20.40	AV	L Line	Pass
5	8.32	38.1	13.00	60.0	21.90	Peak	L Line	Pass
5**	8.32	26.1	13.00	50.0	23.90	AV	L Line	Pass
6	16.55	49.9	13.00	60.0	10.10	Peak	L Line	Pass
6**	16.55	35.8	13.00	50.0	14.20	AV	L Line	Pass

A.2.4 N Phase

CE Test case_FCC_CE_FCC PART 15_ Class B

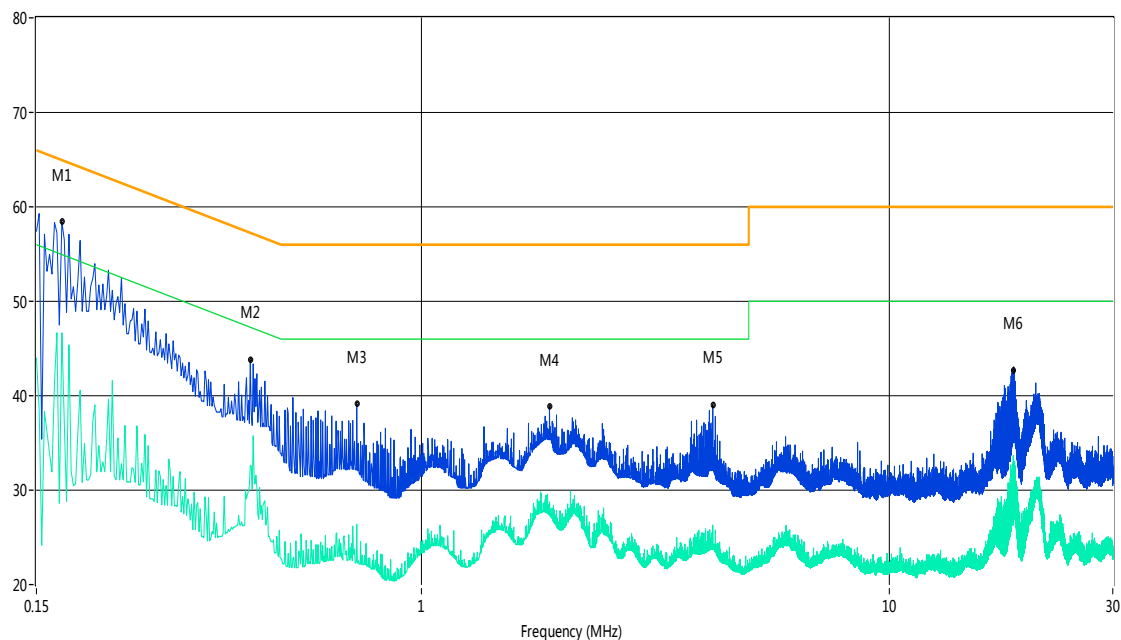


No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.17	54.4	13.00	65.5	11.10	Peak	N Line	Pass
1**	0.17	47.7	13.00	55.5	7.80	AV	N Line	Pass
2	0.25	48.2	13.00	63.1	14.90	Peak	N Line	Pass
2**	0.25	39.4	13.00	53.1	13.70	AV	N Line	Pass
3	0.45	40.5	13.00	57.3	16.80	Peak	N Line	Pass
3**	0.45	28.3	13.00	47.3	19.00	AV	N Line	Pass
4	1.66	42.4	13.00	56.0	13.60	Peak	N Line	Pass
4**	1.66	30.6	13.00	46.0	15.40	AV	N Line	Pass
5	3.41	40.7	13.00	56.0	15.30	Peak	N Line	Pass
5**	3.41	30.6	13.00	46.0	15.40	AV	N Line	Pass
6	19.23	39.6	13.00	60.0	20.40	Peak	N Line	Pass
6**	19.23	28.2	13.00	50.0	21.80	AV	N Line	Pass

The Download Test Mode (EUT1)

A.2.5 L Phase

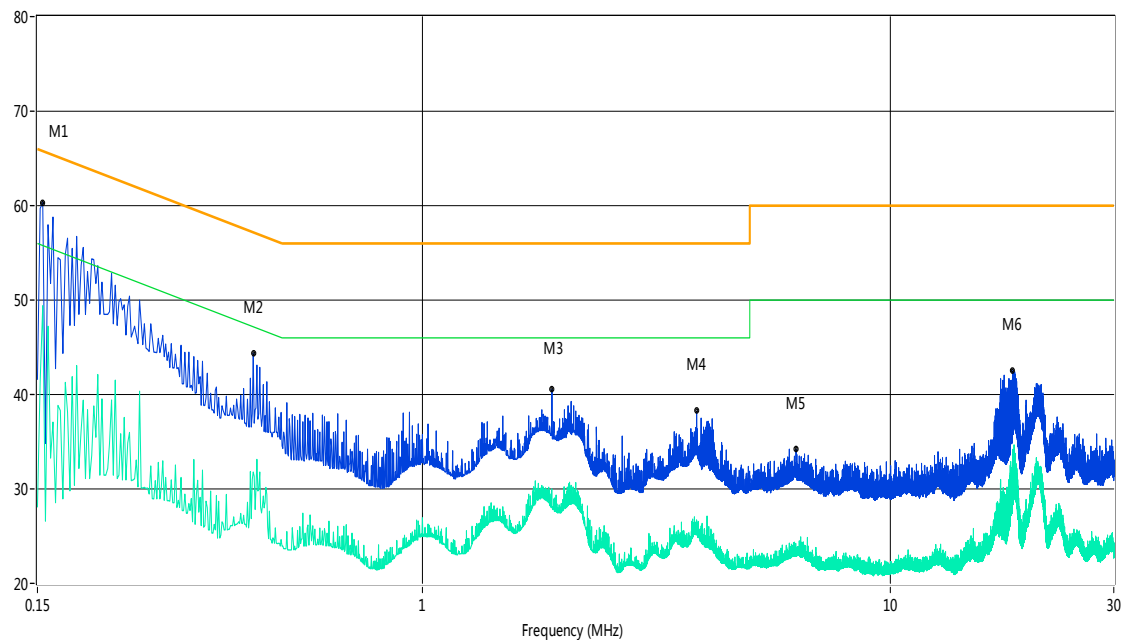
CE Test case_FCC_CE_FCC PART 15_ Class B



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.17	58.4	13.00	65.4	7.00	Peak	L Line	Pass
1**	0.17	46.7	13.00	55.4	8.70	AV	L Line	Pass
2	0.43	43.8	13.00	58.0	14.20	Peak	L Line	Pass
2**	0.43	32.6	13.00	48.0	15.40	AV	L Line	Pass
3	0.73	39.1	13.00	56.0	16.90	Peak	L Line	Pass
3**	0.73	26.4	13.00	46.0	19.60	AV	L Line	Pass
4	1.87	38.8	13.00	56.0	17.20	Peak	L Line	Pass
4**	1.87	28.8	13.00	46.0	17.20	AV	L Line	Pass
5	4.19	39.0	13.00	56.0	17.00	Peak	L Line	Pass
5**	4.19	26.3	13.00	46.0	19.70	AV	L Line	Pass
6	18.41	42.7	13.00	60.0	17.30	Peak	L Line	Pass
6**	18.41	31.9	13.00	50.0	18.10	AV	L Line	Pass

A.2.6 N Phase

CE Test case_FCC_CE_FCC PART 15_ Class B



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.15	60.3	13.00	65.9	5.60	Peak	N Line	Pass
1**	0.15	49.4	13.00	55.9	6.50	AV	N Line	Pass
2	0.43	44.3	13.00	57.9	13.60	Peak	N Line	Pass
2**	0.43	31.8	13.00	47.9	16.10	AV	N Line	Pass
3	1.89	40.5	13.00	56.0	15.50	Peak	N Line	Pass
3**	1.89	28.8	13.00	46.0	17.20	AV	N Line	Pass
4	3.85	38.2	13.00	56.0	17.80	Peak	N Line	Pass
4**	3.85	26.7	13.00	46.0	19.30	AV	N Line	Pass
5	6.28	34.2	13.00	60.0	25.80	Peak	N Line	Pass
5**	6.28	23.5	13.00	50.0	26.50	AV	N Line	Pass
6	18.24	42.5	13.00	60.0	17.50	Peak	N Line	Pass
6**	18.24	34.2	13.00	50.0	15.80	AV	N Line	Pass

ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-SZ1610062-AE.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ1610062-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SZ1610062-AI.PDF”.

--END OF REPORT--