

FCC

EMC

TEST REPORT

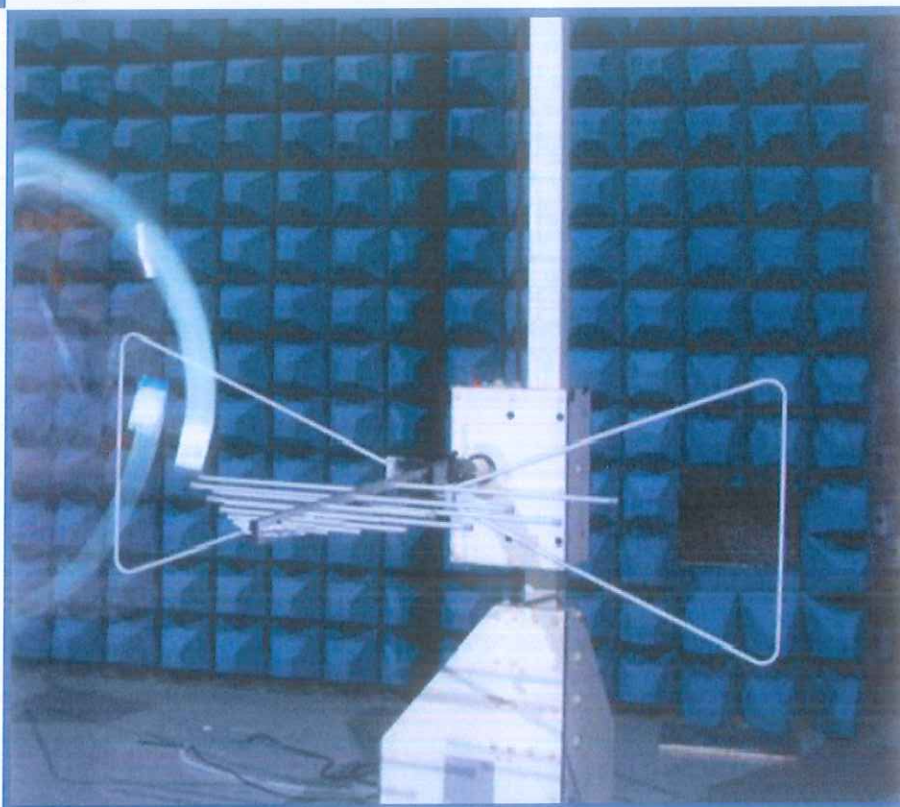
ISSUED BY  
Shenzhen BALUN Technology Co., Ltd.



FOR  
**Cellular Gateway**

ISSUED TO  
Capricorn Electronics Ltd

Workshop No. A7, 5th Floor, Block A, Proficient Industrial  
Centre, 6 Wang Kwun Road, Kowloon Bay, Kowloon, Hong  
Kong



Tested by: *Xia Long*  
Xia Long  
(Engineer)  
Date: *Jul. 2018*

Approved by: *Wei Yanquan*  
Wei Yanquan  
(Chief Engineer)  
Date: *Jul. 13, 2018*



Report No.: BL-SZ1870103-401  
EUT Name: Cellular Gateway  
Model Name: CL5000  
Brand Name: N/A  
Test Standard: 47 CFR Part 15 Subpart B  
FCC ID: WXLCL5000

Test Conclusion: Pass  
Test Date: Jun. 30, 2018 ~ Jul. 05, 2018  
Date of Issue: Jul. 13, 2018

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**Revision History**

<u>Version</u>	<u>Issue Date</u>	<u>Revisions Content</u>
<u>Rev. 01</u>	<u>Jul. 13, 2018</u>	<u>Initial Issue</u>

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# 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	<p>The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1.</p> <p>The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.</p> <p>The laboratory is a testing organization accredited by American Association for Laboratory Accreditation(A2LA) according to ISO/IEC 17025.The accreditation certificate is 4344.01.</p> <p>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.</p>
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 to 25°C
Ambient Relative Humidity	45% to 55%
Ambient Pressure	100 kPa to 102 kPa

## 1.4 Announce

- (1) The test report refer to the BALUN report mode v6.6.
- (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	Capricorn Electronics Ltd
Address	Workshop No. A7, 5th Floor, Block A, Proficient Industrial Centre, 6 Wang Kwun Road, Kowloon Bay, Kowloon, Hong Kong

### 2.2 Manufacturer Information

Manufacturer	Capricorn Electronics Ltd
Address	Workshop No. A7, 5th Floor, Block A, Proficient Industrial Centre, 6 Wang Kwun Road, Kowloon Bay, Kowloon, Hong Kong

### 2.3 Factory Information

Factory	N/A
Address	N/A

### 2.4 General Description for Equipment under Test (EUT)

EUT Name	Cellular Gateway
Model Name Under Test	CL5000
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	V002
Software Version	V2.0.5
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

### 2.5 Ancillary Equipment

Note: Not applicable.

### 3 SUMMARY OF TEST RESULTS

#### 3.1 Test Standards

No.	Identity	Document Title
1	FCC 47 CFR Part 15 Subpart B (10-1-16 Edition)	Unintentional Radiators
2	ANSI C63.4-2014	American National 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)	3.23 dB
Radiated emissions (30 MHz-1 GHz)	4.30 dB
Radiated emissions (1 GHz-18 GHz)	4.81 dB
Radiated emissions (18 GHz-40 GHz)	5.71 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 to 25°C	DC 12V	50% to 55%	100 kPa to 102 kPa

### 4.2 Test Equipment List

Radiated Emission Test For Frequency Below 1 GHz						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	ROHDE&SCHWARZ	ESRP	101036	2018.06.13.	2019.06.12	<input checked="" type="checkbox"/>
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9163	9163-977	2017.07.22	2019.07.21	<input checked="" type="checkbox"/>
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	9120D-1600	2016.07.12	2018.07.11	<input type="checkbox"/>
Anechoic Chamber	RAINFORD	9m*6m*6m	N/A	2017.02.21	2019.02.20	<input checked="" type="checkbox"/>

Radiated Emission Test For Frequency Above 1 GHz						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	KEYSIGHT	N9038A	MY53220118	2017.11.08	2018.11.07	<input checked="" type="checkbox"/>
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9163	9163-624	2017.07.22	2019.07.21	<input type="checkbox"/>
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	9120D-1148	2016.07.12	2018.07.11	<input checked="" type="checkbox"/>
Anechoic Chamber	RAINFORD	9m*6m*6m	N/A	2017.02.21	2019.02.20	<input checked="" type="checkbox"/>

Conducted Emission Test						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	ROHDE&SCHWARZ	ESRP	101036	2018.06.13.	2019.06.12	<input checked="" type="checkbox"/>
LISN	SCHWARZBECK	NSLK 8127	8127-687	2018.06.13.	2019.06.12	<input checked="" type="checkbox"/>
LISN	SCHWARZBECK	NNLK 8129	8129-462	2017.11.08	2018.11.07	<input type="checkbox"/>
AMN	SCHWARZBECK	NNBM8124	8124-509	2018.06.13.	2019.06.12	<input type="checkbox"/>
AMN	SCHWARZBECK	NNBM8124	8124-510	2018.06.13.	2019.06.12	<input type="checkbox"/>
ISN	TESEQ	ISN T800	34449	2017.12.05	2018.12.04	<input type="checkbox"/>
Shielded Enclosure	ChangNing	CN-130701	130703	N/A	N/A	<input checked="" type="checkbox"/>

### 4.3 Test Enclosure list

Description	Manufacturer	Model	Serial No.	Length	Description	Use
PC	Dell	015K3N	N/A	N/A	Special Handled	<input checked="" type="checkbox"/>
Laptop	Apple	A1465	N/A	N/A	N/A	<input type="checkbox"/>
Printer	HP	DESKJET 1000	N/A	N/A	N/A	<input checked="" type="checkbox"/>
Keyboard	Logitech	Y-BP62a	N/A	N/A	N/A	<input checked="" type="checkbox"/>
Mouse	Logitech	M100	N/A	N/A	N/A	<input checked="" type="checkbox"/>
USB disk	Kingston	N/A	N/A	N/A	N/A	<input type="checkbox"/>
TF Card	Kingston	N/A	N/A	N/A	N/A	<input type="checkbox"/>
VGA Cable	N/A	N/A	N/A	1.5 m	Shielded with core	<input type="checkbox"/>
HDMI Cable	N/A	N/A	N/A	1.5 m	Shielded with core	<input checked="" type="checkbox"/>
DVI Cable	N/A	N/A	N/A	1.5 m	Shielded with core	<input type="checkbox"/>
Coaxial video cable	N/A	N/A	N/A	2.0 m	Shielded with core	<input type="checkbox"/>
iPhone	Apple	A1586	N/A	N/A	N/A	<input type="checkbox"/>
Phone	MI	M4	N/A	N/A	N/A	<input type="checkbox"/>
Bluetooth Earphone	SAMSUNG	Gear Circle	N/A	N/A	N/A	<input type="checkbox"/>
Wireless Communication s Test Set	R&S	CMW500	142028	N/A	Cal. Due 2018.06.11	<input type="checkbox"/>
WIFI Router	TP-LINK	TL-WDR7500	N/A	N/A	N/A	<input type="checkbox"/>
Earphone	N/A	OPPO	N/A	1.1 m	N/A	<input type="checkbox"/>
Car Battery	Camel	55530	N/A	N/A	12 V/55 Ah	<input type="checkbox"/>
Artificial load	N/A	N/A	N/A	N/A	2.5 Ω/100 W	<input type="checkbox"/>
Artificial load	N/A	N/A	N/A	N/A	5 Ω/100 W	<input type="checkbox"/>
Electronic Load	ITECH	IT8511	N/A	N/A	N/A	<input type="checkbox"/>
USB Cable	N/A	N/A	N/A	1.5 m	Shielded with core	<input checked="" type="checkbox"/>
DC Power Line	N/A	N/A	N/A	N/A	N/A	<input checked="" type="checkbox"/>
LCD Monitor	SAMSUNG	UA32C4000P	N/A	N/A	N/A	<input type="checkbox"/>
LCD Monitor	Dell	U241HB	N/A	N/A	N/A	<input type="checkbox"/>
RJ45 Cable	N/A	N/A	N/A	1.5 m	Shielded with core	<input type="checkbox"/>
Display Screen	N/A	N/A	N/A	N/A	N/A	<input checked="" type="checkbox"/>
Power Line	N/A	N/A	N/A	N/A	N/A	<input checked="" type="checkbox"/>
Battery	N/A	N/A	N/A	N/A	12V	<input checked="" type="checkbox"/>

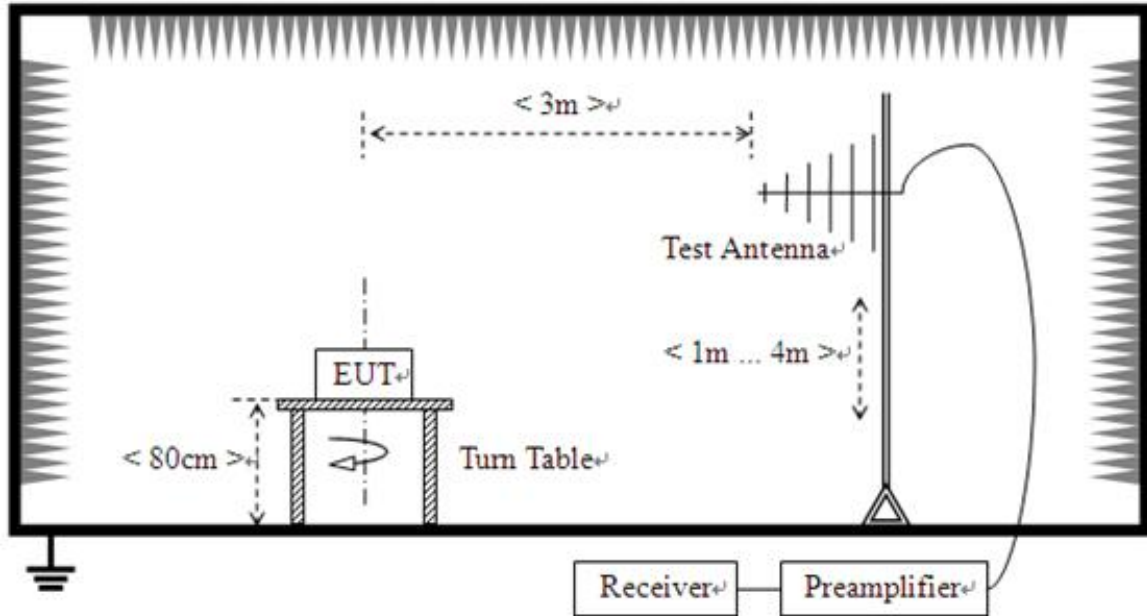


## 4.4 Test Configurations

Test Configurations (TC) No.	Description
TC01	<u>The Data Transfer with PC Test Mode</u> EUT + Battery + USB Cable + PC + Display Screen + HDMI Cable + Power Line + Mouse + Printer
TC02	<u>The Communicate with LTE Test Mode</u> EUT + Battery + DC Power Line + CMW500 + USB Cable + PC + Display Screen + HDMI Cable + Power Line + Mouse + Printer

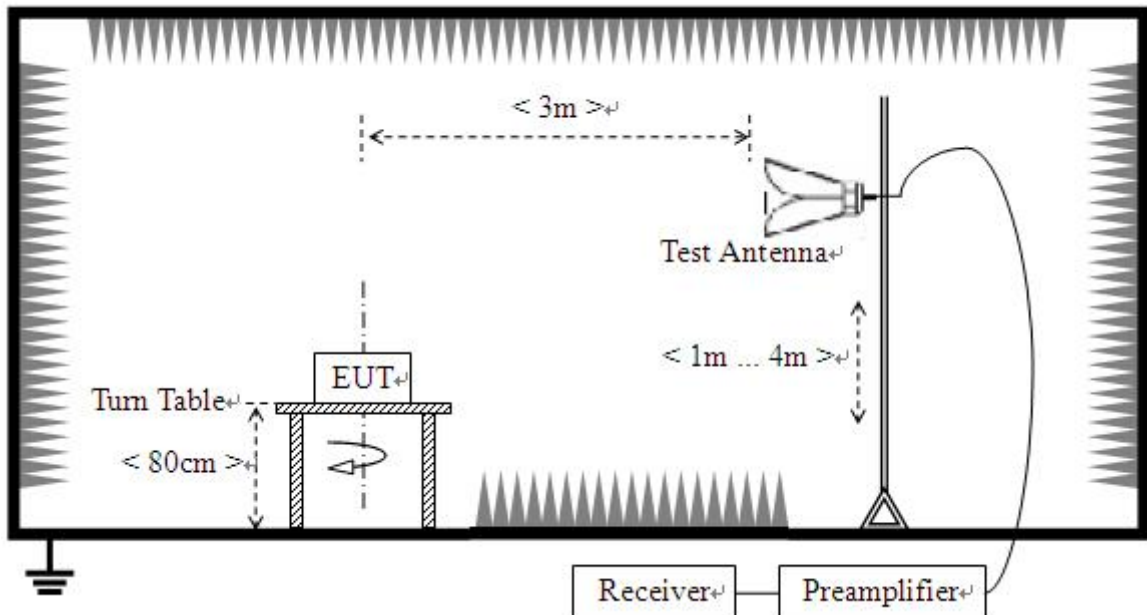
## 4.5 Test Setups

### Test Setup 1



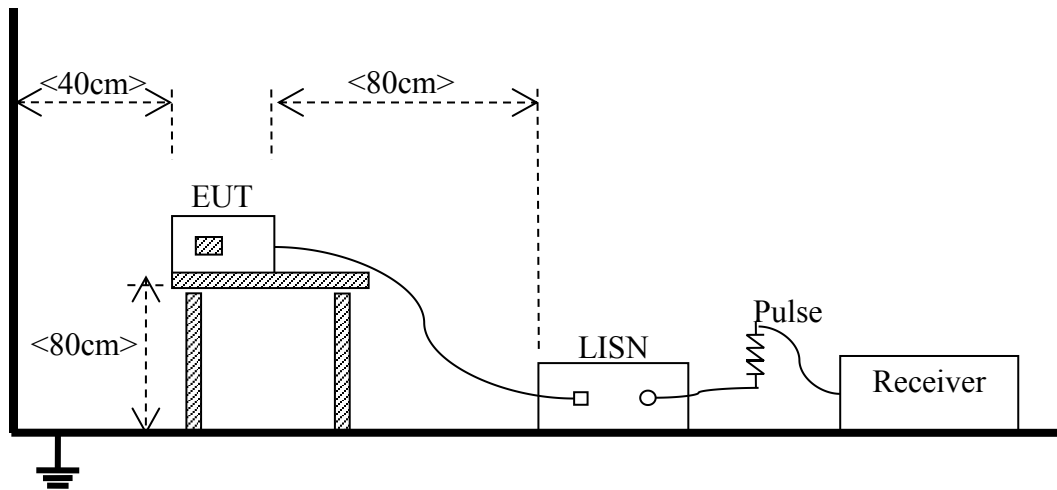
(For Radiated Emission Test (30 MHz-1 GHz))

### Test Setup 2



(For Radiated Emission Test (above 1 GHz))

Test Setup 3



(For Conducted Emission, AC Ports Test)

## 4.6 Test Conditions

Test Case	Test Conditions	
Radiated Emission	Test Env.	NTNV
	Test Setup	Test Setup 1&2
	Test Configuration	TC01~TC02 <sup>Note</sup>
Conducted Emission, AC Ports	Test Env.	NTNV
	Test Setup	Test Setup 3
	Test Configuration	TC01~TC02 <sup>Note</sup>

Note: Based on client request, all normal using modes of the normal function were tested but only the worst test data of the worst mode is reported by this report.

## 5 TEST ITEMS

### 5.1 Emission Tests

#### 5.1.1 Radiated Emission

##### 5.1.1.1 Limit

Frequency range (MHz)	Class B (at 3 m)		Class B (at 10 m)	Class A (at 10 m)	
	Field Strength ( $\mu\text{V/m}$ )	Field Strength ( $\text{dB}\mu\text{V/m}$ )	Field Strength ( $\text{dB}\mu\text{V/m}$ )	Field Strength ( $\mu\text{V/m}$ )	Field Strength ( $\text{dB}\mu\text{V/m}$ )
30 - 88	100	40	30	90	39
88 - 216	150	43.5	33.5	150	43.5
216 - 960	200	46	36	210	46.4
Above 960	500	54	44	300	49.5

NOTE:

- 1) Field Strength ( $\text{dB}\mu\text{V/m}$ ) =  $20 \cdot \log$  [Field Strength ( $\mu\text{V/m}$ )].
- 2) In the emission tables above, the tighter limit applies at the band edges.

##### 5.1.1.2 Test Setup

Refer to 4.5 section (test setup 1 to test setup 2) 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)	Class A	
	Quasi-peak (dB $\mu$ V)	Average (dB $\mu$ V)
0.15 - 0.50	79	66
0.50 - 30	73	60

Frequency range (MHz)	Class B	
	Quasi-peak (dB $\mu$ V)	Average (dB $\mu$ V)
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

**NOTE:**

- 1) The lower limit shall apply at the band edges.
- 2) 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 3) 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  $\Omega$ /50  $\mu$ 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.

Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. A device rated for 50/60 Hz operation need not be tested at both frequencies provided the radiated and line conducted emissions are the same at both frequencies.

### 5.1.2.4 Test Result

Please refer to ANNEX A.2.

# ANNEX A TEST RESULTS

## A.1 Radiated Emission

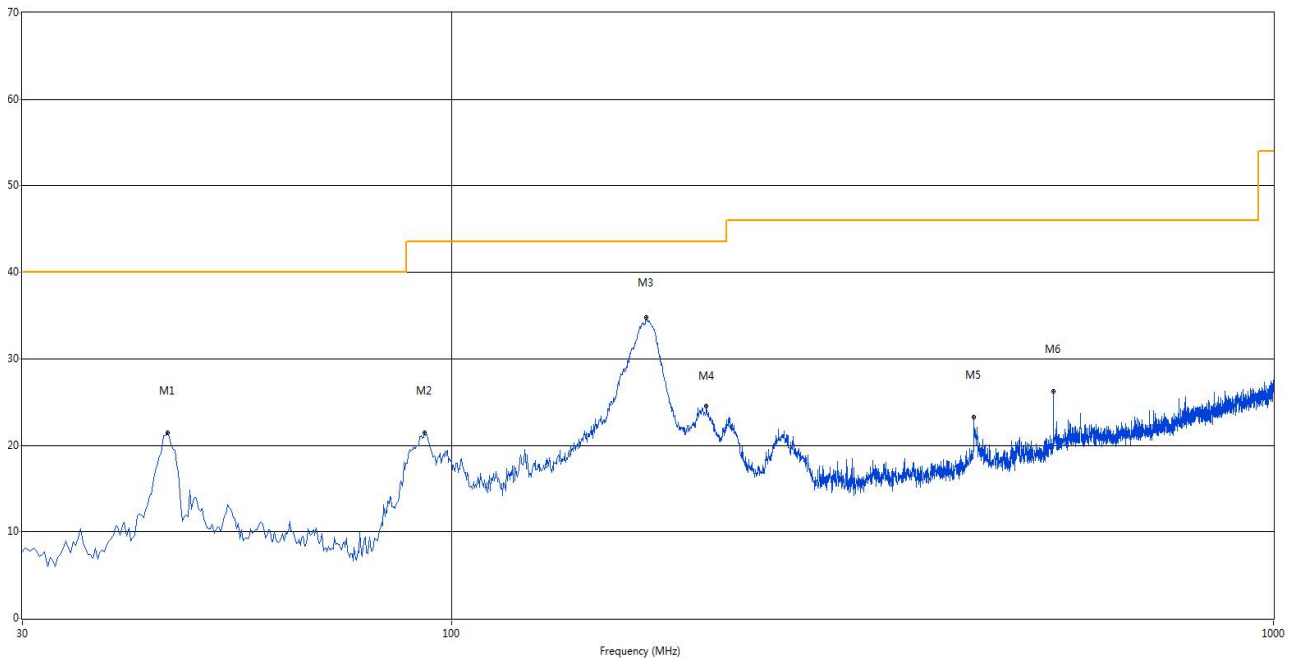
Note 1: The symbol of "--" in the table which means not application.

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

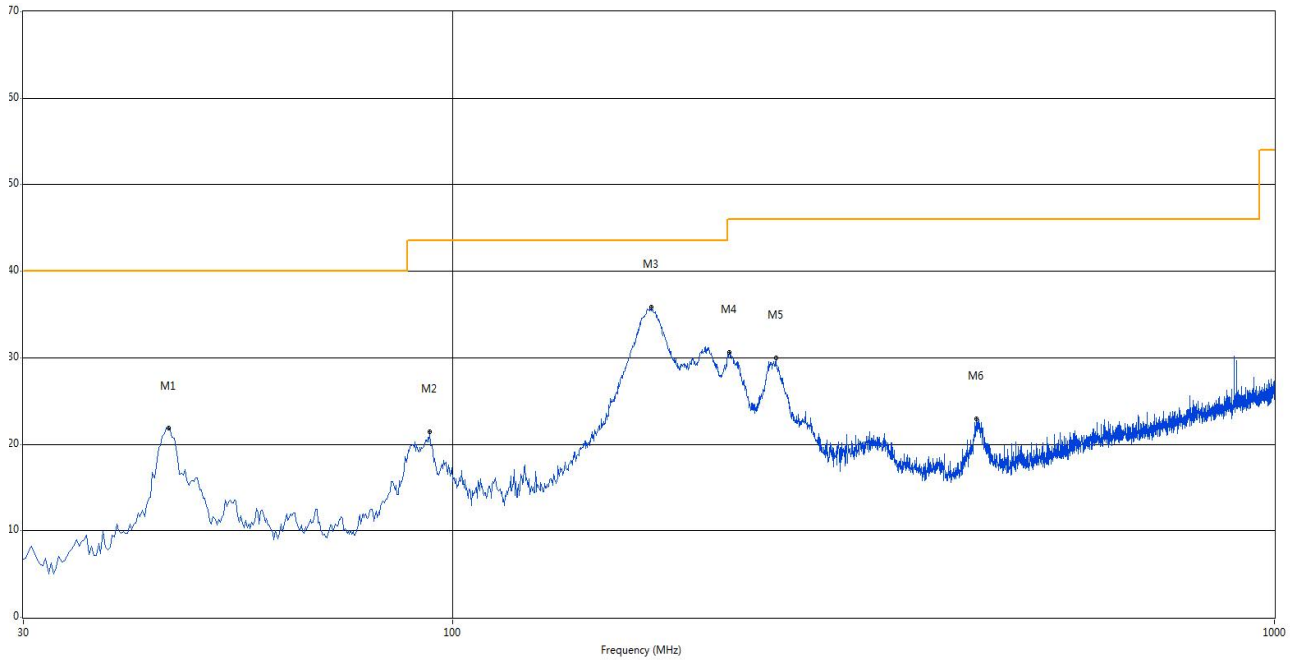
#### The Data Transfer with PC Test Mode (#1)

##### 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	45.035	21.40	-23.66	40.0	18.60	Peak	101.00	100	Vertical	Pass
2	92.565	21.40	-25.86	43.5	22.10	Peak	282.00	100	Vertical	Pass
3	172.348	34.79	-26.47	43.5	8.71	Peak	91.70	100	Vertical	Pass
4	204.115	24.59	-23.97	43.5	18.91	Peak	341.00	200	Vertical	Pass
5	431.822	23.29	-17.52	46.0	22.71	Peak	360.00	100	Vertical	Pass
6	539.977	26.21	-15.44	46.0	19.79	Peak	359.30	100	Vertical	Pass

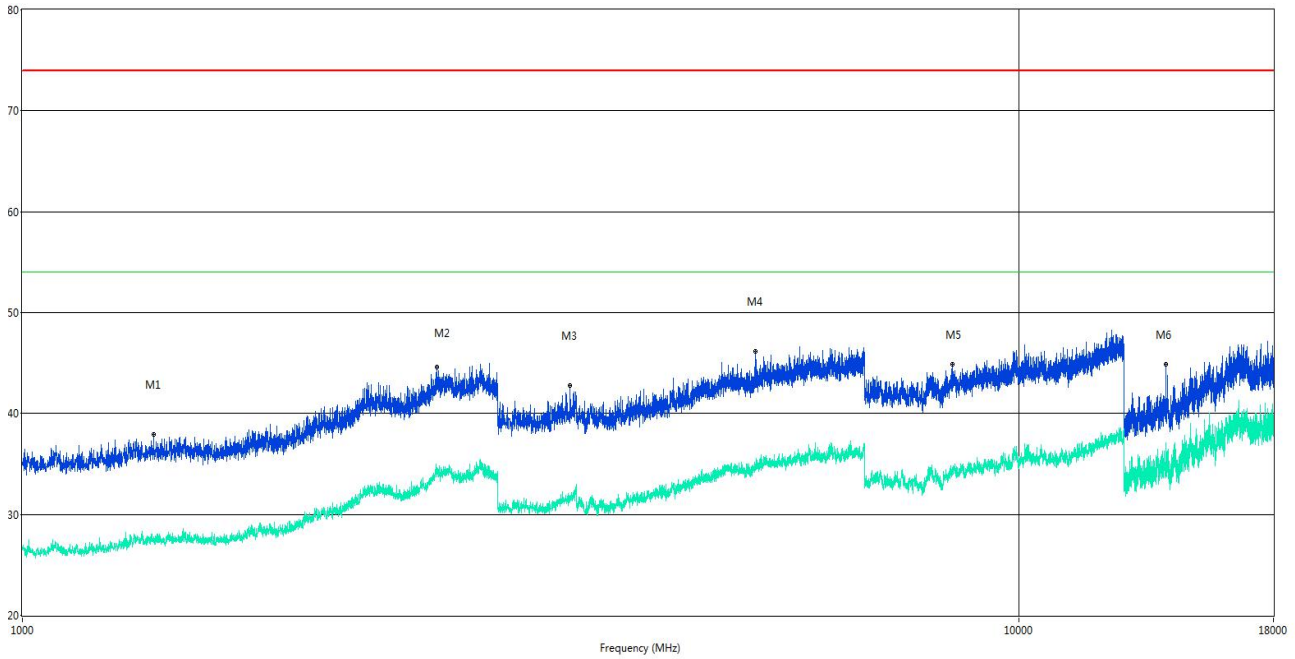
A.1.2 Test Antenna Horizontal, 30 MHz – 1 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	45.035	21.87	-23.66	40.0	18.13	Peak	6.40	200	Horizontal	Pass
2	93.777	21.43	-25.82	43.5	22.07	Peak	334.90	200	Horizontal	Pass
3	174.288	35.87	-26.47	43.5	7.63	Peak	153.70	200	Horizontal	Pass
4	216.968	30.67	-23.81	46.0	15.33	Peak	0.00	200	Horizontal	Pass
5	247.280	29.97	-22.90	46.0	16.03	Peak	12.20	100	Horizontal	Pass
6	434.247	22.98	-17.36	46.0	23.02	Peak	0.00	200	Horizontal	Pass

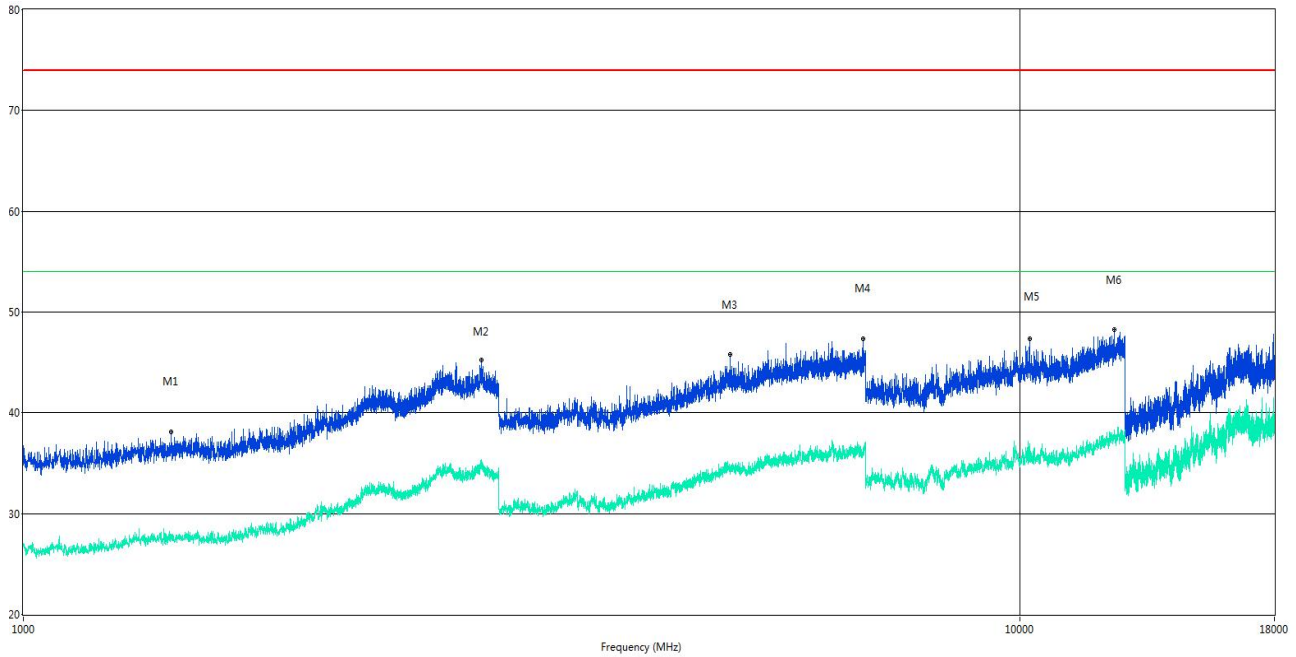


A.1.3 Test Antenna Vertical, 1 GHz – 18 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1354.500	27.7	-12.80	54.0	26.30	AV	204.40	100	Vertical	Pass
1	1354.500	37.94	-12.80	74.0	36.06	Peak	204.40	100	Vertical	Pass
2**	2603.500	34.4	-5.44	54.0	19.60	AV	0.20	100	Vertical	Pass
2	2603.500	44.63	-5.44	74.0	29.37	Peak	0.20	100	Vertical	Pass
3**	3544.000	31.5	-8.86	54.0	22.50	AV	31.70	100	Vertical	Pass
3	3544.000	42.75	-8.86	74.0	31.25	Peak	31.70	100	Vertical	Pass
4**	5444.000	34.5	-4.47	54.0	19.50	AV	360.00	100	Vertical	Pass
4	5444.000	46.11	-4.47	74.0	27.89	Peak	360.00	100	Vertical	Pass
5**	8568.312	34.1	13.85	54.0	19.90	AV	207.80	100	Vertical	Pass
5	8568.312	44.92	13.85	74.0	29.08	Peak	207.80	100	Vertical	Pass
6**	14040.188	37.1	18.67	54.0	16.90	AV	270.00	100	Vertical	Pass
6	14040.188	44.92	18.67	74.0	29.08	Peak	270.00	100	Vertical	Pass

A.1.4 Test Antenna Horizontal, 1 GHz – 18 GHz

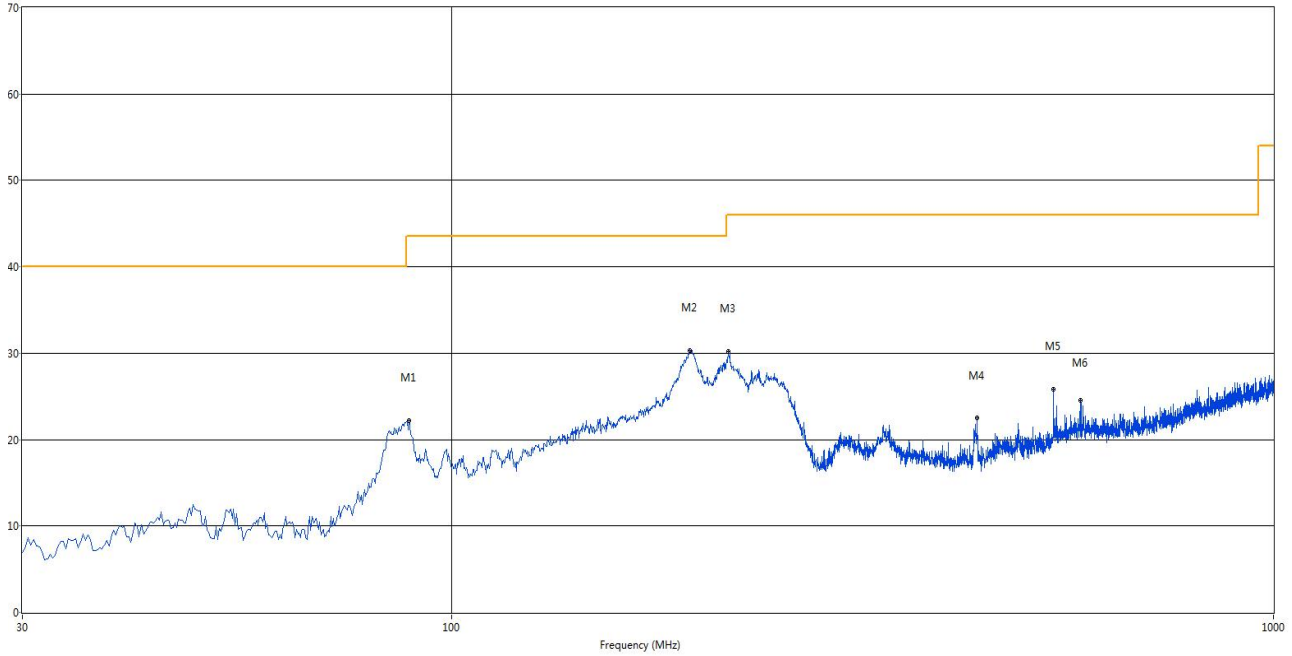


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1407.000	27.6	-13.08	54.0	26.40	AV	209.30	100	Horizontal	Pass
1	1407.000	38.12	-13.08	74.0	35.88	Peak	209.30	100	Horizontal	Pass
2**	2879.000	35.3	-4.79	54.0	18.70	AV	360.00	100	Horizontal	Pass
2	2879.000	45.22	-4.79	74.0	28.78	Peak	360.00	100	Horizontal	Pass
3**	5119.000	34.4	-4.47	54.0	19.60	AV	124.30	100	Horizontal	Pass
3	5119.000	45.76	-4.47	74.0	28.24	Peak	124.30	100	Horizontal	Pass
4**	6954.000	35.9	-1.61	54.0	18.10	AV	213.00	100	Horizontal	Pass
4	6954.000	47.32	-1.61	74.0	26.68	Peak	213.00	100	Horizontal	Pass
5**	10221.438	36.4	16.37	54.0	17.60	AV	156.00	100	Horizontal	Pass
5	10221.438	47.35	16.37	74.0	26.65	Peak	156.00	100	Horizontal	Pass
6**	12429.438	37.7	16.86	54.0	16.30	AV	0.60	100	Horizontal	Pass
6	12429.438	48.24	16.86	74.0	25.76	Peak	0.60	100	Horizontal	Pass

Test Data and Plots

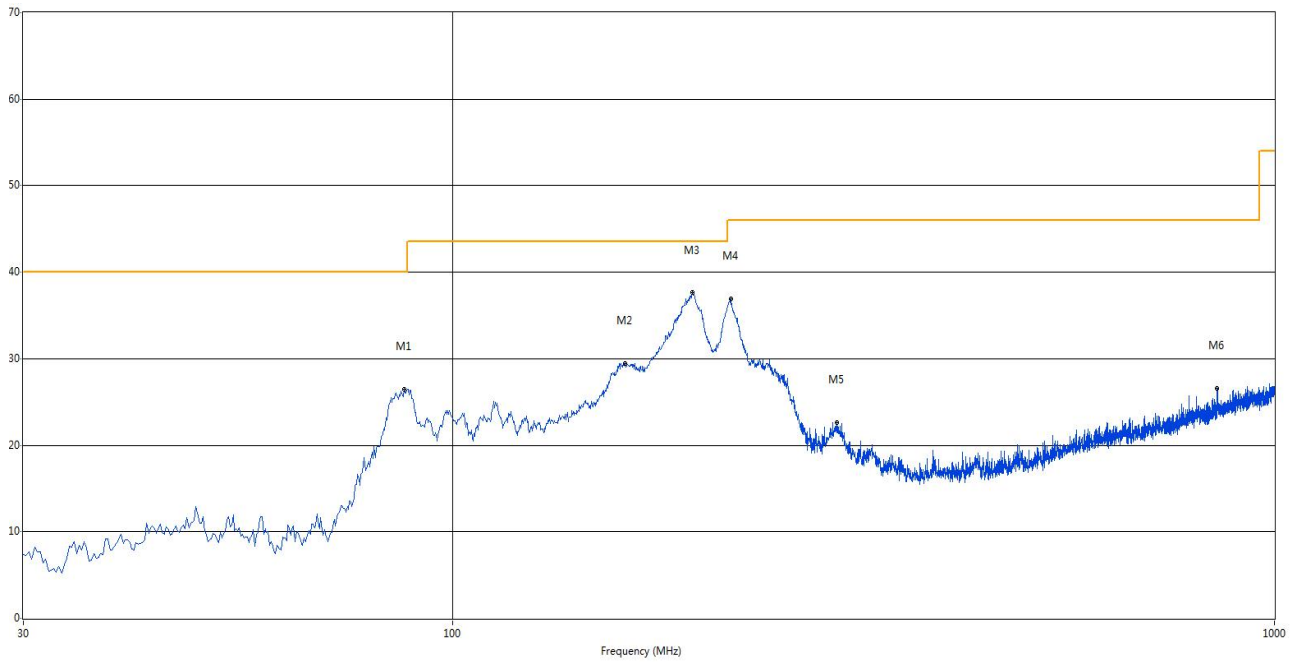
The Data Transfer with PC Test Mode (#2)

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



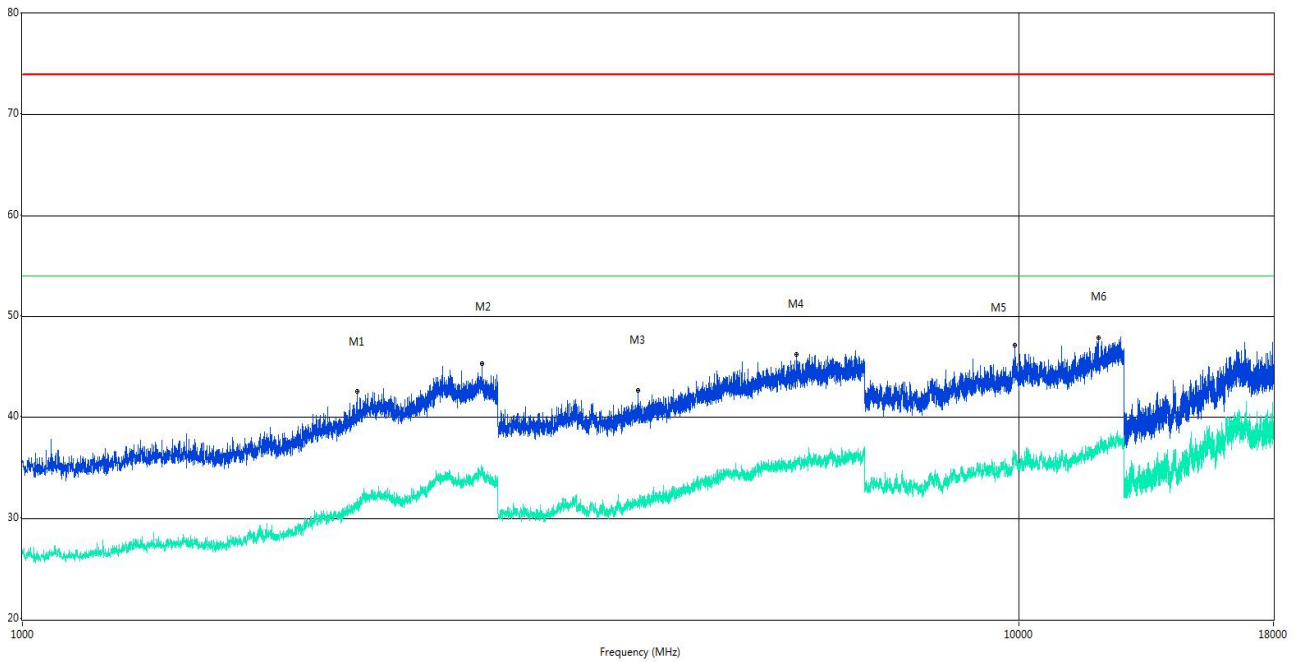
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	88.685	22.18	-26.84	43.5	21.32	Peak	328.10	200	Vertical	Pass
2	194.900	30.32	-24.56	43.5	13.18	Peak	270.30	200	Vertical	Pass
3	216.968	30.20	-23.81	46.0	15.80	Peak	4.20	200	Vertical	Pass
4	435.945	22.46	-17.63	46.0	23.54	Peak	13.70	100	Vertical	Pass
5	539.977	25.82	-15.44	46.0	20.18	Peak	0.70	100	Vertical	Pass
6	582.900	24.50	-14.26	46.0	21.50	Peak	194.30	200	Vertical	Pass

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



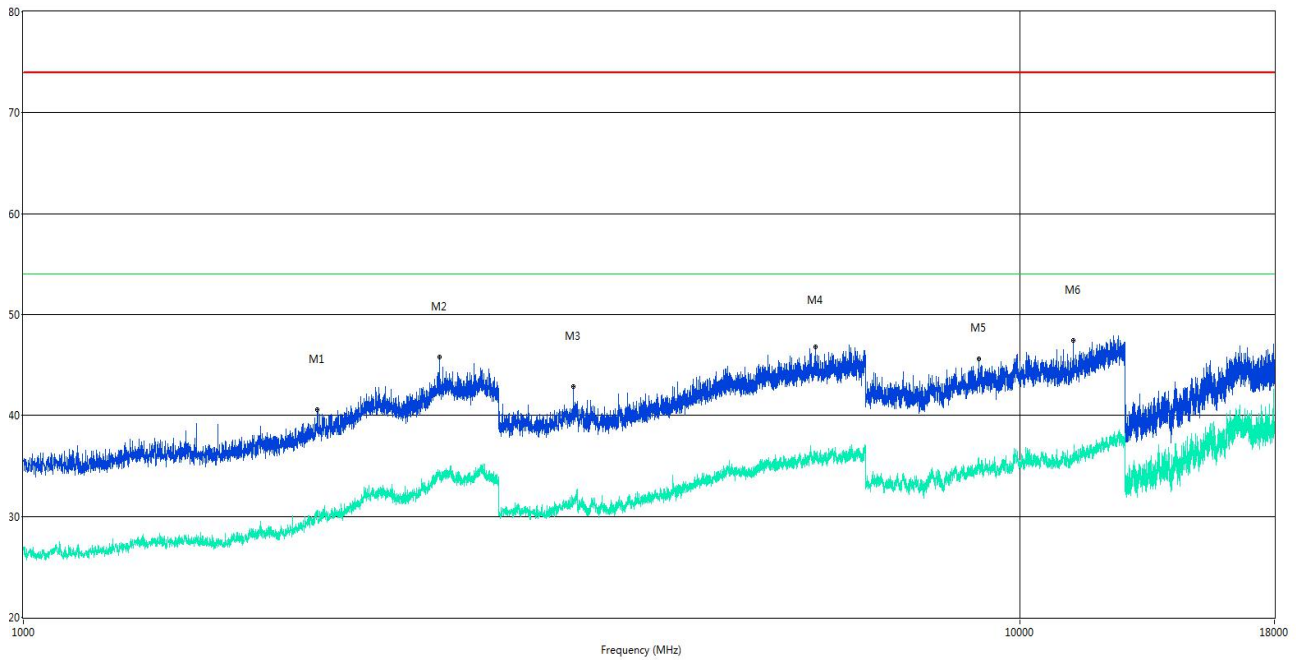
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	87.230	26.49	-27.12	40.0	13.51	Peak	28.90	200	Horizontal	Pass
2	161.920	29.44	-27.16	43.5	14.06	Peak	75.40	100	Horizontal	Pass
3	195.870	37.62	-24.52	43.5	5.88	Peak	359.30	100	Horizontal	Pass
4	217.938	36.92	-23.94	46.0	9.08	Peak	358.50	100	Horizontal	Pass
5	293.598	22.67	-21.47	46.0	23.33	Peak	92.60	100	Horizontal	Pass
6	850.620	26.59	-10.00	46.0	19.41	Peak	360.00	200	Horizontal	Pass

A.1.7 Test Antenna Vertical, 1 GHz – 18 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	2167.000	31.2	-9.86	54.0	22.80	AV	7.50	100	Vertical	Pass
1	2167.000	42.57	-9.86	74.0	31.43	Peak	7.50	100	Vertical	Pass
2**	2891.500	34.7	-5.54	54.0	19.30	AV	236.80	100	Vertical	Pass
2	2891.500	45.37	-5.54	74.0	28.63	Peak	236.80	100	Vertical	Pass
3**	4144.000	31.4	-7.37	54.0	22.60	AV	358.00	100	Vertical	Pass
3	4144.000	42.73	-7.37	74.0	31.27	Peak	358.00	100	Vertical	Pass
4**	5985.000	35.4	-2.95	54.0	18.60	AV	297.60	100	Vertical	Pass
4	5985.000	46.26	-2.95	74.0	27.74	Peak	297.60	100	Vertical	Pass
5**	9899.437	36.4	16.52	54.0	17.60	AV	1.40	100	Vertical	Pass
5	9899.437	47.14	16.52	74.0	26.86	Peak	1.40	100	Vertical	Pass
6**	12009.687	36.7	16.01	54.0	17.30	AV	111.20	100	Vertical	Pass
6	12009.687	47.91	16.01	74.0	26.09	Peak	111.20	100	Vertical	Pass

A.1.8 Test Antenna Horizontal, 1 GHz – 18 GHz



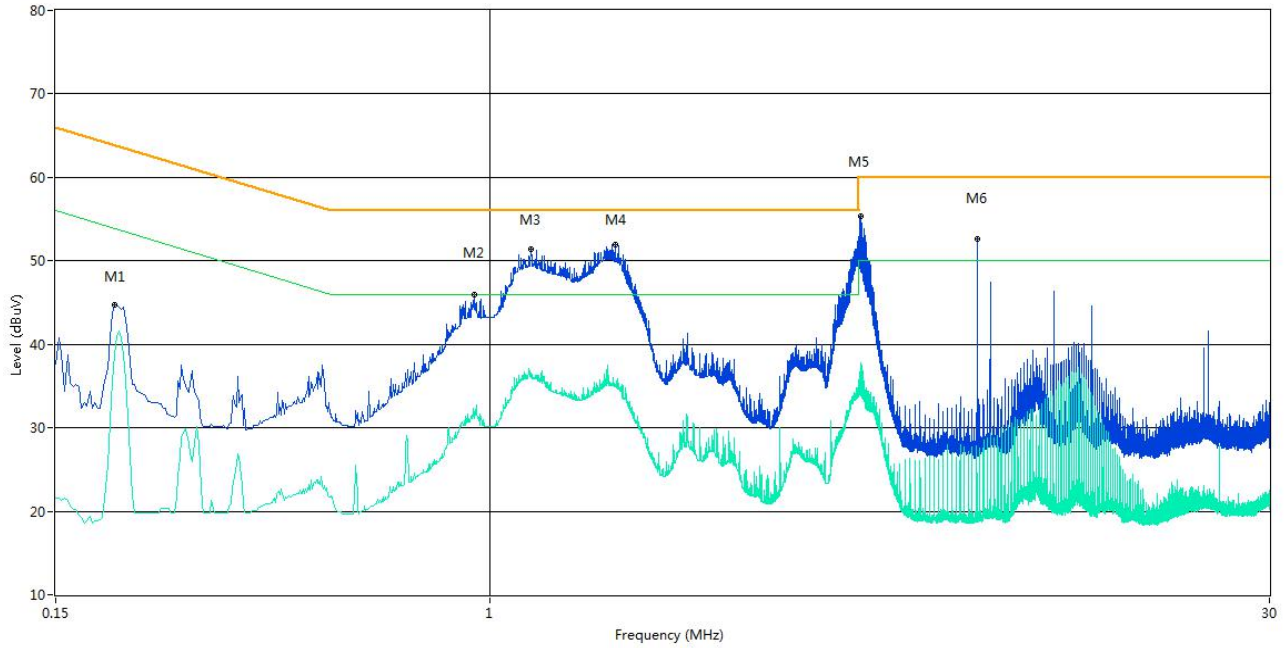
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1973.500	30.2	-10.78	54.0	23.80	AV	71.20	100	Horizontal	Pass
1	1973.500	40.61	-10.78	74.0	33.39	Peak	71.20	100	Horizontal	Pass
2**	2613.500	34.5	-6.18	54.0	19.50	AV	36.70	100	Horizontal	Pass
2	2613.500	45.78	-6.18	74.0	28.22	Peak	36.70	100	Horizontal	Pass
3**	3565.000	31.2	-8.75	54.0	22.80	AV	348.40	100	Horizontal	Pass
3	3565.000	42.89	-8.75	74.0	31.11	Peak	348.40	100	Horizontal	Pass
4**	6237.000	36.3	-1.67	54.0	17.70	AV	214.70	100	Horizontal	Pass
4	6237.000	46.79	-1.67	74.0	27.21	Peak	214.70	100	Horizontal	Pass
5**	9088.687	35.0	14.87	54.0	19.00	AV	5.90	100	Horizontal	Pass
5	9088.687	45.58	14.87	74.0	28.42	Peak	5.90	100	Horizontal	Pass
6**	11302.438	35.9	15.57	54.0	18.10	AV	228.70	100	Horizontal	Pass
6	11302.438	47.43	15.57	74.0	26.57	Peak	228.70	100	Horizontal	Pass

## A.2 Conducted Emission

### Test Data and Plots

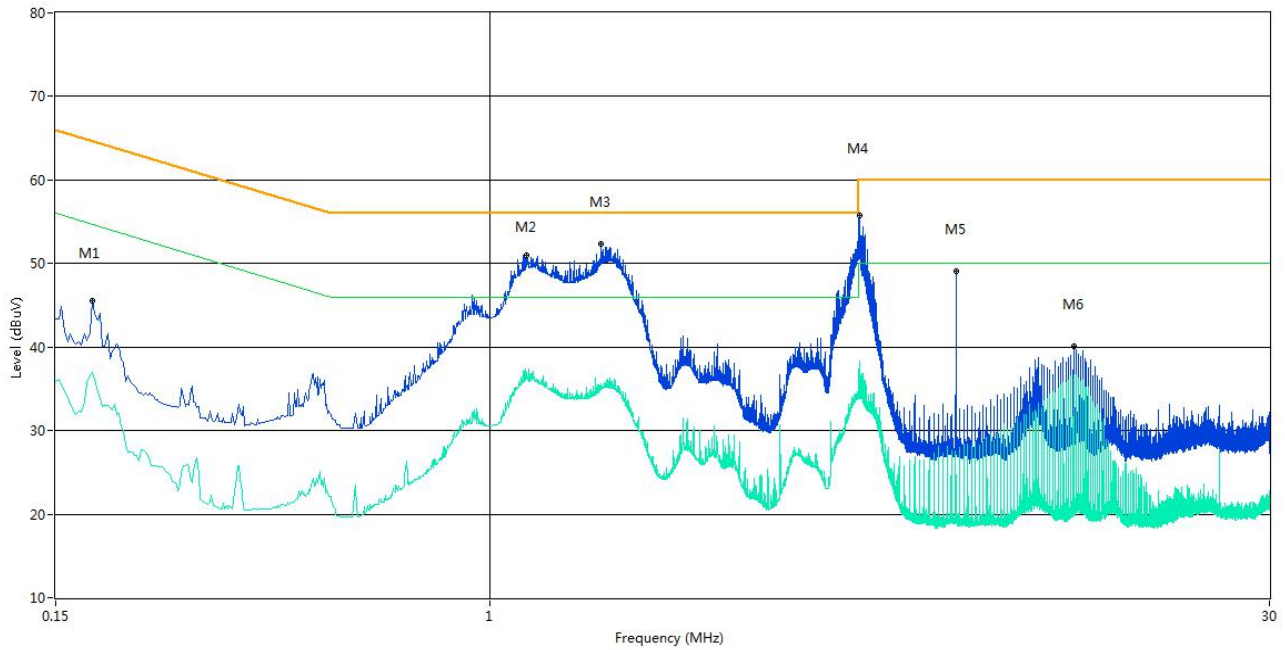
#### The Data Transfer with PC Test Mode (#1)

##### A.2.1 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.194	44.7	10.04	63.9	19.20	Peak	L Line	Pass
1**	0.194	38.7	10.04	53.9	15.20	AV	L Line	Pass
2	0.932	46.0	10.06	56.0	10.00	Peak	L Line	Pass
2**	0.932	31.9	10.06	46.0	14.10	AV	L Line	Pass
3	1.194	51.4	10.07	56.0	4.60	Peak	L Line	Pass
3**	1.194	36.6	10.07	46.0	9.40	AV	L Line	Pass
4	1.724	51.9	10.08	56.0	4.10	Peak	L Line	Pass
4**	1.724	35.1	10.08	46.0	10.90	AV	L Line	Pass
5	5.042	55.3	10.17	60.0	4.70	Peak	L Line	Pass
5**	5.042	37.8	10.17	50.0	12.20	AV	L Line	Pass
6	8.402	52.7	10.27	60.0	7.30	Peak	L Line	Pass
6**	8.402	24.5	10.27	50.0	25.50	AV	L Line	Pass

## A.2.2 N Phase



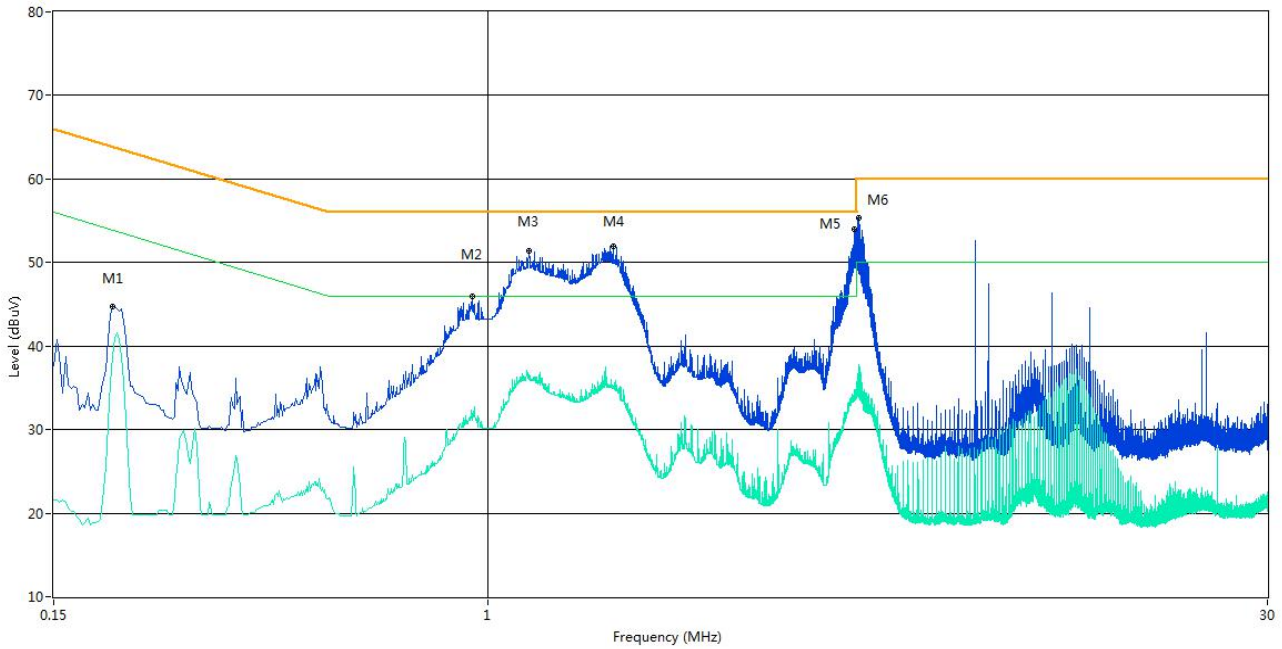
No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.176	45.6	10.04	64.7	19.10	Peak	N Line	Pass
1**	0.176	37.0	10.04	54.7	17.70	AV	N Line	Pass
2	1.170	51.0	10.06	56.0	5.00	Peak	N Line	Pass
2**	1.170	36.2	10.06	46.0	9.80	AV	N Line	Pass
3	1.624	52.4	10.08	56.0	3.60	Peak	N Line	Pass
3**	1.624	35.7	10.08	46.0	10.30	AV	N Line	Pass
4	5.004	55.7	10.17	60.0	4.30	Peak	N Line	Pass
4**	5.004	38.4	10.17	50.0	11.60	AV	N Line	Pass
5	7.652	49.1	10.25	60.0	10.90	Peak	N Line	Pass
5**	7.652	22.6	10.25	50.0	27.40	AV	N Line	Pass
6	12.756	40.0	10.39	60.0	20.00	Peak	N Line	Pass
6**	12.756	36.7	10.39	50.0	13.30	AV	N Line	Pass



## Test Data and Plots

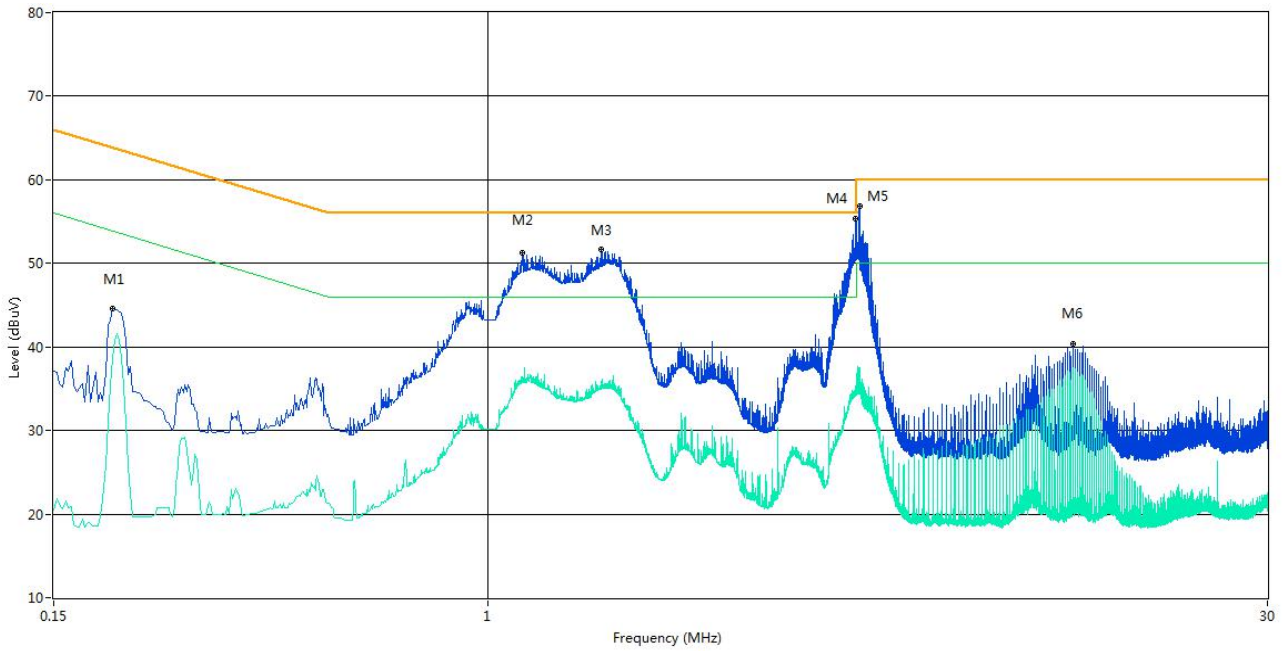
### The Data Transfer with PC Test Mode (#2)

#### A.2.3 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.194	44.7	10.04	63.9	19.20	Peak	L Line	Pass
1**	0.194	38.7	10.04	53.9	15.20	AV	L Line	Pass
2	0.932	46.0	10.06	56.0	10.00	Peak	L Line	Pass
2**	0.932	31.9	10.06	46.0	14.10	AV	L Line	Pass
3	1.194	51.4	10.07	56.0	4.60	Peak	L Line	Pass
3**	1.194	36.6	10.07	46.0	9.40	AV	L Line	Pass
4	1.724	51.9	10.08	56.0	4.10	Peak	L Line	Pass
4**	1.724	35.1	10.08	46.0	10.90	AV	L Line	Pass
5	4.952	60.82	10.17	56.0	-4.82	Peak	L Line	N/A
5*	4.952	45.45	10.17	56.0	10.55	QP	L Line	Pass
5**	4.952	32.99	10.17	46.0	13.01	AV	L Line	Pass
6	5.042	55.3	10.17	60.0	4.70	Peak	L Line	Pass
6**	5.042	37.8	10.17	50.0	12.20	AV	L Line	Pass

## A.2.4 N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.194	44.6	10.04	63.9	19.30	Peak	N Line	Pass
1**	0.194	38.7	10.04	53.9	15.20	AV	N Line	Pass
2	1.160	51.3	10.06	56.0	4.70	Peak	N Line	Pass
2**	1.160	36.4	10.06	46.0	9.60	AV	N Line	Pass
3	1.638	51.7	10.08	56.0	4.30	Peak	N Line	Pass
3**	1.638	35.9	10.08	46.0	10.10	AV	N Line	Pass
4	4.978	56.36	10.17	56.0	-0.36	Peak	N Line	N/A
4*	4.978	47.03	10.17	56.0	8.97	QP	N Line	Pass
4**	4.978	34.48	10.17	46.0	11.52	AV	N Line	Pass
5	5.068	56.9	10.17	60.0	3.10	Peak	N Line	Pass
5**	5.068	37.1	10.17	50.0	12.90	AV	N Line	Pass
6	12.828	40.4	10.39	60.0	19.60	Peak	N Line	Pass
6**	12.828	37.5	10.39	50.0	12.50	AV	N Line	Pass

## **ANNEX B TEST SETUP PHOTOS**

Please refer the document "BL-SZ1870103-AE.PDF".

## **ANNEX C EUT EXTERNAL PHOTOS**

Please refer the document "BL-SZ1870103-AW.PDF".

## **ANNEX D EUT INTERNAL PHOTOS**

Please refer the document "BL-SZ1870103-AI.PDF".

--END OF REPORT--