

FCC

RF

TEST REPORT

ISSUED BY
Shenzhen BALUN Technology Co., Ltd.



FOR
Smart Plug

ISSUED TO
HANGZHOU LIFESMART TECHNOLOGY CO., LTD.

1785 Jiangnan Road, Building 2, Unit 3, 9th Floor, Binjiang District, Hangzhou, Zhejiang, CHN



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Date: 

Report No.: BL-SZ1680421-601
EUT Type: Smart Plug
Model Name: LS061
Brand Name: LifeSmart
Test Standard: 47 CFR Part 15 Subpart C
FCC ID: 2AJMI-00LS061

Test conclusion: Pass
Test Date: Sep. 18, 2016 ~ Sep. 21, 2016
Date of Issue: Oct. 17, 2016

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Revision History

<u>Version</u>	<u>Issue Date</u>	<u>Revisions</u>
Rev. 01	Oct. 10, 2016	Initial Issue
Rev. 02	Oct. 17, 2016	Updating the duty cycle and transmitting time test plot on page 24 and 39.

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1 ADMINISTRATIVE DATA (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 has been listed by US Federal Communications Commission to perform electromagnetic emission measurements. The recognition numbers of test site are 832625.</p> <p>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.</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 Announce

- (1) The test report reference to the report template version v4.2.
- (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

Applicant	HANGZHOU LIFESMART TECHNOLOGY CO., LTD.
Address	1785 Jiangnan Road, Building 2, Unit 3, 9th Floor, Binjiang District, Hangzhou, Zhejiang, CHN

2.2 Manufacturer

Manufacturer	Ningbo Sanow Electronics Co., Ltd.
Address	NO. 128 Huishui Road Luotuo industrial Zone Zhenhai district, Ningbo, China

2.3 Factory Information

Manufacturer	Ningbo Sanow Electronics Co., Ltd.
Address	NO. 128 Huishui Road Luotuo industrial Zone Zhenhai district, Ningbo, China

2.4 General Description for Equipment under Test (EUT)

EUT Type	Smart Plug
Model Name	LS061
Hardware Version	N/A
Software Version	N/A
Network and Wireless connectivity	Short Range Device
About the Product	The equipment is Smart Plug, operating at 433.05-434.79MHz.

2.5 Ancillary Equipment

N/A

2.6 Technical Information

Modulation Type	GFSK
Frequency Range	The frequency range used is 433.05 MHz to 434.79 MHz.
Number of channel	3
Tested Channel	Low (433.05 MHz), Middle (433.92 MHz), High (434.75 MHz)
Antenna Type	PCB Antenna
Antenna Gain	0 dBi

All channel was listed on the following table:

Channel number	Frequency (MHz)
1	433.05
2	433.92
3	434.75

Note: The above EUT information in section 2.4 and 2.6 was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

2.7 Additional Instructions

EUT Software Settings:

Mode	<input checked="" type="checkbox"/> Special software is used. The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.
------	--

Power level setup in software			
Test Software Version	Electricity directly to work and the key can change the channel.		
Mode	Channel	Frequency (MHz)	Soft Set
GFSK	Low	433.05	TX LEVEL is built-in set parameters and cannot be changed and selected.
	Middle	433.92	
	High	434.75	

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 15, Subpart C (10-1-15 Edition)	Intentional Radiators
4	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices

3.2 Verdict

No.	Description	FCC Part No.	Test Result	Verdict
1	Antenna Requirement	15.203	Note 1	Pass
2	Conducted Emission	15.207	ANNEX A.1	Pass
3	20 dB Bandwidth	15.231(c)	ANNEX A.2	Pass
4	Duty Cycle	15.35	ANNEX A.3	Pass
5	Field Strength of Fundamental Emissions	15.231(b)	ANNEX A.4	Pass
6	Radiated Emissions	15.209 15.231(b)	ANNEX A.5	Pass
7	Transmitting Time	15.231(a)	ANNEX A.6	Pass

Note 1: Please refer to section 5.1

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

During the measurement, the normal environmental conditions were within the listed ranges:

Relative Humidity	45% - 55%	
Atmospheric Pressure	100 kPa -102 kPa	
Temperature	NT (Normal Temperature)	+22°C to +25°C
Working Voltage of the EUT	NV (Normal Voltage)	110 V

4.2 Test Equipment List

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer	ROHDE&SCHWARZ	FSV-30	103118	2016.07.13	2017.07.12
Vector Signal Generator	ROHDE&SCHWARZ	SMBV100A	177746	2016.07.13	2017.07.12
Signal Generator	ROHDE&SCHWARZ	SMB100A	260592	2016.07.13	2017.07.12
Switch Unit with OSP-B157	ROHDE&SCHWARZ	OSP120	101270	2016.07.13	2017.07.12
Spectrum Analyzer	AGILENT	E4440A	MY45304434	2015.10.15	2016.10.14
EMI Receiver	ROHDE&SCHWARZ	ESRP	101036	2016.07.05	2017.07.04
LISN	SCHWARZBECK	NSLK 8127	8127-687	2016.07.05	2017.07.04
Bluetooth Tester	ROHDE&SCHWARZ	CBT	101005	2016.07.13	2017.07.12
Power Splitter	KMW	DCPD-LDC	1305003215	--	--
Power Sensor	ROHDE&SCHWARZ	NRP-Z21	103971	2016.07.13	2017.07.12
Attenuator (20 dB)	KMW	ZA-S1-201	110617091	--	--
Attenuator (6 dB)	KMW	ZA-S1-61	1305003189	--	--
DC Power Supply	ROHDE&SCHWARZ	HMP2020	018141664	2016.07.13	2017.07.12
Temperature Chamber	ANGELANTIONI SCIENCE	NTH64-40A	1310	2016.07.13	2017.07.12
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	9m*6m*6m	N/A	2015.02.28	2017.02.27
Shielded Enclosure	ChangNing	CN-130701	130703	--	--

4.3 Measurement Uncertainty

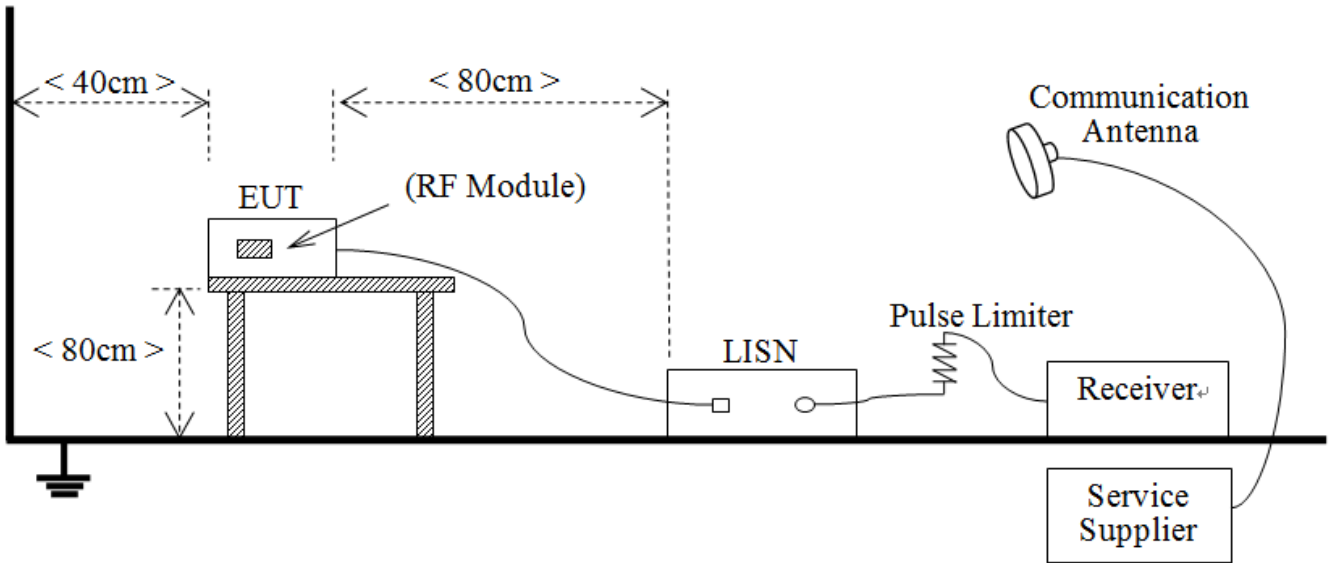
The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2.

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

Measurement	Value
Occupied Channel Bandwidth	$\pm 4\%$
RF output power, conducted	± 1.4 dB
Power Spectral Density, conducted	± 2.5 dB
Unwanted Emissions, conducted	± 2.8 dB
All emissions, radiated	± 5.4 dB
Temperature	± 1 °C
Humidity	$\pm 4\%$

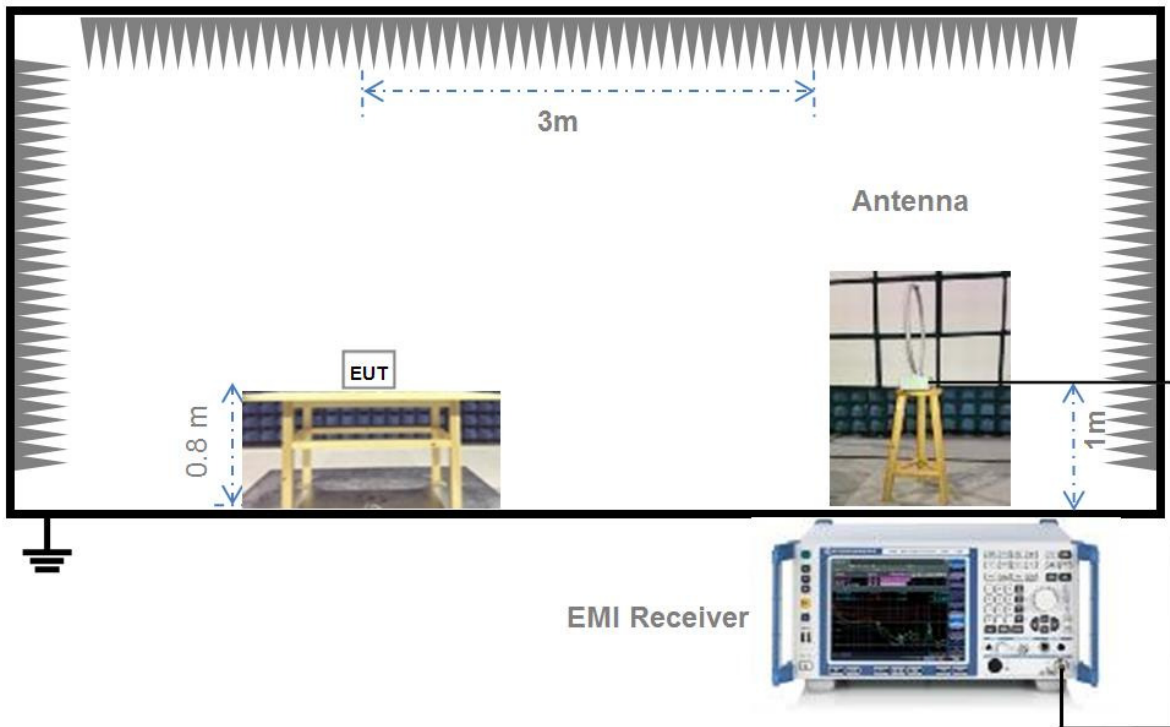
4.4 Description of Test Setup

4.4.1 For AC Power Supply Port Test



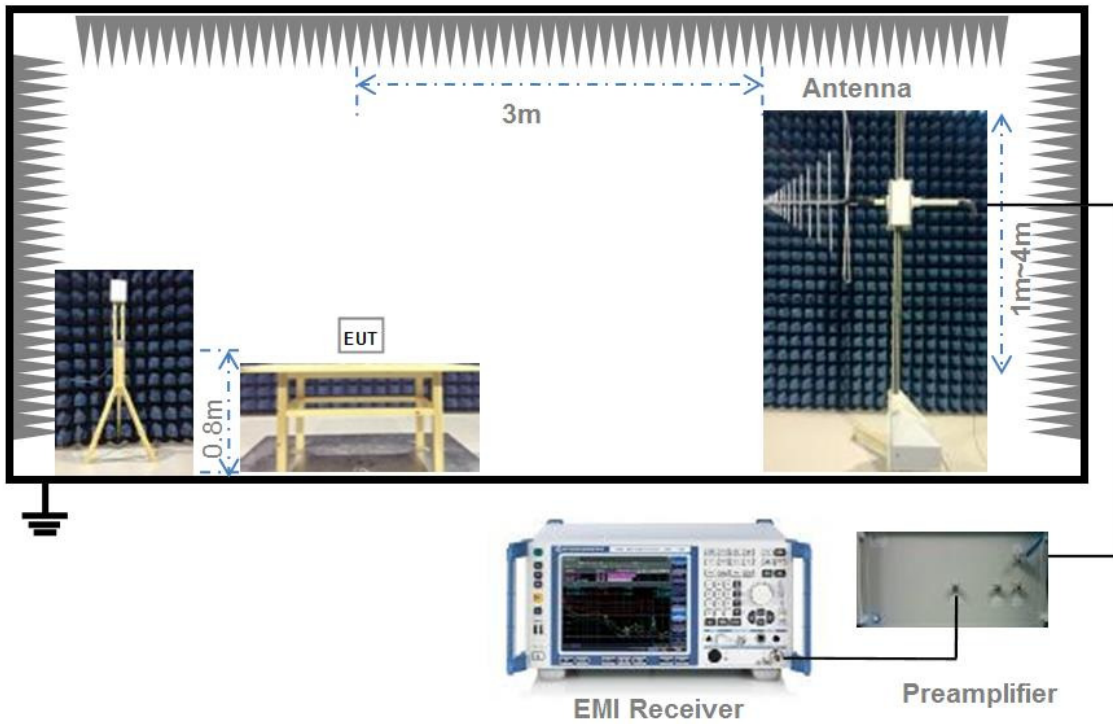
(Diagram 1)

4.4.2 For Radiated Test (Below 30 MHz)



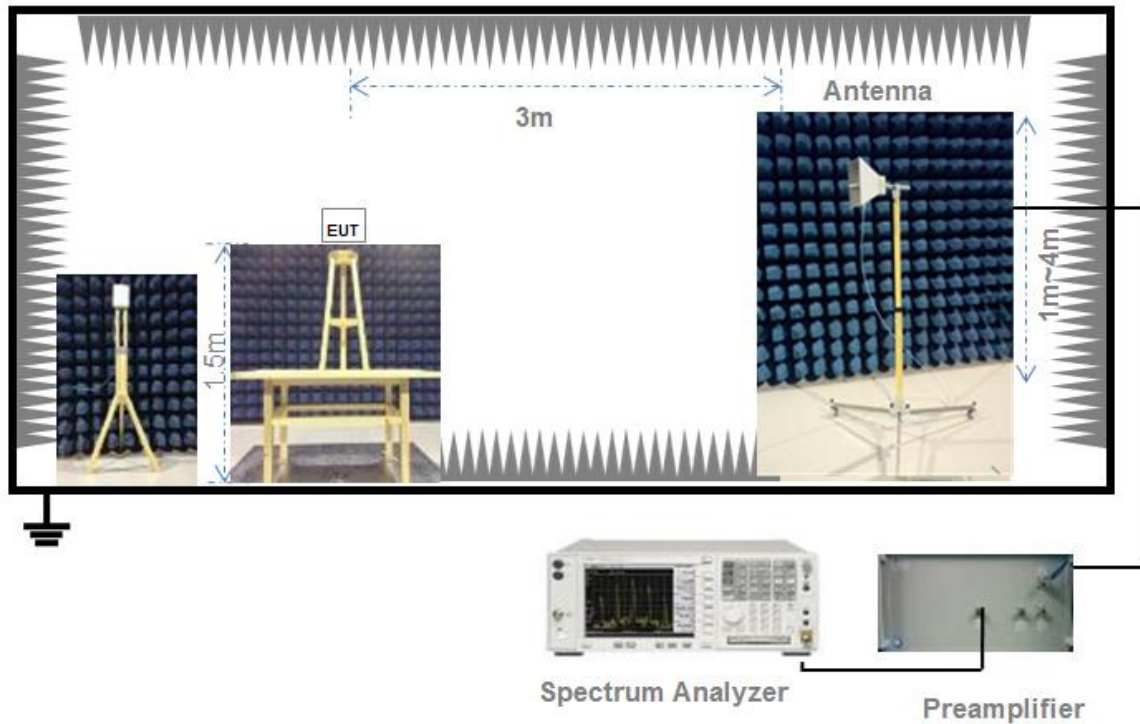
(Diagram 2)

4.4.3 For Radiated Test (30 MHz-1 GHz)



(Diagram 3)

4.4.4 For Radiated Test (Above 1 GHz)



(Diagram 4)

5 TEST ITEMS

5.1 Antenna Requirements

5.1.1 Standard Applicable

FCC §15.203 & 15.247(b)

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of § 15.211, § 15.213, § 15.217, § 15.219, or § 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

If directional gain of transmitting antennas is greater than 6 dBi, the power shall be reduced by the same level in dB comparing to gain minus 6 dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

5.1.2 Antenna Anti-Replacement Construction

The Antenna Anti-Replacement as following method:

Protected Method	Description
The antenna is An embedded-in	An embedded-in antenna design is used.

Reference Documents	Item
Photo	

5.1.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

5.2 Conducted Emission

5.2.1 Limit

FCC §15.207

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 within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 Ω line impedance stabilization network (LISN).

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

5.2.2 Test Setup

See section 4.4.1 for test setup description for the AC power supply port. The photo of test setup please refer to ANNEX B.

5.2.3 Test Procedure

The maximum conducted interference is searched using Peak (PK), if the emission levels 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. Refer to recorded points and plots below.

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.

5.2.4 Test Result

Please refer to ANNEX A.1.

5.3 20 dB Bandwidth

5.3.1 Limit

FCC §15.231

The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

5.3.2 Test Setup

See section 4.4.3 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.3.3 Test Procedure

Use the following spectrum analyzer settings:

Span = approximately 2 to 3 times the 20 dB bandwidth

RBW = 100 kHz

VBW \geq 300 kHz

Sweep = auto

Detector function = peak

Trace = max hold

5.3.4 Test Result

Please refer to ANNEX A.2.

5.4 Field Strength of Fundamental Emissions and Radiated Emissions

5.4.1 Limit

FCC §15.231 & §15.209

According to FCC section 15.231(b), In addition to the provisions of §15.205, the field strength of emissions from intentional radiators operated under this section shall not exceed the following:

Fundamental frequency (MHz)	Field strength of fundamental (microvolts/meter)	Field strength of spurious emissions (microvolts/meter)
40.66-40.70	2250	225
70-130	1250	125
130-174	1250 to 3750	125 to 375
174-260	3750	375
260-470	3750 to 12500	375 to 1250
Above 470	12500	1250

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 ($\mu\text{V}/\text{m}$)
0.009 - 0.490	2400/F(kHz)
0.490 - 1.705	24000/F(kHz)
1.705 - 30.0	30
30 - 88	100
88 - 216	150
216 - 960	200
Above 960	500

Note:

- For Above 1000 MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.
- For above 1000 MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK).

5.4.2 Test Setup

See section 4.4.2 to 4.4.4 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.4.3 Test Procedure

The measurement frequency range is from 30 MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented. The power of the EUT transmitting frequency should be ignored.

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.

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured

RBW = 1 MHz for $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz

VBW \geq RBW

Sweep = auto

Detector function = peak

Trace = max hold

5.4.4 Test Result

Please refer to ANNEX A.4 & A.5.

5.5 Transmitting Time

5.5.1 Limit

(1) A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

(2) A transmitter activated automatically shall cease transmission within 5 seconds after activation.

5.5.2 Test Setup

See section 4.4.3 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.5.3 Test Procedure

The EUT transmitter was activated, the spectrum analyzer single sweep was triggered while a command on the EUT was activated and plots were captured

5.5.4 Test Result

Please refer to ANNEX A.6.

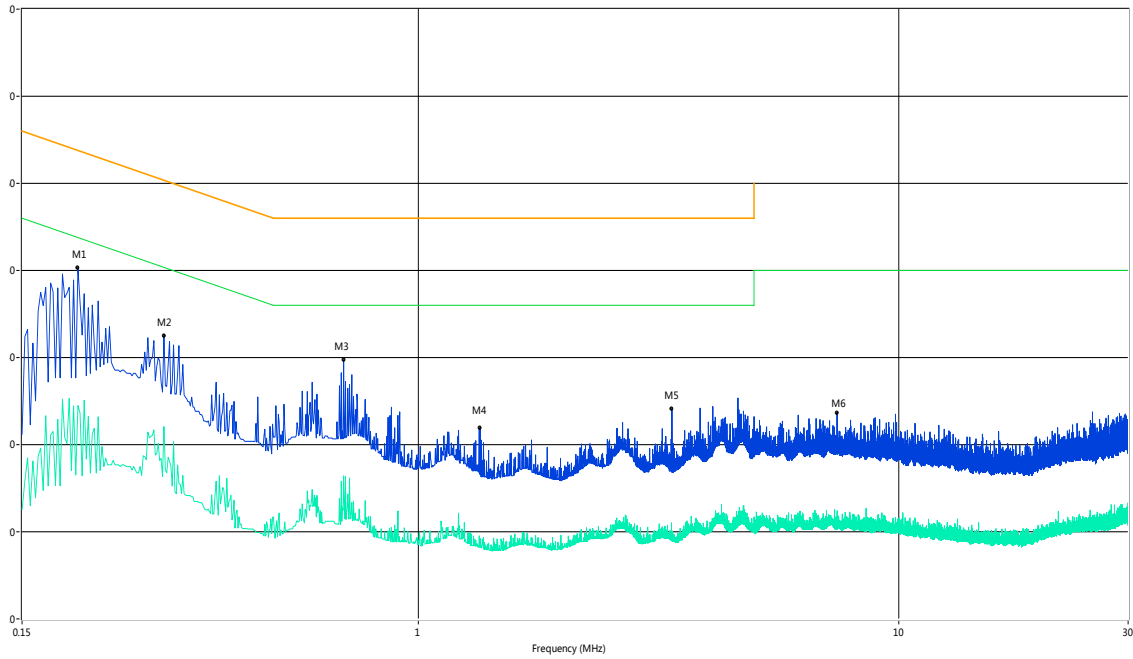
ANNEX A TEST RESULT

A.1 Conducted Emission

Note 1: The EUT is working in the Normal link mode.

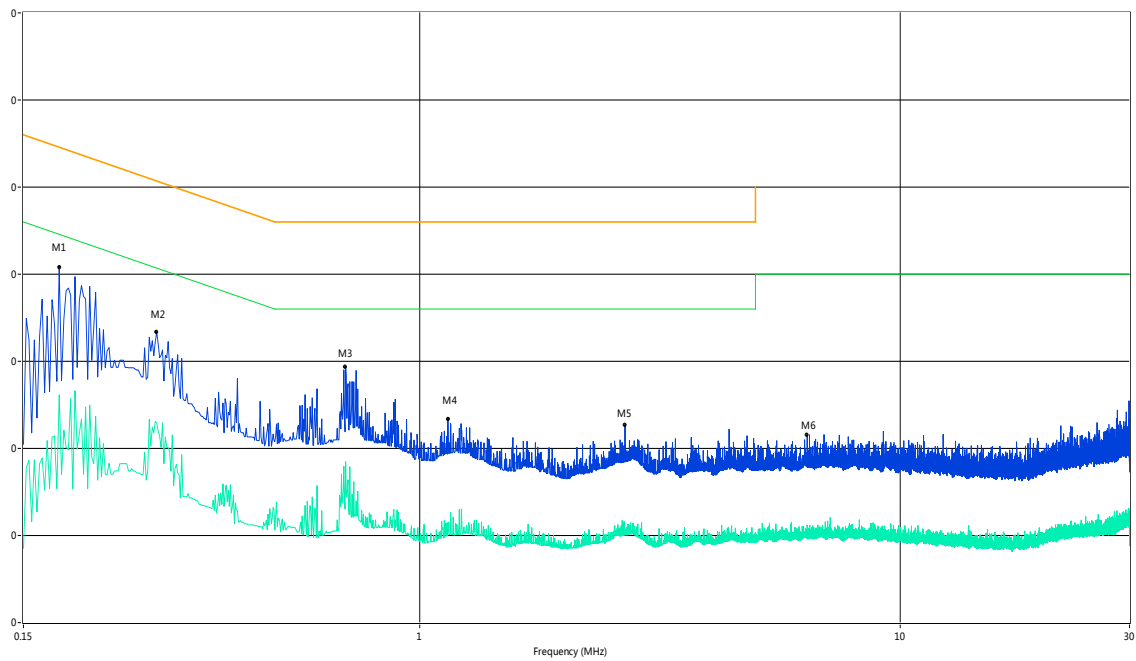
Test Data and Plots

PHASE L



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.20	50.3	11.00	64.7	14.40	Peak	L Line	Pass
1**	0.20	34.5	11.00	54.7	20.20	AV	L Line	Pass
2	0.30	42.4	11.00	61.8	19.40	Peak	L Line	Pass
2**	0.30	32.1	11.00	51.8	19.70	AV	L Line	Pass
3	0.70	39.7	11.00	56.0	16.30	Peak	L Line	Pass
3**	0.70	26.4	11.00	46.0	19.60	AV	L Line	Pass
4	1.35	31.9	11.00	56.0	24.10	Peak	L Line	Pass
4**	1.35	19.2	11.00	46.0	26.80	AV	L Line	Pass
5	3.37	34.1	11.00	56.0	21.90	Peak	L Line	Pass
5**	3.37	19.9	11.00	46.0	26.10	AV	L Line	Pass
6	7.44	33.7	11.00	60.0	26.30	Peak	L Line	Pass
6**	7.44	21.2	11.00	50.0	28.80	AV	L Line	Pass

PHASE N



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.18	50.7	11.00	65.2	14.50	Peak	N Line	Pass
1**	0.18	36.2	11.00	55.2	19.00	AV	N Line	Pass
2	0.28	43.4	11.00	62.2	18.80	Peak	N Line	Pass
2**	0.28	32.9	11.00	52.2	19.30	AV	N Line	Pass
3	0.70	39.3	11.00	56.0	16.70	Peak	N Line	Pass
3**	0.70	28.5	11.00	46.0	17.50	AV	N Line	Pass
4	1.15	33.3	11.00	56.0	22.70	Peak	N Line	Pass
4**	1.15	21.4	11.00	46.0	24.60	AV	N Line	Pass
5	2.68	32.6	11.00	56.0	23.40	Peak	N Line	Pass
5**	2.68	20.2	11.00	46.0	25.80	AV	N Line	Pass
6	6.40	31.5	11.00	60.0	28.50	Peak	N Line	Pass
6**	6.40	21.2	11.00	50.0	28.80	AV	N Line	Pass

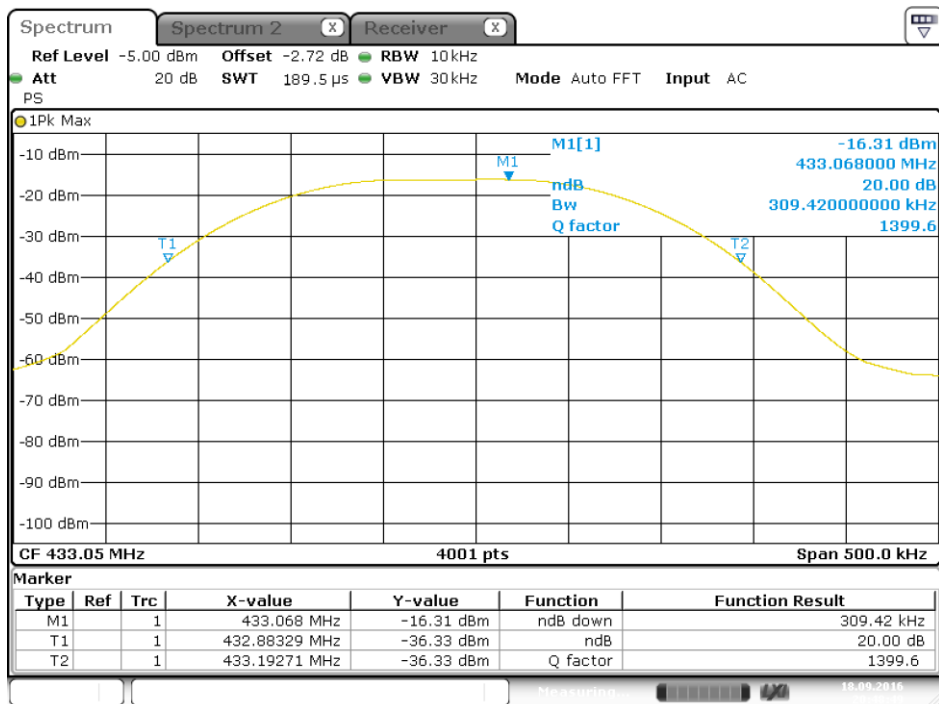
A.2 20 dB Bandwidth

Test Data

Frequency (MHz)	20 dB Bandwidth (kHz)	Limit (kHz)	Verdict
433.05	309.42	$433050 \times 0.25\% = 1082.63$	Pass
433.92	310.17	$433920 \times 0.25\% = 1084.80$	Pass
434.75	250.69	$434750 \times 0.25\% = 1086.88$	Pass

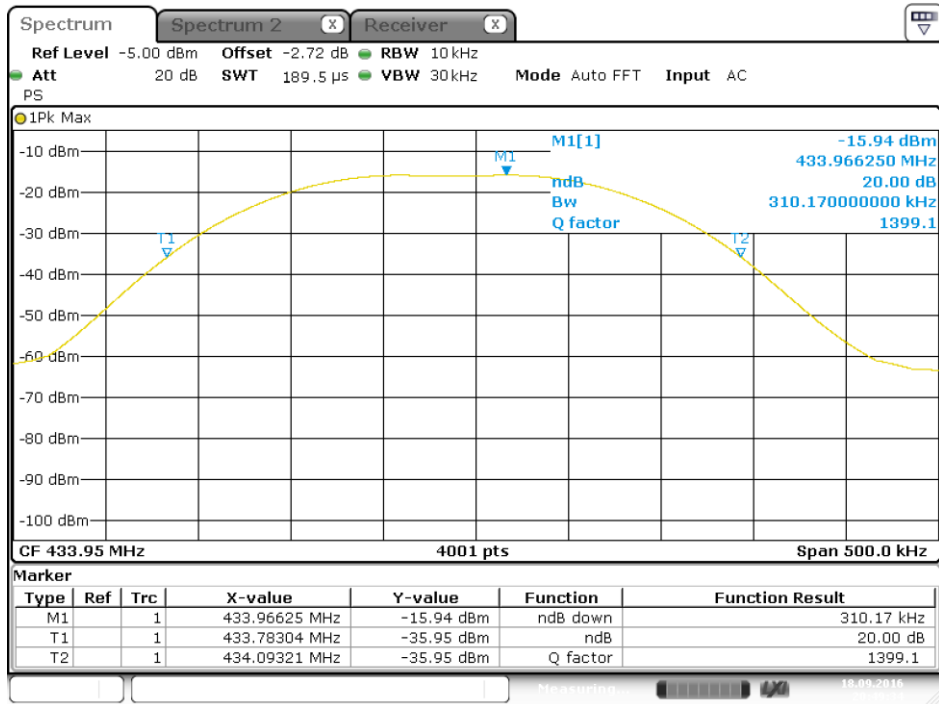
Test plots

20 dB Bandwidth Low Channel



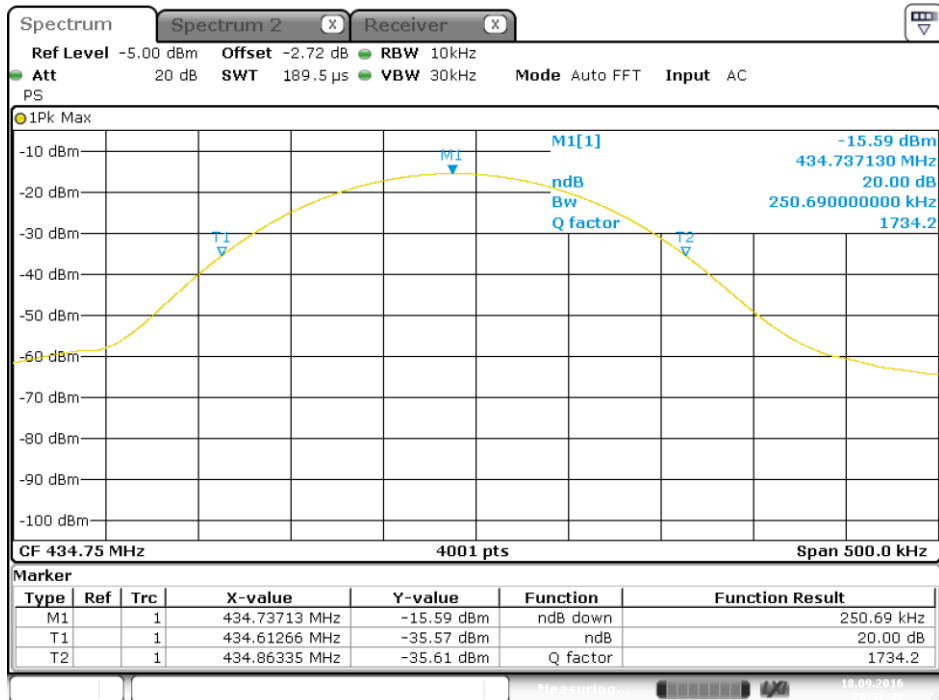
Date: 18.SEP.2016 20:48:49

20 dB Bandwidth Middle Channel



Date: 18.SEP.2016 20:49:34

20 dB Bandwidth High Channel



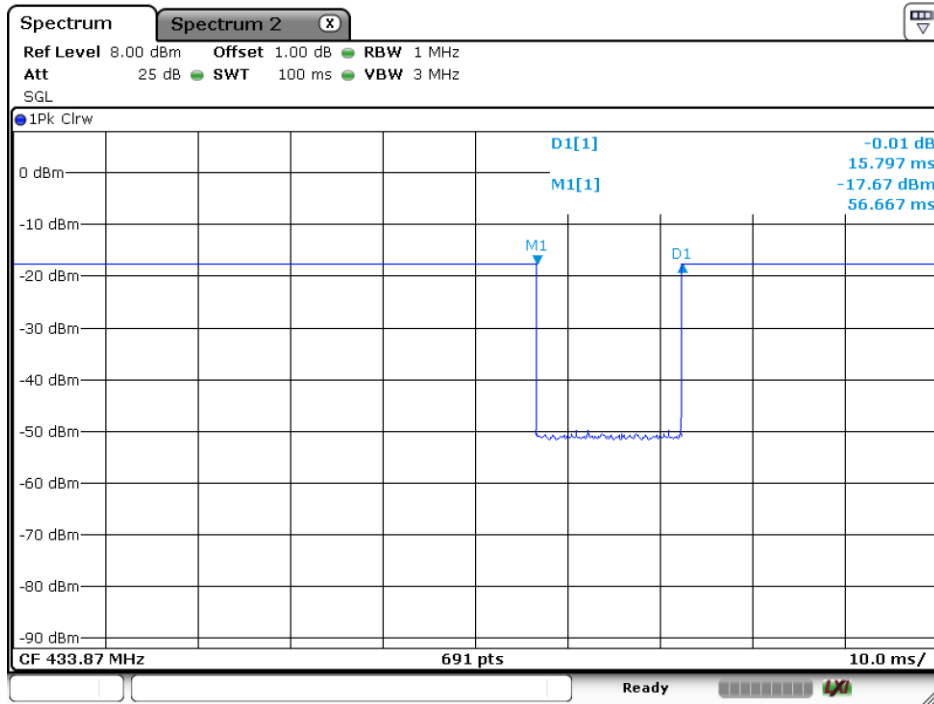
Date: 18.SEP.2016 20:47:42

A.3 Duty cycle

Test Data and Plot

The Duty cycle is $(100-15.797)\text{ms} / 100\text{ms} \times 100\% = 84.203\%$

Duty cycle



Date: 14.OCT.2016 17:45:06

A.4 Field Strength of Fundamental Emissions

Note 1: According the ANSI C63.10-2013, 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.

Note 2: The margin is greater than 20dB, so it is no record in this report.

Low Channel Test Data

Field Strength of Fundamental Emissions and Field strength of spurious emissions Value					
Frequency (MHz)	Field Strength (dBuV/m)	Detector	Limit @3m (dBuV/m)	Margin (dB)	Antenna
433.05	60.56	PEAK	100.8	40.24	Vertical
	72.69	PEAK	100.8	28.11	Horizontal
	N/A ^{Note1}	AVERAGE	80.8	N/A ^{Note1}	Vertical
	N/A ^{Note1}	AVERAGE	80.8	N/A ^{Note1}	Horizontal
866.1	N/A ^{Note2}	PEAK	80.8	N/A ^{Note2}	Vertical
	28.15	PEAK	80.8	52.65	Horizontal
	N/A ^{Note1}	AVERAGE	60.8	N/A ^{Note1}	Vertical
	N/A ^{Note1}	AVERAGE	60.8	N/A ^{Note1}	Horizontal

Middle Channel Test Data

Field Strength of Fundamental Emissions and Field strength of spurious emissions Value					
Frequency (MHz)	Field Strength (dBuV/m)	Detector	Limit @3m (dBuV/m)	Margin (dB)	Antenna
433.92	39.11	PEAK	100.8	61.69	Vertical
	73.24	PEAK	100.8	27.56	Horizontal
	N/A ^{Note1}	AVERAGE	80.8	N/A ^{Note1}	Vertical
	N/A ^{Note1}	AVERAGE	80.8	N/A ^{Note1}	Horizontal
867.84	N/A ^{Note2}	PEAK	80.8	N/A ^{Note2}	Vertical
	28.48	PEAK	80.8	52.32	Horizontal
	N/A ^{Note1}	AVERAGE	60.8	N/A ^{Note1}	Vertical
	N/A ^{Note1}	AVERAGE	60.8	N/A ^{Note1}	Horizontal

High Channel Test Data

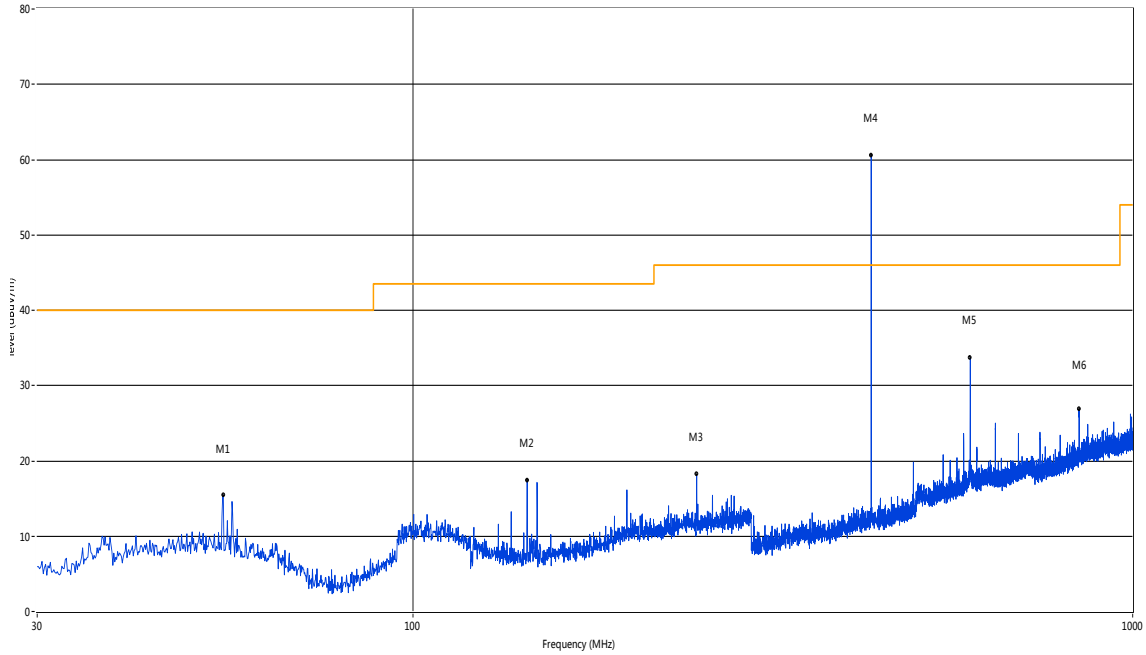
Field Strength of Fundamental Emissions and Field strength of spurious emissions Value					
Frequency (MHz)	Field Strength (dBuV/m)	Detector	Limit @3m (dBuV/m)	Margin (dB)	Antenna
434.75	62.44	PEAK	100.8	38.36	Vertical
	73.83	PEAK	100.8	26.97	Horizontal
	N/A ^{Note1}	AVERAGE	80.8	N/A ^{Note1}	Vertical
	N/A ^{Note1}	AVERAGE	80.8	N/A ^{Note1}	Horizontal
869.5	27.42	PEAK	80.8	53.38	Vertical
	28.94	PEAK	80.8	51.86	Horizontal
	N/A ^{Note1}	AVERAGE	60.8	N/A ^{Note1}	Vertical
	N/A ^{Note1}	AVERAGE	60.8	N/A ^{Note1}	Horizontal

A.5 Radiated Emissions

Note 1: 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.

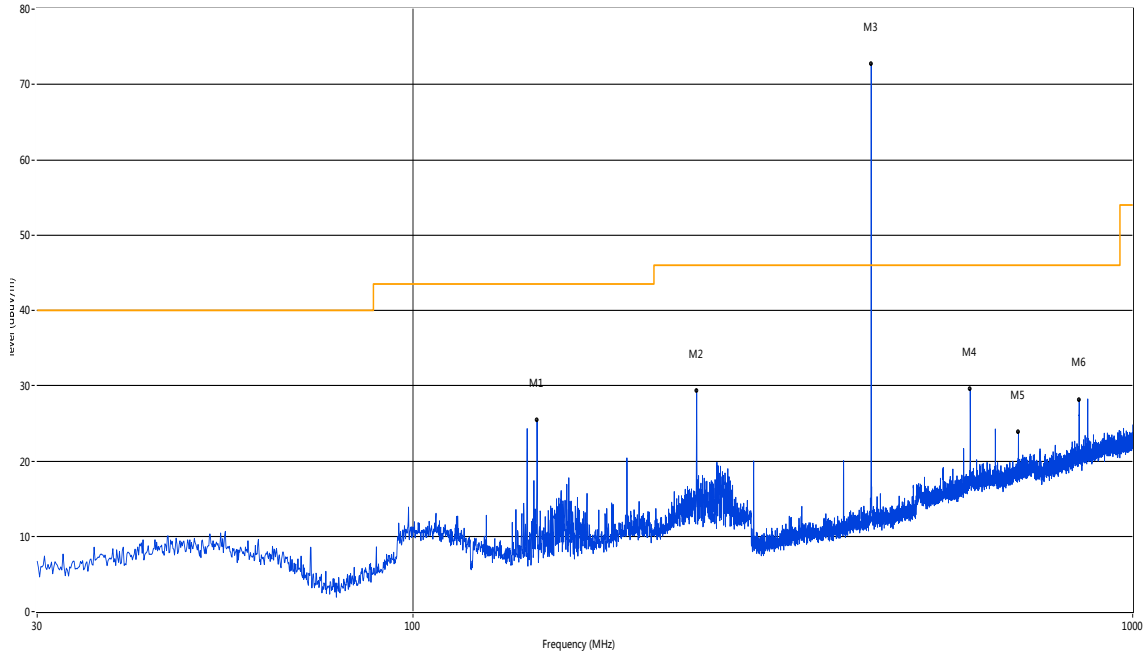
Test Data and Plots (30 MHz ~ 10th Harmonic)

30 MHz to 1 GHz, Low Channel, ANT V



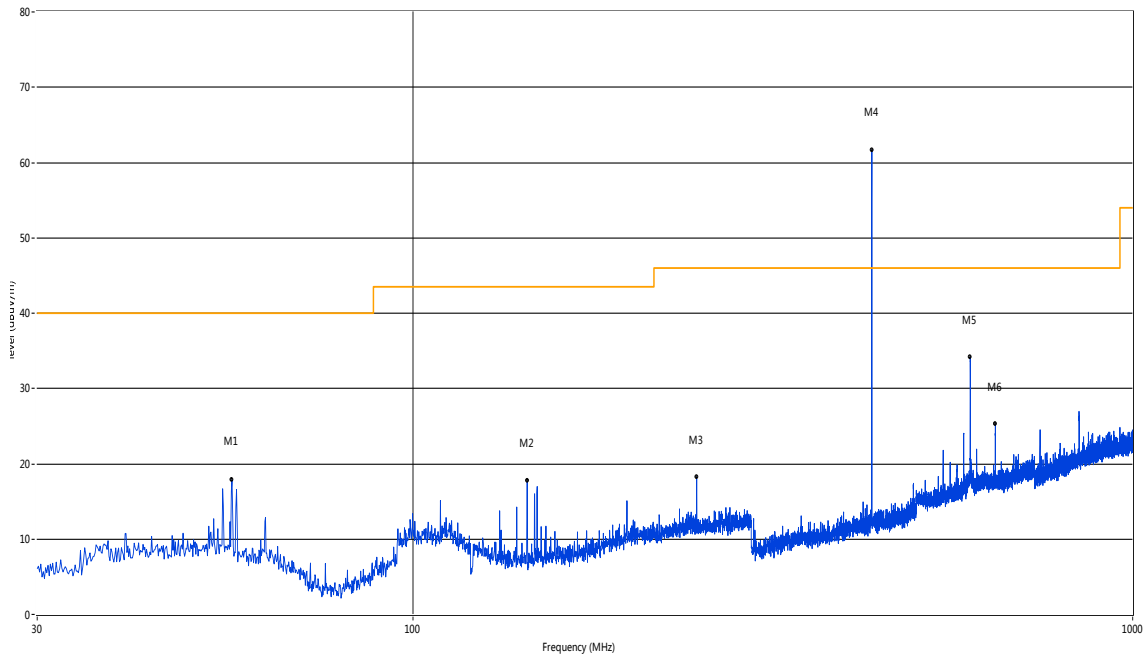
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	54.43	15.44	-18.77	40.0	24.56	Peak	279.70	100	Vertical	Pass
2	143.95	17.34	-23.56	43.5	26.16	Peak	294.30	100	Vertical	Pass
3	247.67	18.21	-18.94	46.0	27.79	Peak	209.30	100	Vertical	Pass
4	432.92	60.56	-14.57	100.8	40.24	Peak	81.40	100	Vertical	Pass
5	594.73	33.70	-10.30	46.0	12.30	Peak	353.90	100	Vertical	Pass
6	842.54	26.81	-6.23	46.0	19.19	Peak	49.40	100	Vertical	Pass

30 MHz to 1 GHz, Low Channel, ANT H



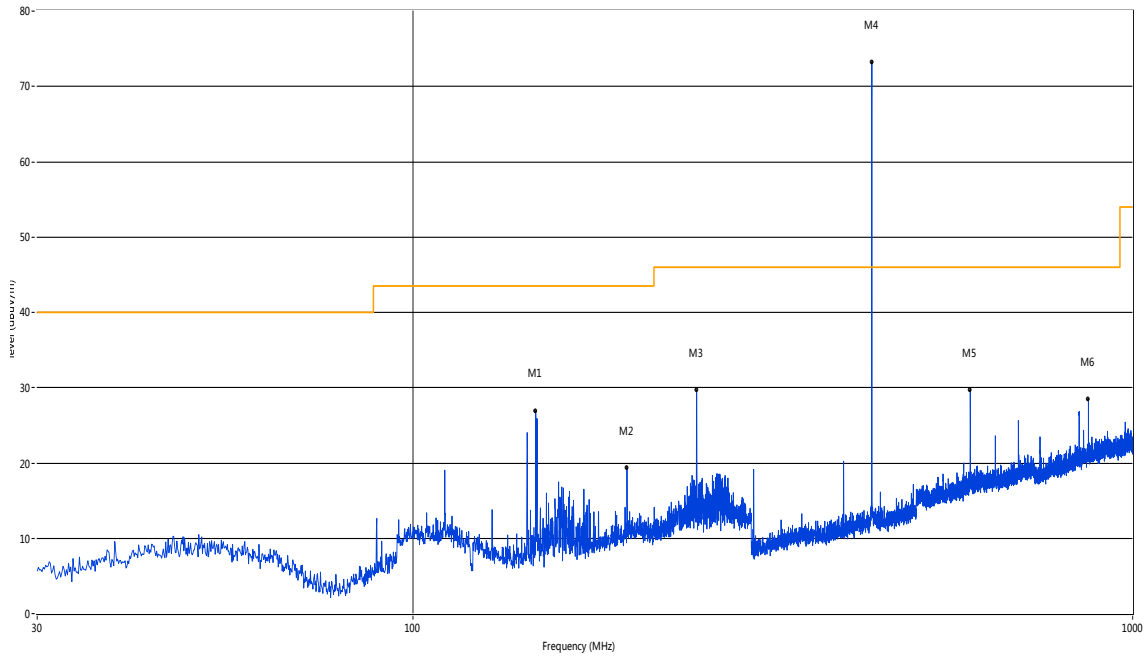
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	148.53	25.35	-23.57	43.5	18.15	Peak	260.80	100	Horizontal	Pass
2	247.67	29.34	-18.94	46.0	16.66	Peak	256.40	100	Horizontal	Pass
3	432.92	72.69	-14.57	100.8	28.11	Peak	199.80	100	Horizontal	Pass
4	594.48	29.58	-10.28	46.0	16.42	Peak	234.60	100	Horizontal	Pass
5	693.70	23.83	-8.79	46.0	22.17	Peak	303.50	100	Horizontal	Pass
6	867.54	28.15	-6.23	80.8	52.65	Peak	176.40	100	Horizontal	Pass

30 MHz to 1 GHz, Middle Channel, ANT V



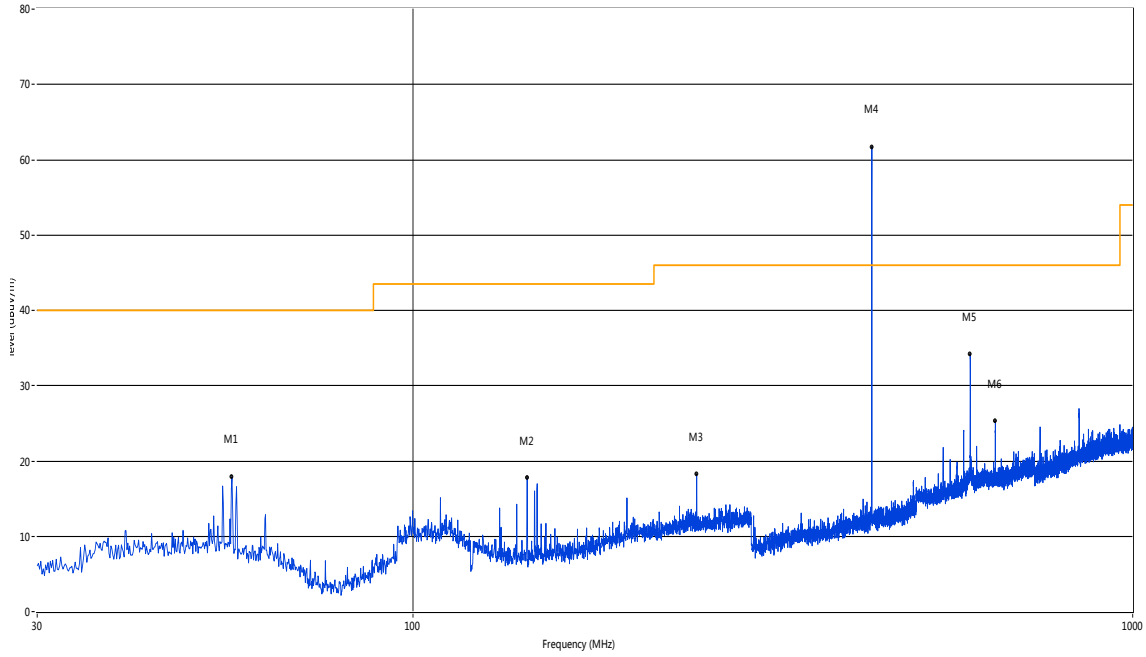
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	55.96	17.89	-19.30	40.0	22.11	Peak	228.20	100	Vertical	Pass
2	143.95	17.70	-23.56	43.5	25.80	Peak	293.80	100	Vertical	Pass
3	247.67	18.27	-18.94	46.0	27.73	Peak	39.60	100	Vertical	Pass
4	433.86	61.69	-14.65	100.8	39.11	Peak	82.10	100	Vertical	Pass
5	594.48	34.14	-10.28	46.0	11.86	Peak	179.40	100	Vertical	Pass
6	644.21	25.28	-9.63	46.0	20.72	Peak	358.90	100	Vertical	Pass

30 MHz to 1 GHz, Middle Channel, ANT H



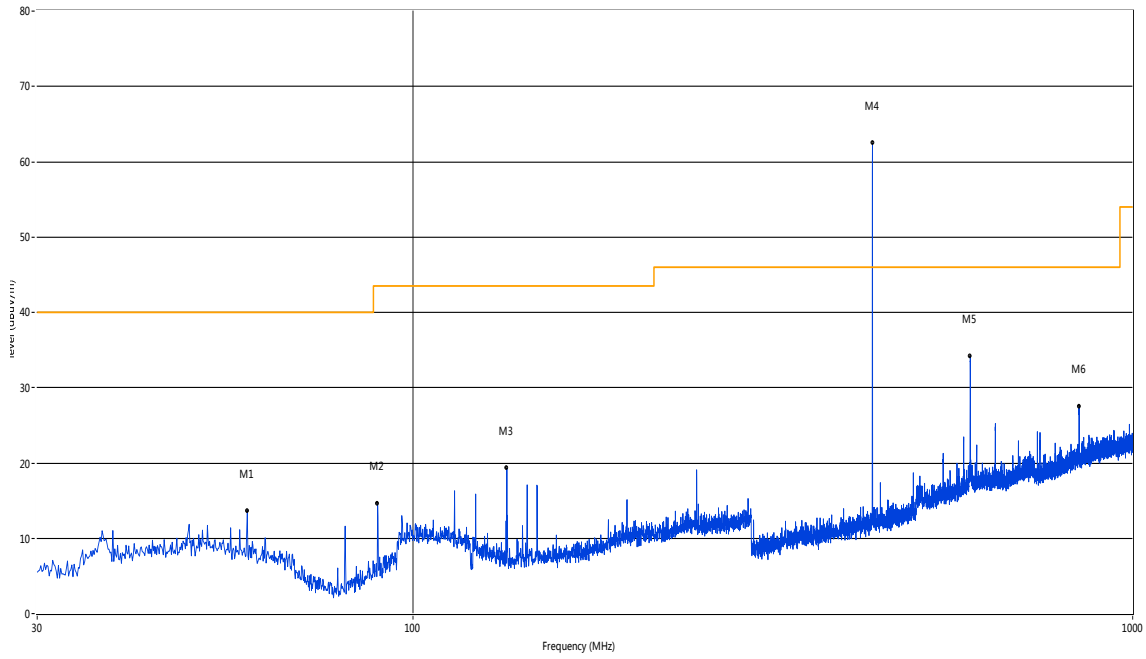
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	147.94	26.90	-23.53	43.5	16.60	Peak	203.50	100	Horizontal	Pass
2	198.10	19.33	-20.38	43.5	24.17	Peak	279.40	100	Horizontal	Pass
3	247.67	29.66	-18.94	46.0	16.34	Peak	255.30	100	Horizontal	Pass
4	433.86	73.24	-14.65	100.8	27.56	Peak	207.90	100	Horizontal	Pass
5	594.60	29.62	-10.28	46.0	16.38	Peak	261.60	100	Horizontal	Pass
6	867.78	28.48	-5.72	80.8	52.32	Peak	21.00	100	Horizontal	Pass

30 MHz to 1 GHz, High Channel, ANT V



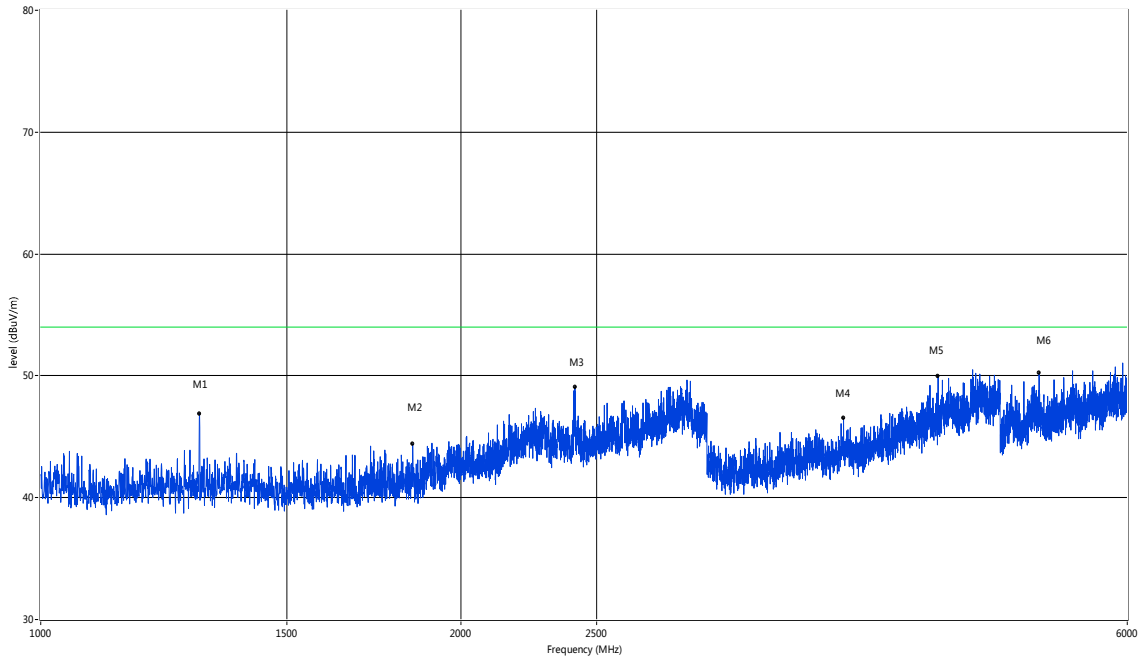
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	55.96	17.89	-19.30	40.0	22.11	Peak	228.20	100	Vertical	Pass
2	143.95	17.70	-23.56	43.5	25.80	Peak	293.80	100	Vertical	Pass
3	247.67	18.27	-18.94	46.0	27.73	Peak	39.60	100	Vertical	Pass
4	433.86	61.69	-14.65	100.8	39.11	Peak	82.10	100	Vertical	Pass
5	594.48	34.14	-10.28	46.0	11.86	Peak	179.40	100	Vertical	Pass
6	644.21	25.28	-9.63	46.0	20.72	Peak	358.90	100	Vertical	Pass

30 MHz to 1 GHz, High Channel, ANT H



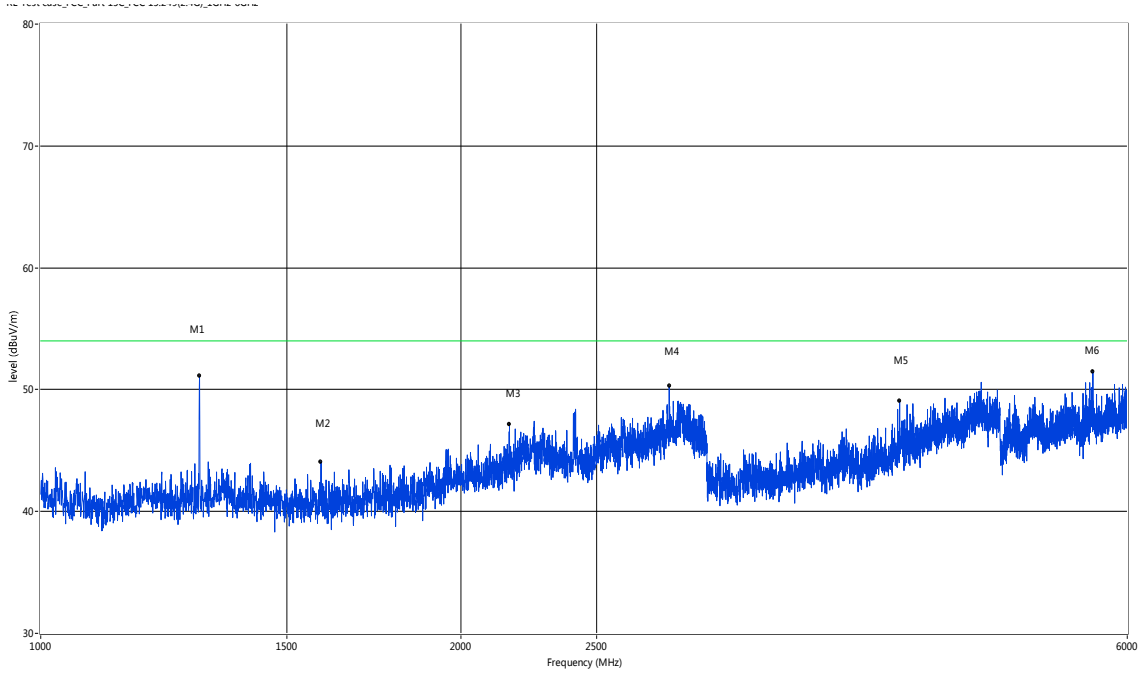
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	58.78	13.66	-19.95	40.0	26.34	Peak	250.50	100	Vertical	Pass
2	89.21	14.54	-22.12	43.5	28.96	Peak	24.60	100	Vertical	Pass
3	134.90	19.27	-23.46	43.5	24.23	Peak	4.20	100	Vertical	Pass
4	434.69	62.44	-14.57	100.8	38.36	Peak	90.50	100	Vertical	Pass
5	594.60	34.16	-10.28	46.0	11.84	Peak	185.00	100	Vertical	Pass
6	868.54	27.42	-6.23	80.8	53.38	Peak	50.70	100	Vertical	Pass

1 GHz to 6 GHz, Low Channel, ANT V



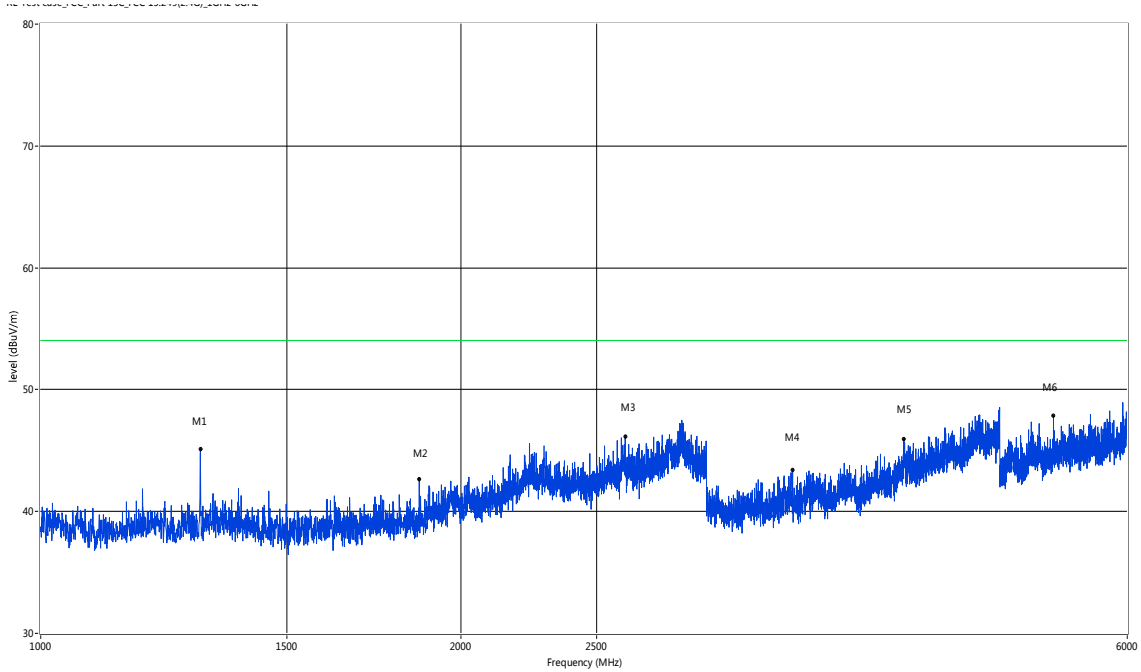
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1299.425	46.90	-2.93	74.0	27.10	Peak	311.00	100	Vertical	Pass
2	1846.788	44.40	-1.10	74.0	29.60	Peak	66.00	100	Vertical	Pass
3	2413.147	49.10	1.85	74.0	24.90	Peak	258.00	100	Vertical	Pass
4	3758.060	46.54	10.44	74.0	27.46	Peak	317.80	100	Vertical	Pass
5	4392.402	49.98	12.14	74.0	24.02	Peak	45.20	100	Vertical	Pass
6	5187.953	50.23	14.75	74.0	23.77	Peak	327.50	100	Vertical	Pass

1 GHz to 6 GHz, Low Channel, ANT H



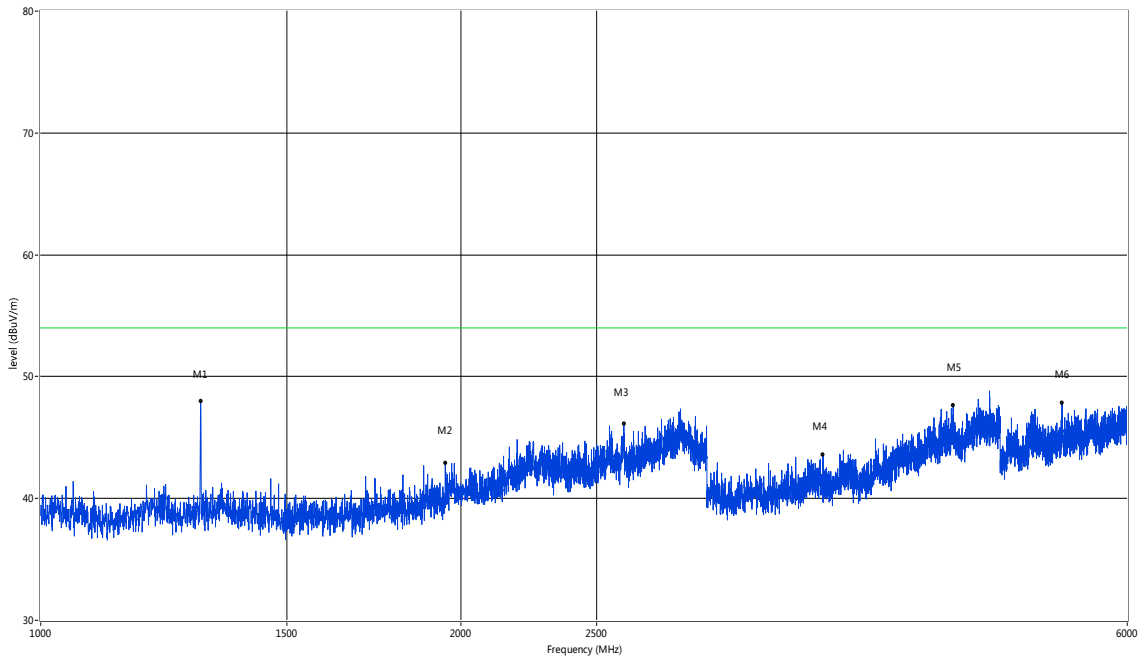
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1299.425	51.12	-2.93	74.0	22.88	Peak	43.00	100	Horizontal	Pass
2	1587.353	44.09	-2.41	74.0	29.91	Peak	4.00	100	Horizontal	Pass
3	2166.208	47.13	1.32	74.0	26.87	Peak	5.00	100	Horizontal	Pass
4	2819.045	50.27	5.68	74.0	23.73	Peak	5.00	100	Horizontal	Pass
5	4122.469	49.09	11.59	74.0	24.91	Peak	4.00	100	Horizontal	Pass
6	5669.333	51.49	15.40	74.0	22.51	Peak	5.00	100	Horizontal	Pass

1 GHz to 6 GHz, Middle Channel, ANT V



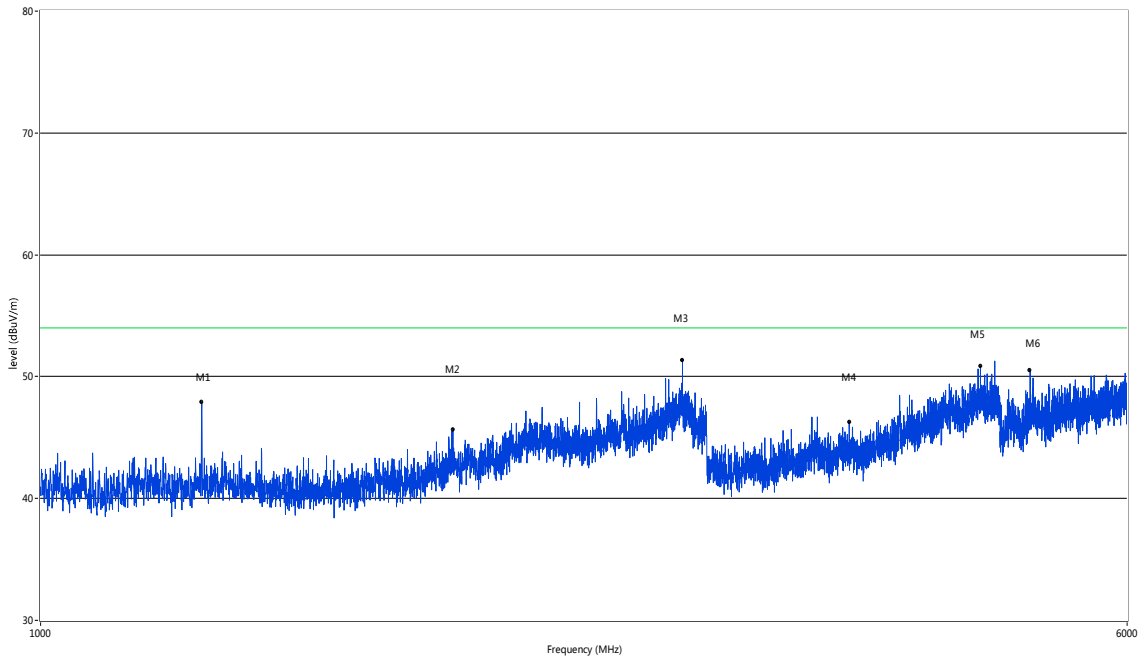
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1301.925	45.07	-2.92	74.0	28.93	Peak	293.30	100	Vertical	Pass
2	1867.783	42.60	-1.09	74.0	31.40	Peak	211.40	100	Vertical	Pass
3	2623.094	46.12	3.45	74.0	27.88	Peak	206.90	100	Vertical	Pass
4	3457.386	43.35	9.60	74.0	30.65	Peak	358.70	100	Vertical	Pass
5	4153.962	45.91	11.50	74.0	28.09	Peak	280.70	100	Vertical	Pass
6	5316.171	47.82	14.62	74.0	26.18	Peak	75.30	100	Vertical	Pass
6*	1301.925	45.07	-2.92	74.0	28.93	Peak	293.30	100	Vertical	Pass

1 GHz to 6 GHz, Middle Channel, ANT H



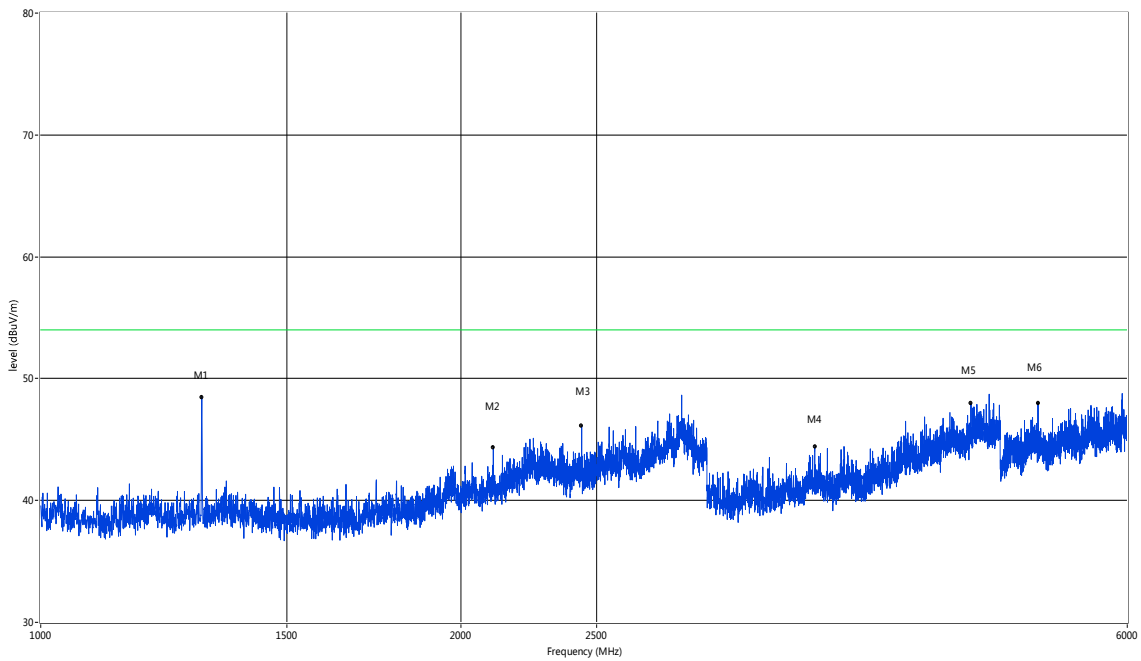
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1301.925	47.98	-2.92	74.0	26.02	Peak	319.40	100	Horizontal	Pass
2	1948.763	42.92	-0.25	74.0	31.08	Peak	108.90	100	Horizontal	Pass
3	2616.096	46.10	4.24	74.0	27.90	Peak	196.80	100	Horizontal	Pass
4	3632.842	43.61	10.11	74.0	30.39	Peak	9.40	100	Horizontal	Pass
5	4502.624	47.61	12.74	74.0	26.39	Peak	4.00	100	Horizontal	Pass
6	5388.153	47.85	14.74	74.0	26.15	Peak	265.20	100	Horizontal	Pass

1 GHz to 6 GHz, High Channel, ANT V



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1304.424	47.90	-2.84	74.0	26.10	Peak	45.70	100	Vertical	Pass
2	1973.757	45.65	0.65	74.0	28.35	Peak	241.00	100	Vertical	Pass
3	2882.029	51.32	7.01	74.0	22.68	Peak	97.20	100	Vertical	Pass
4	3794.051	46.28	10.79	74.0	27.72	Peak	122.20	100	Vertical	Pass
5	4711.072	50.86	13.38	74.0	23.14	Peak	200.70	100	Vertical	Pass
6	5112.972	50.54	15.12	74.0	23.46	Peak	238.50	100	Vertical	Pass
6*	1304.424	47.90	-2.84	74.0	26.10	Peak	45.70	100	Vertical	Pass

1 GHz to 6 GHz, High Channel, ANT H



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1303.924	48.45	-2.82	74.0	25.55	Peak	321.10	100	Horizontal	Pass
2	2109.223	44.34	0.89	74.0	29.66	Peak	113.30	100	Horizontal	Pass
3	2440.140	46.12	1.45	74.0	27.88	Peak	5.90	100	Horizontal	Pass
4	3584.104	44.39	10.01	74.0	29.61	Peak	0.30	100	Horizontal	Pass
5	4636.841	47.95	13.13	74.0	26.05	Peak	360.00	100	Horizontal	Pass
6	5178.955	47.99	14.83	74.0	26.01	Peak	183.80	100	Horizontal	Pass
6*	1303.924	48.45	-2.82	74.0	25.55	Peak	321.10	100	Horizontal	Pass

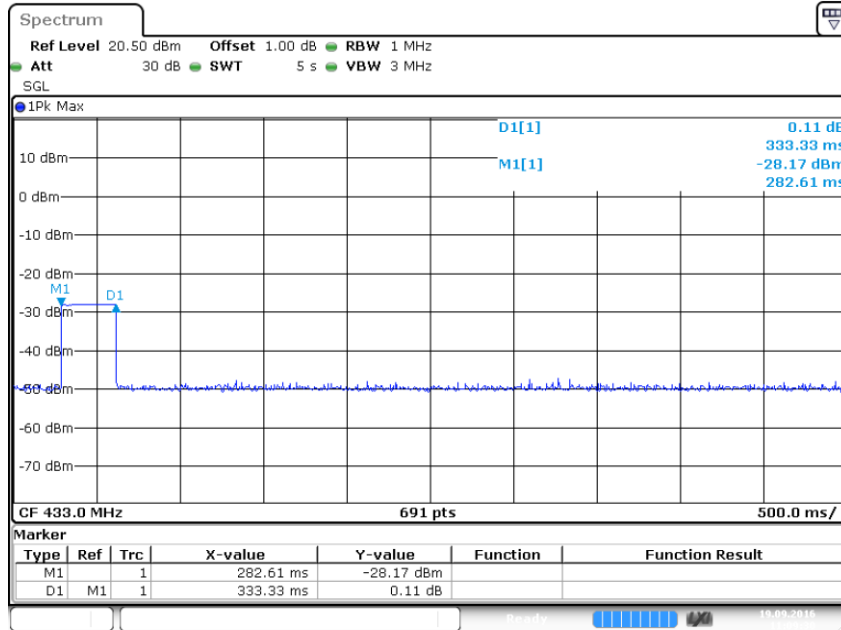
A.6 Transmitter Time

Test Data and Plot

Automatically:

The active time is less than 1 seconds

Active time

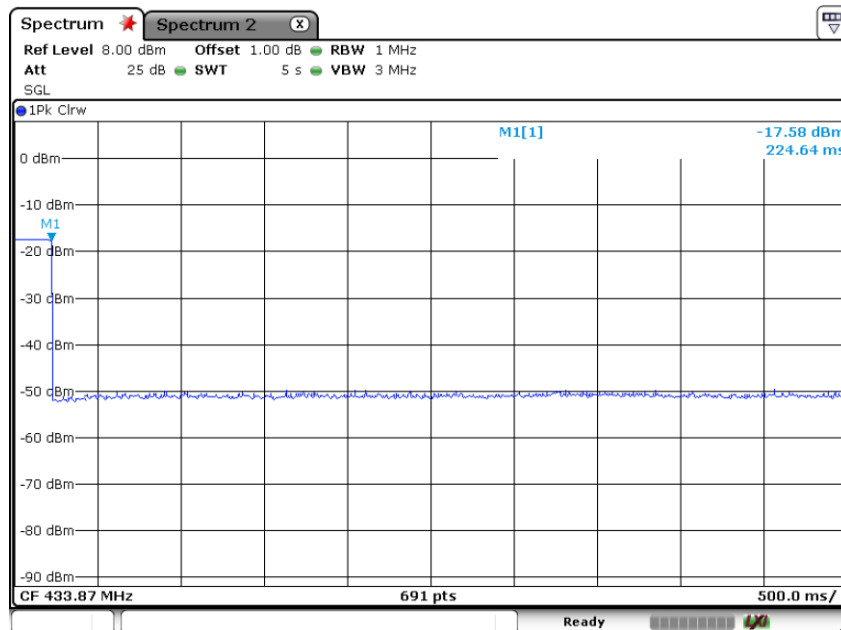


Date: 19.SEP.2016 11:09:30

Manually operated:

The automatically deactivate time is less than 1 seconds

automatically deactivate time



Date: 14.OCT.2016 17:41:11

ANNEX B TEST SETUP PHOTOS

Please refer the document "BL-SZ1680421-AR.PDF".

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document "BL-SZ1680421-AW.PDF".

ANNEX D EUT INTERNAL PHOTOS

Please refer the document "BL-SZ1680421-AI.PDF".

--END OF REPORT--