FCC RF TEST REPORT

ISSUED BY
Shenzhen BALUN Technology Co., Ltd.

FOR

X1 FDD-LTE Smartphone

ISSUED TO
TP-LINK Technologies Co., Ltd.

Building 24-1F/3F/4F/5F, 28-1F/2F/3F/4F Science and Technology Park, Shennan Road, Nanshan District, Shenzhen City, Guangdong Province, P.R. China

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Date Apr. 24. 2017

Approved by: Wei Yanquan
(Chief Engineer)
Date Apr. 24. 2017

Report No.:	BL-SZ1720179-604
EUT Name:	X1 FDD-LTE Smartphone
Model Name:	TP902C
Brand Name:	neffos
Test Standard:	47 CFR Part 15 Subpart E
FCC ID:	TE7X1V1
Test conclusion:	Pass
Test Date:	Mar. 16, 2017 ~ Apr. 12, 2017
Date of Issue:	Apr. 24, 2017

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Revision History

Version	Issue Date	Revisions Content
Rev. 01	Apr. 24, 2017	Initial Issue

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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

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 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 to 25℃
Ambient Relative Humidity	45% - 55%
Ambient Pressure	100 kPa - 102 kPa

1.4 Announce

(1) The test report reference to the report template version v3.8.

(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	TP-LINK Technologies Co., Ltd.
Address	Building 24-1F/3F/4F/5F, 28-1F/2F/3F/4F Science and Technology Park, Shennan Road, Nanshan District, Shenzhen City, Guangdong Province, P.R. China

2.2 Manufacturer

Manufacturer	TP-LINK Technologies Co., Ltd.
Address	Building 24-1F/3F/4F/5F, 28-1F/2F/3F/4F Science and Technology Park, Shennan Road, Nanshan District, Shenzhen City, Guangdong Province, P.R. China

2.3 Factory

Factory	NA
Address	NA

2.4 General Description for Equipment under Test (EUT)

EUT Type	X1 FDD-LTE Smartphone
Model Name Under Test	TP902C
Series Model Name	TP902C, TP902CXYZZ
Description of Model name differentiation	The equipment model TP902C and TP902CXYZZ are the EUT model, the electrical parameters and internal structure of circuit are same, only the model is different (X=2 or 4 (2 indicates Cloudy Grey, 4 indicates Sunrise Gold); Y=4 or 6 (4 indicates the memory is 2G RAM + 16G Flash, 6 indicates the memory is 3G RAM + 32G Flash); ZZ indicates different national).
Hardware Version	N/A
Software Version	N/A
Network and Wireless connectivity	2G Network GSM/GPRS/EDGE 850/1900 MHz 3G Network WCDMA/HSDPA/HSUPA Band 2/4/5 4G Network FDD LTE Band 2/4/7 Bluetooth 3.0, Bluetooth 4.0 Low Energy (BLE), WIFI 802.11a, 802.11b, 802.11g and 802.11n (HT20/40), FM, GPS, GLONASS

2.5 Ancillary Equipment

Ancillary Equipment 1	Battery	
	Brand Name	neffos
	Model No.	NBL-38A2250
	Serial No.	N/A
	Capacitance	2020 mAh
	Rated Voltage	3.85 V
	Limit Charge Voltage	4.4 V
Ancillary Equipment 2	Charger	
	Brand Name	neffos
	Model Name	N050100-2B3
	Rated Input	100-240 V ~, 50/60 Hz, 300 mA
	Rated Output	5 V ⎓, 1 A
Ancillary Equipment 3	USB Cable	
	Length(Approx.)	100 cm
Ancillary Equipment 4	Earphone	
	Length(Approx.)	95cm

2.6 Technical Information

Frequency Range	Band I: 5150 MHz to 5250 MHz, Band IV: 5725 MHz to 5850 MHz
Modulation technology	OFDM
Modulation Type	64QAM, 16QAM, BPSK, QPSK
Product Type	Mobile and portable
Transfer Rate (Mbps) (Single RF path)	802.11a: 54/ 48/ 36 / 24 / 18 / 12 / 9 / 6 Mbps 802.11n: up to 150 Mbps
Channel Bandwidth	802.11a: 20 MHz 802.11n: 20 MHz, 40 MHz
Maximum Output Power	Band I: 20.16 dBm Band IV: 19.94 dBm
Antenna Type	PCB Antenna
Antenna Gain	Band I: 5150 MHz to 5250 MHz: 1.06 dBi Band IV: 5725 MHz to 5850 MHz: 0.03 dBi
About the Product	The equipment is X1 FDD-LTE Smartphone, intended for used with information technology equipment.

2.7 Additional Instructions

Mode	☒ Special software is used. The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.
EUT Software Settings:

Test Software Version	Test software is set by engineering instruction“*#*#3646633#*#*” in engineering mode		
Support Units (Software installation media)	Description	Manufacturer	Model
	Smartphone	TP-LINK Technologies Co., Ltd.	TP902C

Band I (5150 - 5250 MHz) Power level setup in software			
Mode	Channel	Frequency (MHz)	Soft Set
11a	CH36	5180	17
11a	CH44	5220	17
11a	CH48	5240	17
11n (HT20)	CH36	5180	17
11n (HT20)	CH44	5220	17
11n (HT20)	CH48	5240	17
11n (HT40)	CH38	5190	16
11n (HT40)	CH46	5230	16

Band IV (5725 - 5850 MHz) Power level setup in software			
Mode	Channel	Frequency (MHz)	Soft Set
11a	CH149	5745	17
11a	CH157	5785	17
11a	CH165	5825	17
11n (HT20)	CH149	5745	17
11n (HT20)	CH157	5785	17
11n (HT20)	CH165	5825	17
11n (HT40)	CH151	5755	16
11n (HT40)	CH159	5795	16

Run Software

2.8 Channel List

20 MHz		40 MHz	
Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
36	**5180**	**38**	**5190**
40	5200	**46**	**5230**
44	**5220**	**151**	**5755**
48	**5240**	**159**	**5795**
149	**5745**		
153	5765		
157	**5785**		
161	5805		
165	**5825**		

Note: Until further notice, devices subject to this section shall not be capable of transmitting in the band 5600-5650 MHz. This restriction is for the protection of weather radars operating in this band.

The Lowest frequency, the middle frequency and the highest frequency of channel were selected to perform the test, and the selected channel see below:

For 802.11a/n(HT20)

Band I (5150 - 5250 MHz)			Band IV (5725 - 5850 MHz)		
Channel Number	Channel Number	Channel Number	Channel Number	Channel	Frequency (MHz)
36	Low	5180	149	Low	5745
44	Mid	5220	157	Mid	5785
48	High	5240	165	High	5825

For 802.11n (HT40)

Band I (5150 - 5250 MHz)			Band IV (5725 - 5850 MHz)		
Channel Number	Channel Number	Channel Number	Channel Number	Channel	Frequency (MHz)
38	Low	5190	151	Low	5755
46	High	5230	159	High	5795

Note: Preliminary tests were performed in different data rate in above table to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode	Data Rate	Modulation Type	Band I	Band IV
				Channel	Channel
RF Output Power	11a	6	BPSK	48/44/36	165/157/149
	11n(20 MHz)	6.5		48/44/36	165/157/149
	11n(40 MHz)	13.5		46/38	159/151
Emission Bandwidth & 99% Occupied Bandwidth	11a	6	BPSK	48/44/36	165/157/149
	11n(20 MHz)	6.5		48/44/36	165/157/149
	11n(40 MHz)	13.5		46/38	159/151
6 dB bandwidth	11a	6	BPSK	N/A	165/157/149
	11n(20 MHz)	6.5		N/A	165/157/149
	11n(40 MHz)	13.5		N/A	159/151
Power Spectral Density	11a	6	BPSK	48/44/36	165/157/149
	11n(20 MHz)	6.5		48/44/36	165/157/149
	11n(40 MHz)	13.5		46/38	159/151
Conducted Spurious Emission and Band Edge (Authorized-band)	11a	6	BPSK	48/44/36	165/157/149
	11n(20 MHz)	6.5		48/44/36	165/157/149
	11n(40 MHz)	13.5		46/38	159/151
Radiated Spurious Emissions	11a	6	BPSK	48/44/36	165/157/149
	11n(20 MHz)	6.5		48/44/36	165/157/149
	11n(40 MHz)	13.5		46/38	159/151
Band Edge (Restricted-band)	11a	6	BPSK	48/36	165/149
	11n(20 MHz)	6.5		48/36	165/149
	11n(40 MHz)	13.5		46/38	159/151
Frequency Stability	11a	6	BPSK	48	N/A

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 15 Subpart E (10-1-15 Edition)	Unlicensed National Information Infrastructure Devices
2	KDB Publication 789033 D02v01r03	Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E
3	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	--	Pass[Note1]
2	RF Output Power	15.407(a)	ANNEX A.1	Pass
3	Emission Bandwidth & 99% Occupied Bandwidth	15.407(a)	ANNEX A.2	Pass
4	6 dB bandwidth	15.407(e)	ANNEX A.3	Pass
5	Power Spectral Density	15.407(a)	ANNEX A.4	Pass
6	Conducted Emission	15.207	ANNEX A.5	Pass
7	Conducted Spurious Emission and Band Edge (Authorized-band)	15.407(b) 15.209	ANNEX A.6	Pass
8	Radiated Spurious Emissions and Band Edge (Restricted-band)	15.407(b)	ANNEX A.7	Pass
9	Frequency Stability	15.407(g)	ANNEX A.8	Pass
10	Receiver Spurious Emissions	--	--	N/A[Note2]

Note [1]: The EUT has a permanently and irreplaceable attached antenna, which complies with the requirement FCC 15.203.

Note [2]: Only radio communication receivers operating in stand-alone mode within the band 30-960 MHz, as well as scanner receivers, are subject to Industry Canada requirements, so this test is not applicable

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℃ to +25℃
	LT (Low Temperature)	0℃
	HT (High Temperature)	+40℃
Working Voltage of the EUT	NV (Normal Voltage)	3.85 V
	LV (Low Voltage)	3.4 V
	HV (High Voltage)	4.4 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
Switch Unit with OSP-B157	ROHDE&SCHWARZ	OSP120	101270	2016.07.13	2017.07.12
EMI Receiver	KEYSIGHT	N9038A	MY53220118	2016.09.09	2017.09.08
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	2017.02.24	2019.02.23
Anechoic Chamber	EMC Electronic Co., Ltd	20.10*11.60 *7.35m	N/A	2016.08.09	2018.08.08
Shielded Enclosure	ChangNing	CN-130701	130703	--	--
Signal Generator	ROHDE&SCHWARZ	SMB100A	177746	2016.07.13	2017.07.12
Power Amplifier	OPHIR RF	5225F	1037	2017.02.17	2018.02.16

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Power Amplifier	OPHIR RF	5273F	1016	2017.02.17	2018.02.16
Directional Coupler	Werlantone	C5982-10	109275	N/A	N/A
Directional Coupler	Werlantone	CHP-273E	S00801z-01	N/A	N/A
Feld Strength Meter	Narda	EP601	511WX51129	2017.02.23	2018.02.22
Mouth Simulator	B&K	4227	2423931	2016.11.15	2017.11.14
Sound Calibrator	B&K	4231	2430337	2016.11.09	2017.11.08
Sound Level Meter	B&K	NL-20	00844023	2016.11.11	2017.11.10
Ear Simulator	B&K	4185	2409449	2016.11.15	2017.11.14
Ear Simulator	B&K	4195	2418189	2016.11.15	2017.11.14
Audio analyzer	B&K	UPL 16	100129	2016.11.08	2017.11.07

4.3 Measurement Uncertainty

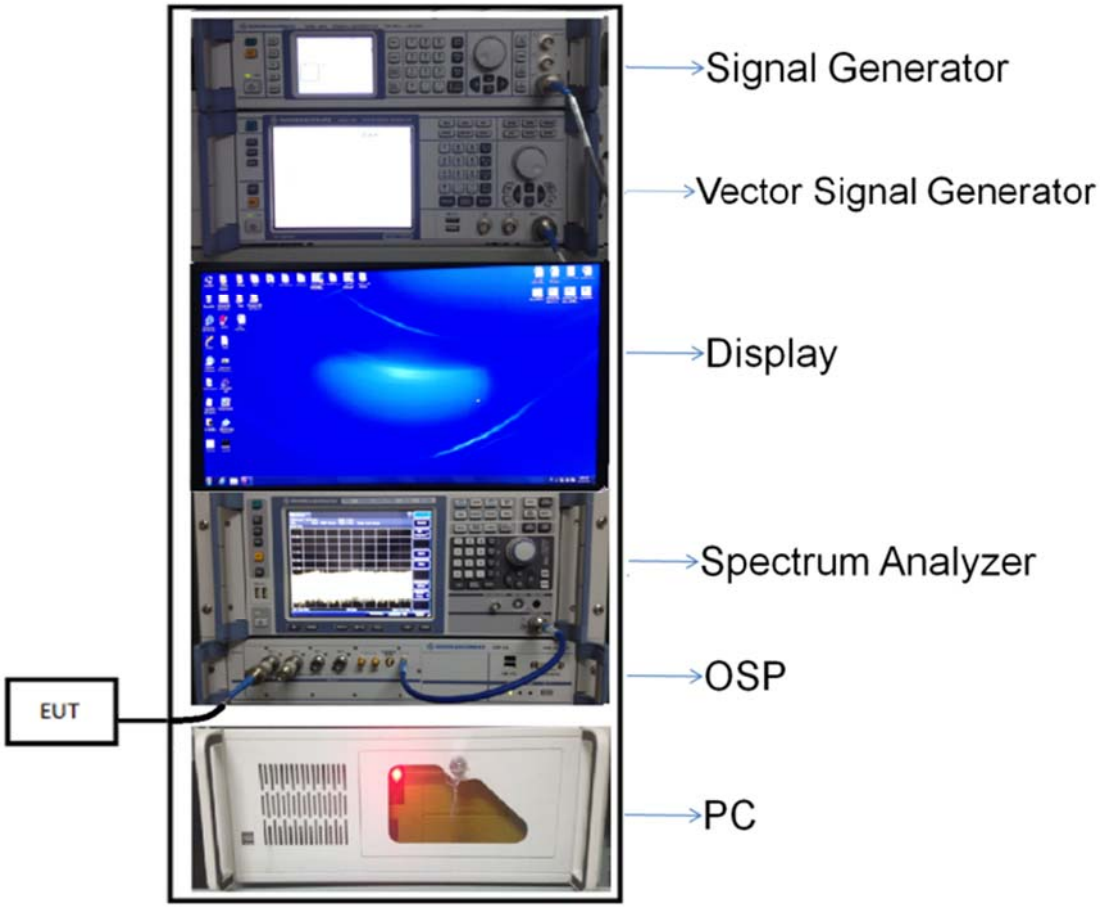
The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2.

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	±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	±4%

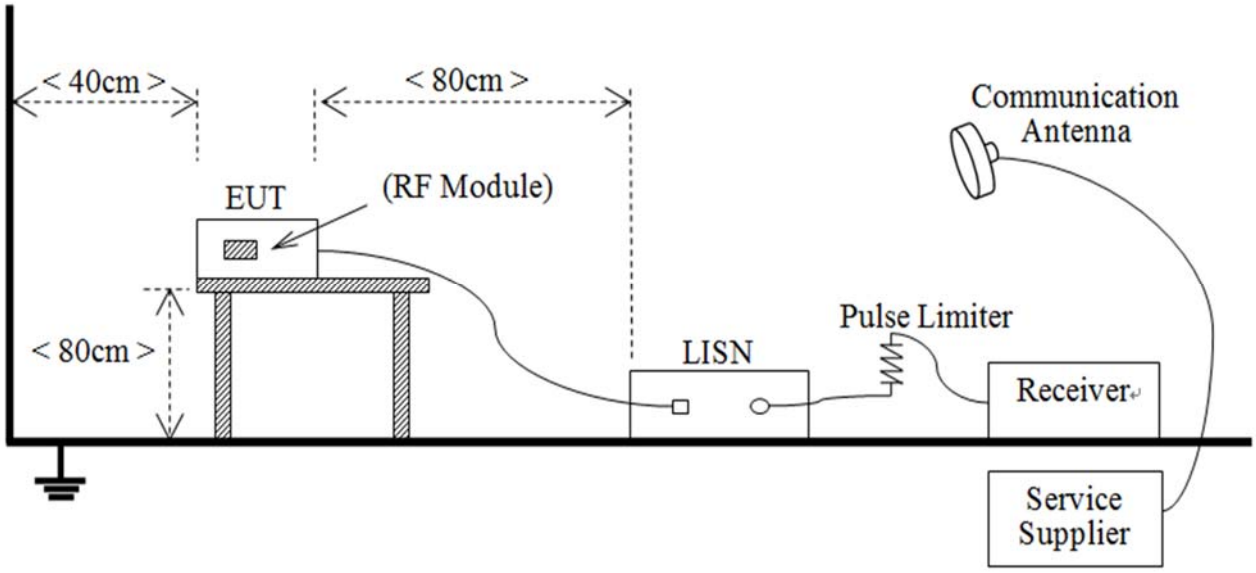
4.4 Description of Test Setup

4.4.1 For Antenna Port Test



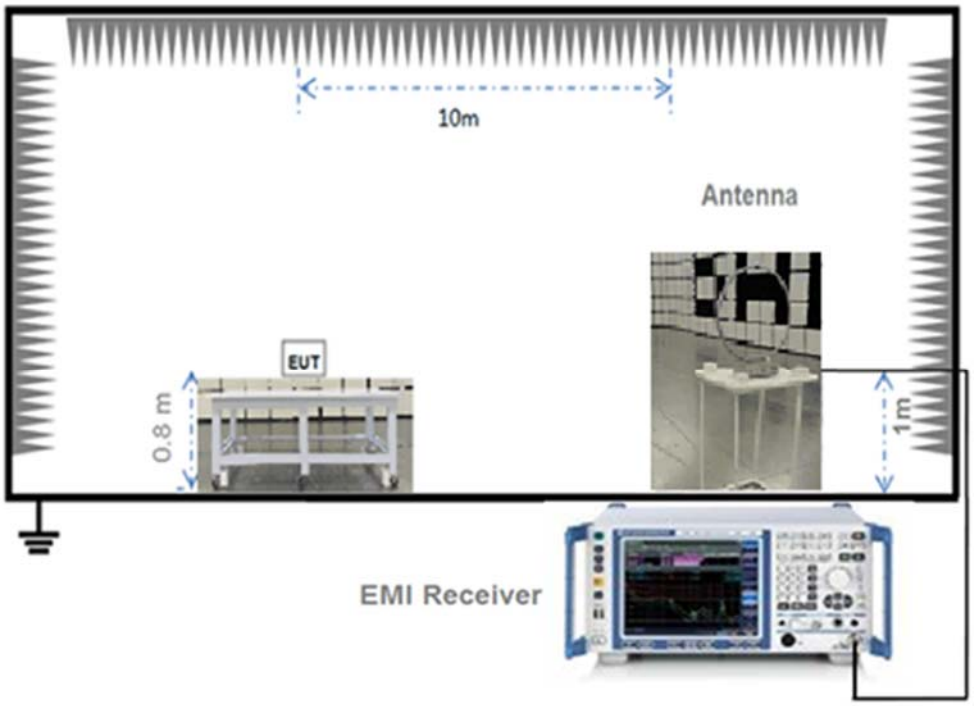
(Diagram 1)

4.4.2 For AC Power Supply Port Test



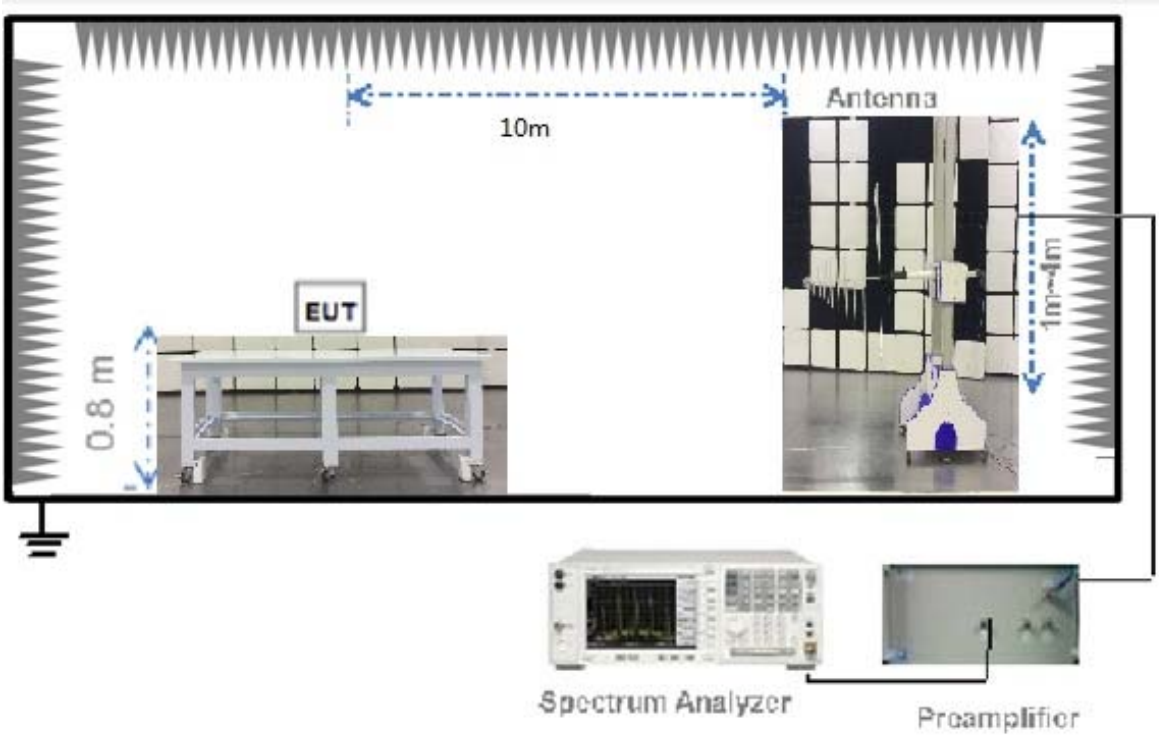
(Diagram 2)

4.4.3 For Radiated Test (Below 30 MHz)



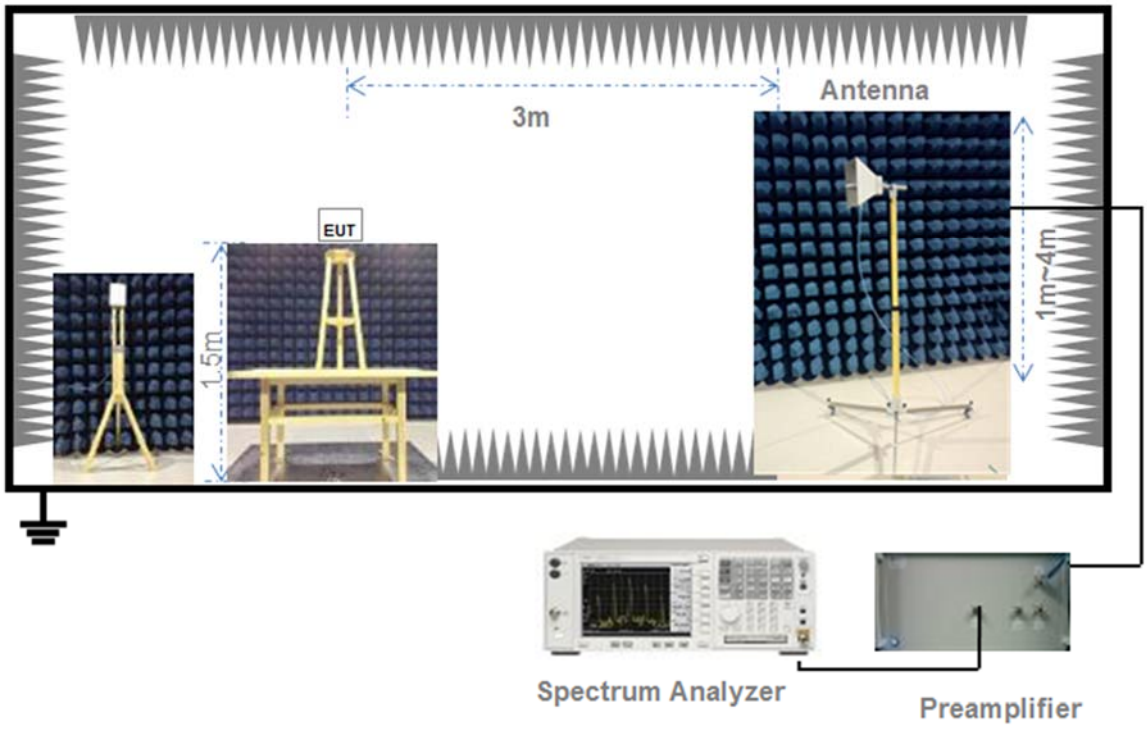
(Diagram 3)

4.4.4 For Radiated Test (30 MHz-1 GHz)



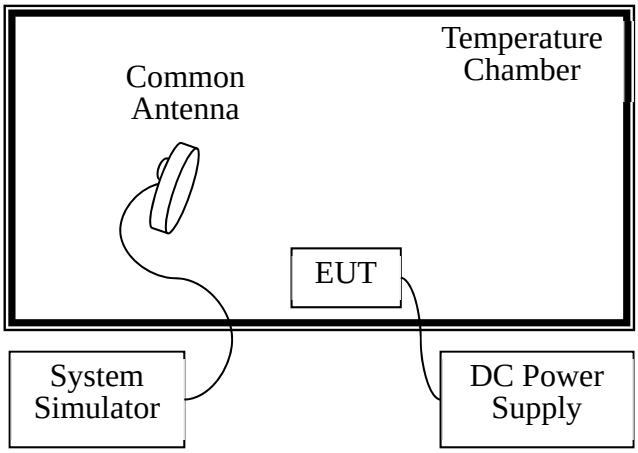
(Diagram 4)

4.4.5 For Radiated Test (Above 1 GHz)



(Diagram 5)

4.4.6 For Frequency Stability Test



(Diagram 6)

5 TEST ITEMS

5.1 RF Output Power

5.1.1 Test Limit

FCC §15.407(a)

The maximum conducted output power should not exceed:

Frequency Band (MHz)	Limit
5150-5250	250 mW
5250-5350	250 mW or 11 dBm + 10log B, whichever is less.
5470-5725	250 mW or 11 dBm + 10log B, whichever is less.
5725-5850	1 W
Note: Where “B” is the 26 dB emissions bandwidth in MHz.	

RSS-247, 6.2

The maximum conducted output power shall not exceed:

Frequency Band (MHz)	Limit
5150-5250	N/A
5250-5350	250 mW or 11 dBm + 10log B, whichever is less.
5470-5725	250 mW or 11 dBm + 10log B, whichever is less.
5725-5850	1 W
Note: Where “B” is the 99% emissions bandwidth in MHz.	

The maximum e.i.r.p. shall not exceed:

Frequency Band (MHz)	Limit
5150-5250	200 mW or 10 dBm + 10log B, whichever is less.
5250-5350	1W or 17 dBm + 10log B, whichever is less.
5470-5725	1W or 17 dBm + 10log B, whichever is less.
5725-5850	N/A
Note: Where “B” is the 99% emissions bandwidth in MHz.	

5.1.2 Test Setup

The section 4.4.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.1.3 Test Procedure

The maximum peak conducted output power may be measured using a broadband Average RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the emission bandwidth and utilize a fast-responding diode detector.

The E.I.R.P used radiated test method. At a test site that has been validated using the procedures of ANSI C63.4 or the latest CISPR 16-1-4 for measurements above 1 GHz, so as to simulate a near free-space environment.

5.1.4 Test Result

Please refer to ANNEX A.1.

5.2 Emission Bandwidth and 6 dB Bandwidth

5.2.1 Limit

FCC §15.407(a), RSS-247, 6.2

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

5.2.2 Test Setup

The test setup photo please refer to 4.4.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.2.3 Test Procedure

Emission bandwidth

1. Set RBW = approximately 1% of the emission bandwidth.

2. Set VBW ≥ 3*RBW,

3. Detector = Peak.

4. Trace mode = Max hold.

5. Measure the maximum width of the emission that is 26 dB down from the peak of the emission.

Occupied Bandwidth

1. Set Span = 1.5 times to 5.0 times the OBW

2. Set RBW = 1% to 5% of the OBW.

3. Set VBW ≥ 3*RBW, Detector = Peak.

4. Trace mode = Max hold.

5. Use the 99% power bandwidth function of the instrument.

6 dB bandwidth

1. Set RBW = 100 kHz, VBW = 300 kHz.

2. Detector = Peak.Trace mode = Max hold.

3. Allow the trace to stabilize.

4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

5.2.4 Test Result

Please refer to ANNEX A.2 and ANNEX A.3.

5.3 Power Spectral density (PSD)

5.3.1 Limit

FCC §15.407(a)

The maximum power spectral density should not exceed:

Frequency Band (MHz)	Limit
5150-5250	11 dBm/MHz
5250-5350	11 dBm/MHz
5470-5725	11 dBm/MHz
5725-5850	30 dBm/500kHz

RSS-247, 6.2

The maximum power spectral density should not exceed:

Frequency Band (MHz)	Limit
5150-5250	N/A
5250-5350	11 dBm/MHz
5470-5725	11 dBm/MHz
5725-5850	30 dBm/500kHz

The e.i.r.p. spectral density should not exceed:

Frequency Band (MHz)	Limit
5150-5250	10 dBm/MHz
5250-5350	N/A
5470-5725	N/A
5725-5850	N/A

5.3.2 Test Setup

The section 4.4.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.3.3 Test Procedure

Set the spectrum analyzer or EMI receiver span to view the entire emission bandwidth.

1. Set RBW = 510 kHz/1 MHz, VBW ≥ 3*RBW, Sweep time = Auto, Detector = RMS.
2. Allow the sweeps to continue until the trace stabilizes.
3. Use the peak marker function to determine the maximum amplitude level.
4. The E.I.R.P spectral density used radiated test method. At a test site that has been validated using the procedures of ANSI C63.4 or the latest CISPR 16-1-4 for measurements above 1 GHz, so as to simulate a near free-space environment.

5.3.4 Test Result

Please refer to ANNEX A.4.

5.4 Conducted Emission

5.4.1 Limit

FCC §15.207, RSS-GEN, 8.8

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 50μH/50Ω line impedance stabilization network (LISN).

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

5.4.2 Test Setup

The section 4.4.2 (Diagram 2) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.4.3 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.

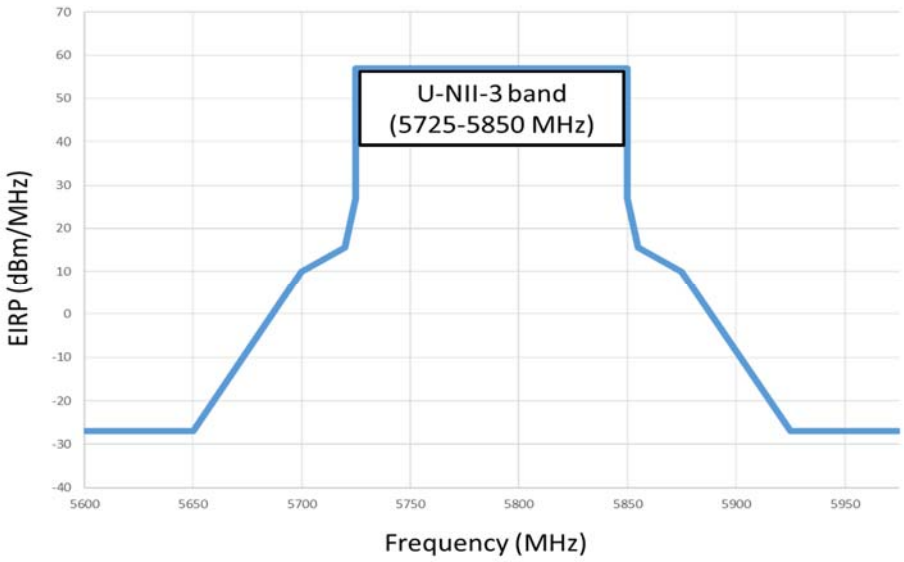
5.4.4 Test Result

Please refer to ANNEX A.5.

5.5 Conducted Spurious Emission and Band Edge (Authorized-band)

5.5.1 Limit

FCC §15.407(b)

Un-restricted band emissions	
Frequency Band (MHz)	Limit
5150 - 5250	Outside of the 5.15-5.35 GHz band: e.i.r.p. -27 dBm
5250 - 5350	Outside of the 5.15-5.35 GHz band: e.i.r.p. -27 dBm
5470 - 5725	Outside of the 5.47-5.725 GHz band: e.i.r.p. -27 dBm
5725 - 5850	All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge. 

RSS-247, 6.2

Un-restricted band emissions	
Frequency Band (MHz)	Limit
5150 - 5250	Outside of the 5.15-5.35 GHz band: e.i.r.p. -27 dBm, However, any unwanted emissions that fall into the band 5250-5350 MHz must be 26 dBc, when measured using a resolution bandwidth between 1 and 5% of the occupied bandwidth, above 5.25 GHz.
5250 - 5350	Outside of the 5.15-5.35 GHz band: e.i.r.p. -27 dBm. And any emissions within the band 5150-5250 MHz shall meet the power spectral density limits of 10 dBm/MHz, The device shall be labelled “for indoor use only.”
5470 - 5725	Outside of the 5.47-5.725 GHz band: e.i.r.p. -27 dBm
5725 - 5850	5715 -5725 MHz: e.i.r.p. -17 dBm 5850 -5860 MHz: e.i.r.p. -17 dBm Other un-restricted band: e.i.r.p .-27 dBm

5.5.2 Test Setup

See section 4.4.2 (Diagram 2) for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.5.3 Test Procedure

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic. Typically, several plots are required to cover this entire span.
RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold
Allow the trace to stabilize

5.5.4 Test Result

Please refer to ANNEX A.6.

5.6 Radiated Spurious Emissions and Band Edge (Restricted-band)

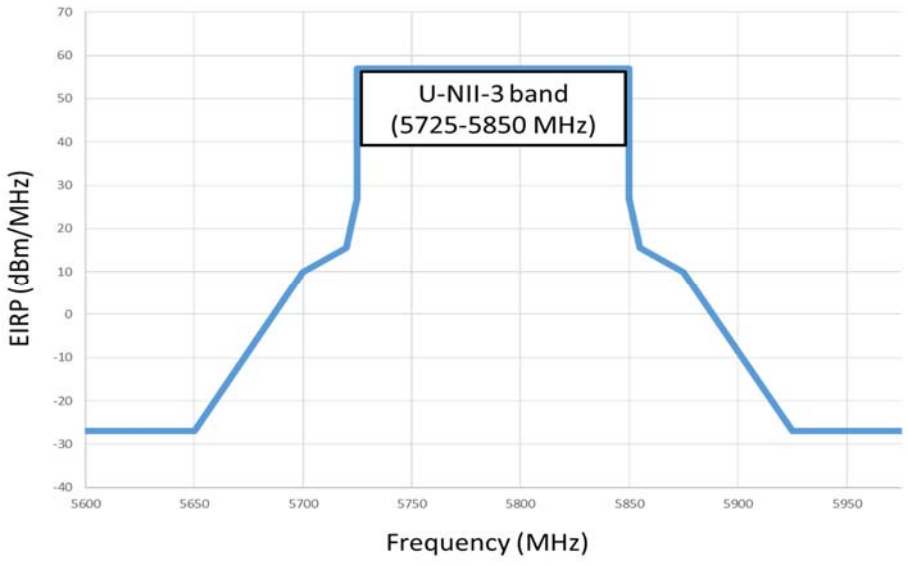
5.6.1 Limit

FCC §15.209 & 15.407(b), RSS-247, 6.2

Frequency (MHz)	Field Strength (μV/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]: The Limit for radiated test was performed according to FCC Part 15C

Note [2]: The tighter limit applies at the band edge.

Un-restricted band emissions	
Out Operating Band (MHz）	Limit
5150 - 5250	e.i.r.p. -27 dBm (68.2 dBuV/m@3m)
5250 - 5350	e.i.r.p. -27 dBm (68.2 dBuV/m@3m)
5470 - 5725	e.i.r.p. -27 dBm (68.2 dBuV/m@3m)
5725 - 5850	All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge. 

Note: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength.

5.6.2 Test Setup

The section 4.4.3-4.4.5 (Diagram 3 - Diagram 5) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.6.3 Test Procedure

Since the emission limits are specified in terms of radiated field strength levels, measurements performed to demonstrate compliance have traditionally relied on a radiated test configuration. Radiated measurements remain the principal method for demonstrating compliance to the specified limits; however antenna-port conducted measurements are also now acceptable to demonstrate compliance (see below for details). When radiated measurements are utilized, test site requirements and procedures for maximizing and measuring radiated emissions that are described in ANSI C63.10 shall be followed.

Antenna-port conducted measurements may also be used as an alternative to radiated measurements for demonstrating compliance in the restricted frequency bands. If conducted measurements are performed, then proper impedance matching must be ensured and an additional radiated test for cabinet/case spurious emissions is required.

General Procedure for conducted measurements in restricted bands

a) Measure the conducted output power (in dBm) using the detector specified (see guidance regarding measurement procedures for determining quasi-peak, peak, and average conducted output power, respectively).

b) Add the maximum transmit antenna gain (in dBi) to the measured output power level to determine the EIRP level (see guidance on determining the applicable antenna gain)

c) Add the appropriate maximum ground reflection factor to the EIRP level (6 dB for frequencies ≤ 30 MHz, 4.7 dB for frequencies between 30 MHz and 1000 MHz, inclusive and 0 dB for frequencies > 1000 MHz).

d) For devices with multiple antenna-ports, measure the power of each individual chain and sum the EIRP of all chains in linear terms (e.g., Watts, mW).

e) Convert the resultant EIRP level to an equivalent electric field strength using the following relationship:

E = EIRP – 20log D + 104.8

where:

E = electric field strength in dBμV/m,

EIRP = equivalent isotropic radiated power in dBm

D = specified measurement distance in meters.

f) Compare the resultant electric field strength level to the applicable limit.

g) Perform radiated spurious emission test.

Quasi-Peak measurement procedure

The specifications for measurements using the CISPR quasi-peak detector can be found in Publication 16 of the International Special Committee on Radio Frequency Interference (CISPR) of the International Electrotechnical Commission.

As an alternative to CISPR quasi-peak measurement, compliance can be demonstrated to the applicable emission limits using a peak detector.

Peak power measurement procedure

Peak emission levels are measured by setting the instrument as follows:

a) RBW = as specified in Table 1.

b) VBW ≥ 3 x RBW.

c) Detector = Peak.

d) Sweep time = auto.

e) Trace mode = max hold.

f) Allow sweeps to continue until the trace stabilizes. (Note that the required measurement time may be longer for low duty cycle applications).

Table 1—RBW as a function of frequency

Frequency	RBW
9-150 kHz	200-300 Hz
0.15-30 MHz	9-10 kHz
30-1000 MHz	100-120 kHz
> 1000 MHz	1 MHz

If the peak-detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement.

Trace averaging across on and off times of the EUT transmissions followed by duty cycle correction

If continuous transmission of the EUT (i.e., duty cycle ≥ 98 percent) cannot be achieved and the duty cycle is constant (i.e., duty cycle variations are less than ± 2 percent), then the following procedure shall be used:

a) The EUT shall be configured to operate at the maximum achievable duty cycle.

b) Measure the duty cycle, x, of the transmitter output signal as described in section 6.0.

c) RBW = 1 MHz (unless otherwise specified).

d) VBW ≥ 3 x RBW.

e) Detector = RMS, if span/(# of points in sweep) ≤ (RBW/2). Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If this condition cannot be satisfied, then the detector mode shall be set to peak.

f) Averaging type = power (i.e., RMS).

1) As an alternative, the detector and averaging type may be set for linear voltage averaging.

2) Some instruments require linear display mode in order to use linear voltage averaging. Log or dB averaging shall not be used.

g) Sweep time = auto.

h) Perform a trace average of at least 100 traces.

i) A correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 percent duty cycle. The correction factor is computed as follows:

1) If power averaging (RMS) mode was used in step f), then the applicable correction factor is 10 log(1/x), where x is the duty cycle.

2) If linear voltage averaging mode was used in step f), then the applicable correction factor is 20 log(1/x), where x is the duty cycle.

3) If a specific emission is demonstrated to be continuous (≥ 98 percent duty cycle) rather than turning on and off with the transmit cycle, then no duty cycle correction is required for that emission.

NOTE: Reduction of the measured emission amplitude levels to account for operational duty factor is not permitted. Compliance is based on emission levels occurring during transmission - not on an average across on and off times of the transmitter.

Determining the applicable transmit antenna gain

A conducted power measurement will determine the maximum output power associated with a restricted band emission; however, in order to determine the associated EIRP level, the gain of the transmitting antenna (in dBi) must be added to the measured output power (in dBm).

Since the out-of-band characteristics of the EUT transmit antenna will often be unknown, the use of a conservative antenna gain value is necessary. Thus, when determining the EIRP based on the measured conducted power, the upper bound on antenna gain for a device with a single RF output shall be selected as the maximum in-band gain of the antenna across all operating bands, or 2 dBi, whichever is greater. However, for devices that operate in multiple frequency bands while using the same transmit antenna, the highest gain of the antenna within the operating band nearest in frequency to the restricted band emission being measured may be used in lieu of the overall highest gain when the emission is at a frequency that is within 20 percent of the nearest band edge frequency, but in no case shall a value less than 2 dBi be used.

See KDB 662911 for guidance on calculating the additional array gain term when determining the effective antenna gain for a EUT with multiple outputs occupying the same or overlapping frequency ranges in the same band.

Radiated spurious emission test

An additional consideration when performing conducted measurements of restricted band emissions is that unwanted emissions radiating from the EUT cabinet, control circuits, power leads, or intermediate circuit elements will likely go undetected in a conducted measurement configuration. To address this concern, a radiated test shall be performed to ensure that emissions emanating from the EUT cabinet (rather than the antenna port) also comply with the applicable limits.

For these cabinet radiated spurious emission measurements the EUT transmit antenna may be replaced with a termination matching the nominal impedance of the antenna. Procedures for performing radiated measurements are specified in ANSI C63.10. All detected emissions shall comply with the applicable limits.

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 ≥ 1 GHz, 100 kHz for f < 1 GHz
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold

5.6.4 Test Result

Please refer to ANNEX A.7 and Please refer to ANNEX A.9

5.7 Frequency Stability

5.7.1 Limit

FCC §15.407(g)

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

5.7.2 Test Setup

The section 4.4.6 (Diagram 6) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.7.3 Test Procedure

The EUT is installed in an environment test chamber with external power source.
Set the chamber to operate at 50 centigrade and external power source to output at nominal voltage of EUT.
A sufficient stabilization period at each temperatures is used prior to each frequency measurement.
When temperature is stabled, measure the frequency stability.
The test shall be performed under -30 to 50 centigrade and 85 to 115 percent of the nominal voltage.
Change setting of chamber and external power source to complete all conditions.

5.7.4 Test Result

Please refer to ANNEX A.8.

ANNEX A TEST RESULT

A.1 RF Output Power

Test Data

Conducted Power

Band I (5150 - 5250 MHz)						
Mode	Channel	Frequency (MHz)	Conducted Power (dBm)	Conducted Power (mW)	FCC Limit (mW)	Verdict
11a	CH36	5180	12.36	17.22	250	Pass
11a	CH44	5220	12.29	16.94	250	Pass
11a	CH48	5240	11.98	15.78	250	Pass
11n (HT20)	CH36	5180	12.18	16.52	250	Pass
11n (HT20)	CH44	5220	11.26	13.37	250	Pass
11n (HT20)	CH48	5240	11.81	15.17	250	Pass
11n (HT40)	CH38	5190	10.81	12.05	250	Pass
11n (HT40)	CH46	5230	10.65	11.61	250	Pass

Band IV (5725 - 5850 MHz)						
Mode	Channel	Frequency (MHz)	Conducted Power (dBm)	Conducted Power (mW)	FCC Limit (W)	Verdict
11a	CH149	5745	10.13	10.30	1.00	Pass
11a	CH157	5785	10.07	10.16	1.00	Pass
11a	CH165	5825	10.48	11.17	1.00	Pass
11n (HT20)	CH149	5745	10.14	10.33	1.00	Pass
11n (HT20)	CH157	5785	10.69	11.72	1.00	Pass
11n (HT20)	CH165	5825	10.34	10.81	1.00	Pass
11n (HT40)	CH151	5755	9.55	9.02	1.00	Pass
11n (HT40)	CH159	5795	9.73	9.40	1.00	Pass

A.2 Emission Bandwidth & 99% Bandwidth

Note: Test plots please refer to the document “Annex No.: BL-SZ1720179-604 Data Part 1.pdf”.

Test Data

Band I (5150 - 5250 MHz)				
Mode	Channel	Frequency(MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
11a	CH36	5180	18.80	16.44
11a	CH44	5220	19.52	16.46
11a	CH48	5240	18.80	16.44
11n (HT20)	CH36	5180	19.56	17.64
11n (HT20)	CH44	5220	19.42	17.60
11n (HT20)	CH48	5240	19.28	17.60
11n (HT40)	CH38	5190	38.20	35.90
11n (HT40)	CH46	5230	38.14	35.88

Band IV (5725 - 5850 MHz				
Mode	Channel	Frequency(MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
11a	CH149	5745	18.66	16.38
11a	CH157	5785	18.72	16.40
11a	CH165	5825	18.82	16.42
11n (HT20)	CH149	5745	19.56	17.54
11n (HT20)	CH157	5785	19.48	17.54
11n (HT20)	CH165	5825	19.24	17.56
11n (HT40)	CH151	5755	37.92	35.92
11n (HT40)	CH159	5795	38.08	35.86

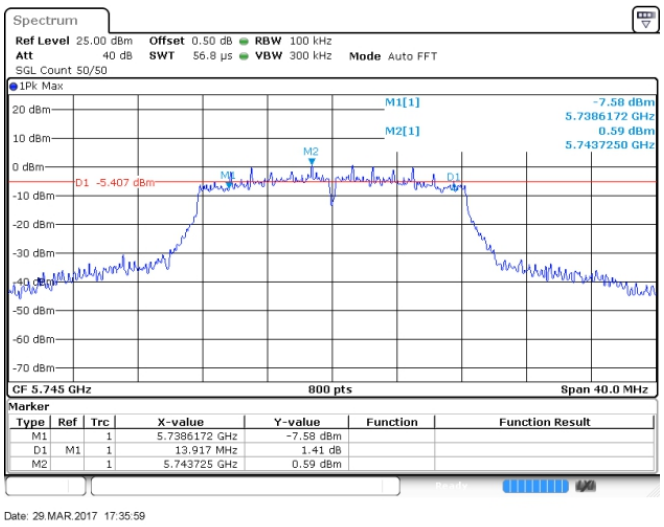
A.3 6 dB Bandwidth

Test Data

Band IV (5725 - 5850 MHz)					
Mode	Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (kHz)	Verdict
11a	CH149	5745	13.92	500	Pass
11a	CH157	5785	16.47	500	Pass
11a	CH165	5825	16.47	500	Pass
11n (HT20)	CH149	5745	17.67	500	Pass
11n (HT20)	CH157	5785	13.97	500	Pass
11n (HT20)	CH165	5825	16.67	500	Pass
11n (HT40)	CH151	5755	35.17	500	Pass
11n (HT40)	CH159	5795	36.42	500	Pass

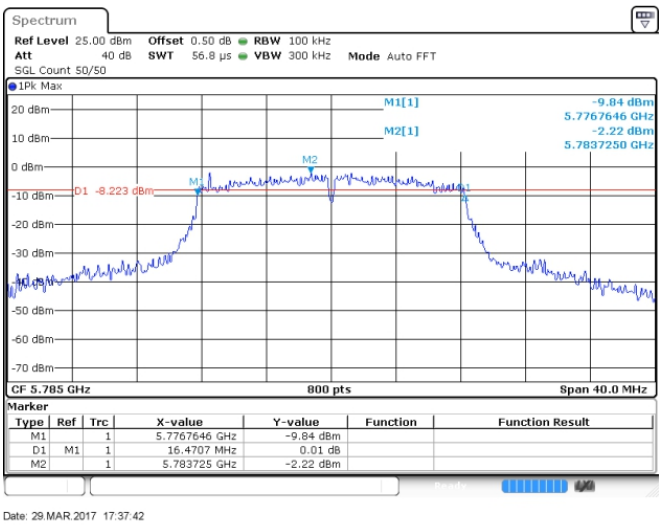
Test Plots

802.11a BAND IV LOW CHANNEL



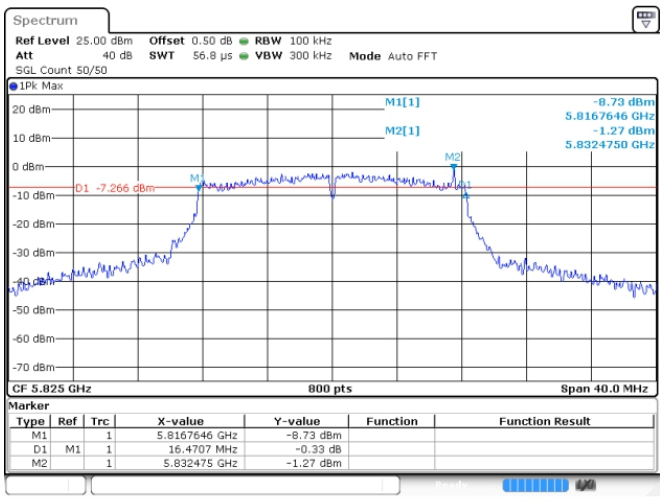
Date: 29.MAR.2017 17:35:59

802.11a BAND IV MIDDLE CHANNEL



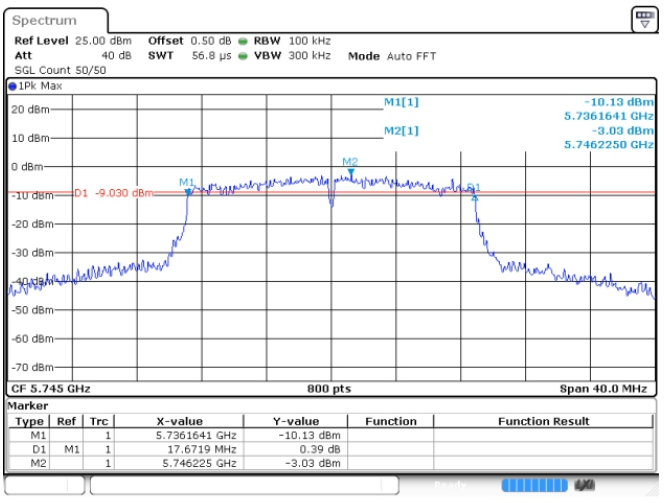
Date: 29.MAR.2017 17:37:42

802.11a BAND IV HIGH CHANNEL



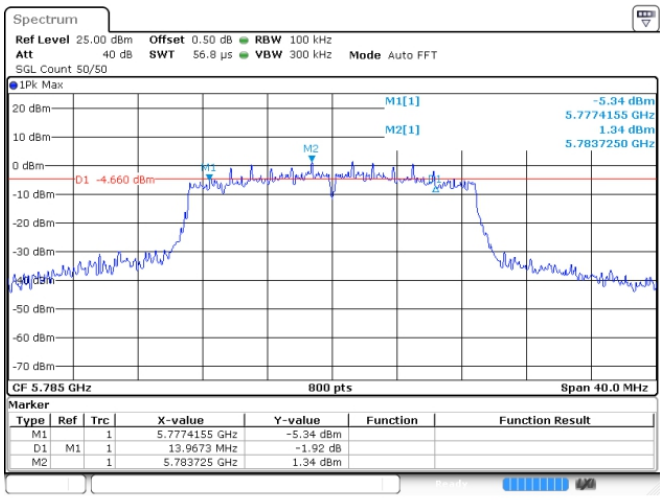
Date: 29.MAR.2017 17:39:24

802.11n BAND IV LOW CHANNEL



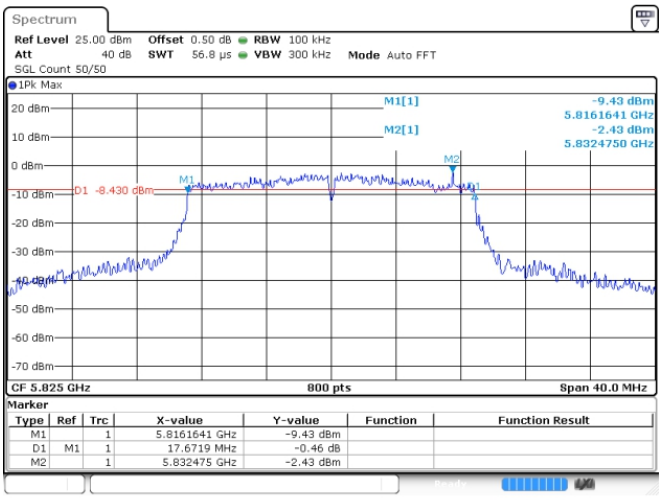
Date: 29.MAR.2017 17:55:15

802.11n BAND IV MIDDLE CHANNEL



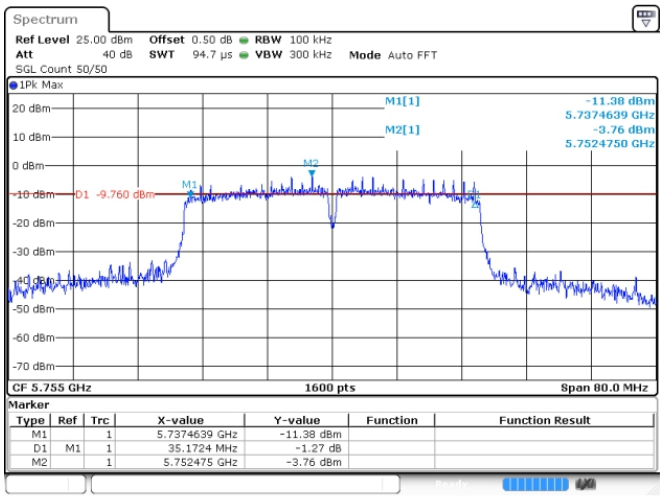
Date: 12.APR.2017 20:34:20

802.11n BAND IV HIGH CHANNEL



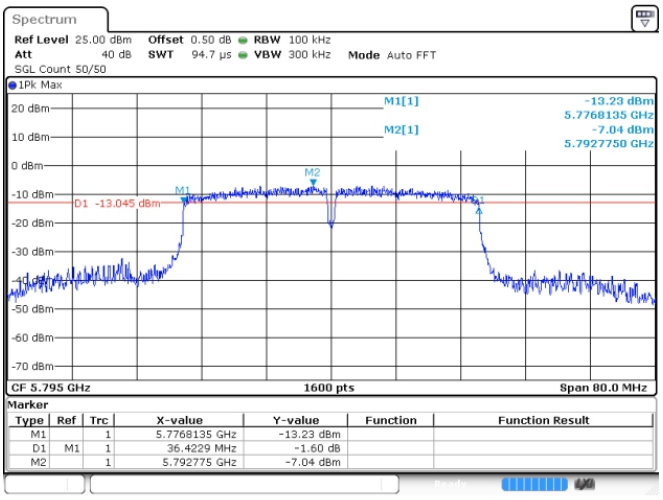
Date: 29.MAR.2017 17:59:32

802.11n40 BAND IV LOW CHANNEL



Date: 29.MAR.2017 18:08:34

802.11n40 BAND IV HIGH CHANNEL



Date: 29.MAR.2017 18:11:17

A.4 Power Spectral Density

Note: Test plots please refer to the document “Annex No.: BL-SZ1720179-604 Data Part 2.pdf”.

Test Data

Band I (5150 - 5250 MHz)					
Mode	Channel	Frequency (MHz)	PSD (dBm/MHz)	FCC Limit(dBm/MHz)	Verdict
11a	CH36	5180	1.44	11	Pass
11a	CH44	5220	0.41	11	Pass
11a	CH48	5240	0.90	11	Pass
11n (HT20)	CH36	5180	1.13	11	Pass
11n (HT20)	CH44	5220	0.38	11	Pass
11n (HT20)	CH48	5240	0.64	11	Pass
11n (HT40)	CH38	5190	-4.14	11	Pass
11n (HT40)	CH46	5230	-3.84	11	Pass

Band IV (5725 - 5850 MHz)					
Mode	Channel	Frequency (MHz)	PSD (dBm/MHz)	FCC Limit (dBm/500 kHz)	Verdict
11a	CH149	5745	-3.61	30	Pass
11a	CH157	5785	-3.65	30	Pass
11a	CH165	5825	-3.08	30	Pass
11n (HT20)	CH149	5745	-4.11	30	Pass
11n (HT20)	CH157	5785	-3.73	30	Pass
11n (HT20)	CH165	5825	-3.41	30	Pass
11n (HT40)	CH151	5755	-7.98	30	Pass
11n (HT40)	CH159	5795	-7.70	30	Pass

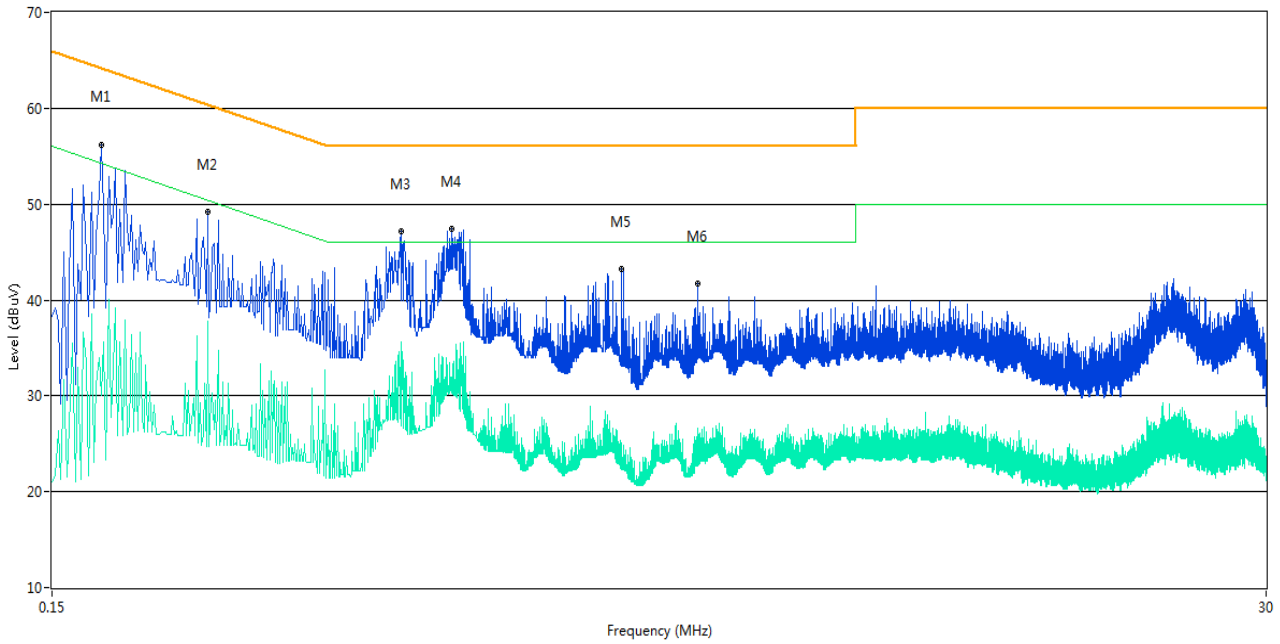
A.5 Conducted Emissions

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

Note [2]: Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 60 Hz and 240 VAC, 50 Hz) for which the device is capable of operation. So, The configuration 120 VAC, 60 Hz and 240 VAC, 50 Hz were tested respectively, but only the worst configuration (120 VAC, 60 Hz) shown here.

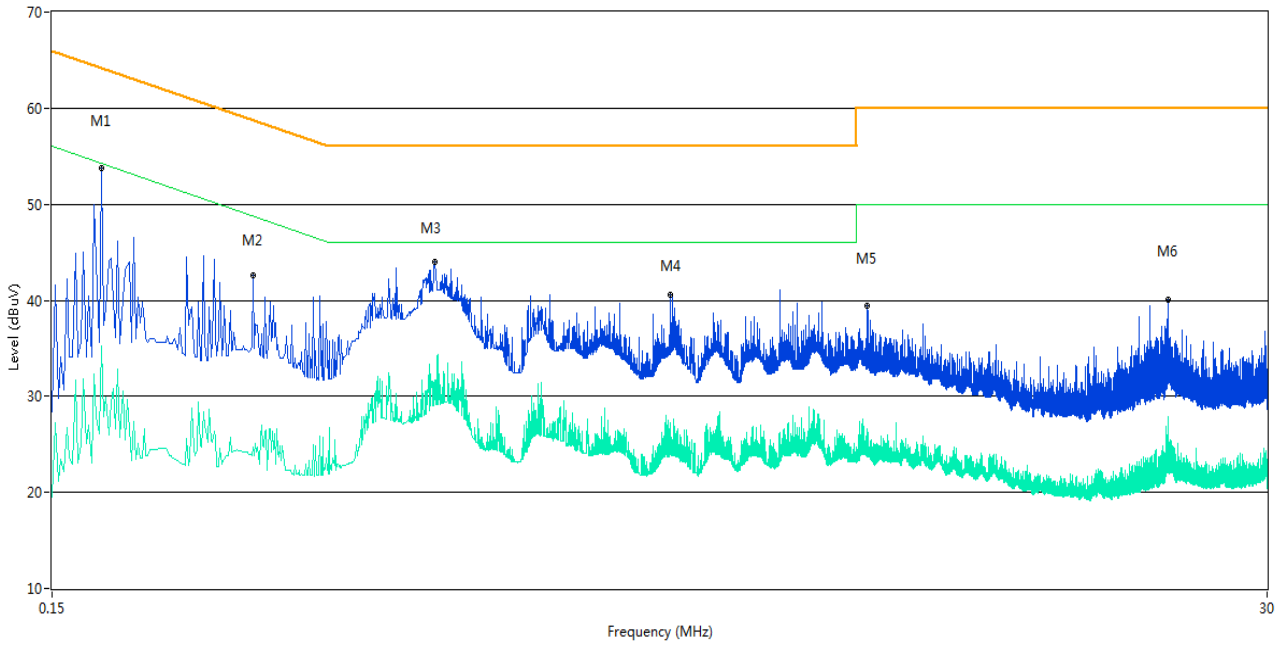
Test Data and Plots

PHASE L



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.186	56.2	11.00	64.2	8.00	Peak	L Line	Pass
1**	0.186	30.0	11.00	54.2	24.20	AV	L Line	Pass
2	0.296	49.2	11.00	60.4	11.20	Peak	L Line	Pass
2**	0.296	37.8	11.00	50.4	12.60	AV	L Line	Pass
3	0.688	47.1	11.00	56.0	8.90	Peak	L Line	Pass
3**	0.688	35.6	11.00	46.0	10.40	AV	L Line	Pass
4	0.858	47.4	11.00	56.0	8.60	Peak	L Line	Pass
4**	0.858	31.9	11.00	46.0	14.10	AV	L Line	Pass
5	1.800	43.2	11.00	56.0	12.80	Peak	L Line	Pass
5**	1.800	25.0	11.00	46.0	21.00	AV	L Line	Pass
6	2.508	41.7	11.00	56.0	14.30	Peak	L Line	Pass
6**	2.508	26.6	11.00	46.0	19.40	AV	L Line	Pass

PHASE N



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.186	53.8	11.00	64.2	10.40	Peak	N Line	Pass
1**	0.186	35.2	11.00	54.2	19.00	AV	N Line	Pass
2	0.360	42.5	11.00	58.7	16.20	Peak	N Line	Pass
2**	0.360	24.7	11.00	48.7	24.00	AV	N Line	Pass
3	0.796	44.0	11.00	56.0	12.00	Peak	N Line	Pass
3**	0.796	31.7	11.00	46.0	14.30	AV	N Line	Pass
4	2.226	40.5	11.00	56.0	15.50	Peak	N Line	Pass
4**	2.226	27.2	11.00	46.0	18.80	AV	N Line	Pass
5	5.244	39.4	11.00	60.0	20.60	Peak	N Line	Pass
5**	5.244	24.5	11.00	50.0	25.50	AV	N Line	Pass
6	19.496	40.1	11.00	60.0	19.90	Peak	N Line	Pass
6**	19.496	27.8	11.00	50.0	22.20	AV	N Line	Pass

A.6 Conducted Spurious Emission and Band Edge (Authorized-band)

Note [1]: Test plots please refer to the document “Annex No.: BL-SZ1720179-604 Data Part 3.pdf”.

Test Band	Mode	Channel	Verdict
Band I	802.11a	Low	Pass
		Middle	Pass
		High	Pass
	802.11n(HT20)	Low	Pass
		Middle	Pass
		High	Pass
	802.11n(HT40)	Low	Pass
		High	Pass
Band IV	802.11a	Low	Pass
		Middle	Pass
		High	Pass
	802.11n(HT20)	Low	Pass
		Middle	Pass
		High	Pass
	802.11n(HT40)	Low	Pass
		High	Pass

A.7 Radiated Spurious Emissions and Band Edge (Restricted-band)

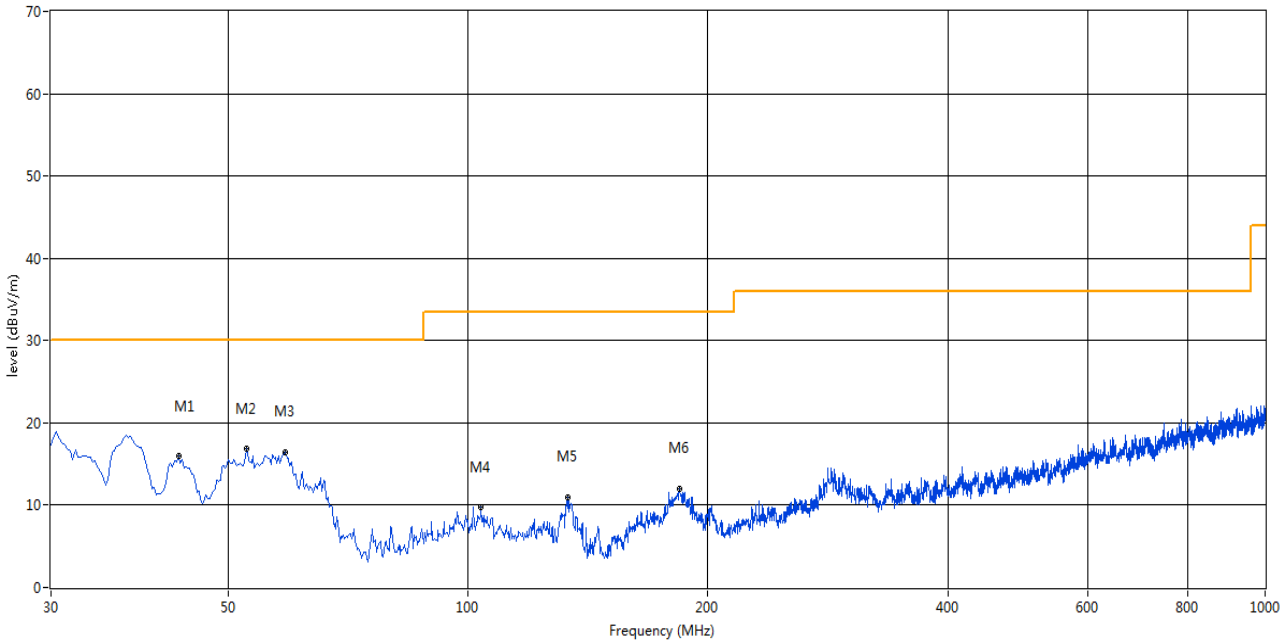
A.7.1 Radiated Spurious Emissions

Note [1]: For the test data above 1 GHz，According the ANSI C63.4, 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 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.

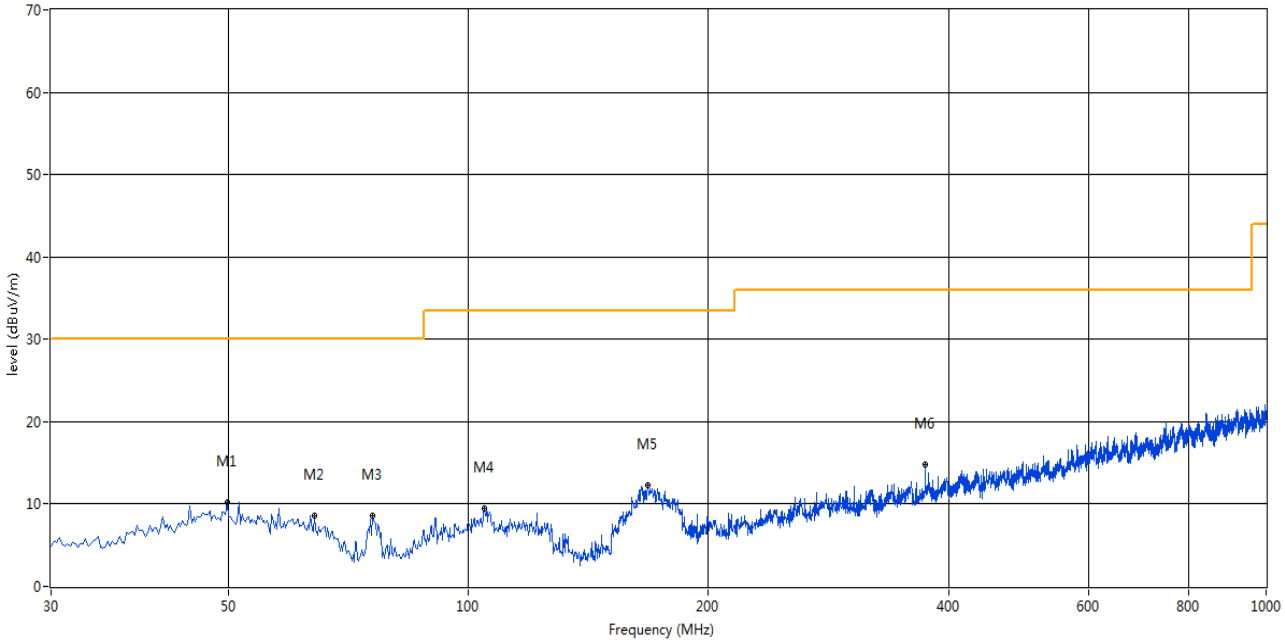
Note [3]: The EUT is working in the Normal link mode below 1 GHz.

30 MHz to 1 GHz, ANT V



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	43.334	16.03	-14.19	30.0	13.97	Peak	92.00	100	Vertical	Pass
2	52.789	16.83	-13.97	30.0	13.17	Peak	123.00	100	Vertical	Pass
3	59.093	16.50	-15.48	30.0	13.50	Peak	225.00	100	Vertical	Pass
4	103.944	9.72	-15.77	33.5	23.78	Peak	136.00	100	Vertical	Pass
5	133.279	11.03	-19.34	33.5	22.47	Peak	37.00	100	Vertical	Pass
6	184.434	12.03	-17.51	33.5	21.47	Peak	140.00	100	Vertical	Pass

30 MHz to 1 GHz, ANT H



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	49.880	10.23	-13.98	30.0	19.77	Peak	284.00	200	Horizontal	Pass
2	64.184	8.64	-16.18	30.0	21.36	Peak	0.00	300	Horizontal	Pass
3	75.821	8.53	-19.83	30.0	21.47	Peak	0.00	100	Horizontal	Pass
4	104.914	9.53	-15.66	33.5	23.97	Peak	282.00	300	Horizontal	Pass
5	167.706	12.32	-18.56	33.5	21.18	Peak	56.00	300	Horizontal	Pass
6	374.021	14.85	-11.50	36.0	21.15	Peak	80.00	100	Horizontal	Pass

Note 1: Only 1 GHz~18 GHz test data were seen in this report, 18 GHz ~ 40 GHz is noise floor.

Note 2: The device was evaluated/tested in XYZ orientation for radiated spurious emissions. And only the worst orientation of EUT was reported, which is the Horizontal orientation.

1 GHz to 7 GHz, ANT H Band I 11a Low channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1320.500	43.44	-3.22	68.2	24.76	Peak	136.60	150	Horizontal	Pass
2	1741.500	43.88	-1.95	68.2	24.32	Peak	21.80	150	Horizontal	Pass
3	2385.500	47.42	0.84	68.2	20.78	Peak	166.10	150	Horizontal	Pass
4	3620.000	41.81	6.44	68.2	26.39	Peak	72.10	150	Horizontal	Pass
5	5179.000	101.81	10.18	68.2	-33.61	Peak	8.60	150	Horizontal	N/A
6	6322.000	45.16	11.02	68.2	23.04	Peak	8.60	150	Horizontal	Pass

7 GHz to 18 GHz, ANT H Band I 11a Low channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	7401.500	42.73	11.46	68.2	25.47	Peak	3.20	150	Horizontal	Pass
2	8754.500	43.09	13.19	68.2	25.11	Peak	258.60	150	Horizontal	Pass
3	10418.250	44.25	15.72	68.2	23.95	Peak	174.70	150	Horizontal	Pass
4	13036.250	46.63	16.92	68.2	21.57	Peak	342.10	150	Horizontal	Pass
5	15307.750	52.08	20.94	68.2	16.12	Peak	60.60	150	Horizontal	Pass
6	16861.500	56.82	25.23	68.2	11.38	Peak	19.40	150	Horizontal	Pass

1 GHz to 7 GHz, ANT H Band I 11a Middle channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1274.500	43.23	-3.64	68.2	24.97	Peak	265.70	150	Horizontal	Pass
2	1769.500	44.03	-1.93	68.2	24.17	Peak	68.30	150	Horizontal	Pass
3	2302.000	47.81	0.97	68.2	20.39	Peak	298.00	150	Horizontal	Pass
4	3761.000	41.68	6.77	68.2	26.52	Peak	330.20	150	Horizontal	Pass
5	5221.000	102.25	9.87	68.2	-34.05	Peak	8.90	150	Horizontal	N/A
6	6387.000	44.84	10.39	68.2	23.36	Peak	360.00	150	Horizontal	Pass

7 GHz to 18 GHz, ANT H Band I 11a Middle channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	7253.000	42.67	11.44	68.2	25.53	Peak	350.90	150	Horizontal	Pass
2	8306.250	42.94	13.32	68.2	25.26	Peak	268.70	150	Horizontal	Pass
3	9813.250	44.39	14.27	68.2	23.81	Peak	61.70	150	Horizontal	Pass
4	11438.500	45.38	15.43	68.2	22.82	Peak	0.00	150	Horizontal	Pass
5	14081.250	48.65	19.45	68.2	19.55	Peak	268.70	150	Horizontal	Pass
6	16388.500	55.06	23.09	68.2	13.14	Peak	0.00	150	Horizontal	Pass

1 GHz to 7 GHz, ANT H Band I 11a High channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1177.000	42.28	-4.81	68.2	25.92	Peak	0.00	150	Horizontal	Pass
2	1642.500	43.55	-3.11	68.2	24.65	Peak	124.40	150	Horizontal	Pass
3	2075.500	46.39	-0.35	68.2	21.81	Peak	246.60	150	Horizontal	Pass
4	4050.000	41.38	7.14	68.2	26.82	Peak	15.60	150	Horizontal	Pass
5	5238.000	103.03	10.22	68.2	-34.83	Peak	3.50	150	Horizontal	N/A
6	6234.000	45.42	10.56	68.2	22.78	Peak	197.90	150	Horizontal	Pass

7 GHz to 18 GHz, ANT H Band I 11a High channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	7379.500	42.66	12.40	68.2	25.54	Peak	183.90	150	Horizontal	Pass
2	8419.000	42.35	11.93	68.2	25.85	Peak	0.90	150	Horizontal	Pass
3	10418.250	44.18	15.72	68.2	24.02	Peak	194.00	150	Horizontal	Pass
4	12241.500	46.67	17.46	68.2	21.53	Peak	214.20	150	Horizontal	Pass
5	14548.750	50.23	20.10	68.2	17.97	Peak	173.80	150	Horizontal	Pass
6	16875.250	55.81	24.37	68.2	12.39	Peak	3.20	150	Horizontal	Pass

1 GHz to 7 GHz, ANT H Band I 11n20 Low channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1117.500	43.14	-5.15	68.2	25.06	Peak	244.00	150	Horizontal	Pass
2	1468.000	43.04	-2.96	68.2	25.16	Peak	153.20	150	Horizontal	Pass
3	2265.500	47.96	2.04	68.2	20.24	Peak	225.60	150	Horizontal	Pass
4	4272.000	43.12	7.95	68.2	25.08	Peak	90.90	150	Horizontal	Pass
5	5181.000	102.57	10.20	68.2	-34.37	Peak	4.50	150	Horizontal	N/A
6	6648.000	45.96	11.15	68.2	22.24	Peak	360.00	150	Horizontal	Pass

7 GHz to 18 GHz, ANT H Band I 11n20 Low channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	7148.500	43.24	12.11	68.2	24.96	Peak	49.40	150	Horizontal	Pass
2	8089.000	42.70	13.30	68.2	25.50	Peak	204.40	150	Horizontal	Pass
3	9769.250	44.32	14.02	68.2	23.88	Peak	308.40	150	Horizontal	Pass
4	11493.500	46.00	16.68	68.2	22.20	Peak	80.40	150	Horizontal	Pass
5	14502.000	50.18	19.93	68.2	18.02	Peak	359.00	150	Horizontal	Pass
6	16839.500	56.42	24.99	68.2	11.78	Peak	256.70	150	Horizontal	Pass

1 GHz to 7 GHz, ANT H Band I 11n20 Middle channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1227.500	42.55	-4.68	68.2	25.65	Peak	280.00	150	Horizontal	Pass
2	1741.500	43.54	-1.95	68.2	24.66	Peak	182.30	150	Horizontal	Pass
3	2192.000	46.56	1.58	68.2	21.64	Peak	248.20	150	Horizontal	Pass
4	3948.000	41.05	7.45	68.2	27.15	Peak	343.40	150	Horizontal	Pass
5	5219.000	102.47	9.91	68.2	-34.27	Peak	3.80	150	Horizontal	N/A
6	6388.000	45.51	10.63	68.2	22.69	Peak	335.70	150	Horizontal	Pass

7 GHz to 18 GHz, ANT H Band I 11n20 Middle channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	7343.750	42.83	11.92	68.2	25.37	Peak	355.50	150	Horizontal	Pass
2	8498.750	43.09	12.91	68.2	25.11	Peak	173.50	150	Horizontal	Pass
3	9662.000	44.30	14.85	68.2	23.90	Peak	305.80	150	Horizontal	Pass
4	12491.750	46.56	16.49	68.2	21.64	Peak	360.00	150	Horizontal	Pass
5	15321.500	51.63	21.34	68.2	16.57	Peak	305.80	150	Horizontal	Pass
6	17727.750	57.17	26.52	68.2	11.03	Peak	360.00	150	Horizontal	Pass

1 GHz to 7 GHz, ANT H Band I 11n20 High channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1204.500	42.49	-4.60	68.2	25.71	Peak	243.80	150	Horizontal	Pass
2	1771.500	43.57	-2.06	68.2	24.63	Peak	351.10	150	Horizontal	Pass
3	2890.000	48.85	5.28	68.2	19.35	Peak	41.00	150	Horizontal	Pass
4	4231.000	42.67	8.25	68.2	25.53	Peak	34.10	150	Horizontal	Pass
5	5241.000	101.77	9.95	68.2	-33.57	Peak	346.00	150	Horizontal	N/A
6	6565.000	45.54	11.18	68.2	22.66	Peak	234.60	150	Horizontal	Pass

7 GHz to 18 GHz, ANT H Band I 11n20 High channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	7398.750	42.41	11.48	68.2	25.79	Peak	21.40	150	Horizontal	Pass
2	9037.750	43.43	13.46	68.2	24.77	Peak	155.50	150	Horizontal	Pass
3	11463.250	45.41	15.61	68.2	22.79	Peak	0.00	150	Horizontal	Pass
4	14081.250	48.08	19.45	68.2	20.12	Peak	247.10	150	Horizontal	Pass
5	16124.500	53.66	22.75	68.2	14.54	Peak	340.40	150	Horizontal	Pass
6	17661.749	56.17	26.53	68.2	12.03	Peak	206.40	150	Horizontal	Pass

1 GHz to 7 GHz, ANT H Band I 11n40 Low channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1188.000	43.82	-4.72	68.2	24.38	Peak	326.50	150	Horizontal	Pass
2	1603.500	43.15	-3.38	68.2	25.05	Peak	80.70	150	Horizontal	Pass
3	2882.500	49.93	5.50	68.2	18.27	Peak	3.40	150	Horizontal	Pass
4	3948.000	42.14	7.45	68.2	26.06	Peak	120.00	150	Horizontal	Pass
5	5191.000	97.97	10.01	68.2	-29.77	Peak	8.70	150	Horizontal	N/A
6	6643.000	45.66	11.19	68.2	22.54	Peak	0.00	150	Horizontal	Pass

7 GHz to 18 GHz, ANT H Band I 11n40 Low channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	7349.250	41.63	12.05	68.2	26.57	Peak	123.00	150	Horizontal	Pass
2	9620.750	44.69	15.42	68.2	23.51	Peak	246.60	150	Horizontal	Pass
3	11034.250	44.75	14.58	68.2	23.45	Peak	174.50	150	Horizontal	Pass
4	13877.750	47.79	18.21	68.2	20.41	Peak	328.60	150	Horizontal	Pass
5	15615.750	51.81	20.82	68.2	16.39	Peak	102.50	150	Horizontal	Pass
6	16908.250	56.97	24.20	68.2	11.23	Peak	356.80	150	Horizontal	Pass

1 GHz to 7 GHz, ANT H Band I 11n40 High channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1165.000	41.95	-5.03	68.2	26.25	Peak	37.60	150	Horizontal	Pass
2	1926.500	45.01	-0.69	68.2	23.19	Peak	98.20	150	Horizontal	Pass
3	2927.000	48.46	3.77	68.2	19.74	Peak	98.20	150	Horizontal	Pass
4	3943.000	40.87	7.25	68.2	27.33	Peak	137.80	150	Horizontal	Pass
5	5232.000	98.22	9.98	68.2	-30.02	Peak	9.10	150	Horizontal	N/A
6	6263.000	45.27	10.91	68.2	22.93	Peak	241.00	150	Horizontal	Pass

7 GHz to 18 GHz, ANT H Band I 11n40 High channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	7519.750	43.18	11.54	68.2	25.02	Peak	32.70	150	Horizontal	Pass
2	8713.250	42.54	13.28	68.2	25.66	Peak	63.50	150	Horizontal	Pass
3	10539.250	44.04	13.68	68.2	24.16	Peak	217.80	150	Horizontal	Pass
4	13602.750	47.68	17.64	68.2	20.52	Peak	12.40	150	Horizontal	Pass
5	15819.250	52.05	21.16	68.2	16.15	Peak	0.70	150	Horizontal	Pass
6	17461.000	55.86	26.24	68.2	12.34	Peak	22.60	150	Horizontal	Pass

1 GHz to 7 GHz, ANT H Band IV 11a Low channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1173.000	42.66	-5.09	68.2	25.54	Peak	309.30	150	Horizontal	Pass
2	1533.500	42.91	-3.32	68.2	25.29	Peak	72.10	150	Horizontal	Pass
3	2542.000	49.34	3.84	68.2	18.86	Peak	254.70	150	Horizontal	Pass
4	4225.000	42.17	8.12	68.2	26.03	Peak	136.40	150	Horizontal	Pass
5	5743.000	99.61	10.62	125.0	25.39	Peak	343.70	150	Horizontal	N/A
6	6648.000	45.29	11.15	68.2	22.91	Peak	303.50	150	Horizontal	Pass

7 GHz to 18 GHz, ANT H Band IV 11a Low channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	7646.250	42.88	12.89	68.2	25.32	Peak	166.10	150	Horizontal	Pass
2	9222.000	42.95	12.68	68.2	25.25	Peak	197.30	150	Horizontal	Pass
3	11006.750	45.33	15.32	68.2	22.87	Peak	357.30	150	Horizontal	Pass
4	12849.250	46.07	15.92	68.2	22.13	Peak	357.30	150	Horizontal	Pass
5	15588.250	51.73	20.97	68.2	16.47	Peak	320.20	150	Horizontal	Pass
6	17648.001	55.86	25.46	68.2	12.34	Peak	3.60	150	Horizontal	Pass

1 GHz to 7 GHz, ANT H Band IV 11a Middle channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1068.000	43.28	-4.77	68.2	24.92	Peak	288.30	150	Horizontal	Pass
2	1529.500	43.85	-3.22	68.2	24.35	Peak	168.30	150	Horizontal	Pass
3	2257.500	47.43	2.11	68.2	20.77	Peak	276.70	150	Horizontal	Pass
4	4021.000	42.28	7.51	68.2	25.92	Peak	94.40	150	Horizontal	Pass
5	5786.000	99.28	10.49	125.0	25.72	Peak	351.60	150	Horizontal	N/A
6	6616.000	45.65	10.72	68.2	22.55	Peak	94.40	150	Horizontal	Pass

7 GHz to 18 GHz, ANT H Band IV 11a Middle channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	7203.500	42.51	11.32	68.2	25.69	Peak	78.10	150	Horizontal	Pass
2	8630.750	43.67	13.06	68.2	24.53	Peak	88.60	150	Horizontal	Pass
3	10330.250	44.76	13.34	68.2	23.44	Peak	47.00	150	Horizontal	Pass
4	12293.750	47.00	16.77	68.2	21.20	Peak	222.10	150	Horizontal	Pass
5	14521.250	50.08	20.81	68.2	18.12	Peak	308.70	150	Horizontal	Pass
6	16930.250	56.09	24.90	68.2	12.11	Peak	57.50	150	Horizontal	Pass

1 GHz to 7 GHz, ANT H Band IV 11a High channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1068.000	43.03	-4.77	68.2	25.17	Peak	75.60	150	Horizontal	Pass
2	1551.000	43.47	-3.07	68.2	24.73	Peak	0.00	150	Horizontal	Pass
3	2200.000	46.69	0.98	68.2	21.51	Peak	148.80	150	Horizontal	Pass
4	3746.000	42.15	6.83	68.2	26.05	Peak	15.60	150	Horizontal	Pass
5	5824.000	100.11	10.44	125.0	24.89	Peak	327.80	150	Horizontal	N/A
6	6745.000	45.65	11.15	68.2	22.55	Peak	104.20	100	Horizontal	Pass

7 GHz to 18 GHz, ANT H Band IV 11a High channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	7640.750	43.01	12.19	68.2	25.19	Peak	101.40	150	Horizontal	Pass
2	9128.500	43.67	13.91	68.2	24.53	Peak	284.30	150	Horizontal	Pass
3	11001.250	45.11	15.47	68.2	23.09	Peak	3.20	150	Horizontal	Pass
4	12299.250	47.04	16.76	68.2	21.16	Peak	360.00	150	Horizontal	Pass
5	15049.250	51.45	20.98	68.2	16.75	Peak	121.40	150	Horizontal	Pass
6	16944.000	55.83	24.91	68.2	12.37	Peak	40.00	150	Horizontal	Pass

1 GHz to 7 GHz, ANT H Band IV 11n20 Low channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1065.500	42.45	-4.63	68.2	25.75	Peak	339.20	150	Horizontal	Pass
2	1444.500	43.67	-3.27	68.2	24.53	Peak	333.30	150	Horizontal	Pass
3	2542.000	49.42	3.84	68.2	18.78	Peak	295.20	150	Horizontal	Pass
4	4023.000	41.62	7.58	68.2	26.58	Peak	136.50	150	Horizontal	Pass
5	5746.000	99.86	10.68	125.0	25.14	Peak	344.10	150	Horizontal	N/A
6	6555.000	45.31	11.12	68.2	22.89	Peak	160.40	150	Horizontal	Pass

7 GHz to 18 GHz, ANT H Band IV 11n20 Low channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	7363.000	43.01	12.34	68.2	25.19	Peak	65.60	150	Horizontal	Pass
2	8683.000	44.40	13.76	68.2	23.80	Peak	218.60	150	Horizontal	Pass
3	10984.750	44.43	15.84	68.2	23.77	Peak	330.50	150	Horizontal	Pass
4	13044.500	46.28	16.99	68.2	21.92	Peak	229.10	150	Horizontal	Pass
5	15310.500	51.45	21.04	68.2	16.75	Peak	0.00	150	Horizontal	Pass
6	16935.750	55.94	25.00	68.2	12.26	Peak	0.00	150	Horizontal	Pass

1 GHz to 7 GHz, ANT H Band IV 11n20 Middle channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1061.000	42.85	-4.51	68.2	25.35	Peak	329.50	150	Horizontal	Pass
2	1356.500	43.50	-3.15	68.2	24.70	Peak	103.80	150	Horizontal	Pass
3	2265.000	48.46	2.03	68.2	19.74	Peak	232.00	150	Horizontal	Pass
4	2884.000	49.54	5.53	68.2	18.66	Peak	78.70	150	Horizontal	Pass
5	4013.000	41.04	7.46	68.2	27.16	Peak	335.70	150	Horizontal	Pass
6	5784.000	100.01	10.61	125.0	24.99	Peak	0.00	150	Horizontal	N/A

7 GHz to 18 GHz, ANT H Band IV 11n20 Middle channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	7555.500	43.08	11.54	68.2	25.12	Peak	280.90	150	Horizontal	Pass
2	9112.001	43.40	13.98	68.2	24.80	Peak	60.20	150	Horizontal	Pass
3	11006.750	44.64	15.32	68.2	23.56	Peak	91.10	150	Horizontal	Pass
4	12522.000	46.26	17.17	68.2	21.94	Peak	343.40	150	Horizontal	Pass
5	14515.750	49.68	20.62	68.2	18.52	Peak	157.50	150	Horizontal	Pass
6	16955.000	55.97	24.45	68.2	12.23	Peak	101.80	150	Horizontal	Pass

1 GHz to 7 GHz, ANT H Band IV 11n20 High channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1188.500	41.88	-4.63	68.2	26.32	Peak	27.10	150	Horizontal	Pass
2	1684.000	43.65	-2.29	68.2	24.55	Peak	244.00	150	Horizontal	Pass
3	2574.000	49.05	3.11	68.2	19.15	Peak	196.10	150	Horizontal	Pass
4	4047.000	41.54	7.12	68.2	26.66	Peak	80.00	150	Horizontal	Pass
5	5826.000	99.44	10.58	125.0	25.56	Peak	351.10	150	Horizontal	N/A
6	6621.000	45.71	10.97	68.2	22.49	Peak	104.20	150	Horizontal	Pass

7 GHz to 18 GHz, ANT H Band IV 11n20 High channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	7407.000	43.04	11.56	68.2	25.16	Peak	124.50	150	Horizontal	Pass
2	8974.500	44.36	13.41	68.2	23.84	Peak	83.90	150	Horizontal	Pass
3	11768.500	46.32	16.86	68.2	21.88	Peak	258.50	150	Horizontal	Pass
4	13811.750	48.88	17.00	68.2	19.32	Peak	0.00	150	Horizontal	Pass
5	15321.500	52.46	21.34	68.2	15.74	Peak	145.10	150	Horizontal	Pass
6	16864.250	56.56	25.06	68.2	11.64	Peak	134.60	150	Horizontal	Pass

1 GHz to 7 GHz, ANT H Band IV 11n40 Low channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1098.000	43.29	-5.15	68.2	24.91	Peak	344.50	150	Horizontal	Pass
2	1694.000	43.26	-2.50	68.2	24.94	Peak	5.40	150	Horizontal	Pass
3	2548.000	48.77	3.48	68.2	19.43	Peak	108.40	150	Horizontal	Pass
4	3944.000	40.89	7.30	68.2	27.31	Peak	40.80	150	Horizontal	Pass
5	5764.000	94.54	11.08	125.0	30.46	Peak	344.80	150	Horizontal	N/A
6	6767.000	45.25	11.27	68.2	22.95	Peak	144.70	150	Horizontal	Pass

7 GHz to 18 GHz, ANT H Band IV 11n40 Low channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	7470.250	42.61	11.58	68.2	25.59	Peak	156.30	150	Horizontal	Pass
2	9450.250	43.99	13.28	68.2	24.21	Peak	84.90	150	Horizontal	Pass
3	10665.750	44.31	14.82	68.2	23.89	Peak	32.20	150	Horizontal	Pass
4	12541.250	46.63	16.68	68.2	21.57	Peak	310.30	150	Horizontal	Pass
5	15057.500	52.55	20.71	68.2	15.65	Peak	146.50	150	Horizontal	Pass
6	16872.500	55.79	24.54	68.2	12.41	Peak	279.50	150	Horizontal	Pass

1 GHz to 7 GHz, ANT H Band IV 11n40 High channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1048.500	42.59	-4.80	68.2	25.61	Peak	73.70	150	Horizontal	Pass
2	1770.500	44.26	-2.00	68.2	23.94	Peak	348.10	150	Horizontal	Pass
3	2880.000	49.17	5.28	68.2	19.03	Peak	0.50	150	Horizontal	Pass
4	4468.000	42.68	8.80	68.2	25.52	Peak	360.30	150	Horizontal	Pass
5	5796.000	95.39	10.53	125.0	29.61	Peak	335.10	150	Horizontal	N/A
6	6656.000	46.13	10.86	68.2	22.07	Peak	279.10	150	Horizontal	Pass

7 GHz to 18 GHz, ANT H Band IV 11n40 High channel

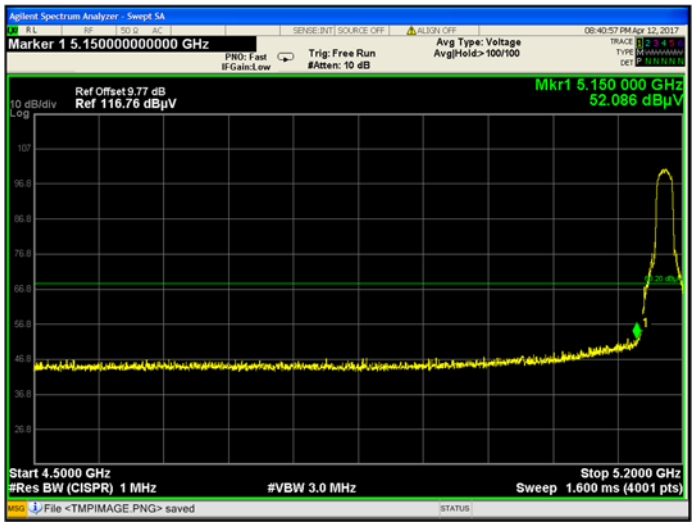
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	7456.500	42.66	11.53	68.2	25.54	Peak	19.80	150	Horizontal	Pass
2	8298.000	42.86	13.67	68.2	25.34	Peak	40.40	150	Horizontal	Pass
3	10308.250	44.68	13.15	68.2	23.52	Peak	92.60	150	Horizontal	Pass
4	13077.500	46.37	16.85	68.2	21.83	Peak	350.70	150	Horizontal	Pass
5	15038.250	51.44	21.25	68.2	16.76	Peak	174.40	150	Horizontal	Pass
6	16842.250	55.77	25.07	68.2	12.43	Peak	61.50	150	Horizontal	Pass

A.7.2 Band Edge (Restricted-band)

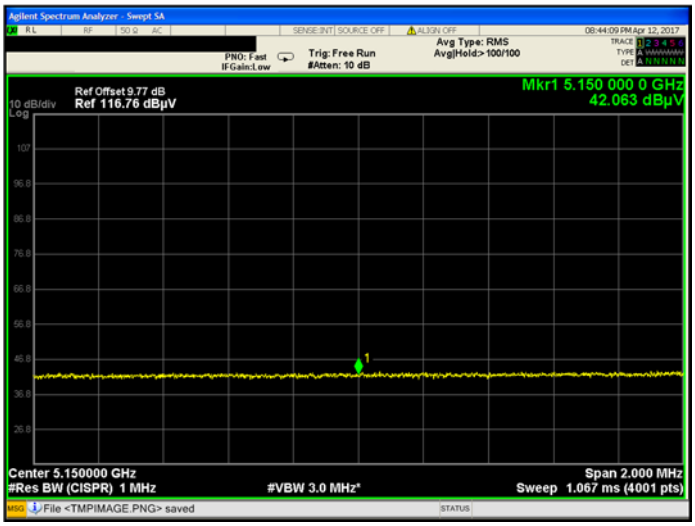
Test Band	Mode	Channel	Verdict
Band I	802.11a	Low	Pass
		High	Pass
	802.11n(HT20)	Low	Pass
		High	Pass
	802.11n(HT40)	Low	Pass
		High	Pass
Band IV	802.11a	Low	Pass
		High	Pass
	802.11n(HT20)	Low	Pass
		High	Pass
	802.11n(HT40)	Low	Pass
		High	Pass

Test Plots

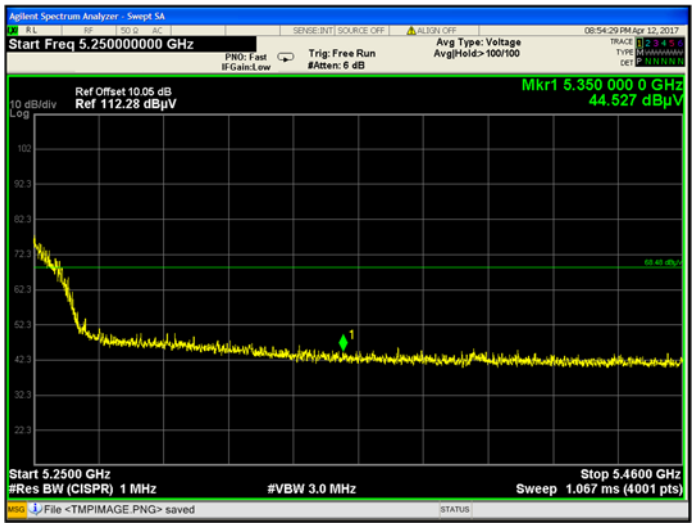
802.11a BAND I LOW CHANNEL, PEAK



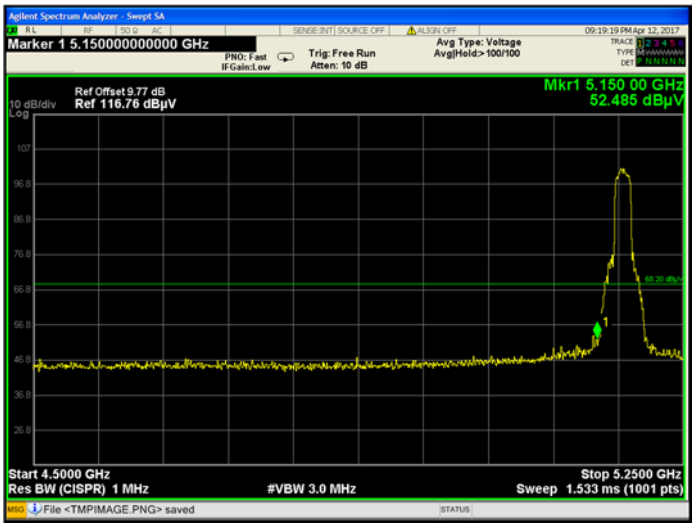
802.11a BAND I LOW CHANNEL, AV



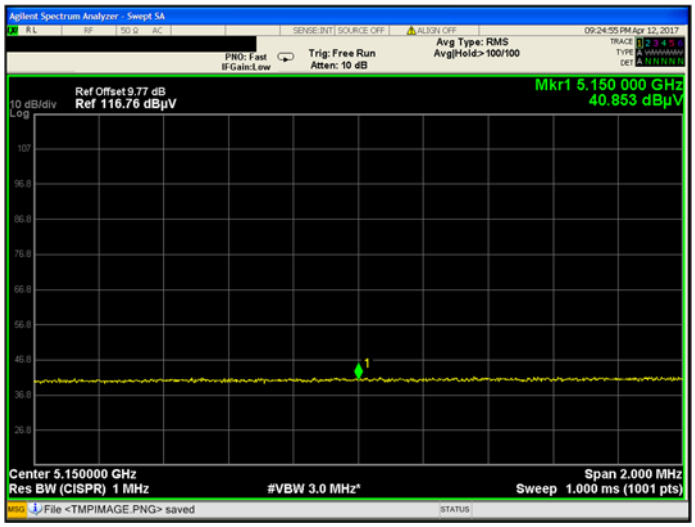
802.11a BAND I HIGH CHANNEL, PEAK



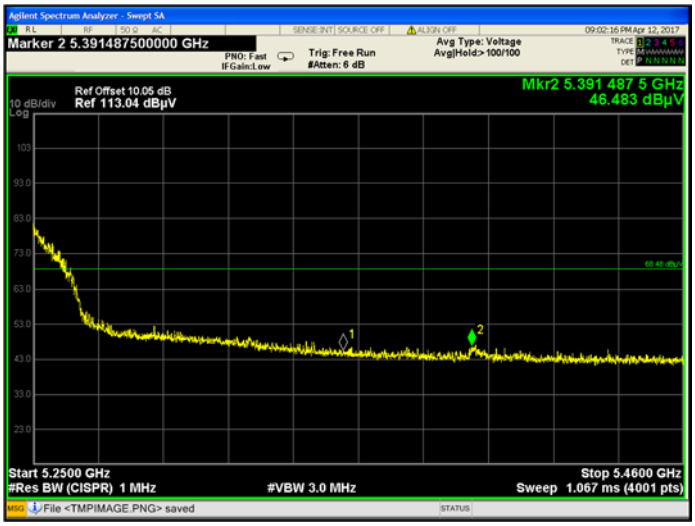
802.11n20 BAND I LOW CHANNEL, PEAK



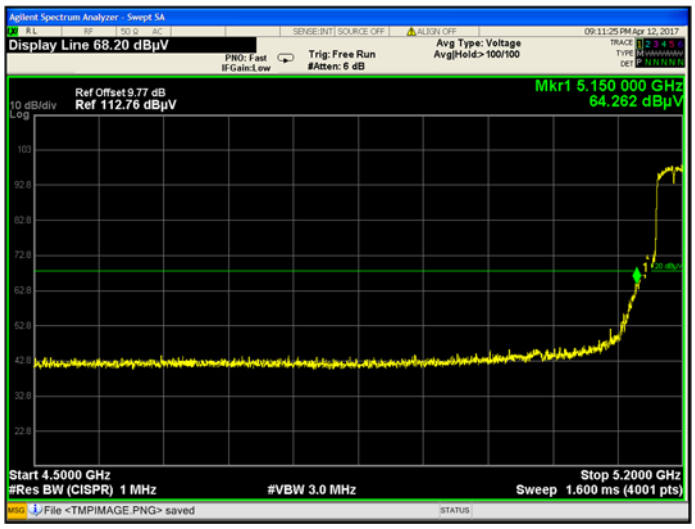
802.11n20 BAND I LOW CHANNEL, AV



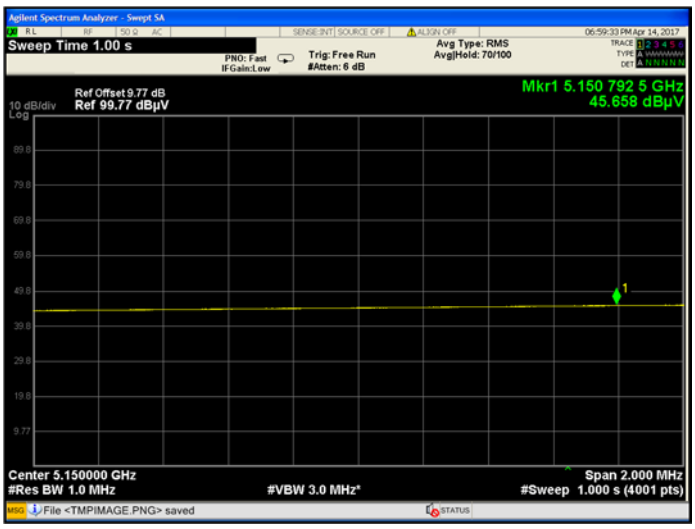
802.11n20 BAND I HIGH CHANNEL, PEAK



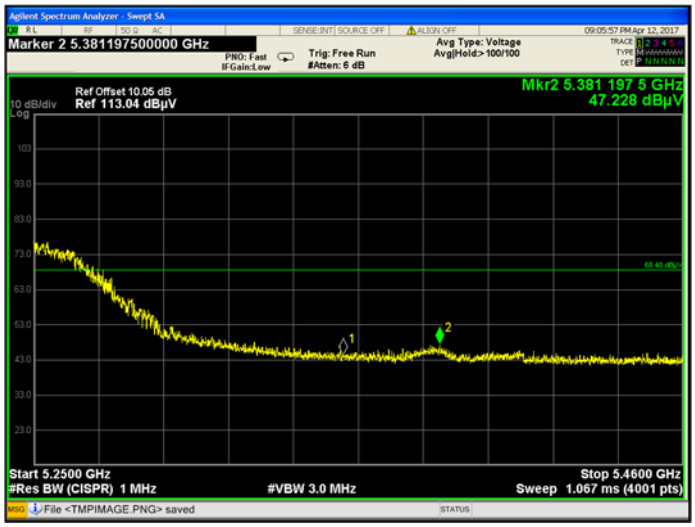
802.11n40 BAND I LOW CHANNEL, PEAK



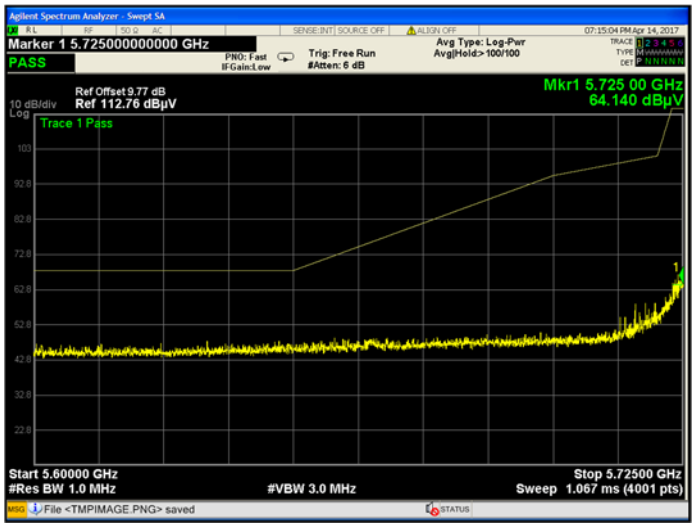
802.11n40 BAND I LOW CHANNEL, AV



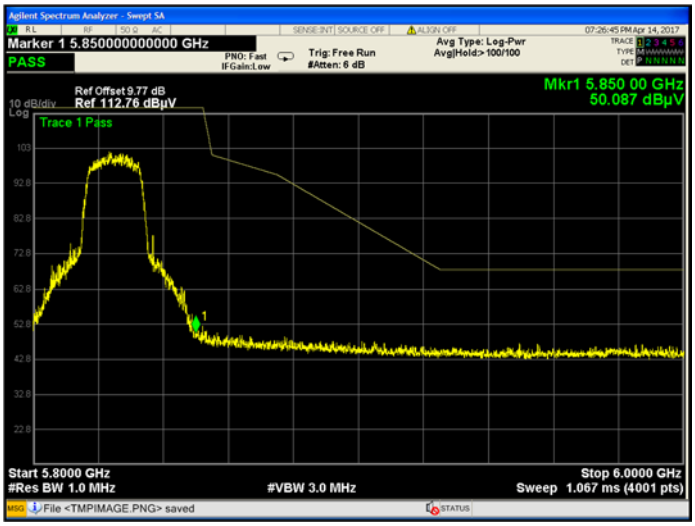
802.11n40 BAND I HIGH CHANNEL, PEAK



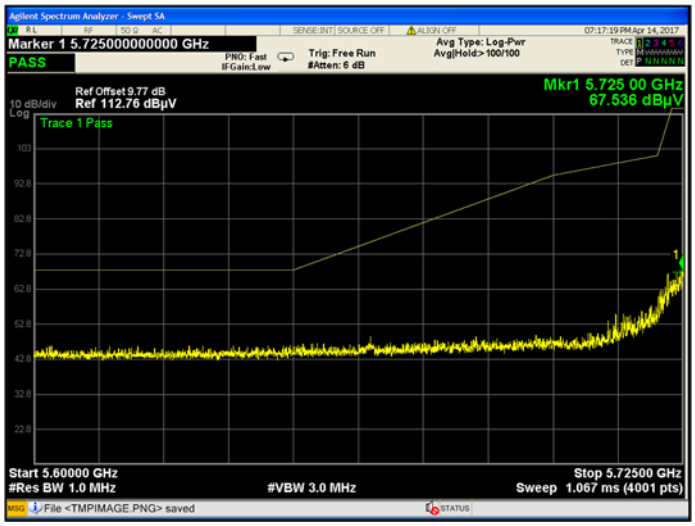
802.11a BAND IV LOW CHANNEL, PEAK



802.11a BAND IV HIGH CHANNEL, PEAK

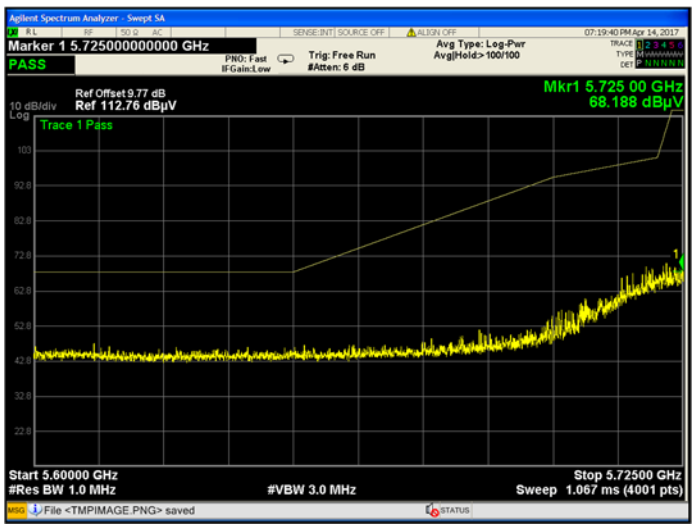


802.11n BAND IV LOW CHANNEL, PEAK

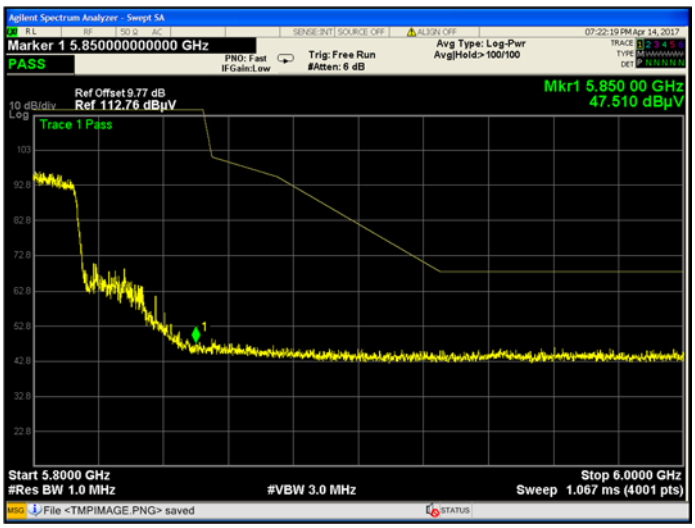


802.11n BAND IV HIGH CHANNEL, PEAK

802.11n40 BAND IV LOW CHANNEL, PEAK



802.11n40 BAND IV HIGH CHANNEL, PEAK



A.8 Frequency Stability

Measurement Data (the worst channel)

Voltage vs. Frequency Stability (5240 MHz)

Test Conditions		Test Frequency (MHz)	0 Minute		2 Minute		5 Minute		10Minute	
TEMP. (°C)	Voltage (VDC)		Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)
20	3.4	5240	5239.989486	-2.01	5240.016983	3.24	5240.020568	3.93	5240.012676	2.42
	3.85	5240	5240.008451	1.61	5239.962011	-7.25	5240.049106	9.37	5240.024577	4.69
	4.4	5240	5240.043903	8.38	5240.037254	7.11	5240.032348	6.17	5239.981472	-3.54

Temperature vs. Frequency Stability (5240 MHz)

Test Conditions		Test Frequency (MHz)	0 Minute		2 Minute		5 Minute		10Minute	
Voltage (VDC)	TEMP. (°C)		Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)
3.85	0	5240	5239.980567	-3.71	5240.043662	8.33	5239.960232	-7.59	5239.959943	-7.64
	5	5240	5240.036837	7.03	5240.043565	8.31	5240.028139	5.37	5240.037051	7.16
	10	5240	5240.037263	7.11	5240.000286	0.05	5240.045563	8.70	5240.033337	6.36
	15	5240	5240.026678	5.09	5239.975127	-4.75	5240.005251	1.00	5240.015869	3.03
	20	5240	5239.970971	-5.54	5240.039111	7.46	5239.985397	-2.79	5239.953039	-8.96
	25	5240	5240.039601	7.56	5240.002332	0.45	5240.026687	5.09	5240.000284	0.05
	30	5240	5240.030544	5.83	5239.989393	-2.02	5240.004137	0.79	5240.030969	5.91
	35	5240	5240.027995	5.34	5240.040326	7.70	5239.953643	-8.85	5240.021425	4.09
	40	5240	5240.013458	2.57	5240.014098	2.69	5240.049846	9.51	5240.040783	7.78

ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-SZ1720179-AR.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL- SZ1720179-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL- SZ1720179-AI.PDF”.

--END OF REPORT--