FCC RF TEST REPORT

ISSUED BY
Shenzhen BALUN Technology Co., Ltd.

FOR

Head-mounted Virtual realiey equipment

ISSUED TO
Chengdu Idealsee Technology Co., Ltd.

Tower B, New Hope Building, No. 69, Tianfu No. 3 Street, Mid Section, Tianfu Avenue, High-Tech Zone, Chengdu, China

Prepared by: _____
Cao Shaodong
(Engineer)
Date Aug. 02, 2016

Approved by: _____
Liao Jianming
(Technical Director)
Date Aug. 2. 2016

Report No.:	BL-SZ1660028-604
EUT Type:	Head-mounted Virtual realiey equipment
Model Name:	K2
Brand Name:	IDEALENS
Test Standard:	47 CFR Part 15 Subpart E
FCC ID:	2AI35-K2
Test conclusion:	Pass
Test Date:	Jul. 12, 2016 ~ Jul. 22, 2016
Date of Issue:	Aug. 02, 2016

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Revision History

Version	Issue Date	Revisions Content
Rev. 01	Jul. 22, 2016	Initial Issue
Rev. 02	Jul. 29, 2016	Updating the test plots and data
Rev. 03	Aug. 01, 2016	Updating the limit of Radiated Spurious Emissions
Rev. 04	Aug. 02, 2016	Updating the limit based on 20dB down from the fundamental

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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	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 v1.3.

(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	Chengdu Idealsee Technology Co., Ltd.
Address	Tower B, New Hope Building, No. 69, Tianfu No. 3 Street, Mid Section, Tianfu Avenue, High-Tech Zone, Chengdu, China

2.2 Manufacturer

Manufacturer	Chengdu Idealens Technology Co., Ltd.
Address	Room 101, Building C2, District C of Tianfu Software Park, No. 219 of Tianhua 2nd Road, High-tech Zone, Chengdu, Sichuan, China

2.3 Factory

Factory	Foxconn science and Ji Zhun Precision Industry(Huizhou) Co., Ltd.
Address	Ditch Village, Longxi Town, Boluo County, Huizhou City, Guangdong Province.

2.4 General Description for Equipment under Test (EUT)

EUT Type	Head-mounted Virtual realiey equipment
Model Name	K2
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	P2
Software Version	0.7.0.0
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A
Network and Wireless connectivity	Bluetooth 3.0, Bluetooth 4.0 Low Energy (BLE), WIFI 802.11a, 802.11b, 802.11g and 802.11n(HT20/40), 802.11ac

2.5 Ancillary Equipment

Ancillary Equipment 1	Battery	
	Brand Name	IDEALENS
	Model No.	904764P
	Serial No.	N/A
	Capacitance	3800 mAh
	Rated Voltage	3.8 V
	Limited Voltage	4.35 V
Ancillary Equipment 2	Charger	
	Brand Name	IDEALENS
	Model No.	TUUS050200-L00
	Serial No.	N/A
	Rated Input	100-240 V~, 0.35 A, 50/60 Hz
	Rated Output	5 V⎓, 2 A
Ancillary Equipment 3	USB Data Cable	
	Length	1.0 m

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	256QAM, 64QAM, 16QAM, BPSK, QPSK
Product Type	Mobile and portable for FCC standard
Transfer Rate (Mbps)	802.11a: 54/ 48/ 36 / 24 / 18 / 9/ 6 Mbps 802.11n: up to 300 Mbps 802.11ac: up to V9
Channel Bandwidth	802.11a: 20 MHz 802.11n: 20 MHz, 40 MHz 802.11ac: 20 MHz, 40 MHz, 80 MHz
Maximum Output Power	Band I: 19.62 dBm Band IV: 11.03 dBm
Antenna System (eg., MIMO, Smart Antenna)	N/A
Categorization as Correlated or Completely Uncorrelated	N/A
Antenna Type	Coupling Ceramics Antenna
Antenna Gain	Band I: 5150 MHz to 5250 MHz: 3.3 dBi Band IV: 5725 MHz to 5850 MHz: 3.3 dBi
About the Product	The equipment is Head-mounted Virtual realiey equipment, intended for used with information technology equipment.

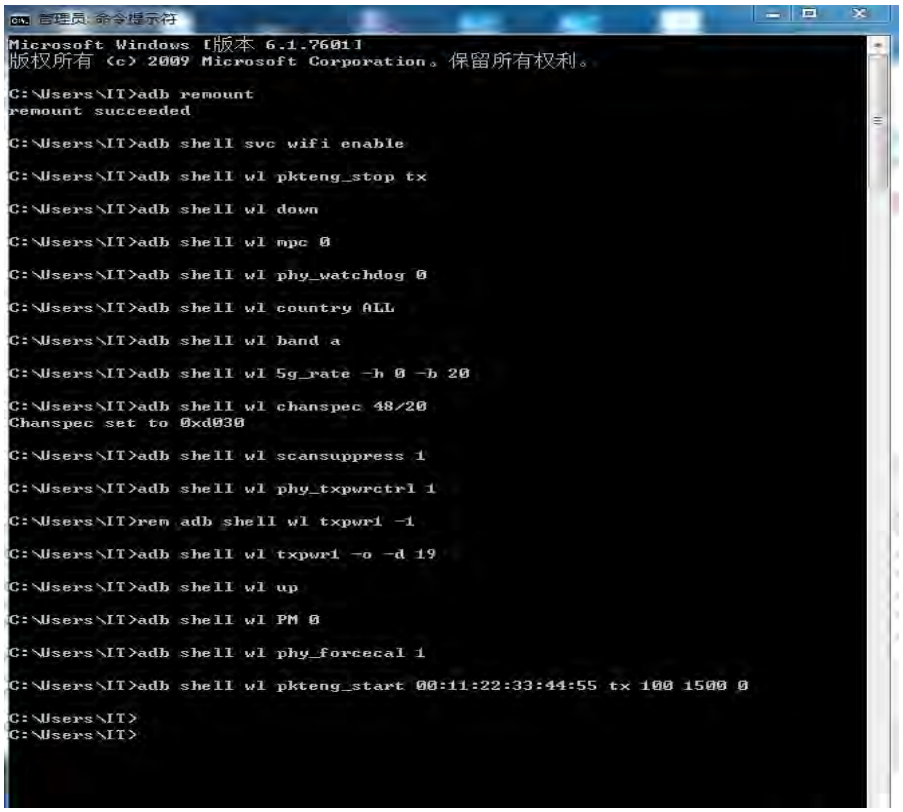
2.7 Additional Instructions

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

EUT Software Settings:

Band I (5150 - 5250 MHz), Band IV: 5725 MHz to 5850 MHz Power level setup in software.		
Test Software Version	Using a built-in CMD command tool.	
Mode	Channel	Soft Set
11a	ALL	19
11n (HT20)	ALL	19
11n (HT40)	ALL	19
11ac (HT80)	ALL	19

Run Software:



2.8 Channel List

20 MHz		40 MHz		80 MHz	
Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
36	5180	38	5190	42	5210
40	5200	46	5230	155	5775
44	5220	151	5755	\	\
48	5240	159	5795	\	\
149	5745	\	\	\	\
157	5785	\	\	\	\
161	5825	\	\	\	\

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	Frequency (MHz)	Channel Number	Channel	Frequency (MHz)
36	Low	5180	149	Low	5745
40	Mid	5200	157	Mid	5785
48	High	5240	161	High	5825

For 802.11n (HT40)

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

For 802.11ac (HT80)

Band I (5150 - 5250 MHz)			Band IV (5470 - 5725 MHz)		
Channel Number	Channel	Frequency (MHz)	Channel Number	Channel	Frequency (MHz)
42	Low	5210	155	Low	5775

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 Technology	Modulation Type	Band I Channel	Band IV Channel
RF Output Power	11a	6	OFDM	BPSK	48/40/36	161/157/149
	11n(20 MHz)	6.5	OFDM	BPSK	48/40/36	161/157/149
	11n(40 MHz)	13.5	OFDM	BPSK	46/38	159/151
	11ac(80 MHz)	V0	OFDM	BPSK	42	155
Emission Bandwidth & 99% Occupied Bandwidth	11a	6	OFDM	BPSK	48/40/36	161/157/149
	11n(20 MHz)	6.5	OFDM	BPSK	48/40/36	161/157/149
	11n(40 MHz)	13.5	OFDM	BPSK	46/38	159/151
	11ac(80 MHz)	V0	OFDM	BPSK	42	155
6 dB bandwidth	11a	6	OFDM	BPSK	N/A	161/157/149
	11n(20 MHz)	6.5	OFDM	BPSK	N/A	161/157/149
	11n(40 MHz)	13.5	OFDM	BPSK	N/A	159/151
	11ac(80 MHz)	V0	OFDM	BPSK	N/A	155
Power Spectral Density	11a	6	OFDM	BPSK	48/40/36	161/157/149
	11n(20 MHz)	6.5	OFDM	BPSK	48/40/36	161/157/149
	11n(40 MHz)	13.5	OFDM	BPSK	46/38	159/151
	11ac(80 MHz)	V0	OFDM	BPSK	42	155
Conducted Spurious Emissions	11a	6	OFDM	BPSK	48/40/36	161/157/149
	11n(20 MHz)	6.5	OFDM	BPSK	48/40/36	161/157/149
	11n(40 MHz)	13.5	OFDM	BPSK	46/38	159/151
	11ac(80 MHz)	V0	OFDM	BPSK	42	155
Radiated Spurious Emissions	11a	6	OFDM	BPSK	48/40/36	161/157/149
	11n(20 MHz)	6.5	OFDM	BPSK	48/40/36	161/157/149
	11n(40 MHz)	13.5	OFDM	BPSK	46/38	159/151
	11ac(80 MHz)	V0	OFDM	BPSK	42	155
Frequency Stability	11a	6	OFDM	BPSK	40	157
	11n(20 MHz)	6.5	OFDM	BPSK	40	157
	11n(40 MHz)	13.5	OFDM	BPSK	38	151
	11ac(80 MHz)	V0	OFDM	BPSK	42	155
Band Edge	11a	6	OFDM	BPSK	36	161/149
	11n(20 MHz)	6.5	OFDM	BPSK	36	161/149
	11n(40 MHz)	13.5	OFDM	BPSK	38	159/151
	11ac(80 MHz)	V0	OFDM	BPSK	42	155

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 D02v0102	Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E
3	KDB Publication 662911 D01v02r01	Emissions Testing of Transmitters with Multiple Outputs in the Same Band (e.g., MIMO, Smart Antenna, etc)
4	ANSI C63.4-2014	American National Standard for Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
5	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 Note 1
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 Emissions	15.407(b) 15.209	ANNEX A.6	Pass
8	Radiated Spurious Emissions and Band Edge	15.407(b)	ANNEX A.7	Pass
9	Frequency Stability	2.1055 90.213	ANNEX A.8	Pass
Note 1: The EUT has a permanently and irreplaceable attached antenna, which complies with the requirement FCC 15.203.				

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)	-10℃
	HT (High Temperature)	+60℃
Working Voltage of the EUT	NV (Normal Voltage)	3.8 V
	LV (Low Voltage)	3.5 V
	HV (High Voltage)	4.35 V

4.2 Test Equipment List

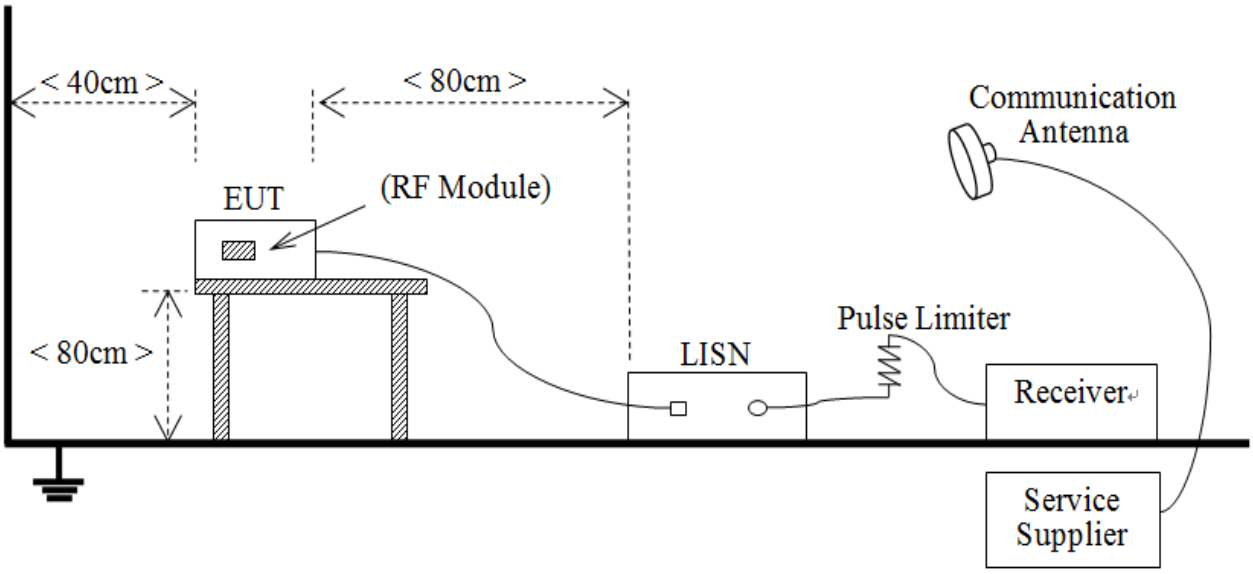
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer	ROHDE&SCHWARZ	FSV-30	103118	2016.07.13	2017.07.12
Vector Signal Generator	ROHDE&SCHWARZ	SMBV100A	177746	2016.07.13	2017.07.12
Signal Generator	ROHDE&SCHWARZ	SMB100A	260592	2016.07.13	2017.07.12
Switch Unit with OSP-B157	ROHDE&SCHWARZ	OSP120	101270	2016.07.13	2017.07.12
Spectrum Analyzer	AGILENT	E4440A	MY45304434	2015.10.18	2016.10.17
Spectrum Analyzer	ROHDE&SCHWARZ	FSV-40	101008	2015.10.18	2016.10.17
EMI Receiver	ROHDE&SCHWARZ	ESRP	101036	2016.07.13	2017.07.12
LISN	SCHWARZBECK	NSLK 8127	8127-687	2016.07.13	2017.07.12
Bluetooth Tester	ROHDE&SCHWARZ	CBT	101005	2016.07.13	2017.07.12
Power Splitter	KMW	DCPD-LDC	1305003215	2016.07.13	2017.07.12
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	2015.08.07	2016.08.06
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(18-40 GHz)	SCHWARZBECK	BBHA 9170	9170-1025	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 Description of Test Setup

4.3.1 For Antenna Port Test

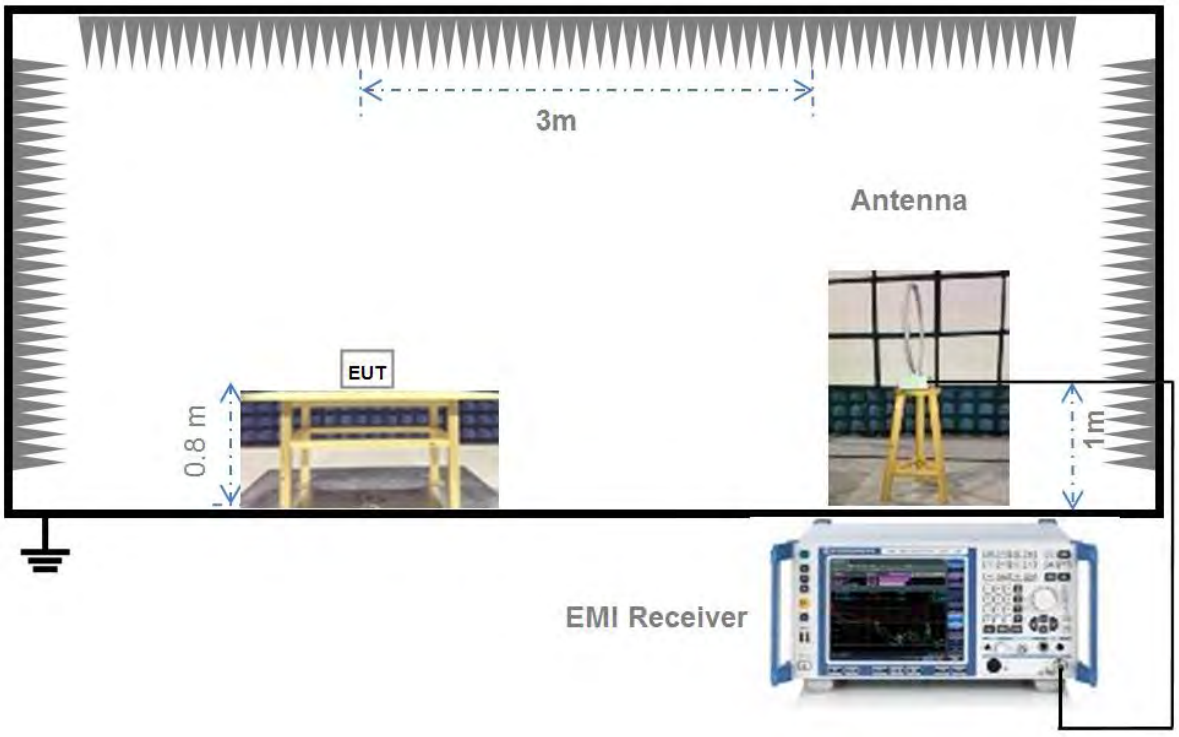
(Diagram 1)

4.3.2 For AC Power Supply Port Test



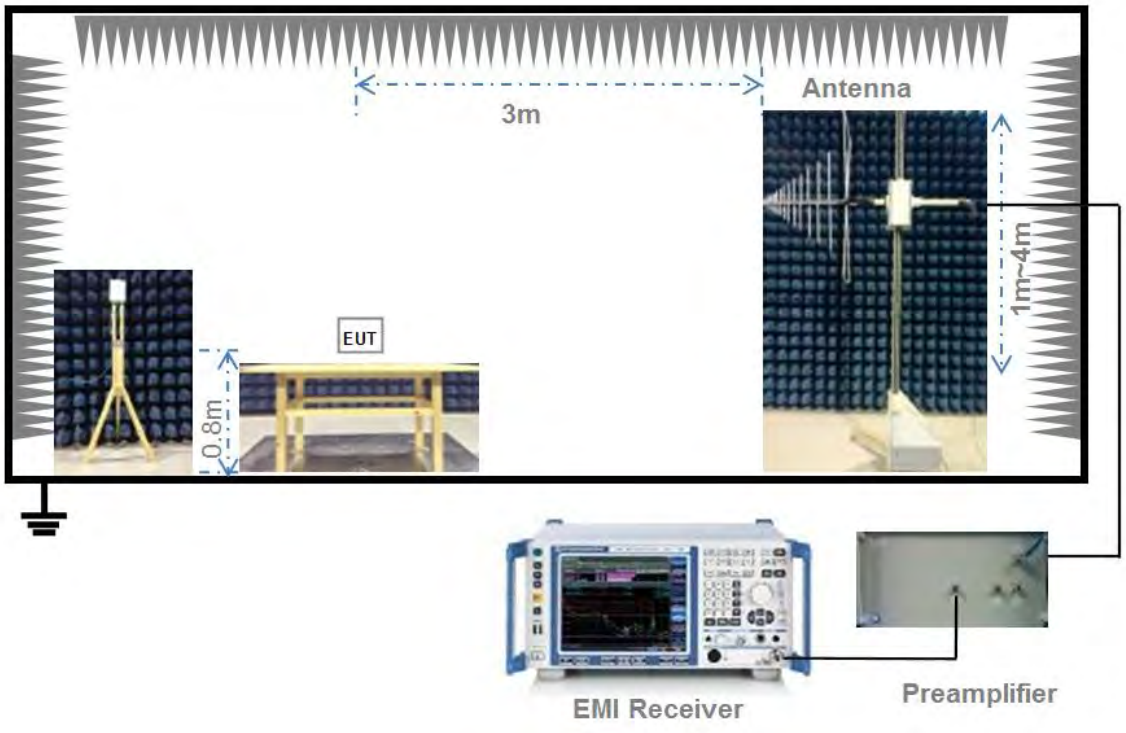
(Diagram 2)

4.3.3 For Radiated Test (Below 30 MHz)



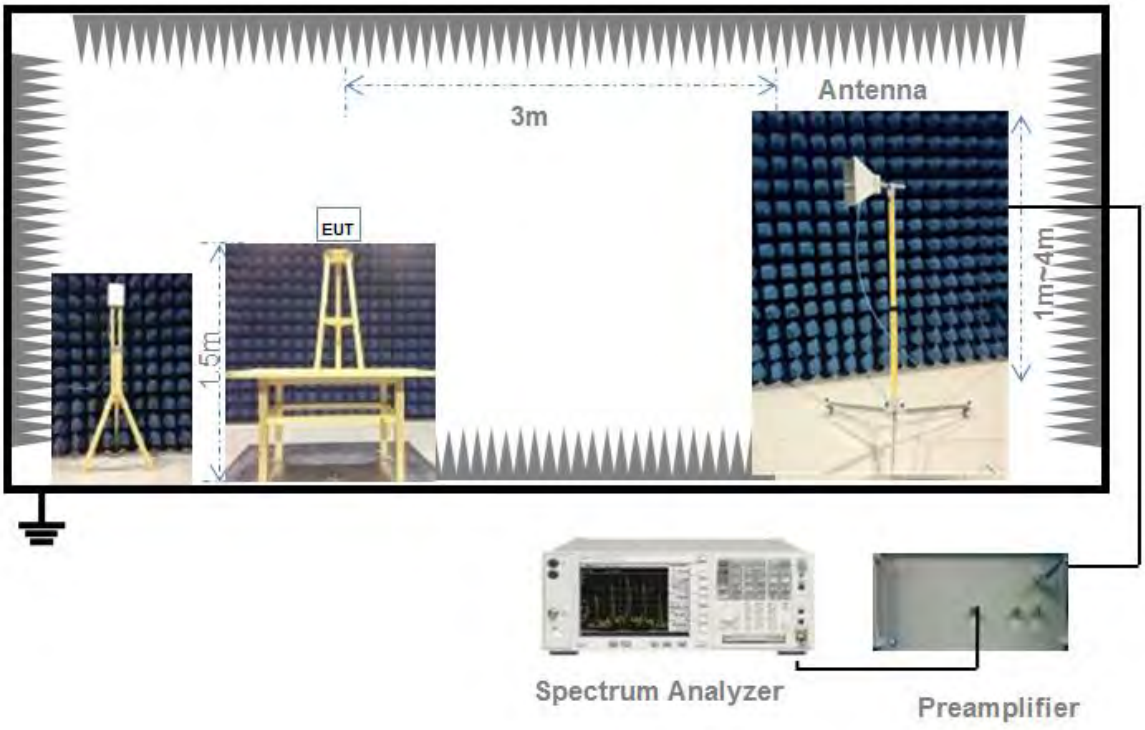
(Diagram 3)

4.3.4 For Radiated Test (30 MHz-1 GHz)



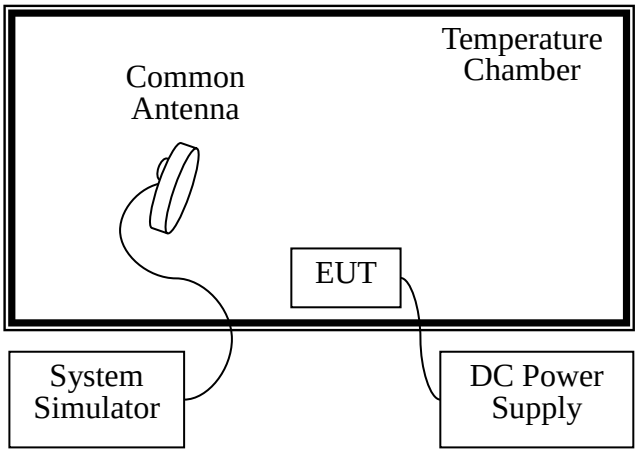
(Diagram 4)

4.3.5 For Radiated Test (Above 1 GHz)



(Diagram 5)

4.3.6 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 4.3.1 (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 4.3.1 (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 4.3.1 (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.

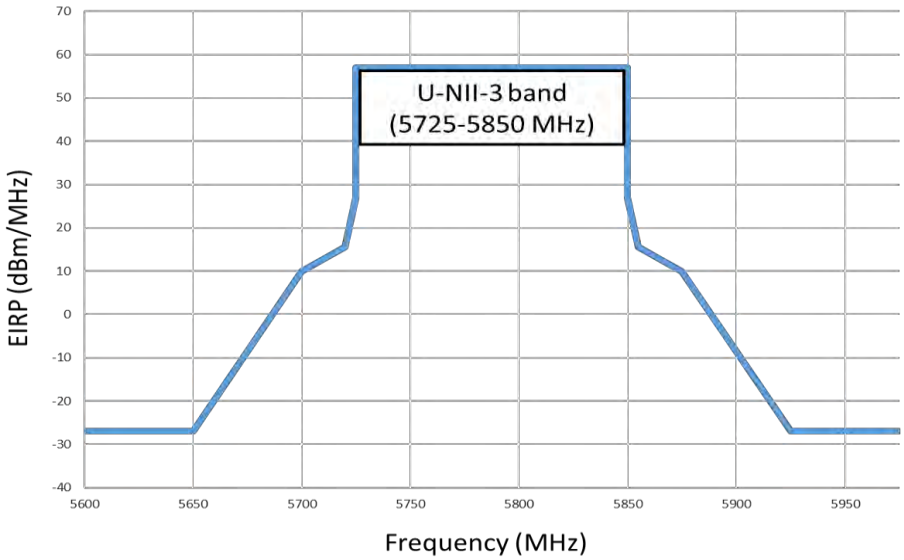
5.4.4 Test Result

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.

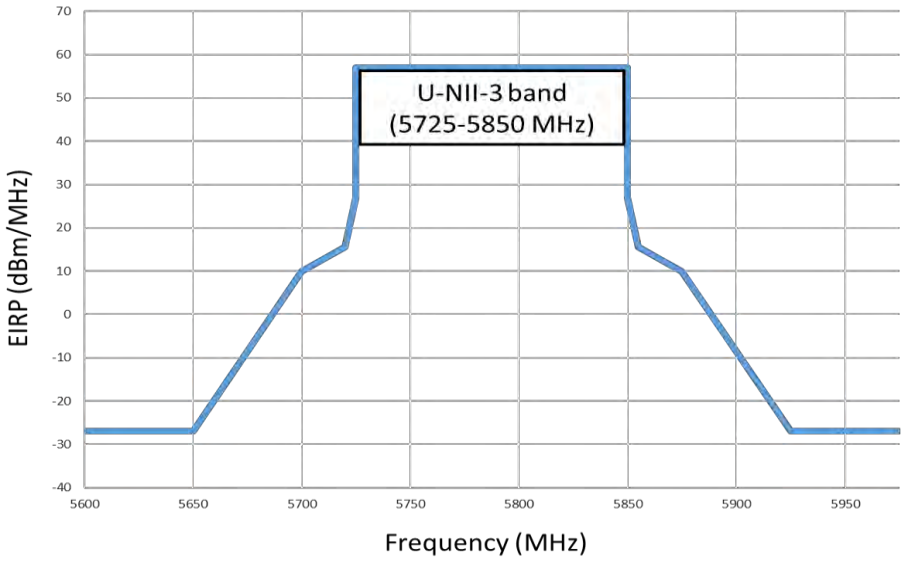
5.6 Radiated Spurious Emissions and Band Edge (Restricted-band)

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 4.3 (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:

$E = EIRP – 20\log D + 104.8$

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 4.3.1 (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.

5.8 Receiver Spurious Emissions

5.8.1 Limit

IC RSS-Gen, 7.1.2

Radiated spurious emission measurements shall be performed with the receiver antenna connected to the receiver antenna terminals. Spurious emissions from receivers shall not exceed the radiated limits shown in the table below:

Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

1. Field Strength (dBμV/m) = 20*log[Field Strength (μV/m)].
2. In the emission tables above, the tighter limit applies at the band edges.
3. 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.
4. For above 1000 MHz, limit field strength of harmonics: 54 dBuV/m@3m (AV) and 74 dBuV/m@3m (PK).

5.8.2 Test Setup

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

5.8.3 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.

Test Plots for the Whole Measurement Frequency Range:

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

5.8.4 Test Result

Please refer to ANNEX A.9.

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)	Limit (mW)	Verdict
11a	CH36	5180	19.47	88.51	250	Pass
11a	CH40	5200	18.06	63.97	250	Pass
11a	CH48	5240	18.28	67.30	250	Pass
11n (HT20)	CH36	5180	18.72	74.47	250	Pass
11n (HT20)	CH40	5200	19.34	85.90	250	Pass
11n (HT20)	CH48	5240	18.52	71.12	250	Pass
11n (HT40)	CH38	5190	19.62	91.62	250	Pass
11n (HT40)	CH46	5230	17.79	60.12	250	Pass
11ac (HT80)	CH42	5210	18.53	71.29	250	Pass

Band IV (5725 - 5850 MHz)						
Mode	Channel	Frequency (MHz)	Conducted Power (dBm)	Conducted Power(mW)	Limit (W)	Verdict
11a	CH149	5745	9.12	8.17	1	Pass
11a	CH157	5785	11.01	12.62	1	Pass
11a	CH161	5825	11.03	12.68	1	Pass
11n (HT20)	CH149	5745	8.07	6.41	1	Pass
11n (HT20)	CH157	5785	9.14	8.20	1	Pass
11n (HT20)	CH161	5825	9.89	9.75	1	Pass
11n (HT40)	CH151	5755	8.43	6.97	1	Pass
11n (HT40)	CH159	5795	9.82	9.59	1	Pass
11ac (HT80)	CH155	5775	6.39	4.36	1	Pass

A.2 Emission Bandwidth & 99% Bandwidth

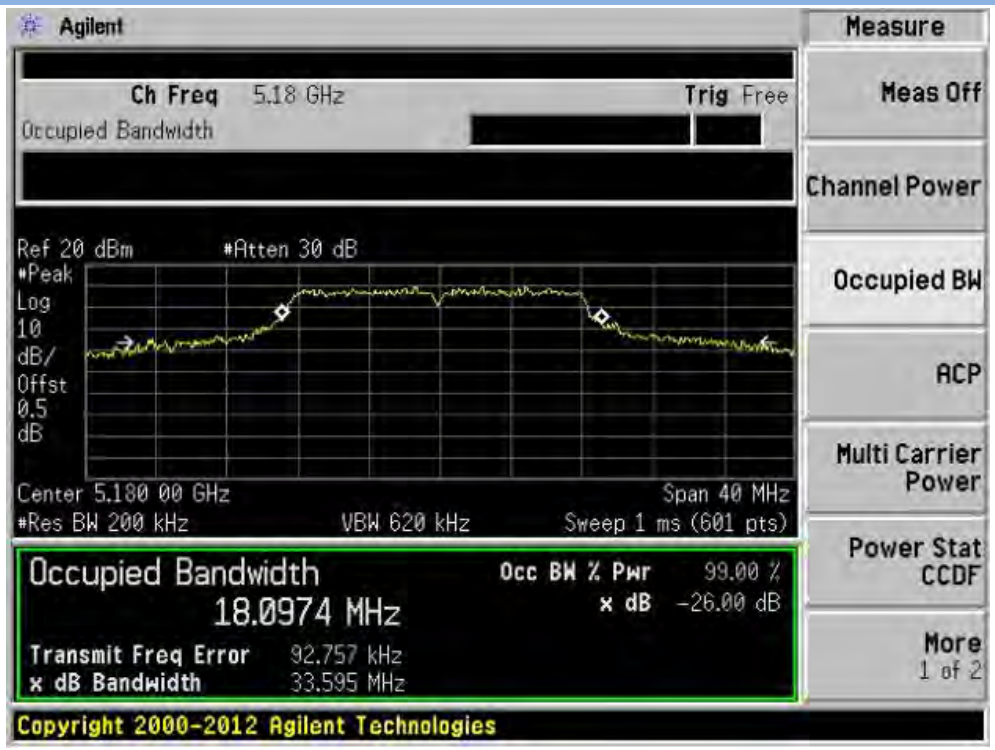
Test Data

Band I (5150 - 5250 MHz)				
Mode	Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
11a	CH36	5180	33.60	18.10
11a	CH40	5200	33.07	17.95
11a	CH48	5240	32.26	17.62
11n (HT20)	CH36	5180	38.37	18.90
11n (HT20)	CH40	5200	36.16	18.55
11n (HT20)	CH48	5240	36.74	18.69
11n (HT40)	CH38	5190	79.82	39.91
11n (HT40)	CH46	5230	80.00	43.48
11ac (HT80)	CH42	5210	159.44	77.48

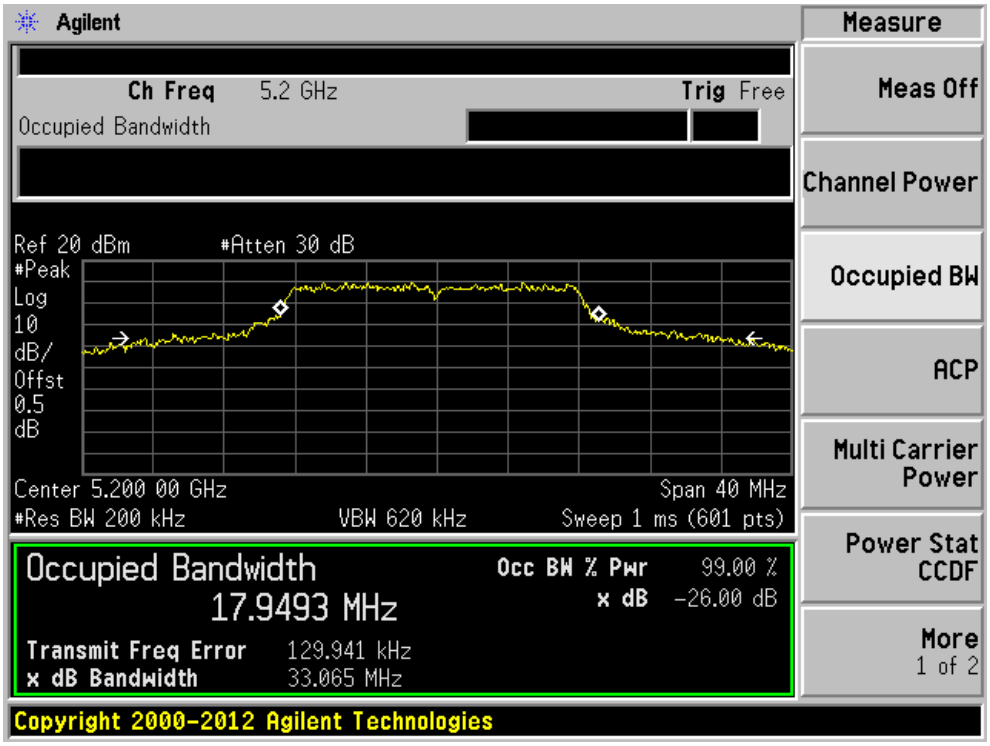
Band IV (5725 - 5850 MHz)				
Mode	Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
11a	CH149	5745	30.18	17.18
11a	CH157	5785	27.71	17.15
11a	CH161	5825	27.79	17.35
11n (HT20)	CH149	5745	33.42	18.39
11n (HT20)	CH157	5785	32.79	18.31
11n (HT20)	CH161	5825	32.74	18.33
11n (HT40)	CH151	5755	74.02	36.70
11n (HT40)	CH159	5795	75.96	36.92
11ac (HT80)	CH155	5775	137.04	76.50

Test Plots

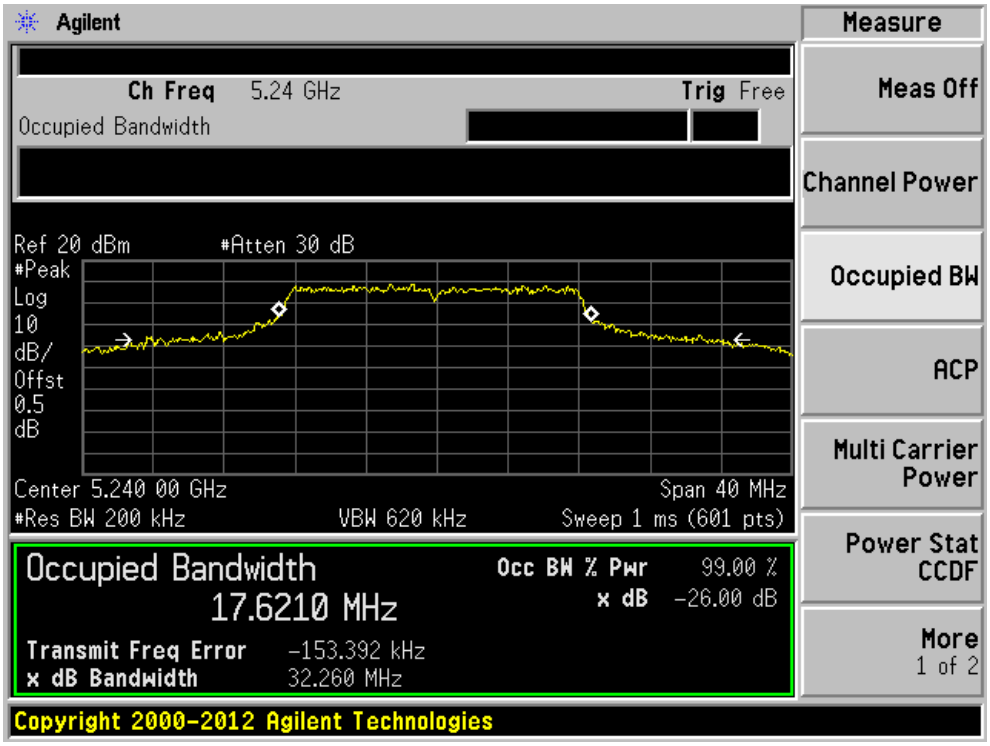
Band I 11a CH36



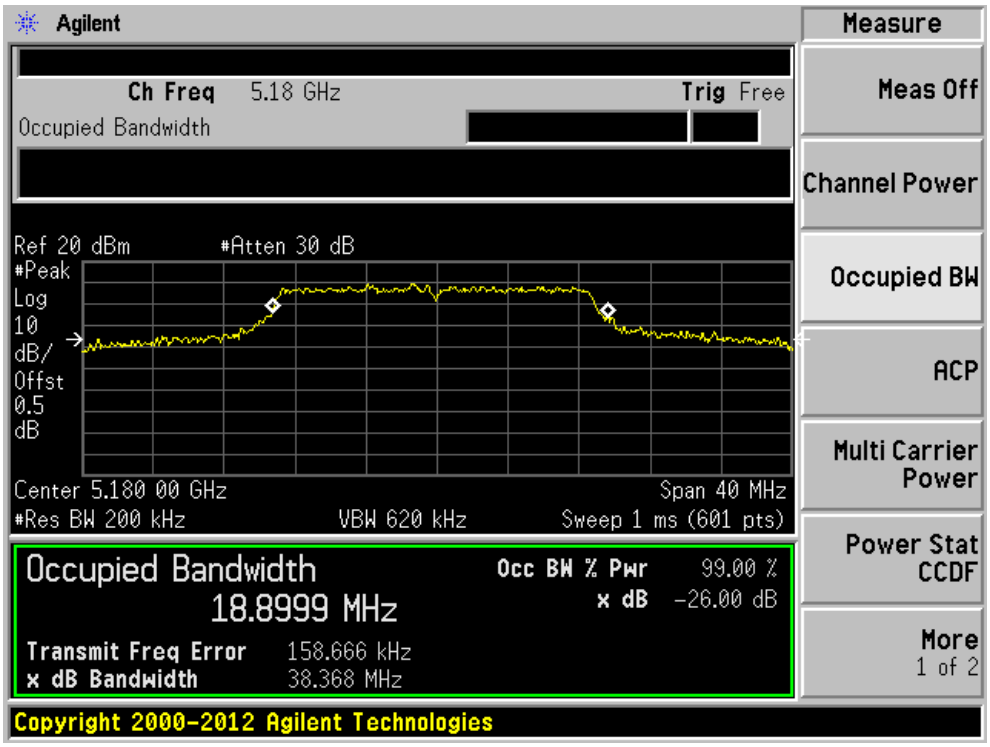
Band I 11a CH40



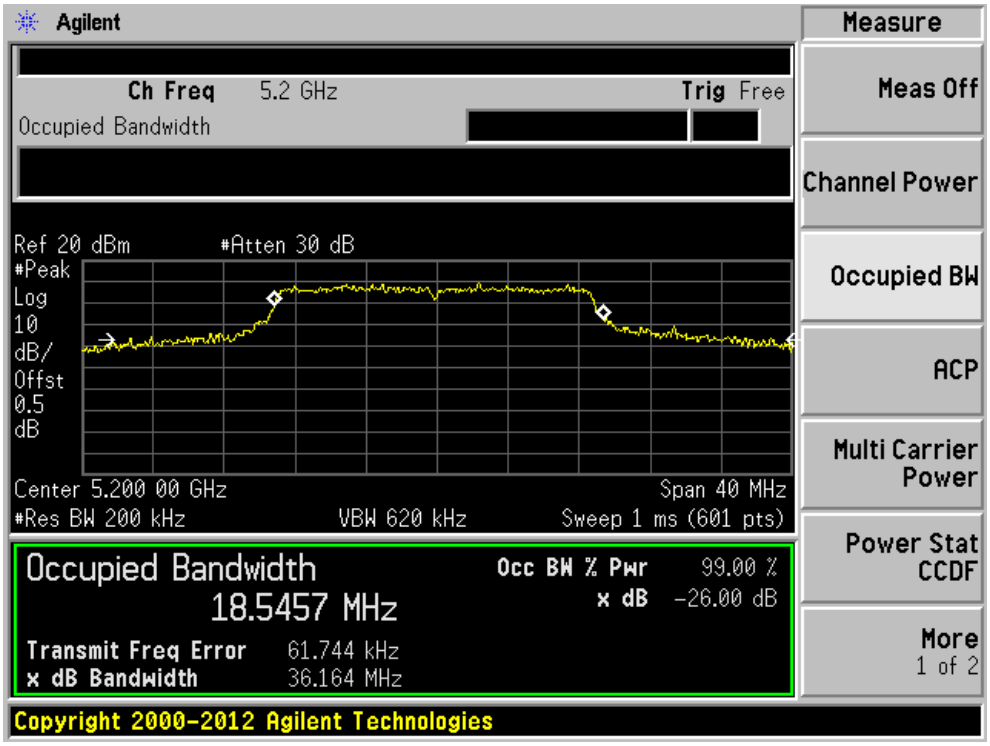
Band I 11a CH48



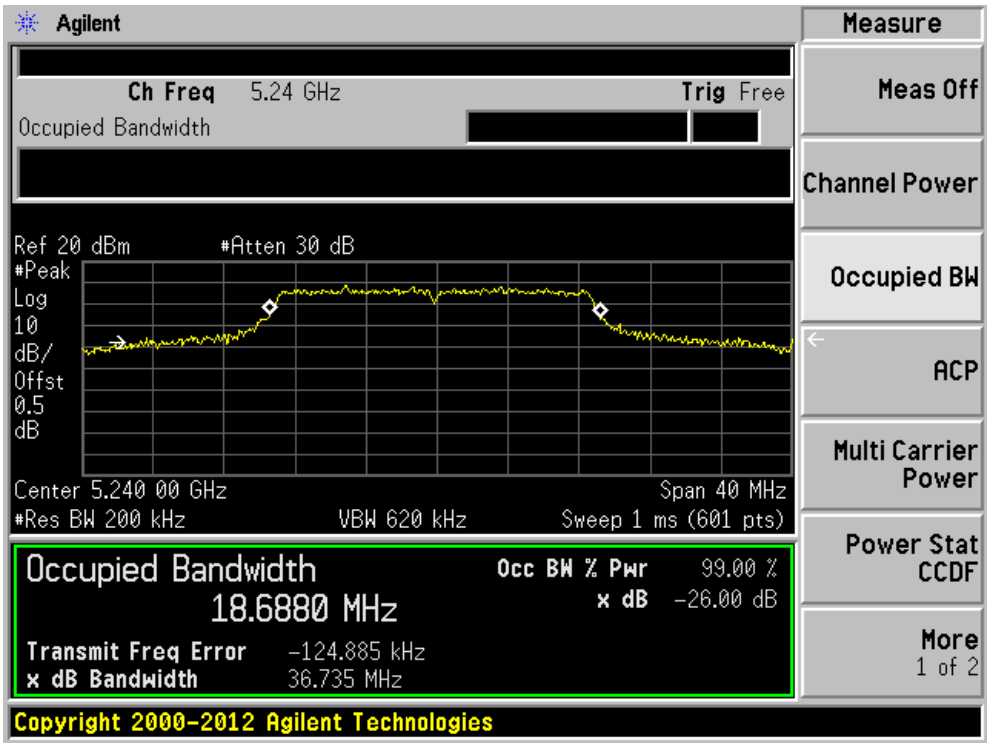
Band I 11n(HT20) CH36



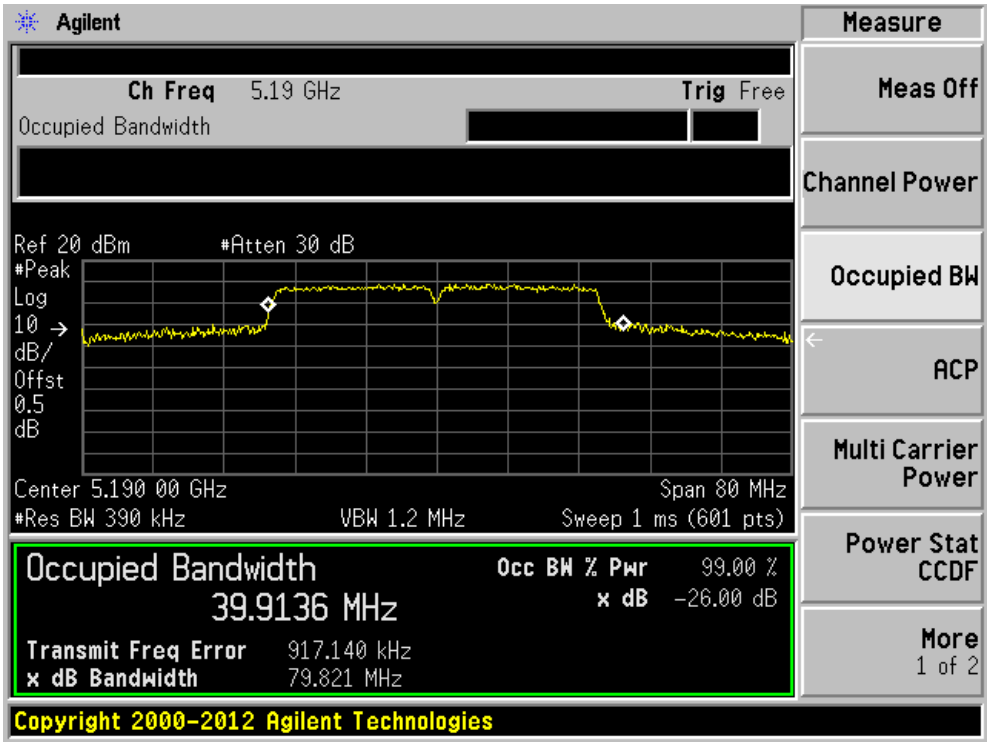
Band I 11n(HT20) CH40



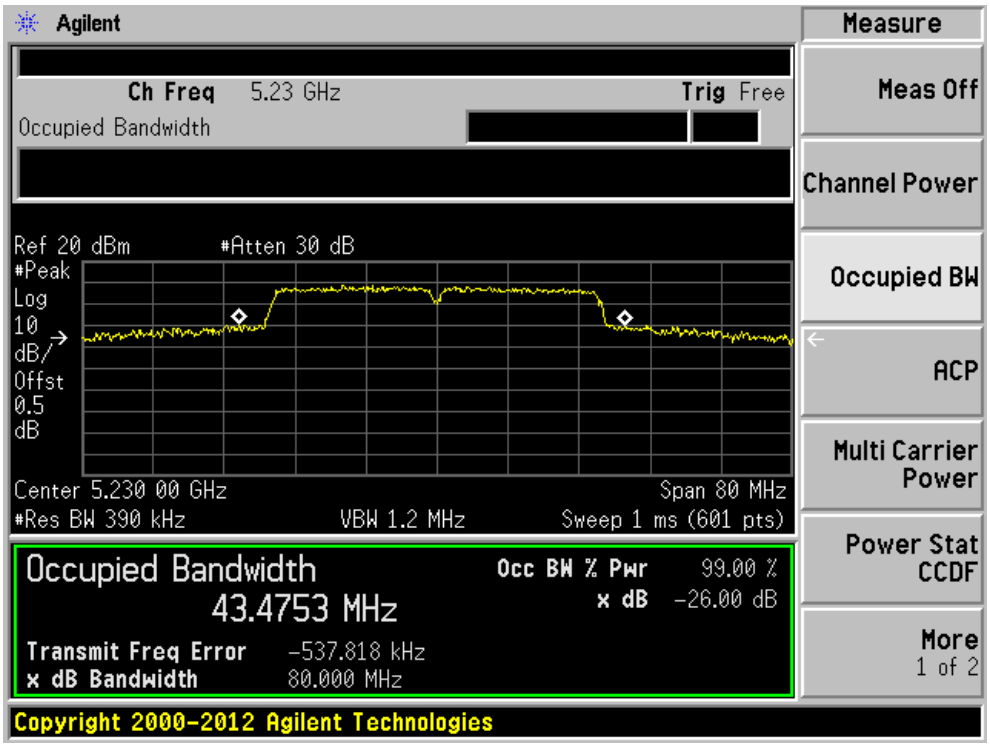
Band I 11n(HT20) CH48



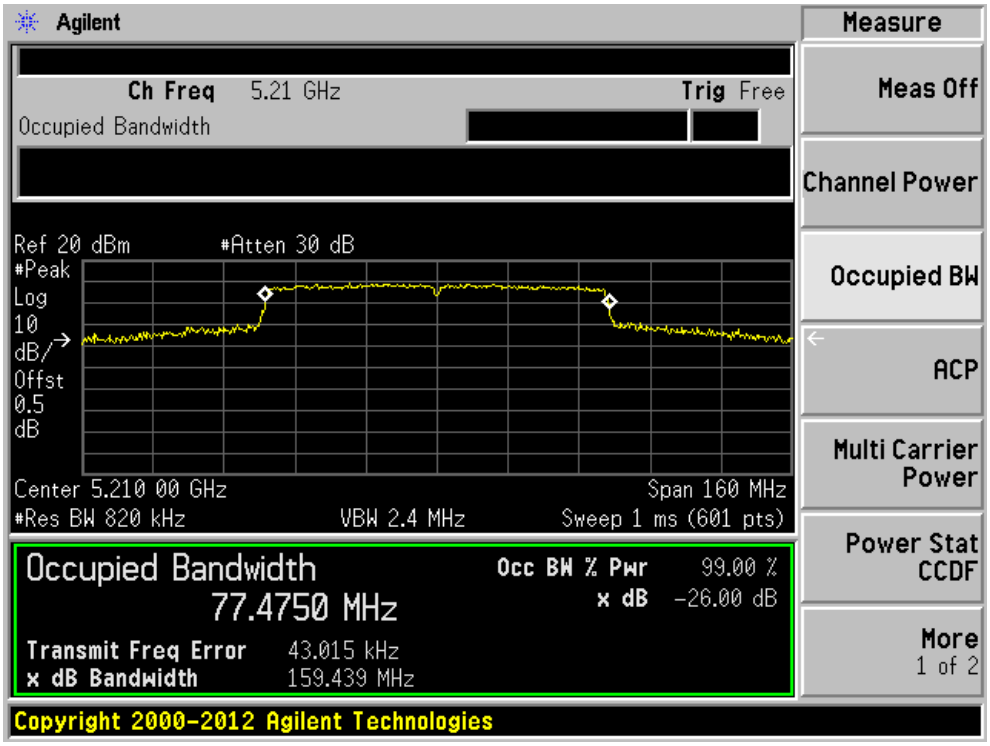
Band I 11n(HT40) CH38



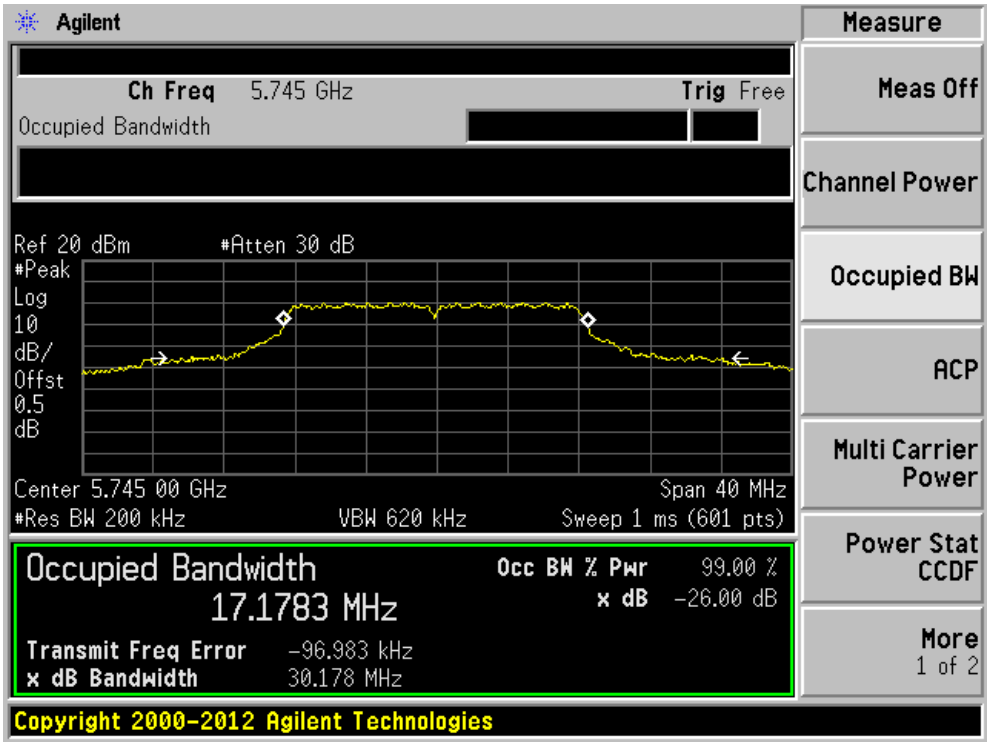
Band I 11n(HT40) CH46



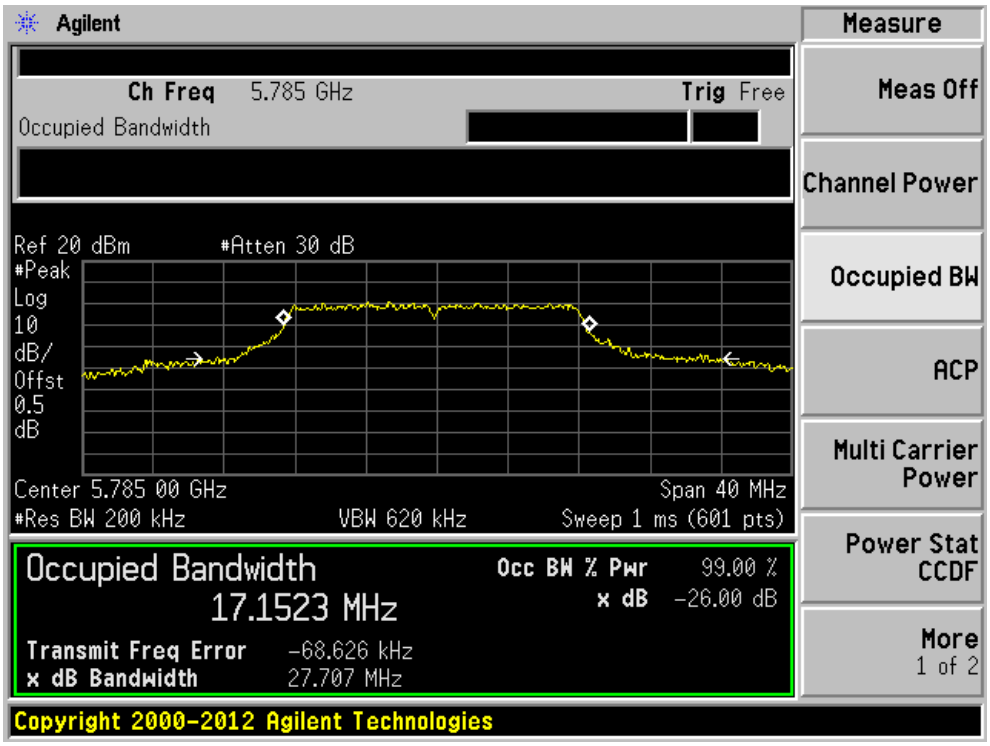
Band I 11ac(HT80) CH42



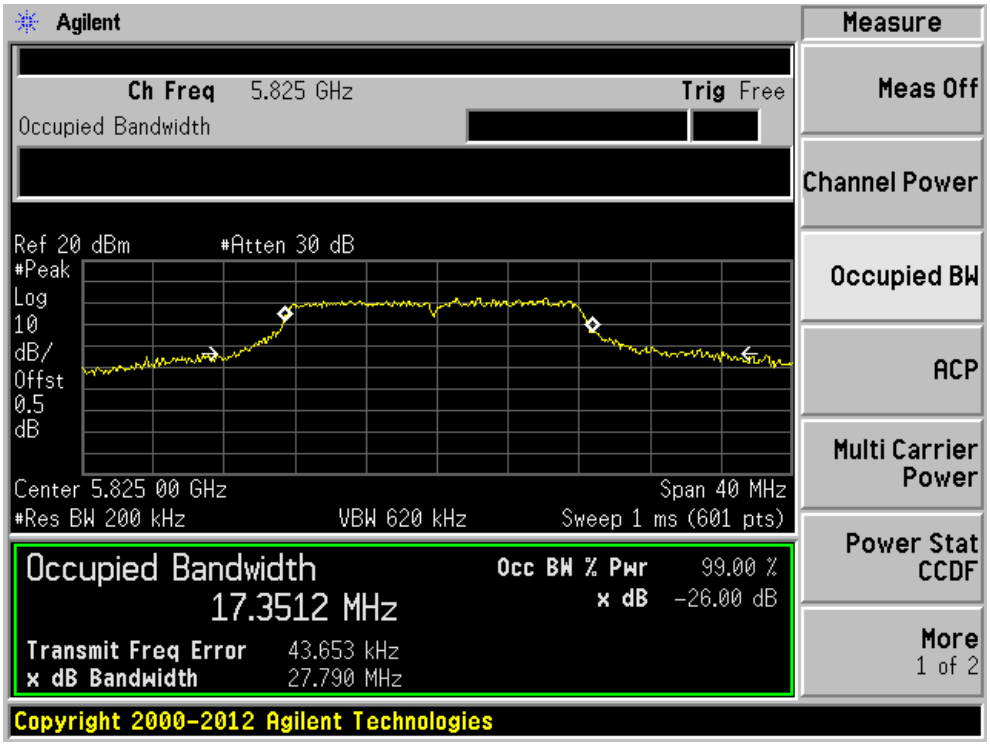
Band IV 11a CH149



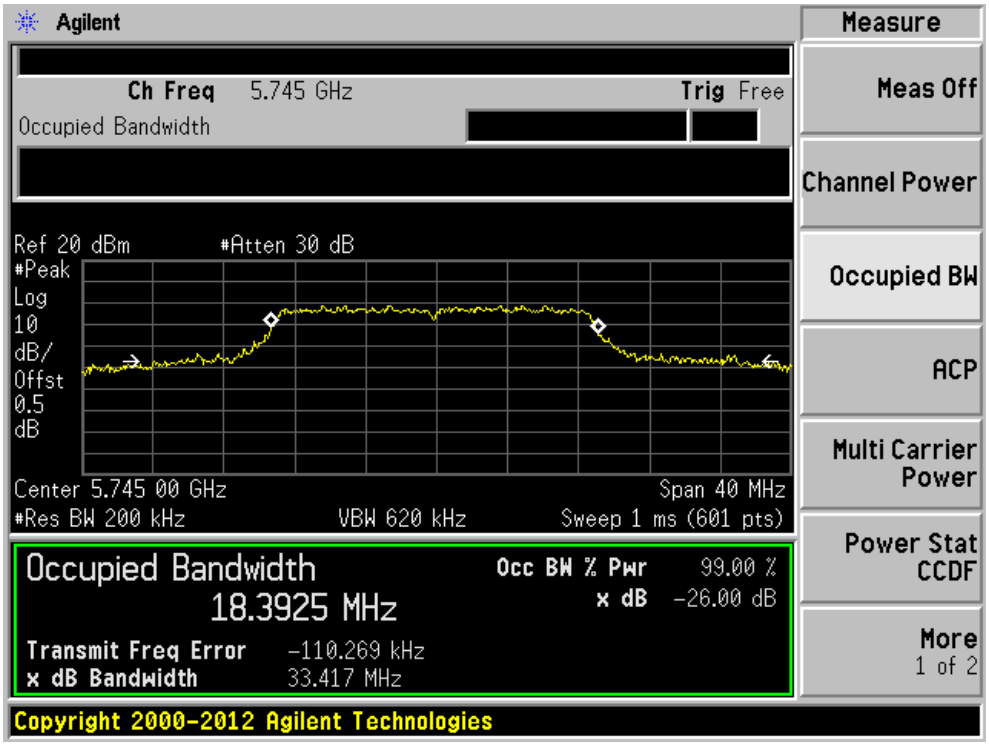
Band IV 11a CH157



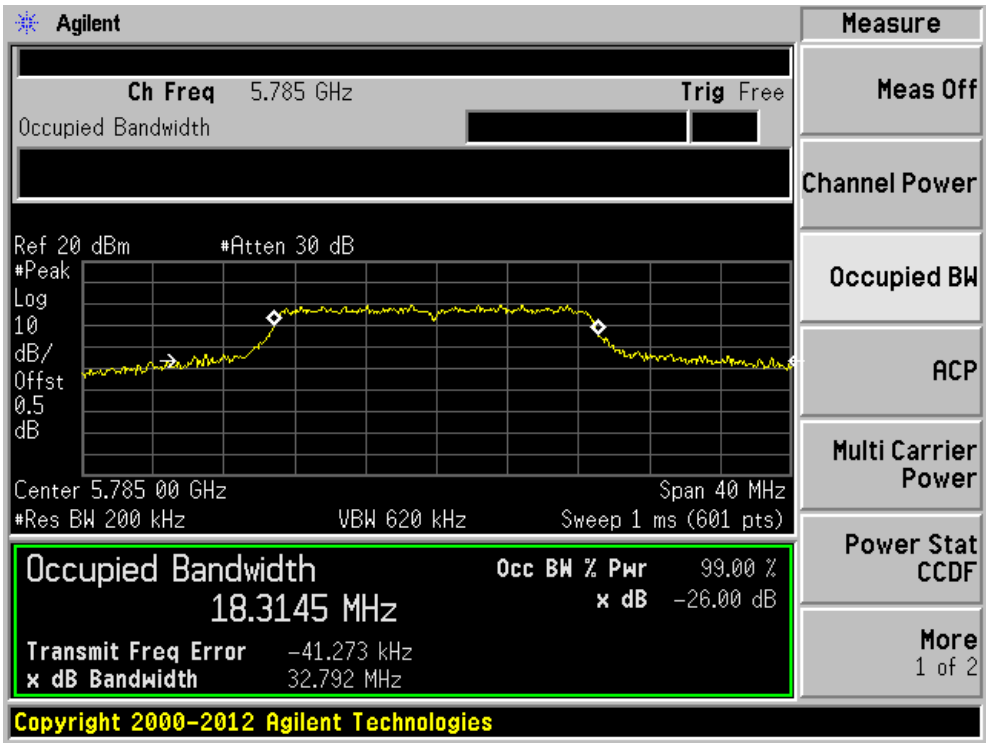
Band IV 11a CH161



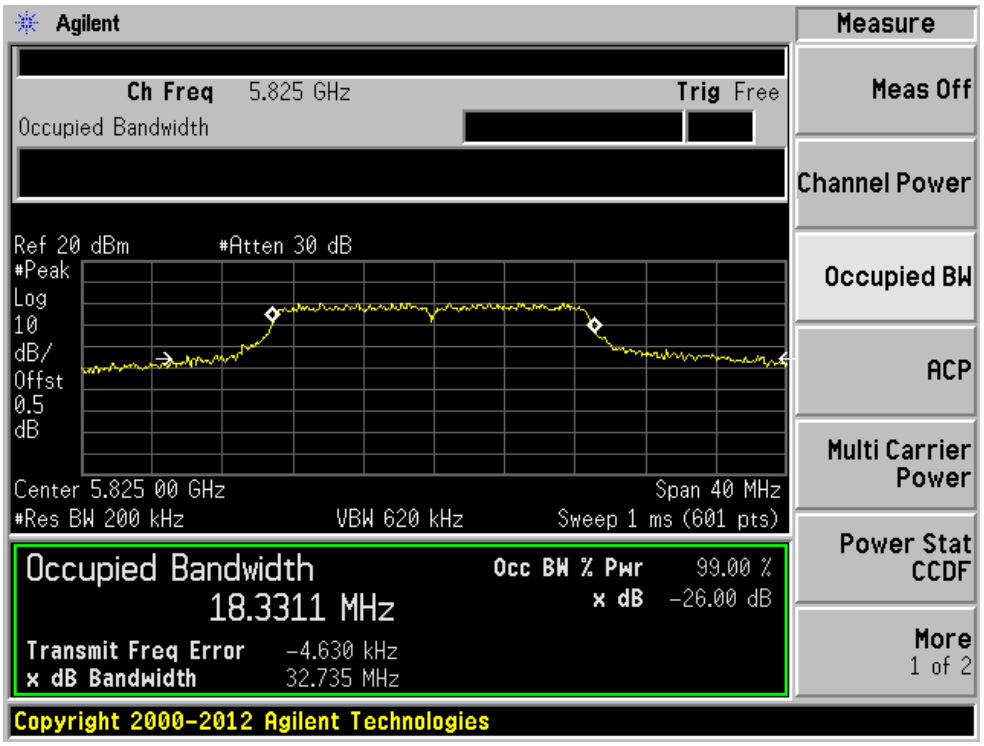
Band IV 11n(HT20) CH149



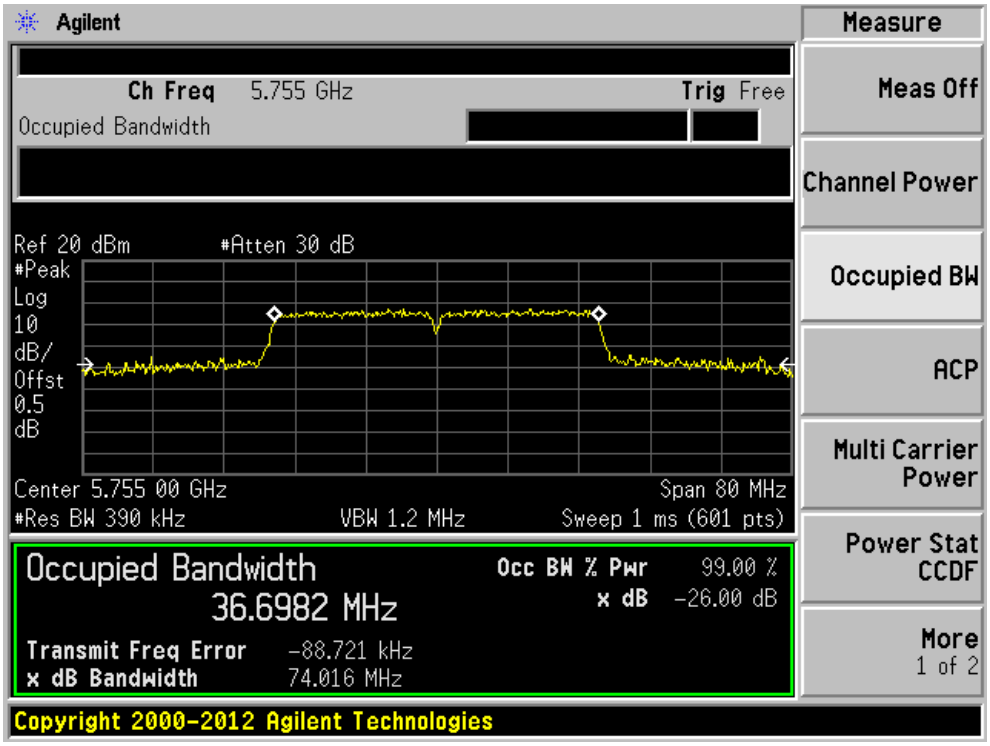
Band IV 11n(HT20) CH157



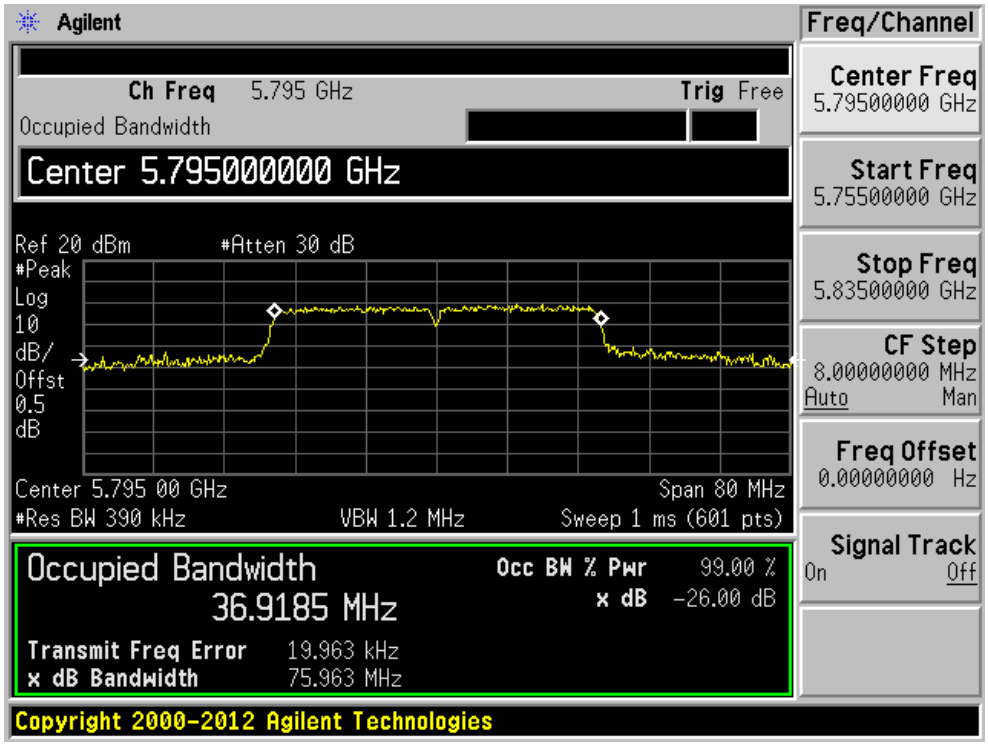
Band IV 11n(HT20) CH161



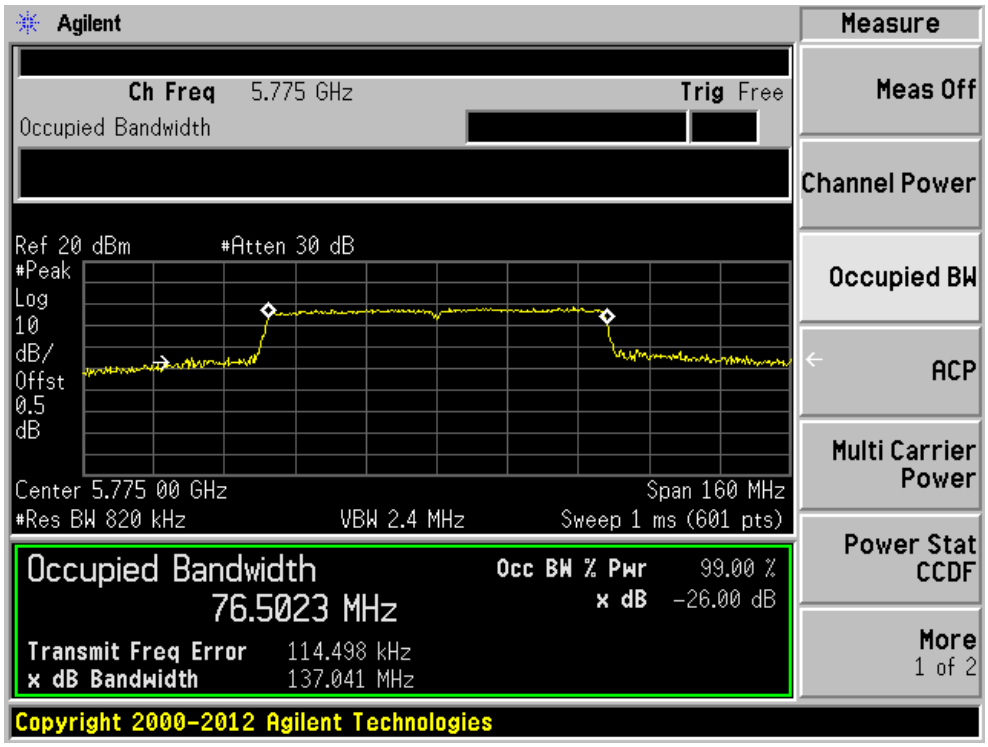
Band IV 11n(HT40) CH151



Band IV 11n(HT40) CH159



Band IV 11ac(HT80) CH155



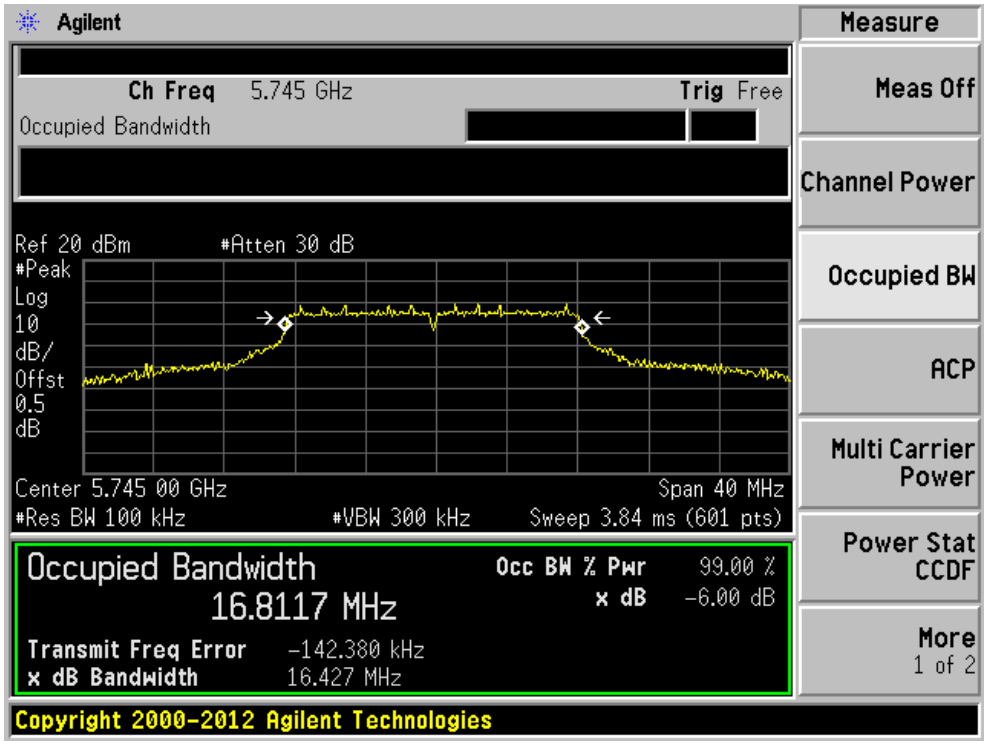
A.3 6 dB Bandwidth

Test Data

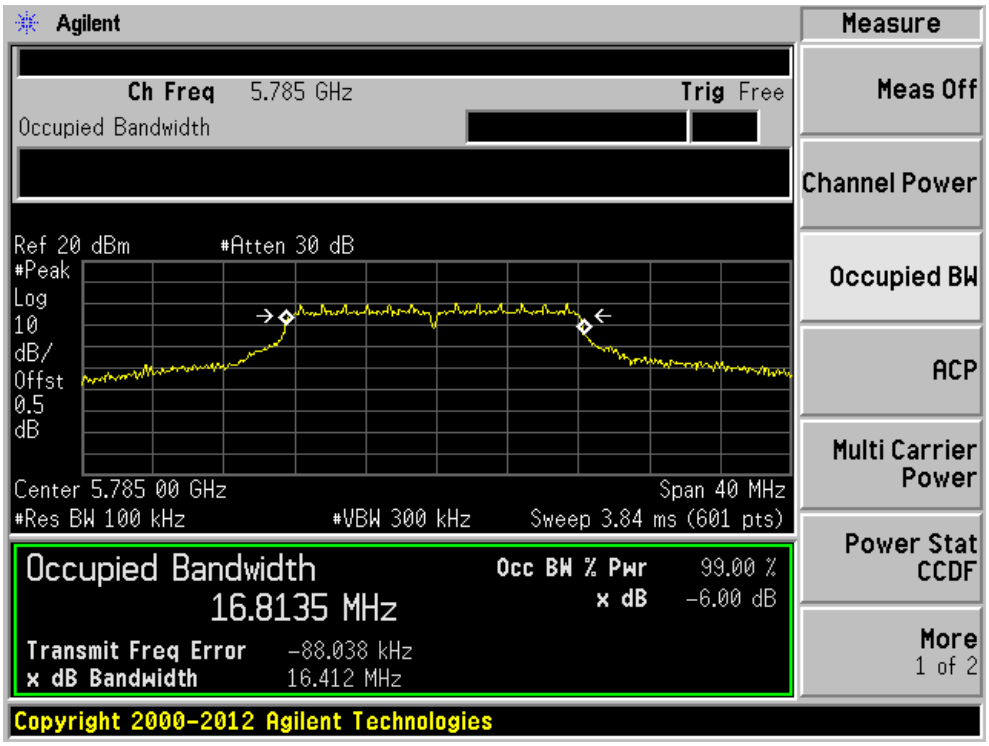
Band IV (5725 - 5850 MHz)					
Mode	Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)	Verdict
11a	CH149	5745	16.43	>0.5	Pass
11a	CH157	5785	16.81	>0.5	Pass
11a	CH161	5825	16.39	>0.5	Pass
11n (HT20)	CH149	5745	17.61	>0.5	Pass
11n (HT20)	CH157	5785	17.62	>0.5	Pass
11n (HT20)	CH161	5825	17.62	>0.5	Pass
11n (HT40)	CH151	5755	36.37	>0.5	Pass
11n (HT40)	CH159	5795	36.42	>0.5	Pass
11ac (HT80)	CH155	5775	75.98	>0.5	Pass

Test Plots

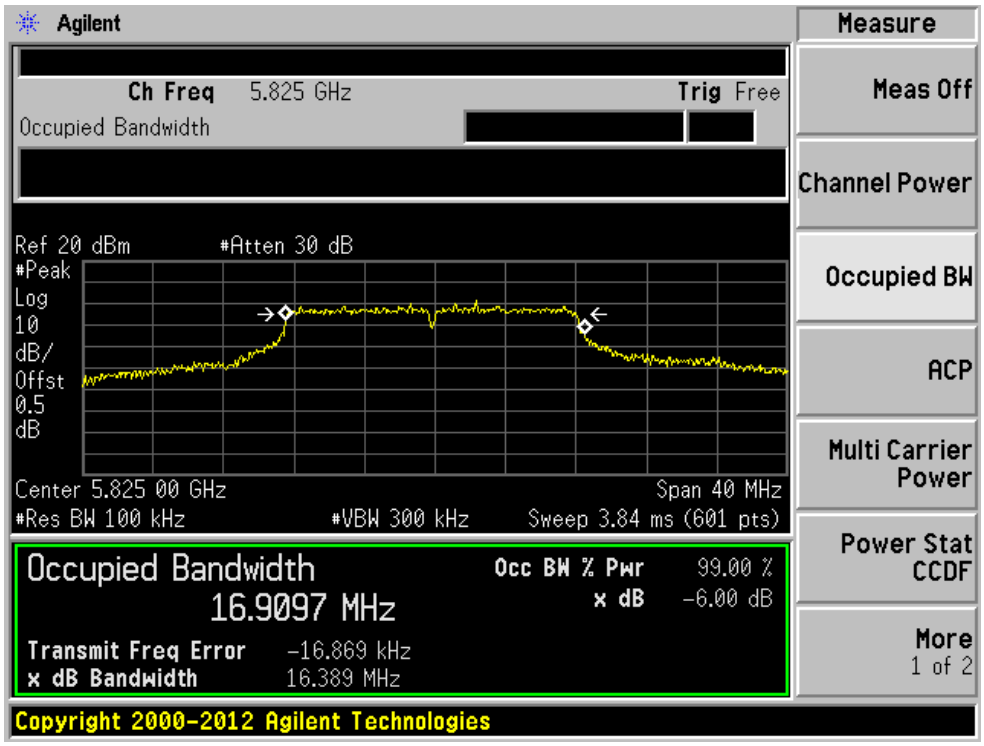
Band IV 11a CH149



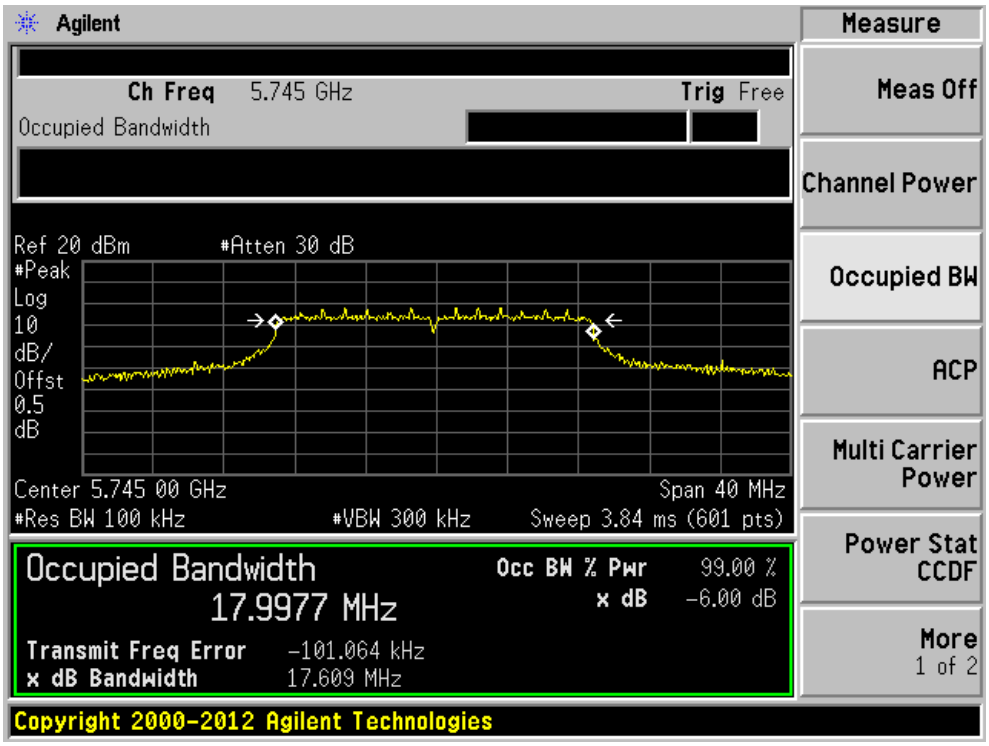
Band IV 11a CH157



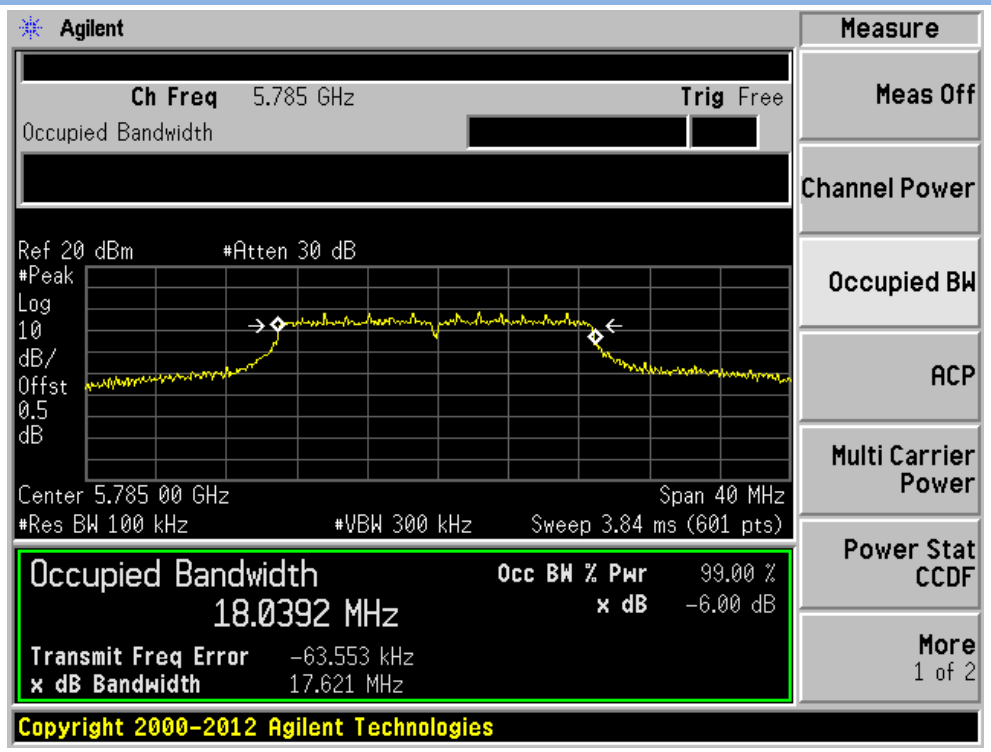
Band IV 11a CH161



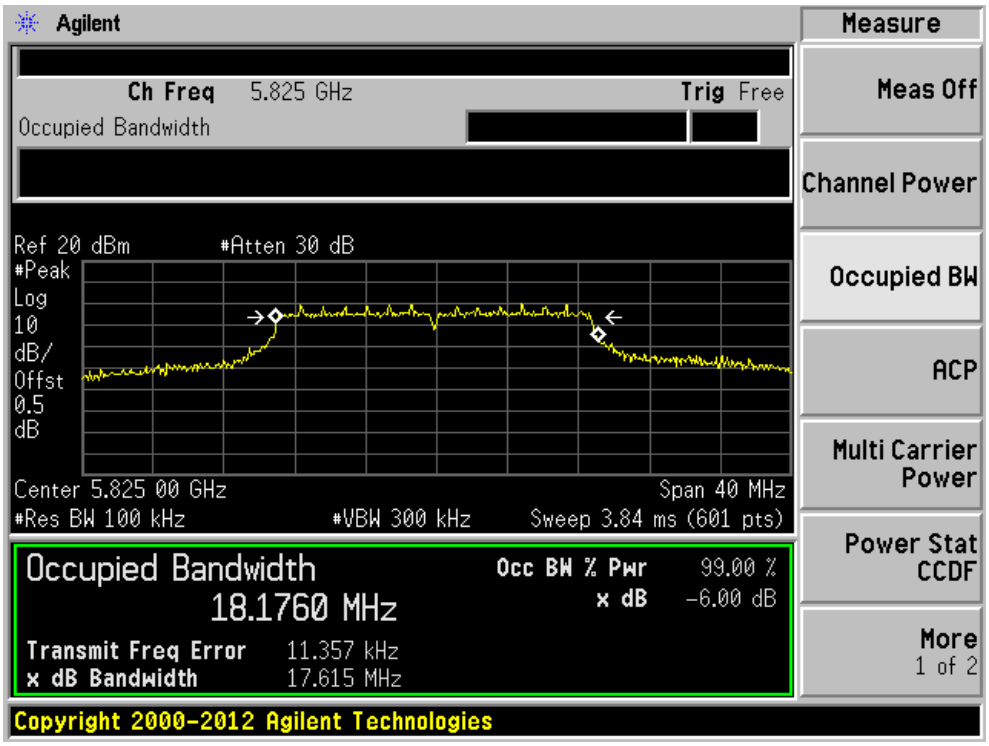
Band IV 11n(HT20) CH149



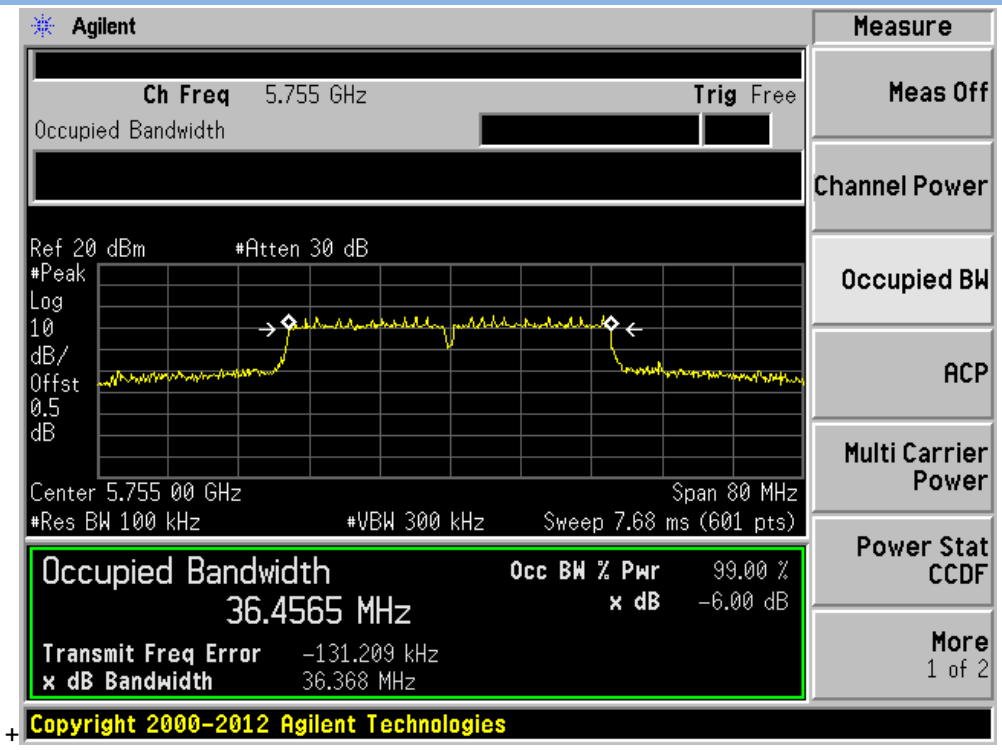
Band IV 11n(HT20) CH157



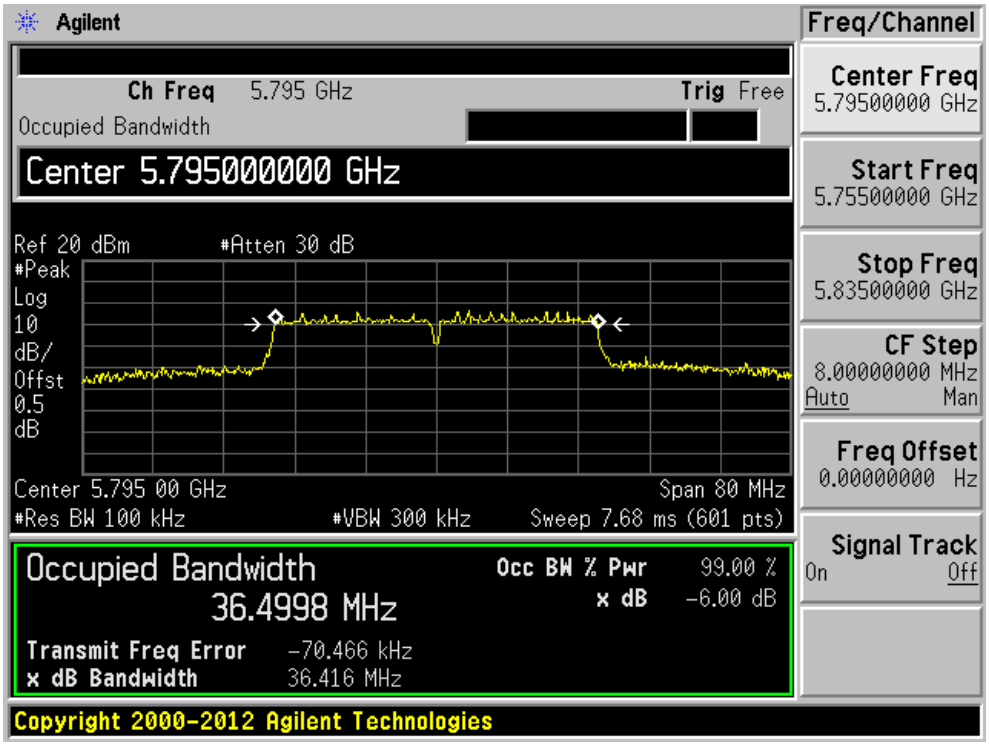
Band IV 11n(HT20) CH161



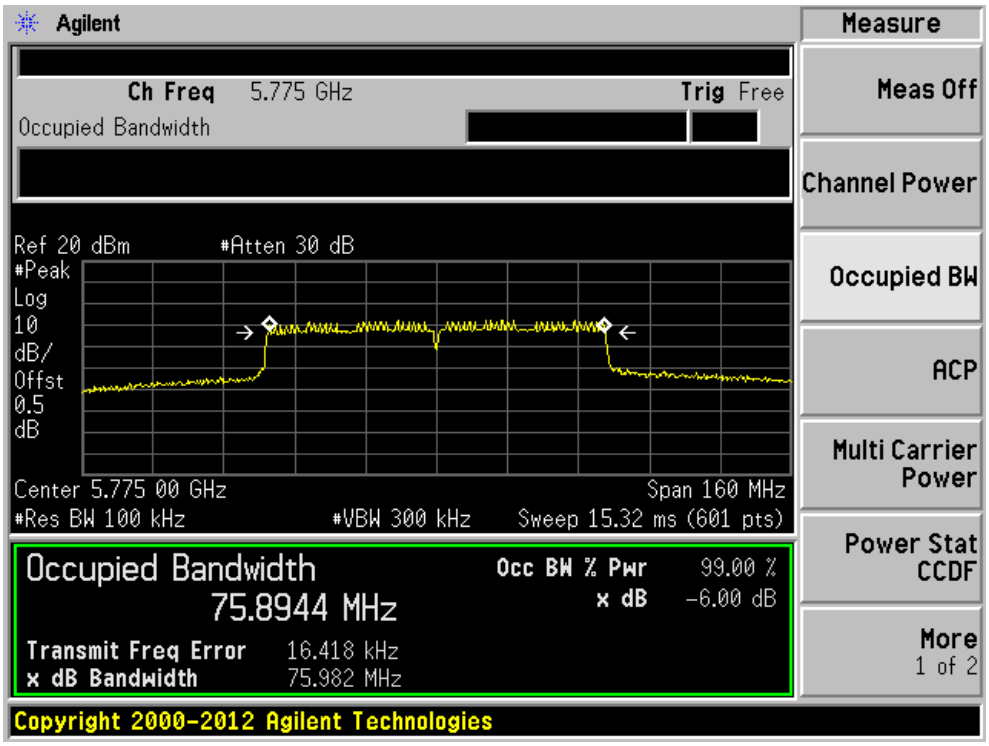
Band IV 11n(HT40) CH151



Band IV 11n(HT40) CH159



Band IV 11ac(HT80) CH155



A.4 Power Spectral Density

Test Data

Note 1: The RBW used in Band IV is 510 kHz, and the PSD factor is: 10*log (500 kHz/RBW) =-0.086 dBm.

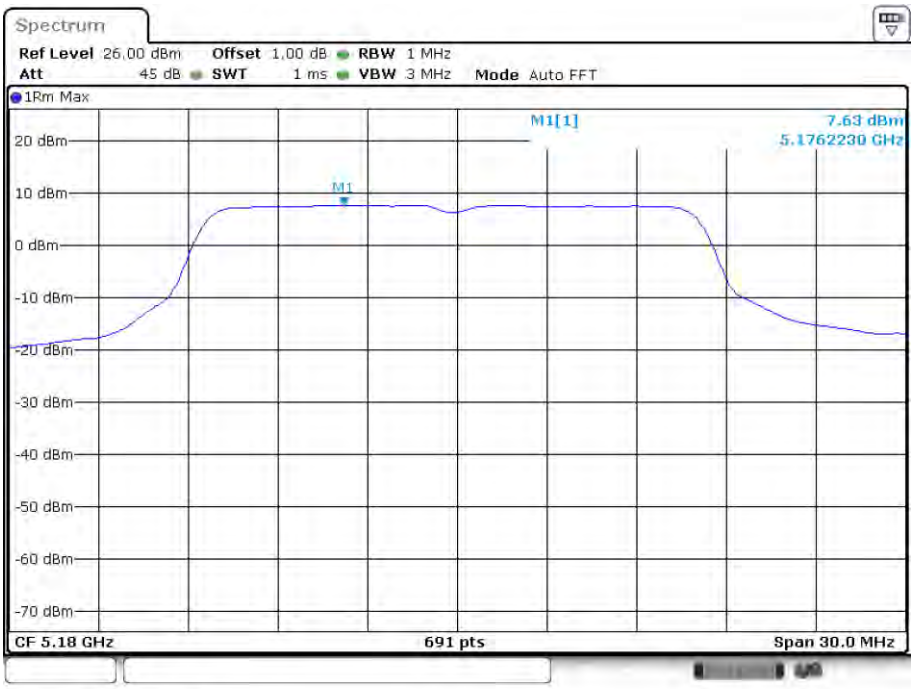
Note 2: All modes were tested but only the worst data of channel was reported in this report.

Band I (5150 - 5250 MHz)							
Mode	Channel	Frequency (MHz)	PSD (dBm/ 510 kHz)	PSD factor	PSD (dBm/ 500 kHz)	Limit(dBm/ MHz)	Verdict
11a	CH36	5180	**7.63**	-0.086	7.54	**11**	Pass
11a	CH40	5200	7.52	-0.086	7.43	11	Pass
11a	CH48	5240	7.23	-0.086	7.14	11	Pass
11n (HT20)	CH36	5180	**7.39**	-0.086	7.30	**11**	Pass
11n (HT20)	CH40	5200	7.32	-0.086	7.23	11	Pass
11n (HT20)	CH48	5240	7.01	-0.086	6.92	11	Pass
11n (HT40)	CH38	5190	**6.39**	-0.086	6.30	**11**	Pass
11n (HT40)	CH46	5230	2.16	-0.086	2.07	11	Pass
11ac (HT80)	CH42	5210	**10.63**	-0.086	10.54	**11**	Pass

Band IV (5725 - 5850 MHz)							
Mode	Channel	Frequency (MHz)	PSD (dBm/ 510 kHz)	PSD factor	PSD (dBm/ 500 kHz)	Limit(dBm/ 500 kHz)	Verdict
11a	CH149	5745	3.81	-0.086	3.72	30	Pass
11a	CH157	5785	4.1	-0.086	4.01	30	Pass
11a	CH161	5825	**5.82**	-0.086	5.73	30	Pass
11n (HT20)	CH149	5745	2.84	-0.086	2.75	30	Pass
11n (HT20)	CH157	5785	2.86	-0.086	2.77	30	Pass
11n (HT20)	CH161	5825	**4.08**	-0.086	3.99	30	Pass
11n (HT40)	CH151	5755	-1.07	-0.086	-1.16	30	Pass
11n (HT40)	CH159	5795	**0.57**	-0.086	0.48	30	Pass
11ac (HT80)	CH155	5775	**-2.88**	-0.086	-2.97	30	Pass

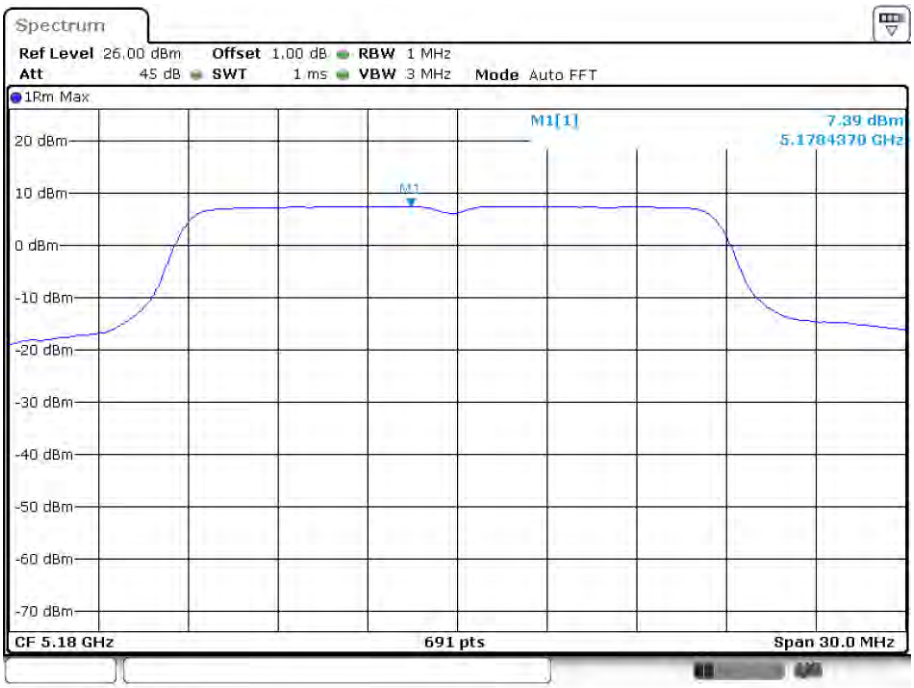
Test Plots (Conducted PSD)

Band I 11a CH36



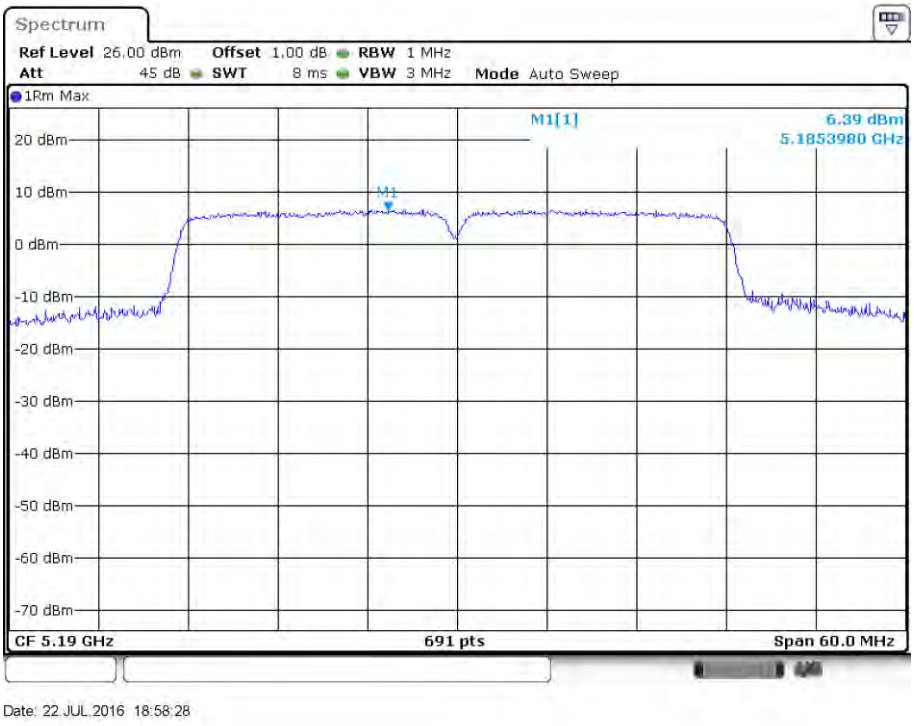
Date: 22.JUL.2016 18:45:34

Band I 11n (HT 20) CH36

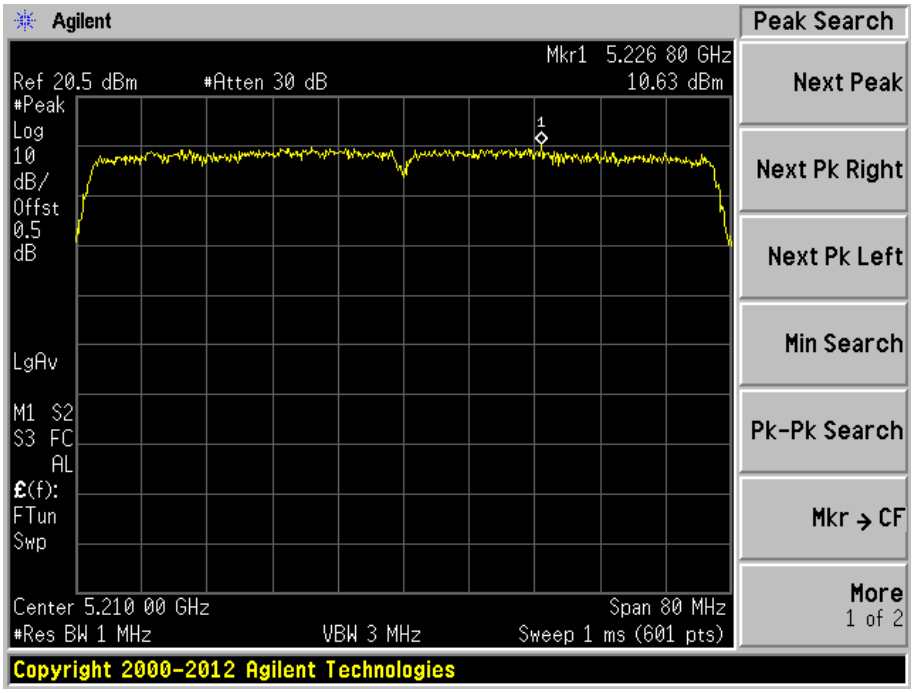


Date: 22.JUL.2016 18:50:27

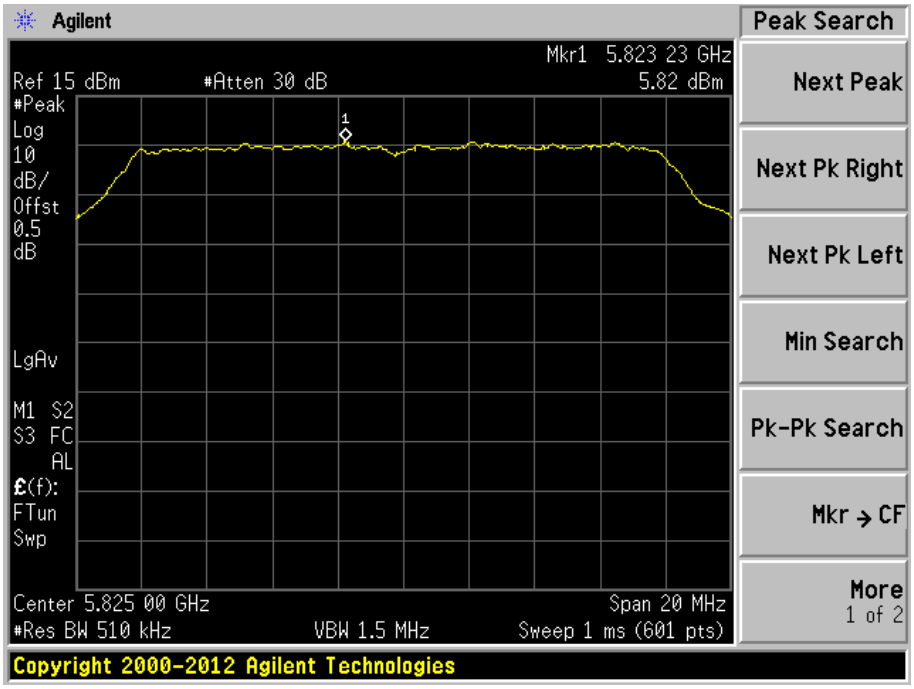
Band I 11n (HT 40) CH38



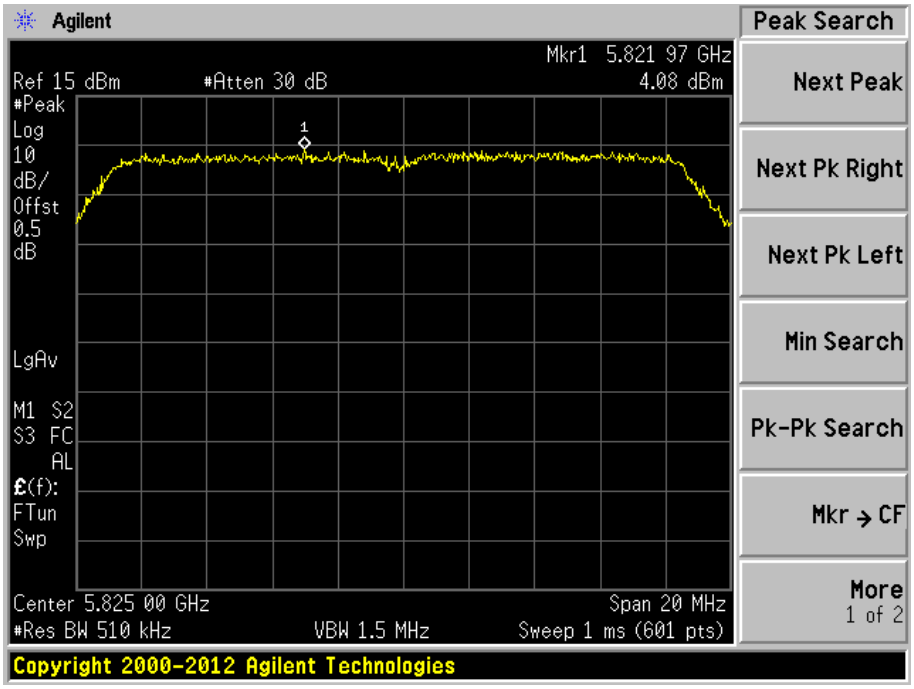
Band I 11ac (HT 80) CH42



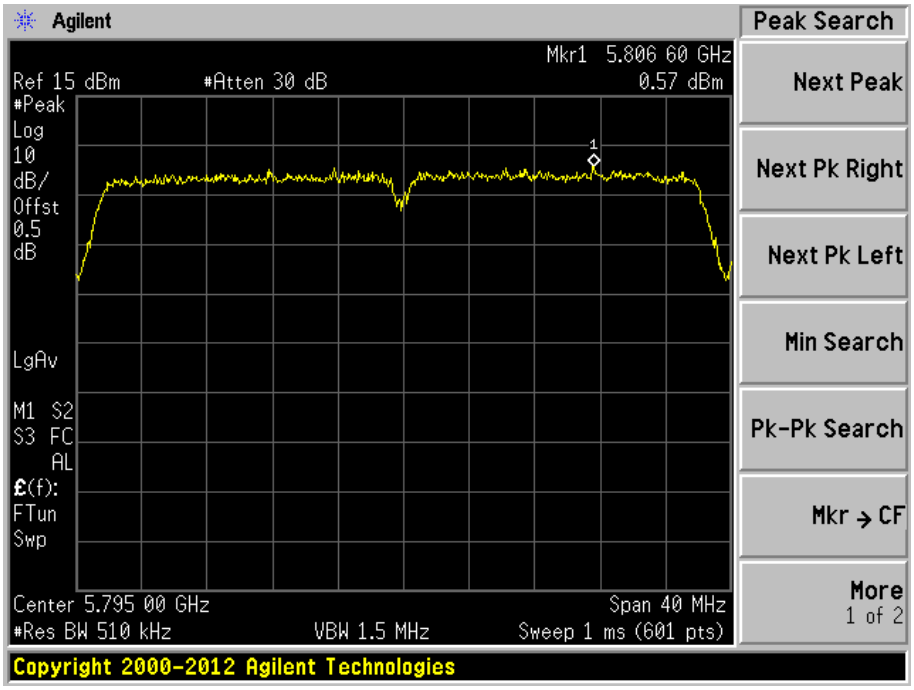
Band IV 11a CH161



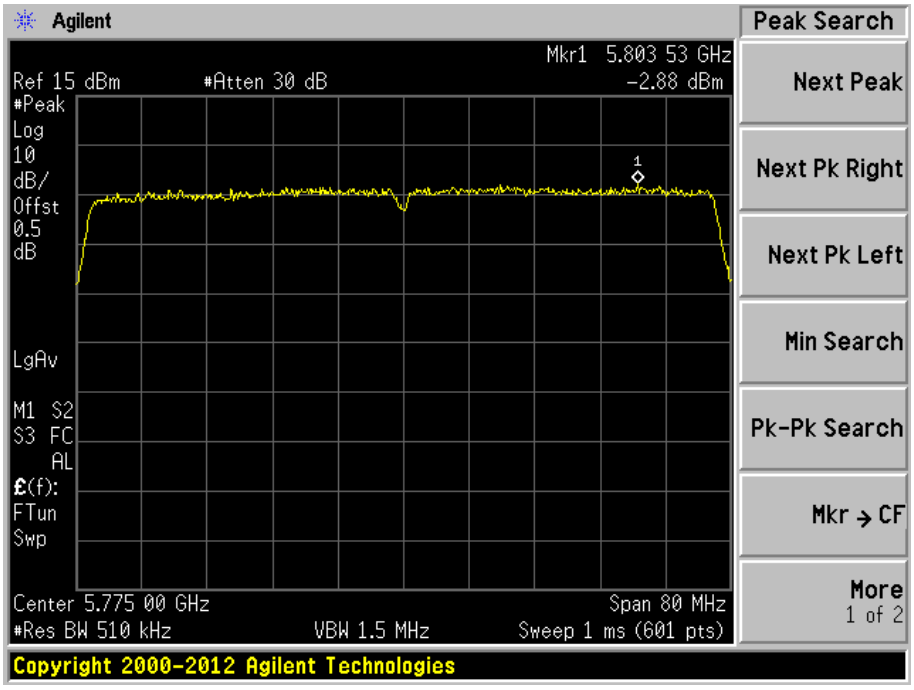
Band IV 11n (HT 20) CH161



Band IV 11n (HT 40) CH159



Band IV 11ac (HT 80) CH42

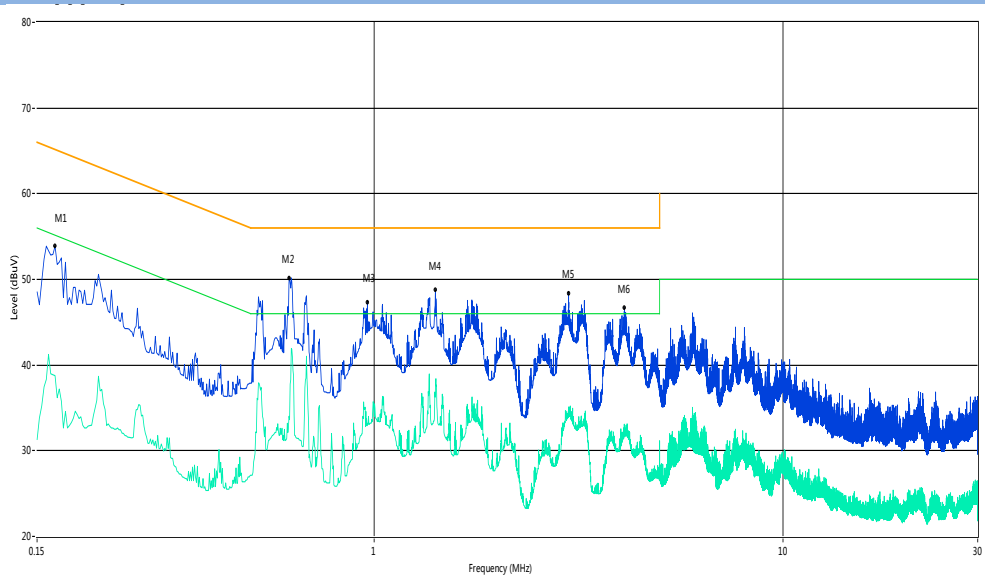


A.5 Conducted Emissions

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

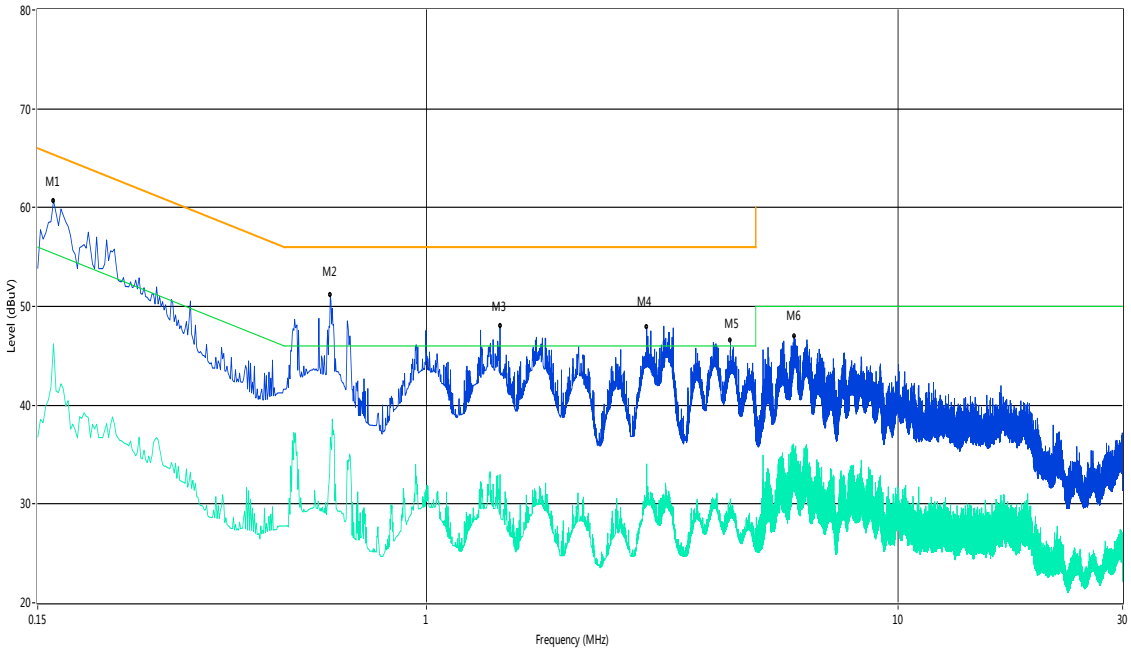
Test Data and Plots

PHASE L



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.17	53.9	11.00	65.5	11.60	Peak	L Line	Pass
1**	0.17	38.8	11.00	55.5	16.70	AV	L Line	Pass
2	0.62	50.2	11.00	56.0	5.80	Peak	L Line	Pass
2**	0.62	33.6	11.00	46.0	12.40	AV	L Line	Pass
3	0.96	47.3	11.00	56.0	8.70	Peak	L Line	Pass
3**	0.96	32.3	11.00	46.0	13.70	AV	L Line	Pass
4	1.41	48.8	11.00	56.0	7.20	Peak	L Line	Pass
4**	1.41	37.1	11.00	46.0	8.90	AV	L Line	Pass
5	2.99	48.4	11.00	56.0	7.60	Peak	L Line	Pass
5**	2.99	34.5	11.00	46.0	11.50	AV	L Line	Pass
6	4.10	46.7	11.00	56.0	9.30	Peak	L Line	Pass
6**	4.10	32.1	11.00	46.0	13.90	AV	L Line	Pass

PHASE N

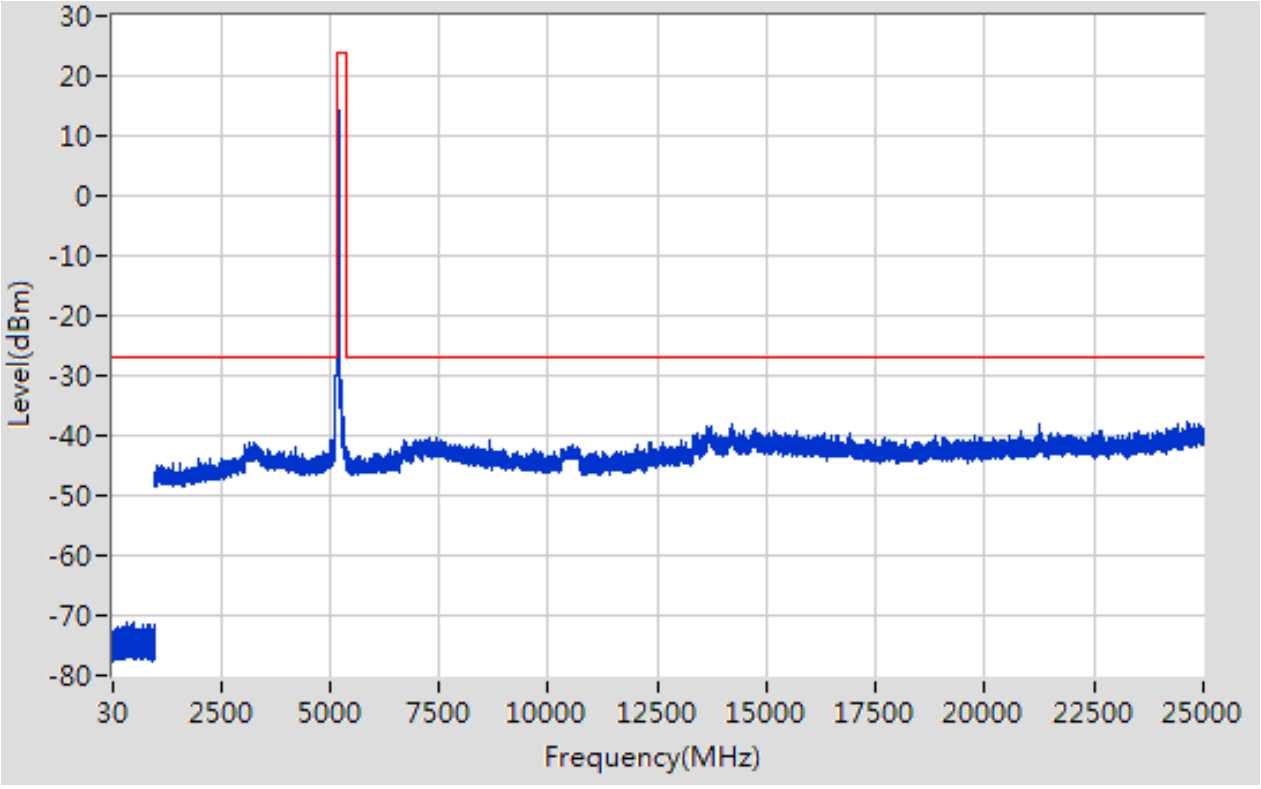


No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.16	60.7	11.00	65.7	5.00	Peak	N Line	Pass
1**	0.16	46.2	11.00	55.7	9.50	AV	N Line	Pass
2	0.63	51.1	11.00	56.0	4.90	Peak	N Line	Pass
2**	0.63	36.8	11.00	46.0	9.20	AV	N Line	Pass
3	1.43	48.0	11.00	56.0	8.00	Peak	N Line	Pass
3**	1.43	33.0	11.00	46.0	13.00	AV	N Line	Pass
4	2.94	47.9	11.00	56.0	8.10	Peak	N Line	Pass
4**	2.94	34.1	11.00	46.0	11.90	AV	N Line	Pass
5	4.42	46.6	11.00	56.0	9.40	Peak	N Line	Pass
5**	4.42	29.8	11.00	46.0	16.20	AV	N Line	Pass
6	6.03	46.9	11.00	60.0	13.10	Peak	N Line	Pass
6**	6.03	33.9	11.00	50.0	16.10	AV	N Line	Pass

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

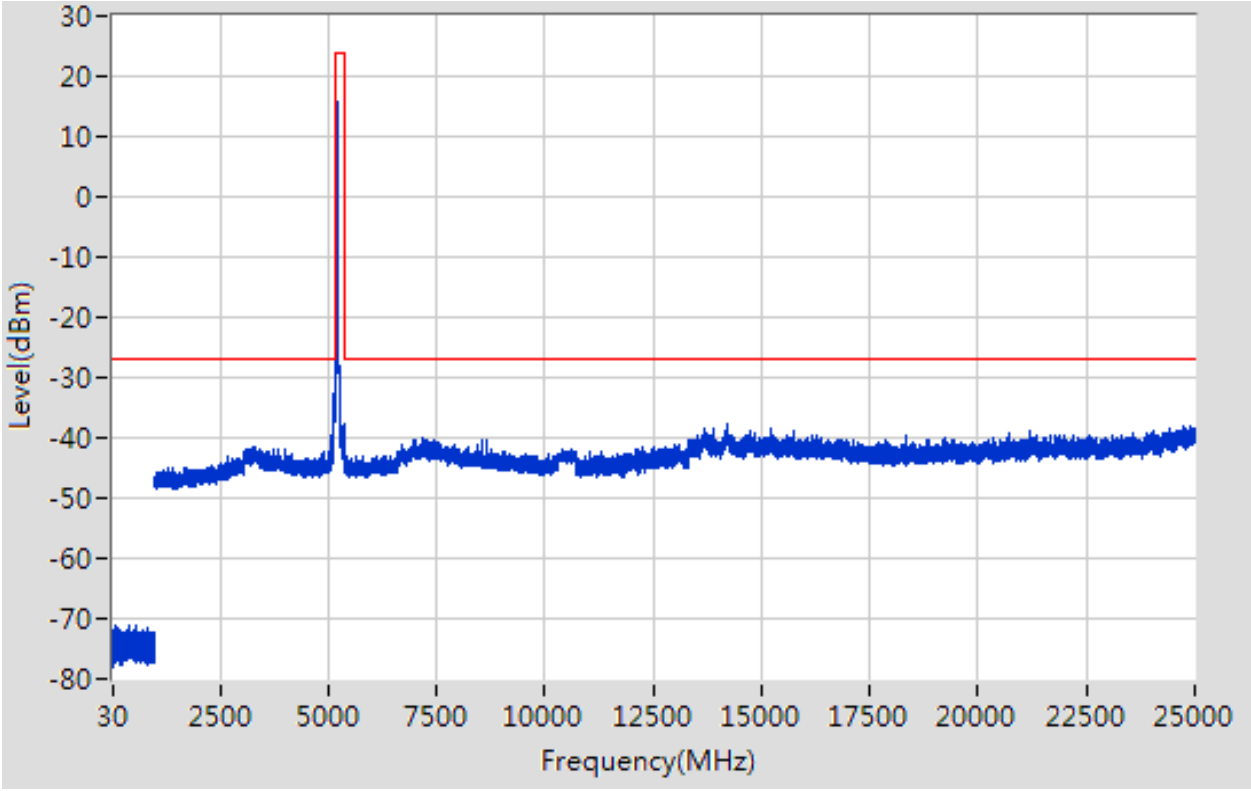
Band I 11a CH36 (30 MHz ~ 25 GHz)

Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	1000	0.1	Peak	487.856	-71.110	-27	Pass	9699
1000	5150	1	Peak	5148.000	-27.330	-27	Pass	4150
5150	5350	1	Peak	5183.500	16.100	24	Pass	401
5350	10300	1	Peak	7263.387	-40.380	-27	Pass	4950
10300	10700	1	Peak	10542.000	-41.700	-27	Pass	401
10700	25000	1	Peak	24635.940	-37.710	-27	Pass	14300



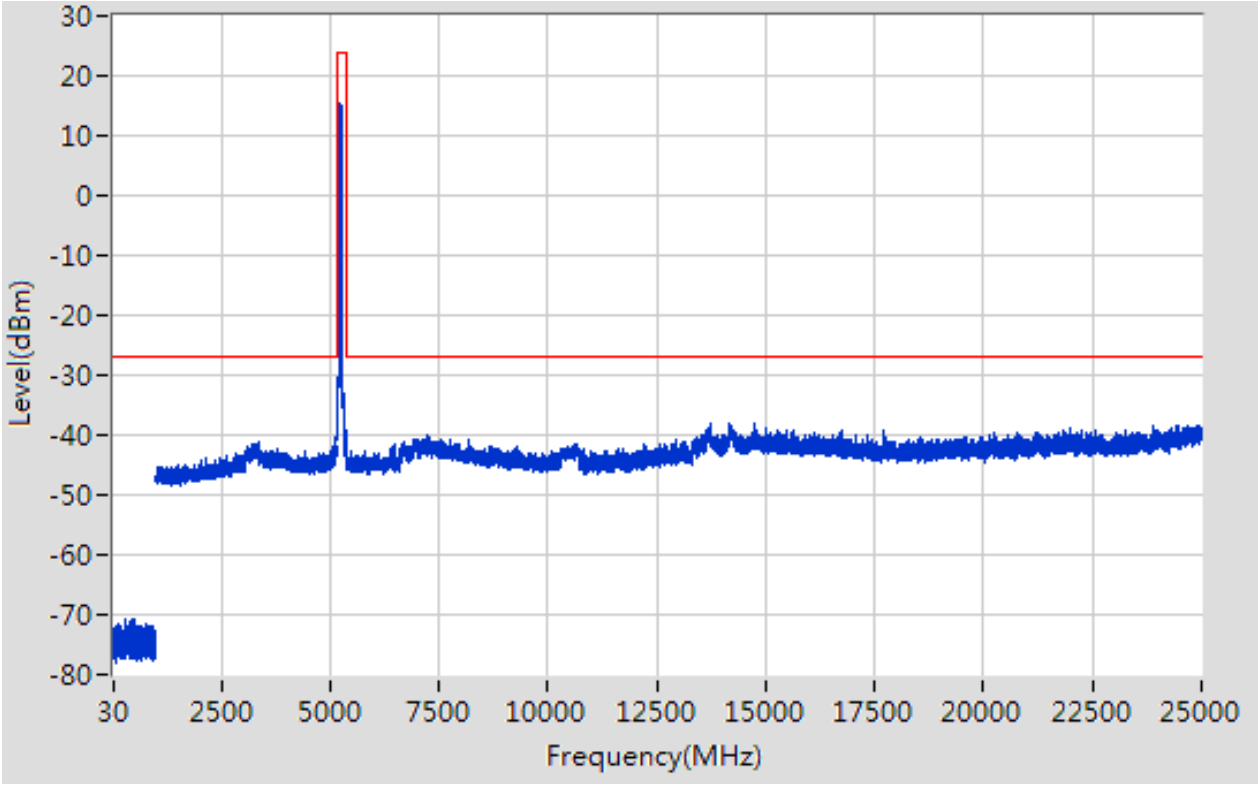
Band I 11a CH40 (30 MHz ~ 25 GHz)

Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	1000	0.1	Peak	392.144	-71.300	-27	Pass	9699
1000	5150	1	Peak	5150.000	-30.640	-27	Pass	4150
5150	5350	1	Peak	5198.000	15.950	24	Pass	401
5350	10300	1	Peak	5352.000	-37.560	-27	Pass	4950
10300	10700	1	Peak	10396.000	-41.980	-27	Pass	401
10700	25000	1	Peak	14201.427	-37.850	-27	Pass	14300



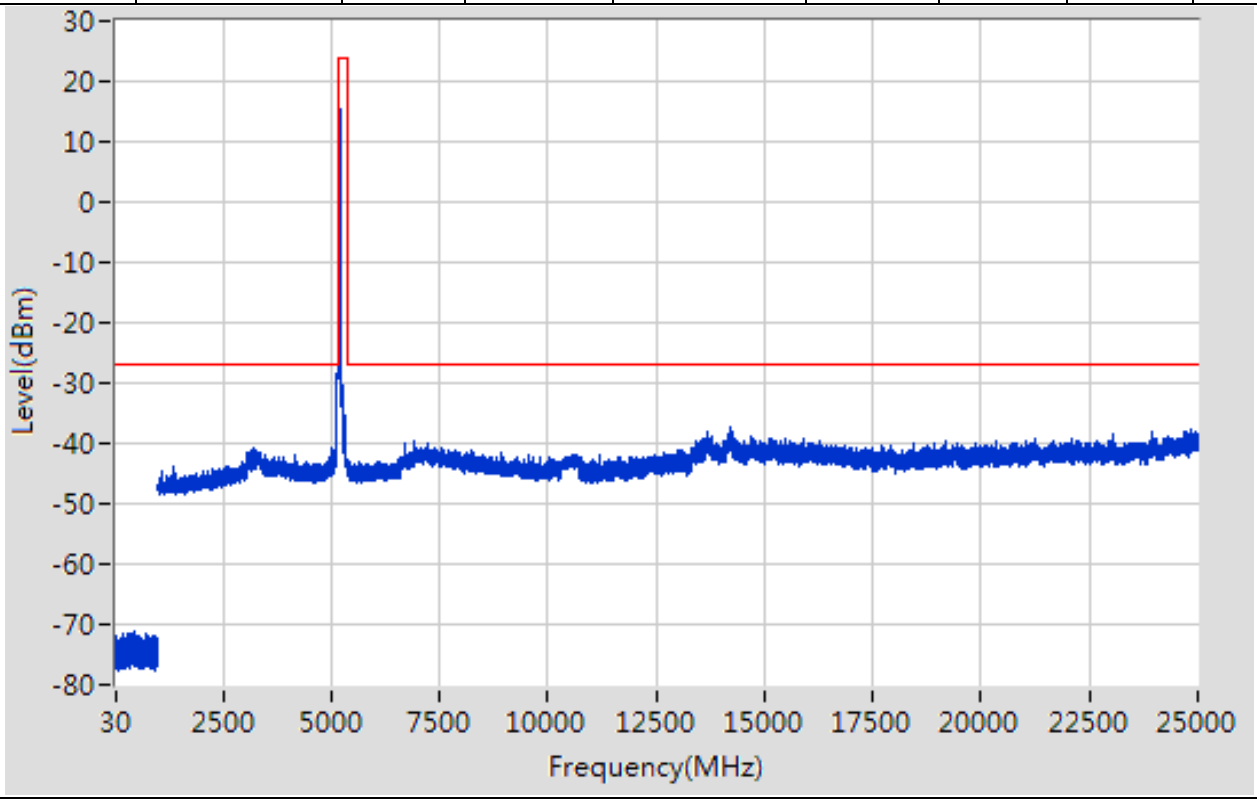
Band I 11a CH48 (30 MHz ~ 25 GHz)

Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	1000	0.1	Peak	506.358	-70.640	-27	Pass	9699
1000	5150	1	Peak	5087.985	-40.270	-27	Pass	4150
5150	5350	1	Peak	5238.000	15.280	24	Pass	401
5350	10300	1	Peak	5384.007	-39.400	-27	Pass	4950
10300	10700	1	Peak	10661.000	-41.560	-27	Pass	401
10700	25000	1	Peak	14724.491	-37.890	-27	Pass	14300



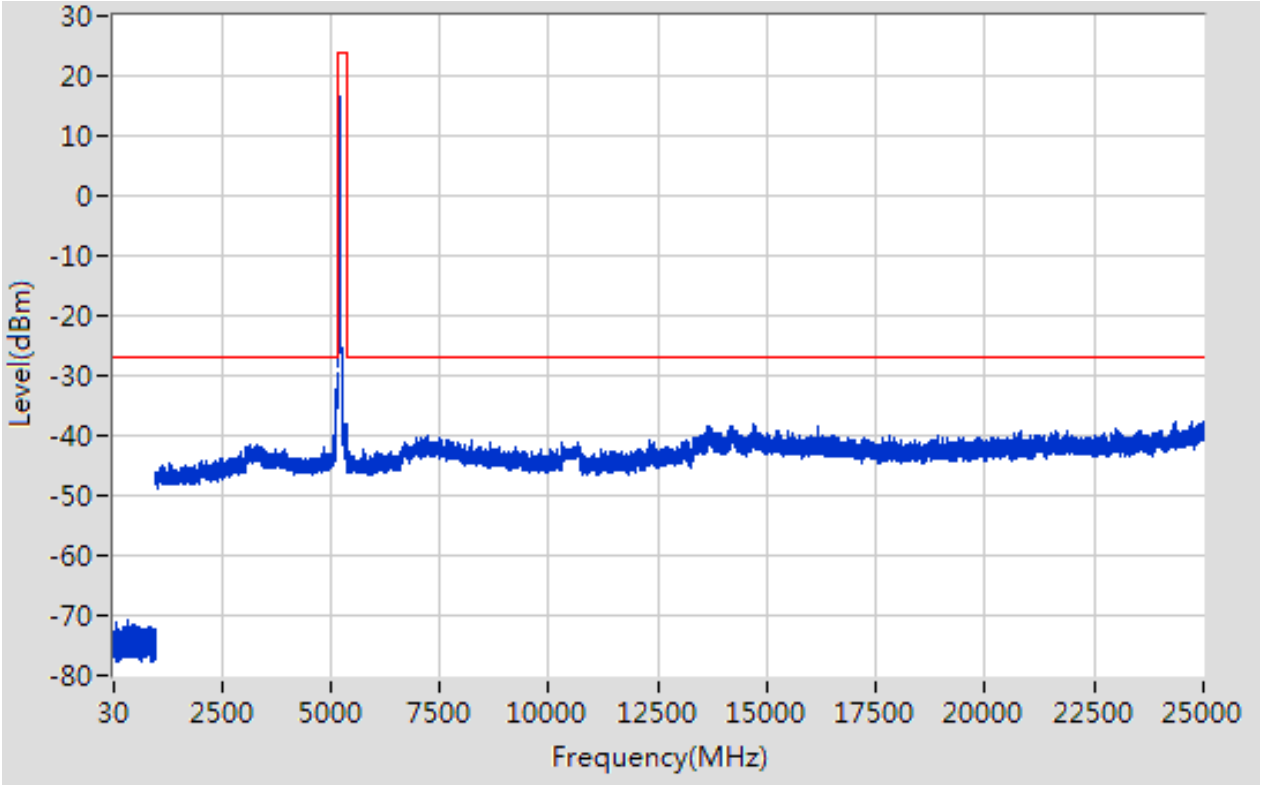
Band I 11n (HT20) CH36 (30 MHz ~ 25 GHz)

Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	1000	0.1	Peak	467.453	-71.130	-27	Pass	9699
1000	5150	1	Peak	5149.000	-27.560	-27	Pass	4150
5150	5350	1	Peak	5178.000	16.670	24	Pass	401
5350	10300	1	Peak	6904.314	-39.430	-27	Pass	4950
10300	10700	1	Peak	10574.000	-41.870	-27	Pass	401
10700	25000	1	Peak	14199.427	-37.160	-27	Pass	14300



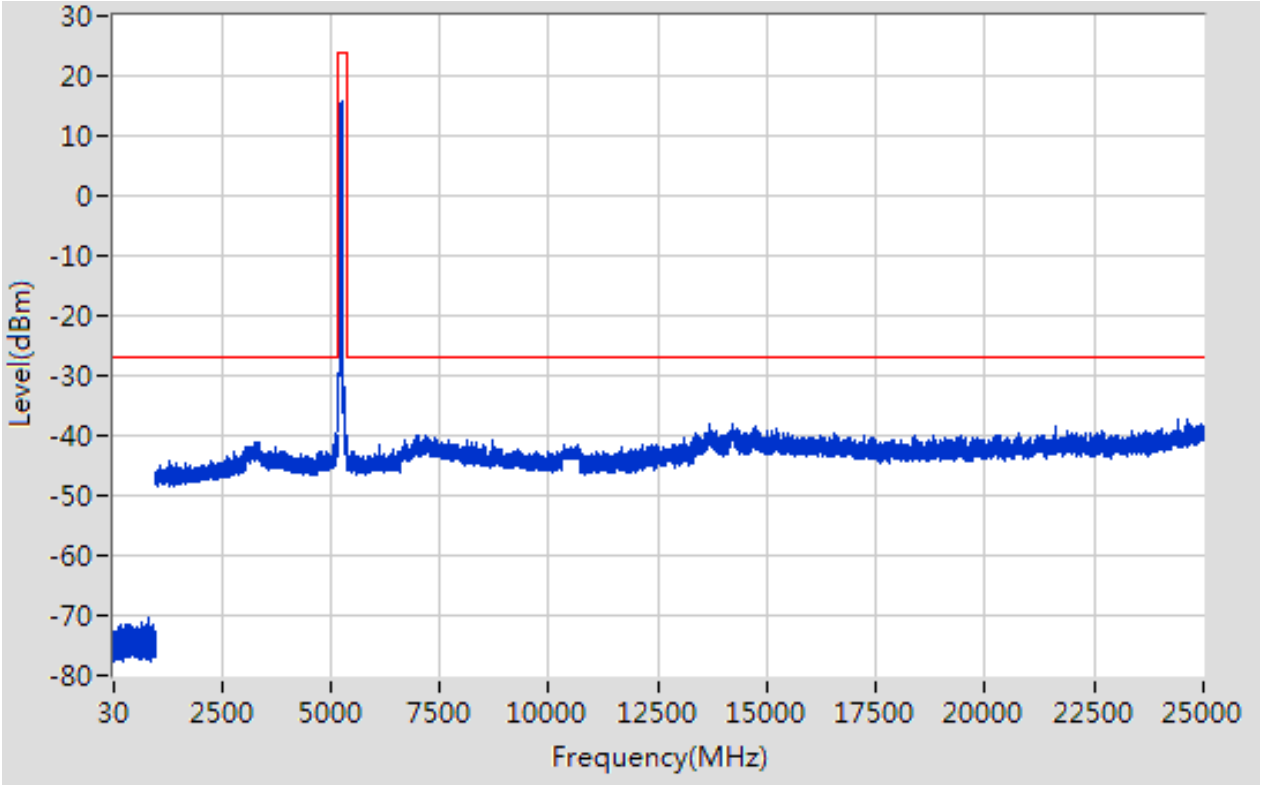
Band I 11n (HT20) CH40 (30 MHz ~ 25 GHz)

Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	1000	0.1	Peak	338.638	-70.950	-27	Pass	9699
1000	5150	1	Peak	5150.000	-29.470	-27	Pass	4150
5150	5350	1	Peak	5197.500	16.580	24	Pass	401
5350	10300	1	Peak	5355.001	-39.290	-27	Pass	4950
10300	10700	1	Peak	10318.000	-40.990	-27	Pass	401
10700	25000	1	Peak	24356.895	-37.500	-27	Pass	14300



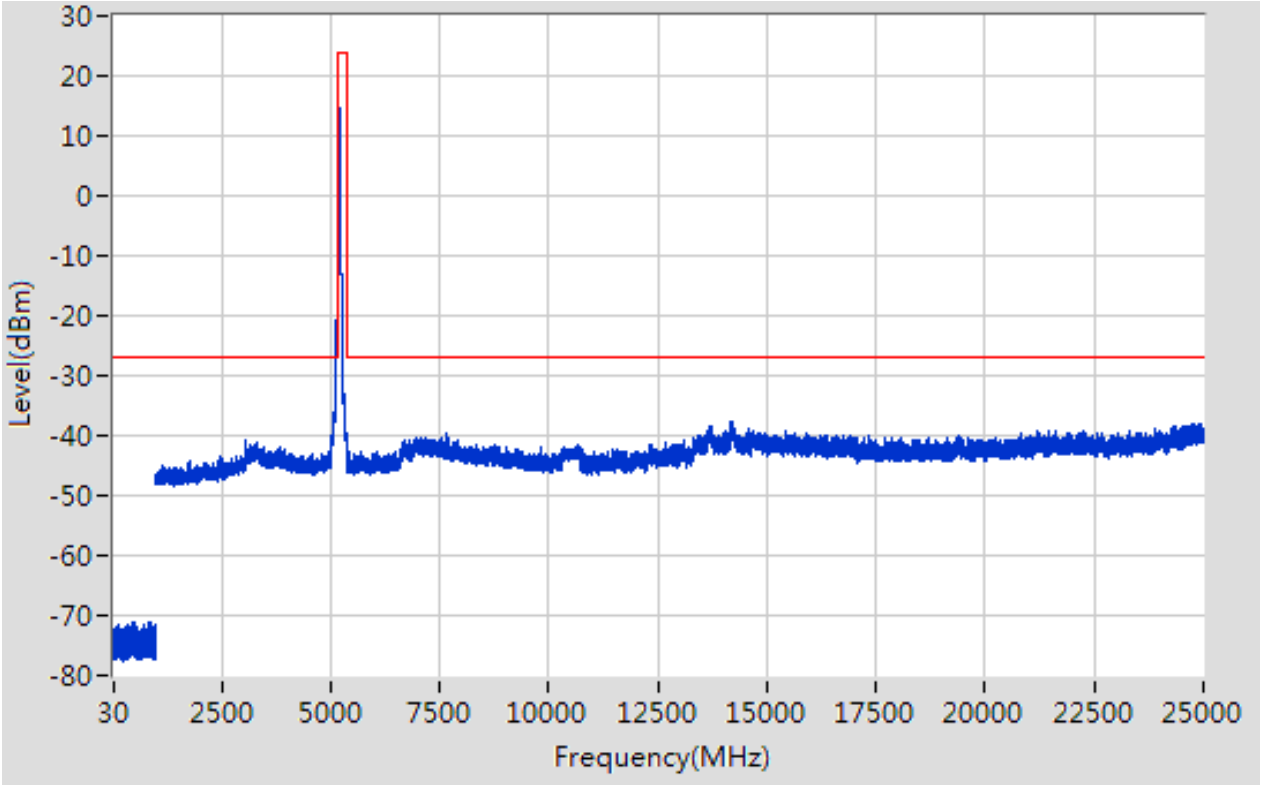
Band I 11n (HT20) CH48 (30 MHz ~ 25 GHz)

Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	1000	0.1	Peak	840.299	-70.220	-27	Pass	9699
1000	5150	1	Peak	5089.986	-39.690	-27	Pass	4150
5150	5350	1	Peak	5242.500	15.660	24	Pass	401
5350	10300	1	Peak	7197.373	-39.850	-27	Pass	4950
10300	10700	1	Peak	10649.000	-41.370	-27	Pass	401
10700	25000	1	Peak	24411.904	-37.360	-27	Pass	14300



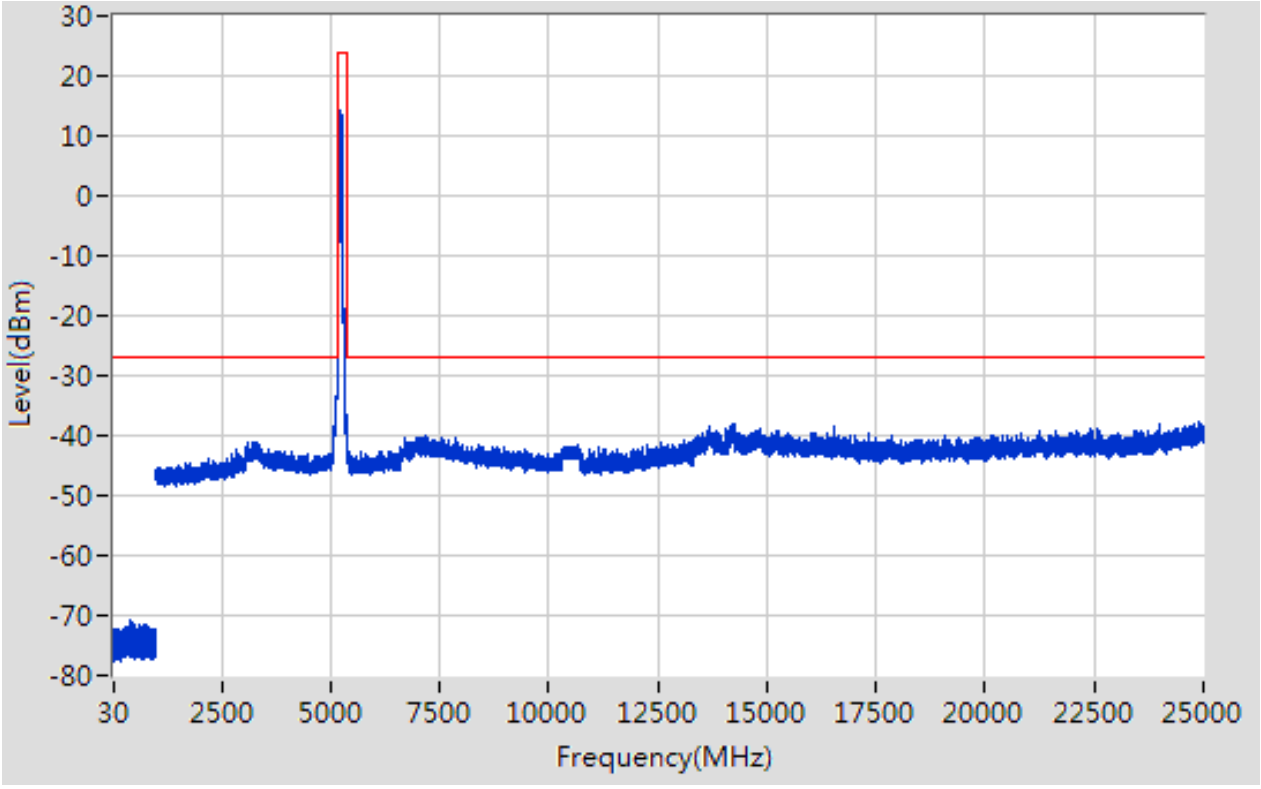
Band I 11n (HT40) CH38 (30 MHz ~ 25 GHz)

Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	1000	0.1	Peak	853.205	-71.020	-27	Pass	9699
1000	5150	1	Peak	5150.000	-27.720	-27	Pass	4150
5150	5350	1	Peak	5199.500	14.590	24	Pass	401
5350	10300	1	Peak	7625.460	-39.800	-27	Pass	4950
10300	10700	1	Peak	10667.000	-41.530	-27	Pass	401
10700	25000	1	Peak	14188.426	-37.870	-27	Pass	14300



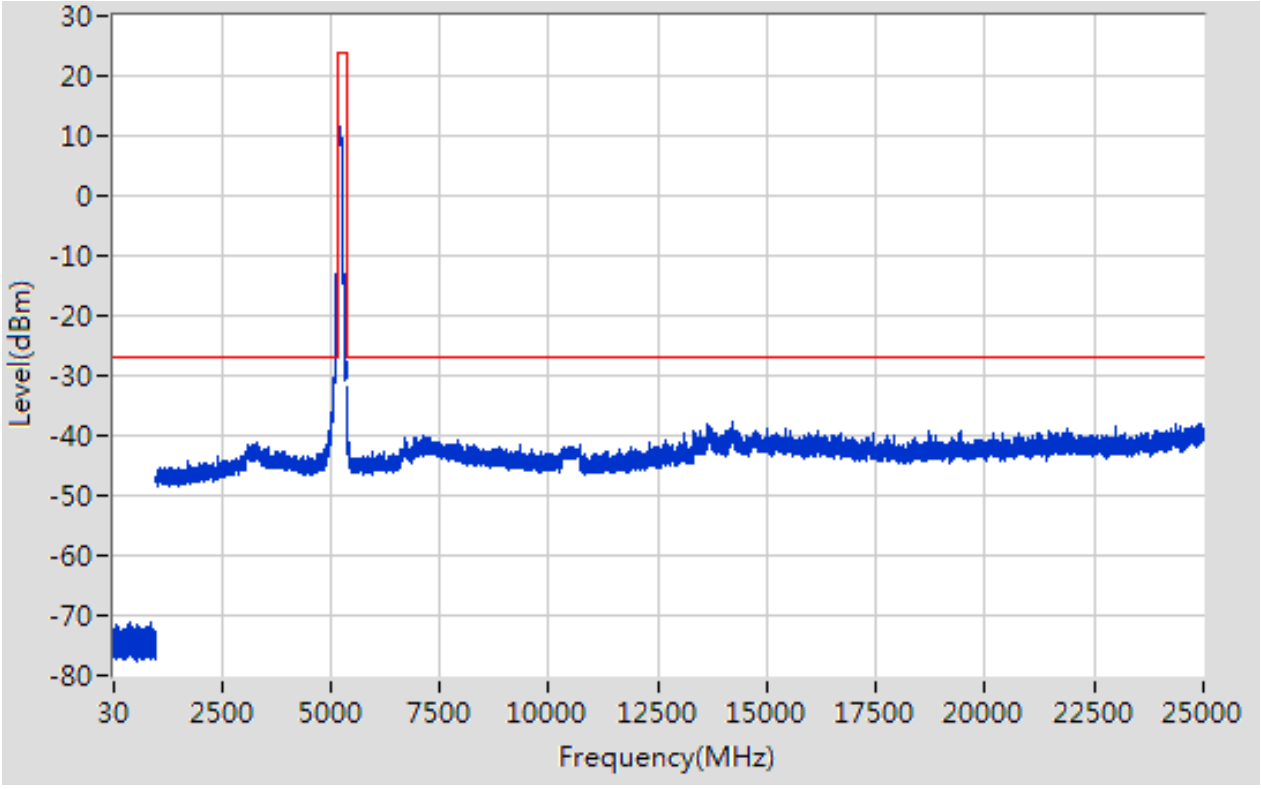
Band I 11n (HT40) CH46 (30 MHz ~ 25 GHz)

Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	1000	0.1	Peak	380.843	-70.780	-27	Pass	9699
1000	5150	1	Peak	5145.999	-27.400	-27	Pass	4150
5150	5350	1	Peak	5222.000	14.330	24	Pass	401
5350	10300	1	Peak	7191.372	-40.030	-27	Pass	4950
10300	10700	1	Peak	10676.000	-41.730	-27	Pass	401
10700	25000	1	Peak	24895.983	-37.610	-27	Pass	14300



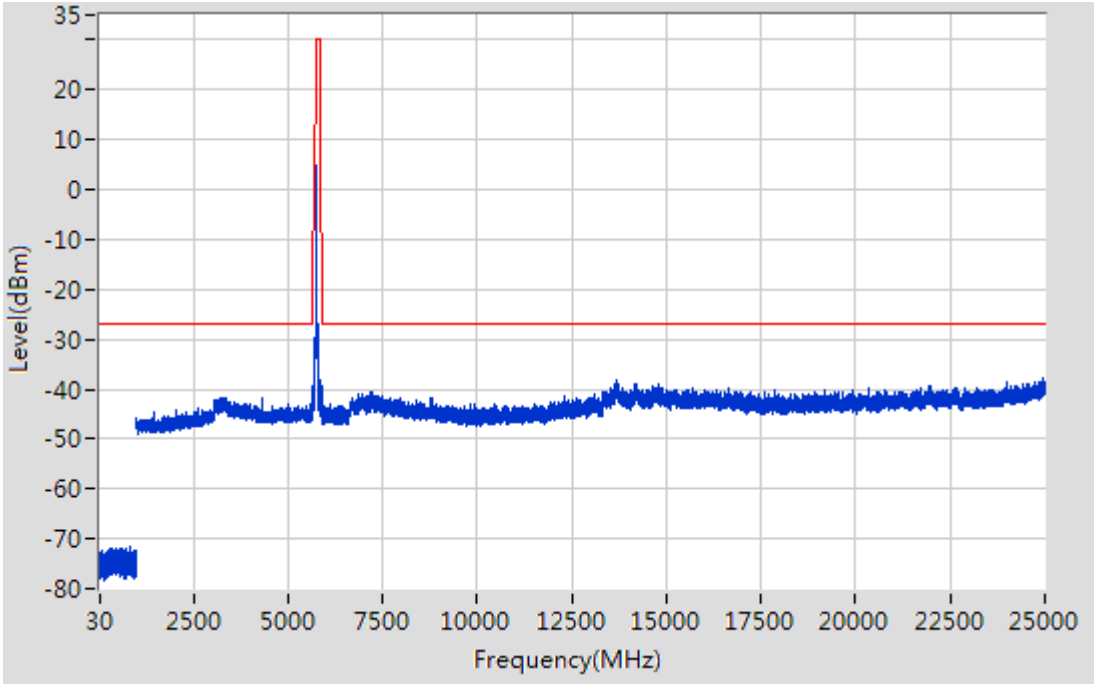
Band I 11ac (HT80) CH42 (30 MHz ~ 25 GHz)

Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	1000	0.1	Peak	842.099	-71.230	-27	Pass	9699
1000	5150	1	Peak	3321.559	-40.760	-27	Pass	4150
5150	5350	1	Peak	5239.500	2.800	24	Pass	401
5350	10300	1	Peak	6698.272	-39.680	-27	Pass	4950
10300	10700	1	Peak	10651.000	-41.300	-27	Pass	401
10700	25000	1	Peak	24907.985	-37.240	-27	Pass	14300



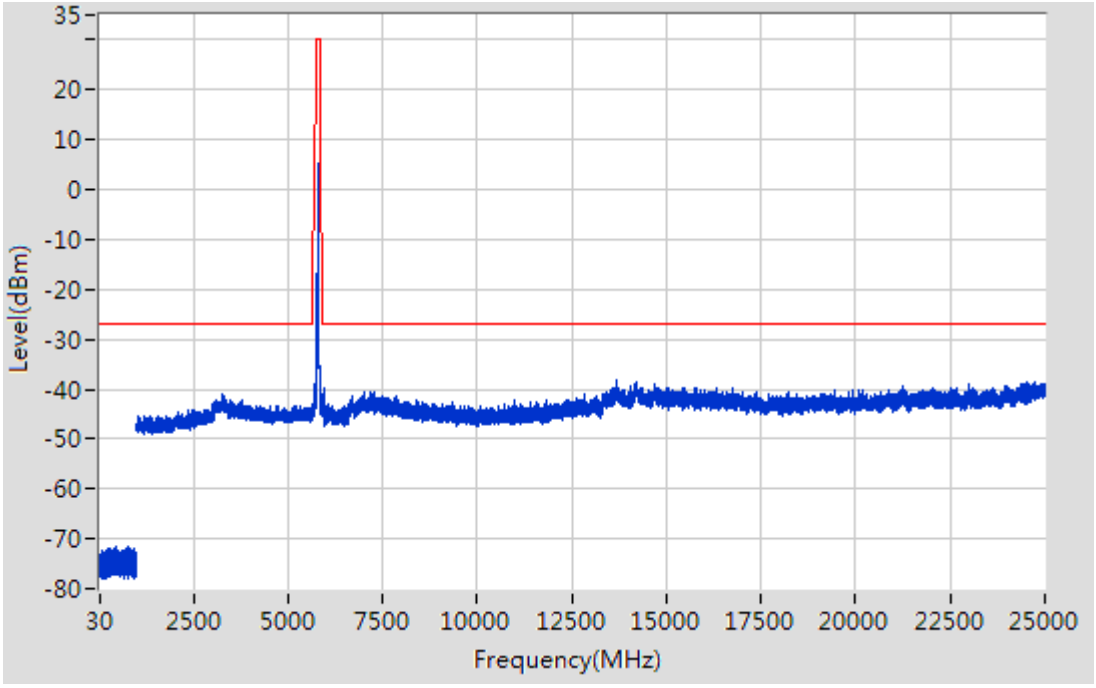
Band IV 11a CH149 (30 MHz ~ 25 GHz)

Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	1000	0.1	Peak	809.50	-71.76	-27.00	Pass	44.76
1000	5650	1	Peak	3360.51	-41.64	-27.00	Pass	14.64
5650	5700	1	Peak	5650.38	-44.00	-26.72	Pass	17.27
5700	5720	1	Peak	5719.80	-26.73	15.54	Pass	42.27
5720	5725	1	Peak	5721.76	-21.09	19.62	Pass	40.71
5725	5850	1	Peak	5742.50	4.84	30.00	Pass	25.16
5850	5855	1	Peak	5854.76	-42.90	16.14	Pass	59.05
5855	5875	1	Peak	5874.25	-43.22	10.21	Pass	53.43
5875	5925	1	Peak	5924.88	-43.96	-26.91	Pass	17.05
5925	25000	1	Peak	24967.99	-37.68	-27.00	Pass	10.68



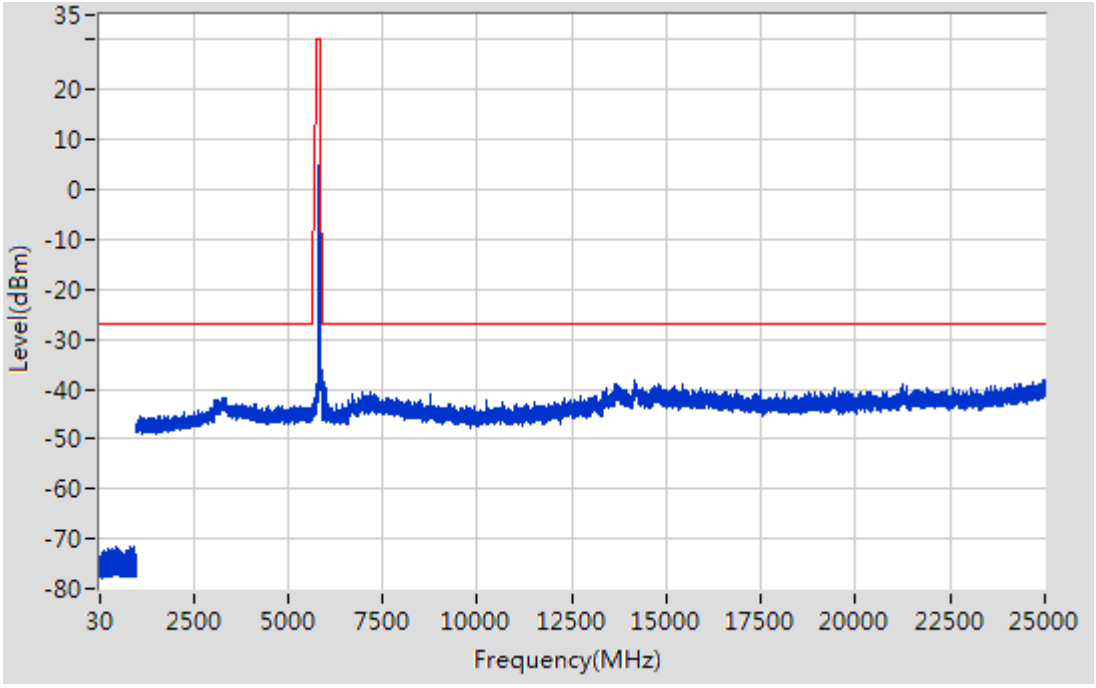
Band IV 11a CH157 (30 MHz ~ 25 GHz)

Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	1000	0.1	Peak	445.75	-71.66	-27.00	Pass	44.66
1000	5650	1	Peak	3246.48	-41.15	-27.00	Pass	14.15
5650	5700	1	Peak	5650.75	-43.33	-26.45	Pass	16.88
5700	5720	1	Peak	5701.90	-39.65	10.53	Pass	50.18
5720	5725	1	Peak	5720.46	-39.96	16.65	Pass	56.62
5725	5850	1	Peak	5789.69	5.15	30.00	Pass	24.85
5850	5855	1	Peak	5854.95	-38.56	15.71	Pass	54.27
5855	5875	1	Peak	5867.05	-38.17	12.23	Pass	50.39
5875	5925	1	Peak	5925.00	-41.47	-27.00	Pass	14.47
5925	25000	1	Peak	13672.95	-38.34	-27.00	Pass	11.34



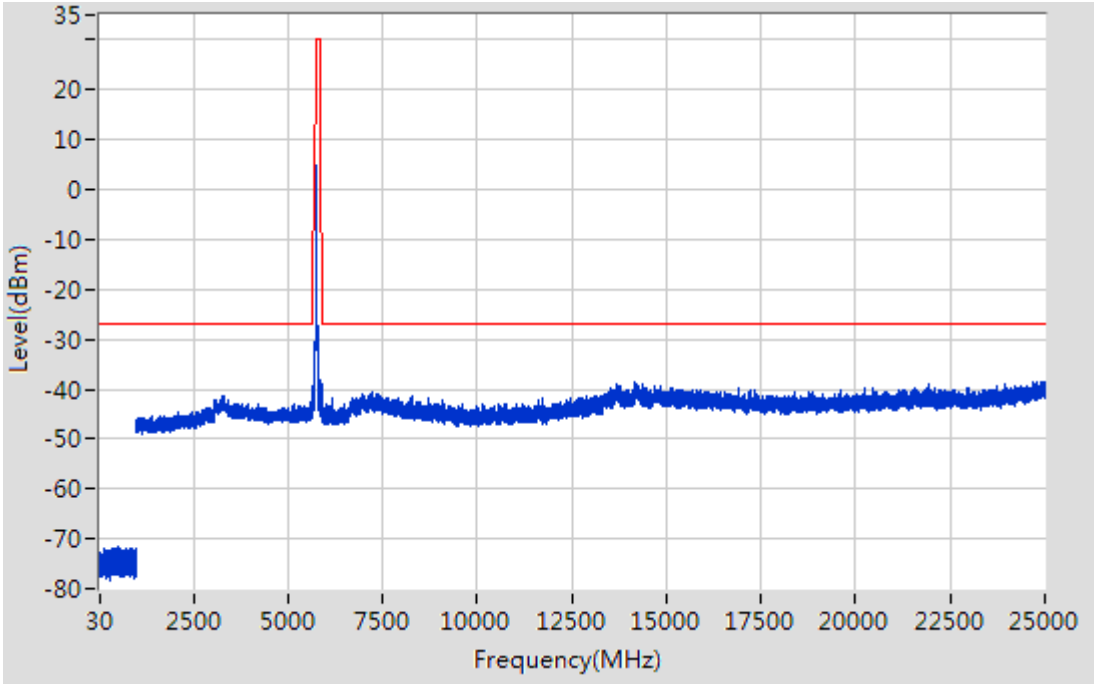
Band IV 11a CH165 (30 MHz ~ 25 GHz)

Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	1000	0.1	Peak	471.05	-71.37	-27.00	Pass	44.37
1000	5650	1	Peak	3313.50	-41.64	-27.00	Pass	14.64
5650	5700	1	Peak	5650.25	-44.14	-26.82	Pass	17.33
5700	5720	1	Peak	5700.90	-43.22	10.25	Pass	53.47
5720	5725	1	Peak	5720.06	-43	15.74	Pass	58.74
5725	5850	1	Peak	5828.75	5.04	30.00	Pass	24.96
5850	5855	1	Peak	5854.90	-29.22	15.83	Pass	45.04
5855	5875	1	Peak	5859.70	-29.21	14.28	Pass	43.5
5875	5925	1	Peak	5924.75	-43.01	-26.81	Pass	16.2
5925	25000	1	Peak	14168.01	-38	-27.00	Pass	11



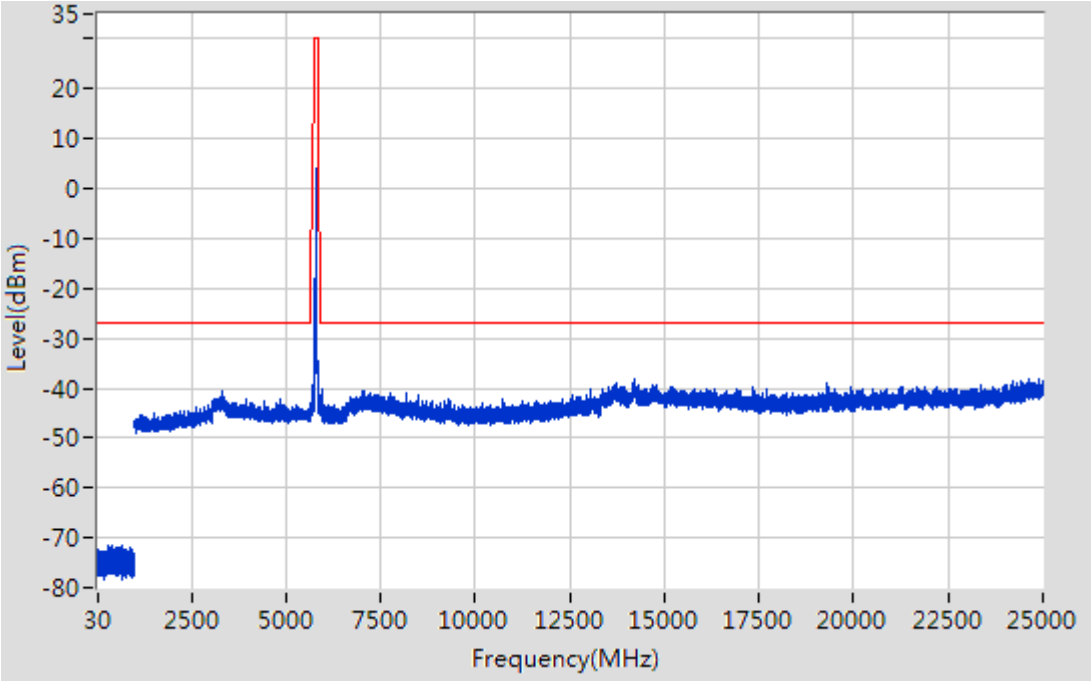
Band IV 11N20 CH149 (30 MHz ~ 25 GHz)

Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	1000	0.1	Peak	497.96	-71.7	-27.00	Pass	44.7
1000	5650	1	Peak	3295.49	-41.25	-27.00	Pass	14.25
5650	5700	1	Peak	5650.75	-43.46	-26.45	Pass	17.01
5700	5720	1	Peak	5711.30	-30.66	13.16	Pass	43.82
5720	5725	1	Peak	5722.26	-23.24	20.76	Pass	44
5725	5850	1	Peak	5743.13	4.99	30.00	Pass	25.01
5850	5855	1	Peak	5854.94	-42.73	15.74	Pass	58.47
5855	5875	1	Peak	5874.50	-43.62	10.14	Pass	53.76
5875	5925	1	Peak	5924.50	-43.11	-26.63	Pass	16.48
5925	25000	1	Peak	24794.92	-38.42	-27.00	Pass	11.42



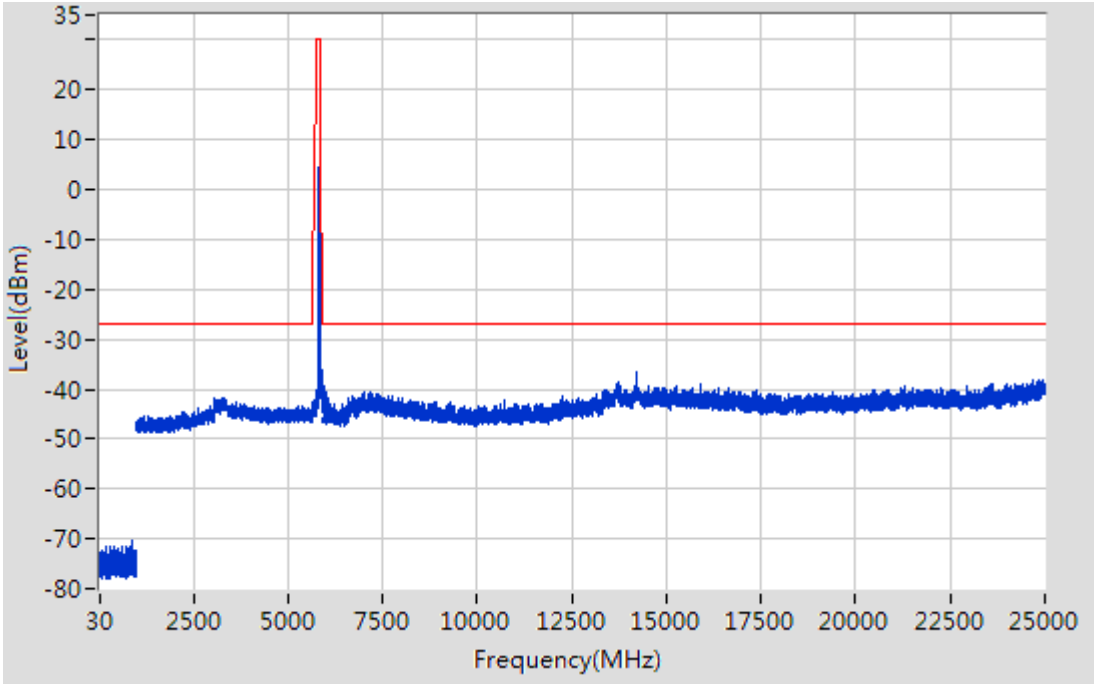
Band IV 11N20 CH157 (30 MHz ~ 25 GHz)

Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	1000	0.1	Peak	404.85	-71.49	-27.00	Pass	44.49
1000	5650	1	Peak	3305.50	-40.75	-27.00	Pass	13.75
5650	5700	1	Peak	5650.13	-44.33	-26.91	Pass	17.43
5700	5720	1	Peak	5703.00	-39.79	10.84	Pass	50.63
5720	5725	1	Peak	5720.21	-41.89	16.08	Pass	57.98
5725	5850	1	Peak	5783.13	4.03	30.00	Pass	25.97
5850	5855	1	Peak	5854.89	-38.23	15.86	Pass	54.08
5855	5875	1	Peak	5867.05	-37.7	12.23	Pass	49.93
5875	5925	1	Peak	5924.13	-42.5	-26.35	Pass	16.15
5925	25000	1	Peak	14196.01	-38.05	-27.00	Pass	11.05



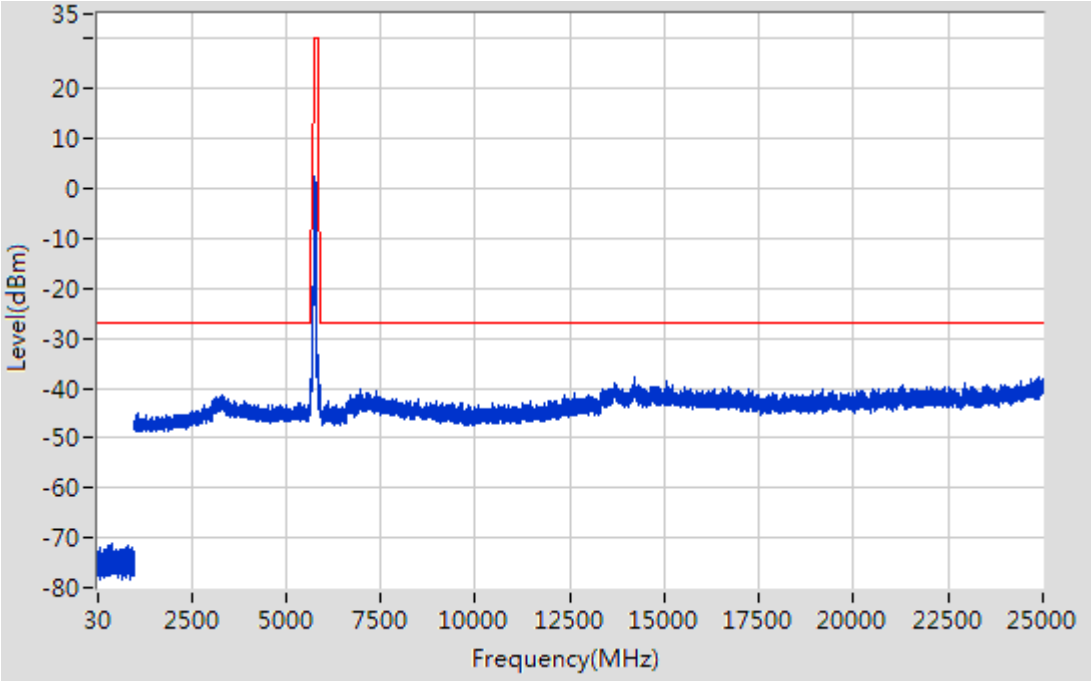
Band IV 11N20 CH165 (30 MHz ~ 25 GHz)

Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	1000	0.1	Peak	872.53	-70.55	-27.00	Pass	43.55
1000	5650	1	Peak	3333.50	-41.74	-27.00	Pass	14.74
5650	5700	1	Peak	5651.13	-43.82	-26.17	Pass	17.65
5700	5720	1	Peak	5701.90	-42.8	10.53	Pass	53.33
5720	5725	1	Peak	5720.24	-42.37	16.14	Pass	58.51
5725	5850	1	Peak	5823.13	4.48	30.00	Pass	25.52
5850	5855	1	Peak	5854.95	-32.25	15.71	Pass	47.96
5855	5875	1	Peak	5862.30	-31.96	13.56	Pass	45.52
5875	5925	1	Peak	5924.13	-43.02	-26.35	Pass	16.67
5925	25000	1	Peak	14192.01	-36.76	-27.00	Pass	9.76



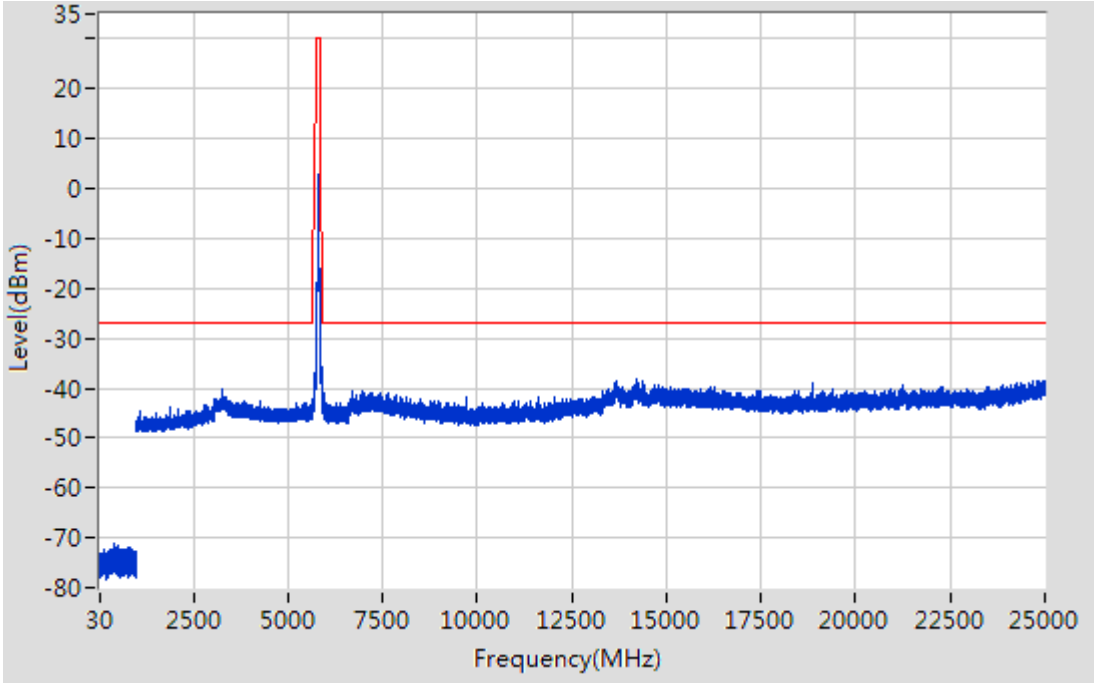
Band IV 11N40 CH151 (30 MHz ~ 25 GHz)

Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	1000	0.1	Peak	380.34	-70.96	-27.00	Pass	43.96
1000	5650	1	Peak	3286.49	-41.49	-27.00	Pass	14.49
5650	5700	1	Peak	5650.13	-41.51	-26.91	Pass	14.6
5700	5720	1	Peak	5715.10	-19.51	14.23	Pass	33.74
5720	5725	1	Peak	5720.00	-20.54	15.60	Pass	36.14
5725	5850	1	Peak	5741.25	2.34	30.00	Pass	27.66
5850	5855	1	Peak	5854.86	-41.46	15.91	Pass	57.37
5855	5875	1	Peak	5871.75	-40.01	10.91	Pass	50.92
5875	5925	1	Peak	5920.88	-40.3	-23.95	Pass	16.35
5925	25000	1	Peak	24912.97	-37.66	-27.00	Pass	10.66



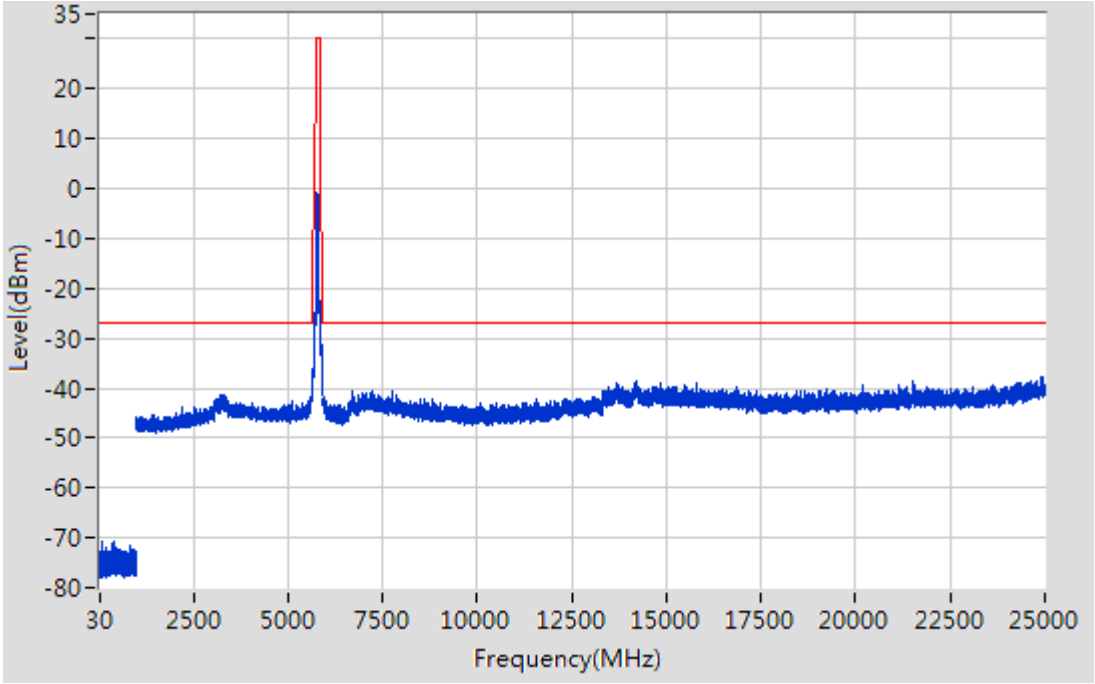
Band IV 11N40 CH151 (30 MHz ~ 25 GHz)

Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	1000	0.1	Peak	397.84	-71.33	-27.00	Pass	44.33
1000	5650	1	Peak	3261.49	-40.28	-27.00	Pass	13.28
5650	5700	1	Peak	5651.38	-42.12	-25.98	Pass	16.13
5700	5720	1	Peak	5702.95	-38.09	10.83	Pass	48.92
5720	5725	1	Peak	5720.06	-37.53	15.74	Pass	53.27
5725	5850	1	Peak	5788.75	2.87	30.00	Pass	27.13
5850	5855	1	Peak	5854.98	-32.63	15.66	Pass	48.29
5855	5875	1	Peak	5866.50	-32.2	12.38	Pass	44.58
5875	5925	1	Peak	5925.00	-41.76	-27.00	Pass	14.76
5925	25000	1	Peak	14194.01	-38.3	-27.00	Pass	11.3



Band IV 11ac80 CH151 (30 MHz ~ 25 GHz)

Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Limit (dBm)	Verdict	Sweep Point
30	1000	0.1	Peak	411.85	-70.84	-27.00	Pass	43.84
1000	5650	1	Peak	5635.00	-38.57	-27.00	Pass	11.57
5650	5700	1	Peak	5650.00	-38.31	-27.00	Pass	11.31
5700	5720	1	Peak	5704.75	-24.79	11.33	Pass	36.12
5720	5725	1	Peak	5720.33	-22.9	16.34	Pass	39.24
5725	5850	1	Peak	5766.88	-0.9	30.00	Pass	30.9
5850	5855	1	Peak	5854.86	-26.58	15.91	Pass	42.5
5855	5875	1	Peak	5874.90	-29.04	10.03	Pass	39.07
5875	5925	1	Peak	5924.88	-40.57	-26.91	Pass	13.67
5925	25000	1	Peak	24884.96	-37.59	-27.00	Pass	10.59



Note: Only noise floor was seen.

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

Antenna-port Conducted test data

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.

EIRP= Measure Conducted output power Value (dBm) + Maximum transmit antenna gain (dBi) + The appropriate maximum ground reflection factor (dB)

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 2dBi, whichever is greater.

And the maximum in-band gain of the antenna is 3.3 dBi.

Note 1: The frequency is fundamental signal which can be ignored.

Note 2: Which frequency is not within a restricted band, and its limit line is resolved to 15.407(b)

Note 3: Average measurement was not performed if peak level went lower than the average limit.

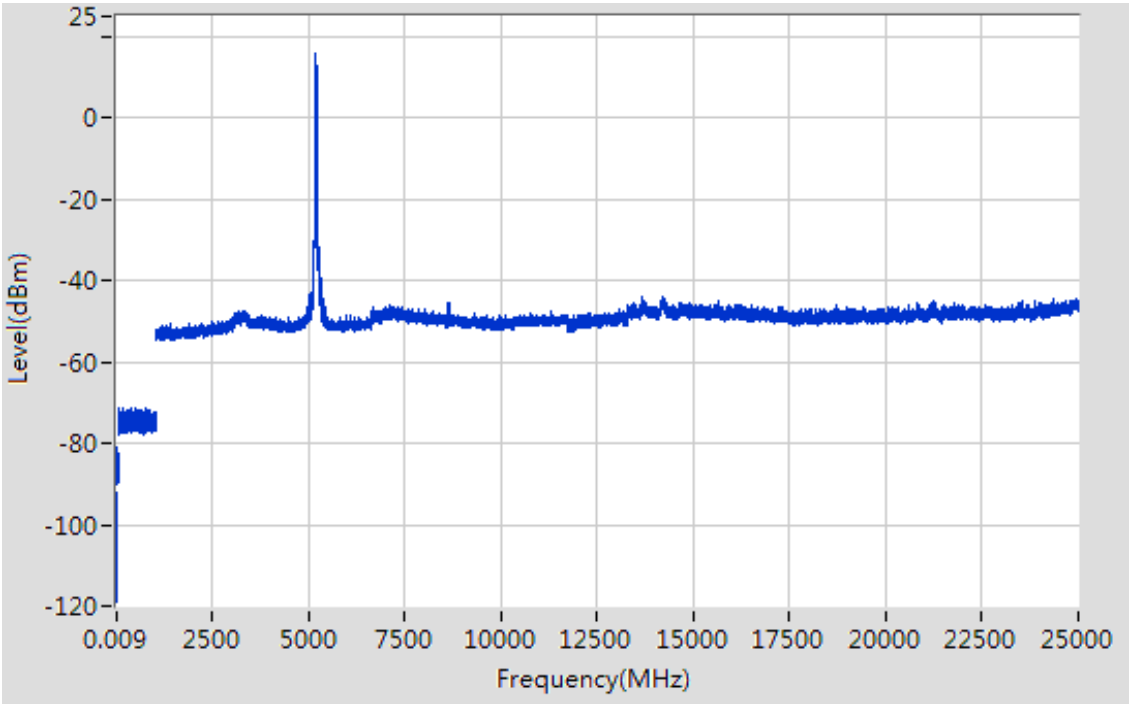
Note 4: The harmonic (2th ,3th , 4th,…etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise

Band I 11a CH36

Frequency (MHz)	Value (dBm)	Ground Reflection Factor (dB)	D (m)	Max gain (dBi)	Detector	E (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark	Verdict
0.01	-92.14	6	3.00	3.30	QP	12.42	68.20	55.78	Note 2	PASS
0.18	-81.11	6	3.00	3.30	QP	23.45	68.20	44.75	Note 2	PASS
355.14	-71.23	4.7	3.00	3.30	QP	32.03	68.20	36.17	Note 2	PASS
5180.836	15.85	0	3.00	3.30	PK	114.41	N/A	N/A	Note 1	N/A
	8.07		3.00	3.30	AV	106.63	N/A	N/A		N/A
8637.613	-45.34	0	3.00	3.30	PK	53.22	68.20	14.98	Note 2	PASS
	-53.12		3.00	3.30	AV	45.44	48.20	2.76	--	PASS
11299.714	-47.64	0	3.00	3.30	PK	50.92	74.00	23.08	--	PASS
	-55.42		3.00	3.30	AV	43.14	54.00	10.86	--	PASS
13650.238	-44.04	0	3.00	3.30	PK	54.52	68.20	13.68	Note 2	PASS
	-51.82		3.00	3.30	AV	46.74	48.20	1.46	--	PASS

Test Plots

Band I 11a CH36 (30 MHz ~ 25 GHz)



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 2dBi, whichever is greater.

And the maximum in-band gain of the antenna is 3.3 dBi.

Note 1: The frequency is fundamental signal which can be ignored.

Note 2: Which frequency is not within a restricted band, and its limit line is resolved to 15.407(b)

Note 3: Average measurement was not performed if peak level went lower than the average limit.

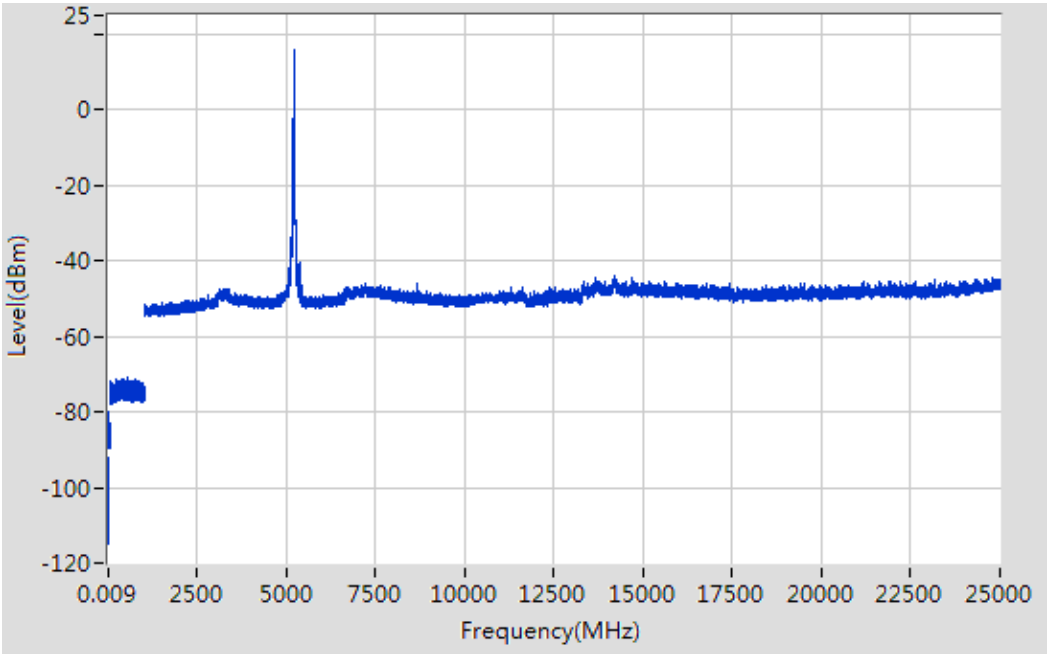
Note 4: The harmonic (2th ,3th , 4th,…etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise

Band I 11a CH40

Frequency (MHz)	Value (dBm)	Ground Reflection Factor (dB)	D (m)	Max gain (dBi)	Detector	E (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark	Verdict
0.011	-92.26	6	3.00	3.30	QP	12.30	68.20	55.90	Note 2	PASS
0.15	-80.18	6	3.00	3.30	QP	24.38	68.20	43.82	Note 2	PASS
539.76	-71.03	4.7	3.00	3.30	QP	32.23	68.20	35.97	Note 2	PASS
5203.84	15.73	0	3.00	3.30	PK	114.29	N/A	N/A	Note 1	N/A
	7.95		3.00	3.30	AV	106.51	N/A	N/A		N/A
8665.62	-45.78	0	3.00	3.30	PK	52.78	68.20	15.42	Note 2	PASS
	-53.56		3.00	3.30	AV	45.00	48.20	3.20	--	PASS
11598.93	-46.95	0	3.00	3.30	PK	51.61	74.00	22.39	--	PASS
	-54.73		3.00	3.30	AV	43.83	54.00	10.17	--	PASS
14170.30	-44.16	0	3.00	3.30	PK	54.40	68.20	13.80	Note 2	PASS
	-51.94		3.00	3.30	AV	46.62	48.20	1.58	--	PASS

Test Plots

Band I 11a CH40 (30 MHz ~ 25 GHz)



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 2dBi, whichever is greater.

And the maximum in-band gain of the antenna is 3.3 dBi.

Note 1: The frequency is fundamental signal which can be ignored.

Note 2: Which frequency is not within a restricted band, and its limit line is resolved to 15.407(b)

Note 3: Average measurement was not performed if peak level went lower than the average limit.

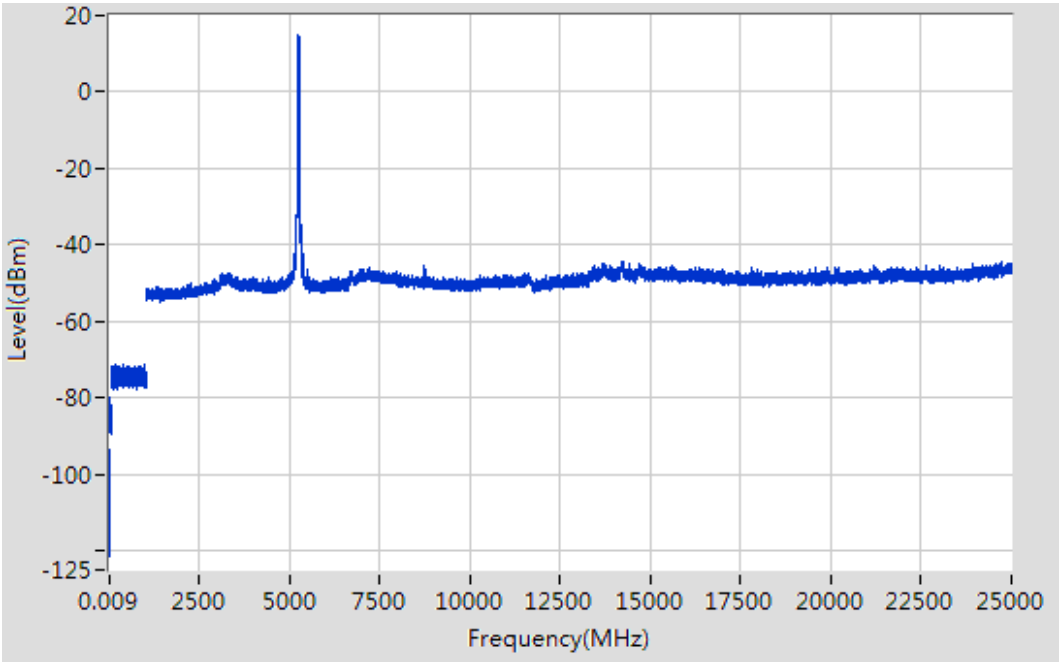
Note 4: The harmonic (2th ,3th , 4th,…etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise

Band I 11a CH48

Frequency (MHz)	Value (dBm)	Ground Reflection Factor (dB)	D (m)	Max gain (dBi)	Detector	E (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark	Verdict
0.01	-93.36	6	3.00	3.30	QP	11.20	68.20	57.00	Note 2	PASS
0.18	-79.69	6	3.00	3.30	QP	24.87	68.20	43.33	Note 2	PASS
396.15	-71.05	4.7	3.00	3.30	QP	32.21	68.20	35.99	Note 2	PASS
5232.85	14.82	0	3.00	3.30	PK	113.38	N/A	N/A	Note 1	N/A
	7.04		3.00	3.30	AV	105.60	N/A	N/A		N/A
8732.64	-45.59	0	3.00	3.30	PK	52.97	68.20	15.23	Note 2	PASS
	-53.37		3.00	3.30	AV	45.19	48.20	3.01	--	PASS
11524.88	-47.38	0	3.00	3.30	PK	51.18	74.00	22.82	--	PASS
	-55.16		3.00	3.30	AV	43.40	54.00	10.60	--	PASS
14214.31	-44.14	0	3.00	3.30	PK	54.42	68.20	13.78	Note 2	PASS
	-51.92		3.00	3.30	AV	46.64	48.20	1.56	--	PASS

Test Plots

Band I 11a CH48 (30 MHz ~ 25 GHz)



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 2dBi, whichever is greater.

And the maximum in-band gain of the antenna is 3.3 dBi.

Note 1: The frequency is fundamental signal which can be ignored.

Note 2: Which frequency is not within a restricted band, and its limit line is resolved to 15.407(b)

Note 3: Average measurement was not performed if peak level went lower than the average limit.

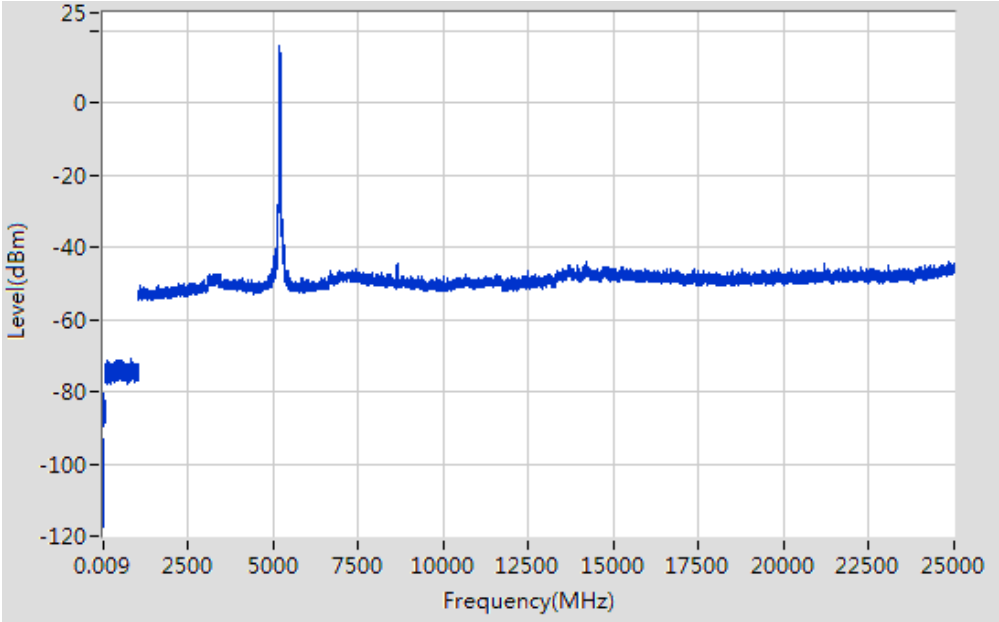
Note 4: The harmonic (2th ,3th , 4th,…etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise

Band I 11n (HT20) CH36

Frequency (MHz)	Value (dBm)	Ground Reflection Factor (dB)	D (m)	Max gain (dBi)	Detector	E (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark	Verdict
0.07	-92.96	6	3.00	3.30	QP	11.60	68.20	56.60	Note 2	PASS
0.33	-80.61	6	3.00	3.30	QP	23.95	68.20	44.25	Note 2	PASS
832.20	-70.78	4.7	3.00	3.30	QP	32.48	68.20	35.72	Note 2	PASS
5176.84	16.04	0	3.00	3.30	PK	114.60	N/A	N/A	Note 1	N/A
	8.26		3.00	3.30	AV	106.82	N/A	N/A		N/A
8631.61	-44.33	0	3.00	3.30	PK	54.23	68.20	13.97	Note 2	PASS
	-52.11		3.00	3.30	AV	46.45	48.20	1.75	--	PASS
10642.24	-47.64	0	3.00	3.30	PK	50.92	74.00	23.08	--	PASS
	-55.42		3.00	3.30	AV	43.14	54.00	10.86	--	PASS
24864.97	-43.98	0	3.00	3.30	PK	54.58	68.20	13.62	Note 2	PASS
	-51.76		3.00	3.30	AV	46.80	48.20	1.40	--	PASS

Test Plots

Band I 11n (HT20) CH36 (30 MHz ~ 25 GHz)



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 2dBi, whichever is greater.

And the maximum in-band gain of the antenna is 3.3 dBi.

Note 1: The frequency is fundamental signal which can be ignored.

Note 2: Which frequency is not within a restricted band, and its limit line is resolved to 15.407(b)

Note 3: Average measurement was not performed if peak level went lower than the average limit.

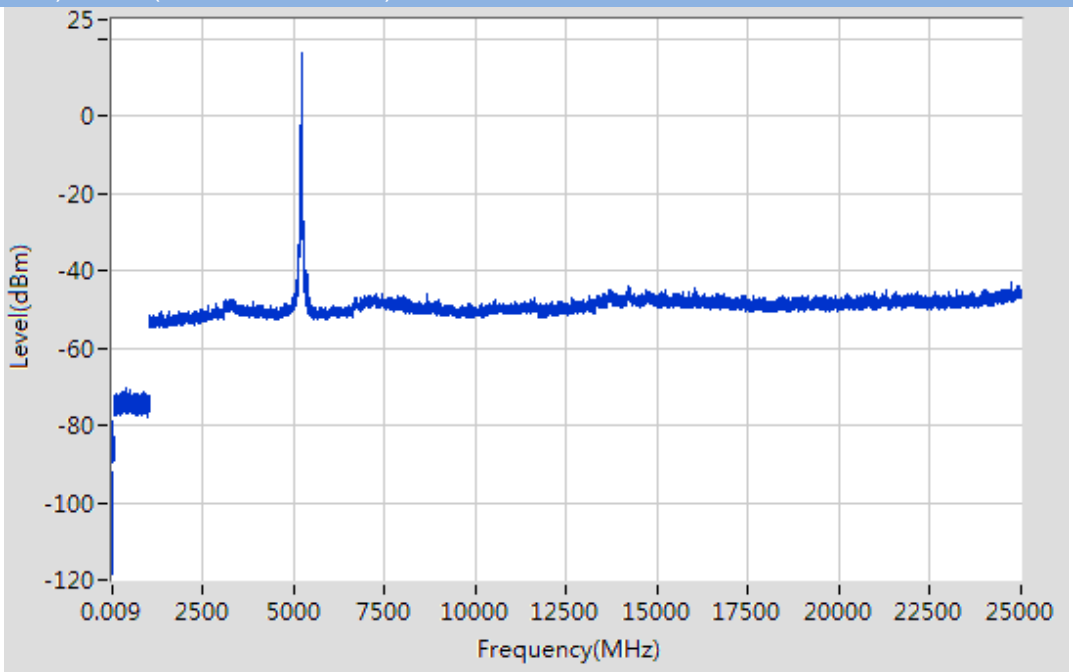
Note 4: The harmonic (2th ,3th , 4th,…etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise

Band I 11n (HT20) CH40

Frequency (MHz)	Value (dBm)	Ground Reflection Factor (dB)	D (m)	Max gain (dBi)	Detector	E (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark	Verdict
0.02	-92.08	6	3.00	3.30	QP	12.48	68.20	55.72	Note 2	PASS
0.24	-78.84	6	3.00	3.30	QP	25.72	68.20	42.48	Note 2	PASS
374.14	-70.46	4.7	3.00	3.30	QP	32.80	68.20	35.40	Note 2	PASS
5194.84	16.42	0	3.00	3.30	PK	114.98	N/A	N/A	Note 1	N/A
	8.64		3.00	3.30	AV	107.20	N/A	N/A		N/A
8665.62	-45.85	0	3.00	3.30	PK	52.71	68.20	15.49	Note 2	PASS
	-53.63		3.00	3.30	AV	44.93	48.20	3.27	--	PASS
11613.94	-47.13	0	3.00	3.30	PK	51.43	74.00	22.57	--	PASS
	-54.91		3.00	3.30	AV	43.65	54.00	10.35	--	PASS
24750.95	-43.00	0	3.00	3.30	PK	55.56	68.20	12.64	Note 2	PASS
	-50.78		3.00	3.30	AV	47.78	48.20	0.42	--	PASS

Test Plots

Band I 11n (HT20) CH40 (30 MHz ~ 25 GHz)



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 2dBi, whichever is greater.

And the maximum in-band gain of the antenna is 3.3 dBi.

Note 1: The frequency is fundamental signal which can be ignored.

Note 2: Which frequency is not within a restricted band, and its limit line is resolved to 15.407(b)

Note 3: Average measurement was not performed if peak level went lower than the average limit.

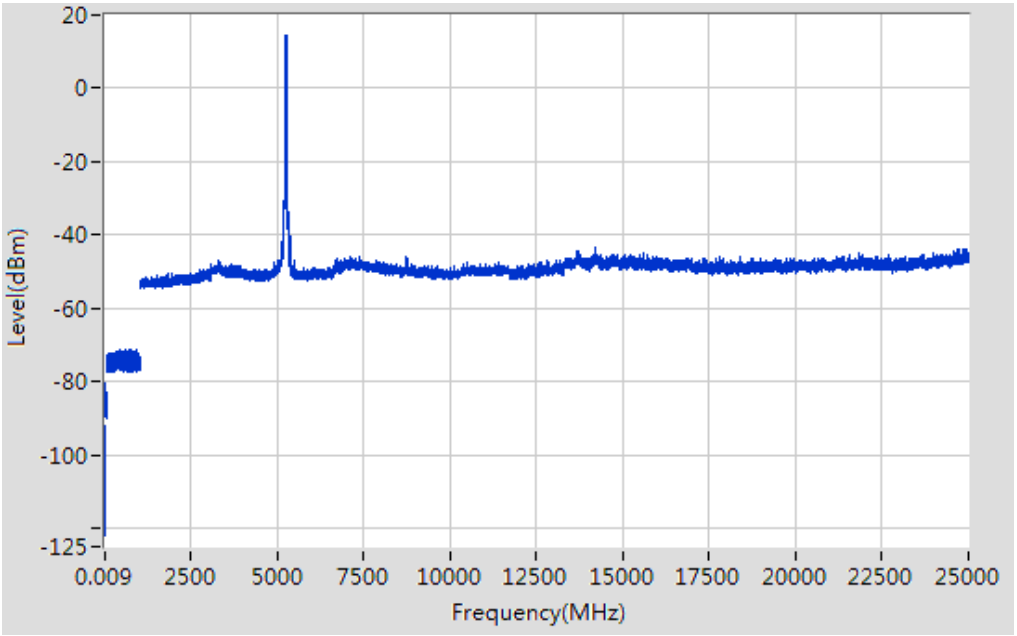
Note 4: The harmonic (2th ,3th , 4th,…etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise

Band I 11n (HT20) CH48

Frequency (MHz)	Value (dBm)	Ground Reflection Factor (dB)	D (m)	Max gain (dBi)	Detector	E (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark	Verdict
0.01	-91.91	6	3.00	3.30	QP	12.65	68.20	55.55	Note 2	PASS
0.15	-80.20	6	3.00	3.30	QP	24.36	68.20	43.84	Note 2	PASS
581.27	-71.12	4.7	3.00	3.30	QP	32.14	68.20	36.06	Note 2	PASS
5234.85	14.47	0	3.00	3.30	PK	113.03	N/A	N/A	Note 1	N/A
	6.69		3.00	3.30	AV	105.25	N/A	N/A		N/A
7362.32	-46.00	0	3.00	3.30	PK	52.56	74.00	21.44	--	PASS
	-53.78		3.00	3.30	AV	44.78	54.00	9.22	--	PASS
11381.77	-47.53	0	3.00	3.30	PK	51.03	74.00	22.97	--	PASS
	-55.31		3.00	3.30	AV	43.25	54.00	10.75	--	PASS
14208.31	-43.30	0	3.00	3.30	PK	55.26	68.20	12.94	Note 2	PASS
	-51.08		3.00	3.30	AV	47.48	48.20	0.72	--	PASS

Test Plots

Band I 11n (HT20) CH48 (30 MHz ~ 25 GHz)



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 2dBi, whichever is greater.

And the maximum in-band gain of the antenna is 3.3 dBi.

Note 1: The frequency is fundamental signal which can be ignored.

Note 2: Which frequency is not within a restricted band, and its limit line is resolved to 15.407(b)

Note 3: Average measurement was not performed if peak level went lower than the average limit.

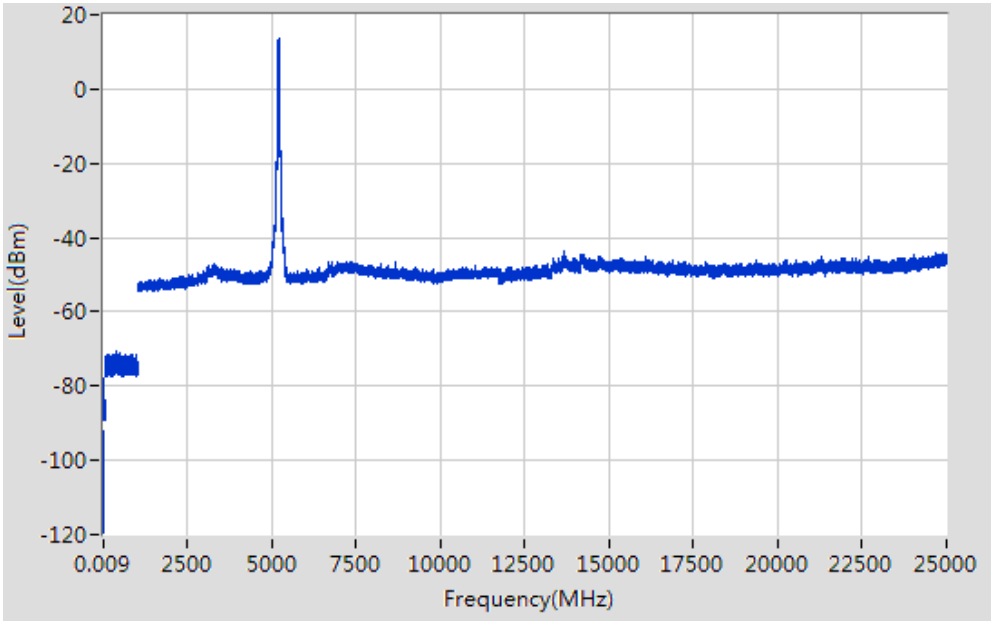
Note 4: The harmonic (2th ,3th , 4th,…etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise

Band I 11n (HT40) CH38

Frequency (MHz)	Value (dBm)	Ground Reflection Factor (dB)	D (m)	Max gain (dBi)	Detector	E (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark	Verdict
0.02	-91.96	6	3.00	3.30	QP	12.60	68.20	55.60	Note 2	PASS
0.19	-77.67	6	3.00	3.30	QP	26.89	68.20	41.31	Note 2	PASS
369.54	-70.73	4.7	3.00	3.30	QP	32.53	68.20	35.67	Note 2	PASS
5205.84	13.66	0	3.00	3.30	PK	112.22	N/A	N/A	Note 1	N/A
	5.88		3.00	3.30	AV	104.44	N/A	N/A		N/A
7299.30	-46.39	0	3.00	3.30	PK	52.17	74.00	21.83	--	PASS
	-54.17		3.00	3.30	AV	44.39	54.00	9.61	--	PASS
11033.52	-47.65	0	3.00	3.30	PK	50.91	74.00	23.09	--	PASS
	-55.43		3.00	3.30	AV	43.13	54.00	10.87	--	PASS
13664.24	-43.45	0	3.00	3.30	PK	55.11	68.20	13.09	Note 2	PASS
	-51.23		3.00	3.30	AV	47.33	48.20	0.87	--	PASS

Test Plots

Band I 11n (HT40) CH38 (30 MHz ~ 25 GHz)



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 2dBi, whichever is greater.

And the maximum in-band gain of the antenna is 3.3 dBi.

Note 1: The frequency is fundamental signal which can be ignored.

Note 2: Which frequency is not within a restricted band, and its limit line is resolved to 15.407(b)

Note 3: Average measurement was not performed if peak level went lower than the average limit.

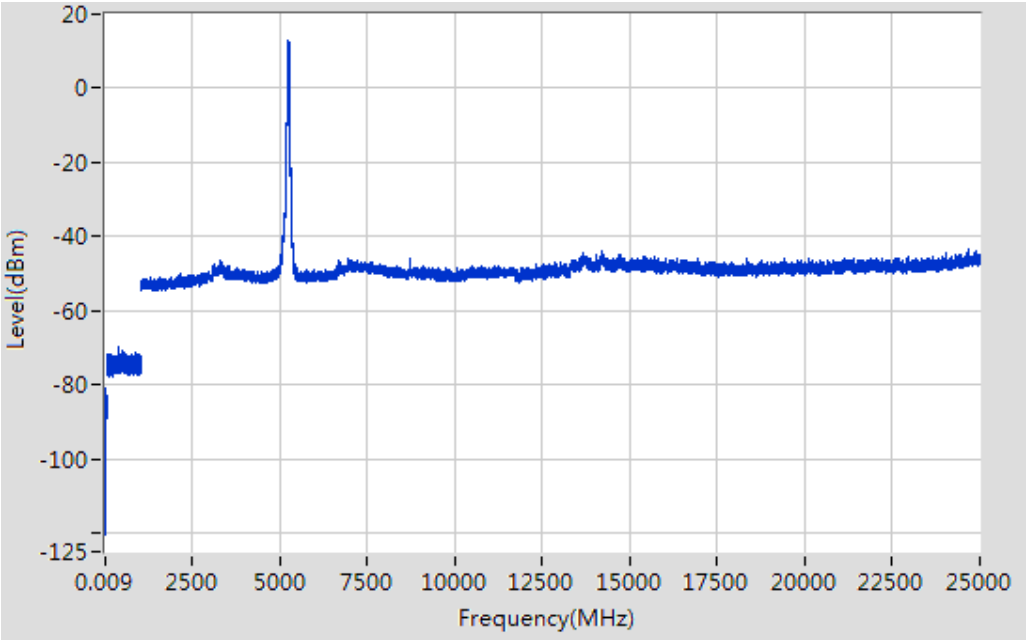
Note 4: The harmonic (2th ,3th , 4th,…etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise

Band I 11n (HT40) CH46

Frequency (MHz)	Value (dBm)	Ground Reflection Factor (dB)	D (m)	Max gain (dBi)	Detector	E (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark	Verdict
0.01	-89.49	6	3.00	3.30	QP	15.07	68.20	53.13	Note 2	PASS
0.44	-80.66	6	3.00	3.30	QP	23.90	68.20	44.30	Note 2	PASS
356.54	-69.97	4.7	3.00	3.30	QP	33.29	68.20	34.91	Note 2	PASS
5222.85	12.79	0	3.00	3.30	PK	111.35	N/A	N/A	Note 1	N/A
	5.01		3.00	3.30	AV	103.57	N/A	N/A		N/A
6957.22	-45.91	0	3.00	3.30	PK	52.65	68.20	15.55	Note 2	PASS
	-53.69		3.00	3.30	AV	44.87	48.20	3.33	--	PASS
10465.12	-47.93	0	3.00	3.30	PK	50.63	68.20	17.57	Note 2	PASS
	-55.71		3.00	3.30	AV	42.85	48.20	5.35	--	PASS
24668.94	-43.48	0	3.00	3.30	PK	55.08	68.20	13.12	Note 2	PASS
	-51.26		3.00	3.30	AV	47.30	48.20	0.90	--	PASS

Test Plots

Band I 11n (HT40) CH46 (30 MHz ~ 25 GHz)



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 2dBi, whichever is greater.

And the maximum in-band gain of the antenna is 3.3 dBi.

Note 1: The frequency is fundamental signal which can be ignored.

Note 2: Which frequency is not within a restricted band, and its limit line is resolved to 15.407(b)

Note 3: Average measurement was not performed if peak level went lower than the average limit.

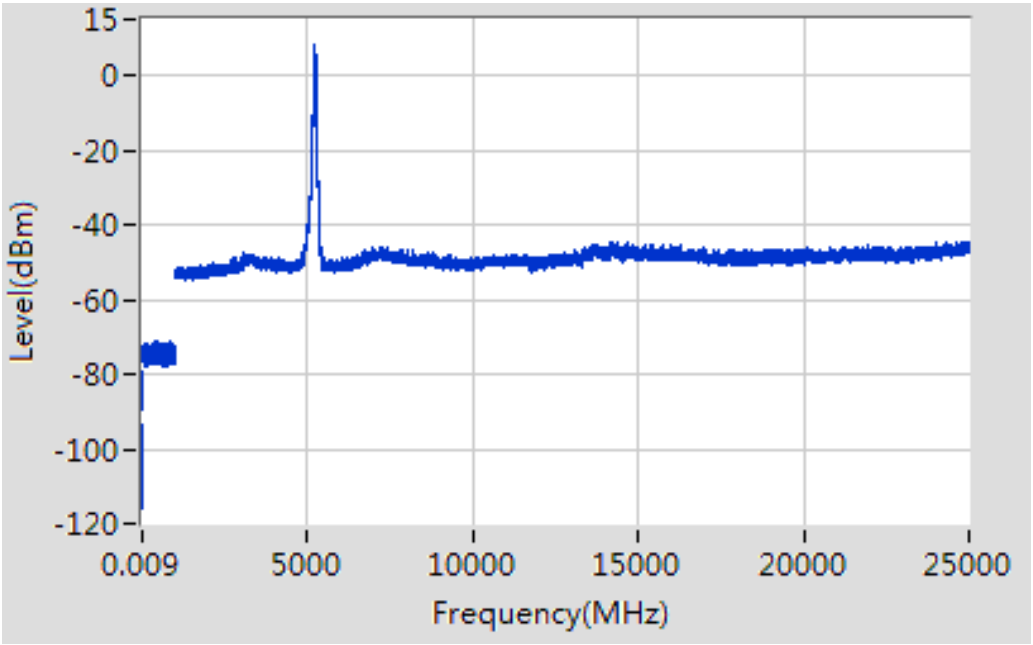
Note 4: The harmonic (2th ,3th , 4th,…etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise

Band I 11ac (HT80) CH42

Frequency (MHz)	Value (dBm)	Ground Reflection Factor (dB)	D (m)	Max gain (dBi)	Detector	E (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark	Verdict
0.01	-93.57	6	3.00	3.30	QP	10.99	68.20	57.21	Note 2	PASS
0.15	-79.42	6	3.00	3.30	QP	25.14	68.20	43.06	Note 2	PASS
810.60	-71.00	4.7	3.00	3.30	QP	32.26	68.20	35.94	Note 2	PASS
5197.84	8.17	0	3.00	3.30	PK	106.73	N/A	N/A	Note 1	N/A
	0.39		3.00	3.30	AV	98.95	N/A	N/A		N/A
7441.34	-46.24	0	3.00	3.30	PK	52.32	74.00	21.68	--	PASS
	-54.02		3.00	3.30	AV	44.54	54.00	9.46	--	PASS
10971.48	-47.85	0	3.00	3.30	PK	50.71	74.00	23.29	--	PASS
	-55.63		3.00	3.30	AV	42.93	54.00	11.07	--	PASS
24944.99	-44.36	0	3.00	3.30	PK	54.20	68.20	14.00	Note 2	PASS
	-52.14		3.00	3.30	AV	46.42	48.20	1.78	--	PASS

Test Plots

Band I 11ac (HT80) CH42 (30 MHz ~ 25 GHz)



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 2dBi, whichever is greater.

And the maximum in-band gain of the antenna is 3.3 dBi.

Note 1: The frequency is fundamental signal which can be ignored.

Note 2: Which frequency is not within a restricted band, and its limit line is resolved to 15.407(b)

Note 3: Average measurement was not performed if peak level went lower than the average limit.

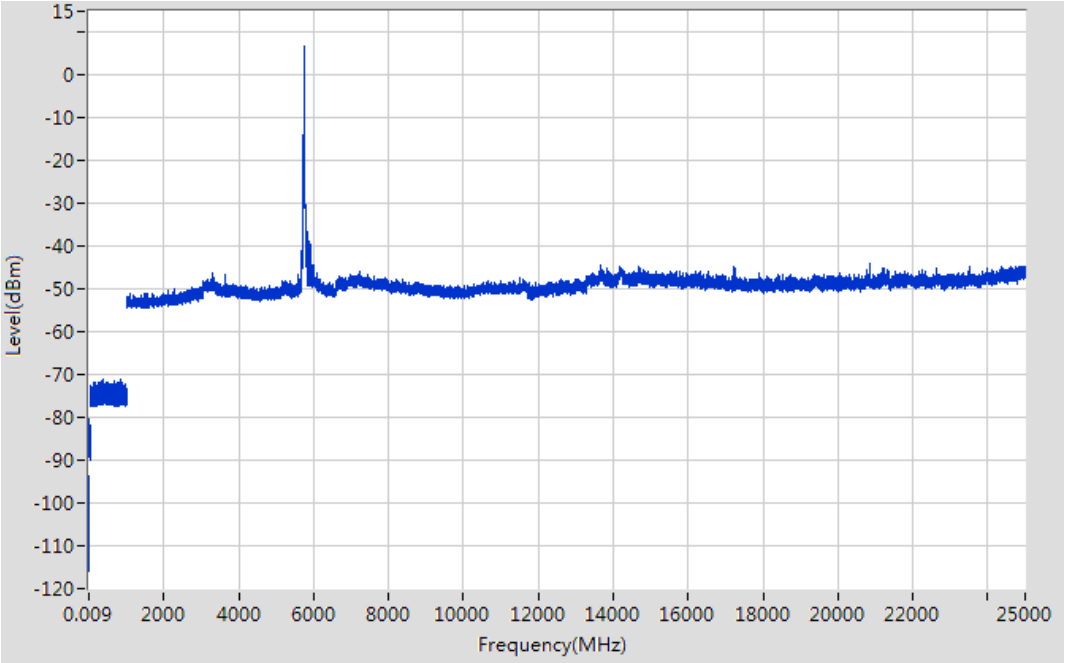
Note 4: The harmonic (2th ,3th , 4th,…etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise

Band IV 11a CH149

Frequency (MHz)	Value (dBm)	Ground Reflection Factor (dB)	D (m)	Max gain (dBi)	Detector	E (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark	Verdict
0.03	-93.72	6	3.00	3.30	QP	10.84	68.20	57.36	Note 2	PASS
0.15	-80.25	6	3.00	3.30	QP	24.31	68.20	43.89	Note 2	PASS
848.40	-70.87	4.7	3.00	3.30	QP	32.39	68.20	35.81	Note 2	PASS
5742.95	6.71	0	3.00	3.30	PK	105.27	N/A	N/A	Note 1	N/A
	-1.07		3.00	3.30	AV	97.49	N/A	N/A		N/A
7236.29	-45.96	0	3.00	3.30	PK	52.60	68.20	15.60	Note 2	PASS
	-53.74		3.00	3.30	AV	44.82	48.20	3.38	--	PASS
11502.86	-47.45	0	3.00	3.30	PK	51.11	74.00	22.89	--	PASS
	-55.23		3.00	3.30	AV	43.33	54.00	10.67	--	PASS
20836.19	-44.07	0	3.00	3.30	PK	54.49	74.00	19.51	--	PASS
	-51.85		3.00	3.30	AV	46.71	54.00	7.29	--	PASS

Test Plots

Band IV 11a CH149 (30 MHz ~ 25 GHz)



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 2dBi, whichever is greater.

And the maximum in-band gain of the antenna is 3.3 dBi.

Note 1: The frequency is fundamental signal which can be ignored.

Note 2: Which frequency is not within a restricted band, and its limit line is resolved to 15.407(b)

Note 3: Average measurement was not performed if peak level went lower than the average limit.

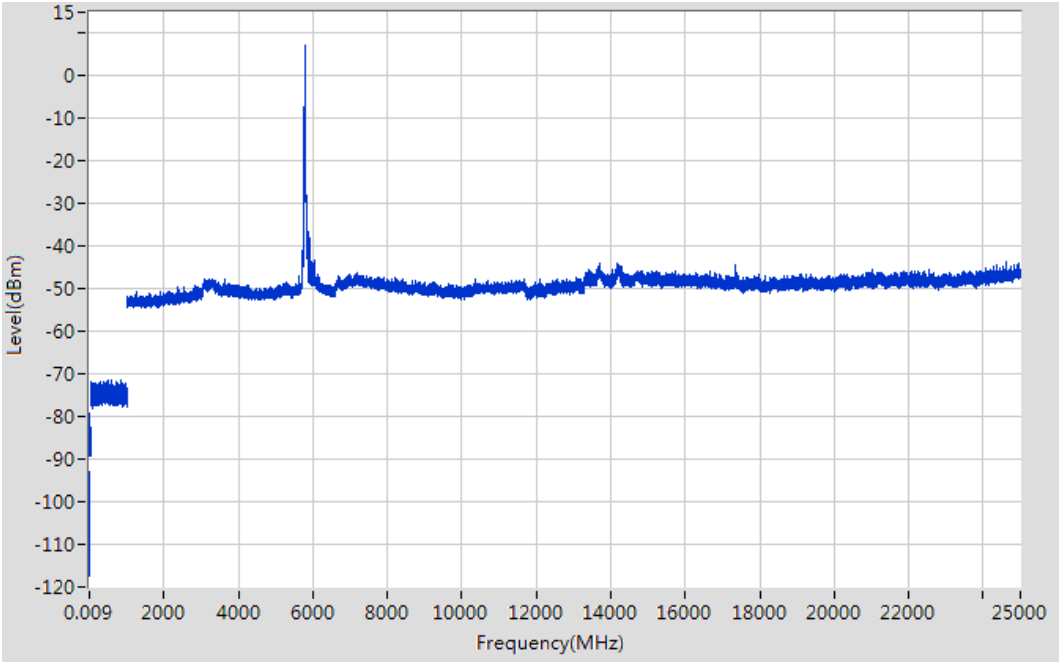
Note 4: The harmonic (2th ,3th , 4th,…etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise

Band IV 11a CH157

Frequency (MHz)	Value (dBm)	Ground Reflection Factor (dB)	D (m)	Max gain (dBi)	Detector	E (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark	Verdict
0.03	-92.98	6	3.00	3.30	QP	11.58	68.20	56.62	Note 2	PASS
0.20	-79.16	6	3.00	3.30	QP	25.40	68.20	42.80	Note 2	PASS
591.77	-71.28	4.7	3.00	3.30	QP	31.98	68.20	36.22	Note 2	PASS
5787.96	7.30	0	3.00	3.30	PK	105.86	N/A	N/A	Note 1	N/A
	-0.48		3.00	3.30	AV	98.08	N/A	N/A		N/A
6034.01	-43.13	0	3.00	3.30	PK	55.43	68.20	12.77	Note 2	PASS
	-50.91		3.00	3.30	AV	47.65	48.20	0.55	--	PASS
10384.06	-47.52	0	3.00	3.30	PK	51.04	68.20	17.16	Note 2	PASS
	-55.30		3.00	3.30	AV	43.26	48.20	4.94	--	PASS
24606.92	-43.54	0	3.00	3.30	PK	55.02	68.20	13.18	Note 2	PASS
	-51.32		3.00	3.30	AV	47.24	48.20	0.96	--	PASS

Test Plots

Band IV 11a CH157 (30 MHz ~ 25 GHz)



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 2dBi, whichever is greater.

And the maximum in-band gain of the antenna is 3.3 dBi.

Note 1: The frequency is fundamental signal which can be ignored.

Note 2: Which frequency is not within a restricted band, and its limit line is resolved to 15.407(b)

Note 3: Average measurement was not performed if peak level went lower than the average limit.

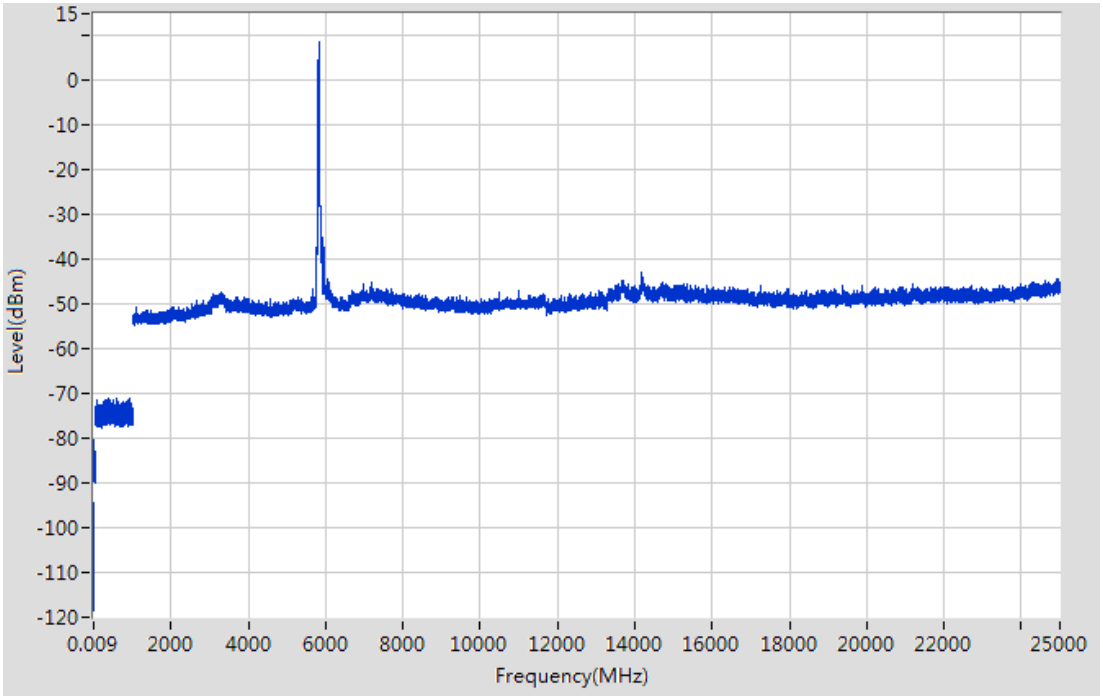
Note 4: The harmonic (2th ,3th , 4th,…etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise

Band IV 11a CH161

Frequency (MHz)	Value (dBm)	Ground Reflection Factor (dB)	D (m)	Max gain (dBi)	Detector	E (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark	Verdict
0.01	-94.26	6	3.00	3.30	QP	10.30	68.20	57.90	Note 2	PASS
0.37	-80.19	6	3.00	3.30	QP	24.37	68.20	43.83	Note 2	PASS
365.54	-70.99	4.7	3.00	3.30	QP	32.27	68.20	35.93	Note 2	PASS
5827.97	8.85	0	3.00	3.30	PK	107.41	N/A	N/A	Note 1	N/A
	1.07		3.00	3.30	AV	99.63	N/A	N/A		N/A
6050.01	-44.37	0	3.00	3.30	PK	54.19	68.20	14.01	Note 2	PASS
	-52.15		3.00	3.30	AV	46.41	48.20	1.79	--	PASS
11006.51	-47.02	0	3.00	3.30	PK	51.54	74.00	22.46	--	PASS
	-54.80		3.00	3.30	AV	43.76	54.00	10.24	--	PASS
14173.30	-42.69	0	3.00	3.30	PK	55.87	68.20	12.33	Note 2	PASS
	-50.47		3.00	3.30	AV	48.09	48.20	0.11	--	PASS

Test Plots

Band VI 11a CH161 (30 MHz ~ 25 GHz)



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 2dBi, whichever is greater.

And the maximum in-band gain of the antenna is 3.3 dBi.

Note 1: The frequency is fundamental signal which can be ignored.

Note 2: Which frequency is not within a restricted band, and its limit line is resolved to 15.407(b)

Note 3: Average measurement was not performed if peak level went lower than the average limit.

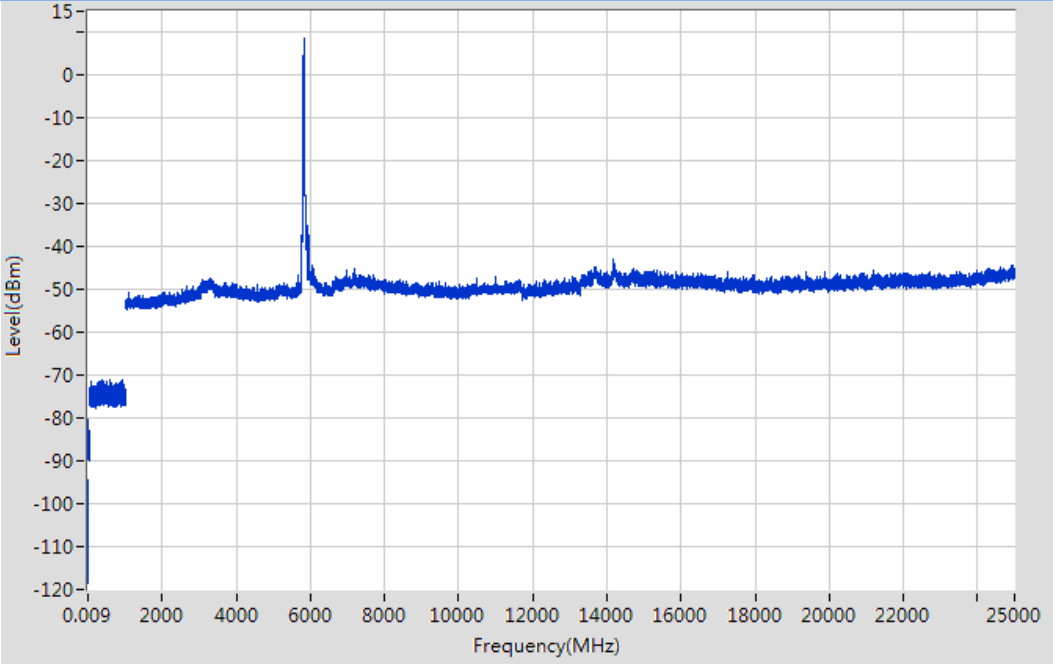
Note 4: The harmonic (2th ,3th , 4th,…etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise

Band IV 11n (HT20) CH149

Frequency (MHz)	Value (dBm)	Ground Reflection Factor (dB)	D (m)	Max gain (dBi)	Detector	E (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark	Verdict
0.02	-91.85	6	3.00	3.30	QP	12.71	68.20	55.49	Note 2	PASS
0.59	-79.78	6	3.00	3.30	QP	24.78	68.20	43.42	Note 2	PASS
412.75	-70.50	4.7	3.00	3.30	QP	32.76	68.20	35.44	Note 2	PASS
5742.95	5.00	0	3.00	3.30	PK	103.56	N/A	N/A	Note 1	N/A
	-2.78		3.00	3.30	AV	95.78	N/A	N/A		N/A
7198.28	-46.27	0	3.00	3.30	PK	52.29	68.20	15.91	Note 2	PASS
	-54.05		3.00	3.30	AV	44.51	48.20	3.69	--	PASS
11283.70	-47.94	0	3.00	3.30	PK	50.62	74.00	23.38	--	PASS
	-55.72		3.00	3.30	AV	42.84	54.00	11.16	--	PASS
14193.30	-43.38	0	3.00	3.30	PK	55.18	68.20	13.02	Note 2	PASS
	-51.16		3.00	3.30	AV	47.40	48.20	0.80	--	PASS

Test Plots

Band IV 11n (HT20) CH149 (30 MHz ~ 25 GHz)



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 2dBi, whichever is greater.

And the maximum in-band gain of the antenna is 3.3 dBi.

Note 1: The frequency is fundamental signal which can be ignored.

Note 2: Which frequency is not within a restricted band, and its limit line is resolved to 15.407(b)

Note 3: Average measurement was not performed if peak level went lower than the average limit.

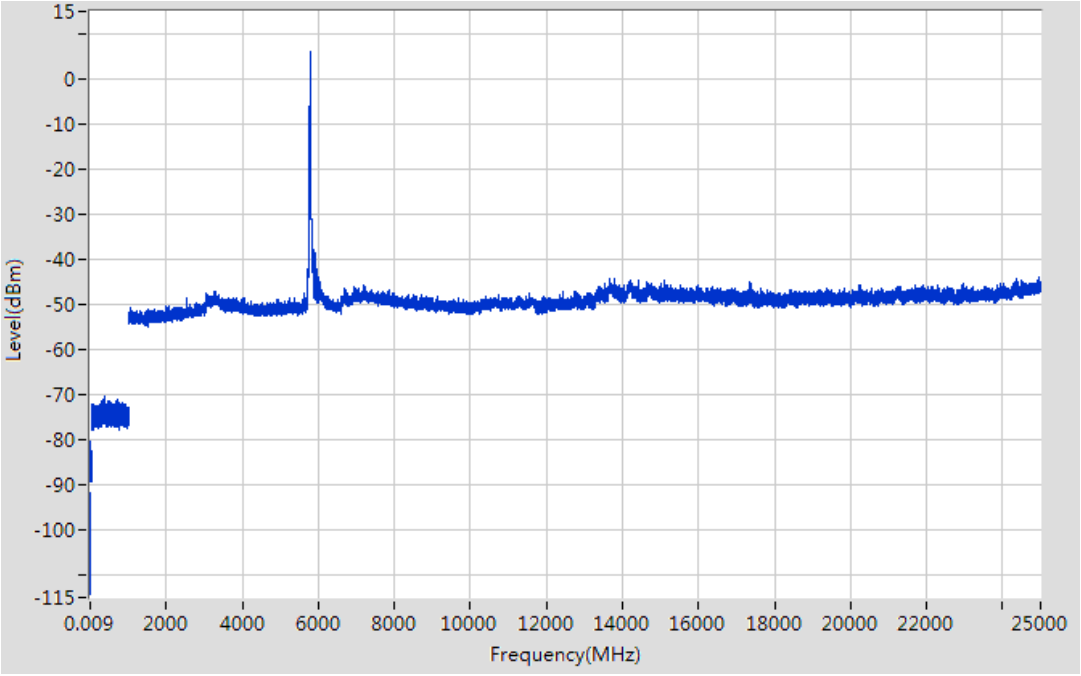
Note 4: The harmonic (2th ,3th , 4th,…etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise

Band IV 11n (HT20) CH157

Frequency (MHz)	Value (dBm)	Ground Reflection Factor (dB)	D (m)	Max gain (dBi)	Detector	E (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark	Verdict
0.01	-91.67	6	3.00	3.30	QP	12.89	68.20	55.31	Note 2	PASS
0.40	-80.22	6	3.00	3.30	QP	24.34	68.20	43.86	Note 2	PASS
390.04	-70.30	4.7	3.00	3.30	QP	32.96	68.20	35.24	Note 2	PASS
5787.96	6.22	0	3.00	3.30	PK	104.78	N/A	N/A	Note 1	N/A
	-1.56		3.00	3.30	AV	97.00	N/A	N/A		N/A
6012.00	-44.07	0	3.00	3.30	PK	54.49	68.20	13.71	Note 2	PASS
	-51.85		3.00	3.30	AV	46.71	48.20	1.49	--	PASS
11567.91	-47.46	0	3.00	3.30	PK	51.10	74.00	22.90	--	PASS
	-55.24		3.00	3.30	AV	43.32	54.00	10.68	--	PASS
24965.99	-44.06	0	3.00	3.30	PK	54.50	68.20	13.70	Note 2	PASS
	-51.84		3.00	3.30	AV	46.72	48.20	1.48	--	PASS

Test Plots

Band IV 11n (HT20) CH157 (30 MHz ~ 25 GHz)



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 2dBi, whichever is greater.

And the maximum in-band gain of the antenna is 3.3 dBi.

Note 1: The frequency is fundamental signal which can be ignored.

Note 2: Which frequency is not within a restricted band, and its limit line is resolved to 15.407(b)

Note 3: Average measurement was not performed if peak level went lower than the average limit.

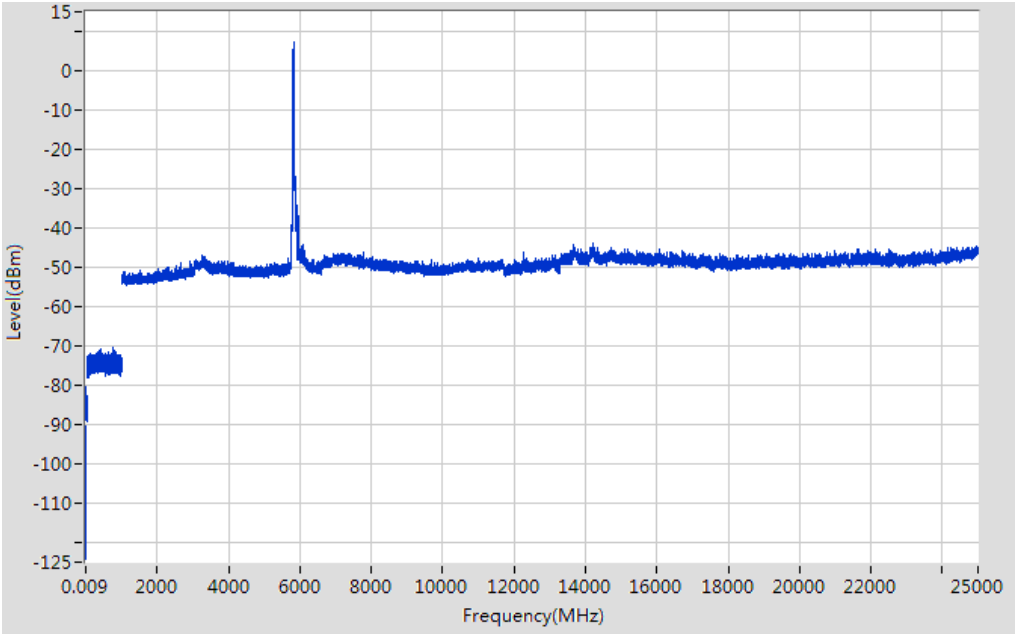
Note 4: The harmonic (2th ,3th , 4th,…etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise

Band IV 11n (HT20) CH161

Frequency (MHz)	Value (dBm)	Ground Reflection Factor (dB)	D (m)	Max gain (dBi)	Detector	E (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark	Verdict
0.01	-90.37	6	3.00	3.30	QP	14.19	68.20	54.01	Note 2	PASS
0.58	-80.48	6	3.00	3.30	QP	24.08	68.20	44.12	Note 2	PASS
769.99	-70.55	4.7	3.00	3.30	QP	32.71	68.20	35.49	Note 2	PASS
5820.96	7.18	0	3.00	3.30	PK	105.74	N/A	N/A	Note 1	N/A
	-0.60		3.00	3.30	AV	97.96	N/A	N/A		N/A
6075.02	-44.42	0	3.00	3.30	PK	54.14	68.20	14.06	Note 2	PASS
	-52.20		3.00	3.30	AV	46.36	48.20	1.84	--	PASS
10985.49	-47.78	0	3.00	3.30	PK	50.78	74.00	23.22	--	PASS
	-55.56		3.00	3.30	AV	43.00	54.00	11.00	--	PASS
14205.31	-43.98	0	3.00	3.30	PK	54.58	68.20	13.62	Note 2	PASS
	-51.76		3.00	3.30	AV	46.80	48.20	1.40	--	PASS

Test Plots

Band IV 11n (HT20) CH161 (30 MHz ~ 25 GHz)



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 2dBi, whichever is greater.

And the maximum in-band gain of the antenna is 3.3 dBi.

Note 1: The frequency is fundamental signal which can be ignored.

Note 2: Which frequency is not within a restricted band, and its limit line is resolved to 15.407(b)

Note 3: Average measurement was not performed if peak level went lower than the average limit.

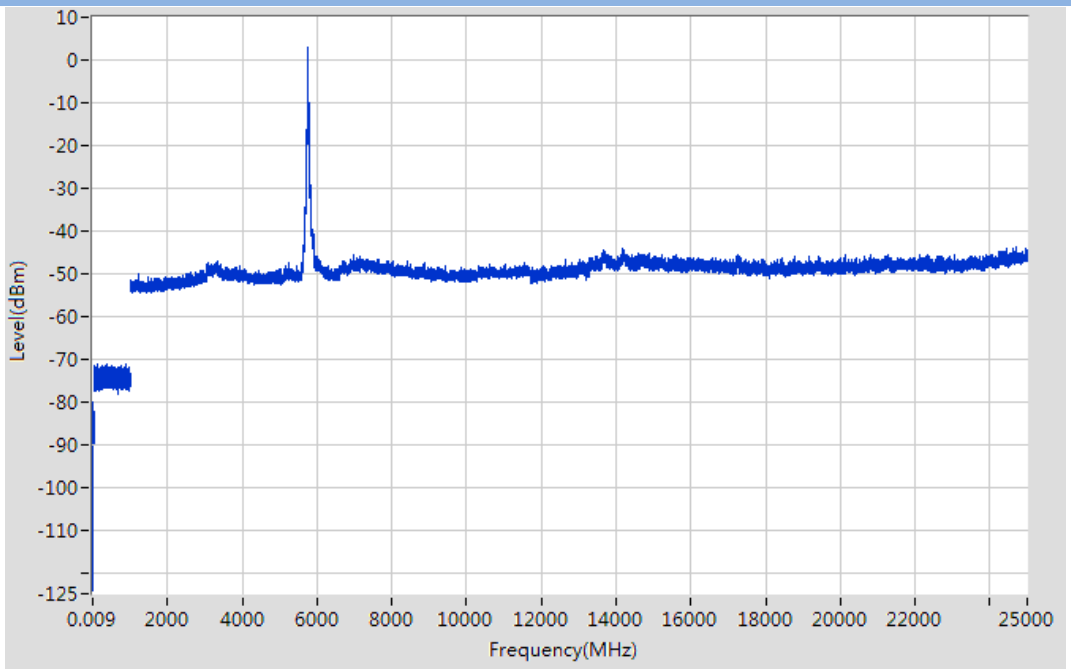
Note 4: The harmonic (2th ,3th , 4th,…etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise

Band IV 11n (HT40) CH151

Frequency (MHz)	Value (dBm)	Ground Reflection Factor (dB)	D (m)	Max gain (dBi)	Detector	E (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark	Verdict
0.01	-90.38	6	3.00	3.30	QP	14.18	68.20	54.02	Note 2	PASS
0.28	-80.11	6	3.00	3.30	QP	24.45	68.20	43.75	Note 2	PASS
135.51	-71.08	4.7	3.00	3.30	QP	32.18	43.50	11.32	Note 2	PASS
5761.95	3.09	0	3.00	3.30	PK	101.65	N/A	N/A	Note 1	N/A
	-4.69		3.00	3.30	AV	93.87	N/A	N/A		N/A
6983.23	-45.60	0	3.00	3.30	PK	52.96	68.20	15.24	Note 2	PASS
	-53.38		3.00	3.30	AV	45.18	48.20	3.02	--	PASS
11532.88	-47.61	0	3.00	3.30	PK	50.95	74.00	23.05	--	PASS
	-55.39		3.00	3.30	AV	43.17	54.00	10.83	--	PASS
24715.94	-43.89	0	3.00	3.30	PK	54.67	68.20	13.53	Note 2	PASS
	-51.67		3.00	3.30	AV	46.89	48.20	1.31	--	PASS

Test Plots

Band IV 11n (HT40) CH151 (30 MHz ~ 25 GHz)



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 2dBi, whichever is greater.

And the maximum in-band gain of the antenna is 3.3 dBi.

Note 1: The frequency is fundamental signal which can be ignored.

Note 2: Which frequency is not within a restricted band, and its limit line is resolved to 15.407(b)

Note 3: Average measurement was not performed if peak level went lower than the average limit.

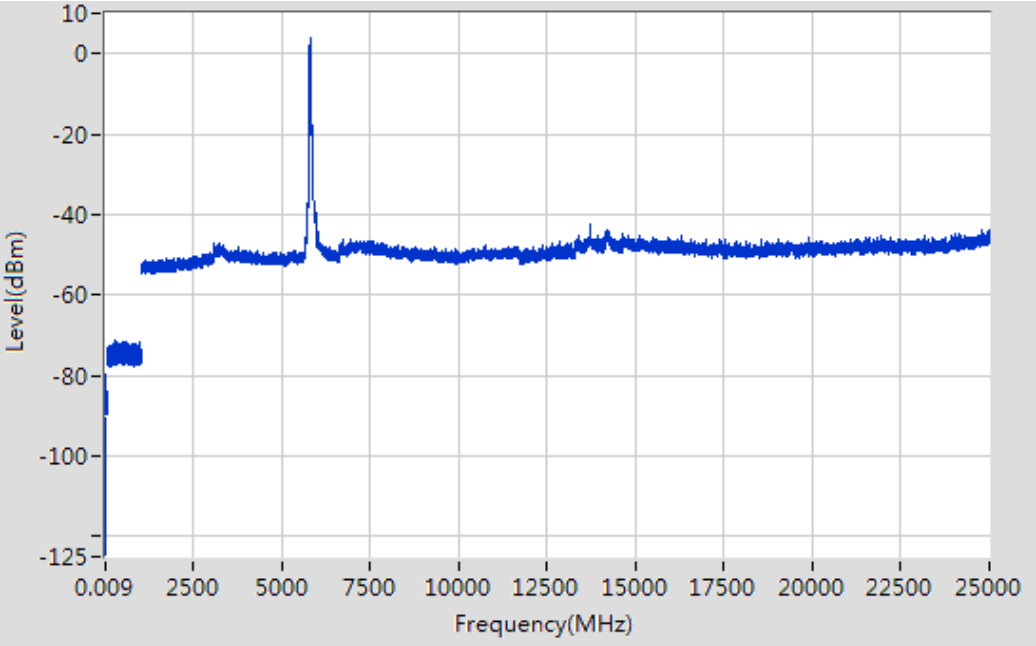
Note 4: The harmonic (2th ,3th , 4th,…etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise

Band IV 11n (HT40) CH159

Frequency (MHz)	Value (dBm)	Ground Reflection Factor (dB)	D (m)	Max gain (dBi)	Detector	E (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark	Verdict
0.01	-90.52	6	3.00	3.30	QP	14.04	68.20	54.16	Note 2	PASS
0.18	-79.58	6	3.00	3.30	QP	24.98	68.20	43.22	Note 2	PASS
254.93	-71.27	4.7	3.00	3.30	QP	31.99	46.00	14.01	Note 2	PASS
5805.96	3.65	0	3.00	3.30	PK	102.21	N/A	N/A	Note 1	N/A
	-5.10		3.00	3.30	AV	93.46	N/A	N/A		N/A
6016.00	-45.23	0	3.00	3.30	PK	53.33	68.20	14.87	Note 2	PASS
	-53.98		3.00	3.30	AV	44.58	48.20	3.62	--	PASS
10766.33	-47.69	0	3.00	3.30	PK	50.87	74.00	23.13	--	PASS
	-56.44		3.00	3.30	AV	42.12	54.00	11.88	--	PASS
13694.24	-42.17	0	3.00	3.30	PK	56.39	68.20	11.81	Note 2	PASS
	-50.92		3.00	3.30	AV	47.64	48.20	0.56	--	PASS

Test Plots

Band IV 11n (HT40) CH159 (30 MHz ~ 25 GHz)



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 2dBi, whichever is greater.

And the maximum in-band gain of the antenna is 3.3 dBi.

Note 1: The frequency is fundamental signal which can be ignored.

Note 2: Which frequency is not within a restricted band, and its limit line is resolved to 15.407(b)

Note 3: Average measurement was not performed if peak level went lower than the average limit.

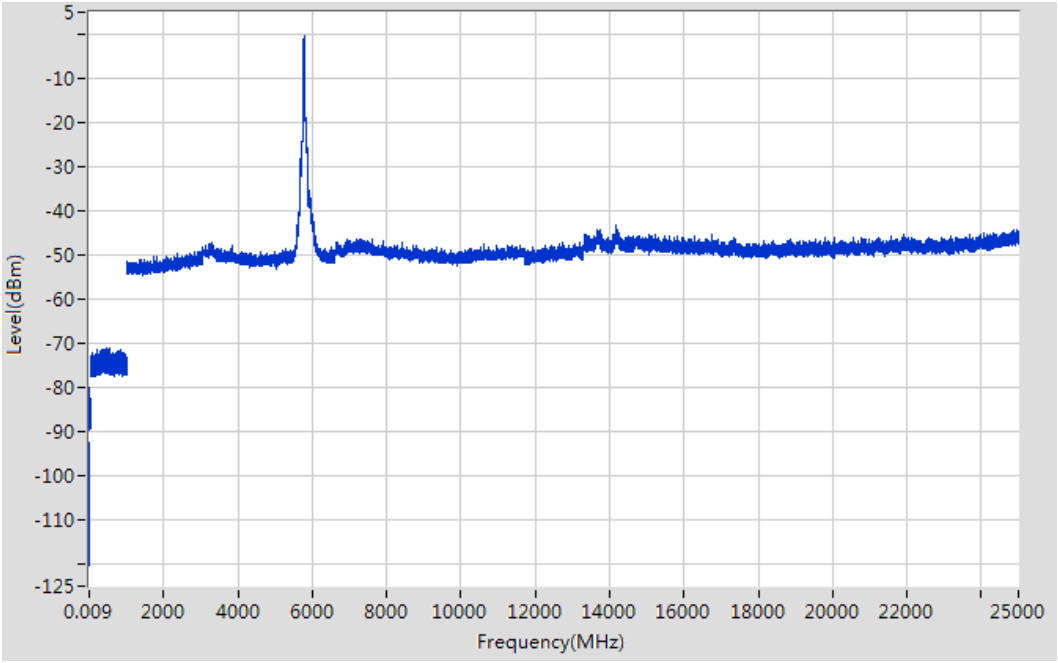
Note 4: The harmonic (2th ,3th , 4th,…etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise

Band IV 11ac (HT80) CH155

Frequency (MHz)	Value (dBm)	Ground Reflection Factor (dB)	D (m)	Max gain (dBi)	Detector	E (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark	Verdict
0.02	-92.45	6	3.00	3.30	QP	12.11	68.20	56.09	Note 2	PASS
0.19	-79.86	6	3.00	3.30	QP	24.70	68.20	43.50	Note 2	PASS
569.57	-70.97	4.7	3.00	3.30	QP	32.29	68.20	35.91	Note 2	PASS
5806.96	-0.27	0	3.00	3.30	PK	98.29	N/A	N/A	Note 1	N/A
	-10.27		3.00	3.30	AV	88.29	N/A	N/A		N/A
6025.01	-41.85	0	3.00	3.30	PK	56.71	68.20	11.49	Note 2	PASS
	-51.85		3.00	3.30	AV	46.71	48.20	1.49	--	PASS
10616.23	-47.49	0	3.00	3.30	PK	51.07	74.00	22.93	--	PASS
	-57.49		3.00	3.30	AV	41.07	54.00	12.93	--	PASS
14173.30	-43.27	0	3.00	3.30	PK	55.29	68.20	12.91	Note 2	PASS
	-53.27		3.00	3.30	AV	45.29	48.20	2.91	--	PASS

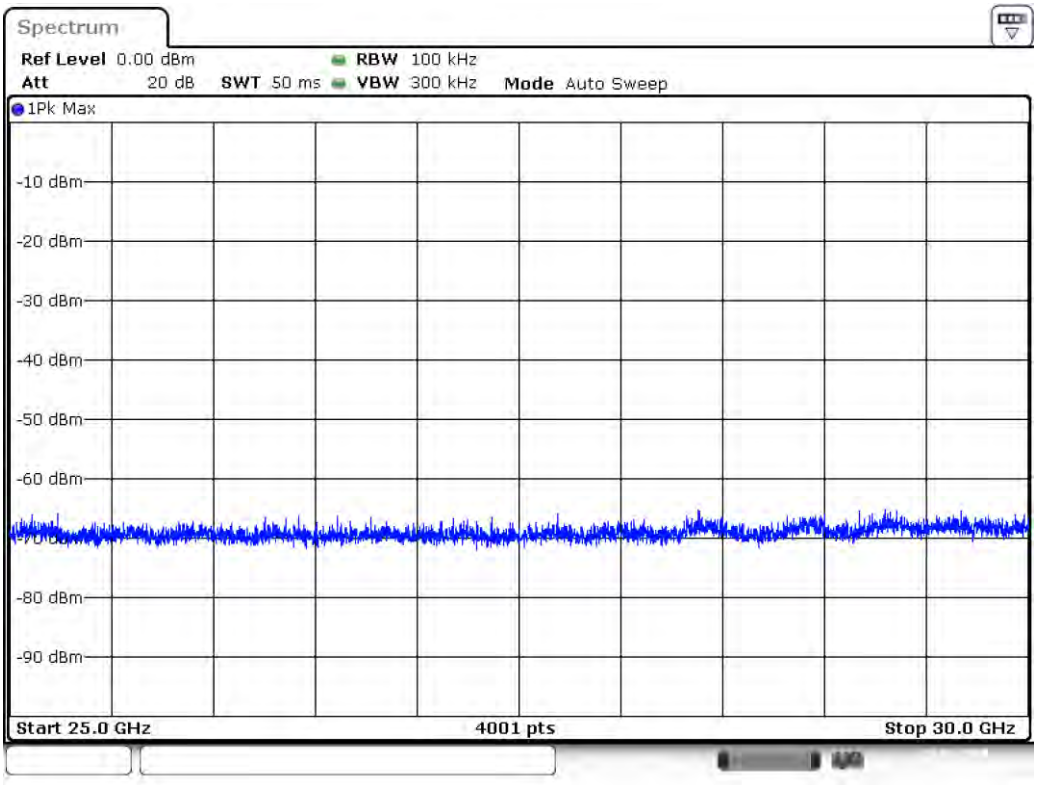
Test Plots

Band IV 11n (HT40) CH159 (30 MHz ~ 25 GHz)



Test Frequency: 25 GHz ~ 40 GHz

Note: Only noise floor was seen.



Cabinet Radiated spurious emission test

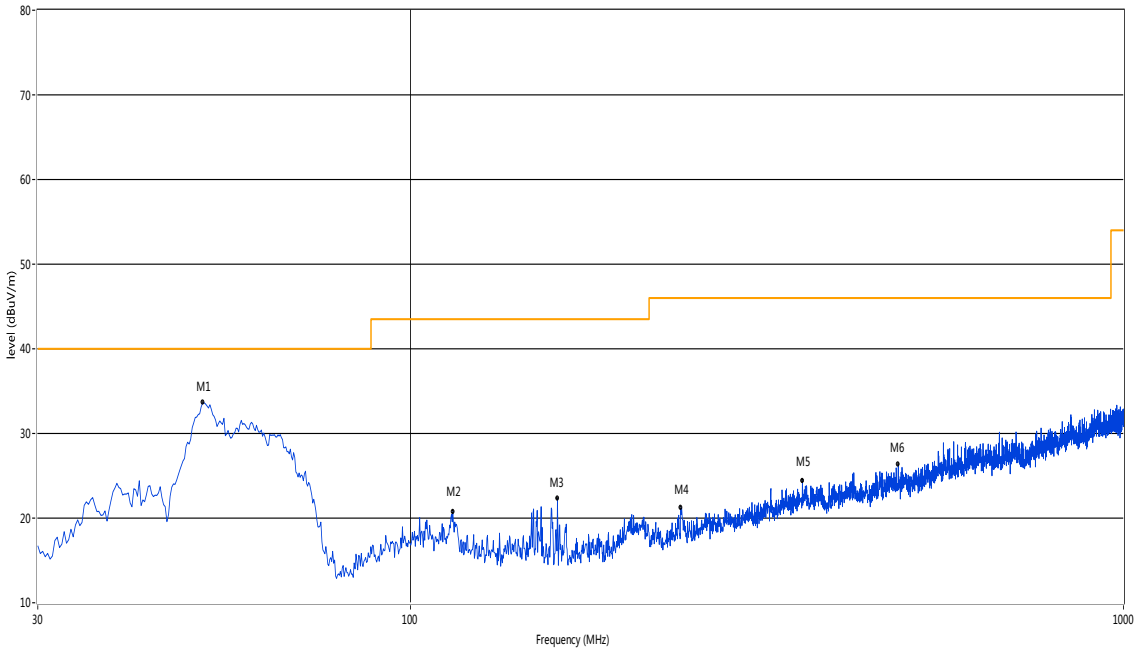
Note 1: The symbol of "--" in the table which means not application.

Note 2: For the test data above 1 GHz，According the ANSI C63.4, 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 3: 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.

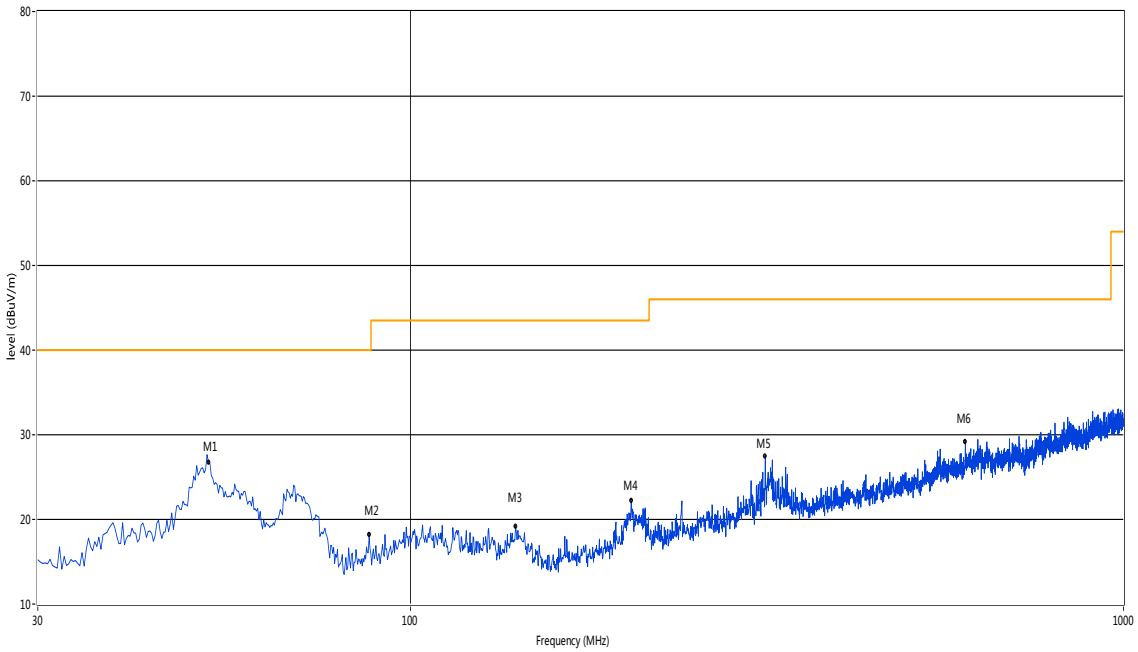
Not 4: All channel was test but only the worst data was reported in this report.

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	51.09	33.62	-18.62	40.0	6.38	Peak	332.00	100	Vertical	Pass
2	114.61	20.78	-20.90	43.5	22.72	Peak	5.30	100	Vertical	Pass
3	160.67	22.31	-23.06	43.5	21.19	Peak	37.60	100	Vertical	Pass
4	239.23	21.21	-19.14	46.0	24.79	Peak	360.00	100	Vertical	Pass
5	354.38	24.43	-16.21	46.0	21.57	Peak	357.10	100	Vertical	Pass
6	483.12	26.33	-13.70	46.0	19.67	Peak	82.60	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	52.06	26.72	-18.62	40.0	13.28	Peak	298.00	100	Horizontal	Pass
2	87.46	18.15	-22.65	40.0	21.85	Peak	338.20	100	Horizontal	Pass
3	140.31	19.16	-23.63	43.5	24.34	Peak	323.30	100	Horizontal	Pass
4	203.83	22.16	-20.14	43.5	21.34	Peak	272.80	100	Horizontal	Pass
5	314.38	27.39	-17.24	46.0	18.61	Peak	151.90	100	Horizontal	Pass
6	599.73	29.18	-10.77	46.0	16.82	Peak	282.80	100	Horizontal	Pass

1 GHz to 40 GHz, ANT V 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	1125.47	41.96	-5.16	74	32.04	Peak	64	150	Vertical	Pass
2	1392.40	41.12	-4.33	74	32.88	Peak	84.7	150	Vertical	Pass
3	1664.83	43.46	-2.52	74	30.54	Peak	12.7	150	Vertical	Pass
4	10301.58	46.81	17.69	74	27.19	Peak	253.5	150	Vertical	Pass
5	14861.07	43.11	9.78	74	30.89	Peak	92.4	150	Vertical	Pass
6	21425.96	49.22	9.34	74	24.78	Peak	177.4	150	Vertical	Pass

1 GHz to 40 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	2390.61	42.64	-6.30	74	31.36	Peak	87.2	150	Horizontal	Pass
2	3182.82	45.43	2.29	74	28.57	Peak	257	150	Horizontal	Pass
3	5565.44	51.94	10.40	74	22.06	Peak	15.2	150	Horizontal	Pass
4	11795.34	49.58	14.23	74	24.42	Peak	321.8	150	Horizontal	Pass
5	14309.90	44.56	19.31	74	29.44	Peak	73	150	Horizontal	Pass
6	21086.52	47.75	9.95	74	26.25	Peak	285.9	150	Horizontal	Pass

1 GHz to 40 GHz, ANT V 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	1362.41	43.17	-6.04	74	30.83	Peak	297.7	150	Vertical	Pass
2	1380.41	42.16	-3.98	74	31.84	Peak	217	150	Vertical	Pass
3	1722.32	44.82	-4.27	74	29.18	Peak	351	150	Vertical	Pass
4	6179.70	44.28	14.42	74	29.72	Peak	16.1	150	Vertical	Pass
5	14413.89	45.51	20.63	74	28.49	Peak	231.1	150	Vertical	Pass
6	22514.14	48.16	8.69	74	25.84	Peak	228.3	150	Vertical	Pass

1 GHz to 40 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	1339.66	43.79	-1.09	74	30.21	Peak	44.2	150	Horizontal	Pass
2	3098.90	46.48	1.11	74	27.52	Peak	358.5	150	Horizontal	Pass
3	5415.58	51.07	12.67	74	22.93	Peak	187	150	Horizontal	Pass
4	7403.91	43.39	19.29	74	30.62	Peak	123.7	150	Horizontal	Pass
5	14819.47	41.96	9.24	74	32.04	Peak	282.1	150	Horizontal	Pass
6	19219.63	47.88	11.08	74	26.12	Peak	30.9	150	Horizontal	Pass

1 GHz to 40 GHz, ANT V 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	1083.98	42.53	-4.71	74	31.47	Peak	170.1	150	Vertical	Pass
2	1444.89	41.35	-4.19	74	32.65	Peak	84.8	150	Vertical	Pass
3	1948.76	45.38	-3.70	74	28.62	Peak	121.2	150	Vertical	Pass
4	8111.48	49.34	18.20	74	24.66	Peak	99.4	150	Vertical	Pass
5	12581.53	44.47	9.31	74	29.53	Peak	296.3	150	Vertical	Pass
6	21176.37	44.59	12.05	74	29.42	Peak	9.9	150	Vertical	Pass

1 GHz to 40 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	2242.76	43.40	-0.33	74	30.60	Peak	173.4	150	Horizontal	Pass
2	2990.01	47.67	9.08	74	26.34	Peak	311.9	150	Horizontal	Pass
3	5280.72	52.44	10.21	74	21.57	Peak	248.8	150	Horizontal	Pass
4	6606.49	44.00	20.18	74	30.00	Peak	157.1	150	Horizontal	Pass
5	16192.18	42.38	11.83	74	31.62	Peak	250.6	150	Horizontal	Pass
6	23252.91	45.85	11.72	74	28.15	Peak	185.1	150	Horizontal	Pass

1 GHz to 40 GHz, ANT V 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	1024.49	42.39	-6.26	74	31.61	Peak	210.5	150	Vertical	Pass
2	1514.87	42.97	-4.36	74	31.03	Peak	123.3	150	Vertical	Pass
3	1799.30	40.32	-3.94	74	33.68	Peak	48.8	150	Vertical	Pass
4	10245.42	49.17	20.40	74	24.83	Peak	283.6	150	Vertical	Pass
5	14767.47	47.19	9.35	74	26.81	Peak	3.2	150	Vertical	Pass
6	18261.65	46.44	12.91	74	27.56	Peak	243.7	150	Vertical	Pass

1 GHz to 40 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	1469.53	43.23	-1.71	74	30.77	Peak	267.9	150	Horizontal	Pass
2	2950.05	44.07	8.89	74	29.93	Peak	147.8	150	Horizontal	Pass
3	3692.31	50.03	13.09	74	23.97	Peak	66.9	150	Horizontal	Pass
4	11368.55	50.47	16.71	74	23.53	Peak	188.7	150	Horizontal	Pass
5	14268.30	45.56	10.66	74	28.44	Peak	284.9	150	Horizontal	Pass
6	20347.75	45.10	13.34	74	28.90	Peak	183.1	150	Horizontal	Pass

1 GHz to 40 GHz, ANT V 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	1140.97	40.03	-6.11	74	33.97	Peak	245.2	150	Vertical	Pass
2	1482.38	41.65	-4.39	74	32.36	Peak	15.9	150	Vertical	Pass
3	1798.80	44.54	-3.89	74	29.46	Peak	190.3	150	Vertical	Pass
4	8336.11	44.39	20.17	74	29.61	Peak	184.9	150	Vertical	Pass
5	12064.89	46.17	9.70	74	27.83	Peak	71.3	150	Vertical	Pass
6	19289.52	46.18	10.77	74	27.82	Peak	144.1	150	Vertical	Pass

1 GHz to 40 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	1605.40	41.78	-4.06	74	32.22	Peak	200.4	150	Horizontal	Pass
2	2960.04	48.80	9.58	74	25.20	Peak	238.4	150	Horizontal	Pass
3	4507.49	51.15	14.73	74	22.85	Peak	331.6	150	Horizontal	Pass
4	9537.85	48.20	20.05	74	25.80	Peak	37.4	150	Horizontal	Pass
5	16764.14	43.49	11.41	74	30.51	Peak	249.1	150	Horizontal	Pass
6	19519.14	45.00	11.71	74	29.00	Peak	89	150	Horizontal	Pass

1 GHz to 40 GHz, ANT V 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	1142.46	42.64	-5.91	74	31.36	Peak	178	150	Vertical	Pass
2	1511.87	42.88	-3.99	74	31.13	Peak	196.9	150	Vertical	Pass
3	1758.81	41.79	-4.43	74	32.22	Peak	51.4	150	Vertical	Pass
4	10200.50	46.98	15.15	74	27.02	Peak	49.7	150	Vertical	Pass
5	16483.36	41.54	9.02	74	32.46	Peak	330.5	150	Vertical	Pass
6	21515.81	45.19	11.43	74	28.82	Peak	126	150	Vertical	Pass

1 GHz to 40 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	1339.66	41.07	-4.42	74	32.94	Peak	350.3	150	Horizontal	Pass
2	3404.60	44.03	8.98	74	29.98	Peak	223.9	150	Horizontal	Pass
3	4786.21	49.64	14.94	74	24.36	Peak	339.4	150	Horizontal	Pass
4	10234.19	47.83	14.17	74	26.17	Peak	341.2	150	Horizontal	Pass
5	14902.66	44.88	9.24	74	29.12	Peak	175.7	150	Horizontal	Pass
6	18324.04	42.86	11.72	74	31.14	Peak	315.2	150	Horizontal	Pass

1 GHz to 40 GHz, ANT V 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	1182.95	43.10	-4.80	74	30.90	Peak	238.4	150	Vertical	Pass
2	1573.86	40.71	-4.09	74	33.29	Peak	305.4	150	Vertical	Pass
3	1795.30	40.97	-4.01	74	33.03	Peak	42.4	150	Vertical	Pass
4	11660.57	50.02	14.31	74	23.99	Peak	140.7	150	Vertical	Pass
5	15058.65	49.48	9.06	74	24.52	Peak	112	150	Vertical	Pass
6	19838.60	44.70	11.04	74	29.30	Peak	115	150	Vertical	Pass

1 GHz to 40 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	1643.36	41.24	-4.87	74	32.76	Peak	118.9	150	Horizontal	Pass
2	2616.38	45.39	9.01	74	28.61	Peak	147.5	150	Horizontal	Pass
3	3947.05	46.90	11.85	74	27.10	Peak	193.5	150	Horizontal	Pass
4	6741.27	47.23	17.04	74	26.77	Peak	311.6	150	Horizontal	Pass
5	16368.97	46.15	9.03	74	27.85	Peak	66.5	150	Horizontal	Pass
6	24780.37	44.47	12.27	74	29.53	Peak	163.8	150	Horizontal	Pass

1 GHz to 40 GHz, ANT V 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	1249.94	40.67	-5.97	74	33.33	Peak	154.9	150	Vertical	Pass
2	1529.87	43.93	-4.46	74	30.07	Peak	248.7	150	Vertical	Pass
3	1881.78	43.96	-4.17	74	30.04	Peak	135.1	150	Vertical	Pass
4	8684.28	45.94	20.11	74	28.06	Peak	280.4	150	Vertical	Pass
5	15297.84	44.05	9.66	74	29.95	Peak	256.1	150	Vertical	Pass
6	18740.02	48.97	9.68	74	25.03	Peak	201.7	150	Vertical	Pass

1 GHz to 40 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	2266.73	40.66	-0.56	74	33.34	Peak	242.8	150	Horizontal	Pass
2	2580.42	46.76	9.10	74	27.24	Peak	214.3	150	Horizontal	Pass
3	4123.88	46.22	14.80	74	27.78	Peak	154.9	150	Horizontal	Pass
4	7808.24	47.97	14.40	74	26.03	Peak	242.7	150	Horizontal	Pass
5	15006.66	48.12	10.96	74	25.88	Peak	7.4	150	Horizontal	Pass
6	19898.50	45.56	12.71	74	28.44	Peak	209.5	150	Horizontal	Pass

1 GHz to 40 GHz, ANT V Band I 11ac80 Low channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1000.50	42.40	-6.19	74	31.60	Peak	230.4	150	Vertical	Pass
2	1540.37	44.38	-4.61	74	29.62	Peak	217.6	150	Vertical	Pass
3	1894.78	42.44	-4.15	74	31.56	Peak	234.7	150	Vertical	Pass
4	9672.63	44.64	18.76	74	29.36	Peak	63.6	150	Vertical	Pass
5	17866.47	42.57	9.21	74	31.43	Peak	19.9	150	Vertical	Pass
6	22284.53	44.50	8.77	74	29.50	Peak	218.5	150	Vertical	Pass

1 GHz to 40 GHz, ANT H Band I 11ac80 Low channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1775.23	43.51	-3.75	74	30.49	Peak	187.5	150	Horizontal	Pass
2	3000.00	47.24	8.97	74	26.77	Peak	210.6	150	Horizontal	Pass
3	5319.68	46.12	13.86	74	27.88	Peak	153.5	150	Horizontal	Pass
4	7943.01	47.08	13.82	74	26.92	Peak	97	150	Horizontal	Pass
5	13093.18	43.30	9.04	74	30.70	Peak	133	150	Horizontal	Pass
6	22574.04	46.60	11.05	74	27.41	Peak	84.6	150	Horizontal	Pass

1 GHz to 40 GHz, ANT V 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	1100.48	41.90	-6.04	74	32.10	Peak	71.9	150	Vertical	Pass
2	1508.37	43.35	-4.33	74	30.65	Peak	162.1	150	Vertical	Pass
3	1610.35	43.90	-3.90	74	30.10	Peak	14.4	150	Vertical	Pass
4	7639.77	42.82	14.82	74	31.18	Peak	122.1	150	Vertical	Pass
5	16483.36	44.06	20.70	74	29.94	Peak	322.3	150	Vertical	Pass
6	22584.03	47.02	11.02	74	26.98	Peak	46.3	150	Vertical	Pass

1 GHz to 40 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	1539.46	46.53	-2.86	74	27.47	Peak	319.5	150	Horizontal	Pass
2	3419.58	44.87	9.23	74	29.13	Peak	14	150	Horizontal	Pass
3	5982.02	46.88	13.57	74	27.13	Peak	156.3	150	Horizontal	Pass
4	7864.39	42.75	18.97	74	31.25	Peak	4.6	150	Horizontal	Pass
5	17502.50	49.93	9.65	74	24.07	Peak	13	150	Horizontal	Pass
6	23063.23	44.90	9.55	74	29.10	Peak	61.4	150	Horizontal	Pass

1 GHz to 40 GHz, ANT V 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	1171.96	38.70	-4.71	74	35.30	Peak	207.4	150	Vertical	Pass
2	1579.36	42.45	-4.41	74	31.55	Peak	2.2	150	Vertical	Pass
3	1646.84	45.50	-4.29	74	28.50	Peak	164.3	150	Vertical	Pass
4	9358.15	50.27	14.34	74	23.73	Peak	314.6	150	Vertical	Pass
5	14049.92	47.03	9.18	74	26.97	Peak	105.9	150	Vertical	Pass
6	19589.02	50.62	8.34	74	23.38	Peak	185.5	150	Vertical	Pass

1 GHz to 40 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	1033.97	39.79	-2.65	74	34.21	Peak	233.1	150	Horizontal	Pass
2	3071.93	46.26	9.06	74	27.74	Peak	316.6	150	Horizontal	Pass
3	4783.22	46.40	13.60	74	27.60	Peak	282.8	150	Horizontal	Pass
4	11402.25	44.84	20.01	74	29.16	Peak	110.4	150	Horizontal	Pass
5	14861.07	41.44	20.48	74	32.56	Peak	74.1	150	Horizontal	Pass
6	23212.98	46.91	13.57	74	27.09	Peak	58	150	Horizontal	Pass

1 GHz to 40 GHz, ANT V 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	1303.42	42.54	-5.19	74	31.46	Peak	305.2	150	Vertical	Pass
2	1462.38	40.80	-4.39	74	33.20	Peak	352.7	150	Vertical	Pass
3	1617.85	41.00	-2.82	74	33.00	Peak	239.3	150	Vertical	Pass
4	10256.66	45.82	14.69	74	28.19	Peak	61.3	150	Vertical	Pass
5	16972.13	44.86	13.33	74	29.14	Peak	159	150	Vertical	Pass
6	18604.83	45.23	10.33	74	28.78	Peak	167.4	150	Vertical	Pass

1 GHz to 40 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	2332.67	41.63	-4.25	74	32.37	Peak	174.4	150	Horizontal	Pass
2	2808.19	44.08	9.16	74	29.92	Peak	261.1	150	Horizontal	Pass
3	4366.63	51.59	11.31	74	22.41	Peak	216.3	150	Horizontal	Pass
4	11256.24	46.42	19.72	74	27.58	Peak	247.3	150	Horizontal	Pass
5	14268.30	41.79	12.58	74	32.21	Peak	154.5	150	Horizontal	Pass
6	20717.14	44.03	8.84	74	29.98	Peak	233.2	150	Horizontal	Pass

1 GHz to 40 GHz, ANT V 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	1236.44	38.99	-5.56	74	35.01	Peak	347.8	150	Vertical	Pass
2	1534.87	43.70	-4.07	74	30.30	Peak	153.4	150	Vertical	Pass
3	1940.27	42.73	-4.20	74	31.27	Peak	227.8	150	Vertical	Pass
4	10593.59	52.04	14.95	74	21.96	Peak	157.2	150	Vertical	Pass
5	14736.27	44.14	20.10	74	29.86	Peak	353.5	150	Vertical	Pass
6	19988.35	42.93	12.02	74	31.07	Peak	35.5	150	Vertical	Pass

1 GHz to 40 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	1977.02	45.48	-0.21	74	28.52	Peak	137.4	150	Horizontal	Pass
2	2882.12	44.56	9.08	74	29.44	Peak	233.3	150	Horizontal	Pass
3	5196.80	51.02	10.81	74	22.98	Peak	199.4	150	Horizontal	Pass
4	11368.55	45.61	14.44	74	28.39	Peak	25.3	150	Horizontal	Pass
5	15131.45	44.66	9.35	74	29.34	Peak	163.3	150	Horizontal	Pass
6	24740.43	44.69	13.00	74	29.32	Peak	250	150	Horizontal	Pass

1 GHz to 40 GHz, ANT V 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	1255.44	39.36	-5.72	74	34.64	Peak	256.5	150	Vertical	Pass
2	1551.36	43.11	-4.46	74	30.89	Peak	141.9	150	Vertical	Pass
3	1899.78	40.83	-2.58	74	33.17	Peak	271.5	150	Vertical	Pass
4	6146.01	49.31	18.59	74	24.70	Peak	235	150	Vertical	Pass
5	15287.44	45.18	10.71	74	28.82	Peak	86.8	150	Vertical	Pass
6	23332.78	49.11	11.56	74	24.89	Peak	42	150	Vertical	Pass

1 GHz to 40 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	1547.45	43.20	-3.07	74	30.80	Peak	171	150	Horizontal	Pass
2	2632.37	44.58	2.41	74	29.43	Peak	26.9	150	Horizontal	Pass
3	5307.69	47.23	15.40	74	26.77	Peak	31.8	150	Horizontal	Pass
4	11110.23	46.49	18.85	74	27.51	Peak	351.6	150	Horizontal	Pass
5	12177.21	44.79	20.34	74	29.21	Peak	127.9	150	Horizontal	Pass
6	23772.05	47.48	8.65	74	26.52	Peak	227.8	150	Horizontal	Pass

1 GHz to 40 GHz, ANT V 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	1105.97	41.44	-6.12	74	32.56	Peak	122.1	150	Vertical	Pass
2	1527.87	42.30	-4.27	74	31.70	Peak	53	150	Vertical	Pass
3	1734.32	43.30	-4.18	74	30.70	Peak	190.1	150	Vertical	Pass
4	11716.72	51.03	14.23	74	22.97	Peak	38.6	150	Vertical	Pass
5	14101.91	49.99	20.66	74	24.01	Peak	327.6	150	Vertical	Pass
6	19379.37	45.69	13.24	74	28.31	Peak	312	150	Vertical	Pass

1 GHz to 40 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	1475.52	39.73	-0.72	74	34.27	Peak	325.1	150	Horizontal	Pass
2	2918.08	44.80	8.85	74	29.20	Peak	330.8	150	Horizontal	Pass
3	5688.31	50.31	11.46	74	23.69	Peak	169.9	150	Horizontal	Pass
4	11492.10	40.79	13.77	74	33.21	Peak	318.8	150	Horizontal	Pass
5	12989.19	43.48	9.10	74	30.52	Peak	164.9	150	Horizontal	Pass
6	19868.55	48.29	11.22	74	25.72	Peak	158.6	150	Horizontal	Pass

1 GHz to 40 GHz, ANT V 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	1348.91	42.32	-4.82	74	31.68	Peak	295.1	150	Vertical	Pass
2	1456.39	44.28	-4.71	74	29.72	Peak	335.8	150	Vertical	Pass
3	1818.30	44.76	-3.26	74	29.24	Peak	279.8	150	Vertical	Pass
4	8706.74	44.57	16.99	74	29.43	Peak	249.8	150	Vertical	Pass
5	16483.36	45.55	11.62	74	28.45	Peak	53.5	150	Vertical	Pass
6	22114.81	49.43	8.62	74	24.58	Peak	228.7	150	Vertical	Pass

1 GHz to 40 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	2030.97	43.27	-5.08	74	30.73	Peak	155.8	150	Horizontal	Pass
2	2992.01	43.85	0.84	74	30.15	Peak	214.1	150	Horizontal	Pass
3	3635.37	47.27	9.97	74	26.73	Peak	64.6	150	Horizontal	Pass
4	11817.80	48.47	15.85	74	25.53	Peak	214.6	150	Horizontal	Pass
5	17960.07	45.89	9.70	74	28.11	Peak	155.8	150	Horizontal	Pass
6	18698.42	44.71	9.52	74	29.29	Peak	149.9	150	Horizontal	Pass

1 GHz to 40 GHz, ANT V 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	1167.96	40.67	-6.18	74	33.33	Peak	330.8	150	Vertical	Pass
2	1470.88	43.72	-4.58	74	30.28	Peak	175.5	150	Vertical	Pass
3	1598.35	43.89	-2.47	74	30.12	Peak	94	150	Vertical	Pass
4	9672.63	43.97	16.24	74	30.03	Peak	331.1	150	Vertical	Pass
5	12727.54	44.48	8.58	74	29.52	Peak	80.9	150	Vertical	Pass
6	20118.14	47.39	11.83	74	26.61	Peak	222	150	Vertical	Pass

1 GHz to 40 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	2192.81	40.28	-4.30	74	33.72	Peak	44.1	150	Horizontal	Pass
2	2656.34	44.33	9.53	74	29.67	Peak	18.8	150	Horizontal	Pass
3	4219.78	47.27	13.61	74	26.73	Peak	325	150	Horizontal	Pass
4	8729.20	43.50	14.21	74	30.50	Peak	166.7	150	Horizontal	Pass
5	14725.87	46.18	9.04	74	27.82	Peak	65.2	150	Horizontal	Pass
6	19648.92	43.81	12.55	74	30.19	Peak	72	150	Horizontal	Pass

1 GHz to 40 GHz, ANT V Band IV 11ac80 Low channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1143.96	40.34	-4.78	74	33.66	Peak	341.9	150	Vertical	Pass
2	1428.39	43.31	-4.56	74	30.69	Peak	112	150	Vertical	Pass
3	1712.32	44.42	-3.72	74	29.59	Peak	297.4	150	Vertical	Pass
4	8470.88	47.37	17.04	74	26.63	Peak	202.7	150	Vertical	Pass
5	13831.53	43.72	20.24	74	30.28	Peak	330.1	150	Vertical	Pass
6	21765.39	47.65	8.63	74	26.35	Peak	311.3	150	Vertical	Pass

1 GHz to 40 GHz, ANT H Band IV 11ac80 Low channel

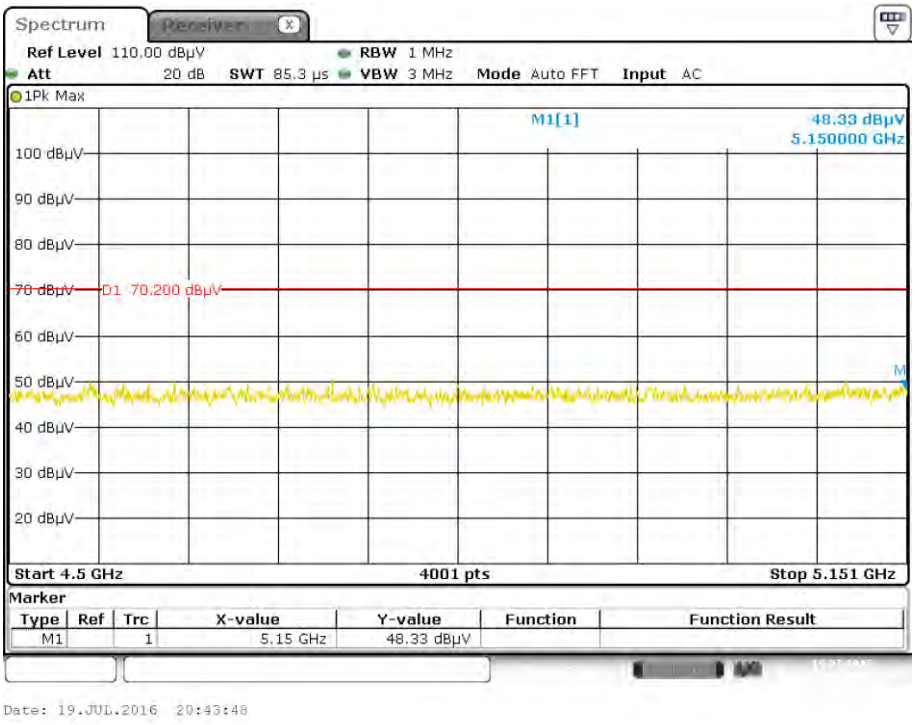
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2120.88	42.78	-0.53	74	31.22	Peak	147.2	150	Horizontal	Pass
2	3293.71	46.08	2.07	74	27.92	Peak	268.6	150	Horizontal	Pass
3	3689.31	49.44	10.12	74	24.56	Peak	104.9	150	Horizontal	Pass
4	8324.88	44.98	17.84	74	29.02	Peak	16.2	150	Horizontal	Pass
5	16358.57	46.09	9.66	74	27.91	Peak	353.2	150	Horizontal	Pass
6	21196.34	43.23	10.43	74	30.77	Peak	316.2	150	Horizontal	Pass

Band Edge

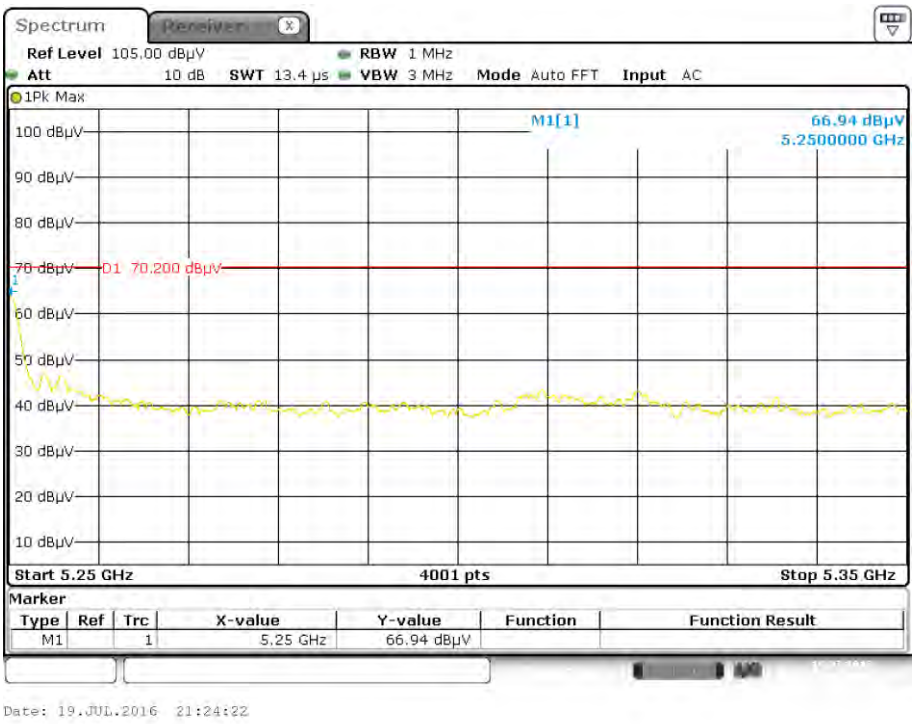
Note: The peak level was lower than the average limit line which was not reported.

Test Data and Plots

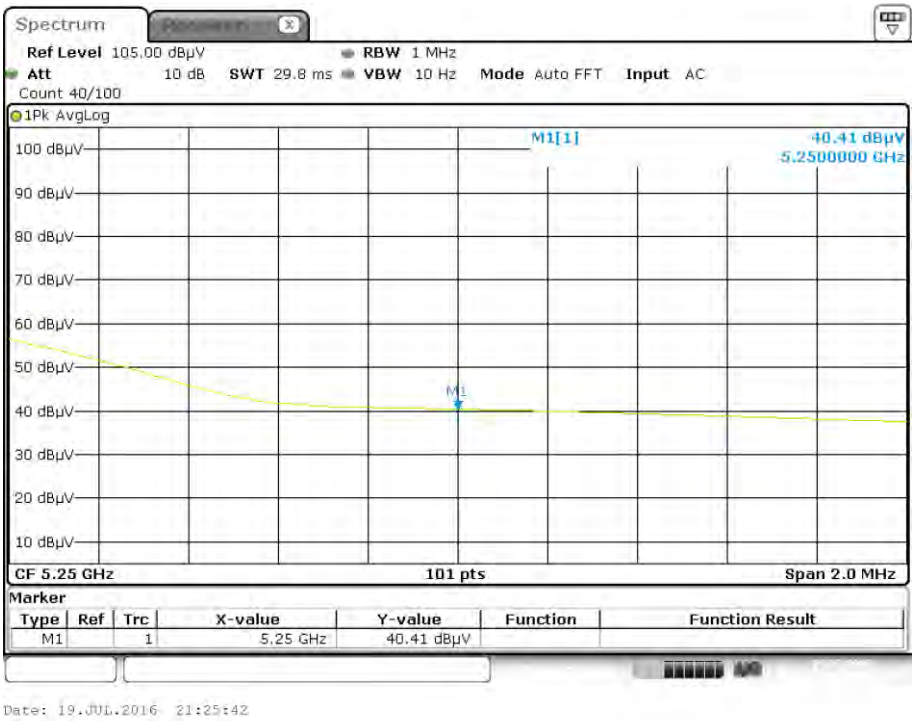
Band I 11a CH36



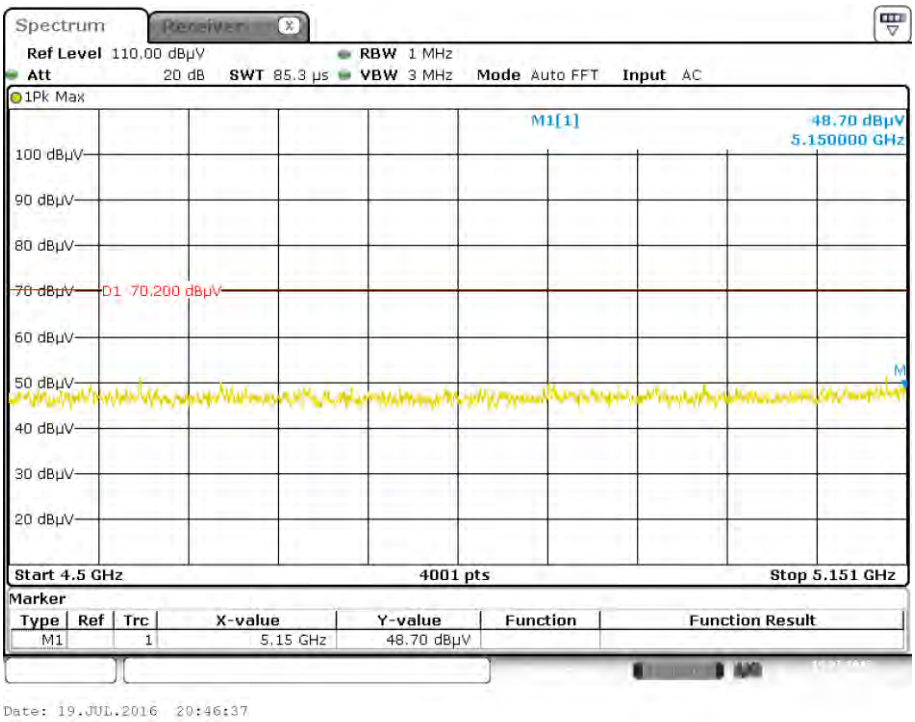
Band I 11a CH48



Band I 11a CH48, AV



Band I 11n (HT20) CH36



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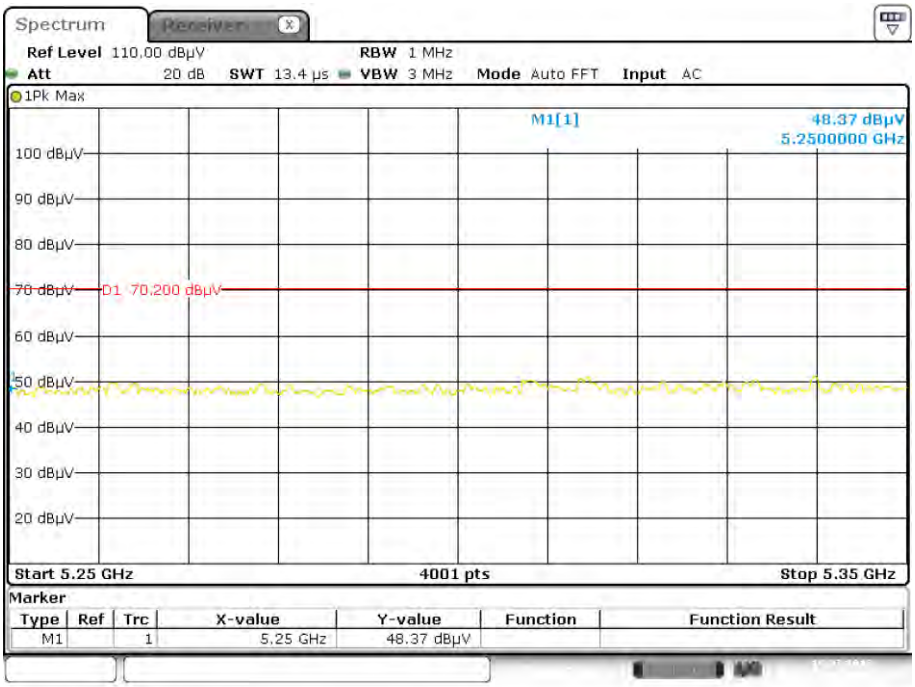

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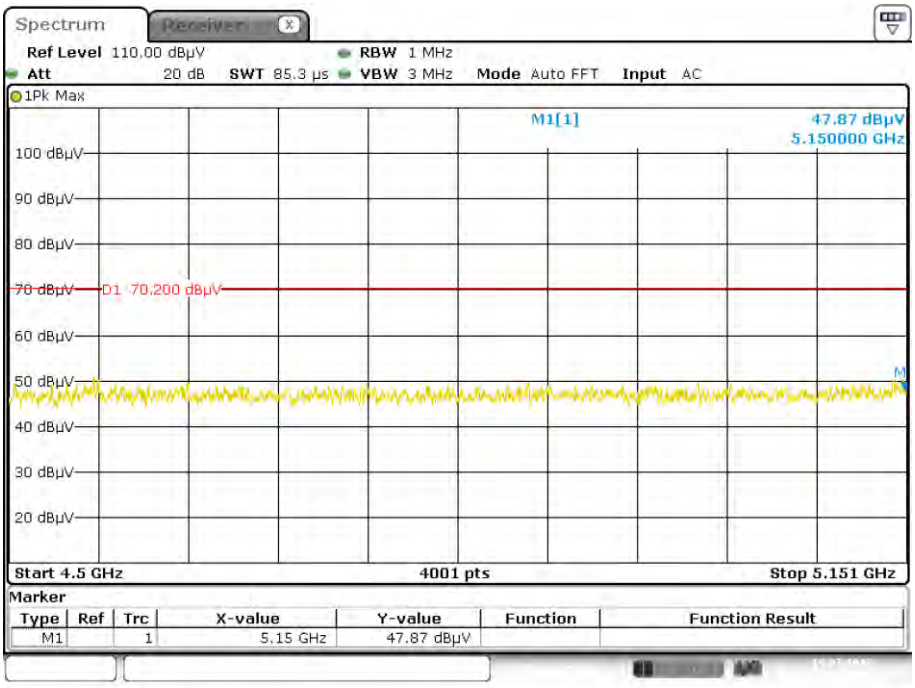
Band I 11n (HT40) CH38



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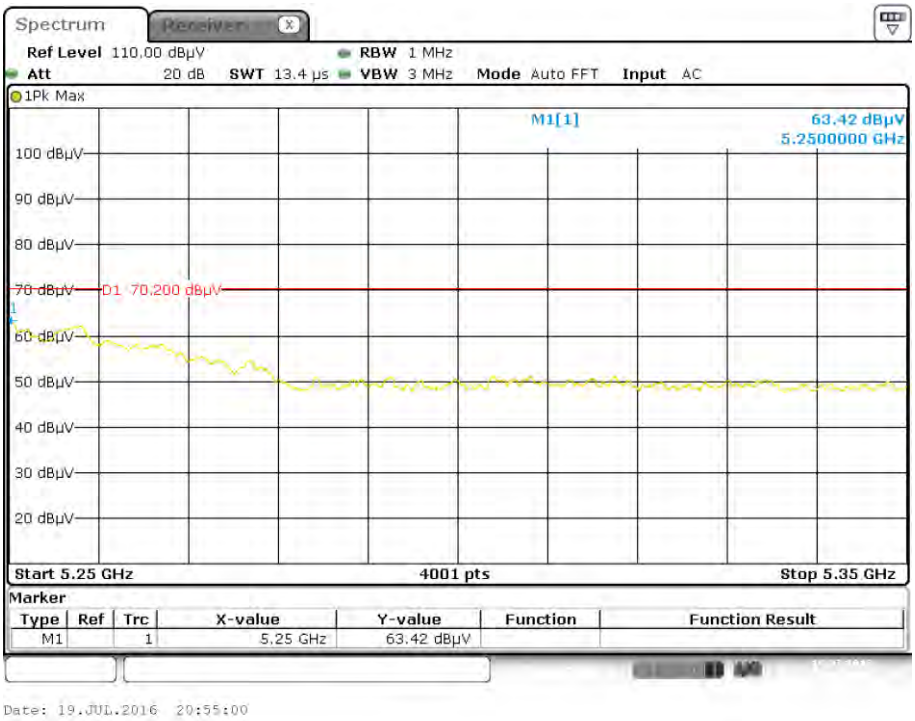
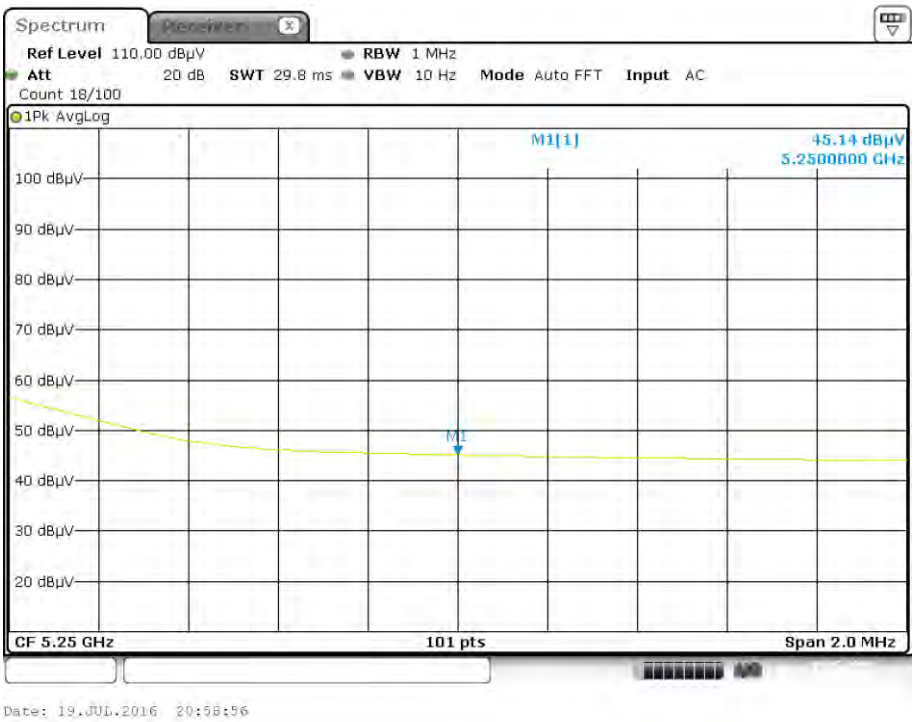
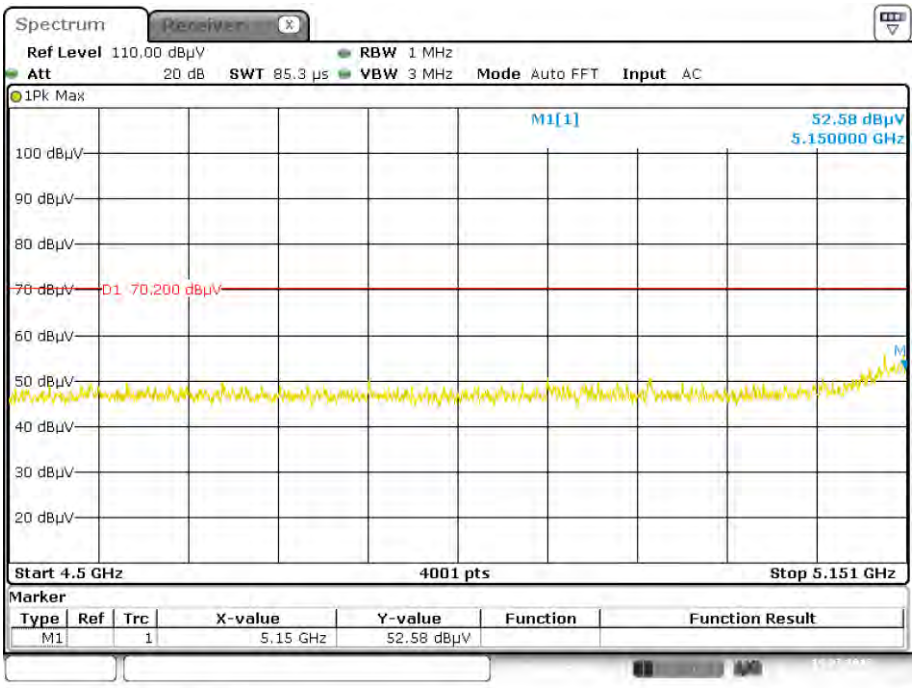


Band I 11n (HT40) CH46, AV



Band I 11ac (HT80) CH42



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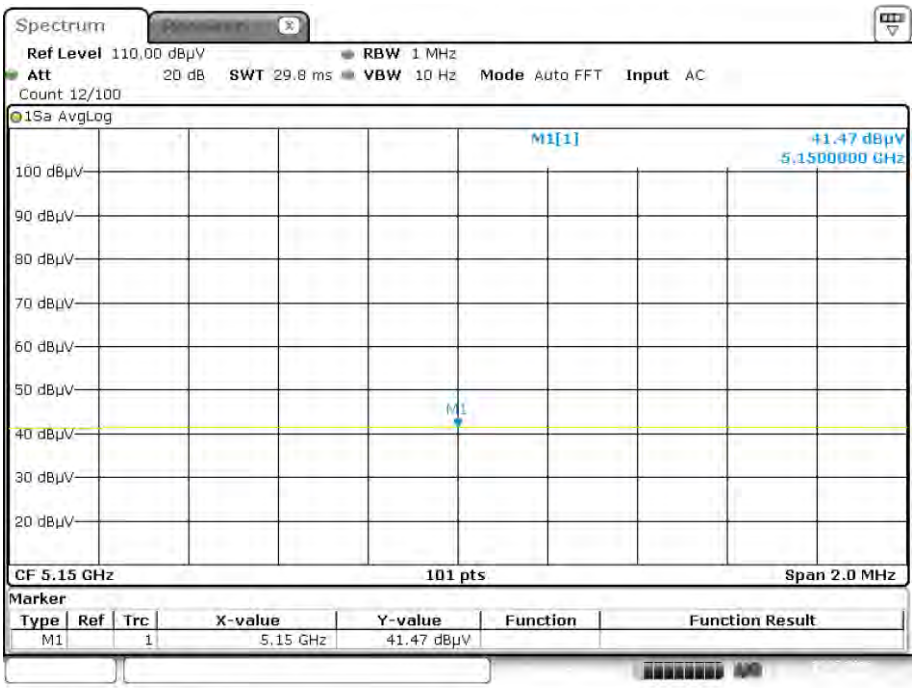
Band I 11ac (HT80) CH42, AV



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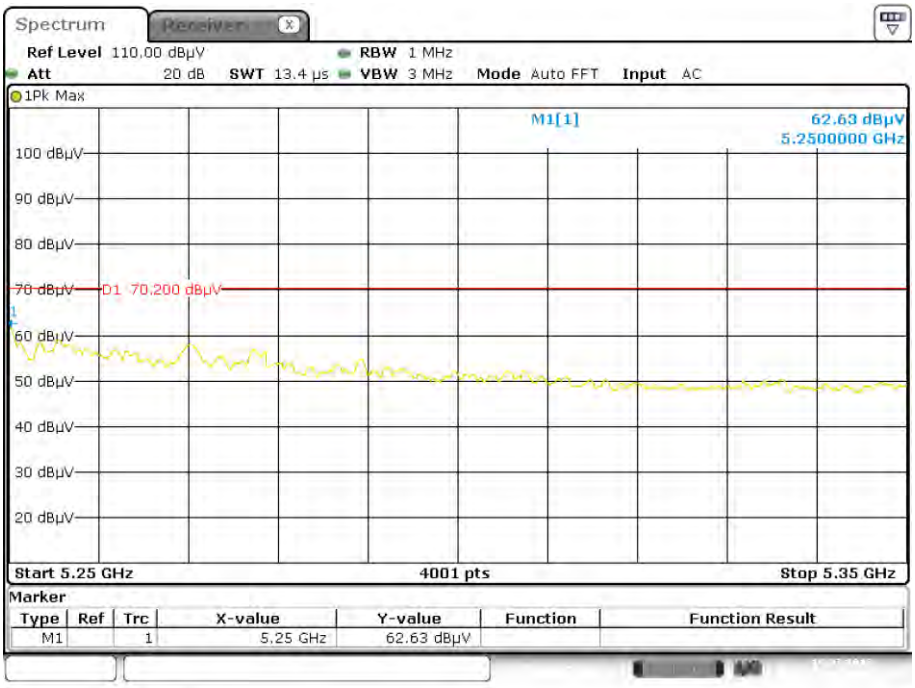
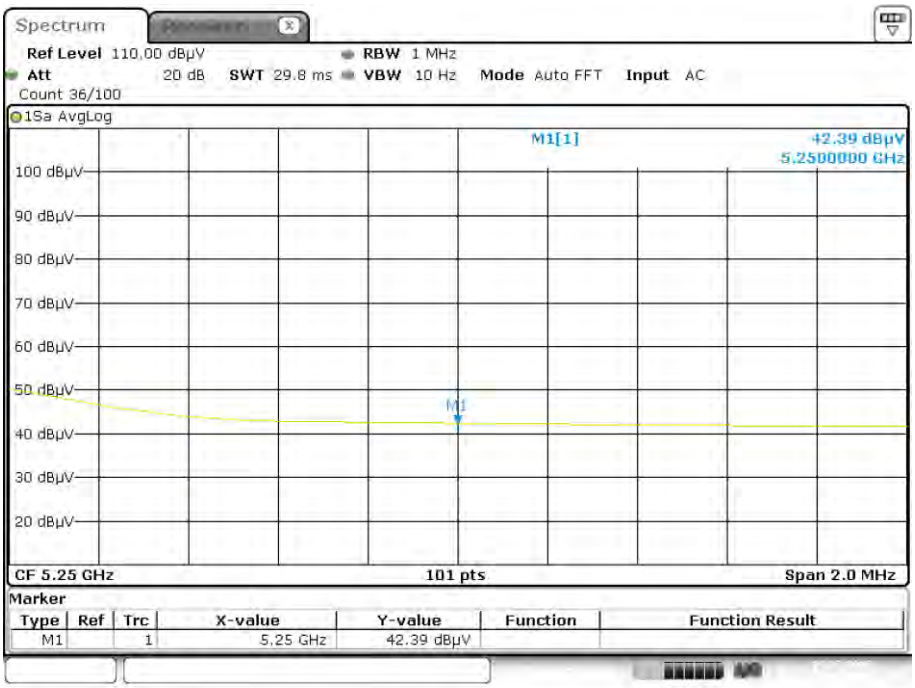
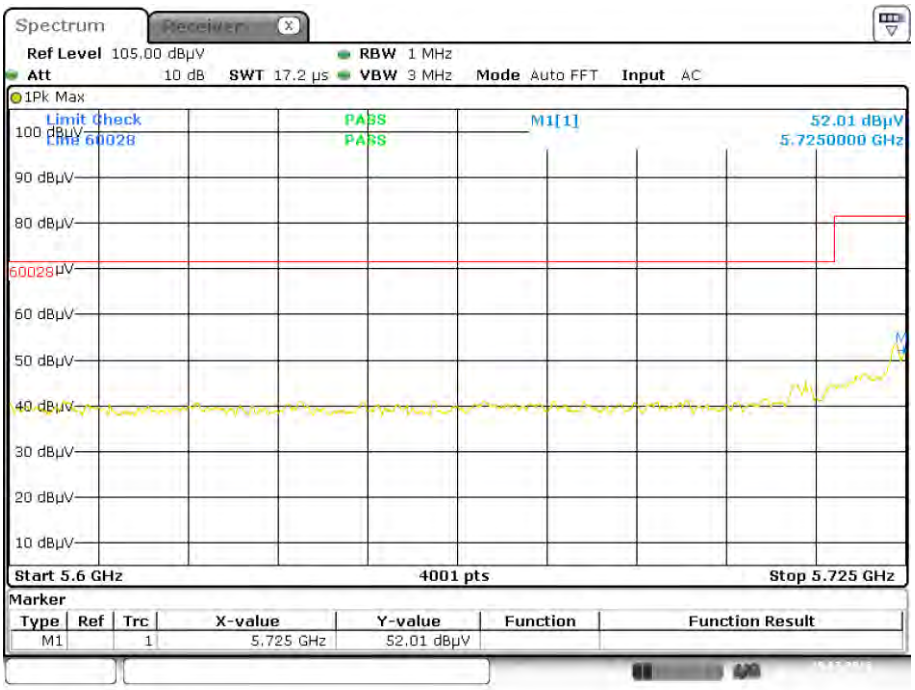


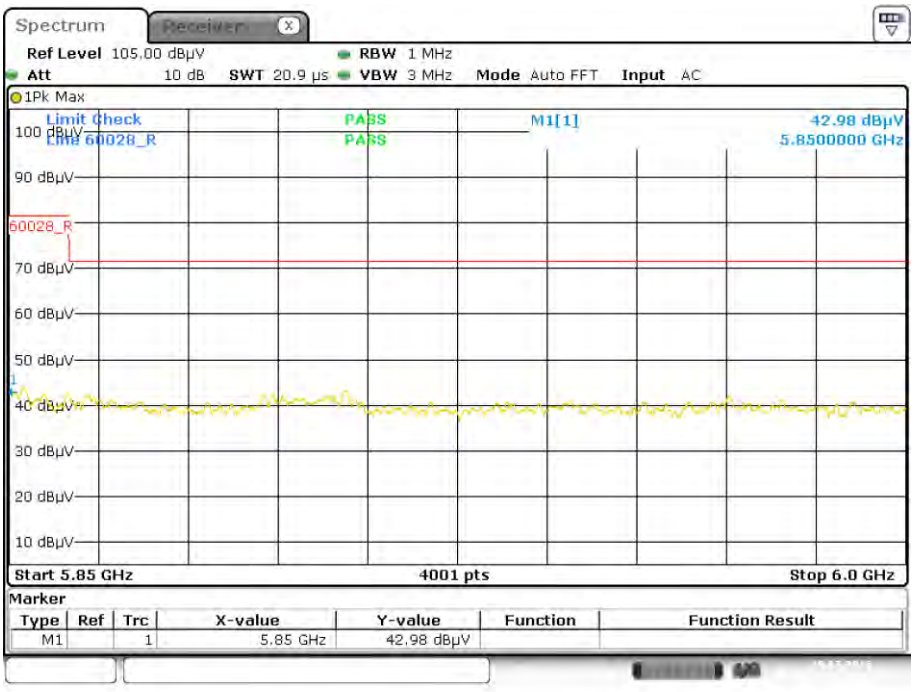
Band I 11ac (HT80) CH42, AV



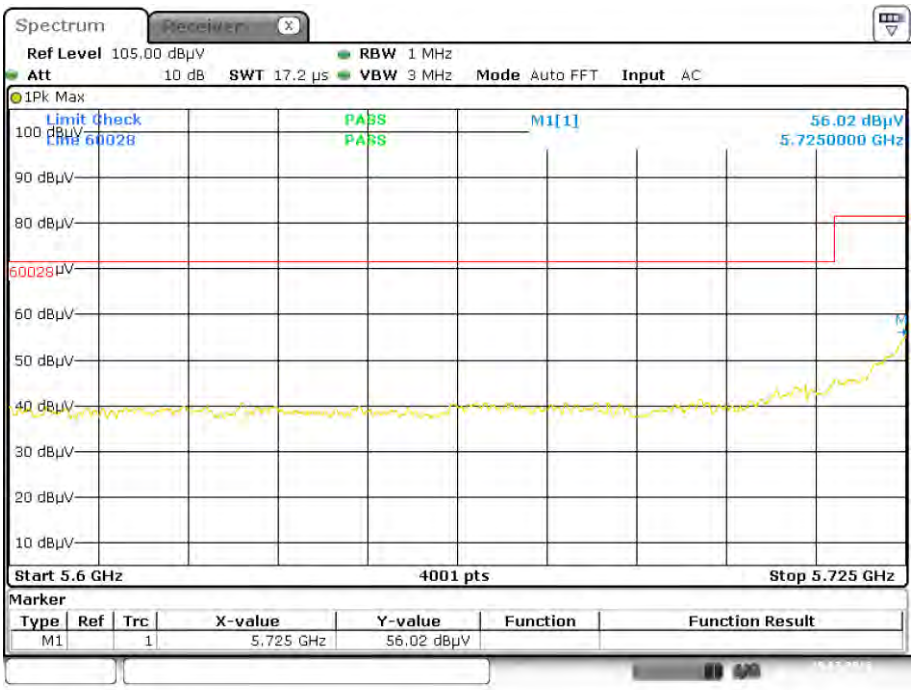
Band IV 11a CH149



Band IV 11a CH165



Band IV 11n (HT20) CH149



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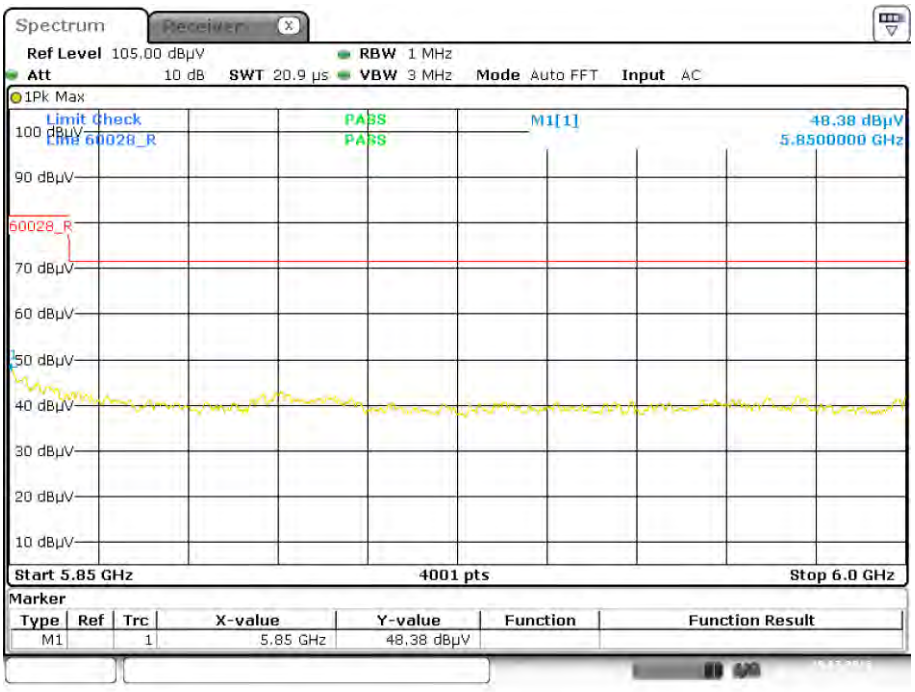
Band IV 11n (HT20) CH165



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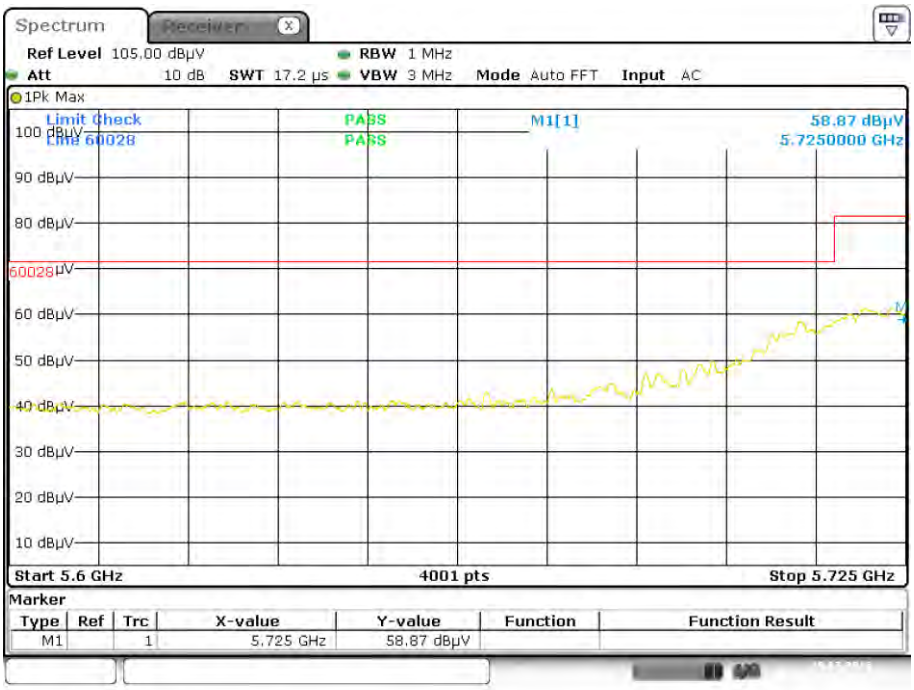
Band IV 11n (HT40) CH151



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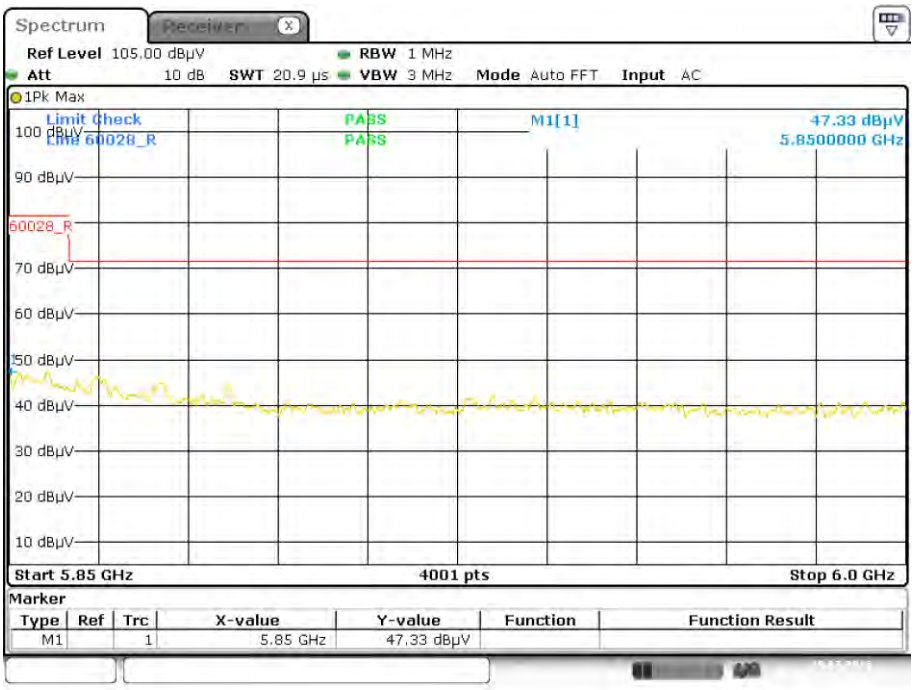
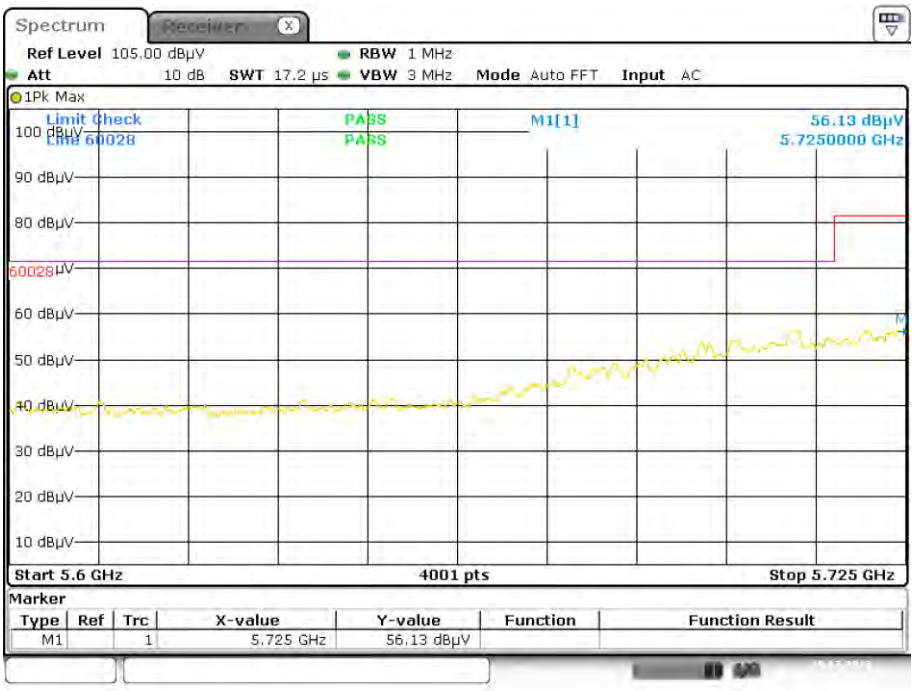
Band IV 11n (HT40) CH159



Date: 19.JUL.2016 21:19:45

Band IV 11ac (HT80) CH155



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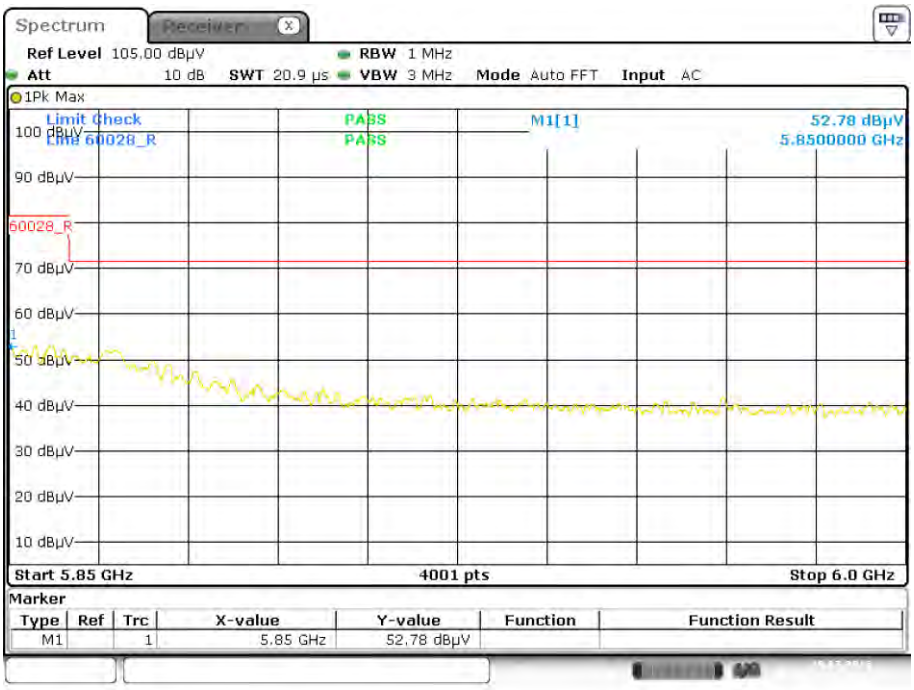
Band IV 11ac (HT80) CH155



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A.8 Frequency Stability

Measurement Data (the worst channel)

Band I:

Voltage vs. Frequency Stability (11a CH40)

Test Conditions		Test Frequency (MHz)	Measurement Frequency (MHz)	Max. Deviation (ppm)
Temperature (°C)	Voltage (VDC)			
20	4.35	5200	5199.9832	-3.23
	3.80	5200	5199.9754	-4.73
	3.50	5200	5199.9736	-5.08

Temperature vs. Frequency Stability (11a CH40)

Test Conditions		Test Frequency (MHz)	Measurement Frequency (MHz)	Max. Deviation (ppm)
Voltage (VDC)	Temperature (°C)			
3.8	-10	5200	5199.97625	-4.57
	0	5200	5199.93526	-12.45
	10	5200	5199.93417	-12.66
	20	5200	5199.97472	-4.86
	30	5200	5199.97157	-5.47
	40	5200	5199.96223	-7.26
	45	5200	5199.98652	-2.59

Voltage vs. Frequency Stability (11n (HT20) CH40)

Test Conditions		Test Frequency (MHz)	Measurement Frequency (MHz)	Max. Deviation (ppm)
Temperature (°C)	Voltage (VDC)			
20	4.35	5200	5199.96583	-6.57
	3.80	5200	5199.93636	-12.24
	3.50	5200	5199.93666	-12.18

Temperature vs. Frequency Stability (11n (HT20) CH40)

Test Conditions		Test Frequency (MHz)	Measurement Frequency (MHz)	Max. Deviation (ppm)
Voltage (VDC)	Temperature (°C)			
3.8	-10	5200	5200.0254	4.88
	0	5200	5200.0365	7.02
	10	5200	5200.0261	5.02
	20	5200	5200.0145	2.79
	30	5200	5200.0142	2.73
	40	5200	5200.0136	2.62
	45	5200	5200.0145	2.79

Voltage vs. Frequency Stability (11n (HT40) CH38)

Test Conditions		Test Frequency (MHz)	Measurement Frequency (MHz)	Max. Deviation (ppm)
Temperature (°C)	Voltage (VDC)			
20	4.35	5190	5189.9862	-2.66
	3.80	5190	5189.9869	-2.52
	3.50	5190	5189.9872	-2.47

Temperature vs. Frequency Stability (11n (HT40) CH38)

Test Conditions		Test Frequency (MHz)	Measurement Frequency (MHz)	Max. Deviation (ppm)
Voltage (VDC)	Temperature (°C)			
3.8	-10	5190	5189.99652	-0.67
	0	5190	5189.99352	-1.25
	10	5190	5189.94501	-10.60
	20	5190	5189.94527	-10.55
	30	5190	5189.98632	-2.64
	40	5190	5189.97412	-4.99
	45	5190	5189.95652	-8.38

Voltage vs. Frequency Stability (11n (HT40) CH46)

Test Conditions		Test Frequency (MHz)	Measurement Frequency (MHz)	Max. Deviation (ppm)
Temperature (°C)	Voltage (VDC)			
20	4.35	5230	5229.9683	-6.06
	3.80	5230	5229.9758	-4.63
	3.50	5230	5229.9812	-3.59

Temperature vs. Frequency Stability (11n (HT40) CH46)

Test Conditions		Test Frequency (MHz)	Measurement Frequency (MHz)	Max. Deviation (ppm)
Voltage (VDC)	Temperature (°C)			
3.8	-10	5230	5229.9683	-6.06
	0	5230	5229.9658	-6.54
	10	5230	5229.9812	-3.59
	20	5230	5229.988	-2.29
	30	5230	5229.9944	-1.07
	40	5230	5230.0008	0.15
	45	5230	5230.0073	1.40

Voltage vs. Frequency Stability (11ac (HT80) CH42)

Test Conditions		Test Frequency (MHz)	Measurement Frequency (MHz)	Max. Deviation (ppm)
Temperature (°C)	Voltage (VDC)			
20	4.35	5210	5209.973253	-5.13
	3.80	5210	5209.953534	-8.92
	3.50	5210	5209.963542	-7.00

Temperature vs. Frequency Stability (11ac (HT80) CH42)

Test Conditions		Test Frequency (MHz)	Measurement Frequency (MHz)	Max. Deviation (ppm)
Voltage (VDC)	Temperature (°C)			
3.8	-10	5210	5209.9732	-5.14
	0	5210	5209.9863	-2.63
	10	5210	5209.9652	-6.68
	20	5210	5209.9871	-2.48
	30	5210	5209.9763	-4.55
	40	5210	5209.9866	-2.57
	45	5210	5209.9822	-3.42

Band IV:

Voltage vs. Frequency Stability (11a CH157)

Test Conditions		Test Frequency (MHz)	Measurement Frequency (MHz)	Max. Deviation (ppm)
Temperature (°C)	Voltage (VDC)			
20	4.35	5785	5784.97635	-4.09
	3.80	5785	5784.98641	-2.35
	3.50	5785	5784.98632	-2.36

Temperature vs. Frequency Stability (11a CH157)

Test Conditions		Test Frequency (MHz)	Measurement Frequency (MHz)	Max. Deviation (ppm)
Voltage (VDC)	Temperature (°C)			
3.8	-10	5785	5784.97635	-4.09
	0	5785	5784.98621	-2.38
	10	5785	5784.98632	-2.36
	20	5785	5784.9963	-0.64
	30	5785	5784.98641	-2.35
	40	5785	5784.99632	-0.64
	45	5785	5784.98632	-2.36

Voltage vs. Frequency Stability (11n (HT20) CH157)

Test Conditions		Test Frequency (MHz)	Measurement Frequency (MHz)	Max. Deviation (ppm)
Temperature (°C)	Voltage (VDC)			
20	4.35	5785	5784.98532	-2.54
	3.80	5785	5784.97599	-4.15
	3.50	5785	5784.98532	-2.54

Temperature vs. Frequency Stability (11n (HT20) CH157)

Test Conditions		Test Frequency (MHz)	Measurement Frequency (MHz)	Max. Deviation (ppm)
Voltage (VDC)	Temperature (°C)			
3.8	-10	5785	5784.96320	-6.36
	0	5785	5784.97421	-4.46
	10	5785	5784.98522	-2.55
	20	5785	5784.98536	-2.53
	30	5785	5784.96341	-6.32
	40	5785	5784.96630	-5.83
	45	5785	5784.98772	-2.12

Voltage vs. Frequency Stability (11n (HT40) CH151)

Test Conditions		Test Frequency (MHz)	Measurement Frequency (MHz)	Max. Deviation (ppm)
Temperature (°C)	Voltage (VDC)			
20	4.35	5755	5754.9563	-7.59
	3.80	5755	5754.9566	-7.54
	3.50	5755	5754.9577	-7.35

Temperature vs. Frequency Stability (11n (HT40) CH151)

Test Conditions		Test Frequency (MHz)	Measurement Frequency (MHz)	Max. Deviation (ppm)
Voltage (VDC)	Temperature (°C)			
3.8	-10	5755	5754.9563	-7.59
	0	5755	5754.9563	-7.59
	10	5755	5754.9572	-7.44
	20	5755	5754.9581	-7.28
	30	5755	5754.959	-7.12
	40	5755	5754.9577	-7.35
	45	5755	5754.9578	-7.33

Voltage vs. Frequency Stability (11ac (HT80) CH155)

Test Conditions		Test Frequency (MHz)	Measurement Frequency (MHz)	Max. Deviation (ppm)
Temperature (°C)	Voltage (VDC)			
20	4.35	5775	5774.973943	-4.51
	3.80	5775	5774.963943	-6.24
	3.50	5775	5774.963943	-6.24

Temperature vs. Frequency Stability (11ac (HT80) CH155)

Test Conditions		Test Frequency (MHz)	Measurement Frequency (MHz)	Max. Deviation (ppm)
Voltage (VDC)	Temperature (°C)			
3.8	-10	5775	5775.00362	0.63
	0	5775	5774.973943	-4.51
	10	5775	5774.963943	-6.24
	20	5775	5774.963943	-6.24
	30	5775	5774.983625	-2.84
	40	5775	5774.965873	-5.91
	45	5775	5774.975236	-4.29

ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-SZ1660028-AR.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL- SZ1660028-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL- SZ1660028-AI.PDF”.

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