FCC TEST REPORT

Product	:	Hover Camera Passport
Trade mark	:	HOVER CAMERA
Model/Type reference	:	HC-6428
Report Number	:	1609060316RFC-2
Date of Issue	:	Sep. 14, 2016
FCC ID	:	2AIDWHCP6428
Test Standards	:	47 CFR Part 15 Subpart E (2015)
Test result	:	PASS

Prepared for:

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Prepared by:

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Approved by: Billy Li, Technical Director

Date: Sep. 14, 2016

UnionTrust Laboratories UnionTrust * Certified *

Version

Version No.	Date	Description
V1.0	Sep. 14, 2016	Original

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1 General Information

1.1 Client Information

Applicant:	Shenzhen Zero Zero Infinity Technology Co., Ltd.
Address of Applicant:	1607 Innovation Park, High-Tech Park of Nanshan dist. Shenzhen
Manufacturer:	Shenzhen Zero Zero Infinity Technology Co., Ltd.
Address of Manufacturer:	1607 Innovation Park, High-Tech Park of Nanshan dist. Shenzhen

1.2 General Description of EUT

Product Name:	Hover Camera Passport	
Model No.(EUT):	HC-6428	
Add. Mode No.:	N/A	
Trade Mark:	HOVER CAMERA	
EUT Supports Radios application:	Wlan 2.4GHz 802.11b/g/n(HT20) Wlan 5.2GHz 802.11a/n(HT20&HT40) Wlan 5.8GHz 802.11a/n(HT20&HT40)	
Power Supply:	AC adapter	Model:HKA03612030-2A Input:100-240V~50/60Hz, 1.0A; Output: 12.0V ⎓ 3A
	Charging Dock:	Model: H-320 Input:11-18V ⎓ 3A MAX; Output: 8.4V ⎓ 2.2A MAX
	Battery 1:	Model: ZB-380 Nominal Voltage: .7.4V ⎓ (Rechargeable LIPO Battery) Battery Capacity: 1100mAh/8.14Wh
	Battery 2:	Model: ZB-381 Nominal Voltage: .7.6V ⎓ (Rechargeable LIPO Battery) Battery Capacity: 1360mAh/10.34Wh
USB Micro-B Plug cable:	0.55m (shielded)	
Sample Received Date:	Sep. 07, 2016	
Sample tested Date:	Sep. 08, 2016 to Sep. 14, 2016	

1.3 Product Specification subjective to this standard

Type of Modulation:	802.11a:OFDM(64QAM, 16QAM, QPSK, BPSK) 802.11n(HT20 & HT40): OFDM (64QAM, 16QAM,QPSK,BPSK)
Operating Frequency / Channel Number:	5150MHz to 5250MHz: 4 for 802.11a/n(HT20) 2 for 802.11n(HT40) 5725MHz to 5850MHz: 5 for 802.11a/n(HT20) 2 for 802.11n(HT40)
Transmit Data Rate:	802.11a:6M/ 9M/ 12M/ 18M/ 24M/ 36M/ 48M/ 54M bps 802.11n(HT20): up to MCS7(65Mbps) 802.11n(HT40): up to MCS7(135Mbps)
Sample Type:	Portable production
Maximum conduction target average power:	802.11a: 13dBm(±1.5dB) 802.11n(HT20): 14dBm(±1.5dB) 802.11n(HT40): 15dBm(±1.5dB)

Test Software of EUT:	Provided by the manufacturer
Antenna Type	Chain 0: PIFA antenna Chain 1: PCB antenna
Antenna Gain:	5150MHz to 5250MHz: Chain 0: -1.6 dBi gain Chain 1: 1.4 dBi gain 5725MHz to 5850MHz: Chain 0: 1.5 dBi gain Chain 1: 1.1 dBi gain
Normal Test voltage:	7.4Vdc for DC power or battery
Extreme Test voltage:	6.4~8.4Vdc for DC power (declared by the manufacturer)
Operating Temperature:	5℃ to +35℃ (declared by the manufacturer)
Software Version:	1-1.0-1.0.1
Hardware Version:	FAIPY_MB_V40

Operation Frequency each of channel

For 802.11a/n(HT20) Operation in the 5150MHz ~5250 MHz band							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
36	5180MHz	40	5200MHz	44	5220MHz	48	5240MHz

For 802.11n(HT40) Operation in the 5150MHz ~5250 MHz band			
Channel	Frequency	Channel	Frequency
38	5190MHz	46	5230MHz

For 802.11a/n(HT20) Operation in the 5725MHz ~5850 MHz band					
Channel	Frequency	Channel	Frequency	Channel	Frequency
149	5745MHz	153	5765MHz	157	5785MHz
161	5805MHz	165	5825MHz	N/A	

For 802.11n(HT40) Operation in the 5725MHz ~5850 MHz band			
Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

1.4 Description of Support Units

The EUT has been tested with associated equipment below.

1) Support equipment

Description	Brand	Model No.	Certification	Supplied by
Laptop	Dell	Inspiron 15 5000 series	FCC ID and DOC	UnionTrust

2) Cable

Cable No.	Description	Connector Type	Cable Type/Length	Supplied by

1	Antenna cable	SMA	0.2m(Shielded)	Client
2	Antenna cable	SMA	0.2m(Shielded)	Client
3	USB Cable	USB	1.2m(shielded)	UnionTrust

1.5 Test Location

All tests were performed at:

Compliance Certification Services (Shenzhen) Inc.

No.10-1 Mingkeda Logistics Park, No.18 Huanguan South RD. Guan lan Town, Baoan Distr, Shenzhen, Guangdong, China.

Compliance Certification Services (Shenzhen) Inc. has been accepted by the FCC, the FCC Registration Number is 441872.

Tested by: Darry Wu

1.6 Deviation from Standards

None.

1.7 Abnormalities from Standard Conditions

None.

1.8 Other Information Requested by the Customer

None.

1.9 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Radio Frequency	±6.3 x 10^{-8}
2	RF power, conducted	±0.52 dB
3	Spurious emissions, radiated (Below 1GHz)	±5.3 dB
	Spurious emissions, radiated (Above 1GHz)	±5.1 dB
4	Conduction emission (9KHz~150KHz)	±3.8 dB
	Conduction emission (150KHz~30MHz)	±3.4 dB
5	Temperature	±0.64 °C
6	Humidity	±2.8 %
7	Supply voltages	±0.49 %

2 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15 Subpart C Section 15.203	ANSI C63.10-2013	PASS
Maximum conducted output power	47 CFR Part 15 Subpart E Section 15.407 (a)(1)(3)	KDB 789033 D02 v01r03Section E.3.a(Method PM)	PASS
Peak Power Spectral Density	47 CFR Part 15 Subpart E Section 15.407 (a)(1)(3)	KDB 789033 D02 v01r03Section F	PASS
6 dB bandwidth	47 CFR Part 15 Subpart E Section 15.407 (e)	KDB 789033 D02 v01r03Section C.2	PASS
26 dB emission bandwidth	47 CFR Part 15 Subpart E Section 15.407 (a) (2)(5)	KDB 789033 D02 v01r03Section C.1	PASS
Frequency stability	47 CFR Part 15 Subpart E Section 15.407 (g)	ANSI C63.10-2013	PASS
Radiated Emissions and Band Edge Measurement	47 CFR Part 15 Subpart E Section 15.407 (b)(1),(4),(6)	KDB 789033 D02 v01r03Section G.3, G.4, G.5, and G.6	PASS
AC Power Line Conducted Emission	47 CFR Part 15 Subpart E Section 15.407 (b)(6)	ANSI C63.10-2013	N/A[1]

Remark:
Tx: In this whole report Tx (or tx) means Transmitter.
Rx: In this whole report Rx (or rx) means Receiver.
RF: In this whole report RF means Radiated Frequency.
CH: In this whole report CH means channel.
Volt: In this whole report Volt means Voltage.
Temp: In this whole report Temp means Temperature.
Humid: In this whole report Humid means humidity.
Press: In this whole report Press means Pressure.
N/A: In this whole report not application
This EUT is powered by batteries, it need remove the battery from the EUT when charging, It doesn't transmitting while charging.

3 Equipment List

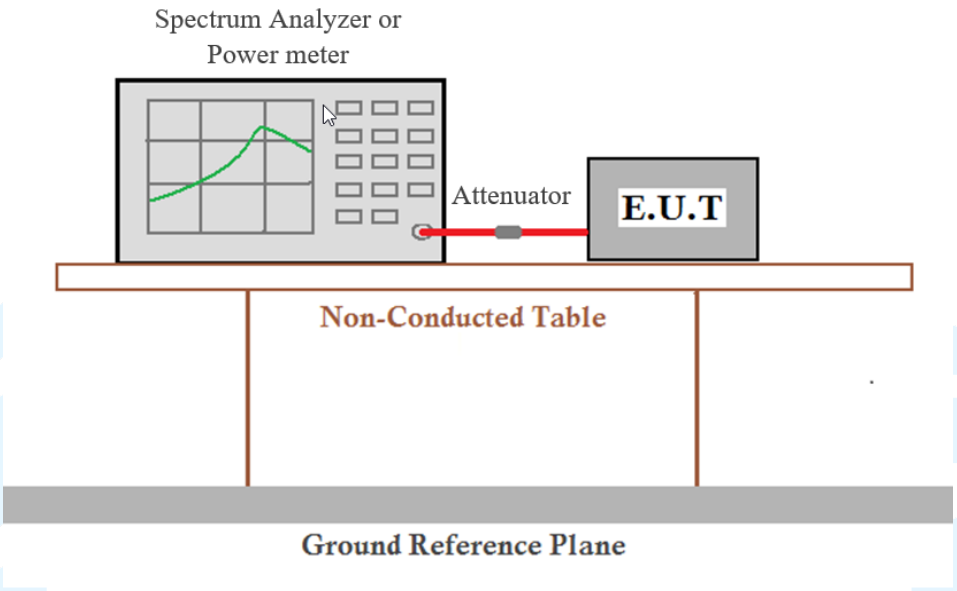
3m (Semi-Anechoic Chamber)					
Equipment	**Manufacturer**	**Mode No.**	**Serial Number**	**Cal. Due date (mm-dd-yyyy)**	**Cal. Interval**
PSA Series Spectrum Analyzer	Agilent	E4446A	US44300399	02-20-2017	1 Year
Turn Table	N/A	N/A	N/A	N.C.R	N.C.R
Controller	Sunol Sciences	SC104V	022310-1	N.C.R	N.C.R
Controller	CT	N/A	N/A	N.C.R	N.C.R
Bilog Antenna	SCHAFFNER	CBL6143	5063	02-21-2017	1 Year
Horn Antenna	SCHWARZBECK	BBHA9120	D286	02-20-2017	1 Year
Loop Antenna	COM-POWER	AL-130	121044	02-20-2017	1 Year
High Noise Amplifier	Agilent	8449B	3008A01838	02-21-2017	1 Year
Horn Antenna	Schwarzbeck	BBHA9120	D286	02-21-2017	1 Year
Temp. / Humidity Meter	Anymetre	JR913	N/A	02-21-2017	N.C.R
Antenna Tower	SUNOL	TLT2	N/A	N.C.R	N.C.R
Test S/W	FARAO	LZ-RF / CCS-SZ-3A2			

Conducted RF test					
Equipment	**Manufacturer**	**Mode No.**	**Serial Number**	**Cal. Due date (mm-dd-yyyy)**	**Cal. Interval**
Spectrum Analyzer	Agilent	N9010A	MY52221469	02-21-2017	1 Year
Power Meter	Agilent	ML2495A	1204003	02-21-2017	1 Year

4 Test Requirement

4.1 Test setup

4.1.1 For Conducted test setup



4.1.2 For Radiated Emissions test setup

Radiated Emissions setup:

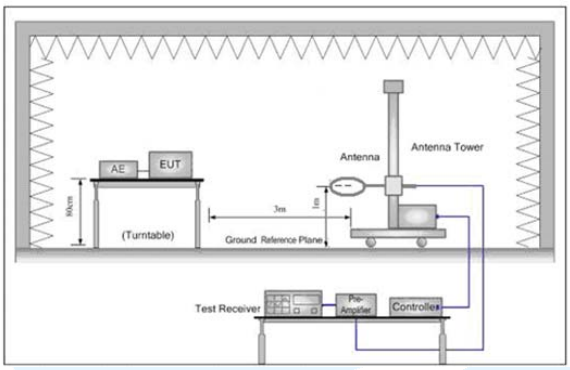


Figure 1. Below 30MHz

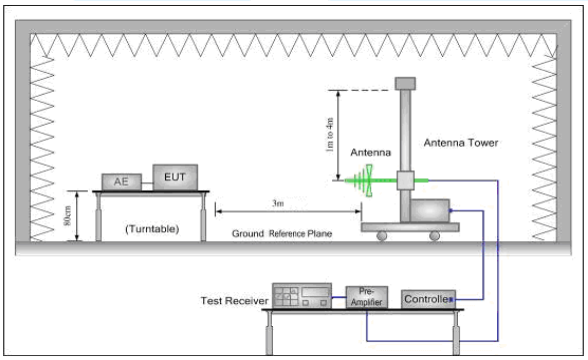


Figure 2. 30MHz to 1GHz

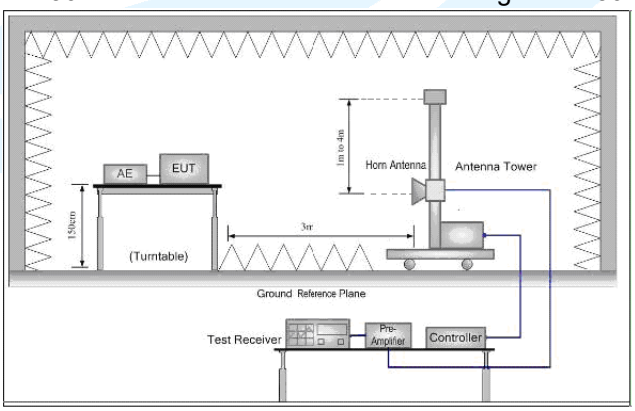


Figure 3. Above 1GHz

4.2 Test Environment

Operating Environment:	
Temperature:	25.4 °C
Humidity:	57 % RH
Atmospheric Pressure:	99.95mbar

4.3 System Test Configuration

For emissions testing, the equipment under test (EUT) setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, radiated emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario. It was powered by a 7.4Vdc rechargeable LIPO battery(Model: ZB-380). Only the worst case data were recorded in this test report.

For STBC modes (2Tx), there are two transmission antennas. Both Chain 0 and Chain 1 used at the same time and antenna ports have uniform output powers. The Chain 0 and Chain 1 antenna ports cannot be used alone.

The signal is maximized through rotation and placement in the three orthogonal axes. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters. Radiated emissions are taken at three meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance. Therefore, all final radiated testing was performed with the EUT in (see table below) orientation.

Frequency Band	Mode	Antenna Port	Worst-case Orientation
5.2GHz and 5.8GHz	1Tx SISO	N/A	N/A
		N/A	N/A
	2Tx STBC	Chain 0 + Chain 1	X-Portrait

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance. Analyzer resolution is 100 kHz or greater for frequencies below 1000MHz. The resolution is 1 MHz or greater for frequencies above 1000MHz. The spurious emissions more than 20 dB below the permissible value are not reported.

Radiated emission measurement were performed from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

4.4 Test Condition

4.4.1 Test channel

Test Mode	Tx/Rx	RF Channel		
		Low(L)	Middle(M)	High(H)
802.11a/n(HT20)	5150MHz ~5250 MHz	Channel 36	Channel 40	Channel 48
		5180MHz	5200MHz	5240MHz
802.11n(HT40)	5150MHz ~5250 MHz	Channel 38	N/A	Channel 46
		5190MHz	N/A	5230MHz
802.11a/n(HT20)	5725MHz ~5850 MHz	Channel149	Channel157	Channel165
		5745MHz	5785MHz	5825MHz
802.11n (HT40)	5725MHz ~5850 MHz	Channel 151	N/A	Channel 159
		5755MHz	N/A	5795MHz
Transmitting mode: Keep the EUT in transmitting mode with all kind of modulation and all kind of data rate.				

4.4.2 Test mode

Pre-scan under all rate at lowest channel

Channel/ Frequency (MHz)	Maximum Conducted Average Power (Measured Value) (dBm)							
Chain 0_802.11a								
Data Rate (Mbps)	**6**	9	12	18	24	36	48	54
36(5180)	**13.39**	12.56	12.56	12.79	13.07	12.71	11.9	10.5
Chain 0_802.11n(HT20)								
Data Rate (Mbps)	MCS 0	MCS 1	MCS 2	**MCS 3**	MCS 4	MCS 5	MCS 6	MCS 7
36(5180)	13.22	12.98	13.52	**13.67**	13.62	13.53	11.21	10.47
Chain 0_802.11n(HT40)								
Data Rate (Mbps)	**MCS 0**	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7
38(5190)	**15.26**	15.04	14.12	13.33	12.98	13.01	10.4	9.6

So, the worst-case data rates see table below:

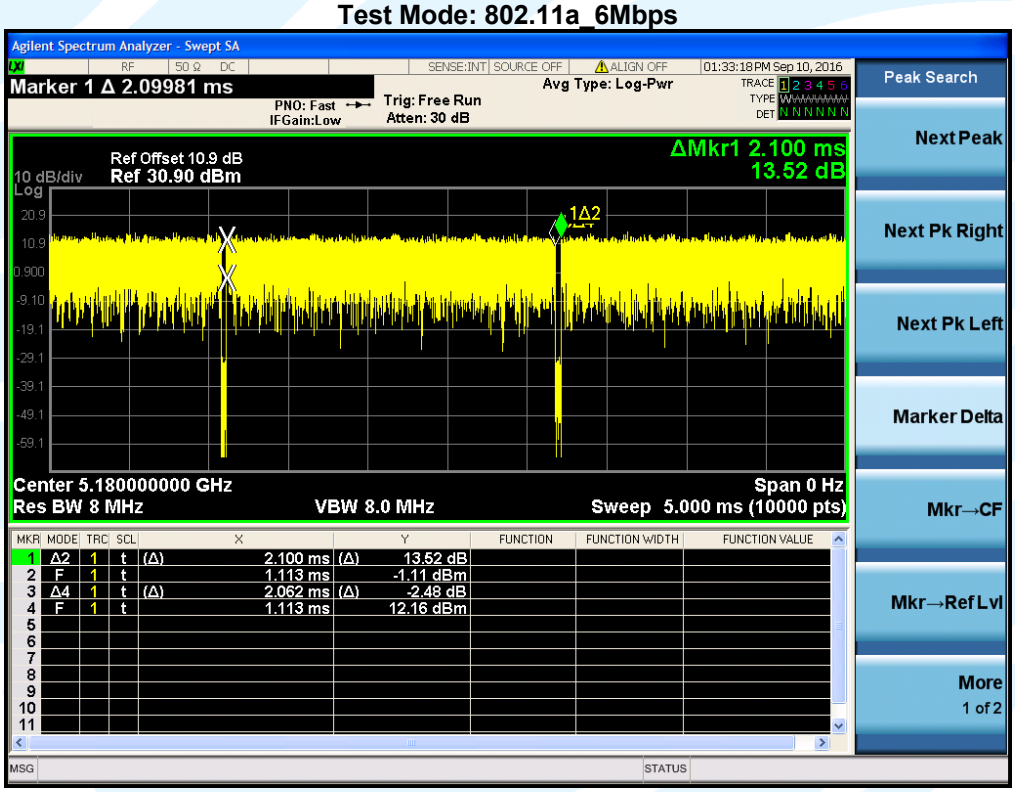
Mode	Worst-case data rates		
	SISO Mode		STBC Mode:
	Chain 0	Chain 1	Chain 0+1
802.11a	N/A	N/A	6 Mbps
802.11n(HT20)	N/A	N/A	MCS 3(26Mbps)
802.11n(HT40)	N/A	N/A	MCS 0(13.5Mbps)

4.4.3 Duty Cycle

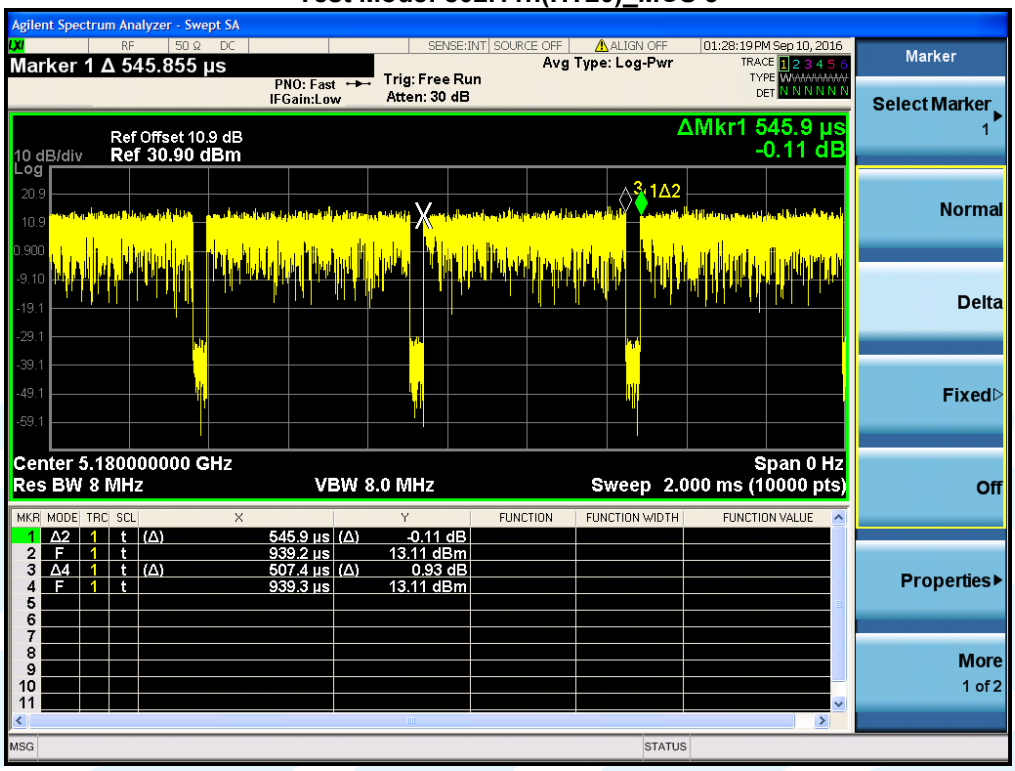
Mode	Data rates (Mbps)	On Time (msec)	Period (msec)	Duty Cycle (linear)	Duty Cycle (%)	Duty Cycle Factor (dB)	1/ T Minimum VBW (kHz)
802.11a	6	2.0620	2.1000	0.98	98.19	0.00	0.01
802.11n(HT20)	26	0.5074	0.5459	0.93	92.95	0.32	1.97
802.11n(HT40)	13.5	0.9434	0.9788	0.96	96.38	0.16	1.06
Remark: 1) Duty cycle= On Time/ Period 2) Duty Cycle factor = 10 * log(1/ Duty cycle)							

The test plot as follows:

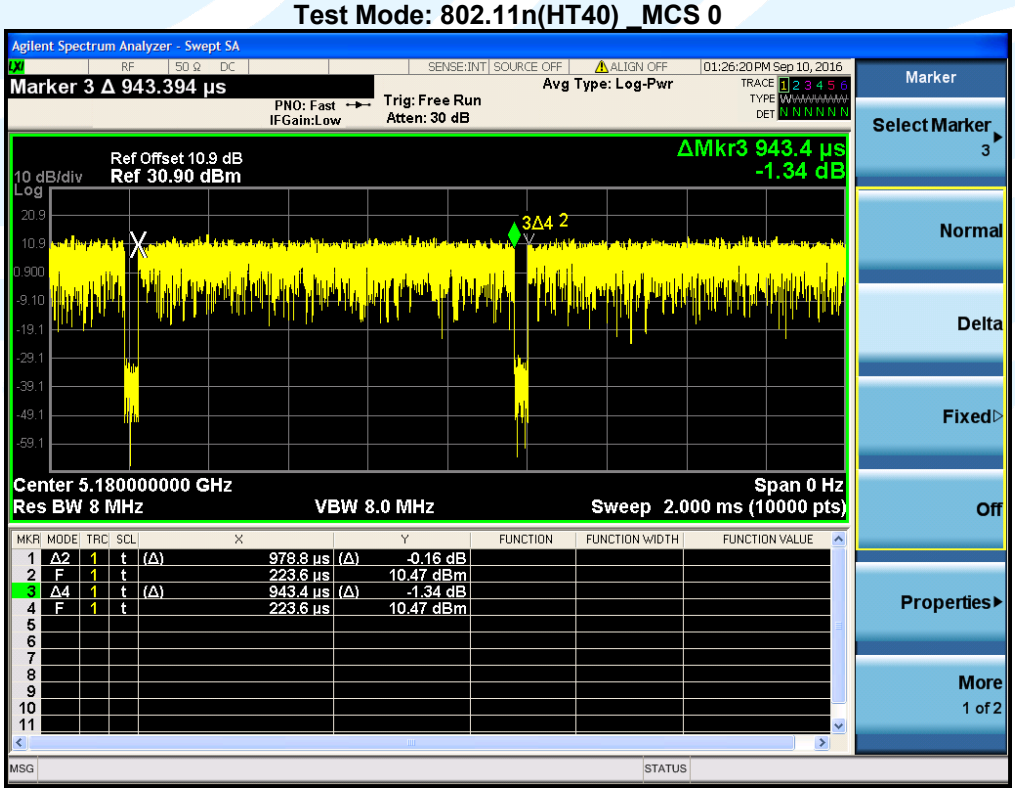
Test Mode: 802.11a_6Mbps



Test Mode: 802.11n(HT20)_MCS 3



Test Mode: 802.11n(HT40) _MCS 0



5 Radio Technical Requirements Specification

Reference documents for testing:

No.	Identity	Document Title
1	FCC Part15E (2015)	Subpart C-Intentional Radiators
2	ANSI C63.10-2013	American National Standard for Testing Unlicesed Wireless Devices
3	789033 D02 General U-NII Test Procedures New Rules v01r03	Guidelines for compliance testing of unlicensed national information infrastructure (U-NII) device part 15 subpart E
4	662911 D01 Multiple Transmitter Output v02r01	Emissions Testing of Transmitters with Multiple Outputs in the Same Band

5.1 Antenna Requirement

15.203 requirement:
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.
15.407(a)(1) (2) requirement:
The conducted output power limit specified in paragraph (a) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (a) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power and the peak power spectral density shall be reduced by the by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna:	

Both antenna in the interior of the equipment and no consideration of replacement. The Tx chains are correlated and the antenna gain is unequal among the chains and the best case directional gain of the antenna is 3.04dBi@5150MHz~5250MHz and 4.31dBi@5725MHz~5850MHz (See section 5.2).

5.2 Maximum conducted output power

Test Requirement: 47 CFR Part 15 Subpart E Section 15.407 (a)(1)(3)

Test Method: KDB 789033 D02 v01r03Section E.3.a(Method PM)

Limit:
1. For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW (24 dBm)
2. For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W (30 dBm).

Test Procedure:
1. Connected the EUT's antenna port to measure device by 10dB attenuator.
2. Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of Tx on burst.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

Test Setup: Refer to section 4.1.1 for details.

Instruments Used: Refer to section 3 for details

Test Mode: Transmitter mode

Test Results: Pass

Test Data:

Mode	Channel Frequency (MHz)	Maximum Conducted Average Power (dBm)					Power Limit (dBm)	Results
		Measured Power		Power with Duty Factor				
		Chain 0	Chain 1	Chain 0	Chain 1	Total (Chain 0+1)		
802.11a	36 (5180)	13.39	13.98	13.39	13.98	16.71	24	Pass
	40 (5200)	13.14	13.70	13.14	13.70	16.44	24	Pass
	48 (5240)	12.94	14.58	12.94	14.58	16.85	24	Pass
	149 (5745)	14.27	12.73	14.27	12.73	16.58	30	Pass
	157 (5785)	12.82	12.41	12.82	12.41	15.63	30	Pass
	165 (5825)	12.36	13.15	12.36	13.15	15.78	30	Pass
802.11n (HT20)	36 (5180)	13.67	15.19	13.99	15.51	17.83	24	Pass
	40 (5200)	14.21	14.88	14.53	15.20	17.89	24	Pass
	48 (5240)	14.48	15.66	14.80	15.98	18.44	24	Pass
	149 (5745)	15.33	13.71	15.65	14.03	17.93	30	Pass
	157 (5785)	13.93	14.58	14.25	14.90	17.60	30	Pass
	165 (5825)	13.04	13.05	13.36	13.37	16.38	30	Pass
802.11n (HT40)	38 (5190)	15.26	15.58	15.42	15.74	18.59	24	Pass
	46 (5230)	14.83	16.35	14.99	16.51	**18.83**	24	Pass
	151 (5755)	15.41	15.17	15.57	15.33	**18.46**	30	Pass
	159 (5795)	14.91	15.17	15.07	15.33	18.21	30	Pass

Remark:

1. All the data attached was use the worst case data rate.
2. Total (Chain 0+1) = $10*\log[(10^{\text{Chain 0}/10})+(10^{\text{Chain 1}/10})]$
3. Power with Duty Factor = Measured Power + Duty Cycle Factor
4. Directional gain and the maximum conducted output power see table below:

Frequency	Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated chains directional gain (dBi)	Power Limits (dBm)
U-NII-1	-1.6	1.4	3.04	24
U-NII-3	1.5	1.1	4.31	30

NOTE: The TX chains are correlated and the antenna gain is unequal among the chains.

The directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2 / N_{ANT}]$ dBi

5.3 Peak Power Spectral Density

Test Requirement: 47 CFR Part 15 Subpart E Section 15.407 (a)(1)(3)

Test Method: KDB 789033 D02 v01r03Section F

Limit:

1. For mobile and portable client devices in the 5.15-5.25 GHz band, The maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.
2. For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.

Test Procedure: The output from the transmitter was connected to an attenuator and then to the input of the RF Spectrum Analyzer.

Spectrum analyzer according to the following Settings:

1. 5.15-5.25 GHz band:

Using method SA-2

a) Set span to encompass the entire emission bandwidth (EBW) of the signal.

b) Set RBW = 1 MHz, Set VBW ≥ 3 RBW, Detector = RMS

c) Sweep time = auto, trigger set to “free run”.

d) Trace average at least 100 traces in power averaging mode.

e) Record the max value and add 10 log (1/duty cycle)

2. 5.725-5.85 GHz band:

a) Set span to encompass the entire emission bandwidth (EBW) of the signal.

b) Set RBW = 500 kHz, Set VBW ≥ 3 RBW, Detector = RMS

c) Use the peak marker function to determine the maximum power level in any 500 kHz band segment within the fundamental EBW.

d) Sweep time = auto, trigger set to “free run”.

e) Trace average at least 100 traces in power averaging mode.

f) Record the max value and add 10 log (1/duty cycle)

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

Test Setup: Refer to section 4.1.1 for details.

Instruments Used: Refer to section 3 for details

Test Mode: Transmitter mode

Test Results: Pass

Test Data:

Mode	Channel Frequency (MHz)	Peak Power Spectral Density (dBm)					PSD Limit (dBm)	Results
		Measured PSD		PSD with Duty Factor				
		Chain 0	Chain 1	Chain 0	Chain 1	Total (Chain 0+1)		
802.11a	36 (5180)	0.878	3.045	0.878	3.045	5.106	11	Pass
	40 (5200)	0.462	1.315	0.462	1.315	3.920	11	Pass
	48 (5240)	0.555	1.262	0.555	1.262	3.933	11	Pass
	149 (5745)	-1.968	0.074	-1.968	0.074	2.182	30	Pass
	157 (5785)	-2.214	0.044	-2.214	0.044	2.070	30	Pass
	165 (5825)	-3.339	-0.503	-3.339	-0.503	1.317	30	Pass
802.11n (HT20)	36 (5180)	1.280	2.810	1.600	3.130	**5.442**	11	Pass
	40 (5200)	0.739	2.157	1.059	2.477	4.836	11	Pass
	48 (5240)	1.105	2.118	1.425	2.438	4.971	11	Pass
	149 (5745)	-1.686	0.484	-1.366	0.804	**2.863**	30	Pass
	157 (5785)	-2.265	0.214	-1.945	0.534	2.479	30	Pass
	165 (5825)	-2.659	-0.129	-2.339	0.191	2.118	30	Pass
802.11n (HT40)	38 (5190)	-2.155	0.609	-1.995	0.769	2.614	11	Pass
	46 (5230)	-1.010	0.727	-0.850	0.887	3.115	11	Pass
	151 (5755)	-3.166	-3.179	-3.006	-3.019	-0.002	30	Pass
	159 (5795)	-3.189	-4.040	-3.029	-3.880	-0.423	30	Pass

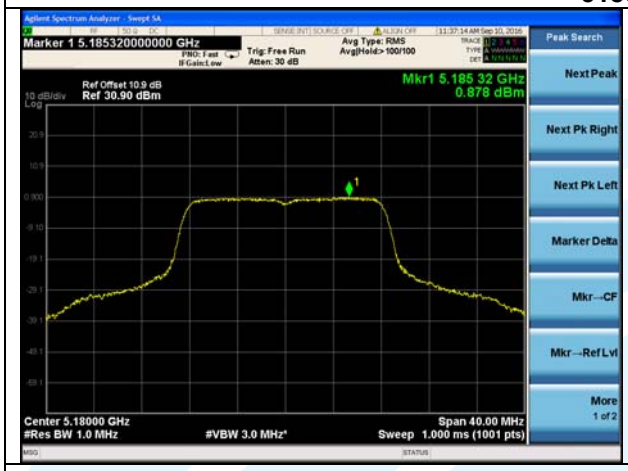
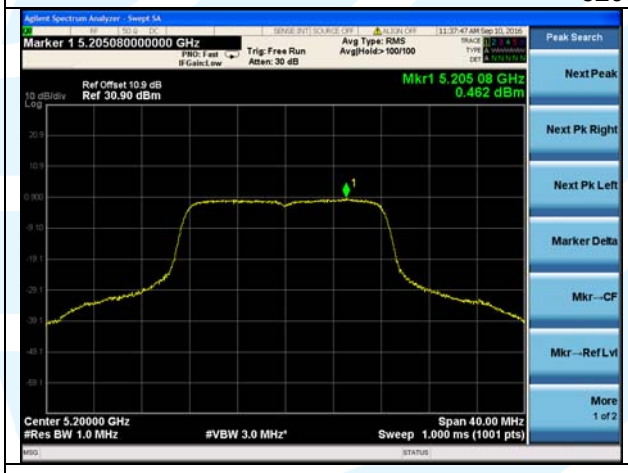
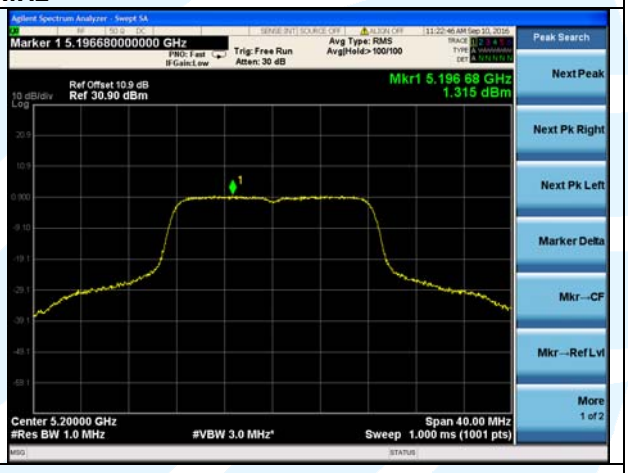
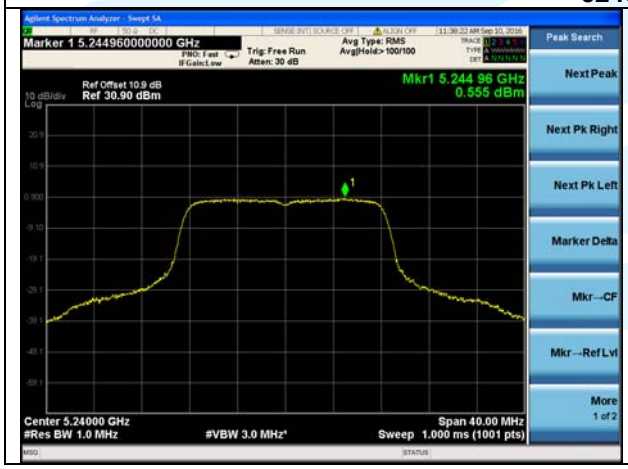
Remark:

1. All the data attached was use the worst case data rate.
2. Total (Chain 0+1) = $10*\log[(10^{\text{Chain 0/10}})+(10^{\text{Chain 1/10}})]$
3. Power with Duty Factor = Measured Power + Duty Cycle Factor
4. Directional gain and the maximum power spectral density see table below:

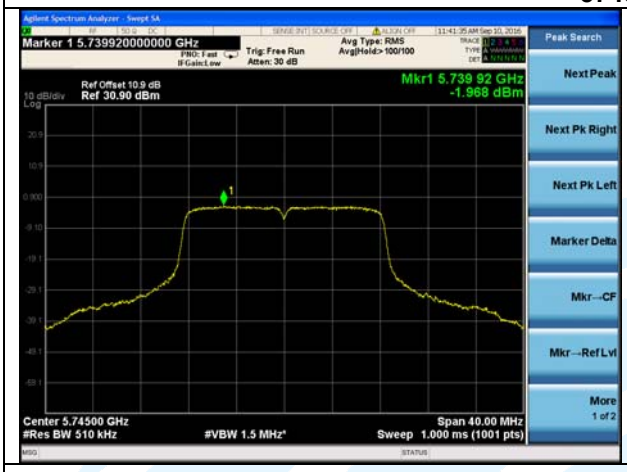
Frequency	Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated chains directional gain (dBi)	PSD Limits (dBm)
U-NII-1	-1.6	1.4	3.04	11
U-NII-3	1.5	1.1	4.31	30
NOTE: The TX chains are correlated and the antenna gain is unequal among the chains. The directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2 /NANT]$ dBi				

The test plot as follows:

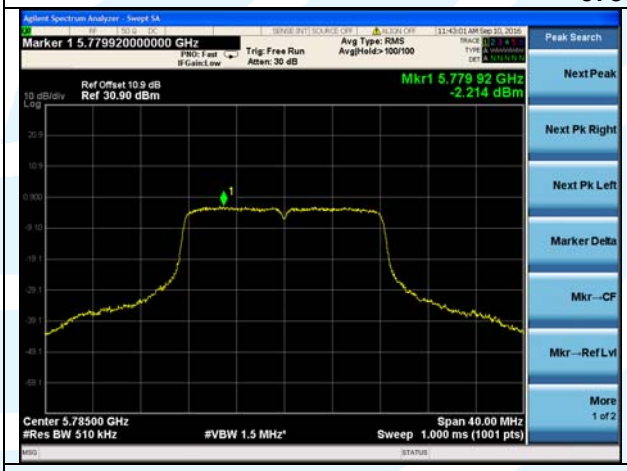
Test Mode: 802.11a

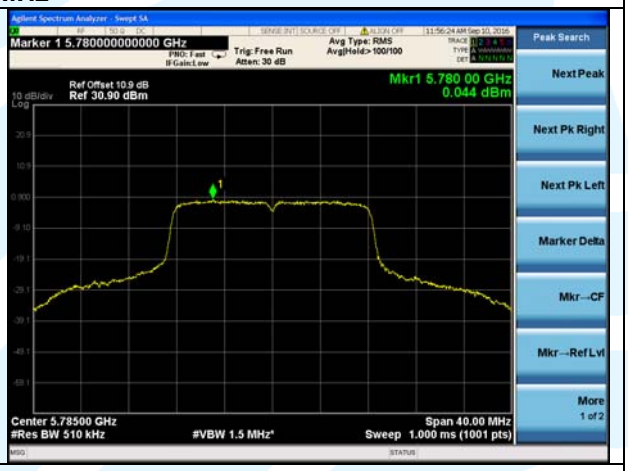
Chain 0	Chain 1
5180MHz	
	
5200MHz	
	
5240MHz	
	

5745MHz

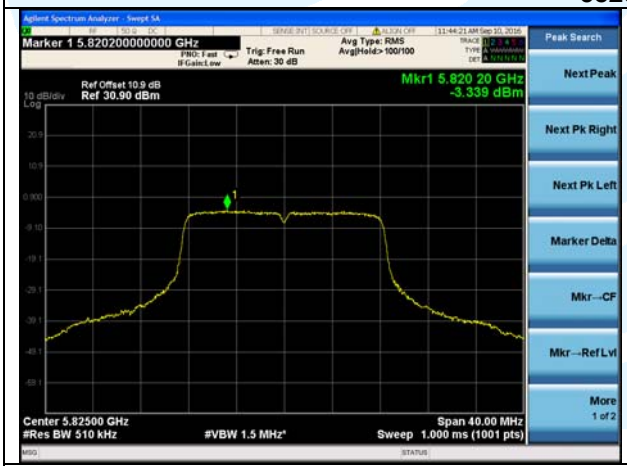


5785MHz

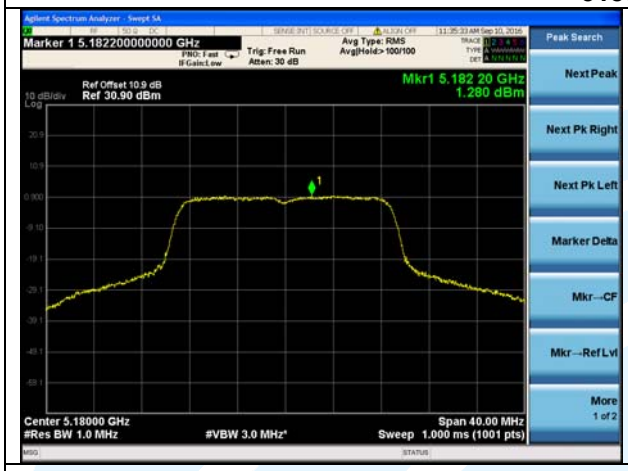
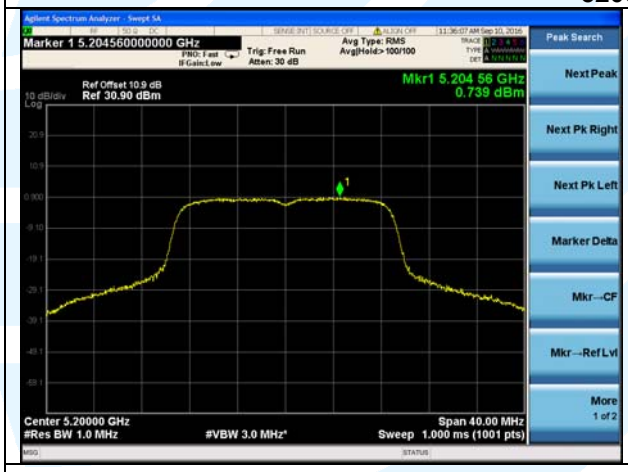
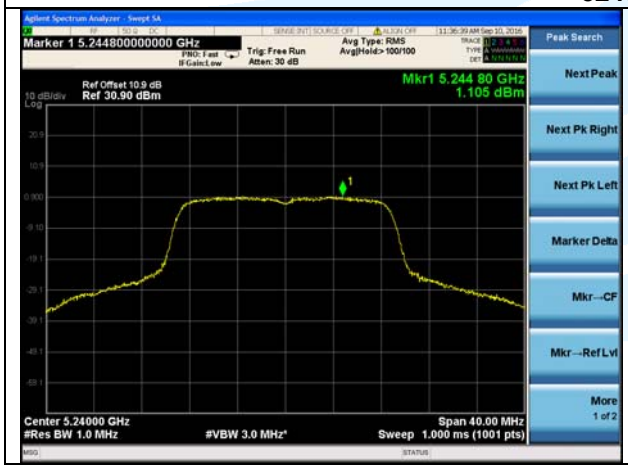




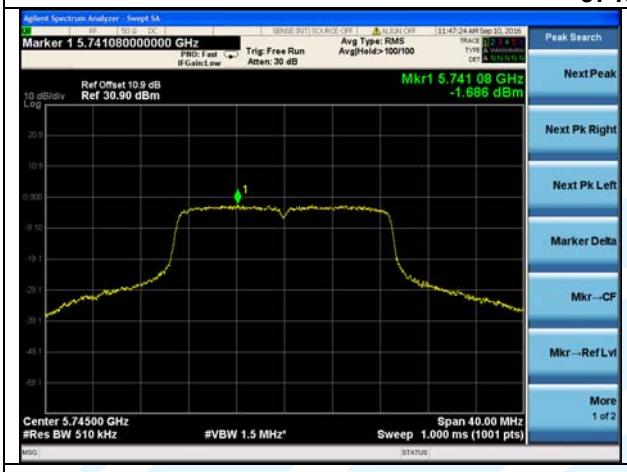
5825MHz



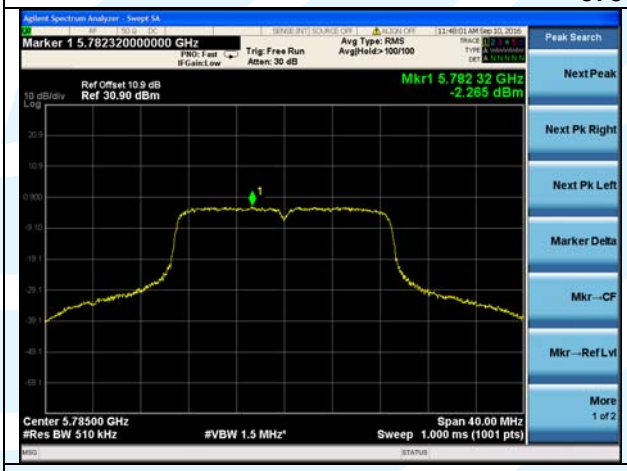
Test Mode: 802.11n(HT20)

Chain 0	Chain 1
5180MHz	
	
5200MHz	
	
5240MHz	
	

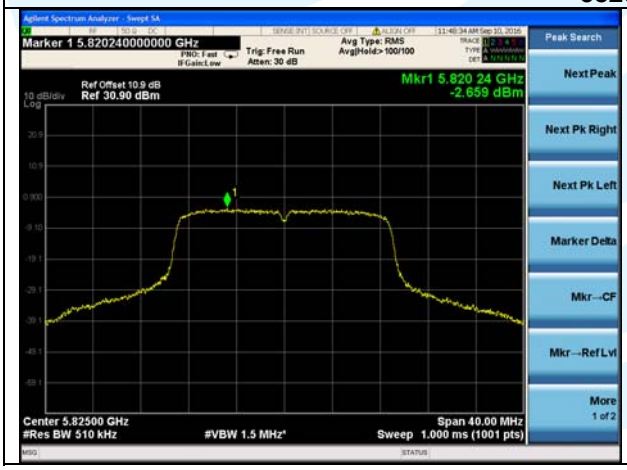
5745MHz



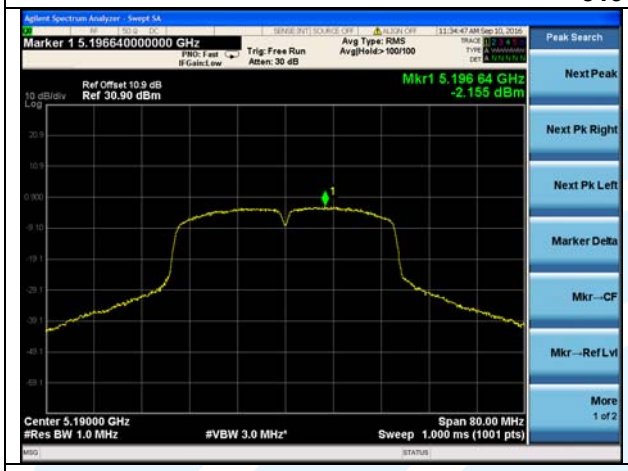
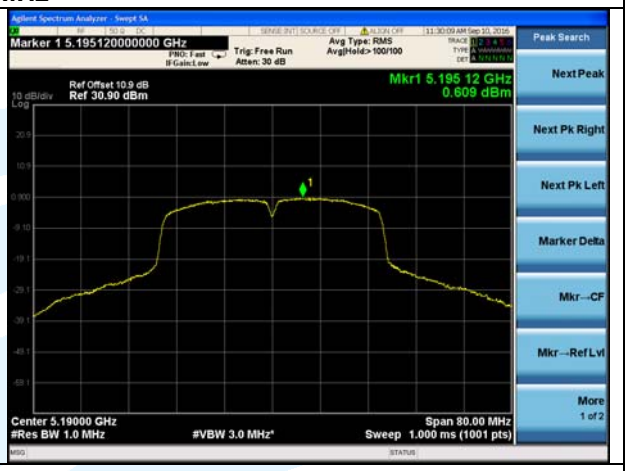
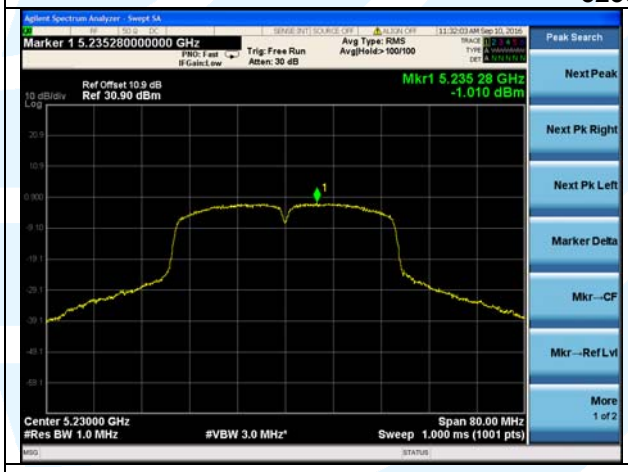
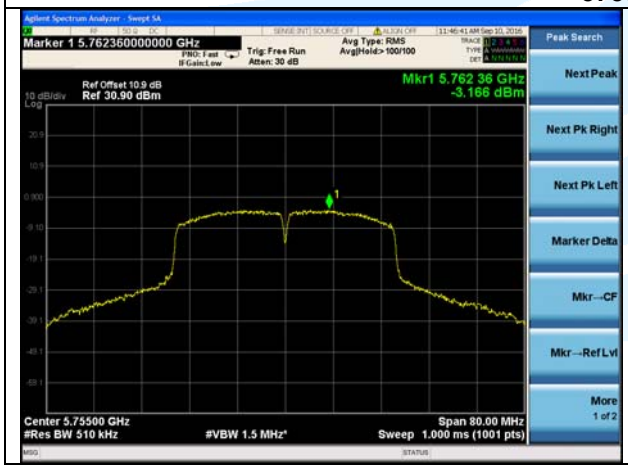
5785MHz



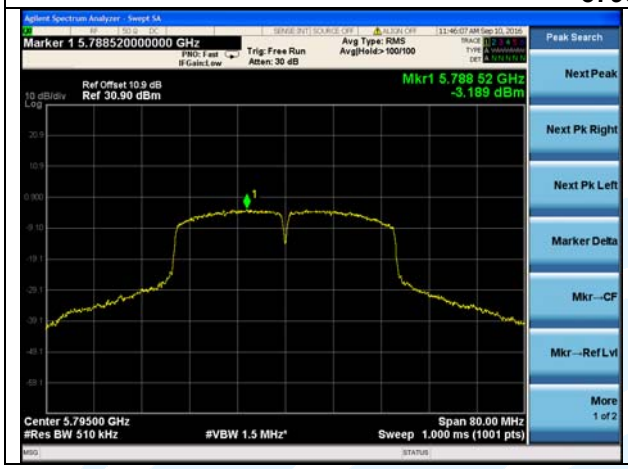
5825MHz



Test Mode: 802.11n(HT40)

Chain 0	Chain 1
5190MHz	
	
5230MHz	
	
5755MHz	
	

5795MHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 5.788520000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: RMS
Avg|Hold:>100/100
11:46:07 AM Sep 10, 2016
Ref Offset 10.9 dB
10 dB/div Ref 30.90 dBm
Log
Mkr1 5.788 52 GHz
-3.189 dBm
Center 5.79500 GHz
#Res BW 510 kHz
#VBW 1.5 MHz*
Span 80.00 MHz
Sweep 1.000 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

Agilent Spectrum Analyzer - Swept SA
Marker 1 5.788360000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: RMS
Avg|Hold:>100/100
11:50:21 AM Sep 10, 2016
Ref Offset 10.9 dB
10 dB/div Ref 30.90 dBm
Log
Mkr1 5.788 36 GHz
-4.040 dBm
Center 5.79500 GHz
#Res BW 510 kHz
#VBW 1.5 MHz*
Span 80.00 MHz
Sweep 1.000 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

5.4 6 dB bandwidth

Test Requirement: 47 CFR Part 15 Subpart E Section 15.407 (e)

Test Method: KDB 789033 D02 v01r03Section C.2

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

Test Procedure: The output from the transmitter was connected to an attenuator and then to the input of the RF Spectrum Analyzer.

Spectrum analyzer according to the following Settings:
a) Set RBW = 100 kHz.
b) Set the video bandwidth (VBW) ≥ 3 * RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.
g) 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.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

Test Setup: Refer to section 4.1.1 for details.

Instruments Used: Refer to section 3 for details

Test Mode: Transmitter mode

Test Results: Pass

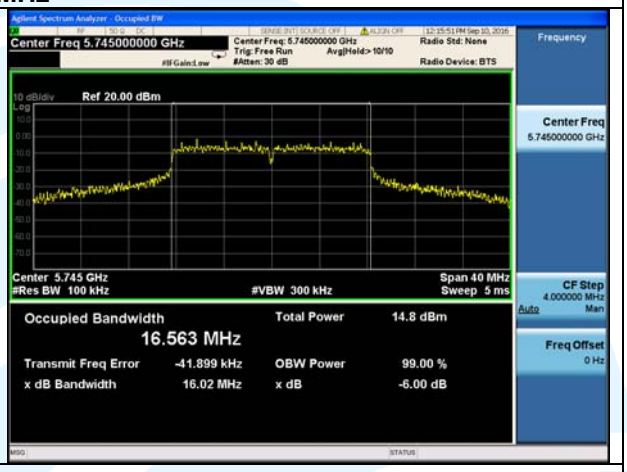
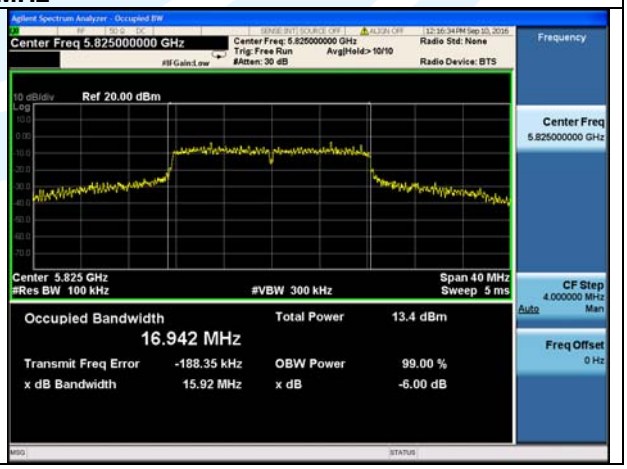
Test Data:

Mode	Channel Frequency (MHz)	Antenna Port	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limit	Result (Pass / Fail)
802.11a	149 (5745)	Chain 0	16.26	16.474	> 500 kHz	Pass
		Chain 1	16.02	16.563	> 500 kHz	Pass
	157 (5785)	Chain 0	16.05	16.440	> 500 kHz	Pass
		Chain 1	16.35	16.708	> 500 kHz	Pass
	165 (5825)	Chain 0	15.97	16.387	> 500 kHz	Pass
		Chain 1	15.92	16.942	> 500 kHz	Pass
802.11n (HT20)	149 (5745)	Chain 0	17.28	17.696	> 500 kHz	Pass
		Chain 1	16.35	17.755	> 500 kHz	Pass
	157 (5785)	Chain 0	16.95	17.666	> 500 kHz	Pass
		Chain 1	17.26	17.895	> 500 kHz	Pass
	165 (5825)	Chain 0	17.26	17.604	> 500 kHz	Pass
		Chain 1	16.93	17.911	> 500 kHz	Pass
802.11n (HT40)	151 (5755)	Chain 0	35.06	36.075	> 500 kHz	Pass
		Chain 1	32.53	37.500	> 500 kHz	Pass

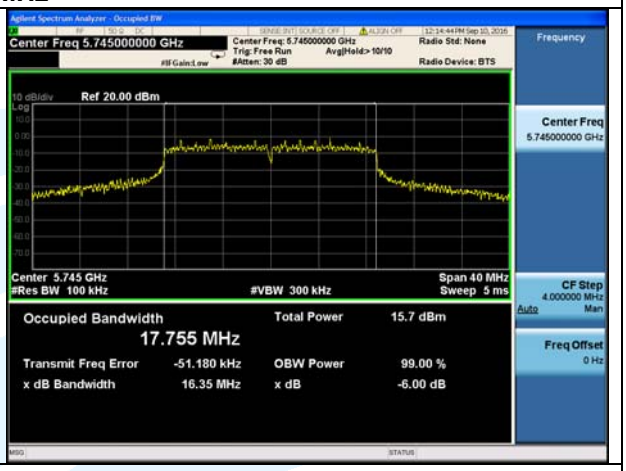
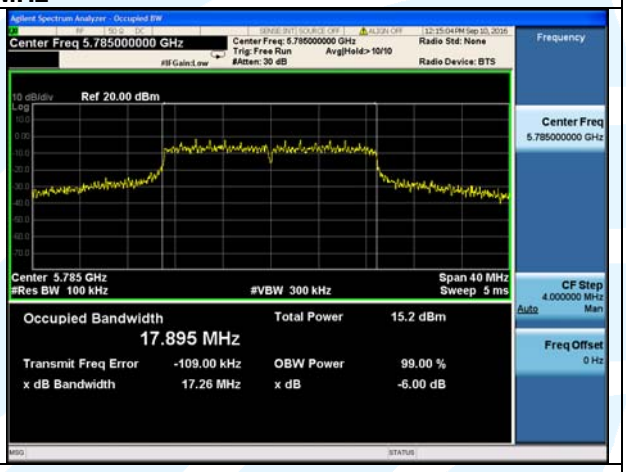
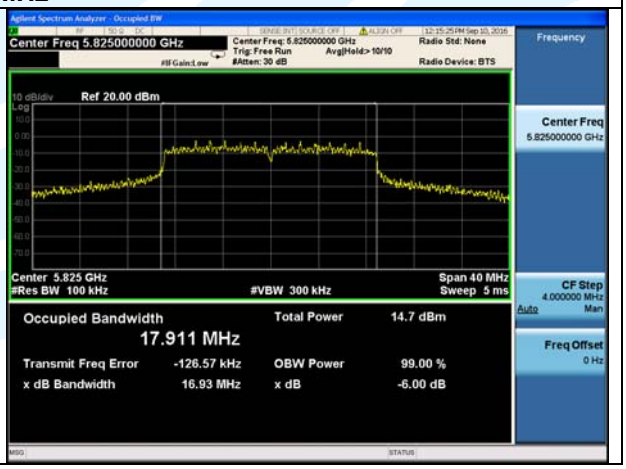
	159 (5795)	Chain 0	33.26	36.011	> 500 kHz	Pass
		Chain 1	31.38	42.197	> 500 kHz	Pass

The test plot as follows:

Test Mode: 802.11a

Chain 0	Chain 1
5745MHz	
	
5785MHz	
5825MHz	
	

Test Mode: 802.11 n(HT20)

Chain 0	Chain 1
5745MHz	
	
5785MHz	
	
5825MHz	
	

Test Mode: 802.11 n(HT40)

Chain 0	Chain 1
5755MHz	
5795MHz	

5.5 26 dB emission bandwidth

Test Requirement: 47 CFR Part 15 Subpart E Section 15.407 (a) (2)(5)

Test Method: KDB 789033 D02 v01r03Section C.1

Limit: None; for reporting purposes only.

Test Procedure: The output from the transmitter was connected to an attenuator and then to the input of the RF Spectrum analyzer.

Spectrum analyzer according to the following Settings:
a) Set RBW = approximately 1 % of the emission bandwidth.
b) Set the VBW > RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1 %.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

Test Setup: Refer to section 4.1.1 for details.

Instruments Used: Refer to section 3 for details

Test Mode: Transmitter mode

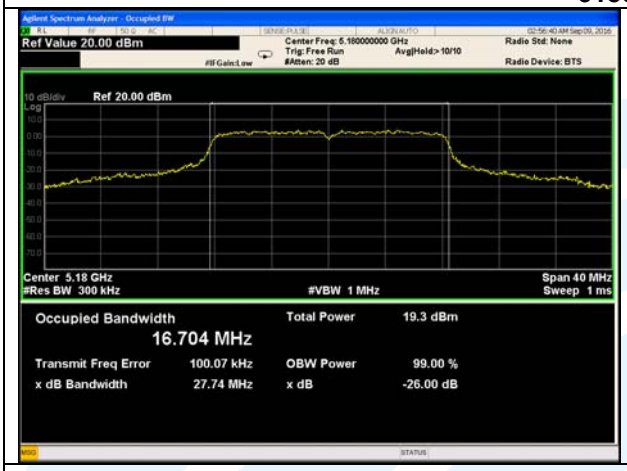
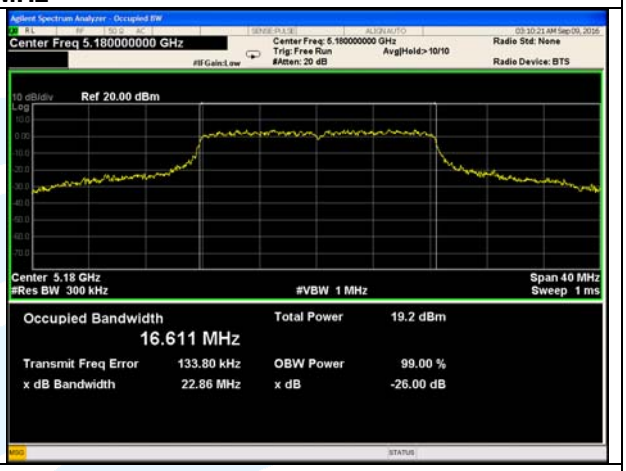
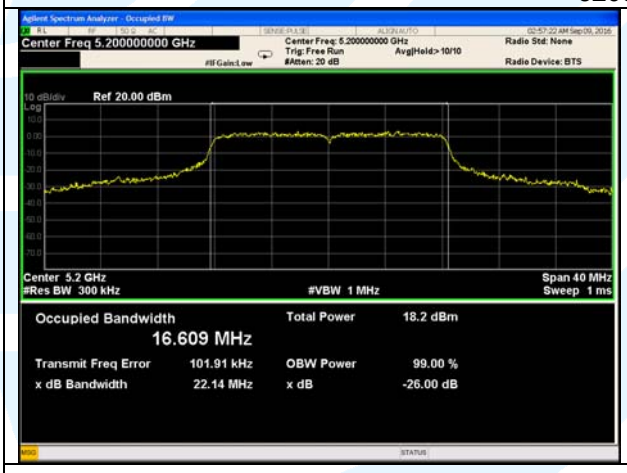
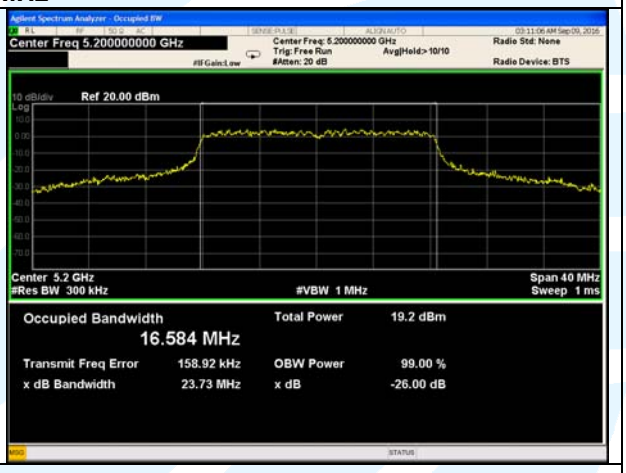
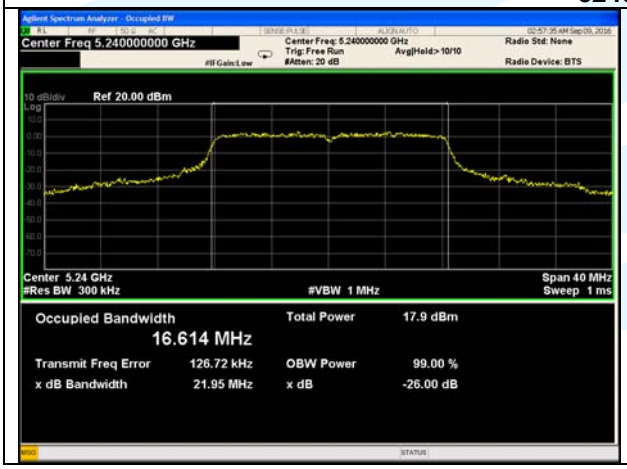
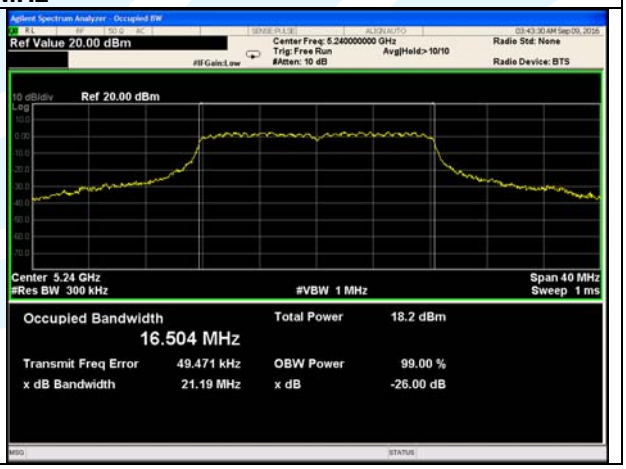
Test Results: Pass

Test Data:

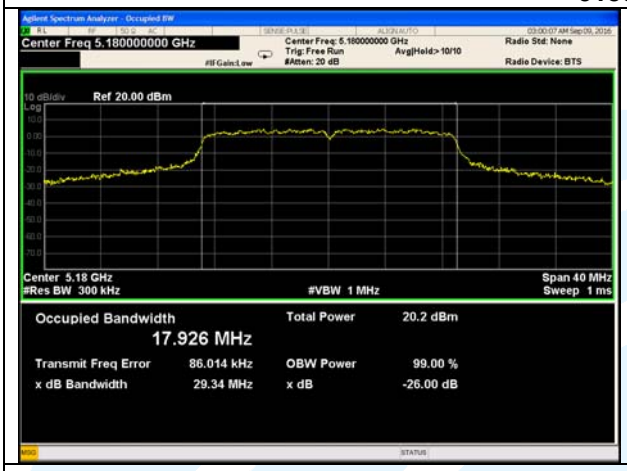
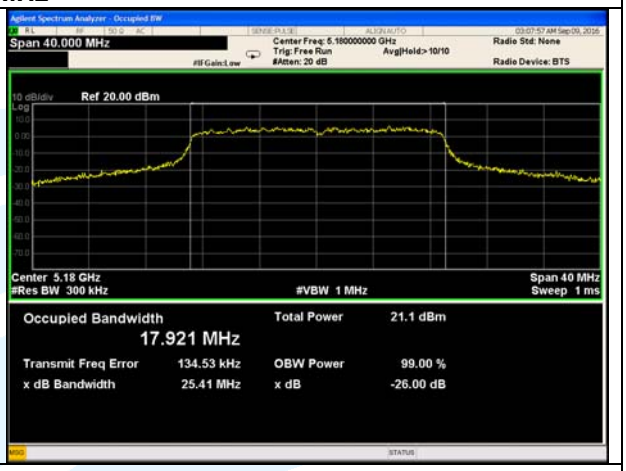
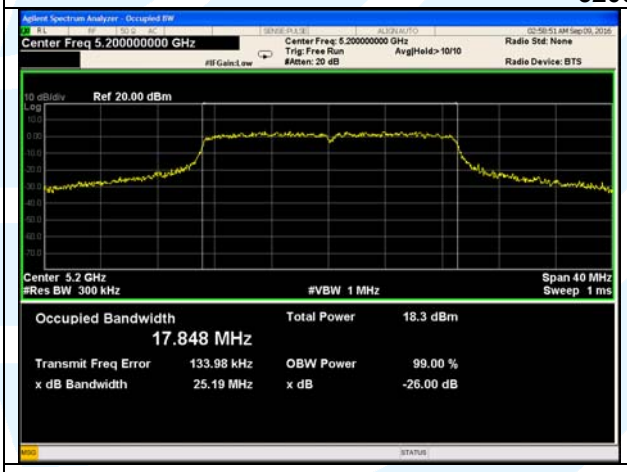
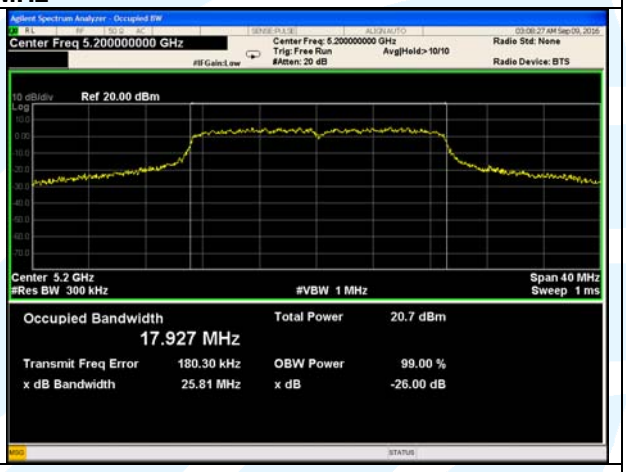
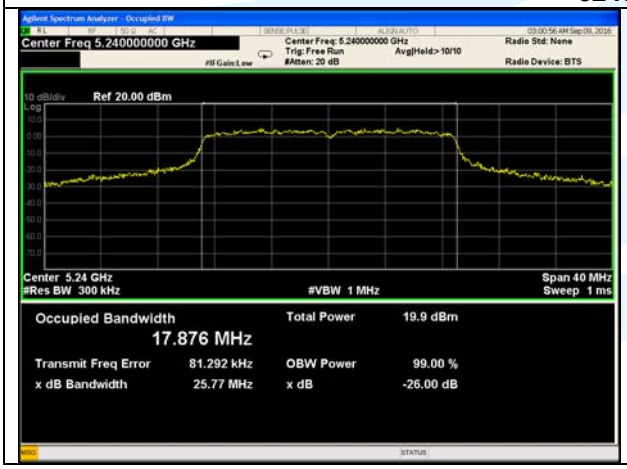
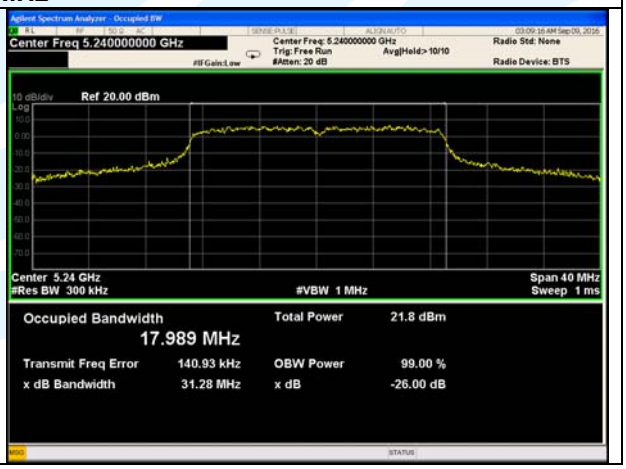
Mode	Channel Frequency (MHz)	Antenna Port	26 dB emission bandwidth (MHz)	99% Bandwidth (MHz)
802.11a	36 (5180)	Chain 0	27.74	16.704
		Chain 1	22.86	16.611
	40 (5200)	Chain 0	22.14	16.609
		Chain 1	23.73	16.584
	48 (5240)	Chain 0	21.95	16.614
		Chain 1	21.19	16.504
802.11n (HT20)	36 (5180)	Chain 0	29.34	17.926
		Chain 1	25.41	17.921
	40 (5200)	Chain 0	25.19	17.848
		Chain 1	25.81	17.927
	48 (5240)	Chain 0	25.77	17.876
		Chain 1	31.28	17.989
802.11n (HT40)	38 (5190)	Chain 0	55.46	36.128
		Chain 1	62.59	36.150
	46 (5230)	Chain 0	60.14	36.129
		Chain 1	67.53	36.201

The test plot as follows:

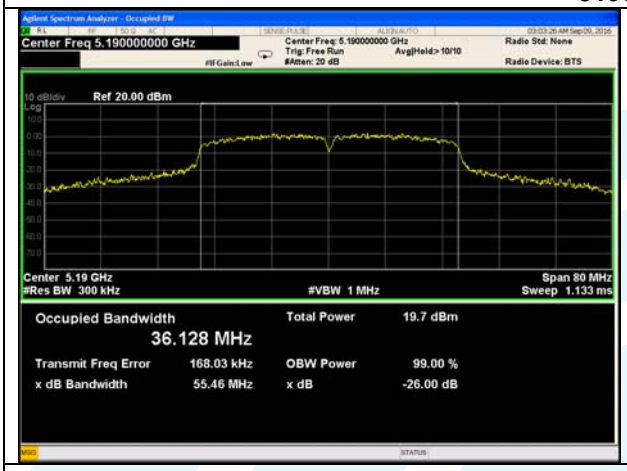
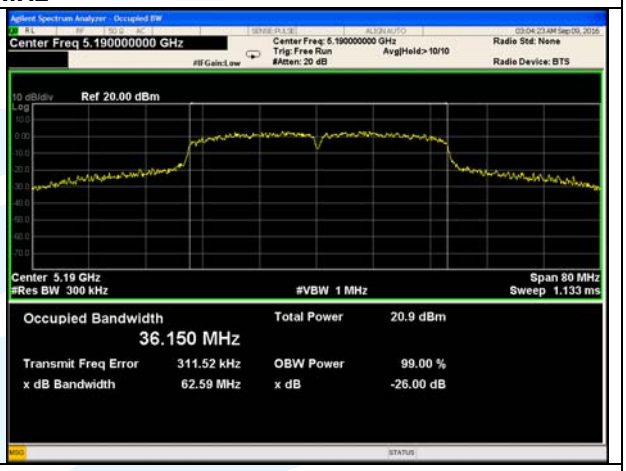
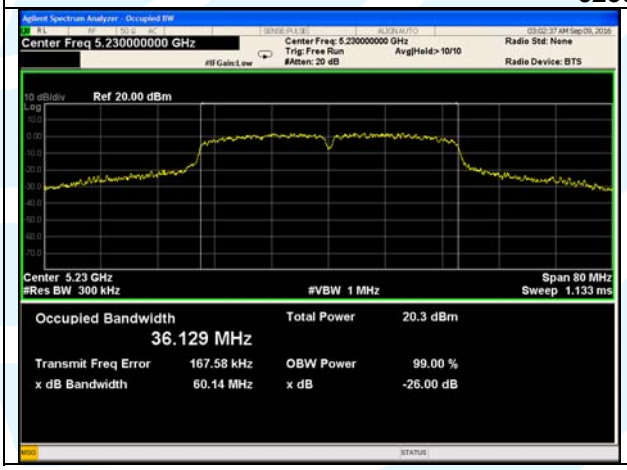
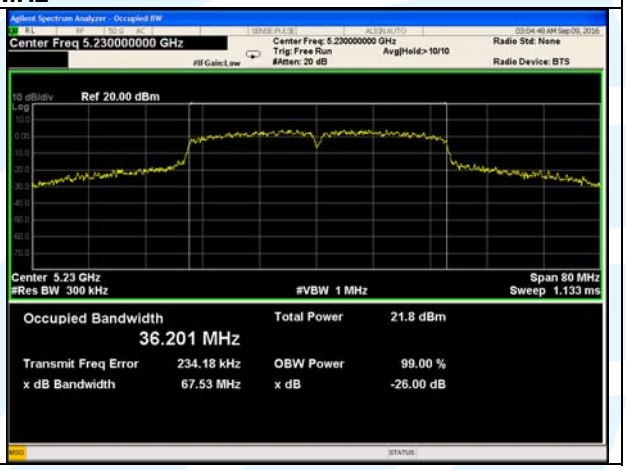
Test Mode: 802.11a

Chain 0	Chain 1
5180MHz	
	
5200MHz	
	
5240MHz	
	

Test Mode: 802.11n(HT20)

Chain 0	Chain 1
5180MHz	
	
5200MHz	
	
5240MHz	
	

Test Mode: 802.11n(HT40)

Chain 0	Chain 1
5190MHz	
	
5230MHz	
	

5.6 Frequency stability

Test Requirement: 47 CFR Part 15 Subpart E Section 15.407 (g)

Test Method: ANSI C63.10-2013

Limit: The frequency of the carrier signal shall be maintained within band of operation.

Test Procedure: a) To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.
b) The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10 dB lower than the measured peak value.
c) The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

Test Setup: Refer to section 4.1.1 for details.

Instruments Used: Refer to section 3 for details

Test Mode: Transmitter mode

Test Results: Pass

Test Data:

Remark:

The EUT this time and previous (FCC ID: 2AIDWHC-6428) all the RF circuit board are the same, the only differences are the RF output power and power supply circuit board of UAV. After assessment, this differences does not affect the test results, so the following test data from the original report with report No. 16WS0525027F-01 Rev0 (FCC ID: 2AIDWHC-6428).

Frequency Stability Versus Temp.						
Temp. (℃)	Power Supply (Vdc)	Measured Frequency (GHz)		Frequency Drift (ppm)		Result (Pass / Fail)
		Chain 0	Chain 1	Chain 0	Chain 1	
Operating Frequency: 5180 MHz						
35	7.4	5.1799805	5.1799715	-3.7645	-5.5019	Pass
20	7.4	5.1799785	5.1799725	-4.1506	-5.3089	Pass
5	7.4	5.1799795	5.1799735	-3.9575	-5.1158	Pass
Operating Frequency: 5190 MHz						
35	7.4	5.1899770	5.1899900	-4.4316	-1.9268	Pass
20	7.4	5.1899765	5.1899845	-4.5279	-2.9865	Pass
5	7.4	5.1899760	5.1899835	-4.6243	-3.1792	Pass
Operating Frequency: 5200 MHz						
35	7.4	5.1999870	5.1999875	-2.5000	-2.4038	Pass
20	7.4	5.1999850	5.1999855	-2.8846	-2.7885	Pass

5	7.4	5.1999820	5.1999840	-3.4615	-3.0769	Pass
Operating Frequency: 5230 MHz						
35	7.4	5.2299795	5.2299840	-3.9197	-3.0593	Pass
20	7.4	5.2299790	5.2299840	-4.0153	-3.0593	Pass
5	7.4	5.2299785	5.2299840	-4.1109	-3.0593	Pass

Operating Frequency: 5240 MHz						
35	7.4	5.2400140	5.2399800	2.6718	-3.8168	Pass
20	7.4	5.2400010	5.2399810	0.1908	-3.6260	Pass
5	7.4	5.2399940	5.2399815	-1.1450	-3.5305	Pass
Operating Frequency: 5745 MHz						
35	7.4	5.7449765	5.7449590	-4.0905	-7.1366	Pass
20	7.4	5.7449760	5.7449625	-4.1775	-6.5274	Pass
5	7.4	5.7449755	5.7449645	-4.2646	-6.1793	Pass
Operating Frequency: 5755 MHz						
35	7.4	5.7549500	5.7549720	-8.6881	-4.8653	Pass
20	7.4	5.7549515	5.7549730	-8.4275	-4.6916	Pass
5	7.4	5.7549520	5.7549730	-8.3406	-4.6916	Pass
Operating Frequency: 5785 MHz						
35	7.4	5.7849795	5.7850115	-3.5436	1.9879	Pass
20	7.4	5.7849785	5.7850195	-3.7165	3.3708	Pass
5	7.4	5.7849770	5.7850250	-3.9758	4.3215	Pass
Operating Frequency: 5795 MHz						
35	7.4	5.7949710	5.7949790	-5.0043	-3.6238	Pass
20	7.4	5.7949805	5.7949745	-3.3650	-4.4003	Pass
5	7.4	5.7949855	5.7949720	-2.5022	-4.8318	Pass
Operating Frequency: 5825 MHz						
35	7.4	5.8249945	5.8250315	-0.9442	5.4077	Pass
20	7.4	5.8249870	5.825035	-2.2318	6.0086	Pass
5	7.4	5.8249830	5.8250385	-2.9185	6.6094	Pass

Frequency Stability Versus Temp.						
Temp. (℃)	Power Supply (Vdc)	Measured Frequency (GHz)		Frequency Drift (ppm)		Result (Pass / Fail)
		Chain 0	Chain 1	Chain 0	Chain 1	
Operating Frequency: 5180 MHz						
20	8.4	5.1800105	5.1800110	2.0270	2.1236	Pass
	7.4	5.1799745	5.1800100	-4.9228	1.9305	Pass
	6.4	5.1800335	5.1800185	6.4672	3.5714	Pass
Operating Frequency: 5190 MHz						
20	8.4	5.1900085	5.1900125	1.6378	2.4085	Pass
	7.4	5.1899665	5.1900120	-6.4547	2.3121	Pass
	6.4	5.1900315	5.1900045	6.0694	0.8671	Pass
Operating Frequency: 5200 MHz						
20	8.4	5.1999825	5.1999805	-3.3654	-3.7500	Pass
	7.4	5.2000070	5.2000105	1.3462	2.0192	Pass
	6.4	5.1999790	5.1999800	-4.0385	-3.8462	Pass
Operating Frequency: 5230 MHz						
20	8.4	5.2300335	5.2300210	6.4054	4.0153	Pass
	7.4	5.2300105	5.2300140	2.0076	2.6769	Pass
	6.4	5.2300290	5.2300190	5.5449	3.6329	Pass
Operating Frequency: 5240 MHz						
20	8.4	5.2399665	5.2399750	-6.3931	-4.7710	Pass
	7.4	5.2399675	5.2400105	-6.2023	2.0038	Pass
	6.4	5.2399675	5.2399765	-6.2023	-4.4847	Pass
Operating Frequency: 5745 MHz						
20	8.4	5.7450090	5.7449670	1.5666	-5.7441	Pass
	7.4	5.7450215	5.7450075	3.7424	1.3055	Pass
	6.4	5.7450135	5.7449700	2.3499	-5.2219	Pass
Operating Frequency: 5755 MHz						
20	8.4	5.7550080	5.7550105	1.3901	1.8245	Pass
	7.4	5.7550345	5.7550170	5.9948	2.9540	Pass
	6.4	5.7550170	5.7549960	2.9540	-0.6950	Pass
Operating Frequency: 5785 MHz						
20	8.4	5.7849775	5.7850035	-3.8894	0.6050	Pass
	7.4	5.7850415	5.7850065	7.1737	1.1236	Pass

	6.4	5.7849900	5.7849900	-1.7286	-1.7286	Pass
Operating Frequency: 5795 MHz						
20	8.4	5.7950080	5.7950005	1.3805	0.0863	Pass
	7.4	5.7949995	5.7950225	-0.0863	3.8827	Pass
	6.4	5.7950090	5.7950010	1.5531	0.1726	Pass
Operating Frequency: 5825 MHz						
20	8.4	5.8250020	5.8250320	0.3433	5.4936	Pass
	7.4	5.8250050	5.8250065	0.8584	1.1159	Pass
	6.4	5.8249890	5.8250350	-1.8884	6.0086	Pass

5.7 Radiated Emissions and Band Edge Measurement

Test Requirement: 47 CFR Part 15 Subpart E Section 15.407 (b)(1),(4),(6)

Test Method: KDB 789033 D02 v01r03Section G.3, G.4, G.5, and G.6

Limit:

1. Limits of Radiated Emission and Bandedge Measurement

Radiated emissions that fall in the restricted bands must comply with the general emissions limits in 15.209(a) as below table. Other emissions shall be at least 20 dB below the highest level of the desired power.

Frequency	Field strength (microvolt/meter)	Limit (dBμV/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
1.705MHz-30MHz	30	-	-	30
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	500	54.0	Quasi-peak	3
Above 1GHz	500	54.0	Average	3

Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

Remark:

a) The lower limit shall apply at the transition frequencies.

b) Emission level (dBuV/m) = 20 log Emission level (uV/m).

c) For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

2. Limits of Unwanted Emission Out of the Restricted Bands

Applicable To	Limit	
789033 D02 General U-NII Test Procedures New Rules v01r03	Field Strength at 3 m	
	PK: 74 (dBμV/m)	AV: 54 (dBμV/m)
Applicable To	EIRP Limit	Equivalent Field Strength at 3 m
15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2 (dBμV/m)
15.407(b)(4) Beyond 10 MHz of the band edge	PK: -27 (dBm/MHz)	PK: 68.2 (dBμV/m)
15.407(b)(4) Within 10 MHz of band edge	PK: -17 (dBm/MHz)	PK: 78.2 (dBμV/m)

Test Procedure:

a) The EUT was placed on the top of a rotating table 0.8 meters (for below 1 GHz) / 1.5 meters (for above 1 GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b) The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c) The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both

horizontal and vertical polarizations of the antenna are set to make the measurement.

d) For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e) The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

f) The test-receiver system was set to peak and average detected function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Remark:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for RMS Average (Duty cycle < 98 %) for Average detection (AV) at frequency above 1 GHz, then the measurement results was added to a correction factor (10 log(1/duty cycle)).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz (Duty cycle ≥ 98 %) or ≥ 1/T(duty cycle is < 98%) for Average detection (AV) at frequency above 1 GHz.
5. All modes of operation were investigated and the worst-case emissions are reported.

Test Setup: Refer to section 4.1.2 for details.

Instruments Used: Refer to section 3 for details

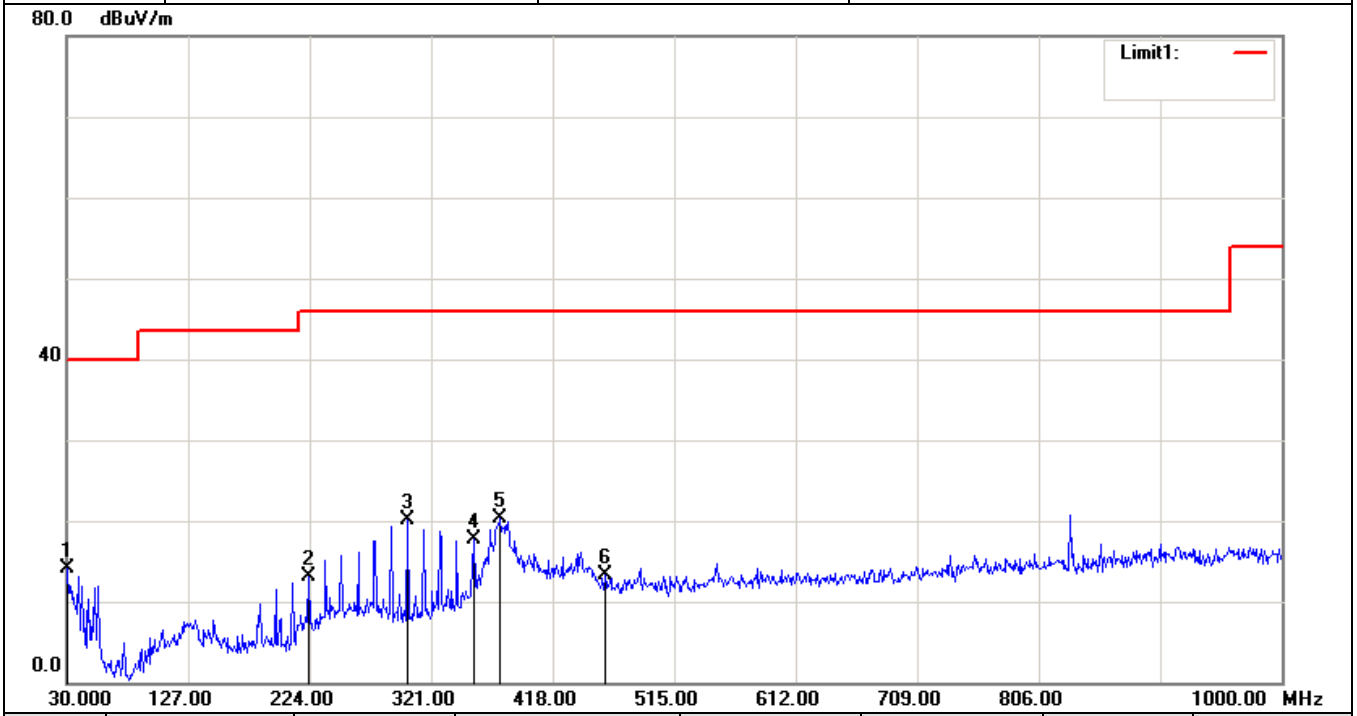
Test Mode: Transmitter mode

Test Results: Pass

Test Data:

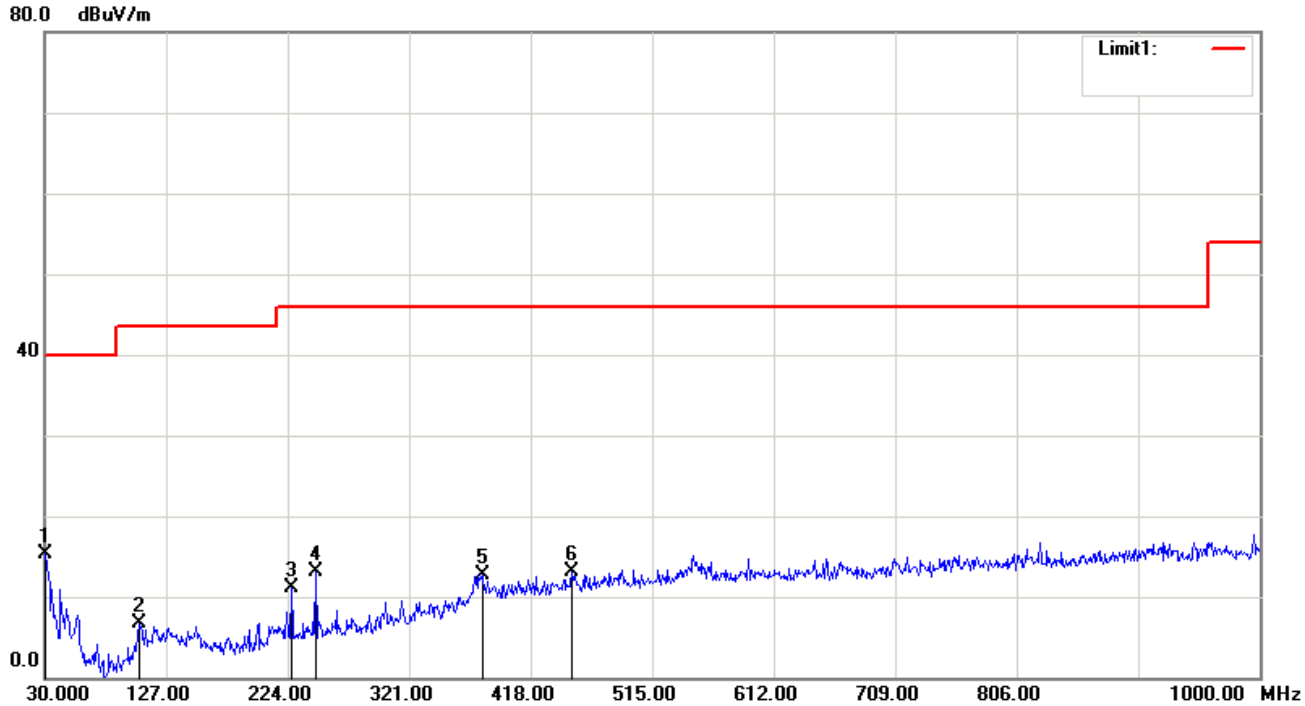
Radiated Emission Test Data (Below 1 GHz Worst Case):

Mode	802.11n(HT40)	**Antenna**	Chain 0+1
Channel	46	**Ant. Polar.**	Horizontal



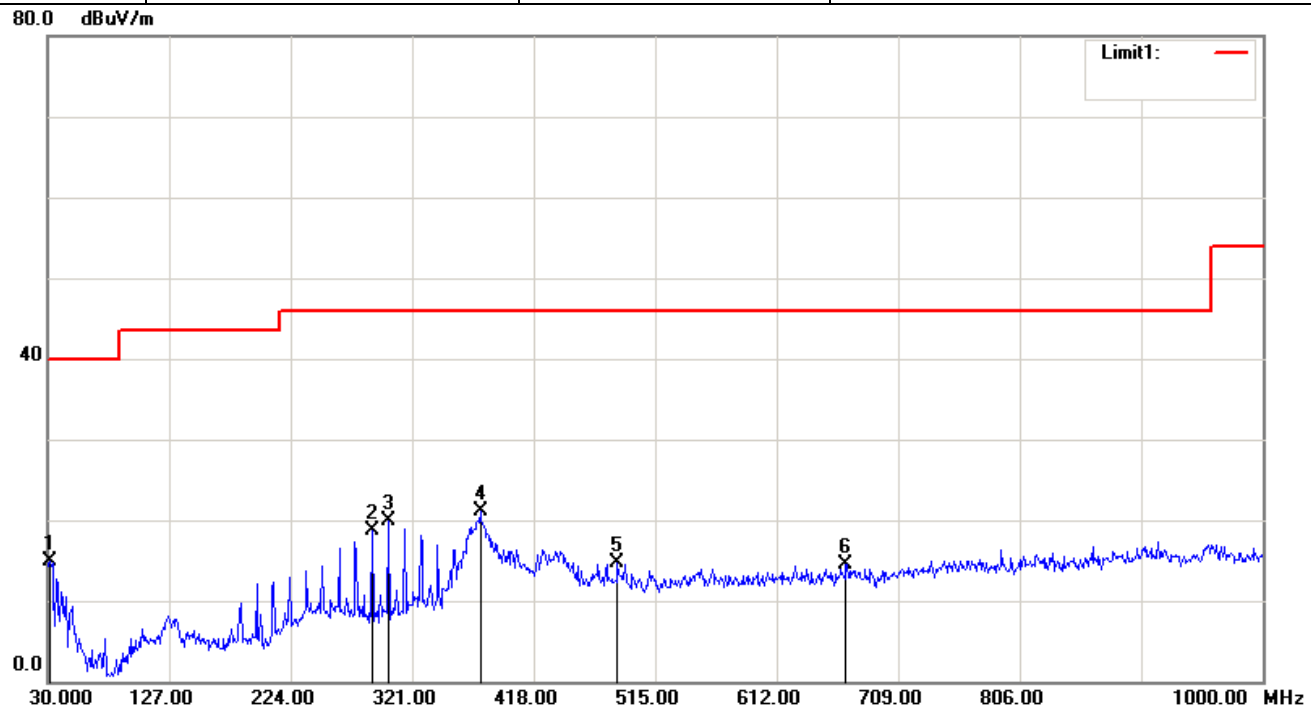
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.0000	25.69	-11.64	14.05	40.00	-25.95	peak
2	223.0300	33.98	-20.80	13.18	46.00	-32.82	peak
3	301.6000	39.63	-19.51	20.12	46.00	-25.88	peak
4	354.9500	35.23	-17.54	17.69	46.00	-28.31	peak
5*	376.2900	37.12	-16.74	20.38	46.00	-25.62	peak
6	459.7100	28.57	-15.19	13.38	46.00	-32.62	peak

Mode	802.11n(HT40)	Antenna	Chain 0+1
Channel	46	Ant. Polar.	Vertical



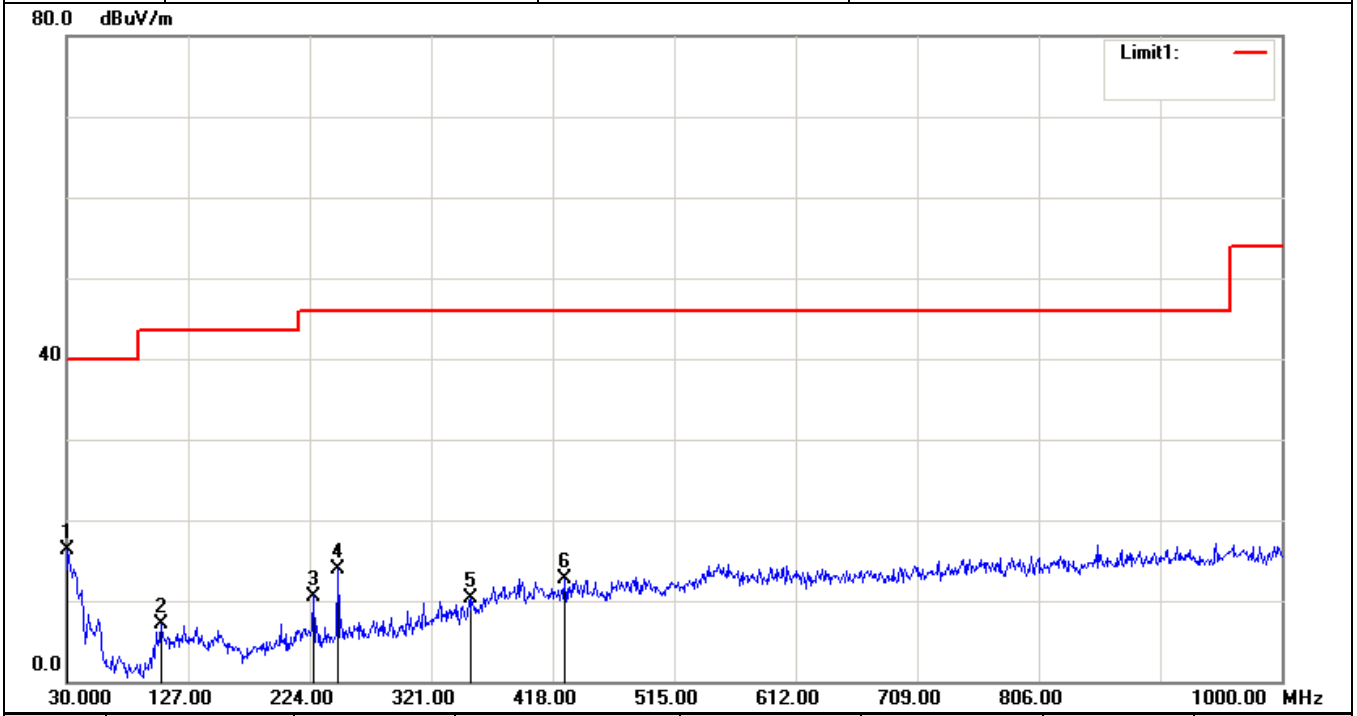
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	30.9700	27.60	-12.22	15.38	40.00	-24.62	peak
2	105.6600	29.30	-22.63	6.67	43.50	-36.83	peak
3	226.9100	32.51	-21.39	11.12	46.00	-34.88	peak
4	246.3100	34.34	-21.23	13.11	46.00	-32.89	peak
5	379.2000	29.23	-16.52	12.71	46.00	-33.29	peak
6	450.9800	28.60	-15.43	13.17	46.00	-32.83	peak

Mode	802.11n(HT40)	Antenna	Chain 0+1
Channel	151	Ant. Polar.	Horizontal



.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	31.9400	27.66	-12.80	14.86	40.00	-25.14	peak
2	288.9900	39.22	-20.46	18.76	46.00	-27.24	peak
3	301.6000	39.32	-19.51	19.81	46.00	-26.19	peak
4*	375.3200	37.88	-16.82	21.06	46.00	-24.94	peak
5	484.9300	28.99	-14.36	14.63	46.00	-31.37	peak
6	667.2900	26.65	-12.19	14.46	46.00	-31.54	peak

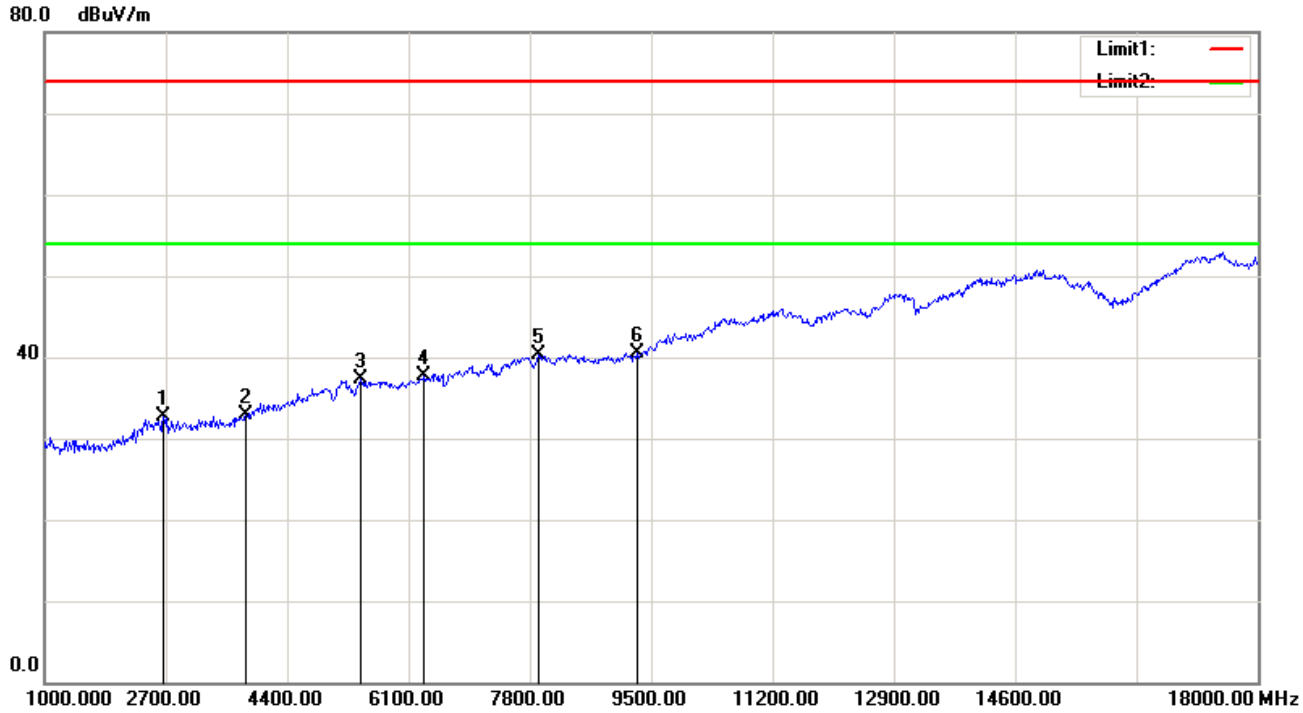
Mode	802.11n(HT40)	Antenna	Chain 0+1
Channel	151	Ant. Polar.	Vertical



.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	30.9700	28.56	-12.22	16.34	40.00	-23.66	peak
2	105.6600	29.78	-22.63	7.15	43.50	-36.35	peak
3	226.9100	31.99	-21.39	10.60	46.00	-35.40	peak
4	246.3100	35.08	-21.23	13.85	46.00	-32.15	peak
5	352.0400	27.83	-17.61	10.22	46.00	-35.78	peak
6	427.7000	28.30	-15.55	12.75	46.00	-33.25	peak

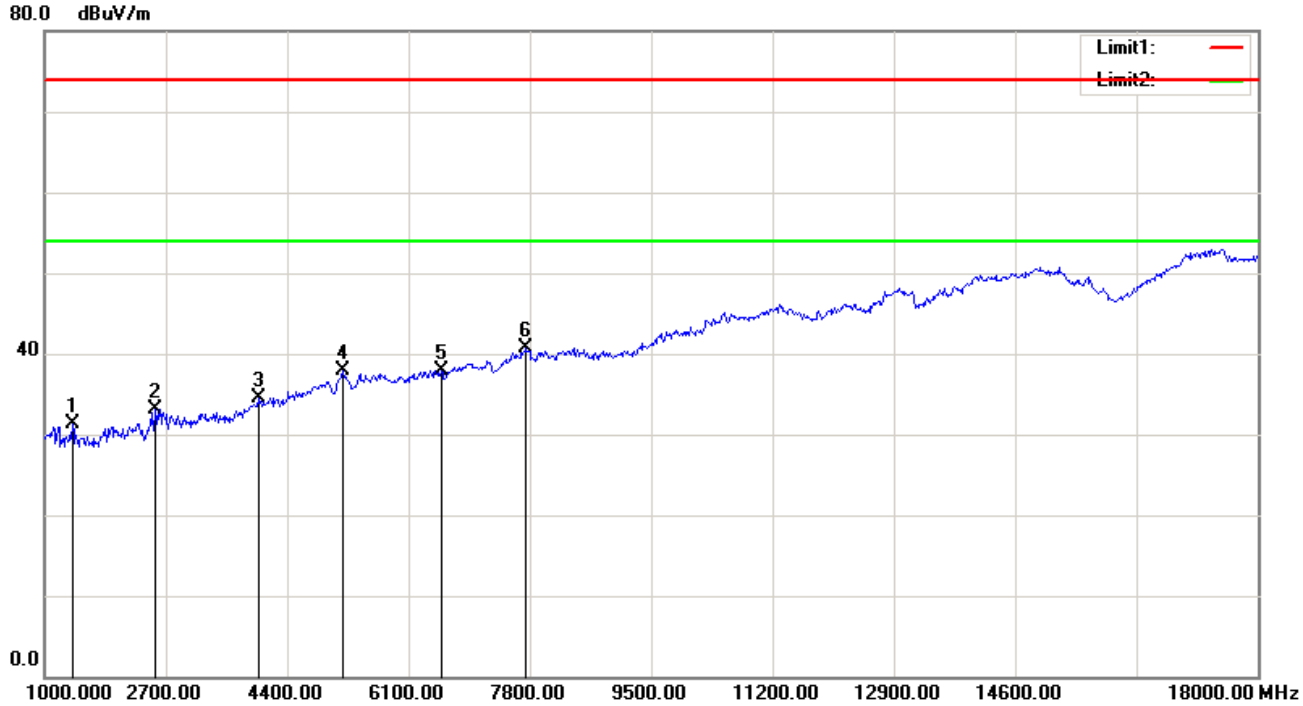
Radiated Emission Test Data (Above 1GHz):

Mode	802.11a	**Antenna**	Chain 0+1
Channel	36	**Ant. Polar.**	Horizontal



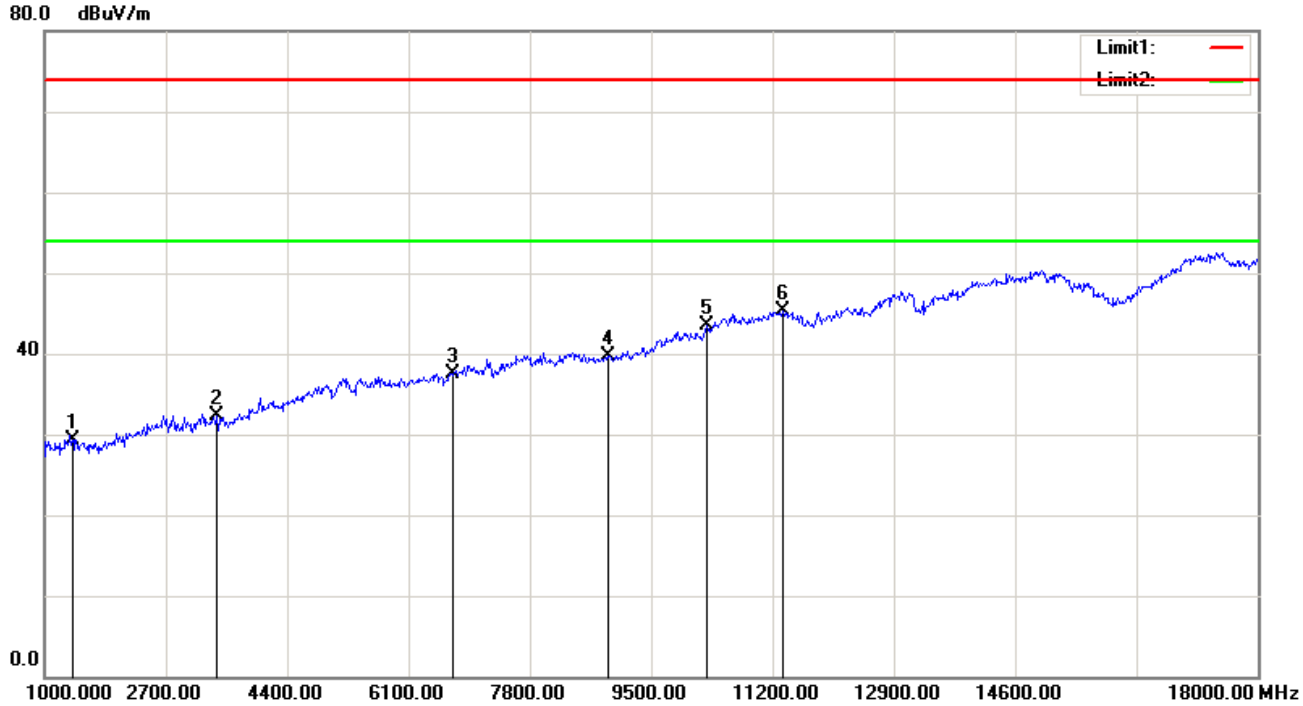
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2666.000	34.62	-1.96	32.66	74.00	-41.34	peak
2	3822.000	32.15	0.84	32.99	74.00	-41.01	peak
3	5420.000	31.52	5.73	37.25	74.00	-36.75	peak
4	6321.000	31.09	6.60	37.69	74.00	-36.31	peak
5	7919.000	30.79	9.49	40.28	74.00	-33.72	peak
6*	9296.000	30.51	9.95	40.46	74.00	-33.54	peak

Mode	802.11a	Antenna	Chain 0+1
Channel	36	Ant. Polar.	Vertical



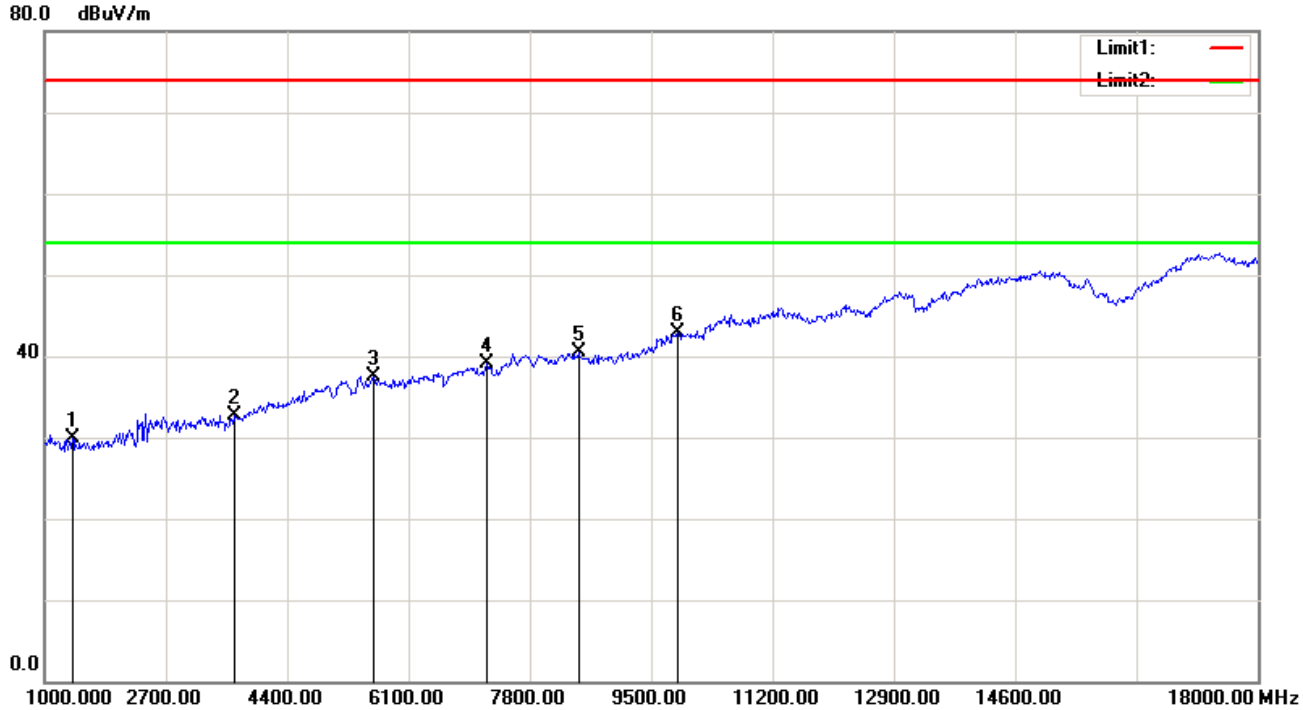
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1391.000	38.39	-7.09	31.30	74.00	-42.70	peak
2	2547.000	35.21	-2.18	33.03	74.00	-40.97	peak
3	3992.000	33.04	1.56	34.60	74.00	-39.40	peak
4	5182.000	32.54	5.30	37.84	74.00	-36.16	peak
5	6559.000	30.98	6.99	37.97	74.00	-36.03	peak
6*	7749.000	31.48	9.16	40.64	74.00	-33.36	peak

Mode	802.11a	Antenna	Chain 0+1
Channel	40	Ant. Polar.	Horizontal



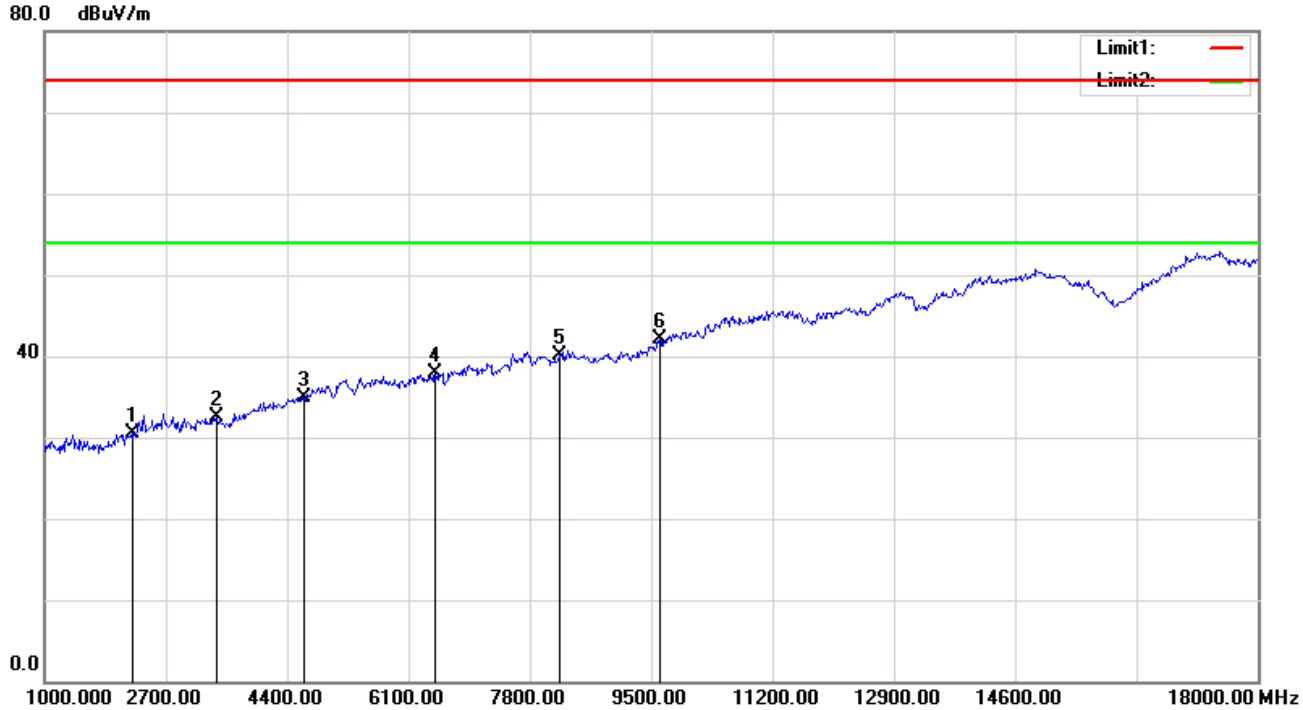
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1391.000	36.45	-7.09	29.36	74.00	-44.64	peak
2	3414.000	32.88	-0.66	32.22	74.00	-41.78	peak
3	6729.000	30.32	7.26	37.58	74.00	-36.42	peak
4	8888.000	30.58	9.16	39.74	74.00	-34.26	peak
5	10282.000	30.56	12.85	43.41	74.00	-30.59	peak
6*	11336.000	30.37	14.93	45.30	74.00	-28.70	peak

Mode	802.11a	Antenna	Chain 0+1
Channel	40	Ant. Polar.	Vertical



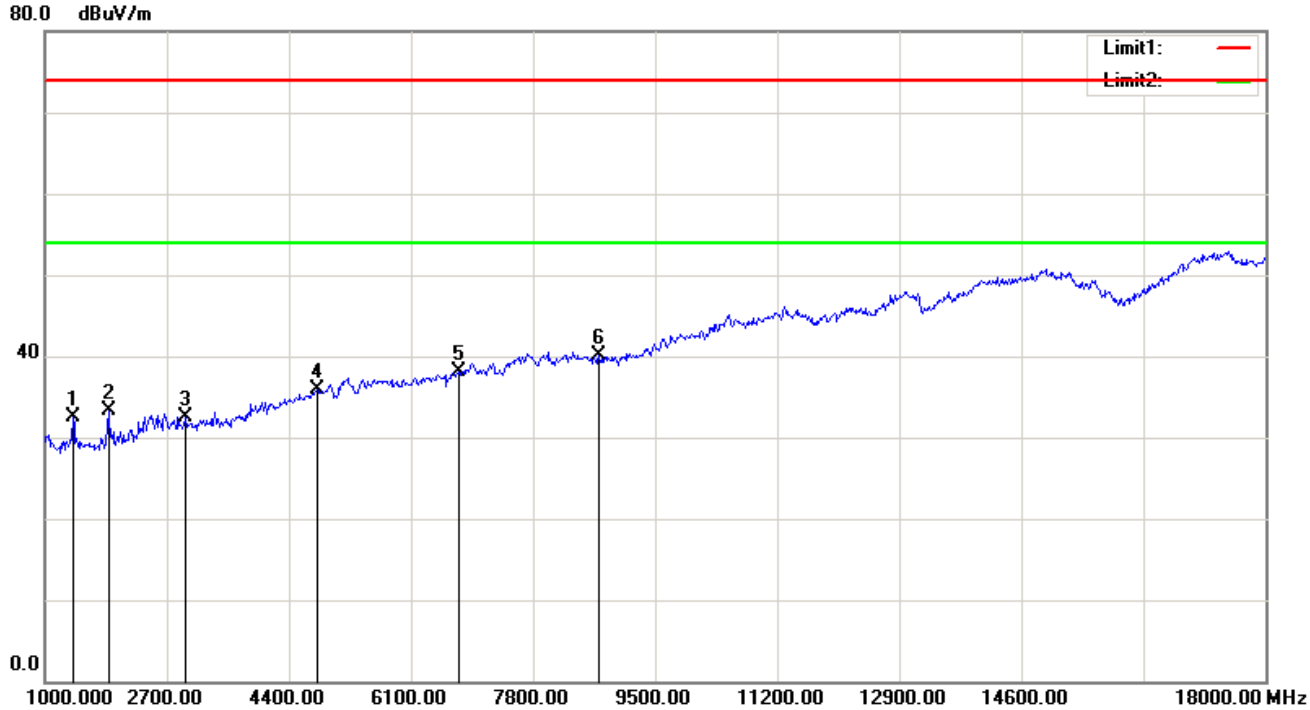
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1391.000	36.90	-7.09	29.81	74.00	-44.19	peak
2	3652.000	32.56	0.12	32.68	74.00	-41.32	peak
3	5607.000	31.51	5.91	37.42	74.00	-36.58	peak
4	7205.000	30.97	8.10	39.07	74.00	-34.93	peak
5	8480.000	31.02	9.39	40.41	74.00	-33.59	peak
6*	9874.000	31.26	11.62	42.88	74.00	-31.12	peak

Mode	802.11a	Antenna	Chain 0+1
Channel	48	Ant. Polar.	Horizontal



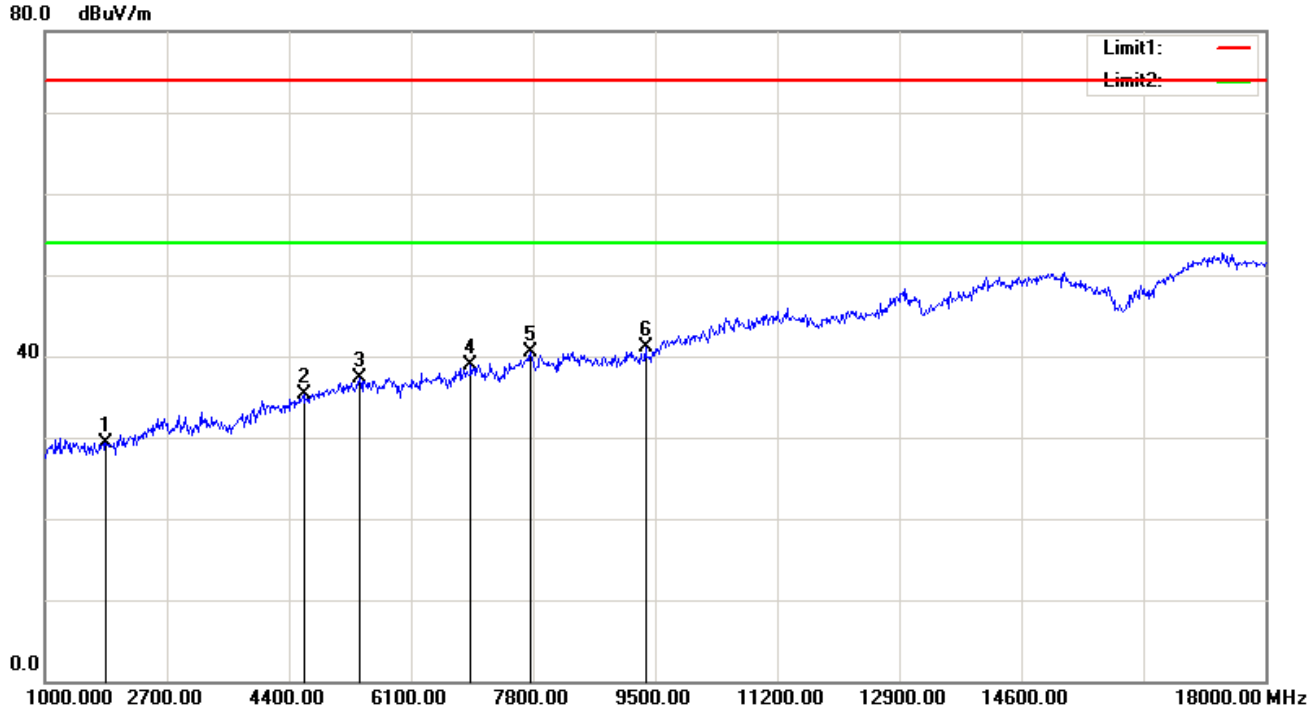
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2241.000	34.25	-3.68	30.57	74.00	-43.43	peak
2	3414.000	33.12	-0.66	32.46	74.00	-41.54	peak
3	4638.000	31.11	3.80	34.91	74.00	-39.09	peak
4	6474.000	31.11	6.85	37.96	74.00	-36.04	peak
5	8225.000	30.59	9.53	40.12	74.00	-33.88	peak
6*	9619.000	31.15	10.88	42.03	74.00	-31.97	peak

Mode	802.11a	Antenna	Chain 0+1
Channel	48	Ant. Polar.	Vertical



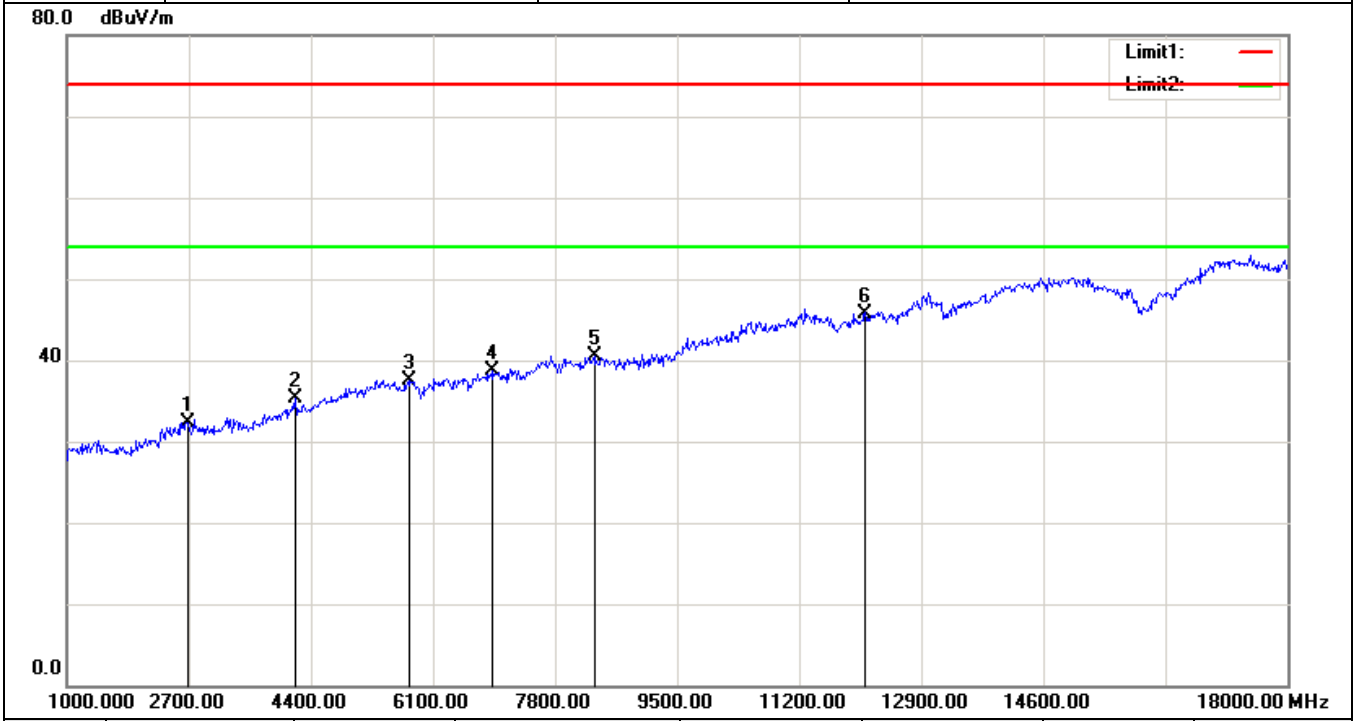
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1391.000	39.50	-7.09	32.41	74.00	-41.59	peak
2	1884.000	39.13	-5.74	33.39	74.00	-40.61	peak
3	2955.000	34.01	-1.44	32.57	74.00	-41.43	peak
4	4791.000	31.69	4.30	35.99	74.00	-38.01	peak
5	6763.000	30.78	7.32	38.10	74.00	-35.90	peak
6*	8718.000	30.81	9.26	40.07	74.00	-33.93	peak

Mode	802.11a	Antenna	Chain 0+1
Channel	149	Ant. Polar.	Horizontal



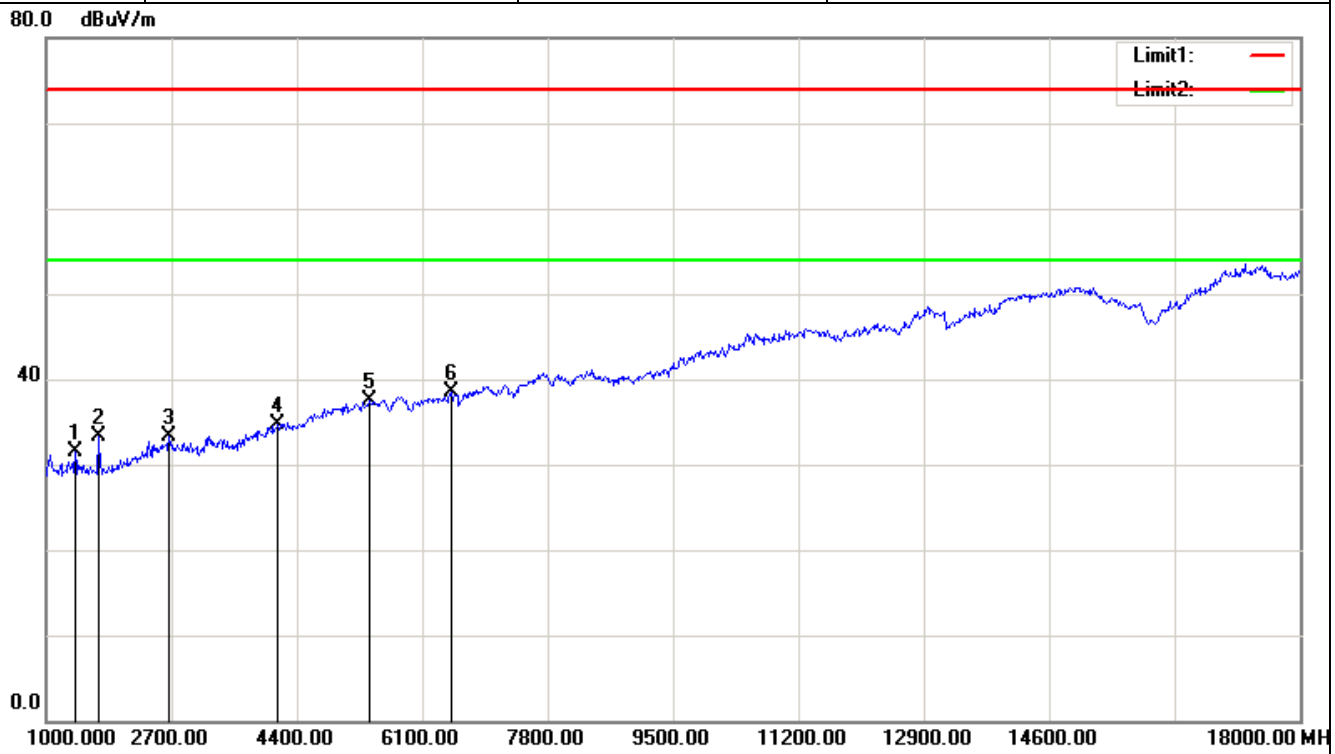
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1850.000	35.27	-5.95	29.32	74.00	-44.68	peak
2	4604.000	31.66	3.69	35.35	74.00	-38.65	peak
3	5386.000	31.60	5.67	37.27	74.00	-36.73	peak
4	6933.000	31.41	7.59	39.00	74.00	-35.00	peak
5	7766.000	31.30	9.19	40.49	74.00	-33.51	peak
6*	9364.000	30.87	10.15	41.02	74.00	-32.98	peak

Mode	802.11a	Antenna	Chain 0+1
Channel	149	Ant. Polar.	Vertical



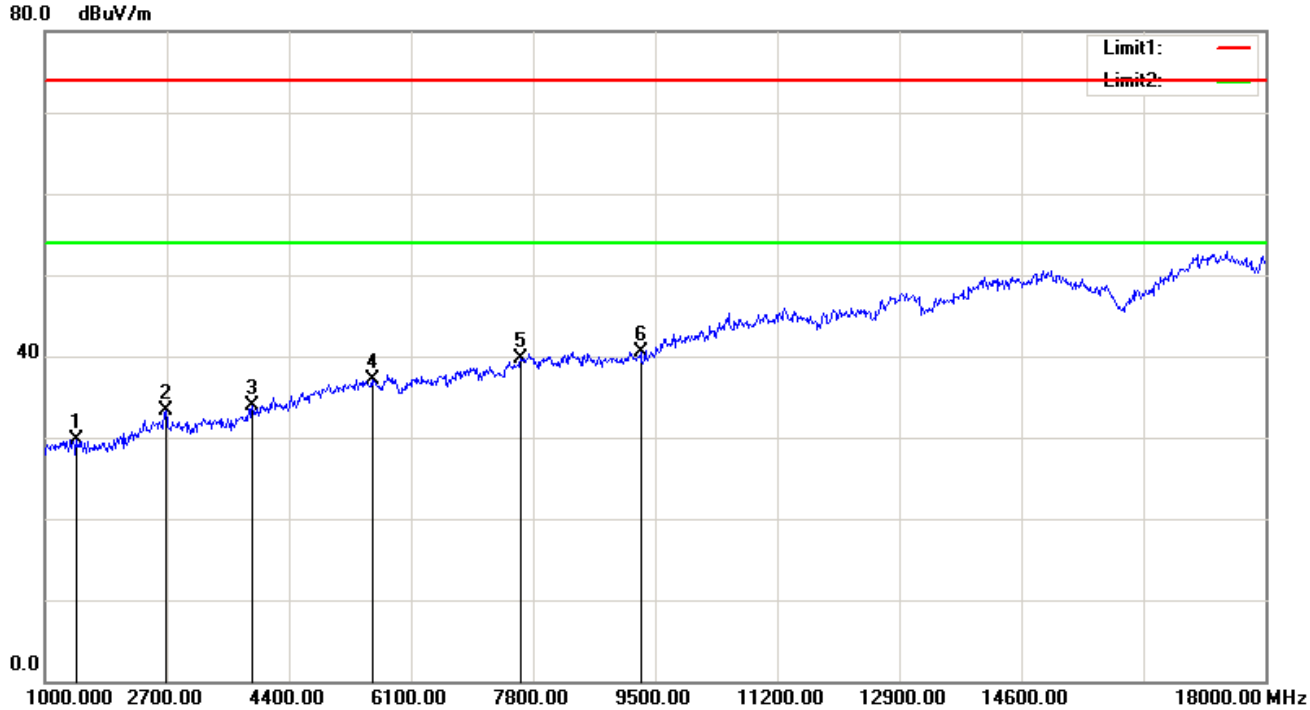
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2683.000	34.27	-1.93	32.34	74.00	-41.66	peak
2	4179.000	33.13	2.22	35.35	74.00	-38.65	peak
3	5777.000	31.50	5.99	37.49	74.00	-36.51	peak
4	6933.000	31.04	7.59	38.63	74.00	-35.37	peak
5	8344.000	30.98	9.46	40.44	74.00	-33.56	peak
6*	12118.000	30.77	15.03	45.80	74.00	-28.20	peak

Mode	802.11a	Antenna	Chain 0+1
Channel	157	Ant. Polar.	Horizontal



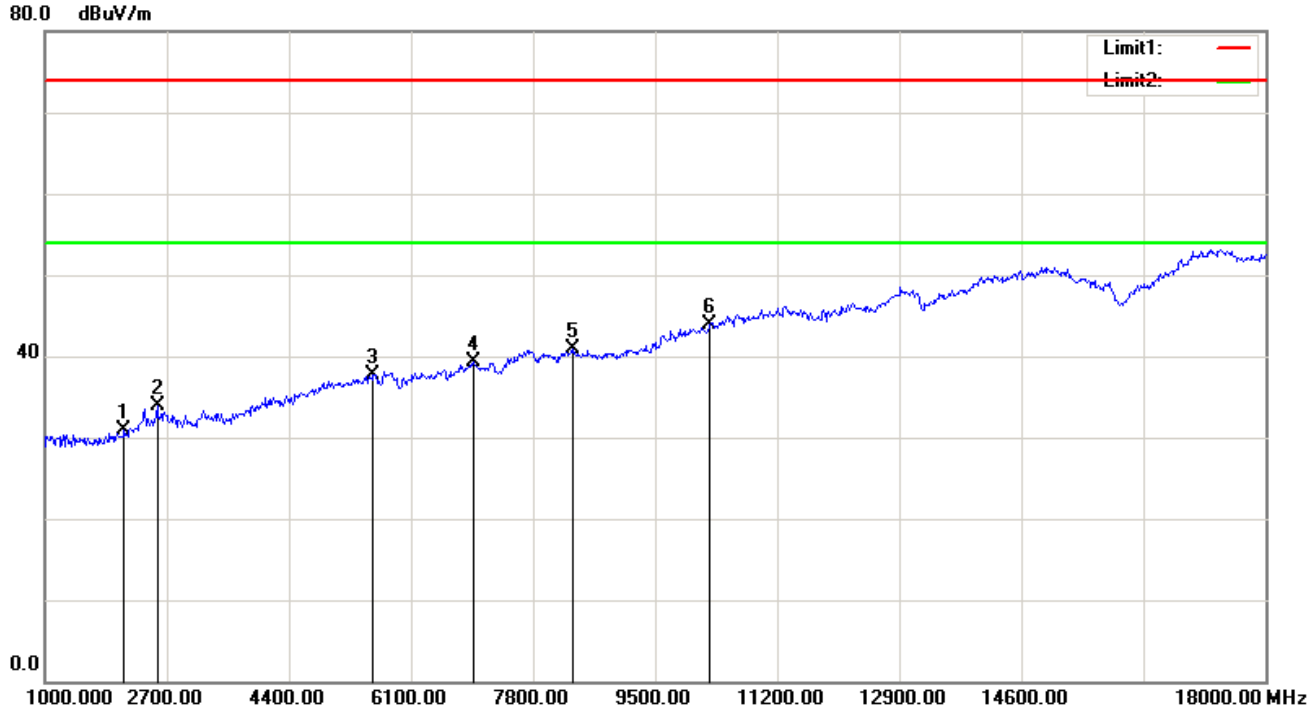
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1391.000	38.58	-7.09	31.49	74.00	-42.51	peak
2	1714.000	39.70	-6.45	33.25	74.00	-40.75	peak
3	2666.000	35.35	-1.96	33.39	74.00	-40.61	peak
4	4145.000	32.68	2.10	34.78	74.00	-39.22	peak
5	5386.000	31.81	5.67	37.48	74.00	-36.52	peak
6*	6491.000	31.68	6.88	38.56	74.00	-35.44	peak

Mode	802.11a	Antenna	Chain 0+1
Channel	157	Ant. Polar.	Vertical



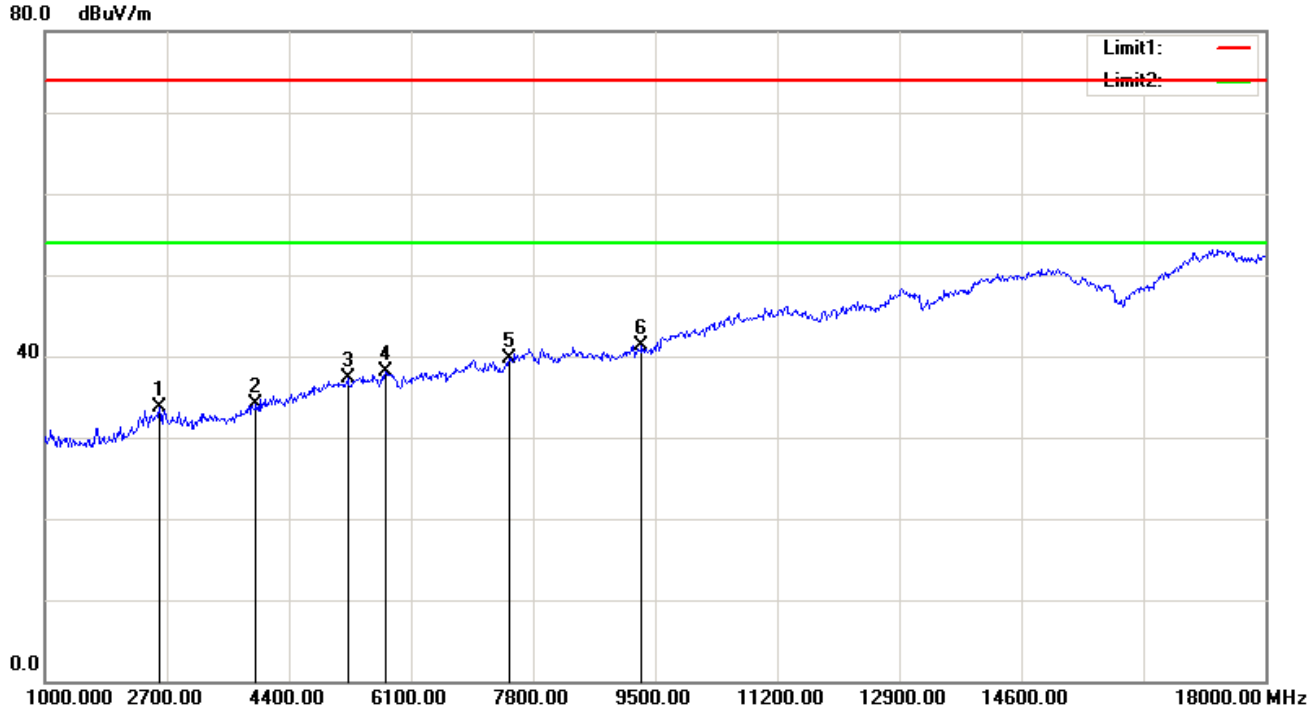
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1442.000	36.59	-6.98	29.61	74.00	-44.39	peak
2	2683.000	35.26	-1.93	33.33	74.00	-40.67	peak
3	3890.000	32.73	1.13	33.86	74.00	-40.14	peak
4	5556.000	31.18	5.89	37.07	74.00	-36.93	peak
5	7630.000	30.83	8.93	39.76	74.00	-34.24	peak
6*	9296.000	30.62	9.95	40.57	74.00	-33.43	peak

Mode	802.11a	Antenna	Chain 0+1
Channel	165	Ant. Polar.	Horizontal



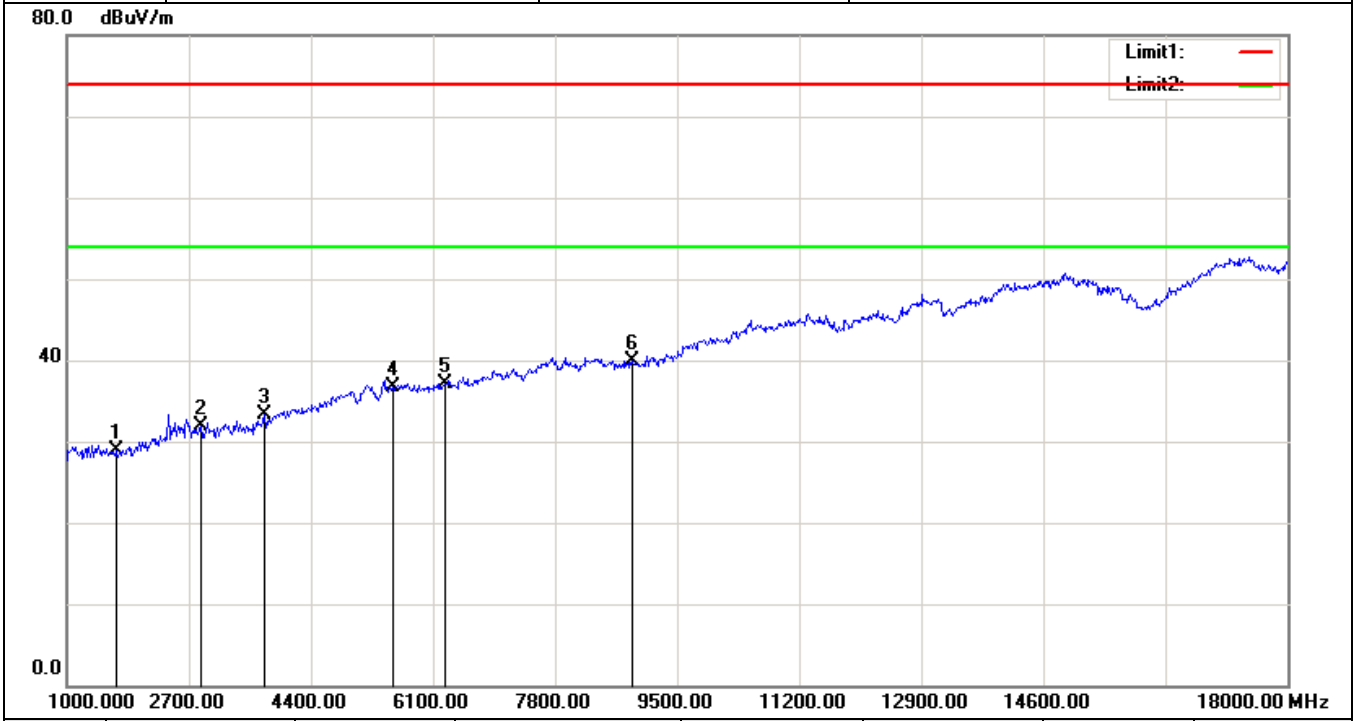
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2105.000	35.39	-4.42	30.97	74.00	-43.03	peak
2	2564.000	36.07	-2.14	33.93	74.00	-40.07	peak
3	5573.000	31.80	5.90	37.70	74.00	-36.30	peak
4	6967.000	31.58	7.65	39.23	74.00	-34.77	peak
5	8344.000	31.39	9.46	40.85	74.00	-33.15	peak
6*	10265.000	31.12	12.80	43.92	74.00	-30.08	peak

Mode	802.11a	Antenna	Chain 0+1
Channel	165	Ant. Polar.	Vertical



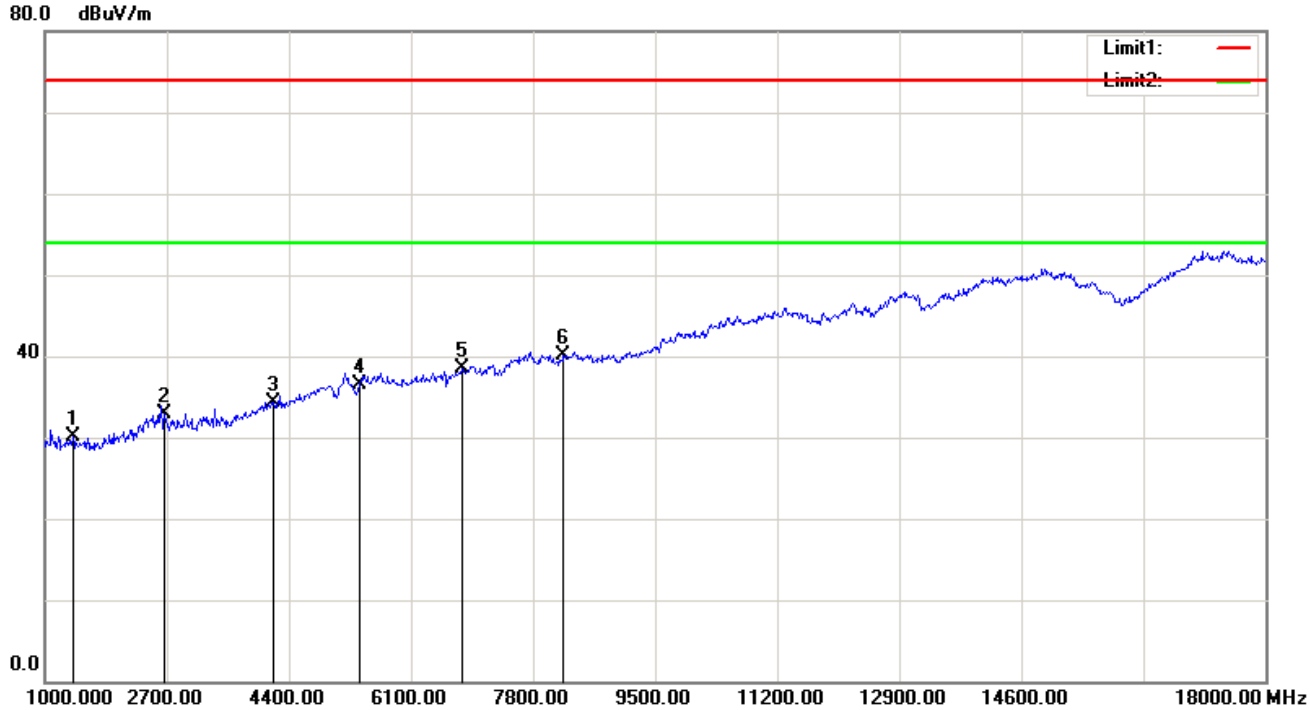
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2598.000	35.70	-2.08	33.62	74.00	-40.38	peak
2	3941.000	32.86	1.34	34.20	74.00	-39.80	peak
3	5216.000	31.87	5.36	37.23	74.00	-36.77	peak
4	5743.000	32.09	5.97	38.06	74.00	-35.94	peak
5	7460.000	31.09	8.60	39.69	74.00	-34.31	peak
6*	9313.000	31.24	10.00	41.24	74.00	-32.76	peak

Mode	802.11n(HT20)	Antenna	Chain 0+1
Channel	36	Ant. Polar.	Horizontal



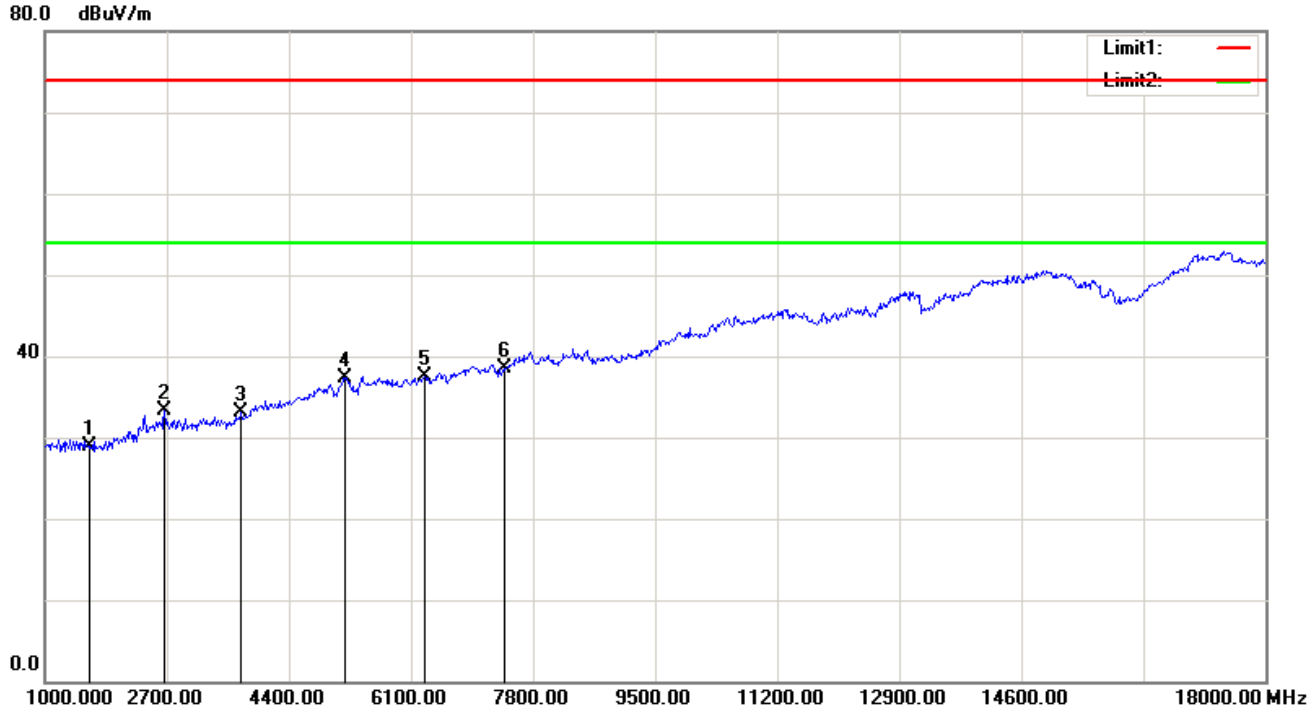
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1680.000	35.49	-6.53	28.96	74.00	-45.04	peak
2	2870.000	33.52	-1.59	31.93	74.00	-42.07	peak
3	3754.000	32.70	0.55	33.25	74.00	-40.75	peak
4	5539.000	30.82	5.89	36.71	74.00	-37.29	peak
5	6270.000	30.55	6.52	37.07	74.00	-36.93	peak
6*	8871.000	30.64	9.17	39.81	74.00	-34.19	peak

Mode	802.11n(HT20)	Antenna	Chain 0+1
Channel	36	Ant. Polar.	Vertical



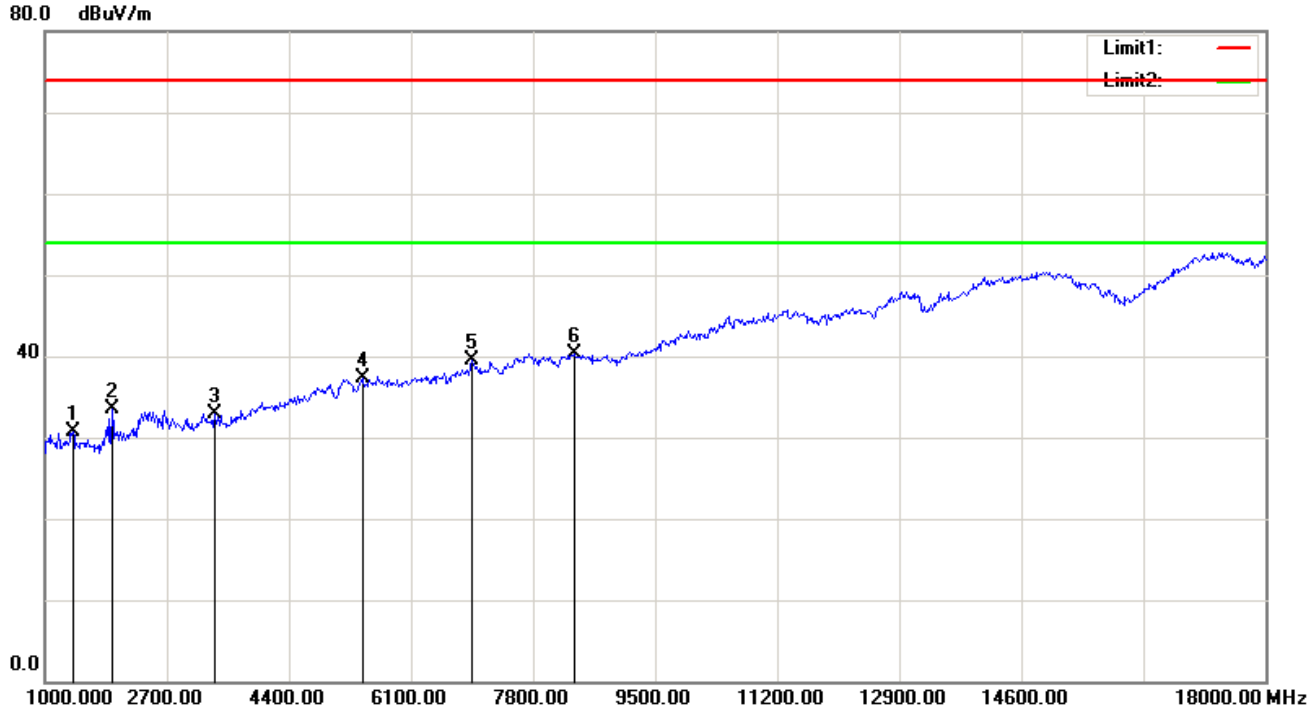
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1391.000	37.13	-7.09	30.04	74.00	-43.96	peak
2	2666.000	34.87	-1.96	32.91	74.00	-41.09	peak
3	4179.000	32.09	2.22	34.31	74.00	-39.69	peak
4	5386.000	30.85	5.67	36.52	74.00	-37.48	peak
5	6814.000	31.10	7.40	38.50	74.00	-35.50	peak
6*	8225.000	30.61	9.53	40.14	74.00	-33.86	peak

Mode	802.11n(HT20)	Antenna	Chain 0+1
Channel	40	Ant. Polar.	Horizontal



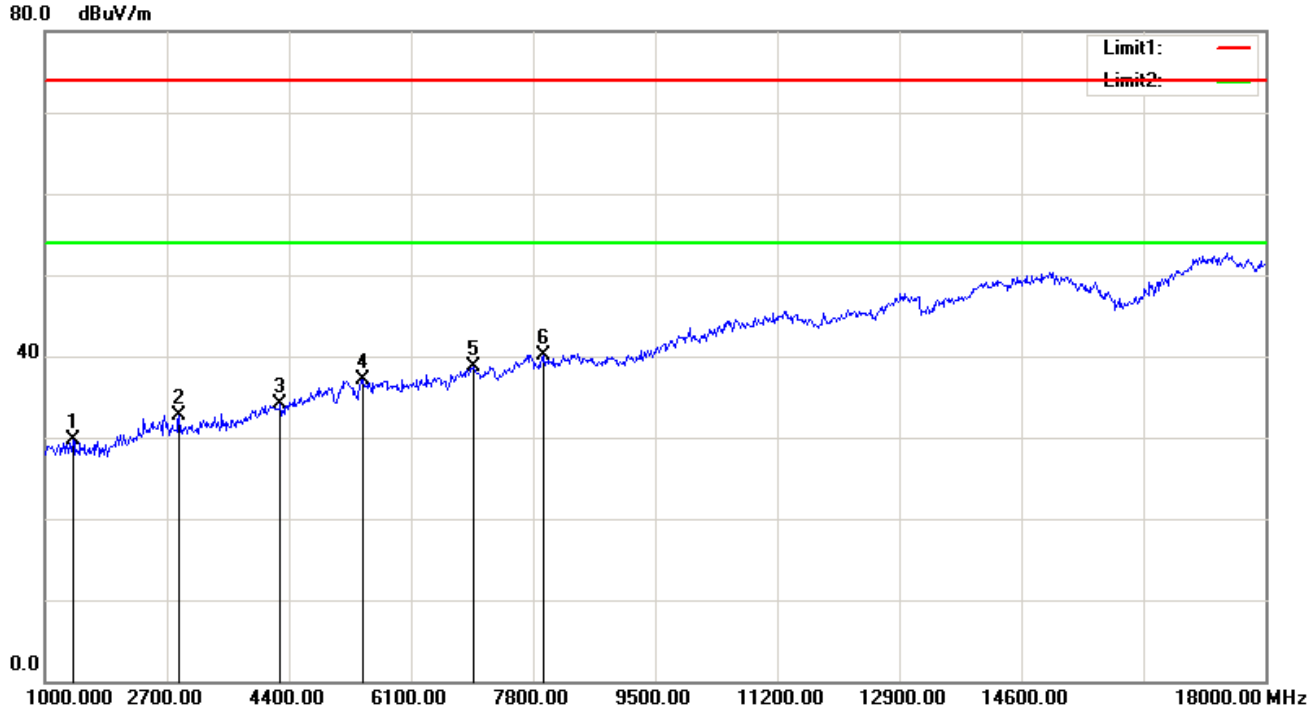
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1629.000	35.59	-6.64	28.95	74.00	-45.05	peak
2	2666.000	35.21	-1.96	33.25	74.00	-40.75	peak
3	3737.000	32.53	0.48	33.01	74.00	-40.99	peak
4	5182.000	32.09	5.30	37.39	74.00	-36.61	peak
5	6287.000	30.90	6.54	37.44	74.00	-36.56	peak
6*	7409.000	30.02	8.50	38.52	74.00	-35.48	peak

Mode	802.11n(HT20)	Antenna	Chain 0+1
Channel	40	Ant. Polar.	Vertical



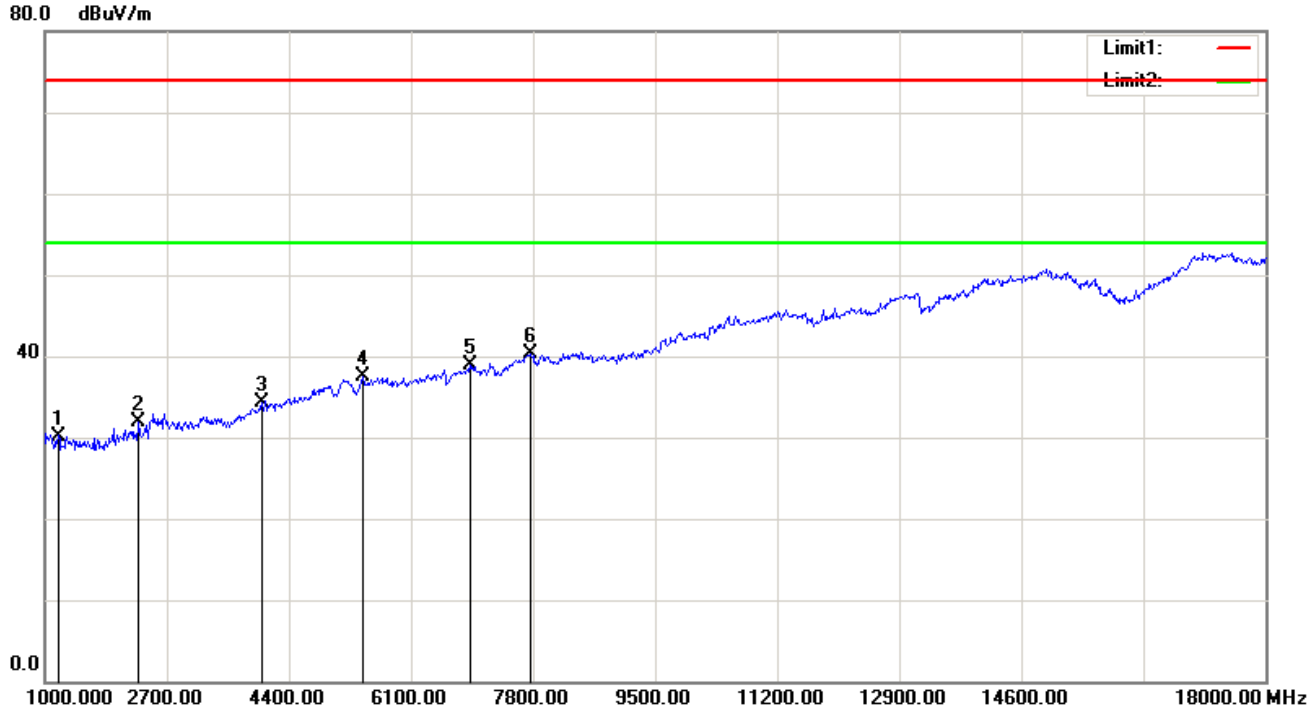
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1391.000	37.75	-7.09	30.66	74.00	-43.34	peak
2	1935.000	38.96	-5.41	33.55	74.00	-40.45	peak
3	3363.000	33.65	-0.75	32.90	74.00	-41.10	peak
4	5420.000	31.48	5.73	37.21	74.00	-36.79	peak
5	6950.000	31.96	7.62	39.58	74.00	-34.42	peak
6*	8378.000	30.80	9.44	40.24	74.00	-33.76	peak

Mode	802.11n(HT20)	Antenna	Chain 0+1
Channel	48	Ant. Polar.	Horizontal



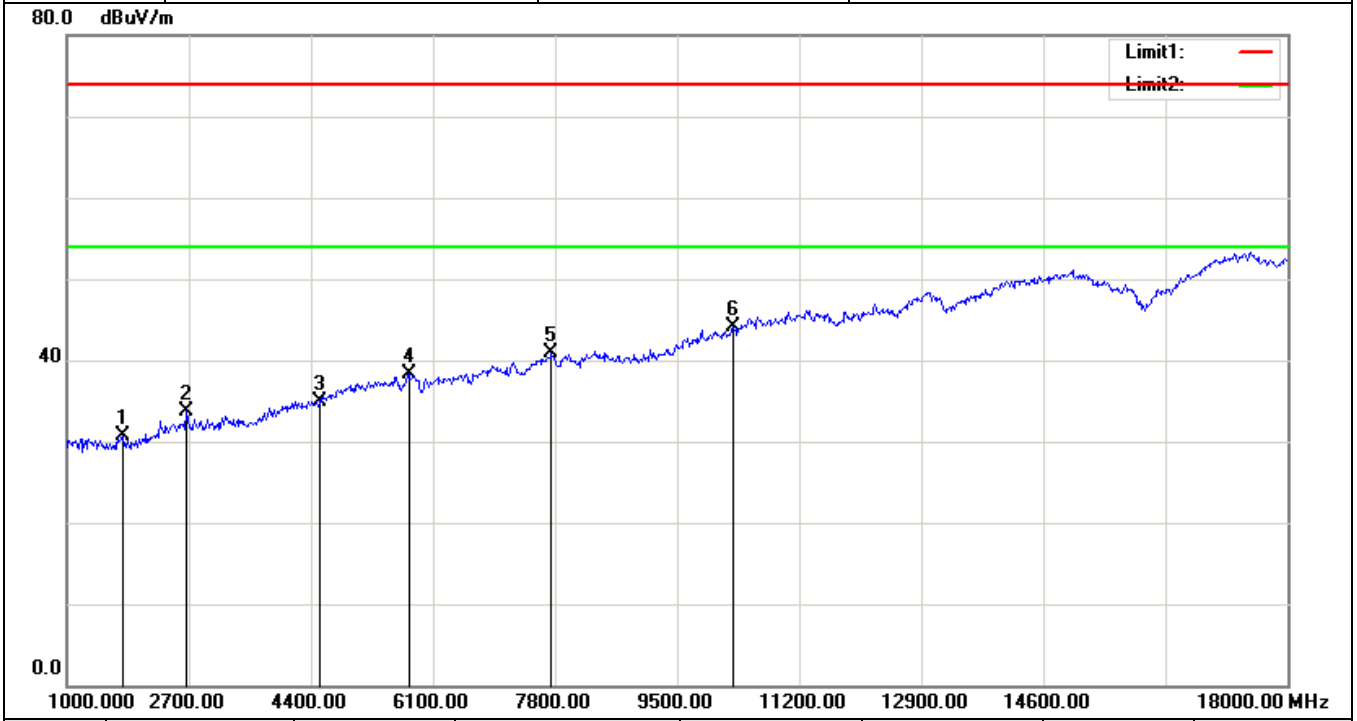
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1391.000	36.83	-7.09	29.74	74.00	-44.26	peak
2	2870.000	34.22	-1.59	32.63	74.00	-41.37	peak
3	4281.000	31.50	2.58	34.08	74.00	-39.92	peak
4	5420.000	31.45	5.73	37.18	74.00	-36.82	peak
5	6967.000	31.13	7.65	38.78	74.00	-35.22	peak
6*	7953.000	30.59	9.56	40.15	74.00	-33.85	peak

Mode	802.11n(HT20)	Antenna	Chain 0+1
Channel	48	Ant. Polar.	Vertical



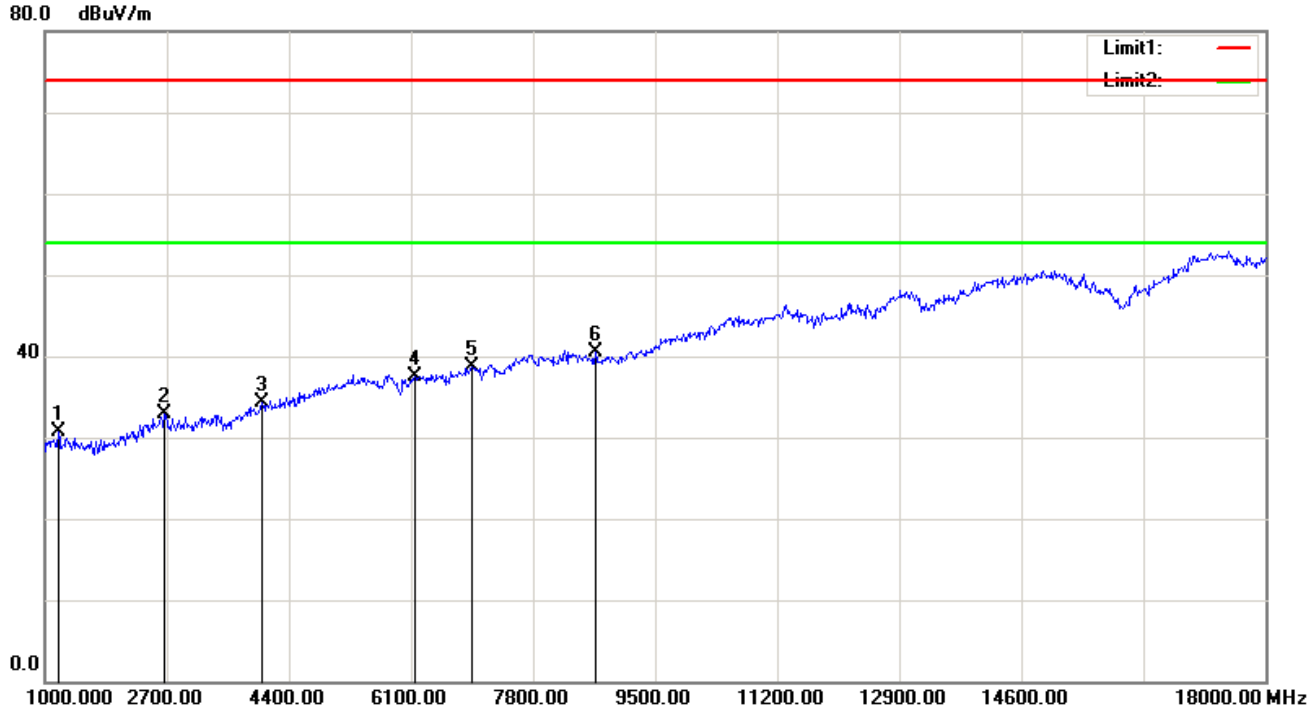
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1187.000	38.04	-7.84	30.20	74.00	-43.80	peak
2	2309.000	35.12	-3.31	31.81	74.00	-42.19	peak
3	4026.000	32.57	1.68	34.25	74.00	-39.75	peak
4	5437.000	31.69	5.76	37.45	74.00	-36.55	peak
5	6916.000	31.29	7.56	38.85	74.00	-35.15	peak
6*	7766.000	31.18	9.19	40.37	74.00	-33.63	peak

Mode	802.11n(HT20)	Antenna	Chain 0+1
Channel	149	Ant. Polar.	Horizontal



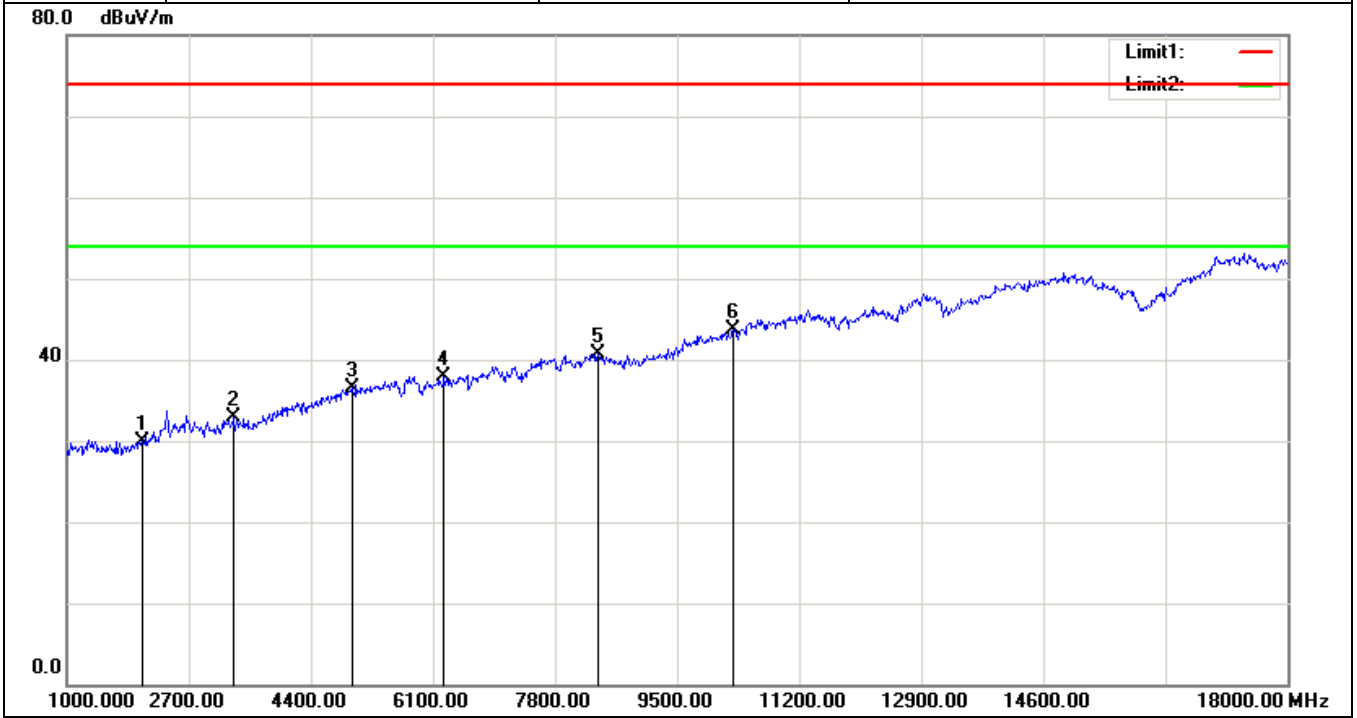
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1782.000	36.96	-6.31	30.65	74.00	-43.35	peak
2	2666.000	35.59	-1.96	33.63	74.00	-40.37	peak
3	4519.000	31.58	3.41	34.99	74.00	-39.01	peak
4	5760.000	32.39	5.98	38.37	74.00	-35.63	peak
5	7749.000	31.71	9.16	40.87	74.00	-33.13	peak
6*	10282.000	31.22	12.85	44.07	74.00	-29.93	peak

Mode	802.11n(HT20)	Antenna	Chain 0+1
Channel	149	Ant. Polar.	Vertical



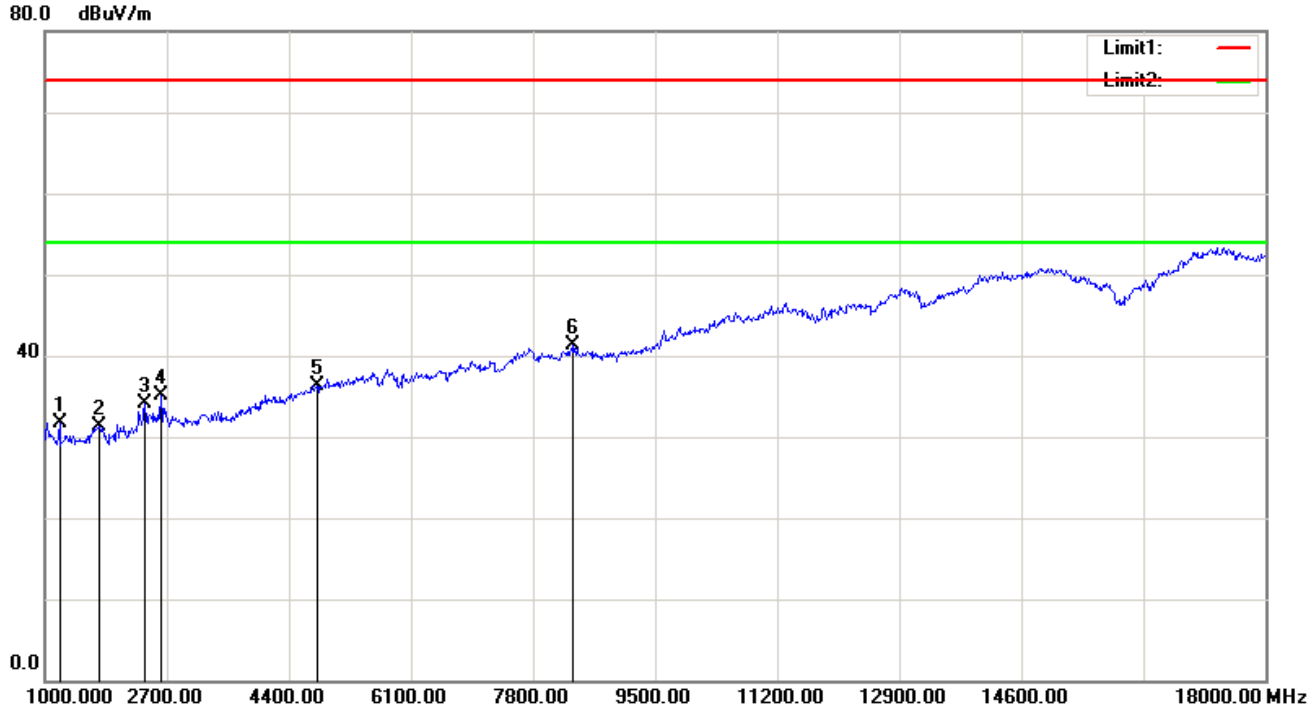
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1187.000	38.46	-7.84	30.62	74.00	-43.38	peak
2	2666.000	34.85	-1.96	32.89	74.00	-41.11	peak
3	4026.000	32.55	1.68	34.23	74.00	-39.77	peak
4	6151.000	31.17	6.32	37.49	74.00	-36.51	peak
5	6950.000	31.04	7.62	38.66	74.00	-35.34	peak
6*	8667.000	31.21	9.28	40.49	74.00	-33.51	peak

Mode	802.11n(HT20)	Antenna	Chain 0+1
Channel	157	Ant. Polar.	Horizontal



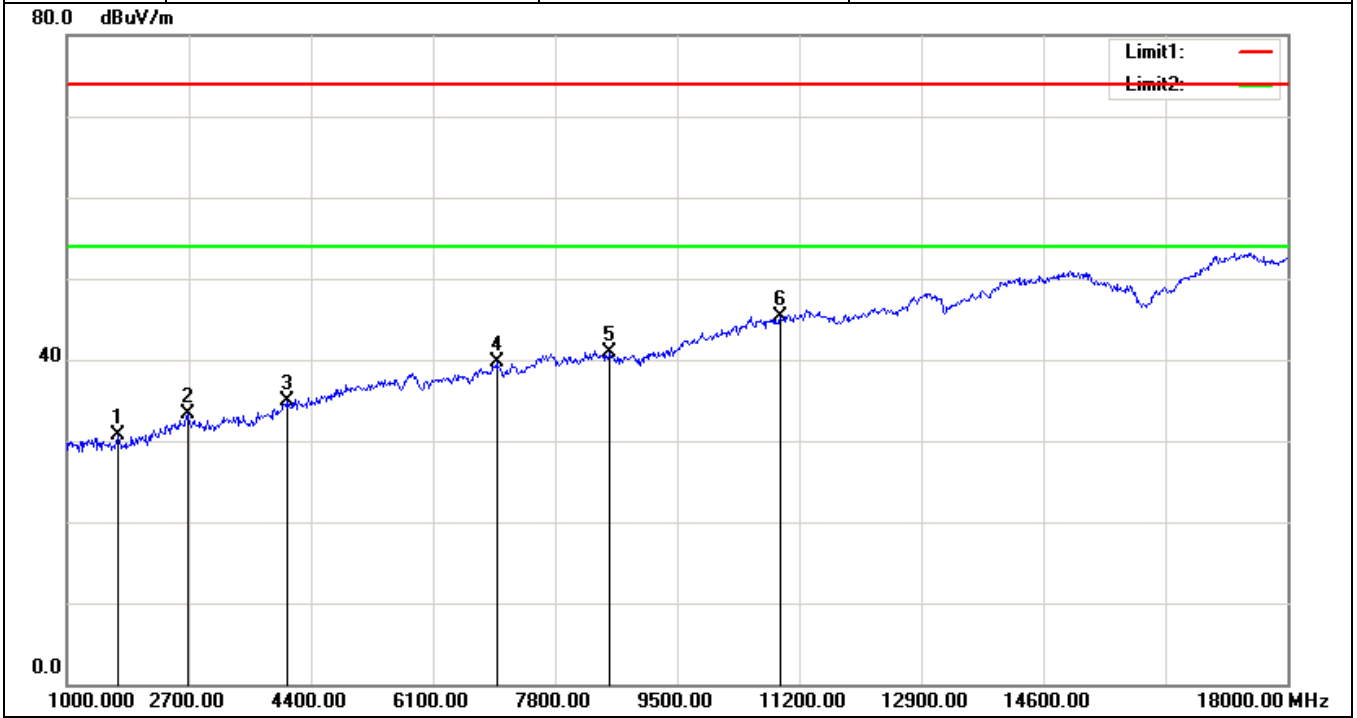
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2054.000	34.66	-4.70	29.96	74.00	-44.04	peak
2	3329.000	33.67	-0.81	32.86	74.00	-41.14	peak
3	4978.000	31.56	4.91	36.47	74.00	-37.53	peak
4	6253.000	31.45	6.49	37.94	74.00	-36.06	peak
5	8395.000	31.29	9.43	40.72	74.00	-33.28	peak
6*	10282.000	30.88	12.85	43.73	74.00	-30.27	peak

Mode	802.11n(HT20)	Antenna	Chain 0+1
Channel	157	Ant. Polar.	Vertical



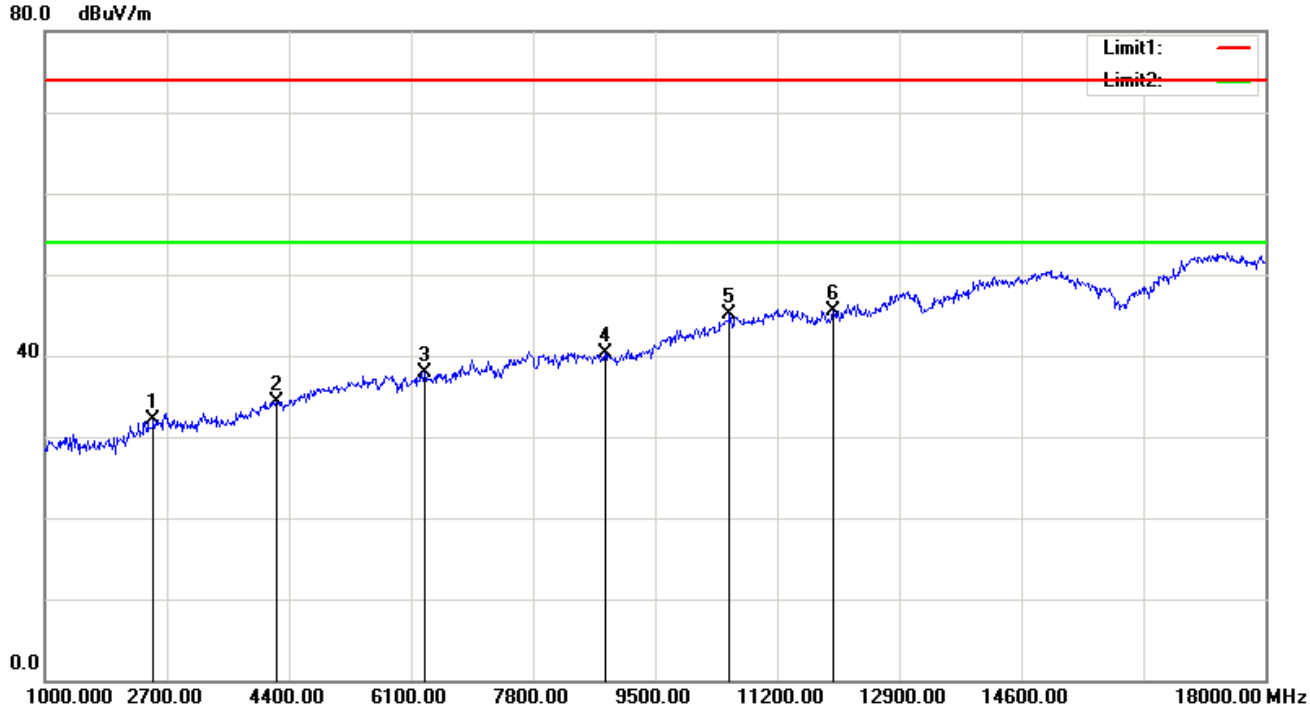
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1204.000	39.50	-7.78	31.72	74.00	-42.28	peak
2	1765.000	37.56	-6.35	31.21	74.00	-42.79	peak
3	2394.000	36.94	-2.84	34.10	74.00	-39.90	peak
4	2615.000	37.21	-2.05	35.16	74.00	-38.84	peak
5	4791.000	31.93	4.30	36.23	74.00	-37.77	peak
6*	8361.000	31.79	9.45	41.24	74.00	-32.76	peak

Mode	802.11n(HT20)	Antenna	Chain 0+1
Channel	165	Ant. Polar.	Horizontal



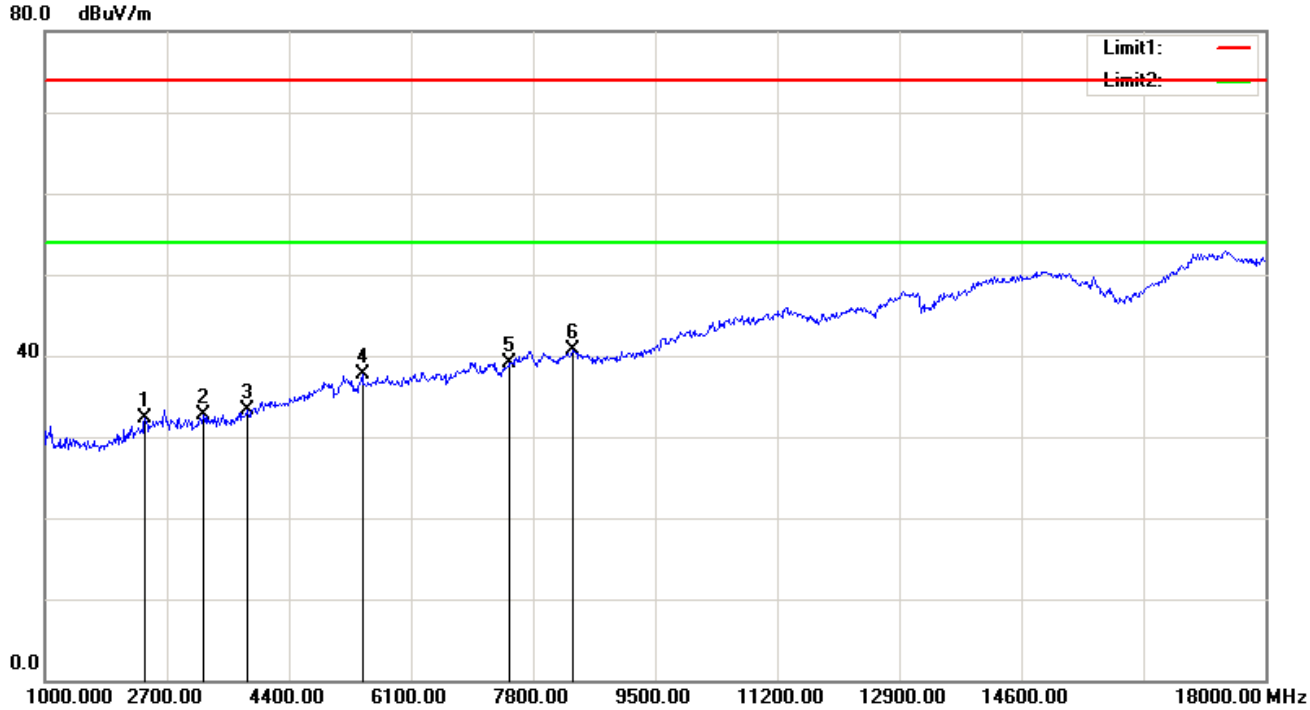
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1714.000	37.11	-6.45	30.66	74.00	-43.34	peak
2	2683.000	35.18	-1.93	33.25	74.00	-40.75	peak
3	4077.000	32.98	1.86	34.84	74.00	-39.16	peak
4	6984.000	32.02	7.67	39.69	74.00	-34.31	peak
5	8565.000	31.49	9.34	40.83	74.00	-33.17	peak
6*	10928.000	30.46	14.86	45.32	74.00	-28.68	peak

Mode	802.11n(HT20)	Antenna	Chain 0+1
Channel	165	Ant. Polar.	Vertical



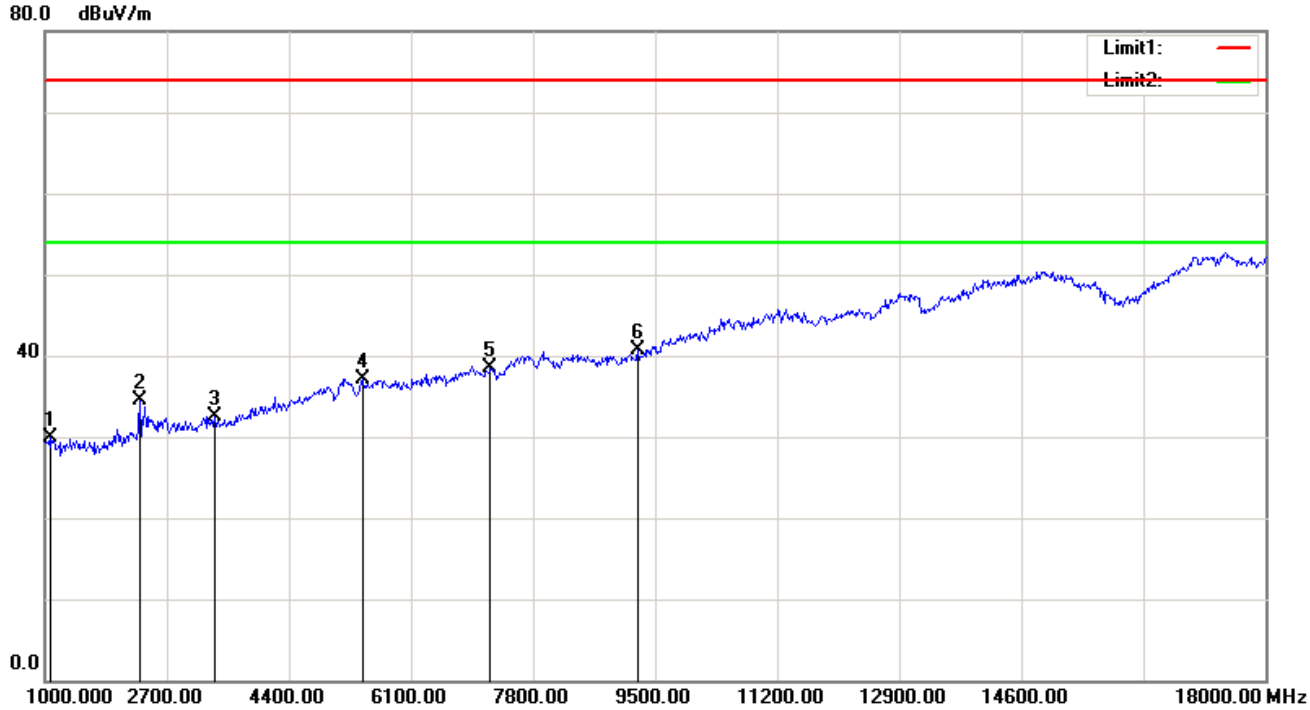
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2513.000	34.29	-2.24	32.05	74.00	-41.95	peak
2	4230.000	31.97	2.40	34.37	74.00	-39.63	peak
3	6287.000	31.29	6.54	37.83	74.00	-36.17	peak
4	8803.000	31.14	9.21	40.35	74.00	-33.65	peak
5	10537.000	31.43	13.64	45.07	74.00	-28.93	peak
6*	11982.000	30.86	14.65	45.51	74.00	-28.49	peak

Mode	802.11n(HT40)	Antenna	Chain 0+1
Channel	38	Ant. Polar.	Horizontal



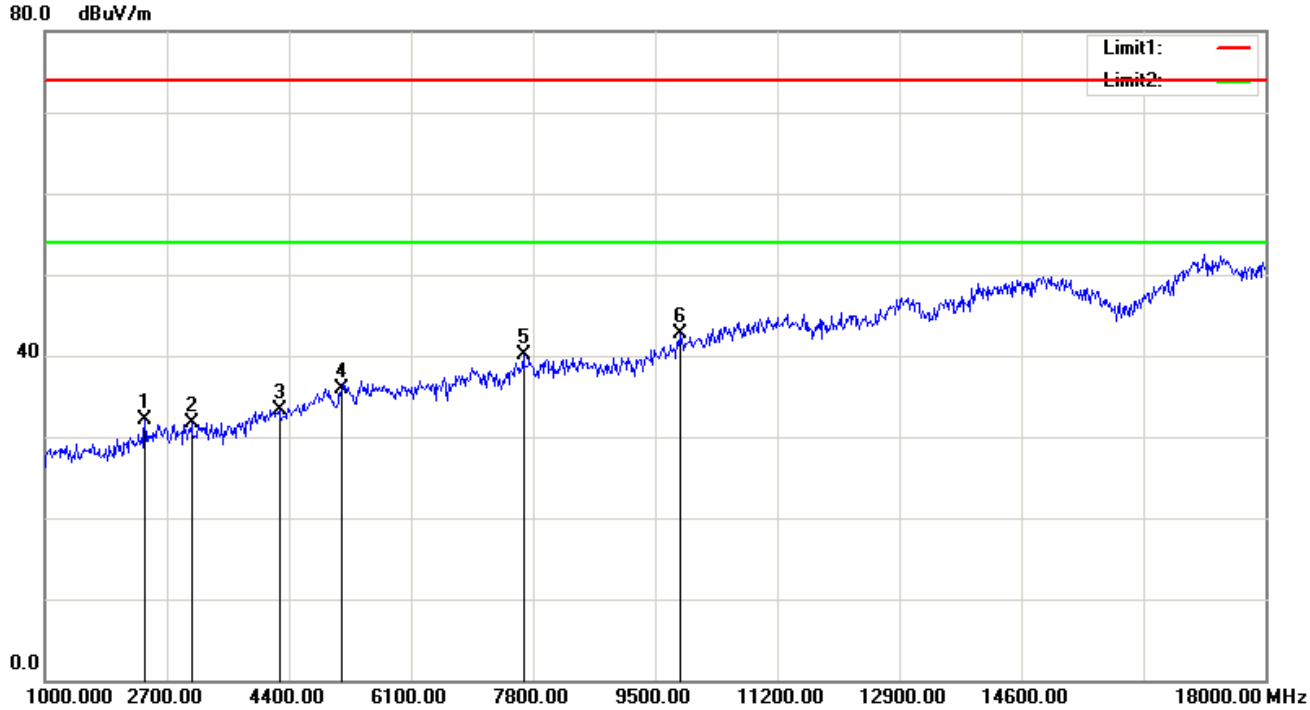
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2394.000	35.21	-2.84	32.37	74.00	-41.63	peak
2	3210.000	33.68	-1.01	32.67	74.00	-41.33	peak
3	3822.000	32.54	0.84	33.38	74.00	-40.62	peak
4	5420.000	32.03	5.73	37.76	74.00	-36.24	peak
5	7477.000	30.40	8.63	39.03	74.00	-34.97	peak
6*	8344.000	31.29	9.46	40.75	74.00	-33.25	peak

Mode	802.11n(HT40)	Antenna	Chain 0+1
Channel	38	Ant. Polar.	Vertical



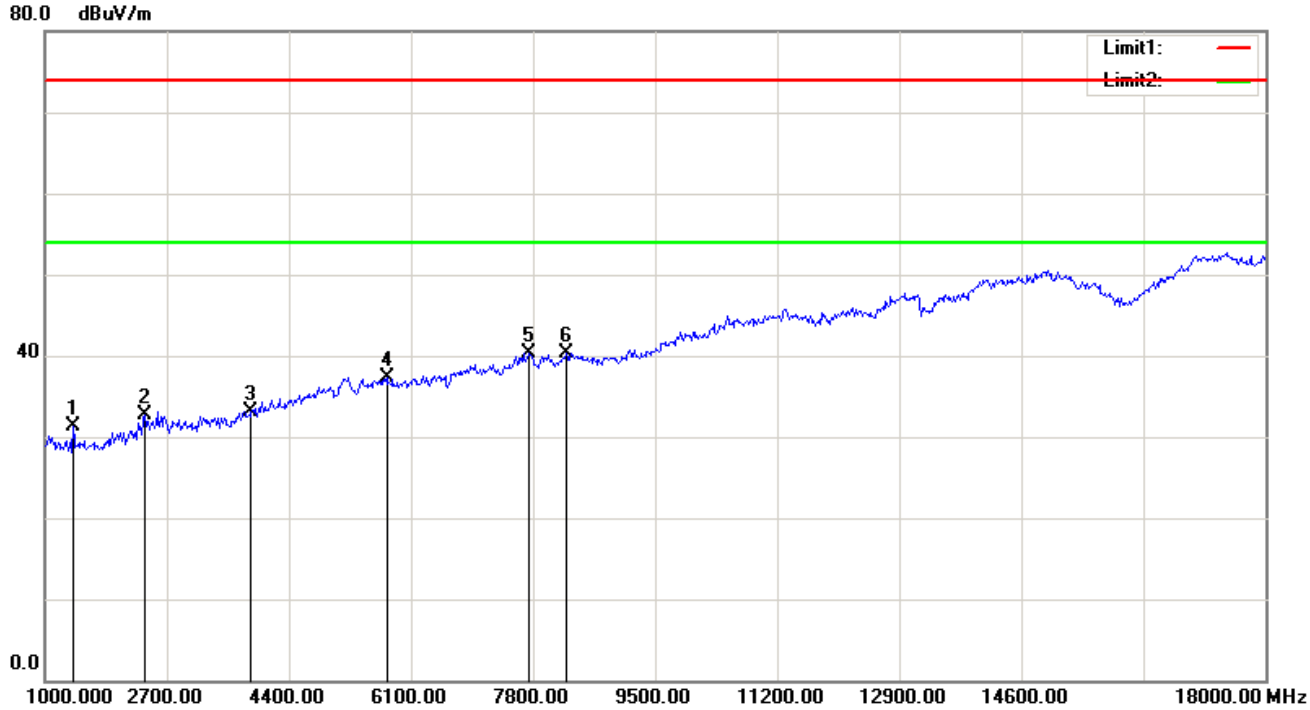
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1085.000	38.19	-8.23	29.96	74.00	-44.04	peak
2	2326.000	37.62	-3.21	34.41	74.00	-39.59	peak
3	3363.000	33.34	-0.75	32.59	74.00	-41.41	peak
4	5420.000	31.32	5.73	37.05	74.00	-36.95	peak
5	7205.000	30.45	8.10	38.55	74.00	-35.45	peak
6*	9262.000	30.90	9.85	40.75	74.00	-33.25	peak

Mode	802.11n(HT40)	Antenna	Chain 0+1
Channel	46	Ant. Polar.	Horizontal



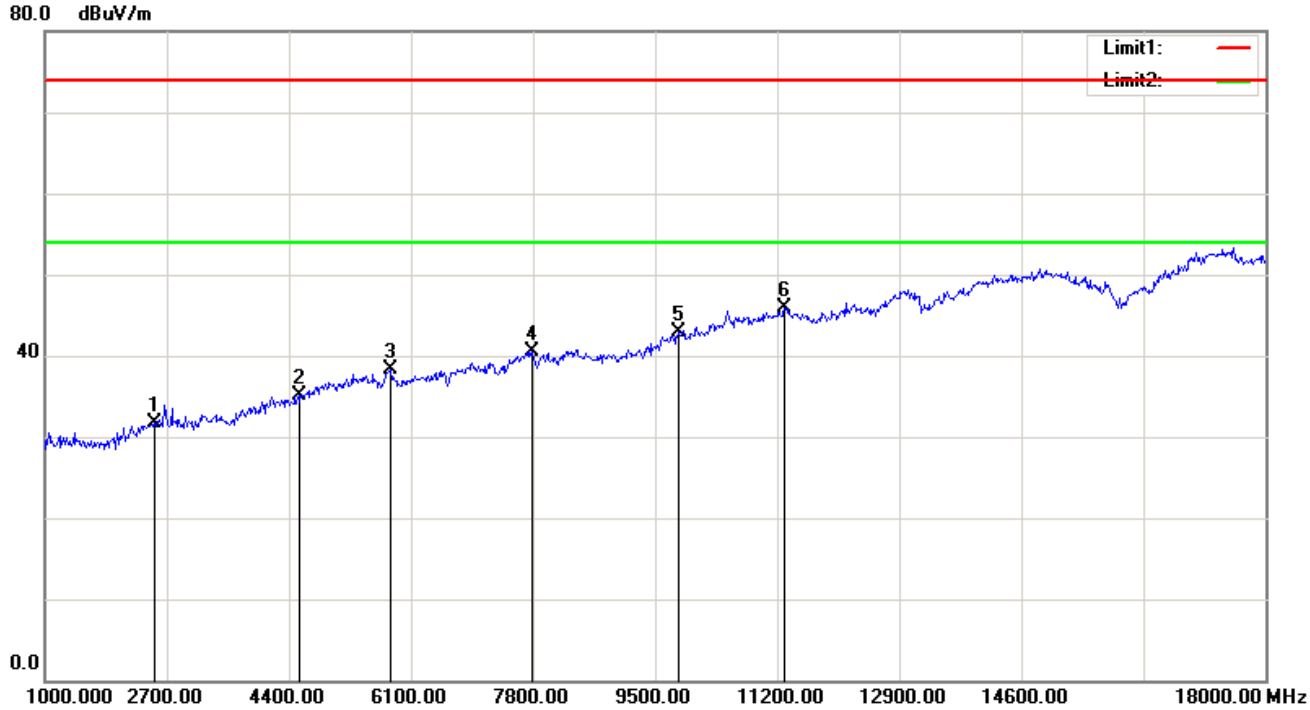
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2394.000	35.00	-2.84	32.16	74.00	-41.84	peak
2	3040.000	32.98	-1.29	31.69	74.00	-42.31	peak
3	4264.000	30.74	2.52	33.26	74.00	-40.74	peak
4	5131.000	30.76	5.21	35.97	74.00	-38.03	peak
5	7664.000	31.09	8.99	40.08	74.00	-33.92	peak
6*	9840.000	31.09	11.52	42.61	74.00	-31.39	peak

Mode	802.11n(HT40)	Antenna	Chain 0+1
Channel	46	Ant. Polar.	Vertical



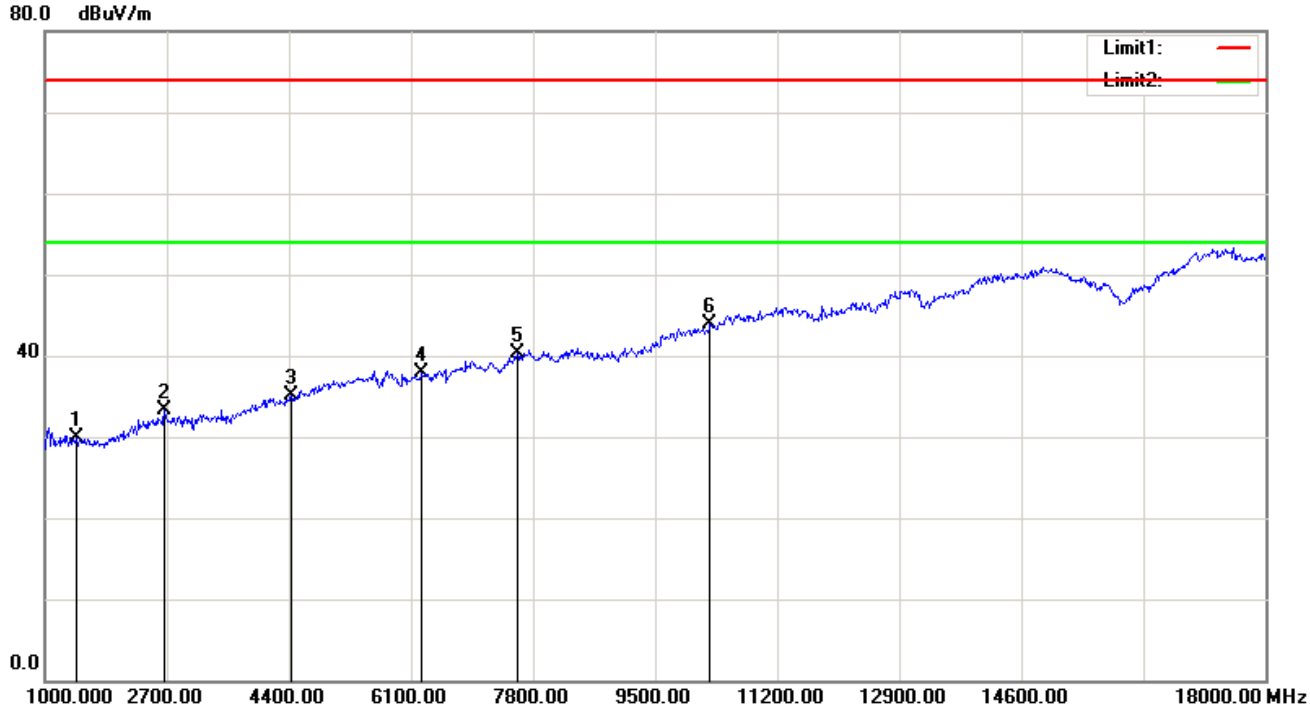
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1391.000	38.42	-7.09	31.33	74.00	-42.67	peak
2	2394.000	35.51	-2.84	32.67	74.00	-41.33	peak
3	3873.000	32.14	1.05	33.19	74.00	-40.81	peak
4	5760.000	31.31	5.98	37.29	74.00	-36.71	peak
5*	7749.000	31.24	9.16	40.40	74.00	-33.60	peak
6	8259.000	30.88	9.51	40.39	74.00	-33.61	peak

Mode	802.11n(HT40)	Antenna	Chain 0+1
Channel	151	Ant. Polar.	Horizontal



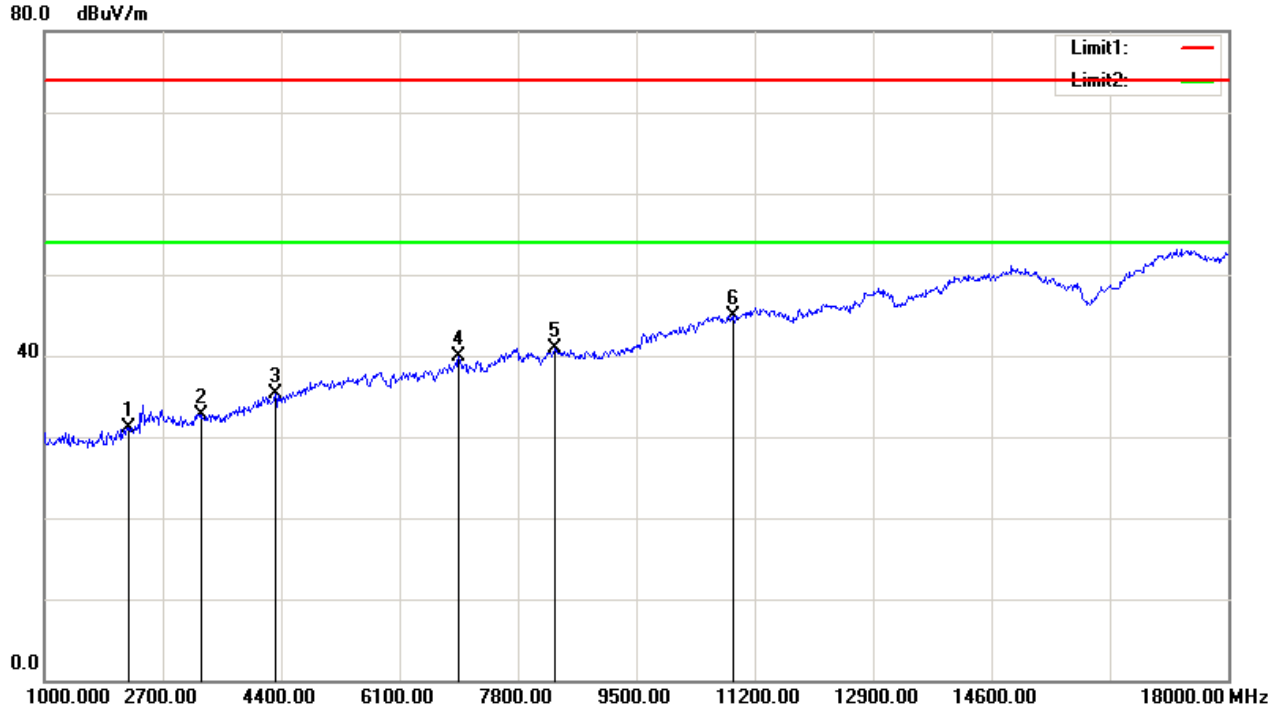
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2530.000	33.99	-2.21	31.78	74.00	-42.22	peak
2	4536.000	31.72	3.47	35.19	74.00	-38.81	peak
3	5811.000	32.25	6.00	38.25	74.00	-35.75	peak
4	7783.000	31.24	9.23	40.47	74.00	-33.53	peak
5	9823.000	31.53	11.47	43.00	74.00	-31.00	peak
6*	11302.000	30.95	14.95	45.90	74.00	-28.10	peak

Mode	802.11n(HT40)	Antenna	Chain 0+1
Channel	151	Ant. Polar.	Vertical



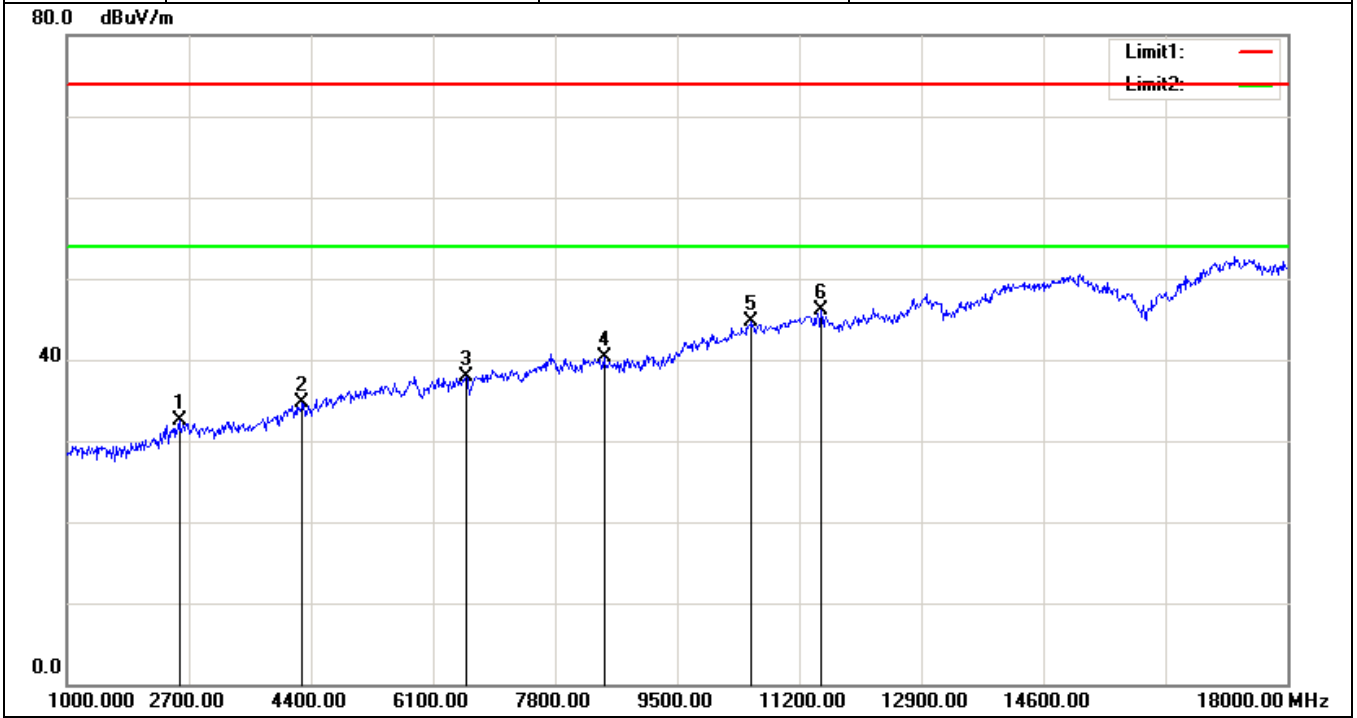
.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1442.000	36.89	-6.98	29.91	74.00	-44.09	peak
2	2666.000	35.22	-1.96	33.26	74.00	-40.74	peak
3	4434.000	32.04	3.12	35.16	74.00	-38.84	peak
4	6253.000	31.35	6.49	37.84	74.00	-36.16	peak
5	7579.000	31.55	8.83	40.38	74.00	-33.62	peak
6*	10265.000	31.19	12.80	43.99	74.00	-30.01	peak

Mode	802.11n(HT40)	Antenna	Chain 0+1
Channel	159	Ant. Polar.	Horizontal



.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2207.000	34.91	-3.87	31.04	74.00	-42.96	peak
2	3261.000	33.68	-0.92	32.76	74.00	-41.24	peak
3	4315.000	32.59	2.70	35.29	74.00	-38.71	peak
4	6950.000	32.26	7.62	39.88	74.00	-34.12	peak
5	8327.000	31.46	9.47	40.93	74.00	-33.07	peak
6*	10894.000	30.20	14.75	44.95	74.00	-29.05	peak

Mode	802.11n(HT40)	Antenna	Chain 0+1
Channel	159	Ant. Polar.	Vertical



.No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2564.000	34.63	-2.14	32.49	74.00	-41.51	peak
2	4281.000	32.04	2.58	34.62	74.00	-39.38	peak
3	6559.000	30.98	6.99	37.97	74.00	-36.03	peak
4	8480.000	30.84	9.39	40.23	74.00	-33.77	peak
5	10537.000	31.07	13.64	44.71	74.00	-29.29	peak
6*	11506.000	31.20	14.86	46.06	74.00	-27.94	peak

Note:

1) Through Pre-scan transmitting mode with all kind of modulation and data rate, find the 6Mbps of rate is the worst case of 802.11a; MCS3 of rate is the worst case of 802.11n(HT20); MCS0 of rate is the worst case of 802.11n(HT40) and then Only the worst case is recorded in the report.

2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level =Receiver Reading - Correct Factor
Correct Factor = Preamplifier Factor– Antenna Factor–Cable Factor

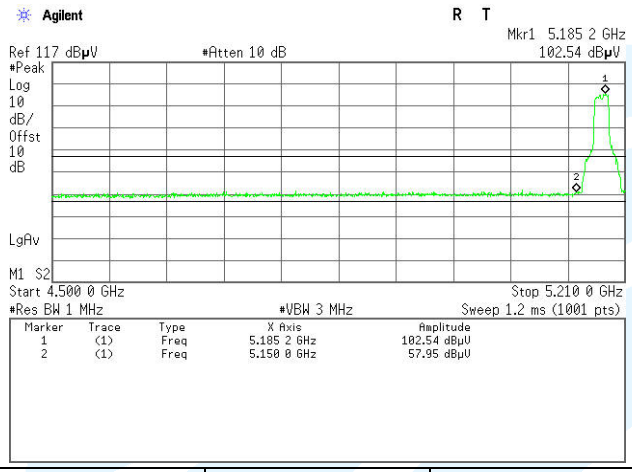
3) Scan from 9kHz to 40GHz, the disturbance above 10GHz and below 30MHz was very low, the amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

4) Snce peak data above 1GHz are lower the average limit, so the average data are pass, no need for testing.

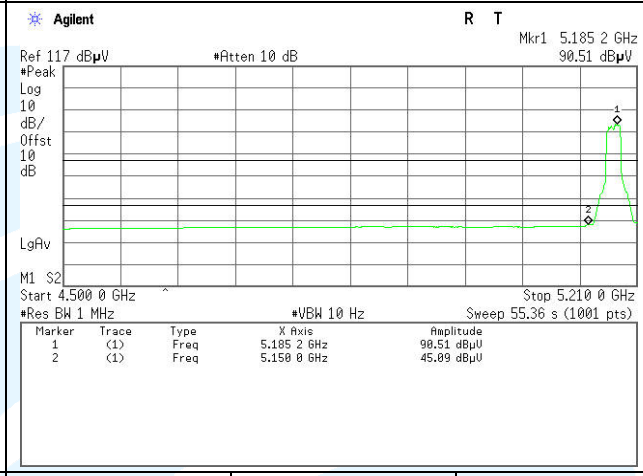
Band Edge Measurements (Radiated)

Mode	802.11a	Antenna	Chain 0+1
Channel	36	Ant. Polar.	Horizontal

Detector: Peak



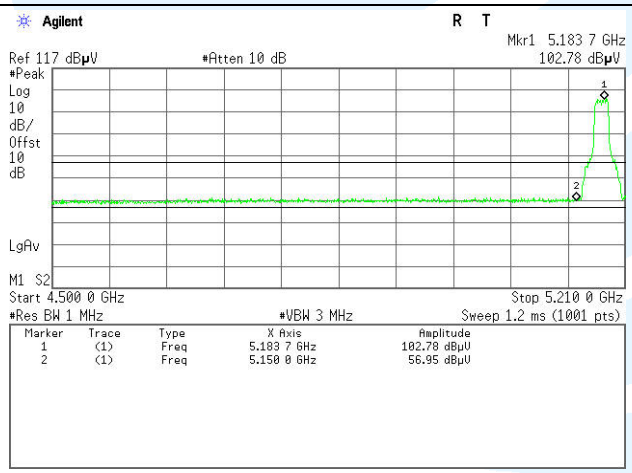
Detector: AV



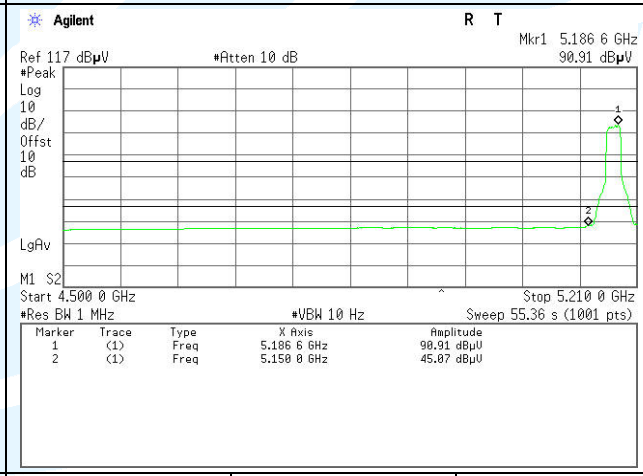
Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	AV level (dBuv/m)	AV Limit (dBuv/m)	Conclusion
5150.00	57.95	74	45.09	54	Pass

Mode	802.11a	Antenna	Chain 0+1
Channel	36	Ant. Polar.	Vertical

Detector: Peak



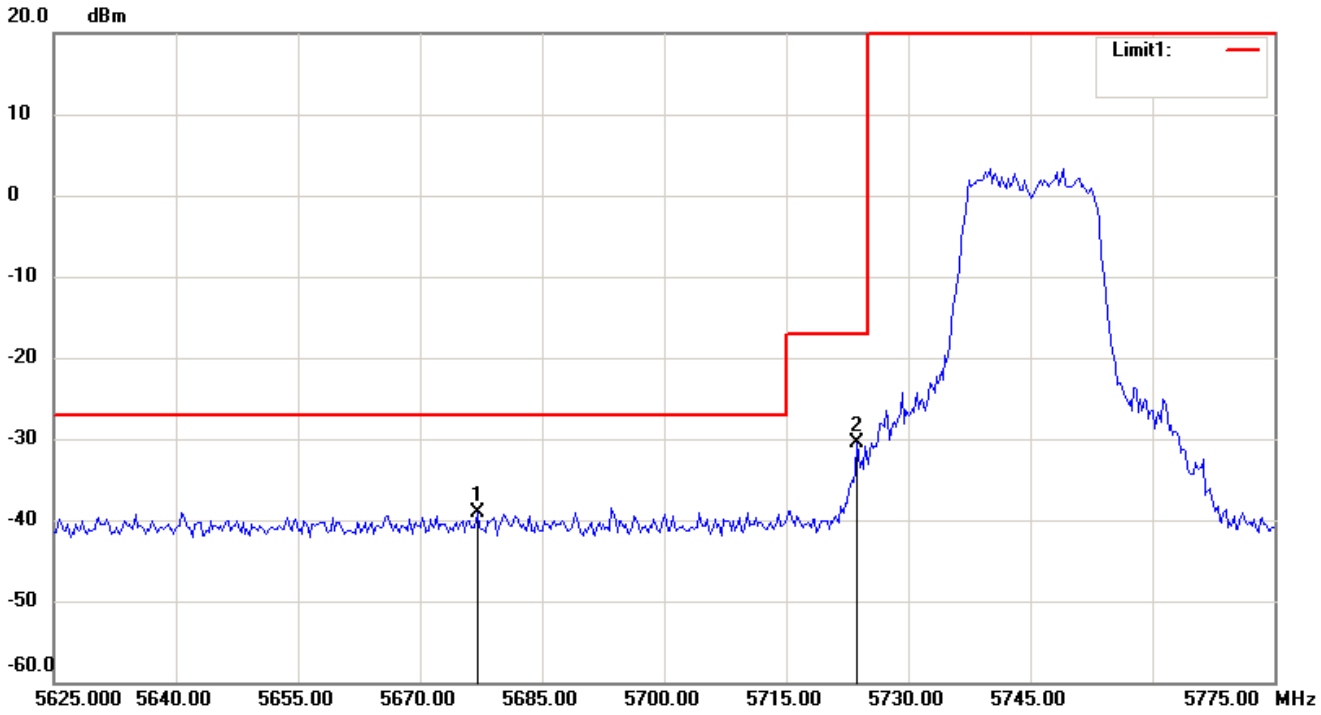
Detector: AV



Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	AV level (dBuv/m)	AV Limit (dBuv/m)	Conclusion
5150.00	56.95	74	45.07	54	Pass

Mode	802.11a	Antenna	Chain 0+1
Channel	149	Ant. Polar.	Horizontal

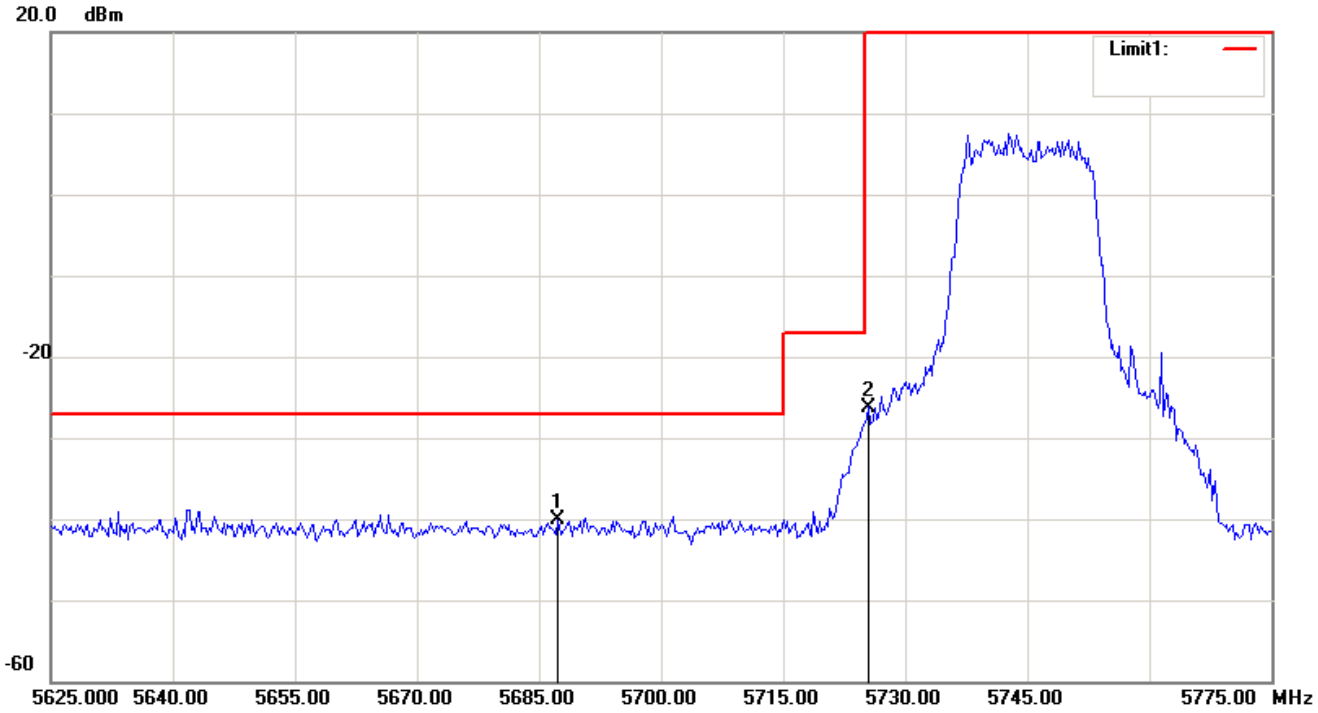
Detector: Peak



Frequency (MHz)	Peak level (dBm)	Peak Limit (dBm)	Margin (dB)	Conclusion
5677.0000	-39.05	-27	-12.05	Pass
5723.7500	-30.47	-17	-13.47	Pass

Mode	802.11a	Antenna	Chain 0+1
Channel	149	Ant. Polar.	Vertical

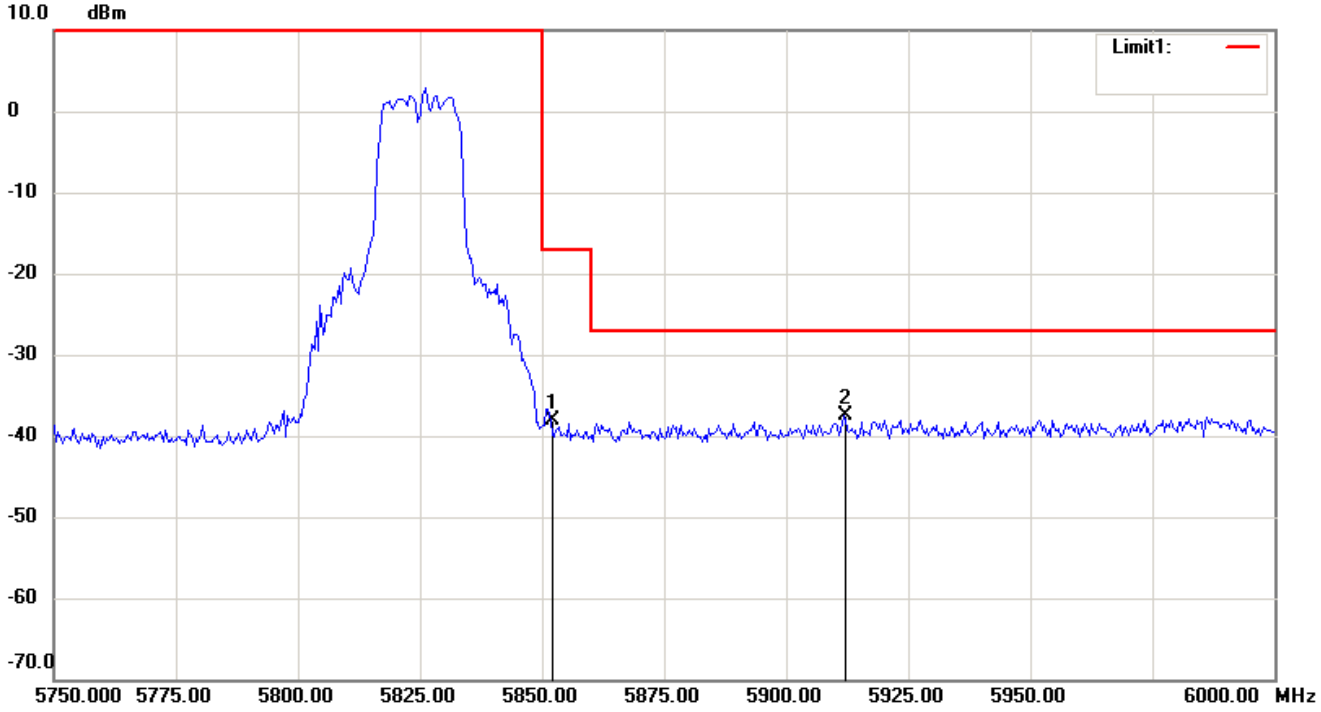
Detector: Peak



Frequency (MHz)	Peak level (dBm)	Peak Limit (dBm)	Margin (dB)	Conclusion
5687.250	-40.04	-27.00	-13.04	Pass
5725.000	-26.20	-17.00	-9.20	Pass

Mode	802.11a	Antenna	Chain 0+1
Channel	165	Ant. Polar.	Horizontal

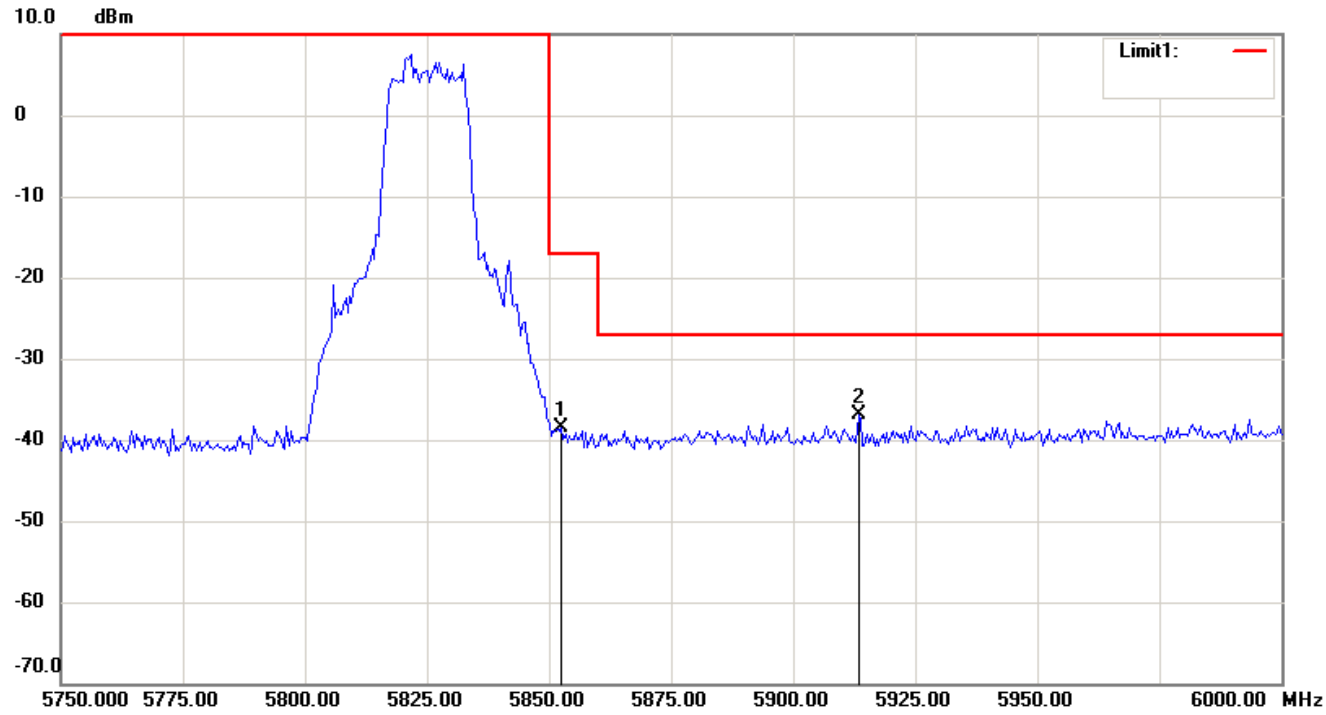
Detector: Peak



Frequency (MHz)	Peak level (dBm)	Peak Limit (dBm)	Margin (dB)	Conclusion
5851.6667	-38.04	-17.00	-21.04	Pass
5911.6667	-37.59	-27.00	-10.59	Pass

Mode	802.11a	Antenna	Chain 0+1
Channel	165	Ant. Polar.	Vertical

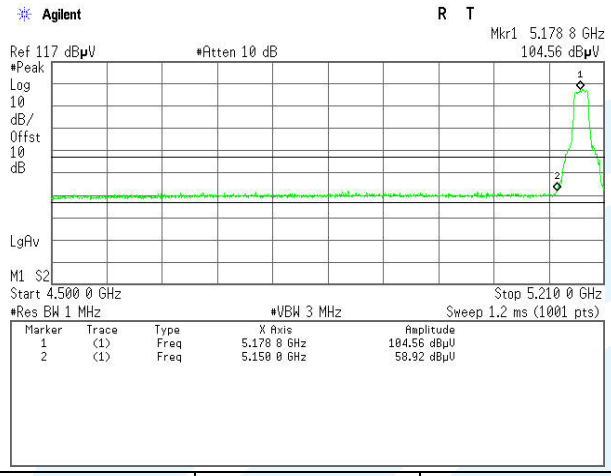
Detector: Peak



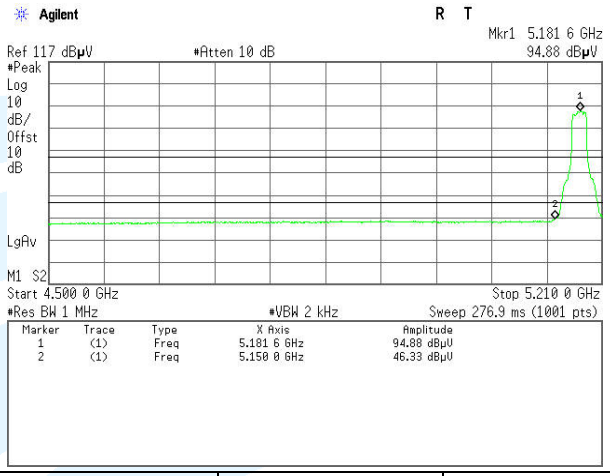
Frequency (MHz)	Peak level (dBm)	Peak Limit (dBm)	Margin (dB)	Conclusion
5852.5000	-38.52	-17.00	-21.52	Pass
5913.3333	-36.93	-27.00	-9.93	Pass

Mode	802.11n(HT20)	Antenna	Chain 0+1
Channel	36	Ant. Polar.	Horizontal

Detector: Peak



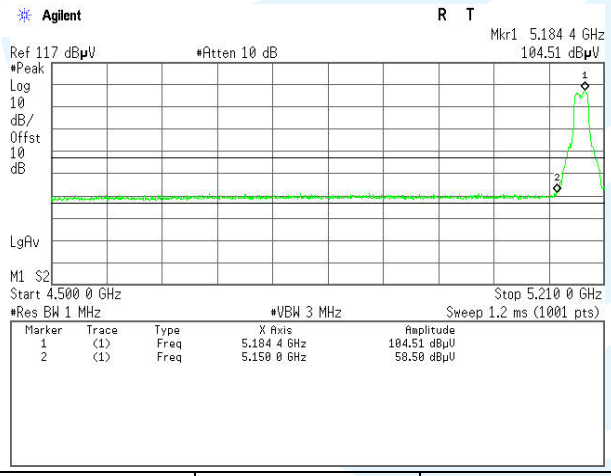
Detector: AV



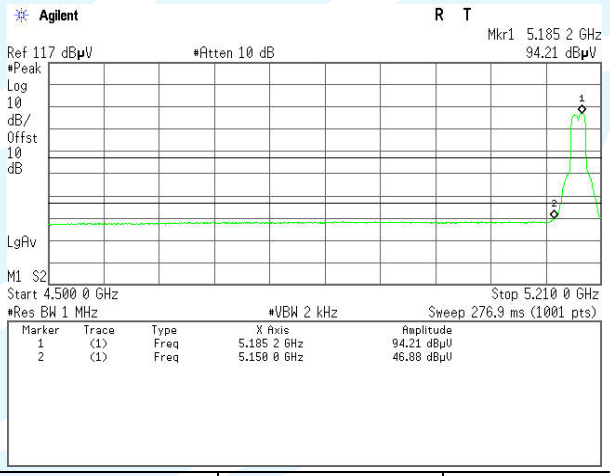
Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	AV level (dBuv/m)	AV Limit (dBuv/m)	Conclusion
5150.00	58.92	74	46.33	54	Pass

Mode	802.11n(HT20)	Antenna	Chain 0+1
Channel	36	Ant. Polar.	Vertical

Detector: Peak



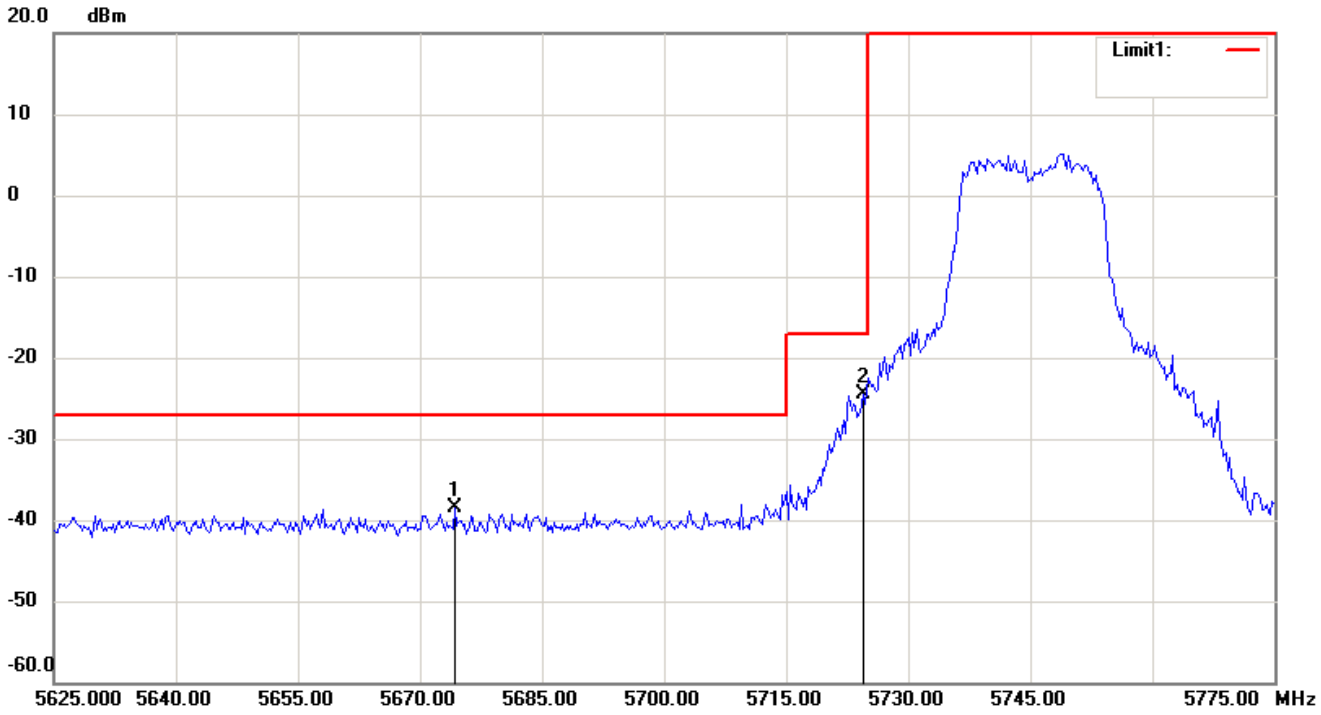
Detector: AV



Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	AV level (dBuv/m)	AV Limit (dBuv/m)	Conclusion
5150.00	58.50	74	46.88	54	Pass

Mode	802.11n(HT20)	Antenna	Chain 0+1
Channel	149	Ant. Polar.	Horizontal

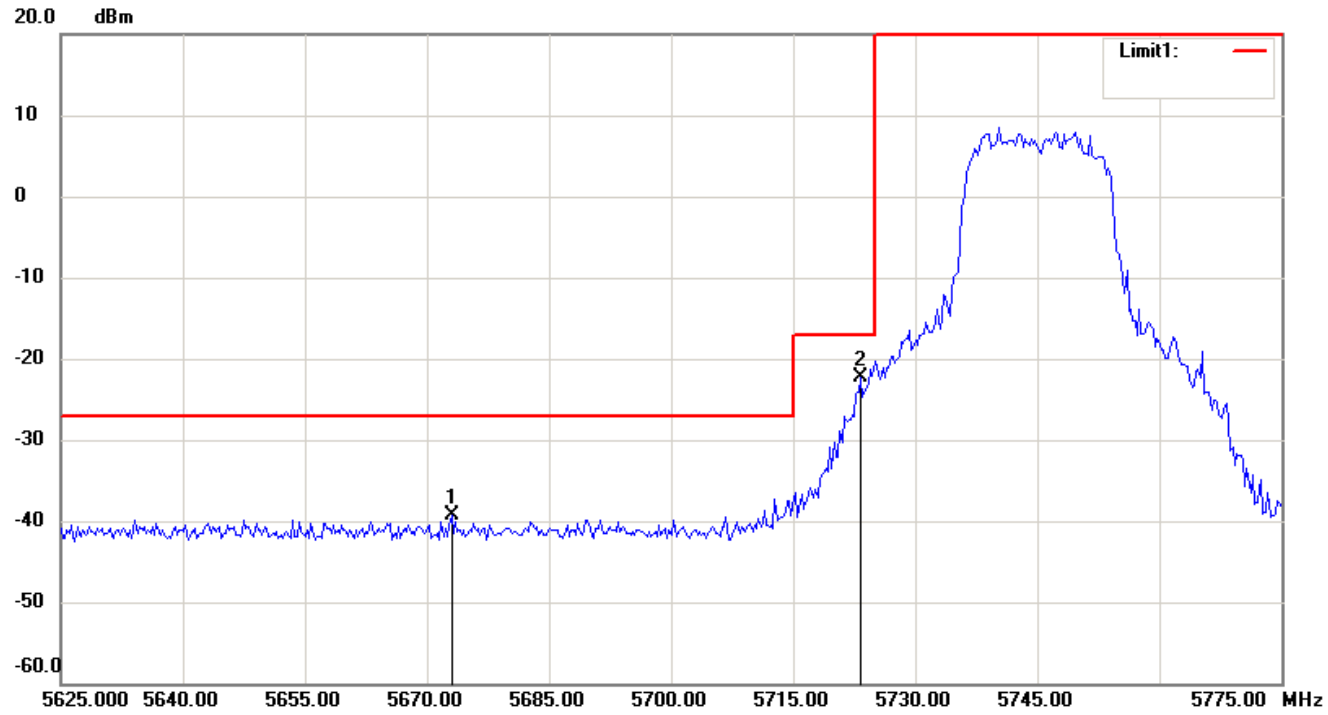
Detector: Peak



Frequency (MHz)	Peak level (dBm)	Peak Limit (dBm)	Margin (dB)	Conclusion
5674.2500	-38.59	-27.00	-11.59	Pass
5724.5000	-24.49	-17.00	-7.49	Pass

Mode	802.11n(HT20)	Antenna	Chain 0+1
Channel	149	Ant. Polar.	Vertical

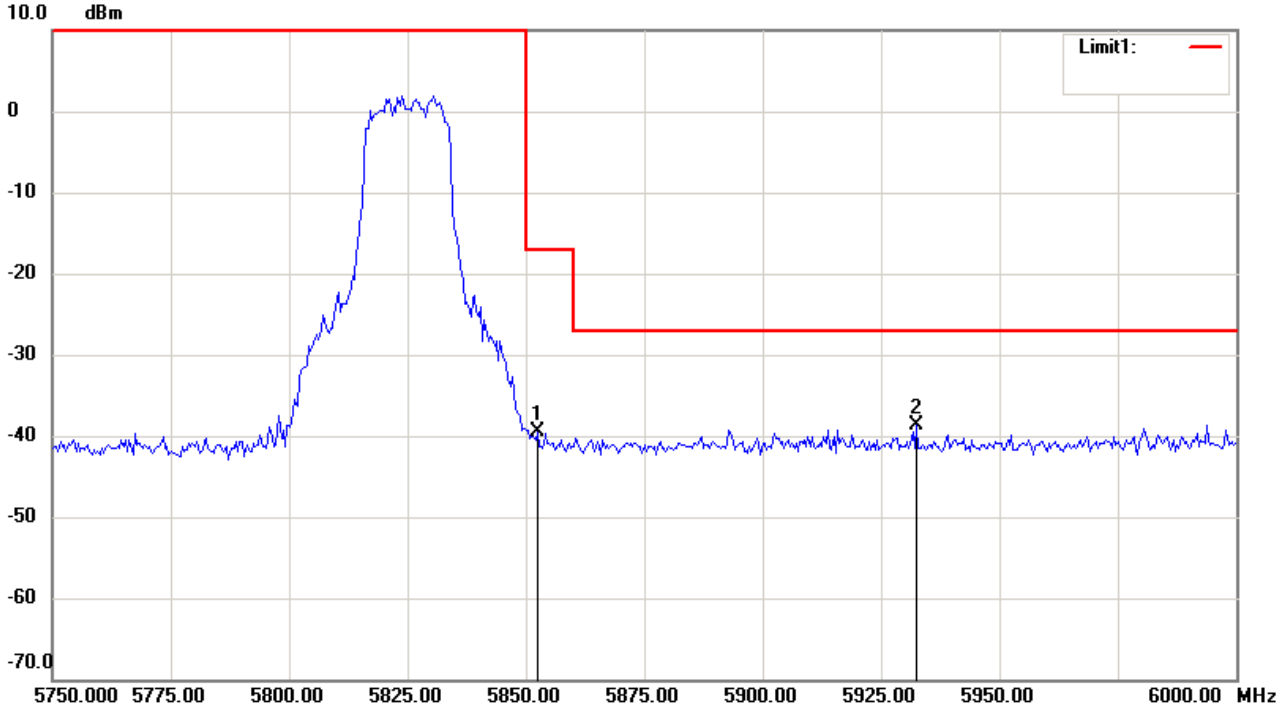
Detector: Peak



Frequency (MHz)	Peak level (dBm)	Peak Limit (dBm)	Margin (dB)	Conclusion
5673.0000	-39.33	-27.00	-12.33	Pass
5723.2500	-22.27	-17.00	-5.27	Pass

Mode	802.11n(HT20)	Antenna	Chain 0+1
Channel	165	Ant. Polar.	Horizontal

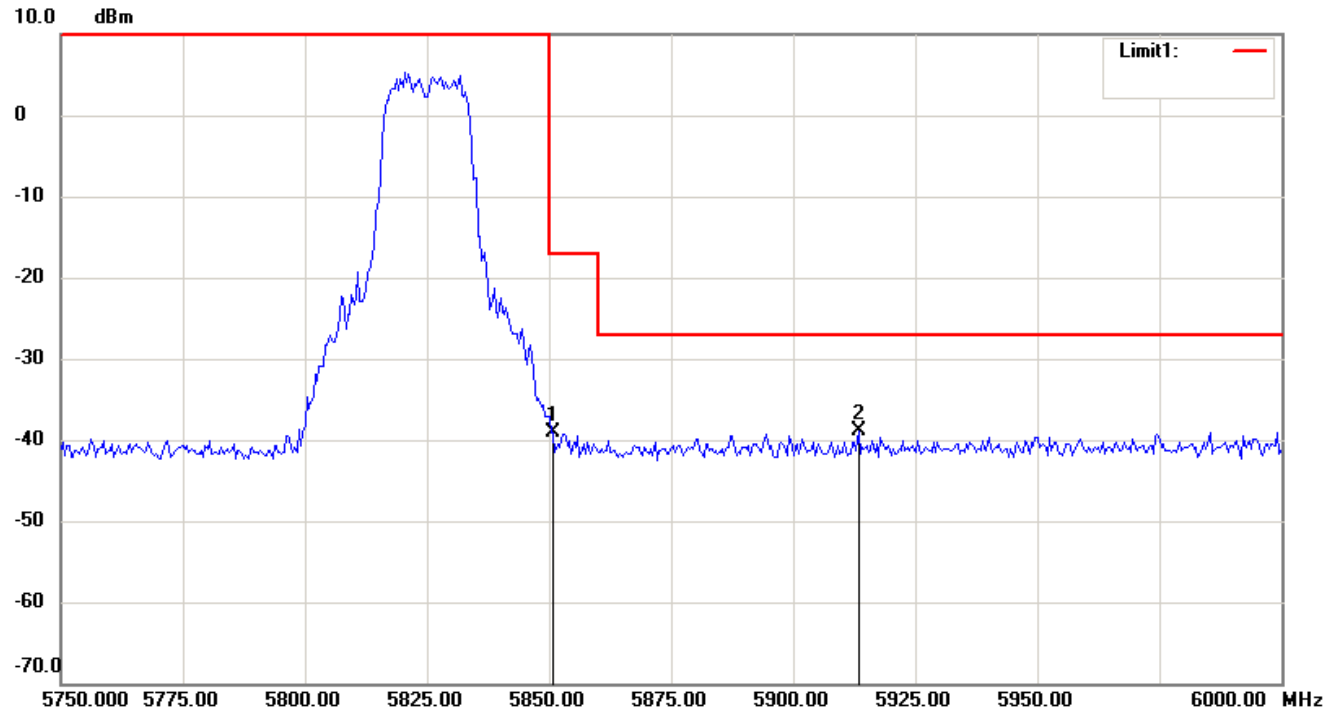
Detector: Peak



Frequency (MHz)	Peak level (dBm)	Peak Limit (dBm)	Margin (dB)	Conclusion
5852.5000	-39.41	-17.00	-22.41	Pass
5932.5000	-38.66	-27.00	-11.66	Pass

Mode	802.11n(HT20)	Antenna	Chain 0+1
Channel	165	Ant. Polar.	Vertical

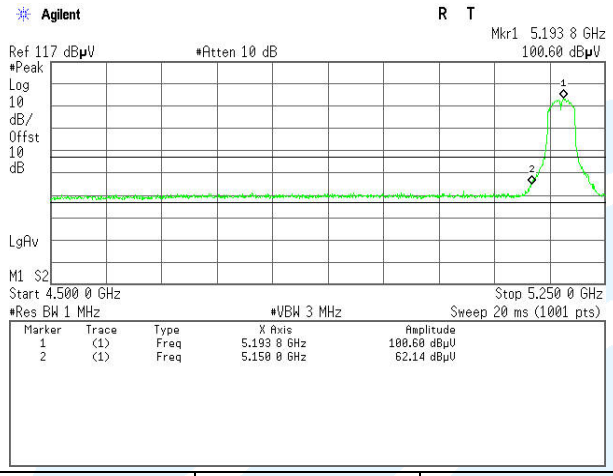
Detector: Peak



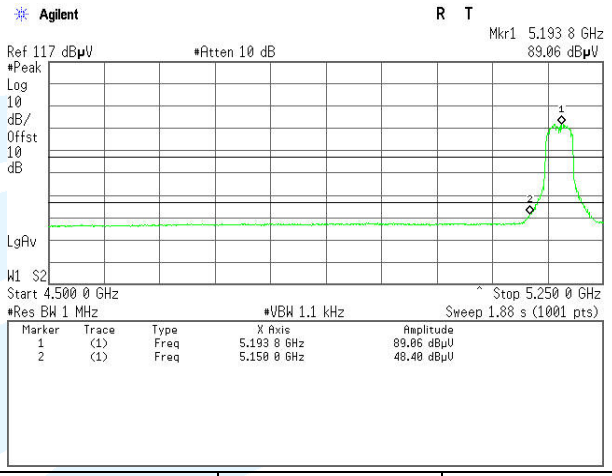
Frequency (MHz)	Peak level (dBm)	Peak Limit (dBm)	Margin (dB)	Conclusion
5850.8333	-39.02	-17.00	-22.02	Pass
5913.3333	-38.83	-27.00	-11.83	Pass

Mode	802.11n(HT40)	Antenna	Chain 0+1
Channel	38	Ant. Polar.	Horizontal

Detector: Peak



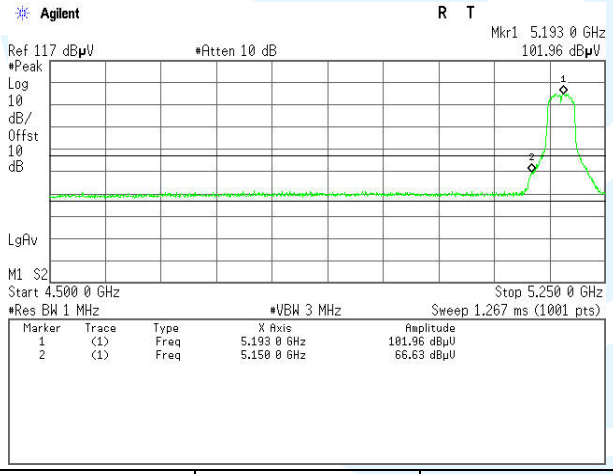
Detector: AV



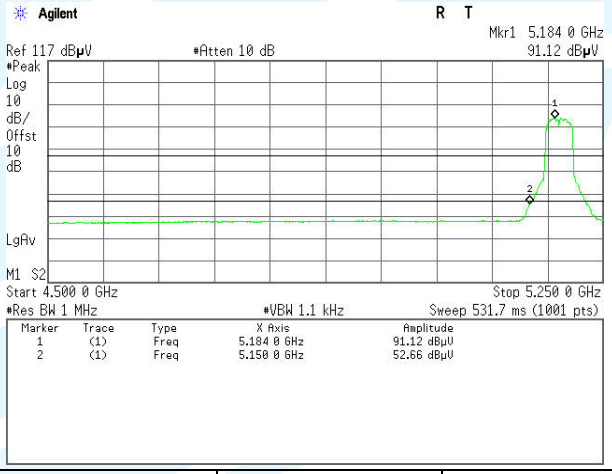
Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	AV level (dBuv/m)	AV Limit (dBuv/m)	Conclusion
5150.00	62.14	74	48.40	54	Pass

Mode	802.11n(HT40)	Antenna	Chain 0+1
Channel	38	Ant. Polar.	Vertical

Detector: Peak



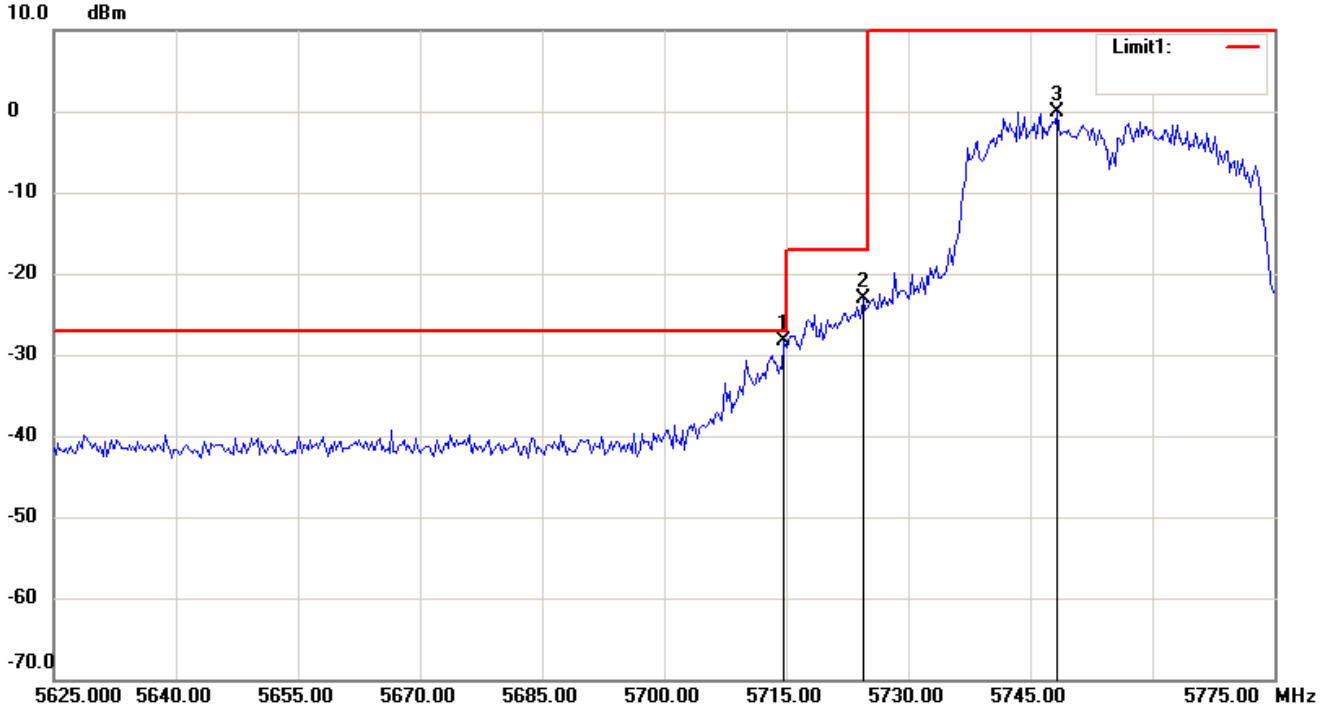
Detector: AV



Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	AV level (dBuv/m)	AV Limit (dBuv/m)	Conclusion
5150.00	66.63	74	52.66	54	Pass

Mode	802.11n(HT40)	Antenna	Chain 0+1
Channel	151	Ant. Polar.	Horizontal

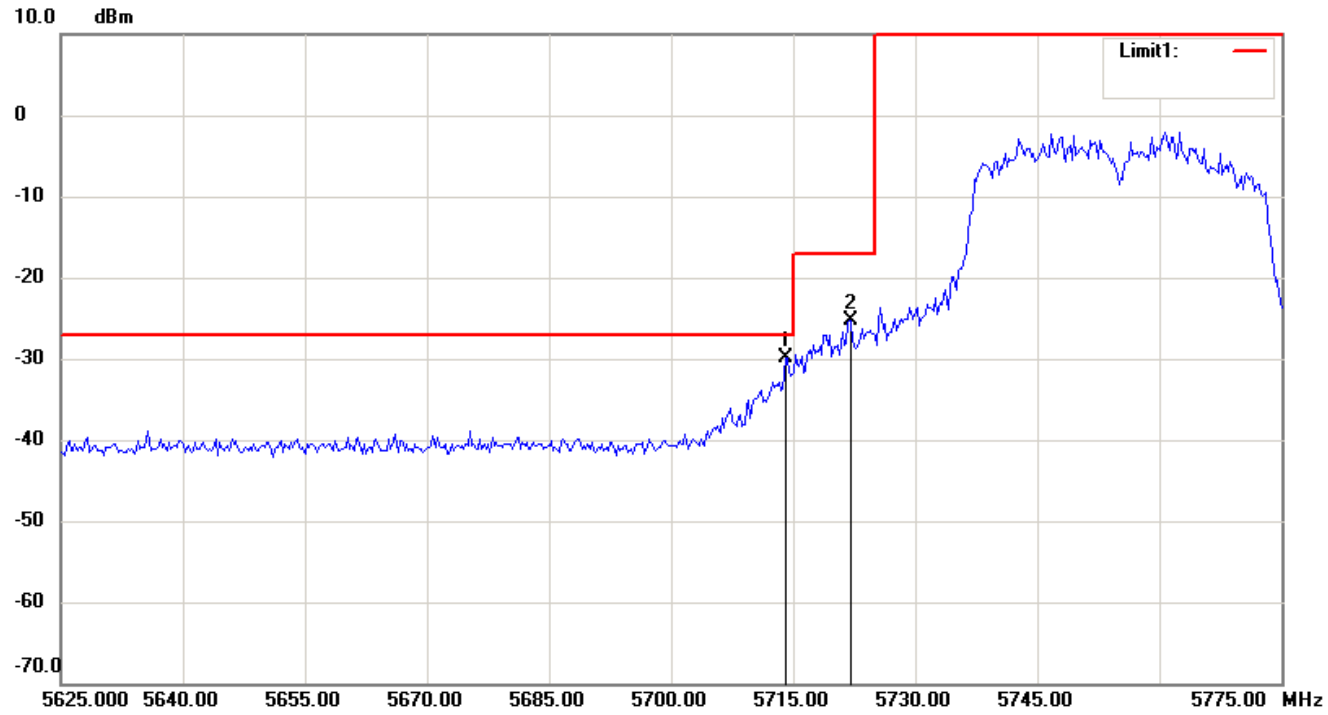
Detector: Peak



Frequency (MHz)	Peak level (dBm)	Peak Limit (dBm)	Margin (dB)	Conclusion
5714.7500	-28.38	-27.00	-1.38	Pass
5724.5000	-23.02	-17.00	-6.02	Pass

Mode	802.11n(HT40)	Antenna	Chain 0+1
Channel	151	Ant. Polar.	Vertical

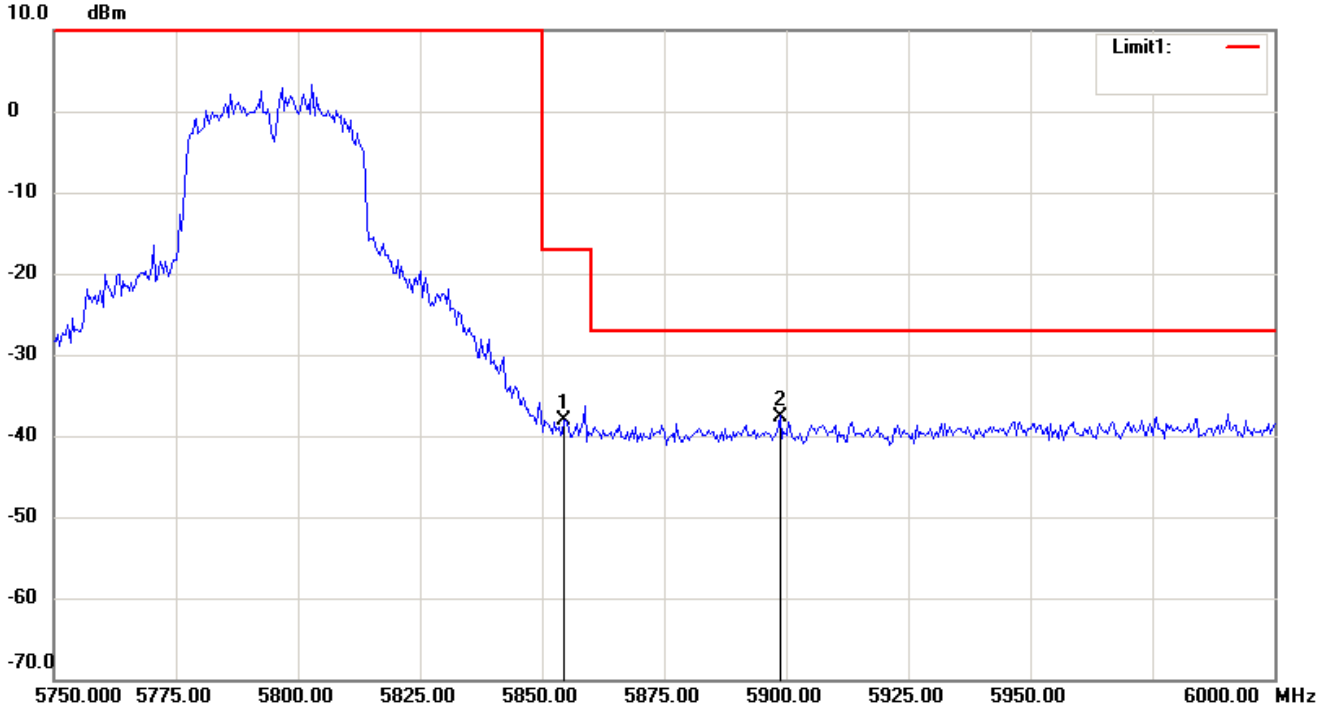
Detector: Peak



Frequency (MHz)	Peak level (dBm)	Peak Limit (dBm)	Margin (dB)	Conclusion
5714.0000	-29.82	-27.00	-2.82	Pass
5722.0000	-25.21	-17.00	-8.21	Pass

Mode	802.11n(HT40)	Antenna	Chain 0+1
Channel	159	Ant. Polar.	Horizontal

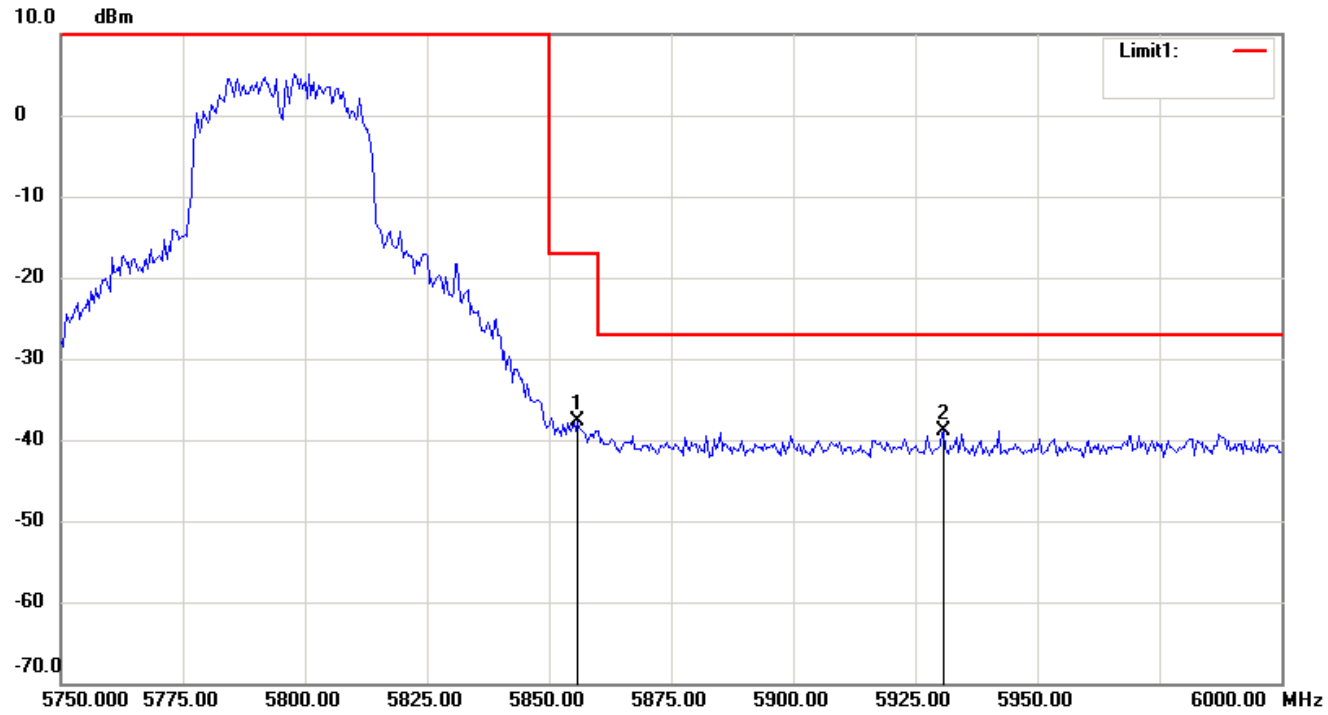
Detector: Peak



Frequency (MHz)	Peak level (dBm)	Peak Limit (dBm)	Margin (dB)	Conclusion
5854.5833	-38.05	-17.00	-21.05	Pass
5898.7500	-37.60	-27.00	-10.60	Pass

Mode	802.11n(HT40)	Antenna	Chain 0+1
Channel	159	Ant. Polar.	Vertical

Detector: Peak



Frequency (MHz)	Peak level (dBm)	Peak Limit (dBm)	Margin (dB)	Conclusion
5855.8333	-37.60	-17.00	-20.60	Pass
5930.8333	-38.81	-27.00	-11.81	Pass

Note:

1) Through Pre-scan transmitting mode with all kind of modulation and data rate, find the 6Mbps of rate is the worst case of 802.11a; MCS3 of rate is the worst case of 802.11n(HT20); MCS0 of rate is the worst case of 802.11n(HT40) and then Only the worst case is recorded in the report.

2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level =Receiver Reading - Correct Factor
Correct Factor = Preamplifier Factor– Antenna Factor–Cable Factor

APPENDIX 1 PHOTOGRAPHS OF TEST SETUP

See test photographs attached in Appendix 1 for the actual connections between Product and support equipment.

APPENDIX 2 PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS

Refer to Appendix 2 for EUT external and internal photographs.

*** End of Report ***

The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of UnionTrust, this report can't be reproduced except in full.