FCC Test Report

Equipment	:	WIFI module
Brand Name	:	PEGATRON
Model No.	:	UPWL6024
FCC ID	:	VUIUPWL6024
Standard	:	47 CFR FCC Part 15.407
Operating Band	:	5150 MHz – 5250 MHz 5725 MHz – 5850 MHz
FCC Classification	:	NII
Applicant	:	PEGATRON CORPORATION 5F., NO. 76, LIGONG ST., BEITOU DISTRICT, TAIPEI CITY 11259 Taiwan
Manufacturer	:	PEGATRON CORPORATION 5F., NO. 76, LIGONG ST., BEITOU DISTRICT, TAIPEI CITY 11259 Taiwan
Function	:	☐ Outdoor; ☒ Indoor; ☐ Fixed P2P ☐ Portable Client

The product sample received on May 18, 2016 and completely tested on Jun. 08, 2016. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Sam Chen
SPORTON INTERNATIONAL INC.

Testing Laboratory
1190

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Summary of Test Result

Conformance Test Specifications			
Report Clause	**Ref. Std. Clause**	**Description**	**Result**
1.1.2	15.203	Antenna Requirement	Complied
3.1	15.407(a)	Emission Bandwidth	Complied
3.2	15.407(a)	Maximum Conducted Output Power	Complied
3.3	15.407(a)	Peak Power Spectral Density	Complied
3.4	15.407(b)	Unwanted Emissions	Complied
3.5	15.407(g)	Frequency Stability	Complied

Revision History

Report No.	Version	Description	Issued Date
FR652526	Rev. 01	Initial issue of report	Jun. 22, 2016

1 General Description

1.1 Information

1.1.1 RF General Information

Band	Mode	BWch (MHz)	Nss-Min	Nant
5.2G	11a	20	1	1
5.8G	11a	20	1	1
5.2G	HT20	20	1,(M0-15)	2
5.8G	HT20	20	1,(M0-15)	2
5.2G	HT40	40	1,(M0-15)	2
5.8G	HT40	40	1,(M0-15)	2

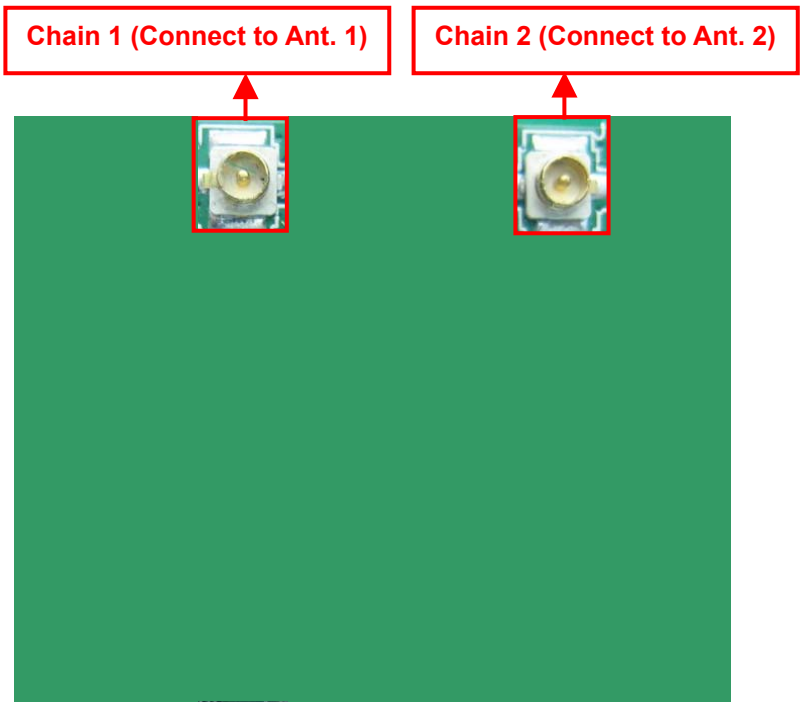
Note:
- 5.2G is the 5.2GHz Band (5.15-5.25GHz).
- 5.8G is the 5.8GHz Band (5.725-5.85GHz).
- 11a, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- BWch is the nominal channel bandwidth.
- Nss-Min is the minimum number of spatial streams.
- Nant is the number of outputs. e.g., 2(2,3) means have 2 outputs for port 2 and port 3. 2 means have 2 outputs for port 1 and port 2.

1.1.2 Antenna Information

Set	Ant.	Brand	Part No.	Model Name	Antenna Type	Connector	Gain (dBi)	
							B1	B4
1	1	PEGATRON	1415-00XR000	UCW2583	PCB Antenna	MHF	5.31	4.07
	2	PEGATRON	1415-00XS000	UCW2620	PCB Antenna	MHF	7.88	6.29
2	3	PEGATRON	1415-01AF000	HY1A-18685	PCB Antenna	MHF	4.01	3.90
	4	PEGATRON	1415-01AE000	HY1A-18686	PCB Antenna	MHF	4.67	4.70
3	5	PEGATRON	1415-0172000	HY1A-18082	PCB Antenna	MHF	4.23	3.88
	6	PEGATRON	1415-0171000	HY1A-18081	PCB Antenna	MHF	5.26	3.92

Note: The EUT has three sets of antenna and there are two antennas for each set. Set 1 the highest gain antennas. so there's only set 1 selected and recorded in the report.

For IEEE 802.11a mode (1TX/1RX):
The EUT supports the antenna with TX and RX diversity functions.
Both chain 1 and chain 2 support transmit and receive functions, but only one of them will be used at one time.
The Chain 1 generated the worst case, so it was selected to test and record in the report.
For IEEE 802.11n mode (2TX/2RX):
Both chain 1 and chain 2 could transmit/receive simultaneously.



1.1.3 Mode Test Duty Cycle

Mode	DC	T(s)	VBW(Hz) ≥ 1/T
11a	0.986	n/a (DC>=0.98)	n/a (DC>=0.98)
HT20	0.986	n/a (DC>=0.98)	n/a (DC>=0.98)
HT40	0.971	933.125u	3k

1.1.4 EUT Operational Condition

EUT Power Type	From Host System			
Beamforming Function	☐	With beamforming	☒	Without beamforming

1.1.5 Table for Class II Change

Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
1. Updating test rule of 5GHz band 1 to “New Rules” from “Old Rules”. 2. Updating test rule of 5GHz band 4 to “15.407 (b)(4)(i) of New Rules (ET Docket No. 13–49; FCC 16–24)” from “New Rules”.	1. Emission Bandwidth 2. Maximum Conducted Output Power 3. Peak Power Spectral Density 4. Unwanted Emissions 5. Frequency Stability
3. Adding four 4 low gain and same type antennas (Part No.: 1415-01AF000 / 1415-01AE000 / 1415-0172000 / 1415-0171000)	6. It is not necessary to perform for all tests.

1.2 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR FCC Part 15
- ANSI C63.10-2013
- FCC KDB 789033 D02 v01r02
- FCC KDB 662911 D01 v02r01

1.3 Testing Location Information

Testing Location							
☐	HWA YA	ADD	:	No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.			
		TEL	:	886-3-327-3456	FAX	:	886-3-318-0055
☒	JHUBEI	ADD	:	No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C.			
		TEL	:	886-3-656-9065	FAX	:	886-3-656-9085

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH01-CB	Akina Chiu	24°C / 78%	06/02/2016
Radiated	03CH01-CB	Eason Chen	22°C / 54%	05/19/2016~06/08/2016

Test site Designation No. TW0006 with FCC
Test site registered number IC 4086D with Industry Canada.

1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

Test Items	Uncertainty	Remark
Radiated Emission (1GHz ~ 18GHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.7 dB	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Channel Mode

Band	Mode	BWch (MHz)	Nss-Min	Nant	Ch. (MHz)	Range	Power Setting
5.2G	11a	20	1	1	5180	L	70
5.2G	11a	20	1	1	5200	M	70
5.2G	11a	20	1	1	5240	H	70
5.2G	HT20	20	1,(M0-15)	2	5180	L	70
5.2G	HT20	20	1,(M0-15)	2	5200	M	70
5.2G	HT20	20	1,(M0-15)	2	5240	H	70
5.2G	HT40	40	1,(M0-15)	2	5190	L	33
5.2G	HT40	40	1,(M0-15)	2	5230	H	70
5.8G	11a	20	1	1	5745	L	80
5.8G	11a	20	1	1	5785	M	80
5.8G	11a	20	1	1	5825	H	80
5.8G	HT20	20	1,(M0-15)	2	5745	L	80
5.8G	HT20	20	1,(M0-15)	2	5785	M	80
5.8G	HT20	20	1,(M0-15)	2	5825	H	80
5.8G	HT40	40	1,(M0-15)	2	5755	L	70
5.8G	HT40	40	1,(M0-15)	2	5795	H	80

Abbreviation Explanation

Band	Mode	BWch (MHz)	Nss-Min	Nant	Ch. (MHz)	Range	Test Cond.	Abbreviation
5.2G	VHT40	40	1,(M0-9)	2	5190	L	TN,VN	5.2G;VHT40;40;1,(M0-9);2;5190;L;TN,VN
5.2G	VHT80	80	1,(M0-9)	2	5210	S	TN,VN	5.2G;VHT80;80;1,(M0-9);2;5210;S;TN,VN

Note:
- Test range channel consist of L (Low Ch.), M (Middle Ch.), H (High Ch.), S (Single Ch. or Intra- band Ch.) and C (Inter-band Ch.).

2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emission Bandwidth, Maximum Conducted Output Power, Peak Power Spectral Density, Frequency Stability
Test Condition	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests	
Tests Item	Unwanted Emissions
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode > 1GHz	CTX
The EUT was performed at X axis, Y axis and Z axis position for Radiated emission test, and the worst case was found at Z axis. So the measurement will follow this same test configuration.	
1	EUT in Z axis

2.3 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

2.4 Accessories

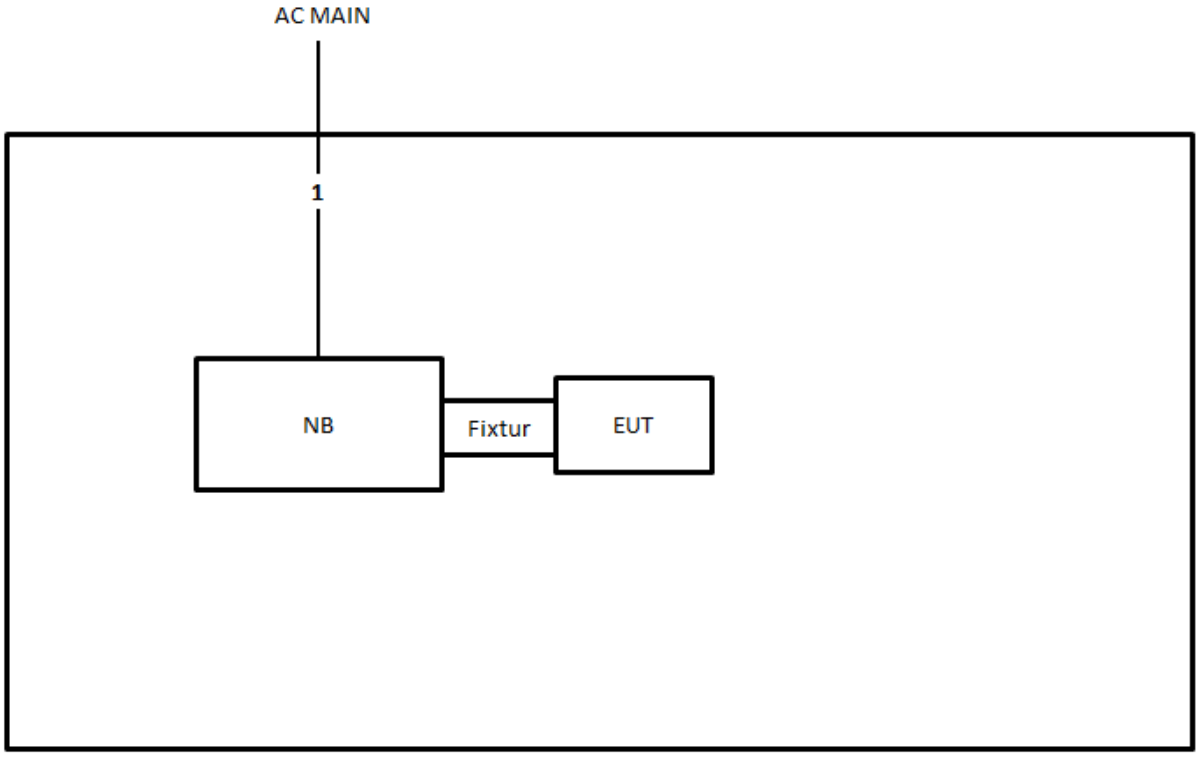
N/A

2.5 Support Equipment

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	NB	DELL	E4300	DoC
2	Fixture	PEGATRON	PEGATRON	DoC

2.6 Test Setup Diagram

Test Setup Diagram - Radiated Test > 1GHz



Item	Connection	Shielded	Length
1	AC MAIN	No	2.6m

3 Transmitter Test Result

3.1 Emission Bandwidth

3.1.1 Emission Bandwidth Limit

Emission Bandwidth Limit
UNII Devices
☒ For the 5.15-5.25 GHz band, N/A
☐ For the 5.25-5.35 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
☐ For the 5.47-5.725 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
☒ For the 5.725-5.85 GHz band, 6 dB emission bandwidth ≥ 500kHz.
LE-LAN Devices
☐ For the band 5.15-5.25 GHz, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
☐ For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
☐ For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
☐ For the 5.725-5.85 GHz band, 6 dB emission bandwidth ≥ 500kHz.

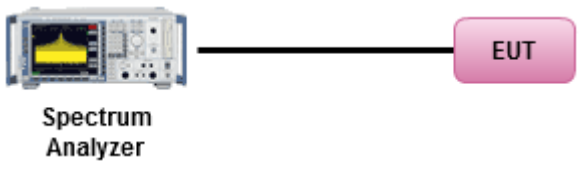
3.1.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Test Method	
▪ For the emission bandwidth shall be measured using one of the options below:	
	☒ Refer as FCC KDB 789033 D02 v01r02, clause C for EBW and clause D for OBW measurement.
	☐ Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.
	☒ Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.

3.1.4 Test Setup

Emission Bandwidth


3.1.5 Test Result of Emission Bandwidth

Refer as Appendix A

3.2 Maximum Conducted Output Power

3.2.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
UNII Devices	
☒	For the 5.15-5.25 GHz band:
	▪ Outdoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If G_{TX} > 6 dBi, then P_{Out} = 30 – (G_{TX} – 6). e.i.r.p. at any elevation angle above 30 degrees ≤ 125mW [21dBm]
	▪ Indoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If G_{TX} > 6 dBi, then P_{Out} = 30 – (G_{TX} – 6)
	▪ Point-to-point AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W If G_{TX} > 23 dBi, then P_{Out} = 30 – (G_{TX} – 23).
	▪ Mobile or Portable Client: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW. If G_{TX} > 6 dBi, then P_{Out} = 24 – (G_{TX} – 6).
☐	For the 5.25-5.35 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If G_{TX} > 6 dBi, then P_{Out} = 24 – (G_{TX} – 6).
☐	For the 5.47-5.725 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If G_{TX} > 6 dBi, then P_{Out} = 24 – (G_{TX} – 6).
☒	For the 5.725-5.85 GHz band:
	▪ Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If G_{TX} > 6 dBi, then P_{Out} = 30 – (G_{TX} – 6).
	▪ Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W.
LE-LAN Devices	
☐	For the 5.15-5.25 GHz band, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
☐	For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
☐	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
☐	For the 5.725-5.85 GHz band:
	▪ Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If G_{TX} > 6 dBi, then P_{Out} = 30 – (G_{TX} – 6).
	▪ Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W.
P_{Out} = maximum conducted output power in dBm, **G_{TX}** = the maximum transmitting antenna directional gain in dBi.	

3.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

Test Method	
▪ Maximum Conducted Output Power	
	[duty cycle ≥ 98% or external video / power trigger]
	☐ Refer as FCC KDB 789033 D02 v01r02, clause E Method SA-1 (spectral trace averaging).
	☐ Refer as FCC KDB 789033 D02 v01r02, clause E Method SA-1 Alt. (RMS detection with slow sweep speed)
	duty cycle < 98% and average over on/off periods with duty factor
	☐ Refer as FCC KDB 789033 D02 v01r02, clause E Method SA-2 (spectral trace averaging).
	☐ Refer as FCC KDB 789033 D02 v01r02, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
	Wideband RF power meter and average over on/off periods with duty factor
	☒ Refer as FCC KDB 789033 D02 v01r02, clause E Method PM-G (using an RF average power meter).
▪ For conducted measurement.	
	▪ If the EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.
	▪ If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \ldots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$

3.2.4 Test Setup

RF Output Power (Power Meter)

3.2.5 Test Result of Maximum Conducted Output Power

Refer as Appendix B

3.3 Peak Power Spectral Density

3.3.1 Peak Power Spectral Density Limit

Peak Power Spectral Density Limit	
UNII Devices	
☒ For the 5.15-5.25 GHz band:	
	▪ Outdoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If G_{TX} > 6 dBi, then P_{Out} = 17 – (G_{TX} – 6).
	▪ Indoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If G_{TX} > 6 dBi, then P_{Out} = 17 – (G_{TX} – 6).
	▪ Point-to-point AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If G_{TX} > 23 dBi, then P_{Out} = 17 – (G_{TX} – 23).
	▪ Mobile or Portable Client: the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If G_{TX} > 6 dBi, then PPSD= 11 – (G_{TX} – 6)..
☐ For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If G_{TX} > 6 dBi, then PPSD= 11 – (G_{TX} – 6).	
☐ For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If G_{TX} > 6 dBi, then PPSD= 11 – (G_{TX} – 6).	
☒ For the 5.725-5.85 GHz band:	
	▪ Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If G_{TX} > 6 dBi, then PPSD= 30 – (G_{TX} – 6).
	▪ Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
LE-LAN Devices	
☐ For the 5.15-5.25 GHz band, the peak power spectral density (PPSD) ≤ 4 dBm/MHz and the e.i.r.p. peak power spectral density (PPSD) ≤ 10 dBm/MHz.	
☐ For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz and the e.i.r.p. peak power spectral density (PPSD) ≤ 17 dBm/MHz.	
	▪ e.i.r.p. greater than 200 mW shall comply with the following e.i.r.p. at different elevations, where θ is the angle above the local horizontal plane (of the Earth) as shown below: -13 dBW/MHz for 0° ≤ θ < 8° ; -13 − 0.716 (θ-8) dBW/MHz for 8° ≤ θ < 40° -35.9 − 1.22 (θ-40) dBW/MHz for 40° ≤ θ ≤ 45° ; -42 dBW/MHz for θ > 45°
☐ For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz and the e.i.r.p. peak power spectral density (PPSD) ≤ 17 dBm/MHz.	
☐ For the 5.725-5.85 GHz band:	
	▪ Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If G_{TX} > 6 dBi, then PPSD= 30 – (G_{TX} – 6).
	▪ Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
PPSD = peak power spectral density that he same method as used to determine the conducted output power shall be used to determine the power spectral density. And power spectral density in dBm/MHz **G_{TX}** = the maximum transmitting antenna directional gain in dBi.	

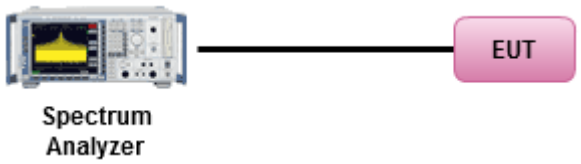
3.3.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

Test Method		
▪ Peak power spectral density procedures that the same method as used to determine the conducted output power shall be used to determine the peak power spectral density and use the peak search function on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density shall be measured using below options:		
	☐ Refer as FCC KDB 789033 D02 v01r02, F)5) power spectral density can be measured using resolution bandwidths < 1 MHz provided that the results are integrated over 1 MHz bandwidth	
	[duty cycle ≥ 98% or external video / power trigger]	
	☒ Refer as FCC KDB 789033 D02 v01r02, clause E Method SA-1 (spectral trace averaging).	
	☐ Refer as FCC KDB 789033 D02 v01r02, clause E Method SA-1 Alt. (RMS detection with slow sweep speed)	
	duty cycle < 98% and average over on/off periods with duty factor	
	☒ Refer as FCC KDB 789033 D02 v01r02, clause E Method SA-2 (spectral trace averaging).	
	☐ Refer as FCC KDB 789033 D02 v01r02, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)	
▪ For conducted measurement.		
	▪ If the EUT supports multiple transmit chains using options given below:	
		☒ Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.
		☐ Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,
		☐ Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.
	▪	If multiple transmit chains, EIRP PPSD calculation could be following as methods: $PPSD_{total} = PPSD_1 + PPSD_2 + \ldots + PPSD_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = PPSD_{total} + DG$

3.3.4 Test Setup

Power Spectral Density
 Spectrum Analyzer

3.3.5 Test Result of Peak Power Spectral Density

Refer as Appendix C

3.4 Unwanted Emissions

3.4.1 Transmitter Radiated Unwanted Emissions Limit

Unwanted emissions below 1 GHz and restricted band emissions above 1GHz limit			
Frequency Range (MHz)	**Field Strength (uV/m)**	**Field Strength (dBuV/m)**	**Measure Distance (m)**
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Un-restricted band emissions above 1GHz Limit	
Operating Band	**Limit**
5.15 - 5.25 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.25 - 5.35 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.47 - 5.725 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.725 - 5.85 GHz	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 1: Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

3.4.2 Measuring Instruments

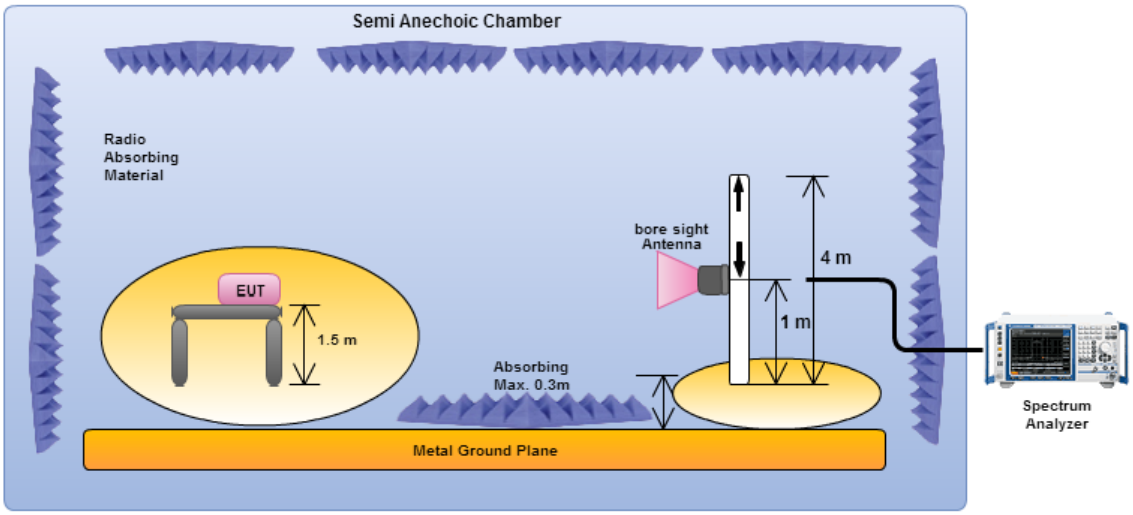
Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

Test Method		
▪ Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).		
▪ The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].		
▪ For the transmitter unwanted emissions shall be measured using following options below:		
	▪ Refer as FCC KDB 789033 D02 v01r02, clause H)2) for unwanted emissions into non-restricted bands.	
	▪ Refer as FCC KDB 789033 D02 v01r02, clause H)1) for unwanted emissions into restricted bands.	
		☐ Refer as FCC KDB 789033 D02 v01r02, H)6) Method AD (Trace Averaging).
		☒ Refer as FCC KDB 789033 D02 v01r02, H)6) Method VB (Reduced VBW).
		☐ Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.
		☐ Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions.
		☒ Refer as FCC KDB 789033 D02 v01r02, clause H)5) measurement procedure peak limit.
		☐ Refer as ANSI C63.10, clause 4.2.3.2.2 measurement procedure peak limit.
▪ For radiated measurement.		
	▪ Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.	
	▪ Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.	
	▪ Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.	
▪ The any unwanted emissions level shall not exceed the fundamental emission level.		
▪ All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.		

3.4.4 Test Setup

Transmitter Radiated Unwanted Emissions
Above 1GHz



3.4.5 Test Result of Transmitter Unwanted Emissions

Refer as Appendix D

3.5 Frequency Stability

3.5.1 Frequency Stability Limit

Frequency Stability Limit
UNII Devices
▪ In-band emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.
LE-LAN Devices
▪ N/A
IEEE Std. 802.11
▪ The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band and ± 25 ppm maximum for the 2.4 GHz band.

3.5.2 Measuring Instruments

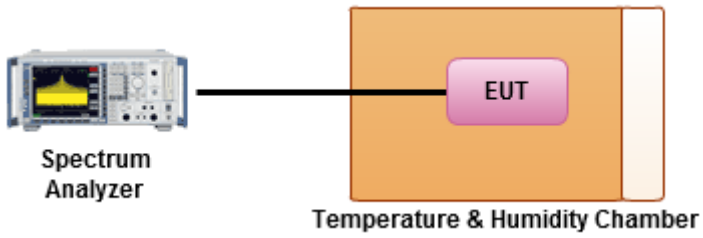
Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

Test Method	
▪ Refer as ANSI C63.10, clause 6.8 for frequency stability tests	
	▪ Frequency stability with respect to ambient temperature
	▪ Frequency stability when varying supply voltage
	▪ Extreme temperature is -30°C~50°C.

3.5.4 Test Setup

Frequency Stability



3.5.5 Test Result of Frequency Stability

Refer as Appendix E

4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Oct. 22, 2015	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 21, 2015	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 18, 2016	Radiation (03CH01-CB)
Pre-Amplifier	WM	TF-130N-R1	923365	26GHz ~ 40GHz	Nov. 13, 2015	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Oct. 27, 2015	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Nov. 02, 2015	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-17	N/A	1 GHz ~ 18 GHz	Nov. 02, 2015	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-1	N/A	18GHz ~ 40 GHz	Nov. 02, 2015	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-2	N/A	18GHz ~ 40 GHz	Nov. 02, 2015	Radiation (03CH01-CB)
Test Software	Audix	E3	6.2009-l0-7	N/A	N/A	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 09, 2015	Conducted (TH01-CB)
Temp. and Humidity Chamber	Ten Billion	TTH-C2SP	TBN-1010206	-20~150 degree	Mar. 10. 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-6	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-7	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-8	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-9	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 02, 2015	Conducted (TH01-CB)

Note: Calibration Interval of instruments listed above is one year.

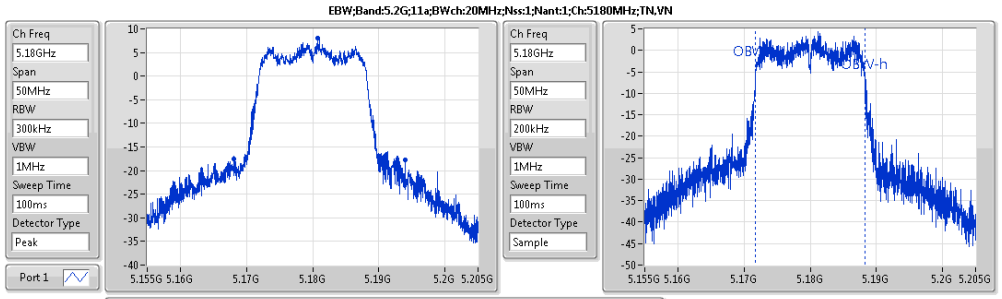
Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.2G;11a;20;1;1	36.45M	16.542M	16M5D1D	25.9M	16.492M
5.8G;11a;20;1;1	15.275M	31.359M	31M4D1D	15.1M	30.86M
5.2G;HT20;20;1,(M0-15);2	43.95M	17.916M	17M9D1D	31.9M	17.616M
5.8G;HT20;20;1,(M0-15);2	17.275M	31.659M	31M7D1D	14.45M	29.385M
5.2G;HT40;40;1,(M0-15);2	91.55M	36.632M	36M6D1D	39.3M	36.182M
5.8G;HT40;40;1,(M0-15);2	35.7M	58.971M	59M0D1D	35.3M	46.177M

Result

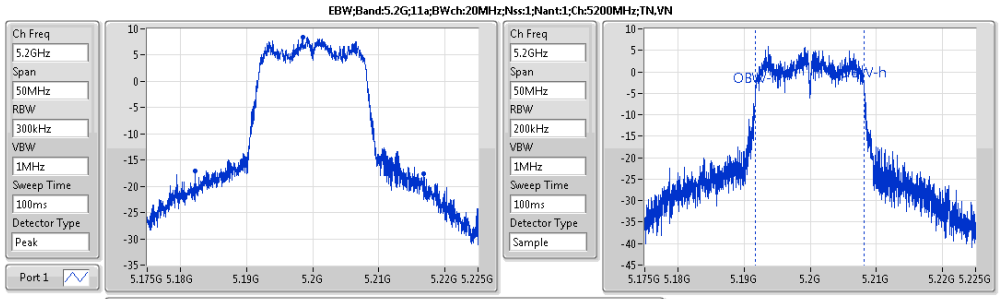
Mode	Result	Limit	P1-N dB (Hz)	P1-OBW (Hz)	P2-N dB (Hz)	P2-OBW (Hz)
5.2G;11a;20;1;1;5180;L;TN,VN	Pass	Inf	25.9M	16.492M		
5.2G;11a;20;1;1;5200;M;TN,VN	Pass	Inf	34.525M	16.517M		
5.2G;11a;20;1;1;5240;H;TN,VN	Pass	Inf	36.45M	16.542M		
5.8G;11a;20;1;1;5745;L;TN,VN	Pass	500k	15.275M	30.86M		
5.8G;11a;20;1;1;5785;M;TN,VN	Pass	500k	15.125M	31.184M		
5.8G;11a;20;1;1;5825;H;TN,VN	Pass	500k	15.1M	31.359M		
5.2G;HT20;20;1,(M0-15);2;5180;L;TN,VN	Pass	Inf	41.825M	17.816M	41.175M	17.916M
5.2G;HT20;20;1,(M0-15);2;5200;M;TN,VN	Pass	Inf	31.9M	17.616M	42.175M	17.766M
5.2G;HT20;20;1,(M0-15);2;5240;H;TN,VN	Pass	Inf	43.95M	17.791M	43.375M	17.891M
5.8G;HT20;20;1,(M0-15);2;5745;L;TN,VN	Pass	500k	15.075M	30.885M	17.275M	30.035M
5.8G;HT20;20;1,(M0-15);2;5785;M;TN,VN	Pass	500k	14.45M	31.659M	15.075M	30.51M
5.8G;HT20;20;1,(M0-15);2;5825;H;TN,VN	Pass	500k	15.05M	29.535M	15.05M	29.385M
5.2G;HT40;40;1,(M0-15);2;5190;L;TN,VN	Pass	Inf	42.25M	36.182M	39.3M	36.282M
5.2G;HT40;40;1,(M0-15);2;5230;H;TN,VN	Pass	Inf	81.05M	36.382M	91.55M	36.632M
5.8G;HT40;40;1,(M0-15);2;5755;L;TN,VN	Pass	500k	35.3M	50.875M	35.65M	46.177M
5.8G;HT40;40;1,(M0-15);2;5795;H;TN,VN	Pass	500k	35.65M	58.971M	35.7M	55.722M

EBW;Band:5.2G;11a;BWch:20MHz;Nss:1;Nant:1;Ch:5180MHz;TN,VN



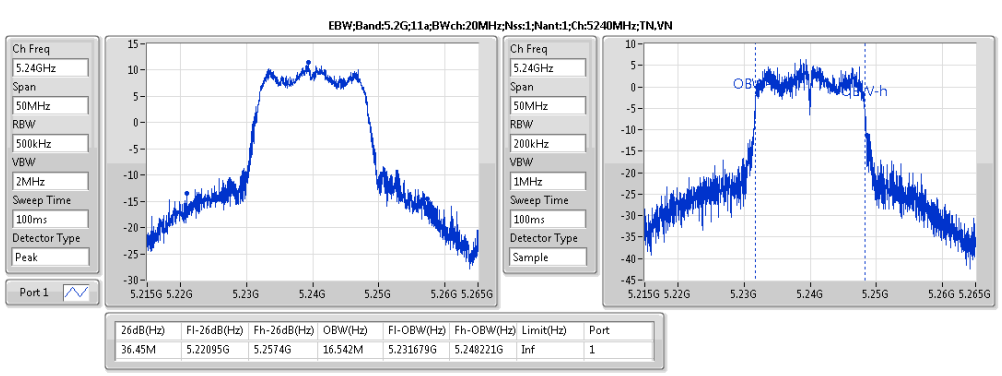
26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
25.9M	5.16805G	5.19395G	16.492M	5.171729G	5.188221G	Inf	1

EBW;Band:5.2G;11a;BWch:20MHz;Nss:1;Nant:1;Ch:5200MHz;TN,VN



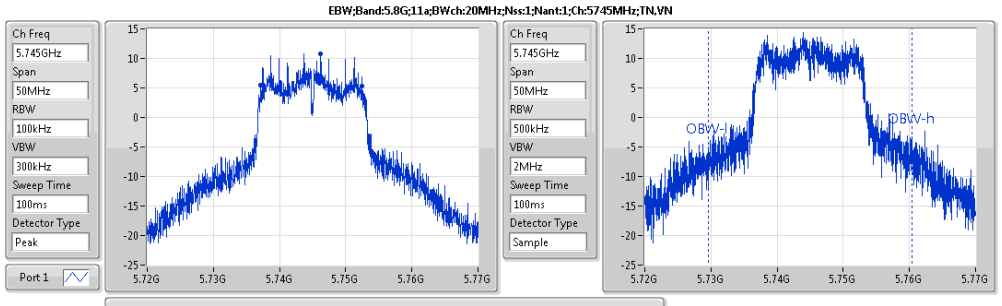
26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
34.525M	5.182225G	5.21675G	16.517M	5.191679G	5.208196G	Inf	1

EBW;Band:5.2G;11a;BWch:20MHz;Nss:1;Nant:1;Ch:5240MHz;TN,VN



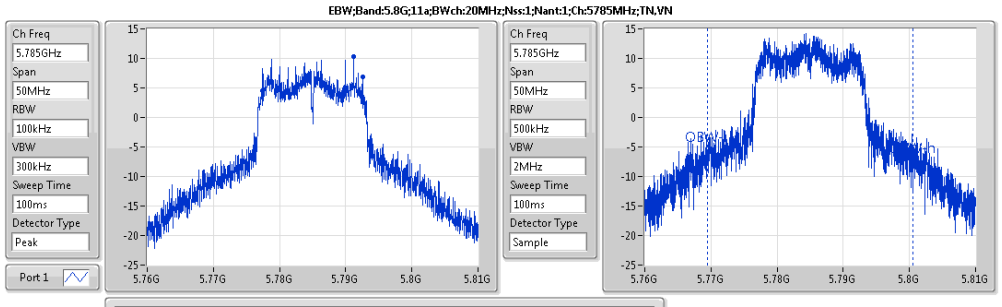
26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.45M	5.22095G	5.2574G	16.542M	5.231679G	5.248221G	Inf	1

EBW;Band:5.8G;11a;BWch:20MHz;Nss:1;Nant:1;Ch:5745MHz;TN,VN



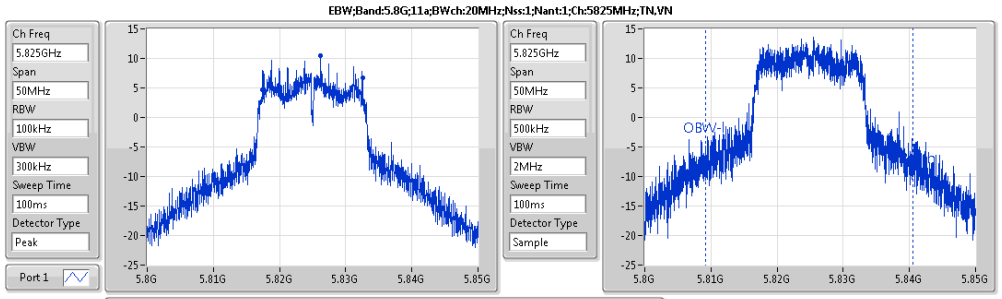
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15.275M	5.7372G	5.752475G	30.86M	5.729583G	5.760442G	500k	1

EBW;Band:5.8G;11a;BWch:20MHz;Nss:1;Nant:1;Ch:5785MHz;TN,VN



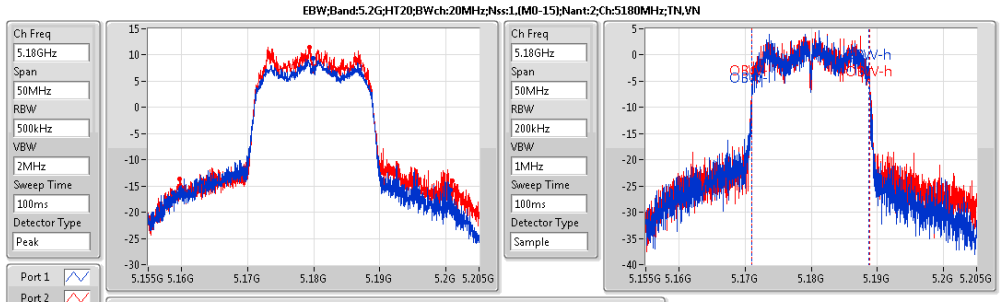
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15.125M	5.7774G	5.792525G	31.184M	5.769408G	5.800592G	500k	1

EBW;Band:5.8G;11a;BWch:20MHz;Nss:1;Nant:1;Ch:5825MHz;TN,VN



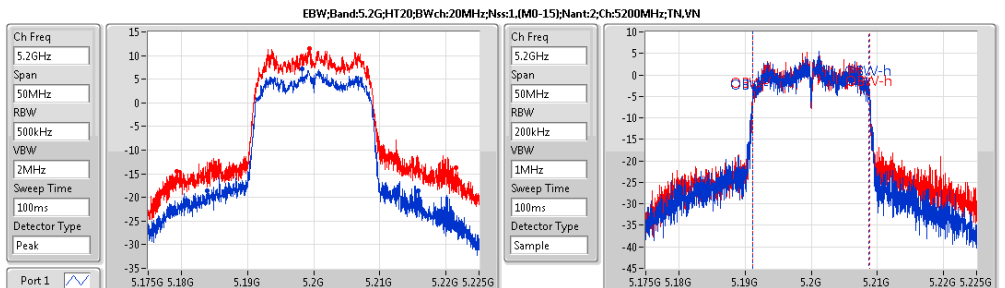
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15.1M	5.817425G	5.832525G	31.359M	5.809208G	5.840567G	500k	1

EBW;Band:5.2G;HT20;BWch:20MHz;Nss:1,(M0-15);Nant:2;Ch:5180MHz;TN,VN



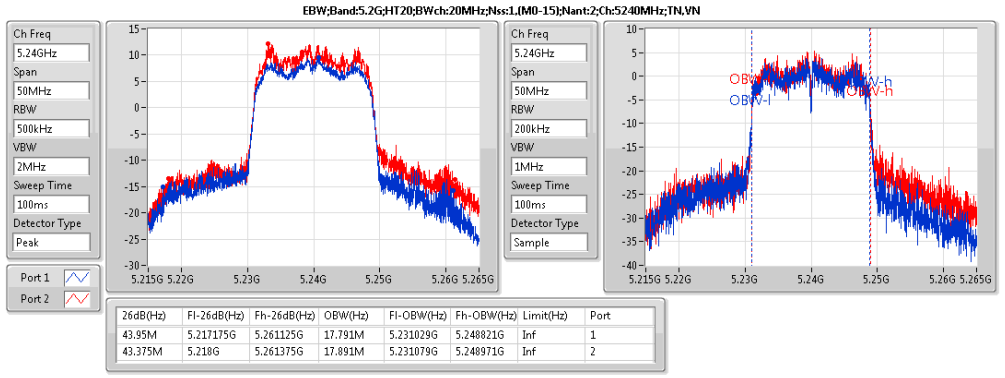
26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
41.825M	5.158825G	5.20065G	17.816M	5.170955G	5.188771G	Inf	1
41.175M	5.1598G	5.200975G	17.916M	5.17098G	5.188896G	Inf	2

EBW;Band:5.2G;HT20;BWch:20MHz;Nss:1,(M0-15);Nant:2;Ch:5200MHz;TN,VN



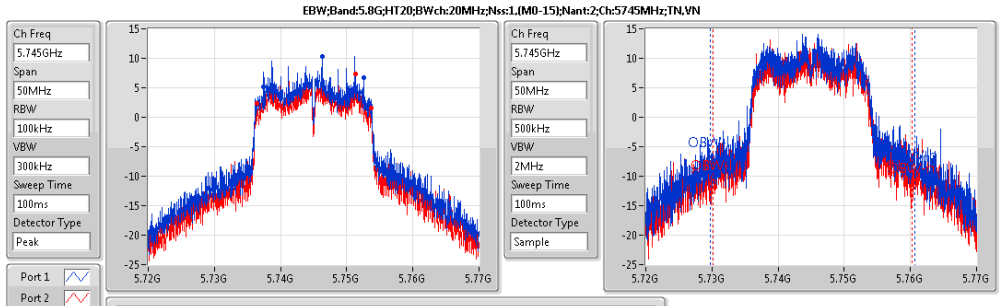
26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
31.9M	5.18395G	5.21585G	17.616M	5.191154G	5.208771G	Inf	1
42.175M	5.1793G	5.221475G	17.766M	5.191104G	5.208871G	Inf	2

EBW;Band:5.2G;HT20;BWch:20MHz;Nss:1,(M0-15);Nant:2;Ch:5240MHz;TN,VN



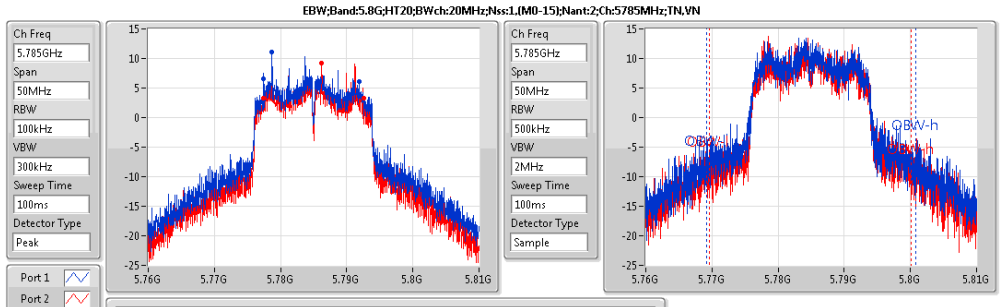
26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
43.95M	5.217175G	5.261125G	17.791M	5.231029G	5.248821G	Inf	1
43.375M	5.218G	5.261375G	17.891M	5.231079G	5.248971G	Inf	2

EBW;Band:5.8G;HT20;BWch:20MHz;Nss:1,(M0-15);Nant:2;Ch:5745MHz;TN,VN



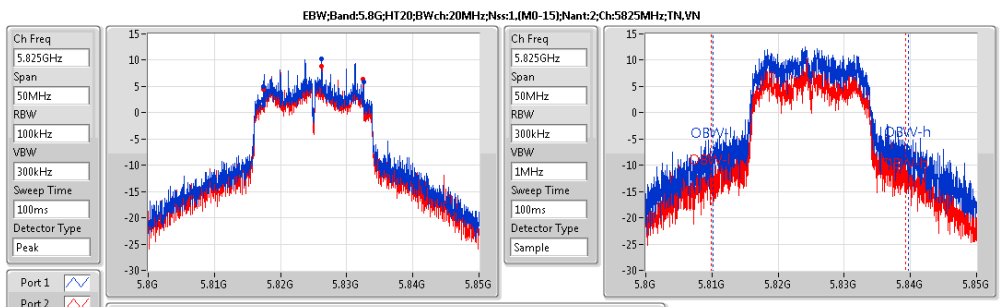
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15.075M	5.73745G	5.752525G	30.885M	5.729783G	5.760667G	500k	1
17.275M	5.736475G	5.75375G	30.035M	5.730157G	5.760192G	500k	2

EBW;Band:5.8G;HT20;BWch:20MHz;Nss:1,(M0-15);Nant:2;Ch:5785MHz;TN,VN



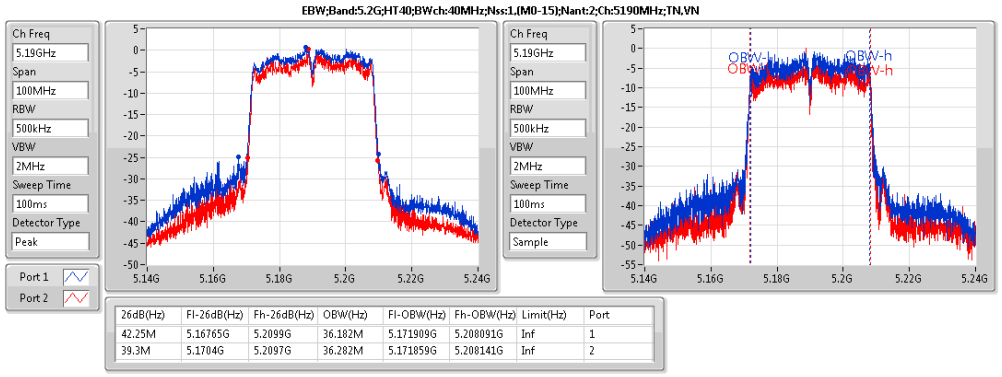
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
14.45M	5.777425G	5.791875G	31.659M	5.769133G	5.800792G	500k	1
15.075M	5.777475G	5.79255G	30.51M	5.769558G	5.800067G	500k	2

EBW;Band:5.8G;HT20;BWch:20MHz;Nss:1,(M0-15);Nant:2;Ch:5825MHz;TN,VN



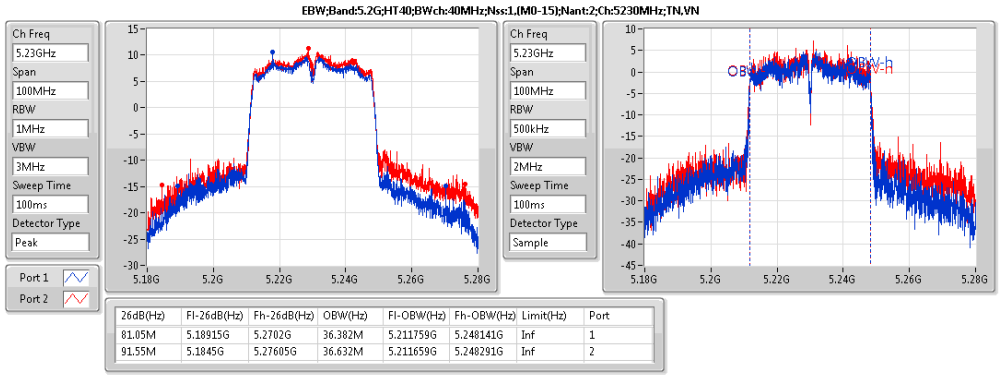
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15.05M	5.817475G	5.832525G	29.535M	5.810207G	5.839743G	500k	1
15.05M	5.817425G	5.832475G	29.385M	5.809933G	5.839318G	500k	2

EBW;Band:5.2G;HT40;BWch:40MHz;Nss:1,(M0-15);Nant:2;Ch:5190MHz;TN,VN



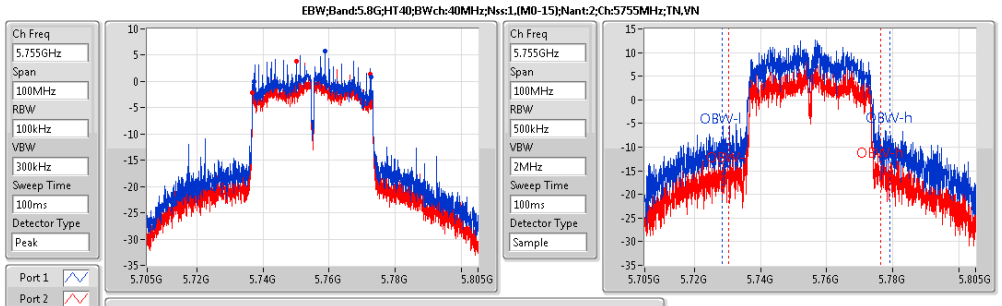
26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
42.25M	5.16765G	5.2099G	36.182M	5.171909G	5.208091G	Inf	1
39.3M	5.1704G	5.2097G	36.282M	5.171859G	5.208141G	Inf	2

EBW;Band:5.2G;HT40;BWch:40MHz;Nss:1,(M0-15);Nant:2;Ch:5230MHz;TN,VN



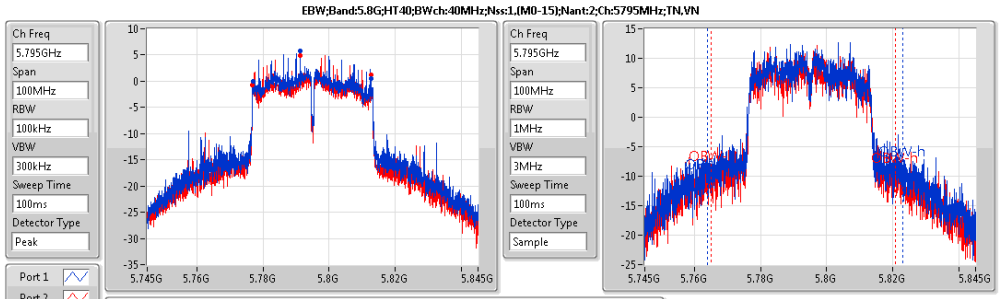
26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
81.05M	5.18915G	5.2702G	36.382M	5.211759G	5.248141G	Inf	1
91.55M	5.1845G	5.27605G	36.632M	5.211659G	5.248291G	Inf	2

EBW;Band:5.8G;HT40;BWch:40MHz;Nss:1,(M0-15);Nant:2;Ch:5755MHz;TN,VN



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
35.3M	5.73725G	5.77255G	50.875M	5.728263G	5.779138G	500k	1
35.65M	5.73685G	5.7725G	46.177M	5.730212G	5.776389G	500k	2

EBW;Band:5.8G;HT40;BWch:40MHz;Nss:1,(M0-15);Nant:2;Ch:5795MHz;TN,VN



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
35.65M	5.7769G	5.81255G	58.971M	5.764065G	5.823036G	500k	1
35.7M	5.77685G	5.81255G	55.722M	5.765065G	5.820787G	500k	2

Summary

Mode	Sum (dBm)	Sum (W)	EIRP (dBm)	EIRP (W)
5.2G;11a;20;1;1	17.65	0.05821	22.96	0.1977
5.8G;11a;20;1;1	21.94	0.15631	26.01	0.39902
5.2G;HT20;20;1,(M0-15);2	18.51	0.07096	26.39	0.43551
5.8G;HT20;20;1,(M0-15);2	22.86	0.1932	29.15	0.82224
5.2G;HT40;40;1,(M0-15);2	18.04	0.06368	25.92	0.39084
5.8G;HT40;40;1,(M0-15);2	22.57	0.18072	28.86	0.76913

Result

Mode	Result	DG (dBi)	EIRP (dBm)	EIRP Lim. (dBm)	Sum (dBm)	Sum Lim. (dBm)	P1 (dBm)	P2 (dBm)
5.2G;11a;20;1;1;5180;L;TN,VN	Pass	5.31	21.75	29.98	16.44	23.98	16.44	
5.2G;11a;20;1;1;5200;M;TN,VN	Pass	5.31	21.97	29.98	16.66	23.98	16.66	
5.2G;11a;20;1;1;5240;H;TN,VN	Pass	5.31	22.96	29.98	17.65	23.98	17.65	
5.8G;11a;20;1;1;5745;L;TN,VN	Pass	4.07	26.01	36.00	21.94	30.00	21.94	
5.8G;11a;20;1;1;5785;M;TN,VN	Pass	4.07	25.99	36.00	21.92	30.00	21.92	
5.8G;11a;20;1;1;5825;H;TN,VN	Pass	4.07	25.96	36.00	21.89	30.00	21.89	
5.2G;HT20;20;1,(M0-15);2;5180;L;TN,VN	Pass	7.88	25.73	28.10	17.85	22.10	14.86	14.82
5.2G;HT20;20;1,(M0-15);2;5200;M;TN,VN	Pass	7.88	25.87	28.10	17.99	22.10	14.57	15.36
5.2G;HT20;20;1,(M0-15);2;5240;H;TN,VN	Pass	7.88	26.39	28.10	18.51	22.10	15.13	15.84
5.8G;HT20;20;1,(M0-15);2;5745;L;TN,VN	Pass	6.29	29.15	35.71	22.86	29.71	20.21	19.45
5.8G;HT20;20;1,(M0-15);2;5785;M;TN,VN	Pass	6.29	29.12	35.71	22.83	29.71	19.85	19.78
5.8G;HT20;20;1,(M0-15);2;5825;H;TN,VN	Pass	6.29	28.69	35.71	22.4	29.71	19.46	19.32
5.2G;HT40;40;1,(M0-15);2;5190;L;TN,VN	Pass	7.88	19.26	28.10	11.38	22.10	9.54	6.75
5.2G;HT40;40;1,(M0-15);2;5230;H;TN,VN	Pass	7.88	25.92	28.10	18.04	22.10	15.05	15.01
5.8G;HT40;40;1,(M0-15);2;5755;L;TN,VN	Pass	6.29	27.56	35.71	21.27	29.71	18.87	17.56
5.8G;HT40;40;1,(M0-15);2;5795;H;TN,VN	Pass	6.29	28.86	35.71	22.57	29.71	19.68	19.44

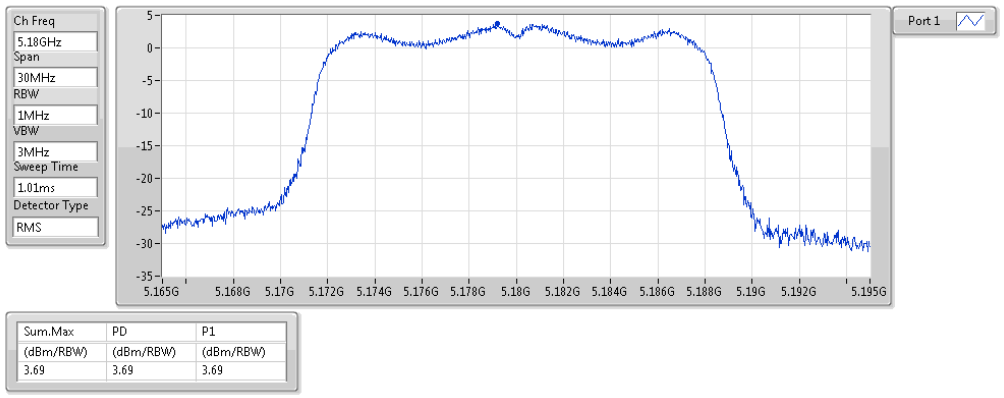
Summary

Mode	PD (dBm/RBW)	EIRP.PD (dBm/RBW)
5.2G;11a;20;1;1	5.44	10.75
5.8G;11a;20;1;1	8.46	12.53
5.2G;HT20;20;1,(M0-15);2	7.05	16.75
5.8G;HT20;20;1,(M0-15);2	9.80	18.06
5.2G;HT40;40;1,(M0-15);2	2.96	12.66
5.8G;HT40;40;1,(M0-15);2	5.07	13.34

Result

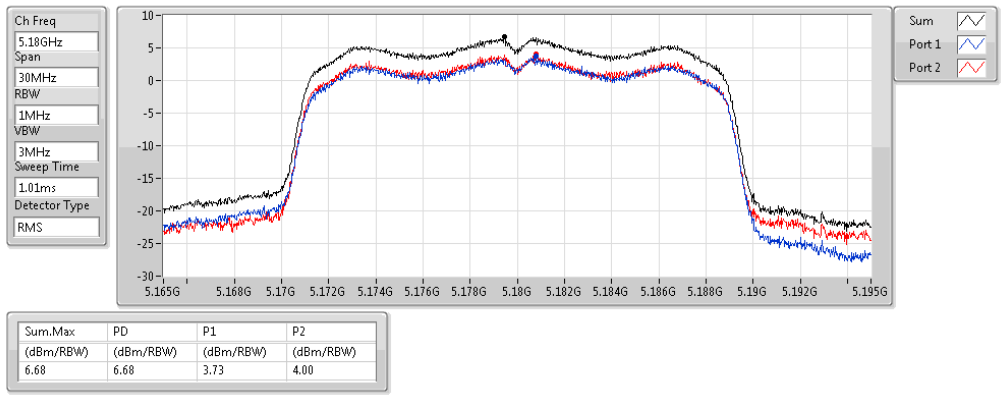
Mode	Result	Meas.RBW (Hz)	Lim.RBW (Hz)	BWCF (dB)	DG (dBi)	Sum.Max (dBm/RBW)	PD (dBm/RBW)	PD.Limit (dBm/RBW)	EIRP.PD (dBm/RBW)	EIRP.PD.Lim (dBm/RBW)	P1 (dBm/RBW)	P2 (dBm/RBW)
5.2G;11a;20;1;1;5180;L;TN,VN	Pass	1M	1M	0.00	5.31	3.69	3.69	11.00	9.00	Inf	3.69	
5.2G;11a;20;1;1;5200;M;TN,VN	Pass	1M	1M	0.00	5.31	5.24	5.24	11.00	10.55	Inf	5.24	
5.2G;11a;20;1;1;5240;H;TN,VN	Pass	1M	1M	0.00	5.31	5.44	5.44	11.00	10.75	Inf	5.44	
5.8G;11a;20;1;1;5745;L;TN,VN	Pass	500k	500k	0.00	4.07	8.46	8.46	30.00	12.53	36.00	8.46	
5.8G;11a;20;1;1;5785;M;TN,VN	Pass	500k	500k	0.00	4.07	-6.62	-6.62	30.00	-2.55	36.00	-6.62	
5.8G;11a;20;1;1;5825;H;TN,VN	Pass	500k	500k	0.00	4.07	8.19	8.19	30.00	12.26	36.00	8.19	
5.2G;HT20;20;1,(M0-15);2;5180;L;TN,VN	Pass	1M	1M	0.00	9.70	6.68	6.68	7.30	16.38	Inf	3.73	4.00
5.2G;HT20;20;1,(M0-15);2;5200;M;TN,VN	Pass	1M	1M	0.00	9.70	6.78	6.78	7.30	16.48	Inf	3.93	3.92
5.2G;HT20;20;1,(M0-15);2;5240;H;TN,VN	Pass	1M	1M	0.00	9.70	7.05	7.05	7.30	16.75	Inf	3.81	4.68
5.8G;HT20;20;1,(M0-15);2;5745;L;TN,VN	Pass	500k	500k	0.00	8.26	9.80	9.80	27.74	18.06	33.74	7.58	6.29
5.8G;HT20;20;1,(M0-15);2;5785;M;TN,VN	Pass	500k	500k	0.00	8.26	9.67	9.67	27.74	17.93	33.74	7.25	6.41
5.8G;HT20;20;1,(M0-15);2;5825;H;TN,VN	Pass	500k	500k	0.00	8.26	9.36	9.36	27.74	17.62	33.74	6.95	5.75
5.2G;HT40;40;1,(M0-15);2;5190;L;TN,VN	Pass	1M	1M	0.00	9.70	-3.48	-3.48	7.30	6.22	Inf	-5.35	-7.94
5.2G;HT40;40;1,(M0-15);2;5230;H;TN,VN	Pass	1M	1M	0.00	9.70	2.96	2.96	7.30	12.66	Inf	-0.32	0.30
5.8G;HT40;40;1,(M0-15);2;5755;L;TN,VN	Pass	500k	500k	0.00	8.26	4.60	4.60	27.74	12.86	33.74	2.36	0.70
5.8G;HT40;40;1,(M0-15);2;5795;H;TN,VN	Pass	500k	500k	0.00	8.26	5.07	5.07	27.74	13.34	33.74	2.52	1.57

PSD;Band:5.2G;11a;BWch:20MHz;Nss:1;Nant:1;Ch:5180MHz;TN,VN



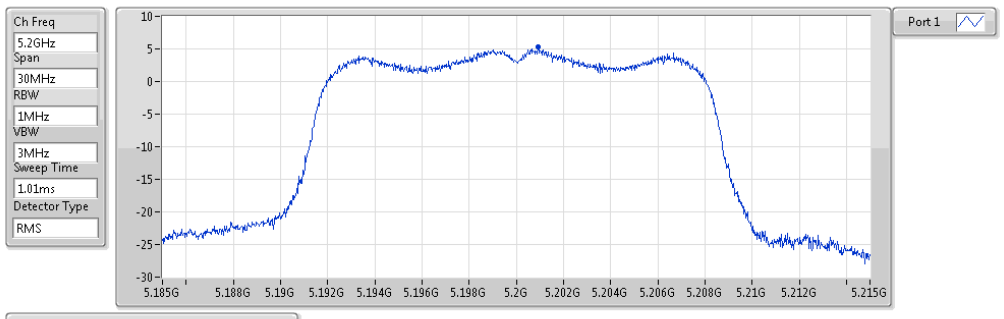
Sum.Max	PD	P1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
3.69	3.69	3.69

PSD;Band:5.2G;HT20;BWch:20MHz;Nss:1,(M0-15);Nant:2;Ch:5180MHz;TN,VN



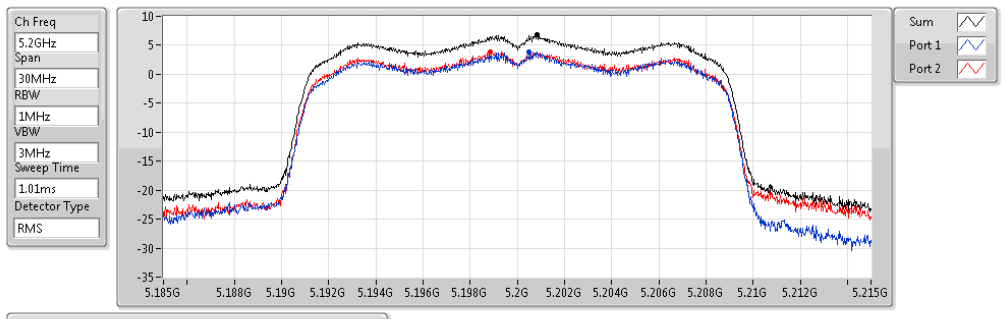
Sum.Max	PD	P1	P2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
6.68	6.68	3.73	4.00

PSD;Band:5.2G;11a;BWch:20MHz;Nss:1;Nant:1;Ch:5200MHz;TN,VN



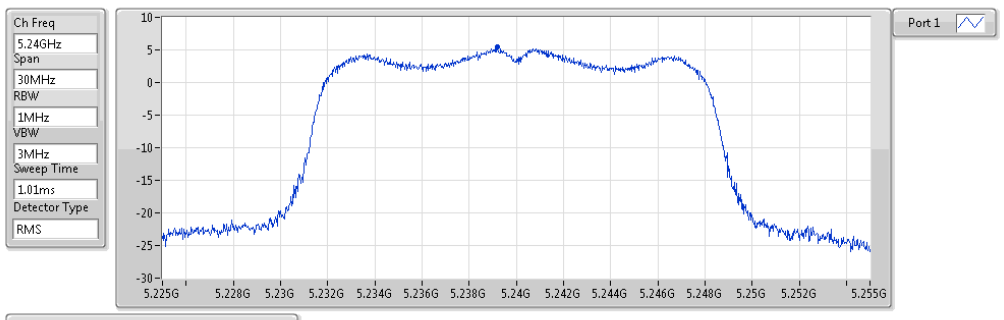
Sum.Max	PD	P1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
5.24	5.24	5.24

PSD;Band:5.2G;HT20;BWch:20MHz;Nss:1,(M0-15);Nant:2;Ch:5200MHz;TN,VN



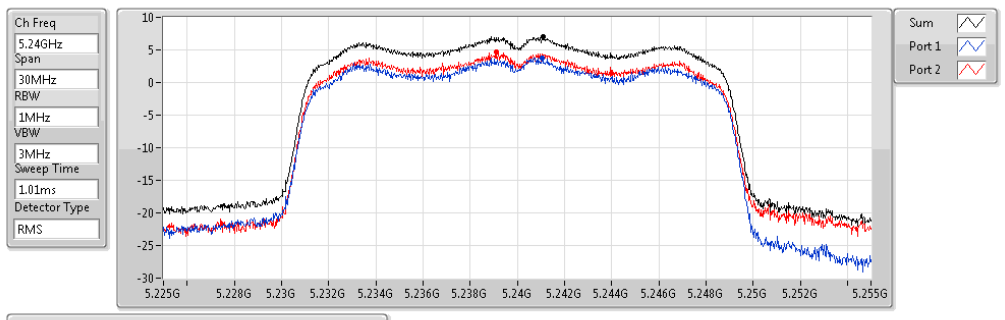
Sum.Max	PD	P1	P2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
6.78	6.78	3.93	3.92

PSD;Band:5.2G;11a;BWch:20MHz;Nss:1;Nant:1;Ch:5240MHz;TN,VN



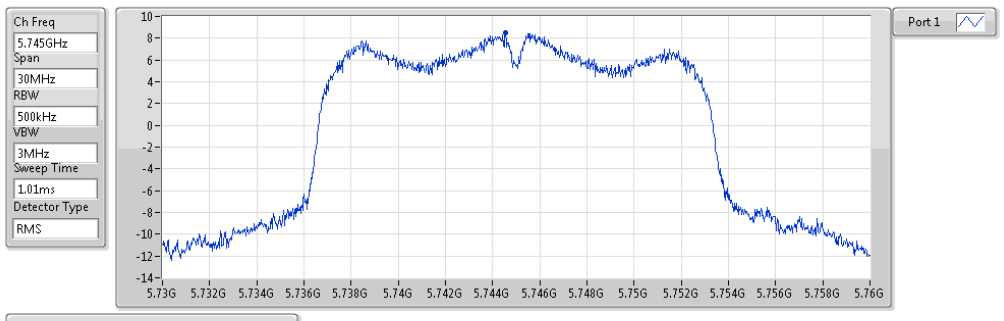
Sum.Max	PD	P1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
5.44	5.44	5.44

PSD;Band:5.2G;HT20;BWch:20MHz;Nss:1,(M0-15);Nant:2;Ch:5240MHz;TN,VN



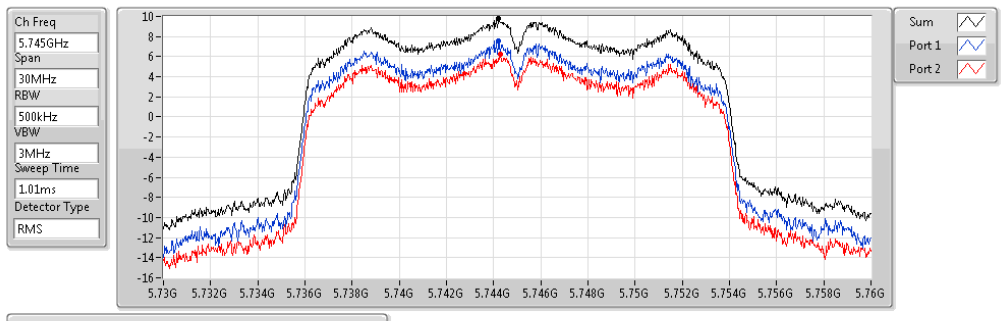
Sum.Max	PD	P1	P2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
7.05	7.05	3.81	4.68

PSD;Band:5.8G;11a;BWch:20MHz;Nss:1;Nant:1;Ch:5745MHz;TN,VN



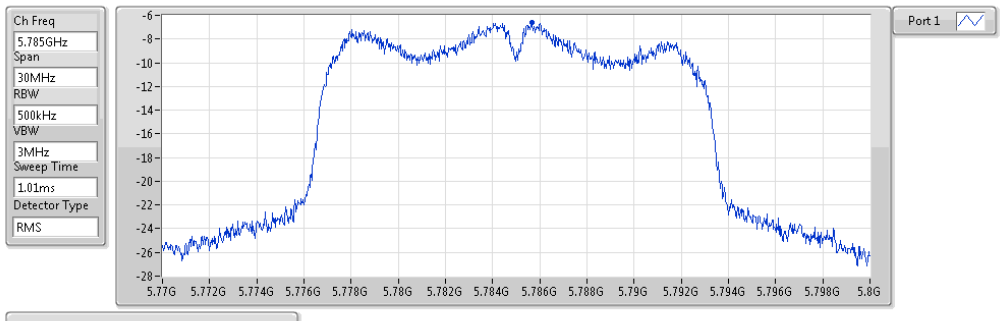
Sum.Max	PD	P1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
8.46	8.46	8.46

PSD;Band:5.8G;HT20;BWch:20MHz;Nss:1,(M0-15);Nant:2;Ch:5745MHz;TN,VN



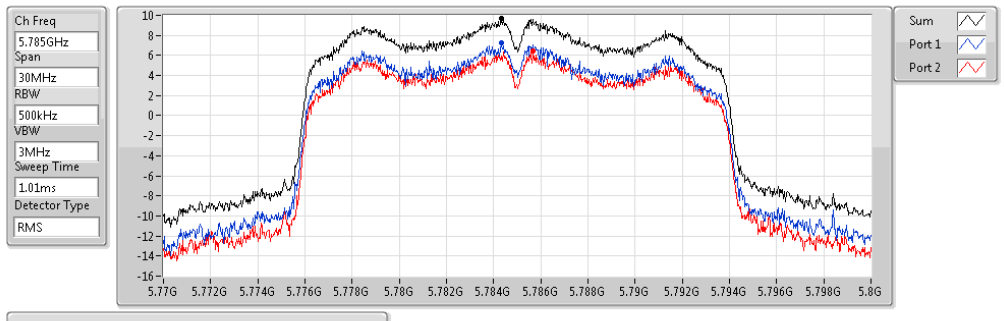
Sum.Max	PD	P1	P2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
9.80	9.80	7.58	6.29

PSD;Band:5.8G;11a;BWch:20MHz;Nss:1;Nant:1;Ch:5785MHz;TN,VN



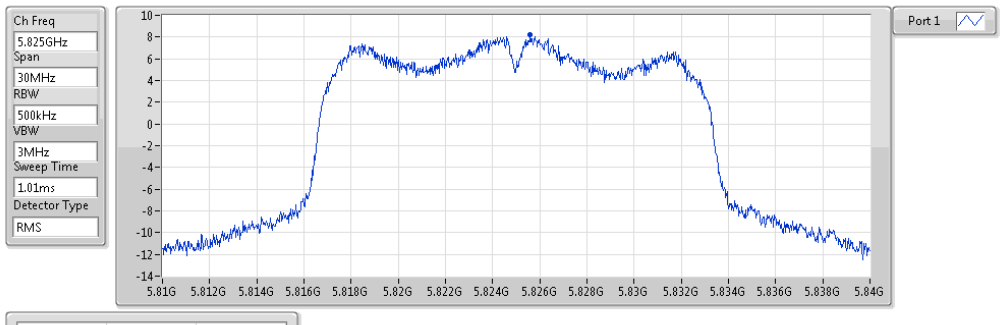
Sum.Max	PD	P1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-6.62	-6.62	-6.62

PSD;Band:5.8G;HT20;BWch:20MHz;Nss:1,(M0-15);Nant:2;Ch:5785MHz;TN,VN



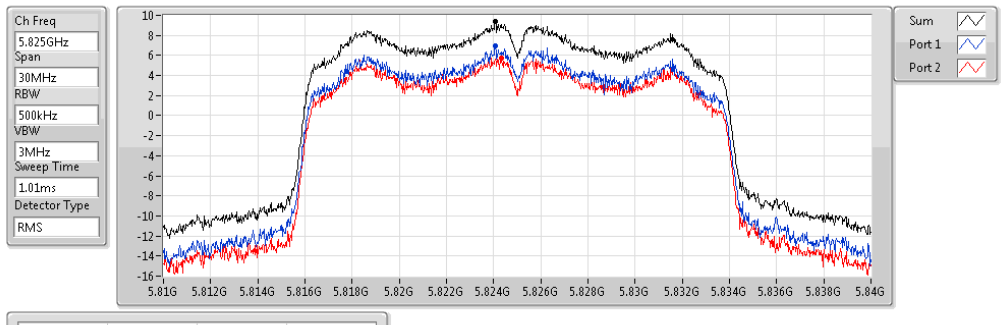
Sum.Max	PD	P1	P2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
9.67	9.67	7.25	6.41

PSD;Band:5.8G;11a;BWch:20MHz;Nss:1;Nant:1;Ch:5825MHz;TN,VN

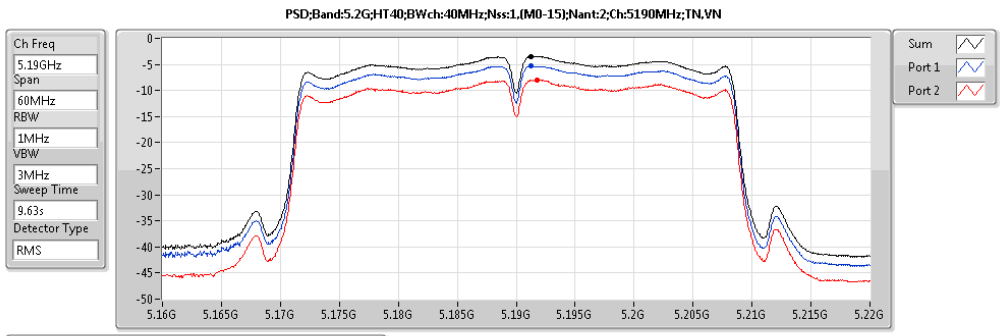


Sum.Max	PD	P1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
8.19	8.19	8.19

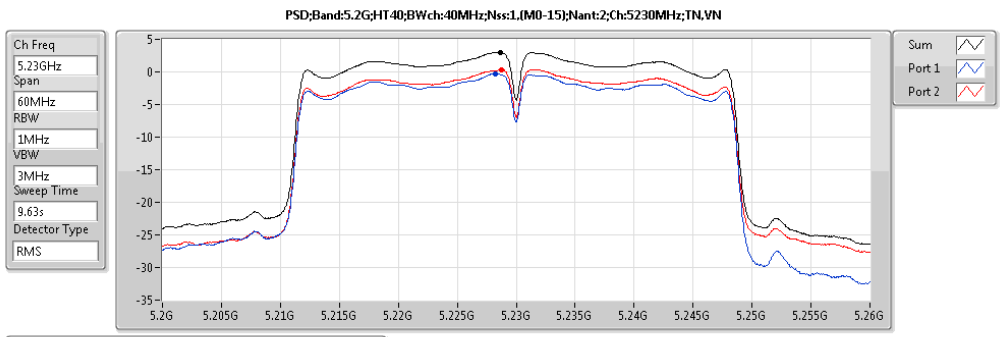
PSD;Band:5.8G;HT20;BWch:20MHz;Nss:1,(M0-15);Nant:2;Ch:5825MHz;TN,VN



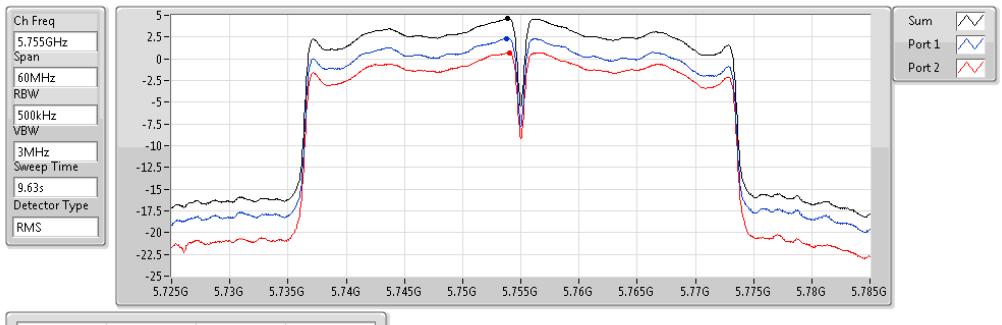
Sum.Max	PD	P1	P2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
9.36	9.36	6.95	5.75



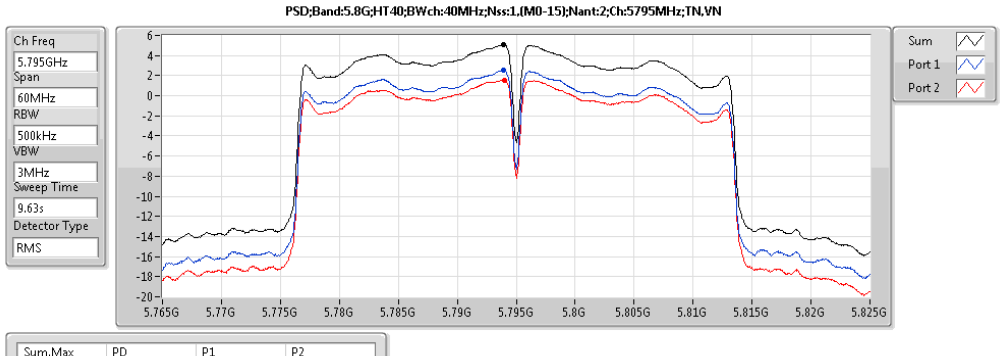
Sum.Max	PD	P1	P2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-3.48	-3.48	-5.35	-7.94



Sum.Max	PD	P1	P2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
2.96	2.96	-0.32	0.30



Sum.Max	PD	P1	P2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
4.60	4.60	2.36	0.70



Sum.Max	PD	P1	P2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
5.07	5.07	2.52	1.57

Radiated Emissions (1GHz~40GHz)

Configurations	IEEE 802.11a CH 36 / Chain 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15541.10	47.26	54.00	-6.74	31.10	13.26	38.25	35.35	197	215	Average	HORIZONTAL
2	15541.86	60.46	74.00	-13.54	44.30	13.26	38.25	35.35	197	215	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15539.50	47.85	54.00	-6.15	31.69	13.26	38.25	35.35	200	309	Average	VERTICAL
2	15542.54	61.05	74.00	-12.95	44.89	13.26	38.25	35.35	200	309	Peak	VERTICAL

Configurations	IEEE 802.11a CH 40 / Chain 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15536.48	47.85	54.00	-6.15	31.69	13.26	38.25	35.35	198	248	Average	HORIZONTAL
2	15542.36	60.54	74.00	-13.46	44.38	13.26	38.25	35.35	198	248	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15535.58	48.01	54.00	-5.99	31.85	13.26	38.25	35.35	199	248	Average	VERTICAL
2	15542.98	60.41	74.00	-13.59	44.25	13.26	38.25	35.35	199	248	Peak	VERTICAL

Configurations	IEEE 802.11a CH 48 / Chain 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15717.26	60.92	74.00	-13.08	44.92	13.35	38.03	35.38	197	245	Peak	HORIZONTAL
2	15720.90	47.00	54.00	-7.00	31.00	13.35	38.03	35.38	197	245	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15717.88	46.96	74.00	-27.04	30.96	13.35	38.03	35.38	198	246	Peak	VERTICAL
2	15718.94	47.11	54.00	-6.89	31.11	13.35	38.03	35.38	198	246	Average	VERTICAL

Configurations	IEEE 802.11a CH 149 / Chain 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11486.68	44.50	54.00	-9.50	28.13	11.60	40.00	35.23	196	243	Average	HORIZONTAL
2	11494.58	58.06	74.00	-15.94	41.69	11.60	40.00	35.23	196	243	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11488.00	57.74	74.00	-16.26	41.37	11.60	40.00	35.23	195	244	Peak	VERTICAL
2	11493.60	44.53	54.00	-9.47	28.16	11.60	40.00	35.23	195	244	Average	VERTICAL

Configurations	IEEE 802.11a CH 157 / Chain 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11568.34	58.63	74.00	-15.37	42.35	11.64	39.87	35.23	200	239	Peak	HORIZONTAL
2	11568.60	45.27	54.00	-8.73	28.99	11.64	39.87	35.23	200	239	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11570.40	58.64	74.00	-15.36	42.36	11.64	39.87	35.23	198	241	Peak	VERTICAL
2	11574.10	45.24	54.00	-8.76	28.96	11.64	39.87	35.23	198	241	Average	VERTICAL

Configurations	IEEE 802.11a CH 165 / Chain 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11652.40	45.94	54.00	-8.06	29.78	11.71	39.67	35.22	199	234	Average	HORIZONTAL
2	11654.82	59.23	74.00	-14.77	43.07	11.71	39.67	35.22	199	234	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11646.16	46.07	54.00	-7.93	29.87	11.69	39.73	35.22	201	237	Average	VERTICAL
2	11650.96	58.80	74.00	-15.20	42.64	11.71	39.67	35.22	201	237	Peak	VERTICAL

Configurations	IEEE 802.11n MCS0 HT20 CH 36 / Chain 1 + Chain 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15537.24	60.75	74.00	-13.25	44.59	13.26	38.25	35.35	199	230	Peak	HORIZONTAL
2	15538.72	47.89	54.00	-6.11	31.73	13.26	38.25	35.35	199	230	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15536.00	61.04	74.00	-12.96	44.88	13.26	38.25	35.35	198	232	Peak	VERTICAL
2	15538.34	48.19	54.00	-5.81	32.03	13.26	38.25	35.35	198	232	Average	VERTICAL

Configurations	IEEE 802.11n MCS0 HT20 CH 40 / Chain 1 + Chain 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15595.88	47.50	54.00	-6.50	31.39	13.28	38.19	35.36	199	228	Average	HORIZONTAL
2	15599.68	61.10	74.00	-12.90	44.99	13.28	38.19	35.36	199	228	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15599.18	60.67	74.00	-13.33	44.56	13.28	38.19	35.36	198	230	Peak	VERTICAL
2	15599.34	47.67	54.00	-6.33	31.56	13.28	38.19	35.36	198	230	Average	VERTICAL

Configurations	IEEE 802.11n MCS0 HT20 CH 48 / Chain 1 + Chain 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15719.62	47.03	54.00	-6.97	31.03	13.35	38.03	35.38	195	224	Average	HORIZONTAL
2	15722.98	60.11	74.00	-13.89	44.11	13.35	38.03	35.38	195	224	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15718.22	59.91	74.00	-14.09	43.91	13.35	38.03	35.38	197	226	Peak	VERTICAL
2	15723.72	47.14	54.00	-6.86	31.14	13.35	38.03	35.38	197	226	Average	VERTICAL

Configurations	IEEE 802.11n MCS0 HT20 CH 149 / Chain 1 + Chain 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11487.04	44.61	54.00	-9.39	28.24	11.60	40.00	35.23	197	221	Average	HORIZONTAL
2	11493.96	57.70	74.00	-16.30	41.33	11.60	40.00	35.23	197	221	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11489.16	57.53	74.00	-16.47	41.16	11.60	40.00	35.23	194	223	Peak	VERTICAL
2	11492.86	44.65	54.00	-9.35	28.28	11.60	40.00	35.23	194	223	Average	VERTICAL

Configurations	IEEE 802.11n MCS0 HT20 CH 157 / Chain 1 + Chain 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11565.66	45.51	54.00	-8.49	29.23	11.64	39.87	35.23	193	217	Average	HORIZONTAL
2	11571.96	58.89	74.00	-15.11	42.61	11.64	39.87	35.23	193	217	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11565.64	45.53	54.00	-8.47	29.25	11.64	39.87	35.23	194	219	Average	VERTICAL
2	11570.98	58.02	74.00	-15.98	41.74	11.64	39.87	35.23	194	219	Peak	VERTICAL

Configurations	IEEE 802.11n MCS0 HT20 CH 165 / Chain 1 + Chain 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11646.30	46.17	54.00	-7.83	29.97	11.69	39.73	35.22	188	213	Average	HORIZONTAL
2	11646.42	58.90	74.00	-15.10	42.70	11.69	39.73	35.22	188	213	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11649.84	58.80	74.00	-15.20	42.60	11.69	39.73	35.22	191	215	Peak	VERTICAL
2	11654.52	46.06	54.00	-7.94	29.90	11.71	39.67	35.22	191	215	Average	VERTICAL

Configurations	IEEE 802.11n MCS0 HT40 CH 38 / Chain 1 + Chain 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15569.68	47.86	54.00	-6.14	31.75	13.28	38.19	35.36	183	208	Average	HORIZONTAL
2	15571.28	61.03	74.00	-12.97	44.92	13.28	38.19	35.36	183	208	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15565.96	47.67	54.00	-6.33	31.56	13.28	38.19	35.36	186	210	Average	VERTICAL
2	15573.94	59.89	74.00	-14.11	43.78	13.28	38.19	35.36	186	210	Peak	VERTICAL

Configurations	IEEE 802.11n MCS0 HT40 CH 46 / Chain 1 + Chain 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15689.58	47.16	54.00	-6.84	31.12	13.33	38.08	35.37	178	201	Average	HORIZONTAL
2	15691.78	60.82	74.00	-13.18	44.81	13.35	38.03	35.37	178	201	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15688.20	60.07	74.00	-13.93	44.03	13.33	38.08	35.37	180	203	Peak	VERTICAL
2	15690.38	47.20	54.00	-6.80	31.16	13.33	38.08	35.37	180	203	Average	VERTICAL

Configurations	IEEE 802.11n MCS0 HT40 CH 151 / Chain 1 + Chain 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11508.84	58.10	74.00	-15.90	41.73	11.60	40.00	35.23	183	195	Peak	HORIZONTAL
2	11511.76	44.99	54.00	-9.01	28.62	11.60	40.00	35.23	183	195	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11510.46	58.33	74.00	-15.67	41.96	11.60	40.00	35.23	181	198	Peak	VERTICAL
j 2	11513.74	45.35	54.00	-8.65	28.98	11.60	40.00	35.23	181	198	Average	VERTICAL

Configurations	IEEE 802.11n MCS0 HT40 CH 159 / Chain 1 + Chain 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11585.16	45.74	54.00	-8.26	29.49	11.67	39.80	35.22	189	191	Average	HORIZONTAL
2	11593.18	59.25	74.00	-14.75	43.00	11.67	39.80	35.22	189	191	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11591.22	45.89	54.00	-8.11	29.64	11.67	39.80	35.22	185	193	Average	VERTICAL
2	11593.10	58.69	74.00	-15.31	42.44	11.67	39.80	35.22	185	193	Peak	VERTICAL

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

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

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Band Edge Emissions

Configurations	IEEE 802.11a CH 36, 40, 48 / Chain 1

Channel 36

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5148.60	73.96	74.00	-0.04	68.15	7.23	31.52	32.94	211	77	Peak	VERTICAL
2	5150.00	53.25	54.00	-0.75	47.44	7.23	31.52	32.94	211	77	Average	VERTICAL
3	5179.20	99.21			93.34	7.26	31.55	32.94	211	77	Average	VERTICAL
4	5180.60	109.57			103.70	7.26	31.55	32.94	211	77	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 5180 MHz.

Channel 40

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5148.80	64.37	74.00	-9.63	58.56	7.23	31.52	32.94	206	73	Peak	VERTICAL
2	5150.00	44.96	54.00	-9.04	39.15	7.23	31.52	32.94	206	73	Average	VERTICAL
3	5199.20	99.90			94.00	7.28	31.56	32.94	206	73	Average	VERTICAL
4	5199.20	109.49			103.59	7.28	31.56	32.94	206	73	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 5200 MHz.

Channel 48

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5102.60	55.99	74.00	-18.01	50.27	7.18	31.48	32.94	211	87	Peak	VERTICAL
2	5150.00	43.62	54.00	-10.38	37.81	7.23	31.52	32.94	211	87	Average	VERTICAL
3	5239.40	99.19			93.23	7.31	31.59	32.94	211	87	Average	VERTICAL
4	5241.20	108.34			102.38	7.31	31.59	32.94	211	87	Peak	VERTICAL
5	5350.00	45.24	54.00	-8.76	39.12	7.37	31.68	32.93	211	87	Average	VERTICAL
6	5366.00	57.78	74.00	-16.22	51.64	7.38	31.69	32.93	211	87	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 5240 MHz.

Configurations	IEEE 802.11a CH 149, 157, 165 / Chain 1

Channel 149

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5633.88	61.88	68.20	-6.32	55.27	7.63	31.96	32.98	204	90	Peak	VERTICAL
2	5744.04	103.45			96.63	7.73	32.10	33.01	204	90	Average	VERTICAL
3	5744.04	113.13			106.31	7.73	32.10	33.01	204	90	Peak	VERTICAL
4	5933.04	57.97	68.20	-10.23	50.91	7.82	32.32	33.08	204	90	Peak	VERTICAL

Item 2, 3 are the fundamental frequency at 5745 MHz.

Channel 157

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5626.32	59.44	68.20	-8.76	52.82	7.63	31.96	32.97	201	88	Peak	VERTICAL
2	5784.00	113.91			107.04	7.76	32.14	33.03	201	88	Peak	VERTICAL
3	5786.16	104.03			97.16	7.76	32.14	33.03	201	88	Average	VERTICAL
4	5943.84	58.58	68.20	-9.62	51.51	7.82	32.34	33.09	201	88	Peak	VERTICAL

Item 2, 3 are the fundamental frequency at 5785 MHz.

Channel 165

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5626.32	58.40	68.20	-9.80	51.78	7.63	31.96	32.97	209	89	Peak	VERTICAL
2	5823.96	113.28			106.35	7.78	32.20	33.05	209	89	Peak	VERTICAL
3	5825.04	104.00			97.07	7.78	32.20	33.05	209	89	Average	VERTICAL
4	5929.80	59.25	68.20	-8.95	52.19	7.82	32.32	33.08	209	89	Peak	VERTICAL

Item 2, 3 are the fundamental frequency at 5825 MHz.

Configurations	IEEE 802.11n MCS0 HT20 CH 36, 40, 48 / Chain 1 + Chain 2

Channel 36

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5144.80	71.57	74.00	-2.43	65.76	7.23	31.52	32.94	221	93	Peak	VERTICAL
2	5150.00	53.56	54.00	-0.44	47.75	7.23	31.52	32.94	221	93	Average	VERTICAL
3	5180.40	99.47			93.60	7.26	31.55	32.94	221	93	Average	VERTICAL
4	5180.80	108.41			102.54	7.26	31.55	32.94	221	93	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 5180 MHz.

Channel 40

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5150.00	44.98	54.00	-9.02	39.17	7.23	31.52	32.94	222	93	Average	VERTICAL
2	5150.00	60.51	74.00	-13.49	54.70	7.23	31.52	32.94	222	93	Peak	VERTICAL
3	5200.40	101.27			95.37	7.28	31.56	32.94	222	93	Average	VERTICAL
4	5200.80	109.31			103.41	7.28	31.56	32.94	222	93	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 5200 MHz.

Channel 48

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5147.60	43.48	54.00	-10.52	37.67	7.23	31.52	32.94	213	93	Average	VERTICAL
2	5149.40	55.39	74.00	-18.61	49.58	7.23	31.52	32.94	213	93	Peak	VERTICAL
3	5240.60	99.61			93.65	7.31	31.59	32.94	213	93	Average	VERTICAL
4	5240.60	108.53			102.57	7.31	31.59	32.94	213	93	Peak	VERTICAL
5	5358.20	57.06	74.00	-16.94	50.92	7.38	31.69	32.93	213	93	Peak	VERTICAL
6	5360.00	45.16	54.00	-8.84	39.02	7.38	31.69	32.93	213	93	Average	VERTICAL

Item 3, 4 are the fundamental frequency at 5240 MHz.

Configurations	IEEE 802.11n MCS0 HT20 CH 149, 157, 165 / Chain 1 + Chain 2

Channel 149

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5643.60	58.57	68.20	-9.63	51.93	7.64	31.98	32.98	205	64	Peak	VERTICAL
2	5745.12	103.13			96.31	7.73	32.10	33.01	205	64	Average	VERTICAL
3	5745.12	112.60			105.78	7.73	32.10	33.01	205	64	Peak	VERTICAL
4	5996.76	57.60	68.20	-10.60	50.47	7.84	32.40	33.11	205	64	Peak	VERTICAL

Item 2, 3 are the fundamental frequency at 5745 MHz.

Channel 157

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5631.72	59.16	68.20	-9.04	52.54	7.63	31.96	32.97	202	66	Peak	VERTICAL
2	5785.08	104.66			97.79	7.76	32.14	33.03	202	66	Average	VERTICAL
3	5785.08	113.99			107.12	7.76	32.14	33.03	202	66	Peak	VERTICAL
4	5940.60	58.73	68.20	-9.47	51.68	7.82	32.32	33.09	202	66	Peak	VERTICAL

Item 2, 3 are the fundamental frequency at 5785 MHz.

Channel 165

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5592.84	57.83	68.20	-10.37	51.27	7.60	31.92	32.96	208	66	Peak	VERTICAL
2	5825.04	103.61			96.68	7.78	32.20	33.05	208	66	Average	VERTICAL
3	5825.04	112.65			105.72	7.78	32.20	33.05	208	66	Peak	VERTICAL
4	5993.52	57.95	68.20	-10.25	50.81	7.84	32.40	33.10	208	66	Peak	VERTICAL

Item 2, 3 are the fundamental frequency at 5825 MHz.

Configurations	IEEE 802.11n MCS0 HT40 CH 38, 46 / Chain 1 + Chain 2

Channel 38

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5150.00	53.72	54.00	-0.28	47.91	7.23	31.52	32.94	223	92	Average	VERTICAL
2	5150.00	67.28	74.00	-6.72	61.47	7.23	31.52	32.94	223	92	Peak	VERTICAL
3	5188.00	90.71			84.81	7.28	31.56	32.94	223	92	Average	VERTICAL
4	5188.40	101.12			95.22	7.28	31.56	32.94	223	92	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 5190 MHz.

Channel 46

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5140.00	62.21	74.00	-11.79	56.42	7.22	31.51	32.94	215	90	Peak	VERTICAL
2	5150.00	47.26	54.00	-6.74	41.45	7.23	31.52	32.94	215	90	Average	VERTICAL
3	5228.40	95.44			89.50	7.30	31.58	32.94	215	90	Average	VERTICAL
4	5231.20	106.28			100.34	7.30	31.58	32.94	215	90	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 5230 MHz.

Configurations	IEEE 802.11n MCS0 HT40 CH 151, 159 / Chain 1 + Chain 2

Channel 151

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5646.84	67.68	68.20	-0.52	61.04	7.64	31.98	32.98	205	68	Peak	VERTICAL
2	5753.76	99.59			92.78	7.73	32.10	33.02	205	68	Average	VERTICAL
3	5757.00	109.33			102.49	7.74	32.12	33.02	205	68	Peak	VERTICAL
4	5925.48	59.16	68.20	-9.04	52.10	7.82	32.32	33.08	205	68	Peak	VERTICAL

Item 2, 3 are the fundamental frequency at 5755 MHz.

Channel 159

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5646.84	62.59	68.20	-5.61	55.95	7.64	31.98	32.98	200	66	Peak	VERTICAL
2	5796.96	101.30			94.40	7.77	32.16	33.03	200	66	Average	VERTICAL
3	5796.96	110.86			103.96	7.77	32.16	33.03	200	66	Peak	VERTICAL
4	5930.88	61.76	68.20	-6.44	54.70	7.82	32.32	33.08	200	66	Peak	VERTICAL

Item 2, 3 are the fundamental frequency at 5795 MHz.

Note:

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

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

Mode: 20 MHz / Chain 1

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5200 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5199.9935	5199.9934	5199.9932	5199.9929
110.00	5199.9926	5199.9916	5199.9915	5199.9909
93.50	5199.9917	5199.9907	5199.9898	5199.9889
Max. Deviation (MHz)	0.0083	0.0093	0.0102	0.0111
Max. Deviation (ppm)	1.59	1.78	1.96	2.13
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(℃)	5200 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-30	5199.9871	5199.9862	5199.9855	5199.9848
-20	5199.9872	5199.9862	5199.9853	5199.9849
-10	5199.9889	5199.9886	5199.9883	5199.9875
0	5199.9899	5199.9894	5199.9888	5199.9879
10	5199.9914	5199.9913	5199.9905	5199.9904
20	5199.9926	5199.9924	5199.9919	5199.9910
30	5199.9974	5199.9972	5199.9971	5199.9967
40	5199.9987	5199.9978	5199.9970	5199.9968
50	5199.9998	5199.9993	5199.9983	5199.9973
Max. Deviation (MHz)	0.0129	0.0138	0.0147	0.0152
Max. Deviation (ppm)	2.48	2.65	2.82	2.92
Result	Pass			

Mode: 40 MHz / Chain 1

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5190 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5189.9936	5189.9933	5189.9924	5189.9916
110.00	5189.9926	5189.9925	5189.9916	5189.9915
93.50	5189.9924	5189.9915	5189.9906	5189.9901
Max. Deviation (MHz)	0.0076	0.0085	0.0094	0.0099
Max. Deviation (ppm)	1.46	1.63	1.81	1.90
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(℃)	5190 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-30	5189.9838	5189.9837	5189.9836	5189.9832
-20	5189.9855	5189.9845	5189.9842	5189.9837
-10	5189.9875	5189.9873	5189.9864	5189.9854
0	5189.9890	5189.9885	5189.9875	5189.9868
10	5189.9907	5189.9899	5189.9897	5189.9890
20	5189.9926	5189.9916	5189.9909	5189.9902
30	5189.9974	5189.9973	5189.9966	5189.9960
40	5189.9979	5189.9972	5189.9967	5189.9958
50	5189.9993	5189.9986	5189.9985	5189.9976
Max. Deviation (MHz)	0.0162	0.0163	0.0164	0.0168
Max. Deviation (ppm)	3.12	3.14	3.16	3.23
Result	Pass			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5785 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5784.9931	5784.9930	5784.9922	5784.9916
110.00	5784.9926	5784.9924	5784.9917	5784.9908
93.50	5784.9918	5784.9910	5784.9909	5784.9905
Max. Deviation (MHz)	0.0082	0.0090	0.0091	0.0095
Max. Deviation (ppm)	1.41	1.55	1.57	1.64
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(℃)	5785 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-30	5784.9873	5784.9867	5784.9857	5784.9855
-20	5784.9886	5784.9881	5784.9878	5784.9870
-10	5784.9898	5784.9891	5784.9882	5784.9878
0	5784.9901	5784.9895	5784.9888	5784.9879
10	5784.9920	5784.9915	5784.9914	5784.9911
20	5784.9926	5784.9923	5784.9915	5784.9905
30	5784.9974	5784.9964	5784.9958	5784.9952
40	5784.9990	5784.9987	5784.9986	5784.9984
50	5785.0006	5785.0005	5784.9998	5784.9989
Max. Deviation (MHz)	0.0127	0.0133	0.0143	0.0145
Max. Deviation (ppm)	2.19	2.30	2.47	2.50
Result	Pass			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5755 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5754.9929	5754.9922	5754.9912	5754.9906
110.00	5754.9926	5754.9920	5754.9918	5754.9908
93.50	5754.9916	5754.9914	5754.9911	5754.9907
Max. Deviation (MHz)	0.0084	0.0086	0.0089	0.0094
Max. Deviation (ppm)	1.46	1.49	1.54	1.63
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(℃)	5755 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-30	5754.9844	5754.9836	5754.9831	5754.9823
-20	5754.9862	5754.9857	5754.9855	5754.9851
-10	5754.9882	5754.9872	5754.9865	5754.9863
0	5754.9895	5754.9887	5754.9882	5754.9879
10	5754.9911	5754.9904	5754.9894	5754.9892
20	5754.9926	5754.9919	5754.9910	5754.9909
30	5754.9974	5754.9973	5754.9967	5754.9958
40	5754.9981	5754.9974	5754.9966	5754.9958
50	5755.0000	5754.9990	5754.9987	5754.9982
Max. Deviation (MHz)	0.0156	0.0164	0.0169	0.0177
Max. Deviation (ppm)	2.71	2.85	2.93	3.07
Result	Pass			