FCC Test Report

Equipment	:	**802.11a/ac PCI-e Module**
Brand Name	:	**LANCOM**
Model No.	:	**DAXA-O1**
FCC ID	:	**U4Y-DAXAO1**
Standard	:	**47 CFR FCC Part 15.407**
Operating Band	:	**5150 MHz – 5250 MHz**
Applicant	:	**LANCOM Systems GmbH Adenauerstrasse 20/B2 52146, Wuerselen Germany**
Manufacturer	:	**LANCOM Systems GmbH Adenauerstrasse 20/B2 52146, Wuerselen Germany**
Function	:	**☐ Outdoor; ☒ Indoor; ☐ Fixed P2P ☒ Client**

The product sample received on Aug. 09, 2016 and completely tested on Sep. 02, 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	15.207	AC Power-line Conducted Emissions	Complied
3.2	15.407(a)	Emission Bandwidth	Complied
3.3	15.407(a)	Maximum Conducted Output Power	Complied
3.4	15.407(a)	Peak Power Spectral Density	Complied
3.5	15.407(b)	Unwanted Emissions	Complied
3.6	15.407(g)	Frequency Stability	Complied

Revision History

Report No.	Version	Description	Issued Date
FR680921	Rev. 01	Initial issue of report	Sep. 21, 2016

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
5150-5250	a, n (HT20), ac (VHT20)	5180-5240	36-48 [4]
5150-5250	n (HT40), ac (VHT40)	5190-5230	38-46 [2]
5150-5250	ac (VHT80)	5210	42 [1]

Band	Mode	BWch (MHz)	Nant
5.2G	11a	20	1(1)
5.2G	HT20	20	2
5.2G	VHT20	20	2
5.2G	HT40	40	2
5.2G	VHT40	40	2
5.2G	VHT80	80	2

Note:
- 5.2G/5.2G-I(IC) is the 5.2GHz Band (5.15-5.25GHz).
- 11a, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- VHT20, VHT40 and VHT80 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM 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.
- This device doesn't support one stream.

1.1.2 Antenna Information

Ant.	Antenna board	Brand Holder	P/N	Antenna Type	Connector	Gain (dBi)
1	2	Tyco Electronics Corporation	1513164-1	Dipole Antenna	U. FL	4
2	6	Tyco Electronics Corporation	1513164-1	Dipole Antenna	U. FL	4

Note: The EUT has two antennas.

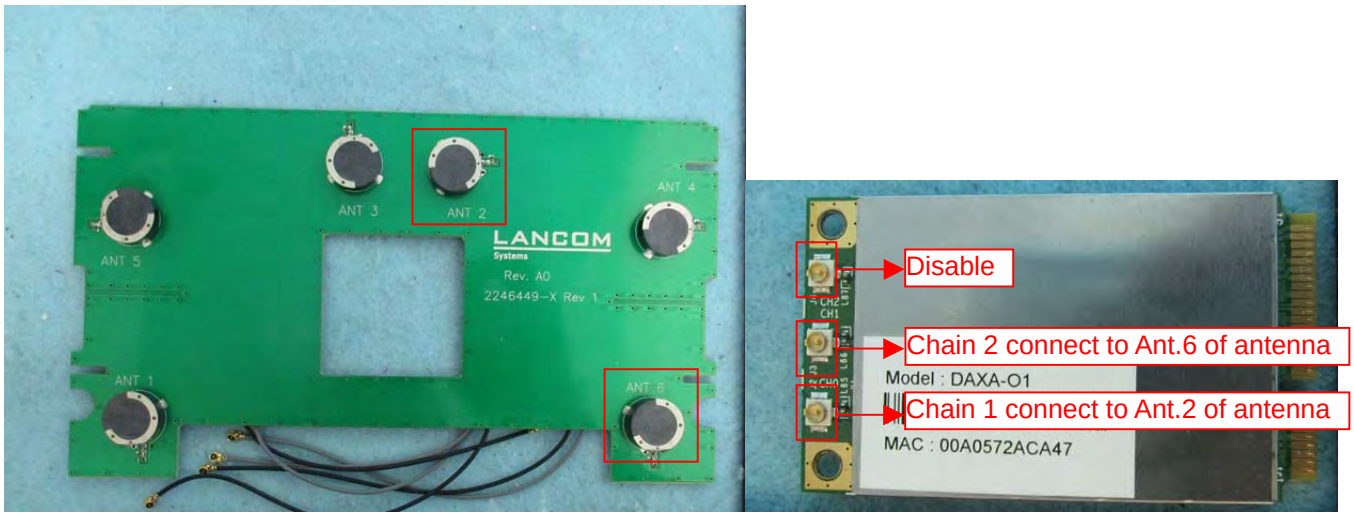
For IEEE 802.11a mode (1TX/1RX):

Only Chain 1 can be used as transmitting/receiving antenna.

For IEEE 802.11n/ac mode (2TX/2RX):

Chain 1 and Chain 2 can be used as transmitting/receiving antenna.

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	0.942	2.065m	1k
VHT20	0.933	993.125u	3k
VHT40	0.875	501.25u	3k
VHT80	0.762	256.875u	10k

1.1.4 EUT Operational Condition

EUT Power Type	From host system			
Beamforming Function	☐	With beamforming	☒	Without beamforming

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 v01r03
- FCC KDB 644545 D03 v01
- 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	Satoshi Yang	24°C / 61%	Aug. 24, 2016 ~ Sep. 02, 2016
Radiated	03CH01-CB	Kenneth Huang	23°C / 54%	Aug. 18, 2016 ~ Sep. 01, 2016
AC Conduction	CO02-CB	Deven Huang	23°C / 60%	Sep. 01, 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
Conducted Emission (150kHz ~ 30MHz)	3.2 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.6 dB	Confidence levels of 95%
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(1)	5180	L	14
5.2G	11a	20	1	1(1)	5200	M	14
5.2G	11a	20	1	1(1)	5240	H	14
5.2G	VHT20	20	2,(M0)	2	5180	L	11
5.2G	VHT20	20	2,(M0)	2	5200	M	11
5.2G	VHT20	20	2,(M0)	2	5240	H	11
5.2G	VHT40	40	2,(M0)	2	5190	L	11
5.2G	VHT40	40	2,(M0)	2	5230	H	11
5.2G	VHT80	80	2,(M0)	2	5210	S	11

Note: VHT20/VHT40 covers HT20/HT40, due to same modulation. The power setting for 802.11n HT20 and HT40 are the same or lower than 802.11ac VHT20 and VHT40.

2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral
Operating Mode	CTX

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.
The EUT was performed at X axis, Y axis and Z axis position for Radiated emission above 1GHz test, and the worst case was found at Z axis. Consequently, measurement for Radiated Emission below 1GHz test will follow this same test mode.	
Operating Mode < 1GHz	CTX
1	Place EUT in Z axis
The EUT was performed at X axis, Y axis and Z axis position for Radiated emission above 1GHz test, and the worst case was found at Z axis. So the measurement will follow this same test configuration.	
Operating Mode > 1GHz	CTX
1	Place 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

For Test Site No: CO01-CB

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	LCD Monitor	DELL	1704FPTt	DoC
2	Keyboard	iCooky	SK068	DoC
3	Mouse	Logitech	M-U0026	DoC
4	Raspberry Pi	Teleconformity	Raspb212	DoC
5	AP	LANCOM	LN-830E	DoC
6	Fixture	LANCOM System	2246449-X Rev 1	N/A

For Test Site No: 03CH01-CB

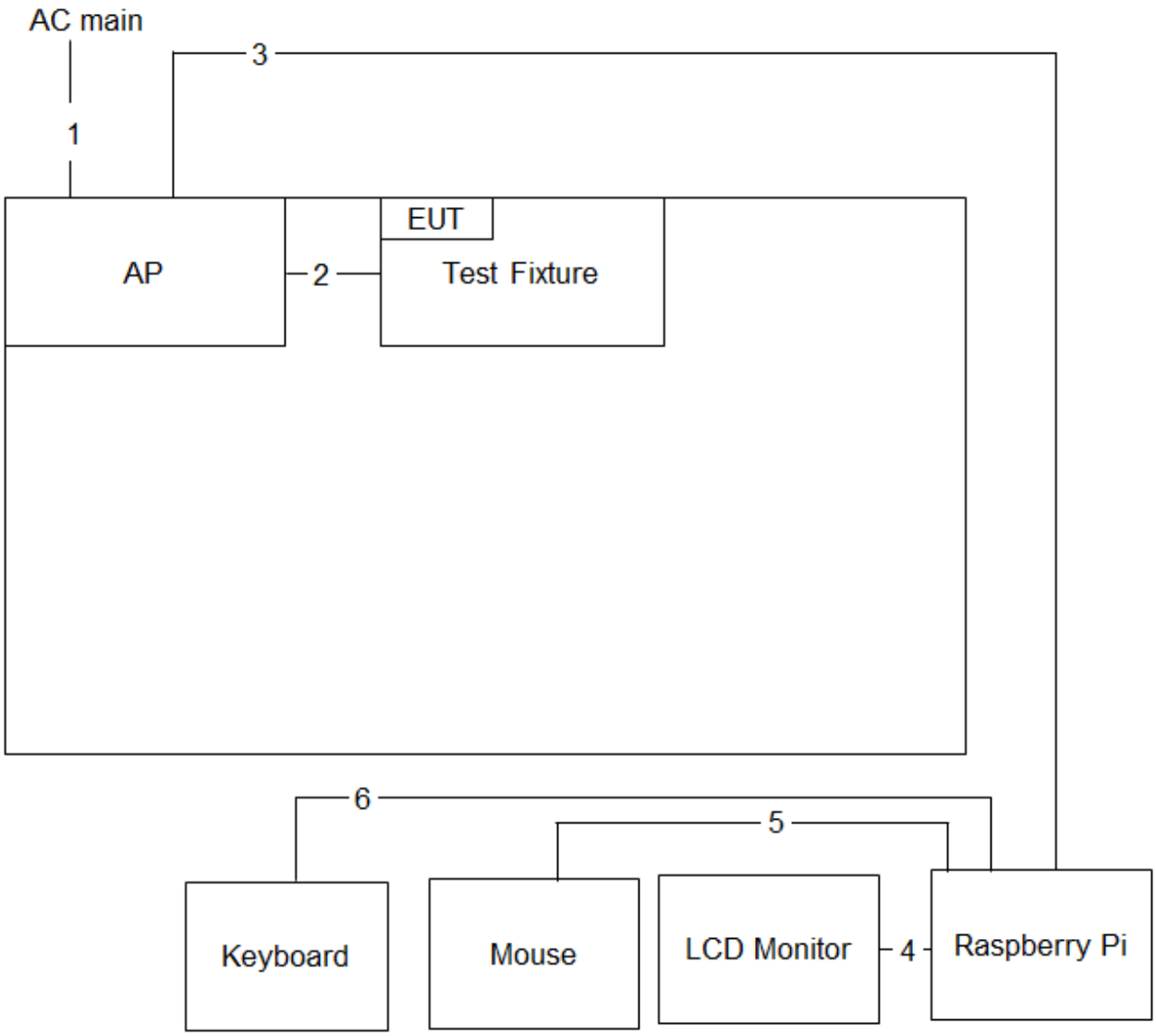
Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	LCD Monitor	DELL	1704FPTt	DoC
2	Keyboard	iCooky	SK068	DoC
3	Mouse	Logitech	M-U0026	DoC
4	Raspberry Pi	Teleconformity	Raspb212	DoC
5	AP	LANCOM	LN-830E	DoC
6	Fixture	LANCOM System	2246449-X Rev 1	N/A

For Test Site No: TH01-CB

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	AP Router	LANCOM	LN-830E	Doc
2	Raspberry Pi	Teleconformity	Raspb212	Doc
3	LCD Monitor	DELL	1704FPTt	DoC
4	Keyboard	iCooky	SK068	DoC
5	Mouse	Logitech	M-U0026	DoC
6	Fixture	LANCOM System	2246449-X Rev 1	N/A

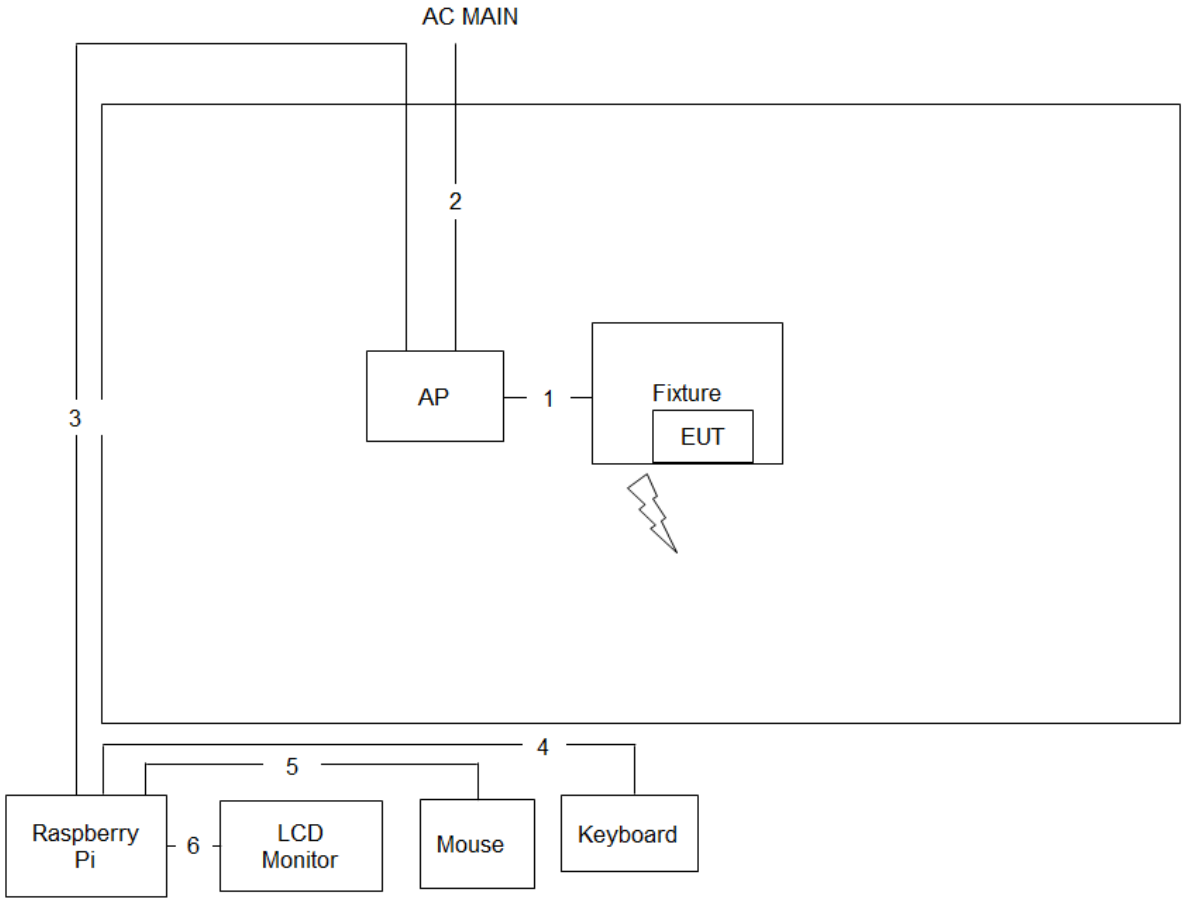
2.6 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



Item	Connection	Shielded	Length
1	Power cable	No	1.5m
2	Bus cable	No	0.1m
3	RJ-45 cable	No	10m
4	HDMI cable	Yes	1.8m
5	USB cable	Yes	1.8m
6	USB cable	Yes	1.8m

Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length
1	Bus cable	No	0.1m
2	Power cable	No	1.5m
3	RJ-45 cable	No	10m
4	USB cable	Yes	1.8m
5	USB cable	Yes	1.8m
6	HDMI cable	Yes	1.8m

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	**Quasi-Peak**	**Average**
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50
Note 1: * Decreases with the logarithm of the frequency.		

3.1.2 Measuring Instruments

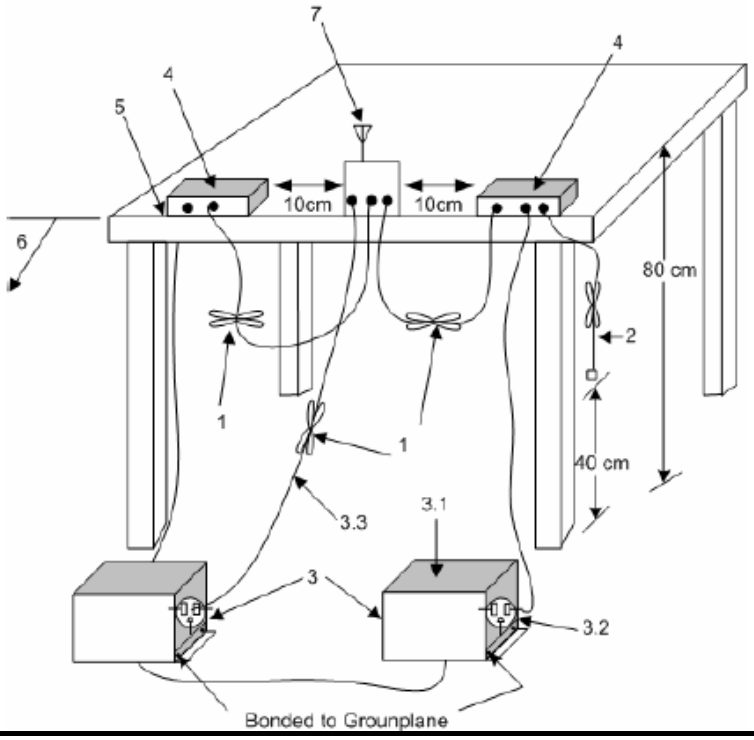
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Test Method
☒ Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Test Setup

AC Power-line Conducted Emissions



3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 Emission Bandwidth

3.2.1 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.

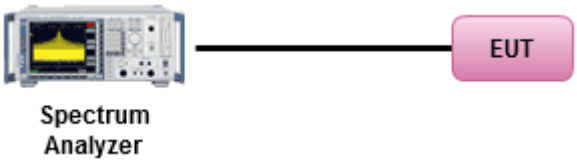
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method		
▪	For the emission bandwidth shall be measured using one of the options below:	
	☒	Refer as FCC KDB 789033, 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.

3.2.4 Test Setup

Emission Bandwidth


3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 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.	

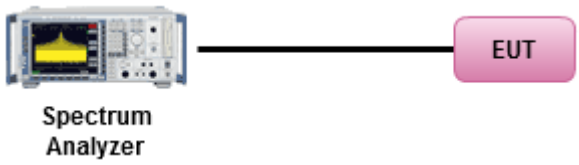
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
▪ Maximum Conducted Output Power	
	[duty cycle ≥ 98% or external video / power trigger]
	☐ Refer as FCC KDB 789033, clause E Method SA-1 (spectral trace averaging).
	☐ Refer as FCC KDB 789033, 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, clause E Method SA-2 (spectral trace averaging).
	☐ Refer as FCC KDB 789033, 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, 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]) $EIRP_{total} = P_{total} + DG$

3.3.4 Test Setup

RF Output Power (Spectrum Analyzer)


3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Peak Power Spectral Density

3.4.1 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.	

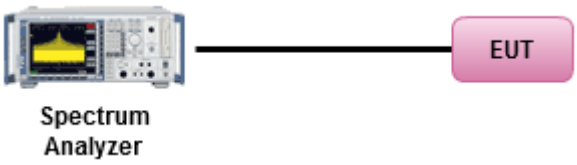
3.4.2 Measuring Instruments

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

3.4.3 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, 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, clause E Method SA-1 (spectral trace averaging).
	☐ Refer as FCC KDB 789033, 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, clause E Method SA-2 (spectral trace averaging).
	☐ Refer as FCC KDB 789033, 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]) $EIRP_{total} = PPSD_{total} + DG$

3.4.4 Test Setup

Power Spectral Density


3.4.5 Test Result of Peak Power Spectral Density

Refer as Appendix D

3.5 Unwanted Emissions

3.5.1 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).

3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

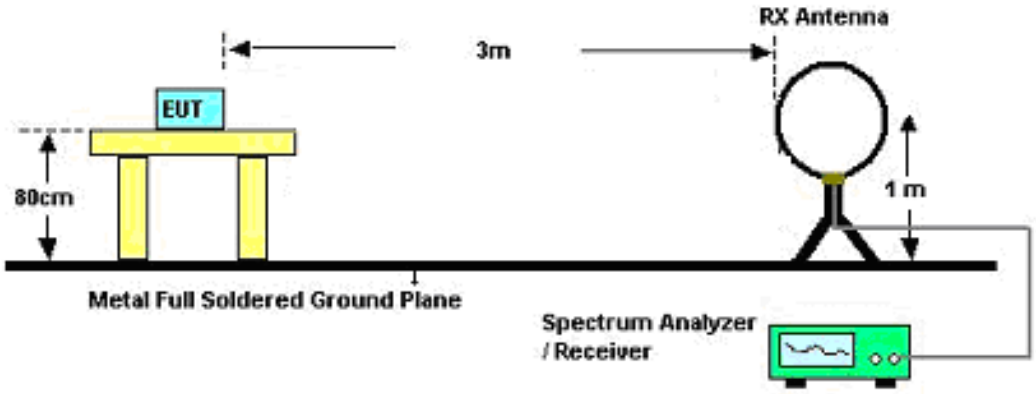
Test Method		
▪ Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 m for frequencies 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, clause H)2) for unwanted emissions into non-restricted bands.	
	▪ Refer as FCC KDB 789033, clause H)1) for unwanted emissions into restricted bands.	
		☐ Refer as FCC KDB 789033, H)6) Method AD (Trace Averaging).
		☒ Refer as FCC KDB 789033, 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, 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.		

Test Method	
▪ For conducted and cabinet radiation measurement, refer as FCC KDB 789033, clause H)3).	
	▪ For conducted unwanted emissions into non-restricted bands (relative emission limits). Devices with multiple transmit chains: Refer as FCC KDB 662911, when testing out-of-band and spurious emissions against relative emission limits, tests may be performed on each output individually without summing or adding 10 log(N) if the measurements are made relative to the in-band emissions on the individual outputs.
	▪ For conducted unwanted emissions into restricted bands (absolute emission limits). Devices with multiple transmit chains using options given below: (1) Measure and sum the spectra across the outputs or (2) Measure and add 10 log(N) dB
	▪ For FCC KDB 662911 The methodology described here may overestimate array gain, thereby resulting in apparent failures to satisfy the out-of-band limits even if the device is actually compliant. In such cases, compliance may be demonstrated by performing radiated tests around the frequencies at which the apparent failures occurred.

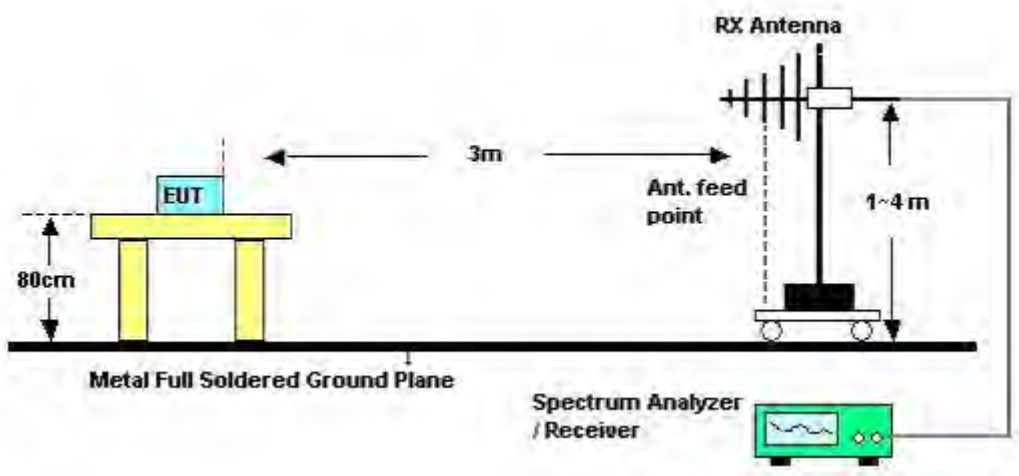
3.5.4 Test Setup

Transmitter Radiated Unwanted Emissions

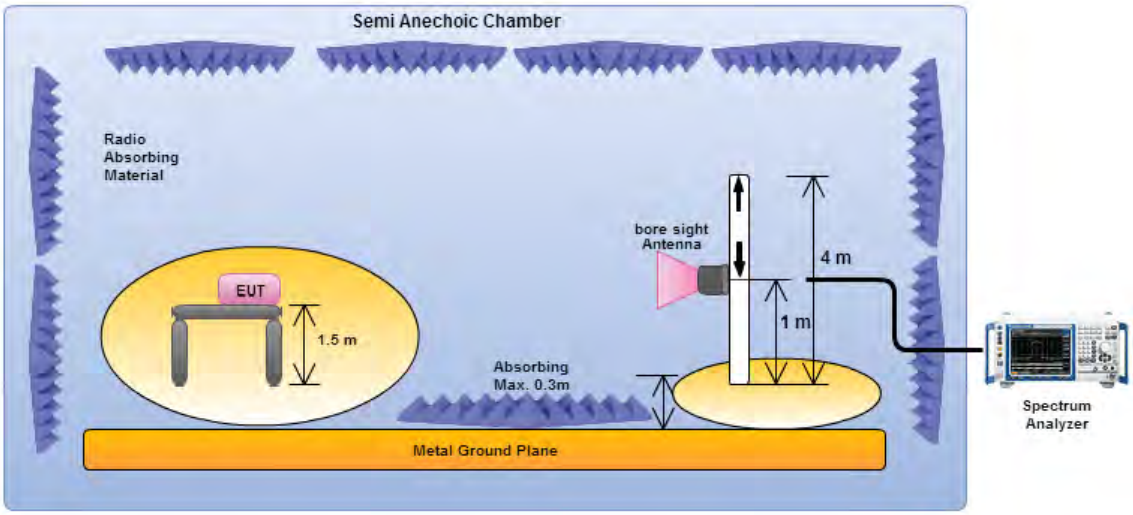
9kHz ~30MHz



30MHz~1GHz



Above 1GHz



3.5.5 Transmitter Unwanted Emissions (Below 30MHz)

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

3.5.6 Test Result of Transmitter Unwanted Emissions

Refer as Appendix E

3.6 Frequency Stability

3.6.1 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.

3.6.2 Measuring Instruments

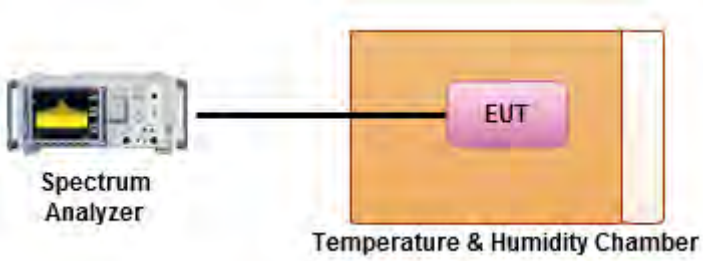
Refer a test equipment and calibration data table in this test report.

3.6.3 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 0℃~40℃.

3.6.4 Test Setup

Frequency Stability



3.6.5 Test Result of Frequency Stability

Refer as Appendix F

4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
LISN	Schwarzbeck	NSLK 8127	8127650	9kHz ~ 30MHz	Nov. 16, 2015	Conduction (CO02-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Nov. 13, 2015	Conduction (CO02-CB)
EMI Receiver	Agilent	N9038A	MY52260140	9kHz ~ 8.4GHz	Jan. 18, 2016	Conduction (CO02-CB)
COND Cable	Woken	Cable	01	0.15MHz ~ 30MHz	Dec. 01, 2015	Conduction (CO02-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	Conduction (CO02-CB)
Pulse Limiter	Schwarzbeck	VTSD 9561F	9561-F073	9kHz ~ 30MHz	Sep. 30, 2015	Conduction (CO02-CB)
BILOG ANTENNA	TESEQ	CBL6112D	37880	20MHz ~ 2GHz	Sep. 03, 2015	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 16, 2016*	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Oct. 22, 2015	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 25, 2016	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10991	0.1MHz ~ 1.3GHz	Mar. 15, 2016	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)
EMI Test	R&S	ESCS	100355	9kHz ~ 2.75GHz	May 16, 2016	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-1	N/A	30 MHz ~ 1 GHz	Nov. 02, 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-D3SP	TBN-931011	-30~100 degree	Jun. 03, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-6	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)

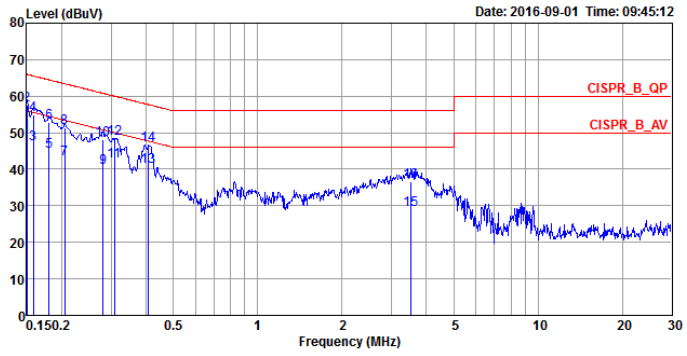
Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
RF Cable-high	Woken	RG402	High Cable-7	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-8	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-9	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.

"*" Calibration Interval of instruments listed above is two years.

N.C.R means Non-Calibration required.

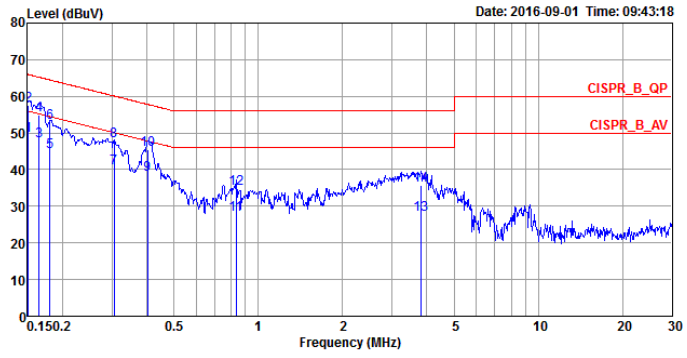
AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Neutral
Operating Function	CTX		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1500	49.63	-6.37	56.00	39.51	9.96	0.16	Average	NEUTRAL
2	0.1500	57.50	-8.50	66.00	47.38	9.96	0.16	QP	NEUTRAL
3	0.1582	47.02	-8.54	55.56	36.90	9.96	0.16	Average	NEUTRAL
4	0.1582	54.83	-10.73	65.56	44.71	9.96	0.16	QP	NEUTRAL
5	0.1806	44.82	-9.64	54.46	34.68	9.96	0.18	Average	NEUTRAL
6	0.1806	52.96	-11.50	64.46	42.82	9.96	0.18	QP	NEUTRAL
7	0.2050	42.75	-10.65	53.40	32.61	9.96	0.18	Average	NEUTRAL
8	0.2050	51.26	-12.14	63.40	41.12	9.96	0.18	QP	NEUTRAL
9	0.2803	40.39	-10.42	50.81	30.24	9.96	0.19	Average	NEUTRAL
10	0.2803	48.14	-12.67	60.81	37.99	9.96	0.19	QP	NEUTRAL
11	0.3083	42.33	-7.69	50.02	32.17	9.97	0.19	Average	NEUTRAL
12	0.3083	48.49	-11.53	60.02	38.33	9.97	0.19	QP	NEUTRAL
13	0.4083	40.88	-6.80	47.68	30.71	9.97	0.20	Average	NEUTRAL
14	0.4083	46.52	-11.16	57.68	36.35	9.97	0.20	QP	NEUTRAL
15	3.5092	28.82	-17.18	46.00	18.50	10.01	0.31	Average	NEUTRAL
16	3.5092	36.49	-19.51	56.00	26.17	10.01	0.31	QP	NEUTRAL

Note 1: “>20dB” means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found emissions (No emissions were detected.)

AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Line
Operating Function	CTX		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1508	49.35	-6.61	55.96	39.23	9.96	0.16	Average	LINE
2	0.1508	57.67	-8.29	65.96	47.55	9.96	0.16	QP	LINE
3	0.1650	47.83	-7.38	55.21	37.71	9.96	0.16	Average	LINE
4	0.1650	54.84	-10.37	65.21	44.72	9.96	0.16	QP	LINE
5	0.1806	44.88	-9.58	54.46	34.75	9.95	0.18	Average	LINE
6	0.1806	52.91	-11.55	64.46	42.78	9.95	0.18	QP	LINE
7	0.3051	40.34	-9.76	50.10	30.16	9.99	0.19	Average	LINE
8	0.3051	47.74	-12.36	60.10	37.56	9.99	0.19	QP	LINE
9	0.4019	38.57	-9.24	47.81	28.36	10.01	0.20	Average	LINE
10	0.4019	45.60	-12.21	57.81	35.39	10.01	0.20	QP	LINE
11	0.8349	27.68	-18.32	46.00	17.45	10.04	0.19	Average	LINE
12	0.8349	34.70	-21.30	56.00	24.47	10.04	0.19	QP	LINE
13	3.8196	27.81	-18.19	46.00	17.38	10.11	0.32	Average	LINE
14	3.8196	35.82	-20.18	56.00	25.39	10.11	0.32	QP	LINE

Note 1: “>20dB” means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found emissions (No emissions were detected.)

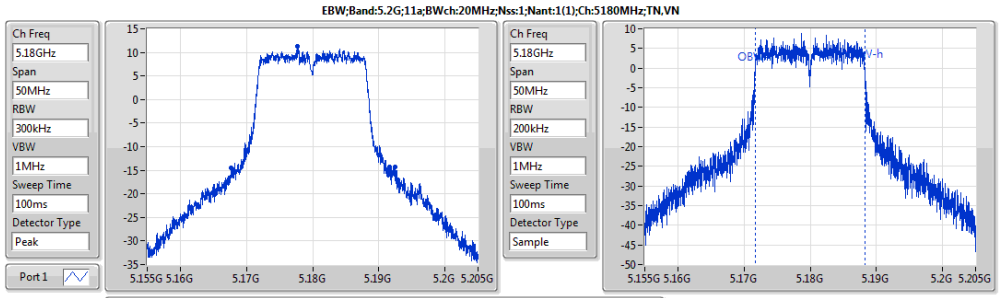
Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.2G;11a;Nss1;Ntx1(1)	42.275M	23.688M	23M7D1D	24.8M	16.542M
5.2G;VHT20;Nss2,(M0);Ntx2	40.3M	18.241M	18M2D1D	25.5M	17.716M
5.2G;VHT40;Nss2,(M0);Ntx2	90.25M	40.23M	40M2D1D	42.3M	36.182M
5.2G;VHT80;Nss2,(M0);Ntx2	88.6M	75.562M	75M6D1D	88.2M	75.562M

Result

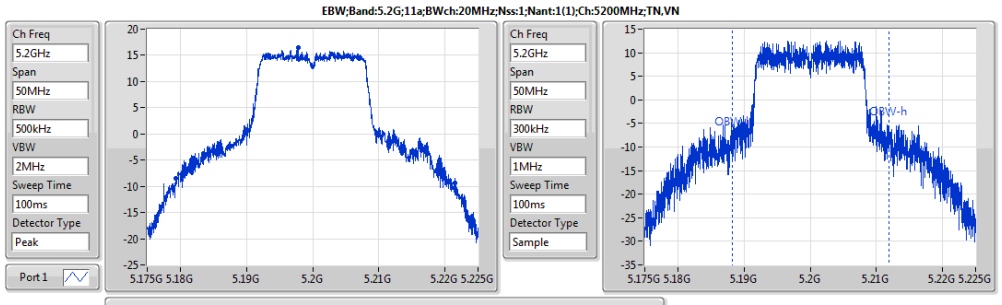
Mode	Result	Limit	P1-N dB (Hz)	P1-OBW (Hz)	P2-N dB (Hz)	P2-OBW (Hz)
5.2G;11a;Nss1;Ntx1(1);5180	Pass	Inf	24.8M	16.542M		
5.2G;11a;Nss1;Ntx1(1);5200	Pass	Inf	42.275M	23.688M		
5.2G;11a;Nss1;Ntx1(1);5240	Pass	Inf	39.525M	18.141M		
5.2G;VHT20;Nss2,(M0);Ntx2;5180	Pass	Inf	26M	17.766M	27M	17.766M
5.2G;VHT20;Nss2,(M0);Ntx2;5200	Pass	Inf	25.5M	17.716M	27.525M	17.766M
5.2G;VHT20;Nss2,(M0);Ntx2;5240	Pass	Inf	37.85M	17.941M	40.3M	18.241M
5.2G;VHT40;Nss2,(M0);Ntx2;5190	Pass	Inf	43.05M	36.182M	42.3M	36.182M
5.2G;VHT40;Nss2,(M0);Ntx2;5230	Pass	Inf	81.15M	36.932M	90.25M	40.23M
5.2G;VHT80;Nss2,(M0);Ntx2;5210	Pass	Inf	88.2M	75.562M	88.6M	75.562M

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



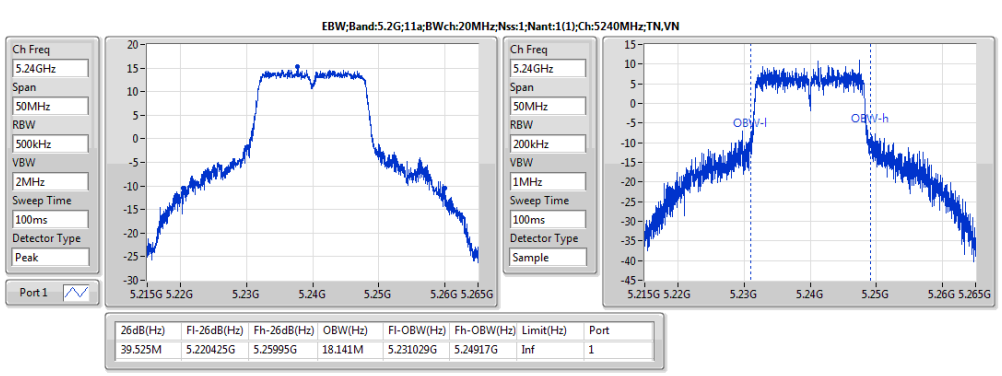
26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
24.8M	5.167725G	5.192525G	16.542M	5.171679G	5.188221G	Inf	1

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



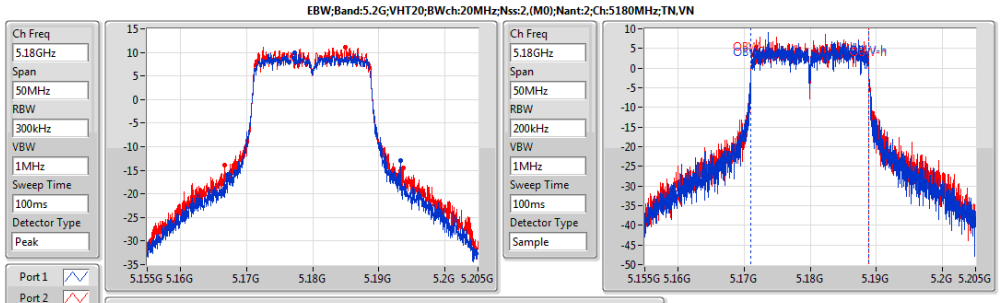
26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
42.275M	5.17925G	5.221525G	23.688M	5.188281G	5.211969G	Inf	1

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



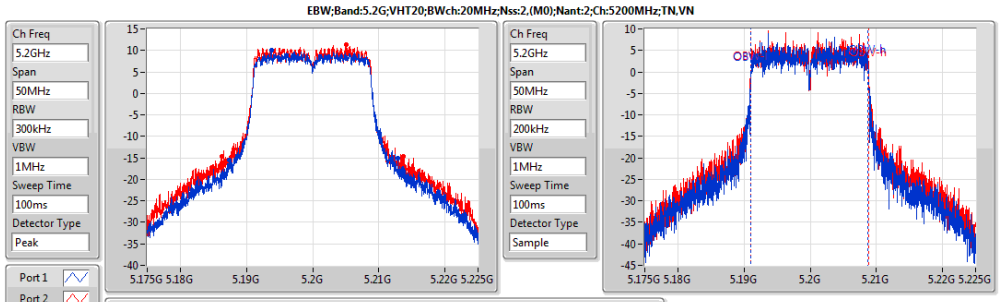
26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
39.525M	5.220425G	5.25995G	18.141M	5.231029G	5.24917G	Inf	1

EBW;Band:5.2G;VHT20;BWch:20MHz;Nss:2,(M0);Nant:2;Ch:5180MHz;TN,VN



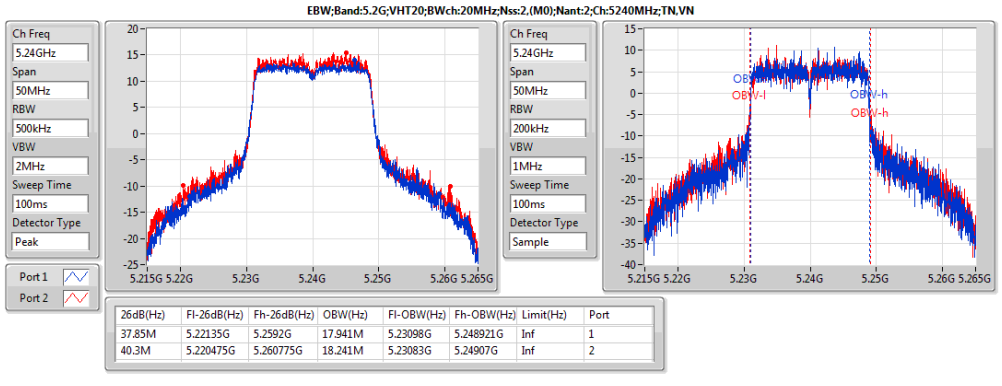
26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
26M	5.167275G	5.193275G	17.766M	5.171079G	5.188846G	Inf	1
27M	5.166675G	5.193675G	17.766M	5.171079G	5.188846G	Inf	2

EBW;Band:5.2G;VHT20;BWch:20MHz;Nss:2,(M0);Nant:2;Ch:5200MHz;TN,VN



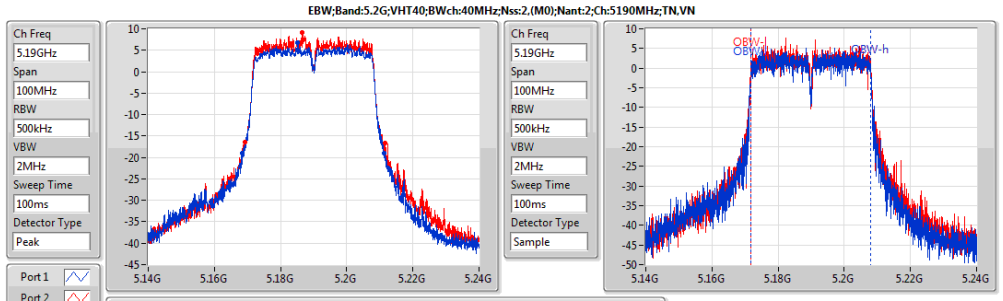
26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
25.5M	5.1874G	5.2129G	17.716M	5.191054G	5.208771G	Inf	1
27.525M	5.186225G	5.21375G	17.766M	5.191029G	5.208796G	Inf	2

EBW;Band:5.2G;VHT20;BWch:20MHz;Nss:2,(M0);Nant:2;Ch:5240MHz;TN,VN



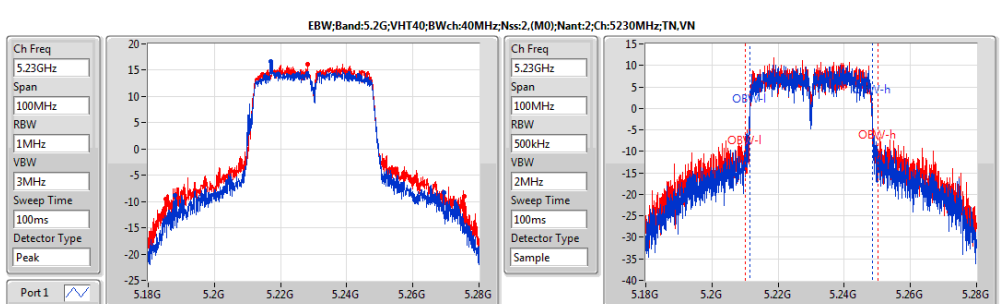
26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
37.85M	5.22135G	5.2592G	17.941M	5.23098G	5.248921G	Inf	1
40.3M	5.220475G	5.260775G	18.241M	5.23083G	5.24907G	Inf	2

EBW;Band:5.2G;VHT40;BWch:40MHz;Nss:2,(M0);Nant:2;Ch:5190MHz;TN,VN



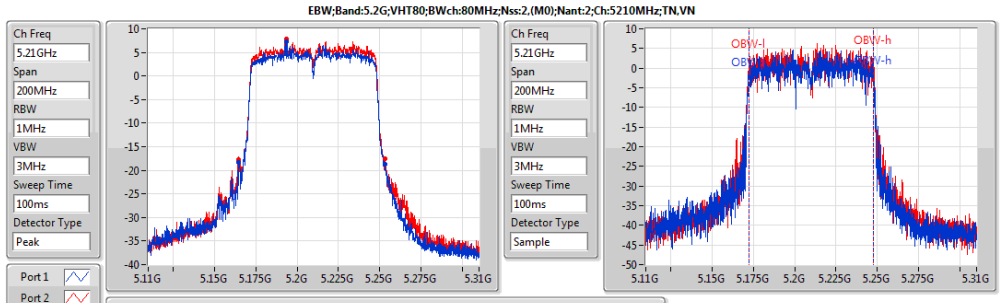
26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
43.05M	5.16835G	5.2114G	36.182M	5.171809G	5.207991G	Inf	1
42.3M	5.16925G	5.21155G	36.182M	5.171809G	5.207991G	Inf	2

EBW;Band:5.2G;VHT40;BWch:40MHz;Nss:2,(M0);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
81.15M	5.1882G	5.26935G	36.932M	5.211509G	5.248441G	Inf	1
90.25M	5.1853G	5.27555G	40.23M	5.21006G	5.25029G	Inf	2

EBW;Band:5.2G;VHT80;BWch:80MHz;Nss:2,(M0);Nant:2;Ch:5210MHz;TN,VN



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
88.2M	5.1647G	5.2529G	75.562M	5.172119G	5.247681G	Inf	1
88.6M	5.1646G	5.2532G	75.562M	5.172219G	5.247781G	Inf	2

Summary

Mode	Sum (dBm)	Sum (W)	EIRP (dBm)	EIRP (W)
5.2G;11a;Nss1;Ntx1(1)	17.84	0.06081	21.84	0.15276
5.2G;VHT20;Nss2,(M0);Ntx2	18.42	0.0695	22.42	0.17458
5.2G;VHT40;Nss2,(M0);Ntx2	18.04	0.06368	22.04	0.15996
5.2G;VHT80;Nss2,(M0);Ntx2	17.29	0.05358	21.29	0.13459

Result

Mode	Result	DG (dBi)	EIRP (dBm)	EIRP Lim. (dBm)	Sum (dBm)	Sum Lim. (dBm)	P1 (dBm)	P2 (dBm)
5.2G;11a;Nss1;Ntx1(1);5180	Pass	4.00	21.84	30.00	17.84	23.98	17.84	
5.2G;11a;Nss1;Ntx1(1);5200	Pass	4.00	21.72	30.00	17.72	23.98	17.72	
5.2G;11a;Nss1;Ntx1(1);5240	Pass	4.00	21.43	30.00	17.43	23.98	17.43	
5.2G;VHT20;Nss2,(M0);Ntx2;5180	Pass	4.00	22.38	30.00	18.38	23.98	15.17	15.57
5.2G;VHT20;Nss2,(M0);Ntx2;5200	Pass	4.00	22.42	30.00	18.42	23.98	15.14	15.67
5.2G;VHT20;Nss2,(M0);Ntx2;5240	Pass	4.00	22.24	30.00	18.24	23.98	14.90	15.53
5.2G;VHT40;Nss2,(M0);Ntx2;5190	Pass	4.00	22.04	30.00	18.04	23.98	14.72	15.32
5.2G;VHT40;Nss2,(M0);Ntx2;5230	Pass	4.00	22.02	30.00	18.02	23.98	14.72	15.29
5.2G;VHT80;Nss2,(M0);Ntx2;5210	Pass	4.00	21.29	30.00	17.29	23.98	13.78	14.72

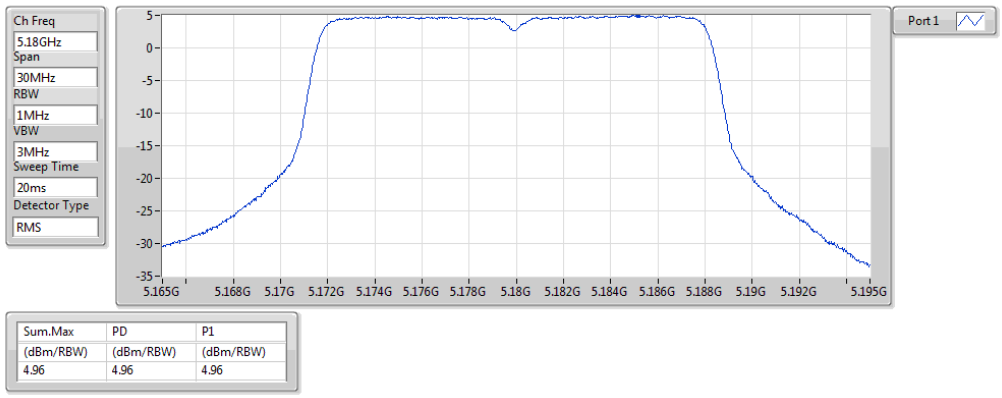
Summary

Mode	PD (dBm/RBW)	EIRP.PD (dBm/RBW)
5.2G;11a;Nss1;Ntx1	5.81	9.81
5.2G;VHT20;Nss2,(M0);Ntx2	5.99	9.99
5.2G;VHT40;Nss2,(M0);Ntx2	2.11	6.11
5.2G;VHT80;Nss2,(M0);Ntx2	-1.03	2.97

Result

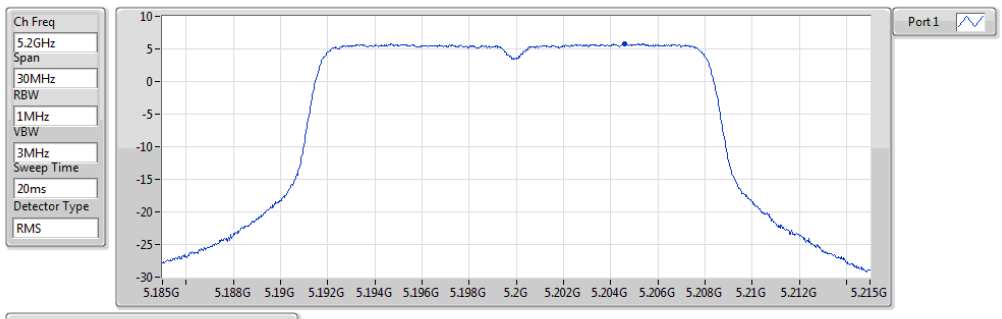
Mode	Result	Meas.RBW (Hz)	Lim.RBW (Hz)	BWCF (dB)	DG (dBi)	Sum.Max (dBm/RBW)	PD (dBm/RBW)	PD.Limit (dBm/RBW)	EIRP.PD (dBm/RBW)	EIRP.PD.Lim (dBm/RBW)	P1 (dBm/RBW)	P2 (dBm/RBW)
5.2G;11a;Nss1;Ntx1;5180	Pass	1M	1M	0.00	4.00	4.96	4.96	11.00	8.96	Inf	4.96	
5.2G;11a;Nss1;Ntx1;5200	Pass	1M	1M	0.00	4.00	5.81	5.81	11.00	9.81	Inf	5.81	
5.2G;11a;Nss1;Ntx1;5240	Pass	1M	1M	0.00	4.00	4.51	4.51	11.00	8.51	Inf	4.51	
5.2G;VHT20;Nss2,(M0);Ntx2;5180	Pass	1M	1M	0.00	4.00	5.99	5.99	11.00	9.99	Inf	2.83	3.18
5.2G;VHT20;Nss2,(M0);Ntx2;5200	Pass	1M	1M	0.00	4.00	5.41	5.41	11.00	9.41	Inf	2.27	2.70
5.2G;VHT20;Nss2,(M0);Ntx2;5240	Pass	1M	1M	0.00	4.00	5.21	5.21	11.00	9.21	Inf	1.96	2.45
5.2G;VHT40;Nss2,(M0);Ntx2;5190	Pass	1M	1M	0.00	4.00	2.11	2.11	11.00	6.11	Inf	-0.97	-0.69
5.2G;VHT40;Nss2,(M0);Ntx2;5230	Pass	1M	1M	0.00	4.00	2.00	2.00	11.00	6.00	Inf	-1.21	-0.73
5.2G;VHT80;Nss2,(M0);Ntx2;5210	Pass	1M	1M	0.00	4.00	-1.03	-1.03	11.00	2.97	Inf	-3.92	-3.67

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



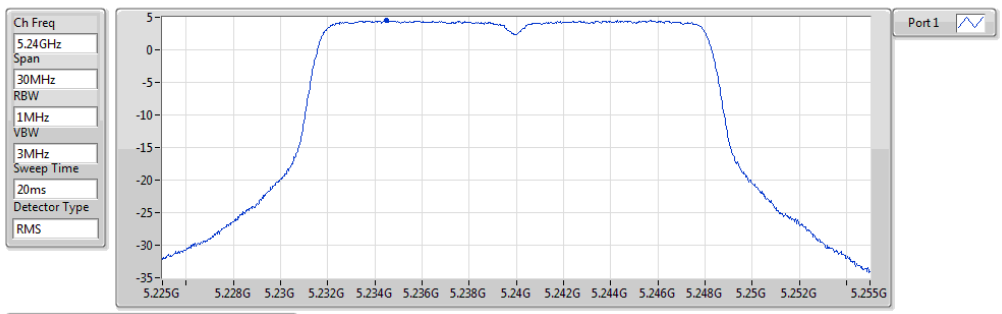
Sum.Max	PD	P1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
4.96	4.96	4.96

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



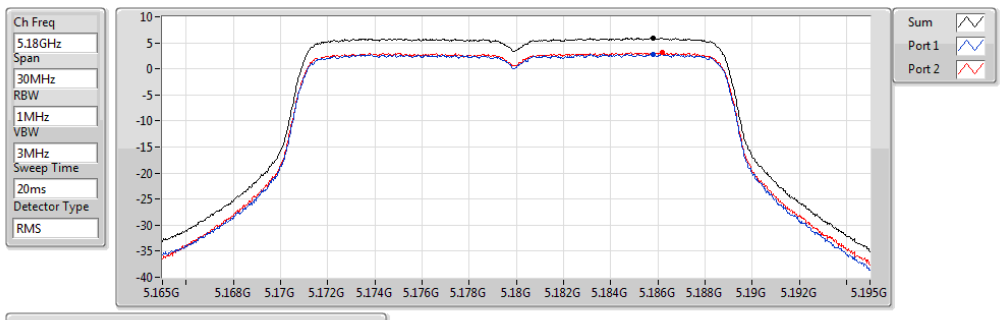
Sum.Max	PD	P1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
5.81	5.81	5.81

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



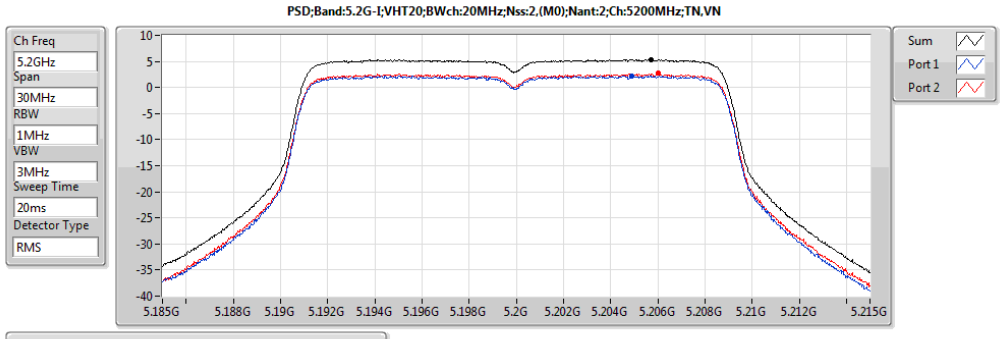
Sum.Max	PD	P1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
4.51	4.51	4.51

PSD;Band:5.2G-I;VHT20;BWch:20MHz;Nss:2,(M0);Nant:2;Ch:5180MHz;TN,VN



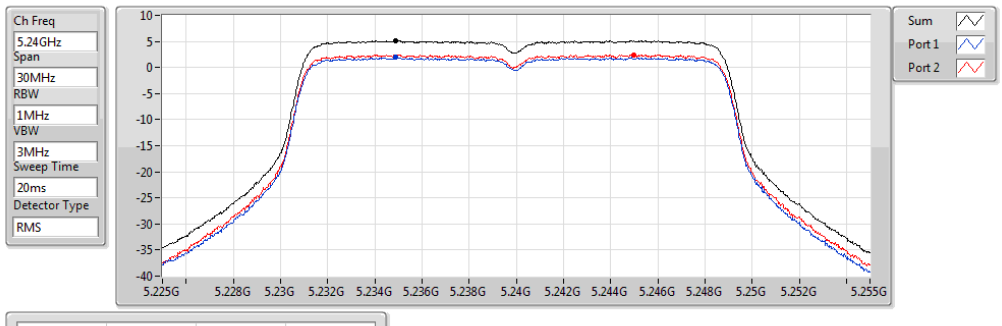
Sum.Max	PD	P1	P2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
5.99	5.99	2.83	3.18

PSD;Band:5.2G-I;VHT20;BWch:20MHz;Nss:2,(M0);Nant:2;Ch:5200MHz;TN,VN



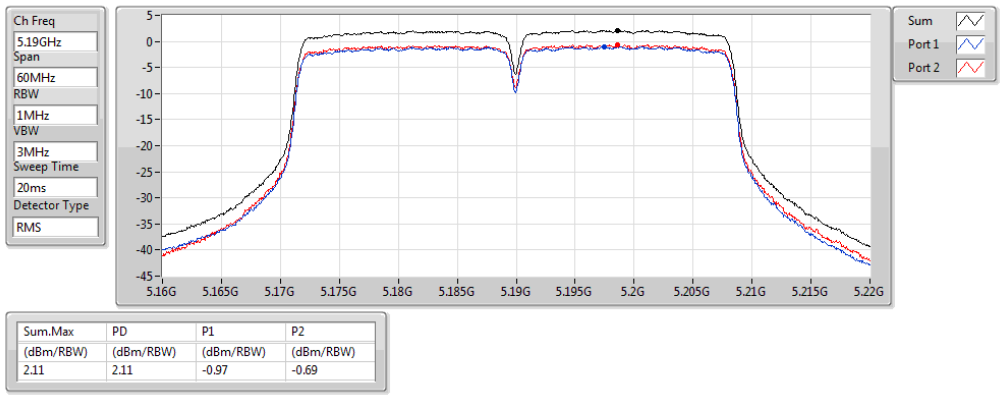
Sum.Max	PD	P1	P2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
5.41	5.41	2.27	2.70

PSD;Band:5.2G-I;VHT20;BWch:20MHz;Nss:2,(M0);Nant:2;Ch:5240MHz;TN,VN



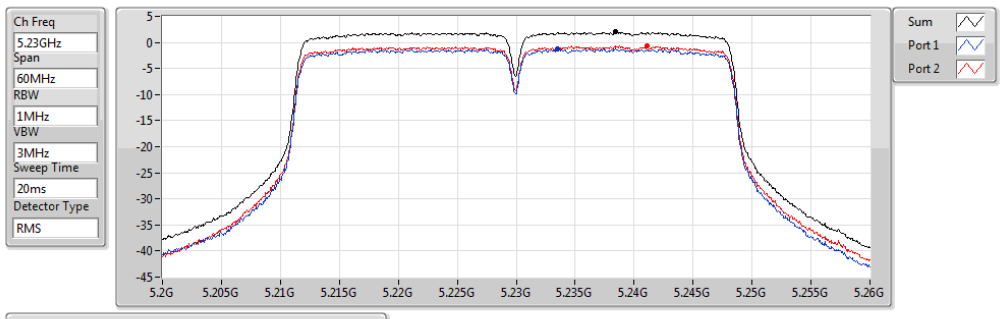
Sum.Max	PD	P1	P2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
5.21	5.21	1.96	2.45

PSD;Band:5.2G-I;VHT40;BWch:40MHz;Nss:2,(M0);Nant:2;Ch:5190MHz;TN,VN



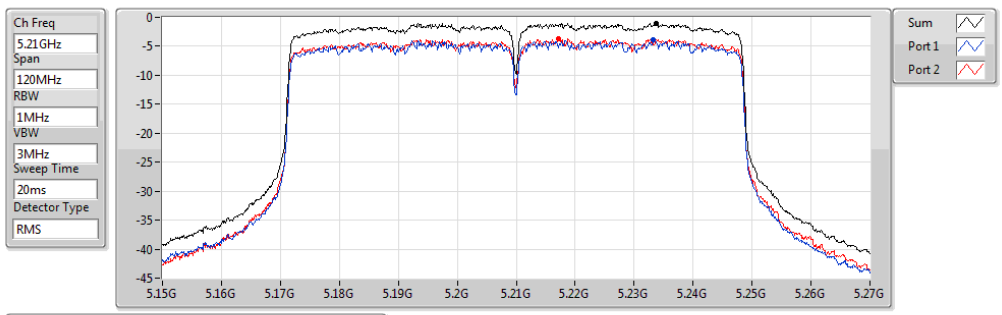
Sum.Max	PD	P1	P2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
2.11	2.11	-0.97	-0.69

PSD;Band:5.2G-I;VHT40;BWch:40MHz;Nss:2,(M0);Nant:2;Ch:5230MHz;TN,VN



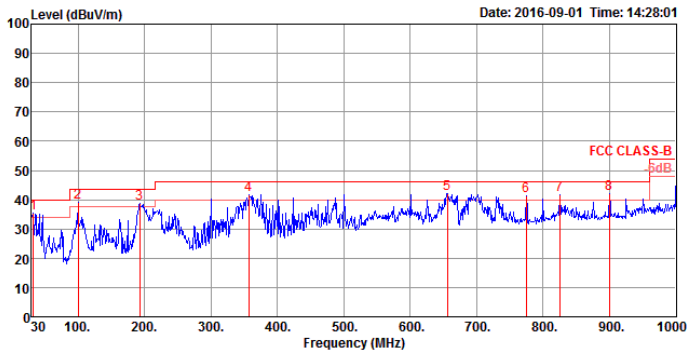
Sum.Max	PD	P1	P2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
2.00	2.00	-1.21	-0.73

PSD;Band:5.2G-I;VHT80;BWch:80MHz;Nss:2,(M0);Nant:2;Ch:5210MHz;TN,VN



Sum.Max	PD	P1	P2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-1.03	-1.03	-3.92	-3.67

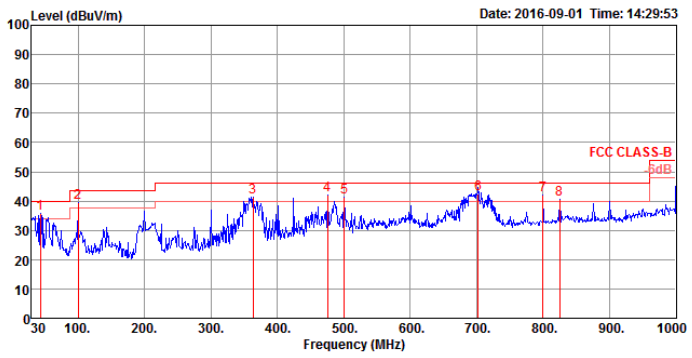
RSE below 1GHz Result			
Operating Mode	1	**Polarization**	Horizontal
Operating Function	CTX		



	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	32.91	35.48	40.00	-4.52	43.61	0.54	24.24	32.91	125	180	Peak	HORIZONTAL
2	99.84	39.13	43.50	-4.37	53.00	0.98	17.60	32.45	300	311	Peak	HORIZONTAL
3	192.96	38.63	43.50	-4.87	53.40	1.34	16.23	32.34	125	256	Peak	HORIZONTAL
4	356.89	41.72	46.00	-4.28	50.63	1.83	21.57	32.31	100	166	Peak	HORIZONTAL
5	655.65	42.14	46.00	-3.86	46.00	2.46	26.07	32.39	125	313	Peak	HORIZONTAL
6	774.96	41.29	46.00	-4.71	44.05	2.87	26.60	32.23	100	309	Peak	HORIZONTAL
7	825.40	41.68	46.00	-4.32	43.69	2.95	27.10	32.06	100	316	Peak	HORIZONTAL
8	900.09	42.08	46.00	-3.92	43.16	2.91	27.70	31.69	100	159	Peak	HORIZONTAL

Note 1: “>20dB” means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found emissions (No emissions were detected.)

RSE below 1GHz Result			
Operating Mode	1	**Power Phase**	Vertical
Operating Function	CTX		



	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	43.58	35.78	40.00	-4.22	49.70	0.62	18.01	32.55	125	193	Peak	VERTICAL
2	99.84	39.43	43.50	-4.07	53.30	0.98	17.60	32.45	100	287	Peak	VERTICAL
3	363.68	41.24	46.00	-4.76	49.92	1.85	21.78	32.31	150	273	Peak	VERTICAL
4	475.23	42.10	46.00	-3.90	48.63	2.14	23.63	32.30	100	204	Peak	VERTICAL
5	500.45	41.31	46.00	-4.69	47.40	2.18	24.03	32.30	100	189	Peak	VERTICAL
6	702.21	42.51	46.00	-3.49	46.41	2.56	25.92	32.38	100	249	QP	VERTICAL
7	800.18	42.23	46.00	-3.77	44.59	3.02	26.80	32.18	150	169	Peak	VERTICAL
8	825.40	40.76	46.00	-5.24	42.77	2.95	27.10	32.06	125	176	Peak	VERTICAL

Note 1: “>20dB” means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found emissions (No emissions were detected.)

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	15542.92	45.37	54.00	-8.63	28.67	12.06	38.13	33.49	231	115	Average	HORIZONTAL
2	15549.78	58.38	74.00	-15.62	41.68	12.06	38.13	33.49	231	115	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	15535.03	45.41	54.00	-8.59	28.71	12.06	38.13	33.49	204	260	Average	VERTICAL
2	15538.37	58.59	74.00	-15.41	41.89	12.06	38.13	33.49	204	260	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	15592.69	45.15	54.00	-8.85	28.54	12.09	38.05	33.53	183	101	Average	HORIZONTAL
2	15608.11	58.25	74.00	-15.75	41.69	12.11	37.98	33.53	183	101	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	15603.08	58.42	74.00	-15.58	41.86	12.11	37.98	33.53	191	261	Peak	VERTICAL
2	15605.32	45.05	54.00	-8.95	28.49	12.11	37.98	33.53	191	261	Average	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	15710.48	59.23	74.00	-14.77	42.86	12.15	37.84	33.62	226	273	Peak	HORIZONTAL
2	15718.85	45.19	54.00	-8.81	28.87	12.15	37.84	33.67	226	273	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	15719.55	45.41	54.00	-8.59	29.09	12.15	37.84	33.67	156	76	Average	VERTICAL
2	15728.14	58.22	74.00	-15.78	41.90	12.15	37.84	33.67	156	76	Peak	VERTICAL

Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 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	15534.26	45.80	54.00	-8.20	29.10	12.06	38.13	33.49	190	309	Average	HORIZONTAL
2	15545.83	58.59	74.00	-15.41	41.89	12.06	38.13	33.49	190	309	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	15532.66	58.64	74.00	-15.36	41.94	12.06	38.13	33.49	150	102	Peak	VERTICAL
2	15538.27	46.39	54.00	-7.61	29.69	12.06	38.13	33.49	150	102	Average	VERTICAL

Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 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	15602.60	46.66	54.00	-7.34	30.10	12.11	37.98	33.53	195	228	Average	HORIZONTAL
2	15605.03	59.26	74.00	-14.74	42.70	12.11	37.98	33.53	195	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	15594.97	61.67	74.00	-12.33	45.06	12.09	38.05	33.53	205	159	Peak	VERTICAL
2	15602.24	48.26	54.00	-5.74	31.70	12.11	37.98	33.53	205	159	Average	VERTICAL

Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 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	15716.67	60.18	74.00	-13.82	43.86	12.15	37.84	33.67	198	236	Peak	HORIZONTAL
2	15722.24	47.63	54.00	-6.37	31.31	12.15	37.84	33.67	198	236	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	15711.86	61.33	74.00	-12.67	44.96	12.15	37.84	33.62	205	159	Peak	VERTICAL
2	15722.31	48.29	54.00	-5.71	31.97	12.15	37.84	33.67	205	159	Average	VERTICAL

Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 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	15572.98	59.57	74.00	-14.43	42.96	12.09	38.05	33.53	149	236	Peak	HORIZONTAL
2	15576.73	45.66	54.00	-8.34	29.05	12.09	38.05	33.53	149	236	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	15566.96	58.53	74.00	-15.47	41.92	12.09	38.05	33.53	273	181	Peak	VERTICAL
2	15572.50	45.67	54.00	-8.33	29.06	12.09	38.05	33.53	273	181	Average	VERTICAL

Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 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	15688.81	59.79	74.00	-14.21	43.37	12.13	37.91	33.62	230	225	Peak	HORIZONTAL
2	15696.28	46.58	54.00	-7.42	30.21	12.15	37.84	33.62	230	225	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	15695.99	60.08	74.00	-13.92	43.71	12.15	37.84	33.62	188	157	Peak	VERTICAL
2	15697.44	47.26	54.00	-6.74	30.89	12.15	37.84	33.62	188	157	Average	VERTICAL

Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 42 / 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	15630.00	45.44	54.00	-8.56	28.93	12.11	37.98	33.58	244	131	Average	HORIZONTAL
2	15630.00	58.38	74.00	-15.62	41.87	12.11	37.98	33.58	244	131	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	15630.00	45.21	54.00	-8.79	28.70	12.11	37.98	33.58	223	316	Average	VERTICAL
2	15630.00	58.26	74.00	-15.74	41.75	12.11	37.98	33.58	223	316	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.

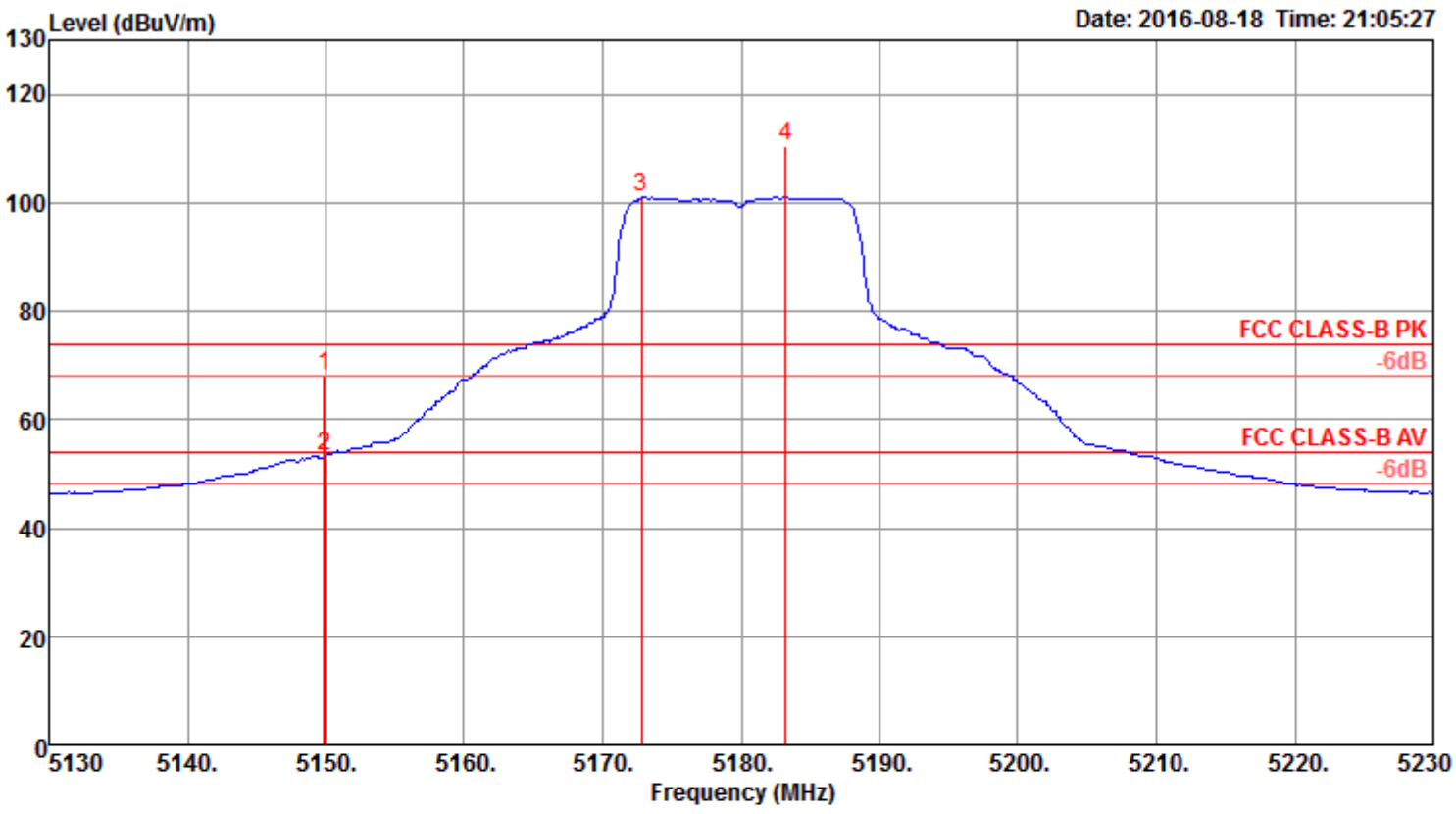
Emission level (dBuV/m) = 20 log Emission level (uV/m).

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

Band Edge Emissions

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

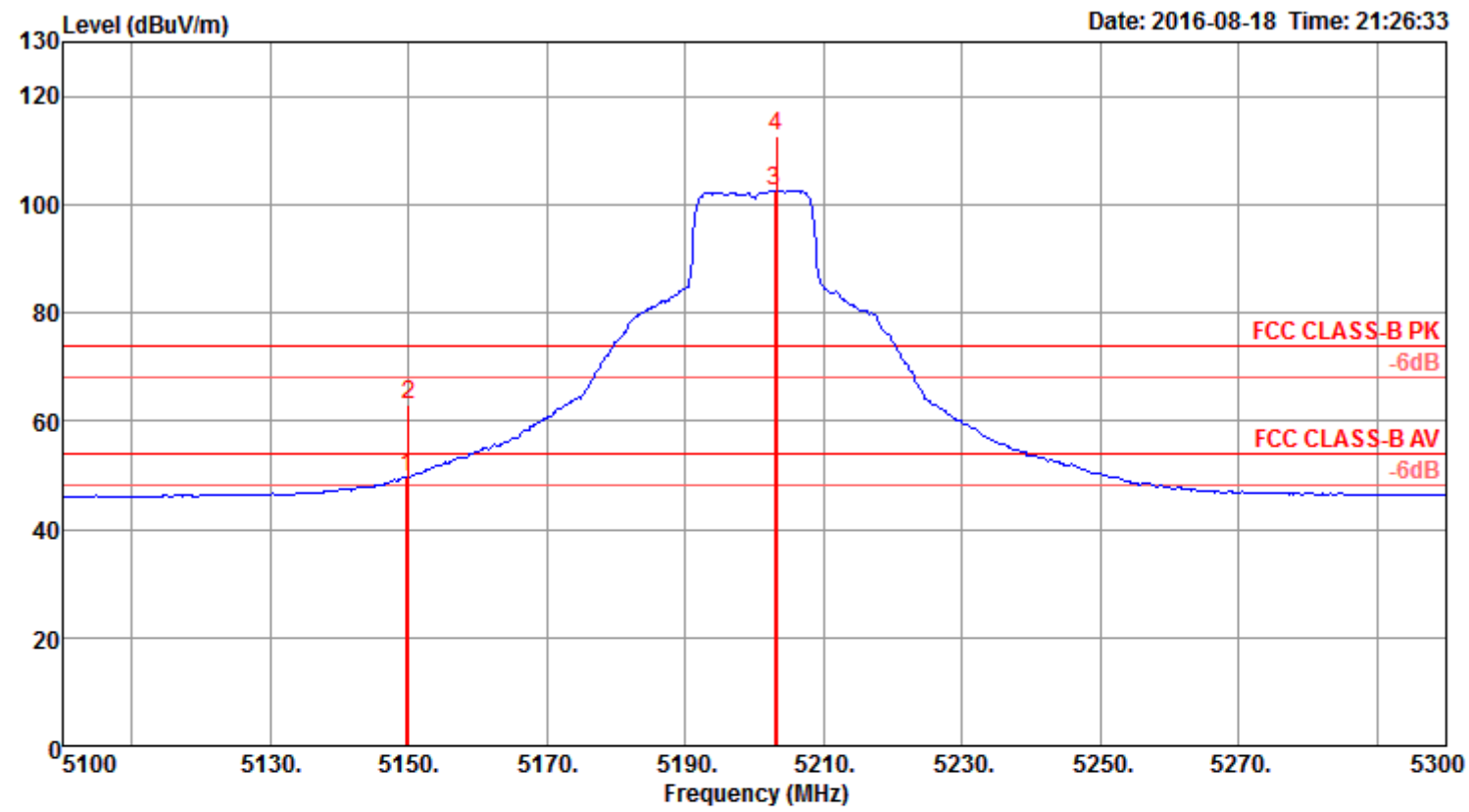
Channel 36



	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	5149.87	68.11	74.00	-5.89	60.85	6.44	33.74	32.92	292	22	Peak	VERTICAL
2	5150.00	53.33	54.00	-0.67	46.07	6.44	33.74	32.92	292	22	Average	VERTICAL
3	5172.79	100.92			93.58	6.47	33.79	32.92	292	22	Average	VERTICAL
4	5183.21	110.61			103.27	6.47	33.79	32.92	292	22	Peak	VERTICAL

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

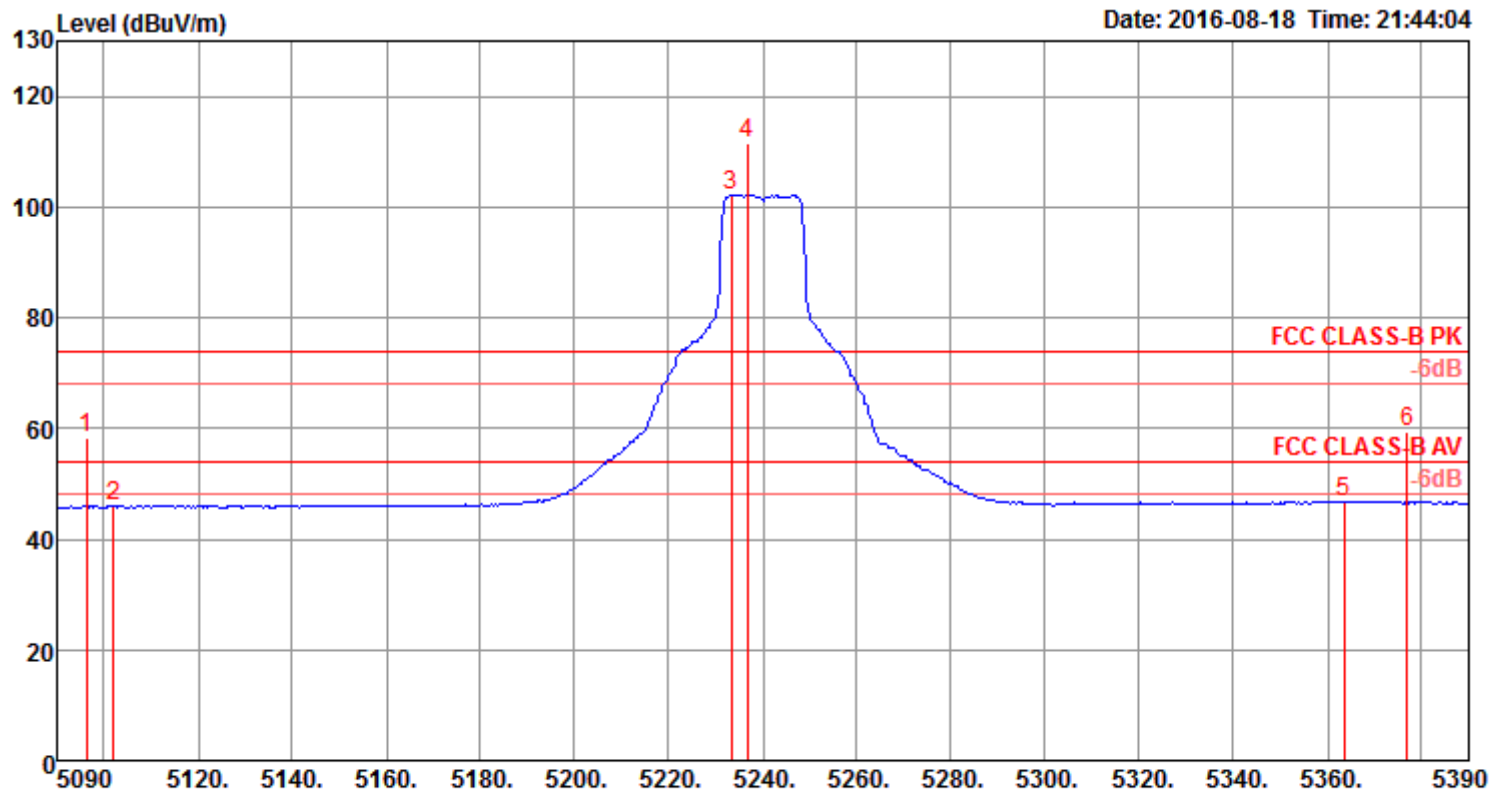
Channel 40



	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	5149.68	49.68	54.00	-4.32	42.42	6.44	33.74	32.92	216	298	Average	HORIZONTAL
2	5150.00	63.14	74.00	-10.86	55.88	6.44	33.74	32.92	216	298	Peak	HORIZONTAL
3	5202.89	102.57			95.16	6.49	33.84	32.92	216	298	Average	HORIZONTAL
4	5203.21	112.49			105.08	6.49	33.84	32.92	216	298	Peak	HORIZONTAL

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

Channel 48

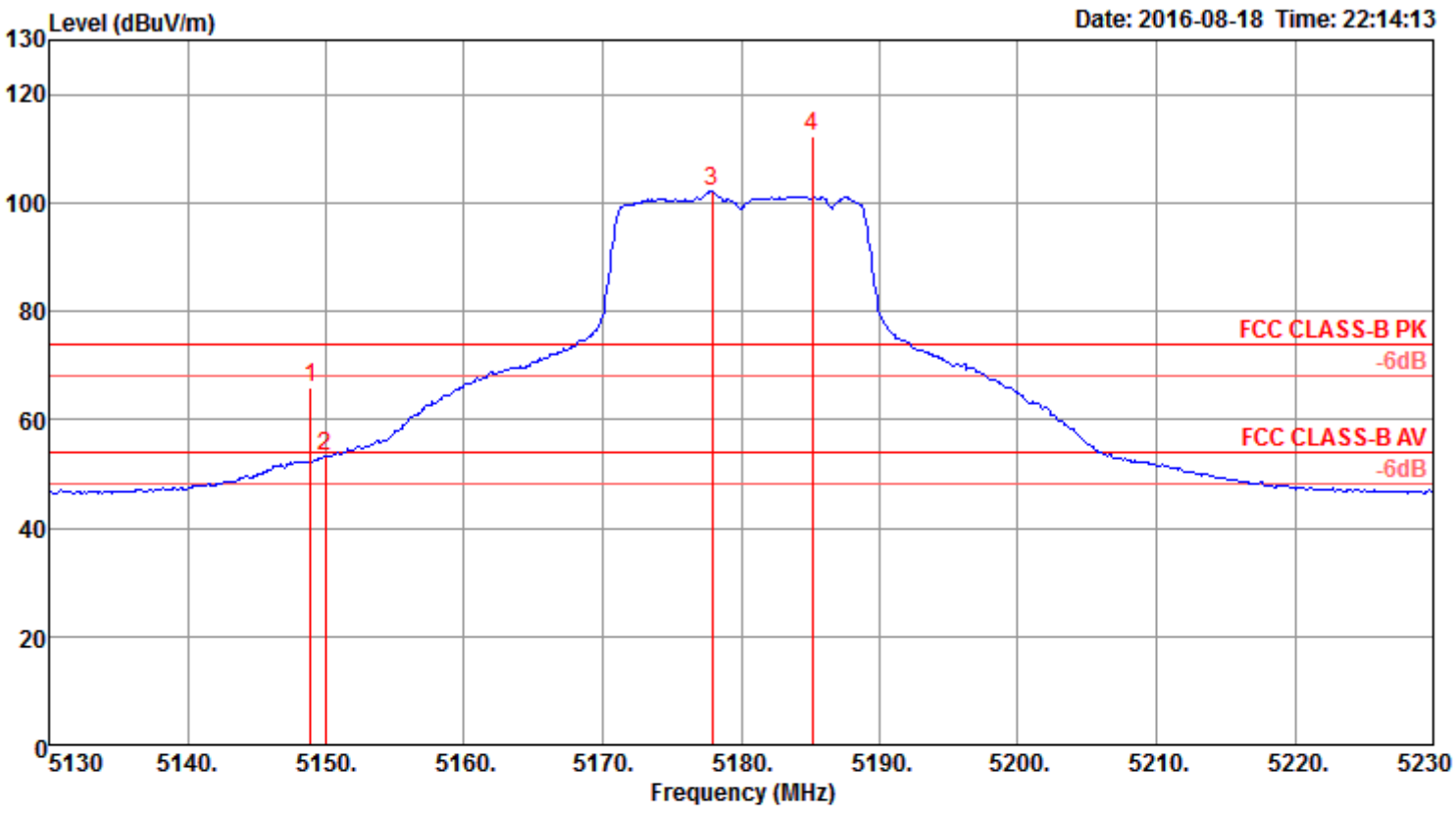


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5096.25	58.26	74.00	-15.74	51.13	6.39	33.65	32.91	299	351	Peak	VERTICAL
2	5102.02	46.07	54.00	-7.93	38.91	6.40	33.67	32.91	299	351	Average	VERTICAL
3	5233.27	102.17			94.68	6.52	33.89	32.92	299	351	Average	VERTICAL
4	5236.64	111.68			104.19	6.52	33.89	32.92	299	351	Peak	VERTICAL
5	5363.56	46.85	54.00	-7.15	39.08	6.62	34.08	32.93	299	351	Average	VERTICAL
6	5377.02	59.50	74.00	-14.50	51.68	6.64	34.11	32.93	299	351	Peak	VERTICAL

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

Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 36, 40, 48 / Chain 1 + Chain 2

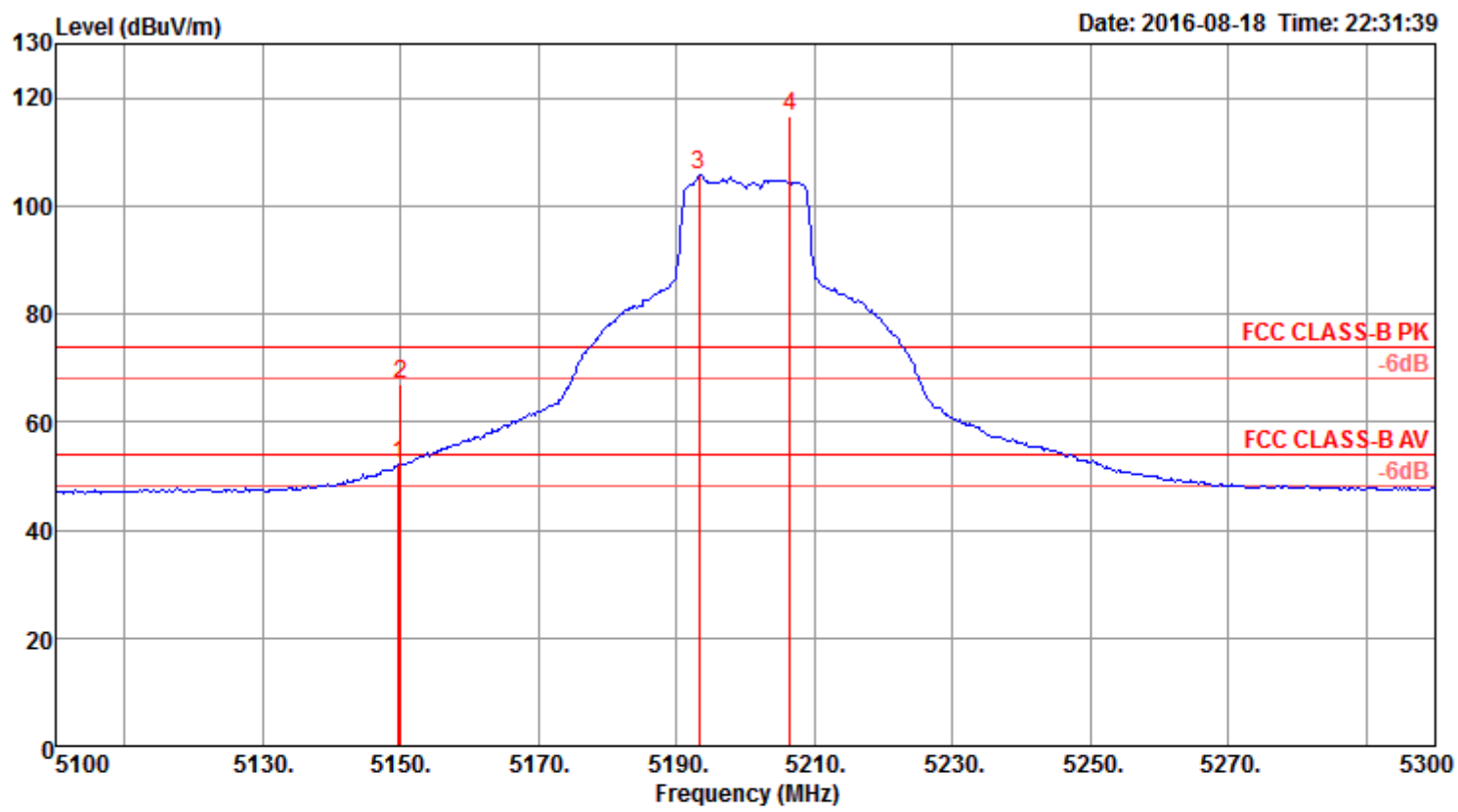
Channel 36



	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	5148.91	65.95	74.00	-8.05	58.69	6.44	33.74	32.92	184	63	Peak	HORIZONTAL
2	5150.00	53.13	54.00	-0.87	45.87	6.44	33.74	32.92	184	63	Average	HORIZONTAL
3	5177.92	102.24			94.90	6.47	33.79	32.92	184	63	Average	HORIZONTAL
4	5185.13	112.18			104.84	6.47	33.79	32.92	184	63	Peak	HORIZONTAL

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

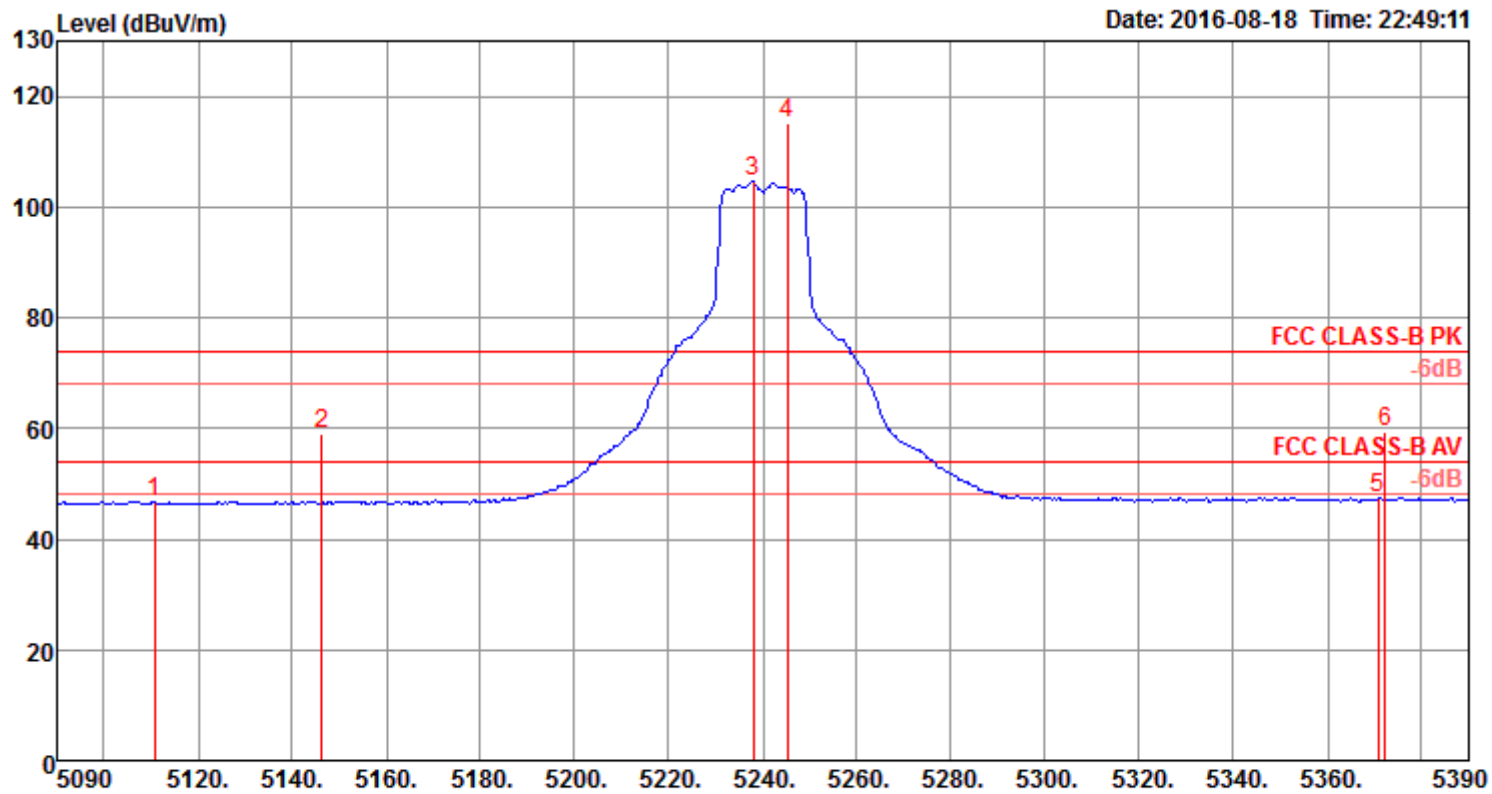
Channel 40



	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	5149.68	51.98	54.00	-2.02	44.72	6.44	33.74	32.92	108	61	Average	HORIZONTAL
2	5150.00	66.89	74.00	-7.11	59.63	6.44	33.74	32.92	108	61	Peak	HORIZONTAL
3	5193.27	105.58			98.20	6.48	33.82	32.92	108	61	Average	HORIZONTAL
4	5206.41	116.59			109.18	6.49	33.84	32.92	108	61	Peak	HORIZONTAL

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

Channel 48

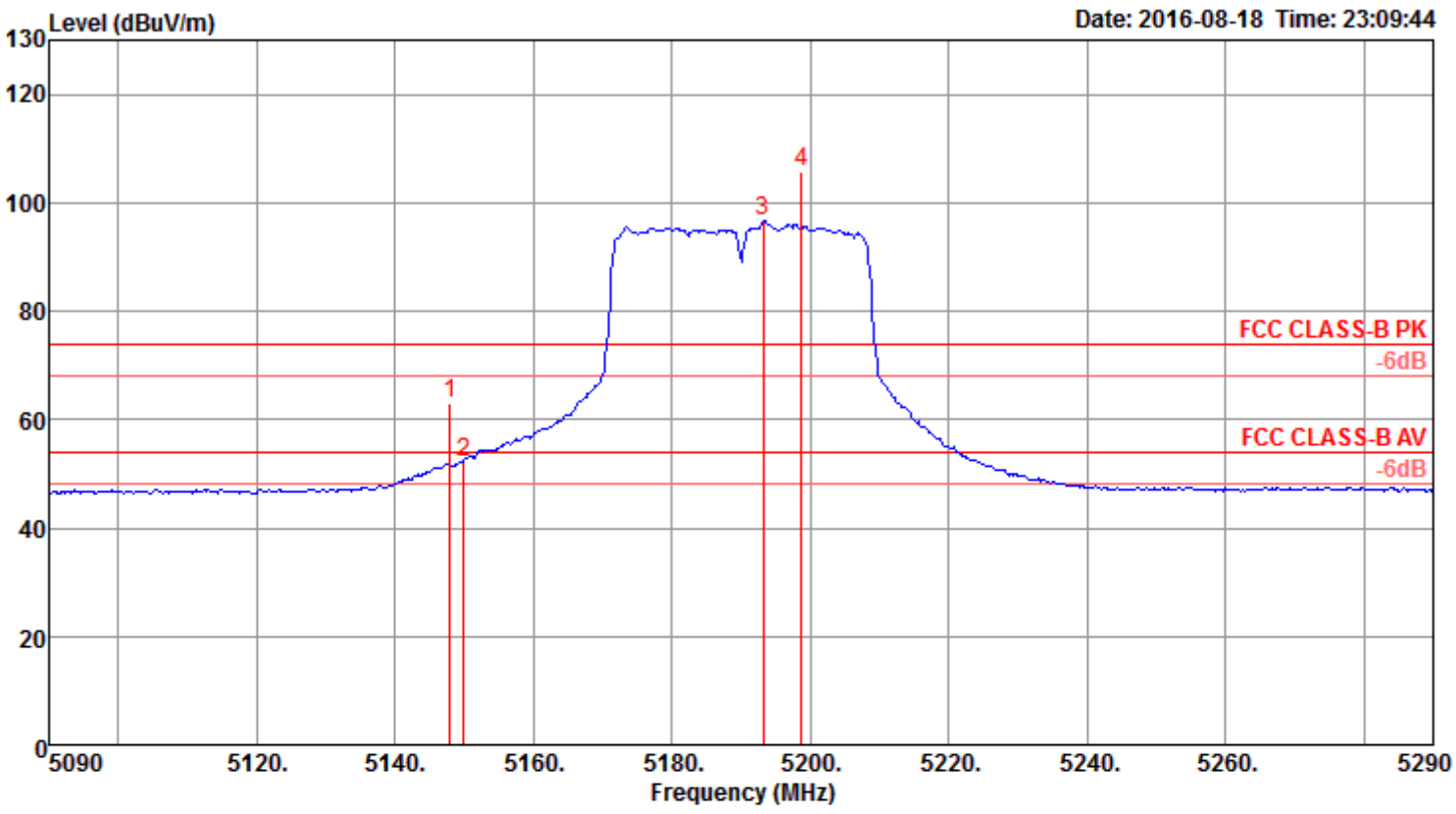


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5110.67	46.62	54.00	-7.38	39.46	6.40	33.67	32.91	291	62	Average	HORIZONTAL
2	5146.25	59.10	74.00	-14.90	51.84	6.44	33.74	32.92	291	62	Peak	HORIZONTAL
3	5238.08	104.63			97.14	6.52	33.89	32.92	291	62	Average	HORIZONTAL
4	5245.29	115.19			107.70	6.52	33.89	32.92	291	62	Peak	HORIZONTAL
5	5370.77	47.45	54.00	-6.55	39.63	6.64	34.11	32.93	291	62	Average	HORIZONTAL
6	5372.21	59.37	74.00	-14.63	51.55	6.64	34.11	32.93	291	62	Peak	HORIZONTAL

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

Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 38, 46 / Chain 1 + Chain 2

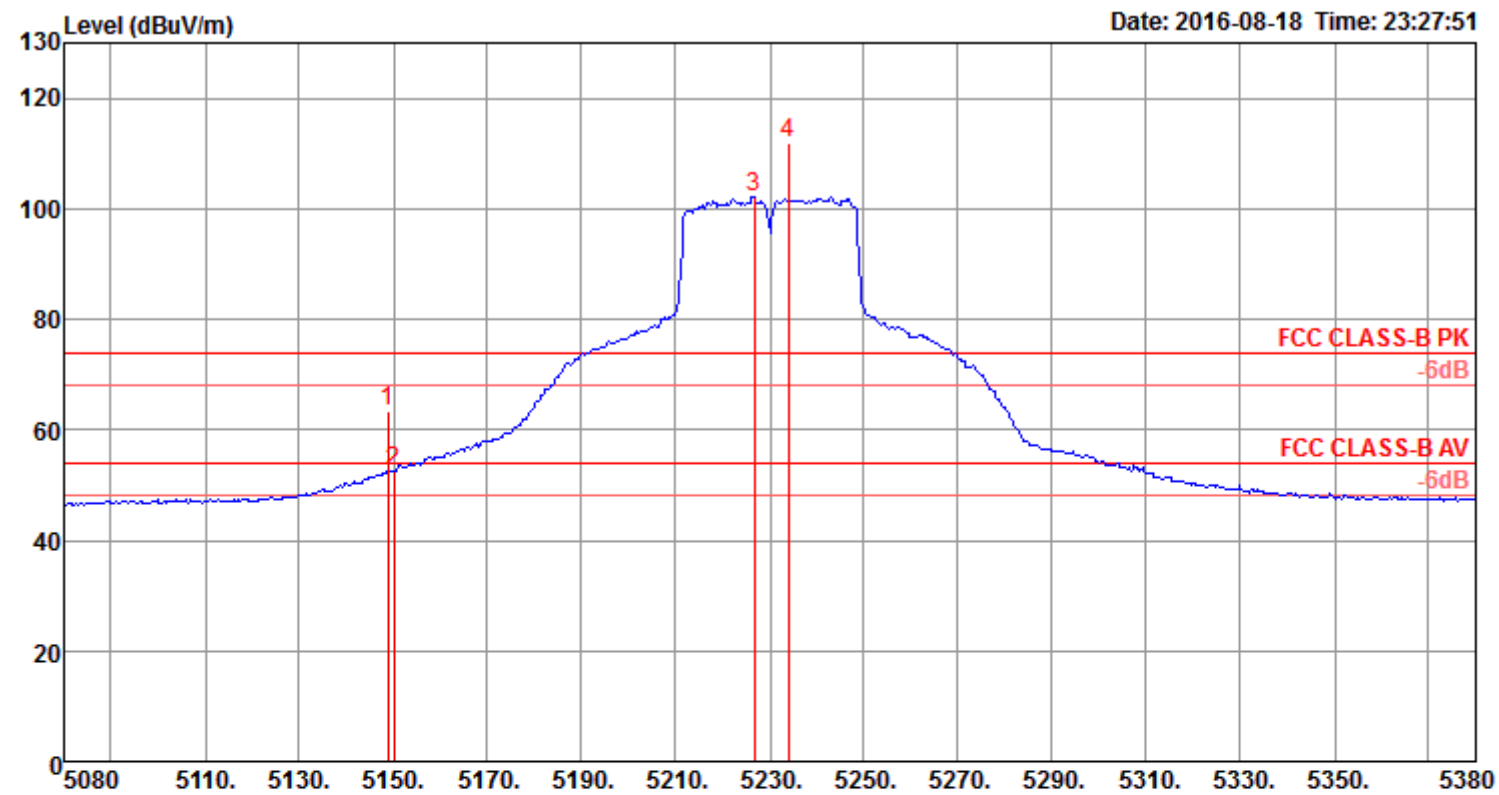
Channel 38



	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	5148.01	63.17	74.00	-10.83	55.91	6.44	33.74	32.92	117	69	Peak	HORIZONTAL
2	5150.00	52.04	54.00	-1.96	44.78	6.44	33.74	32.92	117	69	Average	HORIZONTAL
3	5193.21	96.57			89.19	6.48	33.82	32.92	117	69	Average	HORIZONTAL
4	5198.65	105.79			98.41	6.48	33.82	32.92	117	69	Peak	HORIZONTAL

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

Channel 46

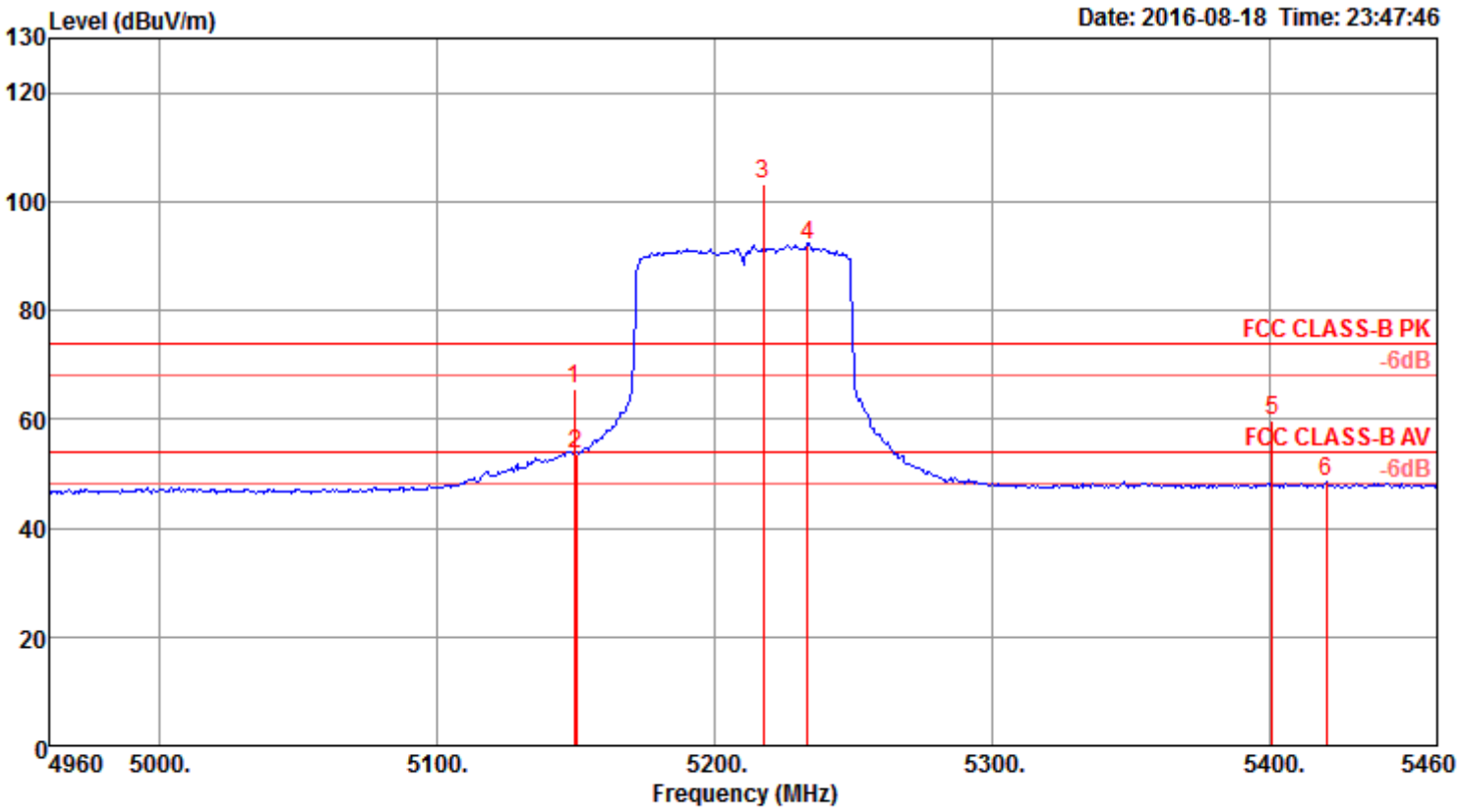


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5148.75	63.43	74.00	-10.57	56.17	6.44	33.74	32.92	112	65	Peak	HORIZONTAL
2	5150.00	52.52	54.00	-1.48	45.26	6.44	33.74	32.92	112	65	Average	HORIZONTAL
3	5226.64	102.08			94.63	6.51	33.86	32.92	112	65	Average	HORIZONTAL
4	5233.85	111.94			104.45	6.52	33.89	32.92	112	65	Peak	HORIZONTAL

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

Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 42 / Chain 1 + Chain 2

Channel 42



	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	5149.10	65.41	74.00	-8.59	58.15	6.44	33.74	32.92	126	67	Peak	HORIZONTAL
2	5150.00	53.74	54.00	-0.26	46.48	6.44	33.74	32.92	126	67	Average	HORIZONTAL
3	5217.21	103.28			95.83	6.51	33.86	32.92	126	67	Peak	HORIZONTAL
4	5233.24	92.03			84.54	6.52	33.89	32.92	126	67	Average	HORIZONTAL
5	5400.71	59.78	74.00	-14.22	51.93	6.65	34.13	32.93	126	67	Peak	HORIZONTAL
6	5419.94	48.68	54.00	-5.32	40.76	6.67	34.18	32.93	126	67	Average	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5210 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	5199.9130	5199.9130	5199.9130	5199.9130
110.00	5199.9710	5199.9710	5199.9710	5199.9710
93.50	5199.9130	5199.9130	5199.9130	5199.9130
Max. Deviation (MHz)	0.0870	0.0870	0.0870	0.0870
Max. Deviation (ppm)	16.73	16.73	16.73	16.73
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(℃)	5200 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5199.9160	5199.9160	5199.9160	5199.9100
10	5199.9820	5199.9060	5199.9100	5199.9020
20	5199.9710	5199.9710	5199.9710	5199.9710
30	5199.9120	5199.9250	5199.9180	5199.9160
40	5199.9520	5199.9140	5199.9160	5199.9180
Max. Deviation (MHz)	0.0880	0.0940	0.0900	0.0980
Max. Deviation (ppm)	16.92	18.08	17.31	18.85
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	5189.9370	5189.9370	5189.9400	5189.9340
110.00	5189.9781	5189.9311	5189.9311	5189.9370
93.50	5189.9310	5189.9310	5189.9310	5189.9340
Max. Deviation (MHz)	0.0690	0.0690	0.0690	0.0660
Max. Deviation (ppm)	13.29	13.29	13.29	12.72
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(℃)	5190 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5189.9310	5189.9400	5189.9310	5189.9370
10	5189.9370	5189.9370	5189.9400	5189.9400
20	5189.9781	5189.9311	5189.9311	5189.9370
30	5189.9400	5189.9370	5189.9370	5189.9400
40	5189.9370	5189.9310	5189.9400	5189.9310
Max. Deviation (MHz)	0.0690	0.0690	0.0690	0.0690
Max. Deviation (ppm)	13.29	13.29	13.29	13.29
Result	Pass			

Mode: 80 MHz / Chain 1

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5210 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5209.9450	5209.9830	5209.9500	5209.9830
110.00	5209.9500	5209.9250	5209.9500	5209.9450
93.50	5209.9550	5209.9450	5209.9350	5209.9550
Max. Deviation (MHz)	0.0550	0.0750	0.0650	0.0550
Max. Deviation (ppm)	10.56	14.40	12.48	10.56
Result	Pass			

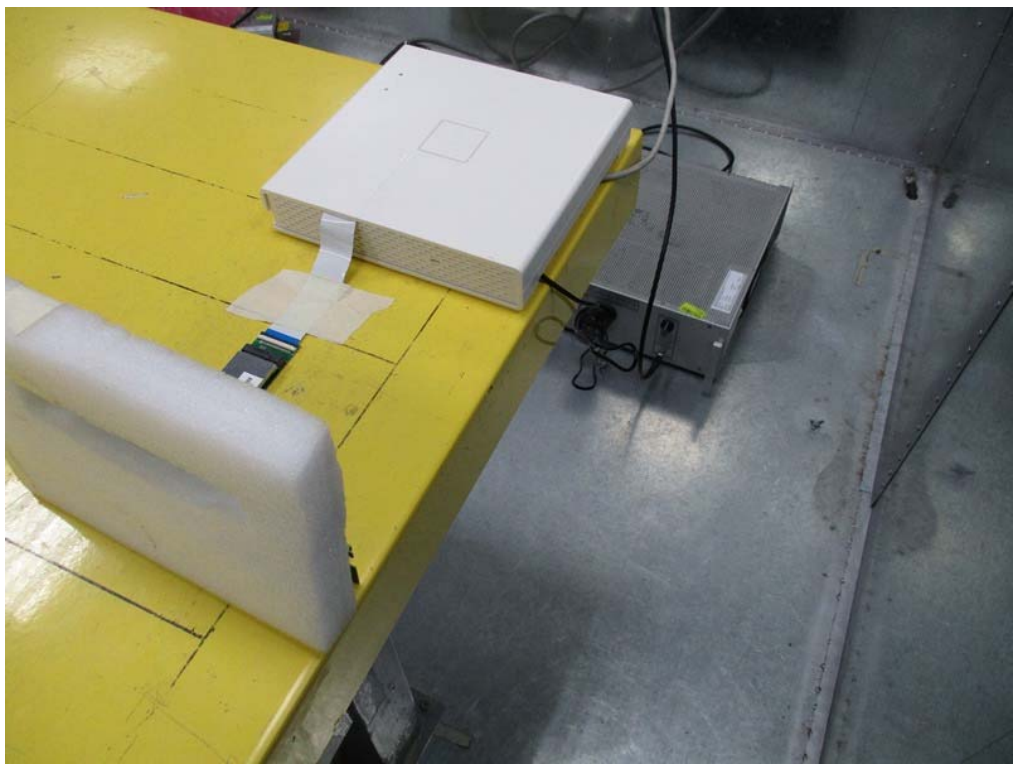
Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(℃)	5210 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5209.9550	5209.9550	5209.9550	5209.9450
10	5209.9450	5209.9450	5209.9450	5209.9550
20	5209.9500	5209.9250	5209.9500	5209.9450
30	5209.9550	5209.9830	5209.9550	5209.9830
40	5209.9830	5209.9450	5209.9450	5209.9550
Max. Deviation (MHz)	0.0550	0.0750	0.0550	0.0550
Max. Deviation (ppm)	10.56	14.40	10.56	10.56
Result	Pass			

1. Photographs of Conducted Emissions Test Configuration

FRONT VIEW

REAR VIEW

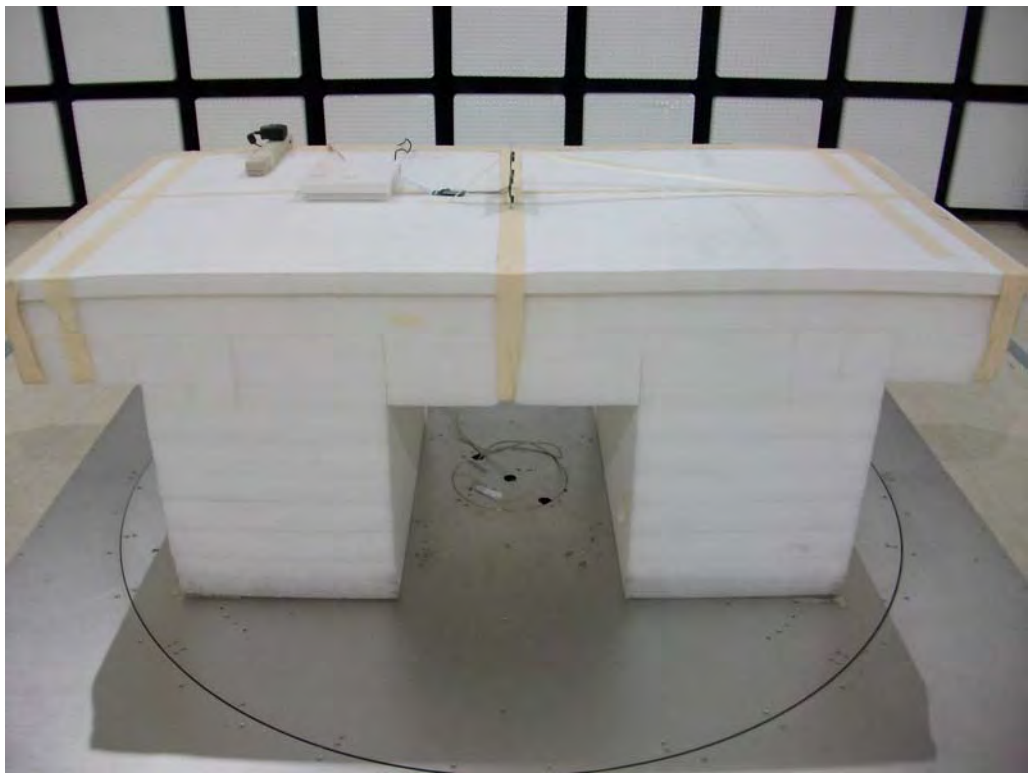


CLOSE-UP VIEW

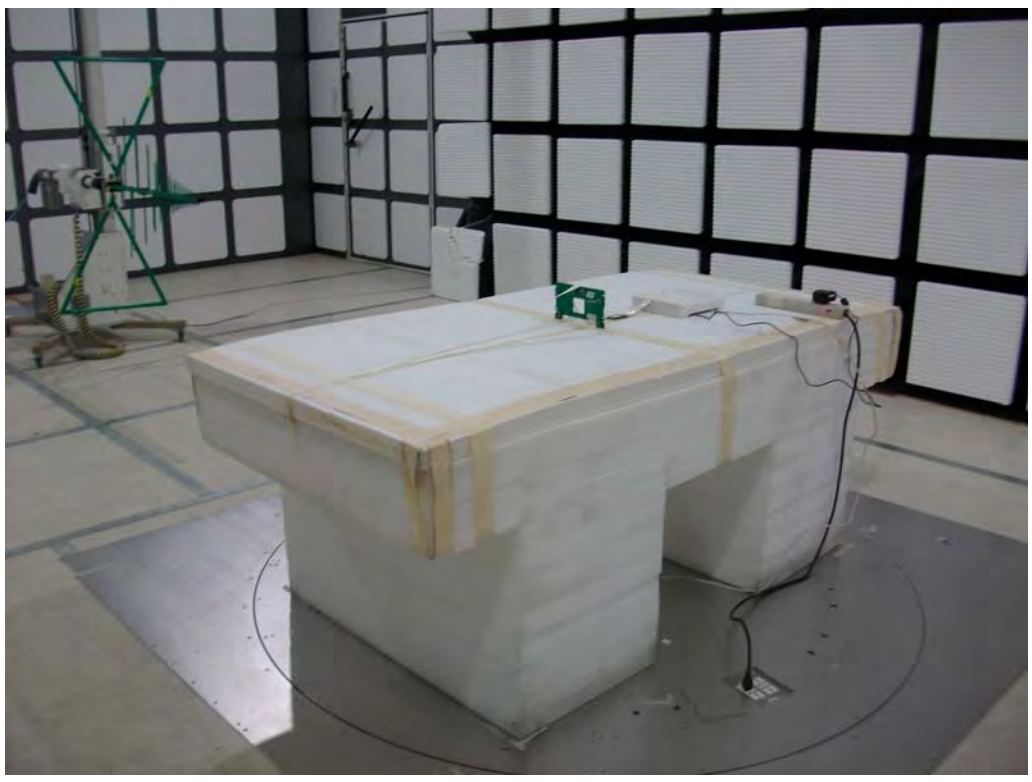
2. Photographs of Radiated Emissions Test Configuration

Test Configuration: 30MHz~1GHz

FRONT VIEW



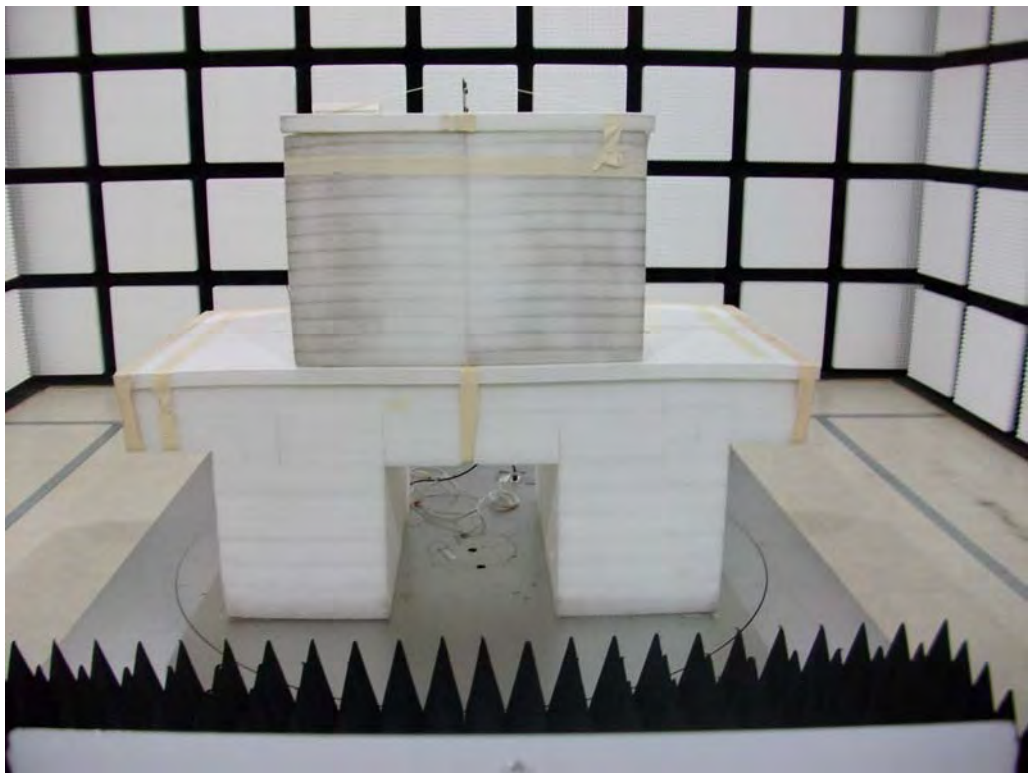
REAR VIEW



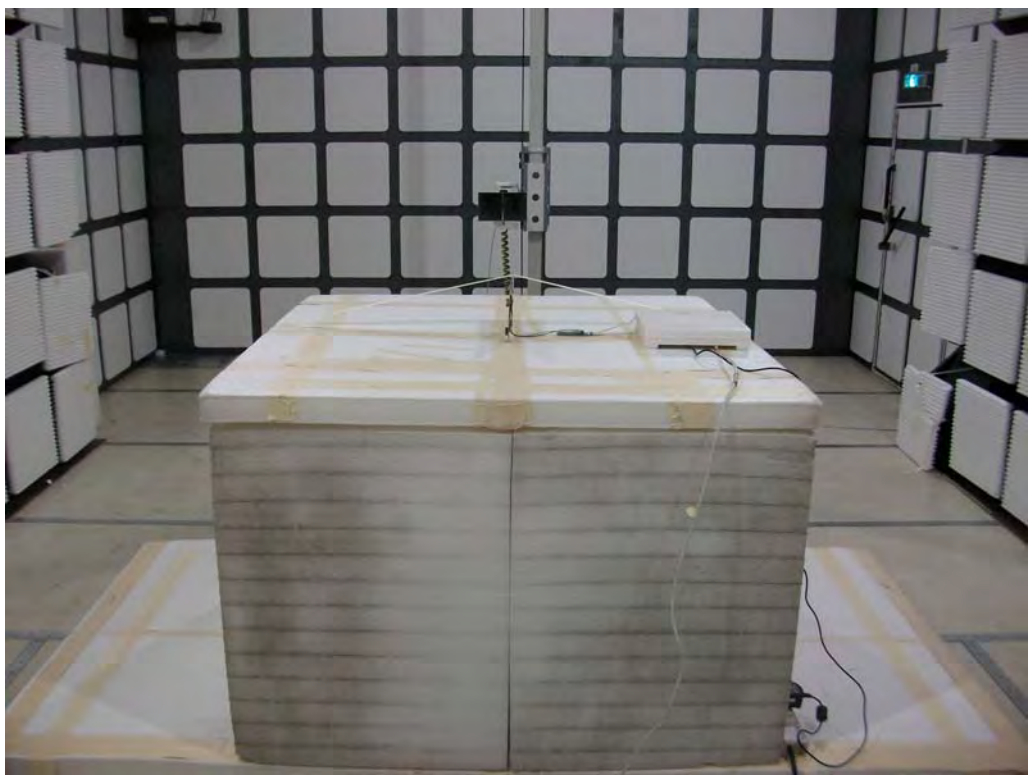
CLOSE-UP VIEW

Test Configuration: Above 1GHz

FRONT VIEW



REAR VIEW



CLOSE-UP VIEW