

FCC Test Report

Equipment : UHD Set -Top Box
Brand Name : AirTies
Model No. : Air 7410X
FCC ID : Z3WAIR7410
Standard : 47 CFR FCC Part 15.407
Operating Band : 5150 MHz – 5250 MHz
5725 MHz – 5850 MHz
Applicant : AirTies Wireless Networks
Gülbahar Mah. Avni Dilligil Sok. Celik Is Merkezi No 5
mecidiyekoy ISTANBUL, 34394 Turkey
Function : ☐ Outdoor; ☒ Indoor; ☐ Fixed P2P
☐ Client

The product sample received on Jan. 29, 2016 and completely tested on Aug. 25, 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.



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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

[illegible]

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]
5725-5850		5745-5825	149-165 [5]
5150-5250	n (HT40), ac (VHT40)	5190-5230	38-46 [2]
5725-5850		5755-5795	151-159 [2]
5150-5250	ac (VHT80)	5210	42 [1]
5725-5850		5775	155 [1]

Band	Mode	BWch (MHz)	Nant
5.2G	11a	20	1
5.8G	11a	20	1
5.2G	HT20,Non-BF	20	3
5.8G	HT20,Non-BF	20	3
5.2G	HT20,BF	20	3
5.8G	HT20,BF	20	3
5.2G	VHT20,Non-BF	20	3
5.8G	VHT20,Non-BF	20	3
5.2G	VHT20,BF	20	3
5.8G	VHT20,BF	20	3
5.2G	HT40,Non-BF	40	3
5.8G	HT40,Non-BF	40	3
5.2G	HT40,BF	40	3
5.8G	HT40,BF	40	3
5.2G	VHT40,Non-BF	40	3
5.8G	VHT40,Non-BF	40	3
5.2G	VHT40,BF	40	3
5.8G	VHT40,BF	40	3
5.2G	VHT80,Non-BF	80	3
5.8G	VHT80,Non-BF	80	3
5.2G	VHT80,BF	80	3
5.8G	VHT80,BF	80	3



Note:

- ♦ 5.2G/5.2G-I(IC) is the 5.2GHz Band (5.15-5.25GHz).
- ♦ 5.8G/5.8G-I(IC) is the 5.8GHz Band (5.725-5.850GHz).
- ♦ 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.

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)			Remark
					Antenna Gain (dBi)	Cable Loss (dB)	True Gain (dBi)	
1	-	-	Printed Antenna	N/A	3.444	-	3.444	2.4G WLAN
2	-	-	Printed Antenna	N/A	3.444	-	3.444	2.4G WLAN
3	-	-	PIFA Antenna	I-PEX	5.83	0.5	5.33	5G WLAN
4	-	-	PIFA Antenna	I-PEX	5.83	0.5	5.33	5G WLAN
5	-	-	PIFA Antenna	I-PEX	5.83	0.5	5.33	5G WLAN

Note: The EUT has five wifi antennas.

For 2.4G WLAN Function

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

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

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

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

Chain 1 and chain 2 could transmit/receive simultaneously.

For 5G WLAN Function

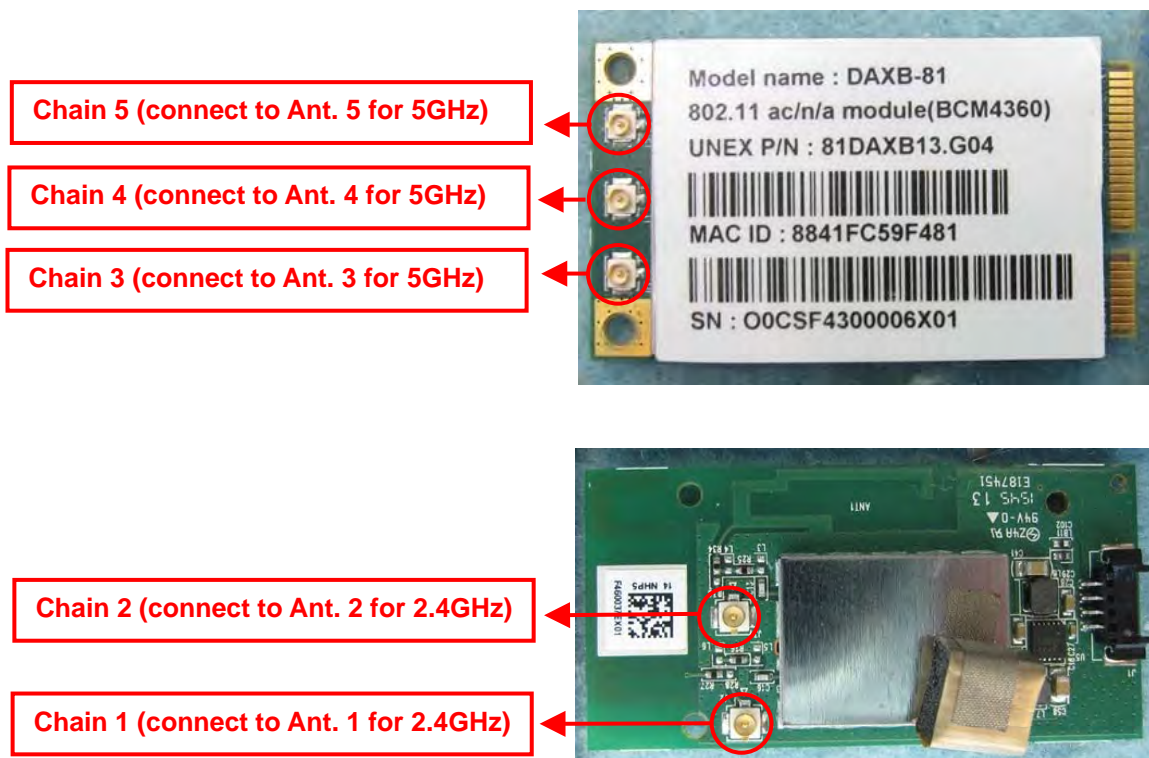
For IEEE 802.11a mode (1TX/1RX):

Only chain 3 can be used as transmitting/receiving antenna.

For IEEE 802.11n/ac mode (3TX/3RX):

Chain 3, chain 4 and chain 5 can be used as transmitting/receiving antenna.

Chain 3, chain 4 and chain 5 could transmit/receive simultaneously.



1.1.3 Mode Test Duty Cycle

Mode	DC	T(s)	VBW(Hz) $\geq 1/T$
11a	0.988	n/a (DC \geq 0.98)	n/a (DC \geq 0.98)
VHT20,BF	0.986	n/a (DC \geq 0.98)	n/a (DC \geq 0.98)
VHT40,BF	0.973	953.125u	3k
VHT80,BF	0.944	461.25u	3k

1.1.4 EUT Operational Condition

EUT Power Type	From Power Adapter		
Beamforming Function	<input checked="" type="checkbox"/>	With beamforming for 802.11n/ac in 5GHz	<input type="checkbox"/> 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				
<input type="checkbox"/>	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
<input checked="" type="checkbox"/>	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	20°C / 60%	Jun. 16, 2016 ~ Aug. 25, 2016
Radiated	03CH01-CB	Akina Chiu	19.9°C / 50%	Feb. 24, 2016 ~ May 31, 2016
AC Conduction	CO01-CB	Da Deng	24°C / 55%	Feb. 26, 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	5180	L	79
5.2G	11a	20	1	1	5200	M	100
5.2G	11a	20	1	1	5240	H	73
5.2G	VHT20,BF	20	1,(M0-8)	3	5180	L	66
5.2G	VHT20,BF	20	1,(M0-8)	3	5200	M	79
5.2G	VHT20,BF	20	1,(M0-8)	3	5240	H	76
5.2G	VHT40,BF	40	1,(M0-9)	3	5190	L	43
5.2G	VHT40,BF	40	1,(M0-9)	3	5230	H	60
5.2G	VHT80,BF	80	1,(M0-9)	3	5210	S	44
5.8G	11a	20	1	1	5745	L	90
5.8G	11a	20	1	1	5785	M	90
5.8G	11a	20	1	1	5825	H	90
5.8G	VHT20,BF	20	1,(M0-8)	3	5745	L	87
5.8G	VHT20,BF	20	1,(M0-8)	3	5785	M	87
5.8G	VHT20,BF	20	1,(M0-8)	3	5825	H	88
5.8G	VHT40,BF	40	1,(M0-9)	3	5755	L	84
5.8G	VHT40,BF	40	1,(M0-9)	3	5795	H	84
5.8G	VHT80,BF	80	1,(M0-9)	3	5775	S	74

Note1: There are two functions of EUT, one is beamforming function, and the other is non-beamforming function for 802.11n/ac, after evaluating, beamforming function has been evaluated to be the worst case, so it was selected to test and record in this test report.

Note2: 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	Normal Link
1	EUT + 2.4GHz WLAN + RF4CE idle
2	EUT + 5GHz WLAN + RF4CE idle
For operating mode 2 is the worst case and it was record in this test report.	

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	Normal Link
1	EUT + 2.4GHz WLAN + RF4CE idle
2	EUT + 5GHz WLAN + RF4CE idle
For operating mode 1 is the worst case and it was record in this test report.	
Operating Mode > 1GHz	CTX
1	EUT in Z axis

Note1: The EUT can only be used at Z axis position.

Note2: All the specification of test configurations and test modes were based on customer's request.

2.3 EUT Operation during Test

For non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

For beamforming mode:

For Conducted Mode:

The EUT was programmed to be in continuously transmitting mode.

For Radiated Mode:

During the test, the following programs under WIN XP were executed.

The program was executed as follows:

1. During the test, the EUT operation to normal function.
2. Executed command fixed test channel under DOS.
3. Executed "Lantest.exe " to link with the remote workstation to receive and transmit packet by Wireless AP and transmit duty cycle no less 98%

2.4 Accessories

Accessories			
Equipment Name	Brand Name	Model Name	Rating
Adapter	MOSO	MSP-C1500IC12.0-18A-US	INPUT: 100-240V, 50/60Hz, 0.6A max OUTPUT: 12.0V, 1.5A
Others			
RJ-45 cable*1: Non-shielded, 1.5m			
HDMI cable*1: Shielded, 1.5m			
Scart cable*1: Non-shielded, 1.2m			
Remote controller*1			

2.5 Support Equipment

For Test Site No: CO01-CB

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	NB*2	DELL	E6430	DoC
2	AP	Planex	GW-AP54SGX	KA220030603014-1
3	HDMI box	Gefen	EXT-HDBOOST-141	DoC
4	HDD3.0	WD	WDBACY5000AWT	DoC

For Test Site No: 03CH01-CB (below 1GHz)

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	NB*2	DELL	E4300	DoC
2	AP	Planex	GW-AP54SGX	KA220030603014-1
3	HDMI box	Gefen	EXT-HDBOOST-141	DoC
4	HDD3.0	WD	WDBACY5000AWT	DoC

For Test Site No: 03CH01-CB (above 1GHz)
For non-beamforming mode

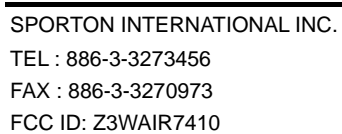
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	NB	DELL	E4300	DoC

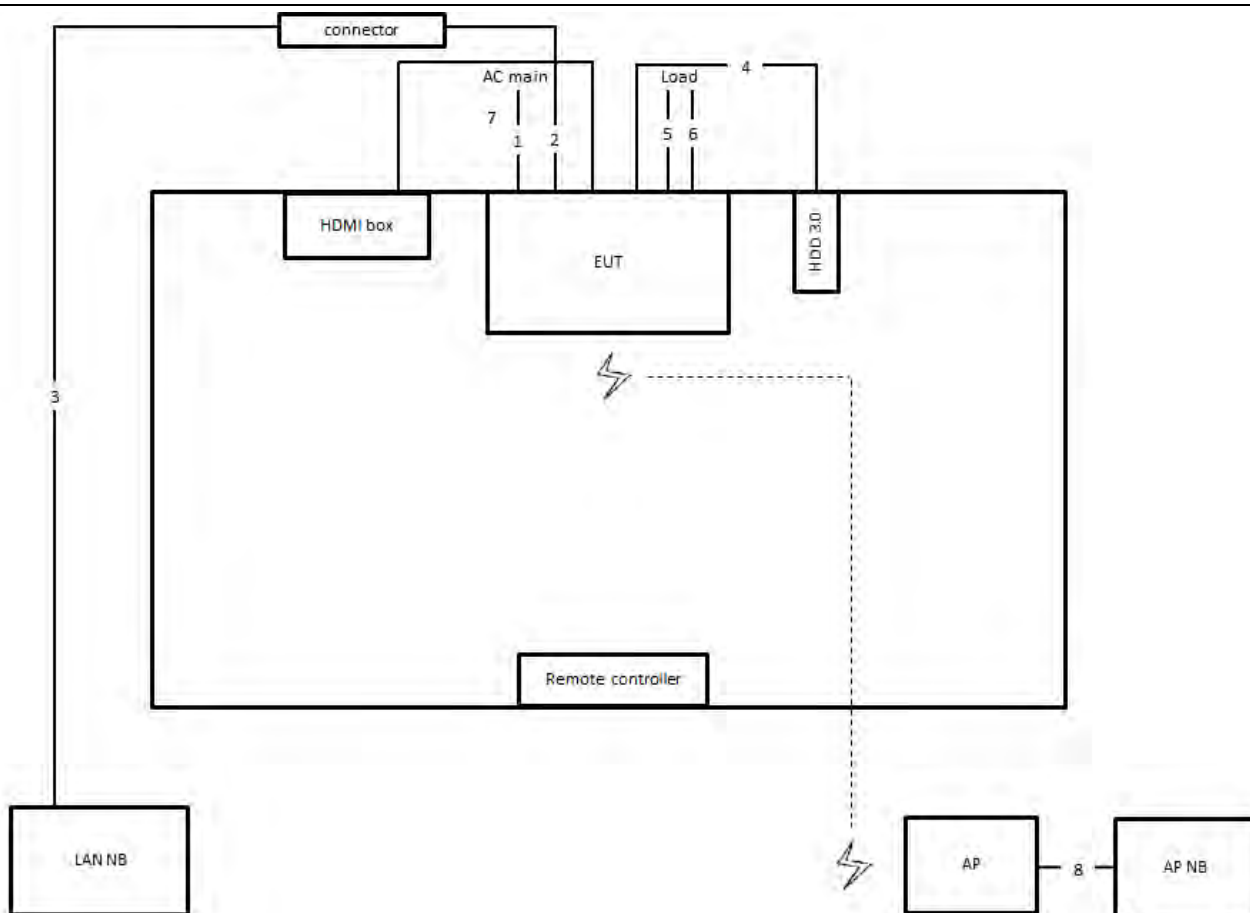
For beamforming mode

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	NB*2	DELL	E4300	DoC
2	AP	Airties	Air4920	Z3WAIR4920

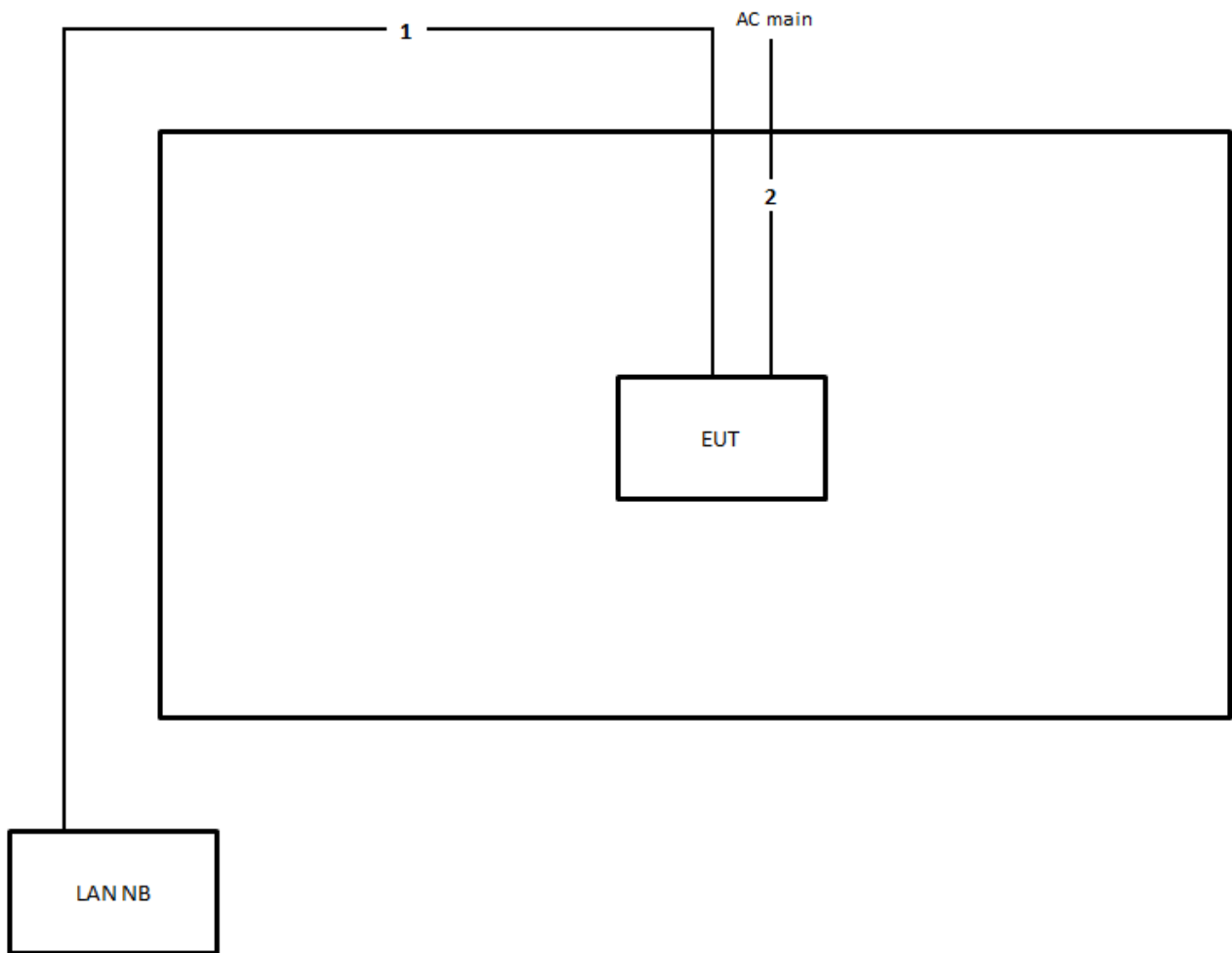
For Test Site No: TH01-CB

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	NB	DELL	E4300	DoC

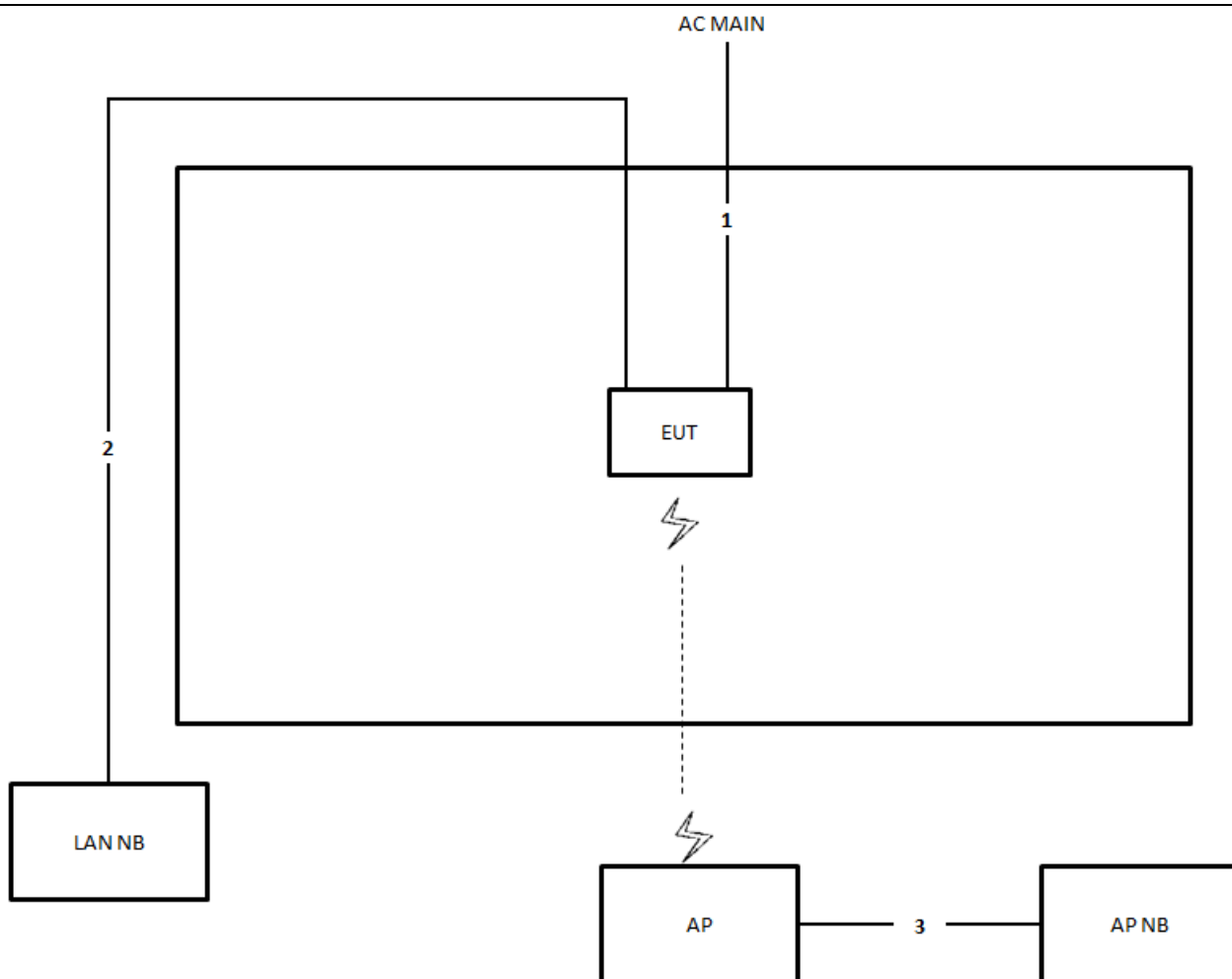


Test Setup Diagram - Radiated Test < 1GHz


Item	Connection	Shielded	Length
1	Power cable	No	1.5m
2	RJ-45 cable	No	1.5m
3	RJ-45 cable	No	10m
4	USB cable	Yes	0.4m
5	Scart cable	No	1.2m
6	Fiber cable	No	1m
7	HDMI cable	Yes	1.5m
8	RJ-45 cable	No	1.5m

Test Setup Diagram - Radiated Test > 1GHz / For non-beamforming mode


Item	Connection	Shielded	Length
1	RJ-45 cable	No	10m
2	Power cable	No	1.5m

Test Setup Diagram - Radiated Test > 1GHz / For beamforming mode


Item	Connection	Shielded	Length
1	Power cable	No	1.5m
2	RJ-45 cable	No	10m
3	RJ-45 cable	No	1.5m

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.

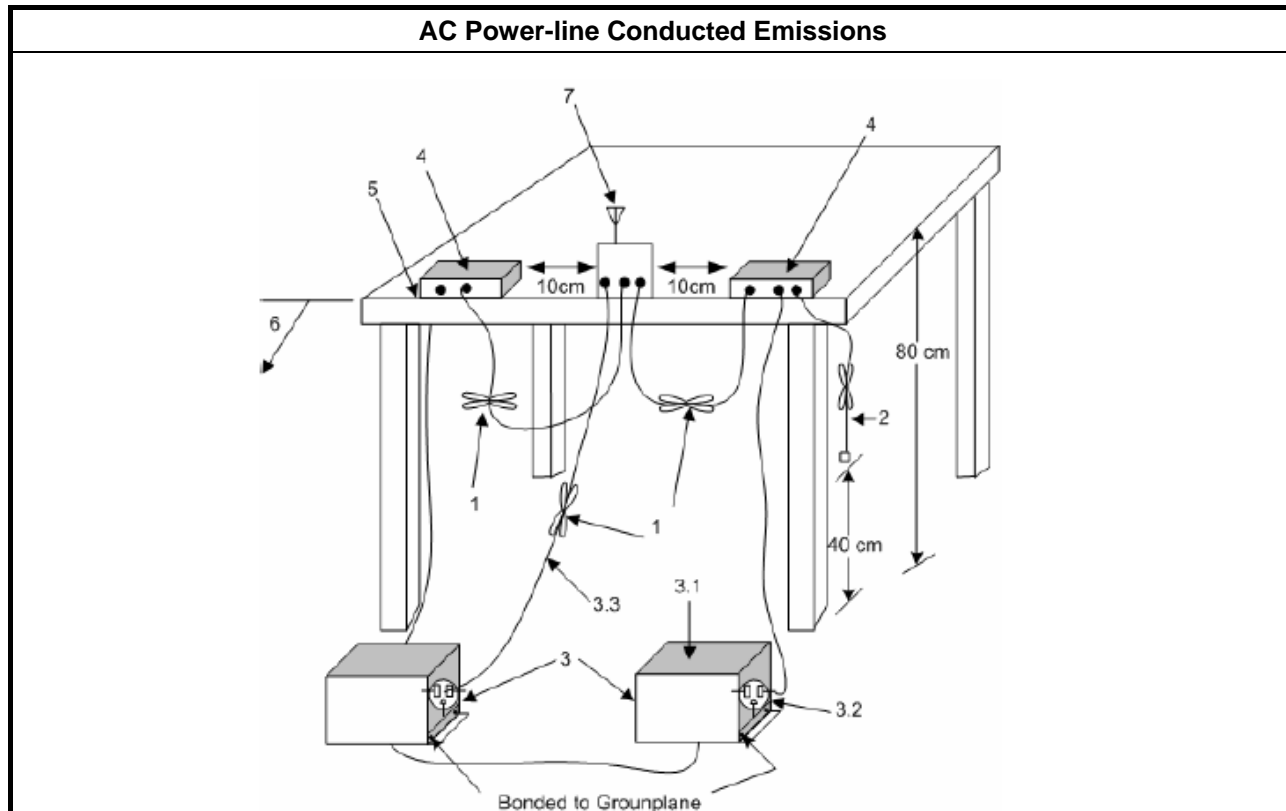
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

Test Method
<input checked="" type="checkbox"/> Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Test Setup





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	
<input checked="" type="checkbox"/>	For the 5.15-5.25 GHz band, N/A
<input type="checkbox"/>	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.
<input type="checkbox"/>	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.
<input checked="" type="checkbox"/>	For the 5.725-5.85 GHz band, 6 dB emission bandwidth \geq 500kHz.
LE-LAN Devices	
<input type="checkbox"/>	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.
<input type="checkbox"/>	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
<input type="checkbox"/>	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
<input type="checkbox"/>	For the 5.725-5.85 GHz band, 6 dB emission bandwidth \geq 500kHz.

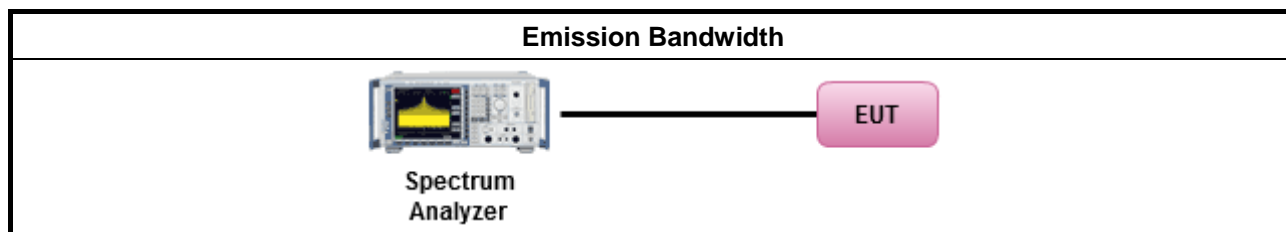
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> For the emission bandwidth shall be measured using one of the options below: 	
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033 D02 v01r03, clause C for EBW and clause D for OBW measurement.
<input type="checkbox"/>	Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.
<input checked="" type="checkbox"/>	Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.

3.2.4 Test Setup



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	
<input checked="" type="checkbox"/> For the 5.15-5.25 GHz band:	
<input type="checkbox"/>	<ul style="list-style-type: none"> 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 $P_{Out} = 24 - (G_{TX} - 6)$.
<input type="checkbox"/>	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 $P_{Out} = 24 - (G_{TX} - 6)$.
<input type="checkbox"/>	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 $P_{Out} = 24 - (G_{TX} - 6)$.
<input checked="" type="checkbox"/> For the 5.725-5.85 GHz band:	
<input type="checkbox"/>	<ul style="list-style-type: none"> 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	
<input type="checkbox"/>	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.
<input type="checkbox"/>	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
<input type="checkbox"/>	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
<input type="checkbox"/> For the 5.725-5.85 GHz band:	
<input type="checkbox"/>	<ul style="list-style-type: none"> 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.	

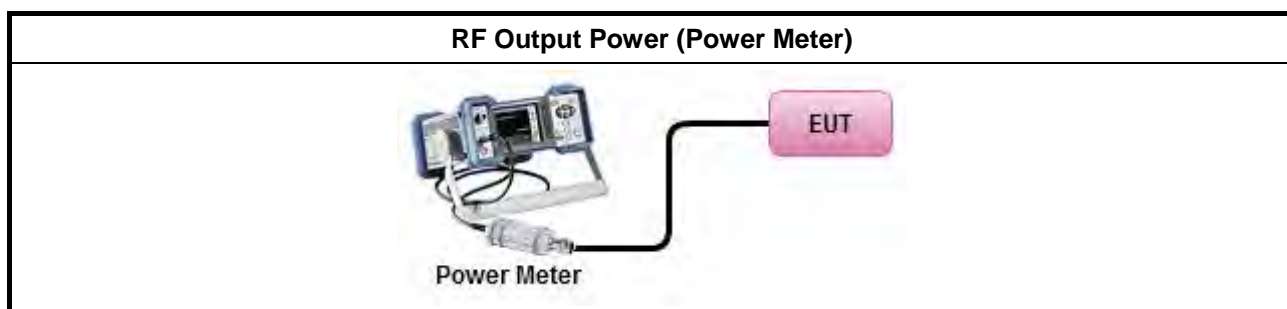
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> Maximum Conducted Output Power 	
	[duty cycle \geq 98% or external video / power trigger]
<input type="checkbox"/>	Refer as FCC KDB 789033 D02 v01r03, clause E Method SA-1 (spectral trace averaging).
<input type="checkbox"/>	Refer as FCC KDB 789033 D02 v01r03, clause E Method SA-1 Alt. (RMS detection with slow sweep speed)
	duty cycle < 98% and average over on/off periods with duty factor
<input type="checkbox"/>	Refer as FCC KDB 789033 D02 v01r03, clause E Method SA-2 (spectral trace averaging).
<input type="checkbox"/>	Refer as FCC KDB 789033 D02 v01r03, 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
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033 D02 v01r03, clause E Method PM-G (using an RF average power meter).
<ul style="list-style-type: none"> For conducted measurement. 	
	<ul style="list-style-type: none"> 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.
	<ul style="list-style-type: none"> If multiple transmit chains, EIRP calculation could be following as methods: $P_{\text{total}} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $\text{EIRP}_{\text{total}} = P_{\text{total}} + \text{DG}$

3.3.4 Test Setup



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	
<input checked="" type="checkbox"/> For the 5.15-5.25 GHz band:	
	<ul style="list-style-type: none"> 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 $PPSD = 11 - (G_{TX} - 6)$.
<input type="checkbox"/> For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.	
<input type="checkbox"/> For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.	
<input checked="" type="checkbox"/> For the 5.725-5.85 GHz band:	
	<ul style="list-style-type: none"> 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	
<input type="checkbox"/> 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.	
<input type="checkbox"/> 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.	
	<ul style="list-style-type: none"> 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 $0^\circ \leq \theta < 8^\circ$; -13 - 0.716 (θ-8) dBW/MHz for $8^\circ \leq \theta < 40^\circ$ -35.9 - 1.22 (θ-40) dBW/MHz for $40^\circ \leq \theta \leq 45^\circ$; -42 dBW/MHz for $\theta > 45^\circ$
<input type="checkbox"/> 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.	
<input type="checkbox"/> For the 5.725-5.85 GHz band:	
	<ul style="list-style-type: none"> 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.	

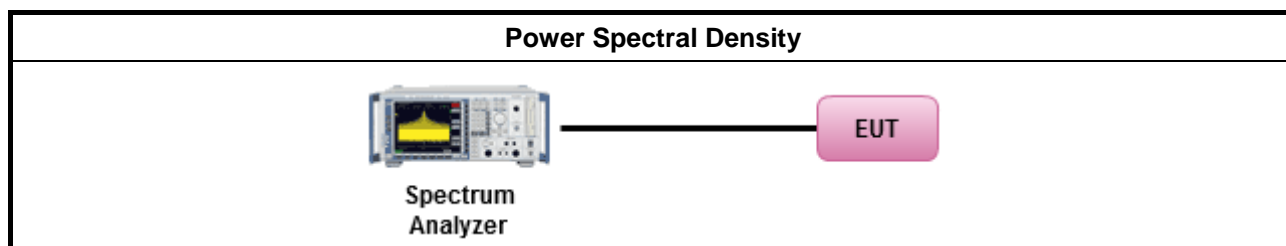
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> 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: 	
<input type="checkbox"/> Refer as FCC KDB 789033 D02 v01r03, 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]	
<input checked="" type="checkbox"/> Refer as FCC KDB 789033 D02 v01r03, clause E Method SA-1 (spectral trace averaging).	
<input type="checkbox"/> Refer as FCC KDB 789033 D02 v01r03, clause E Method SA-1 Alt. (RMS detection with slow sweep speed)	
duty cycle < 98% and average over on/off periods with duty factor	
<input checked="" type="checkbox"/> Refer as FCC KDB 789033 D02 v01r03, clause E Method SA-2 (spectral trace averaging).	
<input type="checkbox"/> Refer as FCC KDB 789033 D02 v01r03, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)	
<ul style="list-style-type: none"> For conducted measurement. 	
<ul style="list-style-type: none"> If the EUT supports multiple transmit chains using options given below: 	
<input checked="" type="checkbox"/> 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.	
<input type="checkbox"/> 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,	
<input type="checkbox"/> 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.	
<ul style="list-style-type: none"> If multiple transmit chains, EIRP PPSD calculation could be following as methods: $PPSD_{total} = PPSD_1 + PPSD_2 + \dots + PPSD_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = PPSD_{total} + DG$ 	

3.4.4 Test Setup



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).

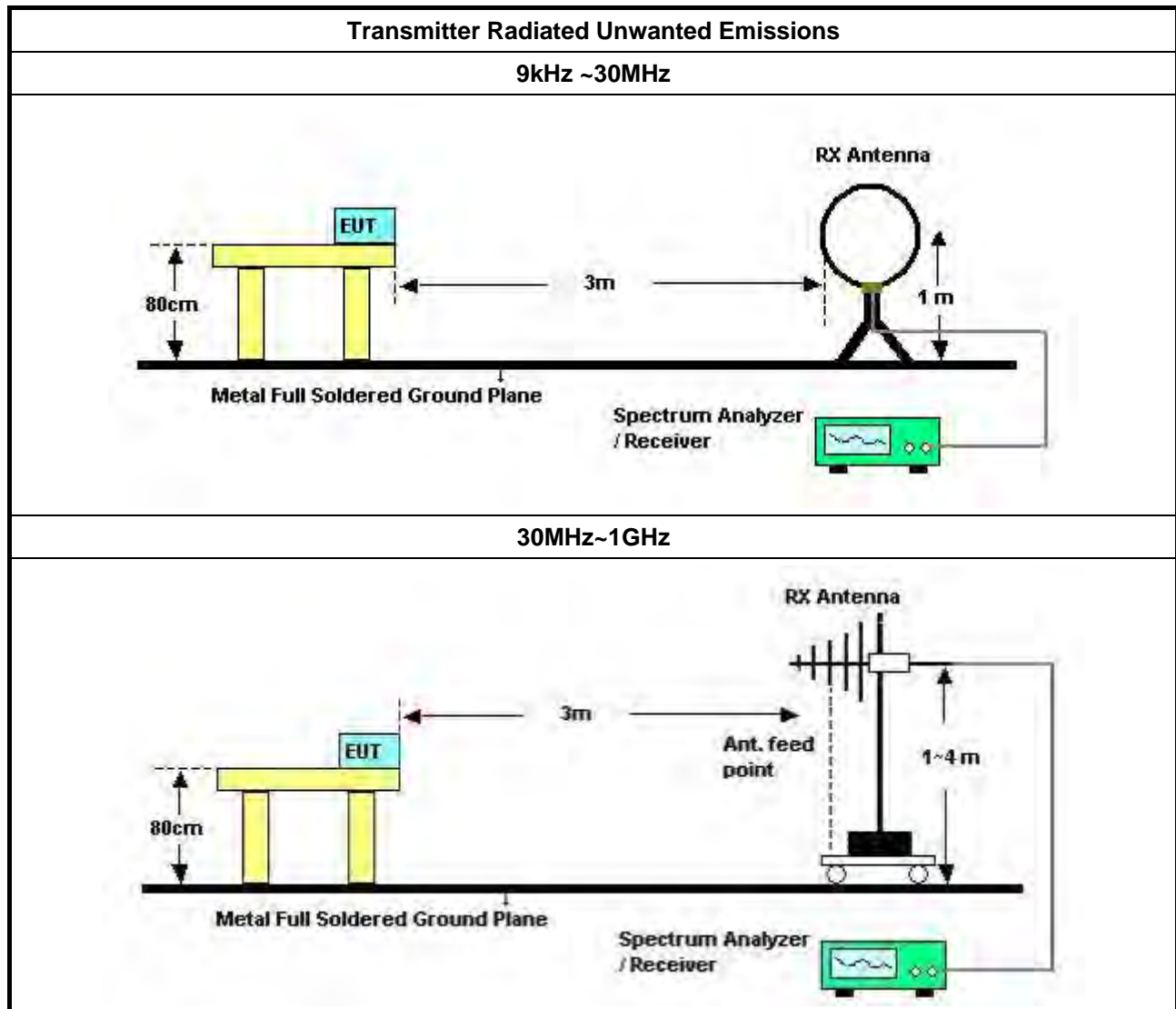
3.5.2 Measuring Instruments

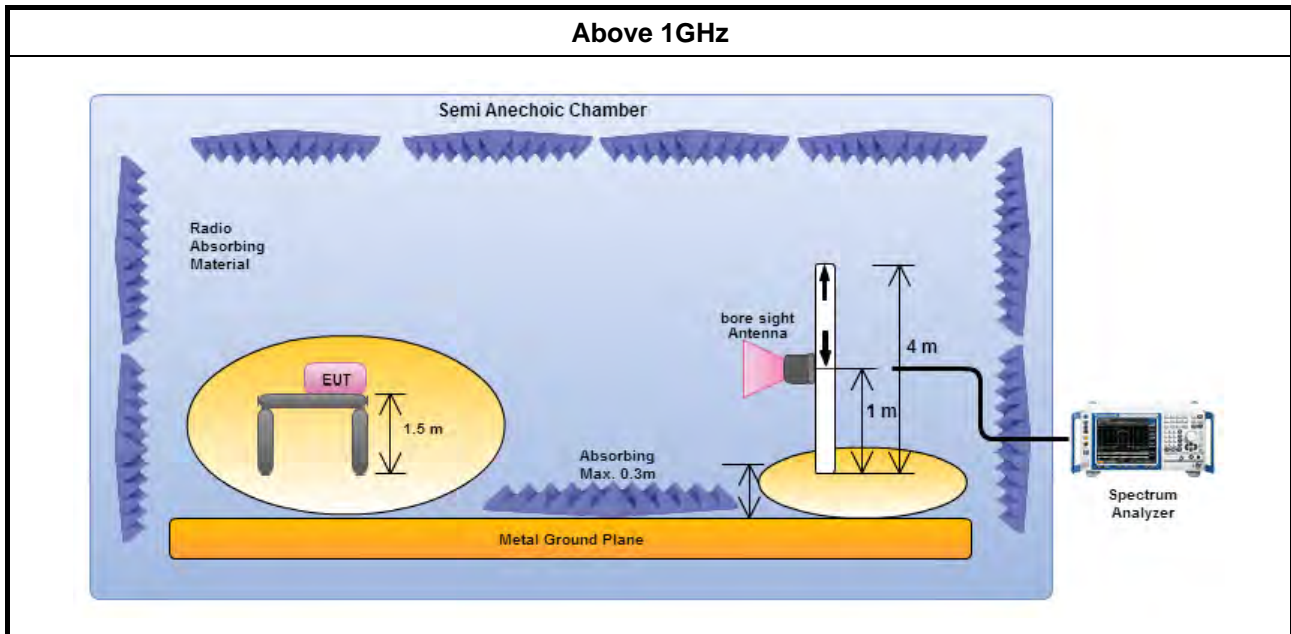
Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> 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). 	
<ul style="list-style-type: none"> The average emission levels shall be measured in [duty cycle \geq 98 or duty factor]. 	
<ul style="list-style-type: none"> For the transmitter unwanted emissions shall be measured using following options below: 	
	<ul style="list-style-type: none"> Refer as FCC KDB 789033 D02 v01r03, clause H)2) for unwanted emissions into non-restricted bands.
	<ul style="list-style-type: none"> Refer as FCC KDB 789033 D02 v01r03, clause H)1) for unwanted emissions into restricted bands.
	<input type="checkbox"/> Refer as FCC KDB 789033 D02 v01r03, H)6) Method AD (Trace Averaging).
	<input checked="" type="checkbox"/> Refer as FCC KDB 789033 D02 v01r03, H)6) Method VB (Reduced VBW).
	<input type="checkbox"/> Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). VBW \geq 1/T, where T is pulse time.
	<input type="checkbox"/> Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions.
	<input checked="" type="checkbox"/> Refer as FCC KDB 789033 D02 v01r03, clause H)5) measurement procedure peak limit.
	<input type="checkbox"/> Refer as ANSI C63.10, clause 4.2.3.2.2 measurement procedure peak limit.
	<ul style="list-style-type: none"> For radiated measurement.
	<ul style="list-style-type: none"> Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.
	<ul style="list-style-type: none"> Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.
	<ul style="list-style-type: none"> Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.
	<ul style="list-style-type: none"> The any unwanted emissions level shall not exceed the fundamental emission level.
<ul style="list-style-type: none"> All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported. 	

3.5.4 Test Setup





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
<ul style="list-style-type: none"> 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
<ul style="list-style-type: none"> N/A
IEEE Std. 802.11
<ul style="list-style-type: none"> 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.

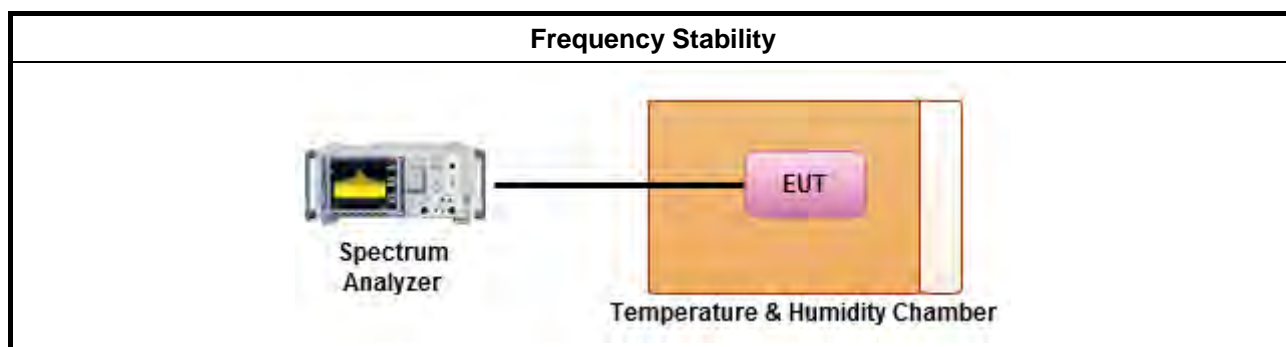
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

Test Method
<ul style="list-style-type: none"> Refer as ANSI C63.10, clause 6.8 for frequency stability tests
<ul style="list-style-type: none"> Frequency stability with respect to ambient temperature Frequency stability when varying supply voltage Extreme temperature is $-30^{\circ}\text{C} \sim 50^{\circ}\text{C}$.

3.6.4 Test Setup





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
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.45GHz	Jan. 27, 2016	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Dec. 08, 2015	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Dec. 23, 2015	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	150kHz ~ 30MHz	May 25, 2015	Conduction (CO01-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	Conduction (CO01-CB)
BILOG ANTENNA	TESEQ	CBL6112D	37880	20MHz ~ 2GHz	Sep. 03, 2015	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 12, 2015*	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. 21, 2015	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10783	9kHz ~ 1.3GHz	Mar. 23, 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)
EMI Receiver	Agilent	N9038A	MY52260123	9kHz ~ 8.4GHz	Jan. 27, 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-I0-7	N/A	N/A	Radiation (03CH01-CB)



FCC Test Report

Report No. : FR612906AB

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
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)
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)

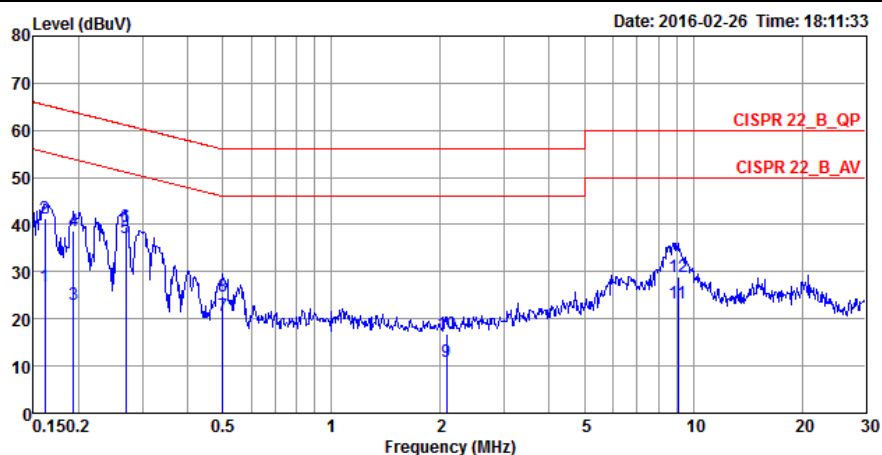
Note: Calibration Interval of instruments listed above is one year.

“*” Calibration Interval of instruments listed above is two years.

NCR means Non-Calibration required.

AC Power-line Conducted Emissions Result

Operating Mode	2	Power Phase	Neutral
Operating Function	Normal Link		

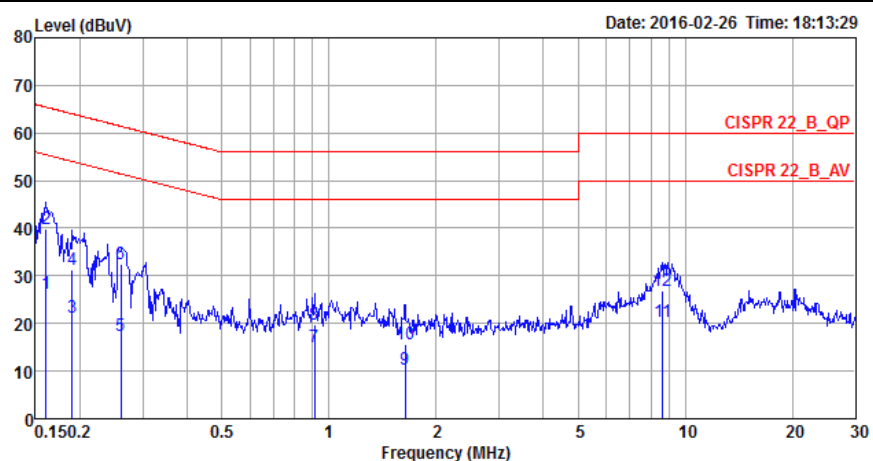


	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1616	26.85	-28.53	55.38	16.76	10.07	0.02	NEUTRAL	Average
2	0.1616	41.45	-23.93	65.38	31.36	10.07	0.02	NEUTRAL	QP
3	0.1934	23.00	-30.89	53.89	13.01	9.97	0.02	NEUTRAL	Average
4	0.1934	38.57	-25.32	63.89	28.58	9.97	0.02	NEUTRAL	QP
5	0.2701	37.25	-13.87	51.12	27.25	9.97	0.03	NEUTRAL	Average
6	0.2701	39.50	-21.62	61.12	29.50	9.97	0.03	NEUTRAL	QP
7	0.4994	20.56	-25.45	46.01	10.56	9.96	0.04	NEUTRAL	Average
8	0.4994	24.79	-31.22	56.01	14.79	9.96	0.04	NEUTRAL	QP
9	2.0768	10.90	-35.10	46.00	0.84	10.00	0.06	NEUTRAL	Average
10	2.0768	16.77	-39.23	56.00	6.71	10.00	0.06	NEUTRAL	QP
11	9.0592	23.21	-26.79	50.00	12.86	10.14	0.21	NEUTRAL	Average
12	9.0592	28.96	-31.04	60.00	18.61	10.14	0.21	NEUTRAL	QP

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	2	Power Phase	Line
Operating Function	Normal Link		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1607	26.37	-29.06	55.43	16.39	9.96	0.02	LINE	Average
2	0.1607	39.95	-25.48	65.43	29.97	9.96	0.02	LINE	QP
3	0.1904	21.26	-32.76	54.02	11.28	9.96	0.02	LINE	Average
4	0.1904	31.20	-32.82	64.02	21.22	9.96	0.02	LINE	QP
5	0.2603	17.36	-34.06	51.42	7.37	9.96	0.03	LINE	Average
6	0.2603	32.40	-29.02	61.42	22.41	9.96	0.03	LINE	QP
7	0.9087	15.02	-30.98	46.00	5.00	9.97	0.05	LINE	Average
8	0.9087	19.77	-36.23	56.00	9.75	9.97	0.05	LINE	QP
9	1.6363	10.34	-35.66	46.00	0.29	9.99	0.06	LINE	Average
10	1.6363	15.62	-40.38	56.00	5.57	9.99	0.06	LINE	QP
11	8.6373	20.48	-29.52	50.00	10.13	10.15	0.20	LINE	Average
12	8.6373	26.85	-33.15	60.00	16.50	10.15	0.20	LINE	QP

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.)



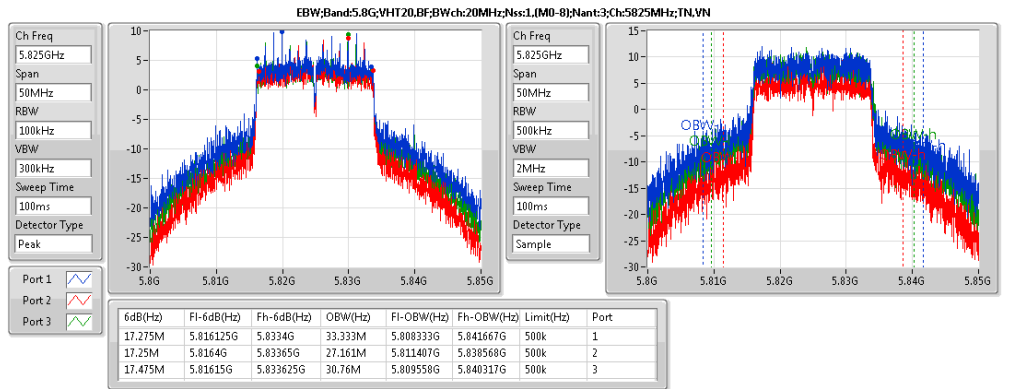
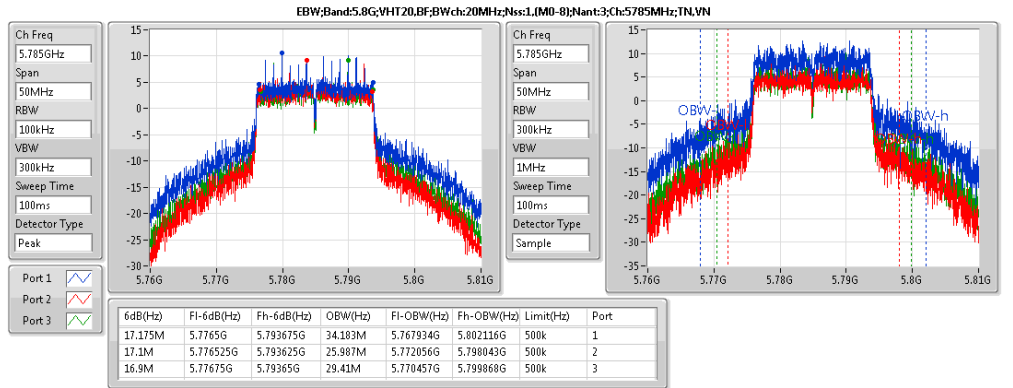
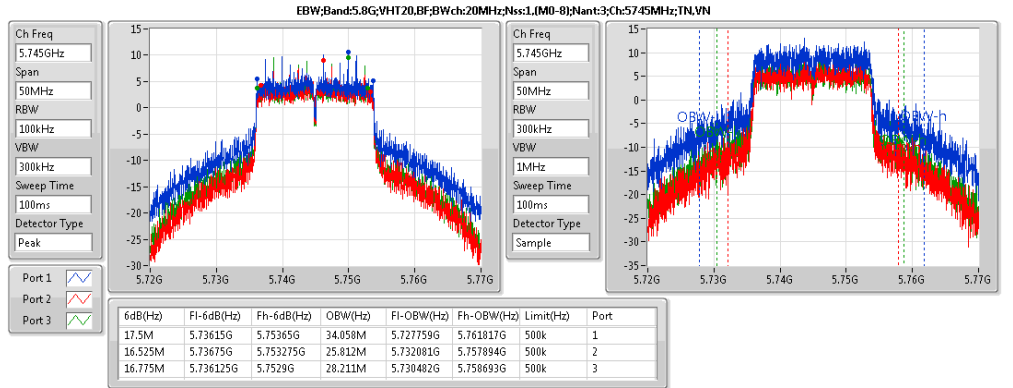
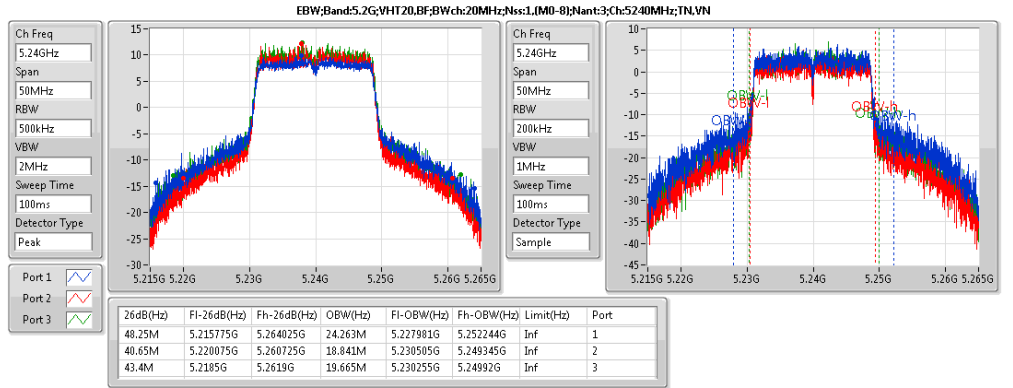
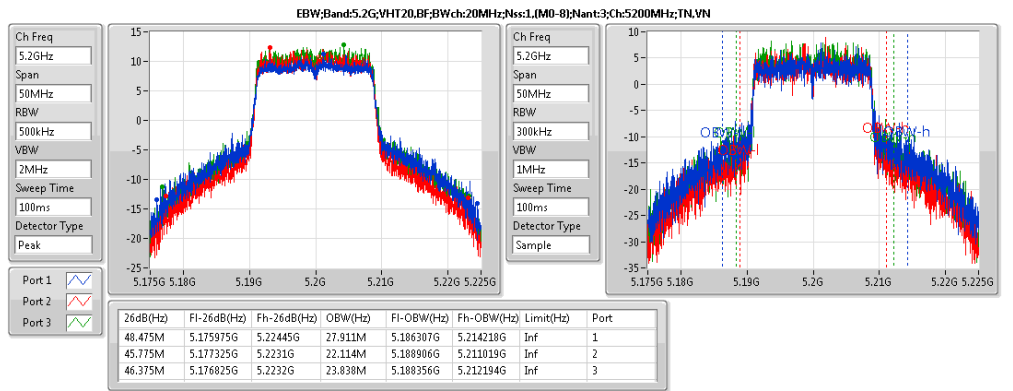
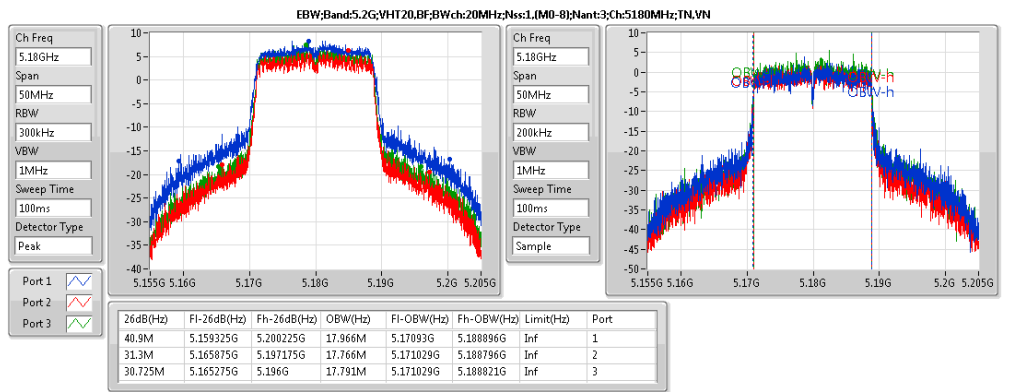
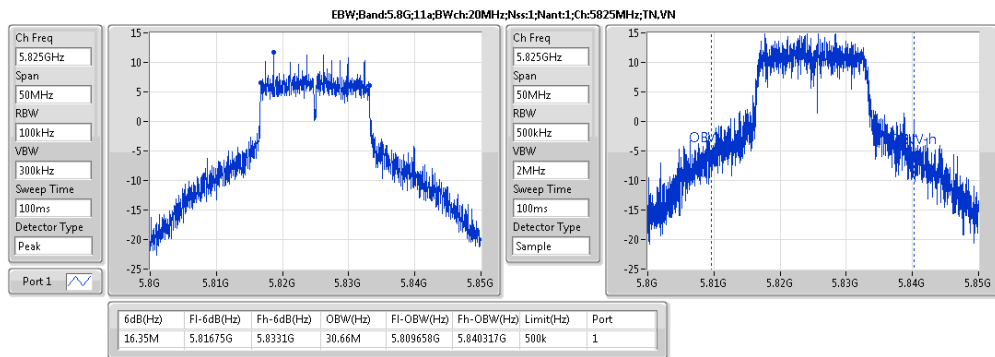
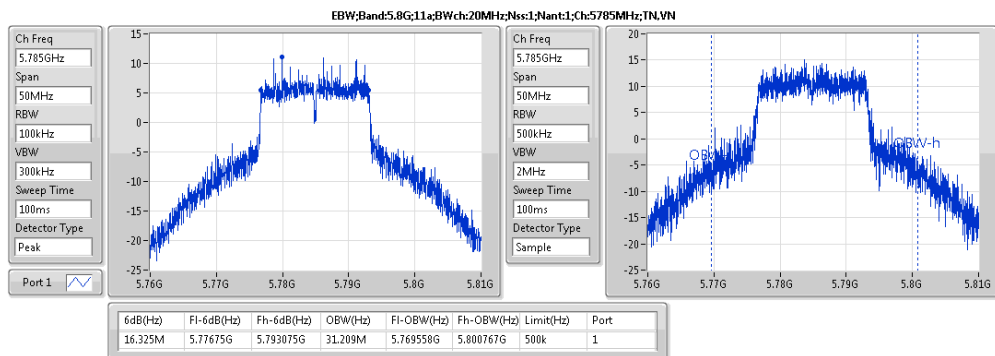
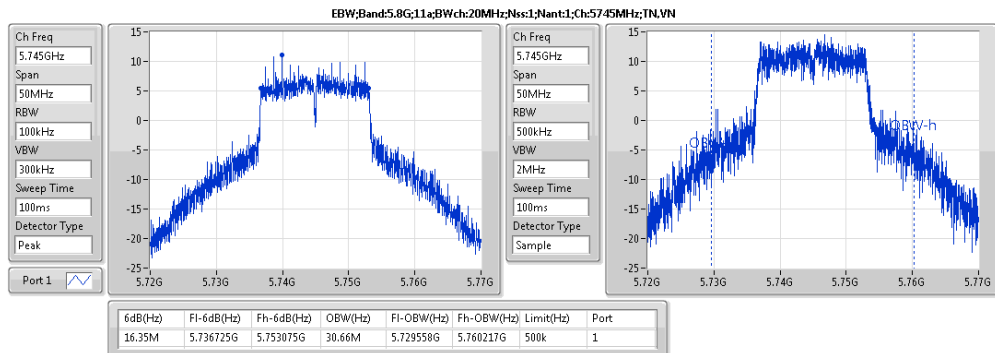
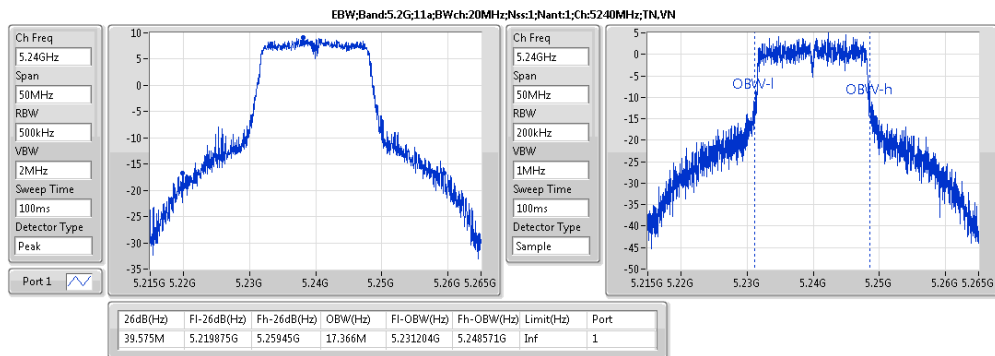
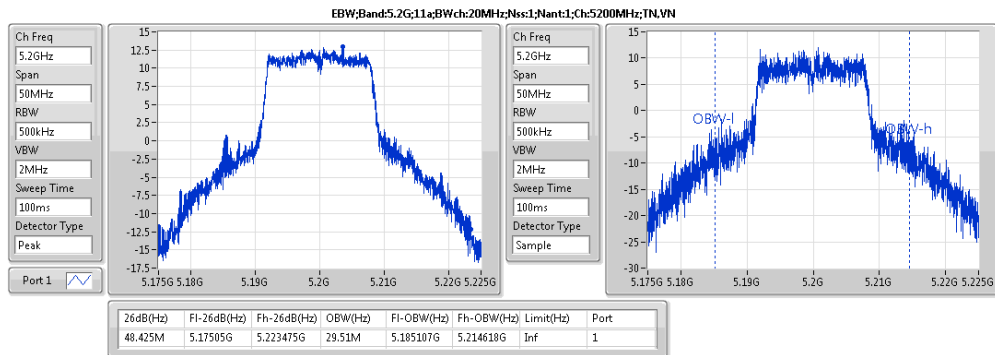
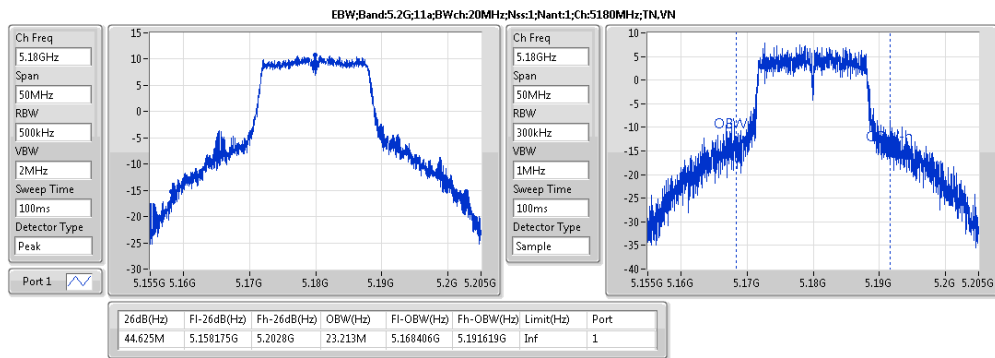
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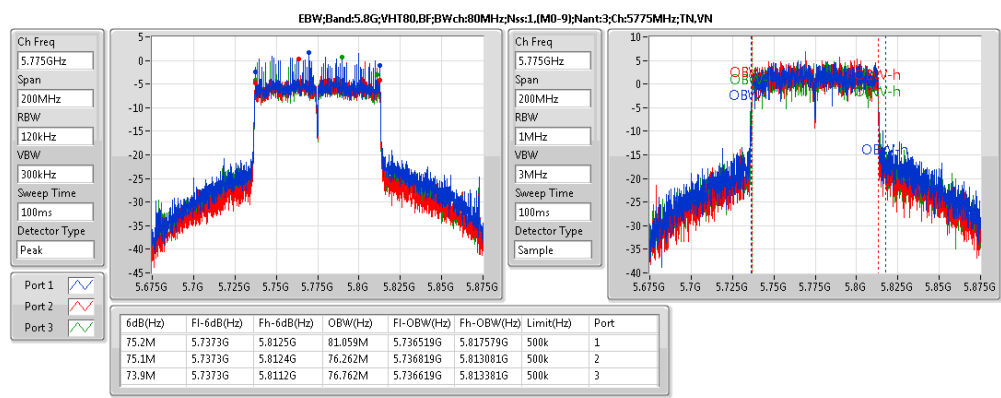
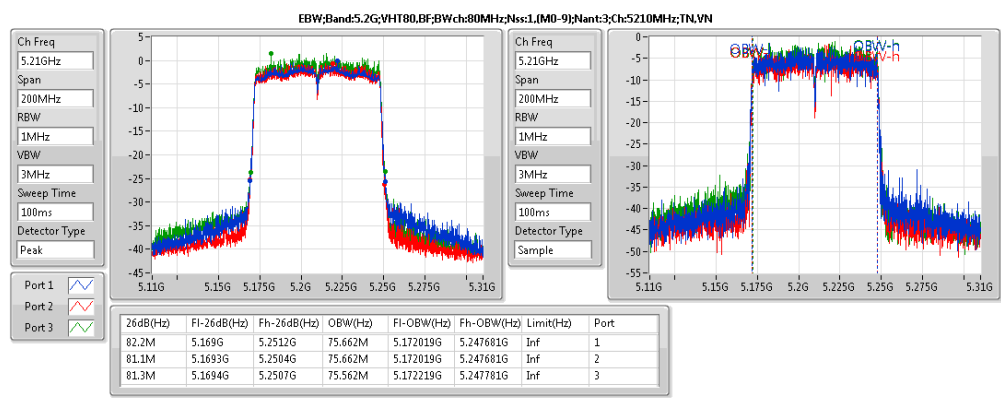
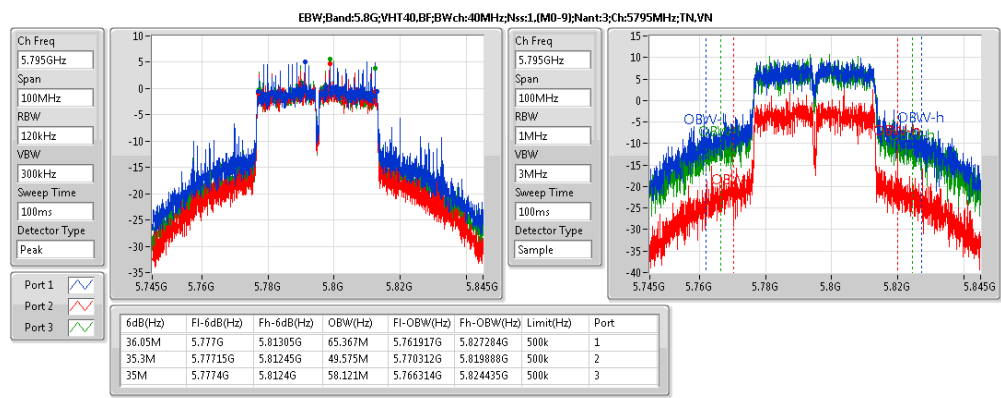
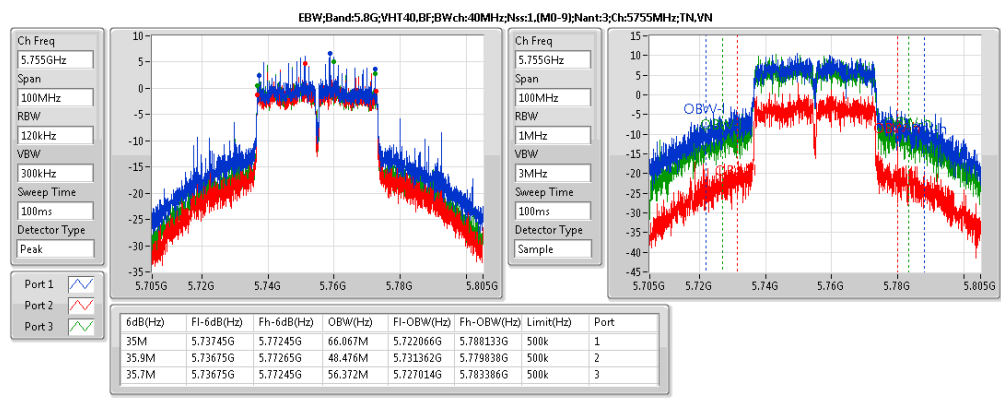
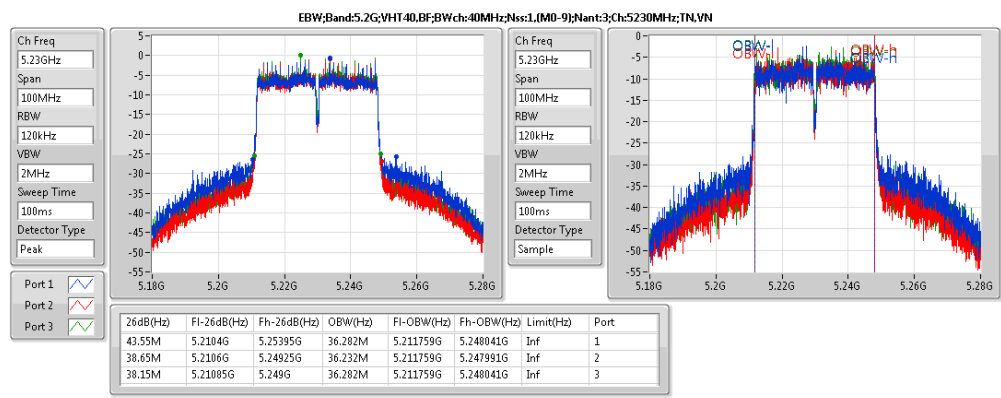
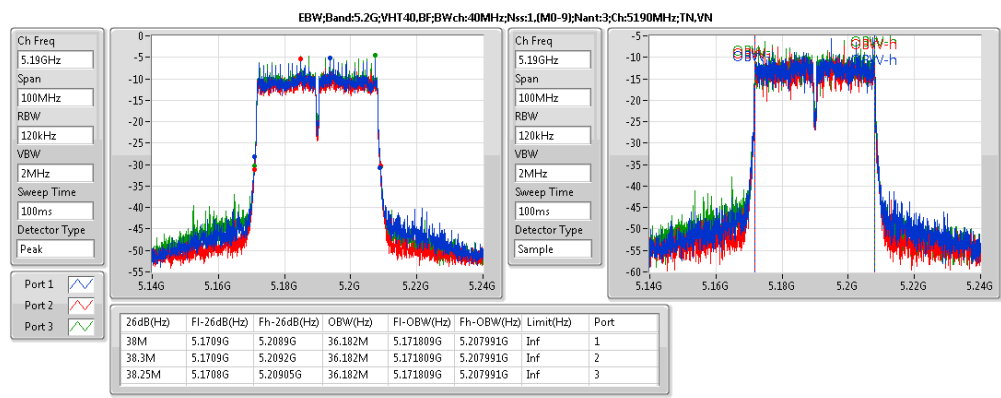
Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.2G;11a;20;1;1	48.425M	29.51M	29M5D1D	39.575M	17.366M
5.8G;11a;20;1;1	16.35M	31.209M	31M2D1D	16.325M	30.66M
5.2G;VHT20,BF;20;1,(M0-8);3	48.475M	27.911M	27M9D1D	30.725M	17.766M
5.8G;VHT20,BF;20;1,(M0-8);3	17.5M	34.183M	34M2D1D	16.525M	25.812M
5.2G;VHT40,BF;40;1,(M0-9);3	43.55M	36.282M	36M3D1D	38M	36.182M
5.8G;VHT40,BF;40;1,(M0-9);3	36.05M	66.067M	66M1D1D	35M	48.476M
5.2G;VHT80,BF;80;1,(M0-9);3	82.2M	75.662M	75M7D1D	81.1M	75.562M
5.8G;VHT80,BF;80;1,(M0-9);3	75.2M	81.059M	81M1D1D	73.9M	76.262M



Result

Mode	Result	Limit	P1-N dB (Hz)	P1-OBW (Hz)	P2-N dB (Hz)	P2-OBW (Hz)	P3-N dB (Hz)	P3-OBW (Hz)
5.2G;11a;20;1;1;5180;L;TN,VN	Pass	Inf	44.625M	23.213M				
5.2G;11a;20;1;1;5200;M;TN,VN	Pass	Inf	48.425M	29.51M				
5.2G;11a;20;1;1;5240;H;TN,VN	Pass	Inf	39.575M	17.366M				
5.8G;11a;20;1;1;5745;L;TN,VN	Pass	500k	16.35M	30.66M				
5.8G;11a;20;1;1;5785;M;TN,VN	Pass	500k	16.325M	31.209M				
5.8G;11a;20;1;1;5825;H;TN,VN	Pass	500k	16.35M	30.66M				
5.2G;VHT20,BF;20;1,(M0-8);3;5180;L;TN,VN	Pass	Inf	40.9M	17.966M	31.3M	17.766M	30.725M	17.791M
5.2G;VHT20,BF;20;1,(M0-8);3;5200;M;TN,VN	Pass	Inf	48.475M	27.911M	45.775M	22.114M	46.375M	23.838M
5.2G;VHT20,BF;20;1,(M0-8);3;5240;H;TN,VN	Pass	Inf	48.25M	24.263M	40.65M	18.841M	43.4M	19.665M
5.8G;VHT20,BF;20;1,(M0-8);3;5745;L;TN,VN	Pass	500k	17.5M	34.058M	16.525M	25.812M	16.775M	28.211M
5.8G;VHT20,BF;20;1,(M0-8);3;5785;M;TN,VN	Pass	500k	17.175M	34.183M	17.1M	25.987M	16.9M	29.41M
5.8G;VHT20,BF;20;1,(M0-8);3;5825;H;TN,VN	Pass	500k	17.275M	33.333M	17.25M	27.161M	17.475M	30.76M
5.2G;VHT40,BF;40;1,(M0-9);3;5190;L;TN,VN	Pass	Inf	38M	36.182M	38.3M	36.182M	38.25M	36.182M
5.2G;VHT40,BF;40;1,(M0-9);3;5230;H;TN,VN	Pass	Inf	43.55M	36.282M	38.65M	36.232M	38.15M	36.282M
5.8G;VHT40,BF;40;1,(M0-9);3;5755;L;TN,VN	Pass	500k	35M	66.067M	35.9M	48.476M	35.7M	56.372M
5.8G;VHT40,BF;40;1,(M0-9);3;5795;H;TN,VN	Pass	500k	36.05M	65.367M	35.3M	49.575M	35M	58.121M
5.2G;VHT80,BF;80;1,(M0-9);3;5210;S;TN,VN	Pass	Inf	82.2M	75.662M	81.1M	75.662M	81.3M	75.562M
5.8G;VHT80,BF;80;1,(M0-9);3;5775;S;TN,VN	Pass	500k	75.2M	81.059M	75.1M	76.262M	73.9M	76.762M







Summary

Mode	Sum (dBm)	Sum (W)	EIRP (dBm)	EIRP (W)
5.2G;11a;20;1;1	20.21	0.10495	25.54	0.3581
5.8G;11a;20;1;1	24.09	0.25645	29.42	0.87498
5.2G;VHT20,BF;20;1,(M0-8);3	23.54	0.22594	33.64	2.31206
5.8G;VHT20,BF;20;1,(M0-8);3	25.33	0.34119	35.43	3.4914
5.2G;VHT40,BF;40;1,(M0-9);3	19.63	0.09183	29.73	0.93972
5.8G;VHT40,BF;40;1,(M0-9);3	25.32	0.34041	35.42	3.48337
5.2G;VHT80,BF;80;1,(M0-9);3	15.77	0.03776	25.87	0.38637
5.8G;VHT80,BF;80;1,(M0-9);3	23.2	0.20893	33.30	2.13796



Result

Mode	Result	DG (dBi)	EIRP (dBm)	EIRP Lim. (dBm)	Sum (dBm)	Sum Lim. (dBm)	P1 (dBm)	P2 (dBm)	P3 (dBm)
5.2G;11a;20;1;1;5180;L;TN,VN	Pass	5.33	23.65	36.00	18.32	30.00	18.32		
5.2G;11a;20;1;1;5200;M;TN,VN	Pass	5.33	25.54	36.00	20.21	30.00	20.21		
5.2G;11a;20;1;1;5240;H;TN,VN	Pass	5.33	22.88	36.00	17.55	30.00	17.55		
5.8G;11a;20;1;1;5745;L;TN,VN	Pass	5.33	29.35	36.00	24.02	30.00	24.02		
5.8G;11a;20;1;1;5785;M;TN,VN	Pass	5.33	29.42	36.00	24.09	30.00	24.09		
5.8G;11a;20;1;1;5825;H;TN,VN	Pass	5.33	29.41	36.00	24.08	30.00	24.08		
5.2G;VHT20,BF;20;1,(M0-8);3;5180;L;TN,VN	Pass	10.10	31.02	31.90	20.92	25.90	15.86	15.66	16.83
5.2G;VHT20,BF;20;1,(M0-8);3;5200;M;TN,VN	Fail	10.10	33.64	31.90	23.54	25.90	18.44	18.17	19.56
5.2G;VHT20,BF;20;1,(M0-8);3;5240;H;TN,VN	Fail	10.10	33.09	31.90	22.99	25.90	17.98	17.75	18.84
5.8G;VHT20,BF;20;1,(M0-8);3;5745;L;TN,VN	Fail	10.10	35.42	31.90	25.31	25.90	20.9	20.17	20.53
5.8G;VHT20,BF;20;1,(M0-8);3;5785;M;TN,VN	Fail	10.10	35.30	31.90	25.2	25.90	20.48	20.31	20.5
5.8G;VHT20,BF;20;1,(M0-8);3;5825;H;TN,VN	Fail	10.10	35.43	31.90	25.33	25.90	20.81	20.51	20.34
5.2G;VHT40,BF;40;1,(M0-9);3;5190;L;TN,VN	Pass	10.10	25.59	31.90	15.49	25.90	10.91	9.72	11.36
5.2G;VHT40,BF;40;1,(M0-9);3;5230;H;TN,VN	Pass	10.10	29.73	31.90	19.63	25.90	14.39	14.54	15.55
5.8G;VHT40,BF;40;1,(M0-9);3;5755;L;TN,VN	Fail	10.10	35.42	31.90	25.32	25.90	21.09	20.06	20.43
5.8G;VHT40,BF;40;1,(M0-9);3;5795;H;TN,VN	Fail	10.10	35.38	31.90	25.27	25.90	21.08	20.01	20.35
5.2G;VHT80,BF;80;1,(M0-9);3;5210;S;TN,VN	Pass	10.10	25.87	31.90	15.77	25.90	11.13	10.34	11.45
5.8G;VHT80,BF;80;1,(M0-9);3;5775;S;TN,VN	Fail	10.10	33.30	31.90	23.2	25.90	18.19	18.07	18.98



Summary

Mode	PD (dBm/RBW)	EIRP.PD (dBm/RBW)
5.2G;11a;20;1;1	6.70	12.03
5.8G;11a;20;1;1	8.22	13.55
5.2G;VHT20,BF;20;1,(M0-8);3	9.40	19.50
5.8G;VHT20,BF;20;1,(M0-8);3	9.84	19.94
5.2G;VHT40,BF;40;1,(M0-9);3	4.02	14.12
5.8G;VHT40,BF;40;1,(M0-9);3	6.01	16.11
5.2G;VHT80,BF;80;1,(M0-9);3	-2.87	7.23
5.8G;VHT80,BF;80;1,(M0-9);3	1.23	11.33



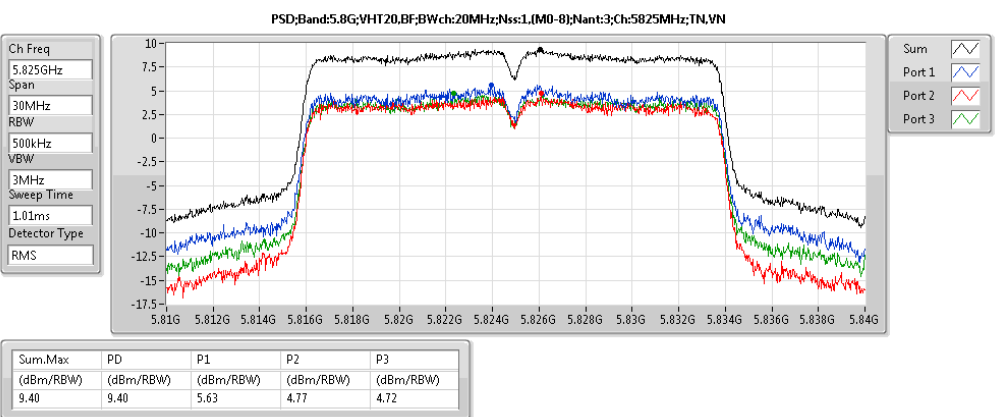
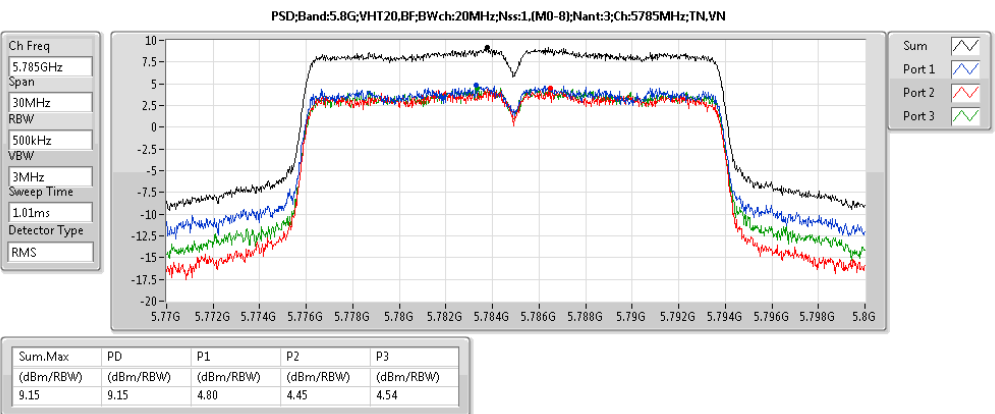
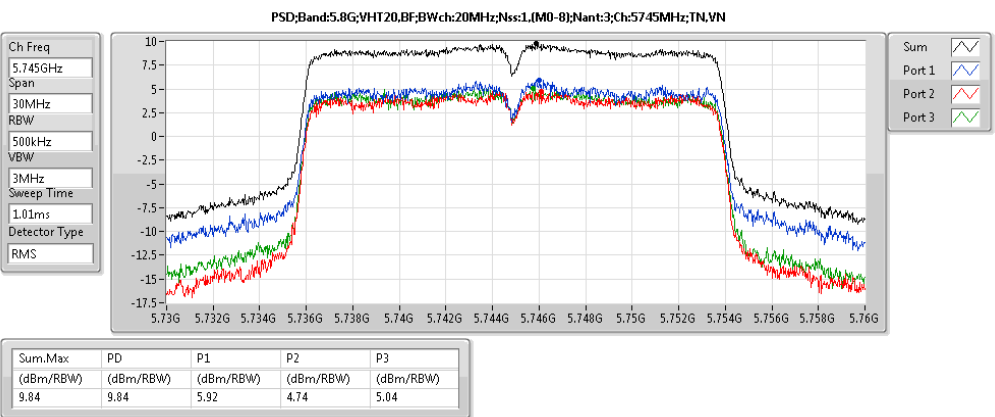
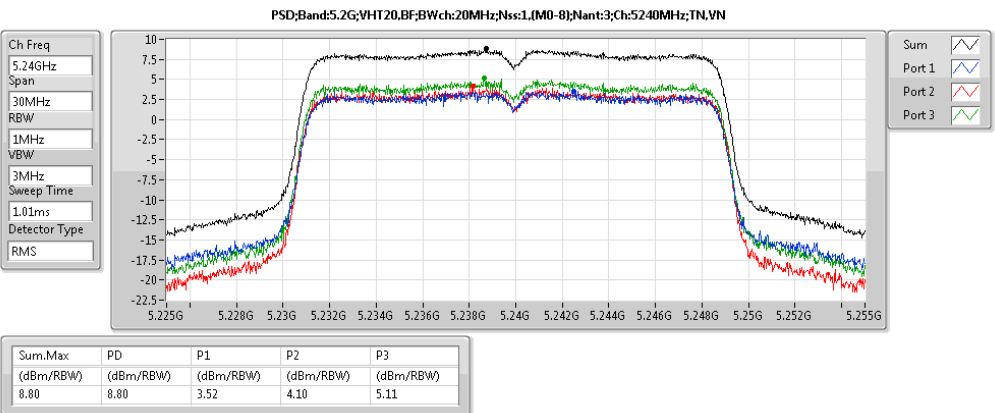
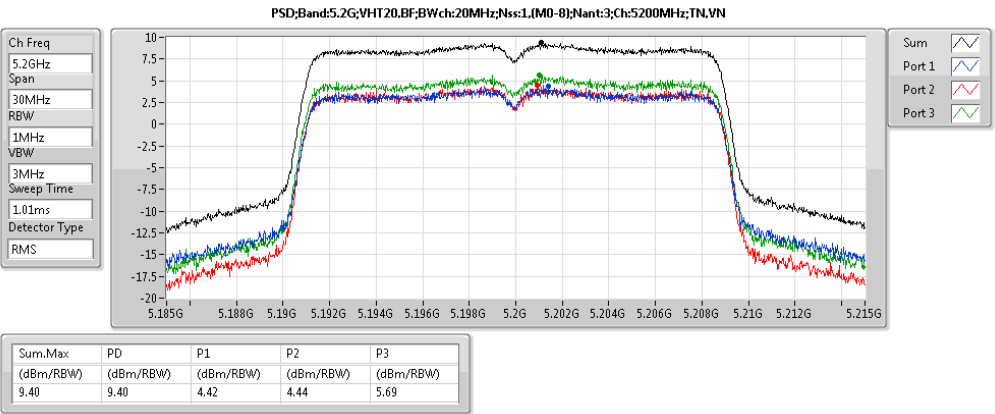
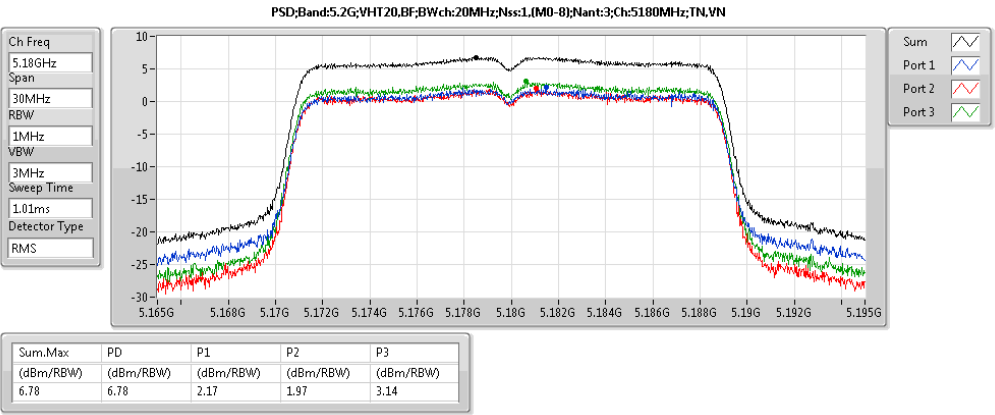
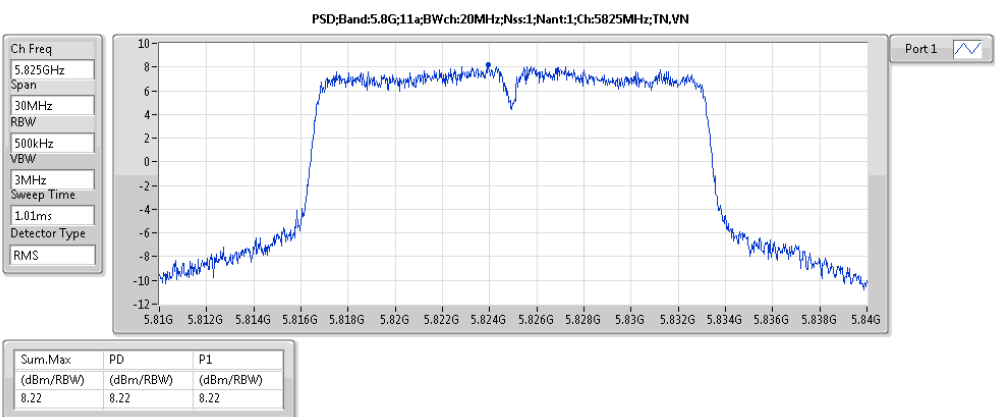
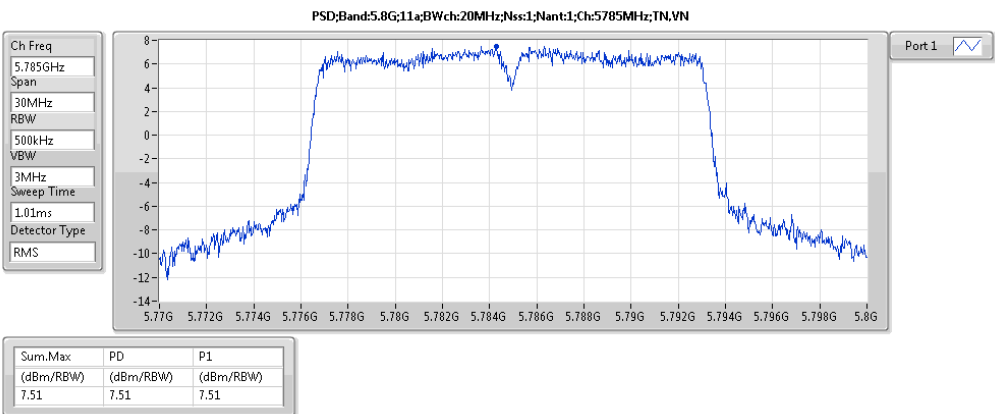
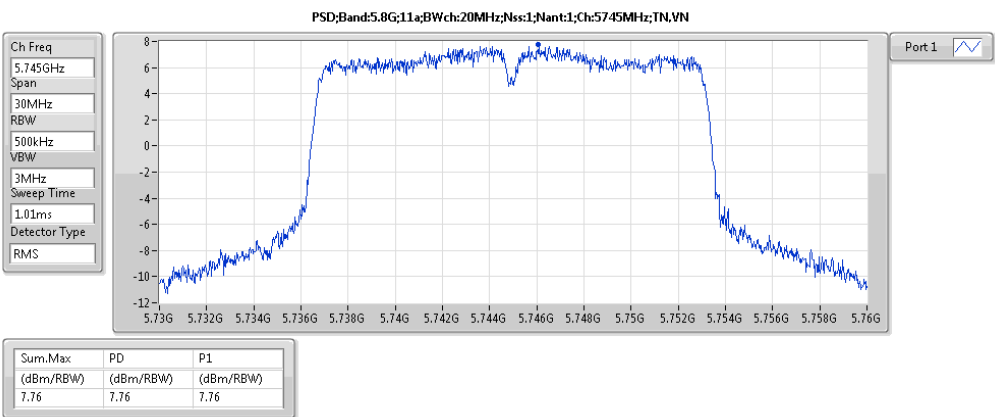
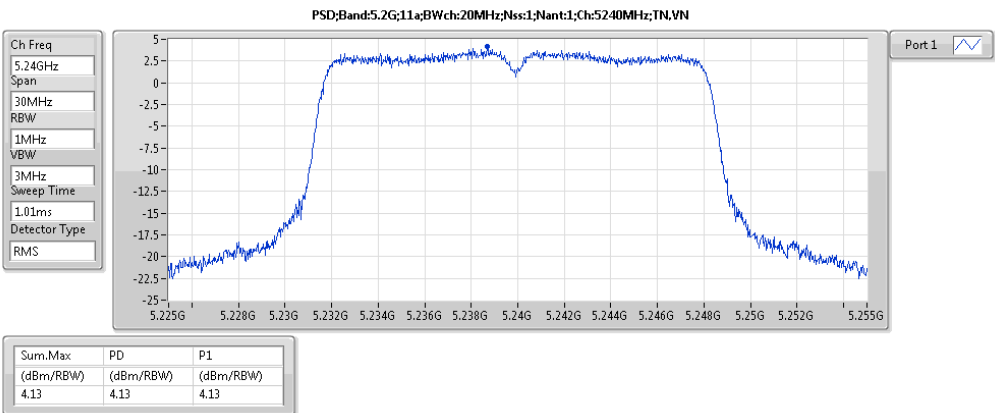
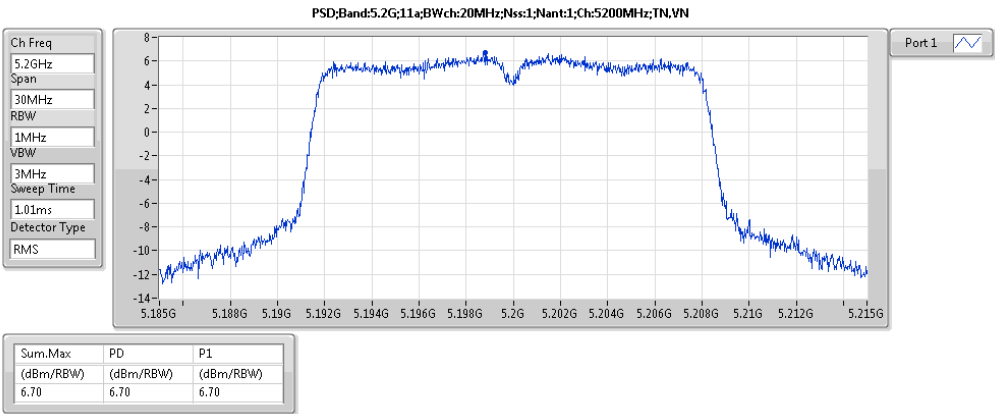
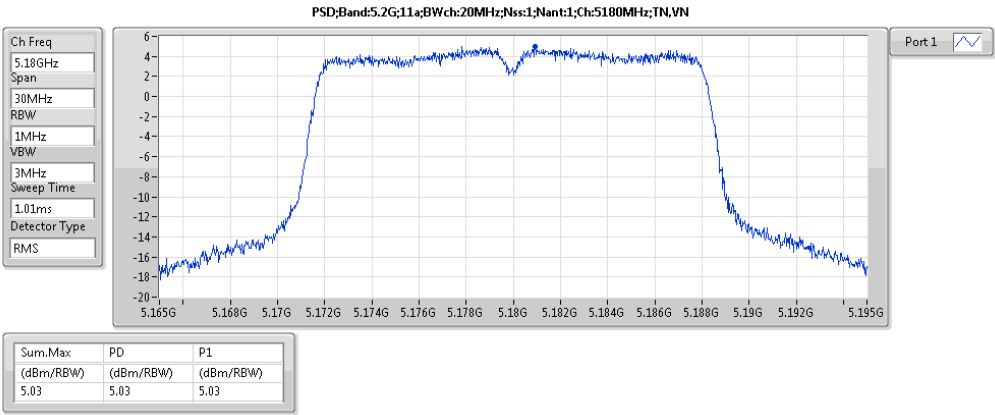
Result

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.Li m (dBm/RBW)	P1 (dBm/RBW)	P2 (dBm/RBW)	P3 (dBm/RBW)
5.2G;11a;20;1;1;5180;L;TN,VN	Pass	1M	1M	0.00	5.33	5.03	5.03	17.00	10.36	Inf	5.03		
5.2G;11a;20;1;1;5200;M;TN,VN	Pass	1M	1M	0.00	5.33	6.70	6.70	17.00	12.03	Inf	6.70		
5.2G;11a;20;1;1;5240;H;TN,VN	Pass	1M	1M	0.00	5.33	4.13	4.13	17.00	9.46	Inf	4.13		
5.8G;11a;20;1;1;5745;L;TN,VN	Pass	500k	500k	0.00	5.33	7.76	7.76	30.00	13.09	36.00	7.76		
5.8G;11a;20;1;1;5785;M;TN,VN	Pass	500k	500k	0.00	5.33	7.51	7.51	30.00	12.84	36.00	7.51		
5.8G;11a;20;1;1;5825;H;TN,VN	Pass	500k	500k	0.00	5.33	8.22	8.22	30.00	13.55	36.00	8.22		
5.2G;VHT20,BF;20;1,(M0-8);3;5180;L;TN,VN	Pass	1M	1M	0.00	10.10	6.78	6.78	12.90	16.88	Inf	2.17	1.97	3.14
5.2G;VHT20,BF;20;1,(M0-8);3;5200;M;TN,VN	Pass	1M	1M	0.00	10.10	9.40	9.40	12.90	19.50	Inf	4.42	4.44	5.69
5.2G;VHT20,BF;20;1,(M0-8);3;5240;H;TN,VN	Pass	1M	1M	0.00	10.10	8.80	8.80	12.90	18.90	Inf	3.52	4.10	5.11
5.8G;VHT20,BF;20;1,(M0-8);3;5745;L;TN,VN	Pass	500k	500k	0.00	10.10	9.84	9.84	25.90	19.94	31.90	5.92	4.74	5.04
5.8G;VHT20,BF;20;1,(M0-8);3;5785;M;TN,VN	Pass	500k	500k	0.00	10.10	9.15	9.15	25.90	19.25	31.90	4.80	4.45	4.54
5.8G;VHT20,BF;20;1,(M0-8);3;5825;H;TN,VN	Pass	500k	500k	0.00	10.10	9.40	9.40	25.90	19.50	31.90	5.63	4.77	4.72
5.2G;VHT40,BF;40;1,(M0-9);3;5190;L;TN,VN	Pass	1M	1M	0.00	10.10	-0.32	-0.32	12.90	9.78	Inf	-4.94	-5.78	-4.53
5.2G;VHT40,BF;40;1,(M0-9);3;5230;H;TN,VN	Pass	1M	1M	0.00	10.10	4.02	4.02	12.90	14.12	Inf	-0.83	-1.16	-0.16
5.8G;VHT40,BF;40;1,(M0-9);3;5755;L;TN,VN	Pass	500k	500k	0.00	10.10	6.00	6.00	25.90	16.10	31.90	1.91	1.12	1.07
5.8G;VHT40,BF;40;1,(M0-9);3;5795;H;TN,VN	Pass	500k	500k	0.00	10.10	6.01	6.01	25.90	16.11	31.90	1.66	1.09	1.28
5.2G;VHT80,BF;80;1,(M0-9);3;5210;S;TN,VN	Pass	1M	1M	0.00	10.10	-2.87	-2.87	12.90	7.23	Inf	-7.51	-8.15	-7.24
5.8G;VHT80,BF;80;1,(M0-9);3;5775;S;TN,VN	Pass	500k	500k	0.00	10.10	1.23	1.23	25.90	11.33	31.90	-2.90	-3.83	-3.71



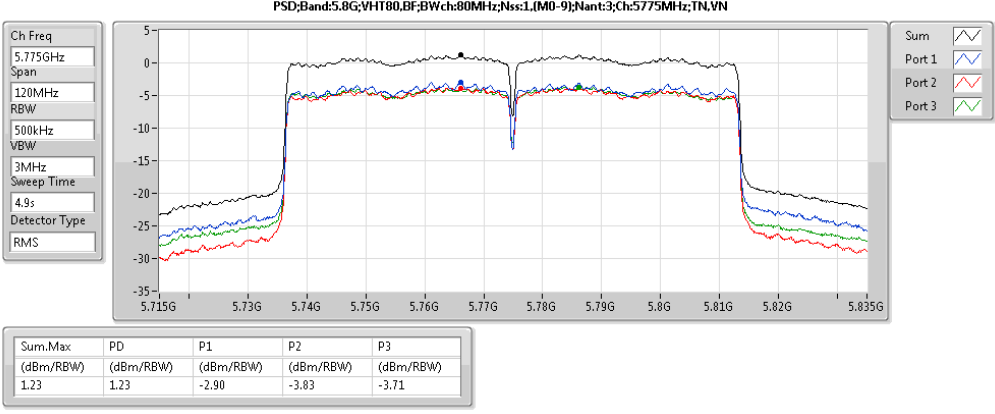
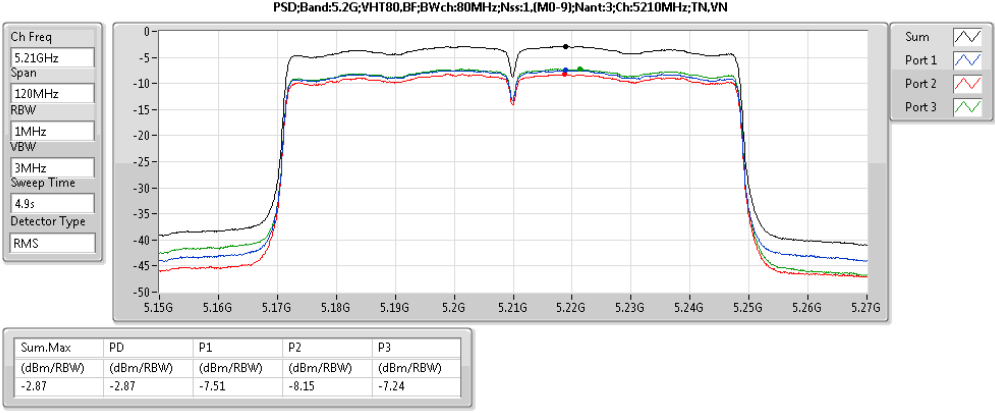
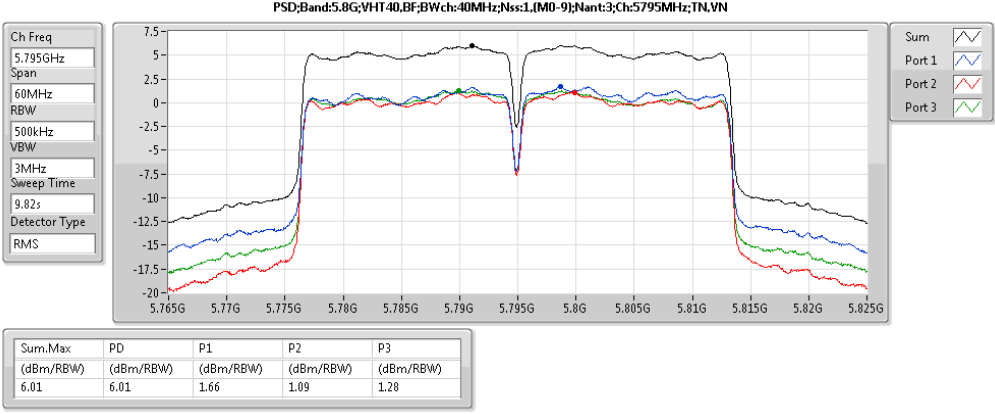
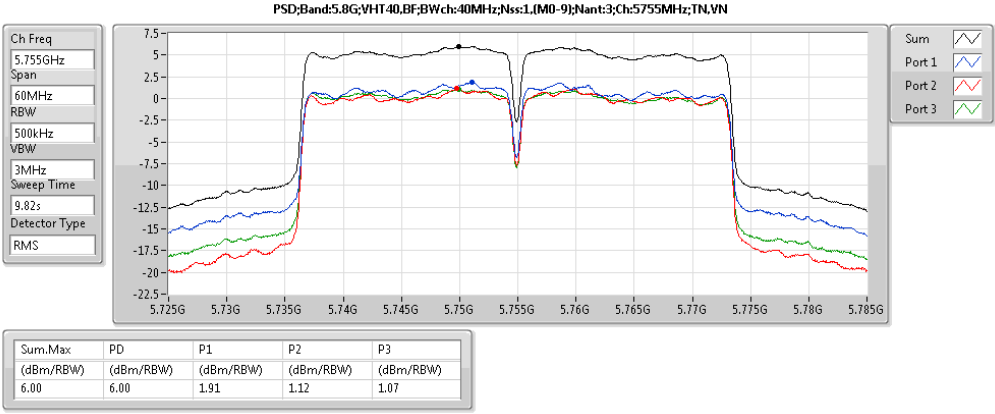
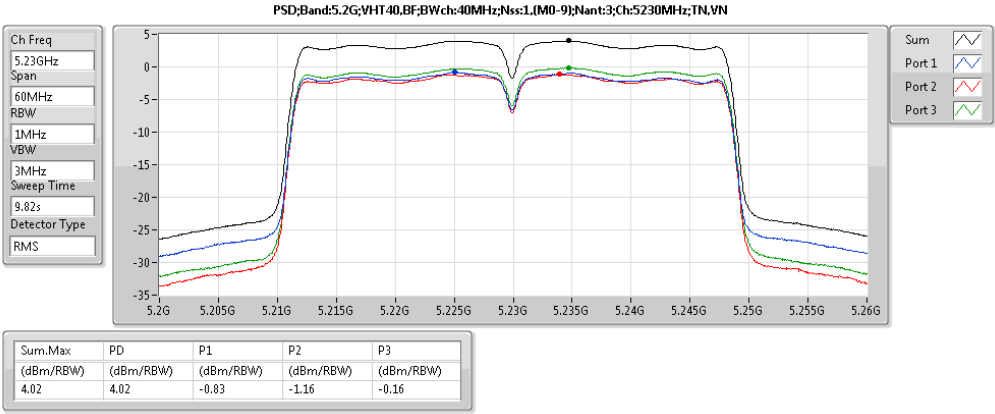
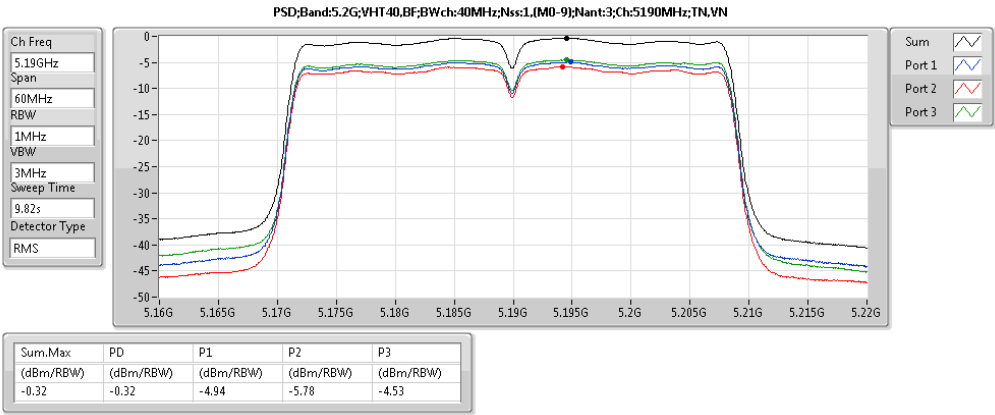
PSD Result

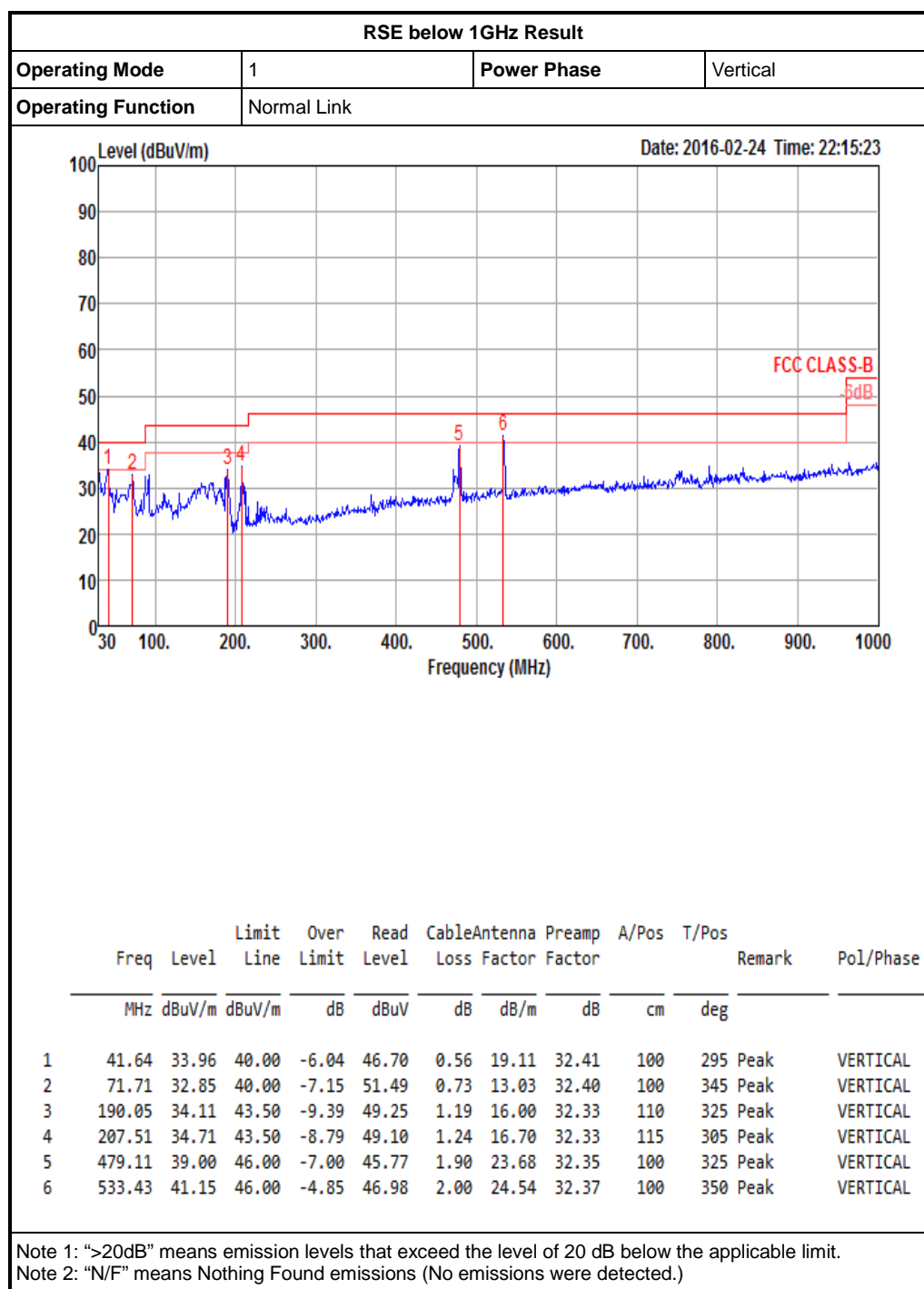
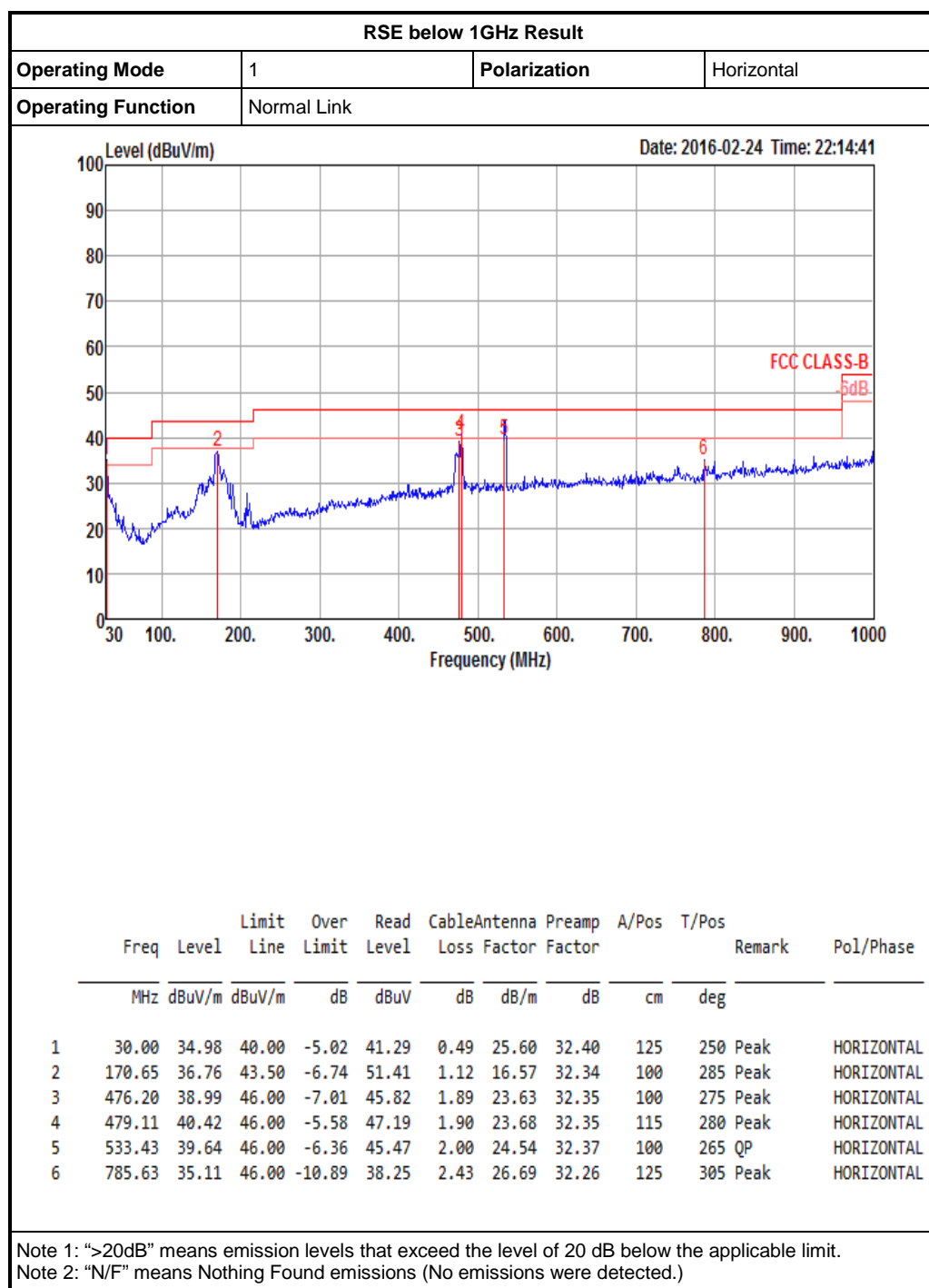
Appendix D





PSD Result





Radiated Emissions (1GHz~40GHz)

Configurations	IEEE 802.11a CH 36 / Chain 3
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamplifier Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15539.60	55.61	74.00	-18.39	40.59	12.49	38.39	35.86	159	254	Peak	HORIZONTAL
2	15539.78	42.73	54.00	-11.27	27.71	12.49	38.39	35.86	159	254	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamplifier Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15539.77	42.96	54.00	-11.04	27.94	12.49	38.39	35.86	133	180	Average	VERTICAL
2	15540.16	55.23	74.00	-18.77	40.21	12.49	38.39	35.86	133	180	Peak	VERTICAL

Configurations	IEEE 802.11a CH 40 / Chain 3
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamplifier Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15599.69	55.76	74.00	-18.24	40.72	12.52	38.38	35.86	164	267	Peak	HORIZONTAL
2	15599.72	42.67	54.00	-11.33	27.63	12.52	38.38	35.86	164	267	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamplifier Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15600.06	43.66	54.00	-10.34	28.62	12.52	38.38	35.86	131	139	Average	VERTICAL
2	15600.12	56.12	74.00	-17.88	41.08	12.52	38.38	35.86	131	139	Peak	VERTICAL

Configurations	IEEE 802.11a CH 48 / Chain 3
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamplifier Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15719.78	56.01	74.00	-17.99	40.92	12.60	38.35	35.86	124	156	Peak	HORIZONTAL
2	15720.40	43.09	54.00	-10.91	28.00	12.60	38.35	35.86	124	156	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamplifier Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15719.50	43.35	54.00	-10.65	28.26	12.60	38.35	35.86	106	279	Average	VERTICAL
2	15720.02	55.88	74.00	-18.12	40.79	12.60	38.35	35.86	106	279	Peak	VERTICAL

Configurations	IEEE 802.11a CH 149 / Chain 3
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11490.10	46.72	54.00	-7.28	29.38	11.18	40.00	33.84	226	255	Average	HORIZONTAL
2	11490.47	59.56	74.00	-14.44	42.22	11.18	40.00	33.84	226	255	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11489.12	51.87	54.00	-2.13	34.53	11.18	40.00	33.84	283	350	Average	VERTICAL
2	11490.25	65.18	74.00	-8.82	47.84	11.18	40.00	33.84	283	350	Peak	VERTICAL

Configurations	IEEE 802.11a CH 157 / Chain 3
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11569.05	59.92	74.00	-14.08	42.68	11.21	39.87	33.84	179	197	Peak	HORIZONTAL
2	11570.01	47.28	54.00	-6.72	30.04	11.21	39.87	33.84	179	197	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11570.16	50.04	54.00	-3.96	32.80	11.21	39.87	33.84	219	74	Average	VERTICAL
2	11570.20	62.30	74.00	-11.70	45.06	11.21	39.87	33.84	219	74	Peak	VERTICAL

Configurations	IEEE 802.11a CH 165 / Chain 3
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11649.88	47.68	54.00	-6.32	30.55	11.24	39.73	33.84	148	213	Average	HORIZONTAL
2	11650.62	61.04	74.00	-12.96	43.91	11.24	39.73	33.84	148	213	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11650.32	49.66	54.00	-4.34	32.53	11.24	39.73	33.84	108	53	Average
2	11652.32	62.02	74.00	-11.98	44.93	11.26	39.67	33.84	108	53	Peak

Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 36 / Chain 3 + Chain 4 + Chain 5
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15539.84	55.91	74.00	-18.09	40.89	12.49	38.39	35.86	139	146	Peak	HORIZONTAL
2	15540.06	42.63	54.00	-11.37	27.61	12.49	38.39	35.86	139	146	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15539.91	43.73	54.00	-10.27	28.71	12.49	38.39	35.86	169	231	Average	VERTICAL
2	15539.99	56.89	74.00	-17.11	41.87	12.49	38.39	35.86	169	231	Peak	VERTICAL

Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 40 / Chain 3 + Chain 4 + Chain 5
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15599.79	43.73	54.00	-10.27	28.69	12.52	38.38	35.86	129	143	Average	HORIZONTAL
2	15599.91	57.07	74.00	-16.93	42.03	12.52	38.38	35.86	129	143	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15599.51	57.44	74.00	-16.56	42.40	12.52	38.38	35.86	139	310	Peak	VERTICAL
2	15599.51	45.75	54.00	-8.25	30.71	12.52	38.38	35.86	139	310	Average	VERTICAL

Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 48 / Chain 3 + Chain 4 + Chain 5
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15719.74	56.21	74.00	-17.79	41.12	12.60	38.35	35.86	134	275	Peak	HORIZONTAL
2	15719.78	43.69	54.00	-10.31	28.60	12.60	38.35	35.86	134	275	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15719.91	44.34	54.00	-9.66	29.25	12.60	38.35	35.86	146	106	Average	VERTICAL
2	15720.25	56.21	74.00	-17.79	41.12	12.60	38.35	35.86	146	106	Peak	VERTICAL

Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 149 / Chain 3 + Chain 4 + Chain 5
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11495.88	64.44	74.00	-9.56	47.10	11.18	40.00	33.84	187	294	Peak	HORIZONTAL
2	11499.04	52.45	54.00	-1.55	35.11	11.18	40.00	33.84	187	294	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11488.84	65.81	74.00	-8.19	48.47	11.18	40.00	33.84	185	280	Peak	VERTICAL
2	11495.92	53.33	54.00	-0.67	35.99	11.18	40.00	33.84	185	280	Average	VERTICAL

Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 157 / Chain 3 + Chain 4 + Chain 5
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11574.68	52.26	54.00	-1.74	35.02	11.21	39.87	33.84	176	299	Average	HORIZONTAL
2	11577.72	64.61	74.00	-9.39	47.37	11.21	39.87	33.84	176	299	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11574.68	53.17	54.00	-0.83	35.93	11.21	39.87	33.84	184	342	Average
2	11579.72	65.33	74.00	-8.67	48.09	11.21	39.87	33.84	184	342	Peak

Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 165 / Chain 3 + Chain 4 + Chain 5
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11649.76	52.84	54.00	-1.16	35.71	11.24	39.73	33.84	204	337	Average	HORIZONTAL
2	11650.16	64.92	74.00	-9.08	47.79	11.24	39.73	33.84	204	337	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11649.96	66.38	74.00	-7.62	49.25	11.24	39.73	33.84	204	337	Peak	VERTICAL
2	11650.64	53.61	54.00	-0.39	36.48	11.24	39.73	33.84	204	337	Average	VERTICAL

Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 38 / Chain 3 + Chain 4 + Chain 5
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna 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	15569.52	56.20	74.00	-17.80	41.16	12.52	38.38	35.86	150	228	Peak	HORIZONTAL
2	15569.71	42.85	54.00	-11.15	27.81	12.52	38.38	35.86	150	228	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna 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	15569.74	43.18	54.00	-10.82	28.14	12.52	38.38	35.86	150	328	Average	VERTICAL
2	15570.14	55.99	74.00	-18.01	40.95	12.52	38.38	35.86	150	328	Peak	VERTICAL

Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 46 / Chain 3 + Chain 4 + Chain 5
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna 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	15689.51	43.70	54.00	-10.30	28.63	12.57	38.36	35.86	150	219	Average	HORIZONTAL
2	15689.86	56.49	74.00	-17.51	41.42	12.57	38.36	35.86	150	219	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna 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	15689.91	44.08	54.00	-9.92	29.01	12.57	38.36	35.86	104	137	Average	VERTICAL
2	15690.07	57.09	74.00	-16.91	42.02	12.57	38.36	35.86	104	137	Peak	VERTICAL

Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 151 / Chain 3 + Chain 4 + Chain 5
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamplifier Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11530.10	47.43	54.00	-6.57	30.15	11.19	39.93	33.84	155	149	Average	HORIZONTAL
2	11532.80	59.64	74.00	-14.36	42.36	11.19	39.93	33.84	155	149	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamplifier Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11498.50	59.78	74.00	-14.22	42.44	11.18	40.00	33.84	145	221	Peak	VERTICAL
2	11532.70	47.31	54.00	-6.69	30.03	11.19	39.93	33.84	145	221	Average	VERTICAL

Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 159 / Chain 3 + Chain 4 + Chain 5
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Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamplifier Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11592.40	47.58	54.00	-6.42	30.39	11.23	39.80	33.84	153	222	Average	HORIZONTAL
2	11602.20	60.55	74.00	-13.45	43.36	11.23	39.80	33.84	153	222	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamplifier Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11599.40	59.73	74.00	-14.27	42.54	11.23	39.80	33.84	168	281	Peak	VERTICAL
2	11634.00	47.48	54.00	-6.52	30.35	11.24	39.73	33.84	168	281	Average	VERTICAL

Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 42 / Chain 3 + Chain 4 + Chain 5
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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	15630.04	42.86	54.00	-11.14	27.80	12.55	38.37	35.86	153	199	Average	HORIZONTAL
2	15630.41	56.13	74.00	-17.87	41.07	12.55	38.37	35.86	153	199	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	15629.77	43.21	54.00	-10.79	28.15	12.55	38.37	35.86	150	152	Average	VERTICAL
2	15630.04	55.85	74.00	-18.15	40.79	12.55	38.37	35.86	150	152	Peak	VERTICAL

Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 155 / Chain 3 + Chain 4 + Chain 5
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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	11547.72	46.52	54.00	-7.48	29.24	11.19	39.93	33.84	170	84	Average	HORIZONTAL
2	11551.96	59.18	74.00	-14.82	41.94	11.21	39.87	33.84	170	84	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	11555.24	46.57	54.00	-7.43	29.33	11.21	39.87	33.84	152	180	Average	VERTICAL
2	11557.64	58.97	74.00	-15.03	41.73	11.21	39.87	33.84	152	180	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.

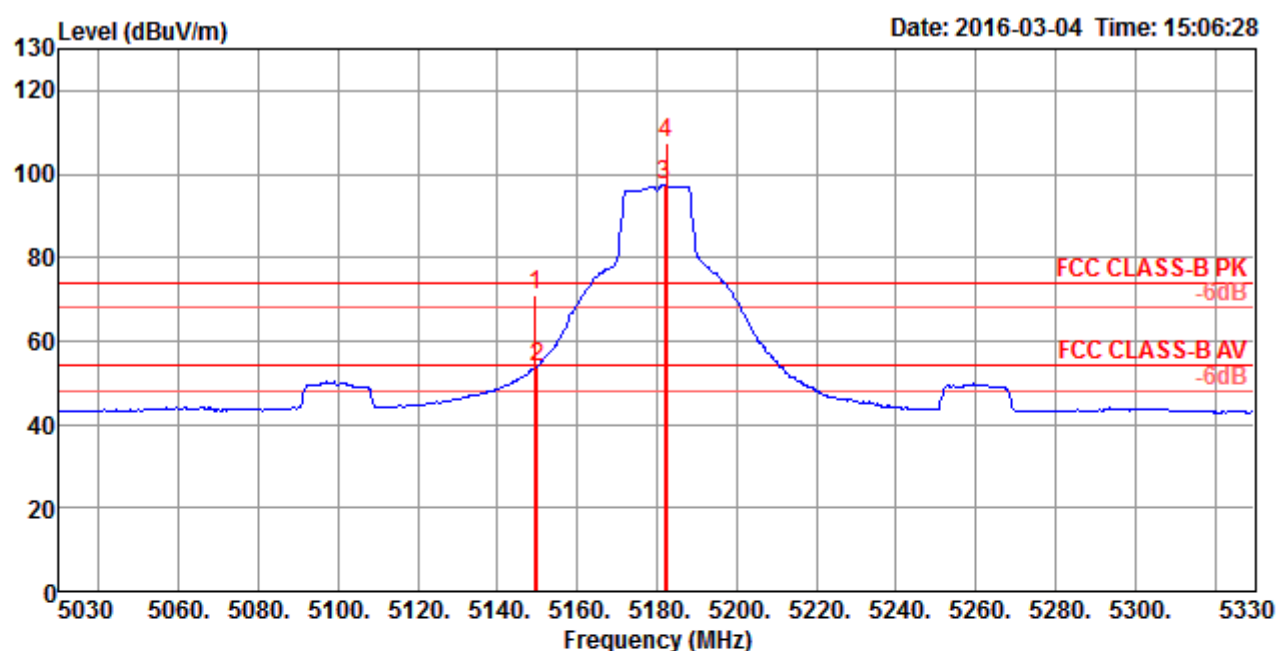
Emission level (dBuV/m) = 20 log Emission level (uV/m).

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

Band Edge Emissions

Configurations	IEEE 802.11a CH 36, 40, 48 / Chain 3
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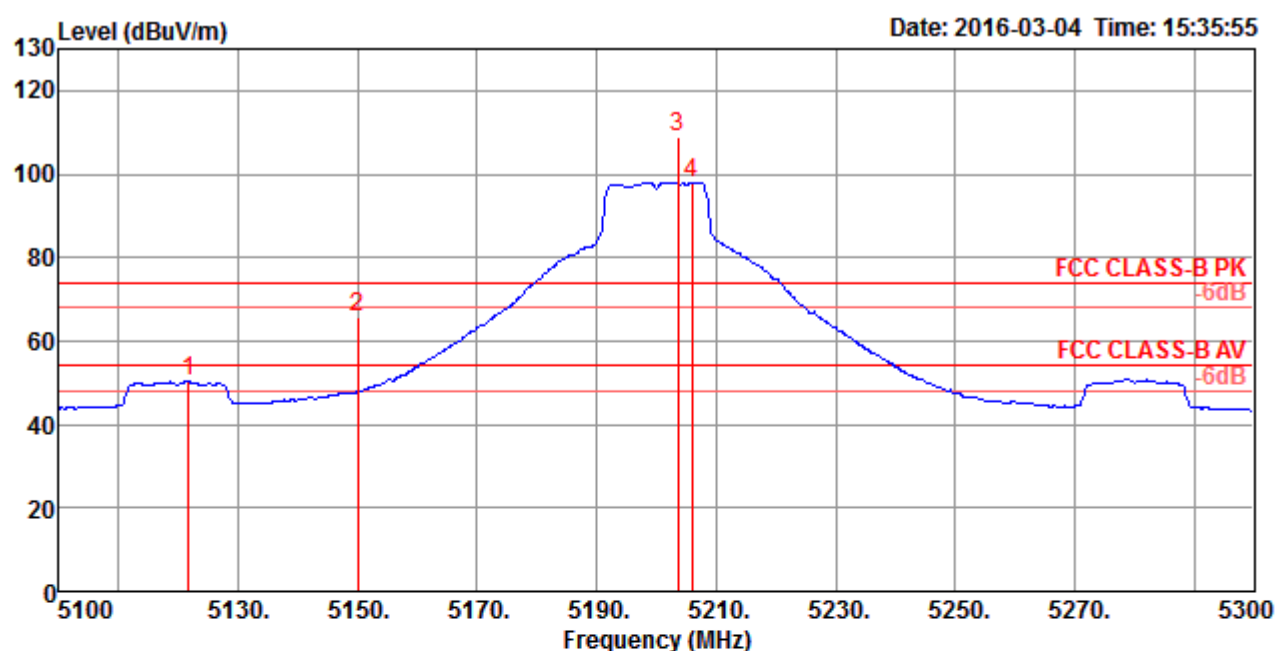
Channel 36



	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5149.40	71.12	74.00	-2.88	67.21	7.24	33.17	36.50	243	63 Peak	HORIZONTAL
2	5150.00	53.87	54.00	-0.13	49.96	7.24	33.17	36.50	243	63 Average	HORIZONTAL
3	5181.80	97.20			93.17	7.29	33.23	36.49	243	63 Average	HORIZONTAL
4	5182.40	107.28			103.25	7.29	33.23	36.49	243	63 Peak	HORIZONTAL

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

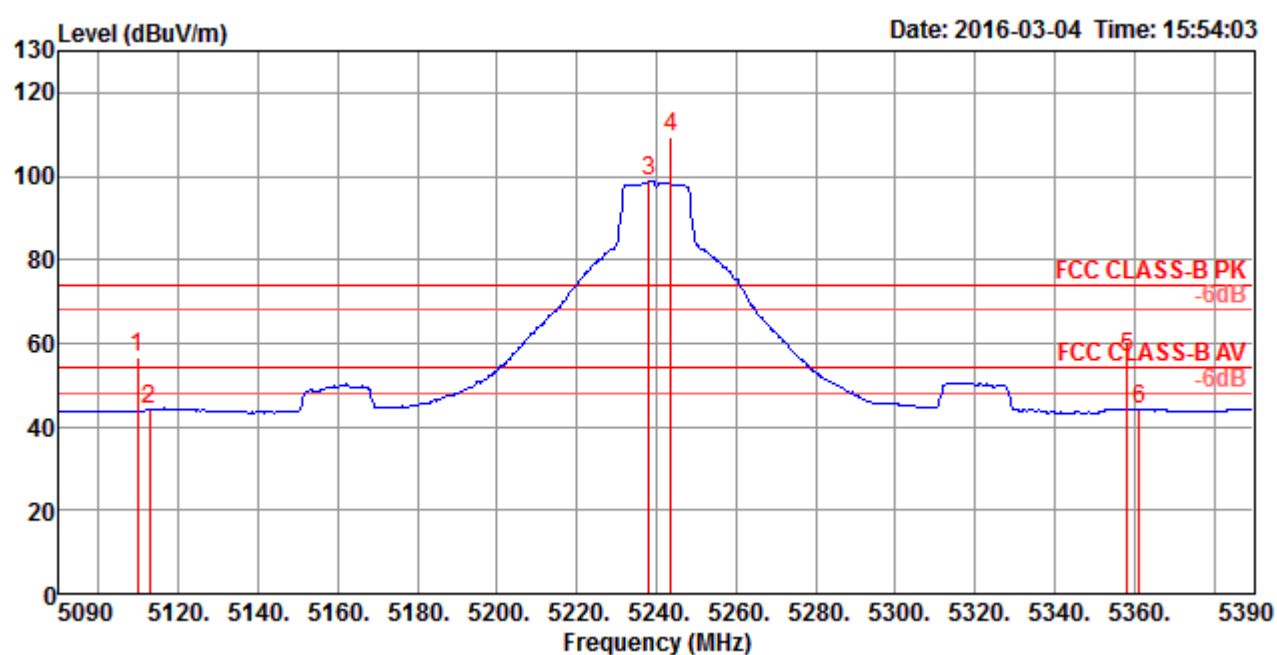
Channel 40



	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5121.60	50.22	54.00	-3.78	46.42	7.19	33.12	36.51	254	63 Average	HORIZONTAL
2	5150.00	65.57	74.00	-8.43	61.66	7.24	33.17	36.50	254	63 Peak	HORIZONTAL
3	5203.60	108.84			104.72	7.33	33.28	36.49	254	63 Peak	HORIZONTAL
4	5206.00	98.03			93.91	7.33	33.28	36.49	254	63 Average	HORIZONTAL

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

Channel 48

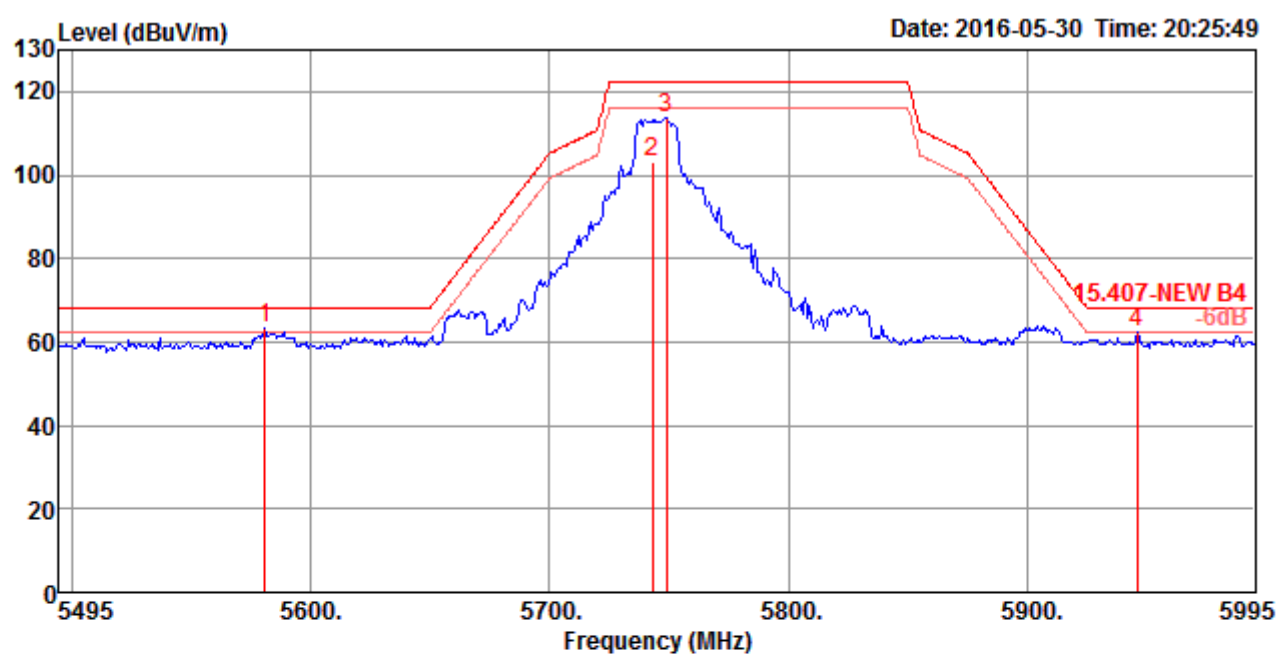


	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5109.80	56.64	74.00	-17.36	52.90	7.16	33.09	36.51	265	61 Peak	HORIZONTAL
2	5112.80	44.23	54.00	-9.77	40.43	7.19	33.12	36.51	265	61 Average	HORIZONTAL
3	5238.20	98.67			94.45	7.36	33.34	36.48	265	61 Average	HORIZONTAL
4	5243.60	109.21			104.99	7.36	33.34	36.48	265	61 Peak	HORIZONTAL
5	5358.20	56.84	74.00	-17.16	52.28	7.47	33.55	36.46	265	61 Peak	HORIZONTAL
6	5361.20	44.27	54.00	-9.73	39.71	7.47	33.55	36.46	265	61 Average	HORIZONTAL

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

Configurations	IEEE 802.11a CH 149, 157, 165 / Chain 3
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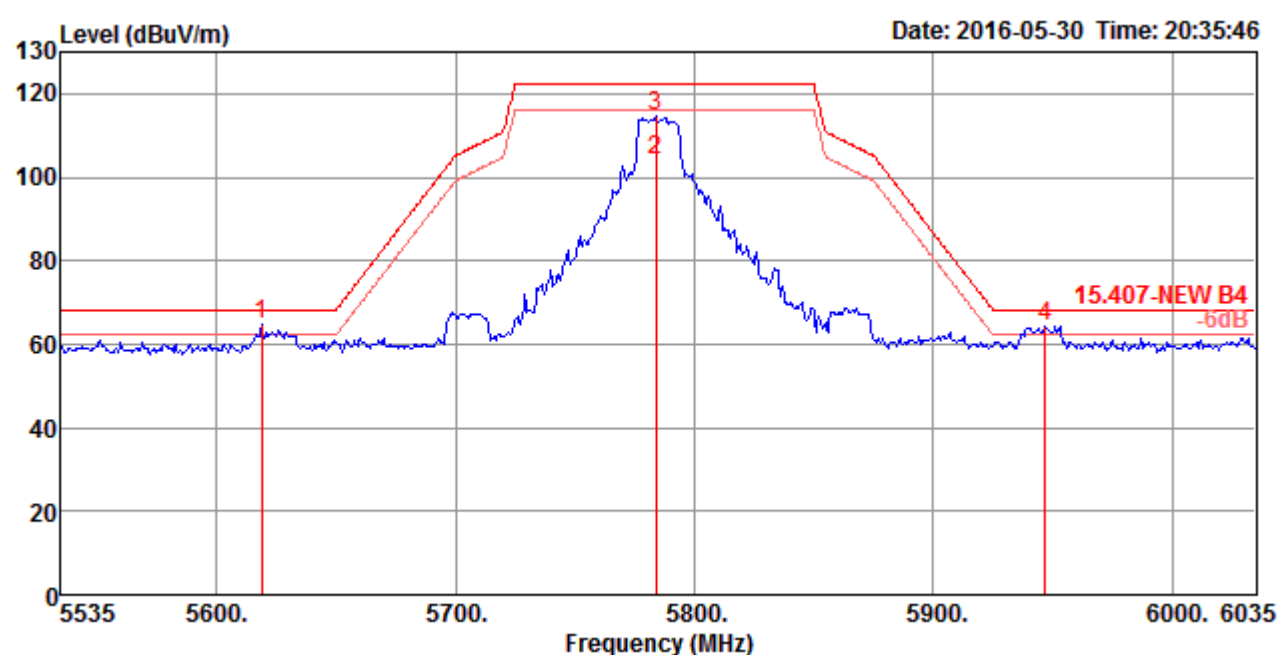
Channel 149



	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5581.00	63.17	68.20	-5.03	55.31	7.61	31.90	31.65	300	300	Peak	VERTICAL
2	5743.00	103.15			95.00	7.76	32.10	31.71	300	300	Average	VERTICAL
3	5749.00	113.71			105.56	7.76	32.10	31.71	300	300	Peak	VERTICAL
4	5946.00	62.14	68.20	-6.06	53.69	7.90	32.34	31.79	300	300	Peak	VERTICAL

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

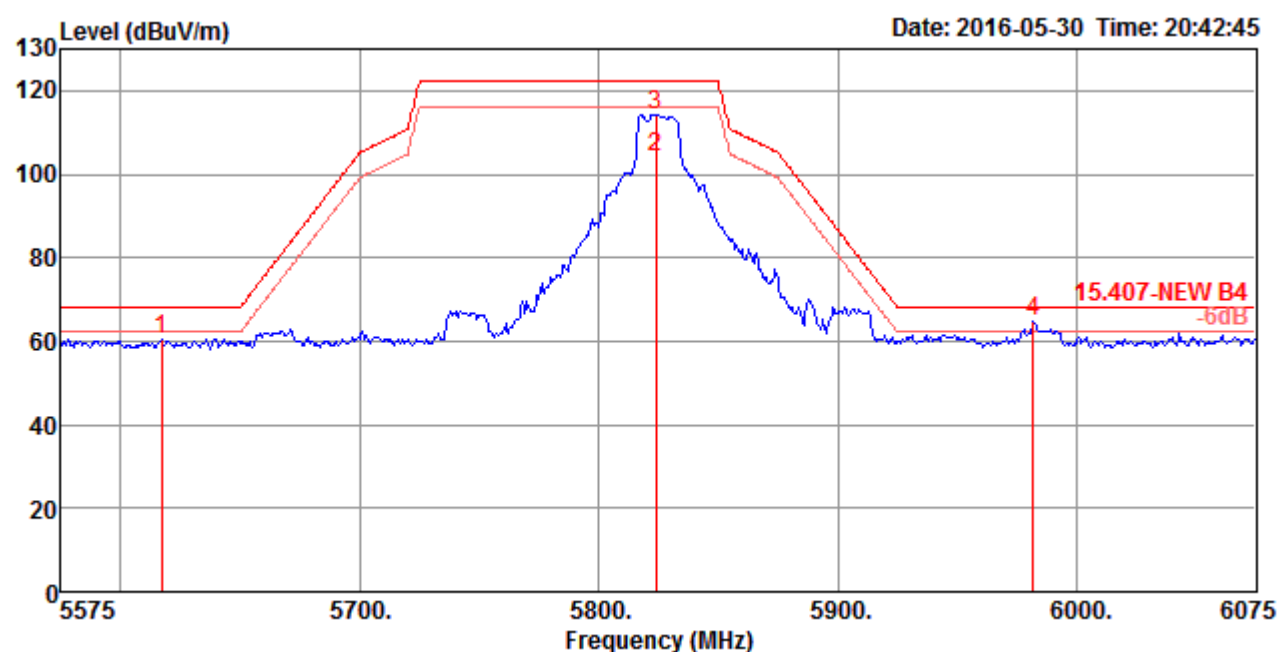
Channel 157



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5619.00	64.73	68.20	-3.47	56.82	7.63	31.94	31.66	300	296	Peak
2	5784.00	104.12			95.92	7.79	32.14	31.73	300	296	Average
3	5784.00	114.44			106.24	7.79	32.14	31.73	300	296	Peak
4	5947.00	64.31	68.20	-3.89	55.86	7.90	32.34	31.79	300	296	Peak

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

Channel 165

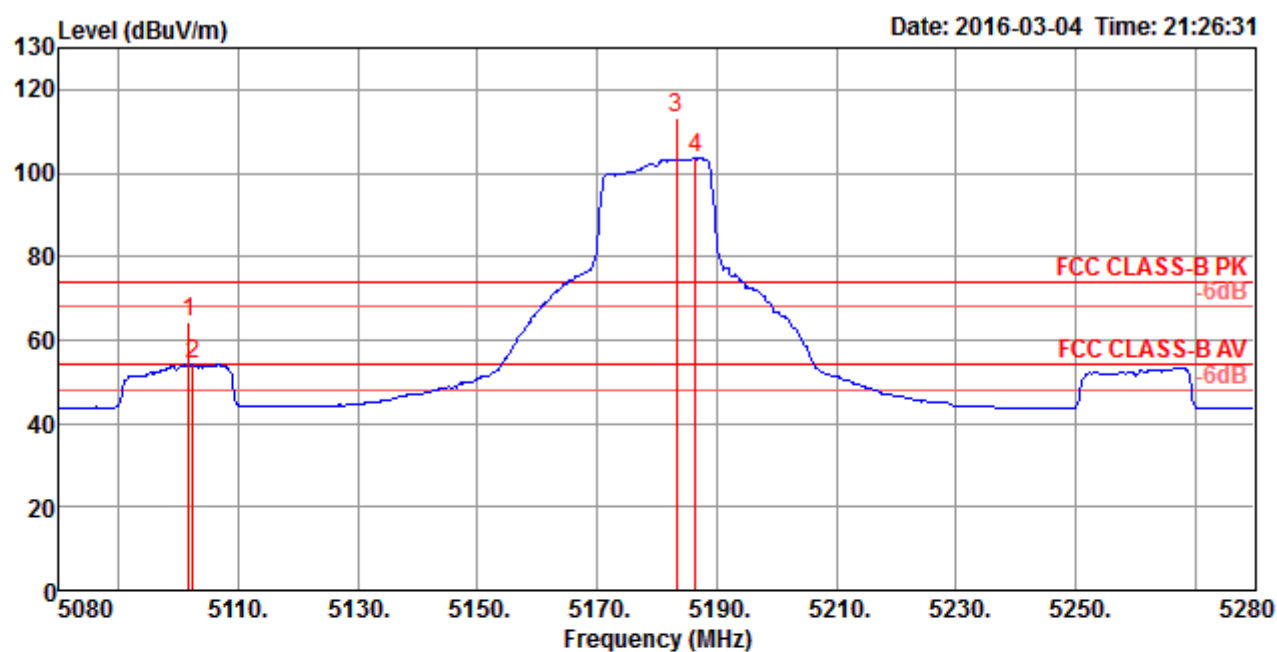


	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	cm	deg	
1	5617.00	60.51	68.20	-7.69	52.60	7.63	31.94	31.66	299	302	Peak
2	5824.00	104.09			95.80	7.83	32.20	31.74	299	302	Average
3	5824.00	114.22			105.93	7.83	32.20	31.74	299	302	Peak
4	5982.00	64.81	68.20	-3.39	56.31	7.92	32.38	31.80	299	302	Peak

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

Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 36, 40, 48 / Chain 3 + Chain 4 + Chain 5
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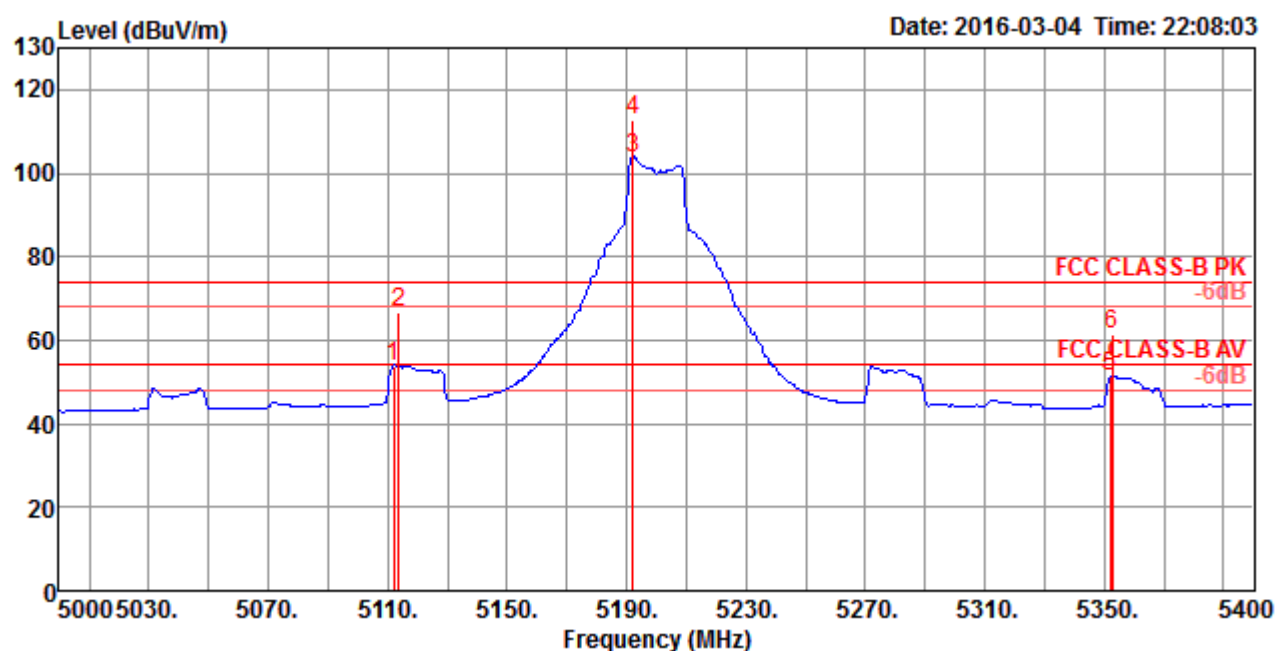
Channel 36



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5101.60	64.31	74.00	-9.69	60.57	7.16	33.09	36.51	249	100	Peak
2	5102.40	53.98	54.00	-0.02	50.24	7.16	33.09	36.51	249	100	Average
3	5183.20	113.43			109.40	7.29	33.23	36.49	249	100	Peak
4	5186.40	103.41			99.38	7.29	33.23	36.49	249	100	Average

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

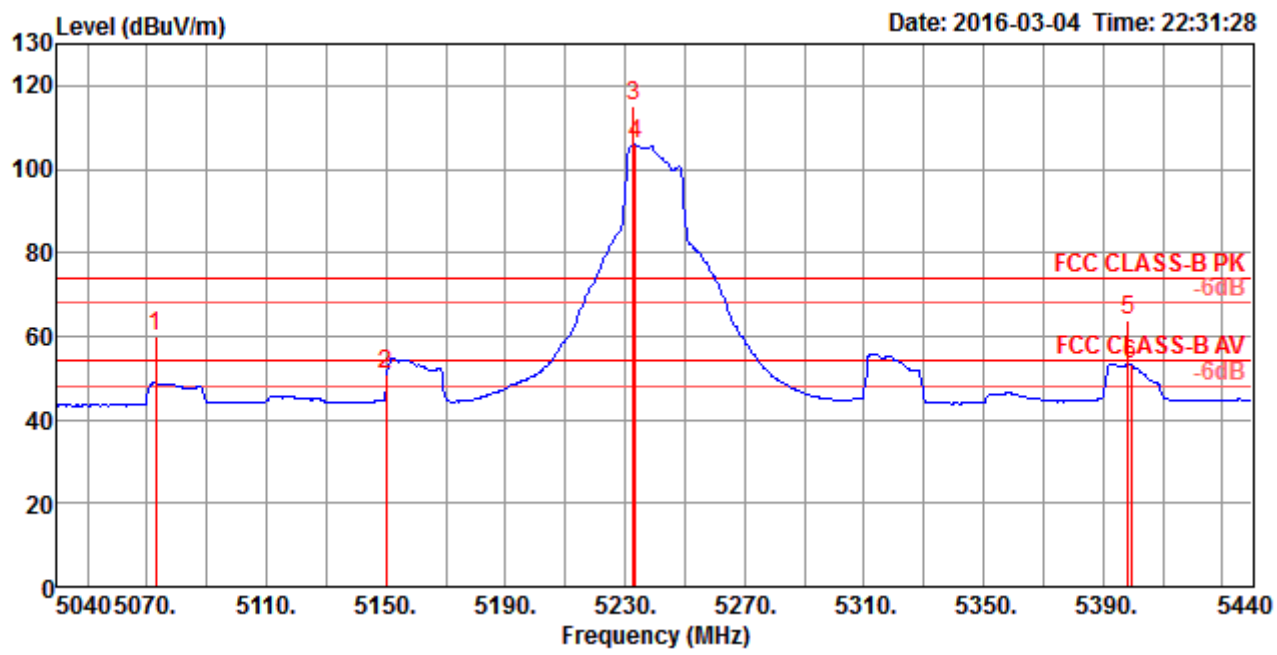
Channel 40



	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5112.00	53.95	54.00	-0.05	50.21	7.16	33.09	36.51	260	84 Average	VERTICAL
2	5113.60	66.72	74.00	-7.28	62.92	7.19	33.12	36.51	260	84 Peak	VERTICAL
3	5192.00	103.85			99.77	7.32	33.25	36.49	260	84 Average	VERTICAL
4	5192.00	112.87			108.79	7.32	33.25	36.49	260	84 Peak	VERTICAL
5	5352.00	51.36	54.00	-2.64	46.83	7.46	33.53	36.46	260	84 Average	VERTICAL
6	5352.80	61.23	74.00	-12.77	56.70	7.46	33.53	36.46	260	84 Peak	VERTICAL

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

Channel 48

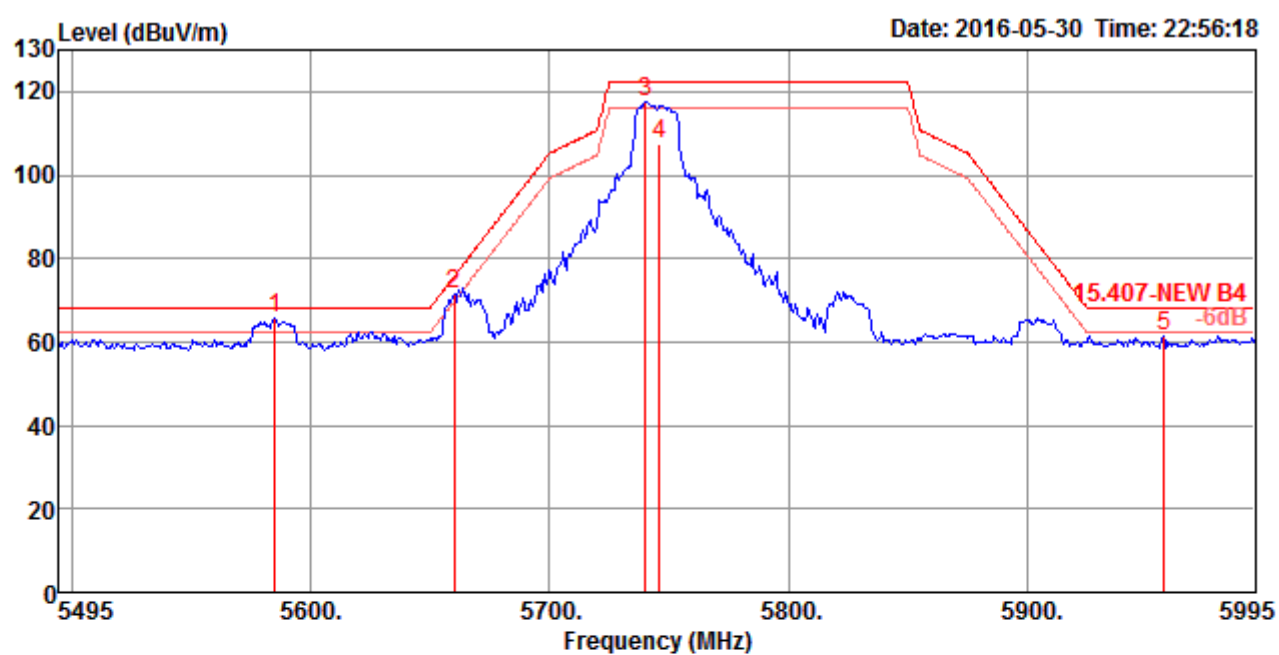


	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	cm	deg	
1	5072.80	60.07	74.00	-13.93	56.43	7.11	33.04	36.51	225	81 Peak	VERTICAL
2	5150.00	51.05	54.00	-2.95	47.14	7.24	33.17	36.50	225	81 Average	VERTICAL
3	5232.80	115.25			111.03	7.36	33.34	36.48	225	81 Peak	VERTICAL
4	5233.60	105.87			101.65	7.36	33.34	36.48	225	81 Average	VERTICAL
5	5398.40	63.90	74.00	-10.10	59.24	7.50	33.61	36.45	225	81 Peak	VERTICAL
6	5399.20	53.32	54.00	-0.68	48.66	7.50	33.61	36.45	225	81 Average	VERTICAL

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

Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 149, 157, 165 / Chain 3 + Chain 4 + Chain 5
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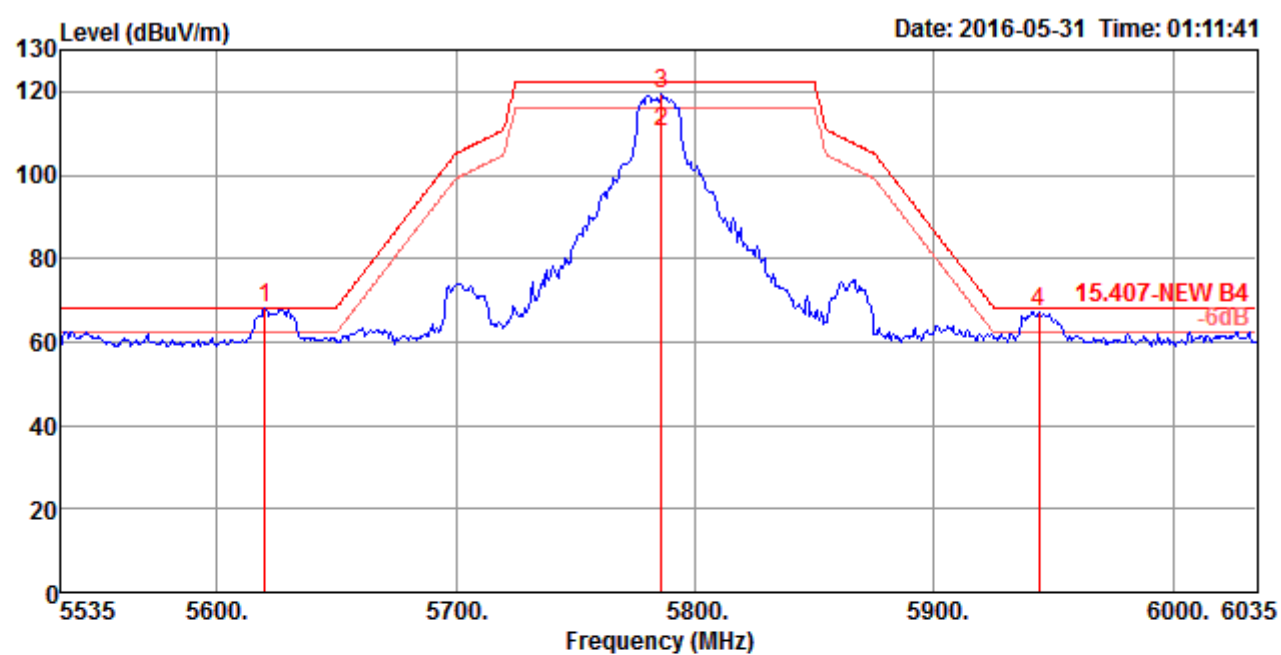
Channel 149



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5585.00	65.93	68.20	-2.27	58.07	7.61	31.90	31.65	253	251 Peak	VERTICAL
2	5660.00	71.36	75.63	-4.27	63.36	7.68	32.00	31.68	253	251 Peak	VERTICAL
3	5740.00	117.66			109.51	7.76	32.10	31.71	253	251 Peak	VERTICAL
4	5746.00	107.51			99.36	7.76	32.10	31.71	253	251 Average	VERTICAL
5	5957.00	61.39	68.20	-6.81	52.95	7.90	32.34	31.80	253	251 Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 5745 MHz.

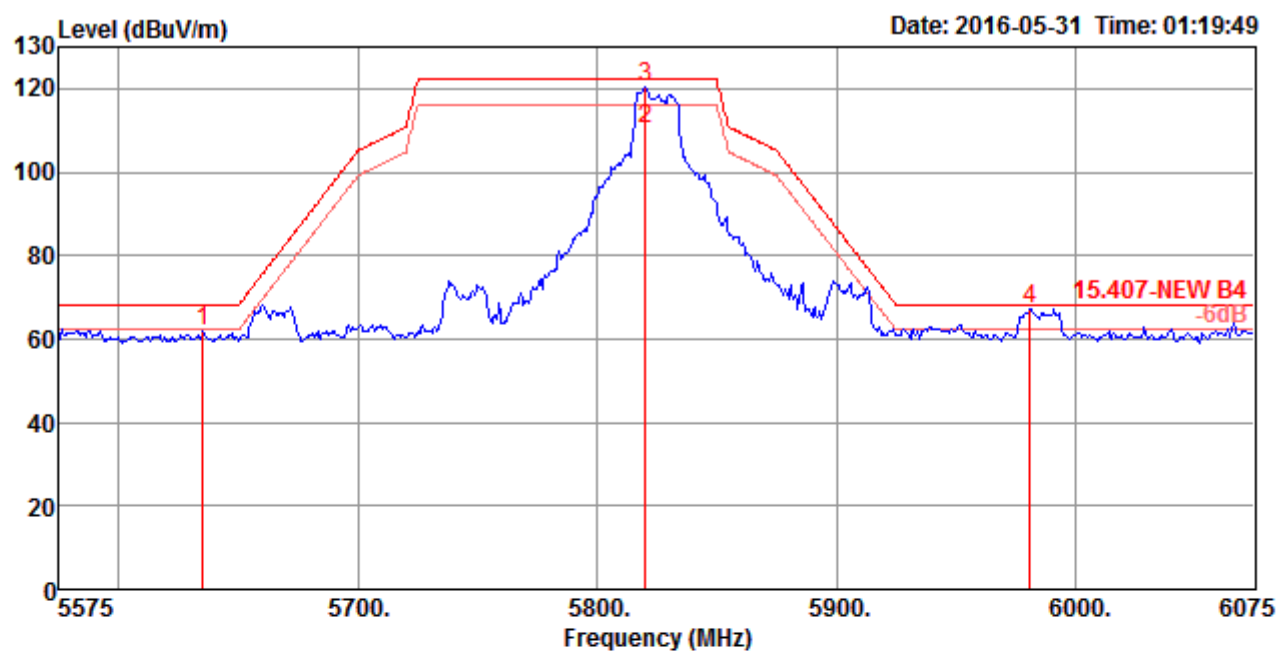
Channel 157



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5620.00	67.99	68.20	-0.21	60.08	7.63	31.94	31.66	258	282	Peak
2	5786.00	110.18			101.98	7.79	32.14	31.73	258	282	Average
3	5786.00	119.38			111.18	7.79	32.14	31.73	258	282	Peak
4	5944.00	67.37	68.20	-0.83	58.92	7.90	32.34	31.79	258	282	Peak

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

Channel 165

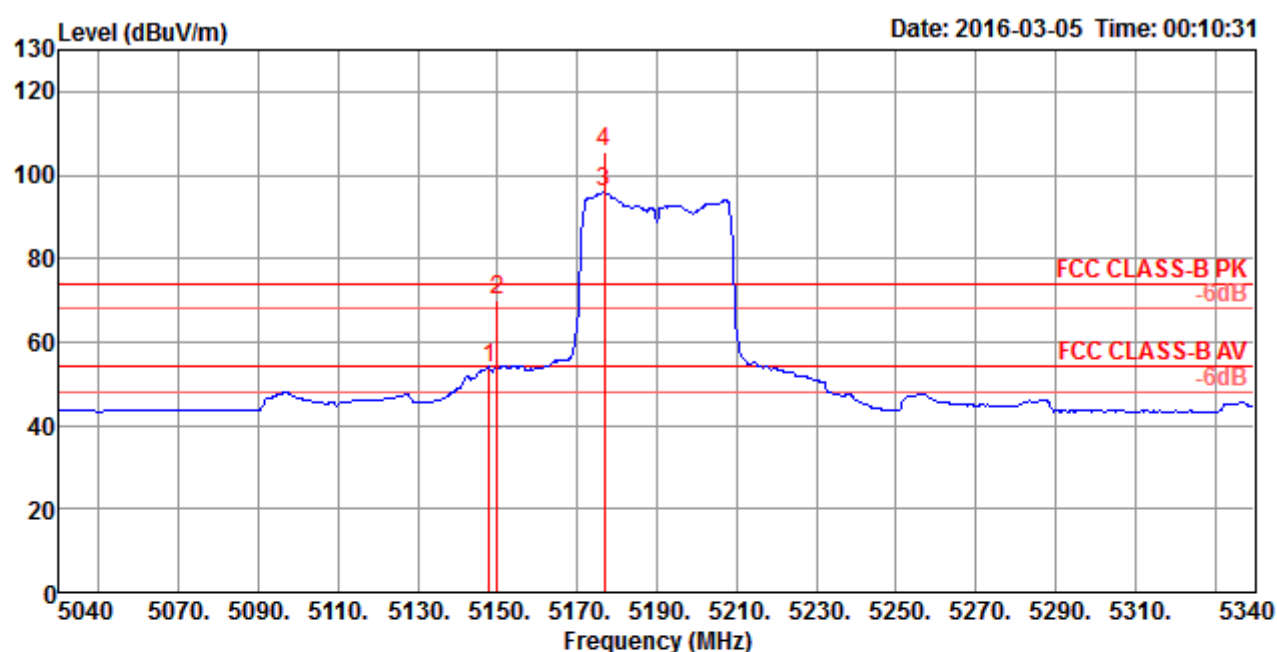


	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5635.00	61.92	68.20	-6.28	53.99	7.64	31.96	31.67	251	252	Peak
2	5820.00	110.20			101.94	7.82	32.18	31.74	251	252	Average
3	5820.00	120.18			111.92	7.82	32.18	31.74	251	252	Peak
4	5981.00	67.06	68.20	-1.14	58.56	7.92	32.38	31.80	251	252	Peak

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

Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 38, 46 / Chain 3 + Chain 4 + Chain 5
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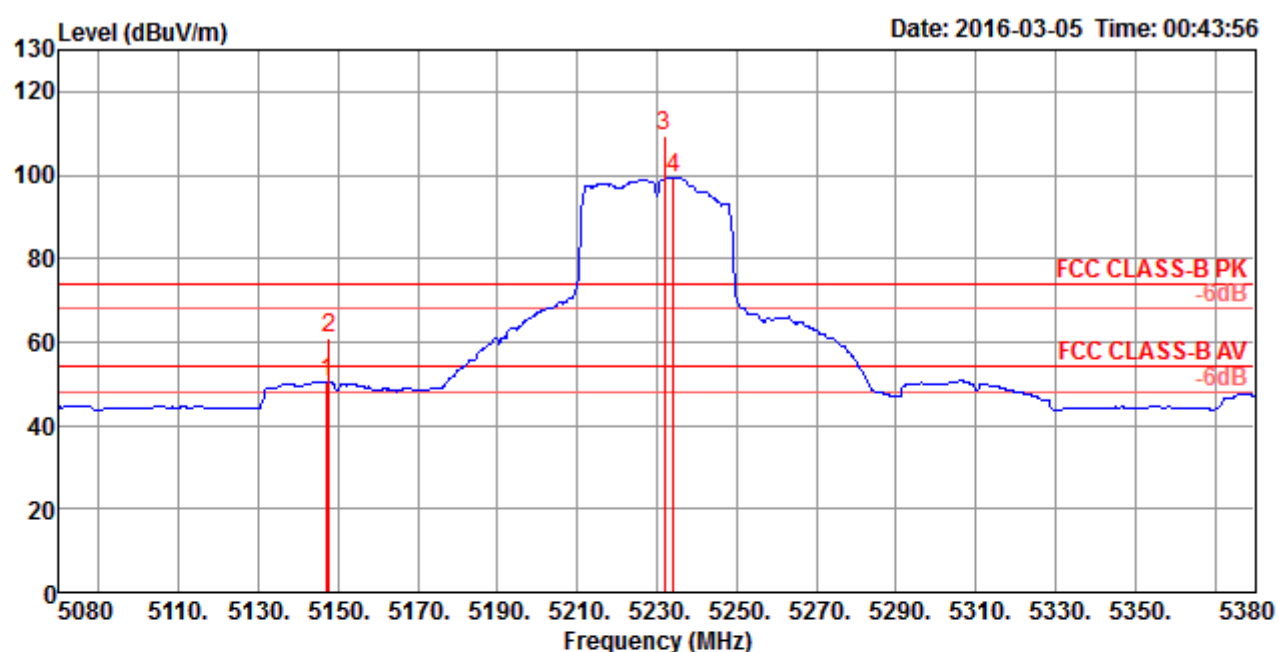
Channel 38



	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5148.00	53.96	54.00	-0.04	50.05	7.24	33.17	36.50	102	35	Average	HORIZONTAL
2	5150.00	69.97	74.00	-4.03	66.06	7.24	33.17	36.50	102	35	Peak	HORIZONTAL
3	5176.80	95.80			91.77	7.29	33.23	36.49	102	35	Average	HORIZONTAL
4	5176.80	105.47			101.44	7.29	33.23	36.49	102	35	Peak	HORIZONTAL

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

Channel 46

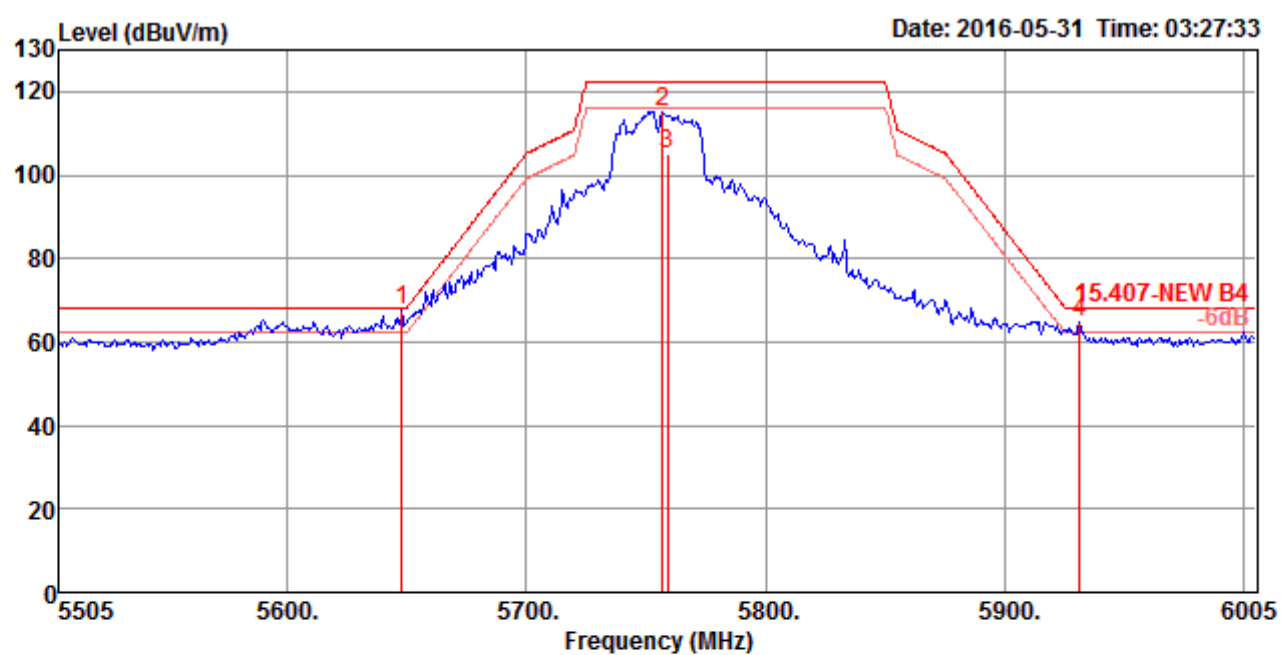


	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5147.20	50.43	54.00	-3.57	46.52	7.24	33.17	36.50	222	79 Average	VERTICAL
2	5147.80	61.00	74.00	-13.00	57.09	7.24	33.17	36.50	222	79 Peak	VERTICAL
3	5231.80	109.33			105.11	7.36	33.34	36.48	222	79 Peak	VERTICAL
4	5234.20	99.37			95.15	7.36	33.34	36.48	222	79 Average	VERTICAL

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

Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 151, 159 / Chain 3 + Chain 4 + Chain 5
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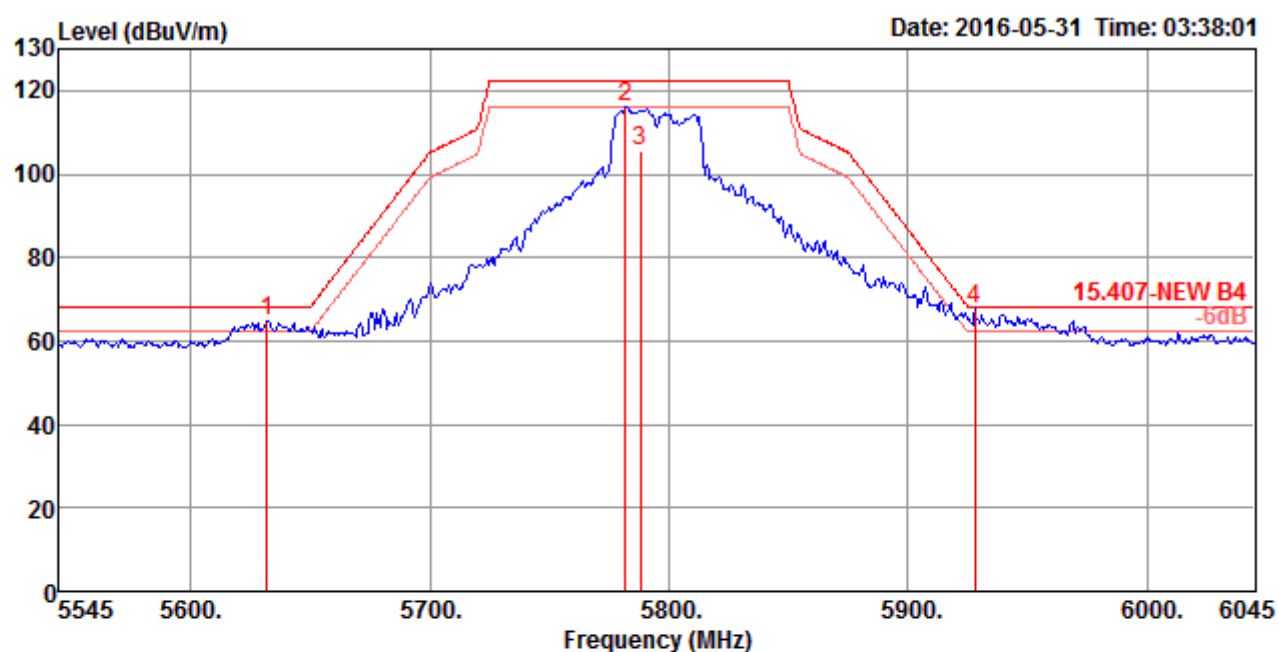
Channel 151



	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5648.00	67.80	68.20	-0.40	59.83	7.66	31.98	31.67	263	285	Peak	VERTICAL
2	5757.00	115.29			107.10	7.78	32.12	31.71	263	285	Peak	VERTICAL
3	5759.00	104.94			96.75	7.78	32.12	31.71	263	285	Average	VERTICAL
4	5931.00	64.58	68.20	-3.62	56.15	7.89	32.32	31.78	263	285	Peak	VERTICAL

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

Channel 159



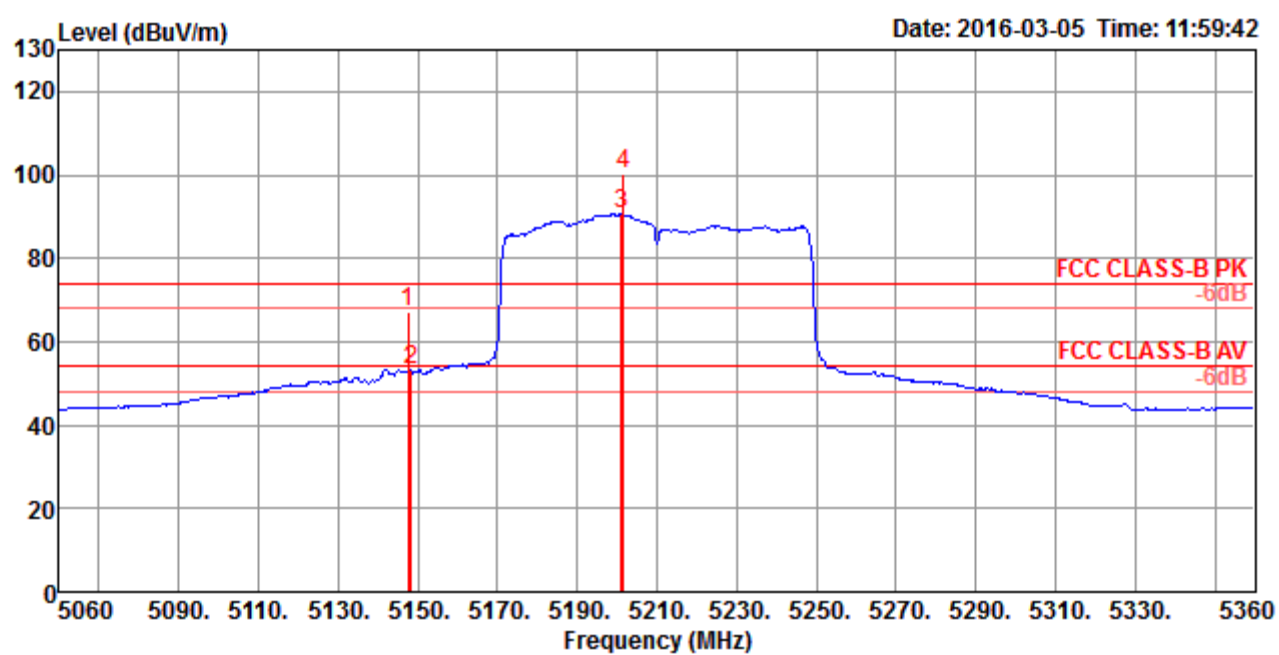
	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5632.00	64.78	68.20	-3.42	56.84	7.64	31.96	31.66	260	314 Peak	HORIZONTAL
2	5782.00	116.04			107.83	7.79	32.14	31.72	260	314 Peak	HORIZONTAL
3	5788.00	105.46			97.26	7.79	32.14	31.73	260	314 Average	HORIZONTAL
4	5928.00	67.52	68.20	-0.68	59.09	7.89	32.32	31.78	260	314 Peak	HORIZONTAL

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

Configurations

IEEE 802.11ac MCS0/Nss1 VHT80 CH 42 / Chain 3 + Chain 4 + Chain 5

Channel 42



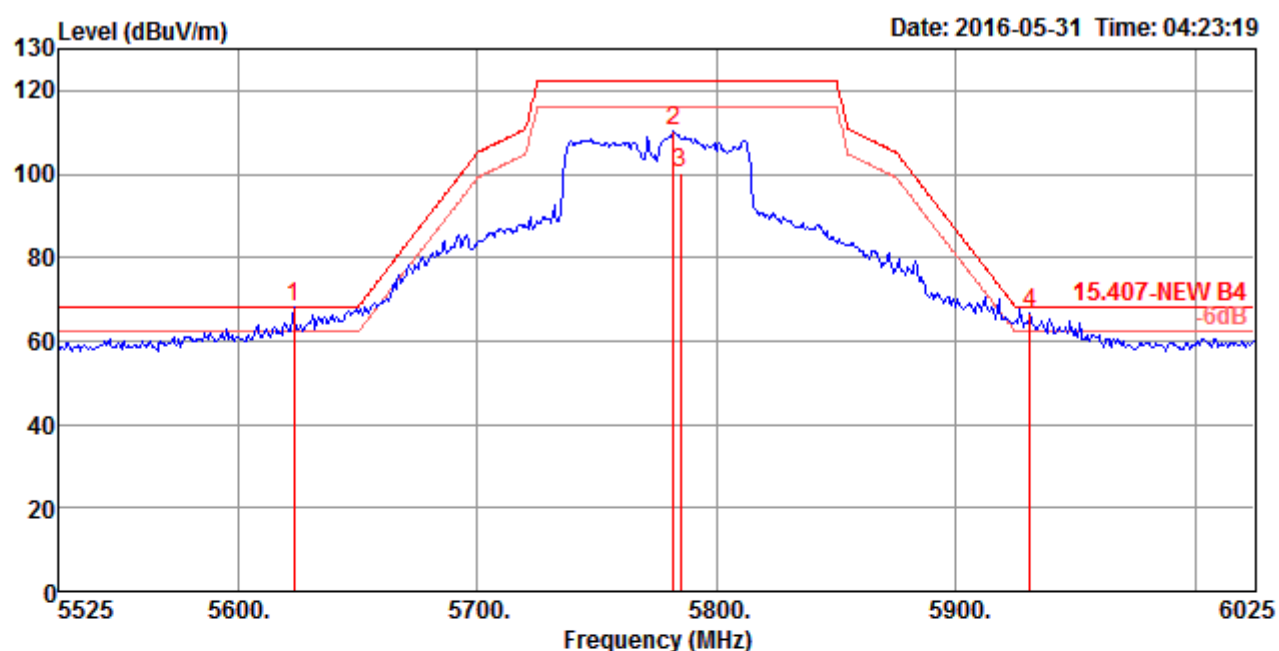
	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5147.60	67.30	74.00	-6.70	63.39	7.24	33.17	36.50	113	341	Peak
2	5148.20	53.28	54.00	-0.72	49.37	7.24	33.17	36.50	113	341	Average
3	5201.00	90.63			86.55	7.32	33.25	36.49	113	341	Average
4	5201.60	100.36			96.24	7.33	33.28	36.49	113	341	Peak

Item 3, 4 are the fundamental frequency at 5210 MHz.

Configurations

IEEE 802.11ac MCS0/Nss1 VHT80 CH 155 / Chain 3 + Chain 4 + Chain 5

Channel 155



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5623.00	68.18	68.20	-0.02	60.27	7.63	31.94	31.66	258	316 Peak	HORIZONTAL
2	5782.00	110.26			102.05	7.79	32.14	31.72	258	316 Peak	HORIZONTAL
3	5785.00	100.22			92.02	7.79	32.14	31.73	258	316 Average	HORIZONTAL
4	5931.00	66.64	68.20	-1.56	58.21	7.89	32.32	31.78	258	316 Peak	HORIZONTAL

Item 2, 3 are the fundamental frequency at 5775 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 5
Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5200 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5199.9918	5199.9908	5199.9898	5199.9892
110.00	5199.9915	5199.9914	5199.9907	5199.9899
93.50	5199.9913	5199.9910	5199.9900	5199.9896
Max. Deviation (MHz)	0.0087	0.0092	0.0102	0.0108
Max. Deviation (ppm)	1.67	1.77	1.96	2.07
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5200 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-30	5199.9877	5199.9869	5199.9865	5199.9857
-20	5199.9880	5199.9876	5199.9868	5199.9864
-10	5199.9889	5199.9882	5199.9877	5199.9869
0	5199.9893	5199.9884	5199.9880	5199.9878
10	5199.9896	5199.9886	5199.9883	5199.9880
20	5199.9915	5199.9909	5199.9903	5199.9893
30	5199.9925	5199.9921	5199.9917	5199.9909
40	5199.9944	5199.9940	5199.9936	5199.9930
50	5199.9946	5199.9939	5199.9937	5199.9936
Max. Deviation (MHz)	0.0123	0.0131	0.0135	0.0143
Max. Deviation (ppm)	2.36	2.52	2.59	2.75
Result	Pass			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5785 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5784.9923	5784.9918	5784.9915	5784.9912
110.00	5784.9915	5784.9909	5784.9905	5784.9903
93.50	5784.9913	5784.9905	5784.9897	5784.9895
Max. Deviation (MHz)	0.0087	0.0095	0.0103	0.0105
Max. Deviation (ppm)	1.50	1.64	1.78	1.81
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5300 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-30	5784.9854	5784.9845	5784.9840	5784.9832
-20	5784.9861	5784.9856	5784.9852	5784.9851
-10	5784.9876	5784.9866	5784.9858	5784.9852
0	5784.9890	5784.9884	5784.9882	5784.9872
10	5784.9898	5784.9897	5784.9889	5784.9884
20	5784.9915	5784.9908	5784.9898	5784.9893
30	5784.9925	5784.9918	5784.9911	5784.9905
40	5784.9932	5784.9925	5784.9919	5784.9914
50	5784.9936	5784.9931	5784.9930	5784.9928
Max. Deviation (MHz)	0.0146	0.0155	0.0160	0.0168
Max. Deviation (ppm)	2.52	2.68	2.76	2.90
Result	Pass			

Mode: 40 MHz / Chain 5
Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5190 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5189.9922	5189.9919	5189.9914	5189.9905
110.00	5189.9915	5189.9908	5189.9902	5189.9899
93.50	5189.9912	5189.9909	5189.9906	5189.9902
Max. Deviation (MHz)	0.0088	0.0092	0.0098	0.0101
Max. Deviation (ppm)	1.69	1.77	1.88	1.94
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5190 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-30	5189.9854	5189.9844	5189.9841	5189.9838
-20	5189.9874	5189.9872	5189.9866	5189.9862
-10	5189.9894	5189.9891	5189.9882	5189.9876
0	5189.9905	5189.9895	5189.9888	5189.9879
10	5189.9909	5189.9902	5189.9901	5189.9893
20	5189.9915	5189.9907	5189.9905	5189.9904
30	5189.9925	5189.9915	5189.9910	5189.9904
40	5189.9937	5189.9934	5189.9925	5189.9921
50	5189.9956	5189.9949	5189.9945	5189.9939
Max. Deviation (MHz)	0.0146	0.0156	0.0159	0.0162
Max. Deviation (ppm)	2.81	3.00	3.06	3.12
Result	Pass			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5755 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5754.9924	5754.9914	5754.9907	5754.9898
110.00	5754.9915	5754.9905	5754.9898	5754.9896
93.50	5754.9908	5754.9899	5754.9893	5754.9885
Max. Deviation (MHz)	0.0092	0.0101	0.0107	0.0115
Max. Deviation (ppm)	1.60	1.75	1.86	1.99
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5755 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-30	5754.9832	5754.9825	5754.9815	5754.9808
-20	5754.9852	5754.9846	5754.9839	5754.9838
-10	5754.9864	5754.9856	5754.9847	5754.9846
0	5754.9883	5754.9874	5754.9865	5754.9860
10	5754.9895	5754.9887	5754.9883	5754.9875
20	5754.9915	5754.9906	5754.9898	5754.9888
30	5754.9925	5754.9923	5754.9915	5754.9912
40	5754.9937	5754.9933	5754.9926	5754.9918
50	5754.9942	5754.9933	5754.9926	5754.9922
Max. Deviation (MHz)	0.0168	0.0175	0.0185	0.0192
Max. Deviation (ppm)	2.92	3.04	3.21	3.33
Result	Pass			



Mode: 80 MHz / Chain 5
Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5210 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5209.9925	5209.9922	5209.9913	5209.9905
110.00	5209.9915	5209.9908	5209.9898	5209.9889
93.50	5209.9914	5209.9911	5209.9903	5209.9893
Max. Deviation (MHz)	0.0086	0.0092	0.0102	0.0111
Max. Deviation (ppm)	1.65	1.76	1.95	2.13
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5210 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-30	5209.9875	5209.9867	5209.9857	5209.9853
-20	5209.9884	5209.9881	5209.9879	5209.9874
-10	5209.9886	5209.9879	5209.9875	5209.9874
0	5209.9897	5209.9892	5209.9889	5209.9886
10	5209.9898	5209.9889	5209.9882	5209.9875
20	5209.9915	5209.9907	5209.9903	5209.9899
30	5209.9925	5209.9923	5209.9922	5209.9919
40	5209.9935	5209.9933	5209.9923	5209.9915
50	5209.9936	5209.9929	5209.9919	5209.9915
Max. Deviation (MHz)	0.0125	0.0133	0.0143	0.0147
Max. Deviation (ppm)	2.40	2.55	2.74	2.82
Result	Pass			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5775 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5774.9919	5774.9912	5774.9903	5774.9895
110.00	5774.9915	5774.9912	5774.9902	5774.9900
93.50	5774.9913	5774.9910	5774.9908	5774.9905
Max. Deviation (MHz)	0.0087	0.0090	0.0098	0.0105
Max. Deviation (ppm)	1.50	1.55	1.69	1.81
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5775 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-30	5774.9865	5774.9859	5774.9851	5774.9850
-20	5774.9876	5774.9871	5774.9870	5774.9866
-10	5774.9877	5774.9876	5774.9871	5774.9870
0	5774.9895	5774.9891	5774.9886	5774.9883
10	5774.9909	5774.9906	5774.9900	5774.9897
20	5774.9915	5774.9906	5774.9902	5774.9900
30	5774.9925	5774.9924	5774.9919	5774.9912
40	5774.9937	5774.9936	5774.9927	5774.9918
50	5774.9940	5774.9932	5774.9926	5774.9923
Max. Deviation (MHz)	0.0135	0.0141	0.0149	0.0150
Max. Deviation (ppm)	2.33	2.44	2.58	2.59
Result	Pass			