FCC Test Report

Product Name	RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Model No	NPort IAW5x50Ayyyyyyyyyy; x or y can be 0-9, A-Z, dash, slash, blank or any Character.
FCC ID	SLE-IAW5X50A

Applicant	MOXA Inc.
Address	FL.4, NO. 135. LANE 235, BAOQIAO RD. XINDIAN DIST.,NEW TAIPEI CITY, TAIWAN

Date of Receipt	Nov. 09, 2016
Issued Date	Dec. 29, 2016
Report No.	16B0271R-RFUSP51V00
Report Version	V1.0

Testing Laboratory
3023

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF or any agency of the government.

Test Report

Issued Date: Dec. 29, 2016
Report No.: 16B0271R-RFUSP51V00

Product Name	RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Applicant	MOXA Inc.
Address	FL.4, NO. 135. LANE 235, BAOQIAO RD. XINDIAN DIST.,NEW TAIPEI CITY, TAIWAN
Manufacturer	MOXA Inc.
Model No.	NPort IAW5x50Ayyyyyyyyyy; x or y can be 0-9, A-Z, dash, slash, blank or any Character.
FCC ID.	SLE-IAW5X50A
EUT Rated Voltage	12-48VDC
EUT Test Voltage	DC 24V
Trade Name	MOXA
Applicable Standard	FCC CFR Title 47 Part 15 Subpart E: 2015 ANSI C63.4: 2014, ANSI C63.10: 2013 789033 D02 General UNII Test Procedures New Rules v01r03
Test Result	Complied

Documented By : Jinn Chen

(Senior Adm. Specialist / Jinn Chen)

Tested By : Kevin Liu

(Engineer / Kevin Liu)

Approved By :

(Director / Vincent Lin)

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Trade Name	MOXA
FCC ID.	SLE-IAW5X50A
Model No.	NPort IAW5x50Ayyyyyyyyyy; x or y can be 0-9, A-Z, dash, slash, blank or any Character.
Frequency Range	802.11a/n-20MHz: 5180-5320MHz, 5500-5700MHz, 5745-5825MHz 802.11n-40MHz: 5190-5310, 5510-5670MHz, 5755-5795MHz
Number of Channels	802.11a/n-20MHz: 24; 802.11n-40MHz: 11
Data Rate	802.11a: 6 - 54Mbps 802.11n: up to 150Mbps
Channel Control	Auto
Type of Modulation	802.11a/n: OFDM, BPSK, QPSK, 16QAM, 64QAM
Antenna type	Dipole Antenna
Antenna Gain	Refer to the table “Antenna List”

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	KINSUN	6602D03081	Dipole	0.38dBi For 5.15~5.25GHz 0.38dBi For 5.25~5.35GHz 0.38dBi For 5.47~5.725GHz -0.39dBi For 5.725~5.825GHz

Note: 1. The antenna of EUT is conform to FCC 15.203.

2. Only the higher gain antenna was tested and recorded in this report

802.11a/n-20MHz Center Working Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 036:	5180 MHz	Channel 040:	5200 MHz	Channel 044:	5220 MHz	Channel 048:	5240 MHz
Channel 052:	5260 MHz	Channel 056:	5280 MHz	Channel 060:	5300 MHz	Channel 064:	5320 MHz
Channel 100:	5500 MHz	Channel 104:	5520 MHz	Channel 108:	5540 MHz	Channel 112:	5560 MHz
Channel 116:	5580 MHz	Channel 120:	5600 MHz	Channel 124:	5620 MHz	Channel 128:	5640 MHz
Channel 132:	5660 MHz	Channel 136:	5680 MHz	Channel 140:	5700 MHz	Channel 149:	5745 MHz
Channel 153:	5765 MHz	Channel 157:	5785 MHz	Channel 161:	5805 MHz	Channel 165:	5825 MHz

802.11n-40MHz Center Working Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 038:	5190 MHz	Channel 046:	5230 MHz	Channel 054:	5270 MHz	Channel 062:	5310 MHz
Channel 102:	5510 MHz	Channel 110:	5550 MHz	Channel 118:	5590 MHz	Channel 126:	5630 MHz
Channel 134:	5670 MHz	Channel 151:	5755 MHz	Channel 159:	5795 MHz		

Note:

1. This device is a RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O with a built-in 802.11a/b/g/n WLAN transceiver.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. At result of pretests, module supports dual-channel transmission, only the worst case is shown in the report.
4. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report.
5. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart E for Unlicensed National Information Infrastructure devices.

Test Mode	Mode 1: Transmit (802.11a-6Mbps) Mode 2: Transmit (802.11n-20BW 7.2Mbps) Mode 3: Transmit (802.11n-40BW 15Mbps)

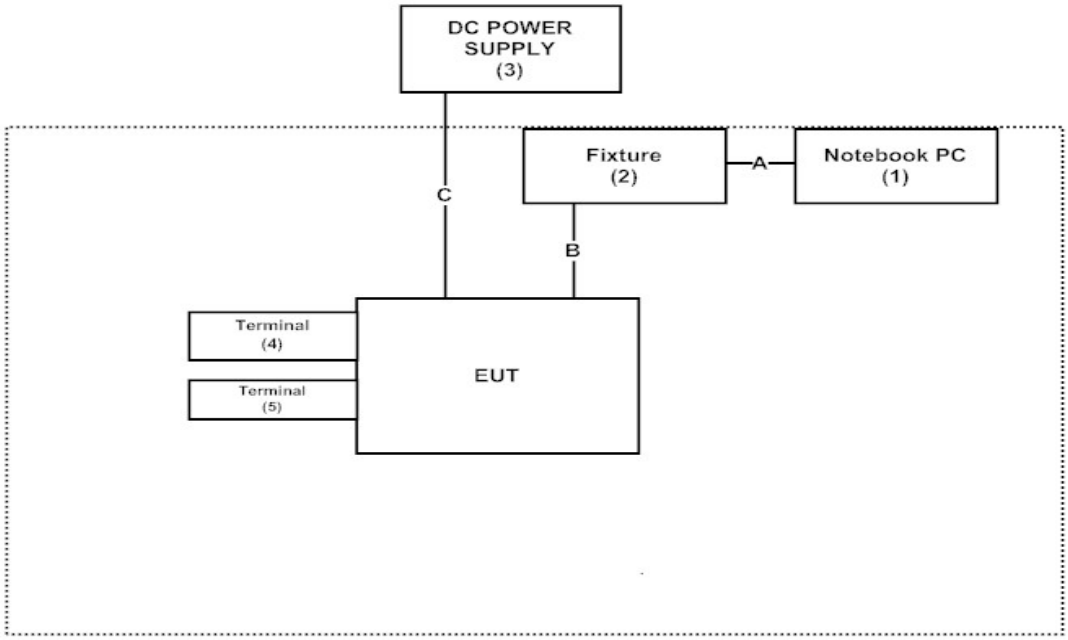
1.3. Tested System Datails

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook PC	DELL	P62G	416FJC2	Non-Shielded, 0.8m
2	Fixture	MOXA	N/A	N/A	N/A
3	DC POWER SUPPLY	GWInstek	SPD-3606	N/A	N/A
4	Terminal	MOXA	N/A	N/A	N/A
5	Terminal	MOXA	N/A	N/A	N/A

Signal Cable Type		Signal cable Description
A	USB Cable	Shielded, 0.8m
B	RS-232 Cable	Non-Shielded, 0.3m
C	DC Power Cable	Non-Shielded, 1.8m

1.4. Configuration of tested System



1.5. EUT Exercise Software

1. Setup the EUT as shown in Section 1.4.
2. Execute software “PuTTY Version 0.63” on the Notebook PC.
3. Configure the test mode, the test channel, and the data rate.
4. Press “OK” to start the continuous Transmit.
5. Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

The related certificate for our laboratories about the test site and management system can be downloaded from DEKRA Testing and Certification Co., Ltd. Web Site:
http://www.dekra.com.tw/english/about/certificates.aspx?bval=5
The address and introduction of DEKRA Testing and Certification Co., Ltd. laboratories can be founded in our Web site: http://www.dekra.com.tw/index_en

Site Description: File on
Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046
Registration Number: 92195

Site Name: DEKRA Testing and Certification Co., Ltd
Site Address: No.159, Sec. 2, Wenhua 1st Rd., Linkou Dist.,
New Taipei City 24457, Taiwan.
TEL: 886-2-2602-7968 / FAX : 866-2-2602-3286
E-Mail : info.tw@dekra.com

FCC Accreditation Number: TW1014

1.7. List of Test Equipment

For Conduction measurements /ASR1

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
X	EMI Test Receiver	R&S	ESR7	101602	2016.12.15	2017.12.14
X	Two-Line V-Network	R&S	ENV216	101306	2016.02.09	2017.02.08
X	Two-Line V-Network	R&S	ENV216	101307	2016.02.09	2017.02.08
X	Coaxial Cable	DEKRA	RG400_BNC	RF001	2016.05.25	2017.05.24

Note:
1. All equipments are calibrated every one year.
2. The test instruments marked with "X" are used to measure the final test results.
3. Test Software version : DEKRA EMI 2.0 V2.1.113

For Conducted measurements /ASR3

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
X	Temperature Chamber	KSON	THS-D4T-100	A0606	2016.03.04	2017.03.03
X	Spectrum Analyzer	R&S	FSV30	103466	2016.12.14	2017.12.13
X	Power Meter	Anritsu	ML2496A	1548003	2016.12.15	2017.12.14
X	Power Sensor	Anritsu	MA2411B	1531024	2016.12.15	2017.12.14
X	Power Sensor	Anritsu	MA2411B	1531025	2016.12.15	2017.12.14

Note:
1. All equipments are calibrated every one year.
2. The test instruments marked with "X" are used to measure the final test results.
3. Test Software version : DEKRA Conduction Test System V8.0.110

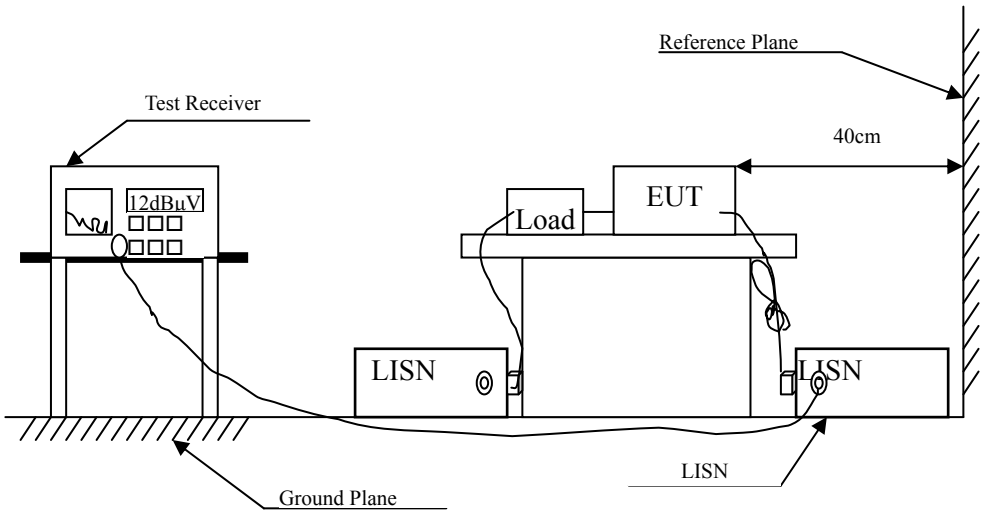
For Radiated measurements /ACB1

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
X	Loop Antenna	A.H.	SAS-562B	272	2016.07.21	2017.07.20
X	Bi-Log Antenna	SCHWARZBECK	VULB9168	9168-674	2016.02.20	2017.02.19
X	Horn Antenna	ETS-Lindgren	3117	00203800	2016.10.13	2017.10.12
X	Horn Antenna	Com-Power	AH-840	101087	2016.05.03	2017.05.02
X	Pre-Amplifier	EMCI	EMC001330	980316	2016.04.27	2017.04.26
X	Pre-Amplifier	EMCI	EMC051835SE	980311	2016.04.27	2017.04.26
X	Pre-Amplifier	EMCI	EMC05820SE	980310	2016.04.28	2017.04.27
X	Pre-Amplifier	EMCI	EMC184045SE	980314	2016.05.12	2017.05.11
	Filter	MICRO TRONICS	BRM50702	G251	2016.08.11	2017.08.10
X	Filter	MICRO TRONICS	BRM50716	G188	2016.08.11	2017.08.10
X	EMI Test Receiver	R&S	ESR7	101602	2016.12.15	2017.12.14
X	Spectrum Analyzer	R&S	FSV40	101149	2016.12.14	2017.12.13
X	Coaxial Cable	SUHNER	SUCOFLEX 106	RF002	2016.05.25	2017.05.24
X	Mircoflex Cable	HUBER SUHNER	SUCOFLEX 102	MY3381/2	2016.08.11	2017.08.10

Note:
1. All equipments are calibrated every one year.
2. The test instruments marked with "X" are used to measure the final test results.
3. Test Software version : DEKRA EMI 2.0 V2.1.113

2. Conducted Emission

2.1. Test Setup



2.2. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBµV) Limit		
Frequency MHz	Limits	
	QP	AV
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

Remarks : In the above table, the tighter limit applies at the band edges.

2.3. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)
Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2013 on conducted measurement.
Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.
The EUT was setup to ANSI C63.10, 2014; tested to UNII test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

2.4. Uncertainty

±2.35dB

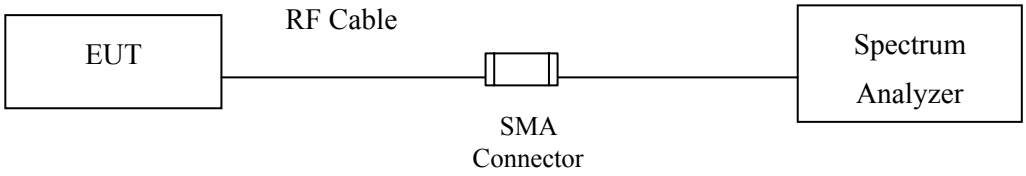
2.5. Test Result of Conducted Emission

Owing to the EUT use DC supply voltage, this test item is not performed.

3. Maximun conducted output power

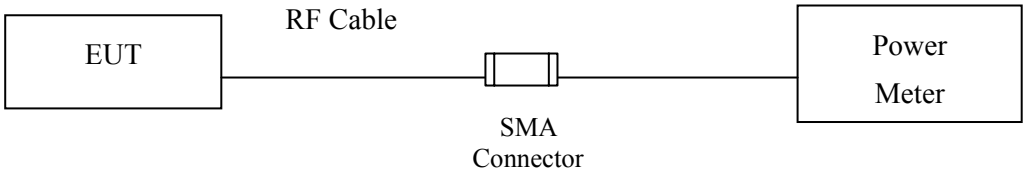
3.1. Test Setup

99% Occupied Bandwidth



Conduction Power Measurement

Conduction Power Measurement (for 802.11an)



3.2. Limits

3.2.1. For the band 5.15-5.25 GHz,

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-topoint U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.2.2. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.2.3. For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point UNII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

3.3. Test Procedure

As an alternative to FCC KDB-789033, the EUT maximum conducted output power was measured with an average power meter employing a video bandwidth greater the 6dB BW of the emission under test. Maximum conducted output power was read directly from the meter across all data rates, and across three channels within each sub-band. Special care was used to make sure that the EUT was transmitting in continuous mode. This method exceeds the limitations of FCC KDB-789033, and provides more accurate measurements.

802.11an (BW≦40MHz) Maximum conducted output power using KDB 789033 section E)3)b) Method PM-G (Measurement using a gated RF average power meter)
Note: the power meter have a video bandwidth that is greater than or equal to the measurement bandwidth, (Anritsu/ MA2411B video bandwidth: 65MHz)

3.4. Uncertainty

Power Meter: ±0.95dB
Spectrum Analyzer: ±1.30dB

3.5. Test Result of Maximum conducted output power

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Maximum conducted output power
Test Mode : Mode 1: Transmit (802.11a-6Mbps)
Test Date : 2016/11/29

Cable loss=1dB		Maximum conducted output power							
Channel No.	Frequency (MHz)	Data Rate (Mbps)							
		6	9	12	18	24	36	48	54
		Measurement Level (dBm)							
36	5180	9.87	--	--	--	--	--	--	--
44	5220	15.22	15.18	15.14	15.08	15.02	14.95	14.91	14.88
48	5240	15.25	--	--	--	--	--	--	--
52	5260	15.01	--	--	--	--	--	--	--
60	5300	14.94	14.9	14.87	14.85	14.84	14.81	14.78	14.76
64	5320	14.86	--	--	--	--	--	--	--
100	5500	14.22	--	--	--	--	--	--	--
116	5580	15.05	15.02	15	14.98	14.96	14.92	14.9	14.88
140	5700	14.55	--	--	--	--	--	--	--
149	5745	13.88	--	--	--	--	--	--	--
157	5785	14.14	14.11	14.08	14.05	14.02	13.99	13.97	13.95
165	5825	14.33	--	--	--	--	--	--	--

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

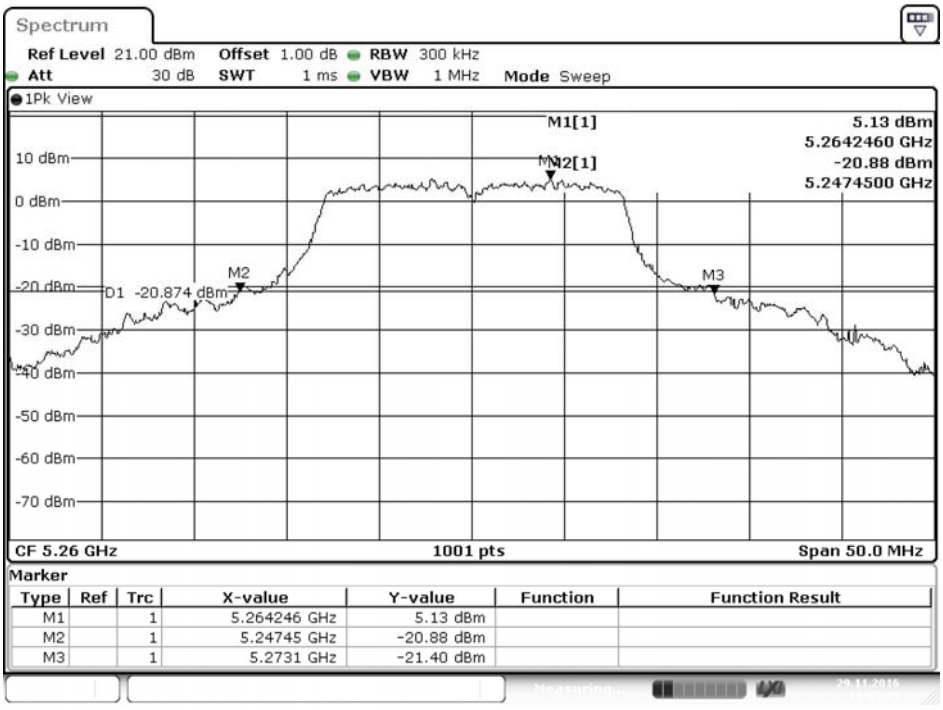
Maximum conducted output power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit	
				(dBm)	dBm+10log(BW)
36	5180	--	9.87	30	--
44	5220	--	15.22	30	--
48	5240	--	15.25	30	--
52	5260	25.650	15.01	24	25.09
60	5300	25.600	14.94	24	25.08
64	5320	27.900	14.86	24	25.46
100	5500	25.450	14.22	24	25.06
116	5580	25.550	15.05	24	25.07
140	5700	25.600	14.55	24	25.08
149	5745	--	13.88	30	--
157	5785	--	14.14	30	--
165	5825	--	14.33	30	--

Note: Power Output Value =Reading value on average power meter + cable loss

26dB **Bandwidth:**

Channel 52:



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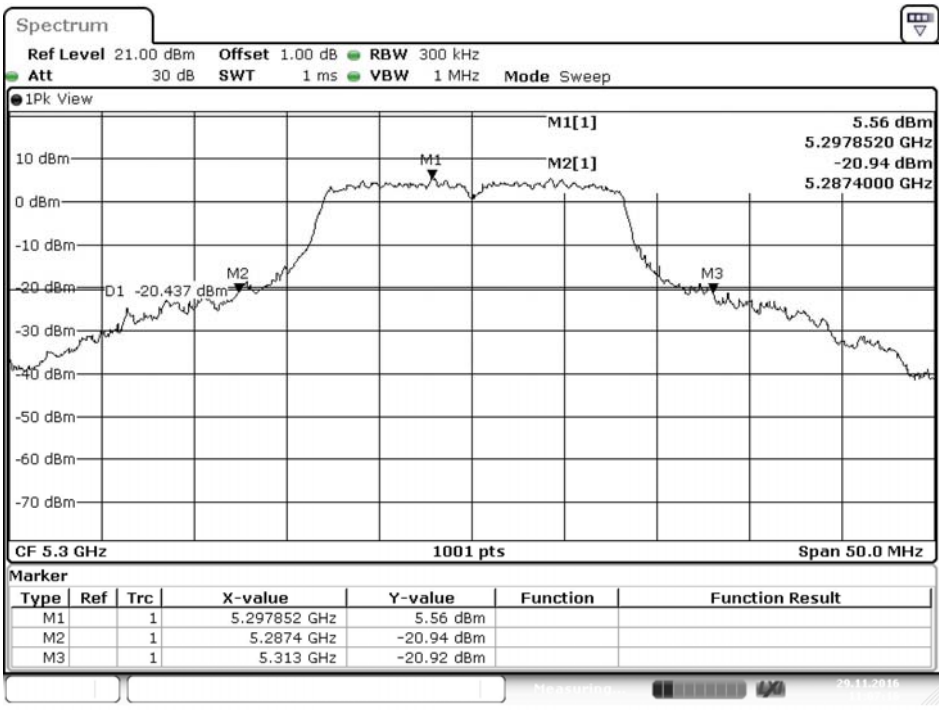
Channel 60:



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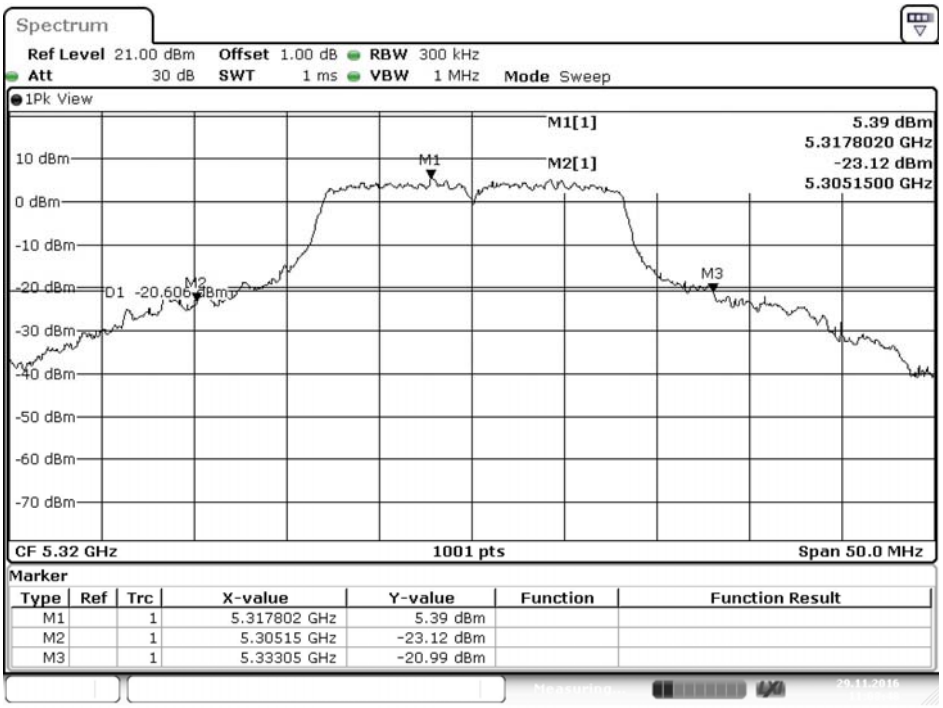
Channel 64:



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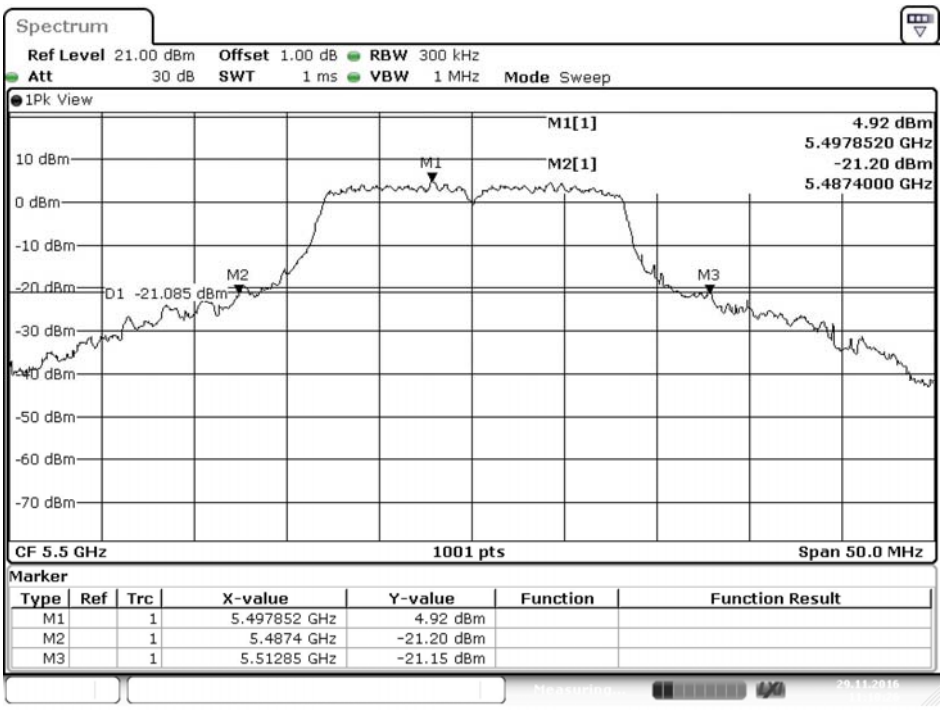
Channel 100:



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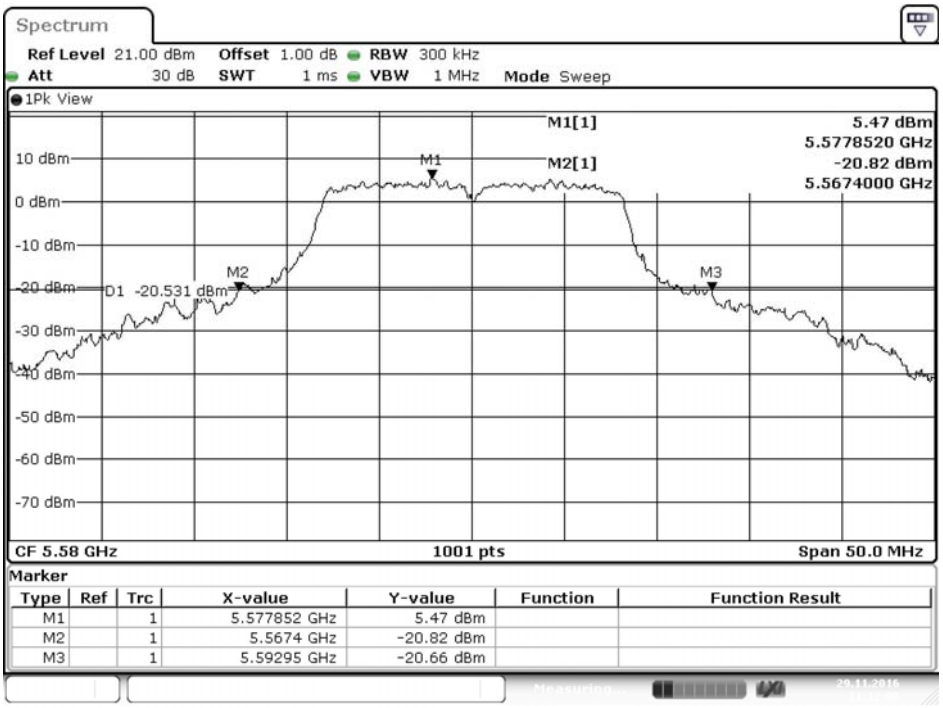
Channel 116:



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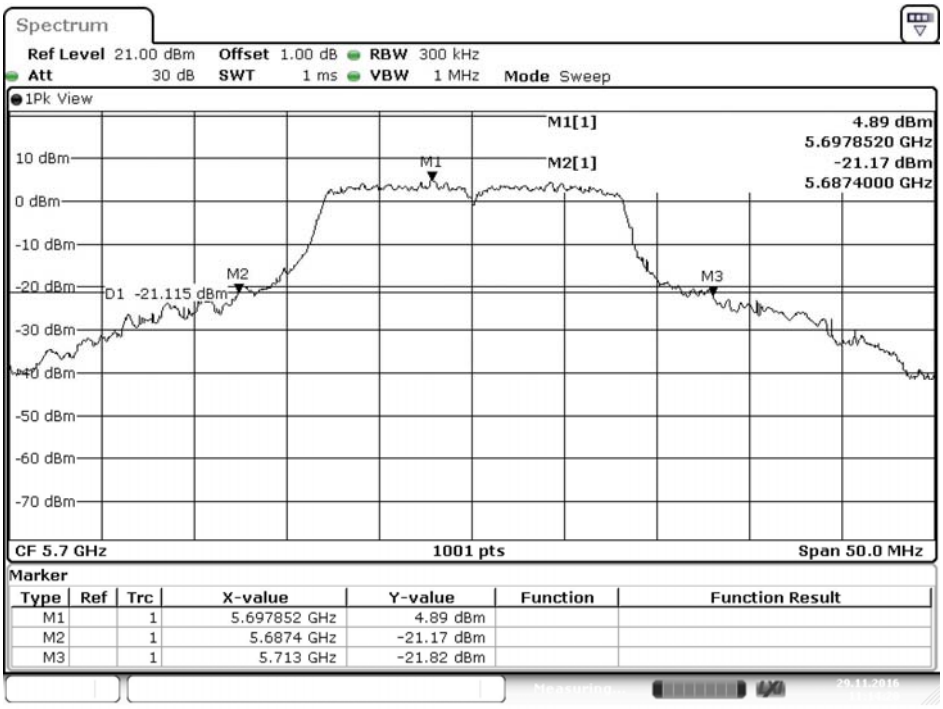
Channel 140:



Date: 29.NOV.2016 11:14:21

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Maximum conducted output power
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps)
Test Date : 2016/11/29

Cable loss=1dB		Maximum conducted output power							
Channel No.	Frequency (MHz)	Data Rate (Mbps)							
		7.2	14.4	21.7	28.9	43.3	57.8	65	72.2
		Measurement Level (dBm)							
36	5180	10.01	--	--	--	--	--	--	--
44	5220	15.21	15.17	15.14	15.11	15.08	15.05	15.01	14.98
48	5240	15.3	--	--	--	--	--	--	--
52	5260	14.94	--	--	--	--	--	--	--
60	5300	14.83	14.8	14.74	14.71	14.68	14.67	14.65	14.62
64	5320	14.89	--	--	--	--	--	--	--
100	5500	14.06	--	--	--	--	--	--	--
116	5580	15.02	14.98	14.95	14.92	14.89	14.85	14.81	14.79
140	5700	14.07	--	--	--	--	--	--	--
149	5745	14.52	--	--	--	--	--	--	--
157	5785	14.6	14.57	14.54	14.52	14.49	14.47	14.44	14.41
165	5825	14.59	--	--	--	--	--	--	--

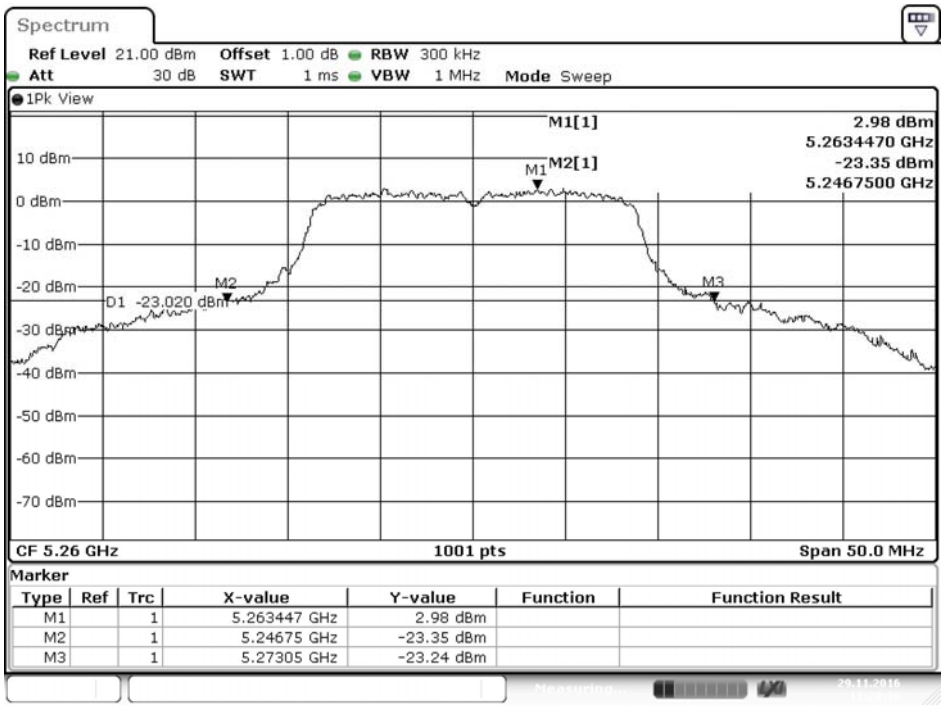
Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit	
				(dBm)	dBm+10log(BW)
36	5180	--	10.01	30	--
44	5220	--	15.21	30	--
48	5240	--	15.3	30	--
52	5260	26.300	14.94	24	25.20
60	5300	25.350	14.83	24	25.04
64	5320	25.950	14.89	24	25.14
100	5500	22.350	14.06	24	24.49
116	5580	28.800	15.02	24	25.59
140	5700	22.150	14.07	24	24.45
149	5745	--	14.52	30	--
157	5785	--	14.6	30	--
165	5825	--	14.59	30	--

Note: Power Output Value =Reading value on average power meter + cable loss

26dB Bandwidth:
Channel 52



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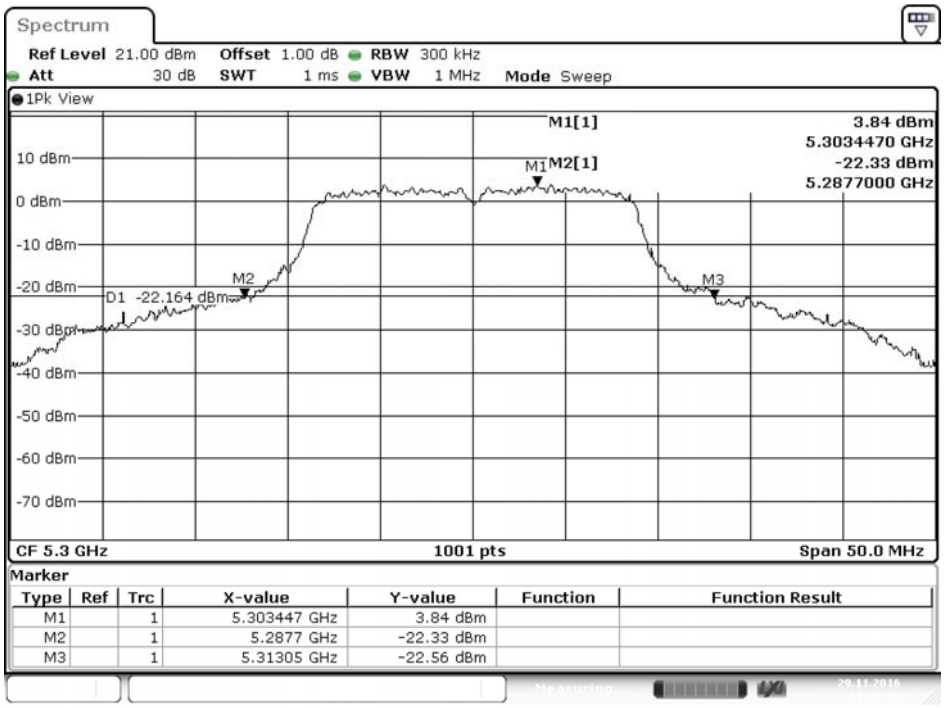
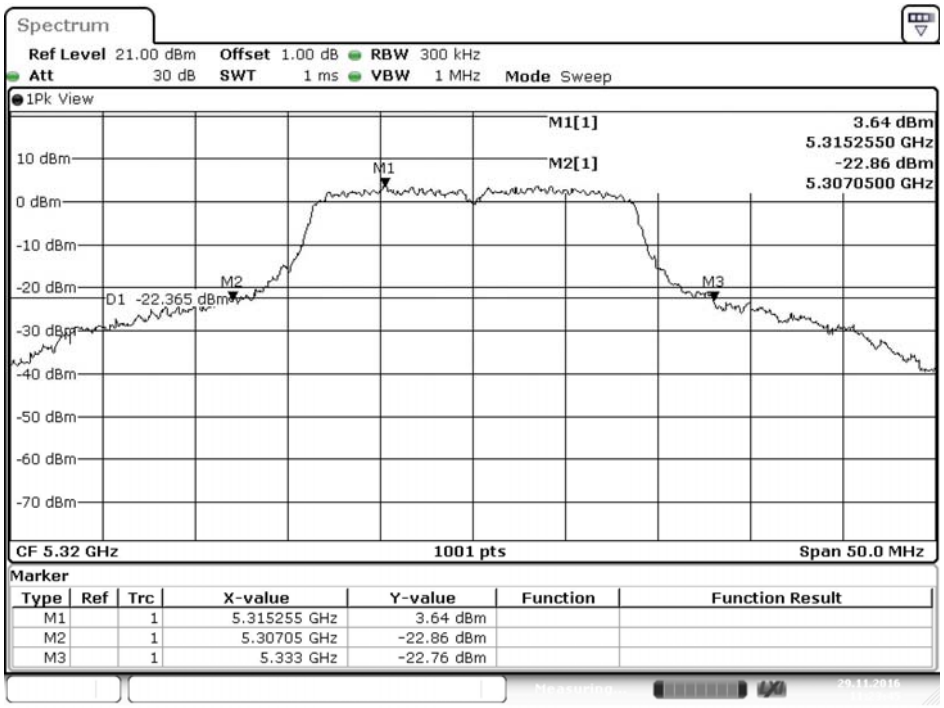
Channel 60



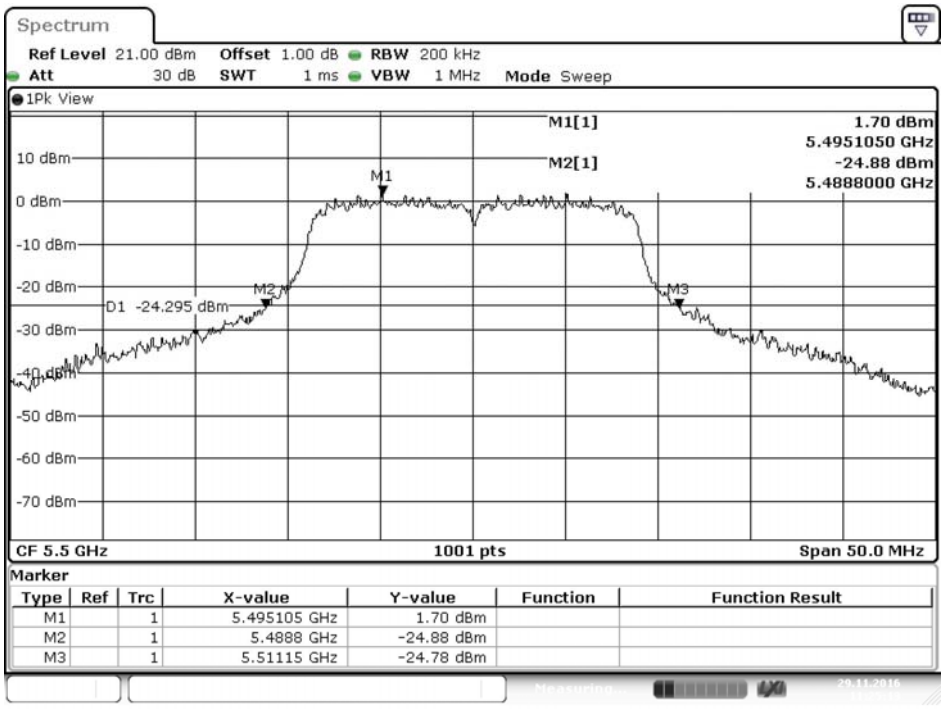
Date: 29.NOV.2016 11:22:09

Channel 64



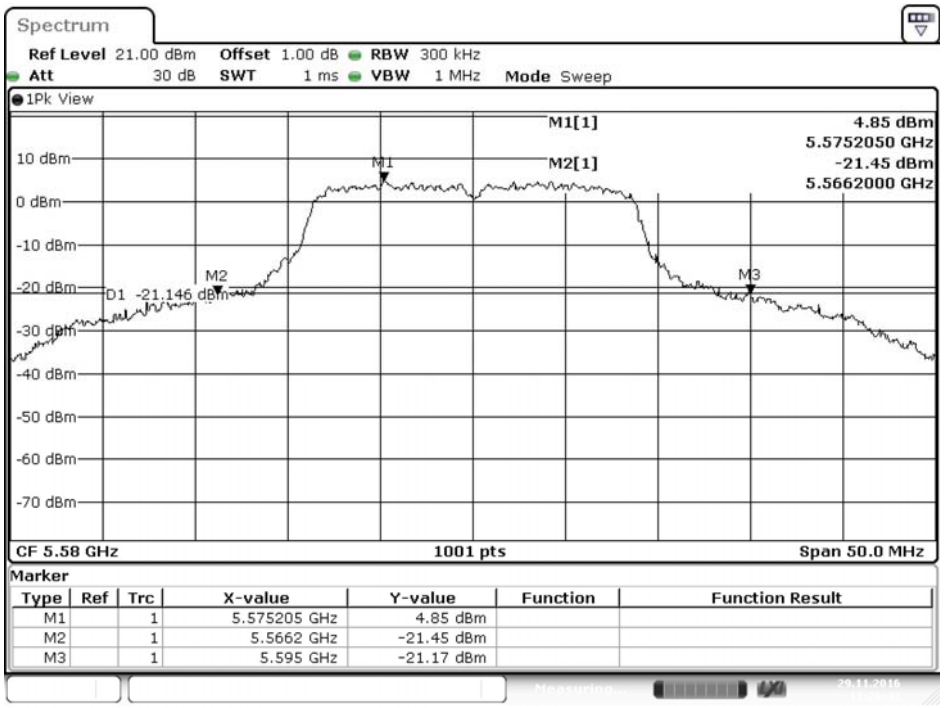
Date: 29.NOV.2016 11:23:45

Channel 100



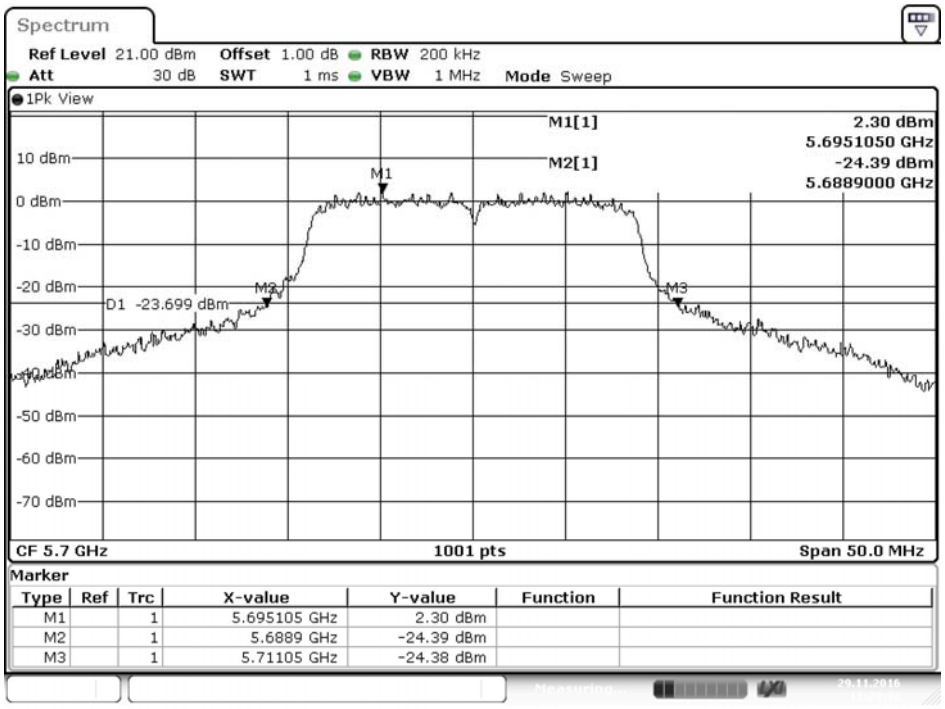
Date: 29.NOV.2016 11:25:14

Channel 116



Date: 29.NOV.2016 11:26:43

Channel 140



Date: 29.NOV.2016 11:29:32

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Maximum conducted output power
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps)
Test Date : 2016/11/29

Cable loss=1dB		Maximum conducted output power							
Channel No.	Frequency (MHz)	Data Rate (Mbps)							
		15	30	45	60	90	120	135	150
		Measurement Level (dBm)							
38	5190	14.6	14.58	14.55	14.52	14.5	14.47	14.46	14.42
46	5230	15.06	--	--	--	--	--	--	--
54	5270	14.73	14.7	14.68	14.66	14.62	14.6	14.57	14.54
62	5310	12.51	--	--	--	--	--	--	--
102	5510	13.12	--	--	--	--	--	--	--
110	5550	14.85	14.83	14.81	14.77	14.75	14.72	14.7	14.68
134	5670	14..35	--	--	--	--	--	--	--
151	5755	14.62	14.6	14.57	14.55	14.52	14.5	14.47	14.45
159	5795	14.61	--	--	--	--	--	--	--

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

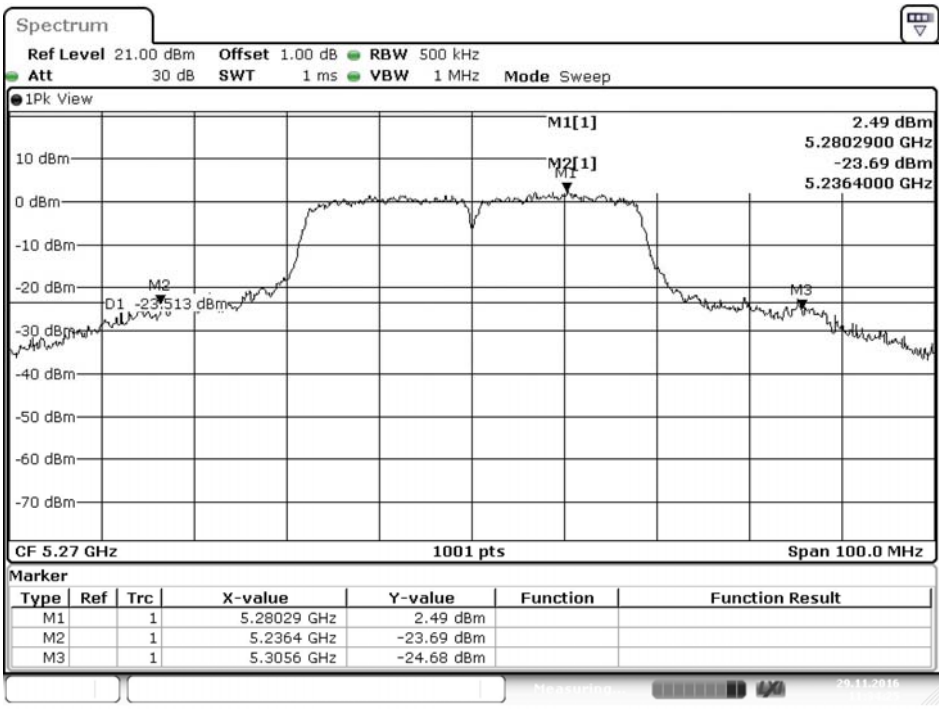
Maximum conducted output power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit	
				(dBm)	dBm+10log(BW)
38	5190	--	14.6	30	--
46	5230	--	15.06	30	--
54	5270	69.200	14.73	24	29.40
62	5310	46.900	12.51	24	27.71
102	5510	47.600	13.12	24	27.78
110	5550	66.100	14.85	24	29.20
134	5670	50.600	14.35	24	28.04
151	5755	--	14.62	30	--
159	5795	--	14.61	30	--

Note: Power Output Value =Reading value on average power meter + cable loss

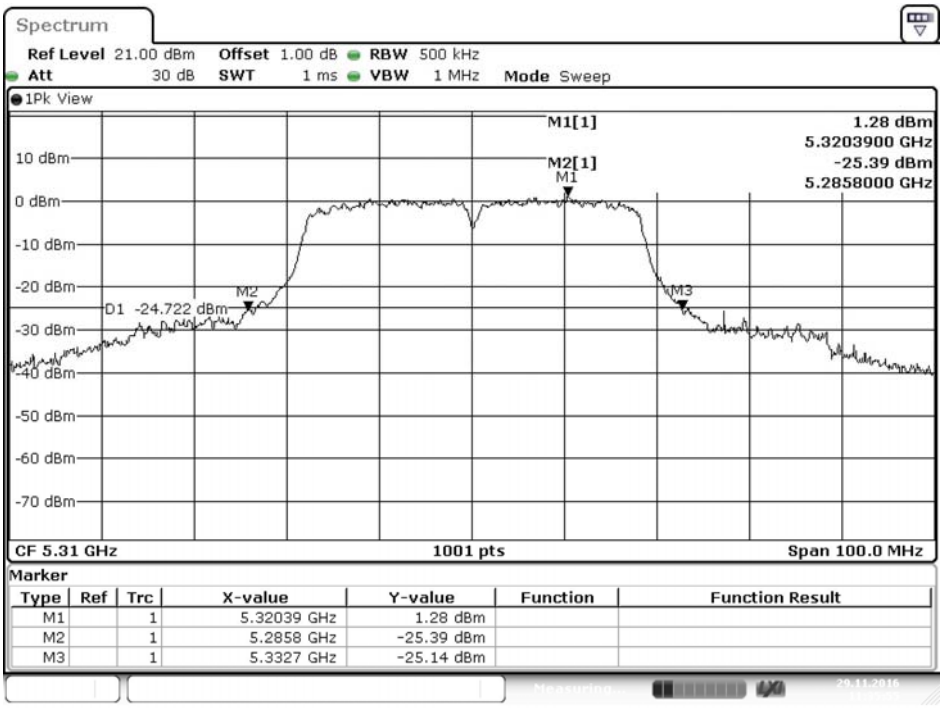
26dB Bandwidth:

Channel 54



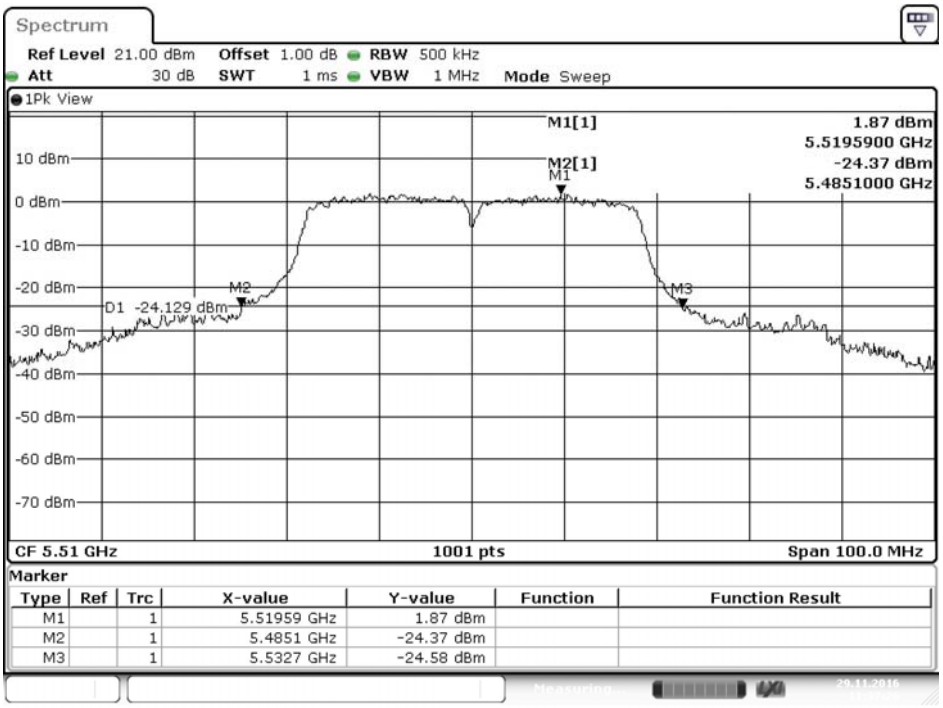
Date: 29.NOV.2016 11:34:25

Channel 62



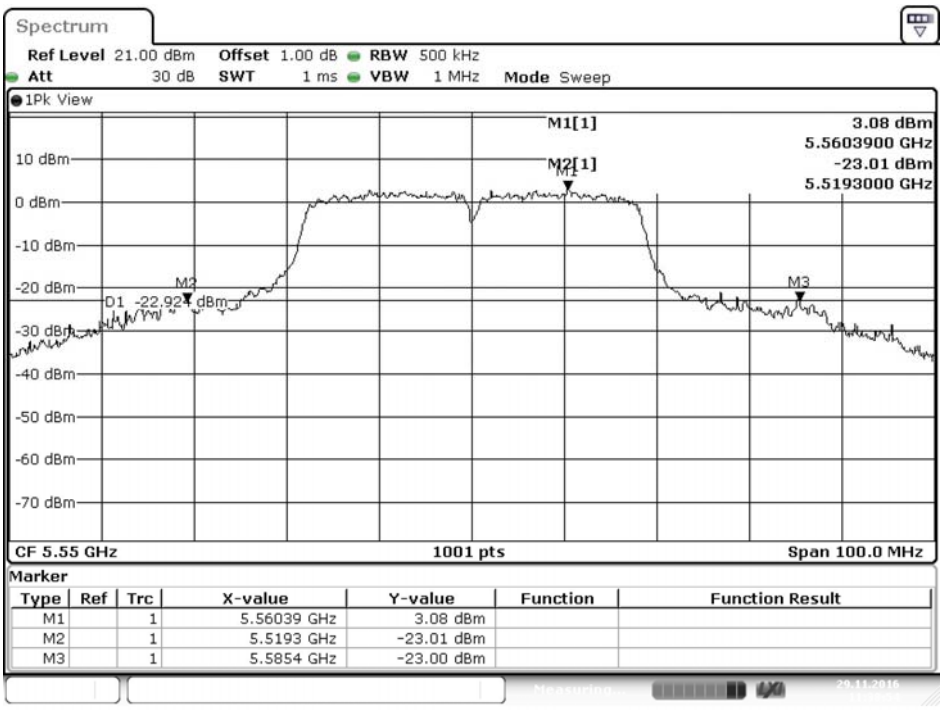
Date: 29.NOV.2016 11:35:55

Channel 102



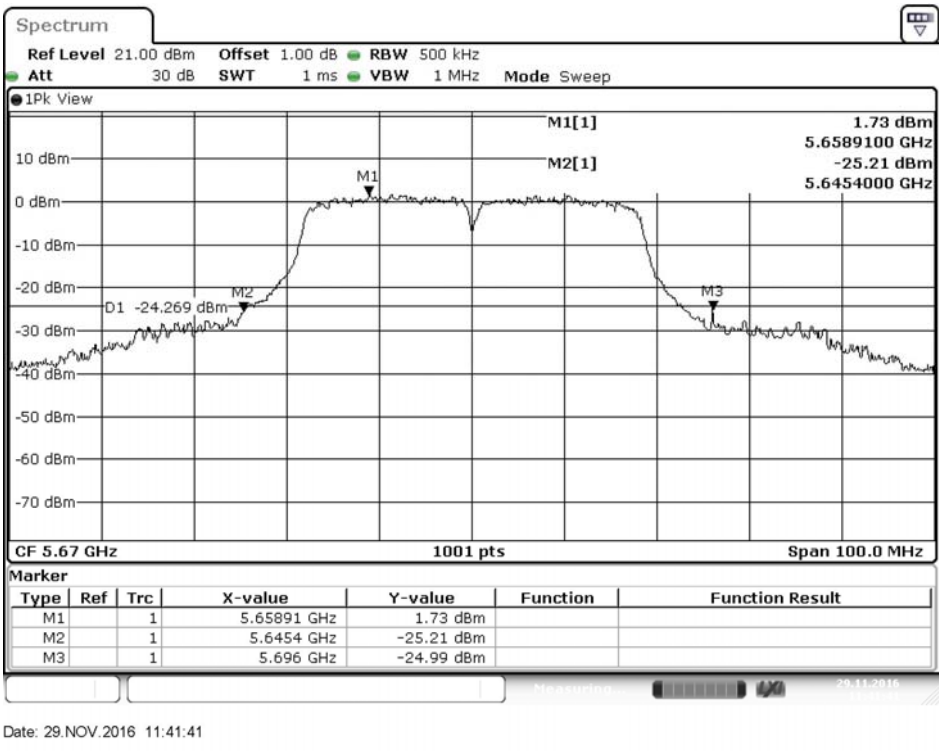
Date: 29.NOV.2016 11:37:26

Channel 110



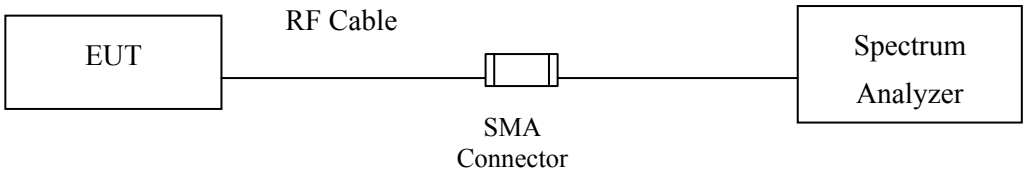
Date: 29.NOV.2016 11:38:54

Channel 134


Spectrum
Ref Level 21.00 dBm Offset 1.00 dB RBW 500 kHz
Att 30 dB SWT 1 ms VBW 1 MHz Mode Sweep
1Pk View
M1[1] 1.73 dBm
5.6589100 GHz
M2[1] -25.21 dBm
5.6454000 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
D1 -24.269 dBm
M1
M2
M3
CF 5.67 GHz
1001 pts
Span 100.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.65891 GHz 1.73 dBm
M2 1 5.6454 GHz -25.21 dBm
M3 1 5.696 GHz -24.99 dBm
Measuring...
29.11.2016
Date: 29.NOV.2016 11:41:41

4. Peak Power Spectral Density

4.1. Test Setup



4.2. Limits

(1) For the band 5.15-5.25 GHz,

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-topoint U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.+

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point UNII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

4.3. Test Procedure

The EUT was setup to ANSI C63.10, 2009; tested to UNII test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

The Peak Power Spectral Density using KDB 789033 section F) procedure, Create an average power spectrum for the EUT operating mode being tested by following the instructions in section E)2) for measuring maximum conducted output power using a spectrum analyzer.

SA-1 method is selected to run the test.

For the band 5.725-5.85 GHz, Scale the observed power level to an equivalent value in 500 kHz by adjusting (increase) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log (500 kHz/100 kHz) = 6.98 dB.

4.4. Uncertainty

±1.30dB

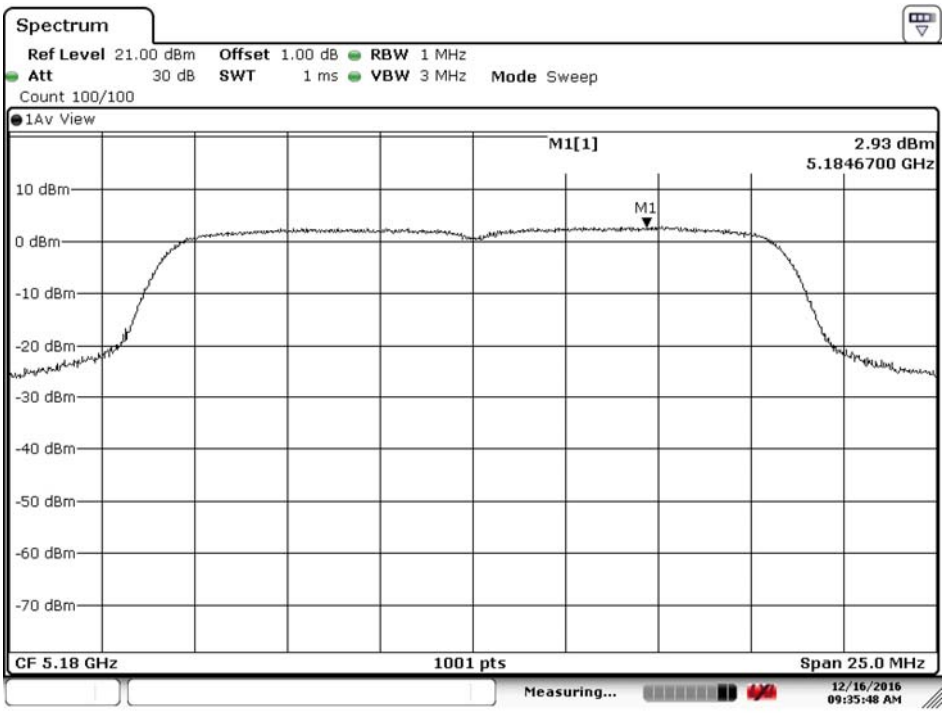
4.5. Test Result of Peak Power Spectral Density

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Peak Power Spectral Density
Test Mode : Mode 1: Transmit (802.11a-6Mbps)
Test Date : 2016/11/29

Channel Number	Frequency (MHz)	Data Rata (Mbps)	Measurement Level (dBm)	Required Limit (dBm)	Result
36	5180	6	2.930	<11	Pass
44	5220	6	1.860	<11	Pass
48	5240	6	1.000	<11	Pass
52	5260	6	1.690	<11	Pass
60	5300	6	2.280	<11	Pass
64	5320	6	1.970	<11	Pass
100	5500	6	1.370	<11	Pass
116	5580	6	1.920	<11	Pass
140	5700	6	1.360	<11	Pass

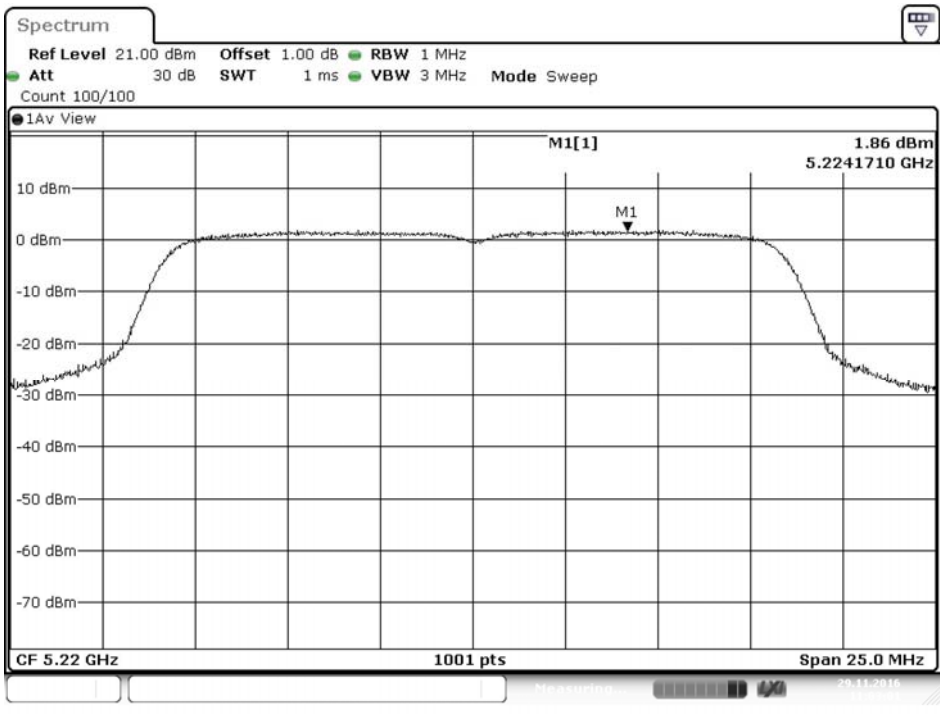
Channel Number	Frequency (MHz)	Data Rata (Mbps)	PPSD (dBm)	BWCF (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
149	5745	6	-7.56	6.98	-0.58	<30	Pass
157	5785	6	-6.85	6.98	0.13	<30	Pass
165	5825	6	-7.24	6.98	-0.26	<30	Pass

Channel 36:



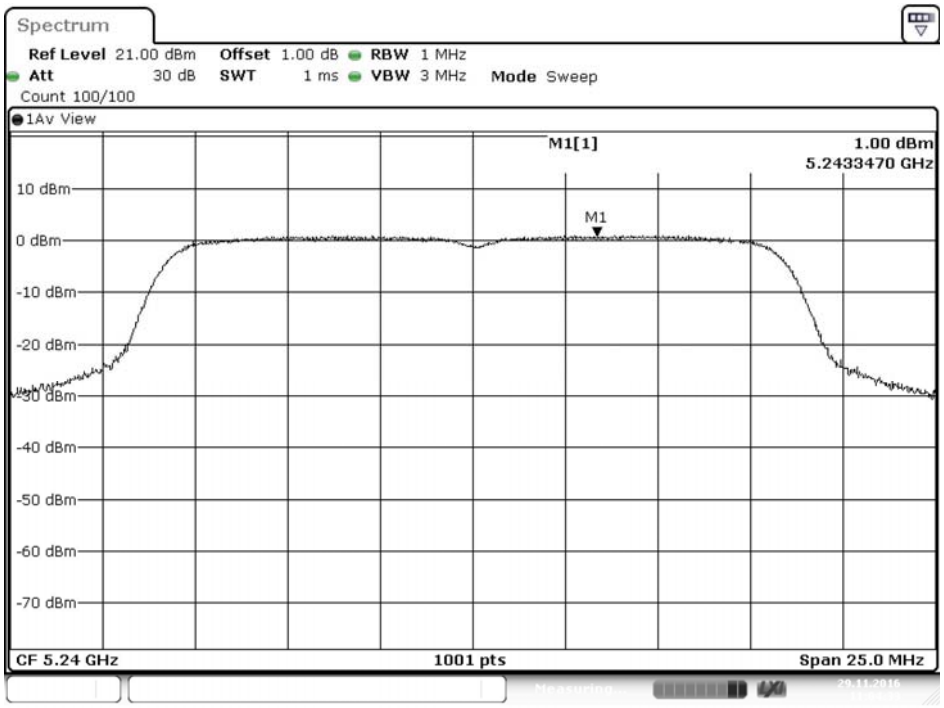
Date: 16.DEC.2016 09:35:48

Channel 44:



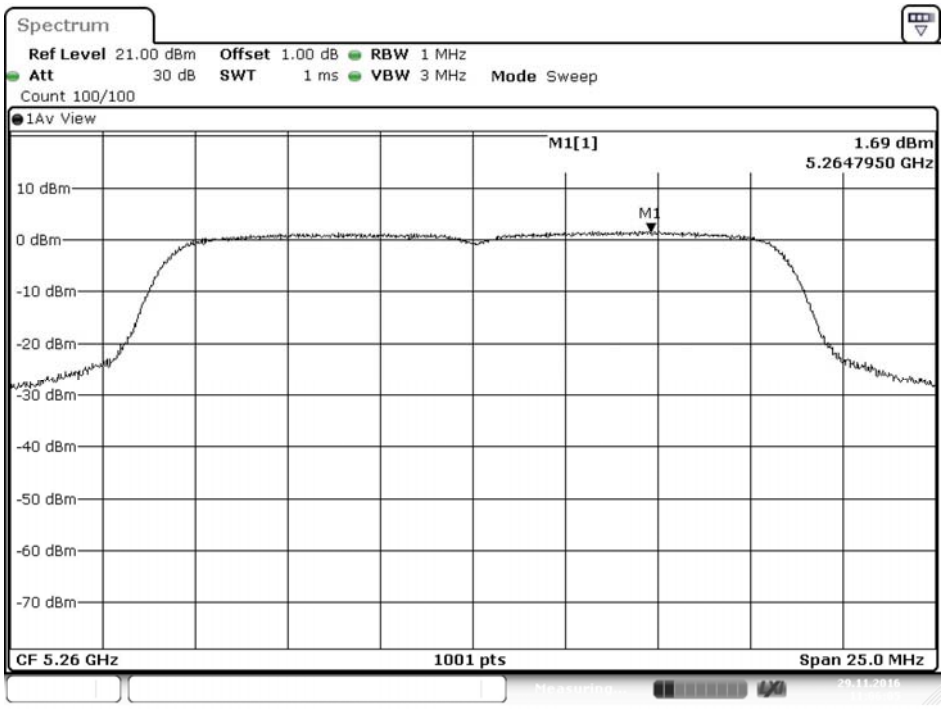
Date: 29.NOV.2016 11:03:01

Channel 48:



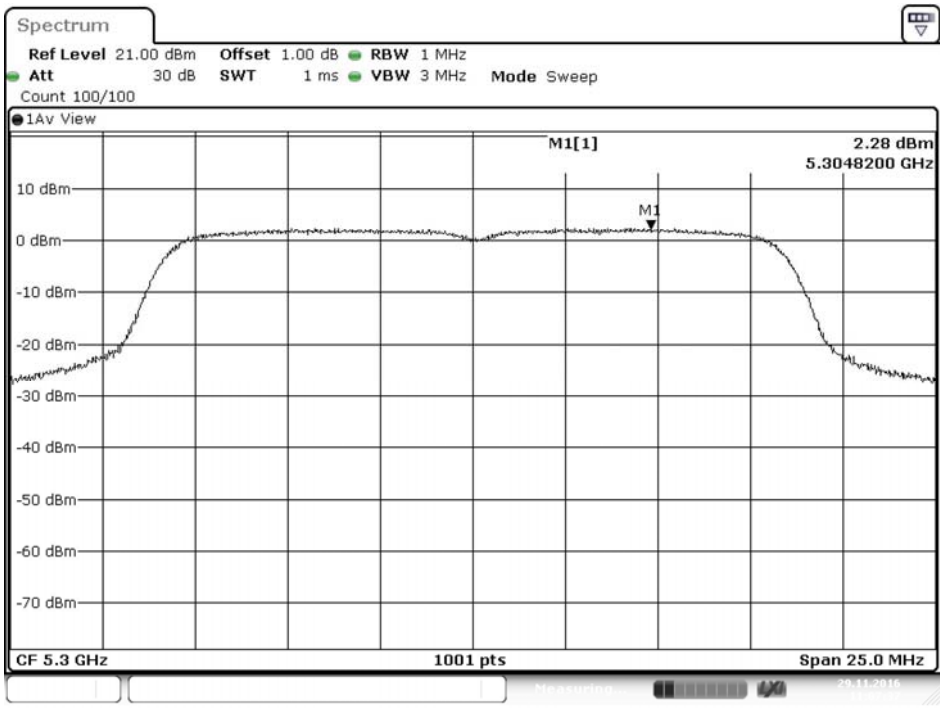
Date: 29.NOV.2016 11:04:33

Channel 52:



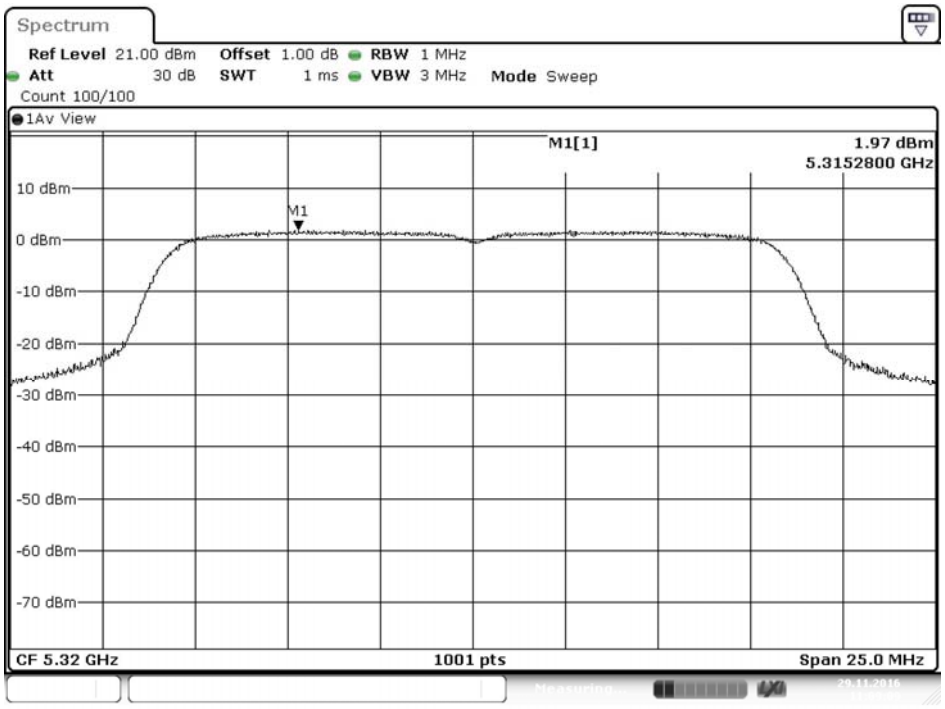
Date: 29.NOV.2016 11:06:06

Channel 60:



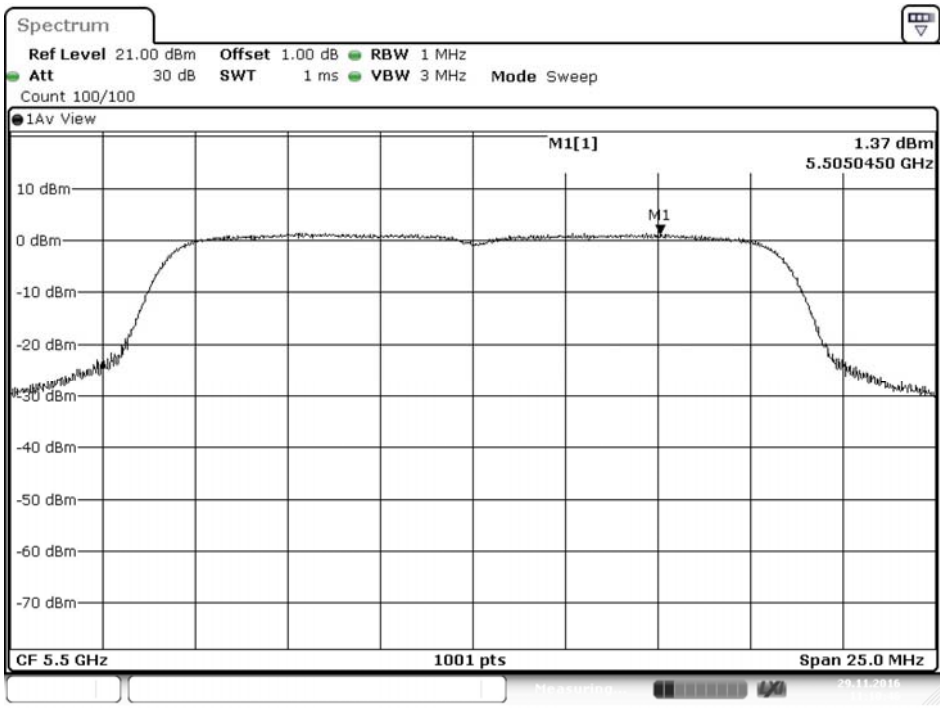
Date: 29.NOV.2016 11:07:37

Channel 64:



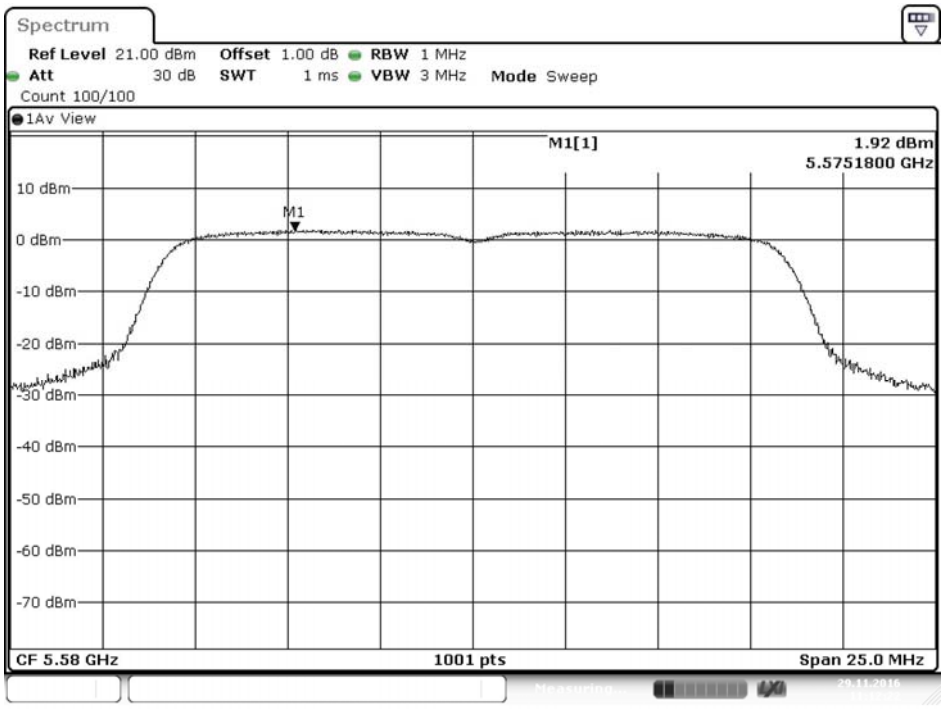
Date: 29.NOV.2016 11:09:09

Channel 100:



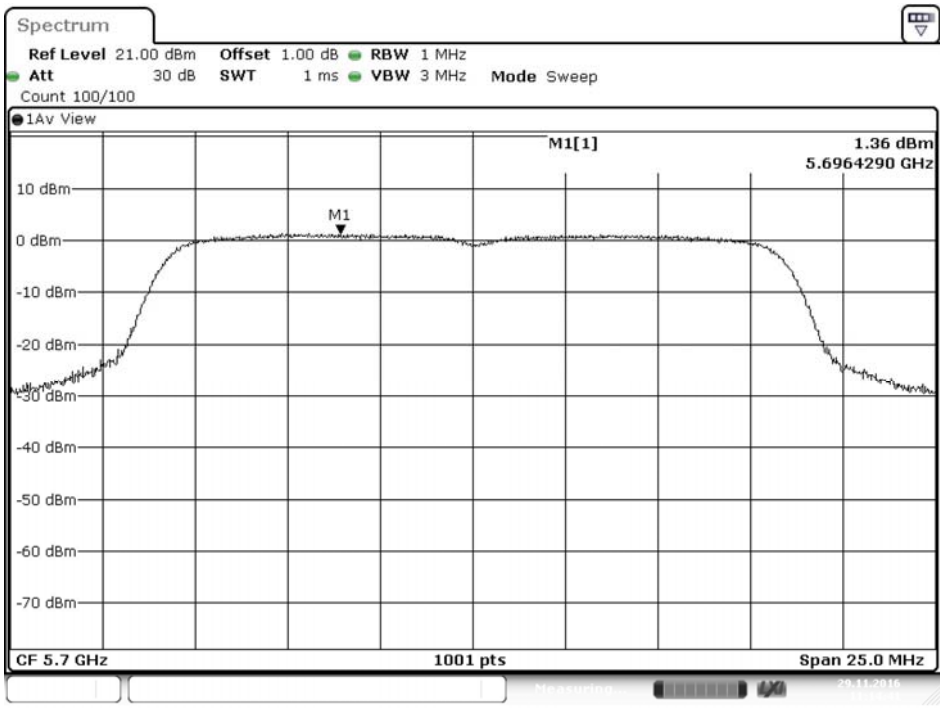
Date: 29.NOV.2016 11:10:47

Channel 116:



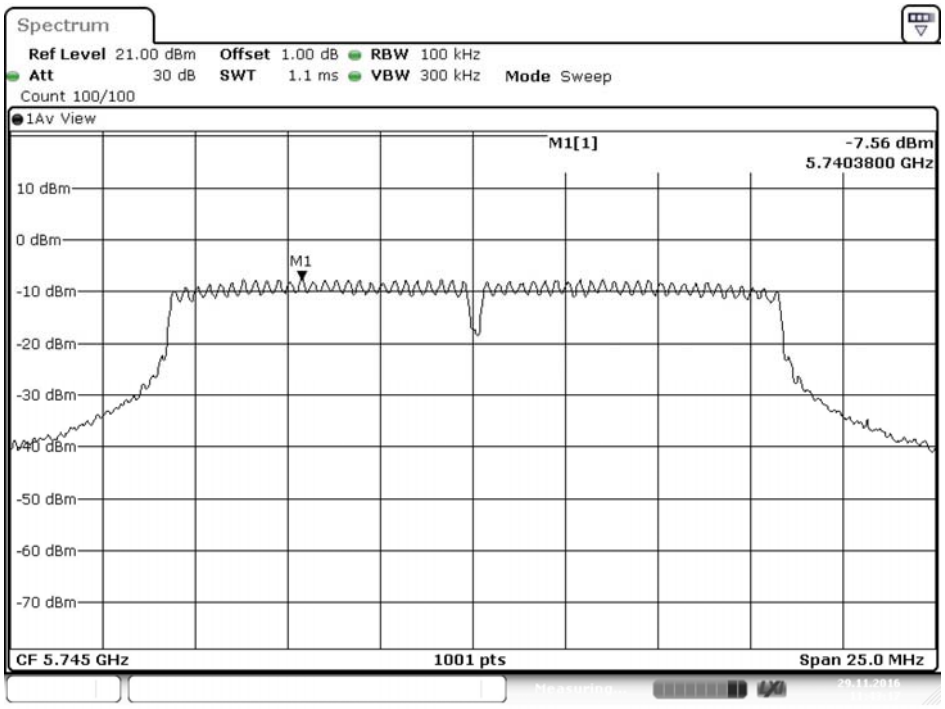
Date: 29.NOV.2016 11:12:22

Channel 140:



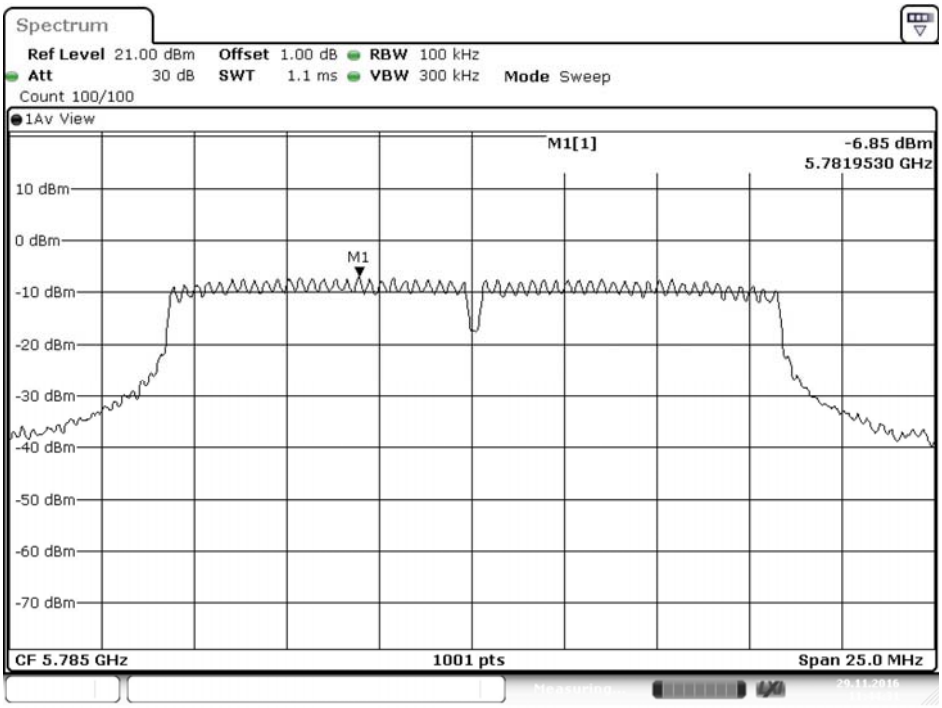
Date: 29.NOV.2016 11:14:42

Channel 149



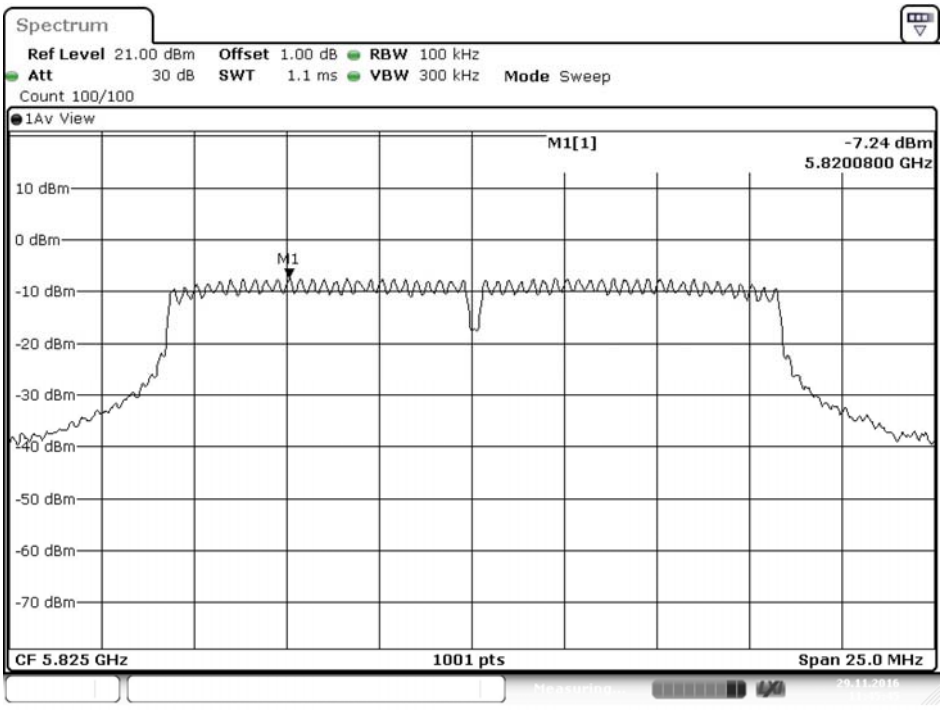
Date: 29.NOV.2016 11:43:18

Channel 157



Date: 29.NOV.2016 11:44:31

Channel 165



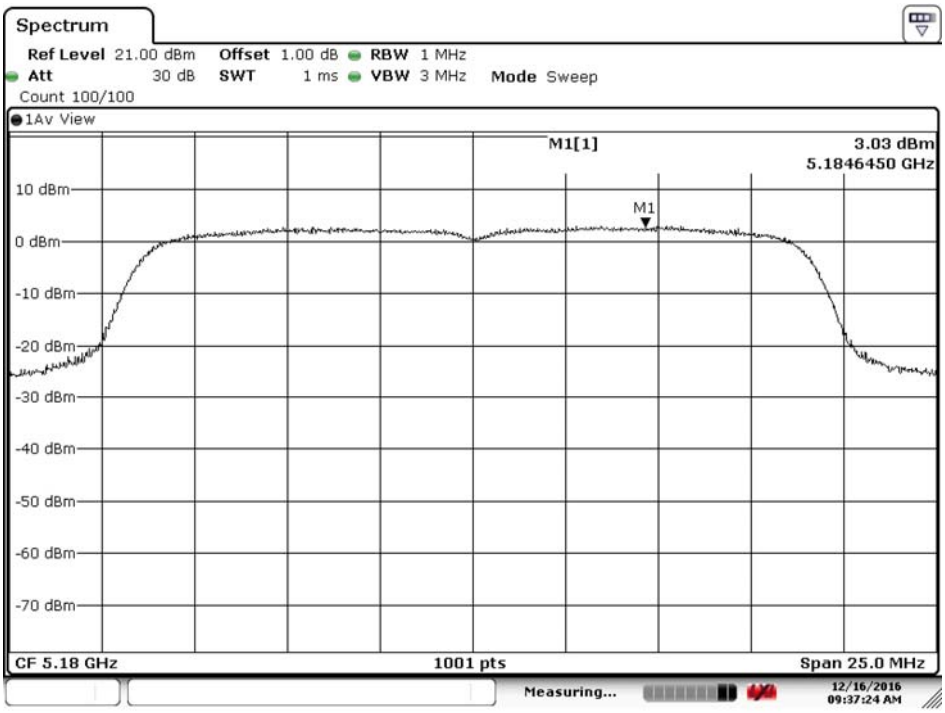
Date: 29.NOV.2016 11:45:46

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Peak Power Spectral Density
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps)
Test Date : 2016/11/29

Channel Number	Frequency (MHz)	Data Rata (Mbps)	Measurement Level (dBm)	Required Limit (dBm)	Result
36	5180	7.2	3.030	11	Pass
44	5220	7.2	1.470	11	Pass
48	5240	7.2	1.180	11	Pass
52	5260	7.2	-0.170	11	Pass
60	5300	7.2	0.940	11	Pass
64	5320	7.2	0.670	11	Pass
100	5500	7.2	0.010	11	Pass
116	5580	7.2	1.780	11	Pass
140	5700	7.2	0.570	11	Pass

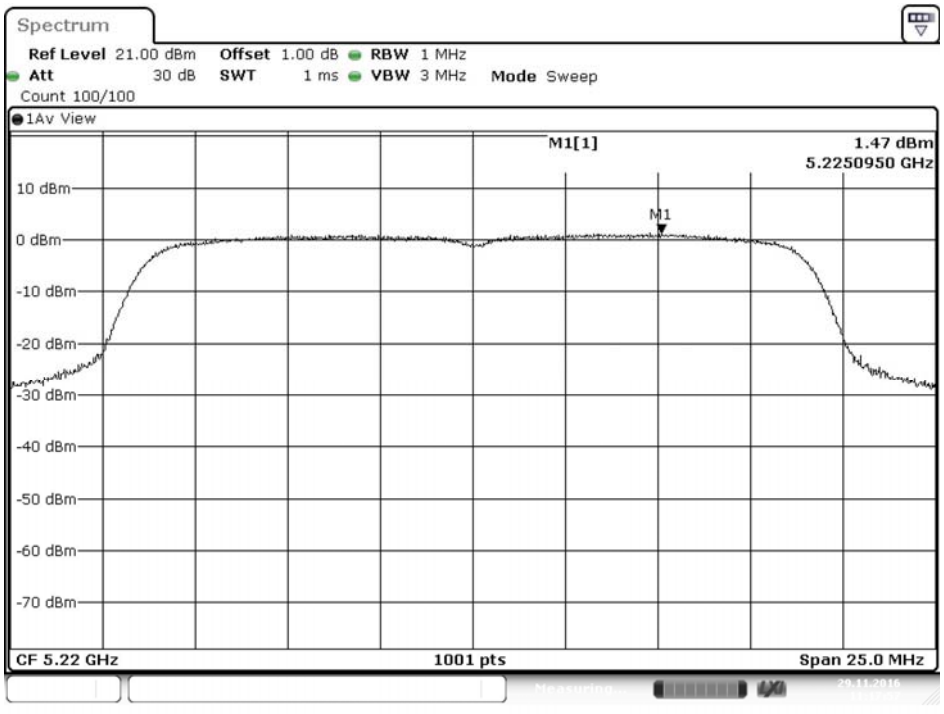
Channel Number	Frequency (MHz)	Data Rata (Mbps)	PPSD (dBm)	BWCF (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
149	5745	7.2	-7.05	6.98	-0.07	<30	Pass
157	5785	7.2	-7.33	6.98	-0.35	<30	Pass
165	5825	7.2	-7.53	6.98	-0.55	<30	Pass

Channel 36:



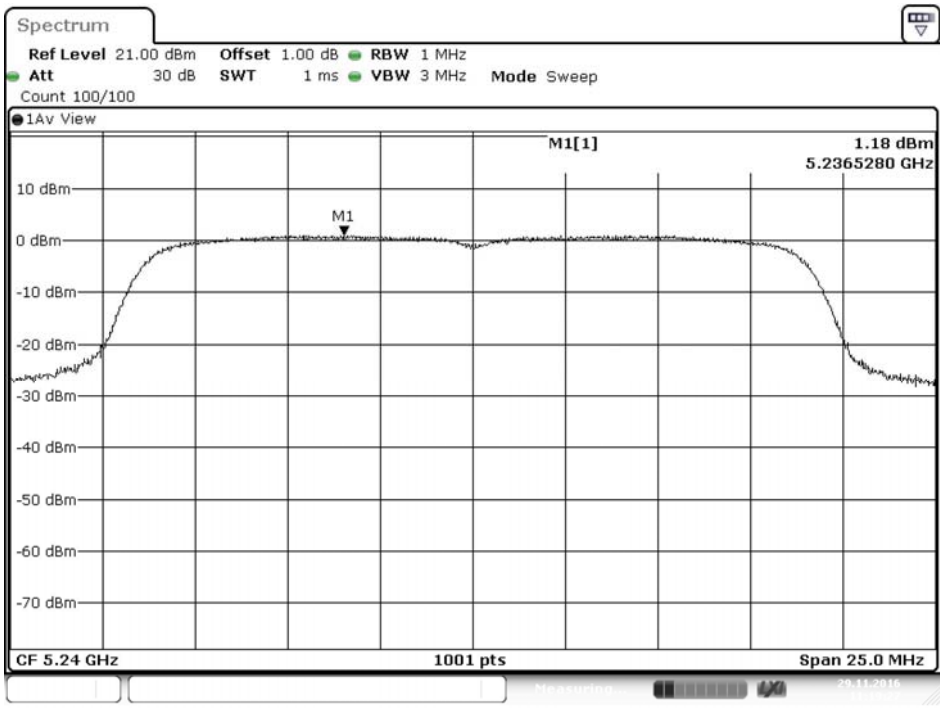
Date: 16.DEC.2016 09:37:24

Channel 44:



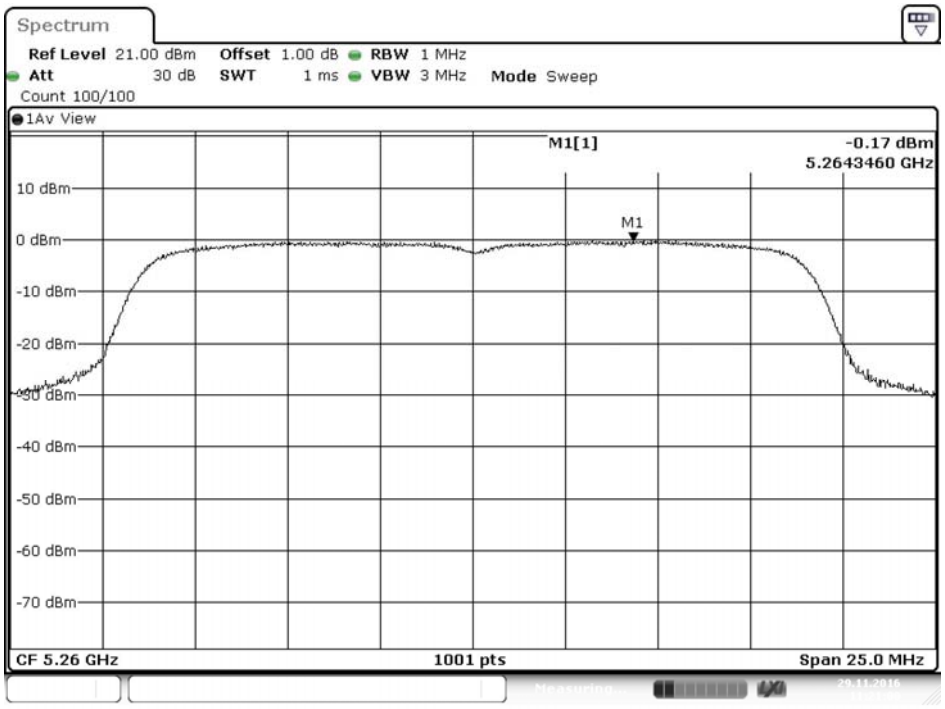
Date: 29.NOV.2016 11:17:57

Channel 48:



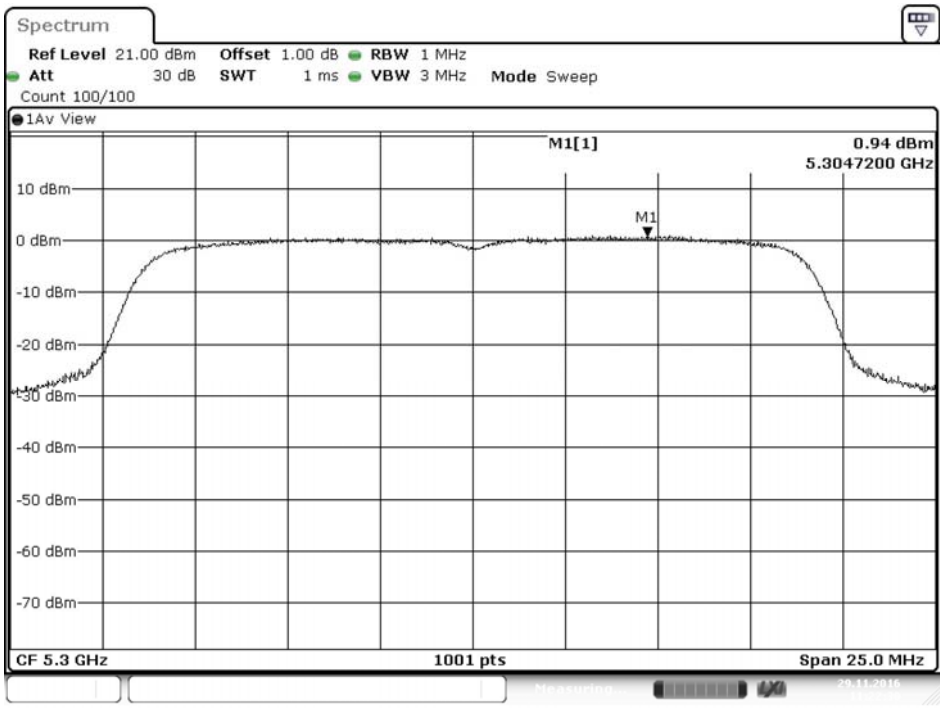
Date: 29.NOV.2016 11:19:28

Channel 52:



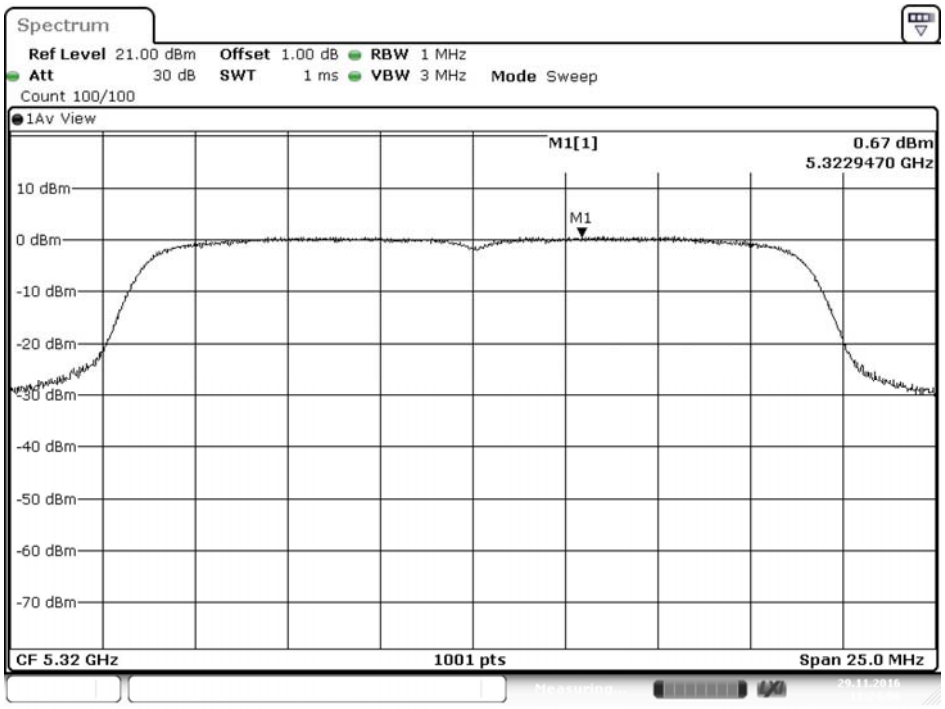
Date: 29.NOV.2016 11:21:00

Channel 60:



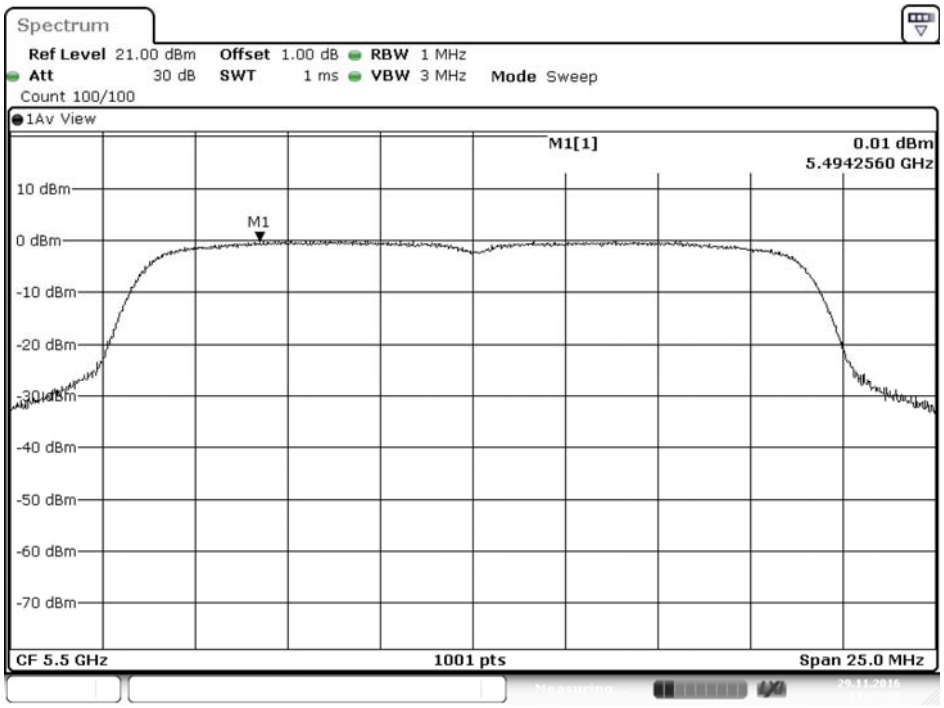
Date: 29.NOV.2016 11:22:30

Channel 64:



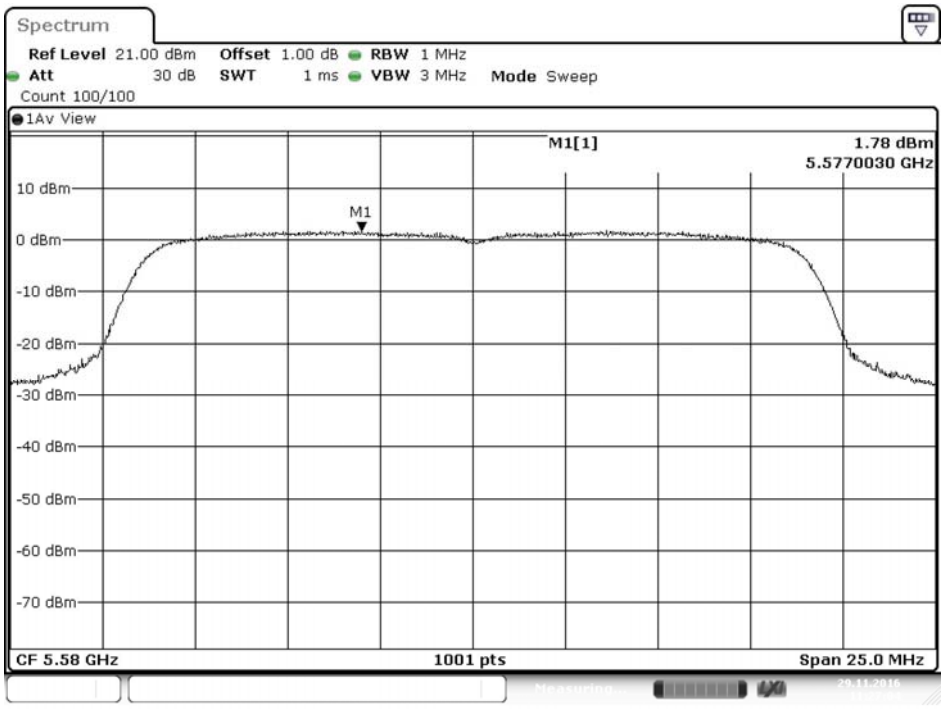
Date: 29.NOV.2016 11:24:07

Channel 100:



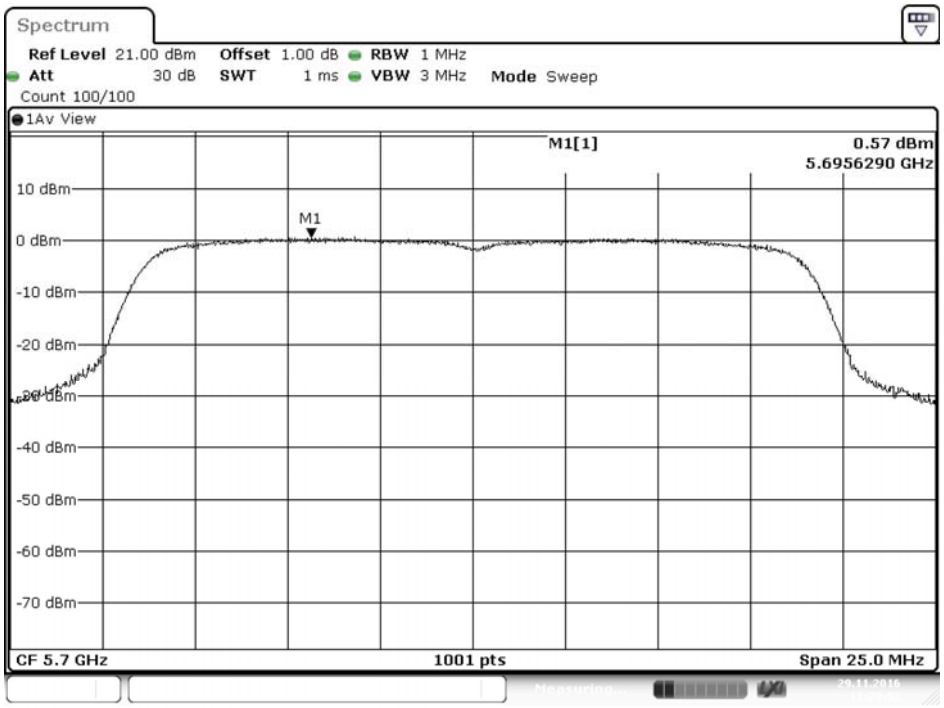
Date: 29.NOV.2016 11:25:35

Channel 116:



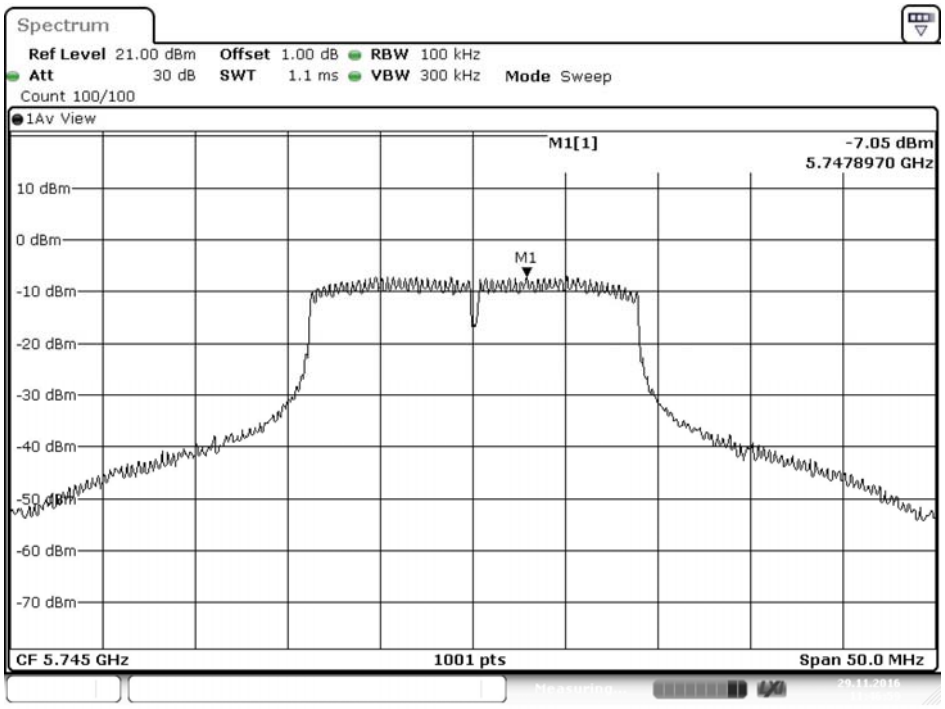
Date: 29.NOV.2016 11:27:04

Channel 140:



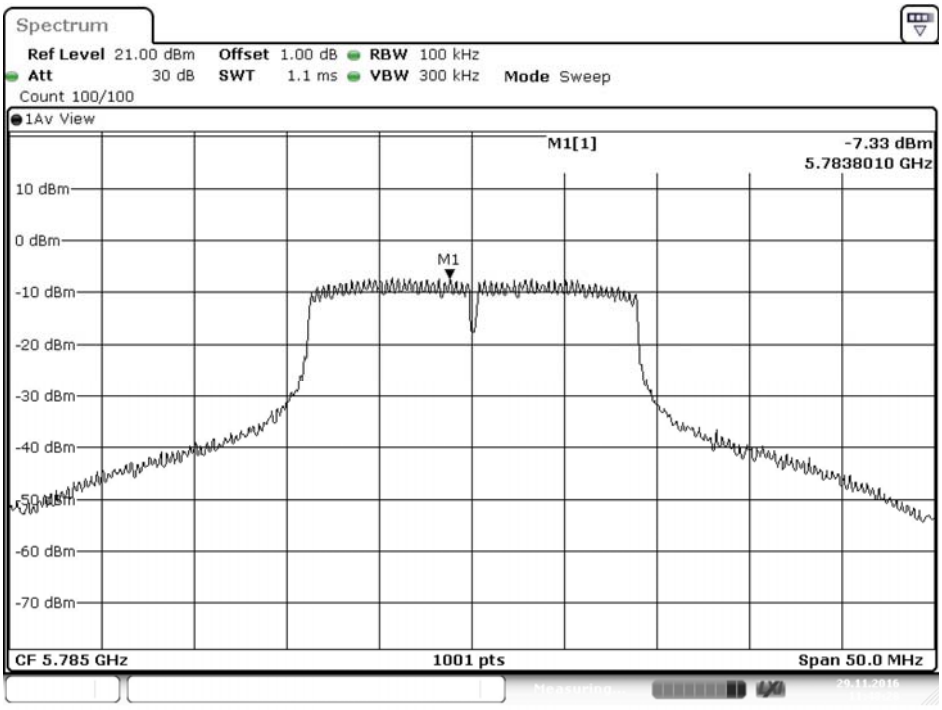
Date: 29.NOV.2016 11:29:53

Channel 149



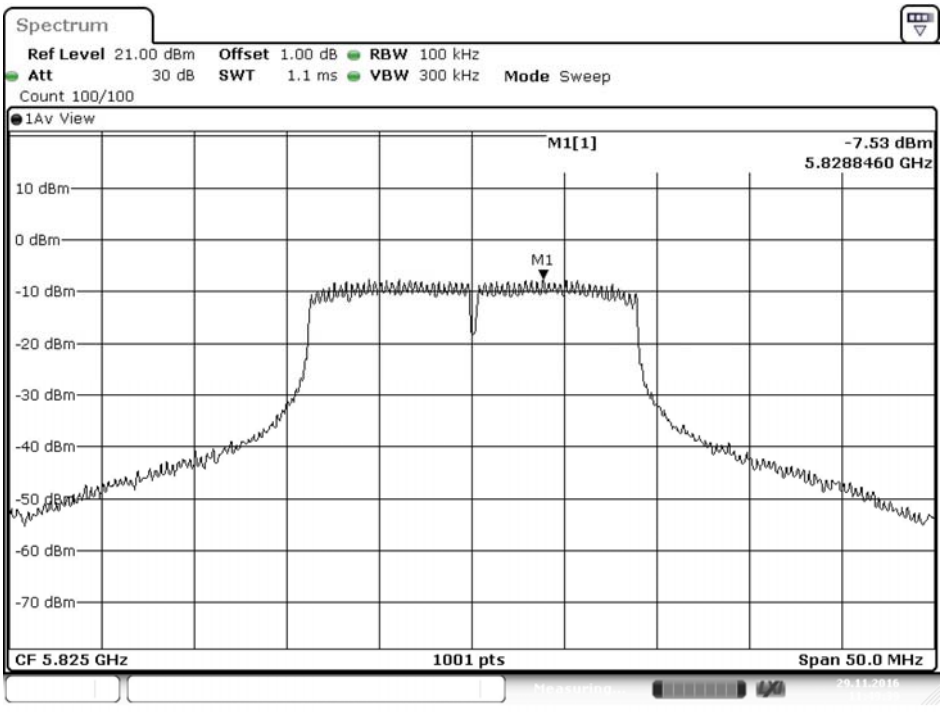
Date: 29.NOV.2016 11:47:00

Channel 157



Date: 29.NOV.2016 11:48:29

Channel 165



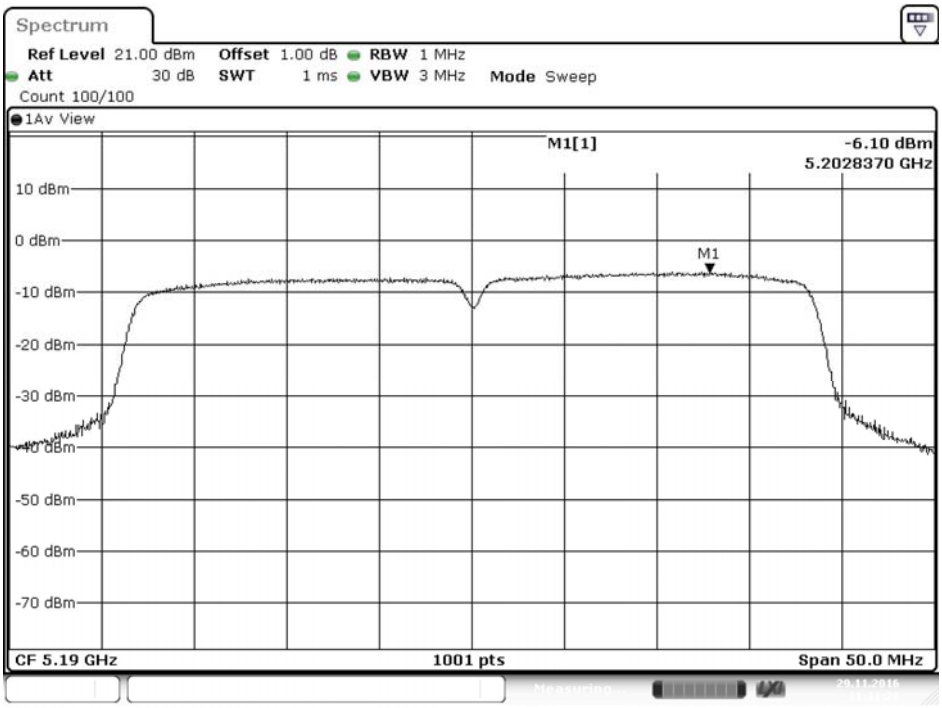
Date: 29.NOV.2016 11:49:40

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Peak Power Spectral Density
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps)
Test Date : 2016/11/29

Channel Number	Frequency (MHz)	Data Rata (Mbps)	Measurement Level (dBm)	Required Limit (dBm)	Result
38	5190	15	-6.100	11	Pass
46	5230	15	-1.880	11	Pass
54	5270	15	-2.920	11	Pass
62	5310	15	-3.070	11	Pass
102	5510	15	-3.230	11	Pass
110	5550	15	-2.570	11	Pass
134	5670	15	-3.320	11	Pass

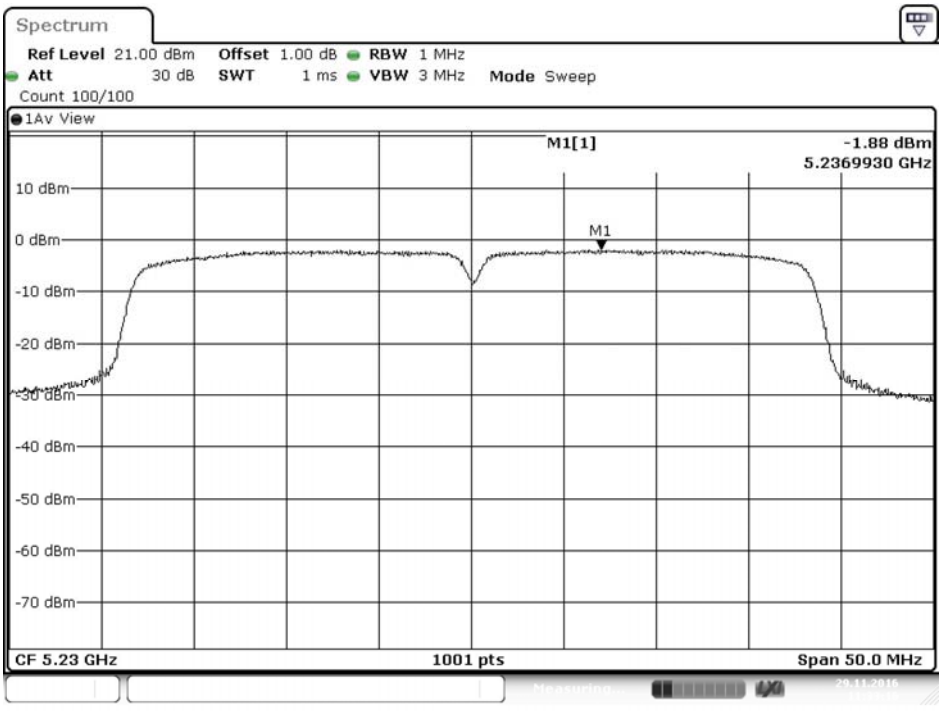
Channel Number	Frequency (MHz)	Data Rata (Mbps)	PPSD (dBm)	BWCF (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
151	5755	15	-9.74	6.98	-2.76	<30	Pass
159	5795	15	-10.29	6.98	-3.31	<30	Pass

Channel 38



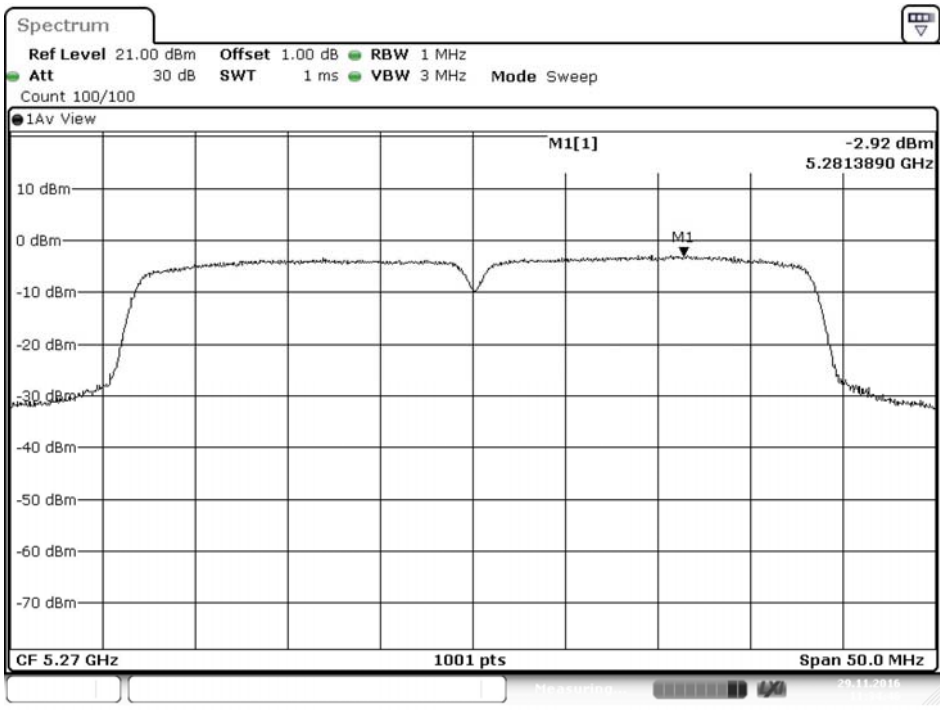
Date: 29.NOV.2016 11:31:29

Channel 46



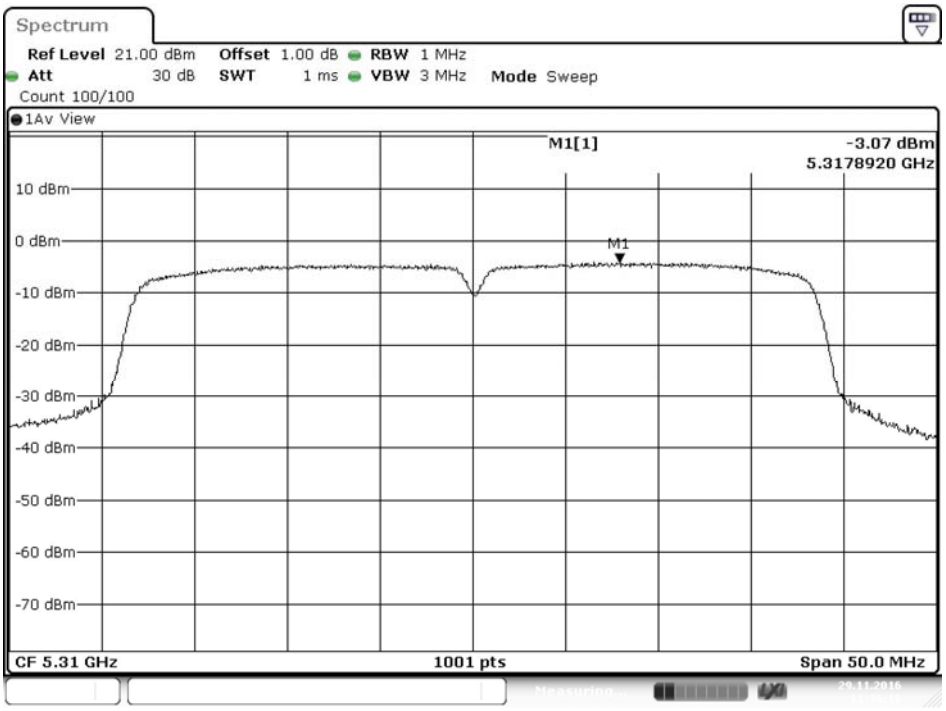
Date: 29.NOV.2016 11:33:16

Channel 54



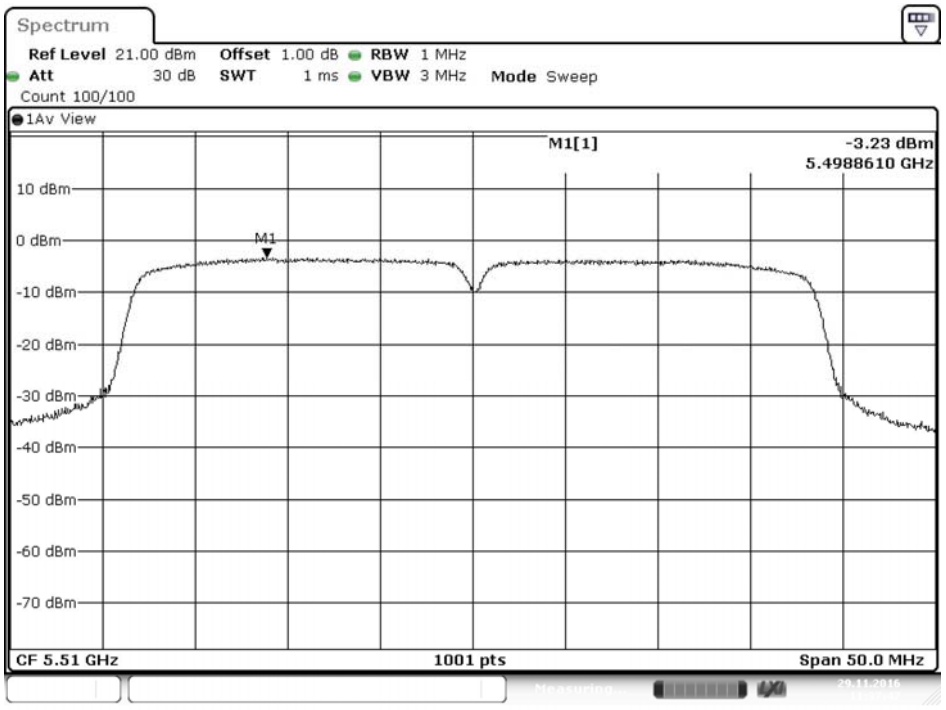
Date: 29.NOV.2016 11:34:46

Channel 62



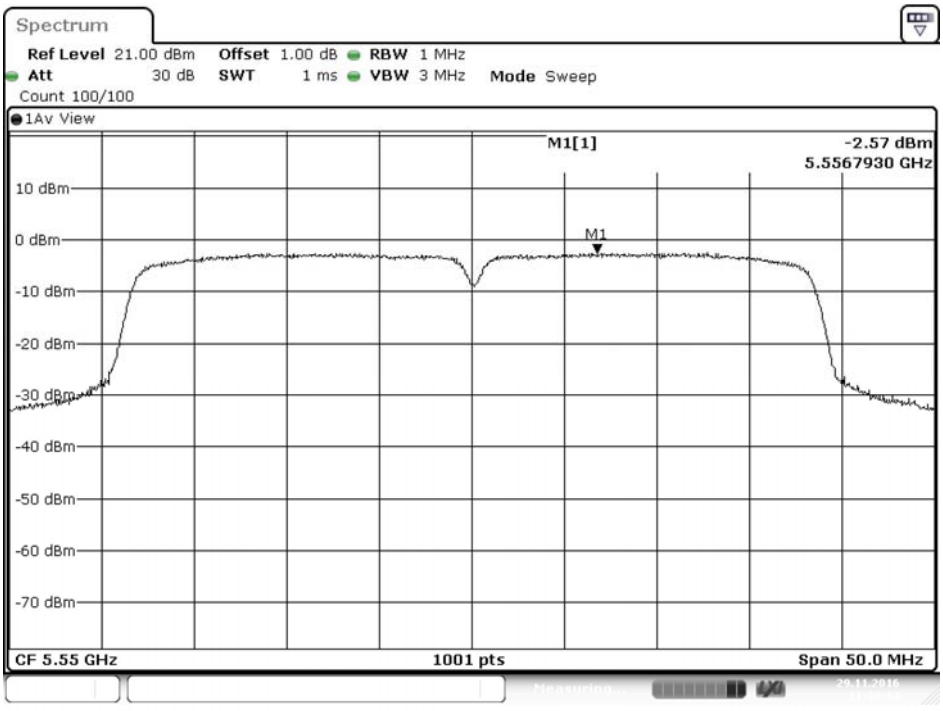
Date: 29.NOV.2016 11:36:16

Channel 102



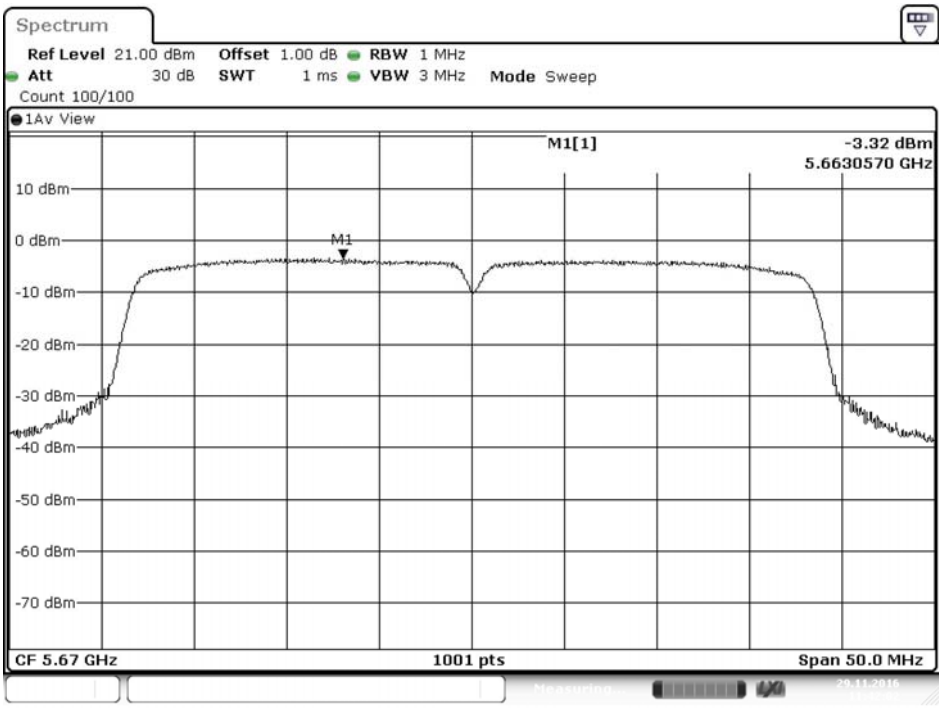
Date: 29.NOV.2016 11:37:47

Channel 110



Date: 29.NOV.2016 11:39:15

Channel 134

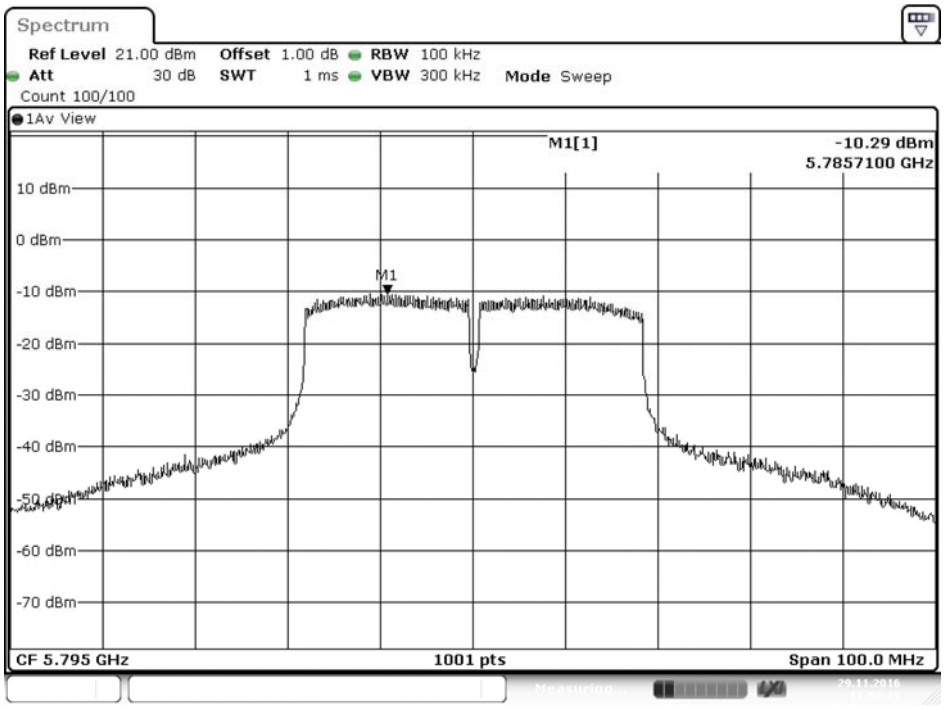


Date: 29.NOV.2016 11:42:02

Channel 151

Date: 29.NOV.2016 11:50:57

Channel 159

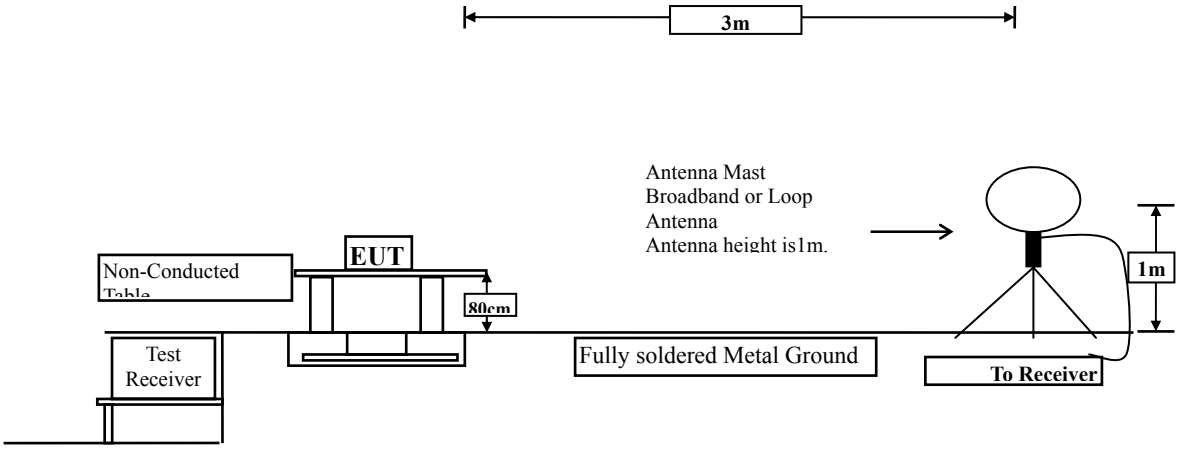


Date: 29.NOV.2016 11:52:15

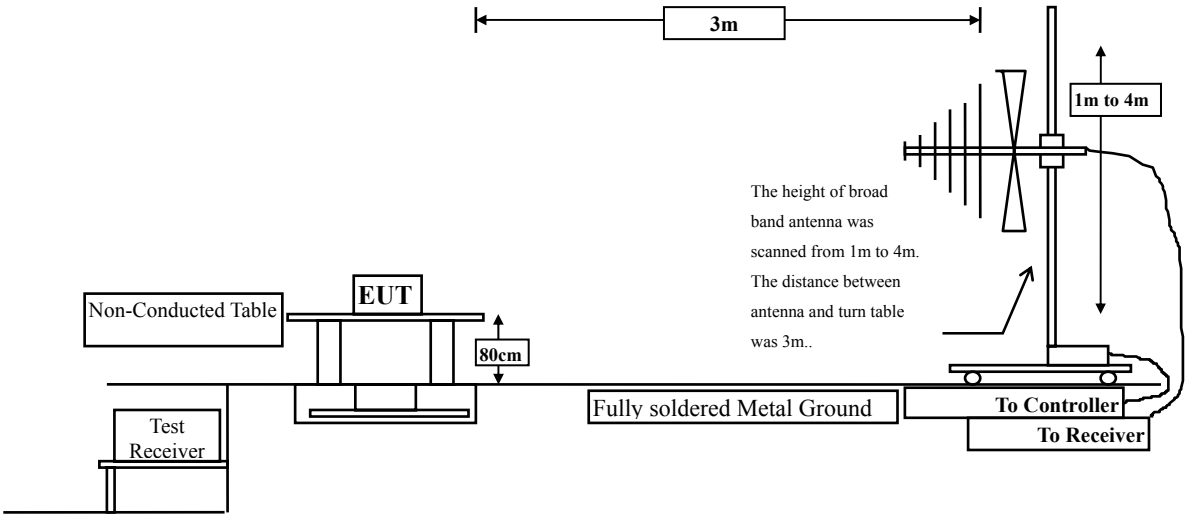
5. Radiated Emission

5.1. Test Setup

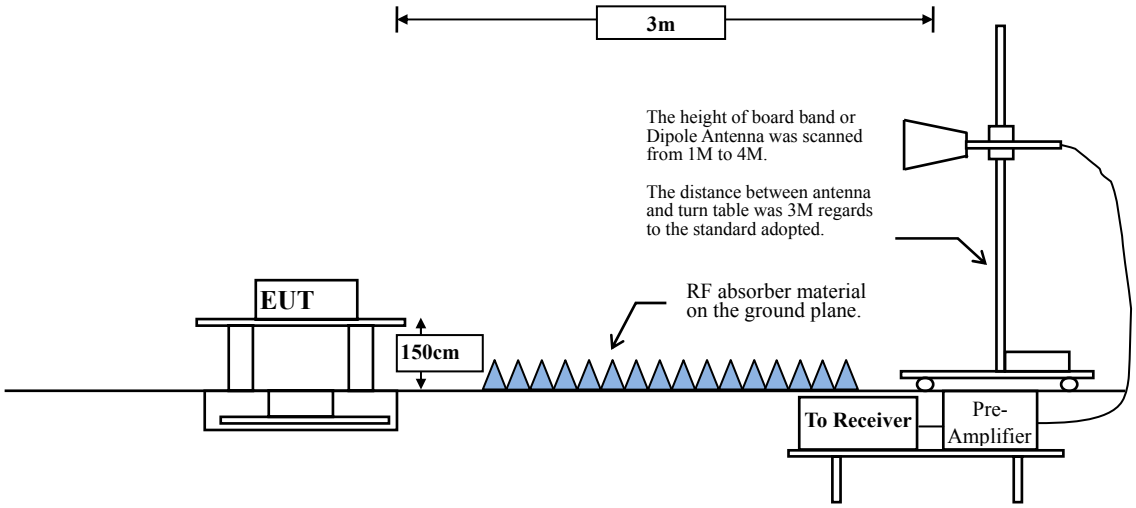
Radiated Emission Under 30MHz



Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



5.2. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209(a) Limits		
Frequency MHz	Field strength (microvolts/meter)	Measurement distance (meter)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remarks: E field strength (dBμV/m) = 20 log E field strength (uV/m)

5.3. Test Procedure

The EUT was setup according to ANSI C63.10, 2013 and tested according to FCC KDB-789033 test procedure for compliance to FCC 47CFR 15. 407 requirements.

Measuring the frequency range below 1GHz, the EUT is placed on a turn table which is 0.8 meter above ground,when measuring the frequency range above 1GHz, the EUT is placed on a turn table which is 1.5 meter above ground.

The turn table is rotated 360 degrees to determine the position of the maximum emission level.

The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10: 2013 on radiated measurement.

The resolution bandwidth below 30MHz setting on the field strength meter is 9kHz and 30MHz~1GHz is 120kHz and above 1GHz is 1MHz.

Radiated emission measurements below 30MHz are made using Loop Antenna and 30MHz~1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The measurement frequency range form 9kHz - 10th Harmonic of fundamental was investigated.

5.4. Uncertainty

Horizontal polarization：

30-300MHz: ±4.08dB；300M-1GHz: ±3.86dB；1-18GHz: ±3.77dB；18-40GHz: ±3.98dB

Vertical polarization：

30-300MHz: ±4.81dB；300M-1GHz: ±3.87dB；1-18GHz：±3.83dB；18-40GHz: ±3.98dB

5.5. Test Result of Radiated Emission

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5180MHz)
Test Date : 2016/11/26

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10360.000	2.149	43.630	45.779	-28.221	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
10360.000	2.149	44.800	46.949	-27.051	74.000
Average Detector:					
--	--	--	--	--	54.000

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5220MHz)
Test Date : 2016/11/26

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10440.000	2.171	48.500	50.672	-23.328	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
10440.000	2.171	53.300	55.472	-18.528	74.000
Average Detector:					
10440.000	2.171	38.500	40.672	-13.328	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5240MHz)
Test Date : 2016/11/26

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10480.000	45.903	47.730	49.915	-24.085	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
10480.000	2.186	53.050	55.235	-18.765	74.000
Average Detector:					
10480.000	2.186	38.720	40.905	-13.095	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5260MHz)
Test Date : 2016/11/26

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10520.000	2.249	50.340	52.589	-21.411	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
10520.000	2.249	54.070	56.319	-17.681	74.000
Average Detector:					
10520.000	2.249	40.000	42.249	-11.751	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5300MHz)
Test Date : 2016/11/26

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10600.000	2.367	51.070	53.437	-20.563	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
10600.000	2.367	53.280	55.647	-18.353	74.000
Average Detector:					
10600.000	2.367	39.910	42.277	-11.723	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5320MHz)
Test Date : 2016/11/26

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10640.000	2.449	51.030	53.479	-20.521	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
10640.000	2.449	52.630	55.079	-18.921	74.000
Average Detector:					
10640.000	2.449	39.150	41.599	-12.401	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5500MHz)
Test Date : 2016/11/26

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
11000.000	3.032	43.690	46.723	-27.277	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
11000.000	3.032	44.010	47.043	-26.957	74.000
Average Detector:					
--	--	--	--	--	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5580MHz)
Test Date : 2016/11/26

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
11160.000	3.391	44.590	47.981	-26.019	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
11160.000	46.673	45.190	48.581	-25.419	74.000
Average Detector:					
--	--	--	--	--	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5700MHz)
Test Date : 2016/11/26

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
11400.000	4.011	43.760	47.771	-26.229	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
11400.000	4.011	45.230	49.241	-24.759	74.000
Average Detector:					
--	--	--	--	--	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5745MHz)
Test Date : 2016/11/26

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal Peak Detector:					
11490.000	47.029	42.230	46.438	-27.562	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical Peak Detector:					
11490.000	4.208	43.760	47.968	-26.032	74.000
Average Detector:					
--	--	--	--	--	54.000

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5785MHz)
Test Date : 2016/11/28

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11570.000	4.420	42.710	47.130	-26.870	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
11570.000	4.420	42.950	47.370	-26.630	74.000
Average Detector:					
--	--	--	--	--	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5825MHz)
Test Date : 2016/11/28

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
11650.000	4.616	42.390	47.006	-26.994	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
11650.000	4.616	42.410	47.026	-26.974	74.000
Average Detector:					
--	--	--	--	--	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5180MHz)
Test Date : 2016/11/28

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10360.000	2.149	43.420	45.569	-28.431	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
10360.000	2.149	43.520	45.669	-28.331	74.000
Average Detector:					
--	--	--	--	--	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5220MHz)
Test Date : 2016/11/28

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10440.000	2.171	52.500	54.672	-19.328	74.000
Average Detector:					
10440.000	2.171	36.930	39.102	-14.898	54.000
Vertical					
Peak Detector:					
10440.000	2.171	52.550	54.722	-19.278	74.000
Average Detector:					
10440.000	2.171	36.370	38.542	-15.458	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5240MHz)
Test Date : 2016/11/28

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10480.000	2.186	54.320	56.505	-17.495	74.000
Average Detector:					
10480.000	2.186	38.410	40.595	-13.405	54.000
Vertical					
Peak Detector:					
10480.000	2.186	53.710	55.895	-18.105	74.000
Average Detector:					
10480.000	2.186	38.090	40.275	-13.725	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5260MHz)
Test Date : 2016/11/28

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10520.000	2.249	54.770	57.019	-16.981	74.000
Average Detector:					
10520.000	2.249	39.160	41.409	-12.591	54.000
Vertical					
Peak Detector:					
10520.000	2.249	54.140	56.389	-17.611	74.000
Average Detector:					
10520.000	2.249	38.430	40.679	-13.321	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5300MHz)
Test Date : 2016/11/29

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10600.000	2.367	53.450	55.817	-18.183	74.000
Average Detector:					
10600.000	2.367	37.840	40.207	-13.793	54.000
Vertical					
Peak Detector:					
10600.000	2.367	51.490	53.857	-20.143	74.000
Average Detector:					
--	--	--	--	--	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5320MHz)
Test Date : 2016/11/29

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10640.000	2.449	53.430	55.879	-18.121	74.000
Average Detector:					
10640.000	2.449	37.870	40.319	-13.681	54.000
Vertical					
Peak Detector:					
10640.000	2.449	51.260	53.709	-20.291	74.000
Average Detector:					
--	--	--	--	--	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5500MHz)
Test Date : 2016/11/29

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
11000.000	3.032	42.940	45.973	-28.027	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
11000.000	3.032	45.270	48.303	-25.697	74.000
Average Detector:					
--	--	--	--	--	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5580MHz)
Test Date : 2016/11/29

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11160.000	3.391	45.100	48.491	-25.509	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
11160.000	3.391	47.480	50.871	-23.129	74.000
Average Detector:					
--	--	--	--	--	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5700MHz)
Test Date : 2016/11/29

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11400.000	4.011	42.180	46.191	-27.809	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
11400.000	4.011	44.160	48.171	-25.829	74.000
Average Detector:					
--	--	--	--	--	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5745MHz)
Test Date : 2016/11/29

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
11490.000	4.208	42.280	46.488	-27.512	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
11490.000	4.208	42.510	46.718	-27.282	74.000
Average Detector:					
--	--	--	--	--	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5785MHz)
Test Date : 2016/11/29

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11570.000	4.420	42.500	46.920	-27.080	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
11570.000	4.420	42.710	47.130	-26.870	74.000
Average Detector:					
--	--	--	--	--	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5825MHz)
Test Date : 2016/11/29

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11650.000	4.616	43.870	48.486	-25.514	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
11650.000	4.616	43.640	48.256	-25.744	74.000
Average Detector:					
--	--	--	--	--	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5190MHz)
Test Date : 2016/11/29

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10380.000	2.147	43.960	46.107	-27.893	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
10380.000	2.147	44.470	46.617	-27.383	74.000
Average Detector:					
--	--	--	--	--	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5230MHz)
Test Date : 2016/11/29

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10460.000	2.177	50.680	52.857	-21.143	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
10460.000	2.177	50.410	52.587	-21.413	74.000
Average Detector:					
--	--	--	--	--	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5270MHz)
Test Date : 2016/11/29

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10540.000	2.302	51.250	53.552	-20.448	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
10540.000	2.302	49.760	52.062	-21.938	74.000
Average Detector:					
--	--	--	--	--	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5310MHz)
Test Date : 2016/11/29

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10620.000	2.406	49.130	51.536	-22.464	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
10620.000	2.406	46.560	48.966	-25.034	74.000
Average Detector:					
--	--	--	--	--	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5510MHz)
Test Date : 2016/11/29

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
11020.000	3.100	42.620	45.720	-28.280	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
11020.000	3.100	43.350	46.450	-27.550	74.000
Average Detector:					
--	--	--	--	--	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5550MHz)
Test Date : 2016/11/29

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
11100.000	3.252	43.320	46.572	-27.428	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
11100.000	3.252	43.710	46.962	-27.038	74.000
Average Detector:					
--	--	--	--	--	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5670MHz)
Test Date : 2016/11/29

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
11340.000	3.820	42.120	45.941	-28.059	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
11340.000	3.820	43.270	47.091	-26.909	74.000
Average Detector:					
--	--	--	--	--	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5755MHz)
Test Date : 2016/11/29

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
11510.000	4.245	42.420	46.664	-27.336	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
11510.000	4.245	42.580	46.824	-27.176	74.000
Average Detector:					
--	--	--	--	--	54.000

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5795MHz)
Test Date : 2016/11/29

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11590.000	4.489	41.960	46.449	-27.551	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
11590.000	4.489	42.300	46.789	-27.211	74.000
Average Detector:					
--	--	--	--	--	54.000

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : General Radiated Emission
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5220MHz)
Test Date : 2016/11/18

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
243.681	-11.998	52.499	40.501	-5.499	46.000
287.261	-10.562	53.120	42.558	-3.442	46.000
332.246	-9.404	53.029	43.625	-2.375	46.000
465.797	-6.371	43.417	37.046	-8.954	46.000
554.362	-4.819	43.805	38.986	-7.014	46.000
730.087	-1.826	42.561	40.735	-5.265	46.000
Vertical					
Peak Detector					
70.768	-13.712	49.547	35.835	-4.165	40.000
287.261	-10.562	45.691	35.129	-10.871	46.000
465.797	-6.371	43.243	36.872	-9.128	46.000
554.362	-4.819	42.874	38.055	-7.945	46.000
599.348	-3.645	44.843	41.199	-4.801	46.000
654.174	-3.160	39.570	36.410	-9.590	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : General Radiated Emission
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5300MHz)
Test Date : 2016/11/18

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
243.681	-11.998	49.879	37.881	-8.119	46.000
287.261	-10.562	50.177	39.615	-6.385	46.000
332.246	-9.404	52.506	43.102	-2.898	46.000
354.739	-8.861	49.787	40.926	-5.074	46.000
465.797	-6.371	43.912	37.541	-8.459	46.000
554.362	-4.819	43.764	38.945	-7.055	46.000
Vertical					
Peak Detector					
70.768	-13.712	50.778	37.066	-2.934	40.000
287.261	-10.562	46.804	36.242	-9.758	46.000
465.797	-6.371	39.900	33.529	-12.471	46.000
509.377	-5.677	41.276	35.599	-10.401	46.000
554.362	-4.819	42.145	37.326	-8.674	46.000
599.348	-3.645	38.231	34.587	-11.413	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : General Radiated Emission
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5580MHz)
Test Date : 2016/11/18

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
243.681	-11.998	52.886	40.888	-5.112	46.000
287.261	-10.562	53.973	43.411	-2.589	46.000
332.246	-9.404	52.369	42.965	-3.035	46.000
465.797	-6.371	43.109	36.738	-9.262	46.000
554.362	-4.819	43.200	38.381	-7.619	46.000
599.348	-3.645	38.592	34.948	-11.052	46.000
Vertical					
Peak Detector					
70.768	-13.712	48.390	34.678	-5.322	40.000
287.261	-10.562	45.918	35.356	-10.644	46.000
465.797	-6.371	42.995	36.624	-9.376	46.000
554.362	-4.819	43.136	38.317	-7.683	46.000
597.942	-3.678	44.529	40.852	-5.148	46.000
642.928	-3.284	38.762	35.478	-10.522	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : General Radiated Emission
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5785MHz)
Test Date : 2016/11/18

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
243.681	-11.998	53.135	41.137	-4.863	46.000
287.261	-10.562	53.438	42.876	-3.124	46.000
332.246	-9.404	52.934	43.530	-2.470	46.000
354.739	-8.861	50.585	41.724	-4.276	46.000
465.797	-6.371	43.535	37.164	-8.836	46.000
554.362	-4.819	43.164	38.345	-7.655	46.000
Vertical					
Peak Detector					
70.768	-13.712	49.072	35.360	-4.640	40.000
287.261	-10.562	45.013	34.451	-11.549	46.000
465.797	-6.371	43.478	37.107	-8.893	46.000
554.362	-4.819	42.458	37.639	-8.361	46.000
597.942	-3.678	43.889	40.212	-5.788	46.000
620.435	-3.475	40.510	37.035	-8.965	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : General Radiated Emission
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5220MHz)
Test Date : 2016/11/18

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
250.710	-11.904	52.464	40.559	-5.441	46.000
287.261	-10.562	53.263	42.701	-3.299	46.000
332.246	-9.404	52.536	43.132	-2.868	46.000
465.797	-6.371	43.568	37.197	-8.803	46.000
554.362	-4.819	43.293	38.474	-7.526	46.000
597.942	-3.678	38.862	35.185	-10.815	46.000
Vertical					
Peak Detector					
72.174	-13.999	49.404	35.405	-4.595	40.000
287.261	-10.562	46.930	36.368	-9.632	46.000
354.739	-8.861	47.152	38.291	-7.709	46.000
465.797	-6.371	43.348	36.977	-9.023	46.000
554.362	-4.819	43.453	38.634	-7.366	46.000
599.348	-3.645	44.043	40.399	-5.601	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : General Radiated Emission
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5300MHz)
Test Date : 2016/11/18

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
243.681	-11.998	52.519	40.521	-5.479	46.000
287.261	-10.562	53.212	42.650	-3.350	46.000
332.246	-9.404	50.994	41.590	-4.410	46.000
354.739	-8.861	50.474	41.613	-4.387	46.000
465.797	-6.371	42.975	36.604	-9.396	46.000
554.362	-4.819	41.205	36.386	-9.614	46.000
Vertical					
Peak Detector					
72.174	-13.999	49.610	35.611	-4.389	40.000
287.261	-10.562	47.477	36.915	-9.085	46.000
354.739	-8.861	43.665	34.804	-11.196	46.000
398.319	-7.823	41.947	34.123	-11.877	46.000
554.362	-4.819	43.764	38.945	-7.055	46.000
599.348	-3.645	44.790	41.146	-4.854	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : General Radiated Emission
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5580MHz)
Test Date : 2016/11/18

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
243.681	-11.998	52.659	40.661	-5.339	46.000
287.261	-10.562	52.989	42.427	-3.573	46.000
332.246	-9.404	52.518	43.114	-2.886	46.000
354.739	-8.861	50.618	41.757	-4.243	46.000
465.797	-6.371	43.468	37.097	-8.903	46.000
554.362	-4.819	43.679	38.860	-7.140	46.000
Vertical					
Peak Detector					
70.768	-13.712	50.345	36.633	-3.367	40.000
287.261	-10.562	46.278	35.716	-10.284	46.000
509.377	-5.677	41.579	35.902	-10.098	46.000
554.362	-4.819	42.044	37.225	-8.775	46.000
597.942	-3.678	43.482	39.805	-6.195	46.000
910.029	0.545	32.524	33.070	-12.930	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : General Radiated Emission
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5785MHz)
Test Date : 2016/11/18

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
249.304	-11.924	52.779	40.855	-5.145	46.000
287.261	-10.562	53.665	43.103	-2.897	46.000
332.246	-9.404	53.131	43.727	-2.273	46.000
465.797	-6.371	43.147	36.776	-9.224	46.000
554.362	-4.819	43.089	38.270	-7.730	46.000
597.942	-3.678	38.236	34.559	-11.441	46.000
Vertical					
Peak Detector					
72.174	-13.999	48.871	34.872	-5.128	40.000
287.261	-10.562	46.859	36.297	-9.703	46.000
354.739	-8.861	43.620	34.759	-11.241	46.000
465.797	-6.371	42.946	36.575	-9.425	46.000
554.362	-4.819	43.779	38.960	-7.040	46.000
597.942	-3.678	44.316	40.639	-5.361	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : General Radiated Emission
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5190MHz)
Test Date : 2016/11/18

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
247.899	-11.942	52.477	40.535	-5.465	46.000
287.261	-10.562	53.252	42.690	-3.310	46.000
332.246	-9.404	53.096	43.692	-2.308	46.000
465.797	-6.371	43.651	37.280	-8.720	46.000
554.362	-4.819	43.759	38.940	-7.060	46.000
931.116	0.774	34.026	34.800	-11.200	46.000
Vertical					
Peak Detector					
70.768	-13.712	49.205	35.493	-4.507	40.000
287.261	-10.562	46.858	36.296	-9.704	46.000
354.739	-8.861	44.125	35.264	-10.736	46.000
398.319	-7.823	47.350	39.526	-6.474	46.000
554.362	-4.819	41.710	36.891	-9.109	46.000
599.348	-3.645	43.751	40.107	-5.893	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : General Radiated Emission
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5270MHz)
Test Date : 2016/11/18

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
266.174	-11.382	49.941	38.559	-7.441	46.000
287.261	-10.562	51.419	40.857	-5.143	46.000
332.246	-9.404	53.262	43.858	-2.142	46.000
354.739	-8.861	50.222	41.361	-4.639	46.000
465.797	-6.371	43.503	37.132	-8.868	46.000
554.362	-4.819	43.503	38.684	-7.316	46.000
Vertical					
Peak Detector					
72.174	-13.999	48.986	34.987	-5.013	40.000
287.261	-10.562	46.555	35.993	-10.007	46.000
354.739	-8.861	43.684	34.823	-11.177	46.000
509.377	-5.677	41.779	36.102	-9.898	46.000
554.362	-4.819	42.749	37.930	-8.070	46.000
597.942	-3.678	43.357	39.680	-6.320	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : General Radiated Emission
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5670MHz)
Test Date : 2016/11/18

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
287.261	-10.562	51.296	40.734	-5.266	46.000
332.246	-9.404	53.133	43.729	-2.271	46.000
354.739	-8.861	50.412	41.551	-4.449	46.000
465.797	-6.371	43.528	37.157	-8.843	46.000
531.870	-5.267	42.327	37.060	-8.940	46.000
554.362	-4.819	43.389	38.570	-7.430	46.000
Vertical					
Peak Detector					
70.768	-13.712	48.471	34.759	-5.241	40.000
287.261	-10.562	46.949	36.387	-9.613	46.000
332.246	-9.404	45.678	36.274	-9.726	46.000
465.797	-6.371	42.084	35.713	-10.287	46.000
554.362	-4.819	42.716	37.897	-8.103	46.000
599.348	-3.645	43.952	40.308	-5.692	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : General Radiated Emission
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5755MHz)
Test Date : 2016/11/18

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
243.681	-11.998	52.378	40.380	-5.620	46.000
287.261	-10.562	53.324	42.762	-3.238	46.000
332.246	-9.404	52.311	42.907	-3.093	46.000
465.797	-6.371	42.790	36.419	-9.581	46.000
554.362	-4.819	42.934	38.115	-7.885	46.000
597.942	-3.678	38.423	34.746	-11.254	46.000
Vertical					
Peak Detector					
70.768	-13.712	49.280	35.568	-4.432	40.000
287.261	-10.562	46.217	35.655	-10.345	46.000
396.913	-7.857	44.752	36.896	-9.104	46.000
465.797	-6.371	43.453	37.082	-8.918	46.000
554.362	-4.819	41.969	37.150	-8.850	46.000
597.942	-3.678	44.592	40.915	-5.085	46.000

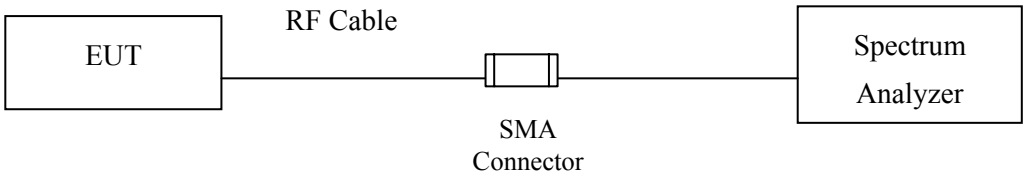
Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

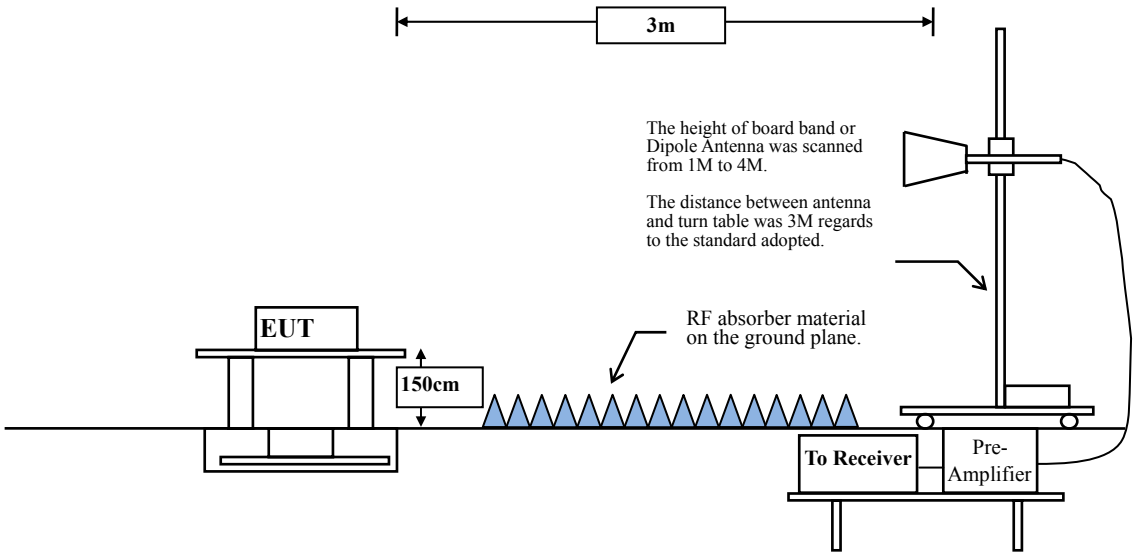
6. Band Edge

6.1. Test Setup

RF Conducted Measurement:



RF Radiated Measurement:



6.2. Limits

The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.

Radiated emissions which fall in the restricted bands, as defined in Section 15.205, must also comply with the radiated emission limits specified in Section 15.209:

FCC Part 15 Subpart C Paragraph 15.209 Limits		
Frequency MHz	uV/m @3m	dBμV/m@3m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Remarks : 1. RF Voltage (dBμV) = 20 log RF Voltage (uV)

2. In the Above Table, the tighter limit applies at the band edges.

3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

6.3. Test Procedure

The EUT is placed on a turn table which is 1.5 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10:2013 on radiated measurement.

The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz.

The EUT was setup to ANSI C63.10, 2013; tested to UNII test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

6.4. Uncertainty

Conducted: ±1.23dB

Radiated:

Horizontal polarization：1-18GHz: ±3.77dB

Vertical polarization：1-18GHz : ±3.83dB

6.5. Test Result of Band Edge

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5180MHz)
Test Date : 2016/11/24

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Peak Limit (dBµV/m)	Average Limit (dBµV/m)	Result
36 (Peak)	5142.899	17.377	39.890	57.267	74.00	54.00	Pass
36 (Peak)	5150.000	17.386	36.855	54.241	74.00	54.00	Pass
36 (Peak)	5183.333	17.445	79.935	97.381	--	--	--
36 (Average)	5141.739	17.376	27.154	44.530	74.00	54.00	Pass
36 (Average)	5150.000	17.386	25.339	42.725	74.00	54.00	Pass
36 (Average)	5185.217	17.450	69.209	86.659	--	--	--

Figure Channel 36: Horizontal (Peak)

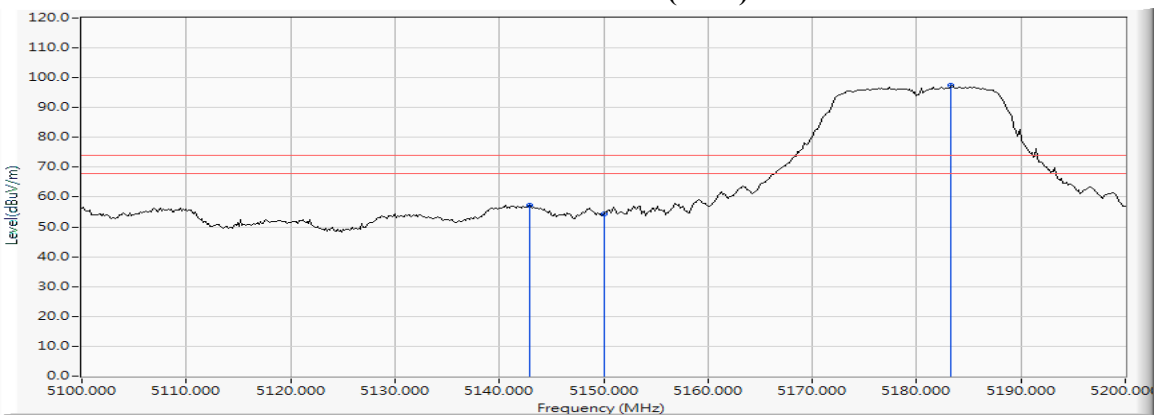
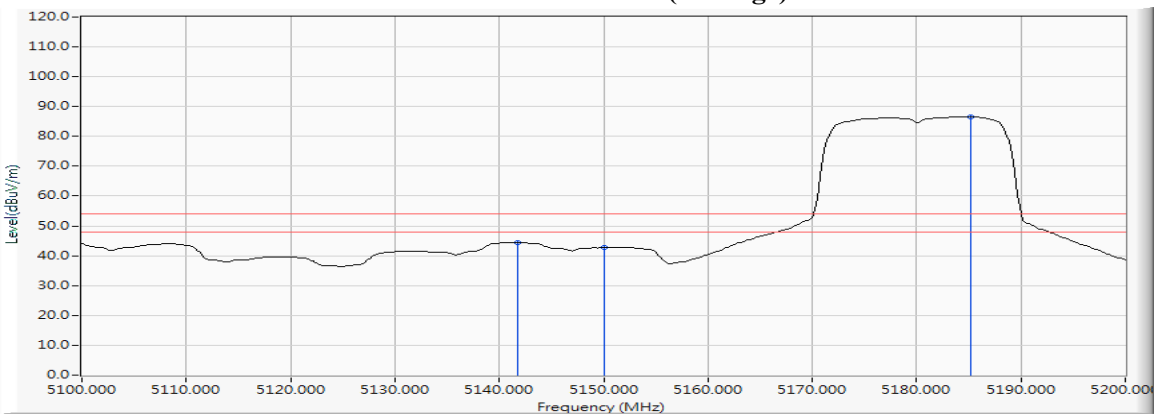


Figure Channel 36: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5180MHz)
Test Date : 2016/11/24

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
36 (Peak)	5107.826	17.326	47.951	65.277	74.00	54.00	Pass
36 (Peak)	5150.000	17.386	44.098	61.484	74.00	54.00	Pass
36 (Peak)	5184.928	17.449	86.197	103.646	--	--	--
36 (Average)	5108.406	17.327	35.539	52.866	74.00	54.00	Pass
36 (Average)	5150.000	17.386	32.479	49.865	74.00	54.00	Pass
36 (Average)	5184.348	17.447	75.894	93.342	--	--	--

Figure Channel 36: Vertical (Peak)

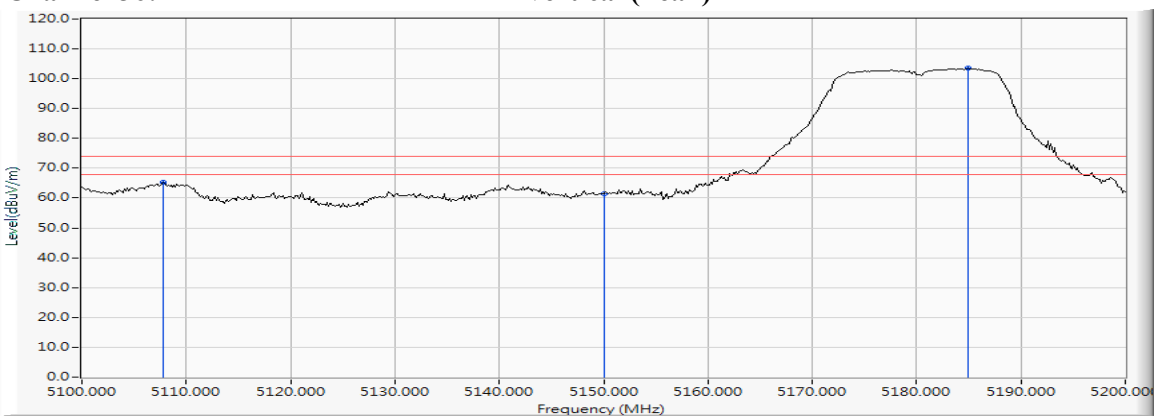
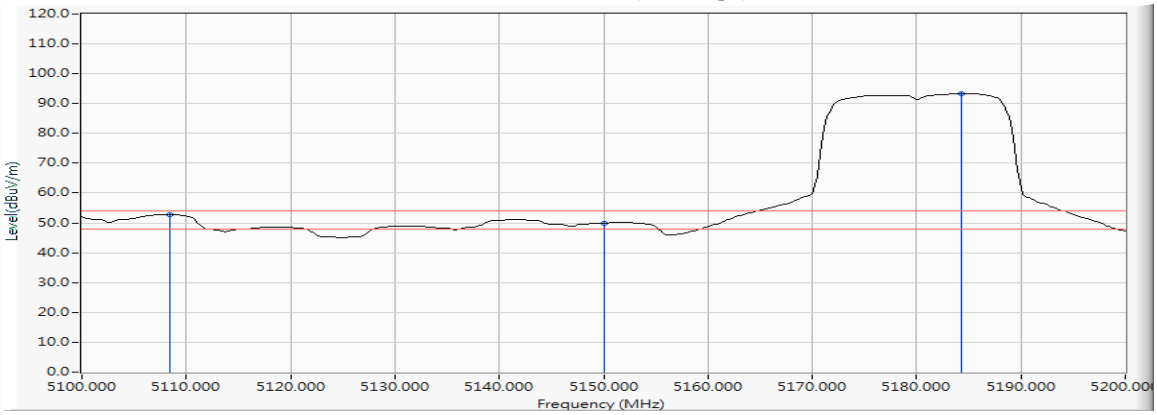


Figure Channel 36: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5320MHz)
Test Date : 2016/11/24

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
64 (Peak)	5317.536	17.687	81.697	99.384	--	--	--
64 (Peak)	5350.000	17.758	37.703	55.461	74.00	54.00	Pass
64 (Peak)	5392.754	17.816	40.513	58.328	74.00	54.00	Pass
64 (Average)	5317.536	17.687	71.608	89.295	--	--	--
64 (Average)	5350.000	17.758	26.247	44.005	74.00	54.00	Pass
64 (Average)	5394.348	17.817	28.640	46.456	74.00	54.00	Pass

Figure Channel 64: Horizontal (Peak)

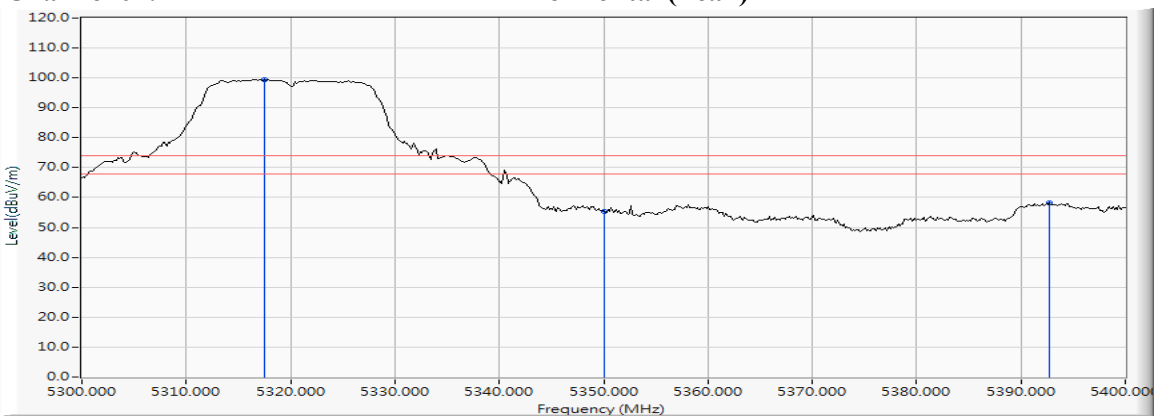
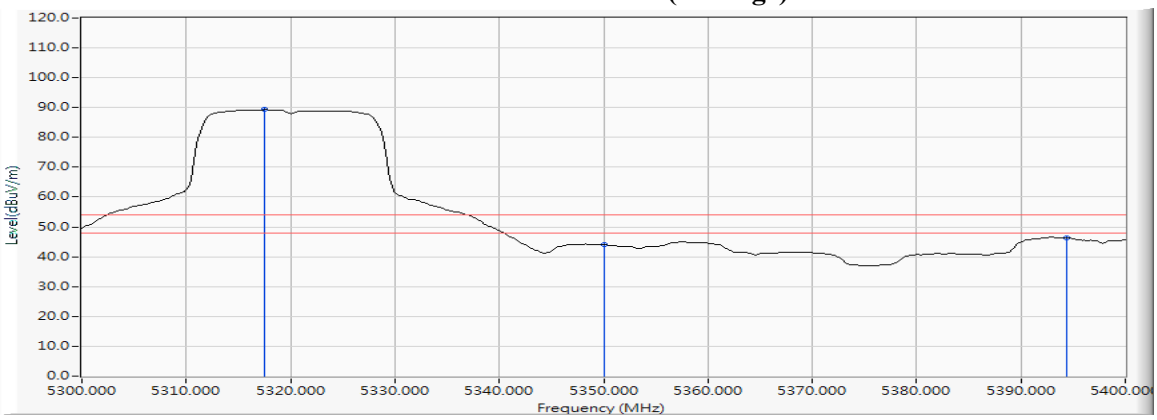


Figure Channel 64: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5320MHz)
Test Date : 2016/11/24

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
64 (Peak)	5320.435	17.691	86.408	104.098	--	--	--
64 (Peak)	5350.000	17.758	43.090	60.848	74.00	54.00	Pass
64 (Peak)	5391.594	17.815	45.001	62.816	74.00	54.00	Pass
64 (Average)	5315.362	17.684	76.038	93.722	--	--	--
64 (Average)	5350.000	17.758	31.073	48.831	74.00	54.00	Pass
64 (Average)	5392.609	17.815	32.493	50.308	74.00	54.00	Pass

Figure Channel 64: Vertical (Peak)

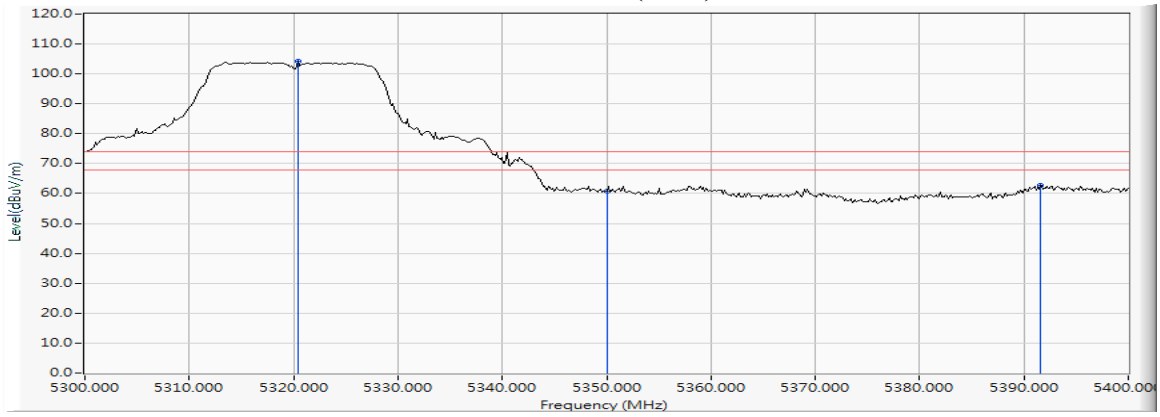
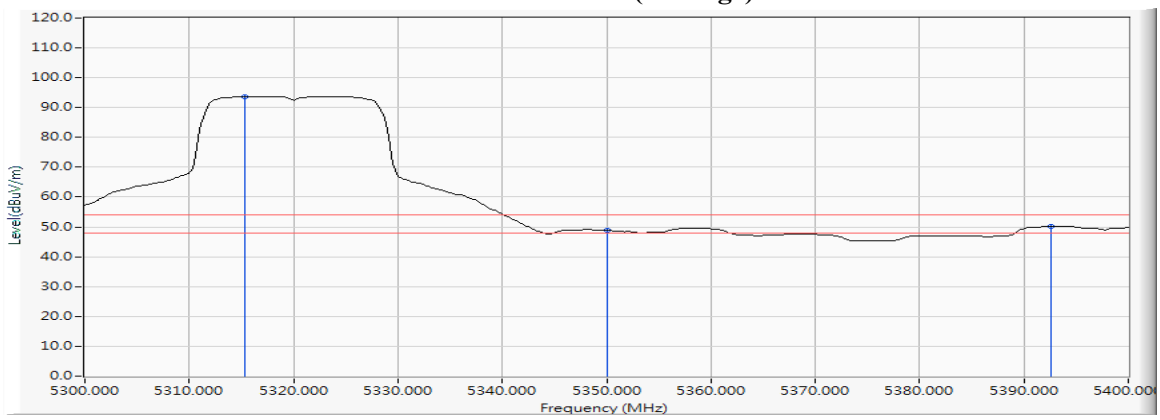


Figure Channel 64: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5500MHz)
Test Date : 2016/11/24

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
100 (Peak)	5416.087	17.879	40.013	57.892	74.00	54.00	Pass
100 (Peak)	5460.000	17.945	34.537	52.481	74.00	54.00	Pass
100 (Peak)	5503.188	18.048	73.907	91.954	--	--	--
100 (Average)	5416.087	17.879	27.459	45.338	74.00	54.00	Pass
100 (Average)	5460.000	17.945	23.118	41.062	74.00	54.00	Pass
100 (Average)	5497.826	18.028	63.254	81.283	--	--	--

Figure Channel 100: Horizontal (Peak)

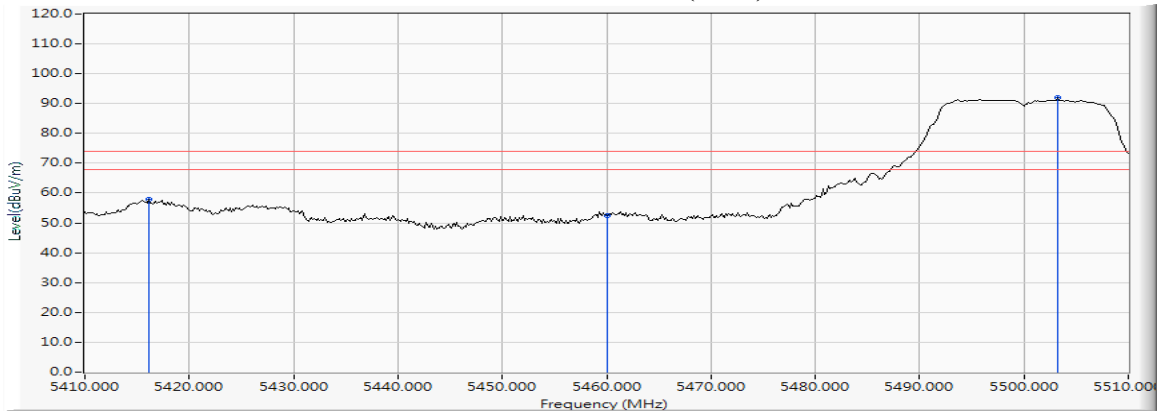
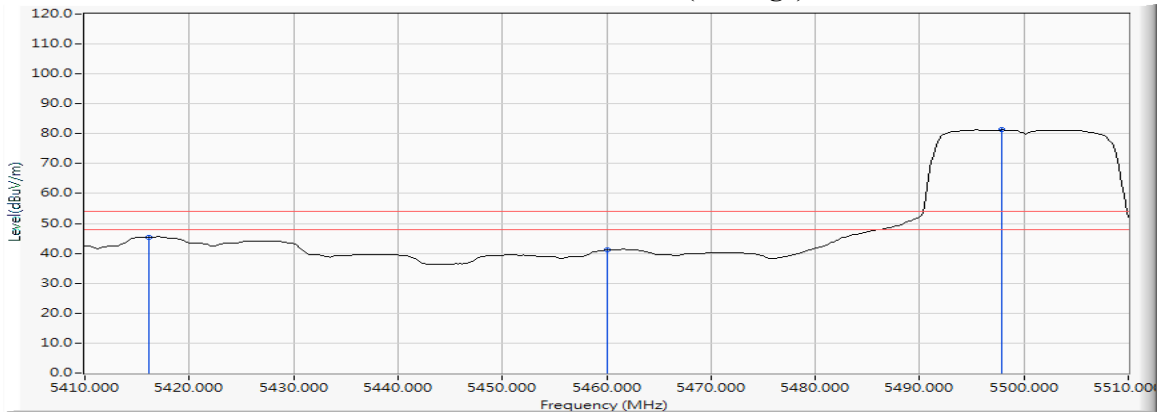


Figure Channel 100: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5500MHz)
Test Date : 2016/11/24

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
100 (Peak)	5414.928	17.876	46.804	64.681	74.00	54.00	Pass
100 (Peak)	5460.000	17.945	41.593	59.537	74.00	54.00	Pass
100 (Peak)	5497.681	18.027	81.031	99.059	--	--	--
100 (Average)	5416.957	17.879	34.751	52.631	74.00	54.00	Pass
100 (Average)	5460.000	17.945	29.522	47.466	74.00	54.00	Pass
100 (Average)	5497.826	18.028	70.468	88.497	--	--	--

Figure Channel 100: Vertical (Peak)

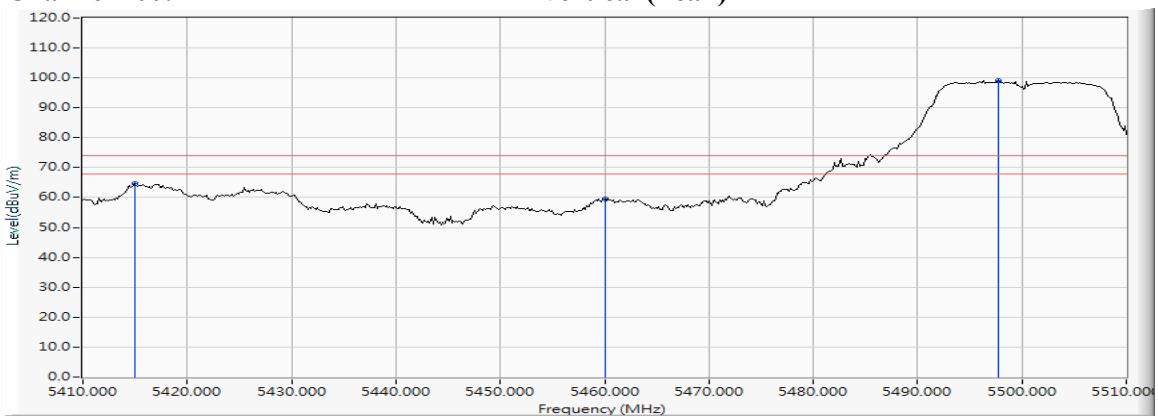
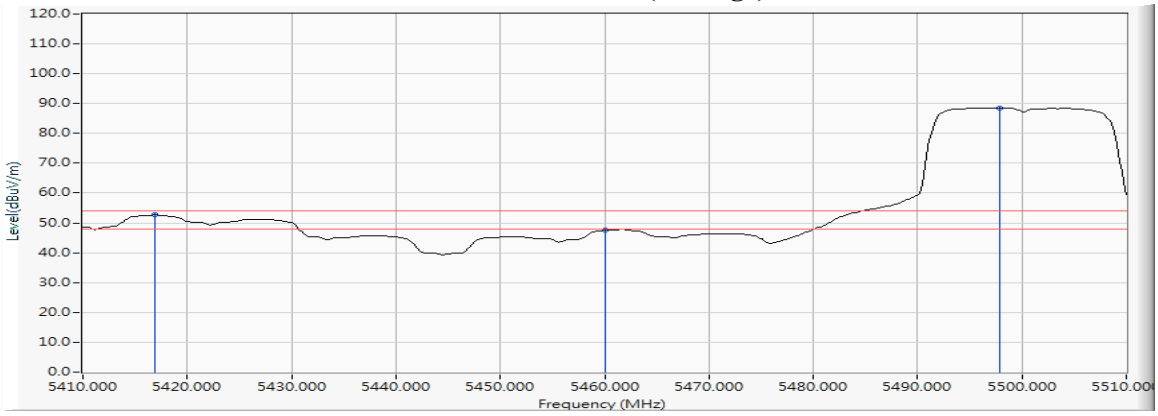


Figure Channel 100: Vertical (Average)



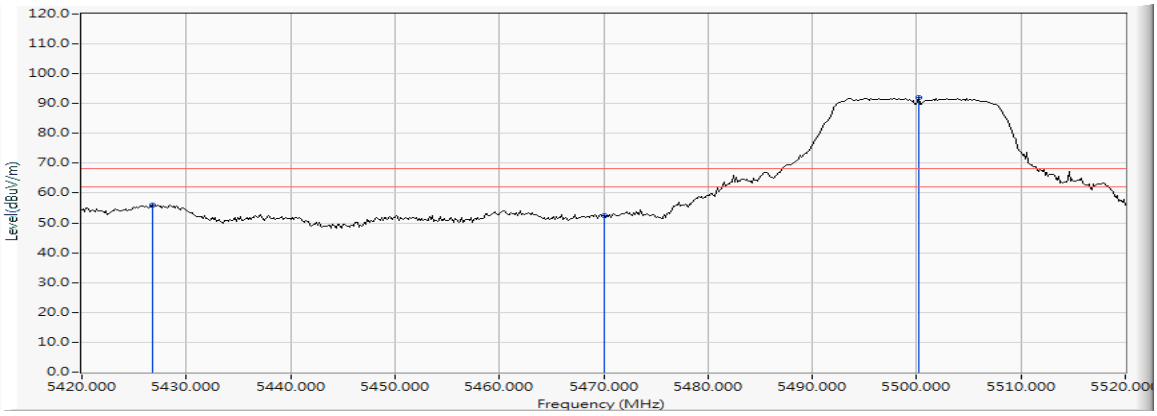
Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

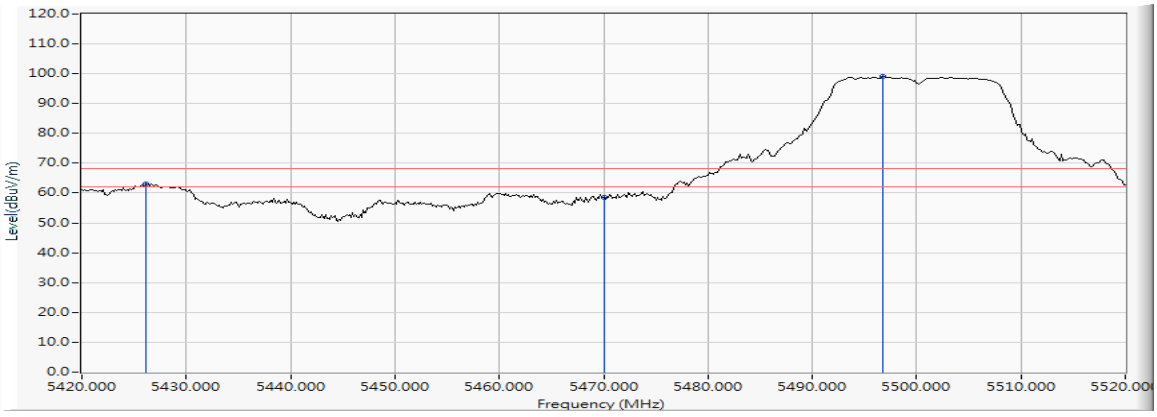
Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5500MHz)
Test Date : 2016/11/26

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5426.812	17.886	38.010	55.896	-12.324	68.220	Pass
Horizontal	5470.000	17.963	34.477	52.439	-15.781	68.220	Pass
Horizontal	5500.145	18.037	74.048	92.084	--	--	--



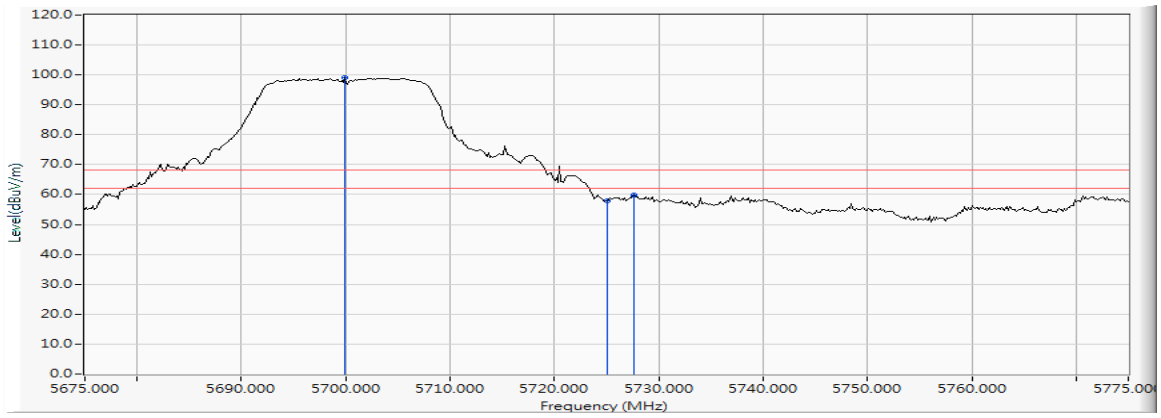
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5426.087	17.885	45.278	63.163	-5.057	68.220	Pass
Vertical	5470.000	17.963	40.448	58.410	-9.810	68.220	Pass
Vertical	5496.812	18.026	81.070	99.096	--	--	--



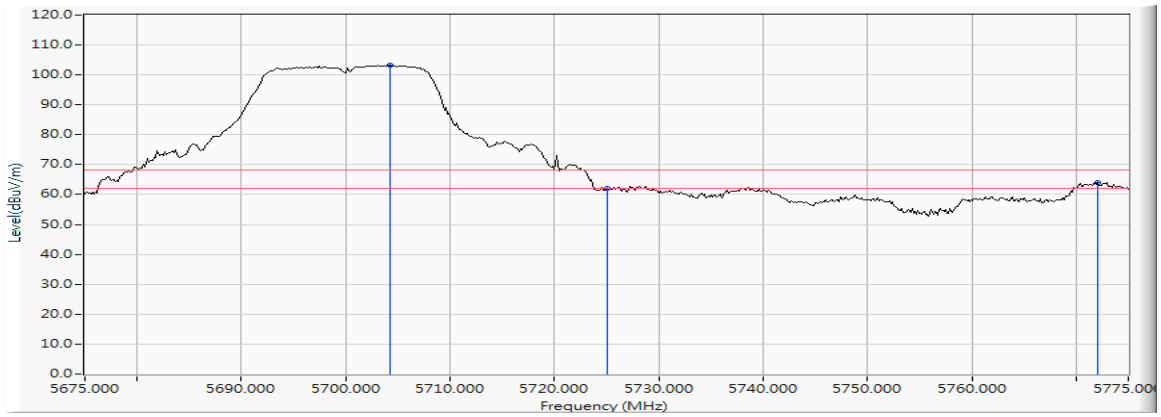
Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5700MHz)
Test Date : 2016/11/26

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5699.928	18.632	80.490	99.122	--	--	--
Horizontal	5725.000	18.711	39.188	57.899	-10.321	68.220	Pass
Horizontal	5727.609	18.720	41.276	59.996	-8.224	68.220	Pass



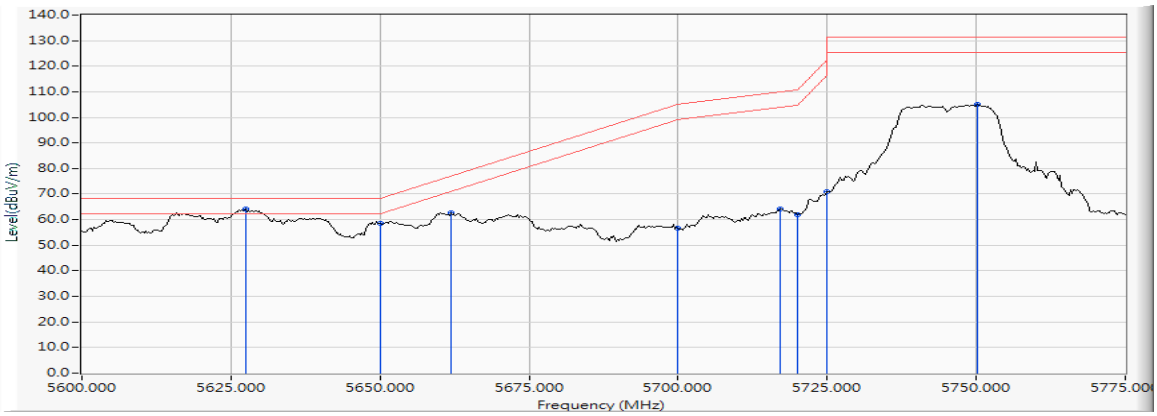
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5704.275	18.646	84.565	103.211	--	--	--
Vertical	5725.000	18.711	43.370	62.081	-6.139	68.220	Pass
Vertical	5772.101	18.858	45.208	64.067	-4.153	68.220	Pass



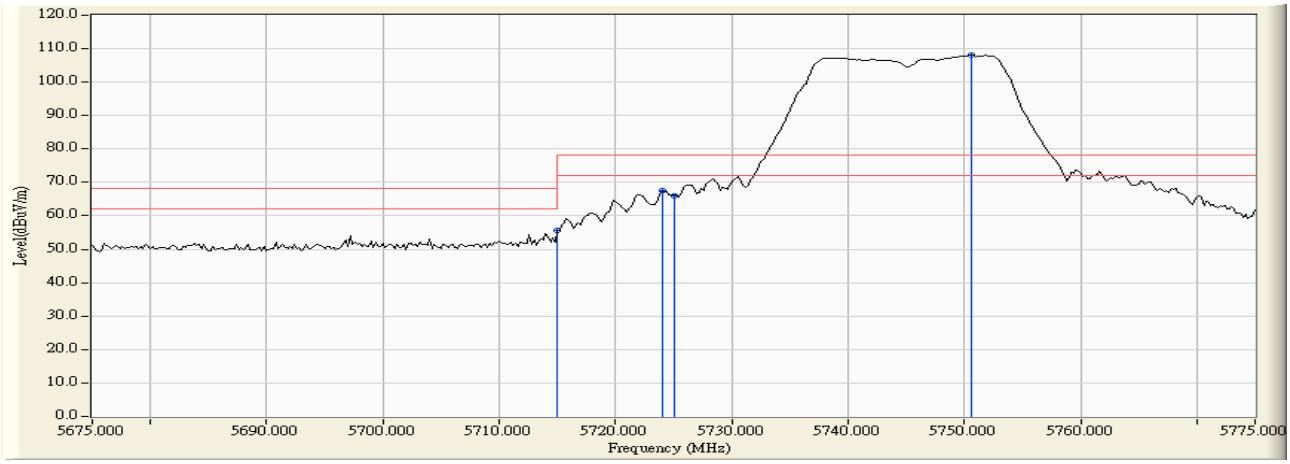
Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5745MHz)
Test Date : 2016/11/26

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5626.630	18.414	40.427	58.841	-9.379	68.220	Pass
Horizontal	5650.000	18.483	35.676	54.158	-14.062	68.220	Pass
Horizontal	5659.855	18.512	39.582	58.094	-17.415	75.509	Pass
Horizontal	5700.000	18.632	34.489	53.121	-52.079	105.200	Pass
Horizontal	5717.428	18.685	41.362	60.047	-50.033	110.080	Pass
Horizontal	5720.000	18.693	38.766	57.459	-53.341	110.800	Pass
Horizontal	5725.000	18.711	46.917	65.628	-56.572	122.200	Pass
Horizontal	5740.761	18.765	81.976	100.741	--	--	--



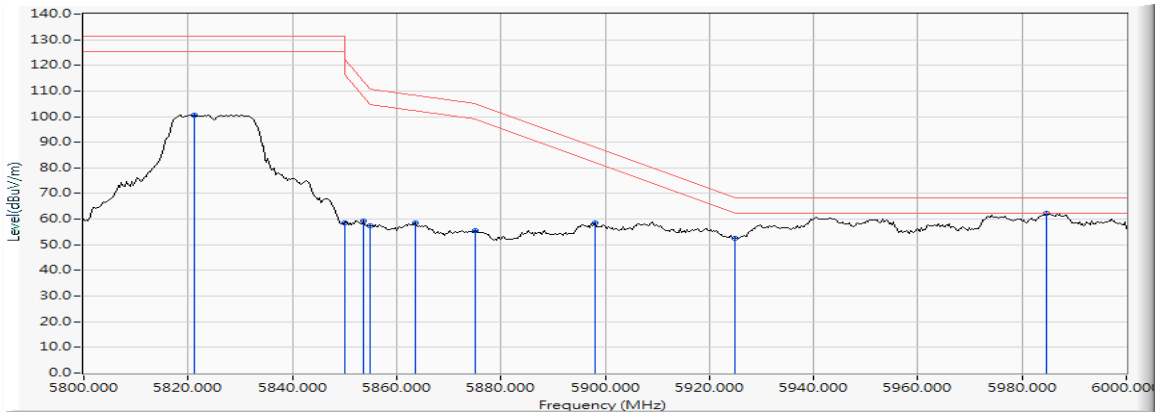
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5627.391	18.415	45.696	64.111	-4.109	68.220	Pass
Vertical	5650.000	18.483	40.091	58.573	-9.647	68.220	Pass
Vertical	5661.884	18.517	44.277	62.795	-14.214	77.009	Pass
Vertical	5700.000	18.632	37.909	56.541	-48.659	105.200	Pass
Vertical	5717.174	18.684	45.401	64.085	-45.924	110.009	Pass
Vertical	5720.000	18.693	43.389	62.082	-48.718	110.800	Pass
Vertical	5725.000	18.711	52.084	70.795	-51.405	122.200	Pass
Vertical	5750.145	18.787	86.131	104.918	--	--	--



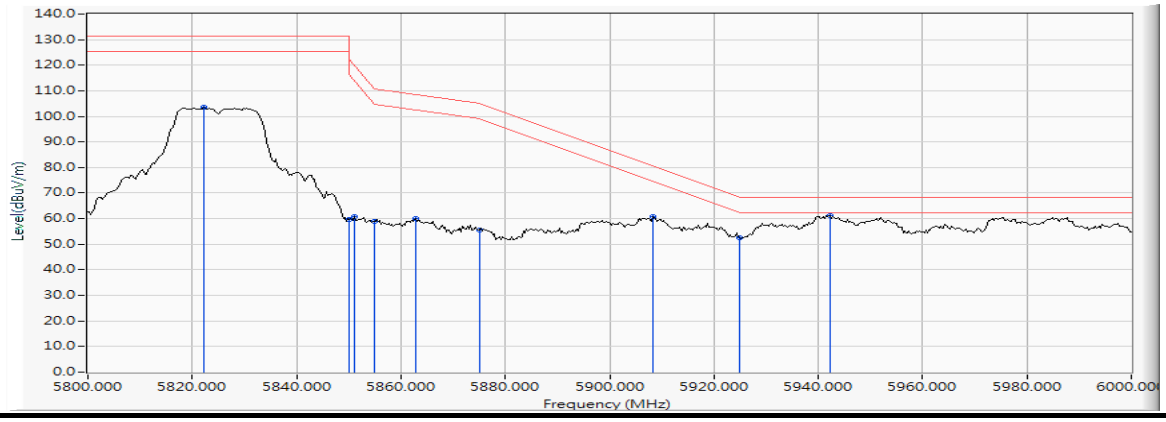
Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5825MHz)
Test Date : 2016/08/26

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5821.159	19.017	81.741	100.758	--	--	--
Horizontal	5850.000	19.103	39.412	58.515	-63.685	122.200	Pass
Horizontal	5853.623	19.112	40.249	59.361	-54.579	113.940	Pass
Horizontal	5855.000	19.115	38.285	57.401	-53.399	110.800	Pass
Horizontal	5863.478	19.137	39.495	58.631	-49.795	108.426	Pass
Horizontal	5875.000	19.177	36.212	55.389	-49.811	105.200	Pass
Horizontal	5897.971	19.241	39.275	58.517	-29.684	88.201	Pass
Horizontal	5925.000	19.333	33.358	52.690	-15.510	68.200	Pass
Horizontal	5984.638	19.505	42.750	62.255	-5.945	68.200	Pass



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5822.319	19.019	84.426	103.445	--	--	--
Vertical	5850.000	19.103	40.733	59.836	-62.364	122.200	Pass
Vertical	5851.014	19.106	41.781	60.887	-59.001	119.888	Pass
Vertical	5855.000	19.115	39.763	58.879	-51.921	110.800	Pass
Vertical	5862.899	19.135	40.800	59.935	-48.653	108.588	Pass
Vertical	5875.000	19.177	36.414	55.591	-49.609	105.200	Pass
Vertical	5908.406	19.276	41.370	60.647	-19.833	80.480	Pass
Vertical	5925.000	19.333	33.262	52.594	-15.606	68.200	Pass



Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5180MHz)
Test Date : 2016/11/24

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Peak Limit (dBµV/m)	Average Limit (dBµV/m)	Result
36 (Peak)	5142.464	17.377	39.488	56.865	74.00	54.00	Pass
36 (Peak)	5150.000	17.386	36.336	53.722	74.00	54.00	Pass
36 (Peak)	5185.652	17.451	78.954	96.405	--	--	--
36 (Average)	5100.000	17.313	26.427	43.740	74.00	54.00	Pass
36 (Average)	5150.000	17.386	25.125	42.511	74.00	54.00	Pass
36 (Average)	5185.362	17.450	68.817	86.267	--	--	--

Figure Channel 36: Horizontal (Peak)

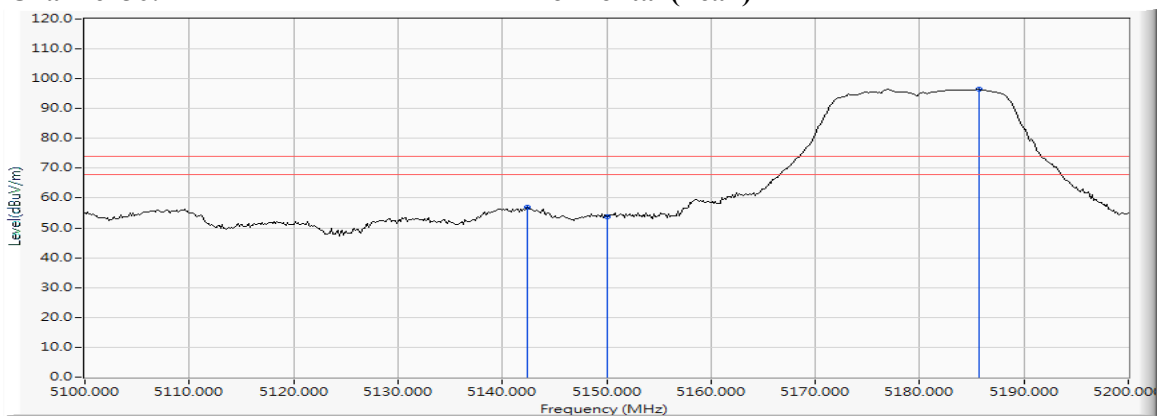
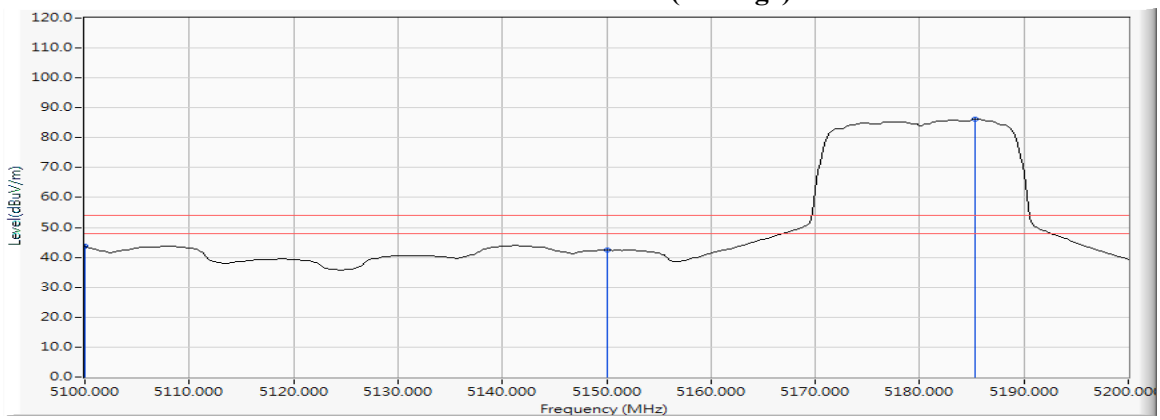


Figure Channel 36: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5180MHz)
Test Date : 2016/11/24

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
36 (Peak)	5107.681	17.325	48.570	65.896	74.00	54.00	Pass
36 (Peak)	5150.000	17.386	44.761	62.147	74.00	54.00	Pass
36 (Peak)	5175.507	17.428	87.955	105.383	--	--	--
36 (Average)	5108.116	17.327	34.792	52.118	74.00	54.00	Pass
36 (Average)	5150.000	17.386	31.993	49.379	74.00	54.00	Pass
36 (Average)	5185.507	17.451	74.942	92.392	--	--	--

Figure Channel 36: Vertical (Peak)

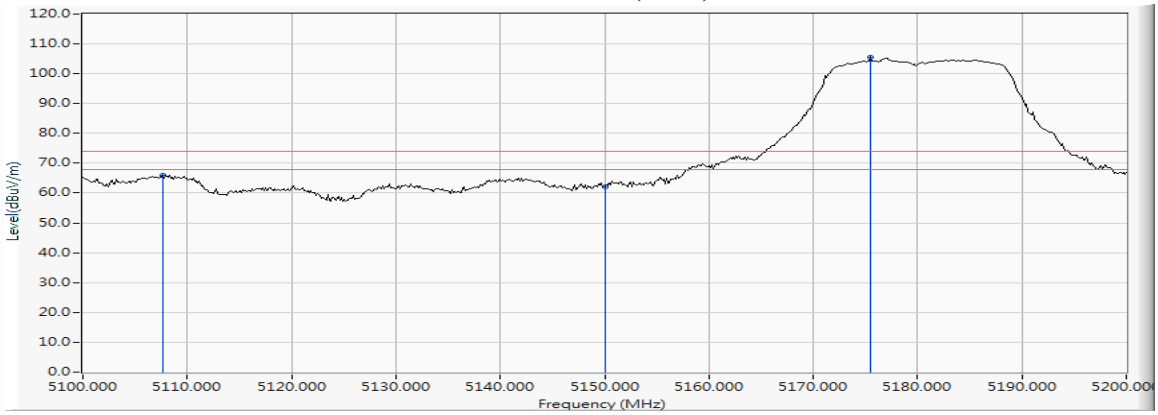
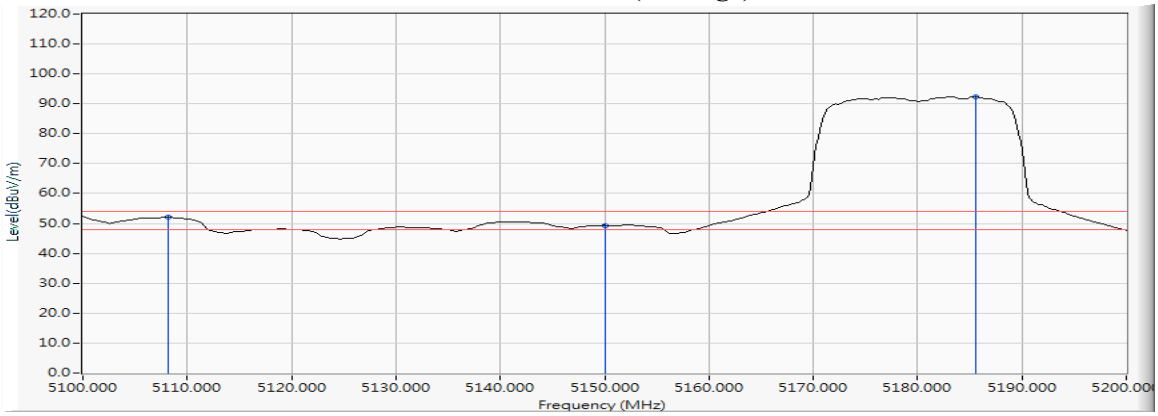


Figure Channel 36: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5320MHz)
Test Date : 2016/11/24

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
64 (Peak)	5316.232	17.685	79.741	97.427	--	--	--
64 (Peak)	5350.000	17.758	36.213	53.971	74.00	54.00	Pass
64 (Peak)	5391.594	17.815	38.198	56.013	74.00	54.00	Pass
64 (Average)	5315.362	17.684	69.287	86.971	--	--	--
64 (Average)	5350.000	17.758	24.703	42.461	74.00	54.00	Pass
64 (Average)	5392.899	17.816	26.019	43.834	74.00	54.00	Pass

Figure Channel 64: Horizontal (Peak)

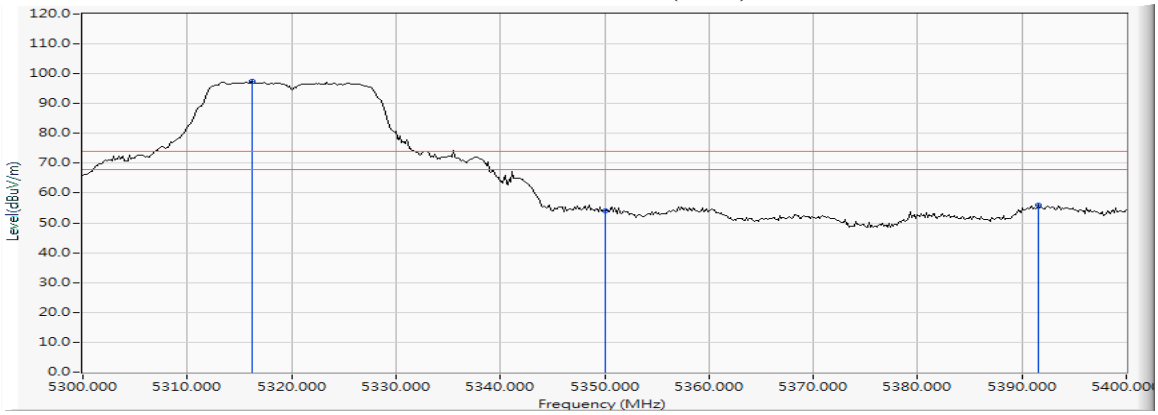
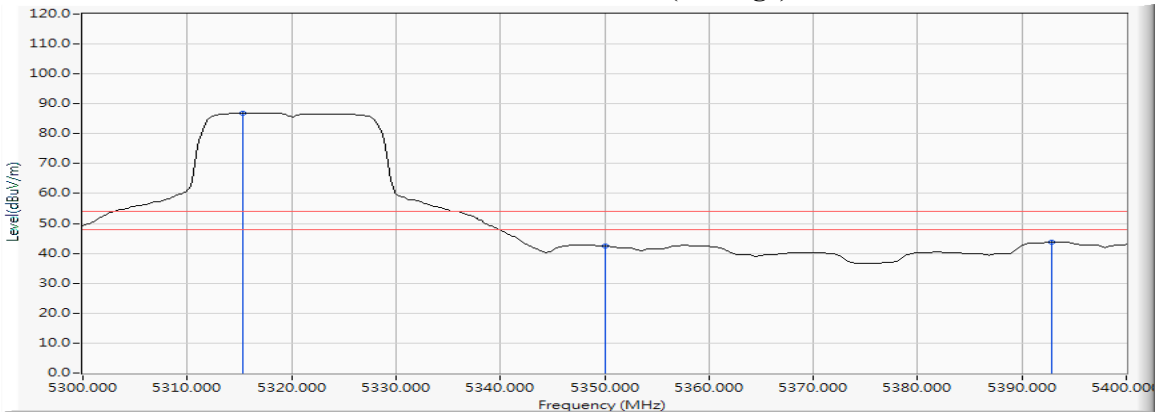


Figure Channel 64: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5320MHz)
Test Date : 2016/11/26

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
64 (Peak)	5323.333	17.694	88.419	106.112	--	--	--
64 (Peak)	5350.000	17.758	43.678	61.436	74.00	54.00	Pass
64 (Peak)	5358.261	17.771	45.534	63.305	74.00	54.00	Pass
64 (Average)	5324.058	17.695	77.809	95.503	--	--	--
64 (Average)	5350.000	17.758	32.431	50.189	74.00	54.00	Pass
64 (Average)	5392.899	17.816	33.742	51.557	74.00	54.00	Pass

Figure Channel 64: Vertical (Peak)

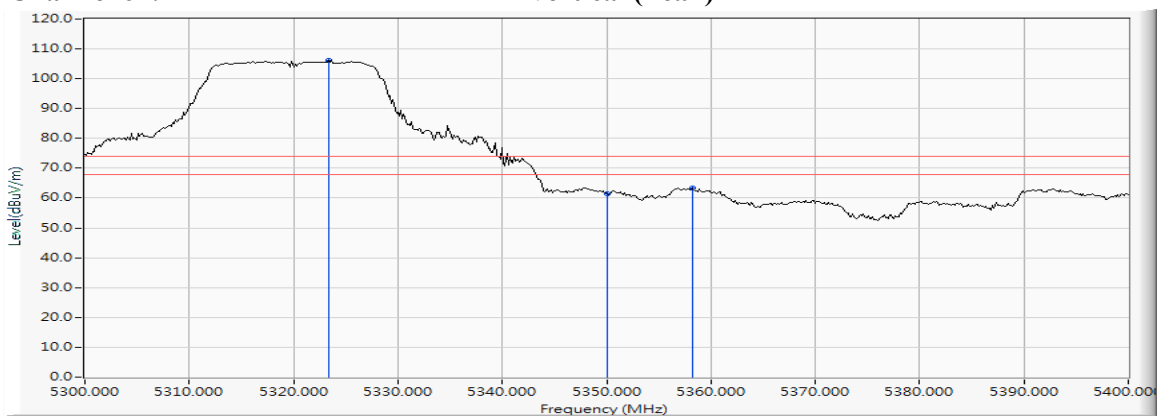
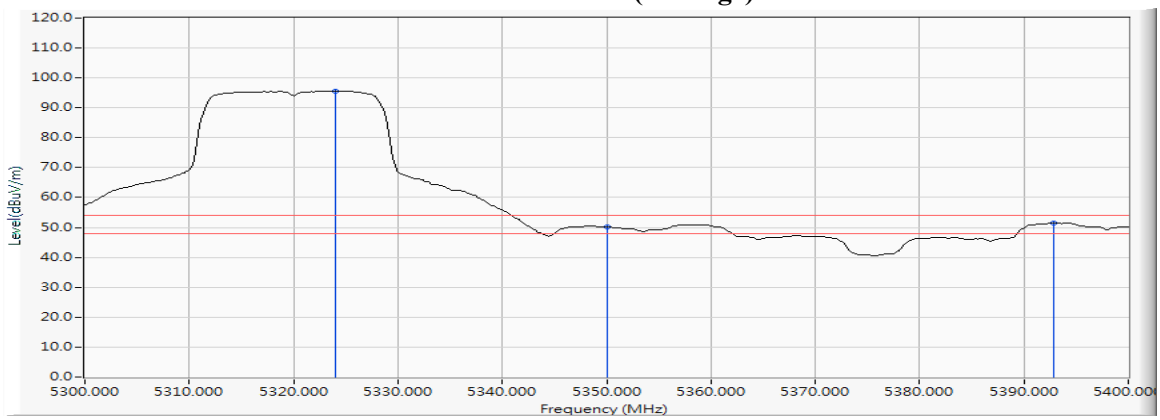


Figure Channel 64: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5500MHz)
Test Date : 2016/11/26

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
100 (Peak)	5415.217	17.878	39.831	57.709	74.00	54.00	Pass
100 (Peak)	5460.000	17.945	34.959	52.903	74.00	54.00	Pass
100 (Peak)	5495.652	18.022	74.315	92.337	--	--	--
100 (Average)	5415.507	17.879	27.044	44.923	74.00	54.00	Pass
100 (Average)	5460.000	17.945	23.393	41.337	74.00	54.00	Pass
100 (Average)	5495.362	18.022	64.094	82.116	--	--	--

Figure Channel 100: Horizontal (Peak)

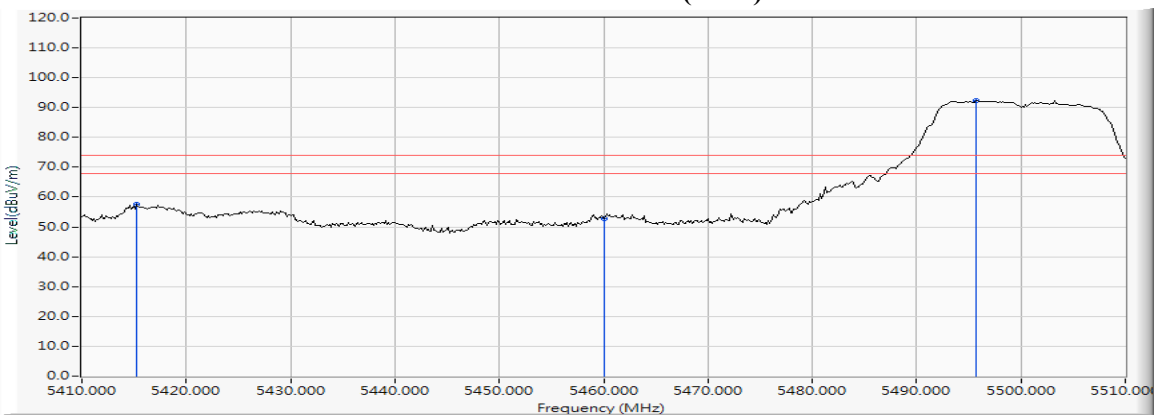
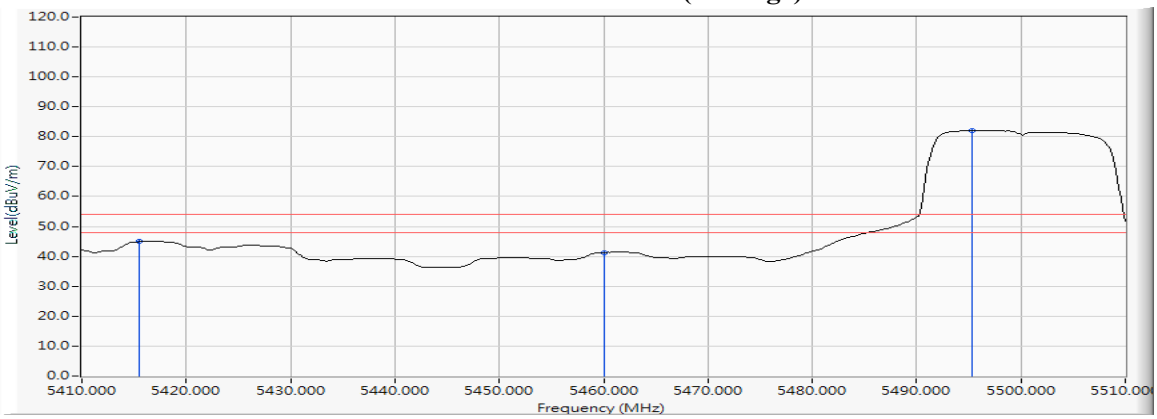


Figure Channel 100: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5500MHz)
Test Date : 2016/11/26

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
100 (Peak)	5415.507	17.879	44.625	62.504	74.00	54.00	Pass
100 (Peak)	5460.000	17.945	40.733	58.677	74.00	54.00	Pass
100 (Peak)	5497.101	18.027	81.288	99.314	--	--	--
100 (Average)	5416.667	17.879	32.907	50.787	74.00	54.00	Pass
100 (Average)	5460.000	17.945	28.756	46.700	74.00	54.00	Pass
100 (Average)	5494.783	18.020	70.522	88.542	--	--	--

Figure Channel 100: Vertical (Peak)

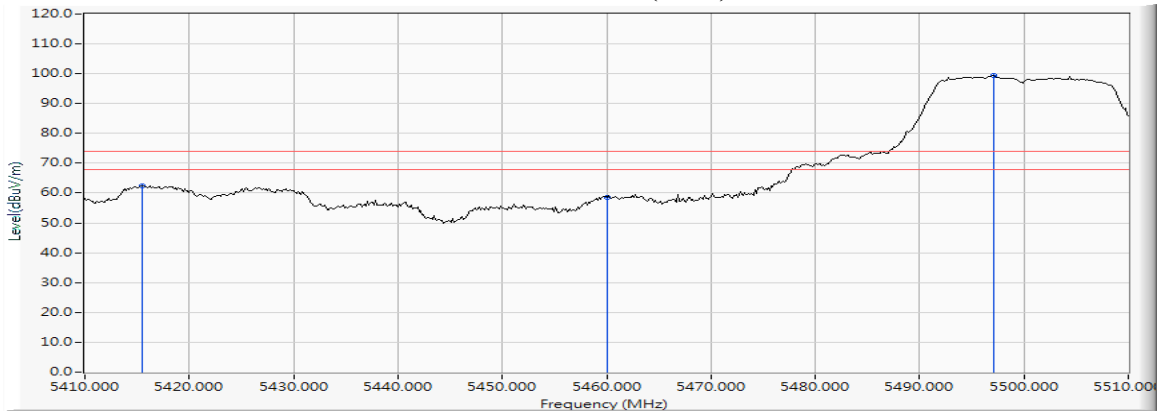
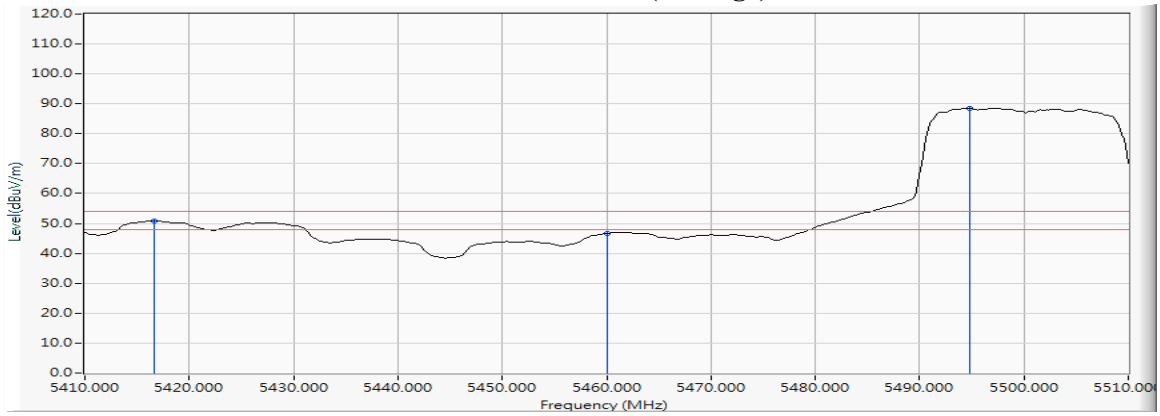


Figure Channel 100: Vertical (Average)



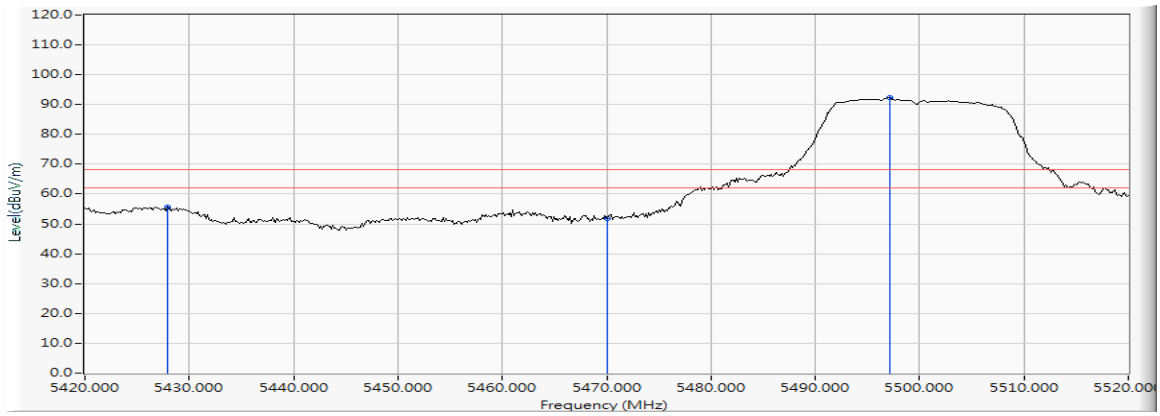
Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

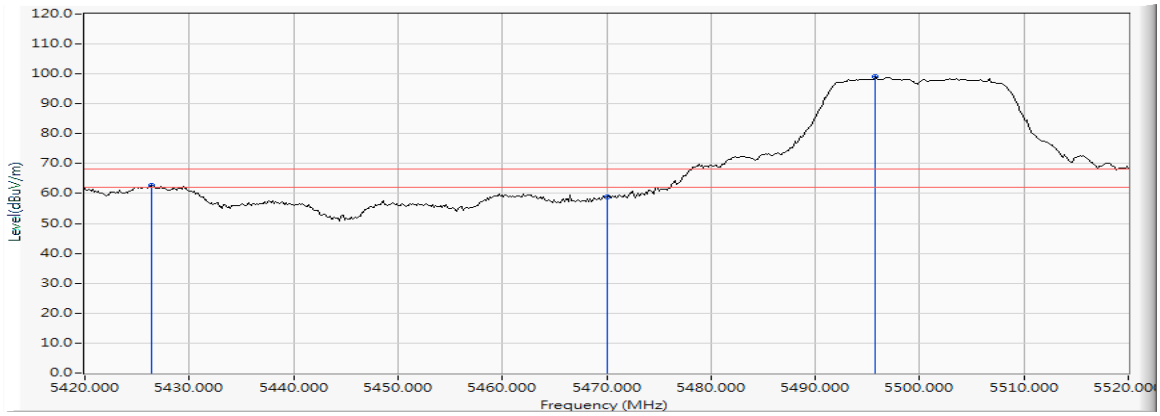
Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5500MHz)
Test Date : 2016/11/26

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5427.971	17.886	37.931	55.817	-12.403	68.220	Pass
Horizontal	5470.000	17.963	33.688	51.650	-16.570	68.220	Pass
Horizontal	5497.101	18.027	74.271	92.297	--	--	--



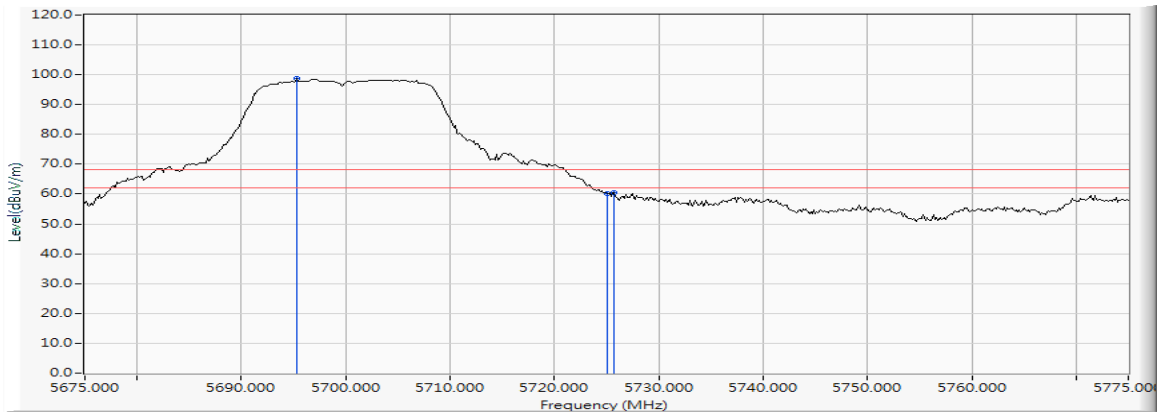
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5426.377	17.886	44.748	62.633	-5.587	68.220	Pass
Vertical	5470.000	17.963	40.766	58.728	-9.492	68.220	Pass
Vertical	5495.797	18.023	81.095	99.118	--	--	--



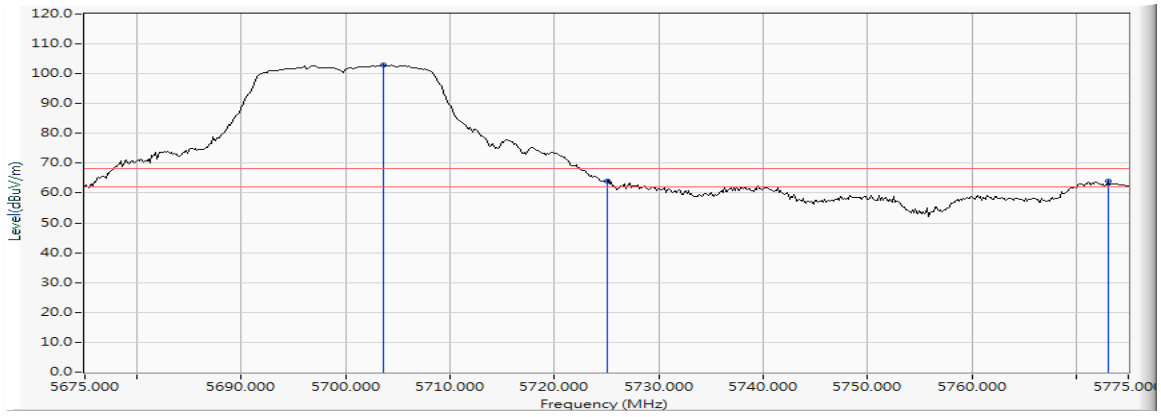
Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5700MHz)
Test Date : 2016/11/26

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5695.290	18.619	80.292	98.910	--	--	--
Horizontal	5725.000	18.711	41.502	60.213	-8.007	68.220	Pass
Horizontal	5725.725	18.712	41.757	60.470	-7.750	68.220	Pass



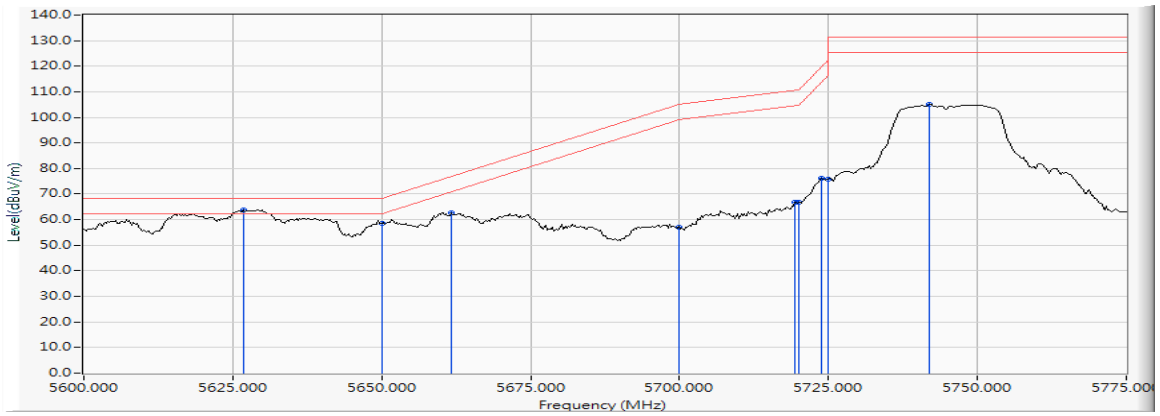
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5703.551	18.643	84.299	102.942	--	--	--
Vertical	5725.000	18.711	45.219	63.930	-4.290	68.220	Pass
Vertical	5773.116	18.862	45.263	64.125	-4.095	68.220	Pass



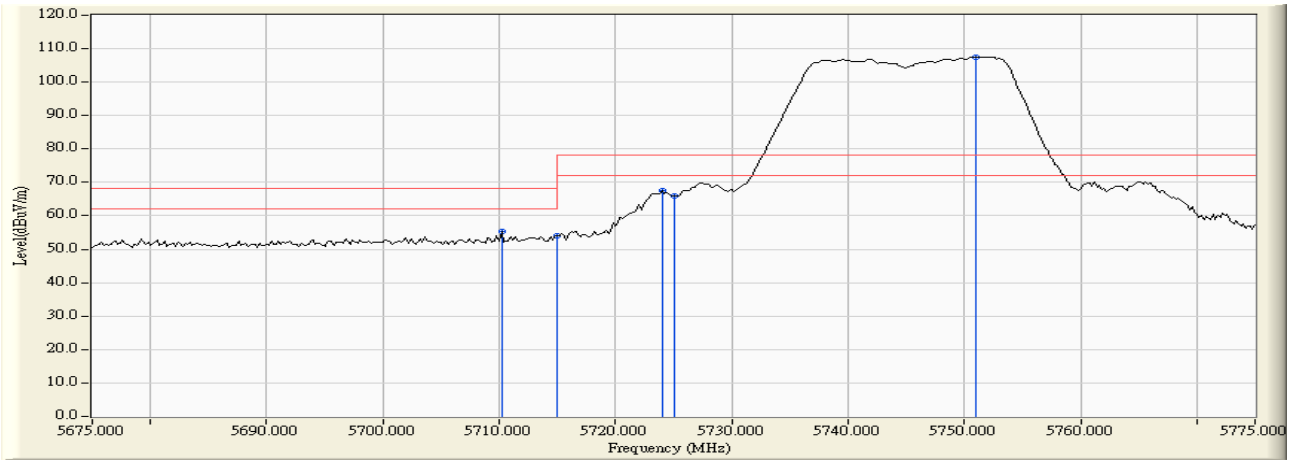
Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5745MHz)
Test Date : 2016/11/26

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5629.420	18.420	41.692	60.112	-8.108	68.220	Pass
Horizontal	5650.000	18.483	35.957	54.439	-13.781	68.220	Pass
Horizontal	5660.362	18.513	39.647	58.160	-17.724	75.884	Pass
Horizontal	5700.000	18.632	34.044	52.676	-52.524	105.200	Pass
Horizontal	5720.000	18.693	43.519	62.212	-48.588	110.800	Pass
Horizontal	5725.000	18.711	53.106	71.817	-50.383	122.200	Pass
Horizontal	5742.029	18.768	82.383	101.151	--	--	--



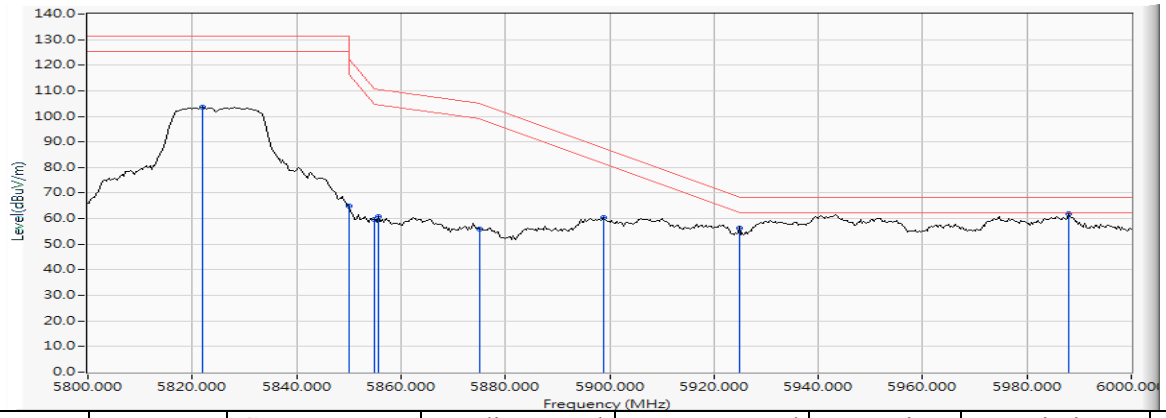
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5626.884	18.414	45.423	63.837	-4.383	68.220	Pass
Vertical	5650.000	18.483	40.052	58.534	-9.686	68.220	Pass
Vertical	5661.630	18.517	44.291	62.808	-14.014	76.822	Pass
Vertical	5700.000	18.632	38.518	57.150	-48.050	105.200	Pass
Vertical	5719.457	18.691	48.286	66.977	-43.671	110.648	Pass
Vertical	5720.000	18.693	48.255	66.948	-43.852	110.800	Pass
Vertical	5723.768	18.706	57.351	76.057	-43.334	119.391	Pass
Vertical	5725.000	18.711	57.251	75.962	-46.238	122.200	Pass
Vertical	5742.029	18.768	86.243	105.011	--	--	--



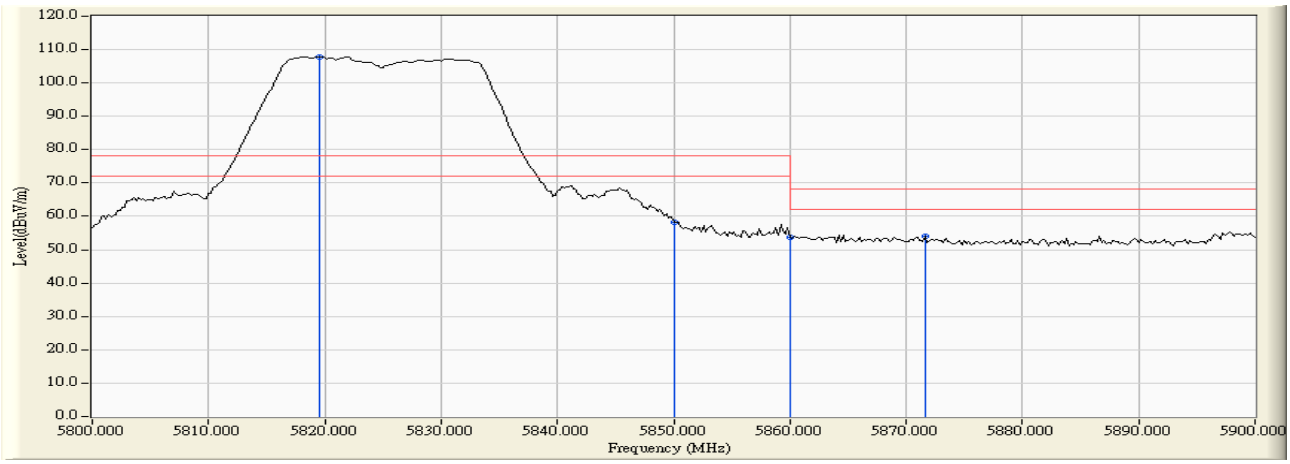
Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5825MHz)
Test Date : 2016/11/26

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5831.594	19.041	82.022	101.064	--	--	--
Horizontal	5850.000	19.103	44.305	63.408	-58.792	122.200	Pass
Horizontal	5855.000	19.115	39.113	58.229	-52.571	110.800	Pass
Horizontal	5855.942	19.118	40.583	59.701	-50.835	110.536	Pass
Horizontal	5875.000	19.177	35.994	55.171	-50.029	105.200	Pass
Horizontal	5906.667	19.270	39.718	58.988	-22.778	81.766	Pass
Horizontal	5925.000	19.333	33.150	52.482	-15.718	68.200	Pass
Horizontal	5985.507	19.507	42.683	62.190	-6.010	68.200	Pass



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5822.029	19.019	84.680	103.698	--	--	--
Vertical	5850.000	19.103	45.916	65.019	-57.181	122.200	Pass
Vertical	5855.000	19.115	40.441	59.557	-51.243	110.800	Pass
Vertical	5855.652	19.117	41.602	60.719	-49.898	110.617	Pass
Vertical	5875.000	19.177	36.816	55.993	-49.207	105.200	Pass
Vertical	5898.841	19.244	41.361	60.605	-26.953	87.558	Pass
Vertical	5925.000	19.333	36.799	56.131	-12.069	68.200	Pass
Vertical	5988.116	19.514	42.254	61.768	-6.432	68.200	Pass



Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5190MHz)
Test Date : 2016/11/26

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
38 (Peak)	5150.000	17.386	43.584	60.970	74.00	54.00	Pass
38 (Peak)	5196.957	17.476	76.710	94.186	--	--	--
38 (Average)	5150.000	17.386	28.047	45.433	74.00	54.00	Pass
38 (Average)	5195.072	17.471	65.264	82.735	--	--	--

Figure Channel 38: Horizontal (Peak)

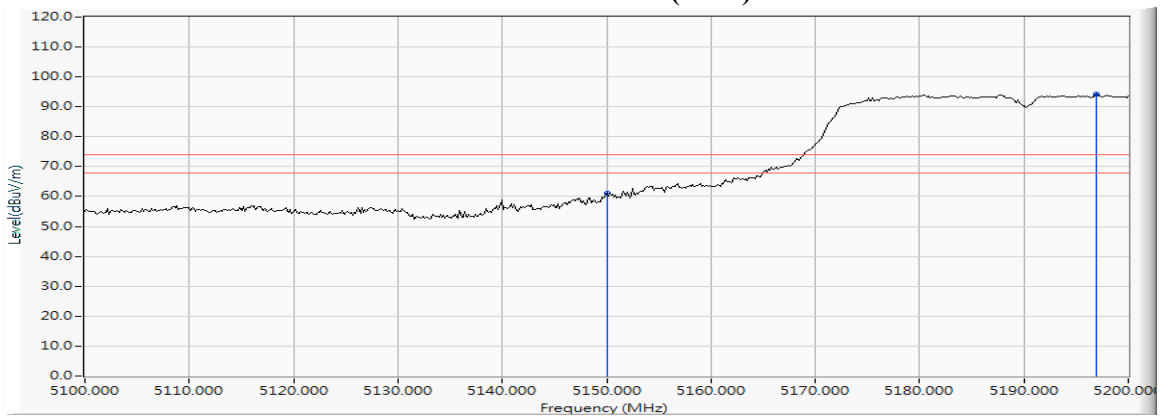
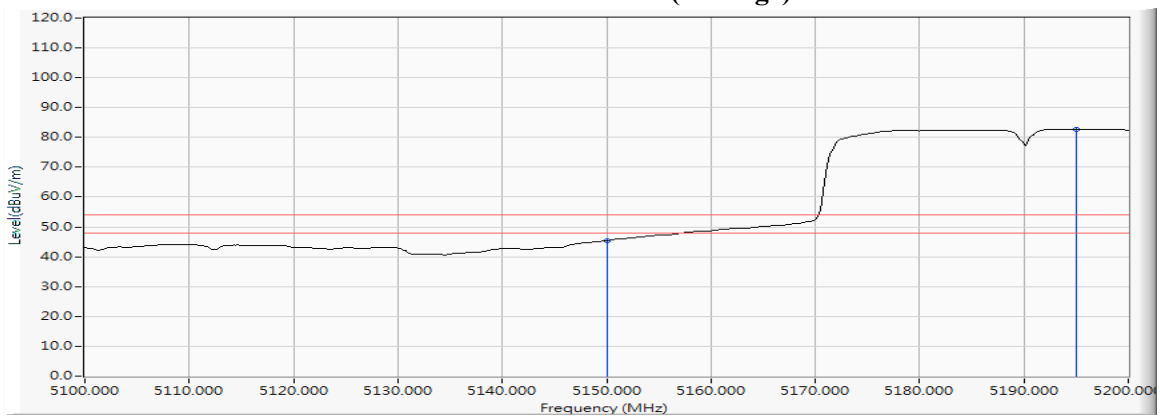


Figure Channel 38: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5190MHz)
Test Date : 2016/11/26

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
38 (Peak)	5150.000	17.386	51.555	68.941	74.00	54.00	Pass
38 (Peak)	5197.101	17.477	85.566	103.042	--	--	--
38 (Average)	5150.000	17.386	35.943	53.329	74.00	54.00	Pass
38 (Average)	5199.275	17.481	74.015	91.496	--	--	--

Figure Channel 38: Vertical (Peak)

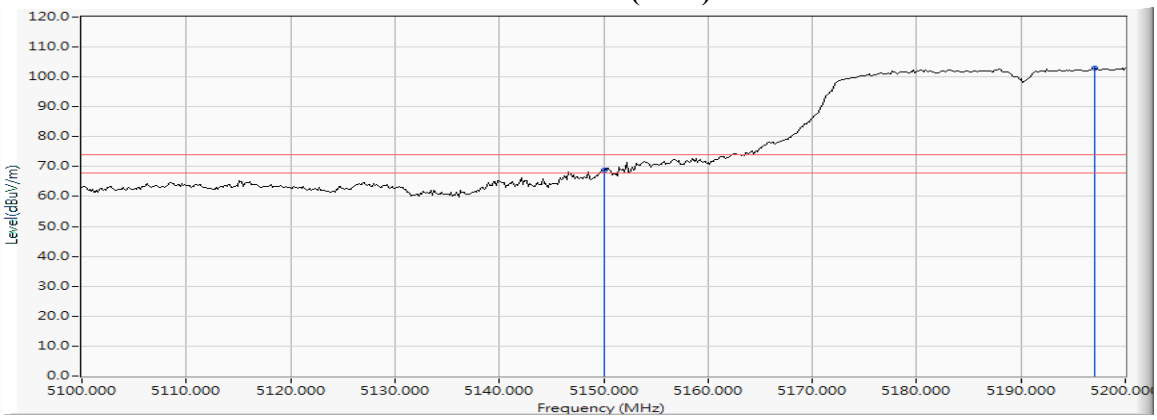
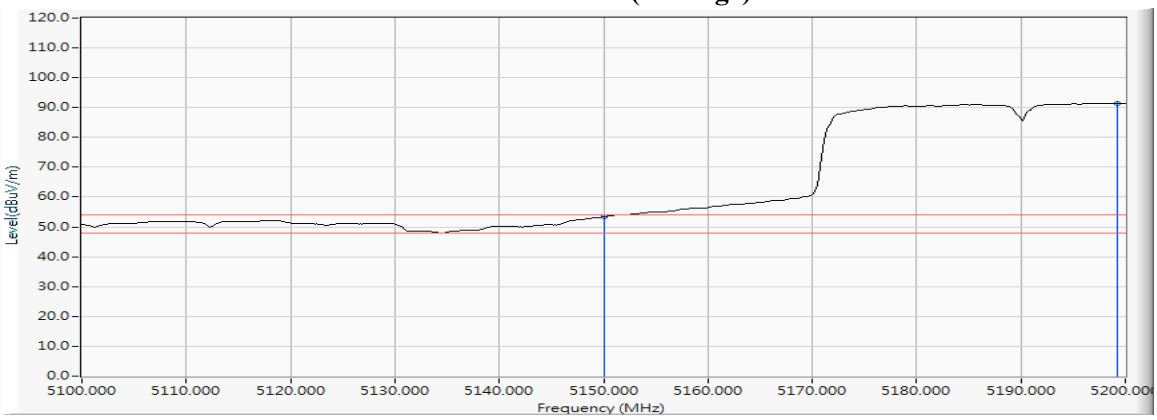


Figure Channel 38: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5310MHz)
Test Date : 2016/11/26

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
62 (Peak)	5317.391	17.687	77.219	94.906	--	--	--
62 (Peak)	5350.000	17.758	40.861	58.619	74.00	54.00	Pass
62 (Peak)	5353.333	17.763	42.577	60.340	74.00	54.00	Pass
62 (Average)	5319.130	17.688	65.493	83.182	--	--	--
62 (Average)	5350.000	17.758	25.439	43.197	74.00	54.00	Pass

Figure Channel 62: Horizontal (Peak)

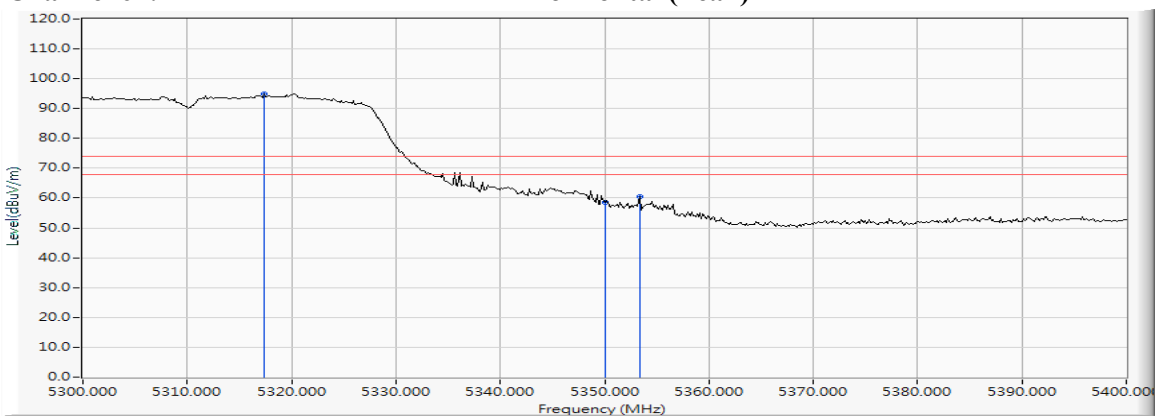
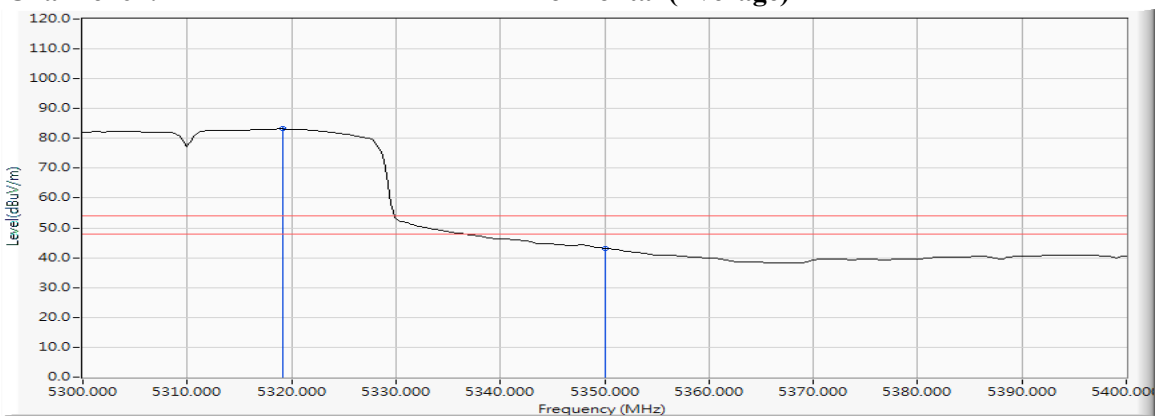


Figure Channel 62: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5310MHz)
Test Date : 2016/11/26

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
62 (Peak)	5301.159	17.664	85.396	103.061	--	--	--
62 (Peak)	5350.000	17.758	52.934	70.692	74.00	54.00	Pass
62 (Peak)	5351.884	17.760	52.937	70.698	74.00	54.00	Pass
62 (Average)	5301.304	17.665	73.444	91.109	--	--	--
62 (Average)	5350.000	17.758	35.690	53.448	74.00	54.00	Pass

Figure Channel 62: Vertical (Peak)

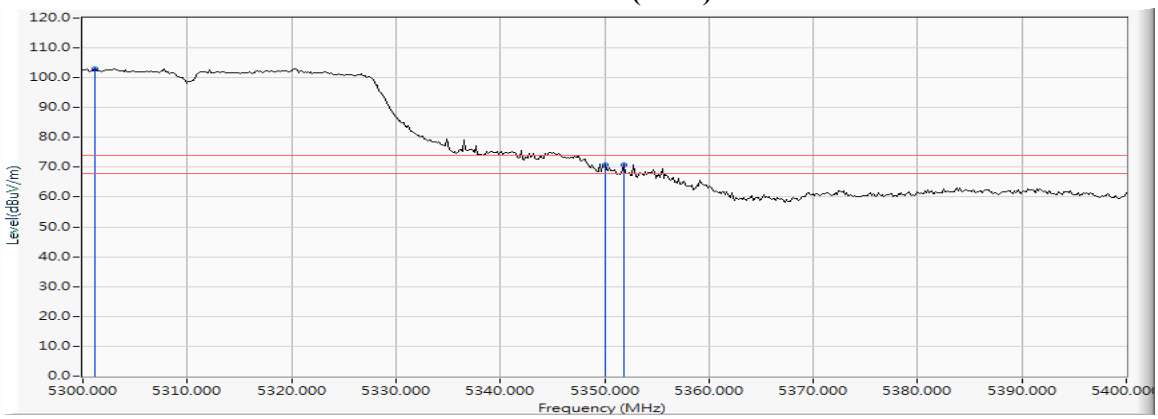
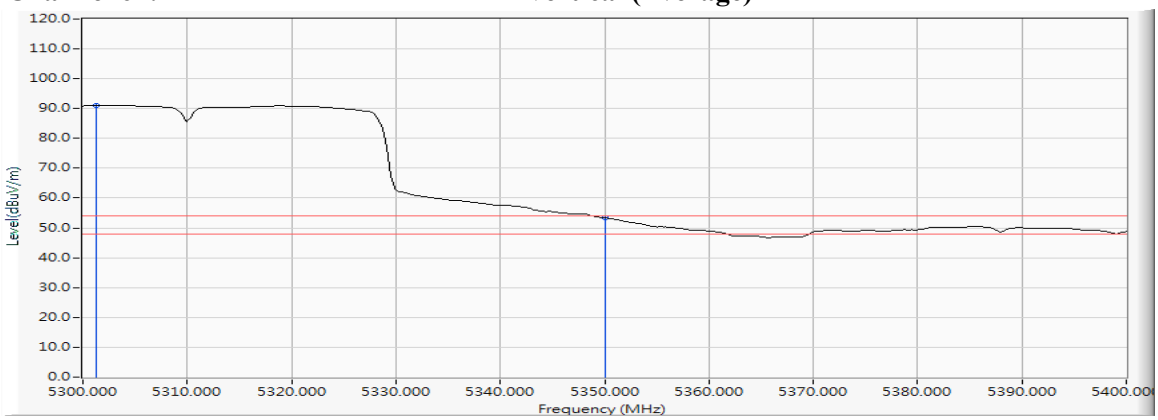


Figure Channel 62: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5510MHz)
Test Date : 2016/11/26

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
102 (Peak)	5414.203	17.875	40.488	58.362	74.00	54.00	Pass
102 (Peak)	5460.000	17.945	39.903	57.847	74.00	54.00	Pass
102 (Peak)	5499.855	18.035	72.574	90.609	--	--	--
102 (Average)	5414.928	17.876	27.250	45.127	74.00	54.00	Pass
102 (Average)	5460.000	17.945	23.579	41.523	74.00	54.00	Pass
102 (Average)	5498.841	18.032	61.397	79.429	--	--	--

Figure Channel 102: Horizontal (Peak)

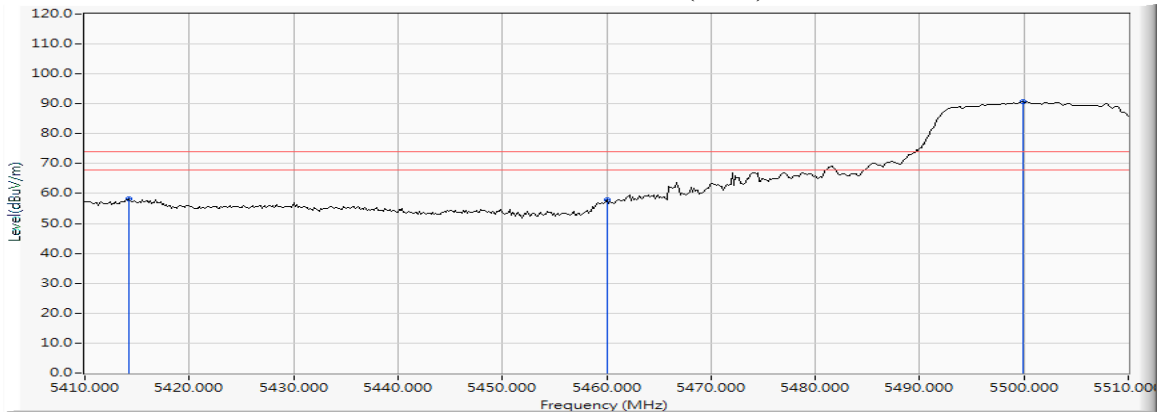
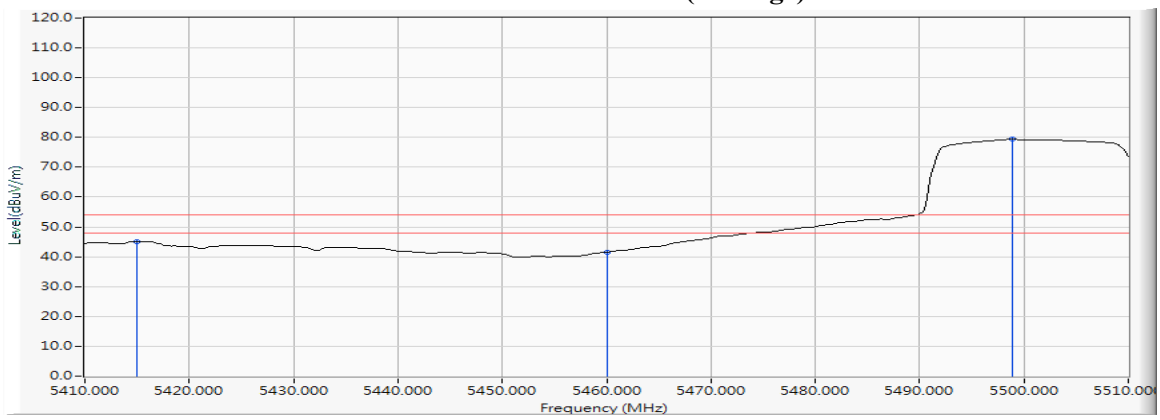


Figure Channel 102: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5510MHz)
Test Date : 2016/11/26

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
102 (Peak)	5459.710	17.944	46.398	64.342	74.00	54.00	Pass
102 (Peak)	5460.000	17.945	45.814	63.758	74.00	54.00	Pass
102 (Peak)	5499.275	18.033	79.751	97.784	--	--	--
102 (Average)	5415.217	17.878	33.616	51.494	74.00	54.00	Pass
102 (Average)	5460.000	17.945	30.209	48.153	74.00	54.00	Pass
102 (Average)	5498.986	18.033	68.177	86.209	--	--	--

Figure Channel 102: Vertical (Peak)

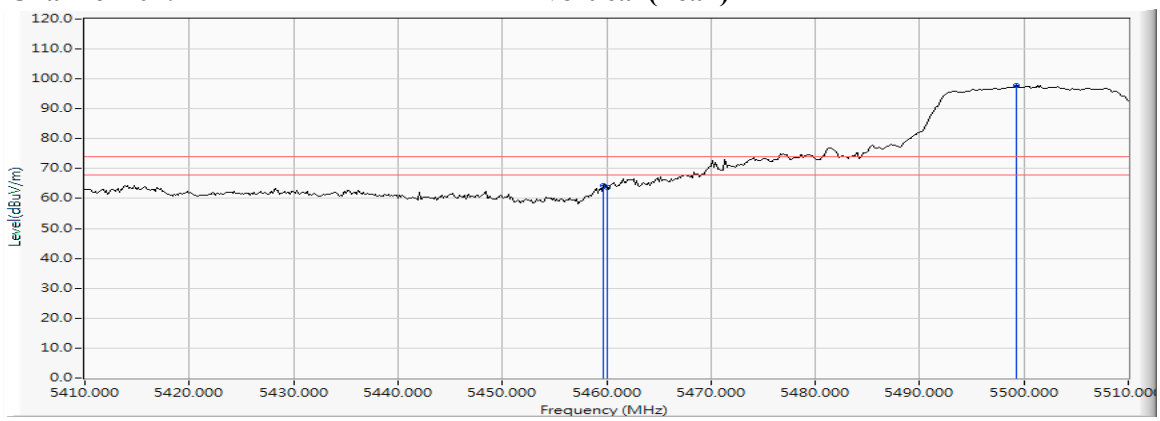
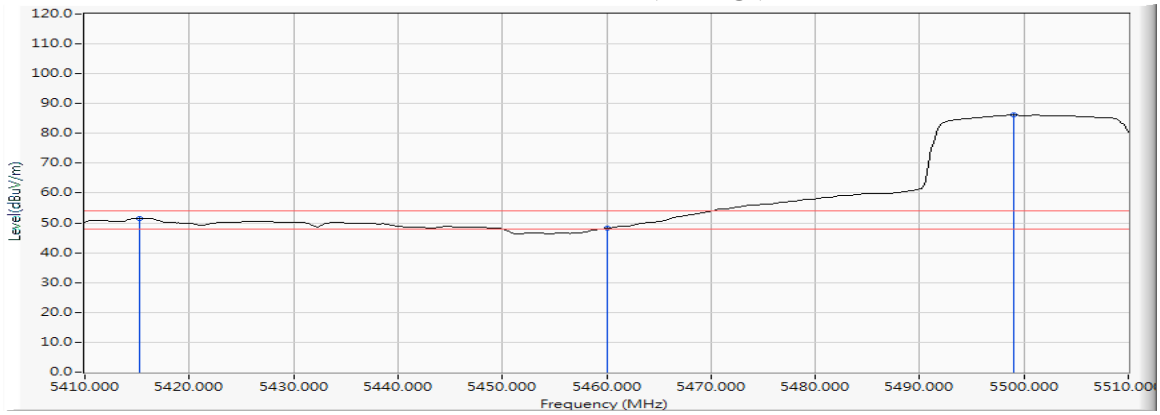


Figure Channel 102: Vertical (Average)



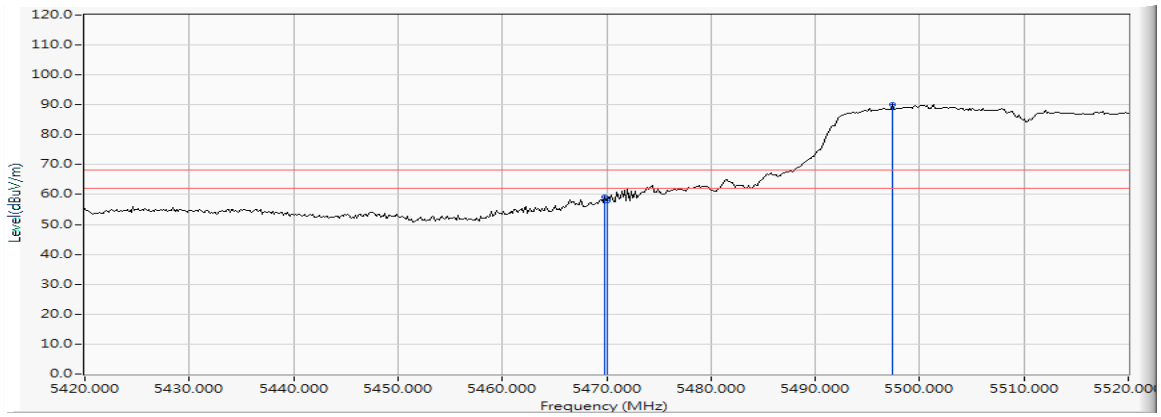
Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

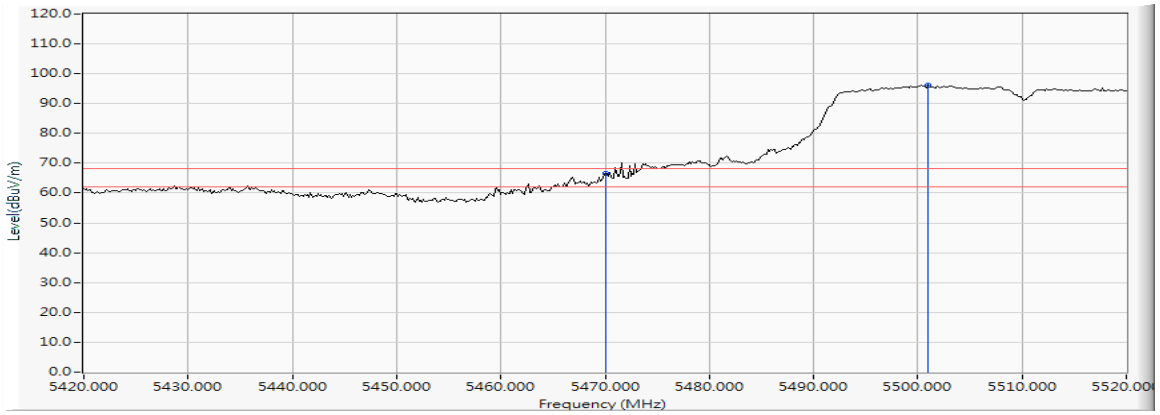
Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5510MHz)
Test Date : 2016/11/26

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5469.855	17.962	41.340	59.302	-8.918	68.220	Pass
Horizontal	5470.000	17.963	40.015	57.977	-10.243	68.220	Pass
Horizontal	5497.391	18.027	72.095	90.122	--	--	--



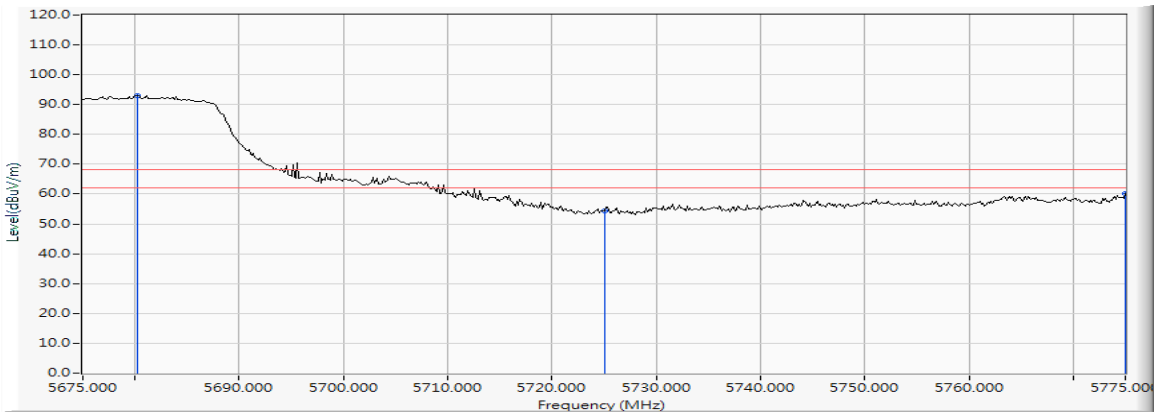
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5470.000	17.963	48.570	66.532	-1.688	68.220	Pass
Vertical	5501.014	18.040	78.111	96.150	--	--	--



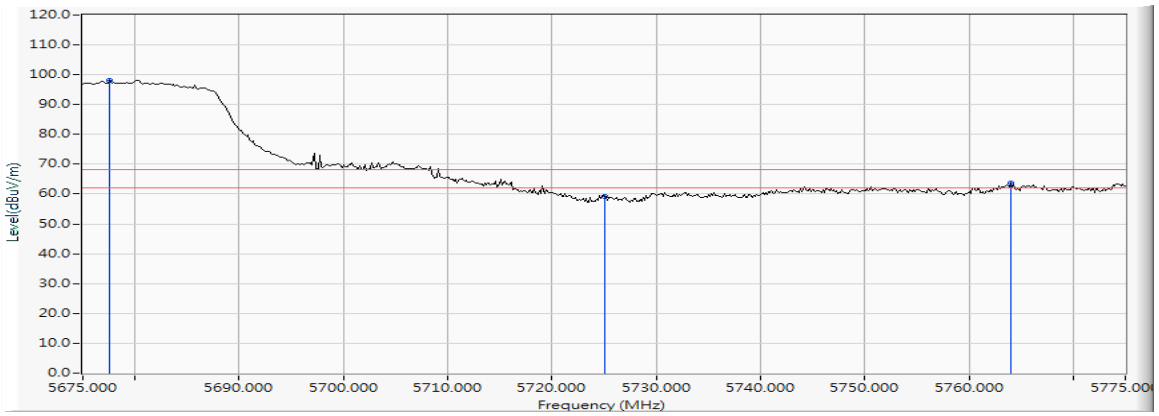
Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5670MHz)
Test Date : 2016/11/26

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5680.217	18.572	74.439	93.012	--	--	--
Horizontal	5725.000	18.711	35.797	54.508	-13.712	68.220	Pass
Horizontal	5775.000	18.868	41.157	60.026	-8.194	68.220	Pass



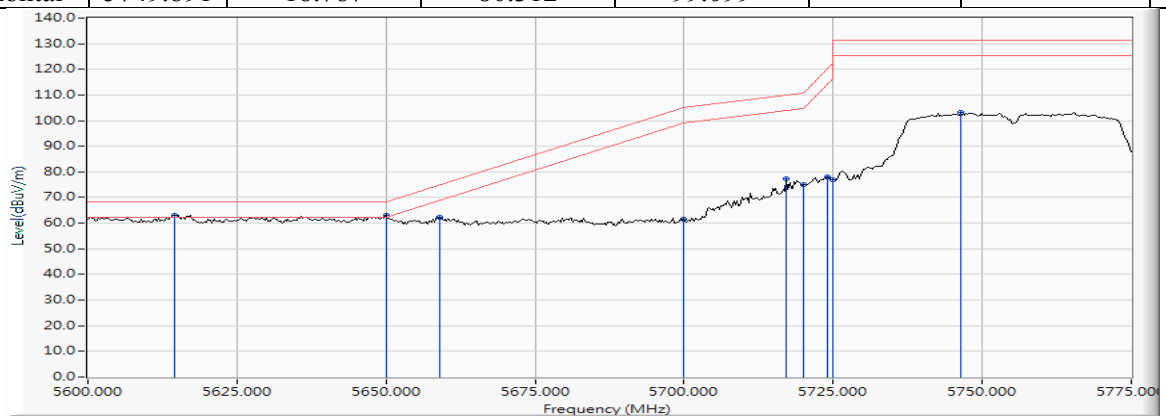
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5677.609	18.565	79.565	98.130	--	--	--
Vertical	5725.000	18.711	40.452	59.163	-9.057	68.220	Pass
Vertical	5763.986	18.829	44.800	63.630	-4.590	68.220	Pass



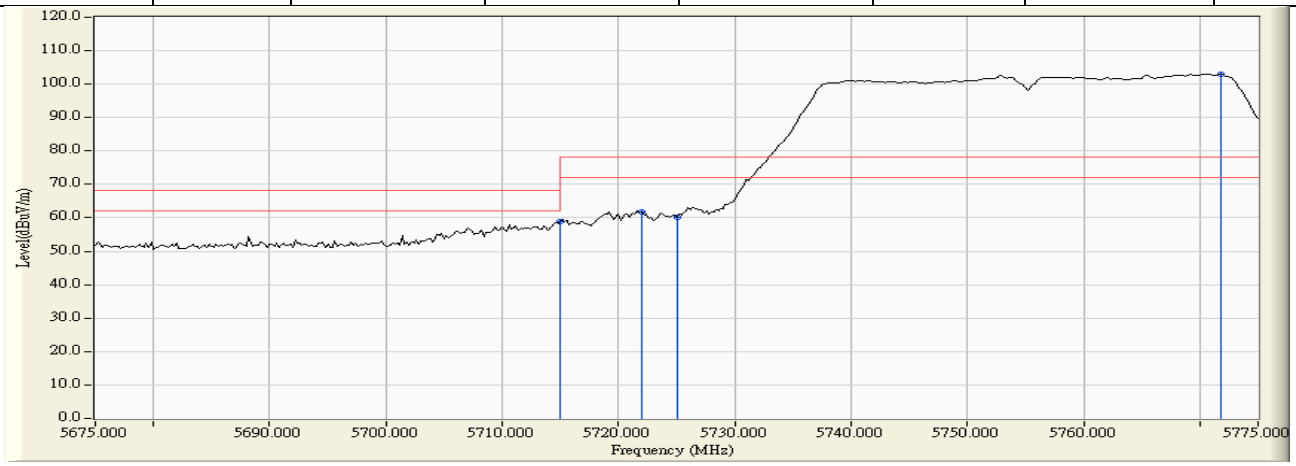
Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5755MHz)
Test Date : 2016/11/26

RF Radiated Measurement :

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5648.696	18.478	40.357	58.835	-9.385	68.220	Pass
Horizontal	5650.000	18.483	39.398	57.880	-10.340	68.220	Pass
Horizontal	5693.080	18.612	40.517	59.129	-40.953	100.082	Pass
Horizontal	5700.000	18.632	38.514	57.146	-48.054	105.200	Pass
Horizontal	5718.949	18.690	54.012	72.702	-37.804	110.506	Pass
Horizontal	5720.000	18.693	53.057	71.750	-39.050	110.800	Pass
Horizontal	5723.261	18.704	54.231	72.935	-45.300	118.235	Pass
Horizontal	5725.000	18.711	53.730	72.441	-49.759	122.200	Pass
Horizontal	5749.891	18.787	80.312	99.099	--	--	--



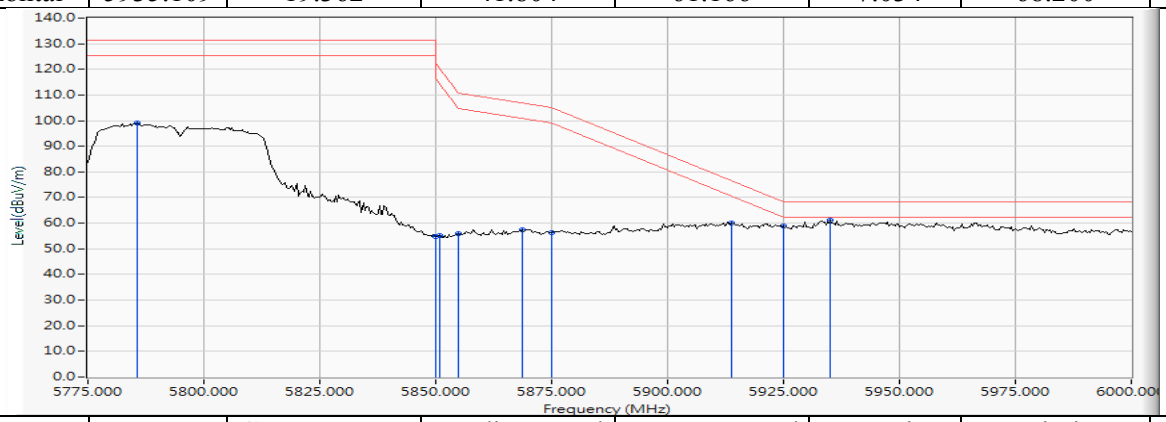
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5614.457	18.383	44.756	63.139	-5.081	68.220	Pass
Vertical	5650.000	18.483	44.620	63.102	-5.118	68.220	Pass
Vertical	5659.094	18.510	43.824	62.334	-12.612	74.946	Pass
Vertical	5700.000	18.632	42.957	61.589	-43.611	105.200	Pass
Vertical	5717.174	18.684	58.698	77.382	-32.627	110.009	Pass
Vertical	5720.000	18.693	56.397	75.090	-35.710	110.800	Pass
Vertical	5724.022	18.707	59.283	77.990	-41.980	119.970	Pass
Vertical	5725.000	18.711	58.167	76.878	-45.322	122.200	Pass
Vertical	5746.341	18.779	84.333	103.111	--	--	--



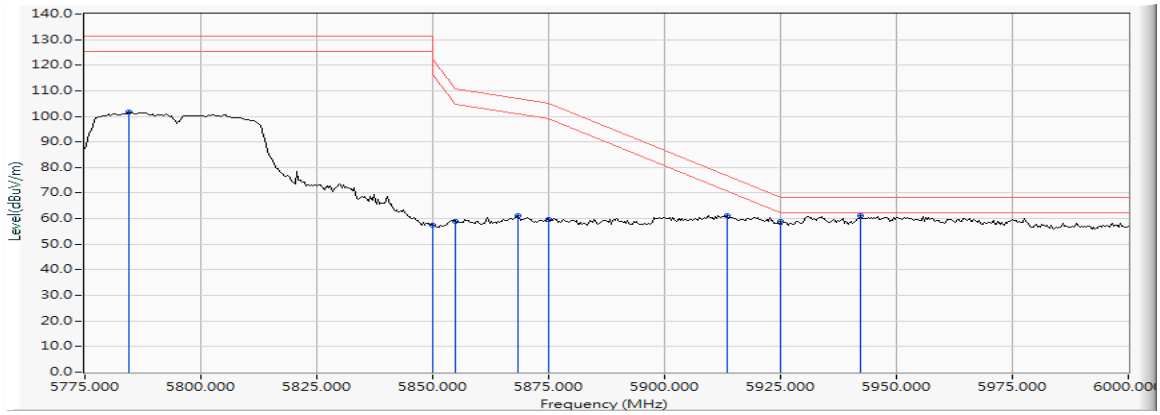
Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5795MHz)
Test Date : 2016/11/26

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5785.761	18.902	80.127	99.029	--	--	--
Horizontal	5850.000	19.103	35.828	54.931	-67.269	122.200	Pass
Horizontal	5850.978	19.106	36.048	55.154	-64.816	119.970	Pass
Horizontal	5855.000	19.115	36.796	55.912	-54.888	110.800	Pass
Horizontal	5868.587	19.154	38.417	57.571	-49.425	106.996	Pass
Horizontal	5875.000	19.177	37.228	56.405	-48.795	105.200	Pass
Horizontal	5913.913	19.296	40.781	60.077	-16.327	76.404	Pass
Horizontal	5925.000	19.333	39.704	59.036	-9.164	68.200	Pass
Horizontal	5935.109	19.362	41.804	61.166	-7.034	68.200	Pass

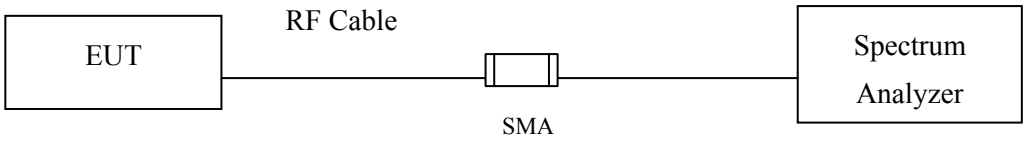


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5784.457	18.897	82.656	101.554	--	--	--
Vertical	5850.000	19.103	38.415	57.518	-64.682	122.200	Pass
Vertical	5855.000	19.115	39.798	58.914	-51.886	110.800	Pass
Vertical	5868.261	19.153	41.984	61.137	-45.950	107.087	Pass
Vertical	5875.000	19.177	40.421	59.598	-45.602	105.200	Pass
Vertical	5913.587	19.295	41.777	61.072	-15.574	76.646	Pass
Vertical	5925.000	19.333	39.697	59.029	-9.171	68.200	Pass
Vertical	5942.283	19.380	41.801	61.182	-7.018	68.200	Pass



7. 6 dB Bandwidth

7.1. Test Setup



7.2. Limits

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

7.3. Test Procedure

The EUT was setup to ANSI C63.10, 2013; tested to UNII test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

7.4. Uncertainty

±671.83Hz

7.5. Test Result of 6 dB Bandwidth

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : 6 dB Bandwidth Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps)
Test Date : 2016/11/29

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745	15900	>500	Pass
157	5785	15750	>500	Pass
165	5825	15900	>500	Pass

Figure Channel 149:

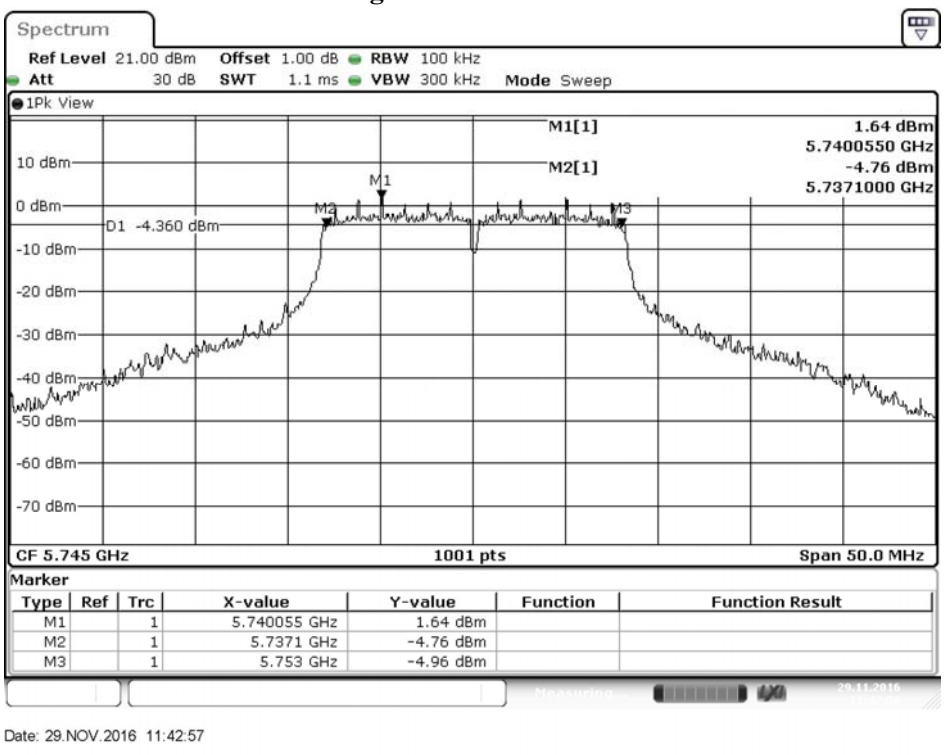
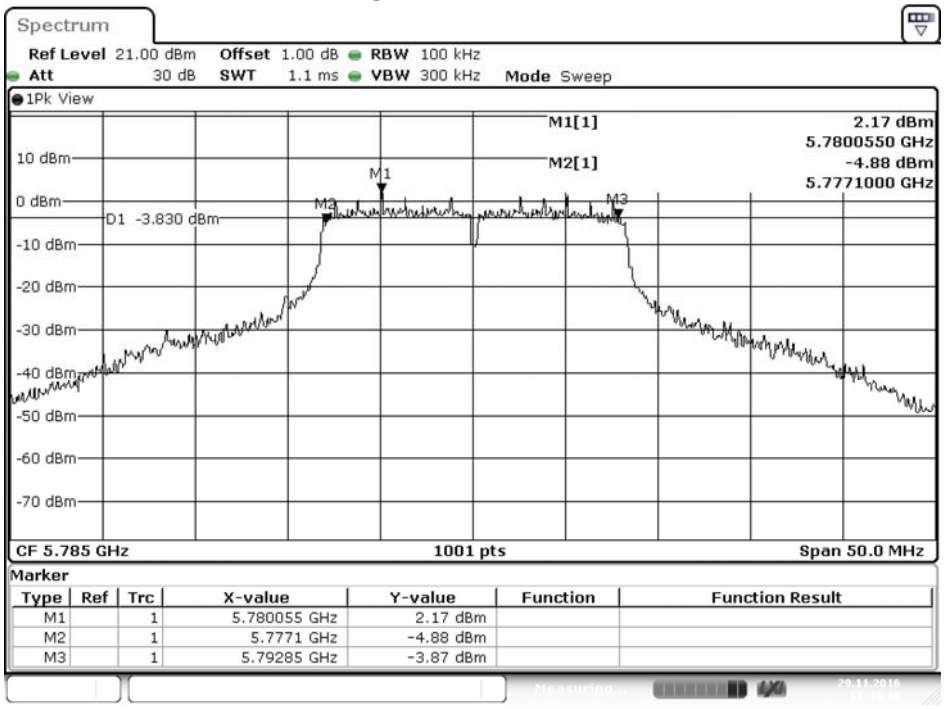
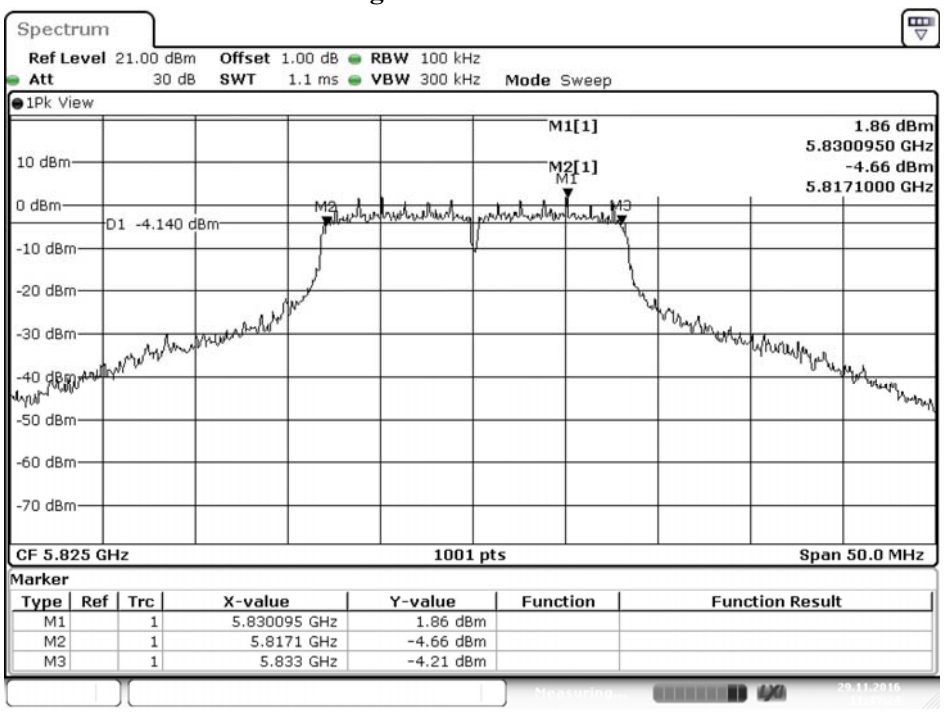


Figure Channel 157:



Date: 29.NOV.2016 11:44:10

Figure Channel 165:



Date: 29.NOV.2016 11:45:25

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : 6 dB Bandwidth Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps)
Test Date : 2016/11/29

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745	16950	>500	Pass
157	5785	16900	>500	Pass
165	5825	16850	>500	Pass

Figure Channel 149:

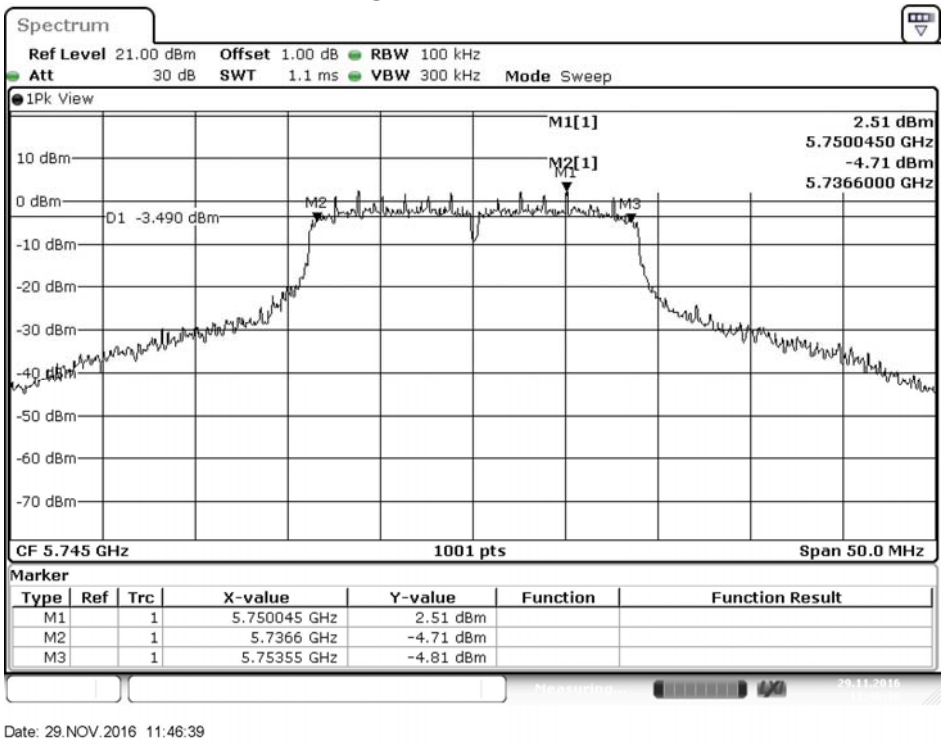
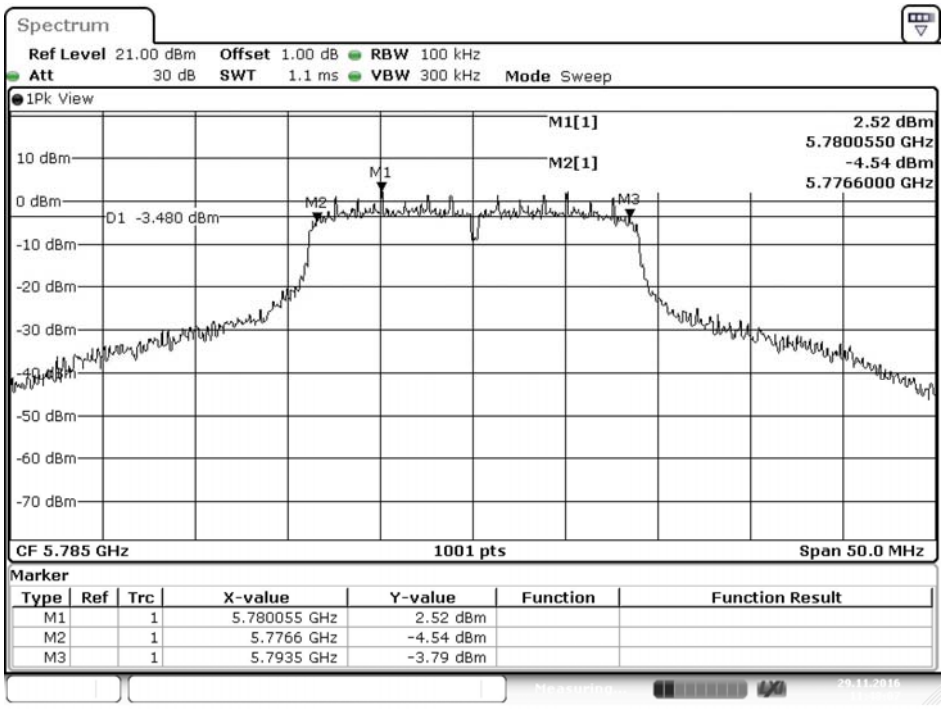
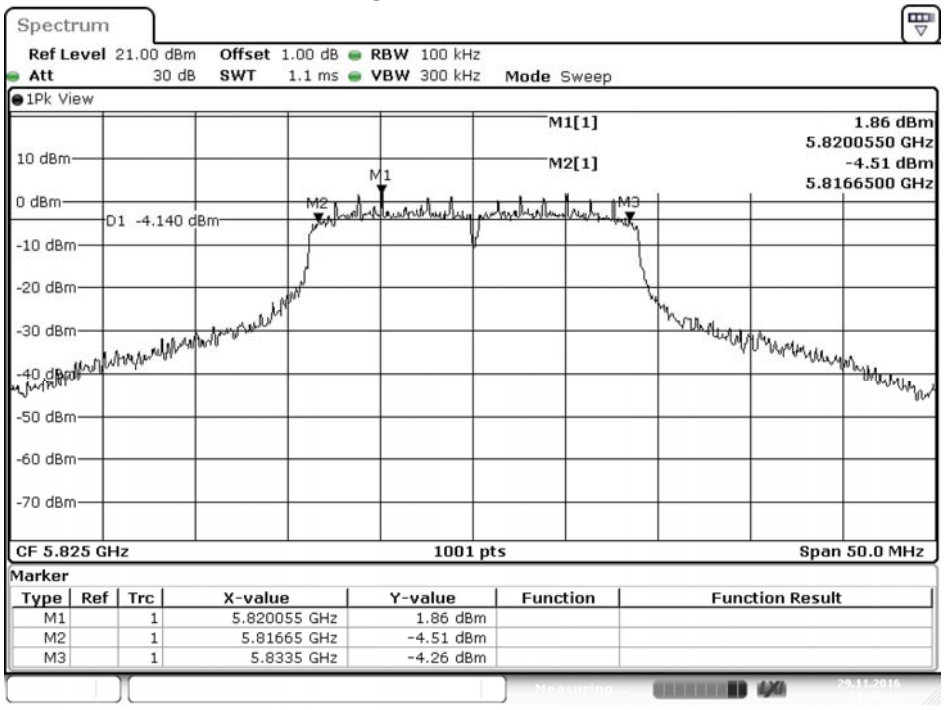


Figure Channel 157:



Date: 29.NOV.2016 11:48:08

Figure Channel 165:



Date: 29.NOV.2016 11:49:19

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : 6 dB Bandwidth Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps)
Test Date : 2016/11/29

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
151	5755	35500	>500	Pass
159	5795	35500	>500	Pass

Figure Channel 151:

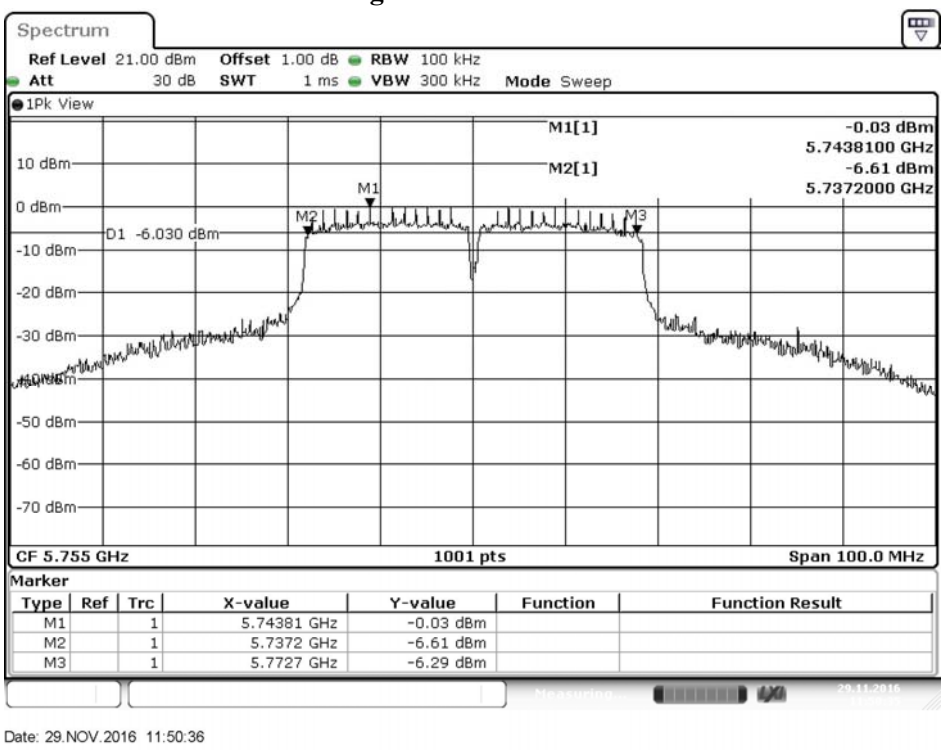
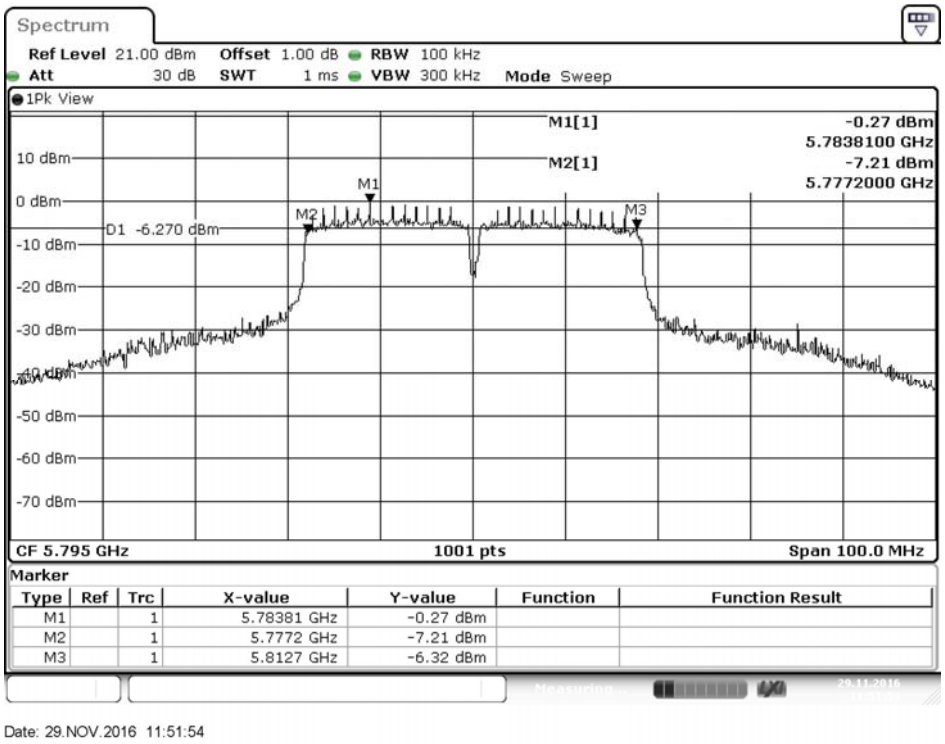


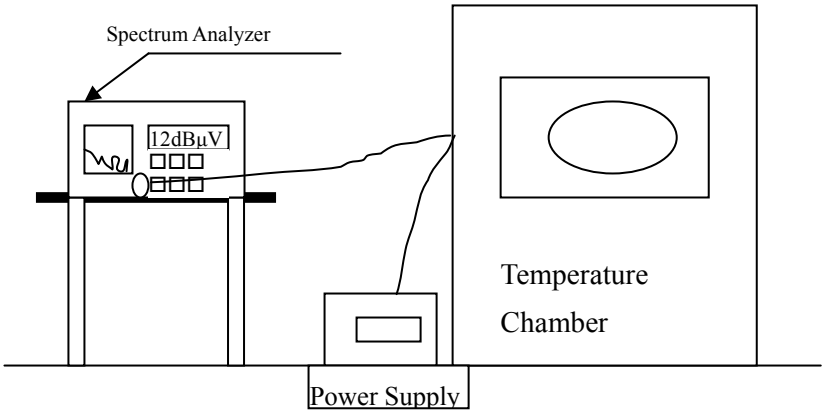
Figure Channel 159:



Date: 29.NOV.2016 11:51:54

8. Frequency Stability

8.1. Test Setup



8.2. Limits

Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified

8.3. Test Procedure

The EUT was setup to ANSI C63.10, 2013; tested to UNII test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

8.4. Uncertainty

±671.83Hz

8.5. Test Result of Frequency Stability

Product : RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with I/O
Test Item : Frequency Stability
Test Mode : Carrier Wave
Test Date : 2016/11/29

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
Tnom (20)℃	Vnom (110)V	36	5180.0000	5179.9980	0.0020
		38	5190.0000	5189.9960	0.0040
		44	5220.0000	5219.9970	0.0030
		46	5230.0000	5229.9950	0.0050
		48	5240.0000	5239.9980	0.0020
		52	5260.0000	5259.9960	0.0040
		54	5270.0000	5269.9940	0.0060
		60	5300.0000	5299.9970	0.0030
		62	5310.0000	5309.9950	0.0050
		64	5320.0000	5319.9960	0.0040
		100	5500.0000	5499.9980	0.0020
		102	5510.0000	5509.9970	0.0030
		110	5550.0000	5549.9960	0.0040
		116	5580.0000	5579.9980	0.0020
		134	5670.0000	5669.9950	0.0050
		140	5700.0000	5699.9980	0.0020
		149	5745.0000	5744.9950	0.0050
		151	5755.0000	5754.9970	0.0030
		157	5785.0000	5784.9960	0.0040
		159	5795.0000	5794.9970	0.0030
		165	5825.0000	5824.9960	0.0040

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
Tmax (50)℃	Vmax (126.5)V	36	5180.0000	5179.9950	0.0050
		38	5190.0000	5189.9970	0.0030
		44	5220.0000	5219.9980	0.0020
		46	5230.0000	5229.9970	0.0030
		48	5240.0000	5239.9950	0.0050
		52	5260.0000	5259.9970	0.0030
		54	5270.0000	5269.9970	0.0030
		60	5300.0000	5299.9980	0.0020
		62	5310.0000	5309.9970	0.0030
		64	5320.0000	5319.9980	0.0020
		100	5500.0000	5499.9980	0.0020
		102	5510.0000	5509.9960	0.0040
		110	5550.0000	5549.9970	0.0030
		116	5580.0000	5579.9980	0.0020
		134	5670.0000	5669.9950	0.0050
		140	5700.0000	5699.9980	0.0020
		149	5745.0000	5744.9950	0.0050
		151	5755.0000	5754.9960	0.0040
		157	5785.0000	5784.9970	0.0030
		159	5795.0000	5794.9960	0.0040
		165	5825.0000	5824.9960	0.0040

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
Tmax (50)℃	Vmin (93.5)V	36	5180.0000	5179.9970	0.0030
		38	5190.0000	5189.9950	0.0050
		44	5220.0000	5219.9980	0.0020
		46	5230.0000	5229.9960	0.0040
		48	5240.0000	5239.9950	0.0050
		52	5260.0000	5259.9980	0.0020
		54	5270.0000	5269.9970	0.0030
		60	5300.0000	5299.9980	0.0020
		62	5310.0000	5309.9970	0.0030
		64	5320.0000	5319.9950	0.0050
		100	5500.0000	5499.9960	0.0040
		102	5510.0000	5509.9970	0.0030
		110	5550.0000	5549.9950	0.0050
		116	5580.0000	5579.9960	0.0040
		134	5670.0000	5669.9970	0.0030
		140	5700.0000	5699.9980	0.0020
		149	5745.0000	5744.9970	0.0030
		151	5755.0000	5754.9980	0.0020
		157	5785.0000	5784.9950	0.0050
		159	5795.0000	5794.9980	0.0020
		165	5825.0000	5824.9960	0.0040

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
Tmin (0)℃	Vmax (126.5)V	36	5180.0000	5179.9970	0.0030
		38	5190.0000	5189.9950	0.0050
		44	5220.0000	5219.9980	0.0020
		46	5230.0000	5229.9970	0.0030
		48	5240.0000	5239.9950	0.0050
		52	5260.0000	5259.9960	0.0040
		54	5270.0000	5269.9980	0.0020
		60	5300.0000	5299.9950	0.0050
		62	5310.0000	5309.9960	0.0040
		64	5320.0000	5319.9950	0.0050
		100	5500.0000	5499.9960	0.0040
		102	5510.0000	5509.9980	0.0020
		110	5550.0000	5549.9970	0.0030
		116	5580.0000	5579.9970	0.0030
		134	5670.0000	5669.9950	0.0050
		140	5700.0000	5699.9960	0.0040
		149	5745.0000	5744.9970	0.0030
		151	5755.0000	5754.9960	0.0040
		157	5785.0000	5784.9950	0.0050
		159	5795.0000	5794.9980	0.0020
		165	5825.0000	5824.9970	0.0030

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
Tmin (0)℃	Vmin (93.5)V	36	5180.0000	5179.9950	0.0050
		38	5190.0000	5189.9960	0.0040
		44	5220.0000	5219.9980	0.0020
		46	5230.0000	5229.9950	0.0050
		48	5240.0000	5239.9970	0.0030
		52	5260.0000	5259.9980	0.0020
		54	5270.0000	5269.9950	0.0050
		60	5300.0000	5299.9950	0.0050
		62	5310.0000	5309.9960	0.0040
		64	5320.0000	5319.9980	0.0020
		100	5500.0000	5499.9950	0.0050
		102	5510.0000	5509.9960	0.0040
		110	5550.0000	5549.9960	0.0040
		116	5580.0000	5579.9950	0.0050
		134	5670.0000	5669.9980	0.0020
		140	5700.0000	5699.9950	0.0050
		149	5745.0000	5744.9970	0.0030
		151	5755.0000	5754.9960	0.0040
		157	5785.0000	5784.9970	0.0030
		159	5795.0000	5794.9950	0.0050
		165	5825.0000	5824.9960	0.0040

9. EMI Reduction Method During Compliance Testing

No modification was made during testing.