

FCC Test Report

Product Name	Wireless gateway			
Model No	MGate W5xyz, MGate W5xyz-T x represent the number of serial port. yz represent series number. -T represent wide temperature model			
FCC ID	SLE-W5X08			

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

Date of Receipt	Jul. 01, 2015
Issued Date	Sep. 23, 2015
Report No.	1570097R-RFUSP47V00
Report Version	V1.0
BC-MRA	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 report of the equipment and evaluated measurement uncertainty herein.

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Test Report

Issued Date: Sep. 23, 2015 Report No.: 1570097R-RFUSP47V00



Product Name	Wireless gateway			
Applicant	MOXA Inc.			
A 11	FL.4, NO.135 LANE 235, BAOQIAO RD. XINDIAN DIST., NEW			
Address	TAIPEI CITY, TAIWAN			
Manufacturer	MOXA Inc.			
	MGate W5xyz, MGate W5xyz-T			
Model No	x represent the number of serial port.			
WIOdel No.	yz represent series number.			
	-T represent wide temperature model			
FCC ID.	SLE-W5X08			
EUT Rated Voltage	DC 12V			
EUT Test Voltage	DC 12V			
Trade Name	MOXA			
Applicable Standard	FCC CFR Title 47 Part 15 Subpart E: 2014			
	ANSI C63.4: 2014, ANSI C63.10: 2013			
	789033 D02 General UNII Test Procedures New Rules v01			
Test Result	Complied			

Documented By :

:

:

lin oanne.

(Senior Adm. Specialist / Joanne Lin)

Tested By

Eason chen

(Engineer / Eason Chen)

Approved By

(Director / Vincent Lin)



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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Wireless gateway			
Trade Name	MOXA			
FCC ID.	SLE-W5X08			
Model No.	MGate W5xyz, MGate W5xyz-T			
	x represent the number of serial port.			
	yz represent series number.			
	-T represent wide temperature model			
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	1.73dBi For 5.15~5.25GHz
				1.73dBi For 5.25~5.35GHz
				1.73dBi For 5.47~5.725GHz
				1.73dBi For 5.725~5.825GHz

Note: The antenna of EUT is conform to FCC 15.203

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

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 36:	5180 MHz	Channel 40:	5200 MHz	Channel 44:	5220 MHz	Channel 48:	5240 MHz
Channel 52:	5260 MHz	Channel 56:	5280 MHz	Channel 60:	5300 MHz	Channel 64:	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 38:	5190 MHz	Channel 46:	5230 MHz	Channel 54:	5270 MHz	Channel 62:	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 Wireless gateway 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. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11a is 6Mbps > 802.11n-20BW is 7.2Mbps and 802.11n-40BW is 15Mbps
- 4. 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.

Model No.	Description
MGate W5108	1 port wireless Modbus gateway
MGate W5208	2 port wireless Modbus gateway
MGate W5108-T	1 port wireless Modbus gateway, -40~75 operating temperature
MGate W5208-T	2 port wireless Modbus gateway, -40~75 operating temperature

5. The different of each model is shown as below:

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



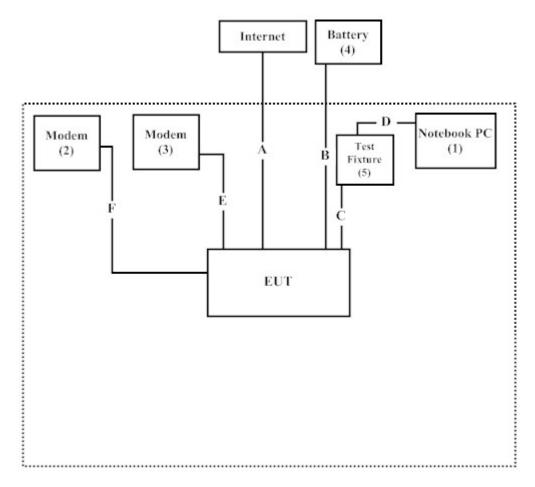
1.3. Tested System Datails

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	РРТ	N/A	Non-Shielded, 0.8m
2	Modem	ACEEX	DM-1414	0102027536	Non-Shielded, 1.8m
3	Modem	ACEEX	DM-1414	0102027550	Non-Shielded, 1.8m
4	DC 12V Battery	Chen Guang	66N50	N/A	N/A
5	Test Fixture	MOXA	N/A	N/A	N/A

Signa	ll Cable Type	Signal cable Description				
Α	LAN Cable	Non-Shielded, 1.8m				
В	Power Cable	Non-Shielded, 1.8m				
С	RS-232 Cable	Non-Shielded, 1.4m				
D	USB Cable	Non-Shielded, 1m				
Е	RS-232 Cable	Non-Shielded, 1.8m				
F	RS-232 Cable	Non-Shielded, 1.8m				

1.4. Configuration of tested System



1.5. EUT Exercise Software

- 1. Setup the EUT as shown on 1.4
- 2. Execute "Tera Term 4.72" program on the EUT.
- 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 QuieTek Corporation's Web Site : <u>http://www.quietek.com/chinese/about/certificates.aspx?bval=5</u> The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : <u>http://www.quietek.com/</u>

Site Description:	File on Federal Communications Commission FCC Engineering Laboratory 7435 Oakland Mills Road Columbia, MD 21046 Registration Number: 92195
Site Name: Site Address:	Quietek Corporation No.5-22, Ruishukeng, Linkou Dist. New Taipei City 24451, Taiwan, R.O.C. TEL: 886-2-8601-3788 / FAX : 886-2-8601-3789 E-Mail : <u>service@quietek.com</u>

FCC Accreditation Number: TW1014

2. Conducted Emission

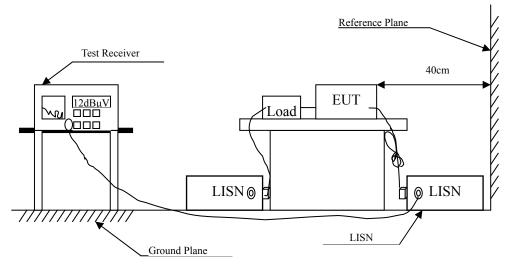
2.1. Test Equipment

	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark				
Х	Test Receiver	R & S	ESCS 30 / 825442/018	Sep., 2015					
Х	Artificial Mains Network	R & S	ENV4200 / 848411/10	Feb., 2015	Peripherals				
Х	LISN	R & S	ESH3-Z5 / 825562/002	Feb., 2015	EUT				
	DC LISN	Schwarzbeck	8226 / 176	Mar., 2015	EUT				
Х	Pulse Limiter	R & S	ESH3-Z2 / 357.8810.52	Feb., 2015					
	No.1 Shielded Room								

Note:

- 1. All equipments are calibrated every one year.
- 2. The test instruments marked by "X" are used to measure the final test results.

2.2. Test Setup



2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBµV) Limit							
Frequency	Limits						
MHz	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.

2.4. 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, 2013; tested to UNII test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

2.5. Uncertainty

± 2.26 dB



2.6. Test Result of Conducted Emission

Owing to the DC operation of EUT, this test item is not performed.



3. Maximun conducted output power

3.1. Test Equipment

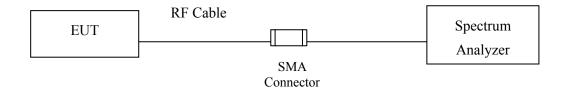
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Х	Power Meter	Anritsu	ML2495A/6K00003357	May, 2015
Х	Power Sensor	Anritsu	MA2411B/0738448	Jun., 2015
Х	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015
Note	2:			

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

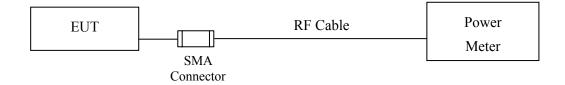
2. The test instruments marked with "X" are used to measure the final test results.

3.2. Test Setup

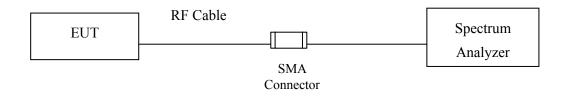
26dBc Occupied Bandwidth



Conduction Power Measurement (for 802.11an)



Conduction Power Measurement (for 802.11ac)



3.3. Limits

3.3.1. 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.

- 3.3.2. 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.
- 3.3.3. 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.

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

802.11ac (BW=80MHz) Maximum conducted output power using KDB 789033 section E)2)b) Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep).

When transmitted signals consist of two or more non-contiguous spectrum segments (e.g., 80+80 MHz mode) or when a single spectrum segment of a transmission crosses the boundary between two adjacent U-NII bands, KDB 644545 D01 section F) procedure is used for measurements.

3.5. Uncertainty

± 1.27 dB

3.6. Test Result of Maximum conducted output power

Product	:	Wireless gateway
Test Item	:	Maximum conducted output power
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps)

Cable loss=1dB		Maximum conducted output power								
			Data Rate (Mbps)							
Channel No.	Frequency (MHz)	6	9	12	18	24	36	48	54	Required Limit
				Measu	urement	Level ((dBm)			
36	5180	15.12								<24dBm
44	5220	15.38	15.29	15.22	15.16	15.04	14.98	14.89	14.78	<24dBm
48	5240	14.63								<24dBm
52	5260	14.64								<24dBm
60	5300	14.56	14.49	14.38	14.29	14.15	14.06	13.95	13.84	<24dBm
64	5320	14.98								<24dBm
100	5500	14.97								<24dBm
116	5580	15.13	15.02	14.97	14.86	14.81	14.75	14.63	14.59	<24dBm
140	5700	15.2								<24dBm
149	5745	14.72								<30dBm
157	5785	15.26	15.22	15.19	15.07	14.95	14.88	14.77	14.62	<30dBm
165	5825	14.82								<30dBm

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

Maximum conducted output power Measurement:

Channel No	Frequency Range	26dB Bandwidth	Output Power	Output Power Limit		
	(MHz)	(MHz)	(dBm)	(dBm)	dBm+10log(BW)	
36	5180		15.12	24		
44	5220		15.38	24		
48	5240		14.63	24		
52	5260	17.625	14.64	24	23.46	
60	5300	17.662	14.56	24	23.47	
64	5320	17.683	14.98	24	23.48	
100	5500	17.626	14.97	24	23.46	
116	5580	17.713	15.13	24	23.48	
140	5700	17.708	15.2	24	23.48	
149	5745		14.72	30		
157	5785		15.26	30		
165	5825		14.82	30		

Note:

1. Power Output Value =Reading value on average power meter + cable loss

26dBc Occupied Bandwidth:

🇾 Keysight S	pectrum Analyzer - Occupi	ed BW							
ເ <mark>೫</mark> ℝ∟ Center I	RF 50 Ω /		Center	SENSE:INT Freq: 5.26000 ree Run	0000 GHz Avg Hold	ALIGN AUTO	07:30:58 P Radio Std	M Aug 20, 2015 : None	Frequency
		#IFGain:Low		: 30 dB	Avginon	. 10/10	Radio Dev	vice: BTS	
10 dB/div	Ref Offset 1.5 Ref 21.50 c								
Log 11.5				~~~					Center Freq
1.50					\vdash				5.26000000 GHz
-8.50		and with www.				Manage			
-28.5	mat mit the state of the state of the		_			· ••••	^r ht-frankeligetetetetetetetetetetetetetetetetetetet	- Walder	
-38.5								""White	
-40.5									
-68.5									
Center : #Res BV	5.26 GHz V 1 MHz		#1	ив измн	z			n 50 MHz ep 1 ms	CF Step 5.000000 MHz
Occi	ipied Bandw	idth		Total P	ower	19.8	3 dBm		<u>Auto</u> Man
	17.625 MHz							FreqOffset	
Trans	mit Freq Error	-72.57	3 kHz	OBW P	ower	99	9.00 %		0 Hz
x dB	Bandwidth	25.14	MHz	x dB		-26.	00 dB		
MSG						I o statu	s		

Channel 60:

🔰 Keysight Sp	ectrum Analyzer - Occu	upied BW									
Center F	RF 50 Ω req 5.30000	AC 0000 GH	łz	Center F	NSE:INT reg: 5.3000			SN AUTO	07:32:30 P Radio Std	M Aug 20, 2015 : None	Frequency
		#IF	Gain:Low ↔	Trig: Fre #Atten: 3		Avg Ho	id: 10	/10	Radio Dev	rice: BTS	
10 dB/div	Ref Offset 1 Ref 21.50										
Log 11.5											Center Fre
1.50						- T					5.30000000 G
-8.50		1 - Allen from	<i>w</i>				J.	"Italia			
-28.5	with the way of the set	νψιν.							biderry lever light	M. Mind and	
-38.5										"TV "Und	
-58.5											
-68.5											
Center 5 #Res BW				#VE	з измн	lz				n 50 MHz ep 1 ms	CF Ste 5.000000 MH
Occu	pied Band	width			Total P	ower		19.6	dBm		Auto Ma
			62 MI	Ηz							Freq Offs
Transı	mit Freq Erro	or	-50.385	kHz	OBW P	ower		99	.00 %		01
x dB B	Bandwidth		26.81 N	1Hz	x dB			-26.	00 dB		
MSG							0	STATUS			



Channel 64:

	ght Spectrum Analyzer -										
Cente	er Freq 5.320				Freg: 5.3200	00000 GHz		ALIGN AUTO	07:33:34 P Radio Std	M Aug 20, 2015 : None	Frequency
Contra				Trig: Fi #Atten:	ree Run	Avg Ho	old:	10/10	Radio Dev	ice: BTS	
		#11	Gain:Low	#Atten.	50 00				Radio Dev		
10 dB/		set 1.5 dB 1.50 dBm									
			<u> </u>								
11.5				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~							Center Freq
1.50 —			J.								5.320000000 GHz
-8.50 —		البران					À	N			
-18.5	with the second of the other	marthur .							Marinell	withing	
-28.5	WHAT A THE WAY AND A THE WAY A									untility in	
-38.5	-									11 2411	
-48.5 —											
-58.5 —											
-68.5											
Cente	er 5.32 GHz					1			Spa	n 50 MHz	
	BW 1 MHz			#\	/ВЖ ЗМН	Iz				ep 1 ms	CF Step 5.00000 MHz
					-						Auto Man
00	cupied Bar				Total F	ower		20.0) dBm		
		17.6	683 M	Hz							Freq Offset
Tra	ansmit Freq I	Error	-72.304	kHz	OBW P	ower		99	.00 %		0 Hz
x d	B Bandwidth	.	27.77	MHz	x dB			-26	00 dB		
	B Bullamaa		21.11		AUD			20.	00 42		
MSG									3		<u> </u>
								v			

Channel 100:

	trum Analyzer - Oc										
Center Fre	RF 50 Ω		-17	Center	SENSE:INT Freq: 5.5000	00000 GH		ALIGN AUTO	07:35:31 P Radio Std	M Aug 20, 2015 None	Frequency
			Gain:Low		ree Run 30 dB	Avg H	old:	10/10	Radio Dev	ice: BTS	
			Gam.Low								
10 dB/div	Ref Offset Ref 21.5										
Log											
11.5			m		Mar and a second second	- manny					Center Freq
1.50			N				4				5.50000000 GHz
-8.50		an all-all						A			
-10.5	L MARY TRANSPORT	Mail As						, Humble	when upper	1.14	
-20.5 -38.5	AN AN AND AND AND AND AND AND AND AND AN									w.M.M.W.	
-30.5											
-58.5											
-68.5											
00.0											
Center 5.5										n 50 MHz	CF Step
#Res BW	1 IVIMZ			#	VBW 3 MI	HZ			SWE	ep 1ms	5.000000 MHz Auto Man
Occup	ied Band	width			Total I	Power		20.5	dBm		<u>Auto</u> Man
			26 N	/Hz							
											Freq Offset 0 Hz
Transm	it Freq Eri	ror	-74.06	9 kHz	OBW I	Power		99	.00 %		0 H2
x dB Ba	ndwidth		27.59	MHz	x dB			-26.	00 dB		
MSG									3		



Channel 116:

🎉 Keysight	Spectrum Analyzer - O	ccupied BW									- 6 - ×
(XI RL	RF 50 S				SENSE:INT Freq: 5.5800			ALIGN AUTO	07:36:37 P Radio Std	M Aug 20, 2015	Frequency
Center	Freq 5.5800	00000 G	Hz		ree Run	Avg He		10/10	Radio Sta	: None	, , , , , , , , , , , , , , , , , , , ,
		#1	Gain:Low	#Atten					Radio Dev	rice: BTS	
10 dB/div	Ref Offse Ref 21.										
Log						· · ·					
11.5					-						Center Freq
1.50					¥						5.58000000 GHz
-8.50			<i>s</i> ⁷				N				
-18.5		and the second]	Wayness .			
-10.5	ŀĿŗ♡ŧŧŗ ^A ŧſĸĔ <mark>Ĭ</mark> ₩ĊIJ ^{ſŗ} ĸĬĸŊſŦĬ ^{Ŋĸĸ} ĬĿĸ	A Karak						a day wat	William .	the the second	
-28.5	North April 1911								- verve	hon mulu	
-38.5						-				- Vilinia	
-48.5											
-58.5											
-68.5											
00.0											
Center	5.58 GHz								Spa	n 50 MHz	CF Step
#Res B\	N 1 MHz			#\	/BW/3MH	Iz			Swe	ep 1 ms	5.000000 MHz
											Auto Man
Occ	upied Band	dwidth			Total F	ower		20.1	dBm		
		177	713 M	Hz							-
				112							Freq Offset
Tran	smit Freq Er	ror	-146.76	kHz	OBW P	ower		99	.00 %		0 Hz
v dB	Bandwidth		25.31 N	147	x dB			-26	00 dB		
A GD	Danawiath		23.511	1112	X UD			-20.			
MSG									3		
								-	1		

Channel 140:

	trum Analyzer - Occuj										
(XI RL Center Fr	RF 50 Ω eq 5.700000		7		ENSE:INT Freg: 5.70000	0000 GH		ALIGN AUTO	07:39:19 P Radio Std	M Aug 20, 2015	Frequency
	eq 3.700000		++		ee Run	Avg H		10/10	Radio Dev		
		#IFG	ain:Low	#Atten:	30 dB				Radio Dev	ICe: BIS	
	Ref Offset 1										
10 dB/div Log	Ref 21.50	dBm		1	1	1			1		
11.5				anna da la	ستحميد ميدوسيس						Center Freq
1.50					¥						5.70000000 GHz
-8.50		الملر.	4				N	b.			
-18.5	jugest the trail of the second s	North Carling						marchelen	and the second	anitration	
-28.5	his faith and the state		-						a low with the state	han the second	
-38.5 Luniu	•		-		-					- WIN	
-48.5	_		-								
-58.5			-								
-68.5											
Center 5.7	2 04-								- One	n 60 Milia	
#Res BW				#V	вки змн	z				n 50 MHz ep 1 ms	CF Step
											5.000000 MHz Auto Man
Occup	ied Bandv	vidth			Total P	ower		19.8	3 dBm		
		17.70	08 MI	Ηz							Freq Offset
-											0 Hz
Transm	nit Freq Erro	or -	99.515	KHZ	OBW P	ower		99	0.00 %		
x dB Ba	andwidth		27.17 N	1Hz	x dB			-26.	00 dB		
MSG									5		



Product	:	Wireless gateway
Test Item	:	Maximum conducted output power
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps)

Cable	Cable loss=1dB			ower									
				D	ata Rat	e (Mbps	5)						
Channel No.	Frequency (MHz)	7.2	14.4	21.7	28.9	43.3	57.8	65	72.2	Required Limit			
				Measurement Level (dBm)									
36	5180	14.87								<24dBm			
44	5220	15.32	15.26	15.14	15.02	14.92	14.86	14.78	14.68	<24dBm			
48	5240	14.36								<24dBm			
52	5260	14.63								<24dBm			
60	5300	14.62	14.58	14.49	14.37	14.25	14.16	14.05	13.94	<24dBm			
64	5320	14.58								<24dBm			
100	5500	15.08								<24dBm			
116	5580	14.87	14.79	14.65	14.51	14.49	14.35	14.21	14.018	<24dBm			
140	5700	14.98								<24dBm			
149	5745	14.86								<30dBm			
157	5785	15.21	15.17	15.03	14.96	14.84	14.72	14.61	14.53	<30dBm			
165	5825	14.84								<30dBm			

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

Maximum conducted output power Measurement:

Channel No	Frequency Range	26dB Bandwidth	Output Power	Output Power Limit			
	(MHz)	(MHz)	(dBm)	(dBm)	dBm+10log(BW)		
36	5180		14.87	24			
44	5220		15.32	24			
48	5240		14.36	24			
52	5260	18.558	14.63	24	23.69		
60	5300	18.581	14.62	24	23.69		
64	5320	18.606	14.58	24	23.70		
100	5500	18.627	15.08	24	23.70		
116	5580	18.648	14.87	24	23.71		
140	5700	18.605	14.98	24	23.70		
149	5745		14.86	30			
157	5785		15.21	30			
165	5825		14.84	30			

Note:

1. Power Output Value =Reading value on average power meter + cable loss



26dBc Occupied Bandwidth:

		C	channel 52			
🚺 Keysight Spectre	um Analyzer - Occupied BW					
Center Fre	RF 50 Ω AC q 5.260000000	Trig: I	SENSE:INT r Freq: 5.260000000 GHz Free Run Avg Ho n: 30 dB	ALIGN AUTO	07:43:40 PM Aug 20, 201 Radio Std: None Radio Device: BTS	5 Frequency
10 dB/div Log	Ref Offset 1.5 dB Ref 21.50 dBm			11]
11.5 1.50 -8.50						Center Freq 5.260000000 GHz
-18.5 -28.5	ptwww.matherinanapyianya.htm			Non Million	an man will be to be a stand	-
-48.5						
-68.5 Center 5.26 #Res BW 1		#	VBW 3 MHz		Span 50 MH Sweep 1 m	
Occupi	ed Bandwidth		Total Power	19.9) dBm	<u>Auto</u> Man
Transmi	ר T& t Freq Error	.558 MHz 6.261 kHz	OBW Power	99	0.00 %	Freq Offset 0 Hz
x dB Bar	ndwidth	25.89 MHz	x dB	-26.	00 dB	
MSG				I o status	3	

Channel 52

						••							
	I Keysight Spectrum Analyzer - Occupied BW												
LXI RL		Ω AC			NSE:INT		ALIGN AUTO		M Aug 20, 2015	Frequency			
Cente	r Freq 5.3000	000000 GH			req: 5.30000		1. 40/40	Radio Std	l: None	Frequency			
				Trig: Fre #Atten: 3		Avg Hole	d: 10/10	Radio Dev	dee: BTS				
		#IF	Gain:Low	#Attent a				Radio De	VICE. BTS				
	Bof Offe	et 1.5 dB											
10 dB/d		.50 dBm											
Log			П [.]										
11.5										Center Free			
1.50			man		**************************************	- many				5.30000000 GH			
			X			1	L,			5.30000000 GH			
-8.50		- J.	pn				h.						
-18.5		North March 1999					"Helen						
20.5	LAND BOARD AND AND AND AND AND AND AND AND AND AN	w					44	ե ^{ֈի} րչ _{ն ծ} ա _{նո} ւ					
-28.5	ev-1140-11-11-11-1-1-1-1-1-1-1-1-1-1-1-1-1							· · · · · ·	he station				
-38.5		_							- 015				
-48.5													
-58.5													
-68.5		_											
Cente	r 5.3 GHz							Spa	n 50 MHz	CF Ster			
#Res I	BW 1 MHz			#VE	SW 3 MH	z		Sw	eep 1ms	5.000000 MH			
									-	Auto Ma			
Oc	cupied Ban	dwidth			Total P	ower	19.6	i dBm		<u>/ (dto</u>			
		18.5	81 MI	ΗZ						Freq Offse			
_										он			
Tra	nsmit Freq E	rror	4.665 I	(Hz	OBW P	ower	99	.00 %					
v di	B Bandwidth		26.03 N	147	x dB		-26	00 dB					
1 [•] •			20.03 N				-20.						
MSG								3					
								1					



Channel 64

	ight Spe	ctrum Analyzer -	Occupied BW										- # X
XI RL			Ω AC			ENSE:INT req: 5.3200	00000 CH-		IN AUTO	07:46:34 P Radio Std	M Aug 20, 2015	Fre	quency
Cent	er Fr	eq 5.320	000000 G	HZ			Avg Ho		/10	Radio Sta	None		,,
			#1	Gain:Low	#Atten:	30 dB				Radio Dev	ice: BTS		
		Pof Offe	et 1.5 dB										
10 dB.	/div		.50 dBm										
Log													
11.5 -													enter Freq
1.50 -												5.320	000000 GHz
-8.50 -				d l				1					
-18.5		أيلهما	41-41-41-41-41-41-41-41-41-41-41-41-41-4					TV I	White we want	di	N.J. Constanting		
-28.5	Million	HANN THINK VINT							• • • •	Walk with Wal	Nelses .		
-38.5	N 197.		_								AND MICH		
-48.5													
-58.5													
-68.5 -													
-00.0													
Cent	er 5.	32 GHz								Spa	n 50 MHz		CF Step
#Res	BW	1 MHz			#V	BW 3 MH	IZ			Swe	ep 1ms	5.	000000 MHz
						T - 4 - 1 F			40.0			<u>Auto</u>	Man
00	ccup	pied Ban				Total F	ower		19.0	dBm			
			18.6	606 M	Hz							l ғ	req Offset
Tra	ansn	nit Freq E	rror	15.398	kHz	OBW F	ower		99	.00 %			0 Hz
		andwidth		25.49 N	147	x dB			-26 (00 dB			
· ^				23.43	1112	X UD			-20.0				
										1			
MSG								Ľ,	STATUS				

🚺 Keysight Spectrum Analyzer - Occupied BV	1				
Center Freq 5.500000000	Trig: F		ALIGN AUTO	07:47:24 PM Aug 20, 2015 Radio Std: None	Frequency
	#IFGain:Low #Atter	n: 30 dB		Radio Device: BTS	
Ref Offset 1.5 dB 10 dB/div Ref 21.50 dBn	<u>1</u>		· ·		
11.5					Center Freq
-8.50					5.500000000 GHz
-8.50 -18.5 -28.5 -28.5	Brain .		Review Lail Altread	L. L. Surper of March March 199 . Strate 199	
-28.5				an hardfalla configuration	
-38.5					
-58.5					
-68.5					
Center 5.5 GHz #Res BW 1 MHz	#	VBW 3 MHz		Span 50 MHz Sweep 1 ms	CF Step 5.000000 MHz
Occupied Bandwidt	h	Total Power	20.	5 dBm	<u>Auto</u> Man
	8.627 MHz				Freq Offset
Transmit Freq Error	-10.601 kHz	OBW Power	99	9.00 %	0 Hz
x dB Bandwidth	26.36 MHz	x dB	-26.	00 dB	
MSG			🚺 STATU	S	



Channel 116

	ght Spectrum	n Analyzer - Oc	cupied BW									
LXI RL	R					ENSE:INT			IGN AUTO		M Aug 20, 2015	Frequency
Cente	er Freq	5.58000)0000 G	Hz		Freq: 5.5800 ee Run	Avg Ho		10/10	Radio Std	I: None	
			#	FGain:Low	#Atten:					Radio Dev	vice: BTS	
		Ref Offset	16.40									
10 dB/		Ref 21.5										
Log												
11.5				man		-						Center Freq
1.50				X				X				5.580000000 GHz
-8.50			لر	v ⁴¹					1 4			
-18.5 —			Mar Mar						- Tran	Lalle .		
-28.5	white he will	.hvvitef ^{al} la ^{ja} lava	·							a a la construction de la constr	hulon miliogram	
-38.5	-de a.										~ս լագետ	
-48.5												
-58.5												
-68.5												
00.0												
	er 5.58 (n 50 MHz	CF Step
#Res	BW 1N	/IHz			#V	BW 3 MI	lz			Sw	eep 1 ms	5.000000 MHz
0.		d Dome	ماغام أبيرا			Total F	Power		20.2	dBm		<u>Auto</u> Man
	cupie	d Band			-	Total I	Ower		20.2	ubiii		
			18.	648 M	ΗZ							Freq Offset
Tra	ansmit	Freq Er	ror	-43.929	kHz	OBW F	ower		99	.00 %		0 Hz
x d	B Band	dwidth		25.67 N	1Hz	x dB			-26	00 dB		
~ ~		amati		20101 1		A u			201			
MSG												
									- O INTOS			

Keysight Spectrum Analyzer - Occupied BW					
RL RF 50 Ω AC Center Freq 5.700000000		SENSE:INT ter Freq: 5.700000000 GH		07:53:53 PM Aug 20, 2015 Radio Std: None	Frequency
	Trig	:FreeRun Avg∣H en:30 dB	old: 10/10	Radio Device: BTS	
Ref Offset 1.5 dB					
10 dB/div Ref 21.50 dBm					
Log 11.5					Center Freq
1.50	- F		\		5.700000000 GHz
-8.50	of the second se		- Norm		
-18.5			"Why three	Wheeker a	
-18.5 -28.5 -38.5				ethron the Burkwahlts you on	
30.0					
-48.5					
-68.5					
Center 5.7 GHz #Res BW 1 MHz		#VBW 3 MHz		Span 50 MHz Sweep 1 ms	CF Step 5.000000 MHz
				•	Auto Man
Occupied Bandwidth		Total Power	19.8	dBm	
18	.605 MHz				Freq Offset
Transmit Freq Error	OBW Power	99	.00 %	0 Hz	
x dB Bandwidth	25.58 MHz	x dB	-26.0	00 dB	
			~	1	
MSG					



Product	:	Wireless gateway
Test Item	:	Maximum conducted output power
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n-40BW 15Mbps)

Cable	Cable loss=1dB				Maximu	ım cond	lucted o	utput po	ower	
				Ľ	ata Rat	e (Mbps	5)			
Channel No.	Frequency (MHz)	15	30	45	60	90	120	135	150	Required Limit
				Measu	urement	Level (dBm)			
38	5190	13.56	13.48	13.35	13.25	13.16	13.04	12.98	12.88	<24dBm
46	5230	12.83								<24dBm
54	5270	13.41	13.35	13.26	13.18	13.09	12.94	12.82	12.76	<24dBm
62	5310	13.26								<24dBm
102	5510	12.78								<24dBm
110	5550	13.23	13.18	13.01	12.92	12.86	12.77	12.62	12.55	<24dBm
134	5670	13.26								<24dBm
151	5755	13.03	12.97	12.86	12.74	12.66	12.51	12.44	12.39	<30dBm
159	5795	13.09								<30dBm

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

Maximum conducted output power Measurement:

Channel No	Frequency Range	26dB Bandwidth	Output Power	Output Po	ower Limit
	(MHz)	(MHz)	(dBm)	(dBm)	dBm+10log(BW)
38	5190		13.56	24	
46	5230		12.83	24	
54	5270	36.344	13.41	24	26.60
62	5310	36.349	13.26	24	26.60
102	5510	36.366	12.78	24	26.61
110	5550	36.381	13.23	24	26.61
134	5670	36.449	13.26	24	26.62
151	5755		13.03	30	
159	5795		13.09	30	

Note:

1. Power Output Value =Reading value on average power meter + cable loss

26dBc Occupied Bandwidth:

Channel 54

	Spectrum Analyzer - Occupied	BW				- d -
Center	RF 50 Ω AC Freq 5.27000000		SENSE:INT	Radio Std	M Aug 20, 2015 : None	Frequency
			Free Run Avg Holo n: 30 dB	Radio Dev	vice: BTS	
10 dB/div	Ref Offset 1.5 d Ref 21.50 dE					
Log 11.5						Center Freq
1.50			The second second second second			5.270000000 GHz
-8.50					v	
-18.5	K _m Path e t ^{ur}				Yveletykovykykelym	
-38.5						
-48.5						
-58.5						
-68.5						
	5.27 GHz N 1 MHz	#	VBW 3 MHz		n 50 MHz eep 1 ms	CF Step 5.000000 MHz
Occi	upied Bandwic	lth	Total Power	18.6 dBm		
	-	6.344 MHz				Freq Offset
Tran	Transmit Freq Error 96.834		OBW Power	99.00 %		
x dB	Bandwidth	45.86 MHz	x dB	-26.00 dB		
MSG				I STATUS		

		Channel 02			
🎉 Keysight Spectrum Analyzer - Occupied BV	V				
X RL RF 50 Ω AC Center Freq 5.310000000	Trig: F	SENSE:INT Freq: 5.310000000 GHz Free Run Avg Hol : 30 dB	d: 10/10	08:03:55 PM Aug 20, 2015 Radio Std: None Radio Device: BTS	Frequency
Ref Offset 1.5 dB					Center Freq
-8.50			vert-vert-sectory and and a fue		5.310000000 GHz
-18.5				and the second sec	
-38.5					
-68.5					
Center 5.31 GHz #Res BW 1 MHz	#	VBW 3 MHz		Span 50 MHz Sweep 1 ms	CF Step 5.000000 MH: Auto Mar
Occupied Bandwidt	h	Total Power	Total Power 17.8 dBm		
-	6.349 MHz				Freq Offse
Transmit Freq Error	99.905 kHz	OBW Power	99.0	00 %	0 H:
x dB Bandwidth	45.46 MHz	x dB	-26.0	0 dB	
MSG			I o status		



Channel 102

	pectrum Analyzer - Occu							
(X/RL	RF 50 Ω	AC		SENSE:INT Freg: 5.510000000	ALIGN AUTO	08:08:03 Radio Sto	M Aug 20, 2015	Frequency
Center I	req 5.51000	JOOO GHZ			g Hold: 10/10	Radio Sto	: None	, , , , , , , , , , , , , , , , , , , ,
		#IFGain:Lov				Radio De	vice: BTS	
	Ref Offset 1	EdD						
10 dB/div	Ref 21.50							
Log								
11.5								Center Freq
1.50					~~~			5.510000000 GHz
-8.50		<u> </u>			<u> </u>			
-18.5								
-28.5	alle have been all all all all all all all all all al	hhhav ^{en v}			Jife Marcian	d Maradak	h-H-H-M-TLMML	
-38.5	Miles Marshall	-				AND DE LE	May Market	
-48.5	-						ատվու	
-58.5								
-68.5								
Center :	5.51 GHz					Spar	100 MHz	05.060
#Res BW	/ 1 MHz		#\	VBW 3 MHz			eep 1 ms	CF Step 10.000000 MHz
								<u>Auto</u> Man
Occu	ipied Bandy	width		Total Powe	er 18	.2 dBm		
		36.366	MHz					Freq Offset
_								0 Hz
Trans	mit Freq Erro	or 5.4	55 kHz	OBW Powe	r 9	99.00 %		0 H2
x dB l	Bandwidth	44.8	2 MHz	x dB	-20	6.00 dB		
					~			
MSG						rus		

🚺 Keysight Spectrum Analyzer - Occupi					
ເx RL RF 50Ω A Center Freq 5.5500000		SENSE:INT Center Freq: 5.550000000 GH Trig: Free Run Avg		09:15 PM Aug 20, 2015 lio Std: None	Frequency
		#Atten: 30 dB		lio Device: BTS	
Ref Offset 1.5					
Log 11.5					Center Freq
1.50		women and the second second			5.550000000 GHz
-8.50			1. 		
-18.5	Alandah Mar		Manager and All and Al	Man Martine L.	
-38.5				Profestiller and a strategy law clock	
-48.5					
-68.5					
Center 5.55 GHz #Res BW 1 MHz		#VBW 3 MHz		Span 100 MHz Sweep 1 ms	CF Step 10.000000 MHz
Occupied Bandw	idth	Total Power	18.6 dB	m	<u>Auto</u> Man
	36.381 MH	Z			Freq Offset
Transmit Freq Error	r -3.432 kH	z OBW Power	99.00	%	0 Hz
x dB Bandwidth	45.34 MH	lz xdB	-26.00 d	IB	
MSG			I o status		L



		pectrum Analyzer - O	ccupied BW								
	L	RF 50 \$				SENSE:INT		ALIGN AUTO		M Aug 20, 2015	Frequency
Cer	nter F	req 5.6700	00000 G	Hz		er Freq: 5.6700 Free Run		ld: 10/10	Radio Sto	: None	requeries
]	#1	-Gain:Low		en: 30 dB	Avgino	Iu. 10/10	Radio De	vice: BTS	
		_		Guilleon							
		Ref Offse	t 1.5 dB								
	B/div	Ref 21.5	50 dBm								
Log											
11.5											Center Freq
1.50					Bart Bart	marine and	and a second second		-		5.670000000 GHz
-8.50				4				λ			
				r				¥.			
-18.5		derest hour of the life	NIN					Nu _{he}		()umukudarakathana	
-28.5		A AND A AND A	A MARKEN .		-			- Harris	The party of		
-38.5	1.00	dispersion was					_		1 4.1	White white the	
-48.5	afba									- With	
-58.5											
-68.5											
		5.67 GHz								100 MHz	CF Step
#Re	es BN	/ 1 MHz			:	#VBW 3 MH	lz		Sw	eep 1ms	10.000000 MHz
											<u>Auto</u> Man
)ccu	pied Band	dwidth			Total F	ower	18.	4 dBm		
			26 /	1/0 1	MHz						
			50.5	F4J I							Freq Offset
Т	Transmit Freq Error -34.854 I			54 kHz	OBW F	Power	9	9.00 %		0 Hz	
		Bandwidth		45.9	0 MHz	x dB		26	.00 dB		
^	UDI	Sanuwiuun		45.0		XUD		-20	.00 06		
1								r 1			
MSG									JS		

4. Peak Power Spectral Density

4.1. Test Equipment

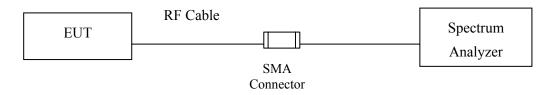
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2015
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2015
Х	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr, 2015
Mater				

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

2. The test instruments marked with "X" are used to measure the final test results.

4.2. Test Setup



4.3. 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.

4.4. 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.

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 $BWCF = 10\log (500 \text{ kHz}/100 \text{ kHz}) = 6.98 \text{ dB}.$

4.5. Uncertainty

± 1.27 dB



4.6. Test Result of Peak Power Spectral Density

Product	:	Wireless gateway
Test Item	:	Peak Power Spectral Density
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps)

Channel Number	Frequency (MHz)	Data Rata (Mbps)	Measurement Level (dBm)	Required Limit (dBm)	Result
36	5180	6	4.330	11	Pass
44	5220	6	4.310	11	Pass
48	5240	6	3.480	11	Pass
52	5260	6	3.700	11	Pass
60	5300	6	3.410	11	Pass
64	5320	6	3.970	11	Pass
100	5500	6	4.320	11	Pass
116	5580	6	4.000	11	Pass
140	5700	6	3.590	11	Pass

Channel Number	Frequency (MHz)	Data Rata (Mbps)	PPSD (dBm)	BWCF (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
149	5745	6	-5.36	6.98	1.62	<30	Pass
157	5785	6	-5.89	6.98	1.09	<30	Pass
165	5825	6	-5.75	6.98	1.23	<30	Pass



		Channel 3	b:		
🚺 Keysight Spectrum Analyzer - Swept					- # *
xu RL RF 50Ω Center Freq 5.180000	AC 000 GHz PNO: Fast IEGain: Low	SENSE:INT Trig: Free Run #Atten: 30 dB	ALIGN AUTO #Avg Type: RMS	07:10:29 PM Aug 20, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N	Frequency
Ref Offset 1.5 d 10 dB/div Ref 21.50 dB	в	#ritten: oo ub	Mkr1	5.183 775 GHz 4.33 dBm	Auto Tune
11.5			1		Center Freq 5.180000000 GHz
8.50					Start Freq 5.167500000 GHz
18.5					Stop Freq 5.192500000 GHz
48.5					CF Step 2.500000 MH; <u>Auto</u> Mar
58.5					Freq Offse 0 Hi
68.5					
Center 5.18000 GHz #Res BW 1.0 MHz	#VBW	3.0 MHz	Sweep 1	Span 25.00 MHz .000 ms (1001 pts)	
ASG			to status	3	

Channel 36:

Channel 44:

Kausiaka Caratana Arabara Carat CA					
Keysight Spectrum Analyzer - Swept SA	SEN	NSE:INT	ALIGN AUTO 07:25:34 PM	1 Aug 20, 2015	
Center Freq 5.220000000 G	Hz	#Avg Type	RMS TRAC	E123456	Frequency
ا Ref Offset 1.5 dB 10 dB/div Ref 21.50 dBm	PNO: Fast 😱 Trig: Free FGain:Low #Atten: 30		Mkr1 5.224 7	00 GHz 31 dBm	Auto Tune
			1		Center Fre 220000000 GH
8.50				5.	Start Fre 207500000 GH
18.5 28.5				the marked and the second second	Stop Fre 232500000 GH
18.5				Aut	CF Ste 2.500000 MH o Ma
58.5					Freq Offs 0 H
68.5					
Center 5.22000 GHz #Res BW 1.0 MHz	#VBW 3.0 MHz	ę	Span 2 Sweep 1.000 ms (5.00 MHz 1001 pts)	
MSG			STATUS		



				Channel 48:	(
						ctrum Analyzer - Swept SA	
Frequency	27:21 PM Aug 20, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWW		ALIGN AUTO #Avg Type: RMS	SENSE:INT	GHz PNO: Fast	RF 50 Ω AC req 5.240000000	RL Center F
Auto Tune	244 475 GHz	kr1 5 '	Mki	#Atten: 30 dB	IFGain:Low		
	3.48 dBm	IKI 1 U .	IVIN			Ref Offset 1.5 dB Ref 21.50 dBm	10 dB/div
Center Free							
5.240000000 GH			♦ ¹				11.5
Start Fred		and a					1.50
5.227500000 GH							-8.50
Stop Fro							-18.5
Stop Fred 5.252500000 GH:	"The should be and the					on and the second se	-28.5
CF Ster							
2.500000 MH Auto Mar							48.5
Freq Offse							
0 H;							-58.5
							-68.5
	pan 25.00 MHz) ms (1001 pts)		Sweep	3.0 MHz	#VBW	24000 GHz 1.0 MHz	Center 5. #Res BW
	,,	<u>.</u>					MSG

Ch 1 48

Channel 52:

	ectrum Analyzer - Swe					T		-		
Center F	RF 50 Ω req 5.26000	AC 0000 GHz		SEN	ISE:INT	#Avg Typ	ALIGN AUTO	TRAC	MAug 20, 2015 E 1 2 3 4 5 6 E A WWWWW	Frequency
10 dB/div	Ref Offset 1.5 Ref 21.50 d	IFGa dB): Fast ⊊ in:Low	#Atten: 3			Mkr1	5.265 4	75 GHz 70 dBm	Auto Tune
11.5							▲ ¹			Center Fred 5.260000000 GH:
1.50 -8.50		and a second		after miller af fire minister and an and a						Start Free 5.247500000 GH
-18.5	and when the second sec							-	Here and the second	Stop Fre 5.272500000 GH
.38.5										CF Ste 2.500000 MH <u>Auto</u> Ma
58.5										Freq Offse 0 H
-68.5										
Center 5.: #Res BW	26000 GHz 1.0 MHz		#VBW	3.0 MHz			Sweep 1	Span 2 .000 ms (5.00 MHz 1001 pts)	
MSG							K STATUS			



			Channel 60:	(
					trum Analyzer - Swept SA	
Frequency	07:32:50 PM Aug 20, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWW	ALIGN AUTO #Avg Type: RMS	SENSE:INT	OGHZ	RF 50 Ω AC eq 5.300000000	enter Fr
Auto Tune	5.305 175 GHz	Mkr1	#Atten: 30 dB	IFGain:Low	Ref Offset 1.5 dB	
	3.41 dBm				Ref 21.50 dBm	dB/div
Center Freq						-09
5.30000000 GHz		1				11.5
Start Freq		and the second second				1.50
5.287500000 GHz						8.50
Stop Freq	The second				aller Market	18.5
5.312500000 GHz	Marrie Warder				in phr	28.5 28.5
CF Step						-38.5
2.500000 MHz <u>Auto</u> Man						-48.5
Freq Offset						58.5
0 Hz						
						68.5
	Span 25.00 MHz 000 ms (1001 pts)	Sweep 1	3.0 MHz	#VBW	0000 GHz 1.0 MHz	Center 5.3 #Res BW
L		STATUS				ISG

Ch ol 60

Channel 64:

🎉 Keysight S	pectrum Analyzer - Sw	ept SA								
Center F	RF 50 Ω Freq 5.32000	00000 GH	z	1	ISE:INT	#Avg Typ	ALIGN AUTO e: RMS	TRAC	M Aug 20, 2015	Frequency
10 dB/div	Ref Offset 1.5 Ref 21.50 (IFG 5 dB	0: Fast 🕞 ain:Low	#Atten: 3			Mkr1	5.323 9	97 dBm	Auto Tune
11.5										Center Freq 5.320000000 GHz
-8.50			*****		and a second		941). L. Barry, and Bar			Start Fred 5.307500000 GHz
-18.5									Multon Halas Carrier	Stop Freq 5.332500000 GHz
-38.5										CF Step 2.500000 MH <u>Auto</u> Mar
-58.5										Freq Offse 0 H
-68.5										
	.32000 GHz / 1.0 MHz		#VBW	3.0 MHz			Sweep 1	Span 2 .000 ms (5.00 MHz 1001 pts)	
MSG							🕼 status			



	Channel 10	J:		
Keysight Spectrum Analyzer - Swept SA				
RL RF 50 Ω AC enter Freq 5.500000000	I GHz PNO: Fast Trig: Free Run	ALIGN AUTO #Avg Type: RMS	07:35:50 PM Aug 20, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWW	Frequency
Ref Offset 1.5 dB	IFGain:Low #Atten: 30 dB	Mkr1	5.496 875 GHz 4.32 dBm	
				Center Freq 5.500000000 GHz
50				Start Freq 5.487500000 GHz
3.5			March William and	Stop Freq 5.512500000 GHz
3.5				CF Step 2.500000 MHz <u>Auto</u> Man
3.5				Freq Offset 0 Hz
3.5				
enter 5.50000 GHz Res BW 1.0 MHz	#VBW 3.0 MHz	Sweep 1	Span 25.00 MHz .000 ms (1001 pts)	
G			5	

Channel 100:

Channel 116:

	ectrum Analyzer - Sw			1			-		
Center F	RF 50 Ω req 5.58000	00000 GH	z	SENS	#Avg Typ	ALIGN AUTO e: RMS	TRAC	HAug 20, 2015 E 1 2 3 4 5 6 E A WWWWW	Frequency
10 dB/div	Ref Offset 1.5 Ref 21.50 c	iF0 5 dB	NO: Fast 🕞 Gain:Low	#Atten: 30		Mkr1	5.575 9	50 GHz 00 dBm	Auto Tune
11.5			↓ 1						Center Fred 5.580000000 GH;
-8.50			a ya da a ka a ka a ka a ka a ka a ka a			ere da sue a sue a sue			Start Free 5.567500000 GH
-18.5	unbele Margar						h h	Mrally and	Stop Free 5.592500000 GH
38.5									CF Ste 2.50000 MH <u>Auto</u> Ma
58.5									Freq Offse 0 ⊢
-68.5									
Center 5.: #Res BW	58000 GHz 1.0 MHz		#VBW	3.0 MHz		Sweep 1	Span 2 .000 ms (5.00 MHz 1001 pts)	
MSG						K STATUS			



				140:	hannel				
								m Analyzer - Swep	
Frequency	MAug 20, 2015 CE 1 2 3 4 5 6 PE A WWWWW	TRAC	ALIGN AUTO Type: RMS		SENSE:IN	z	AC 0000 GHz	RF 50 Ω	enter Fre
Auto Tune	500 GHz	D	Mkr1		#Atten: 30 dB	0: Fast 😱 ain:Low	IFGa		
	.59 dBm							ef Offset 1.5 ef 21.50 d	
Center Freq									8
5.700000000 GHz						≜ ¹			.5
Start Freq			and a second			¥	and the second		50
5.687500000 GHz									50
Stop Freq		L L							.5
5.712500000 GHz	and a farmer of the same								5 Hugher
CF Step									
2.500000 MHz Auto Man									.5
Freq Offset									.5
0 Hz									.5
	25.00 MHz								enter 5.70
	(1001 pts)		Sweep 1		.0 MHz	#VBW) MHz	es BW 1

Channel 140:

				-							_
									Analyzer - Swe		
Frequency	M Aug 20, 2015		ALIGN AUTO		SENSE:INT	S			F 50 Ω		XI RL
Trequency		TRAC	e:RMS	#Avg Typ	ree Run	Trio: Er	GHz	0000 G	5.74500	ter Freq	Cent
	PE A WWWW	DE				#Atten:	PNO: Fast IFGain:Low				
Auto Tun	025 GHz	5 740 0	Mkr1								
	10 dBm								f Offset 1.5 ef 21.50 d		
		- v .		1		1		BM	er 21.50 a	aiv Re	10 dE _og
Center Fre											_
											11.5
5.745000000 GH											11.5
Start Fre							1				1.50
5.732500000 GH				0000000		0.000.000	MMMM				
5.732500000 GH		₩1	VVVVV	ννγγνγγ		/NYVVY1	1	VVVVVv	^V		8.50
					V						
Stop Fre											18.5
5.757500000 GH		J							8		
5.757500000 GH		⁻ W ₄									-28.5
	Ym.	~							J ^{WC}	- mark	
CF Ste	m									north	38.5
2.500000 MH	Ŷ										30.5
<u>Auto</u> Ma											
											48.5
Freq Offse											
0 H											58.5
UH											
											68.5
											l
	25.00 MHz	Span 2	_							er 5.745	
	(1001 pts)	.133 ms (Sweep 3		Hz	/ 300 kH	#VBW		kHz	BW 100	#Res
			K STATUS					d	t Complete	Alignmer	ISG 🤇



				57	nnel I:	Cha					
									Analyzer - Swe		
Frequency	Aug 20, 2015		LIGN AUTO	#Avg Type	SE:INT	SEN	-		F 50 Ω		a Ri
	TYPE A WWWW DET A NNNNN		#Avg Type. Kina					Center Freq 5.785000000 GHz PNO: Fast G IFGain:Low			
Auto Tur	Ref Offset 1.5 dB Mkr1 5.779 400 GHz 0 dB/div Ref 21.50 dBm -5.36 dBm -5.36 dBm										
Center Fre											.og
5.785000000 GH											11.5
Start Fre								1			1.50
5.772500000 GH		M	᠕᠕᠕᠕		paran	mm	www		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		8.50
Stop Fre						1					8.5
5.797500000 GH		J.									28.5
CF Ste	mon	N.								mon	8.5
2.500000 MH Auto Ma	v									¢	
											8.5
Freq Offs 0 F											58.5
											68.5
	5.00 MHz 1001 pts)	Span 2: 133 ms (*	Sweep 3.			300 kHz	#VBW			er 5.785 BW 10	
			K STATUS								SG

Channel 157

				Onu	Inter 1	00					
	t Spectrum Analyzer -	Swept SA									
LXI RL		Ω AC		SEI	NSE:INT		ALIGN AUTO		1 Aug 20, 2015	Frequency	
Center Freq 5.825000000 GHz PNO: Fast 😱				#Avg Type: RMS TRACE 1 2 3 4 5 Trig: Free Run Trig: WWWW					E 1 2 3 4 5 6	Frequency	
		#Atten: 30 dB		DETANN		T A N N N N N	Auto Tune				
	Ref Offset 1.5 dB Mkr1 5.820 025 GHz 0 dB/div Ref 21.50 dBm -5.75 dBm										
										Center Fred	
11.5										5.825000000 GH	
11.0										5.82500000 GH2	
1.50			1							Start Free	
										5.812500000 GH	
-8.50		Mald Arrand A		<u>*******</u>	- AMARANA	AAAAAA A	AAAAAA A	try .		0.01200000 011	
-18.5					V					Stop Free	
	کر							L.		5.837500000 GH	
-28.5	and a start							- Ann	a		
-38.5 AAA	www								myy	CF Step	
l l									v	2.500000 MH Auto Mar	
-48.5										<u>Auto</u> Mai	
										Freq Offse	
-58.5										он	
-68.5											
	5.82500 GHz	:			1		1	Span 2	5.00 MHz		
#Res B	W 100 kHz		#VBW	300 kHz			Sweep 3	.133 ms (1001 pts)		
MSG							K STATUS	3			
							-	1			



Test Item : Peak Power Spectral Density

Test Site : No.3 OATS

Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps)

Channel Number	Frequency (MHz)	Data Rata (Mbps)	Measurement Level (dBm)	Required Limit (dBm)	Result
36	5180	7.2	3.810	11	Pass
44	5220	7.2	4.040	11	Pass
48	5240	7.2	3.430	11	Pass
52	5260	7.2	3.480	11	Pass
60	5300	7.2	3.250	11	Pass
64	5320	7.2	3.230	11	Pass
100	5500	7.2	3.980	11	Pass
116	5580	7.2	3.800	11	Pass
140	5700	7.2	3.280	11	Pass

Channel Number	Frequency (MHz)	Data Rata (Mbps)	PPSD (dBm)	BWCF (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
149	5745	7.2	-6.23	6.98	0.75	<30	Pass
157	5785	7.2	-6.43	6.98	0.55	<30	Pass
165	5825	7.2	-7.18	6.98	-0.20	<30	Pass



			Chan	nel 36:		
	pectrum Analyzer - Swept SA					
Center F	RF 50 Ω AC Freq 5.18000000	0 GHz PNO: Fast	SENSE:INT	ALIGN AUTO #Avg Type: RMS	07:40:48 PM Aug 20, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N	Frequency
10 dB/div	Ref Offset 1.5 dB Ref 21.50 dB m	IFGain:Low	#Atten: 30 dB	Mkr1	5.184 375 GHz 3.81 dBm	Auto Tune
11.5				▲ ¹		Center Freq 5.180000000 GHz
8.50						Start Freq 5.167500000 GHz
-18.5					Martin and space	Stop Freq 5.192500000 GHz
38.5						CF Step 2.500000 MHz <u>Auto</u> Mar
58.5						Freq Offse 0 Ha
-68.5						
	.18000 GHz 1.0 MHz	#VBW	3.0 MHz	Sweep 1	Span 25.00 MHz .000 ms (1001 pts)	
//SG				K STATUS	3	

Channel 36:

Channel 44:

💓 Keysight Spectrum Analyzer - Swept SA	
X RL RF 50 Ω AC SENSE:INT ALIGN AUTO 07:41:51 PM Aug 20, 2015 Center Freq 5.220000000 GHz PNO: East Trig: Free Run #Avg Type: RMS TracE [1 2 3 4 5 6	Frequency
PNO: Fast Trig: Free Run IFGain:Low #Atten: 30 dB Ref Offset 1.5 dB 10 dB/div Ref 21.50 dBm 	Auto Tun
	Center Fre 220000000 G⊦
1.50	Start Fre 207500000 G⊦
18.5	Stop Fre 232500000 GF
18.5	CF Ste 2.500000 Mi o Mi
	Freq Offs
Center 5.22000 GHz Span 25.00 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Sweep 1.000 ms (1001 pts)	
ASG STATUS	



			Chani	nel 48:		
🎉 Keysight Spectrum Anal						
X RL RF Center Freq 5.2	50 Ω AC 240000000	GHz PNO: Fast	SENSE:INT Trig: Free Run #Atten: 30 dB	ALIGN AUTO #Avg Type: RMS	07:43:08 PM Aug 20, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNN	Frequency
	fset 1.5 dB 1.50 dBm			Mkr1	5.244 675 GHz 3.43 dBm	Auto Tune
11.5				1		Center Freq 5.240000000 GHz
8.50			munder the topper afterness			Start Fred 5.227500000 GHz
28.5					La the second se	Stop Fred 5.252500000 GHz
48.5						CF Step 2.500000 MH: <u>Auto</u> Mar
58.5						Freq Offse 0 Ha
68.5						
Center 5.24000 (#Res BW 1.0 MH		#VBW	3.0 MHz	Sweep 1	Span 25.00 MHz .000 ms (1001 pts)	
ASG				Ko STATUS	5	

Channel 48:

Channel 52:

					Chann				
- d -							ilyzer - Swept SA	ht Spectrum Ar	
Frequency	M Aug 20, 2015		ALIGN AUTO		SENSE:INT		50 Ω AC	RF	XI RL
rrequency	CE 1 2 3 4 5 6 PE A WWWWW		pe:RMS	#Avg Ty	Trig: Free Run		260000000	r Freq 5	Cente
	ETANNNN	DE			#Atten: 30 dB	PNO: Fast IFGain:Low			
Auto Tun		E 00E 0	Mind			II Gall.Low			
	050 GHz		INIKET				ffset 1.5 dB		
	48 dBm	3.					21.50 dBm	iv Ref	10 dB/c
									Γ
Center Fre									
5.260000000 GH			A1						11.5 —
			♦ '						
					montestant		and the second second		1.50 —
Start Fre							1 and the second		
5.247500000 GH							1		-8.50
1		1						1	0.50
		1						/	
Stop Fre	1							1	-18.5 —
5.272500000 GH	No Walkson and a start							AN AN AND AND AND AND AND AND AND AND AN	
	. April 10							all a constant	-28.5 🛩
CF Ste									38.5
2.500000 MH									00.0
<u>Auto</u> Ma									
									48.5
Freq Offse									
0 H									-58.5
0 F									
									-68.5
	25.00 MHz	Span 2					GHz	5.26000	Cente
	(1001 pts)	1.000 ms (Sweep 1		.0 MHz	#VBW		3W 1.0 M	
L									ISG
		3	No STATUS						10G



			Chann	iel 60:		
	trum Analyzer - Swept SA					
Center Fre	RF 50 Ω AC eq 5.30000000	0 GHz PNO: Fast G IFGain:Low	SENSE:INT Trig: Free Run #Atten: 30 dB	ALIGN AUTO #Avg Type: RMS	07:44:45 PM Aug 20, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNN N	Frequency
	Ref Offset 1.5 dB Ref 21.50 dBm			Mkr1	5.303 925 GHz 3.25 dBm	Auto Tune
11.5				▲ ¹		Center Freq 5.30000000 GHz
-8.50						Start Freq 5.287500000 GHz
-18.5	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				Manuthmanne	Stop Freq 5.312500000 GHz
-38.5						CF Step 2.500000 MHz <u>Auto</u> Man
-58.5						Freq Offset 0 Hz
-68.5						
Center 5.30 #Res BW 1		#VBW	3.0 MHz	· · · · ·	Span 25.00 MHz I.000 ms (1001 pts)	
MSG					S	

Channel 60:

Channel 64:

			01011	Chann			
- 6 -						nalyzer - Swept SA	
Frequency	07:46:54 PM Aug 20, 2015	ALIGN AUTO		SENSE:INT		50 Ω AC	RL R
riequency	TRACE 1 2 3 4 5 6 TYPE A WWWW	e:RMS	#Avg Typ	Trig: Free Run	GHz	.320000000	nter Freq
	DETANNNN			#Atten: 30 dB	PNO: Fast 😱 IFGain:Low		
Auto Tun	5.323 475 GHz 3.23 dBm	Mkr1				Offset 1.5 dB 21.50 dBm	
Center Fre							
5.320000000 GH							5
5.52000000 Gi							
Start Fre		and a second	***	and the foregoing the second sec)
5.307500000 GH	<u>\</u>)
	\mathbf{h}					/	
Stop Fre							; ,
5.332500000 GH	Window Window						and the part of the
	Ĩ						,
CF Ste							;
2.500000 MH Auto Ma							
<u>Auto</u> Ma							;
Freq Offs							
01							j
			_				;
	Span 25.00 MHz		1		<i>#</i>) (5) W		nter 5.3200
	000 ms (1001 pts)	Sweep 1.		8.0 MHz	#vBW	INZ	es BW 1.0
		-O INTOS					



		Channe	el 100:		
🔰 Keysight Spectrum Analyzer - Swept SA					
XI RL RF 50Ω AC Center Freq 5.5000000		SENSE:INT Trig: Free Run #Atten: 30 dB	ALIGN AUTO #Avg Type: RMS	07:47:43 PM Aug 20, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N	Frequency
Ref Offset 1.5 dB 10 dB/div Ref 21.50 dBn			Mkr1	5.496 775 GHz 3.98 dBm	Auto Tune
11.5	∮ 1				Center Freq 5.50000000 GHz
8.50					Start Free 5.487500000 GHz
18.5 17 28.5 White physical 2				Mar Mariner	Stop Fred 5.512500000 GHz
48.5					CF Step 2.500000 MHz <u>Auto</u> Mar
58.5					Freq Offse 0 Ha
68.5					
Center 5.50000 GHz #Res BW 1.0 MHz	#VBW	3.0 MHz	Sweep 1	Span 25.00 MHz .000 ms (1001 pts)	
ISG			to status	; 	

Ch 1 100

Channel 116:

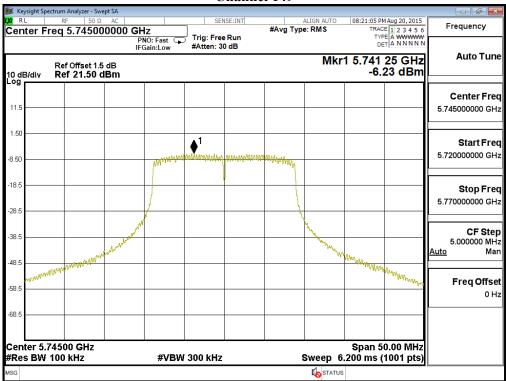
	ectrum Analyzer - Swept						
LXI RL	RF 50 Ω		SENSE:IN			8:37 PM Aug 20, 2015	Frequency
Center F	req 5.580000	000 GHz	Trig: Free Run	#Avg Type:	RIVIS	TRACE 1 2 3 4 5 6	
		PNO: Fast (IFGain:Low	#Atten: 30 dB			DET A NNNN	
					Mkr1 5 5	75 225 GHz	Auto Tune
	Ref Offset 1.5 d					3.80 dBm	
10 dB/div Log	Ref 21.50 dB	sm				0.00 abiii	
-							Center Freq
11.5							
11.5		▲1					5.58000000 GHz
1.50					and the second	×	Otort From
						1	Start Freq
-8.50						1	5.567500000 GHz
	1					λ.	
-18.5						<u>\</u>	Otom Ener
-28.5	Star Wal					No.	Stop Freq
-28.5						W shares a share a sha	5.592500000 GHz
-20.5						71	
							CF Step
-38.5							2.500000 MHz
							<u>Auto</u> Man
-48.5							
							E
-58.5							Freq Offset
							0 Hz
-68.5							
-00.0							
Center 5.	58000 GHz		1		Sn	an 25.00 MHz	
#Res BW		#VB	W 3.0 MHz	Sv	veep 1.000	ms (1001 pts)	
MSG					STATUS	(
Mag					SIAIUS		



		Channe	el 140:		
🎉 Keysight Spectrum Analyzer - S					
x RL RF 50 Center Freq 5.7000		Trig: Free Run #Atten: 30 dB	ALIGN AUTO #Avg Type: RMS	07:54:12 PM Aug 20, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNNN	Frequency
Ref Offset 1 10 dB/div Ref 21.50	.5 dB		Mkr1	5.696 300 GHz 3.28 dBm	Auto Tune
11.5					Center Freq 5.70000000 GHz
8.50					Start Fred 5.687500000 GHz
18.5 / /				when the second	Stop Frec 5.712500000 GH:
48.5					CF Step 2.500000 MH: Auto Mar
58.5					Freq Offse 0 Hi
68.5					
Center 5.70000 GHz #Res BW 1.0 MHz	#VBW	3.0 MHz	Sweep 1	Span 25.00 MHz .000 ms (1001 pts)	
//SG			K STATUS		

Ch 1 1 / 0

Channel 149





	Channel 157											
								•	m Analyzer - Swe			
Frequency	0 PM Aug 20, 2015 RACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N	TRAC	ALIGN AUTO e: RMS	#Avg Typ		Trig: Fre	Z NO: Fast 😱	AC 0000 GH	RF 50 Ω 5.78500		en	
Auto Tun	9 40 GHz	Ref Offset 1.5 dB dB/div Ref 21.50 dBm -6.43 dBm -6.43 dBm										
Center Fre 5.785000000 G⊦											og 11.5	
Start Fre 5.760000000 G⊦				manage	him the states	L Andardaa ayyaadi	MYMANIAN				1.50 3.50	
Stop Fre 5.810000000 GH											8.5 8.5	
CF Ste 5.000000 MH Auto Ma		Annone	Maran Maran					when the way of the	Woolowwww		18.5	
Freq Offs 0 H	MMMMM	- WINANA							Allaodada	mannana	i0.5	
	50.00 MHz (1001 pts)		Sween 6		,	300 kHz	#VBM		00 GHz	ter 5.78 8 BW 1		
											ISG	

Channel 157

Channel 165

				00	inner i	0					
								pt SA	n Analyzer - Swe	ysight Spectru	🊺 Ke
Frequency	M Aug 20, 2015		ALIGN AUTO		SE:INT	SEI		AC	KF 50 Ω		l XI R
Frequency	E 1 2 3 4 5 6	TRAC	e:RMS	#Avg Typ	_		z	0000 GH	5.82500	ter Free	Cer
		DE				Trig: Free #Atten: 3	IO: Fast 🖵 Jain:Low	PI IFC			
Auto Tune	95 GHz 18 dBm	Ref Offset 1.5 dB Mkr1 5.820 95 GHz rdiv Ref 21.50 dBm -7.18 dBm									
Center Freq											Log
5.825000000 GHz											11.5
Otherst Error											1.50
Start Freq						♦ ¹					
5.80000000 GHz				howwww.	NAMANA	Mohanara	ANNYPPRAN				-8.50
				۳°	ĺ						
Stop Freq											-18.5
5.85000000 GHz											-28.5
				۲. ۲			P				-20.5
CF Step			N _N					and the second			-38.5
5.000000 MHz <u>Auto</u> Man			- Maria					Mary North			
		hat when a	N/					<i></i>	- AADAN MARKAN		-48.5
Freq Offset	muunnun	. WWW							www.www.	www.www	
0 Hz											-58.5
											-68.5
											-00.0
	0.00 MHz 1001 pts)	Span 5	Sween 6			300 kHz	#\/B\M			ter 5.82 s BW 10	
	1001 pts)						#101			5 099 10	
			I STATUS								MSG



Product	:	Wireless gateway
Test Item	:	Peak Power Spectral Density
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n-40BW 15Mbps)

Channel Number	Frequency (MHz)	Data Rata (Mbps)	Measurement Level (dBm)	Required Limit (dBm)	Result
38	5190	15	-0.510	11	Pass
46	5230	15	-1.010	11	Pass
54	5270	15	-0.510	11	Pass
62	5310	15	-1.400	11	Pass
102	5510	15	-1.100	11	Pass
110	5550	15	-0.580	11	Pass
134	5670	15	-0.860	11	Pass

Channel Number	Frequency (MHz)	Data Rata (Mbps)	PPSD (dBm)	BWCF (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
151	5755	15	-10.75	6.98	-3.77	<30	Pass
159	5795	15	-11.36	6.98	-4.38	<30	Pass



Channel 38					
50 Ω AC SENSE:INT ALIGN AUTO 08:00:14 PMAug 20, 2015 0000000 GHz #Avg Type: RMS TRACE [12:34:56 TRACE [12:34:56 TRACE [12:34:56 PNO: Fast Trig: Free Run Trype: RMS Trype: AVWAWW Trype: AVWAWW IEGain: Low #Atten: 30 dB DET A NNNN DET A NNNN					
Gain:Low #Atten: 30 GB Mkr1 5.198 15 GHz -0.51 dBm	Auto Tun				
5.	Center Fre 5.190000000 G⊦				
	Start Fre 5.165000000 G⊦				
5.	Stop Fre 5.215000000 GH				
Aut	CF Ste 5.000000 MH to Ma				
	Freq Offs 0 F				
Span 50.00 MHz #VBW 3.0 MHz Sweep 1.000 ms (1001 pts)					

Channel 38

Channel 46

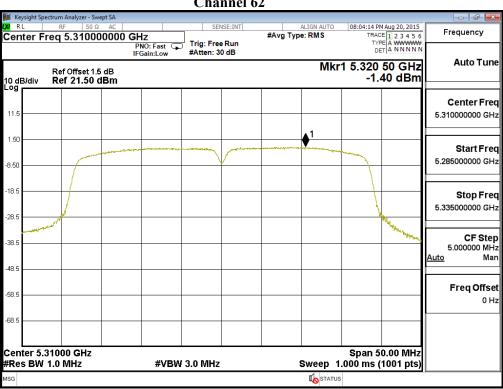
			Channel	10		
	pectrum Analyzer - Swept SA					
L <mark>XI</mark> RL	RF 50 Ω AC		SENSE:INT	ALIGN AUT		Frequency
Center	Freq 5.23000000	0 GHz		#Avg Type: RMS	TRACE 1 2 3 4 5 6 TYPE A WWWWW	Frequency
		PNO: Fast 😱 IFGain:Low	Trig: Free Run #Atten: 30 dB		DETANNNN	Auto Tune
	Ref Offset 1.5 dB				kr1 5.238 20 GHz -1.01 dBm	Autorune
10 dB/div Log	Ref 21.50 dBm				-1.01 0.611	
						Center Freq
11.5						
11.0						5.230000000 GHz
				▲1		
1.50						Stort From
	Margare and Commence				and a second second	Start Free
-8.50	/**		Y			5.205000000 GHz
-18.5						Oton Eror
	1					Stop Fred
-28.5					h	5.255000000 GHz
-20.0	an where a det					
					Mart Markenter	CF Step
-38.5						5.000000 MH
						<u>Auto</u> Mar
-48.5						
						5 Off
-58.5						Freq Offset
						0 Hz
-68.5						
Center 5	.23000 GHz	·	1		Span 50.00 MHz	
	1.0 MHz	#VBW	3.0 MHz	Sweep	1.000 ms (1001 pts)	
MSG				STA:	· · ·	μ
				•		



				54	Channel				
- 6								ht Spectrum An	
Frequency	MAug 20, 2015 E 1 2 3 4 5 6 E A WWWWW	TRAC	ALIGN AUTO (pe: RMS	#Avg T	SENSE:INT	GHz PNO: Fast	50 Ω AC	r Freq 5.	XI RL Cente
Auto Tun	PNO: Fast #Atten: 30 dB Det ANNNN Ref Offset 1.5 dB Mkr1 5.277 70 GHz -0.51 dBm								
Center Fre 5.270000000 GH									- og 11.5 –
Start Fre 5.245000000 GH		m							1.50 — 8.50 —
Stop Fre 5.29500000 GH									-18.5 — 28.5 —
CF Stej 5.000000 MH <u>Auto</u> Ma	North March March							- Will for in some of the	38.5 — 48.5 —
Freq Offse 0 H									58.5 —
	0.00 MHz	Span 5						5.27000	
	1001 pts)	.000 ms (Sweep 1.		3.0 MHz	#vBW	۷	3W 1.0 M	#Res

Ch 1 54

Channel 62





		Chann	el 102					
🊺 Keysight Spectrum Analyzer - Swept SA								
M RL RF 50 Ω AC Center Freq 5.510000000	PNO: East	SENSE:INT	ALIGN AUTO #Avg Type: RMS	08:08:22 PM Aug 20, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWW	Frequency			
Ref Offset 1.5 dB 10 dB/div Ref 21.50 dBm	Ref Offset 1.5 dB #Atten: 30 dB Mkr1 5.519 85 GHz							
- og					Center Freq 5.510000000 GHz			
8.50					Start Fred 5.485000000 GH2			
28.5					Stop Fred 5.535000000 GH;			
20.5				North Market	CF Step 5.000000 MH Auto Mar			
58.5					Freq Offse 0 H			
68.5								
Center 5.51000 GHz #Res BW 1.0 MHz	#VBW 3	3.0 MHz	· · ·	Span 50.00 MHz .000 ms (1001 pts)				
ASG			Ko STATUS					

Channel 102

Channel 110

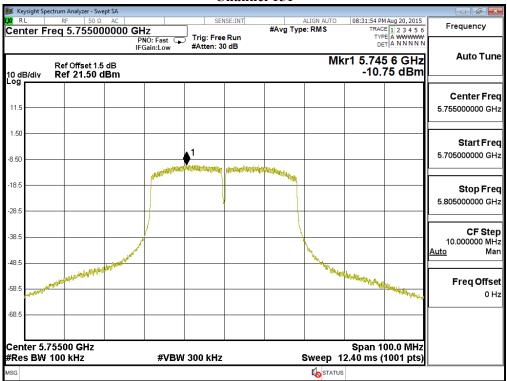
			0	-		
	Spectrum Analyzer - Swept S					
K RL	RF 50 Ω A		SENSE:INT	ALIGN AUT		Frequency
Center	Freq 5.5500000	00 GHz	Trig: Free Run	#Avg Type: RMS	TRACE 1 2 3 4 5 6	Trequency
		PNO: Fast G	#Atten: 30 dB		DET A NNNN	
				М	kr1 5.558 70 GHz	Auto Tun
	Ref Offset 1.5 dE			IVI	-0.58 dBm	
10 dB/div Log	 Ref 21.50 dBr 	n			-0.00 0.011	
- -						Contor Ero
11.5						Center Fre
11.5						5.550000000 GH
				⊾ 1		
1.50				9		
	anon				and the second sec	Start Fre
-8.50			Y			5.525000000 GH
					}	
18.5	1					
10.0	<u> </u>					Stop Fre
					Υ.	5.575000000 GH
-28.5	www.harrowlett				N.	
wood	WWW				- Alberton State	CF Ste
38.5						5.000000 MH
						Auto Ma
48.5						
58.5						Freq Offs
-00.0						0 H
68.5						
	5 55000 CH-				Onen 50 00 Mili-	
	5.55000 GHz W 1.0 MHz	#\(P)	V 3.0 MHz	Cwoon	Span 50.00 MHz 1.000 ms (1001 pts)	
		#VDV		•	,	
ASG				I o sta	TUS	



			nel 13	Cha				
- 5 💌							Spectrum Analy	
Frequency	08:11:35 PM Aug 20, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWWW	ALIGN AUTO ype: RMS	#Av	SENSE:IN	GHz	50 Ω AC 70000000 (RF Freq 5.6	X RL Center
Auto Tune	Ref Offset 1.5 dB Mkr1 5.662 30 GHz							
Center Fred 5.670000000 GH;						I.50 dBm	Ref 21	10 dB/div - 09 11.5
Start Fred 5.645000000 GH2		- A war war and	n and the second second		1			1.50 8.50
Stop Free 5.695000000 GH:								28.5
CF Step 5.000000 MH Auto Mar	and the second s						Werkerer	38.5
Freq Offse 0 H								58.5
	Span 50.00 MHz						5.67000 G	
	.000 ms (1001 pts)	Sweep 1.		3.0 MHz	#VBW	Ź	W 1.0 MHz	FRES B

Channel 134

Channel 151





			C	<u>'hanne</u>	1 1 59					
	um Analyzer - Swept SA									
Center Fre	RF 50 Ω AC q 5.795000000 G	iHz PNO: Fast 😱	Trig: Free		#Avg Typ	ALIGN AUTO e: RMS	TRAC	M Aug 20, 2015 DE 1 2 3 4 5 6 PE A WWWW ET A N N N N N	Frequency	
10 dB/div F	Ref Offset 1.5 dB Mkr1 5.783 7 GHz dB/div Ref 21.50 dBm -11.36 dBm									
- og 11.5									Center Freq 5.795000000 GHz	
-8.50		1	որություններ	huut halinin tali	Uldark				Start Freq 5.745000000 GHz	
.18.5									Stop Freq 5.845000000 GHz	
38.5		-				<u></u>			CF Step 10.000000 MHz Auto Mar	
58.5	angui-phriteithiligthichte					Why Hard	winner and a second	Mitty-shalo-shearing	Freq Offset 0 Hz	
68.5										
Center 5.79: #Res BW 10		#VBW	300 kHz			Sweep 1	2.40 ms (00.0 MHz (1001 pts)		

Channel 159



5. Radiated Emission

5.1. Test Equipment

The following test equipments are used during the radiated emission test:

Test Site	Equipment		Manufacturer	Model No./Serial No.	Last Cal.
Site # 3	Х	Magnetic Loop Antenna	Teseq	HLA6121/ 37133	Sep., 2015
	Х	Bilog Antenna	Schaffner Chase	CBL6112B/ 2707	Jun., 2015
	Х	EMI Test Receiver	R&S	ESCS 30/838251/ 001	Jun., 2015
	Х	Coaxial Cable	QTK(Arnist)	RG 214/ LC003-RG	Jun., 2015
	Х	Coaxial signal switch	Arnist	MP59B/ 6200798682	Jun., 2015

Test Site	Equipment		Manufacturer	Model No./Serial No.	Last Cal.
CB # 8	Х	Spectrum Analyzer	R&S	FSP40/ 100339	Oct., 2014
	Х	Horn Antenna	ETS-Lindgren	3117/ 35205	Mar., 2015
	Х	Horn Antenna	Schwarzbeck	BBHA9170/209	Jan, 2015
	Х	Horn Antenna	TRC	AH-0801/95051	Aug., 2015
	Х	Pre-Amplifier	EMCI	EMC012630SE/980210	Jan., 2015
	Х	Pre-Amplifier	MITEQ	JS41-001040000-58-5P/153945	Jul., 2015
	Х	Pre-Amplifier	NARDA	DBL-1840N506/013	Jul., 2015

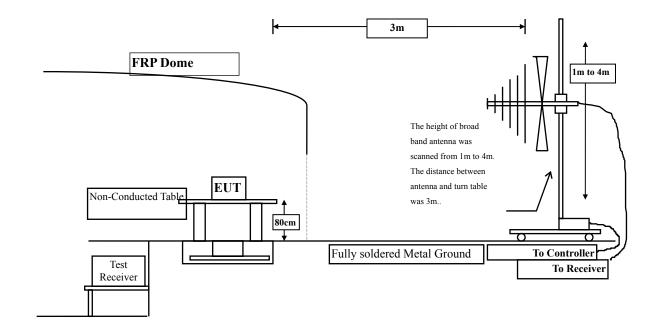
Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

2. The test instruments marked with "X" are used to measure the final test results.

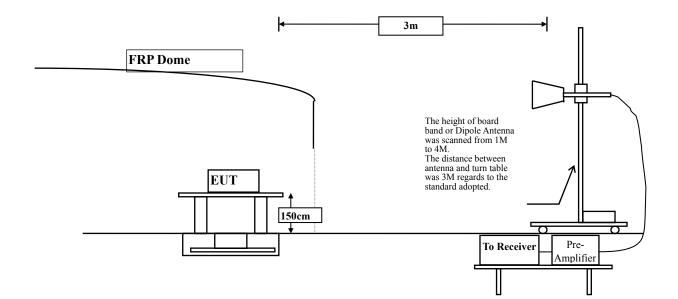


5.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz





5.3. 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	Measurement distance		
	(microvolts/meter)	(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 $(dB\mu V/m) = 20 \log E$ field strength (uV/m)

5.4. 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 worst radiated emission is measured in the Open Area Test Site on the Final Measurement. The measurement frequency range form 9kHz - 10th Harmonic of fundamental was investigated.

5.5. Uncertainty

- ± 3.8 dB below 1GHz
- ± 3.9 dB above 1GHz

5.6. Test Result of Radiated Emission

Product	:	Wireless gateway
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps) (5180MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
10360.000	10.932	38.560	49.492	-24.508	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10360.000	12.436	37.850	50.285	-23.715	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*

- 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	:	Wireless gateway
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps) (5220MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
10440.000	9.725	37.790	47.515	-26.485	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10440.000	11.505	37.850	49.355	-24.645	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*

- 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	:	Wireless gateway
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps) (5240MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
10480.000	10.464	37.580	48.043	-25.957	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10480.000	12.399	37.250	49.649	-24.351	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*

- 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	:	Wireless gateway
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps) (5260MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
10520.000	11.531	37.630	49.161	-24.839	74.000
15780.000	*	*	*	*	74.000
21040.000	*	*	*	*	74.000
26300.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10520.000	13.441	37.250	50.691	-23.309	74.000
15780.000	*	*	*	*	74.000
21040.000	*	*	*	*	74.000
26300.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*

- 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	:	Wireless gateway
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps) (5300MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
10600.000	13.182	37.580	50.762	-23.238	74.000
15900.000	*	*	*	*	74.000
21200.000	*	*	*	*	74.000
26500.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10600.000	14.717	36.980	51.697	-22.303	74.000
15900.000	*	*	*	*	74.000
21200.000	*	*	*	*	74.000
26500.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*

- 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	:	Wireless gateway
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps) (5320MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10640.000	12.912	36.520	49.432	-24.568	74.000
15960.000	*	*	*	*	74.000
21280.000	*	*	*	*	74.000
26600.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10640.000	14.585	36.220	50.805	-23.195	74.000
15960.000	*	*	*	*	74.000
21280.000	*	*	*	*	74.000
26600.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*

- 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	:	Wireless gateway
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps) (5500MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
11000.000	12.513	38.140	50.653	-23.347	74.000
16500.000	*	*	*	*	74.000
22000.000	*	*	*	*	74.000
27500.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11000.000	14.635	37.250	51.885	-22.115	74.000
16500.000	*	*	*	*	74.000
22000.000	*	*	*	*	74.000
27500.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*

- 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	:	Wireless gateway
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps) (5580MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
11160.000	12.953	36.850	49.804	-24.196	74.000
16800.000	*	*	*	*	74.000
22400.000	*	*	*	*	74.000
28000.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11160.000	15.197	36.210	51.407	-22.593	74.000
16800.000	*	*	*	*	74.000
22400.000	*	*	*	*	74.000
28000.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*

- 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	:	Wireless gateway
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps) (5700MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
11400.000	14.753	36.890	51.643	-22.357	74.000
17100.000	*	*	*	*	74.000
22800.000	*	*	*	*	74.000
28500.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11400.000	16.303	36.650	52.953	-21.047	74.000
17100.000	*	*	*	*	74.000
22800.000	*	*	*	*	74.000
28500.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*

- 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 Test Item Test Site Test Mode	 Wireless gateway Harmonic Radiated Emission Data No.3 OATS Mode 1: Transmit (802.11a-6Mbps) (5745MHz) 					
Frequency	Correct	Reading	Measurement	Margin	Limit	
	Factor	Level	Level			
MHz	dB	dBuV	dBuV/m	dB	dBuV/m	
Horizontal						
Peak Detector:						
11490.000	14.326	38.750	53.075	-20.925	74.000	
17235.000	*	*	*	*	74.000	
20720.000	*	*	*	*	74.000	
25900.000	*	*	*	*	74.000	
31080.000	*	*	*	*	74.000	
36260.000	*	*	*	*	74.000	
Average						
Detector:						
*	*	*	*	*	*	
Vertical						
Peak Detector:						
11490.000	15.842	38.430	53.971	-20.029	74.000	
17235.000	*	*	*	*	74.000	
20720.000	*	*	*	*	74.000	
25900.000	*	*	*	*	74.000	
31080.000	*	*	*	*	74.000	
36260.000	*	*	*	*	74.000	
Average						
Detector:						
*	*	*	*	*	*	

Note:

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- 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 Test Item Test Site Test Mode	No.3 OATS					
Frequency	Correct	Reading	Measurement	Margin	Limit	
	Factor	Level	Level	-		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m	
Horizontal						
Peak Detector:						
11570.000	14.849	38.280	53.129	-20.871	74.000	
17355.000	*	*	*	*	74.000	
20800.000	*	*	*	*	74.000	
26000.000	*	*	*	*	74.000	
31200.000	*	*	*	*	74.000	
36400.000	*	*	*	*	74.000	
Average						
Detector:						
*	*	*	*	*	*	
Vertical						
Peak Detector:						
11570.000	16.215	36.850	53.064	-20.936	74.000	
17355.000	*	*	*	*	74.000	
20800.000	*	*	*	*	74.000	
26000.000	*	*	*	*	74.000	
31200.000	*	*	*	*	74.000	
36400.000	*	*	*	*	74.000	
Average						
Detector:						
*	*	*	*	*	*	

- 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	: Wireless gateway						
Test Item	: Harmonic Radiated Emission Data						
Test Site	: No.3 OATS						
Test Mode	: Mode 1:	Transmit (802.11	a-6Mbps) (5825MHz	z)			
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBuV	dBuV/m	dB	dBuV/m		
Horizontal							
Peak Detector:							
11650.000	13.179	38.450	51.629	-22.371	74.000		
17475.000	*	*	*	*	74.000		
20960.000	*	*	*	*	74.000		
26200.000	*	*	*	*	74.000		
31440000	*	*	*	*	74.000		
36680.000	*	*	*	*	74.000		
Average							
Detector:							
*	*	*	*	*	*		
Vertical							
Peak Detector:							
11650.000	14.634	37.960	52.594	-21.406	74.000		
17475.000	*	*	*	*	74.000		
20960.000	*	*	*	*	74.000		
26200.000	*	*	*	*	74.000		
31440000	*	*	*	*	74.000		
36680.000	*	*	*	*	74.000		
Average							
Detector:							

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1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.

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2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.

3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.

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4. Measurement Level = Reading Level + Correct Factor.

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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	:	Wireless gateway
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5180MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10360.000	10.932	38.650	49.582	-24.418	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
100 60 000		• • • • • •			

10360.000	12.436	37.980	50.415	-23.585	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

- 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	:	Wireless gateway
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5220MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
IVIIIZ	uD	uDμν	uDμv/III	цВ	uDμv/III
Horizontal					
Peak Detector:					
10440.000	9.725	37.750	47.475	-26.525	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000 Average	*	*	*	*	74.000
Detector:					
*	*	*	*	*	*

Vertical

Peak Detector:

10440.000	11.505	38.630	50.135	-23.865	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*

Note:

- 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.

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Product	:	Wireless gateway
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5240MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
10480.000	10.464	38.950	49.413	-24.587	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10480.000	12.399	38.110	50.509	-23.491	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
Average					
Detector:					

Note:

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- 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.

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4. Measurement Level = Reading Level + Correct Factor.

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- 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	:	Wireless gateway
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5260MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	$dB\mu V/m$
Horizontal					
Peak Detector:					
10520.000	11.531	38.520	50.051	-23.949	74.000
15780.000	*	*	*	*	74.000
21040.000	*	*	*	*	74.000
26300.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10520.000	13.441	37.630	51.071	-22.929	74.000
15780.000	*	*	*	*	74.000
21040.000	*	*	*	*	74.000
26300.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*

- 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	:	Wireless gateway
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5300MHz)

Frequency	Correct	Reading Level	Measurement	Margin	Limit
	Factor		Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10600.000	13.182	36.520	49.702	-24.298	74.000
15900.000	*	*	*	*	74.000
21200.000	*	*	*	*	74.000
26500.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*

Vertical

Peak Detector:

10600.000	14.717	36.120	50.837	-23.163	74.000
15900.000	*	*	*	*	74.000
21200.000	*	*	*	*	74.000
26500.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*

Note:

- 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	:	Wireless gateway
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5320MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
10640.000	12.912	36.320	49.232	-24.768	74.000
15960.000	*	*	*	*	74.000
21280.000	*	*	*	*	74.000
26600.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10640.000	14.585	35.850	50.435	-23.565	74.000
15960.000	*	*	*	*	74.000
21280.000	*	*	*	*	74.000
26600.000	*	*	*	*	74.000
Average					
Detector:					

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1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.

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- 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	:	Wireless gateway
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5500MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
11000.000	12.513	38.220	50.733	-23.267	74.000
16500.000	*	*	*	*	74.000
22000.000	*	*	*	*	74.000
27500.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11000.000	14.635	37.280	51.915	-22.085	74.000
16500.000	*	*	*	*	74.000

22000.000 * * * * * 74.000 27500.000 * * * * * 74.000 Average Detector: * * * * * * * *

Note:

- 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	:	Wireless gateway
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5580MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
11160.000	12.953	37.140	50.094	-23.906	74.000
16800.000	*	*	*	*	74.000
22400.000	*	*	*	*	74.000
28000.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11160.000	15.197	37.330	52.527	-21.473	74.000
16800.000	*	*	*	*	74.000
22400.000	*	*	*	*	74.000
28000.000	*	*	*	*	74.000
Average					

Detector:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.

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- 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	:	Wireless gateway
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5700MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
11400.000	14.753	36.690	51.443	-22.557	74.000
17100.000	*	*	*	*	74.000
22800.000	*	*	*	*	74.000
28500.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11400.000	16.303	36.070	52.373	-21.627	74.000
17100.000	*	*	*	*	74.000
22800.000	*	*	*	*	74.000
28500.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*

- 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.

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Product Test Item Test Site Test Mode	: Harmon : No.3 OA		sion Data n-20BW 7.2Mbps) (:	5745MHz)	
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level	-	
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11490.000	14.326	37.950	52.275	-21.725	74.000
17235.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11490.000	15.842	37.870	53.711	-20.289	74.000
17235.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*

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	: Wireless	s gateway			
Test Item	: Harmon	ic Radiated Emiss	sion Data		
Test Site	: No.3 OA	ATS			
Test Mode	: Mode 2:	Transmit (802.11	In-20BW 7.2Mbps) (5	5785MHz)	
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11570.000	14.849	37.760	52.609	-21.391	74.000
17355.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
31320.000	*	*	*	*	74.000
36540.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11570.000	16.215	37.750	53.964	-20.036	74.000
17355.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
31320.000	*	*	*	*	74.000
36540.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*

- 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.

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Product	: Wireless	gateway			
Test Item	: Harmon	ic Radiated Emiss	sion Data		
Test Site	: No.3 OA	ATS			
Test Mode	: Mode 2:	Transmit (802.11	n-20BW 7.2Mbps) (3	5825MHz)	
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11650.000	13.179	38.570	51.749	-22.251	74.000
17475.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440.000	*	*	*	*	74.000
36680.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11650.000	14.634	37.540	52.174	-21.826	74.000
17475.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440.000	*	*	*	*	74.000
36680.000	*	*	*	*	74.000
Average					
Detector:					

Note:

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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	:	Wireless gateway
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n-40BW 15Mbps) (5190MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	$dB\mu V/m$
Horizontal					
Peak Detector:					
10380.000	10.400	38.200	48.600	-25.400	74.000
15570.000	*	*	*	*	74.000
20760.000	*	*	*	*	74.000
25950.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					

Peak Detector:

can Detector.					
10380.000	11.965	37.760	49.726	-24.274	74.000
15570.000	*	*	*	*	74.000
20760.000	*	*	*	*	74.000
25950.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

Note:

- 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	:	Wireless gateway
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n-40BW 15Mbps) (5230MHz)

nit	Limit	Margin	Measurement	Reading	Correct	Frequency
			Level	Level	Factor	
V/m	dBµV/r	dB	$dB\mu V/m$	dBµV	dB	MHz
						Horizontal
						Peak Detector:
)00	74.000	-25.698	48.302	38.370	9.932	10460.000
)00	74.000	*	*	*	*	15690.000
)00	74.000	*	*	*	*	20920.000
)00	74.000	*	*	*	*	26150.000
						Average
						Detector:
:	*	*	*	*	*	*
*		*	*	*	*	Detector:

Vertical

Peak Detector:

10460.000	11.790	38.210	50.000	-24.000	74.000
15690.000	*	*	*	*	74.000
20920.000	*	*	*	*	74.000
26150.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

Note:

- 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	:	Wireless gateway
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n-40BW 15Mbps) (5270MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	$dB\mu V/m$
Horizontal					
Peak Detector:					
10540.000	12.058	38.520	50.579	-23.421	74.000
15810.000	*	*	*	*	74.000
21080.000	*	*	*	*	74.000
26350.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10540.000	13.868	37.360	51.228	-22.772	74.000

10340.000	15.808	37.300	51.228	-22.112	/4.000
15810.000	*	*	*	*	74.000
21080.000	*	*	*	*	74.000
26350.000 Average	*	*	*	*	74.000
Detector:					
*	*	*	*	*	*

- 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	:	Wireless gateway
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n-40BW 15Mbps) (5310MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	$dB\mu V/m$
Horizontal					
Peak Detector:					
10620.000	13.096	37.710	50.805	-23.195	74.000
15930.000	*	*	*	*	74.000
21240.000	*	*	*	*	74.000
26550.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					

Peak Detector:

can Detector.					
10620.000	14.683	36.880	51.563	-22.437	74.000
15930.000	*	*	*	*	74.000
21240.000	*	*	*	*	74.000
26550.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

Note:

- 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	:	Wireless gateway
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n-40BW 15Mbps) (5510MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
11020.000	12.820	38.670	51.490	-22.510	74.000
15930.000	*	*	*	*	74.000
21240.000	*	*	*	*	74.000
26550.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11020.000	14.966	38.250	53.217	-20.783	74.000
15930.000	*	*	*	*	74.000

15930.000	*	*	*	*	74.000
21240.000	*	*	*	*	74.000
26550.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

- 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	:	Wireless gateway
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n-40BW 15Mbps) (5550MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	$dB\mu V/m$
Horizontal					
Peak Detector:					
11100.000	12.752	37.220	49.972	-24.028	74.000
16770.000	*	*	*	*	74.000
22360.000	*	*	*	*	74.000
27950.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11100 000	15.000	26 270	51 27(22 (24	74 000

11100.000	15.006	36.370	51.376	-22.624	74.000
16770.000	*	*	*	*	74.000
22360.000	*	*	*	*	74.000
27950.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

- 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	:	Wireless gateway
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n-40BW 15Mbps) (5670MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBµV/m	dB	dBµV/m
Horizontal	41D	uDµ (ub	
Peak Detector:					
11340.000	14.149	36.870	51.019	-22.981	74.000
17010.000	*	*	*	*	74.000
22680.000	*	*	*	*	74.000
28350.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
112 10 000	1 - 001	a a 0000	51 0 51	22 1 2 3	-

11340.000	15.891	35.980	51.871	-22.129	74.000
17010.000	*	*	*	*	74.000
22680.000	*	*	*	*	74.000
28350.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

- 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.

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Product	: Wireless gateway						
Test Item	: Harmonic Radiated Emission Data						
Test Site	: No.3 OATS						
Test Mode	: Mode 3:	Transmit (802.11	n-40BW 15Mbps) (5	755MHz)			
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBuV	dBuV/m	dB	dBuV/m		
Horizontal							
Peak Detector:							
11510.000	14.402	38.380	52.782	-21.218	74.000		
17265.000	*	*	*	*	74.000		
20760.000	*	*	*	*	74.000		
25950.000	*	*	*	*	74.000		
31140.000	*	*	*	*	74.000		
36330.000	*	*	*	*	74.000		
Average							
Detector:							
*	*	*	*	*	*		
Vertical							
Peak Detector:							
11510.000	15.894	37.510	53.404	-20.596	74.000		
17265.000	*	*	*	*	74.000		
20760.000	*	*	*	*	74.000		
25950.000	*	*	*	*	74.000		
31140.000	*	*	*	*	74.000		
36330.000	*	*	*	*	74.000		
Average							
Detector:							

Note:

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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	: Wireless gateway						
Test Item	: Harmonic Radiated Emission Data						
Test Site	: No.3 OATS						
Test Mode	: Mode 3:	Transmit (802.11	n-40BW 15Mbps) (5	795MHz)			
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBuV	dBuV/m	dB	dBuV/m		
Horizontal							
Peak Detector:							
11590.000	15.138	37.670	52.808	-21.192	74.000		
17385.000	*	*	*	*	74.000		
20920.000	*	*	*	*	74.000		
26150.000	*	*	*	*	74.000		
31380.000	*	*	*	*	74.000		
36610.000	*	*	*	*	74.000		
Average							
Detector:							
*	*	*	*	*	*		
Vertical							
Peak Detector:							
11590.000	16.461	35.040	51.501	-22.499	74.000		
17385.000	*	*	*	*	74.000		
20920.000	*	*	*	*	74.000		
26150.000	*	*	*	*	74.000		
31380.000	*	*	*	*	74.000		
36610.000	*	*	*	*	74.000		
Average							
Detector:							

Note:

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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 Test Item Test Site Test Mode	 Wireless gateway General Radiated Emission No.3 OATS Mode 1: Transmit (802.11a-6Mbps) (5220MHz) 					
Frequency	Correct	Reading	Measurement	Margin	Limit	
	Factor	Level	Level			
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m	
Horizontal						
Peak Detector						
161.920	-11.626	47.213	35.588	-7.912	43.500	
392.780	-2.096	36.327	34.231	-11.769	46.000	
483.960	-0.688	36.919	36.232	-9.768	46.000	
600.360	3.977	33.950	37.927	-8.073	46.000	
712.880	3.569	27.806	31.375	-14.625	46.000	
961.200	6.450	43.499	49.949	-4.051	54.000	
Vertical Peak Detector						
111.480	-0.954	35.740	34.786	-8.714	43.500	
181.320	-9.512	44.271	34.759	-8.741	43.500	
222.060	-8.789	43.212	34.423	-11.577	46.000	
286.080	-8.097	45.106	37.009	-8.991	46.000	
365.620	-2.179	34.574	32.395	-13.605	46.000	
747.800	2.166	30.672	32.838	-13.162	46.000	

- 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 Test Item Test Site Test Mode	 Wireless gateway General Radiated Emission No.3 OATS Mode 1: Transmit (802.11a-6Mbps) (5300MHz) 					
Frequency	Correct	Reading	Measurement	Margin	Limit	
	Factor	Level	Level			
MHz	dB	dBµV	$dB\mu V/m$	dB	$dB\mu V/m$	
Horizontal						
Peak Detector						
222.060	-10.439	45.017	34.578	-11.422	46.000	
505.300	0.308	31.268	31.576	-14.424	46.000	
664.380	2.062	29.952	32.014	-13.986	46.000	
747.800	3.296	29.620	32.916	-13.084	46.000	
858.380	5.972	31.844	37.816	-8.184	46.000	
961.200	6.450	43.202	49.652	-4.348	54.000	
Vertical Peak Detector						
101.780	-0.021	34.656	34.634	-8.866	43.500	
171.620	-8.752	41.884	33.132	-10.368	43.500	
229.820	-8.512	44.640	36.128	-9.872	46.000	
363.680	-2.393	37.978	35.585	-10.415	46.000	
480.080	-4.359	32.641	28.282	-17.718	46.000	
961.200	7.260	33.483	40.743	-13.257	54.000	

- 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 Test Item	 Wireless gateway General Radiated Emission 						
Test Site	: No.3 OATS						
Test Mode	: Mode 1: Transmit (802.11a-6Mbps) (5580MHz)						
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m		
Horizontal							
Peak Detector							
152.220	-10.135	41.859	31.724	-11.776	43.500		
402.480	-2.263	33.788	31.525	-14.475	46.000		
513.060	1.550	30.172	31.722	-14.278	46.000		
625.580	1.770	28.788	30.558	-15.442	46.000		
697.360	3.171	27.379	30.550	-15.450	46.000		
961.200	6.450	43.013	49.463	-4.537	54.000		
Vertical							
Peak Detector							
134.760	-4.648	37.232	32.584	-10.916	43.500		
355.920	-3.488	38.783	35.295	-10.705	46.000		
480.080	-4.359	36.246	31.887	-14.113	46.000		
600.360	-2.833	29.121	26.288	-19.712	46.000		
747.800	2.166	29.746	31.912	-14.088	46.000		
961.200	7.260	36.865	44.125	-9.875	54.000		

- 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 Test Item Test Site Test Mode	 Wireless gateway General Radiated Emission No.3 OATS Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5785MHz) 						
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m		
Horizontal							
Peak Detector							
261.140	-5.462	43.520	38.058	-7.942	46.000		
359.700	-0.248	40.510	40.262	-5.738	46.000		
372.500	0.871	39.580	40.451	-5.549	46.000		
386.500	1.135	38.250	39.385	-6.615	46.000		
452.930	1.292	36.810	38.103	-7.897	46.000		
749.750	3.965	30.850	34.815	-11.185	46.000		
854.600	7.373	29.470	36.843	-9.157	46.000		
Vertical							
Peak Detector							
251.250	-4.962	40.870	35.908	-10.092	46.000		
326.850	-2.754	40.880	38.127	-7.873	46.000		
348.250	-0.909	38.650	37.742	-8.258	46.000		
371.740	-0.254	37.840	37.586	-8.414	46.000		
447.150	-6.192	40.250	34.058	-11.942	46.000		
749.850	2.043	31.280	33.323	-12.677	46.000		
798.250	2.629	30.840	33.468	-12.532	46.000		

- 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 Test Item Test Site Test Mode	 Wireless gateway General Radiated Emission No.3 OATS Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5220MHz) 					
Frequency	Correct	Reading	Measurement	Margin	Limit	
	Factor	Level	Level			
MHz	dB	dBµV	dBµV/m	dB	dBµV/m	
Horizontal						
Peak Detector						
171.620	-10.242	44.542	34.300	-9.200	43.500	
406.360	-2.500	35.772	33.272	-12.728	46.000	
559.620	1.664	33.160	34.824	-11.176	46.000	
608.120	4.384	29.852	34.236	-11.764	46.000	
720.640	3.511	31.804	35.315	-10.685	46.000	
961.200	6.450	43.648	50.098	-3.902	54.000	
Vertical						
Peak Detector	(105	20.470	22.202	11.007	12 500	
159.980	-6.185	38.478	32.293	-11.207	43.500	
288.020	-8.189	44.244	36.055	-9.945	46.000	
390.840	-3.099	37.207	34.108	-11.892	46.000	
509.180	-0.158	31.207	31.049	-14.951	46.000	
687.660	2.444	27.477	29.921	-16.079	46.000	
961.200	7.260	36.351	43.611	-10.389	54.000	

- 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 Test Item Test Site Test Mode	 Wireless gateway General Radiated Emission No.3 OATS Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5300MHz) 					
Frequency	Correct	Reading	Measurement	Margin	Limit	
	Factor	Level	Level			
MHz	dB	dBµV	dBµV/m	dB	dBµV/m	
Horizontal						
Peak Detector						
148.340	-10.254	41.038	30.784	-12.716	43.500	
408.300	-2.866	38.357	35.491	-10.509	46.000	
474.260	0.024	36.979	37.002	-8.998	46.000	
600.360	3.977	34.330	38.307	-7.693	46.000	
720.640	3.511	32.508	36.019	-9.981	46.000	
961.200	6.450	43.038	49.488	-4.512	54.000	
Vertical Peak Detector						
111.480	-0.954	37.405	36.451	-7.049	43.500	
235.640	-9.330	48.536	39.206	-6.794	46.000	
390.840	-3.099	35.414	32.315	-13.685	46.000	
480.080	-4.359	40.738	36.379	-9.621	46.000	
666.320	-1.809	32.539	30.731	-15.269	46.000	
961.200	7.260	36.131	43.391	-10.609	54.000	

- 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 Test Item Test Site Test Mode	 Wireless gateway General Radiated Emission No.3 OATS Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5580MHz) 				
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector					
159.980	-11.775	43.334	31.559	-11.941	43.500
355.920	-2.528	40.571	38.043	-7.957	46.000
460.680	1.589	34.277	35.866	-10.134	46.000
600.360	3.977	35.394	39.371	-6.629	46.000
720.640	3.511	31.599	35.110	-10.890	46.000
825.400	6.250	24.043	30.293	-15.707	46.000
Vertical Peak Detector					
159.980	-6.185	41.531	35.346	-8.154	43.500
288.020	-8.189	43.397	35.208	-10.792	46.000
365.620	-2.179	40.213	38.034	-7.966	46.000
480.080	-4.359	36.693	32.334	-13.666	46.000
681.840	1.484	28.552	30.036	-15.964	46.000
961.200	7.260	36.174	43.434	-10.566	54.000

- 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 Test Item Test Site Test Mode	 Wireless gateway General Radiated Emission No.3 OATS Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5785MHz) 				
				,	.
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector					
251.250	-5.974	44.740	38.766	-7.234	46.000
359.800	-0.226	40.350	40.124	-5.876	46.000
371.250	0.856	39.840	40.696	-5.304	46.000
383.540	1.288	38.140	39.428	-6.572	46.000
452.870	1.279	36.140	37.419	-8.581	46.000
854.700	7.366	30.250	37.616	-8.384	46.000
Vertical					
Peak Detector					
251.180	-4.959	40.840	35.881	-10.119	46.000
326.580	-2.804	40.850	38.047	-7.953	46.000
348.160	-0.890	38.650	37.760	-8.240	46.000
371.250	-0.334	38.250	37.916	-8.084	46.000
447.200	-6.187	40.160	33.973	-12.027	46.000
749.700	2.016	31.840	33.856	-12.144	46.000
798.250	2.629	30.840	33.468	-12.532	46.000

- 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 Test Item Test Site Test Mode	 Wireless gateway General Radiated Emission No.3 OATS Mode 3: Transmit (802.11n-40BW 15Mbps) (5190MHz) 				
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector					
101.780	-7.141	42.502	35.361	-8.139	43.500
152.220	-10.135	40.694	30.559	-12.941	43.500
369.500	-1.098	35.487	34.389	-11.611	46.000
468.440	1.195	33.790	34.985	-11.015	46.000
600.360	3.977	36.226	40.203	-5.797	46.000
961.200	6.450	42.479	48.929	-5.071	54.000
Vertical					
Peak Detector					
119.240	-3.541	34.451	30.910	-12.590	43.500
237.580	-8.970	49.206	40.236	-5.764	46.000
357.860	-3.734	40.629	36.895	-9.105	46.000
480.080	-4.359	35.967	31.608	-14.392	46.000
687.660	2.444	28.304	30.748	-15.252	46.000
831.220	2.561	33.565	36.126	-9.874	46.000

- 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.

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Product Test Item Test Site Test Mode	 Wireless gateway General Radiated Emission No.3 OATS Mode 3: Transmit (802.11n-40BW 15Mbps) (5270MHz) 				
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector					
49.400	-11.018	44.021	33.003	-6.997	40.000
225.940	-9.878	45.873	35.994	-10.006	46.000
398.600	-2.268	36.141	33.873	-12.127	46.000
600.360	3.977	35.177	39.154	-6.846	46.000
747.800	3.296	29.772	33.068	-12.932	46.000
961.200	6.450	42.999	49.449	-4.551	54.000
Vertical Peak Detector					
165.800	-7.719	43.118	35.399	-8.101	43.500
276.380	-8.653	45.953	37.300	-8.700	46.000
369.500	-2.868	38.155	35.287	-10.713	46.000
480.080	-4.359	39.388	35.029	-10.971	46.000
664.380	-1.918	34.414	32.496	-13.504	46.000
961.200	7.260	36.736	43.996	-10.004	54.000

- 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 Test Item Test Site Test Mode	 Wireless gateway General Radiated Emission No.3 OATS Mode 3: Transmit (802.11n-40BW 15Mbps) (5550MHz) 				
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector					
175.500	-10.017	46.537	36.519	-6.981	43.500
396.660	-2.296	35.982	33.686	-12.314	46.000
476.200	-0.252	39.170	38.918	-7.082	46.000
600.360	3.977	33.844	37.821	-8.179	46.000
666.320	2.031	31.468	33.500	-12.500	46.000
961.200	6.450	43.395	49.845	-4.155	54.000
Vertical Peak Detector					
169.680	-8.728	42.051	33.323	-10.177	43.500
299.660	-6.855	42.258	35.403	-10.597	46.000
373.380	-2.373	35.882	33.509	-12.491	46.000
503.360	-0.852	29.721	28.869	-17.131	46.000
637.220	-3.649	31.262	27.613	-18.387	46.000
961.200	7.260	34.913	42.173	-11.827	54.000

- 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 Test Item Test Site Test Mode	: General : No.3 O		n n-40BW 15Mbps) (5	755MHz)	
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector					
251.250	-5.974	44.770	38.796	-7.204	46.000
359.840	-0.220	40.810	40.589	-5.411	46.000
371.440	0.860	39.850	40.710	-5.290	46.000
383.510	1.289	37.510	38.799	-7.201	46.000
452.920	1.290	35.284	36.574	-9.426	46.000
749.700	3.961	30.840	34.801	-11.199	46.000
854.200	7.348 30.250		37.598	-8.402	46.000
Vertical					
Peak Detector					
252.260	-5.000	41.680	36.680	-9.320	46.000
326.820	-2.759	40.840	38.081	-7.919	46.000
348.160	-0.890	38.260	37.370	-8.630	46.000
371.520	-0.295	37.220	36.925	-9.075	46.000
447.200	-6.187	40.250	34.063	-11.937	46.000
749.850	2.043	31.250	33.293	-12.707	46.000
798.250	2.629	30.820	33.448	-12.552	46.000

- 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 Equipment

RF Conducted Measurement

The following test equipments are used during the band edge tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2015
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2015
Х	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015

Note:

- 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
- 2. The test instruments marked with "X" are used to measure the final test results.

RF Radiated Measurement:

The following test equipments are used during the band edge tests:

Test Site	Equipment		Manufacturer	Model No./Serial No.	Last Cal.
⊠CB # 8	Х	Spectrum Analyzer	R&S	FSP40/ 100339	Oct., 2014
	Х	Horn Antenna	ETS-Lindgren	3117/ 35205	Mar., 2015
	Х	Horn Antenna	Schwarzbeck	BBHA9170/209	Jan., 2015
	Х	Horn Antenna	TRC	AH-0801/95051	Aug., 2015
	Х	Pre-Amplifier	EMCI	EMC012630SE/980210	Jan., 2015
	Х	Pre-Amplifier	MITEQ	JS41-001040000-58-5P/153945	Jul., 2015
	Х	Pre-Amplifier	NARDA	DBL-1840N506/013	Jul., 2015

Note:

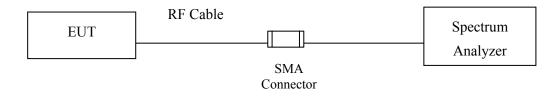
: 1. All instruments are calibrated every one year.

2. The test instruments marked by "X" are used to measure the final test results.

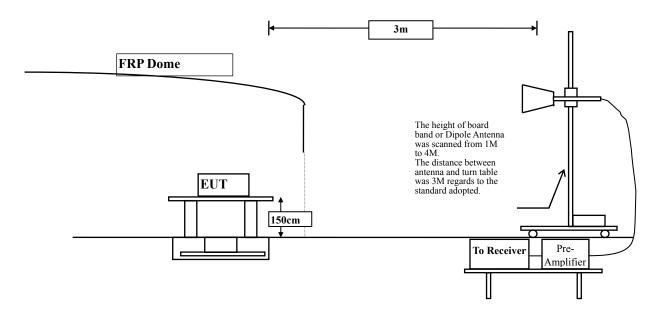


6.2. Test Setup

RF Conducted Measurement:



RF Radiated Measurement:





6.3. 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 $(dB\mu V) = 20 \log RF$ 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.

6.4. 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.

6.5. Uncertainty

- ± 3.8 dB below 1GHz
- \pm 3.9 dB above 1GHz



6.6. Test Result of Band Edge

Product	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps) (5180MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBµV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
36 (Peak)	5150.000	2.796	58.532	61.328	74.00	54.00	Pass
36 (Peak)	5183.400	2.685	103.889	106.573			
36 (Average)	5150.000	2.796	42.135	44.931	74.00	54.00	Pass
36 (Average)	5185.000	2.680	93.421	96.100			

Figure Channel 36:

Horizontal (Peak)

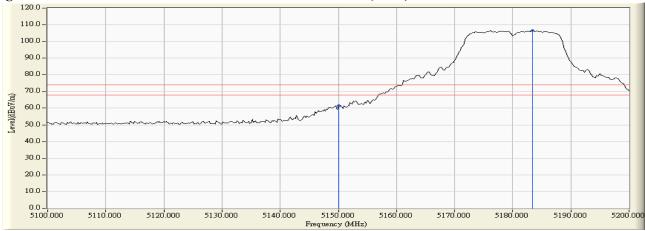


Figure Channel 36:

Horizontal (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.

- 2. Peak measurements: RBW = 1MHz, VBW = 3MHz, 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.



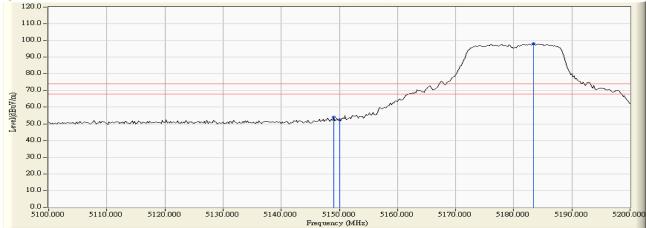
Product	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps) (5180MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Result
	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	$(dB\mu V/m)$	$(dB\mu V/m)$	Result
36 (Peak)	5149.000	3.327	50.782	54.109	74.00	54.00	Pass
36 (Peak)	5150.000	3.331	49.022	52.354	74.00	54.00	Pass
36 (Peak)	5183.400	3.489	94.553	98.042			
36 (Average)	5150.000	3.331	37.626	40.958	74.00	54.00	Pass
36 (Average)	5185.000	3.497	84.378	87.874			

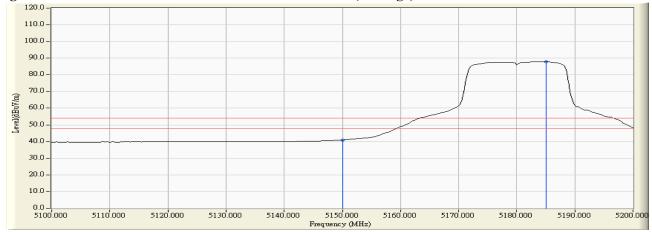
Figure Channel 36:

Vertical (Peak)





Vertical (Average)



- 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	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps) (5320MHz)

**** 1

RF Radiated Measurement (Horizontal):

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Arerage Limit	Dagult
	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	$(dB\mu V/m)$	$(dB\mu V/m)$	Result
64 (Peak)	5323.200	3.637	102.753	106.390			
64 (Peak)	5350.000	3.575	54.566	58.141	74.00	54.00	Pass
64 (Peak)	5350.800	3.572	54.737	58.310	74.00	54.00	Pass
64 (Average)	5324.400	3.634	92.368	96.002			
64 (Average)	5350.000	3.575	41.240	44.815	74.00	54.00	Pass

Figure Channel 64:

Horizontal (Peak)

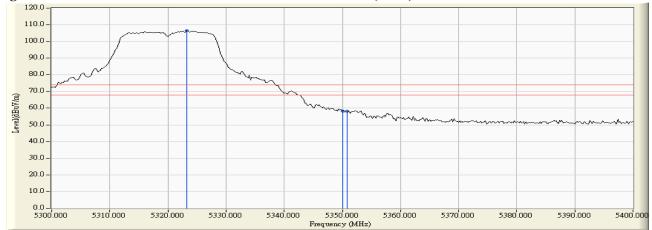
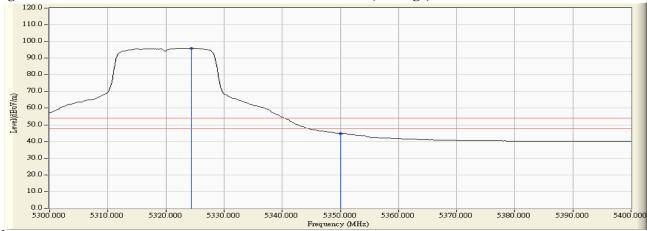


Figure Channel 64:

Horizontal (Average)



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



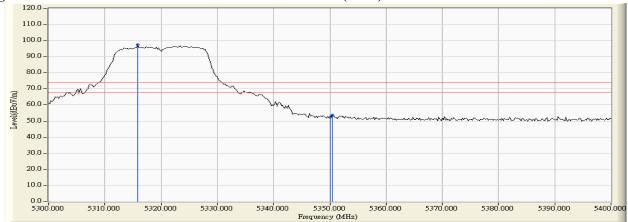
Product	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps) (5320MHz)

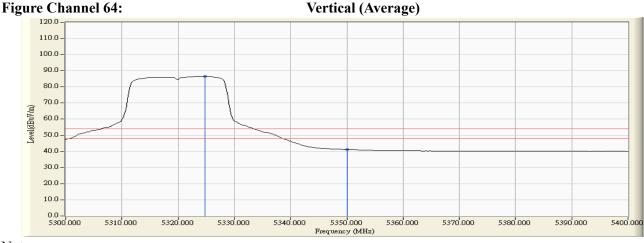
RF Radiated Measurement (Vertical):

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Arerage Limit	Result
	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	$(dB\mu V/m)$	$(dB\mu V/m)$	Result
64 (Peak)	5315.800	3.883	93.573	97.456			
64 (Peak)	5350.000	3.900	48.506	52.406	74.00	54.00	Pass
64 (Peak)	5350.400	3.900	49.814	53.714	74.00	54.00	Pass
64 (Average)	5324.800	3.890	82.718	86.609			
64 (Average)	5350.000	3.900	37.356	41.256	74.00	54.00	Pass

Figure Channel 64:

Vertical (Peak)





- 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.



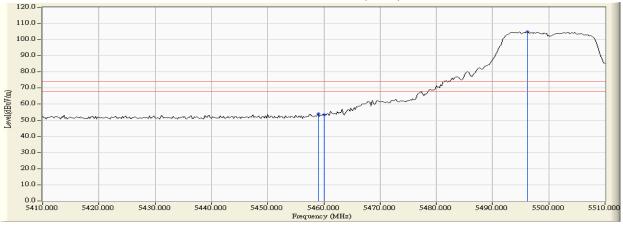
Product	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps) (5500MHz)

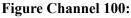
RF Radiated Measurement (Horizontal):

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Arerage Limit	Dogult
Channel No.	(MHz)	(dB)	$(dB\mu V)$	$(dB\mu V/m)$	$(dB\mu V/m)$	$(dB\mu V/m)$	Result
100 (Peak)	5459.000	3.755	50.372	54.128	74.00	54.00	Pass
100 (Peak)	5460.000	3.775	49.693	53.468	74.00	54.00	Pass
100 (Peak)	5496.200	4.427	100.412	104.839			
100 (Average)	5460.000	3.775	37.341	41.116	74.00	54.00	Pass
100 (Average)	5495.400	4.417	90.196	94.612			

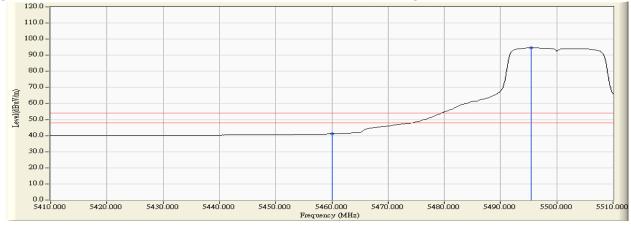
Figure Channel 100:

Horizontal (Peak)





Horizontal (Average)



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



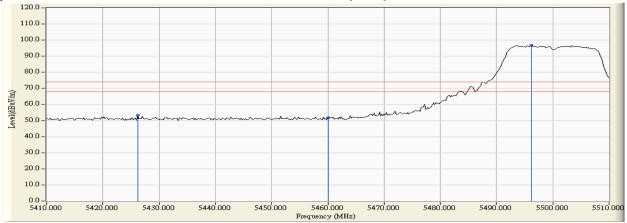
Product	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps) (5500MHz)

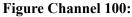
RF Radiated Measurement (Vertical):

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Arerage Limit	Result
Channel No.	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	$(dB\mu V/m)$	$(dB\mu V/m)$	Result
100 (Peak)	5426.200	3.724	49.547	53.272	74.00	54.00	Pass
100 (Peak)	5460.000	3.934	47.807	51.742	74.00	54.00	Pass
100 (Peak)	5496.200	4.421	92.322	96.743			
100 (Average)	5460.000	3.934	36.294	40.229	74.00	54.00	Pass
100 (Average)	5495.400	4.413	82.252	86.664			

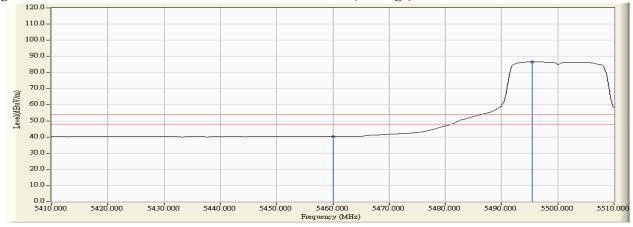
Figure Channel 100:

Vertical (Peak)





Vertical (Average)

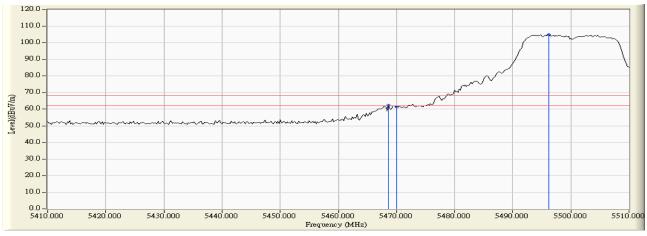


- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level =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

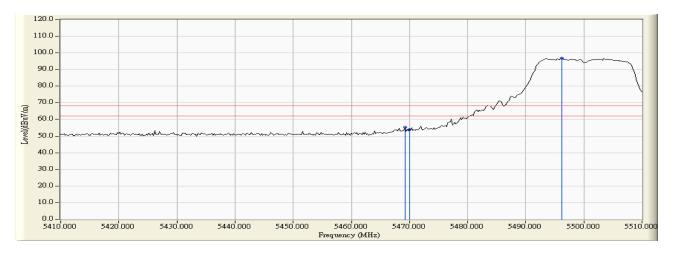


Product	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps) -Channel 100

RF Radiated Measurement:



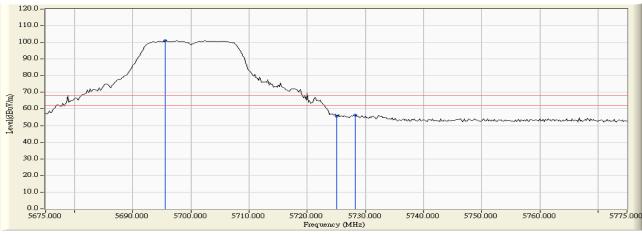
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV/m)	Result
Horizontal	5468.600	3.943	58.348	62.291	-5.929	68.220	Pass
Horizontal	5470.000	3.970	57.428	61.398	-6.822	68.220	Pass
Horizontal	5496.200	4.427	100.412	104.839	36.619	68.220	Pass



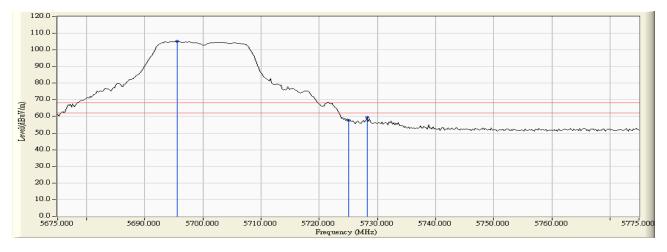
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV/m)	Result
Vertical	5469.200	4.067	51.167	55.235	-12.985	68.220	Pass
Vertical	5470.000	4.079	49.970	54.049	-14.171	68.220	Pass
Vertical	5496.200	4.421	92.322	96.743	28.523	68.220	Pass



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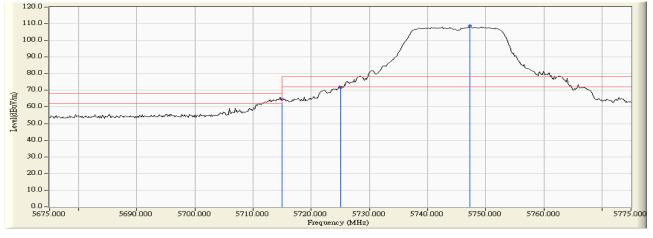
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV/m)	Result
Horizontal	5695.600	4.984	95.998	100.982	32.762	68.220	Pass
Horizontal	5725.000	5.104	50.679	55.782	-12.438	68.220	Pass
Horizontal	5728.200	5.117	51.312	56.429	-11.791	68.220	Pass



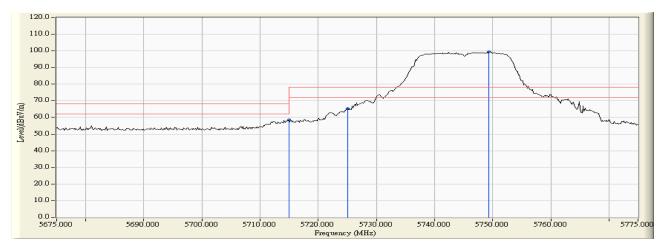
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV/m)	Result
Vertical	5695.600	4.180	101.081	105.260	37.040	68.220	Pass
Vertical	5725.000	4.215	53.486	57.701	-10.519	68.220	Pass
Vertical	5728.200	4.224	55.147	59.371	-8.849	68.220	Pass



Product	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps)-Channel 149



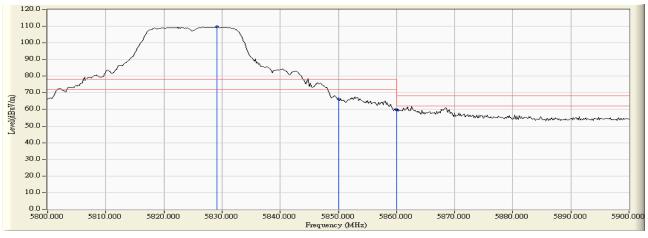
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV/m)	Result
Horizontal	5715.000	5.063	59.596	64.659	-3.561	68.220	Pass
Horizontal	5725.000	5.104	66.775	71.878	-6.342	78.220	Pass
Horizontal	5747.319	5.194	103.586	108.780	30.560	78.220	Pass



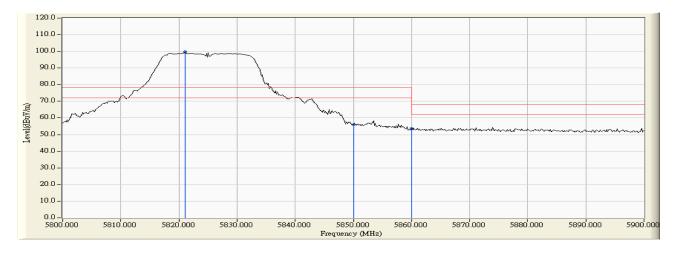
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV/m)	Result
Vertical	5715.000	4.186	54.452	58.638	-9.582	68.220	Pass
Vertical	5725.000	4.215	61.125	65.340	-12.880	78.220	Pass
Vertical	5749.348	4.285	94.978	99.263	21.043	78.220	Pass



Product	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps)-Channel 165



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV/m)	Result
Horizontal	5829.130	5.568	104.158	109.726	31.506	78.220	Pass
Horizontal	5850.000	5.715	60.584	66.299	-11.921	78.220	Pass
Horizontal	5860.000	5.798	54.145	59.943	-8.277	68.220	Pass



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV/m)	Result
Vertical	5821.014	4.309	95.466	99.775	21.555	78.220	Pass
Vertical	5850.000	4.194	51.667	55.861	-22.359	78.220	Pass
Vertical	5860.000	4.168	49.589	53.757	-14.463	68.220	Pass



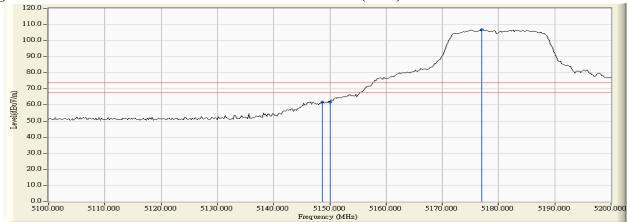
Product	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5180MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Result
	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	$(dB\mu V/m)$	$(dB\mu V/m)$	Result
36 (Peak)	5148.600	2.801	59.120	61.921	74.00	54.00	Pass
36 (Peak)	5150.000	2.796	59.091	61.887	74.00	54.00	Pass
36 (Peak)	5177.000	2.706	103.984	106.690			
36 (Average)	5150.000	2.796	43.076	45.872	74.00	54.00	Pass
36 (Average)	5185.200	2.679	93.470	96.148			

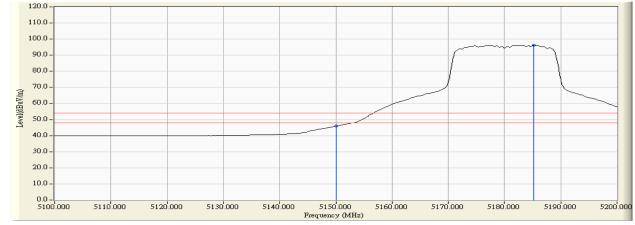
Figure Channel 36:

Horizontal (Peak)





Horizontal (Average)



- 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	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5180MHz)

RF Radiated Measurement (Vertical):

** **

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Result
	(MHz)	(dB)	(dBµV)	(dBµV/m)	$(dB\mu V/m)$	$(dB\mu V/m)$	Result
36 (Peak)	5146.200	3.313	51.127	54.440	74.00	54.00	Pass
36 (Peak)	5150.000	3.331	50.038	53.370	74.00	54.00	Pass
36 (Peak)	5183.200	3.488	94.234	97.722			
36 (Average)	5150.000	3.331	37.801	41.133	74.00	54.00	Pass
36 (Average)	5185.400	3.499	84.090	87.588			

Figure Channel 36:

Vertical (Peak)

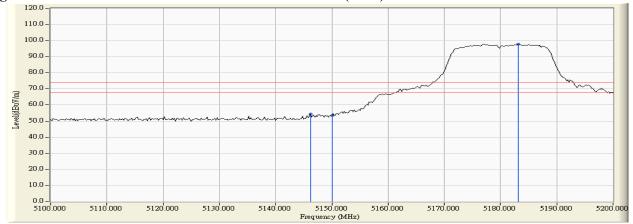
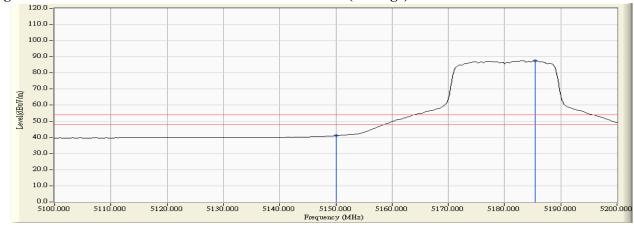


Figure Channel 36:

Vertical (Average)



- 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.



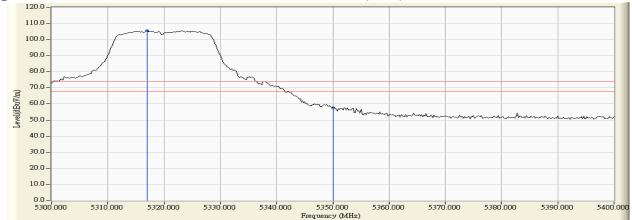
Product	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5320MHz)

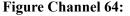
RF Radiated Measurement (Horizontal):

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Arerage Limit	Result
	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	$(dB\mu V/m)$	$(dB\mu V/m)$	Result
64 (Peak)	5317.000	3.648	101.857	105.505			
64 (Peak)	5350.000	3.575	53.987	57.562	74.00	54.00	Pass
64 (Average)	5325.200	3.633	91.493	95.126			
64 (Average)	5350.000	3.575	40.264	43.839	74.00	54.00	Pass

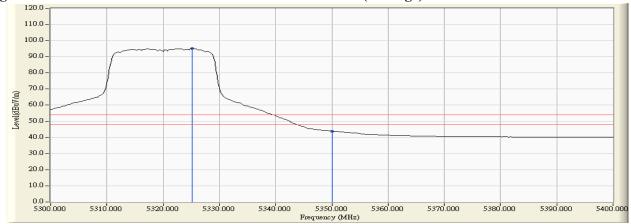
Figure Channel 64:

Horizontal (Peak)





Horizontal (Average)



- 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	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5320MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Arerage Limit	Result
	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	$(dB\mu V/m)$	$(dB\mu V/m)$	Result
64 (Peak)	5317.000	3.884	92.849	96.733			
64 (Peak)	5350.000	3.900	48.303	52.203	74.00	54.00	Pass
64 (Peak)	5350.400	3.900	50.650	54.550	74.00	54.00	Pass
64 (Average)	5325.200	3.891	82.404	86.295			
64 (Average)	5350.000	3.900	37.158	41.058	74.00	54.00	Pass

Figure Channel 64:

Vertical (Peak)

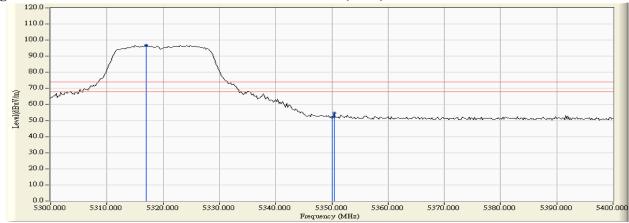
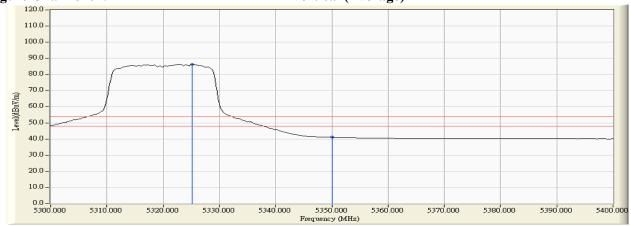


Figure Channel 64:

Vertical (Average)



- 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	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5500MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Arerage Limit	Result
Channel No.	(MHz)	(dB)	(dBµV)	(dBµV/m)	$(dB\mu V/m)$	$(dB\mu V/m)$	Result
100 (Peak)	5459.800	3.771	51.076	54.848	74.00	54.00	Pass
100 (Peak)	5460.000	3.775	49.978	53.753	74.00	54.00	Pass
100 (Peak)	5497.000	4.438	101.038	105.476			
100 (Average)	5460.000	3.775	37.084	40.859	74.00	54.00	Pass
100 (Average)	5494.800	4.408	89.825	94.233			

Figure Channel 100:

Horizontal (Peak)

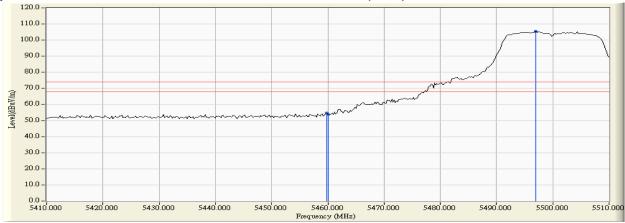
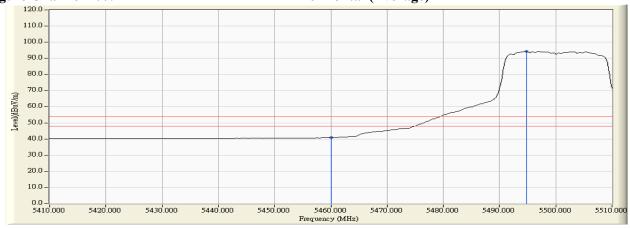


Figure Channel 100:

Horizontal (Average)



- 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	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5500MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Arerage Limit	Degult
Channel No.	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	$(dB\mu V/m)$	$(dB\mu V/m)$	Result
100 (Peak)	5457.800	3.903	49.375	53.278	74.00	54.00	Pass
100 (Peak)	5460.000	3.934	47.223	51.158	74.00	54.00	Pass
100 (Peak)	5497.000	4.428	92.249	96.678			
100 (Average)	5460.000	3.934	36.293	40.228	74.00	54.00	Pass
100 (Average)	5494.800	4.406	81.791	86.197			

Figure Channel 100:

Vertical (Peak)

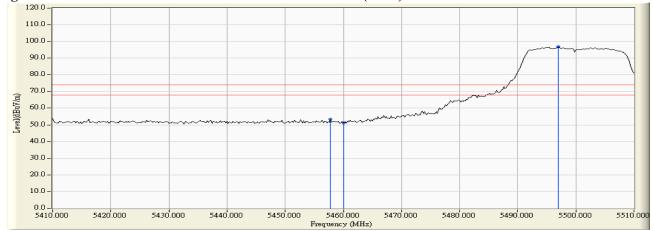
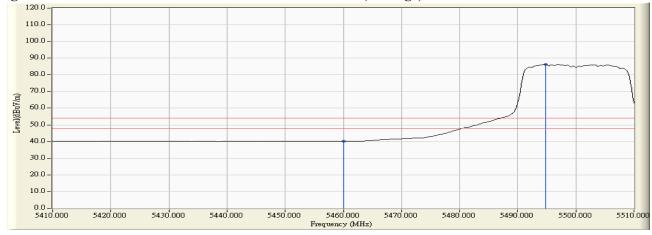


Figure Channel 100:

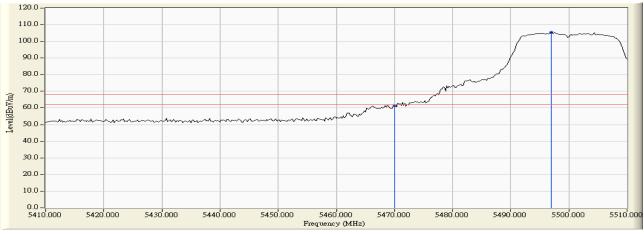
Vertical (Average)



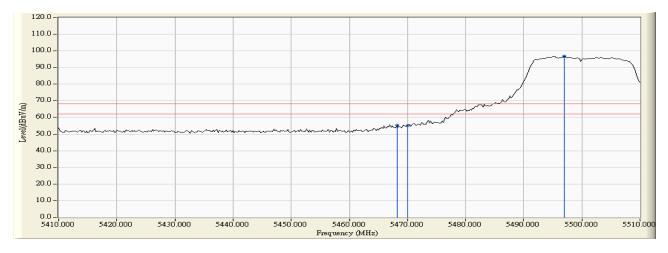
- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level =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



Product	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) -Channel 100



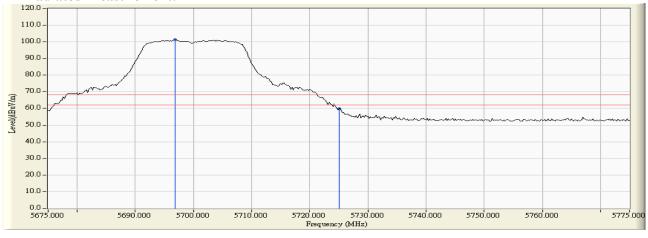
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV /m)	Result
Horizontal	5470.000	3.970	57.516	61.486	-6.734	68.220	Pass
Horizontal	5497.000	4.438	101.038	105.476	37.256	68.220	Pass



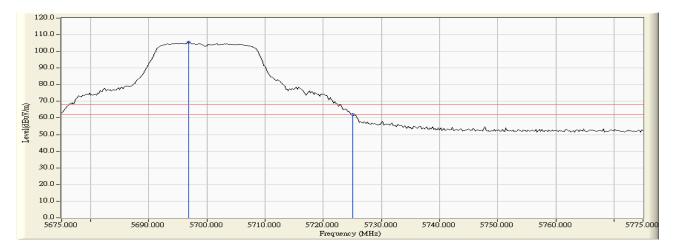
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV/m)	Result
Vertical	5468.200	4.054	51.225	55.278	-12.942	68.220	Pass
Vertical	5470.000	4.079	50.806	54.885	-13.335	68.220	Pass
Vertical	5497.000	4.428	92.249	96.678	28.458	68.220	Pass



Product	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) -Channel 140



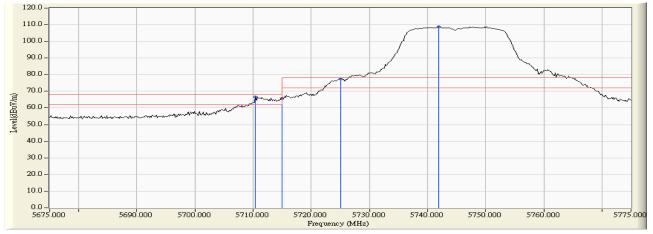
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV /m)	Result
Horizontal	5696.800	4.989	96.470	101.459	33.239	68.220	Pass
Horizontal	5725.000	5.104	54.632	59.735	-8.485	68.220	Pass



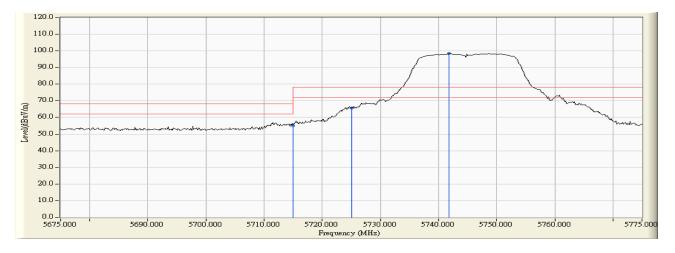
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV /m)	Result
Vertical	5696.800	4.178	101.432	105.611	37.391	68.220	Pass
Vertical	5725.000	4.215	57.716	61.931	-6.289	68.220	Pass



Product	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) -Channel 149



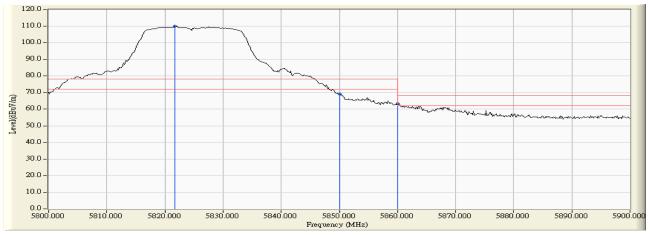
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV/m)	Result
Horizontal	5710.362	5.044	61.436	66.480	-1.740	68.220	Pass
Horizontal	5715.000	5.063	60.703	65.766	-2.454	68.220	Pass
Horizontal	5725.000	5.104	72.440	77.543	-0.677	78.220	Pass
Horizontal	5741.957	5.174	103.718	108.892	30.672	78.220	Pass



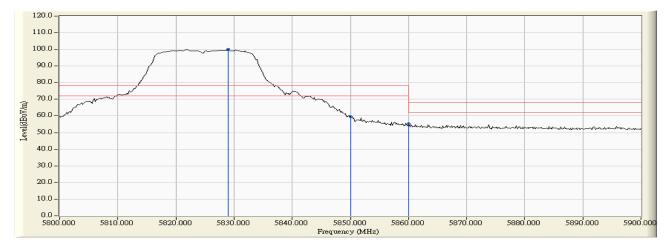
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV/m)	Result
Vertical	5715.000	4.186	50.934	55.120	-13.100	68.220	Pass
Vertical	5725.000	4.215	61.543	65.758	-12.462	78.220	Pass
Vertical	5741.812	4.264	94.263	98.528	20.308	78.220	Pass



Product	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) -Channel 165



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV/m)	Result
Horizontal	5821.739	5.519	104.405	109.924	31.704	78.220	Pass
Horizontal	5850.000	5.715	63.474	69.189	-9.031	78.220	Pass
Horizontal	5860.000	5.798	57.482	63.280	-4.940	68.220	Pass



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV/m)	Result
Vertical	5828.986	4.276	95.817	100.092	21.872	78.220	Pass
Vertical	5850.000	4.194	55.476	59.670	-18.550	78.220	Pass
Vertical	5860.000	4.168	51.238	55.406	-12.814	68.220	Pass



Product	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n-40BW 15Mbps) (5190MHz)

RF Radiated Measurement (Horizontal):

** **

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Result
	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	$(dB\mu V/m)$	$(dB\mu V/m)$	Result
38 (Peak)	5150.000	2.796	64.731	67.527	74.00	54.00	Pass
38 (Peak)	5196.800	2.640	99.640	102.281			
38 (Average)	5150.000	2.796	48.883	51.679	74.00	54.00	Pass
38 (Average)	5199.000	2.634	87.900	90.534			

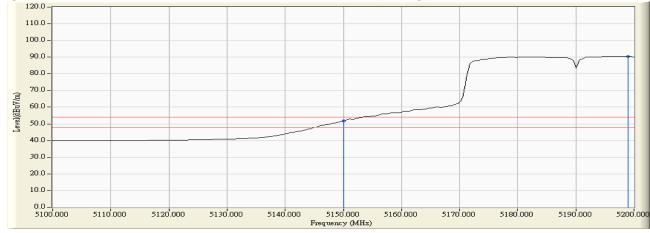
Figure Channel 38:

Horizontal (Peak)



Figure Channel 38:

Horizontal (Average)



- 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	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n-40BW 15Mbps) (5190MHz)

RF Radiated Measurement (Vertical):

** **

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Result
Channel No.	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	$(dB\mu V/m)$	$(dB\mu V/m)$	Result
38 (Peak)	5146.600	3.314	52.194	55.509	74.00	54.00	Pass
38 (Peak)	5150.000	3.331	51.775	55.107	74.00	54.00	Pass
38 (Peak)	5197.000	3.554	88.891	92.446			
38 (Average)	5150.000	3.331	39.163	42.495	74.00	54.00	Pass
38 (Average)	5195.600	3.547	77.602	81.150			

Figure Channel 38:

Vertical (Peak)

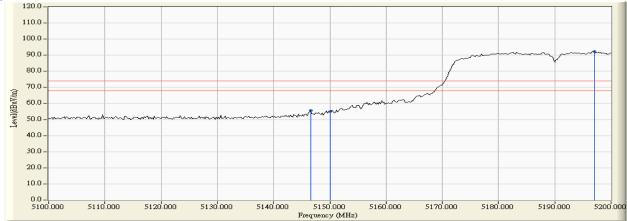
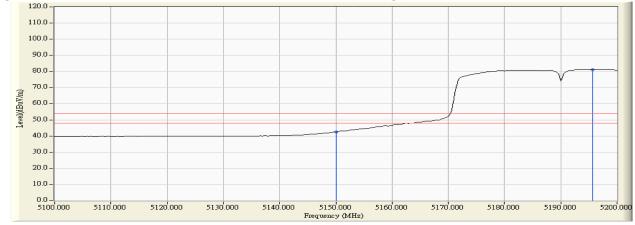


Figure Channel 38:

Vertical (Average)



- 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.



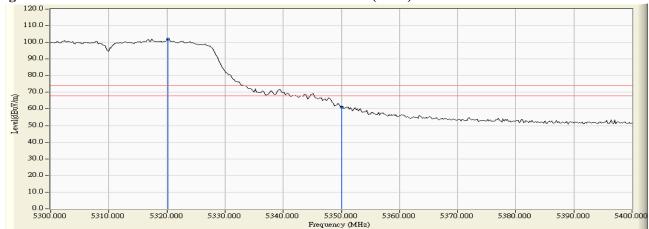
Product	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n-40BW 15Mbps) (5310MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Arerage Limit	Result
	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	$(dB\mu V/m)$	$(dB\mu V/m)$	Result
62 (Peak)	5320.200	3.642	98.339	101.981			
62 (Peak)	5350.000	3.575	57.645	61.220	74.00	54.00	Pass
62 (Average)	5319.000	3.644	86.534	90.178			
62 (Average)	5350.000	3.575	43.444	47.019	74.00	54.00	Pass

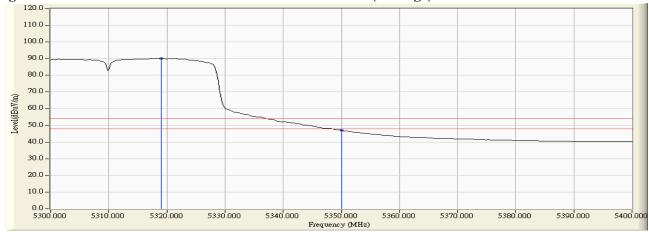
Figure Channel 62:

Horizontal (Peak)





Horizontal (Average)



- 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.



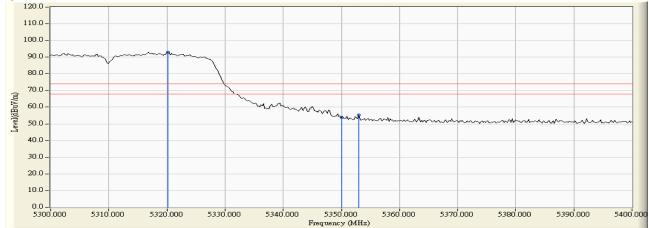
Product	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n-40BW 15Mbps) (5310MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Arerage Limit	Result
Channel No.	(MHz)	(dB)	(dBµV)	(dBµV/m)	$(dB\mu V/m)$	$(dB\mu V/m)$	Kesuit
62 (Peak)	5320.200	3.886	89.157	93.044			
62 (Peak)	5350.000	3.900	49.762	53.662	74.00	54.00	Pass
62 (Peak)	5353.000	3.894	51.400	55.295	74.00	54.00	Pass
62 (Average)	5319.000	3.885	77.793	81.679			
62 (Average)	5350.000	3.900	37.972	41.872	74.00	54.00	Pass

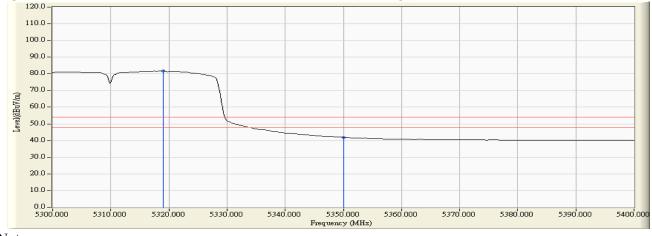
Figure Channel 62:

Vertical (Peak)





Vertical (Average)



- 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.



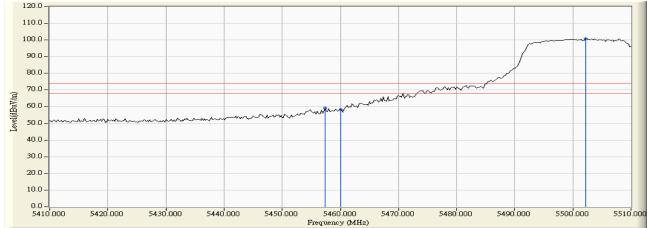
Product	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n-40BW 15Mbps) (5510MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Arerage Limit	Result
	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	$(dB\mu V/m)$	$(dB\mu V/m)$	Kesuit
102 (Peak)	5457.400	3.725	55.512	59.237	74.00	54.00	Pass
102 (Peak)	5460.000	3.775	54.575	58.350	74.00	54.00	Pass
102 (Peak)	5502.200	4.509	96.245	100.753			
102 (Average)	5460.000	3.775	40.757	44.532	74.00	54.00	Pass
102 (Average)	5501.400	4.498	85.188	89.686			

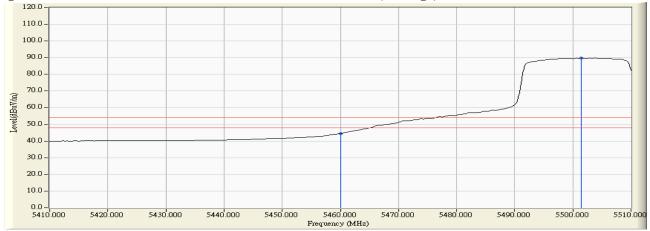
Figure Channel 102:

Horizontal (Peak)





Horizontal (Average)



- 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.



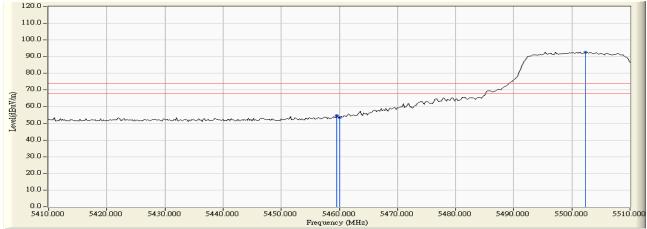
Product	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n-40BW 15Mbps) (5510MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Arerage Limit	Result
	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	$(dB\mu V/m)$	$(dB\mu V/m)$	Kesuit
102 (Peak)	5459.600	3.930	50.700	54.629	74.00	54.00	Pass
102 (Peak)	5460.000	3.934	49.485	53.420	74.00	54.00	Pass
102 (Peak)	5502.400	4.485	88.275	92.759			
102 (Average)	5460.000	3.934	37.438	41.373	74.00	54.00	Pass
102 (Average)	5501.600	4.476	77.190	81.666			

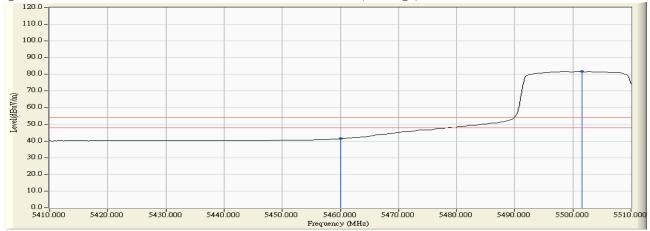
Figure Channel 102:

Vertical (Peak)





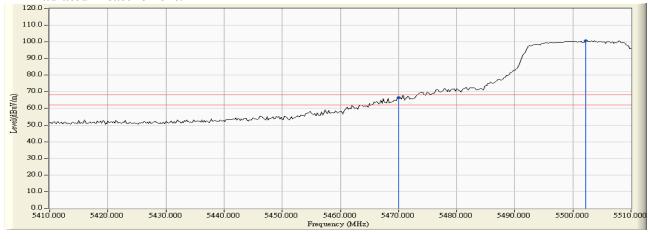
Vertical (Average)



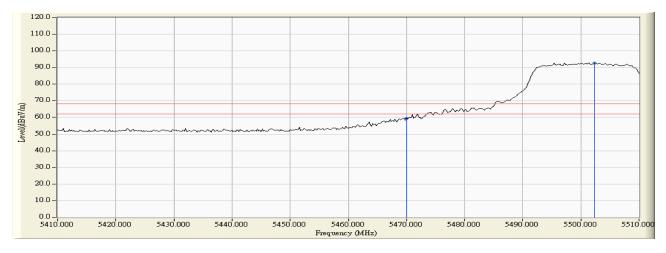
- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level =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



Product	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n-40BW 15Mbps) -Channel 102



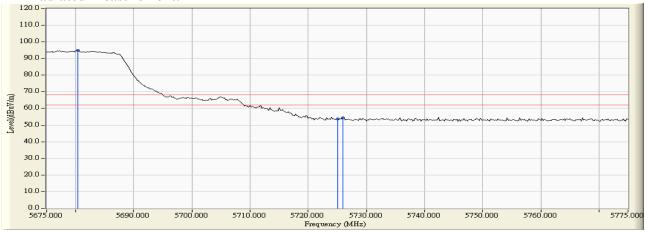
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV /m)	Result
Horizontal	5470.000	3.970	62.691	66.661	-1.559	68.220	Pass
Horizontal	5502.200	4.509	96.245	100.753	32.533	68.220	Pass



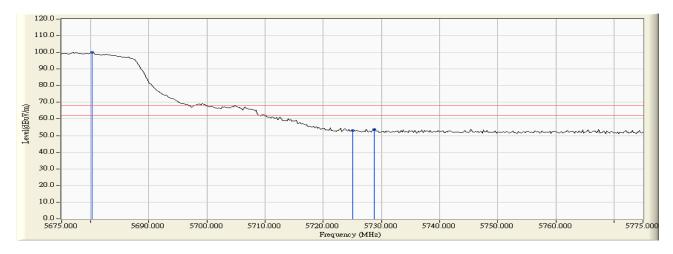
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV/m)	Result
Vertical	5470.000	4.079	55.414	59.493	-8.727	68.220	Pass
Vertical	5502.400	4.485	88.275	92.759	24.539	68.220	Pass



Product	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n-40BW 15Mbps) -Channel 134



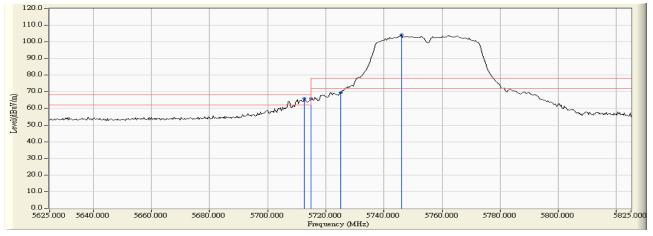
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV/m)	Result
Horizontal	5680.400	4.928	90.128	95.055	26.835	68.220	Pass
Horizontal	5725.000	5.104	48.506	53.609	-14.611	68.220	Pass
Horizontal	5726.000	5.108	49.175	54.283	-13.937	68.220	Pass



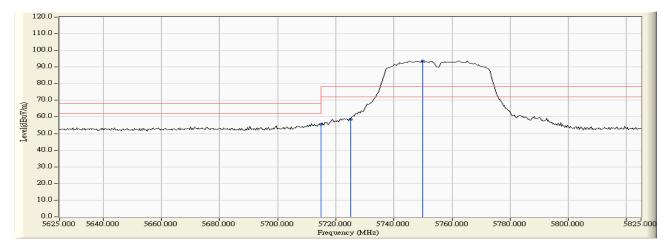
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV/m)	Result
Vertical	5680.200	4.247	95.832	100.079	31.859	68.220	Pass
Vertical	5725.000	4.215	49.020	53.235	-14.985	68.220	Pass
Vertical	5728.800	4.225	49.592	53.818	-14.402	68.220	Pass



Product	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n-40BW 15Mbps) -Channel 151



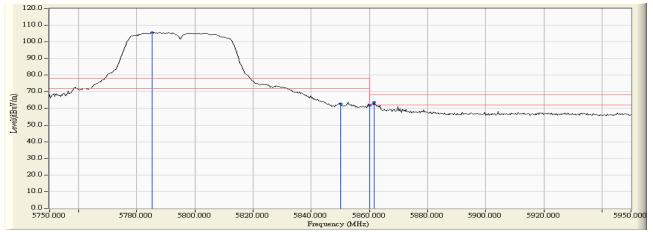
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV/m)	Result
Horizontal	5712.536	5.053	60.851	65.904	-2.316	68.220	Pass
Horizontal	5715.000	5.063	60.732	65.795	-2.425	68.220	Pass
Horizontal	5725.000	5.104	64.373	69.476	-8.744	78.220	Pass
Horizontal	5746.159	5.190	98.906	104.096	25.876	78.220	Pass



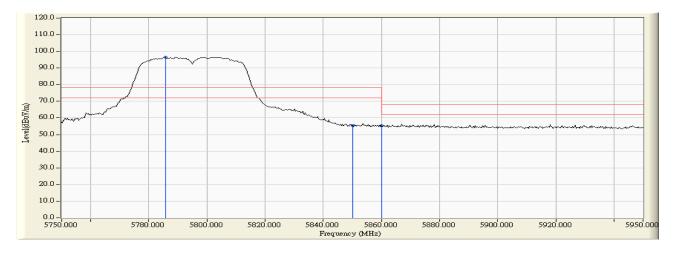
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV/m)	Result
Vertical	5715.000	4.186	51.590	55.776	-12.444	68.220	Pass
Vertical	5725.000	4.215	54.495	58.710	-19.510	78.220	Pass
Vertical	5749.928	4.285	89.420	93.706	15.486	78.220	Pass



Product	:	Wireless gateway
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n-40BW 15Mbps) -Channel 159



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV/m)	Result
Horizontal	5785.362	5.326	100.324	105.650	27.430	78.220	Pass
Horizontal	5850.000	5.715	57.109	62.824	-15.396	78.220	Pass
Horizontal	5860.000	5.798	56.061	61.859	-6.361	68.220	Pass
Horizontal	5861.594	5.812	57.792	63.603	-4.617	68.220	Pass



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV/m)	Result
Vertical	5785.652	4.368	92.204	96.571	18.351	78.220	Pass
Vertical	5850.000	4.194	51.069	55.263	-22.957	78.220	Pass
Vertical	5860.000	4.168	51.213	55.381	-12.839	68.220	Pass

7. Occupied Bandwidth

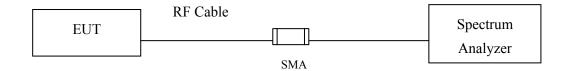
7.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2015
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2015
Х	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015

Note:

- 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
- 2. The test instruments marked with "X" are used to measure the final test results.

7.2. Test Setup



7.3. Limits

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

7.4. .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.

7.5. Uncertainty

 \pm 150Hz



7.6. Test Result of Occupied Bandwidth

Product	:	Wireless gateway
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745	16150	>500	Pass
157	5785	16200	>500	Pass
165	5825	16200	>500	Pass

	I iguit Ch			
🎉 Keysight Spectrum Analyzer - Swept SA				
LXI RL RF 50Ω AC	SENSE:INT	ALIGN AUTO	08:14:26 PM Aug 20, 2015	Frequency
Center Freq 5.745000000 GHz	Trig: Free Run	Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE M WWWWW	Trequency
PNO: Fas IFGain:Loo			DET P N N N N N	
		Mice	2 5.736 85 GHz	Auto Tune
Ref Offset 1.5 dB		IVIKE	-2.07 dBm	
10 dB/div Ref 21.50 dBm			-2.07 aBm	
11.5	1			0
▲2		3		Center Freq
1.50	montes when he had	manut -	-1.87 dBm	5.745000000 GHz
-8.50				
-18.5		<u>\</u>		
-10.0		Ward.		Start Freq
-28.5 -38.5		The state of the s	WWW. Lywy or Almondo	5.720000000 GHz
-38.5			and the stand of the second se	
-48.5			"Www	
50.5				Stop Freq
-58.5				5.770000000 GHz
-68.5				
Center 5.74500 GHz		- ·	Span 50.00 MHz	CF Step
#Res BW 100 kHz #V	/BW 300 kHz	Sweep 4	.800 ms (1001 pts)	5.000000 MHz Auto Man
MKR MODE TRC SCL X	Y FL	INCTION FUNCTION WIDTH	FUNCTION VALUE	Auto Wan
1 N 1 f 5.740 00 GHz	4.13 dBm			
2 N 1 f 5.736 85 GHz 3 N 1 f 5.753 00 GHz	-2.07 dBm -2.81 dBm			Freq Offset
4 1 <u>5.755 00 GHZ</u>	-2.01 UDIII			0 Hz
5			E	0112
6 7				
8				
9				
10				
MSG				
M50		IN STATUS		

Figure Channel 149:



					1 1541	e em	anner i	011			
	it Spectrum	Analyzer - Sw	ept SA								
K. RL Center	r Freq		00000 GH			NSE:INT	Avg Typ	ALIGN AUTO e: Log-Pwr	TRAC	M Aug 20, 2015 E 1 2 3 4 5 6 PE M WWWWW	Frequency
			PI IF(NO: Fast ⊂ Gain:Low	Trig: Free #Atten: 3				Di	ET P NNNNN	Auto Tune
10 dB/di		f Offset 1.9 f 21.50 (Mkr		80 GHz 09 dBm	Auto Tulle
Log 11.5					1						Center Freq
1.50				↓ ²	mound	montont	minutur 3			-2.55 dBm	5.785000000 GHz
-8.50						, 					
			man	~~~			~	MULANNIN		Malunna	Start Freq 5.76000000 GHz
-38.5	Man	wolfwer w	Name						· MANAPANA PLAN	Mr marya .	
-48.5											Stop Freq
-68.5											5.810000000 GHz
Center						<u> </u>				0.00 MHz	CF Step
#Res B				#VB\	N 300 kHz			<u> </u>		1001 pts)	5.000000 MHz <u>Auto</u> Man
1 N	E TRC SC		× 5.780 0		3.45 dl	Bm	INCTION FU	NCTION WIDTH	FUNCTION	DN VALUE	
2 N 3 N	1 f 1 f		5.776 8 5.793 0		-4.09 dl -3.72 dl						Freq Offset
4 5 6						+				=	0 Hz
7											
9 10						_					
11					III						
MSG								to statu:	6		

Figure Channel 157:

Figure Channel 165:

🎉 Keysight Spec	trum Analyzer - Swep	ot SA							
Center Fr	RF 50 Ω eq 5.825000	AC 0000 GHz				LIGN AUTO	TRAC	M Aug 20, 2015 E 1 2 3 4 5 6 PE M WWWW	Frequency
10 dB/div	Ref Offset 1.5 Ref 21.50 d		Mkr	DE 2 5.816	80 GHz 35 dBm	Auto Tune			
11.5 1.50			2 Luntan martine and have the	mlmaluntin	1			-2.81 dBm	Center Fred 5.825000000 GH;
-18.5 -28.5 -38.5	John Martin Martin	Marin Calendone			- V	WUNDOWNWWW	What My Mary	All and all and a grant and a grant and a grant a gran	Start Free 5.800000000 GH
-48.5 -58.5 -68.5									Stop Fre 5.85000000 GH
Center 5.8 #Res BW 1 MKR MODE TRO	100 kHz	#	VBW 300 kHz	FUNCTIO		Sweep 4.	.800 ms (0.00 MHz 1001 pts)	CF Ste 5.000000 MH <u>Auto</u> Ma
1 N 1 2 N 1 3 N 1 4 5 6		5.820 00 GHz 5.816 80 GHz 5.833 00 GHz	-4.35 dE	3m 3m				=	Freq Offse 0 H
7 8 9 10 11									
MSG						K STATUS			<u>u</u>



Product	:	Wireless gateway
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745	16850	>500	Pass
157	5785	17000	>500	Pass
165	5825	16900	>500	Pass

Figure Channel 149:

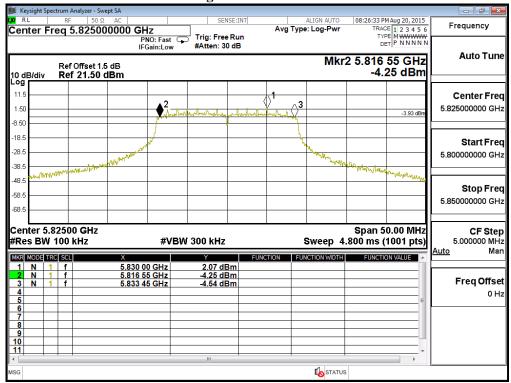
	ht Spectr		nalyzer - Swe									
Cente	r Fre	RF q 5	50 Ω .74500	AC 0000 GH	Z NO: Fast		NSE:INT	Avg Typ	ALIGN AUTO e: Log-Pwr	TRAC	M Aug 20, 2015 E 1 2 3 4 5 6 PE M WWWW	
	IFGain:Low #Atten: 30 dB Delif Mkr2 5.736 60 GHz Ref Offset 1.5 dB Atten: 400 dB/div -3.07 dBm -3.07 dBm											Auto Tune
11.5 1.50 -8.50					2 2	1 Innelewedes	mboont				-2.90 dBm	Center Freq 5.745000000 GHz
-18.5 — -28.5 — -38.5 —	Junant	when	un christing	White A when the	р ^и			\ 	Mundar Mr. Mr. Mr. Mr. Mr. Mr. Mr. Mr. Mr. Mr	Mura and a started	Monsolling	Start Freq 5.720000000 GHz
-48.5 -58.5 -68.5											··· /*/@γp4	Stop Freq 5.770000000 GHz
Center #Res E	3W 1	00 k		×	#VE	300 kHz				.800 ms (0.00 MHz 1001 pts)	CF Step 5.000000 MHz <u>Auto</u> Man
1 N 2 N 3 N 4 5 6	1	f f f		5.740 0 5.736 6 5.753 4	0 GHz	3.10 dl -3.07 dl -3.37 dl	Bm Bm				=	Freq Offset
7 8 9 10 11												
MSG						III				3	•	



							9.						
		Spect		Analyzer - Swe	ept SA								
l xi R	_		RF		AC		SE	NSE:INT		ALIGN AUTO		M Aug 20, 2015	Frequency
Cen	ter	Fre	eq (5.78500	0000 GI		Trig: Fre	o Dun	Avg Type	e: Log-Pwr	TRA TV	CE 1 2 3 4 5 6 PE MWWWW	
					P	NO: Fast (Gain:Low	#Atten: 3				D	ETPNNNN	
_						Call.LOW							Auto Tune
			Ref	Offset 1.5	dB					MKr		45 GHz	
10 di	B/div	/	Ref	f 21.50 c	lBm						-3.	82 dBm	
Log													
11.5									1 <u>,</u>				Center Freq
1.50			_			● ²	allalanda		$\sqrt{3}$			-3.19 dBm	5.785000000 GHz
-8.50						- Anno			and the second			0110 000	
						1							
-18.5						N ^d			- h				Start Freq
-28.5					and the second second					Wayh.			5.760000000 GHz
-38.5				my salanti	Man					www	William .	Wurnen	0.1000000000000
	met	MW/M	(Phylor	ninger i s							- And All Market	Wwwwwwww	
-48.5													Stop Freq
-58.5			_										
-68.5													5.81000000 GHz
00.0													
Cen	ter	5 79	850	0 GHz					1		Snan f	0.00 MHz	CF Step
#Re						#VB	W 300 kHz		:	Sween 4		(1001 pts)	5.000000 MHz
										<u> </u>		<u> </u>	Auto Man
MKR					Х		Y		NCTION FUI	NCTION WIDTH	FUNCT	ON VALUE	
1	N	1	f		<u>5.790 (</u> 5.776 4		<u>2.81 d</u> -3.82 d						
3	N	1	f		5.793 4		- <u>3.62 u</u> -3.55 d						Freq Offset
4													0 Hz
5 6												=E	
7		-											
8													
9													
10 11												——.	
•							III						
MSG													
										No miles	·		

Figure Channel 157:

Figure Channel 165:





Product	:	Wireless gateway
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n-40BW 15Mbps)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
151	5755	35300	>500	Pass
159	5795	35300	>500	Pass

Figure Channel 151:

📕 Keysight Spectrum Analyzer - Si	vept SA				
Center Freq 5.7550		SENSE:INT	ALIGN AUTO Avg Type: Log-Pwr	08:31:33 PM Aug 20, 2015 TRACE 1 2 3 4 5 6 TYPE M	Frequency
Ref Offset 1 10 dB/div Ref 21.50	IFGain:Low	#Atten: 30 dB	Mk	r2 5.737 4 GHz -8.97 dBm	Auto Tune
11.50 -8.60		21 UMU	- <u>huu</u> @ ³	-7.30 dBn	Center Fred 5.755000000 GH2
-18.5 -28.5 -38.5 -48.5		¥		4mm Mary Mary	Start Free 5.705000000 GH
-48.5					Stop Free 5.805000000 GH2
Center 5.75500 GHz #Res BW 100 kHz	#VBW :	300 kHz	Sweep 9	Span 100.0 MHz .600 ms (1001 pts)	CF Stej 10.000000 MH <u>Auto</u> Ma
1 N 1 f 2 N 1 f 3 N 1 f 4 5 7	5.746 3 GHz 5.737 4 GHz 6.772 7 GHz	-1.30 dBm -8.97 dBm -10.53 dBm			Freq Offse 0 H
8 9 10 11					

Figure Channel 159:

Keysight Spectrum Analyzer - Swe				
Center Freq 5.79500	00000 GHz	Avg Type: Log-Pwr	08:32:51 PM Aug 20, 2015 TRACE 1 2 3 4 5 6 TYPE M	Frequency
Ref Offset 1.5 10 dB/div Ref 21.50 d	IFGain:Low #Atten: 30 dB	Mk	12 5.777 4 GHz -9.73 dBm	Auto Tune
11.5 1.50		مرينيا ما	-7.58 dBm	Center Freq 5.795000000 GHz
-18.5 -28.5 -38.5 -48.5	Making and Control of		WARNE ANTONIA	Start Free 5.745000000 GHz
-48.5			a reul/in_L drahamine	Stop Fred 5.845000000 GH
Center 5.79500 GHz #Res BW 100 kHz		Sweep 9.	Span 100.0 MHz 600 ms (1001 pts) EUNCTION VALUE	CF Step 10.000000 MH Auto Ma
1 N 1 f 2 N 1 f 3 N 1 f 4 5 6	6.786 3 GHz -1.57 dBm 6.777 4 GHz -9.73 dBm 6.812 7 GHz -10.72 dBm			Freq Offse 0 H
7 8 9 10 11				
MSG				

8. Frequency Stability

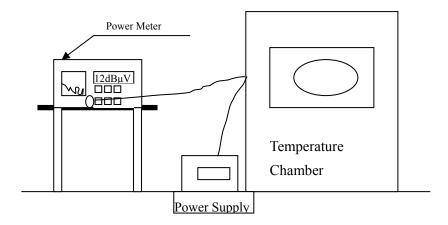
8.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2015
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2015
Х	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015

Note:

- 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
- 2. The test instruments marked with "X" are used to measure the final test results.

8.2. Test Setup



8.3. 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

8.4. 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.

8.5. Uncertainty

± 150 Hz



8.6. Test Result of Frequency Stability

Product	:	Wireless gateway
Test Item	:	Frequency Stability
Test Site	:	Temperature Chamber

Test Mode : Carrier Wave

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
		36	5180.0000	5179.9970	0.0030
		38	5190.0000	5189.9980	0.0020
		44	5220.0000	5219.9960	0.0040
		46	5230.0000	5229.9940	0.0060
		48	5240.0000	5239.9980	0.0020
		52	5260.0000	5259.9920	0.0080
		54	5270.0000	5269.9940	0.0060
	Vnom (12)V	60	5300.0000	5299.9950	0.0050
		62	5310.0000	5309.9940	0.0060
		64	5320.0000	5319.9920	0.0080
Tnom (20) °C		100	5500.0000	5499.9980	0.0020
		102	5510.0000	5509.9970	0.0030
		110	5550.0000	5549.9980	0.0020
		116	5580.0000	5579.9990	0.0010
		134	5670.0000	5669.9970	0.0030
		140	5700.0000	5699.9980	0.0020
		149 5745.0000	5744.9960	0.0040	
		151	5755.0000	5754.9980	0.0020
		157	5785.0000	5784.9980	0.0020
		159	5795.0000	5794.9990	0.0010
		165	5825.0000	5824.9970	0.0030



Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
		36	5180.0000	5179.9980	0.0020
		38	5190.0000	5189.9990	0.0010
		44	5220.0000	5219.9970	0.0030
		46	5230.0000	5229.9980	0.0020
		48	5240.0000	5239.9980	0.0020
		52	5260.0000	5259.9990	0.0010
		54	5270.0000	5269.9970	0.0030
		60	5300.0000	5299.9950	0.0050
		62	5310.0000	5309.9980	0.0020
	Vmax (13.8)V	64	5320.0000	5319.9960	0.0040
Tmax (50) °C		100	5500.0000	5499.9970	0.0030
		102	5510.0000	5509.9980	0.0020
		110	5550.0000	5549.9970	0.0030
		116	5580.0000	5579.9980	0.0020
		134	5670.0000	5669.9960	0.0040
		140 5700.0000 149 5745.0000	5699.9980	0.0020	
			5745.0000	5744.9980	0.0020
		151	5755.0000	5754.9980	0.0020
		157	5785.0000	5784.9970	0.0030
		159	5795.0000	5794.9980	0.0020
		165	5825.0000	5824.9970	0.0030



Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
		36	5180.0000	5179.9980	0.0020
		38	5190.0000	5189.9990	0.0010
		44	5220.0000	5219.9970	0.0030
		46	5230.0000	5229.9980	0.0020
		48	5240.0000	5239.9980	0.0020
		52	5260.0000	5259.9990	0.0010
		54	5270.0000	5269.9970	0.0030
		60	5300.0000	5299.9950	0.0050
		62	5310.0000	5309.9980	0.0020
	Vmin (10.2)V	64	5320.0000	5319.9960	0.0040
Tmax (50) °C		100	5500.0000	5499.9970	0.0030
		102	5510.0000	5509.9980	0.0020
		110	5550.0000	5549.9970	0.0030
		116	5580.0000	5579.9980	0.0010 0.0030 0.0020 0.0020 0.0010 0.0030 0.0050 0.0020 0.0020 0.0030 0.0020 0.0020 0.0030 0.0040 0.0030 0.0020
		134	5670.0000	5669.9960	0.0040
		140	5700.0000	5699.9980	0.0020
		149	5745.0000	5744.9980	0.0020
		151	5755.0000	5754.9980	0.0020
		157	5785.0000	5784.9970	0.0030
		159	5795.0000	5794.9980	0.0020
		165	5825.0000	5824.9970	0.0030



Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
		36	5180.0000	5179.9980	0.0020
		38	5190.0000	5189.9970	0.0030
		44	5220.0000	5219.9980	0.0020
		46	5230.0000	5229.9960	0.0040
		48	5240.0000	5239.9990	0.0010
		52	5260.0000	5259.9980	0.0020
		54	5270.0000	5269.9970	0.0030
		60	5300.0000	5299.9980	0.0020
		62	5310.0000	5309.9980	0.0020
		64	5320.0000	5319.9990	0.0010
Tnom (0) °C	Vnom (13.8)V	100	5500.0000	5499.9970	0.0030
		102	5510.0000	5509.9960	0.0040
		110	5550.0000	5549.9980	0.0020
		116	5580.0000	5579.9970	0.0030
		134	5670.0000	5669.9980	0.0020 0.0030 0.0020 0.0020 0.0040 0.0010 0.0020 0.0020 0.0020 0.0020 0.0020 0.0020 0.0020 0.0020 0.0010 0.0030 0.0030 0.0040 0.0020
		140	5700.0000	5699.9980	0.0020
		149	5745.0000	5744.9970	0.0030
		151	5755.0000	5754.9960	0.0020 0.0030 0.0020 0.0020 0.0040 0.0010 0.0020 0.0020 0.0020 0.0020 0.0020 0.0020 0.0020 0.0020 0.0030 0.0040 0.0020 0.0030 0.0020 0.0020 0.0020 0.0020 0.0020 0.0020 0.0020 0.0020 0.0020 0.0020 0.0020 0.0020 0.0020 0.0030 0.0020 0.0030
		157	5785.0000	5784.9980	0.0020
		159	5795.0000	5794.9970	0.0030
		165	5825.0000	5824.9980	0.0020



Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
		36	5180.0000	5179.9980	0.0020
		38	5190.0000	5189.9970	0.0030
		44	5220.0000	5219.9980	0.0020
		46	5230.0000	5229.9960	0.0040
		48	5240.0000	5239.9990	0.0010
		52	5260.0000	5259.9980	0.0020
		54	5270.0000	5269.9970	0.0030
		60	5300.0000	5299.9980	0.0020
		62	5310.0000	5309.9980	0.0020
Tmax (0)℃ V1		64	5320.0000	5319.9990	0.0010
	Vmax (10.2)V	100	5500.0000	5499.9970	0.0030
		102	5510.0000	5509.9960	0.0040
		110	5550.0000	5549.9980	0.0020
		116	5580.0000	5579.9970	0.0020 0.0030 0.0020 0.0020 0.0040 0.0010 0.0020 0.0020 0.0020 0.0020 0.0020 0.0020 0.0020 0.0020 0.0020 0.0020 0.0020 0.0020 0.0030 0.0030 0.0030 0.0040
		134	5670.0000	5669.9980	0.0020
		140	5700.0000	5699.9980	0.0020
		149	5745.0000	5.0000 5744.9970 0.	0.0030
		151	5755.0000	5754.9960	0.0040
		157	5785.0000	5784.9980	0.0020
		159	5795.0000	5794.9970	0.0030
		165	5825.0000	5824.9980	0.0020



9. EMI Reduction Method During Compliance Testing

No modification was made during testing.



Attachment 1: EUT Test Photographs



Attachment 2: EUT Detailed Photographs