

FCC Test Report

Product Name	GigaConnect® Smart Gateway
Model No	EG-210N
FCC ID.	QI3BEC-EG210N

Applicant	Billion Electric Co., Ltd.
Address	8F., No.192, Sec. 2, Zhongxing Rd., Xindian Dist., New Taipei City 231, Taiwan (R.O.C.)

Date of Receipt	Jun. 27, 2019
Issue Date	Jul. 16, 2019
Report No.	1960404R-RFUSP26V00
Report Version	V1.0



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

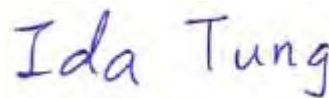
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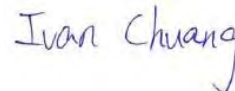
Product Name	GigaConnect® Smart Gateway
Applicant	Billion Electric Co., Ltd.
Address	8F., No.192, Sec. 2, Zhongxing Rd., Xindian Dist., New Taipei City 231, Taiwan (R.O.C.)
Manufacturer	Billion Electric Co., Ltd.
Model No.	EG-210N
FCC ID.	QI3BEC-EG210N
EUT Rated Voltage	AC 100-240V, 50/60Hz
EUT Test Voltage	AC 120V, 60Hz
Trade Name	BEC, Billion
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2018 ANSI C63.4: 2014, ANSI C63.10: 2013 KDB 558074 D01 15.247 Meas Guidance v05r02 KDB 662911 D01 Multiple Transmitter Output v02r01
Test Result	Complied

Documented By :



(Adm. Assistant / Ida Tung)

Tested By :



(Senior Engineer / Ivan Chuang)

Approved By :



(Director / Vincent Lin)

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	GigaConnect® Smart Gateway
Trade Name	BEC, Billion
Model No.	EG-210N
FCC ID.	QI3BEC-EG210N
Frequency Range	2412-2462MHz for 802.11b/g/n-20BW, 2422-2452MHz for 802.11n-40BW
Number of Channels	802.11b/g/n-20MHz: 11, n-40MHz: 7
Data Speed	802.11b: 1-11Mbps, 802.11g: 6-54Mbps, 802.11n: up to 300Mbps
Channel separation	802.11b/g/n: 5 MHz
Type of Modulation	802.11b:DSSS (DBPSK, DQPSK, CCK) 802.11g/n:OFDM (BPSK, QPSK, 16QAM, 64QAM)
Antenna Type	Dipole
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto
Power Adapter	MFR: BILLION, M/N: BA018-120120AXU Input: AC 100-240V, 50/60Hz, 0.5A Output: DC 12V, 1.2A Cable Out: Non-shielded, 1.5m

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Gain
1	WHA YU INDUSTRIAL CO., LTD	C942-510009-A	Dipole	1.8dBi for 2.4 GHz

Note:

1. The antenna of EUT is conforming to FCC 15.203.
2. The transmit signals are completely uncorrelated on MIMO mode.

802.11b/g/n-20MHz Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 01:	2412 MHz	Channel 02:	2417 MHz	Channel 03:	2422 MHz	Channel 04:	2427 MHz
Channel 05:	2432 MHz	Channel 06:	2437 MHz	Channel 07:	2442 MHz	Channel 08:	2447 MHz
Channel 09:	2452 MHz	Channel 10:	2457 MHz	Channel 11:	2462 MHz		

802.11n-40MHz Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 03:	2422 MHz	Channel 04:	2427 MHz	Channel 05:	2432 MHz	Channel 06:	2437 MHz
Channel 07:	2442 MHz	Channel 08:	2447 MHz	Channel 09:	2452 MHz		

Note:

1. The EUT is a GigaConnect® Smart Gateway with a built-in 2.4GHz 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.
4. At result of pretests, module supports dual-channel transmission, only the worst case is shown in the report. (802.11b is chain B, 802.11g is chain B, 802.11n is chain A and chain B)
5. The transmit signals are completely uncorrelated on MIMO mode.
6. These tests are conducted on a sample for the purpose of demonstrating compliance of transmitter with Part 15 Subpart C Paragraph 15.247 of spread spectrum devices.

Test Mode:	Mode 1: Transmit (802.11b 1Mbps)
	Mode 2: Transmit (802.11g 6Mbps)
	Mode 3: Transmit (802.11n-20MBW 14.4Mbps)
	Mode 4: Transmit (802.11n-40MBW 30Mbps)

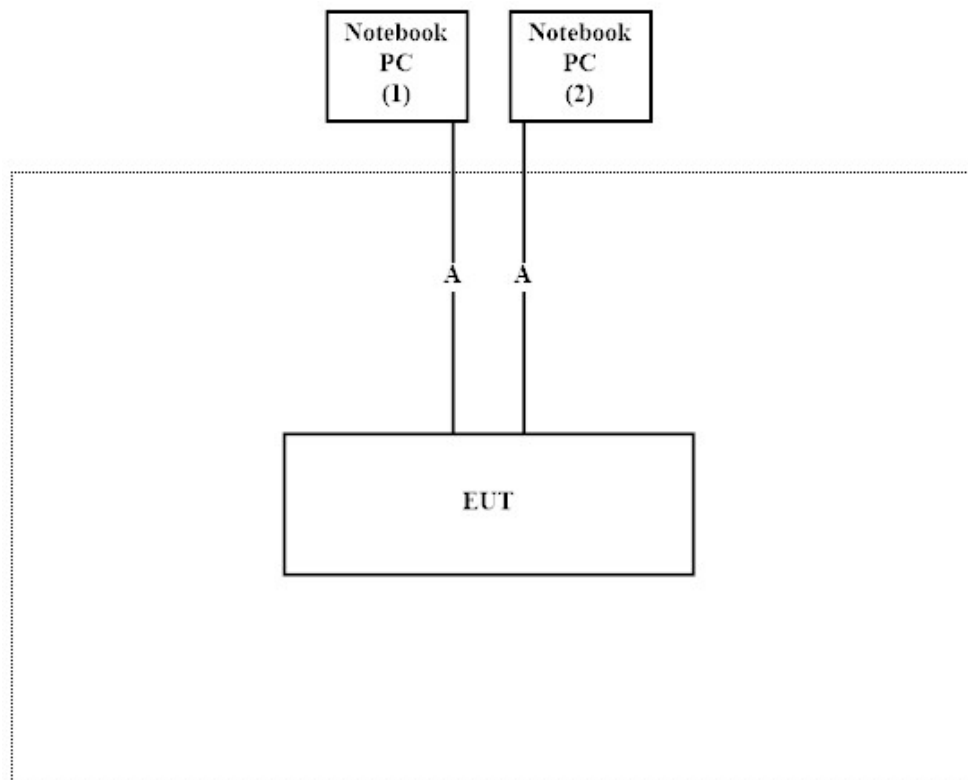
1.3. Tested System Details

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	Inspiron 15 3000	GT5JPJ2	N/A
2	Notebook PC	DELL	Inspiron 15 3000	4V5JPJ2	N/A

Signal Cable Type	Signal cable Description
A LAN Cable	Non-shielded, 3.0m, two PCS.

1.4. Configuration of Tested System



1.5. EUT Exercise Software

1. Setup the EUT as shown in Section 1.4.
2. Execute software “MT7603 QA V0.0.0.60” on the Notebook PC.
3. Configure the test mode, the test channel, and the data rate.
4. Press “OK” to start the continuous Transmit.
5. Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

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

The related certificate for our laboratories about the test site and management system can be downloaded from DEKRA Testing and Certification Co., Ltd. Web Site:

<http://www.dekra.com.tw/english/about/certificates.aspx?bval=5>

The address and introduction of DEKRA Testing and Certification Co., Ltd. laboratories can be founded in our Web site: http://www.dekra.com.tw/index_en

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E-Mail : info.tw@dekra.com

FCC Accreditation Number: TW0023

1.7. List of Test Item and Equipment

For Conduction measurements /ASR1

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
X	EMI Test Receiver	R&S	ESR7	101601	2019.05.13	2020.05.12
X	Two-Line V-Network	R&S	ENV216	101306	2019.03.11	2020.03.10
X	Two-Line V-Network	R&S	ENV216	101307	2019.04.03	2020.04.02
X	Coaxial Cable	Quietek	RG400_BNC	RF001	2019.05.24	2020.05.23

Note:

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

For Conducted measurements /ASR2

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
X	Spectrum Analyzer	R&S	FSV30	103464	2019.01.25	2020.01.24
X	Power Meter	Anritsu	ML2496A	1548003	2018.12.19	2019.12.18
X	Power Sensor	Anritsu	MA2411B	1531024	2018.12.19	2019.12.18
X	Power Sensor	Anritsu	MA2411B	1531025	2018.12.19	2019.12.18

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked with "X" are used to measure the final test results.
3. Test Software version : DEKRA Conduction Test System V9.0.5

For Radiated measurements /ACB1

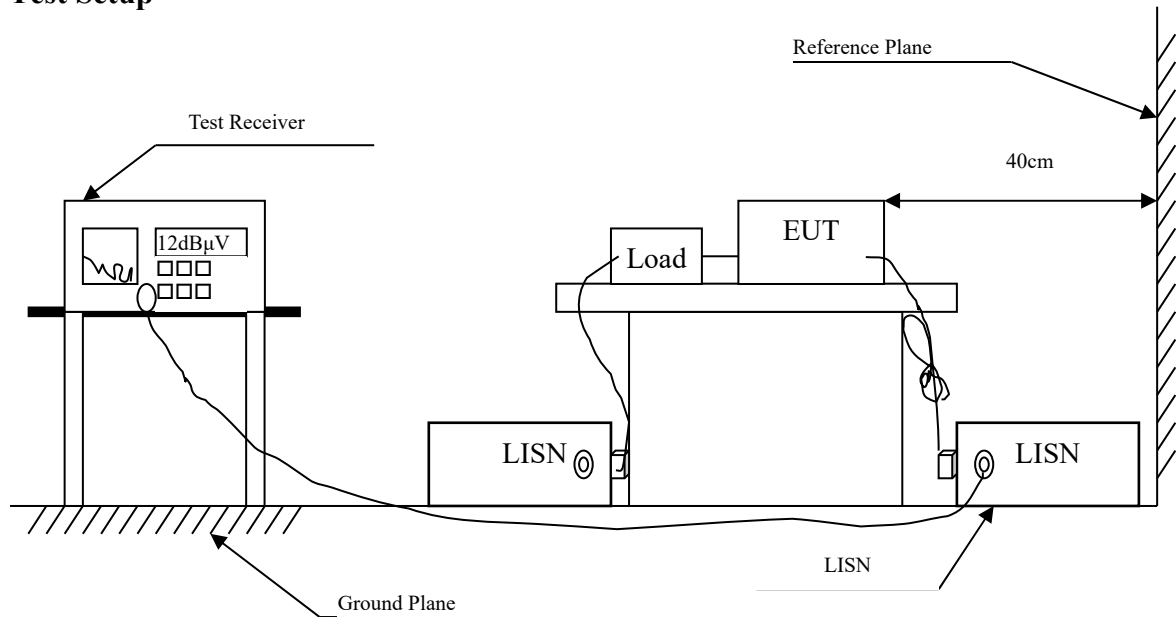
	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
X	Loop Antenna	AMETEK	HLA6121	49611	2019.02.22	2020.02.21
X	Bi-Log Antenna	SCHWARZBECK	VULB9168	9168-674	2019.04.23	2020.04.22
X	Horn Antenna	ETS-Lindgren	3117	00203800	2018.12.11	2019.12.10
X	Horn Antenna	Com-Power	AH-840	101087	2019.05.30	2020.05.29
X	Pre-Amplifier	EMCI	EMC001330	980316	2019.06.14	2020.06.13
X	Pre-Amplifier	EMCI	EMC051835SE	980311	2019.06.13	2020.06.12
X	Pre-Amplifier	EMCI	EMC05820SE	980285	2019.06.06	2020.06.05
X	Pre-Amplifier	EMCI	EMC184045SE	980314	2019.05.28	2020.05.27
X	Filter	MICRO TRONICS	BRM50702	G251	2018.09.04	2019.09.03
	Filter	MICRO TRONICS	BRM50716	G188	2018.09.04	2019.09.03
X	EMI Test Receiver	R&S	ESR7	101602	2018.12.17	2019.12.16
X	Spectrum Analyzer	R&S	FSV40	101148	2019.02.20	2020.02.19
X	Coaxial Cable	SUHNER	SUCOFLEX 106	RF002	2019.05.25	2020.05.24
X	Mircoflex Cable	HUBER SUHNER	SUCOFLEX 102	MY3381/2	2019.05.28	2020.05.27

Note:

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

2. Conducted Emission

2.1. Test Setup



2.2. Limits

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

2.3. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement.

Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

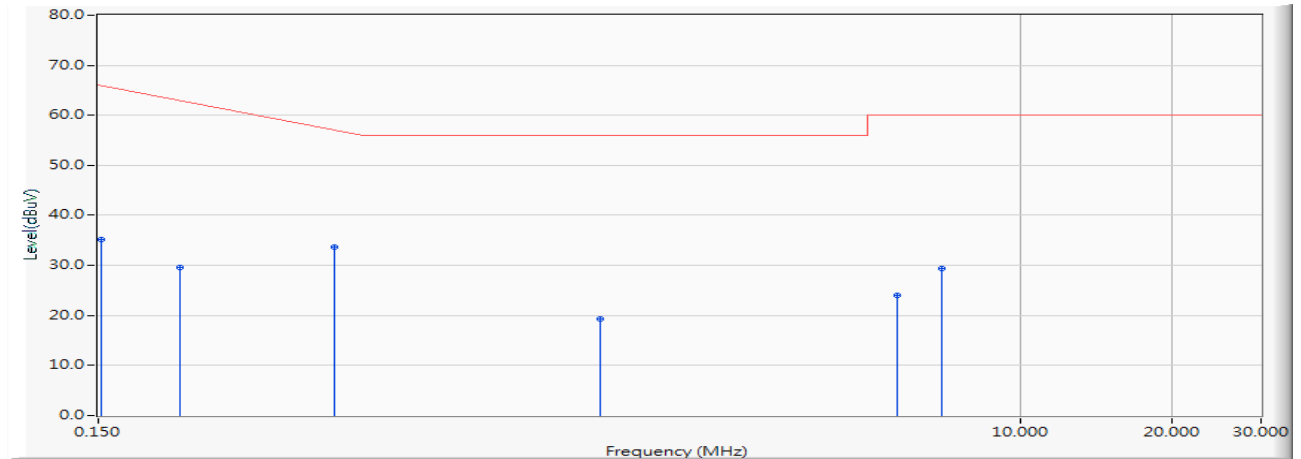
2.4. Uncertainty

± 2.35 dB

2.5. Test Result of Conducted Emission

Product : GigaConnect® Smart Gateway
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps) (2437MHz)
 Test Date : 2019/07/11

Line 1



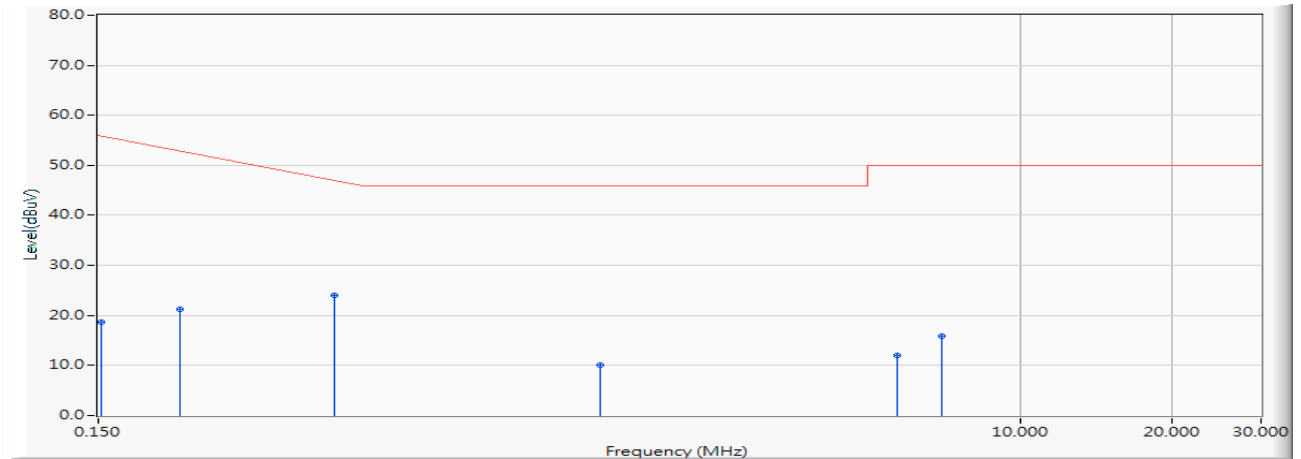
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.152	9.581	25.697	35.278	-30.665	65.943	QUASIPeAK
2		0.217	9.584	19.952	29.536	-34.550	64.086	QUASIPeAK
3	*	0.440	9.616	23.995	33.611	-24.103	57.714	QUASIPeAK
4		1.479	9.650	9.576	19.226	-36.774	56.000	QUASIPeAK
5		5.700	9.767	14.295	24.062	-35.938	60.000	QUASIPeAK
6		7.002	9.790	19.543	29.333	-30.667	60.000	QUASIPeAK

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. "*" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : GigaConnect® Smart Gateway
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps) (2437MHz)
 Test Date : 2019/07/11

Line 1



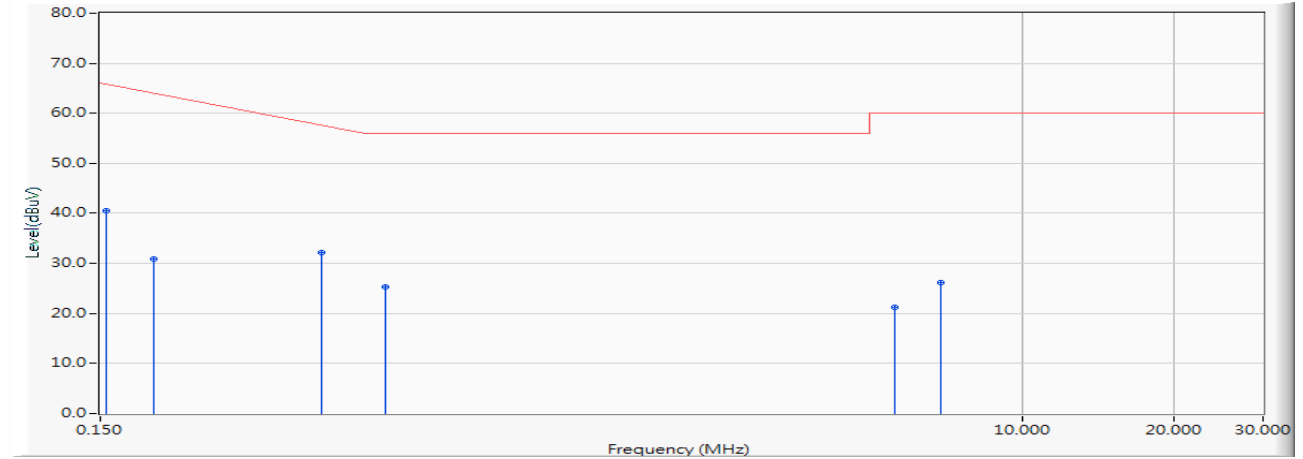
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.152	9.581	9.061	18.642	-37.301	55.943	AVERAGE
2		0.217	9.584	11.600	21.183	-32.903	54.086	AVERAGE
3	*	0.440	9.616	14.383	23.999	-23.715	47.714	AVERAGE
4		1.479	9.650	0.384	10.034	-35.966	46.000	AVERAGE
5		5.700	9.767	2.311	12.078	-37.922	50.000	AVERAGE
6		7.002	9.790	5.981	15.771	-34.229	50.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. "*" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : GigaConnect® Smart Gateway
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps) (2437MHz)
 Test Date : 2019/07/11

Line 2



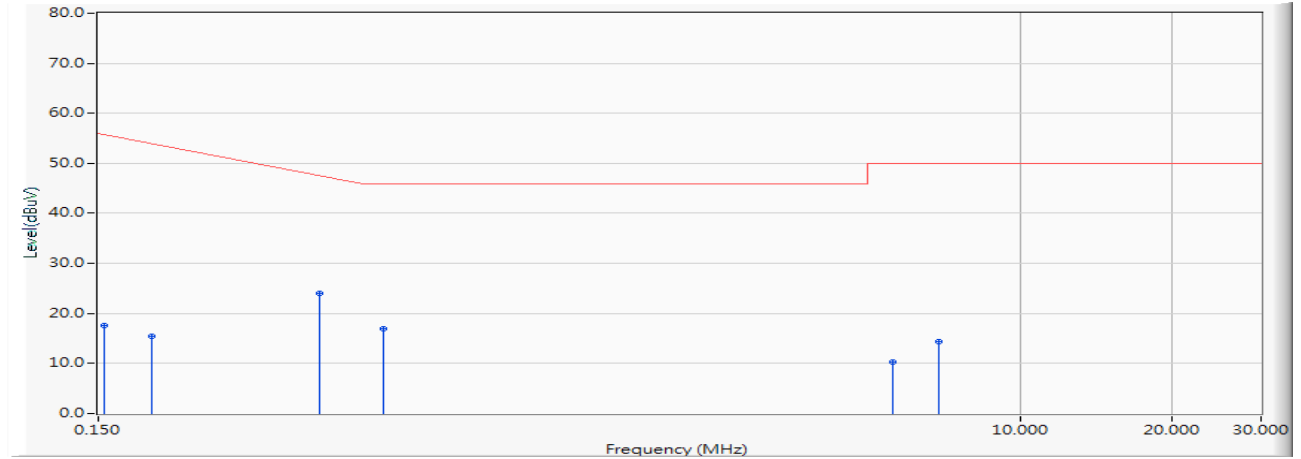
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.154	9.572	31.008	40.580	-25.306	65.886	QUASIPeAK
2		0.191	9.578	21.374	30.952	-33.877	64.829	QUASIPeAK
3		0.411	9.604	22.527	32.132	-26.411	58.543	QUASIPeAK
4		0.550	9.612	15.735	25.347	-30.653	56.000	QUASIPeAK
5		5.600	9.766	11.531	21.297	-38.703	60.000	QUASIPeAK
6		6.900	9.789	16.453	26.242	-33.758	60.000	QUASIPeAK

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. "*" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : GigaConnect® Smart Gateway
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps) (2437MHz)
 Test Date : 2019/07/11

Line 2



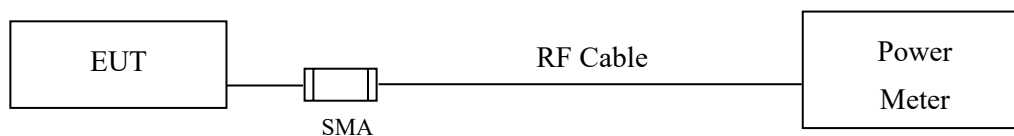
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.154	9.572	8.120	17.691	-38.195	55.886	AVERAGE
2		0.191	9.578	5.860	15.438	-39.391	54.829	AVERAGE
3	*	0.411	9.604	14.496	24.101	-24.442	48.543	AVERAGE
4		0.550	9.612	7.249	16.861	-29.139	46.000	AVERAGE
5		5.600	9.766	0.555	10.321	-39.679	50.000	AVERAGE
6		6.900	9.789	4.528	14.317	-35.683	50.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. "*" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

3. Peak Power Output

3.1. Test Setup



3.2. Limits

The maximum peak power shall be less 1 Watt.

3.3. Test Procedure

Tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements. The maximum peak conducted output power using KDB 558074 section 8.3.1.3 PKPM1 Peak power meter method. The maximum average conducted output power using KDB 558074 section 8.3.2.3 Method (Measurement using a gated RF average-reading power meter)

3.4. Uncertainty

± 0.86 dB

3.5. Test Result of Peak Power Output

Product : GigaConnect® Smart Gateway
 Test Item : Peak Power Output Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)
 Test Date : 2019/07/10

Chain A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)				Peak Power	Required Limit	Result
		1	2	5.5	11	1		
		Measurement Level (dBm)						
01	2412	16.52	--	--	--	18.36	<30dBm	Pass
06	2437	16.55	16.52	16.48	16.43	17.85	<30dBm	Pass
11	2462	17.25	--	--	--	19.12	<30dBm	Pass

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

Chain B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)				Peak Power	Required Limit	Result
		1	2	5.5	11	1		
		Measurement Level (dBm)						
01	2412	16.92	--	--	--	18.81	<30dBm	Pass
06	2437	16.94	16.91	16.87	16.83	18.10	<30dBm	Pass
11	2462	17.92	--	--	--	19.73	<30dBm	Pass

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

Product : GigaConnect® Smart Gateway
 Test Item : Peak Power Output Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)
 Test Date : 2019/07/10

Chain A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		6	9	12	18	24	36	48	54			
		Measurement Level (dBm)										
01	2412	14.13	--	--	--	--	--	--	--	22.23	<30dBm	Pass
06	2437	16.06	16.01	15.97	15.95	15.90	15.86	15.83	15.79	23.15	<30dBm	Pass
11	2462	17.89	--	--	--	--	--	--	--	22.89	<30dBm	Pass

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

Chain B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		6	9	12	18	24	36	48	54			
		Measurement Level (dBm)										
01	2412	14.82	--	--	--	--	--	--	--	22.82	<30dBm	Pass
06	2437	16.59	16.55	16.51	16.48	16.44	16.40	16.37	16.35	23.62	<30dBm	Pass
11	2462	18.18	--	--	--	--	--	--	--	23.13	<30dBm	Pass

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

Product : GigaConnect® Smart Gateway
 Test Item : Peak Power Output Data
 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps)
 Test Date : 2019/07/10

Chain A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4			
		Measurement Level (dBm)										
01	2412	13.78	--	--	--	--	--	--	--	20.71	<30dBm	Pass
06	2437	15.69	15.66	15.62	15.58	15.55	15.51	15.48	15.44	21.84	<30dBm	Pass
11	2462	12.78	--	--	--	--	--	--	--	20.05	<30dBm	Pass

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

Chain B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4			
		Measurement Level (dBm)										
01	2412	14.43	--	--	--	--	--	--	--	21.80	<30dBm	Pass
06	2437	15.80	15.78	15.75	15.71	15.68	15.65	15.63	15.59	22.32	<30dBm	Pass
11	2462	13.45	--	--	--	--	--	--	--	21.05	<30dBm	Pass

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

Chain A+B

Channel No	Frequency (MHz)	Data Rate (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
01	2412	14.4	20.71	21.80	24.30	<30dBm	Pass
06	2437	14.4	21.84	22.32	25.10	<30dBm	Pass
11	2462	14.4	20.05	21.05	23.59	<30dBm	Pass

Note: Peak Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

Product : GigaConnect® Smart Gateway
 Test Item : Peak Power Output Data
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps)
 Test Date : 2019/07/10

Chain A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		30	60	90	120	180	240	270	300			
		Measurement Level (dBm)										
03	2422	11.05	--	--	--	--	--	--	--	19.43	<30dBm	Pass
06	2437	12.61	12.58	12.55	12.52	12.49	12.45	12.43	12.40	20.43	<30dBm	Pass
09	2452	11.58	--	--	--	--	--	--	--	19.83	<30dBm	Pass

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

Chain B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		30	60	90	120	180	240	270	300			
		Measurement Level (dBm)										
03	2422	11.69	--	--	--	--	--	--	--	20.02	<30dBm	Pass
06	2437	12.71	12.68	12.65	12.59	12.56	12.52	12.48	12.45	20.78	<30dBm	Pass
09	2452	11.65	--	--	--	--	--	--	--	20.14	<30dBm	Pass

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

Chain A+B

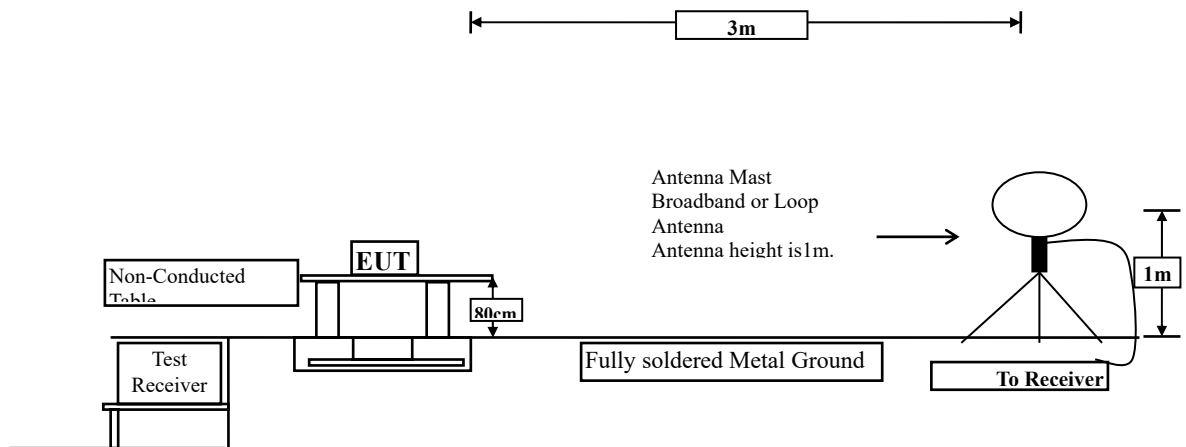
Channel No	Frequency (MHz)	Data Rate (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
03	2422	30	19.43	20.02	22.75	<30dBm	Pass
06	2437	30	20.43	20.78	23.62	<30dBm	Pass
09	2452	30	19.83	20.14	23.00	<30dBm	Pass

Note: Peak Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

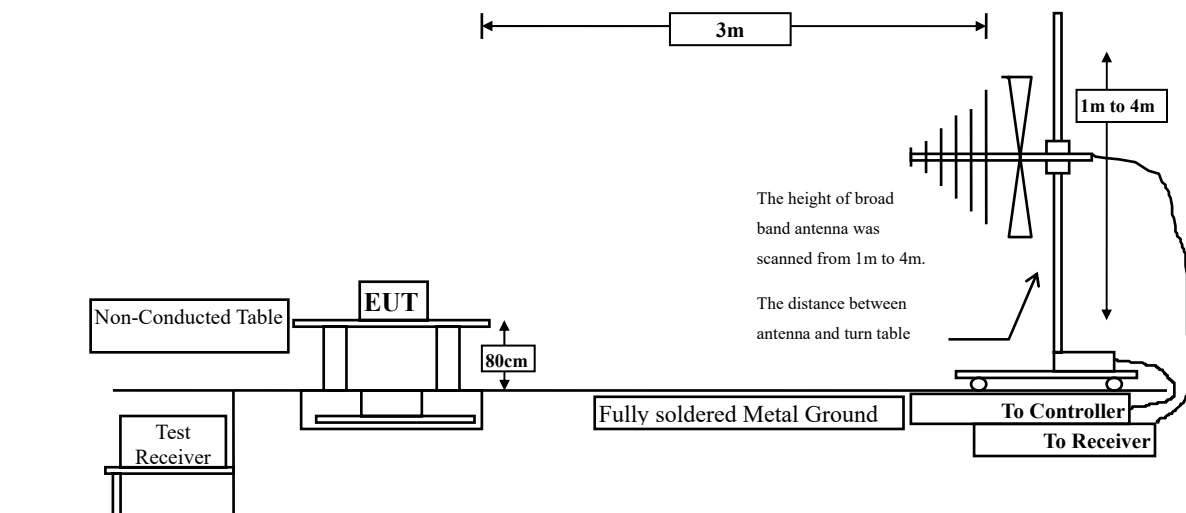
4. Radiated Emission

4.1. Test Setup

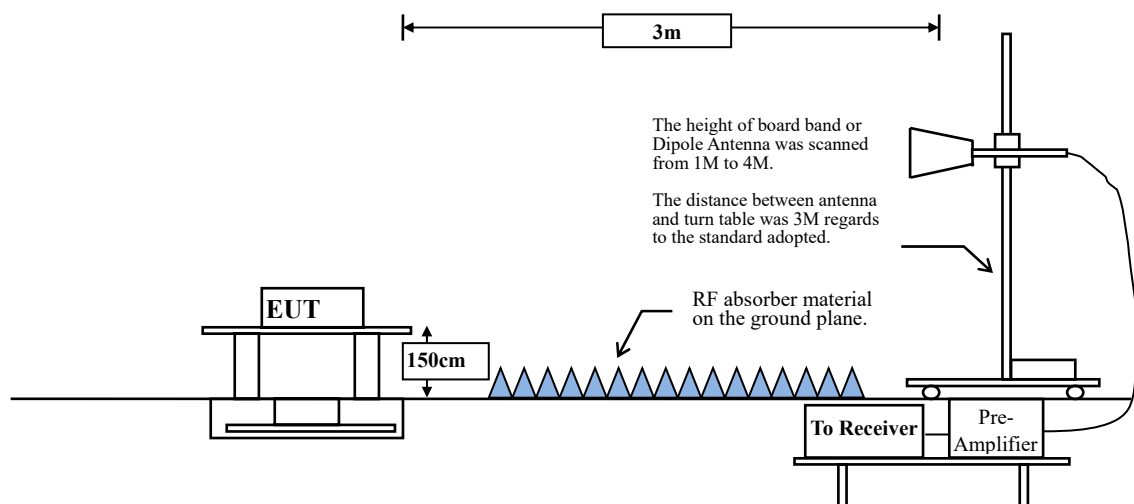
Radiated Emission Under 30MHz



Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



4.2. Limits

➤ General Radiated Emission 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 Limits		
Frequency MHz	Field strength (microvolts/meter)	Measurement distance (meter)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

- Remarks:
1. RF Voltage (dBuV) = 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.

4.3. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

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

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

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

The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level.

This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10: 2013 on radiated measurement.

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

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

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

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

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

RBW and VBW Parameter setting:

According to KDB 558074 Peak power measurement procedure

RBW = as specified in Table 1.

$VBW \geq 3 \times RBW$.

Table 1 —RBW as a function of frequency

Frequency	RBW
9-150 kHz	200-300 Hz
0.15-30 MHz	9-10 kHz
30-1000 MHz	100-120 kHz
> 1000 MHz	1 MHz

According to KDB 558074 Average power measurement procedure

RBW = 1MHz.

VBW = 10Hz, when duty cycle $\geq 98 \%$

$VBW \geq 1/T$, when duty cycle $< 98 \%$

(T refers to the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.)

2.4GHz band	Duty Cycle (%)	T (ms)	1/T (Hz)	VBW (Hz)
802.11b	98.99	--	--	10
802.11g	96.78	1.3820	724	1k
802.11n20	83.29	0.6680	1497	2k
802.11n40	61.96	0.3160	3165	5k

Note: Duty Cycle Refer to Section 9

4.4. Uncertainty

Horizontal polarization :

30-300MHz: $\pm 4.08\text{dB}$; 300M-1GHz: $\pm 3.86\text{dB}$; 1-18GHz: $\pm 3.77\text{dB}$; 18-40GHz: $\pm 3.98\text{dB}$

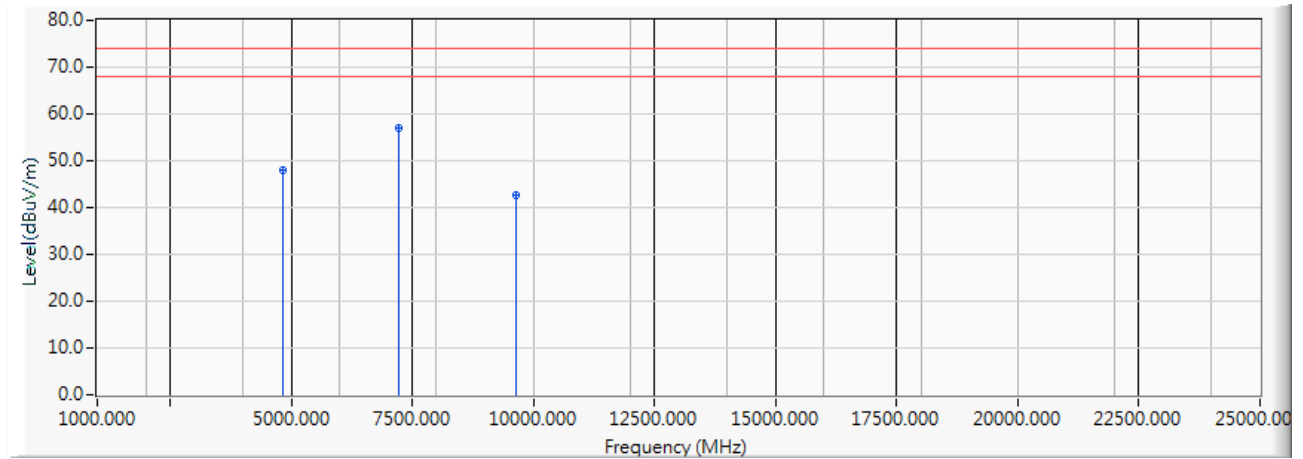
Vertical polarization :

30-300MHz: $\pm 4.81\text{dB}$; 300M-1GHz: $\pm 3.87\text{dB}$; 1-18GHz: $\pm 3.83\text{dB}$; 18-40GHz: $\pm 3.98\text{dB}$

4.5. Test Result of Radiated Emission

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)
 Test Date : 2019/07/10

Horizontal



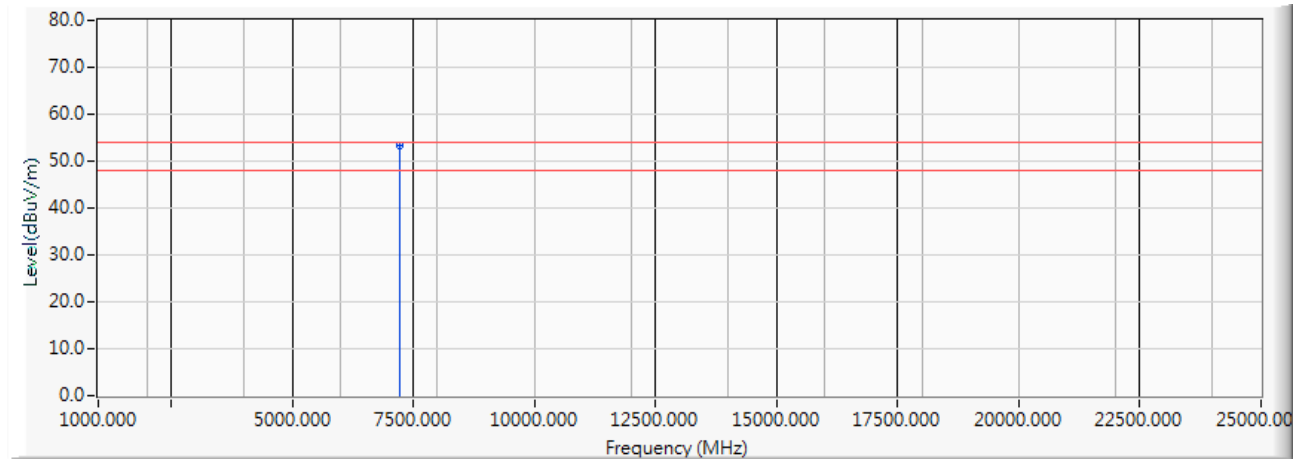
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4824.000	-6.086	54.180	48.095	-25.905	74.000	PEAK
2	*	7236.000	-3.033	60.190	57.157	-16.843	74.000	PEAK
3		9648.000	-0.680	43.190	42.510	-31.490	74.000	PEAK

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)
 Test Date : 2019/07/10

Horizontal



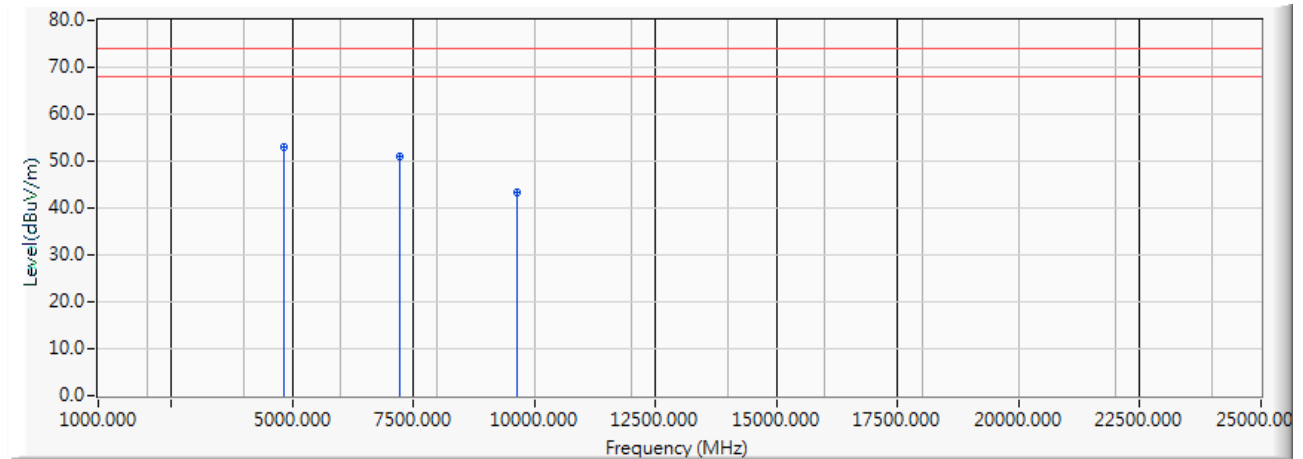
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	7236.000	-3.033	56.200	53.167	-0.833	54.000	AVERAGE

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)
 Test Date : 2019/07/10

Vertical



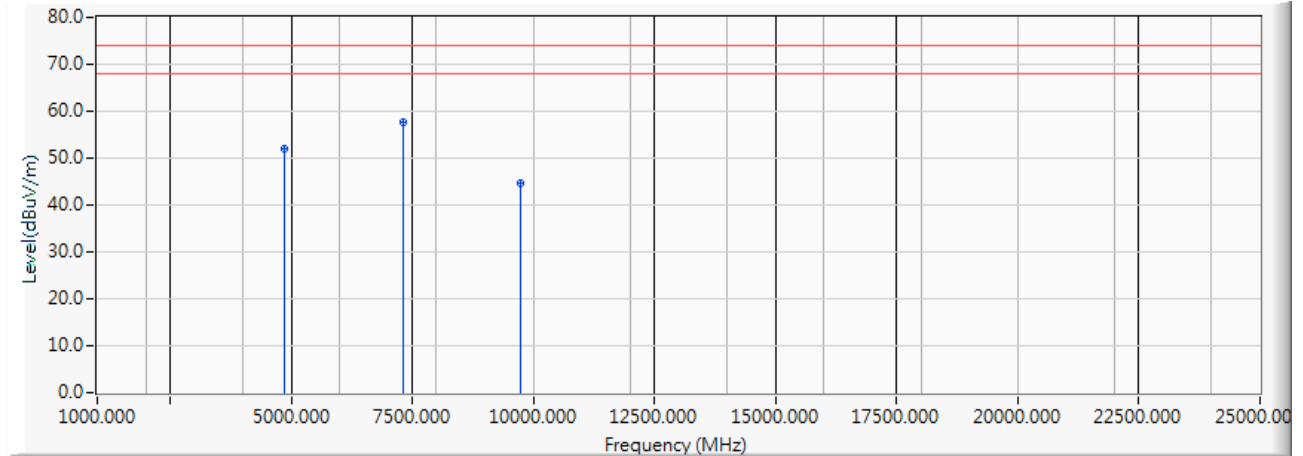
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4824.000	-6.086	59.240	53.155	-20.845	74.000	PEAK
2		7236.000	-3.033	53.880	50.847	-23.153	74.000	PEAK
3		9648.000	-0.680	43.930	43.250	-30.750	74.000	PEAK

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437MHz)
 Test Date : 2019/07/10

Horizontal



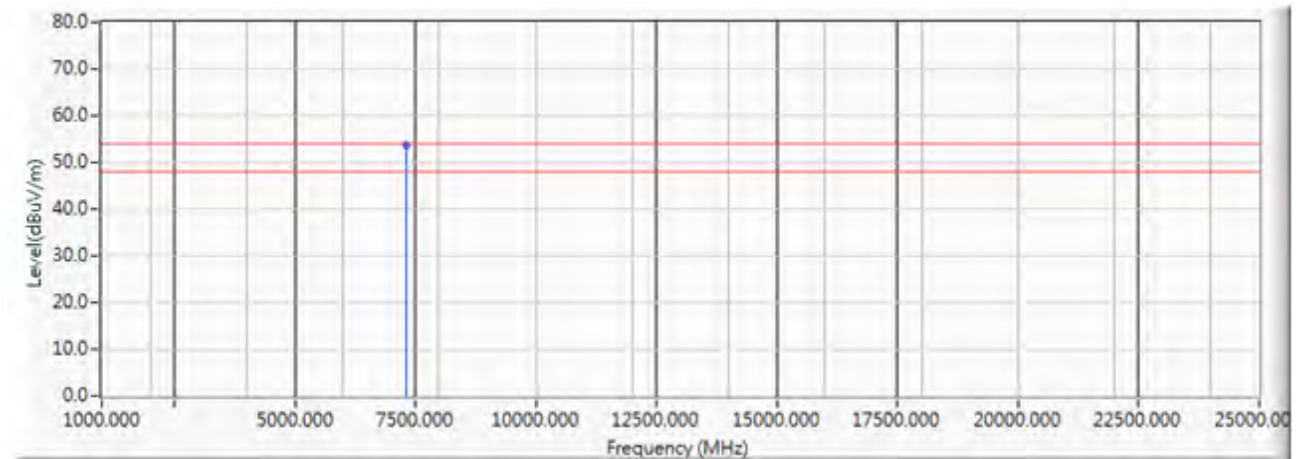
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4874.000	-6.055	57.990	51.935	-22.065	74.000	PEAK
2	*	7311.000	-2.976	60.610	57.635	-16.365	74.000	PEAK
3		9748.000	-0.502	45.150	44.648	-29.352	74.000	PEAK

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437MHz)
 Test Date : 2019/07/10

Horizontal



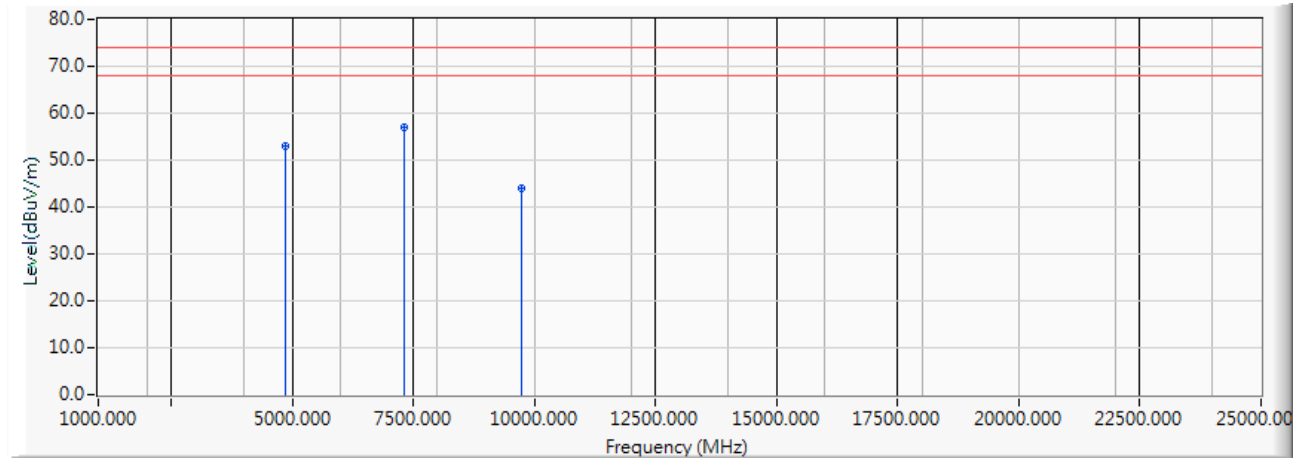
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	7311.000	-2.976	56.590	53.615	-0.385	54.000	AVERAGE

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437MHz)
 Test Date : 2019/07/10

Vertical



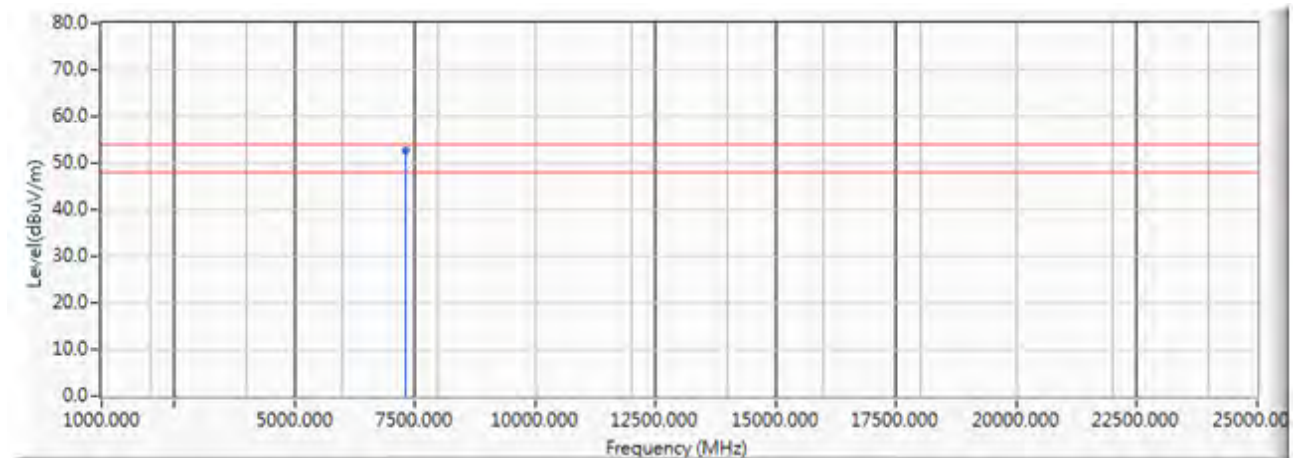
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4874.000	-6.055	58.960	52.905	-21.095	74.000	PEAK
2	*	7311.000	-2.976	59.820	56.845	-17.155	74.000	PEAK
3		9748.000	-0.502	44.370	43.868	-30.132	74.000	PEAK

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437MHz)
 Test Date : 2019/07/10

Vertical



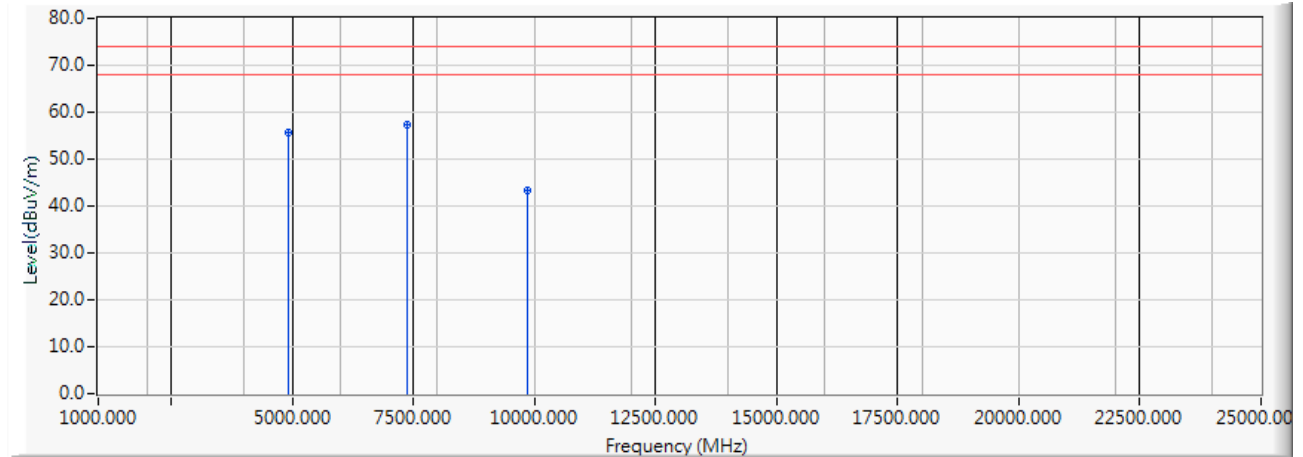
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	7311.000	-2.976	55.800	52.825	-1.175	54.000	AVERAGE

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)
 Test Date : 2019/07/10

Horizontal



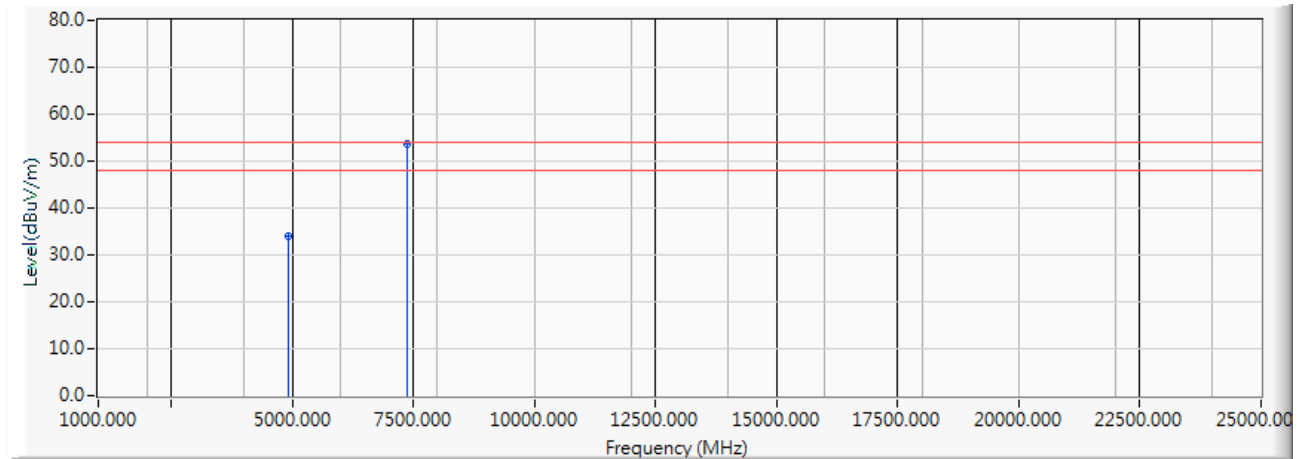
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4924.000	-6.041	61.730	55.690	-18.310	74.000	PEAK
2	*	7386.000	-2.861	60.140	57.278	-16.722	74.000	PEAK
3		9848.000	-0.399	43.830	43.431	-30.569	74.000	PEAK

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)
 Test Date : 2019/07/10

Horizontal

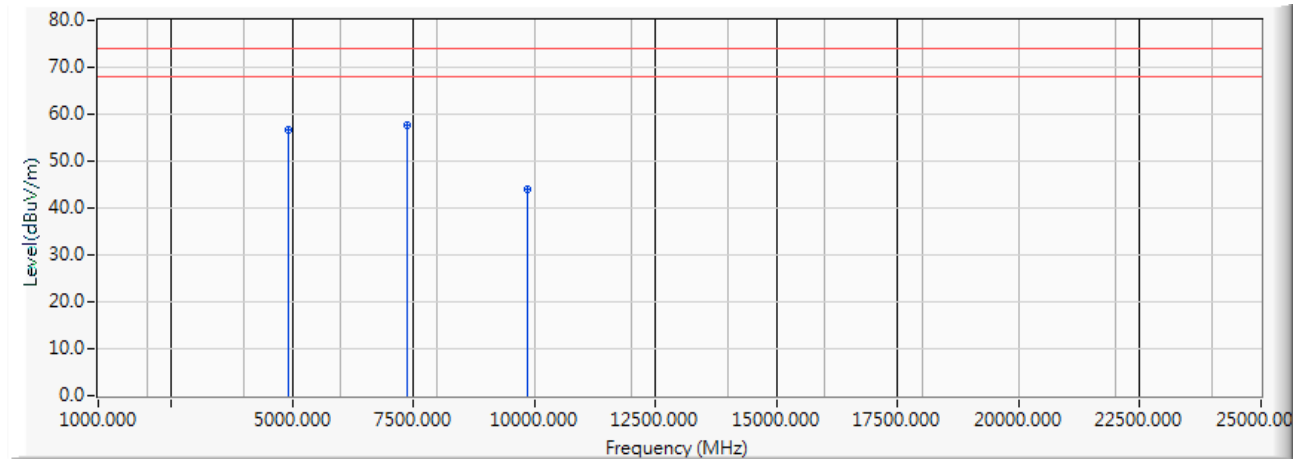


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4924.000	-6.041	40.110	34.070	-19.930	54.000	AVERAGE
2	*	7386.000	-2.861	56.470	53.608	-0.392	54.000	AVERAGE

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)
 Test Date : 2019/07/10

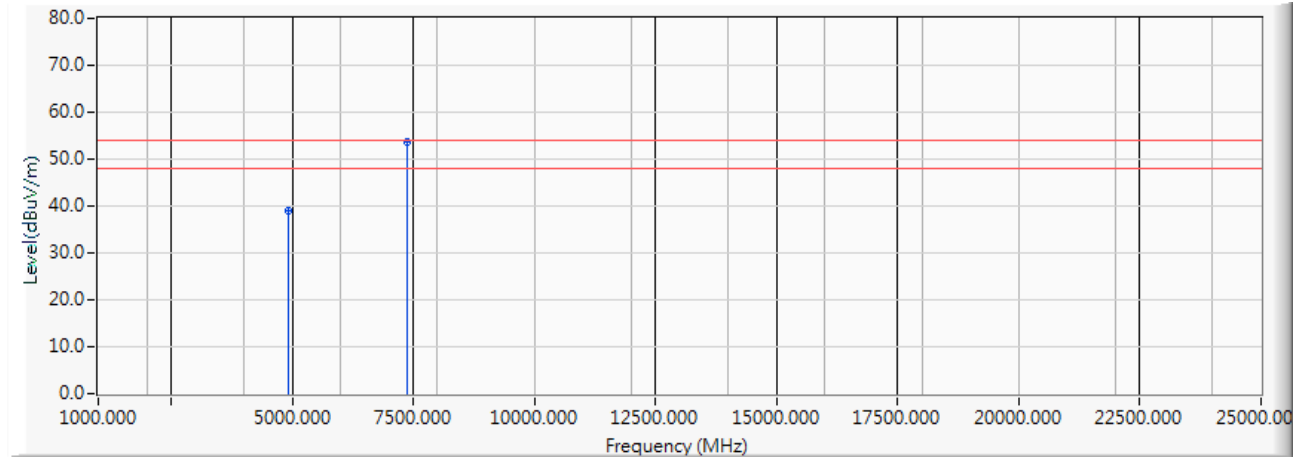
Vertical

		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4924.000	-6.041	62.690	56.650	-17.350	74.000	PEAK
2	*	7386.000	-2.861	60.590	57.728	-16.272	74.000	PEAK
3		9848.000	-0.399	44.500	44.101	-29.899	74.000	PEAK

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)
 Test Date : 2019/07/10

Vertical

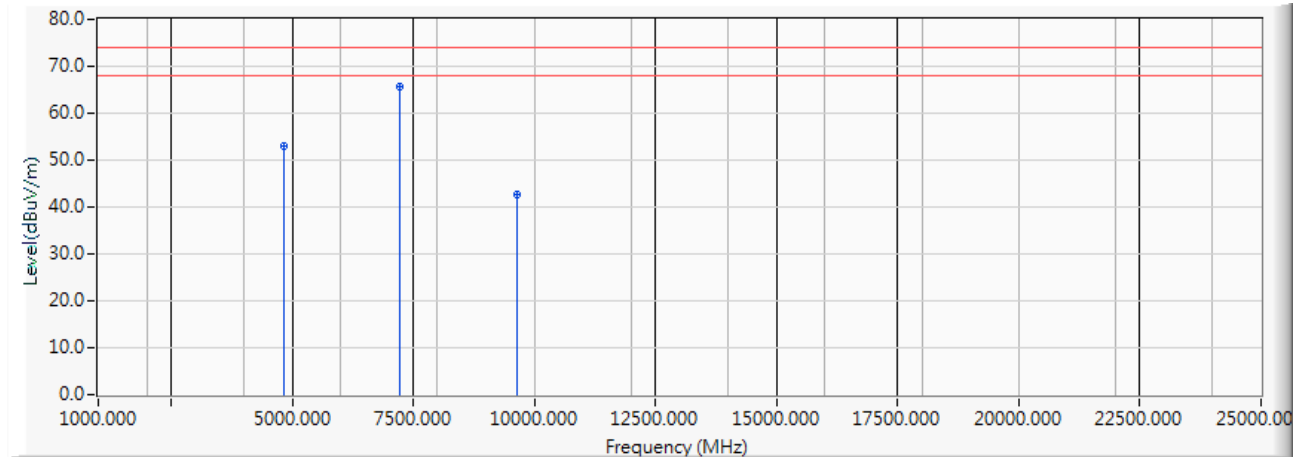
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4924.000	-6.041	45.130	39.090	-14.910	54.000	AVERAGE
2	*	7386.000	-2.861	56.620	53.758	-0.242	54.000	AVERAGE

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)
 Test Date : 2019/07/10

Horizontal



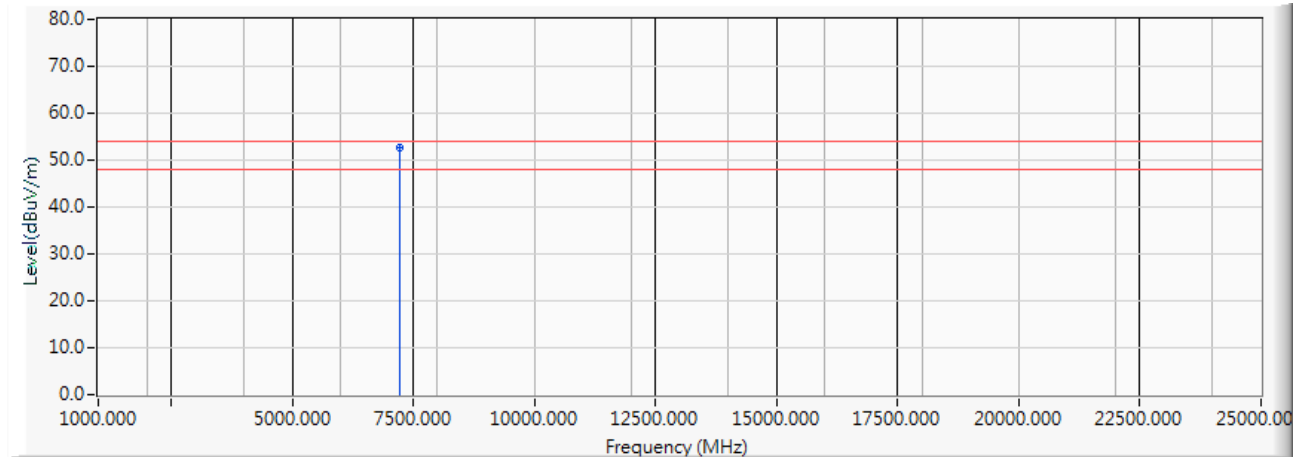
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4824.000	-6.086	58.930	52.845	-21.155	74.000	PEAK
2	*	7236.000	-3.033	68.600	65.567	-8.433	74.000	PEAK
3		9648.000	-0.680	43.350	42.670	-31.330	74.000	PEAK

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)
 Test Date : 2019/07/10

Horizontal



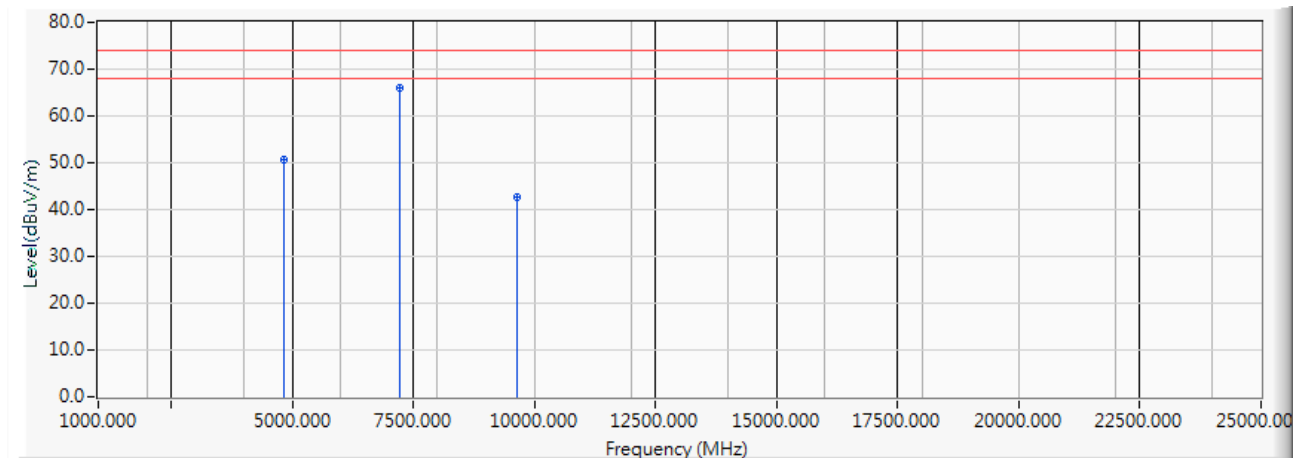
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	7236.000	-3.033	55.790	52.757	-1.243	54.000	AVERAGE

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)
 Test Date : 2019/07/10

Vertical



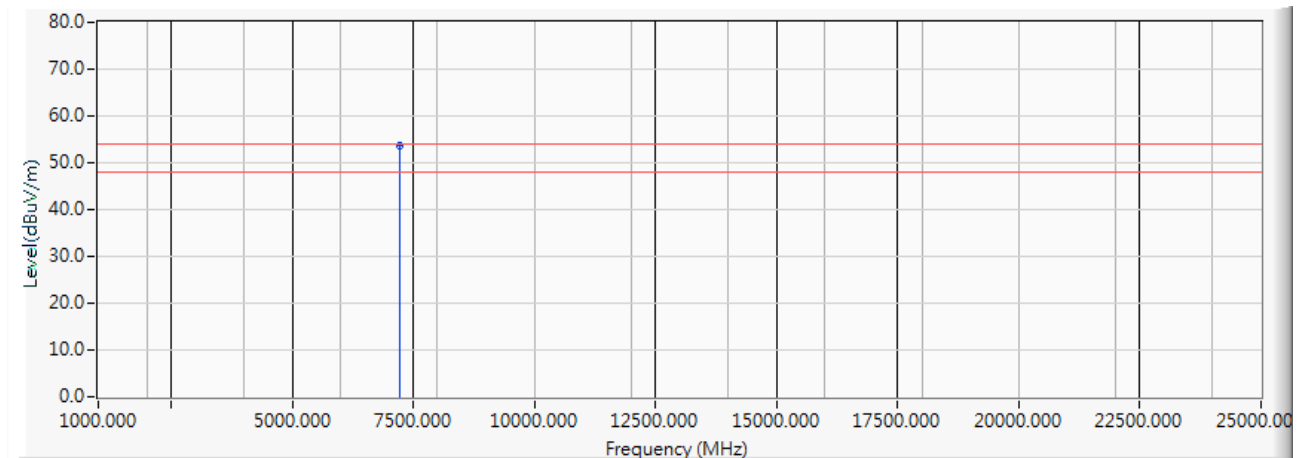
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4824.000	-6.086	56.730	50.645	-23.355	74.000	PEAK
2	*	7236.000	-3.033	69.120	66.087	-7.913	74.000	PEAK
3		9648.000	-0.680	43.400	42.720	-31.280	74.000	PEAK

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)
 Test Date : 2019/07/10

Vertical



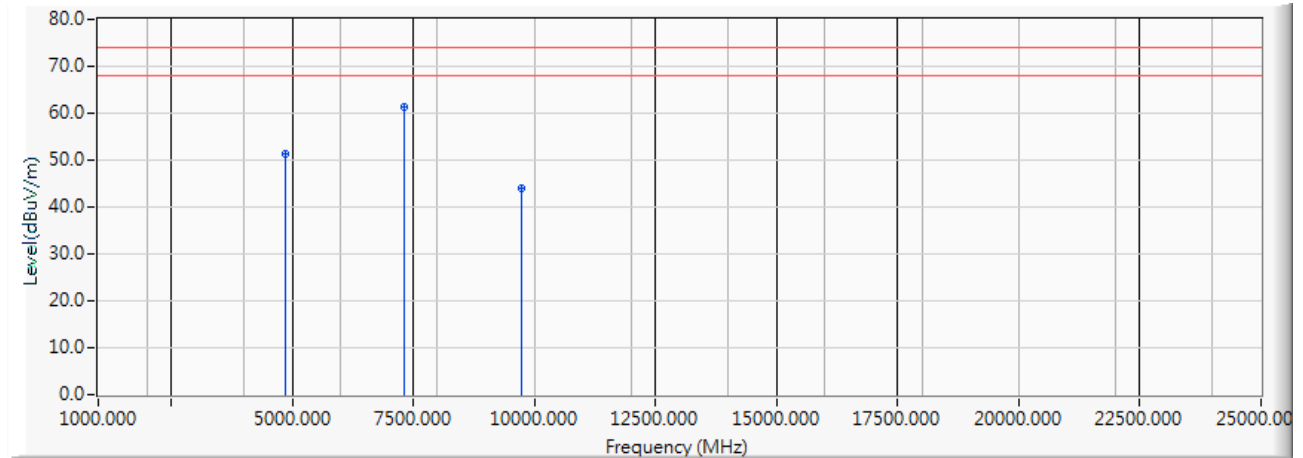
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	7236.000	-3.033	56.840	53.807	-0.193	54.000	AVERAGE

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437MHz)
 Test Date : 2019/07/10

Horizontal



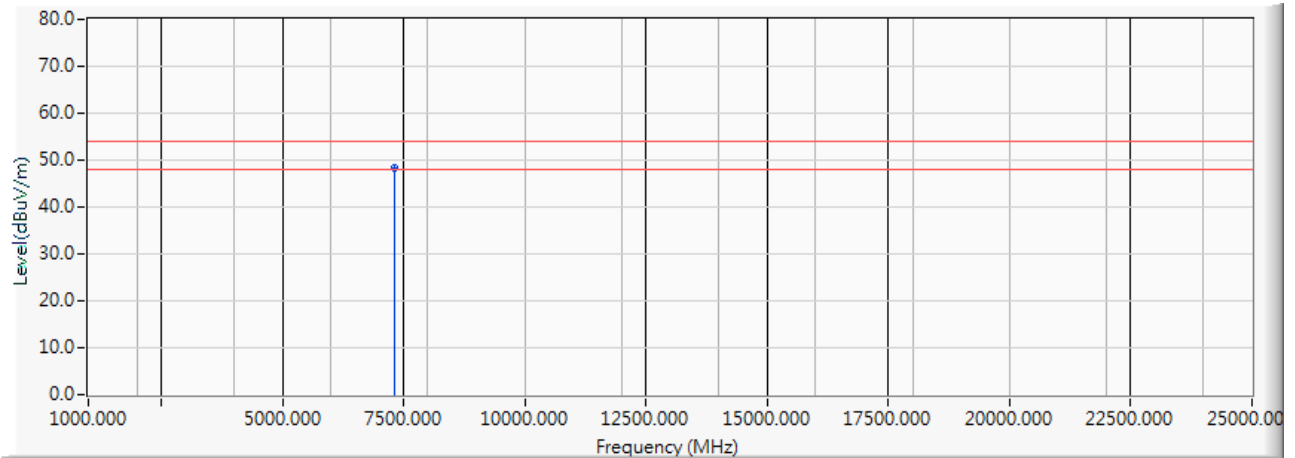
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4874.000	-6.055	57.230	51.175	-22.825	74.000	PEAK
2	*	7311.000	-2.976	64.300	61.325	-12.675	74.000	PEAK
3		9748.000	-0.502	44.630	44.128	-29.872	74.000	PEAK

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437MHz)
 Test Date : 2019/07/10

Horizontal



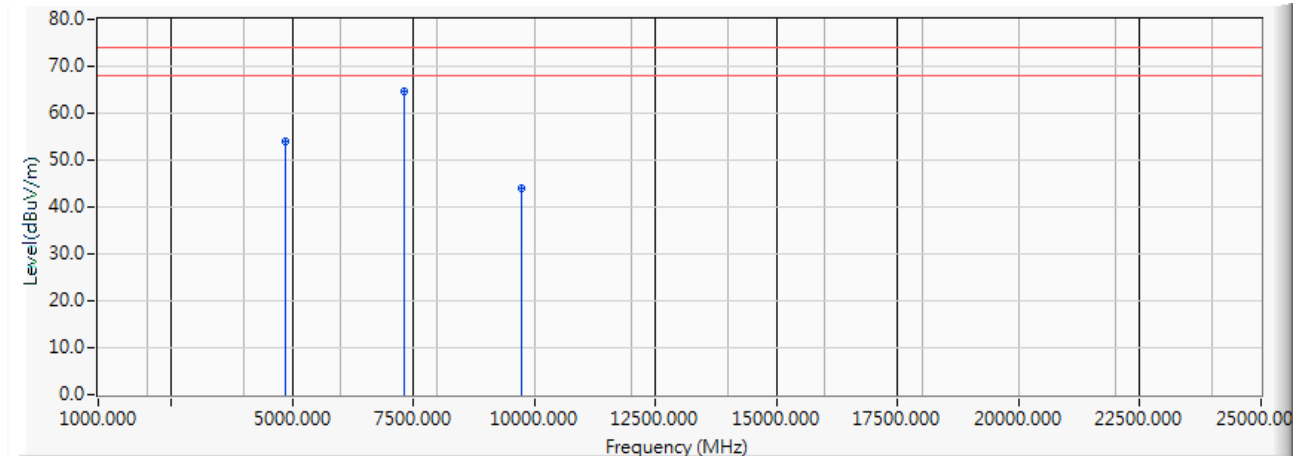
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	7311.000	-2.976	51.380	48.405	-5.595	54.000	AVERAGE

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437MHz)
 Test Date : 2019/07/10

Vertical



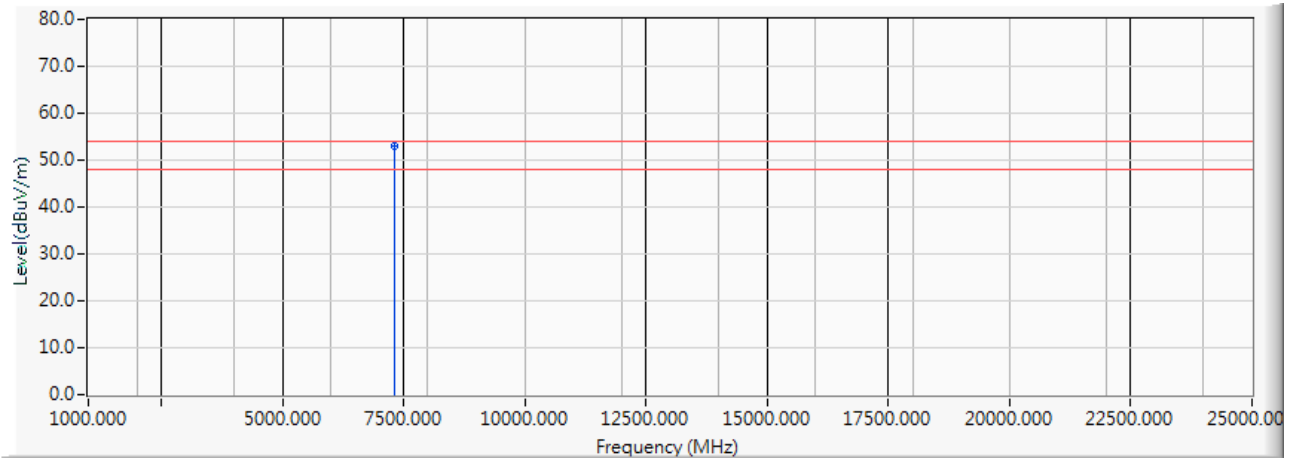
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4874.000	-6.055	59.980	53.925	-20.075	74.000	PEAK
2	*	7311.000	-2.976	67.740	64.765	-9.235	74.000	PEAK
3		9748.000	-0.502	44.580	44.078	-29.922	74.000	PEAK

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437MHz)
 Test Date : 2019/07/10

Vertical



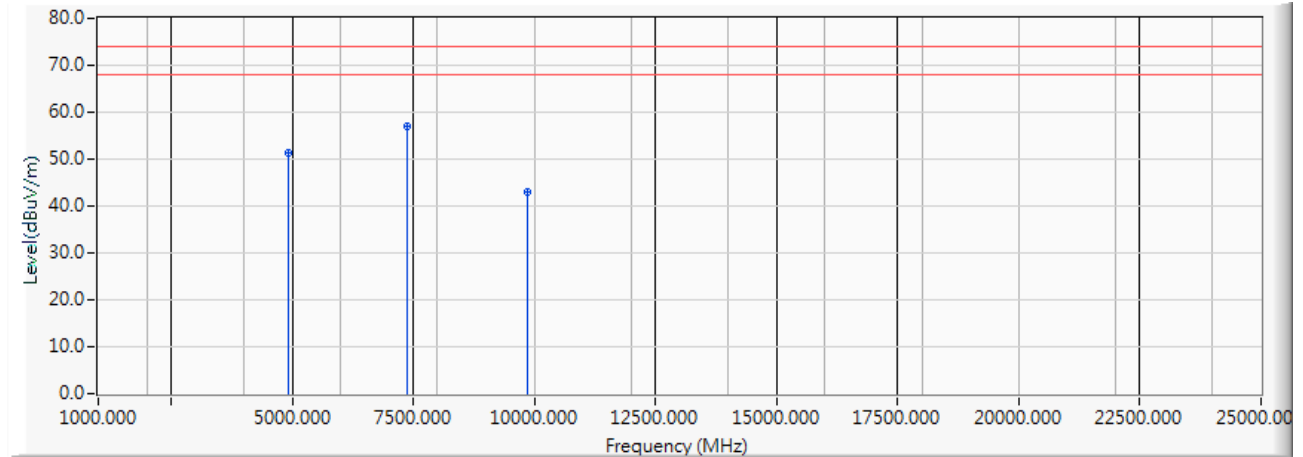
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	7311.000	-2.976	55.860	52.885	-1.115	54.000	AVERAGE

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)
 Test Date : 2019/07/10

Horizontal



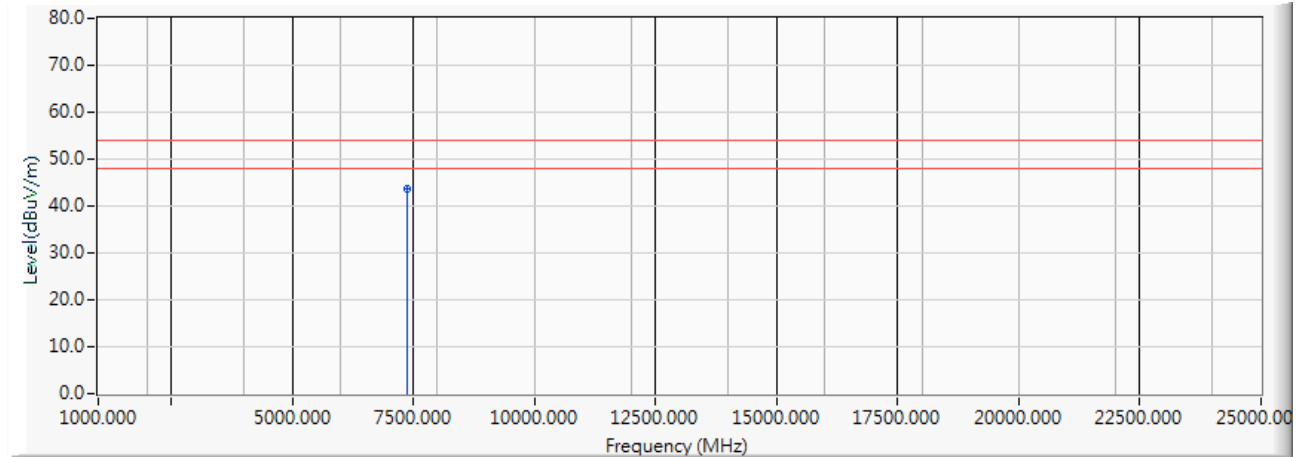
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4924.000	-6.041	57.360	51.320	-22.680	74.000	PEAK
2	*	7386.000	-2.861	60.000	57.138	-16.862	74.000	PEAK
3		9848.000	-0.399	43.560	43.161	-30.839	74.000	PEAK

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)
 Test Date : 2019/07/10

Horizontal

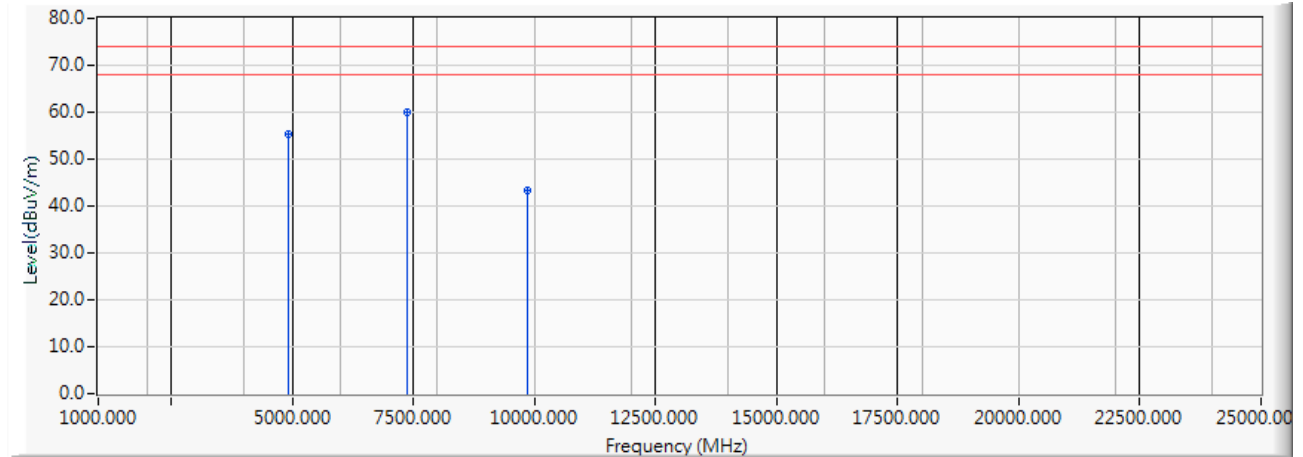


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	7386.000	-2.861	46.640	43.778	-10.222	54.000	AVERAGE

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)
 Test Date : 2019/07/10

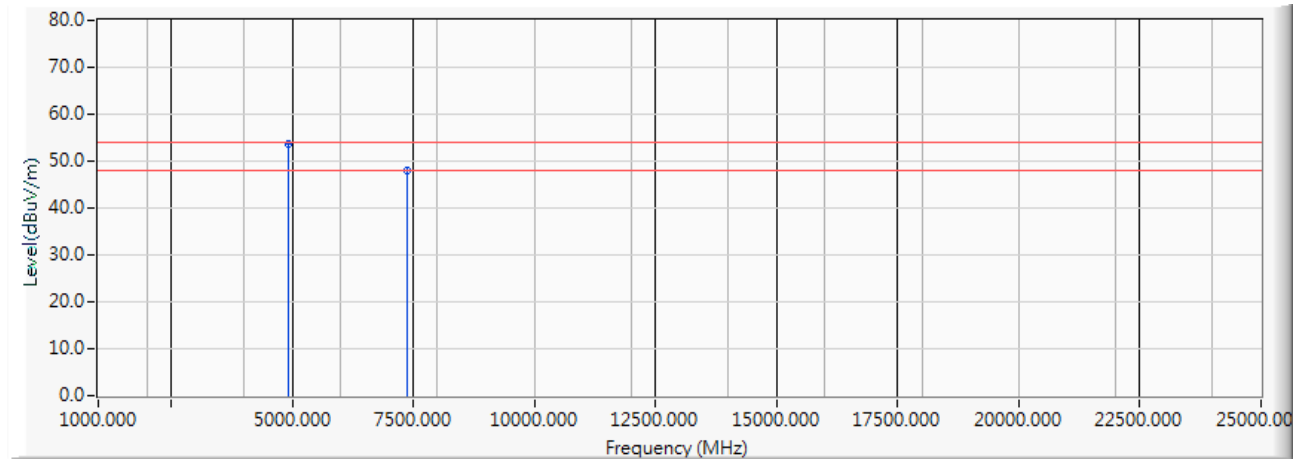
Vertical

		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4924.000	-6.041	61.250	55.210	-18.790	74.000	PEAK
2	*	7386.000	-2.861	62.930	60.068	-13.932	74.000	PEAK
3		9848.000	-0.399	43.880	43.481	-30.519	74.000	PEAK

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)
 Test Date : 2019/07/10

Vertical

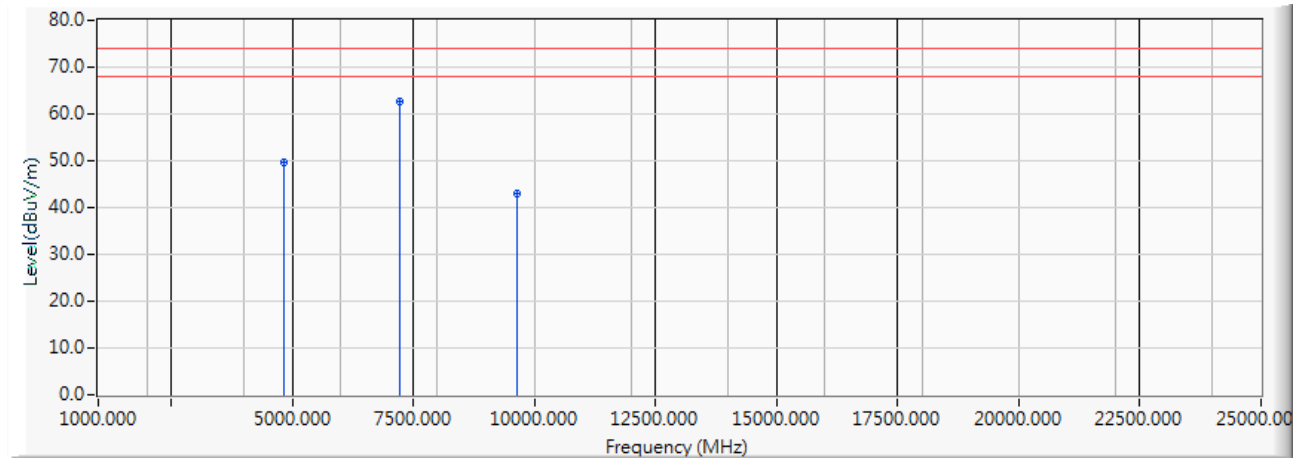
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4924.000	-6.041	59.820	53.780	-0.220	54.000	AVERAGE
2		7386.000	-2.861	50.900	48.038	-5.962	54.000	AVERAGE

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps)(2412MHz)
 Test Date : 2019/07/10

Horizontal



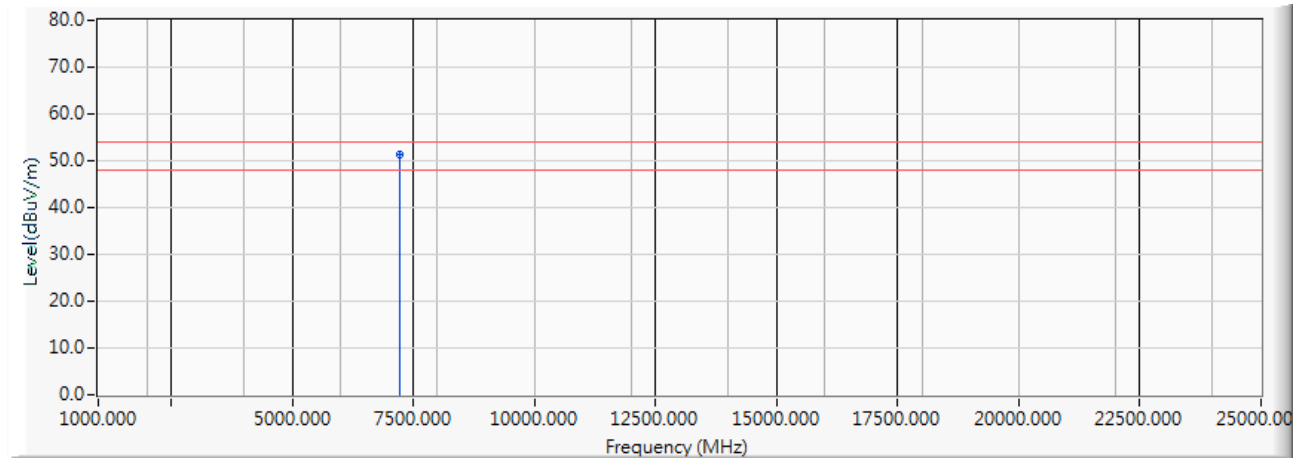
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4824.000	-6.086	55.790	49.705	-24.295	74.000	PEAK
2	*	7236.000	-3.033	65.540	62.507	-11.493	74.000	PEAK
3		9648.000	-0.680	43.570	42.890	-31.110	74.000	PEAK

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps)(2412MHz)
 Test Date : 2019/07/10

Horizontal



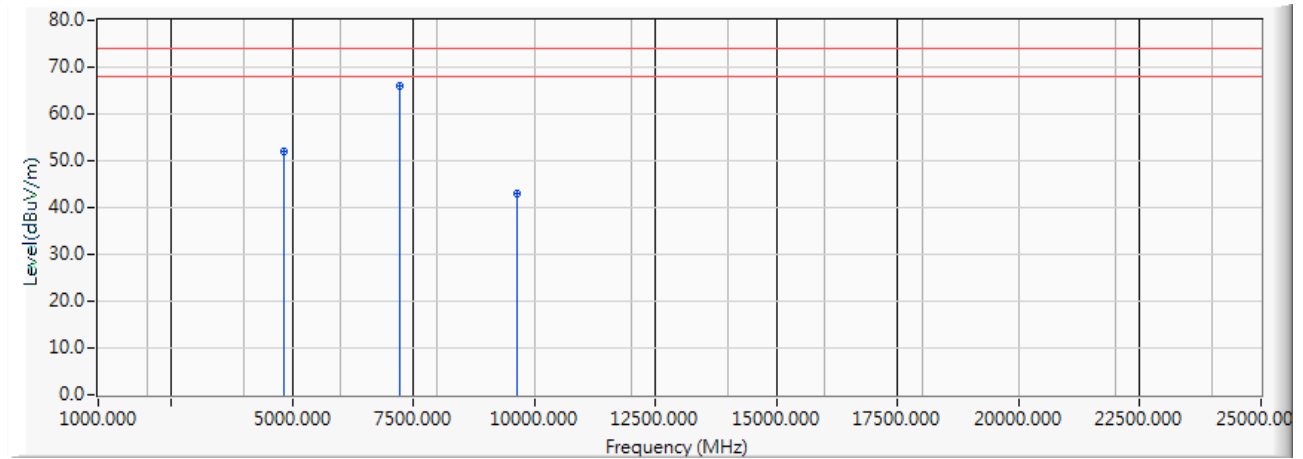
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	7236.000	-3.033	54.260	51.227	-2.773	54.000	AVERAGE

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps)(2412MHz)
 Test Date : 2019/07/10

Vertical

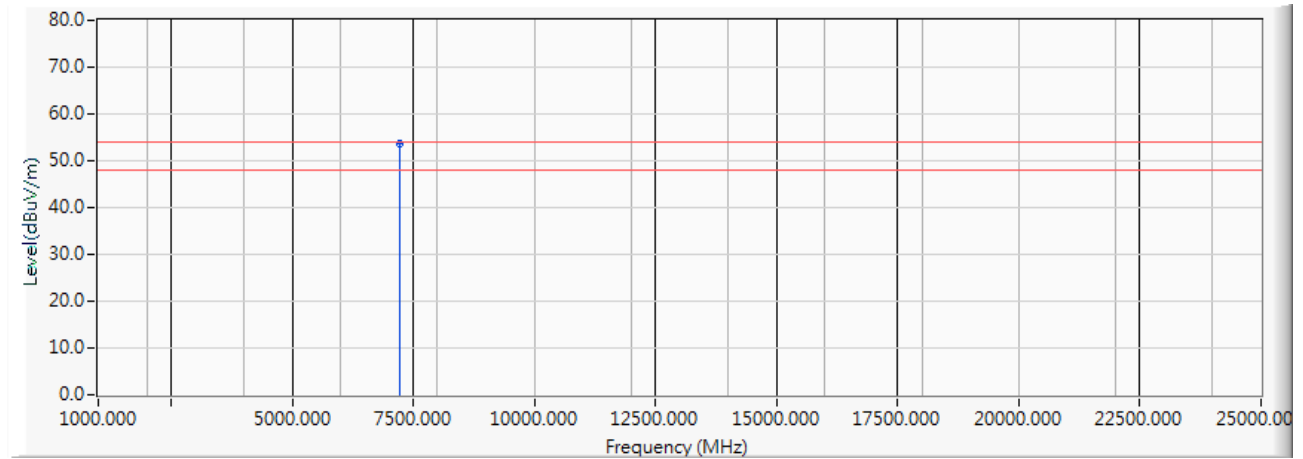


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4824.000	-6.086	57.980	51.895	-22.105	74.000	PEAK
2	*	7236.000	-3.033	68.880	65.847	-8.153	74.000	PEAK
3		9648.000	-0.680	43.720	43.040	-30.960	74.000	PEAK

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps)(2412MHz)
 Test Date : 2019/07/10

Vertical

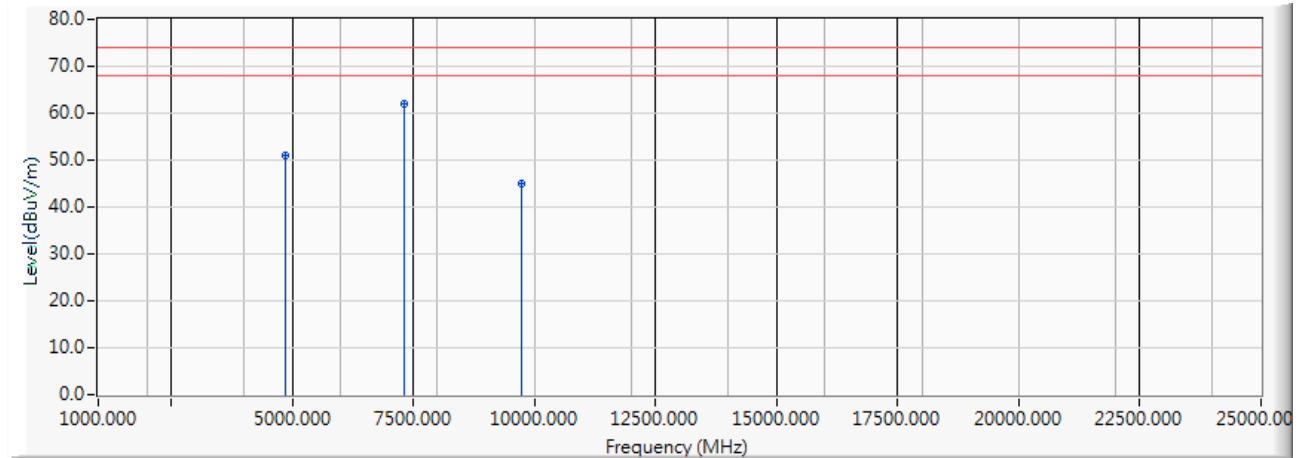
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	7236.000	-3.033	56.810	53.777	-0.223	54.000	AVERAGE

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps) (2437MHz)
 Test Date : 2019/07/10

Horizontal



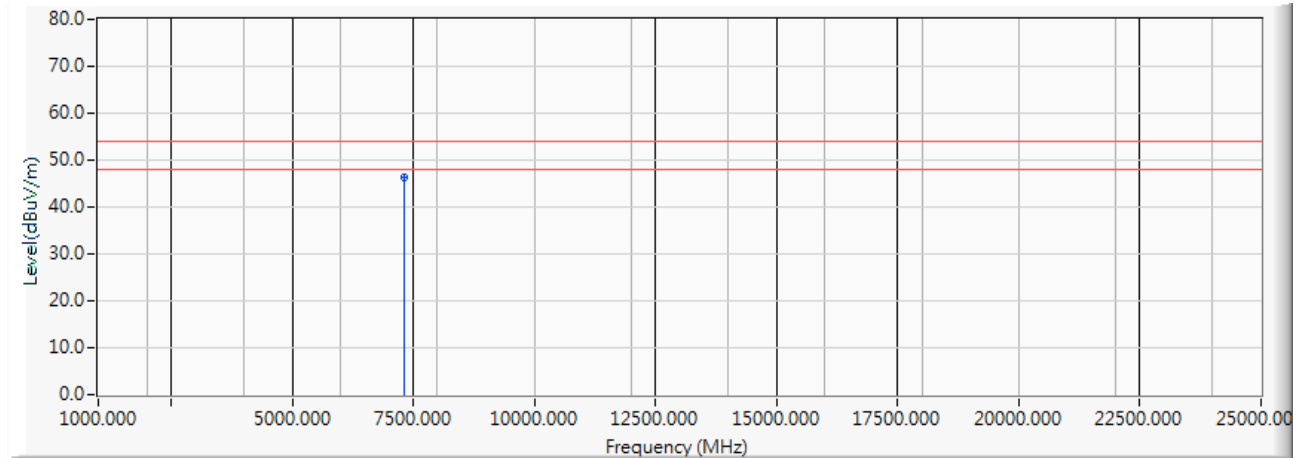
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4874.000	-6.055	56.910	50.855	-23.145	74.000	PEAK
2	*	7311.000	-2.976	64.990	62.015	-11.985	74.000	PEAK
3		9748.000	-0.502	45.380	44.878	-29.122	74.000	PEAK

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps) (2437MHz)
 Test Date : 2019/07/10

Horizontal



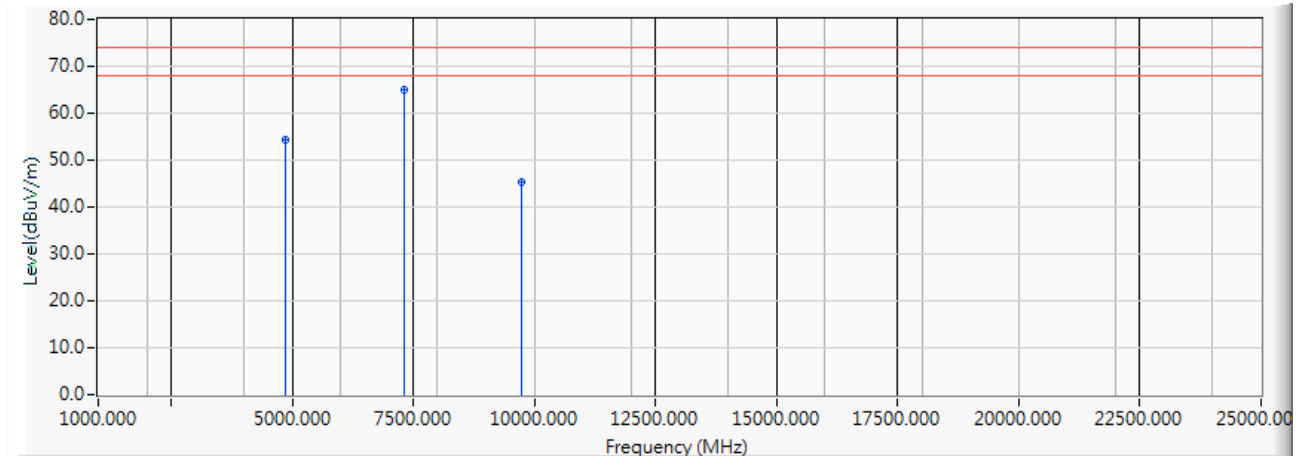
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	7311.000	-2.976	49.410	46.435	-7.565	54.000	AVERAGE

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps) (2437MHz)
 Test Date : 2019/07/10

Vertical



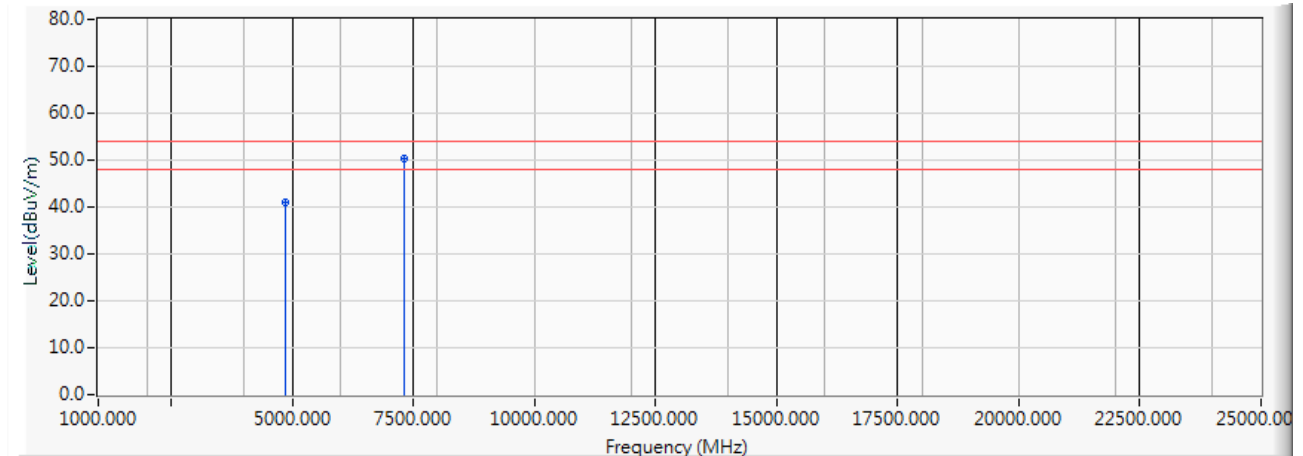
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4874.000	-6.055	60.370	54.315	-19.685	74.000	PEAK
2	*	7311.000	-2.976	68.050	65.075	-8.925	74.000	PEAK
3		9748.000	-0.502	45.990	45.488	-28.512	74.000	PEAK

Note:

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

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 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps) (2437MHz)
 Test Date : 2019/07/10

Vertical



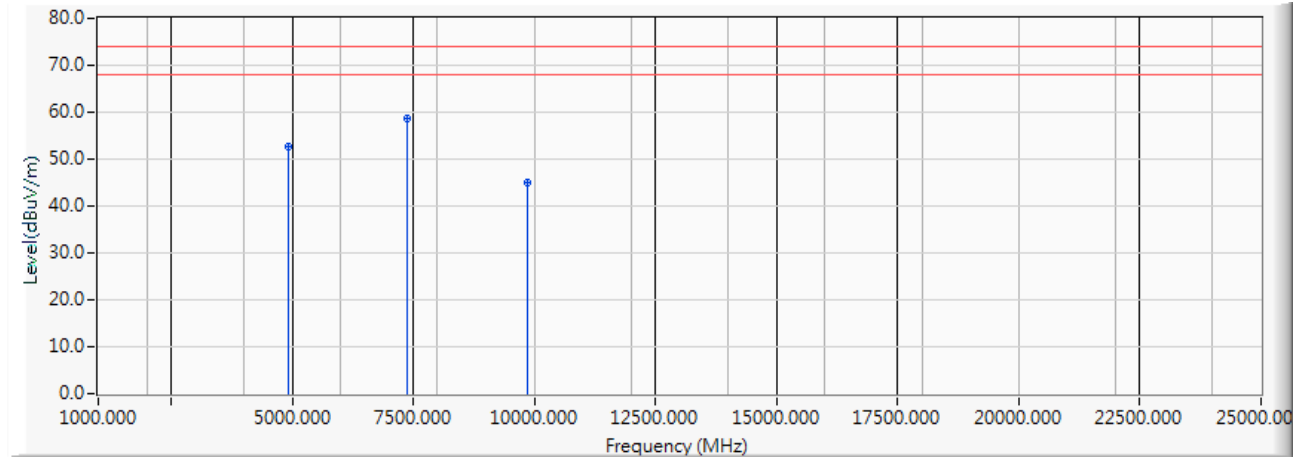
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4874.000	-6.055	47.140	41.085	-12.915	54.000	AVERAGE
2	*	7311.000	-2.976	53.410	50.435	-3.565	54.000	AVERAGE

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps) (2462MHz)
 Test Date : 2019/07/10

Horizontal



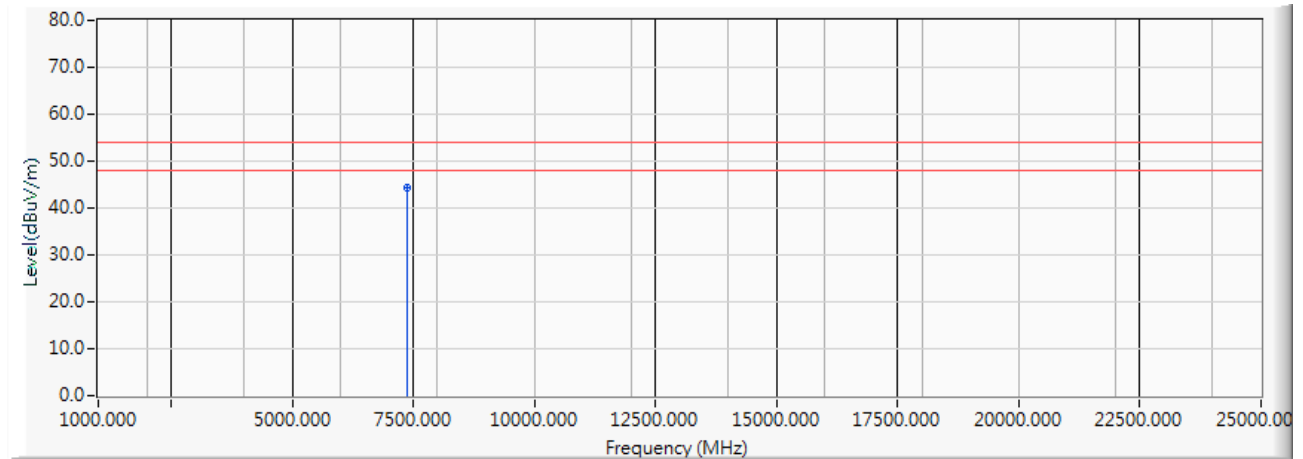
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4924.000	-6.041	58.620	52.580	-21.420	74.000	PEAK
2	*	7386.000	-2.861	61.510	58.648	-15.352	74.000	PEAK
3		9848.000	-0.399	45.400	45.001	-28.999	74.000	PEAK

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps) (2462MHz)
 Test Date : 2019/07/10

Horizontal

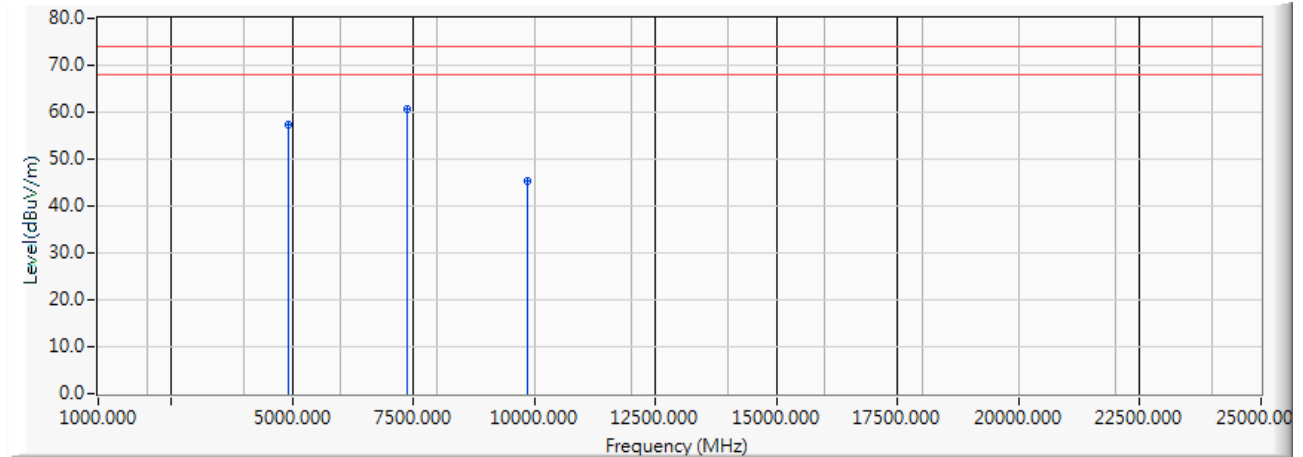


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	7386.000	-2.861	47.240	44.378	-9.622	54.000	AVERAGE

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps) (2462MHz)
 Test Date : 2019/07/10

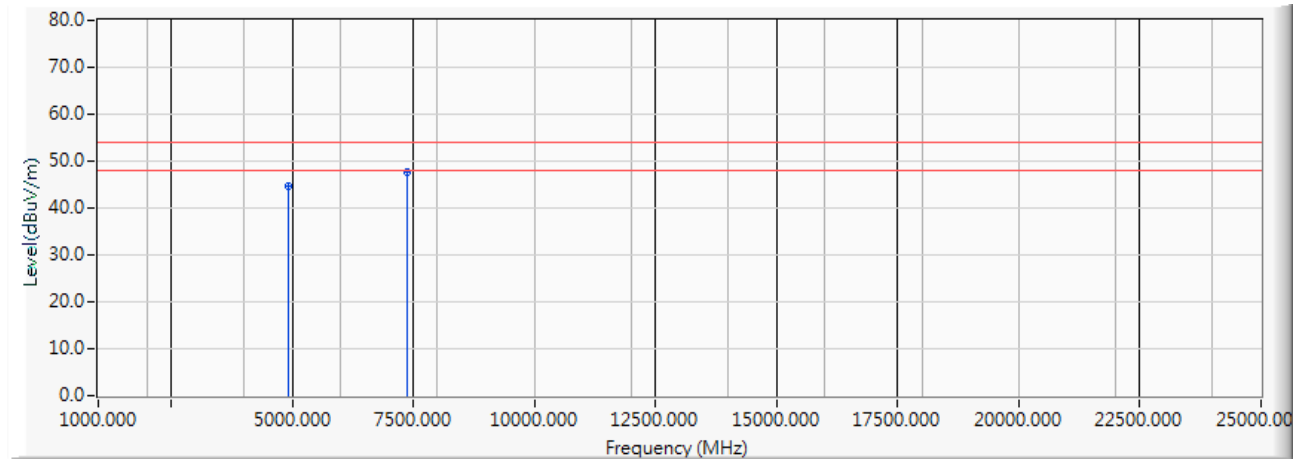
Vertical

		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4924.000	-6.041	63.210	57.170	-16.830	74.000	PEAK
2	*	7386.000	-2.861	63.610	60.748	-13.252	74.000	PEAK
3		9848.000	-0.399	45.670	45.271	-28.729	74.000	PEAK

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps) (2462MHz)
 Test Date : 2019/07/10

Vertical

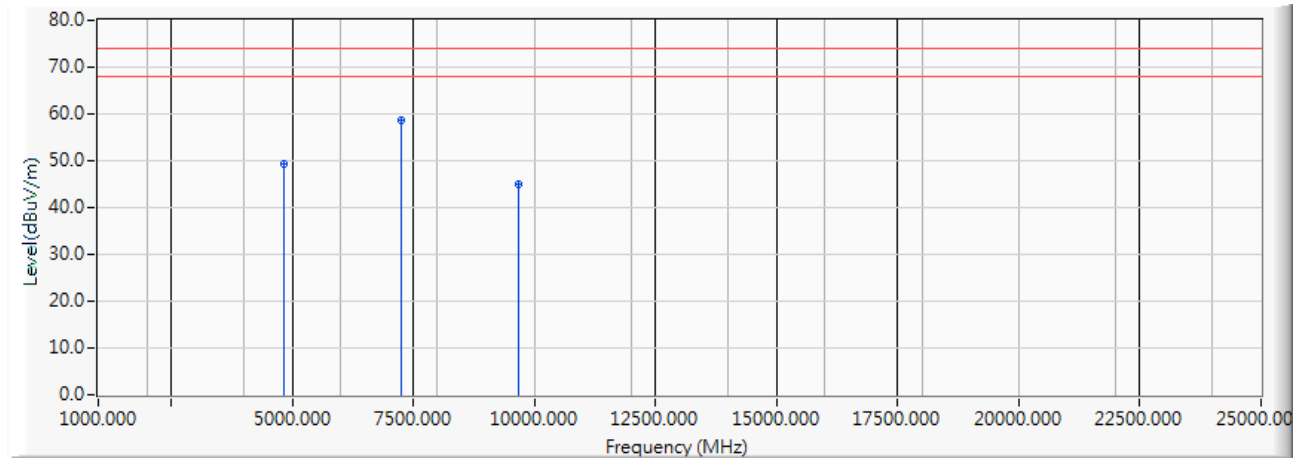
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4924.000	-6.041	50.810	44.770	-9.230	54.000	AVERAGE
2	*	7386.000	-2.861	50.430	47.568	-6.432	54.000	AVERAGE

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps)(2422MHz)
 Test Date : 2019/07/10

Horizontal



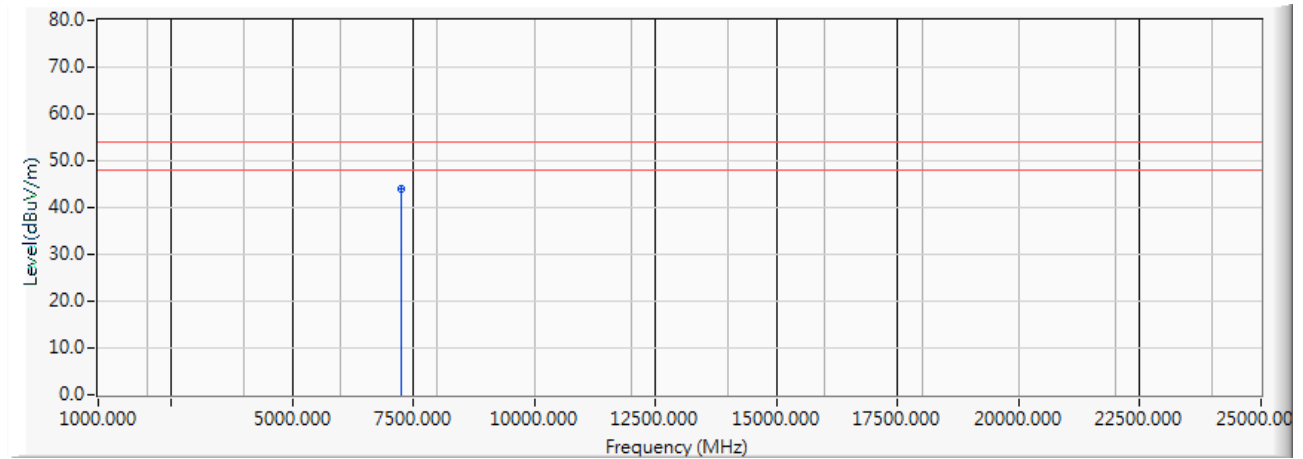
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4844.000	-6.075	55.290	49.214	-24.786	74.000	PEAK
2	*	7266.000	-3.025	61.850	58.824	-15.176	74.000	PEAK
3		9688.000	-0.618	45.620	45.003	-28.997	74.000	PEAK

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps)(2422MHz)
 Test Date : 2019/07/10

Horizontal



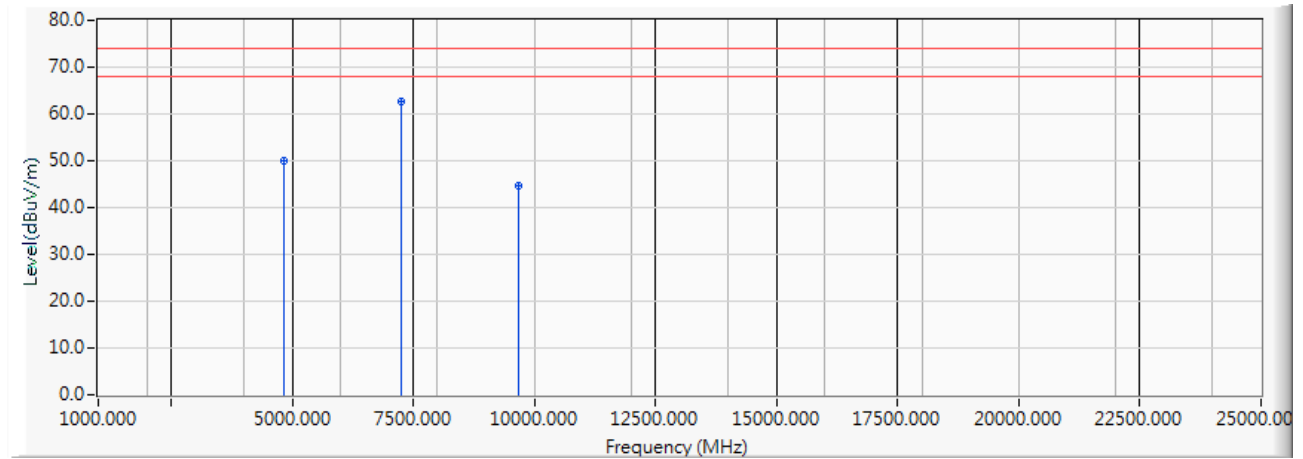
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	7266.000	-3.025	46.940	43.914	-10.086	54.000	AVERAGE

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps)(2422MHz)
 Test Date : 2019/07/10

Vertical

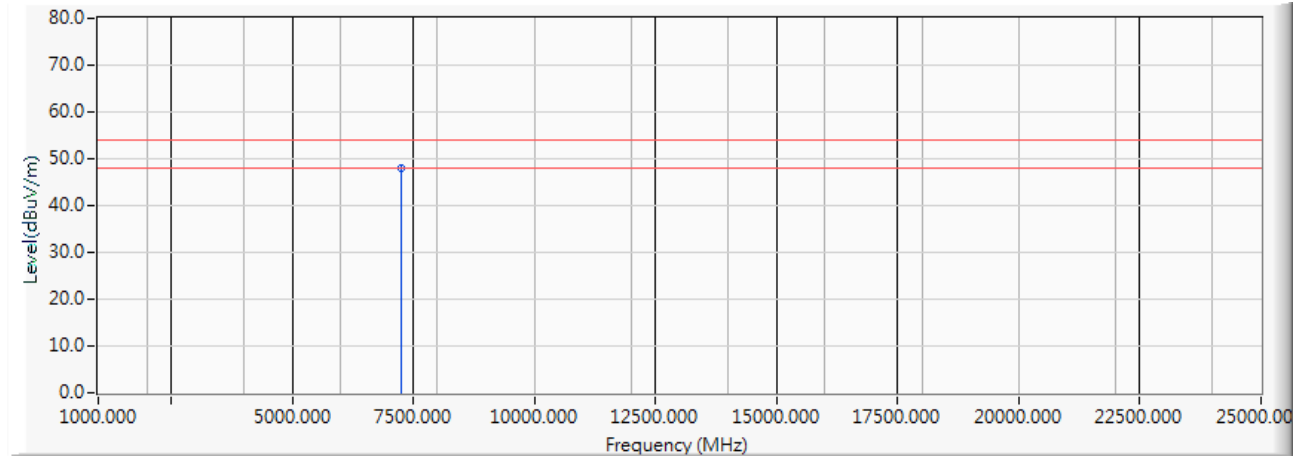


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4844.000	-6.075	56.120	50.044	-23.956	74.000	PEAK
2	*	7266.000	-3.025	65.590	62.564	-11.436	74.000	PEAK
3		9688.000	-0.618	45.310	44.693	-29.307	74.000	PEAK

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps)(2422MHz)
 Test Date : 2019/07/10

Vertical

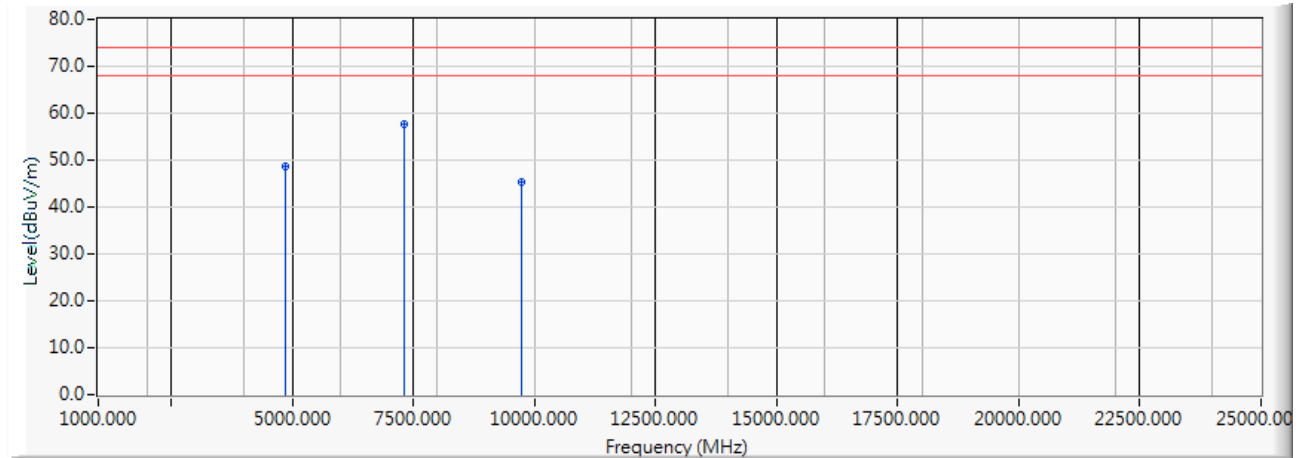
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	7266.000	-3.025	51.120	48.094	-5.906	54.000	AVERAGE

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps) (2437MHz)
 Test Date : 2019/07/10

Horizontal



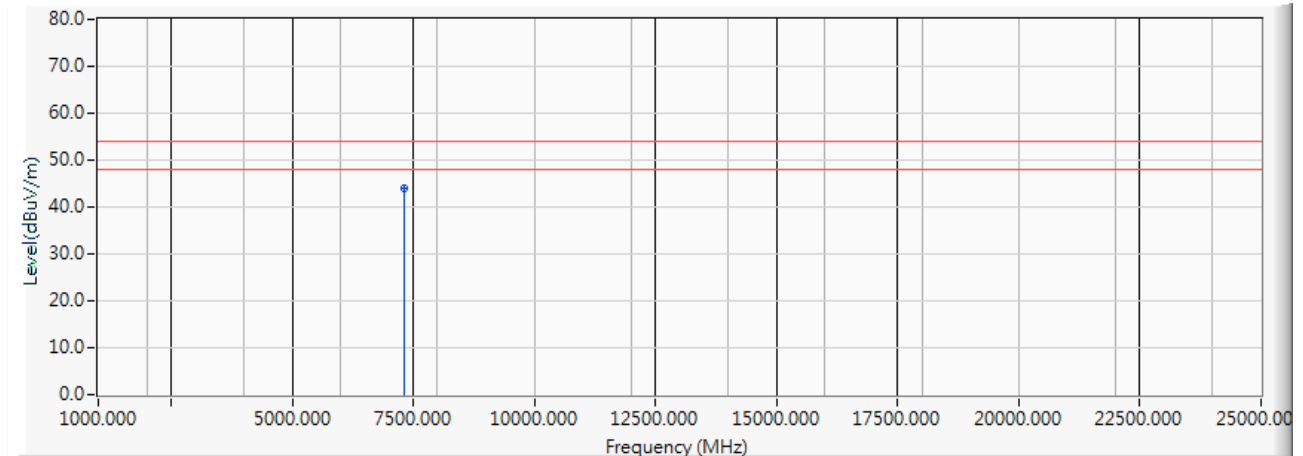
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4874.000	-6.055	54.690	48.635	-25.365	74.000	PEAK
2	*	7311.000	-2.976	60.770	57.795	-16.205	74.000	PEAK
3		9748.000	-0.502	45.720	45.218	-28.782	74.000	PEAK

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps) (2437MHz)
 Test Date : 2019/07/10

Horizontal



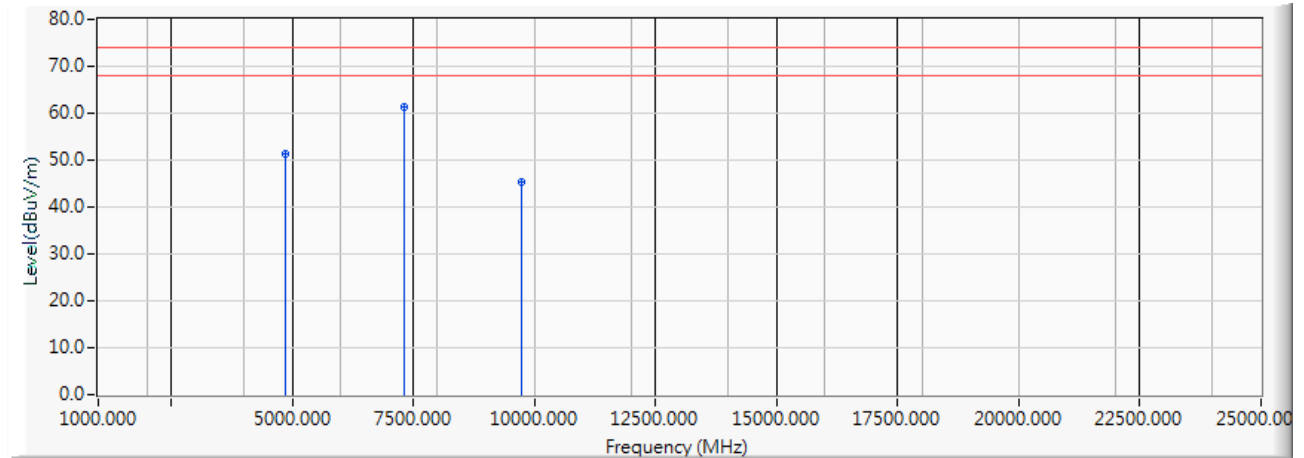
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	7311.000	-2.976	47.120	44.145	-9.855	54.000	AVERAGE

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps) (2437MHz)
 Test Date : 2019/07/10

Vertical

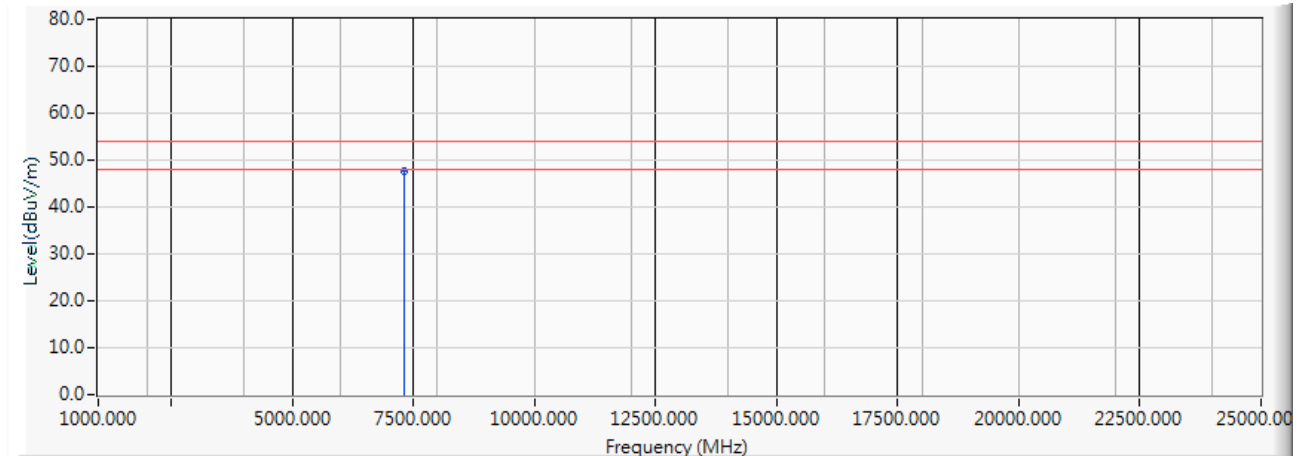


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4874.000	-6.055	57.270	51.215	-22.785	74.000	PEAK
2	*	7311.000	-2.976	64.340	61.365	-12.635	74.000	PEAK
3		9748.000	-0.502	45.930	45.428	-28.572	74.000	PEAK

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps) (2437MHz)
 Test Date : 2019/07/10

Vertical

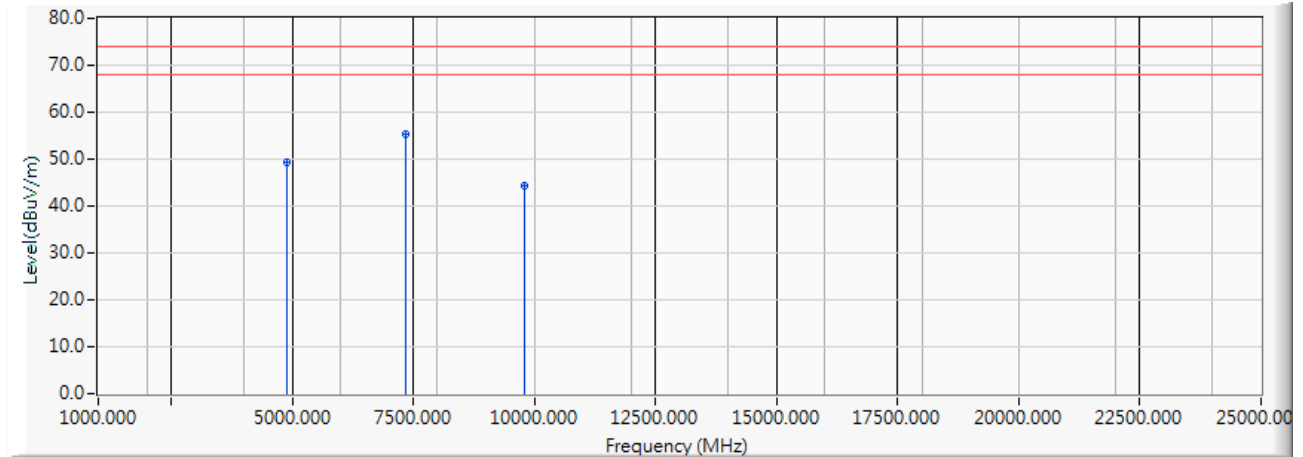
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	7311.000	-2.976	50.560	47.585	-6.415	54.000	AVERAGE

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps) (2452MHz)
 Test Date : 2019/07/10

Horizontal



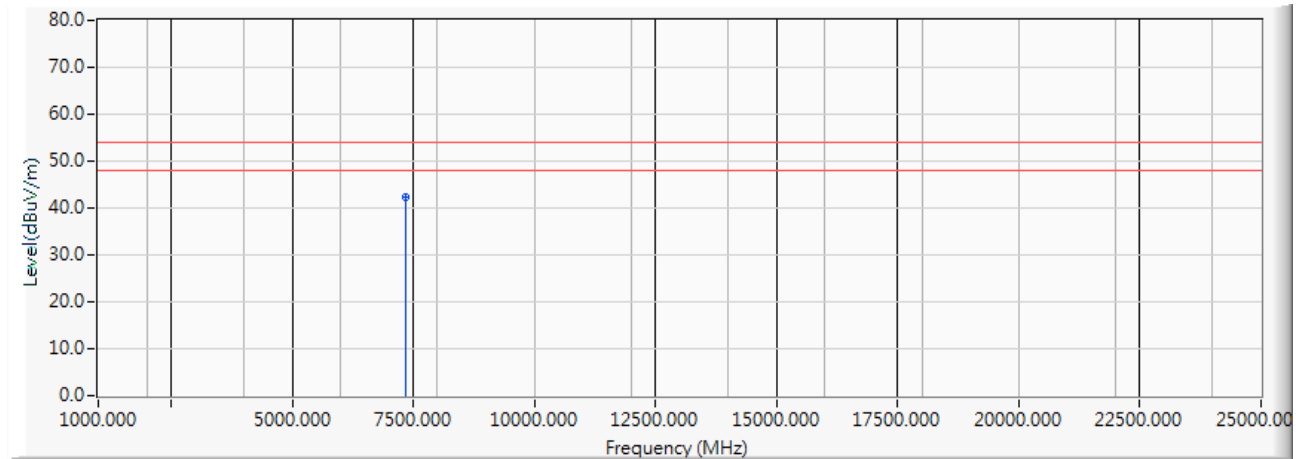
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4904.000	-6.069	55.280	49.211	-24.789	74.000	PEAK
2	*	7356.000	-2.911	58.380	55.470	-18.530	74.000	PEAK
3		9808.000	-0.445	44.810	44.365	-29.635	74.000	PEAK

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps) (2452MHz)
 Test Date : 2019/07/10

Horizontal

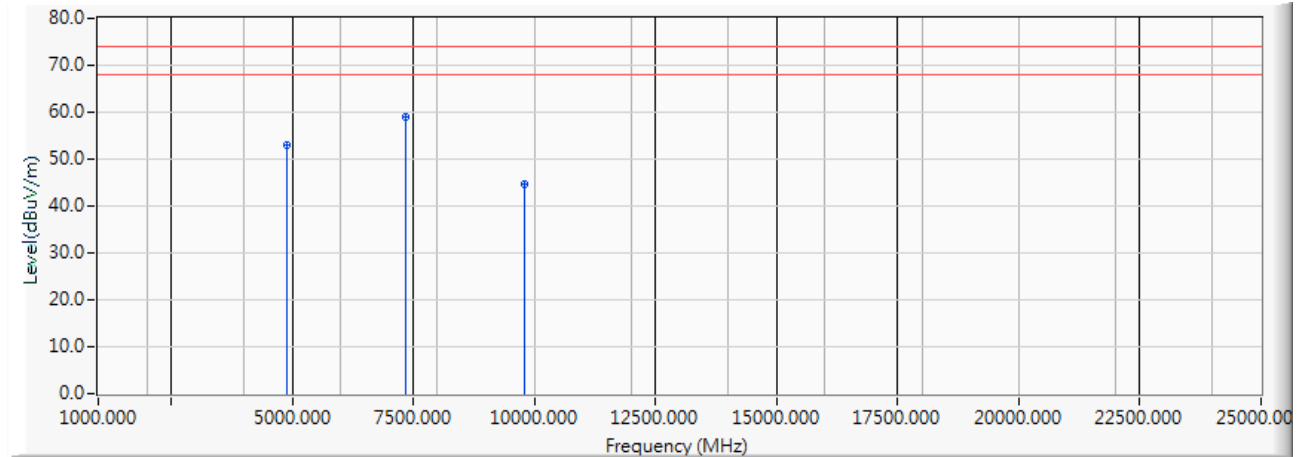


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	7356.000	-2.911	45.170	42.260	-11.740	54.000	AVERAGE

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps) (2452MHz)
 Test Date : 2019/07/10

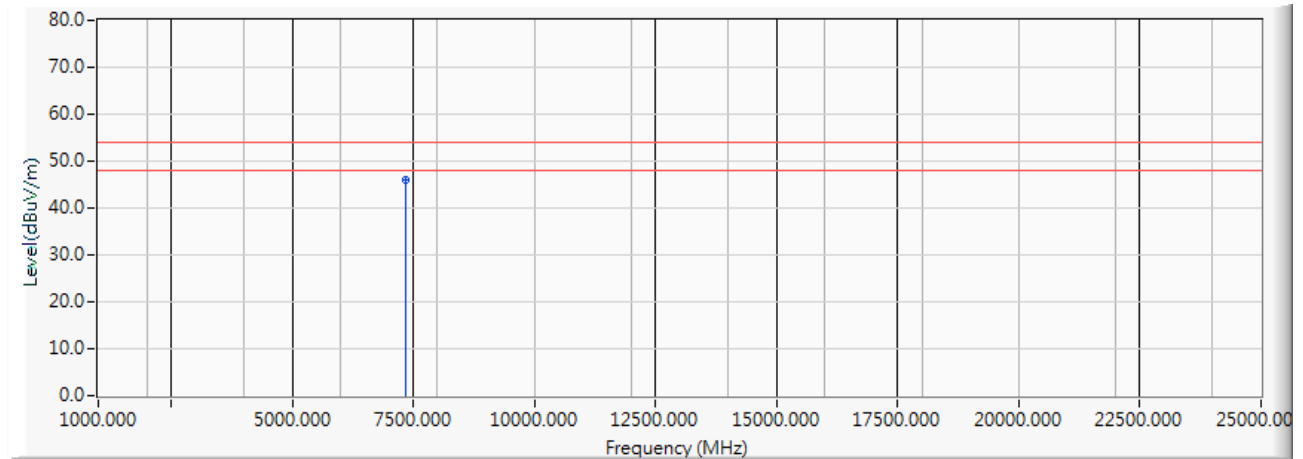
Vertical

		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4904.000	-6.069	58.920	52.851	-21.149	74.000	PEAK
2	*	7356.000	-2.911	61.870	58.960	-15.040	74.000	PEAK
3		9808.000	-0.445	45.080	44.635	-29.365	74.000	PEAK

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps) (2452MHz)
 Test Date : 2019/07/10

Vertical

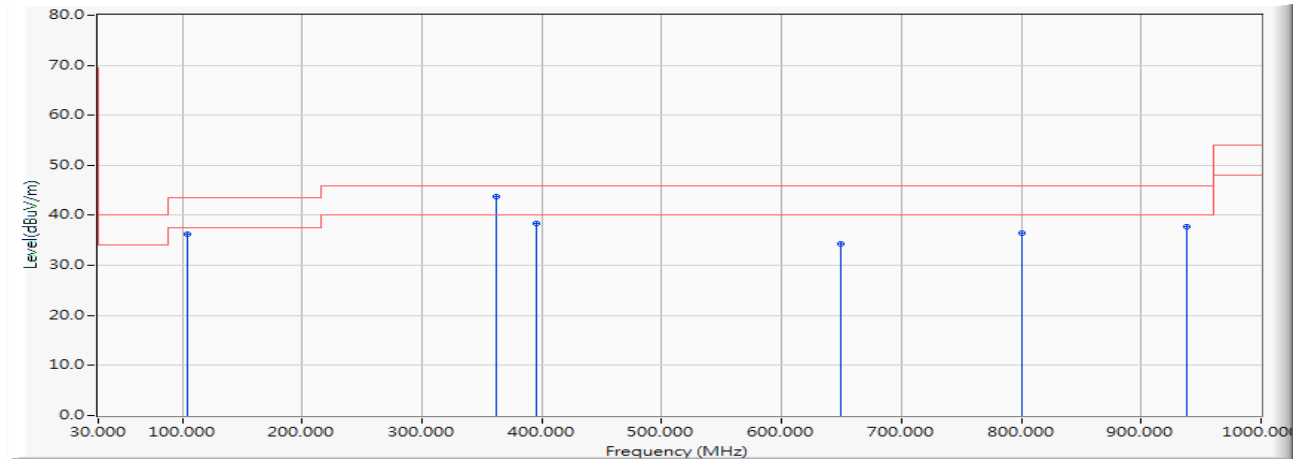
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	7356.000	-2.911	48.820	45.910	-8.090	54.000	AVERAGE

Note:

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

Product : GigaConnect® Smart Gateway
 Test Item : General Radiated Emission Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)(2437MHz)
 Test Date : 2019/07/10

Horizontal



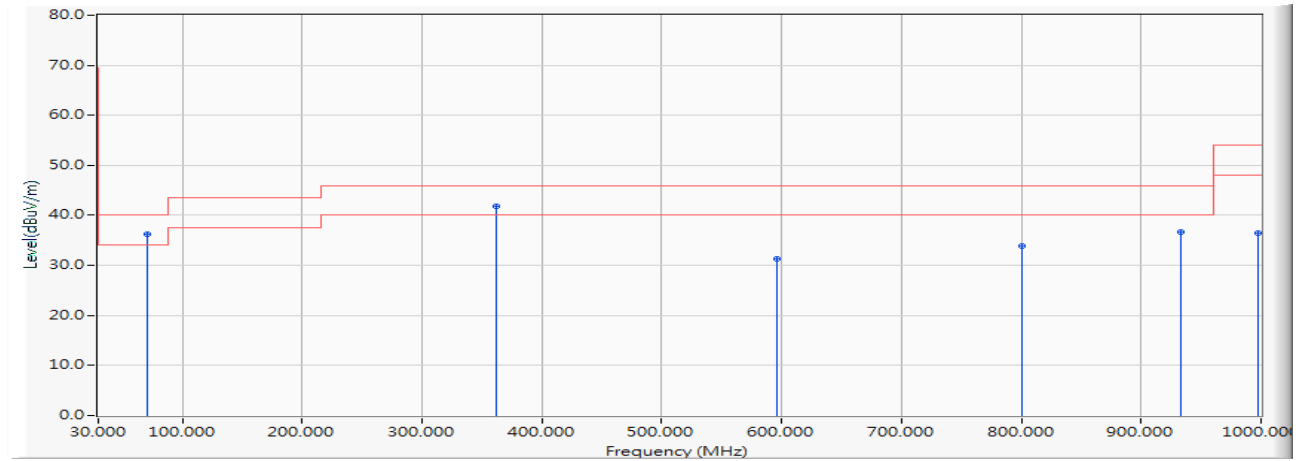
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		104.690	-15.327	51.502	36.176	-7.324	43.500	QUASIPeAK
2	*	361.740	-8.912	52.748	43.836	-2.164	46.000	QUASIPeAK
3		395.690	-8.134	46.436	38.302	-7.698	46.000	QUASIPeAK
4		649.830	-3.697	38.032	34.334	-11.666	46.000	QUASIPeAK
5		800.180	-1.654	38.041	36.387	-9.613	46.000	QUASIPeAK
6		937.920	0.217	37.489	37.706	-8.294	46.000	QUASIPeAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

Product : GigaConnect® Smart Gateway
 Test Item : General Radiated Emission Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)(2437MHz)
 Test Date : 2019/07/10

Vertical



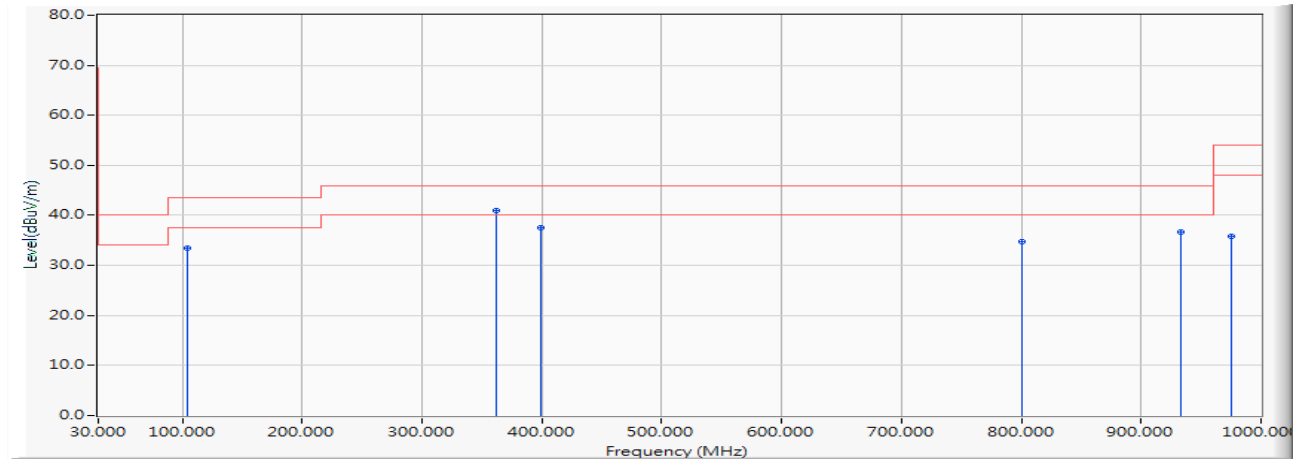
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	70.740	-13.750	49.948	36.197	-3.803	40.000	QUASIPeAK
2		361.740	-8.912	50.811	41.899	-4.101	46.000	QUASIPeAK
3		596.480	-4.087	35.368	31.281	-14.719	46.000	QUASIPeAK
4		800.180	-1.654	35.608	33.954	-12.046	46.000	QUASIPeAK
5		933.070	0.165	36.616	36.781	-9.219	46.000	QUASIPeAK
6		998.060	0.982	35.407	36.389	-17.611	54.000	QUASIPeAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

Product : GigaConnect® Smart Gateway
 Test Item : General Radiated Emission Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)(2437MHz)
 Test Date : 2019/07/10

Horizontal



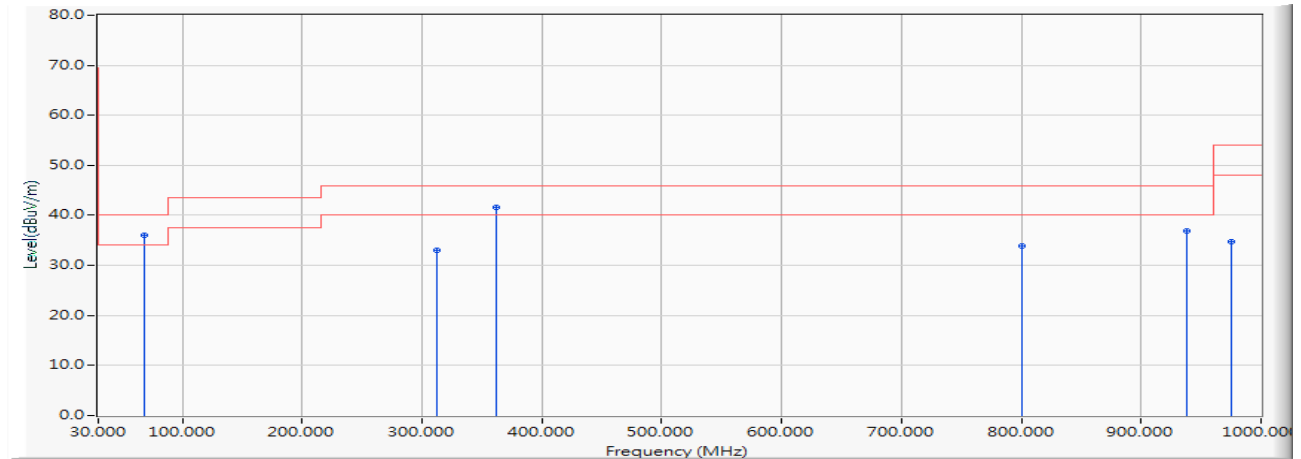
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		104.690	-15.327	48.890	33.564	-9.936	43.500	QUASIPeAK
2	*	361.740	-8.912	49.884	40.972	-5.028	46.000	QUASIPeAK
3		399.570	-8.045	45.494	37.449	-8.551	46.000	QUASIPeAK
4		800.180	-1.654	36.472	34.818	-11.182	46.000	QUASIPeAK
5		933.070	0.165	36.436	36.601	-9.399	46.000	QUASIPeAK
6		975.750	0.691	35.065	35.756	-18.244	54.000	QUASIPeAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

Product : GigaConnect® Smart Gateway
 Test Item : General Radiated Emission Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)(2437MHz)
 Test Date : 2019/07/10

Vertical



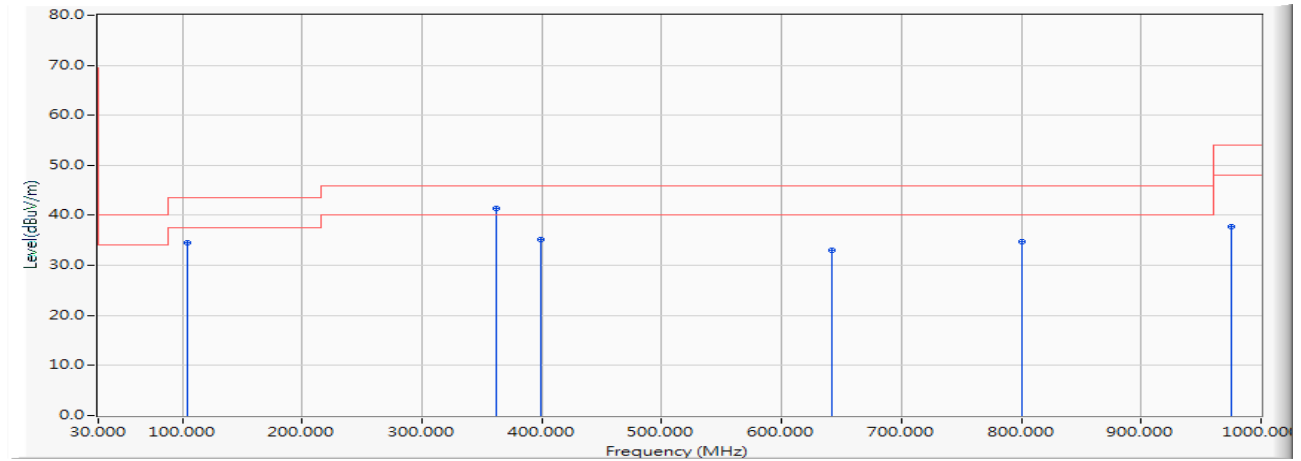
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	68.800	-13.426	49.525	36.099	-3.901	40.000	QUASIPEAK
2		312.270	-10.050	43.168	33.118	-12.882	46.000	QUASIPEAK
3		361.740	-8.912	50.416	41.504	-4.496	46.000	QUASIPEAK
4		800.180	-1.654	35.505	33.851	-12.149	46.000	QUASIPEAK
5		937.920	0.217	36.780	36.997	-9.003	46.000	QUASIPEAK
6		975.750	0.691	33.965	34.656	-19.344	54.000	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

Product : GigaConnect® Smart Gateway
 Test Item : General Radiated Emission Data
 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps)(2437MHz)
 Test Date : 2019/07/10

Horizontal



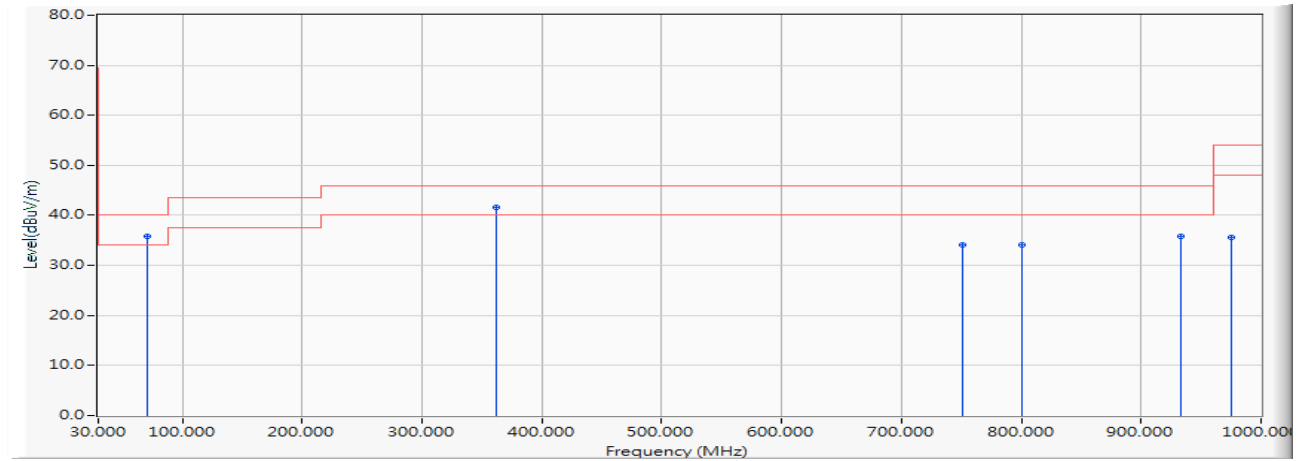
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		104.690	-15.327	49.763	34.437	-9.063	43.500	QUASIPeAK
2	*	361.740	-8.912	50.355	41.443	-4.557	46.000	QUASIPeAK
3		399.570	-8.045	43.186	35.141	-10.859	46.000	QUASIPeAK
4		642.070	-3.745	36.727	32.982	-13.018	46.000	QUASIPeAK
5		800.180	-1.654	36.444	34.790	-11.210	46.000	QUASIPeAK
6		975.750	0.691	37.140	37.831	-16.169	54.000	QUASIPeAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

Product : GigaConnect® Smart Gateway
 Test Item : General Radiated Emission Data
 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps)(2437MHz)
 Test Date : 2019/07/10

Vertical



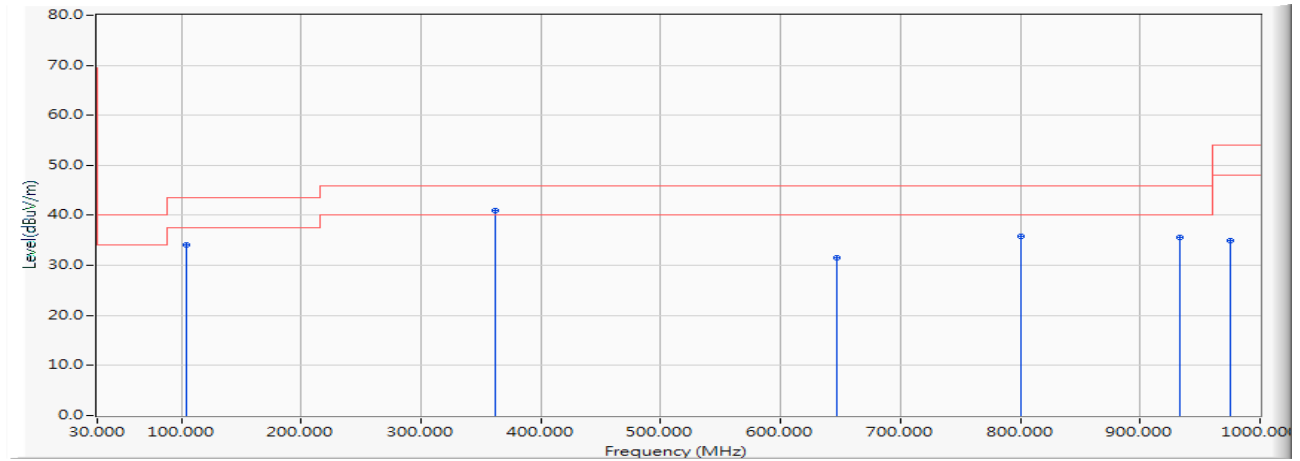
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	70.740	-13.750	49.498	35.747	-4.253	40.000	QUASIPeAK
2		361.740	-8.912	50.502	41.590	-4.410	46.000	QUASIPeAK
3		750.710	-2.019	36.064	34.045	-11.955	46.000	QUASIPeAK
4		800.180	-1.654	35.666	34.012	-11.988	46.000	QUASIPeAK
5		933.070	0.165	35.567	35.732	-10.268	46.000	QUASIPeAK
6		975.750	0.691	34.841	35.532	-18.468	54.000	QUASIPeAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

Product : GigaConnect® Smart Gateway
 Test Item : General Radiated Emission Data
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps)(2437MHz)
 Test Date : 2019/07/10

Horizontal



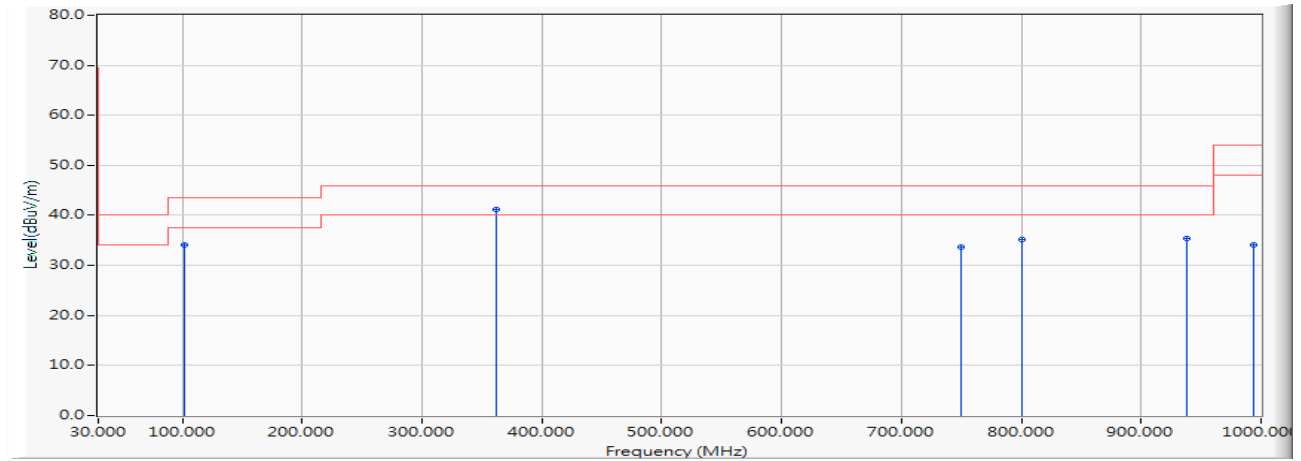
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		104.690	-15.327	49.487	34.161	-9.339	43.500	QUASIPeAK
2	*	361.740	-8.912	49.843	40.931	-5.069	46.000	QUASIPeAK
3		646.920	-3.715	35.258	31.543	-14.457	46.000	QUASIPeAK
4		800.180	-1.654	37.493	35.839	-10.161	46.000	QUASIPeAK
5		933.070	0.165	35.401	35.566	-10.434	46.000	QUASIPeAK
6		975.750	0.691	34.337	35.028	-18.972	54.000	QUASIPeAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

Product : GigaConnect® Smart Gateway
 Test Item : General Radiated Emission Data
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps)(2437MHz)
 Test Date : 2019/07/10

Vertical



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		101.780	-15.837	49.835	33.998	-9.502	43.500	QUASIPeAK
2	*	361.740	-8.912	50.107	41.195	-4.805	46.000	QUASIPeAK
3		749.740	-2.028	35.738	33.710	-12.290	46.000	QUASIPeAK
4		800.180	-1.654	36.900	35.246	-10.754	46.000	QUASIPeAK
5		937.920	0.217	35.230	35.447	-10.553	46.000	QUASIPeAK
6		994.180	0.930	33.274	34.205	-19.795	54.000	QUASIPeAK

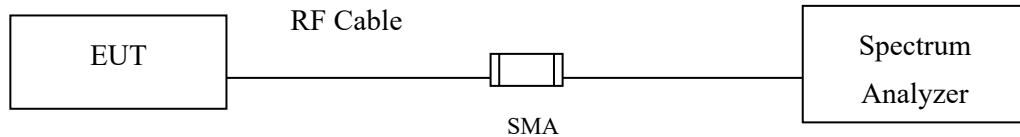
Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

5. RF antenna conducted test

5.1. Test Setup

RF antenna Conducted Measurement:



5.2. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

5.3. Test Procedure

Tested according to DTS test procedure of KDB558074 section 8.5 DTS emissions in non-restricted frequency bands for compliance to FCC 47CFR 15.247 requirements.
Set RBW = 100 kHz, Set VBW > RBW, scan up through 10th harmonic.

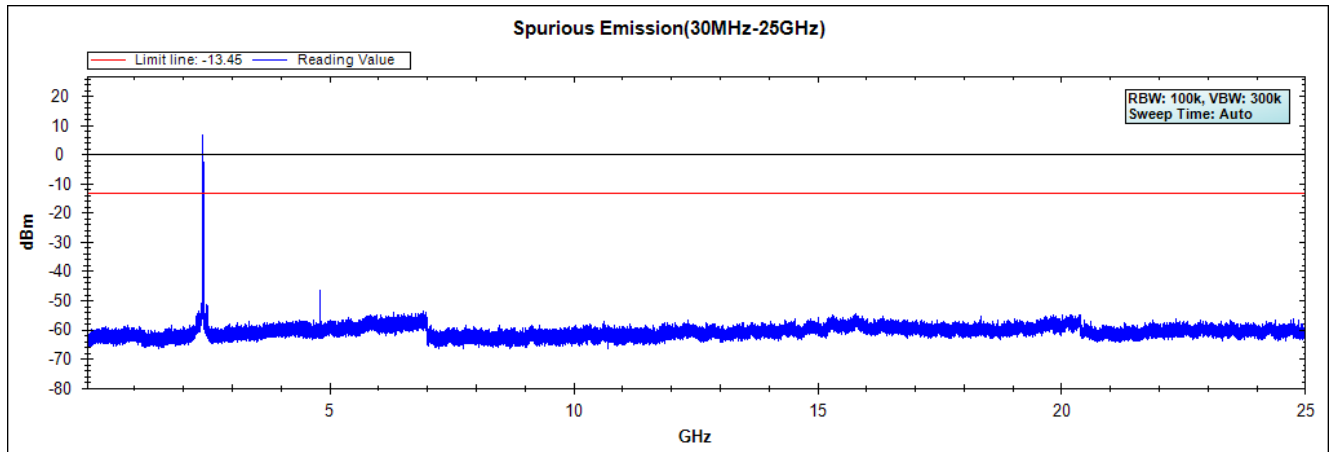
5.4. Uncertainty

$\pm 1.23\text{dB}$

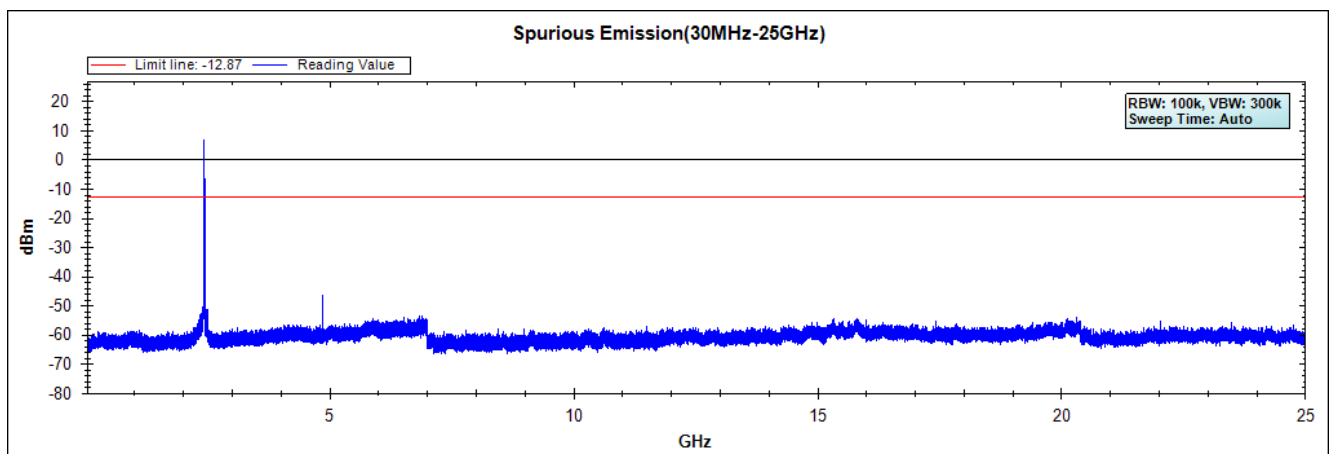
5.5. Test Result of RF antenna conducted test

Product : GigaConnect® Smart Gateway
Test Item : RF antenna conducted test
Test Mode : Mode 1: Transmit (802.11b 1Mbps)
Test Date : 2019/07/10

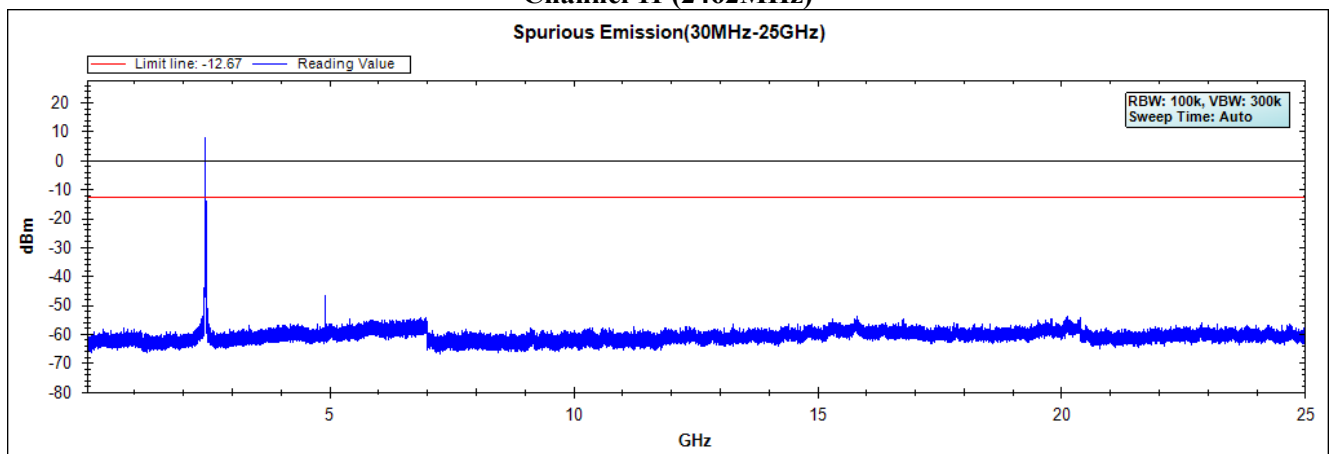
Channel 01 (2412MHz)



Channel 06 (2437MHz)



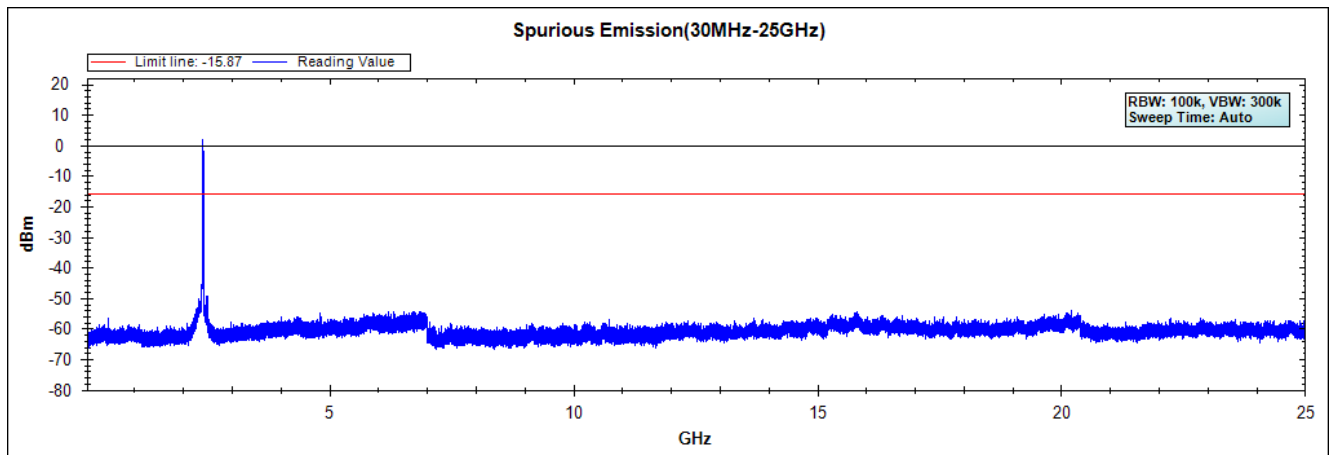
Channel 11 (2462MHz)



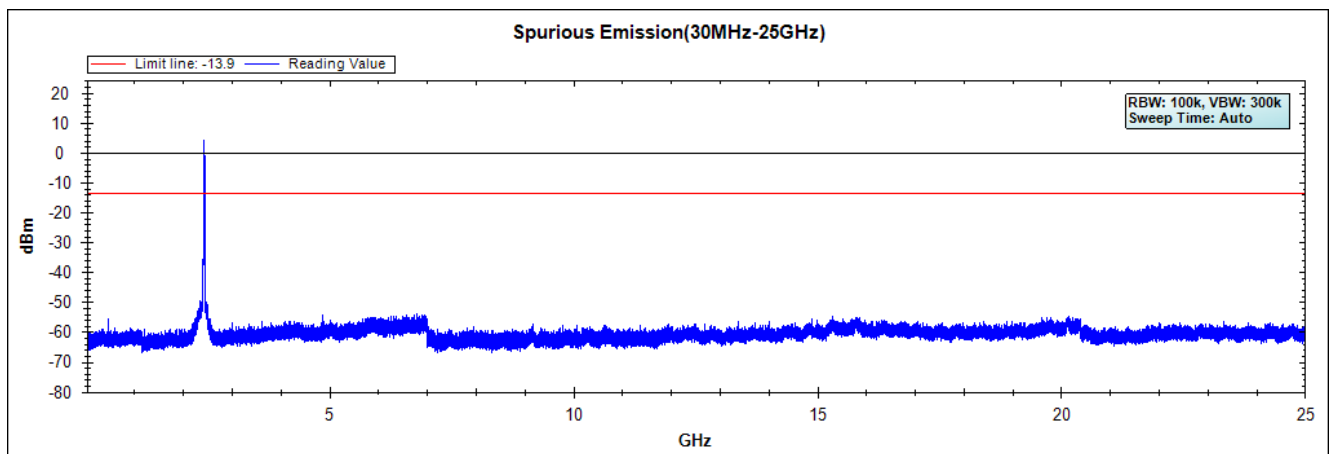
Note: The above test pattern is synthesized by multiple of the frequency range.

Product : GigaConnect® Smart Gateway
Test Item : RF Antenna Conducted Spurious
Test Mode : Mode 2: Transmit (802.11g 6Mbps)
Test Date : 2019/07/10

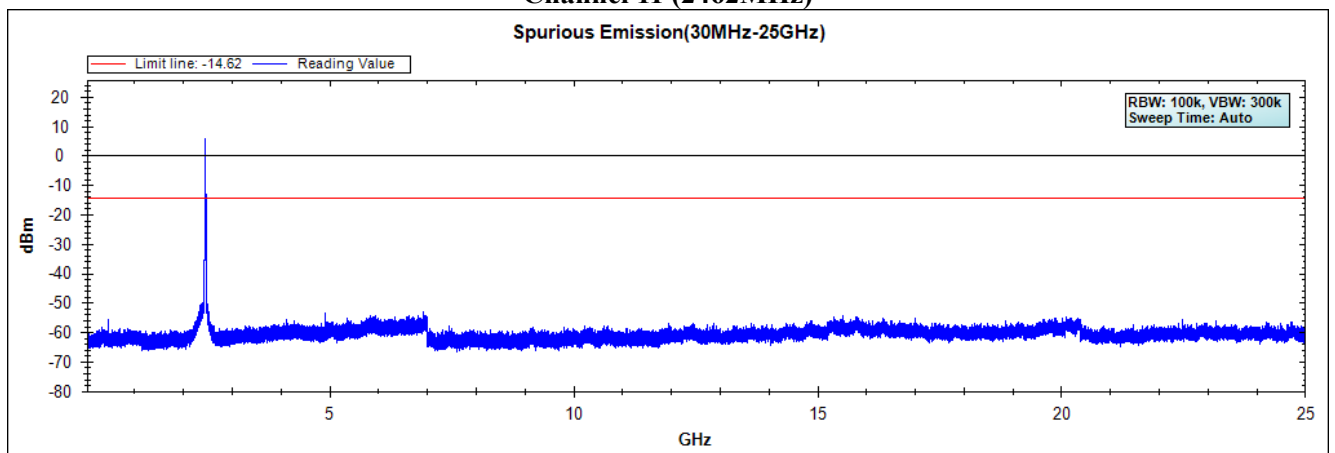
Channel 01 (2412MHz)



Channel 06 (2437MHz)



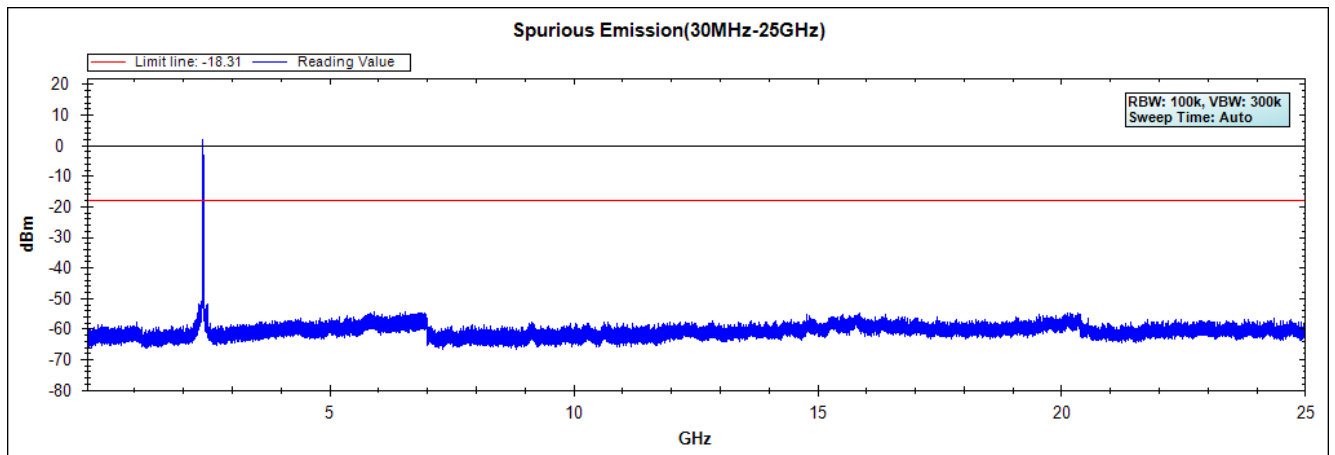
Channel 11 (2462MHz)



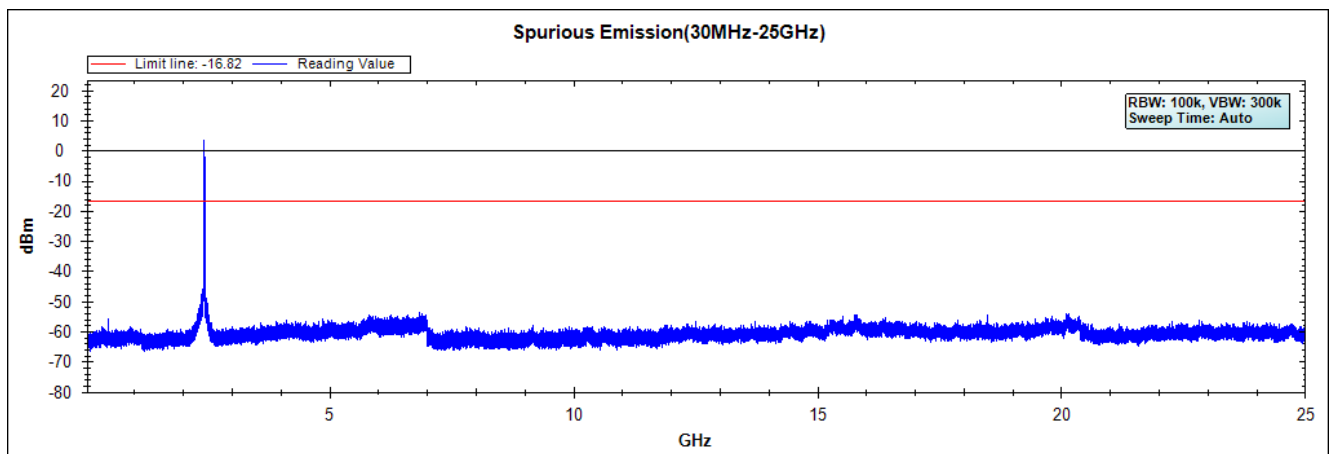
Note: The above test pattern is synthesized by multiple of the frequency range.

Product : GigaConnect® Smart Gateway
Test Item : RF Antenna Conducted Spurious
Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps)
Test Date : 2019/07/10

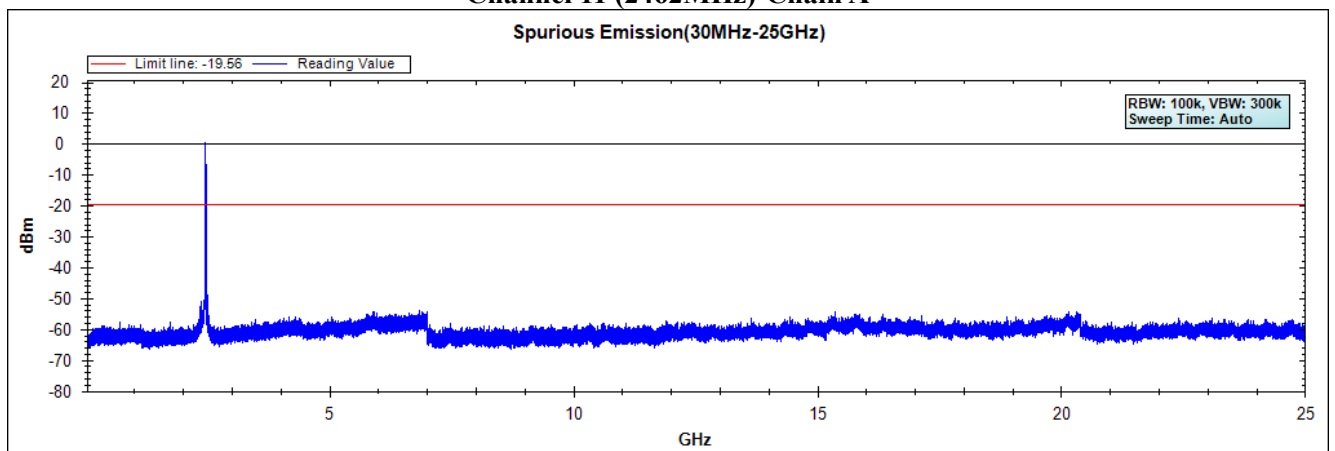
Channel 01 (2412MHz)-Chain A



Channel 06 (2437MHz)-Chain A



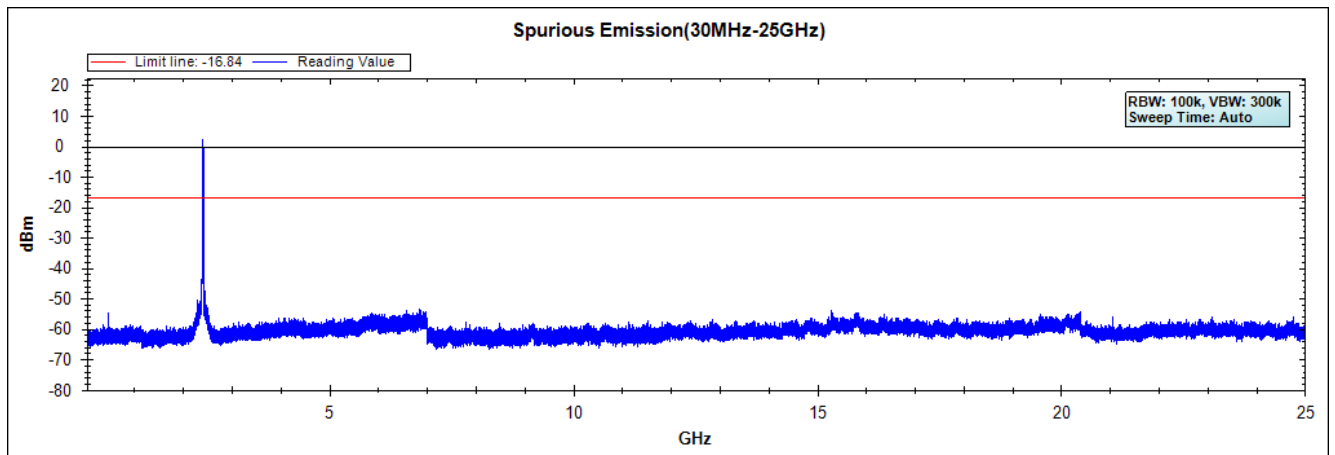
Channel 11 (2462MHz)-Chain A



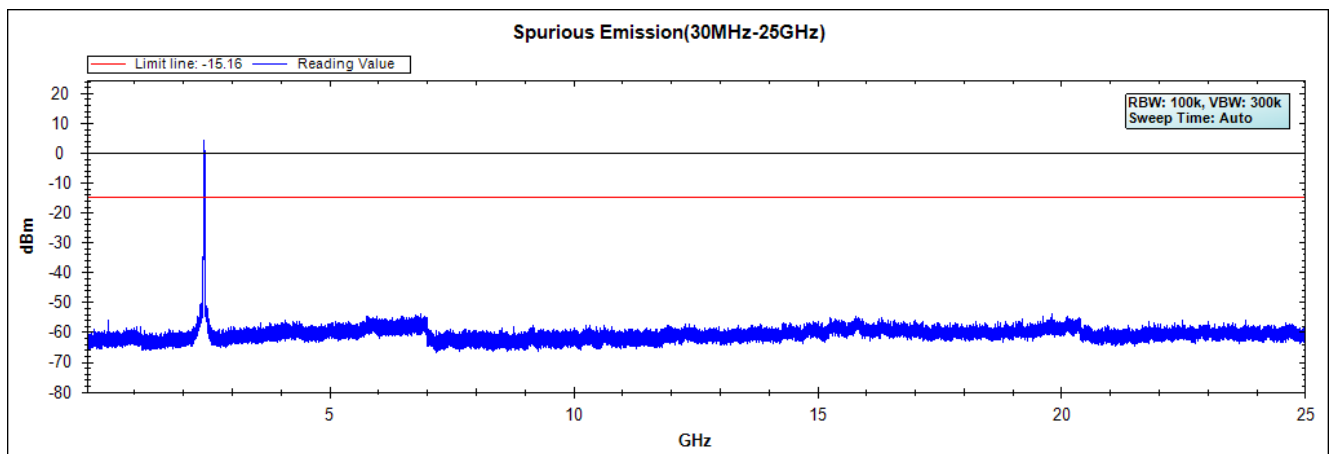
Note: The above test pattern is synthesized by multiple of the frequency range.

Product : GigaConnect® Smart Gateway
Test Item : RF Antenna Conducted Spurious
Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps)
Test Date : 2019/07/10

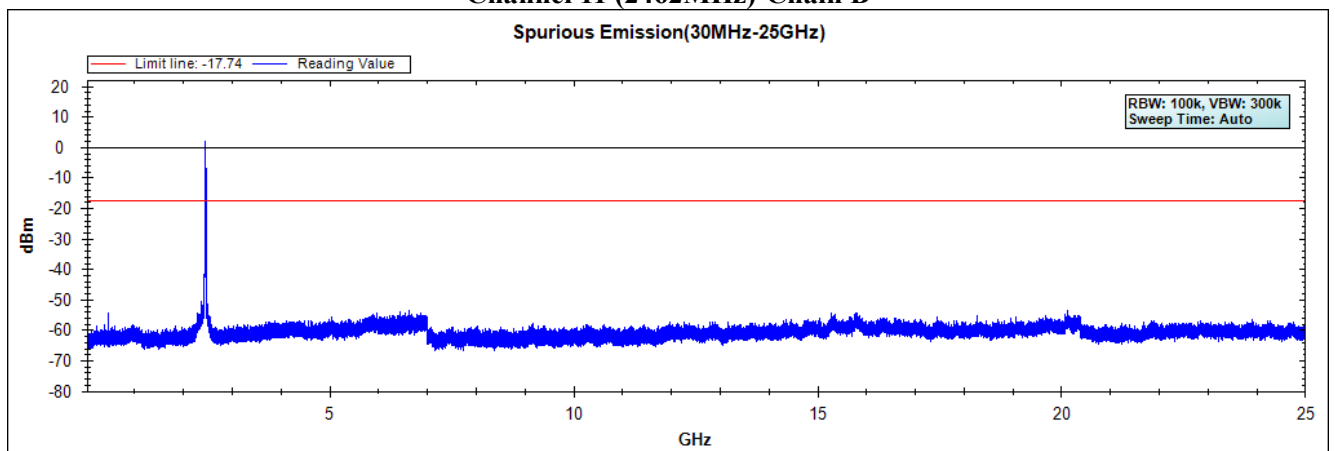
Channel 01 (2412MHz)-Chain B



Channel 06 (2437MHz)-Chain B



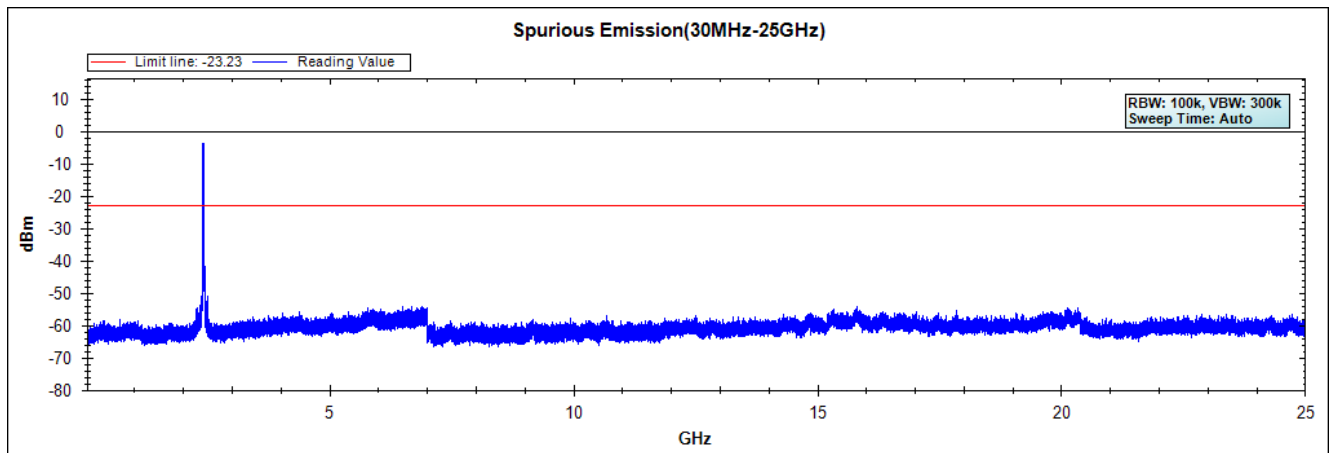
Channel 11 (2462MHz)-Chain B



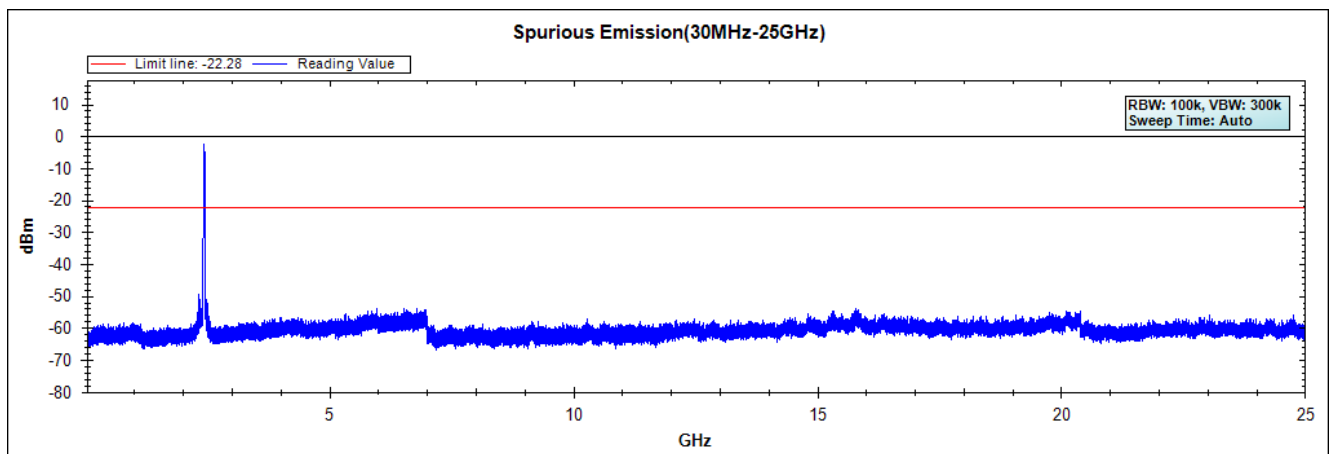
Note: The above test pattern is synthesized by multiple of the frequency range.

Product : GigaConnect® Smart Gateway
Test Item : RF Antenna Conducted Spurious
Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps)
Test Date : 2019/07/10

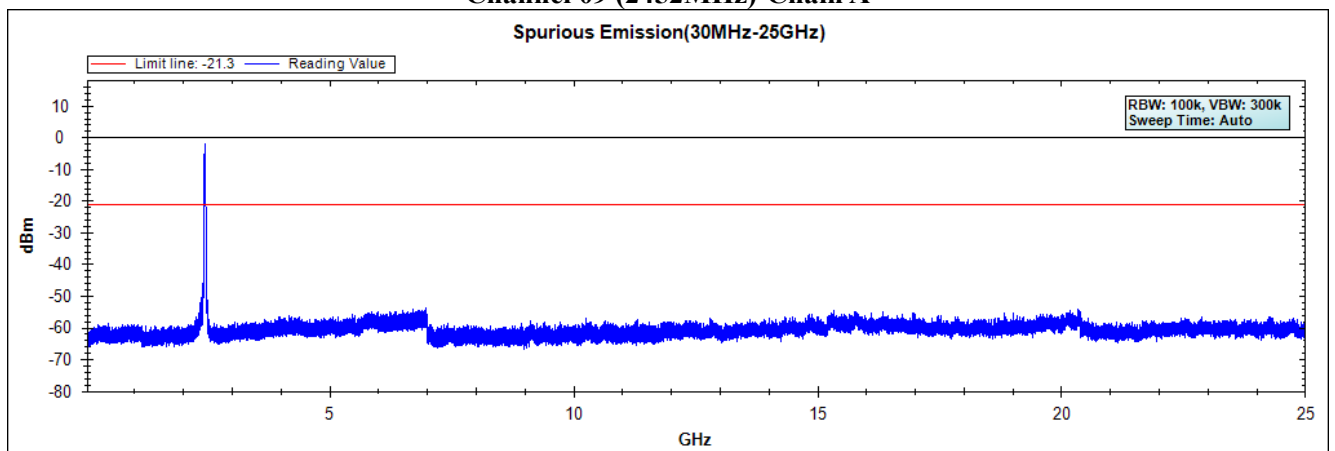
Channel 03 (2422MHz)-Chain A



Channel 06 (2437MHz)-Chain A



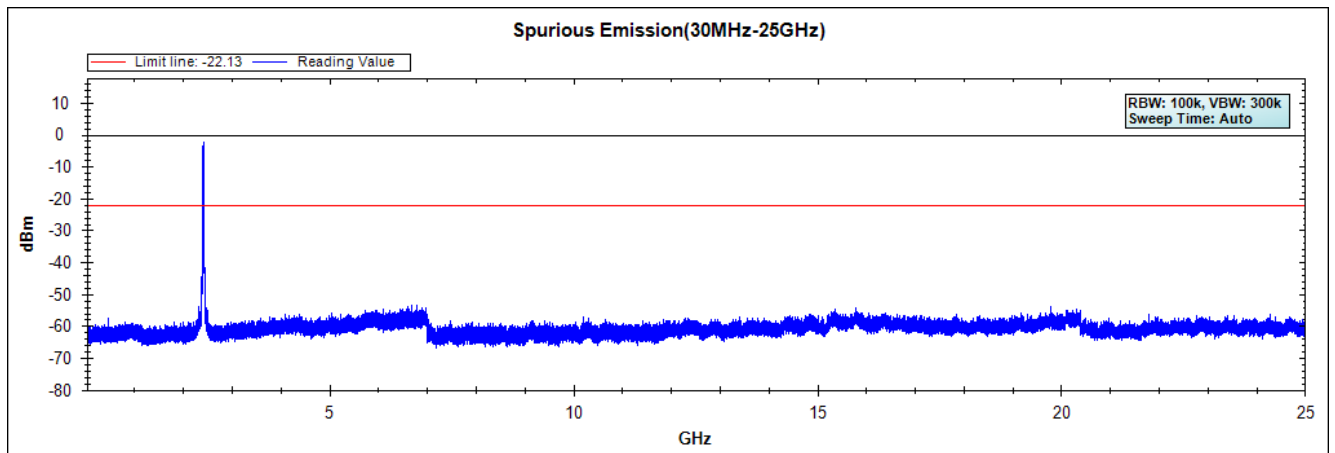
Channel 09 (2452MHz)-Chain A



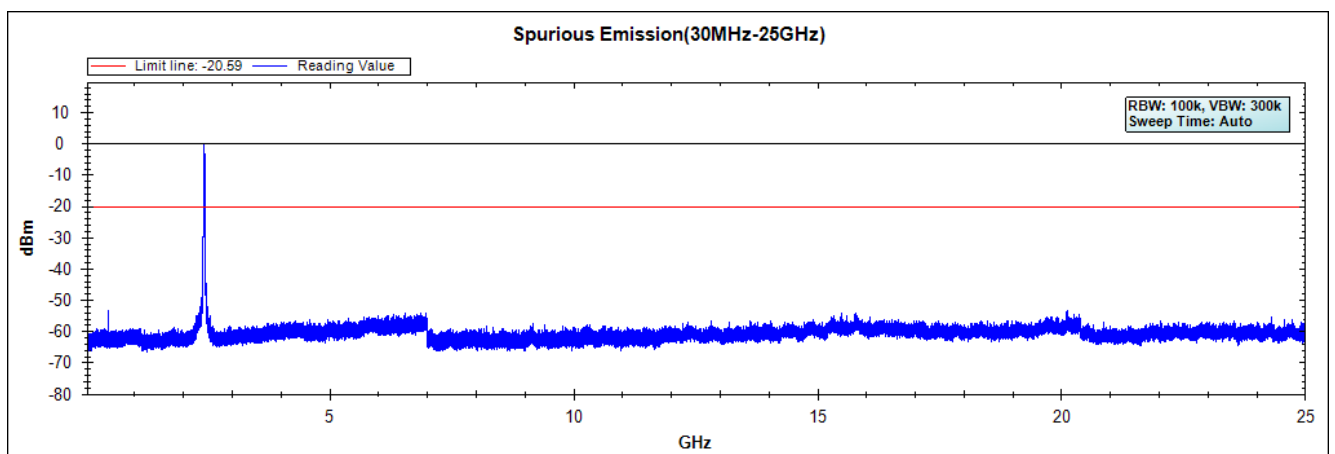
Note: The above test pattern is synthesized by multiple of the frequency range.

Product : GigaConnect® Smart Gateway
Test Item : RF Antenna Conducted Spurious
Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps)
Test Date : 2019/07/10

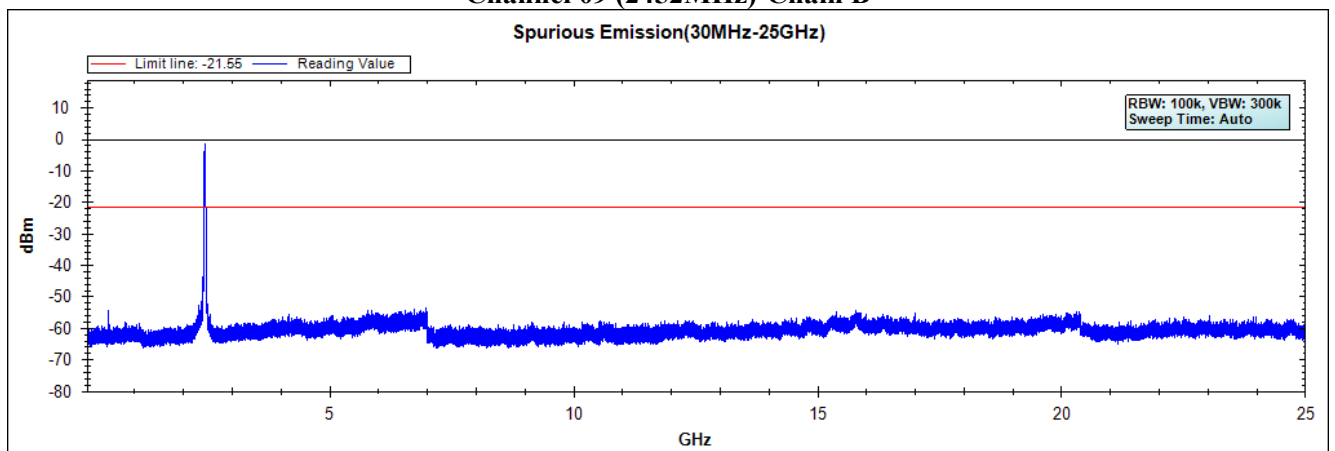
Channel 03 (2422MHz)-Chain B



Channel 06 (2437MHz)-Chain B



Channel 09 (2452MHz)-Chain B

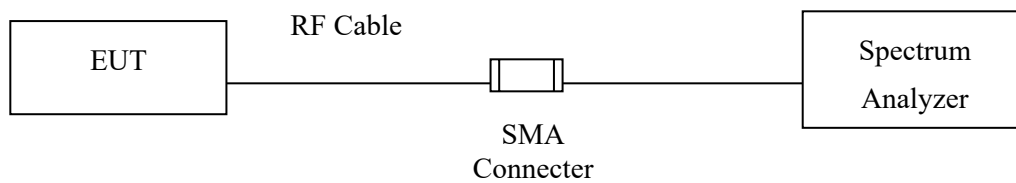


Note: The above test pattern is synthesized by multiple of the frequency range.

6. Band Edge

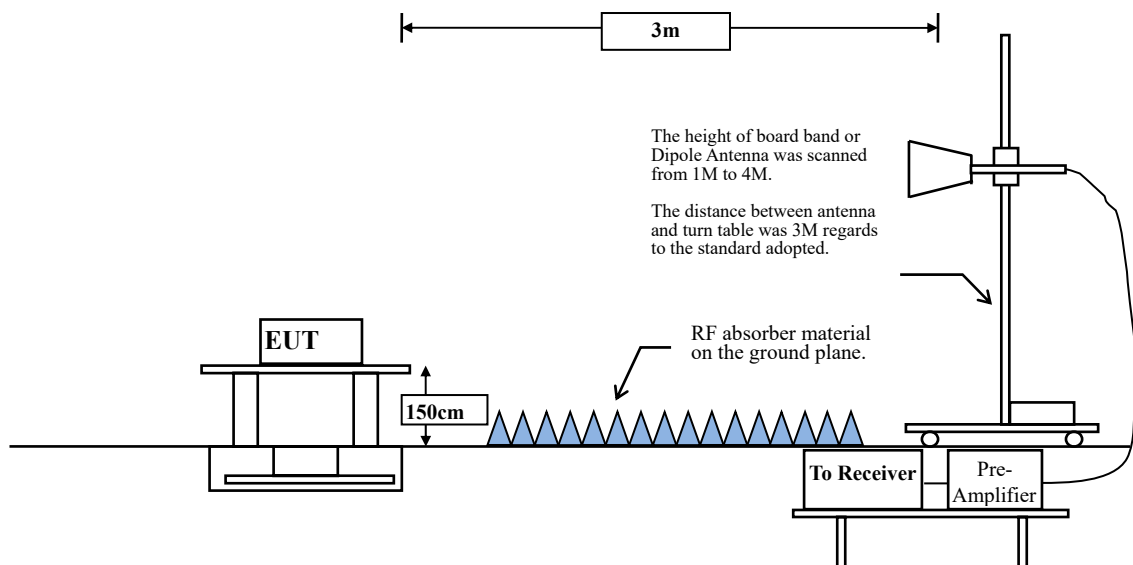
6.1. Test Setup

RF Conducted Measurement



RF Radiated Measurement:

Above 1GHz



6.2. Limits

According to FCC Section 15.247(d). In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

6.3. Test Procedure

The EUT was setup according to ANSI C63.10, 2013 and tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

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 from 1 meter to 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.

RBW and VBW Parameter setting:

According to KDB 558074 Peak power measurement procedure

RBW = as specified in Table 1.

$VBW \geq 3 \times RBW$.

Table 1 —RBW as a function of frequency

Frequency	RBW
9-150 kHz	200-300 Hz
0.15-30 MHz	9-10 kHz
30-1000 MHz	100-120 kHz
> 1000 MHz	1 MHz

According to KDB 558074 Average power measurement procedure

RBW = 1MHz.

VBW = 10Hz, when duty cycle $\geq 98\%$

$VBW \geq 1/T$, when duty cycle $< 98\%$

(T refers to the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.)

2.4GHz band	Duty Cycle (%)	T (ms)	1/T (Hz)	VBW (Hz)
802.11b	98.99	--	--	10
802.11g	96.78	1.3820	724	1k
802.11n20	83.29	0.6680	1497	2k
802.11n40	61.96	0.3160	3165	5k

Note: Duty Cycle Refer to Section 9

6.4. Uncertainty

Conducted: $\pm 1.23\text{dB}$

Radiated:

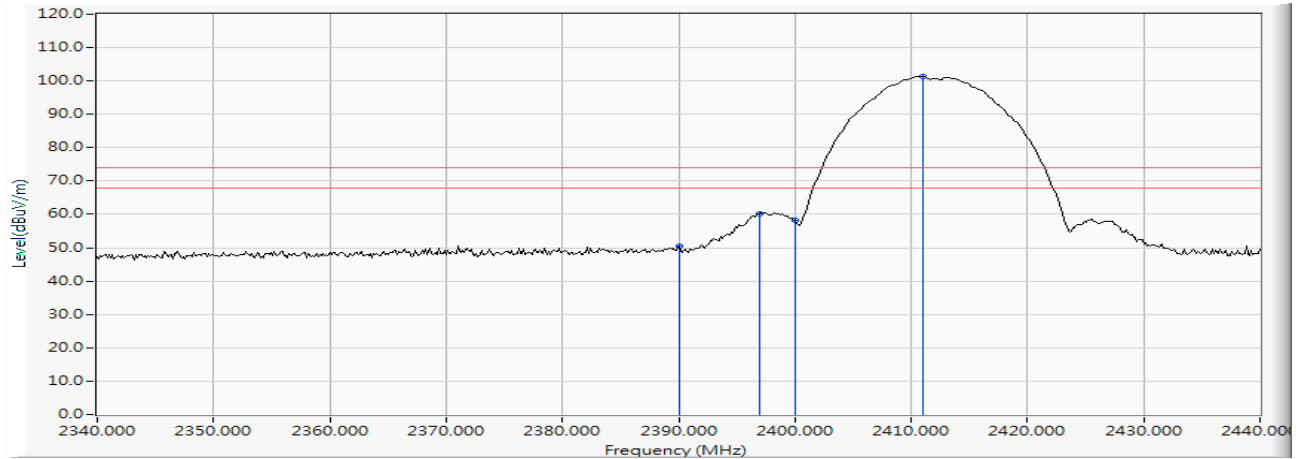
Horizontal polarization : 1-18GHz: $\pm 3.77\text{dB}$

Vertical polarization : 1-18GHz : $\pm 3.83\text{dB}$

6.5. Test Result of Band Edge

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)
 Test Date : 2019/07/10

Horizontal



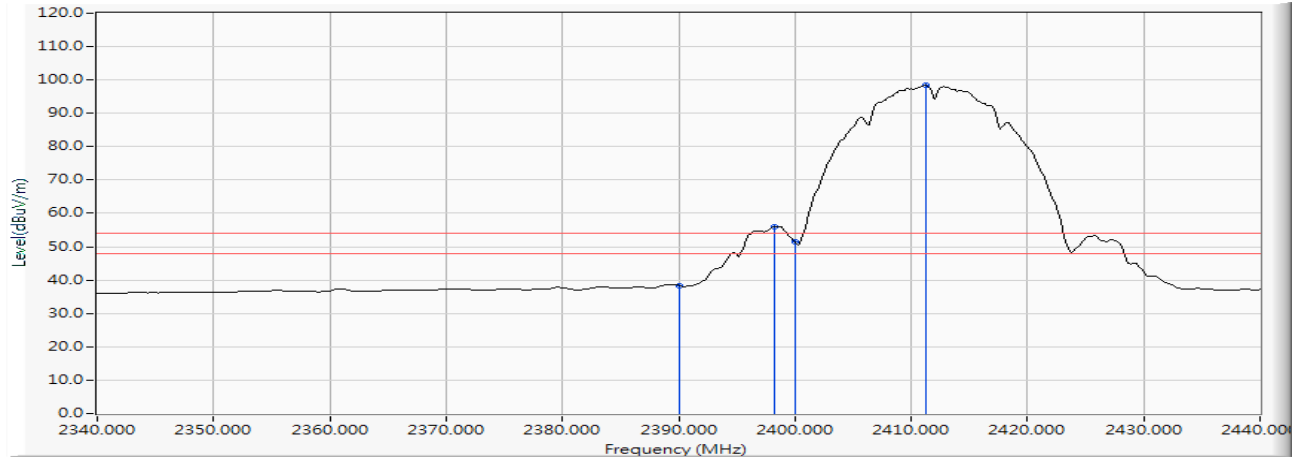
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	10.841	39.667	50.508	-23.492	74.000	PEAK
2		2396.957	10.870	49.392	60.263	--	--	PEAK
3		2400.000	10.884	47.263	58.147	--	--	PEAK
4	*	2411.014	10.928	90.560	101.489	--	--	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)
 Test Date : 2019/07/10

Horizontal

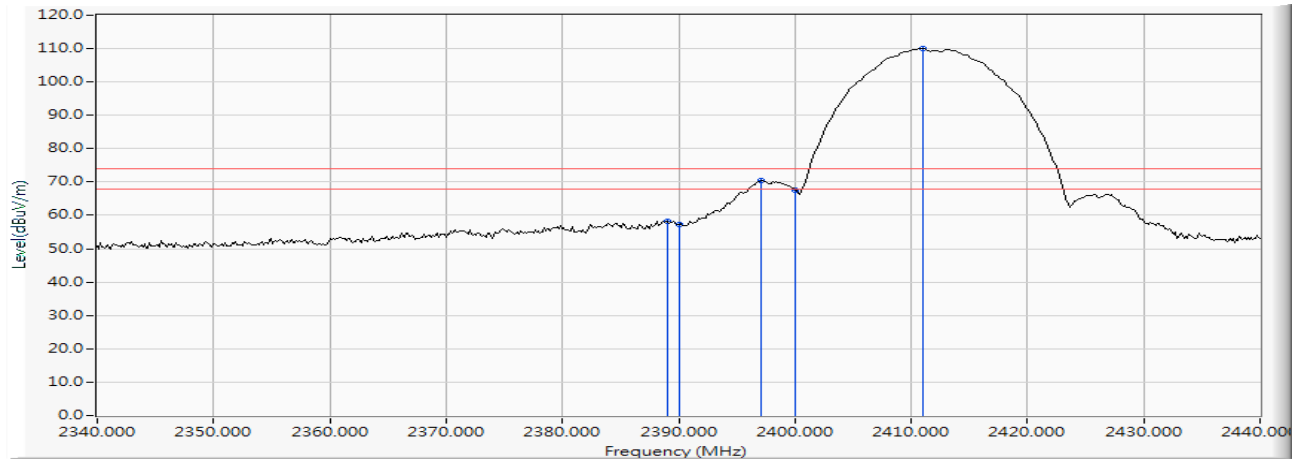


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	10.841	27.456	38.297	-15.703	54.000	AVERAGE
2		2398.261	10.877	45.090	55.966	--	--	AVERAGE
3		2400.000	10.884	40.487	51.371	--	--	AVERAGE
4	*	2411.304	10.930	87.390	98.320	--	--	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)
 Test Date : 2019/07/10

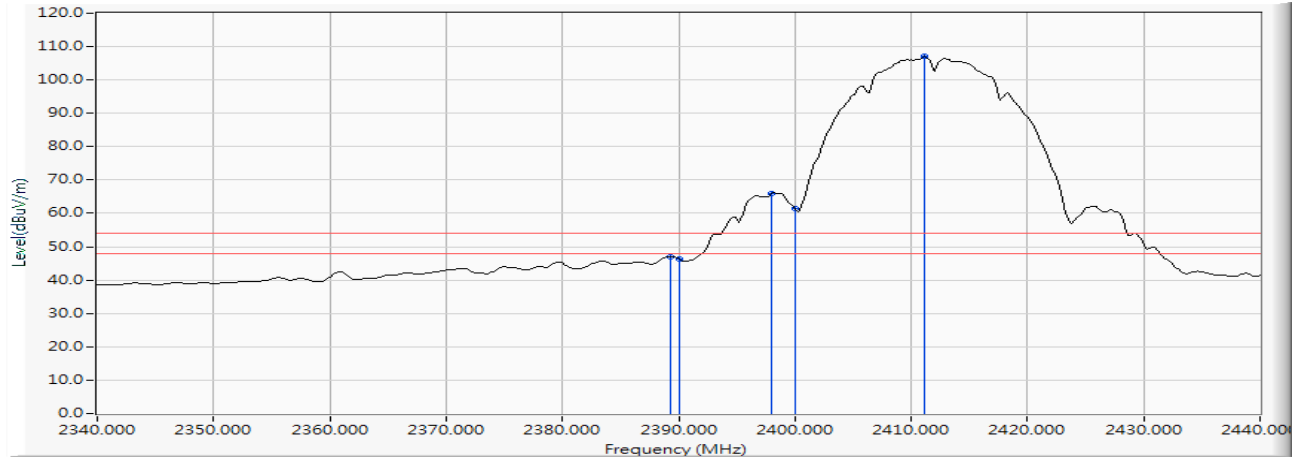
Vertical

		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2388.986	10.837	47.497	58.334	-15.666	74.000	PEAK
2		2390.000	10.841	46.341	57.182	-16.818	74.000	PEAK
3		2397.101	10.871	59.592	70.463	--	--	PEAK
4		2400.000	10.884	56.606	67.490	--	--	PEAK
5	*	2411.014	10.928	99.141	110.070	--	--	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)
 Test Date : 2019/07/10

Vertical

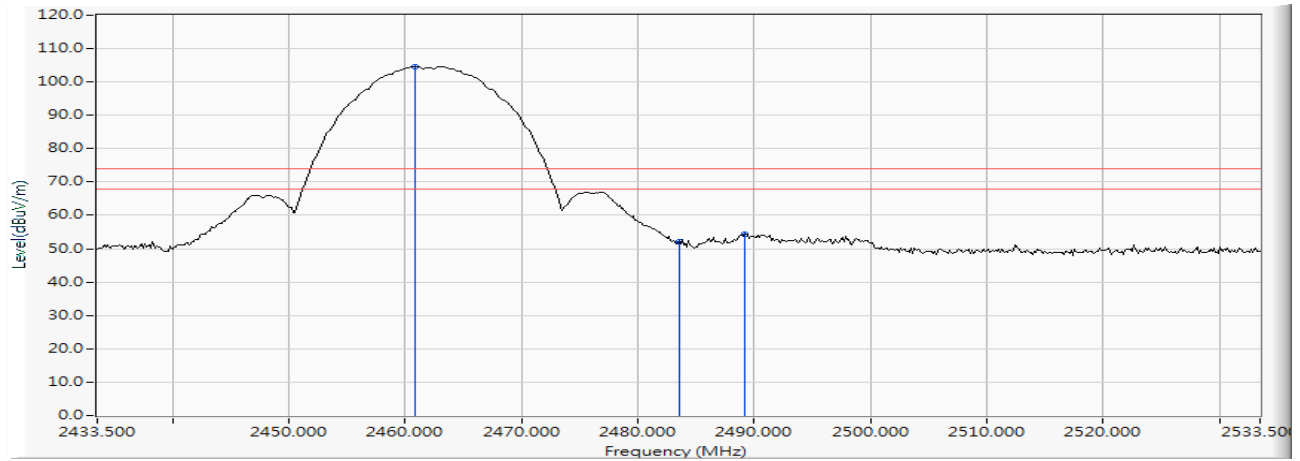
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2389.275	10.839	36.263	47.101	-6.899	54.000	AVERAGE
2		2390.000	10.841	35.466	46.307	-7.693	54.000	AVERAGE
3		2397.971	10.875	55.068	65.943	--	--	AVERAGE
4		2400.000	10.884	50.514	61.398	--	--	AVERAGE
5	*	2411.159	10.929	96.060	106.989	--	--	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)
 Test Date : 2019/07/10

Horizontal



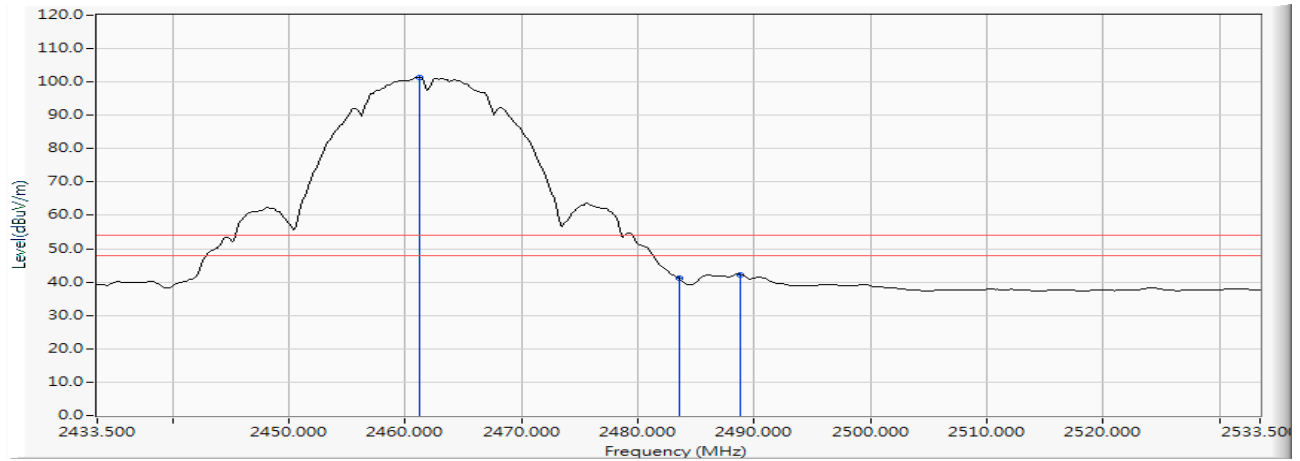
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2460.891	11.130	93.586	104.717	--	--	PEAK
2		2483.500	11.229	40.972	52.202	-21.798	74.000	PEAK
3		2489.152	11.251	43.026	54.278	-19.722	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)
 Test Date : 2019/07/10

Horizontal

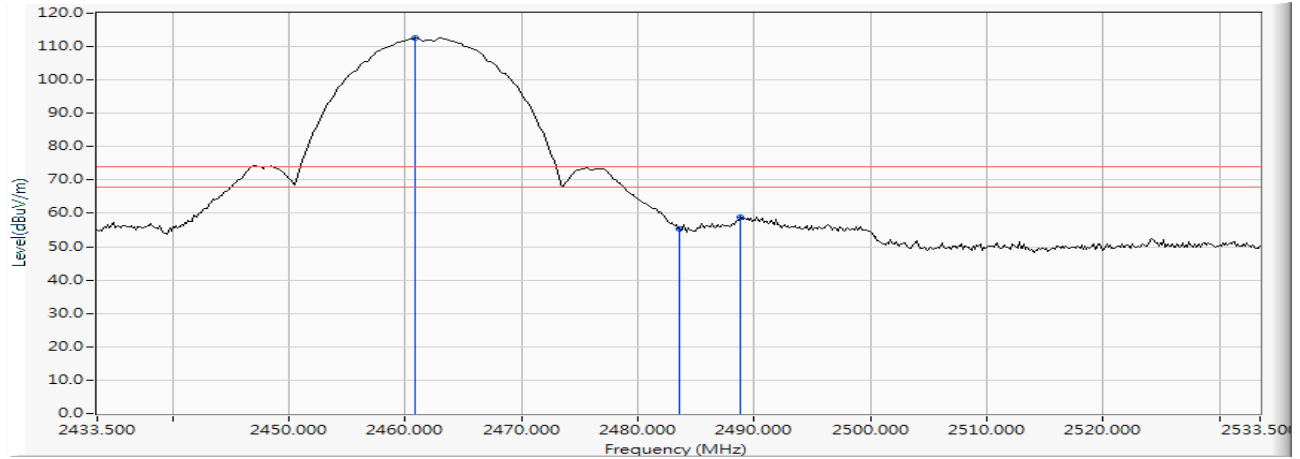


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2461.181	11.131	90.342	101.474	--	--	AVERAGE
2		2483.500	11.229	29.944	41.174	-12.826	54.000	AVERAGE
3		2488.862	11.250	31.045	42.296	-11.704	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)
 Test Date : 2019/07/10

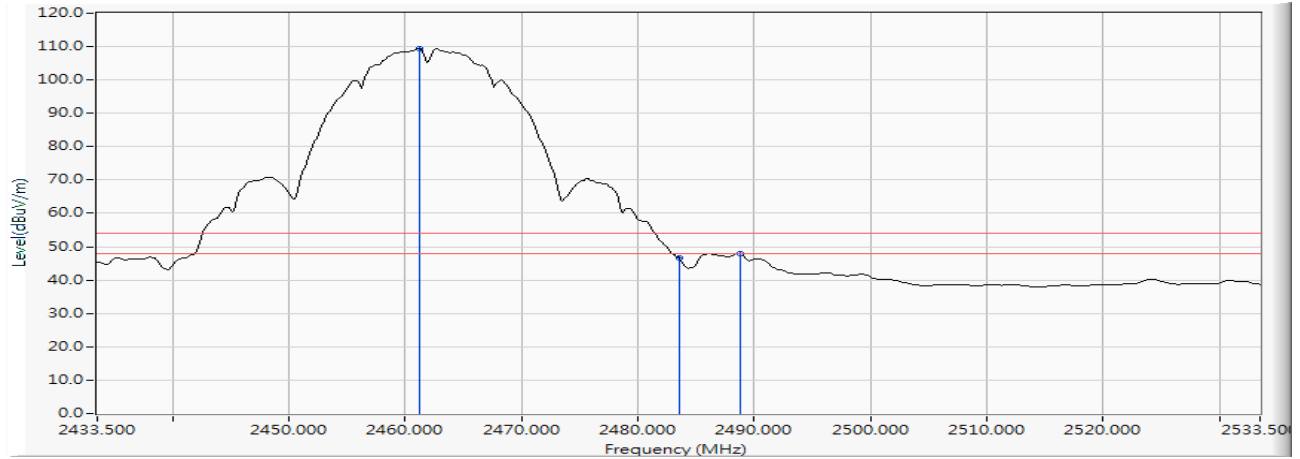
Vertical

		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2460.891	11.130	101.398	112.529	--	--	PEAK
2		2483.500	11.229	44.228	55.458	-18.542	74.000	PEAK
3		2488.862	11.250	47.524	58.775	-15.225	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)
 Test Date : 2019/07/10

Vertical

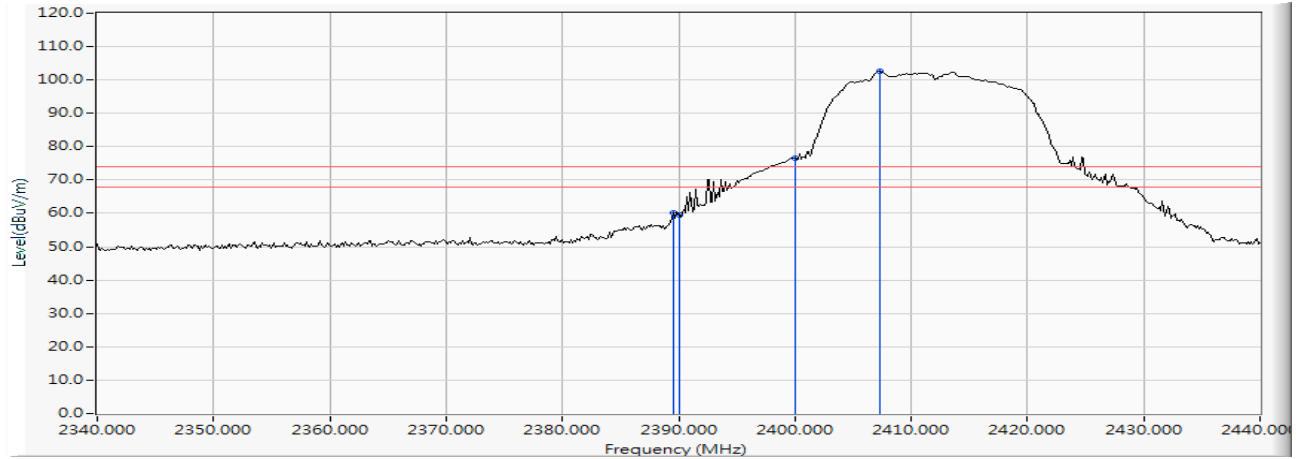
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2461.181	11.131	98.276	109.408	--	--	AVERAGE
2		2483.500	11.229	35.351	46.581	-7.419	54.000	AVERAGE
3		2488.862	11.250	36.751	48.002	-5.998	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)
 Test Date : 2019/07/10

Horizontal



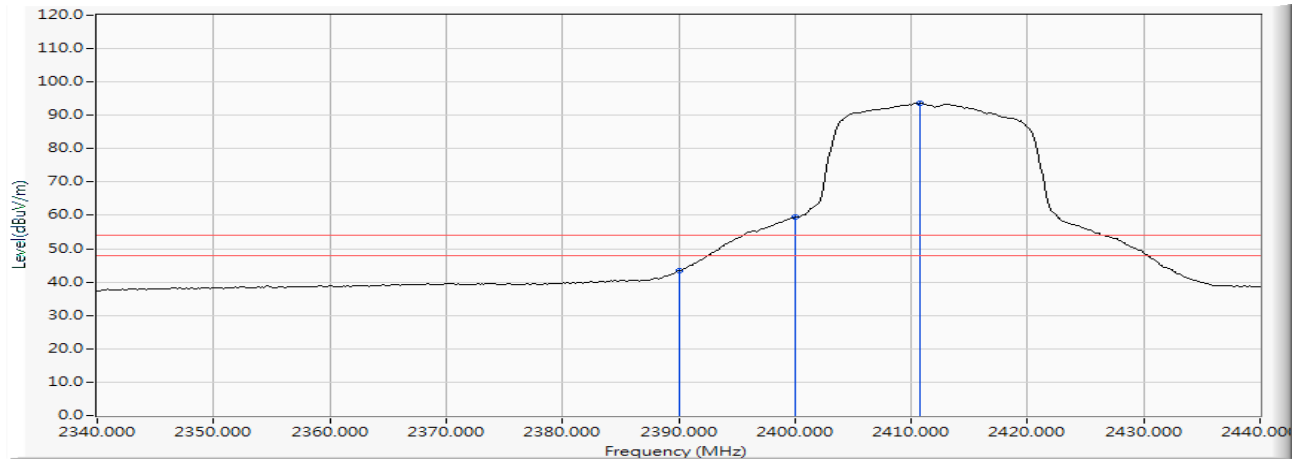
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2389.565	10.840	49.329	60.169	-13.831	74.000	PEAK
2		2390.000	10.841	48.612	59.453	-14.547	74.000	PEAK
3		2400.000	10.884	65.545	76.429	--	--	PEAK
4	*	2407.246	10.913	91.558	102.471	--	--	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)
 Test Date : 2019/07/10

Horizontal

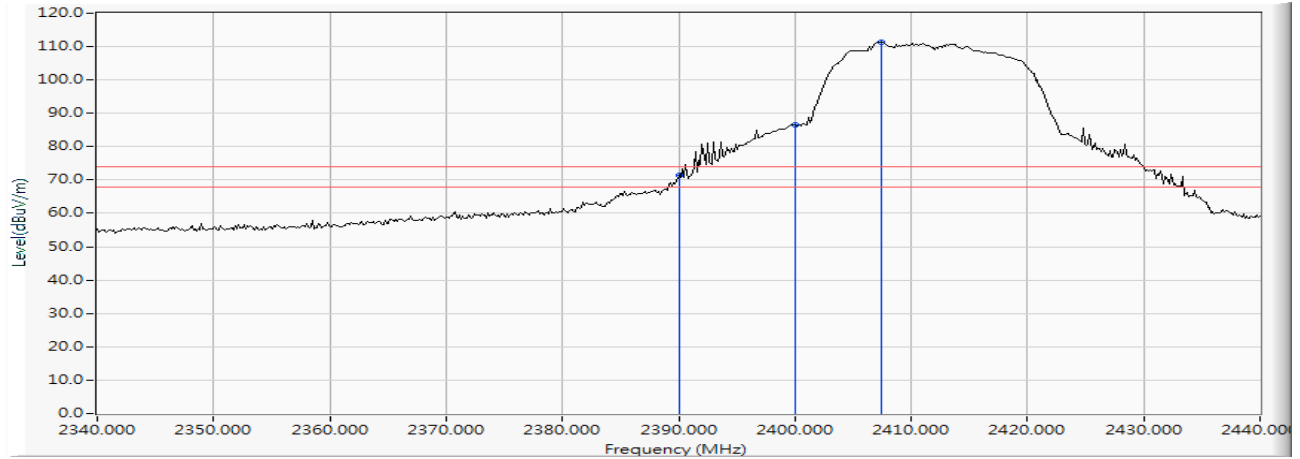


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	10.841	32.722	43.563	-10.437	54.000	AVERAGE
2		2400.000	10.884	48.474	59.358	--	--	AVERAGE
3	*	2410.725	10.927	82.676	93.603	--	--	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)
 Test Date : 2019/07/10

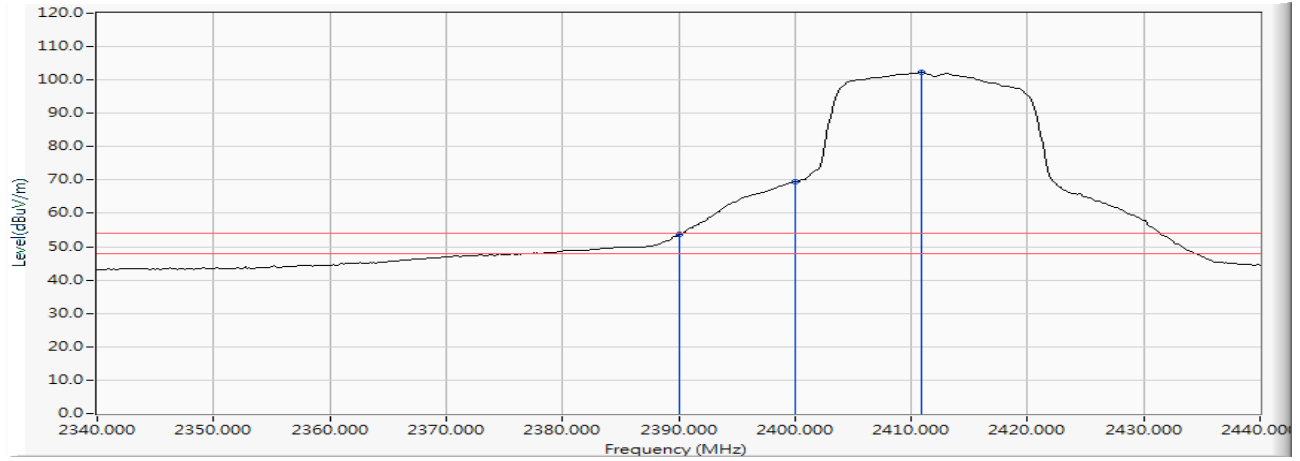
Vertical

		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	10.841	60.517	71.358	-2.642	74.000	PEAK
2		2400.000	10.884	75.589	86.473	--	--	PEAK
3	*	2407.391	10.914	100.506	111.420	--	--	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)
 Test Date : 2019/07/10

Vertical

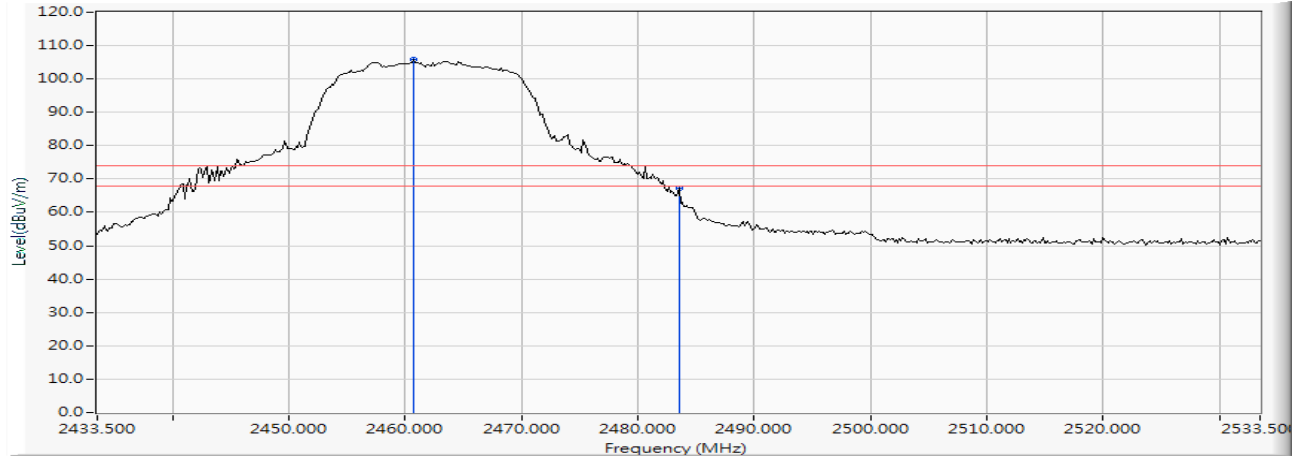
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	10.841	42.758	53.599	-0.401	54.000	AVERAGE
2		2400.000	10.884	58.565	69.449	--	--	AVERAGE
3	*	2410.870	10.928	91.323	102.251	--	--	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)
 Test Date : 2019/07/10

Horizontal



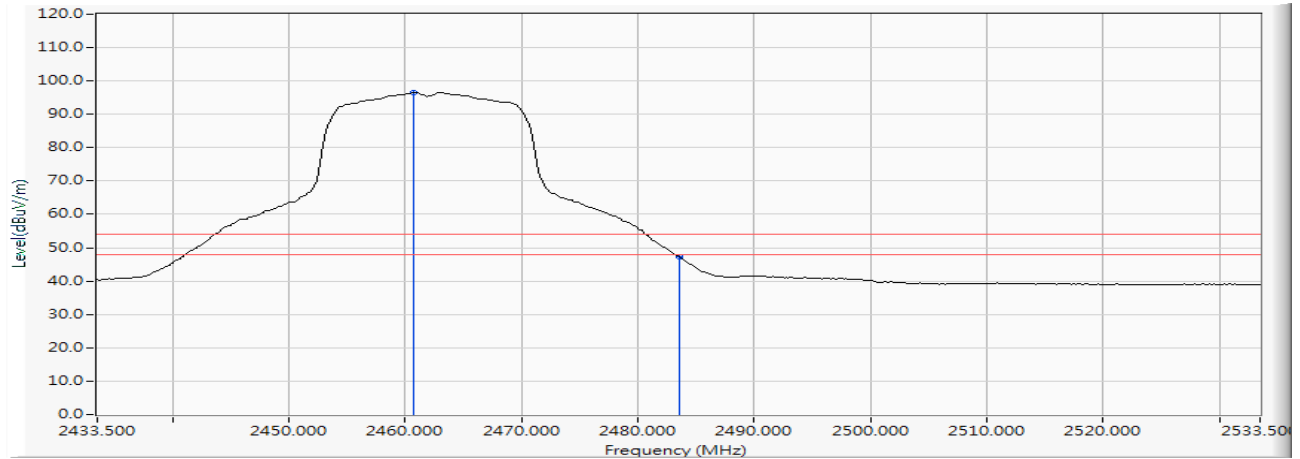
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2460.746	11.130	94.676	105.806	--	--	PEAK
2		2483.500	11.229	56.092	67.322	-6.678	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)
 Test Date : 2019/07/10

Horizontal

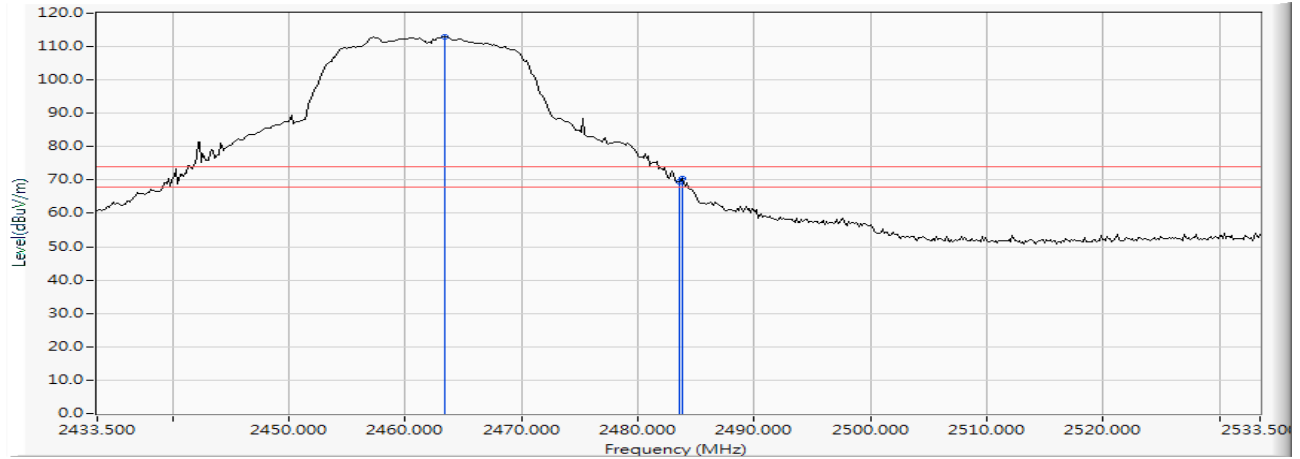


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2460.746	11.130	85.396	96.526	--	--	AVERAGE
2		2483.500	11.229	36.089	47.319	-6.681	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)
 Test Date : 2019/07/10

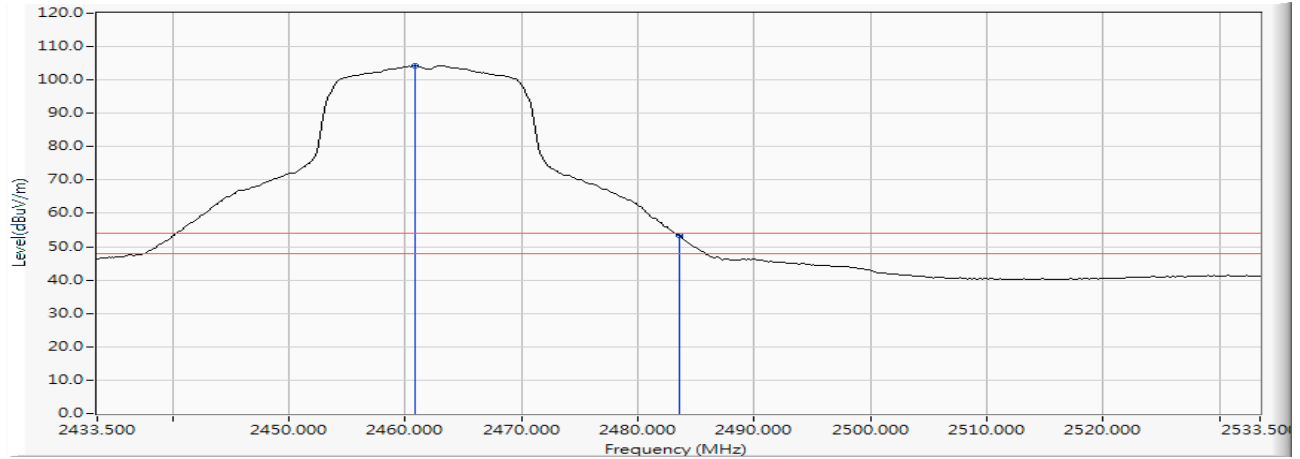
Vertical

		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2463.355	11.141	101.908	113.050	--	--	PEAK
2		2483.500	11.229	58.371	69.601	-4.399	74.000	PEAK
3		2483.790	11.231	59.262	70.493	-3.507	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)
 Test Date : 2019/07/10

Vertical

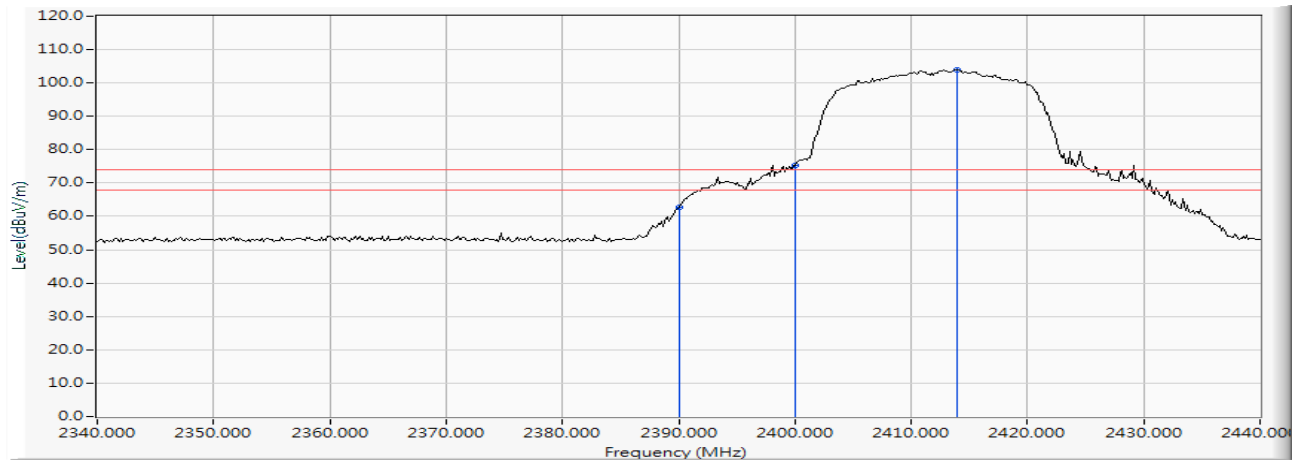
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2460.891	11.130	93.199	104.330	--	--	AVERAGE
2		2483.500	11.229	42.251	53.481	-0.519	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps) (2412MHz)
 Test Date : 2019/07/10

Horizontal



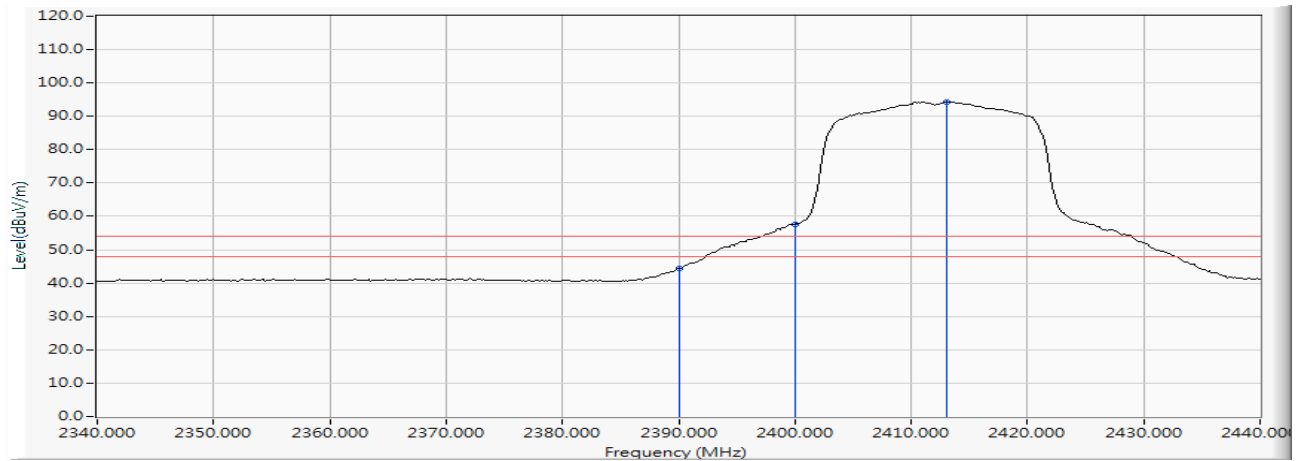
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	10.841	51.895	62.736	-11.264	74.000	PEAK
2		2400.000	10.884	64.332	75.216	--	--	PEAK
3	*	2413.913	10.940	92.987	103.927	--	--	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps) (2412MHz)
 Test Date : 2019/07/10

Horizontal

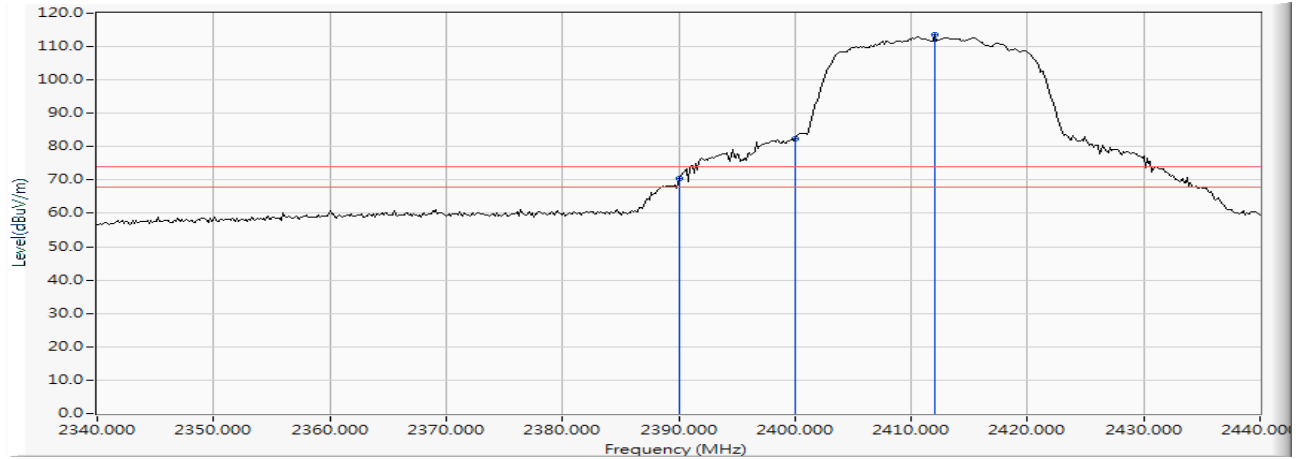


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	10.841	33.561	44.402	-9.598	54.000	AVERAGE
2		2400.000	10.884	46.786	57.670	--	--	AVERAGE
3	*	2413.043	10.938	83.423	94.360	--	--	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps) (2412MHz)
 Test Date : 2019/07/10

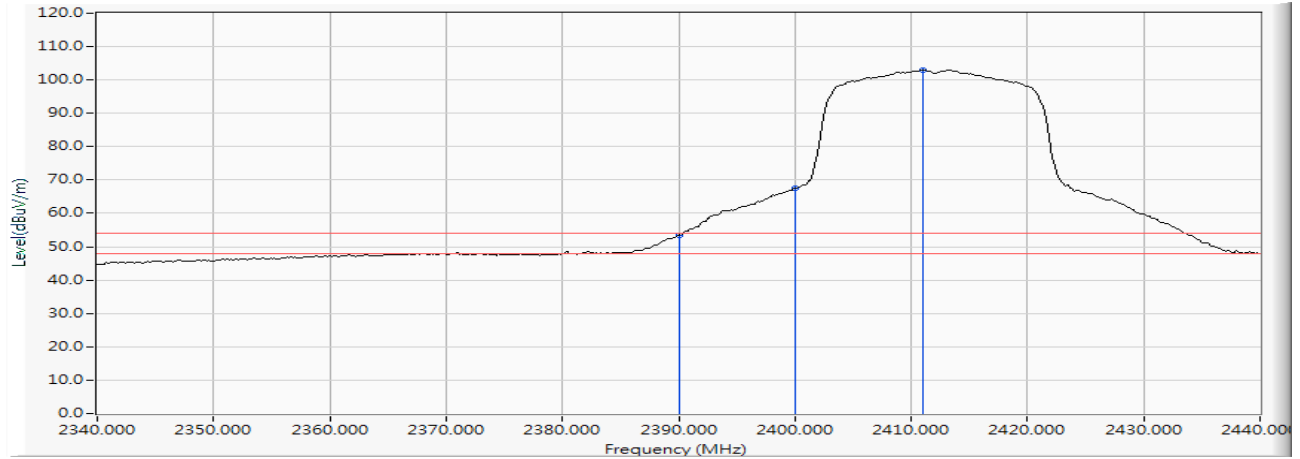
Vertical

		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	10.841	59.681	70.522	-3.478	74.000	PEAK
2		2400.000	10.884	71.615	82.499	--	--	PEAK
3	*	2412.029	10.932	102.589	113.522	--	--	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps) (2412MHz)
 Test Date : 2019/07/10

Vertical

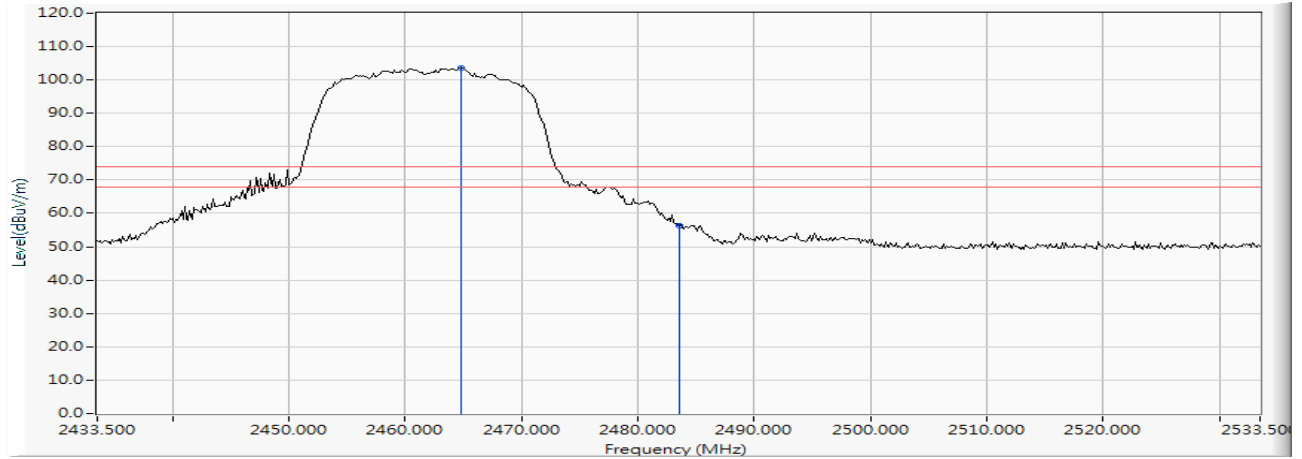
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	10.841	42.538	53.379	-0.621	54.000	AVERAGE
2		2400.000	10.884	56.589	67.473	--	--	AVERAGE
3	*	2411.014	10.928	92.054	102.983	--	--	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps) (2462MHz)
 Test Date : 2019/07/10

Horizontal



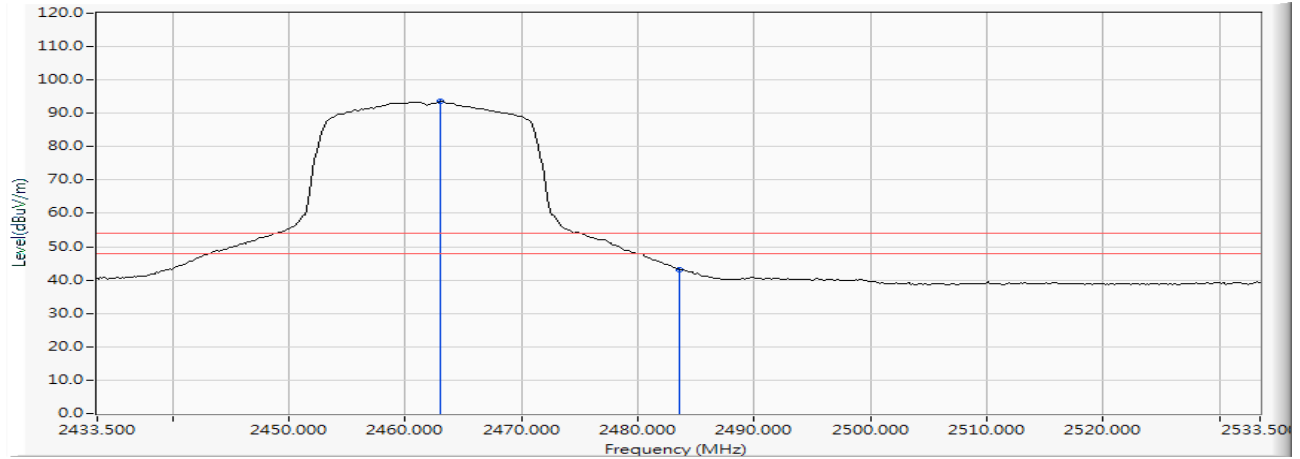
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2464.804	11.149	92.375	103.524	--	--	PEAK
2		2483.500	11.229	45.025	56.255	-17.745	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps) (2462MHz)
 Test Date : 2019/07/10

Horizontal

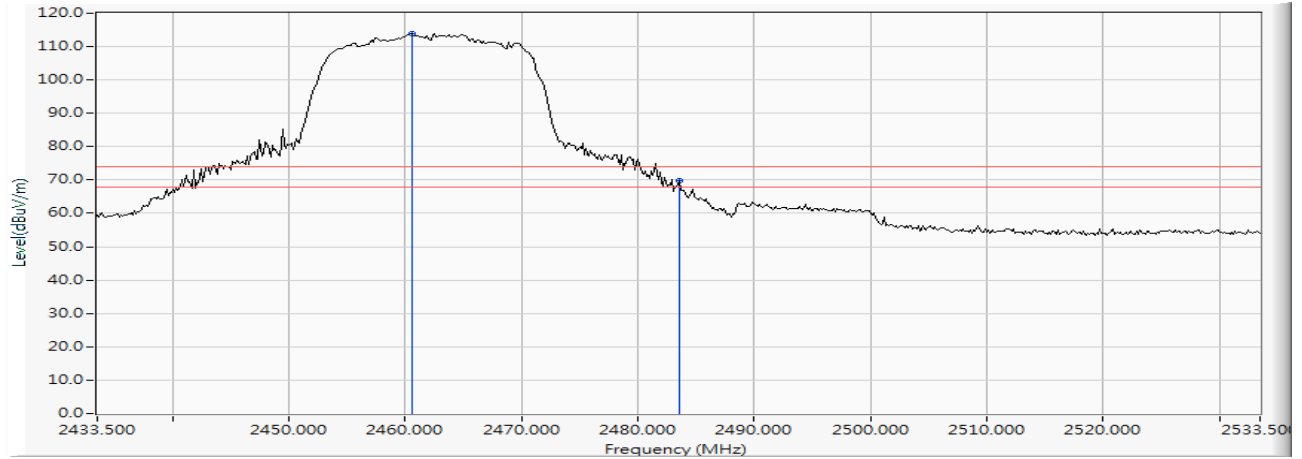


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2463.065	11.140	82.369	93.510	--	--	AVERAGE
2		2483.500	11.229	31.941	43.171	-10.829	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps) (2462MHz)
 Test Date : 2019/07/10

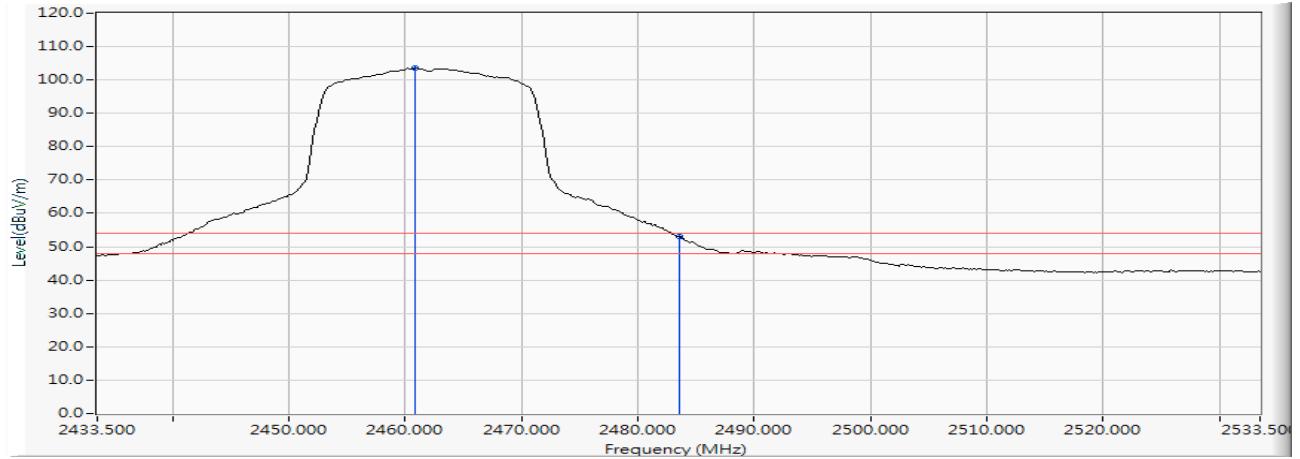
Vertical

		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2460.601	11.129	102.810	113.939	--	--	PEAK
2		2483.500	11.229	58.661	69.891	-4.109	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps) (2462MHz)
 Test Date : 2019/07/10

Vertical

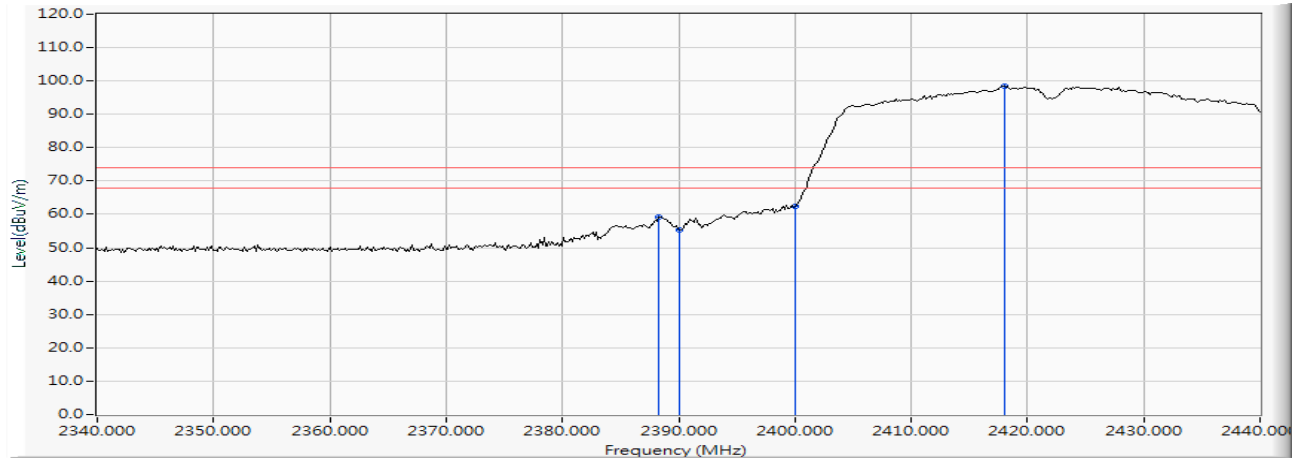
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2460.891	11.130	92.366	103.497	--	--	AVERAGE
2		2483.500	11.229	41.975	53.205	-0.795	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps) (2422MHz)
 Test Date : 2019/07/10

Horizontal



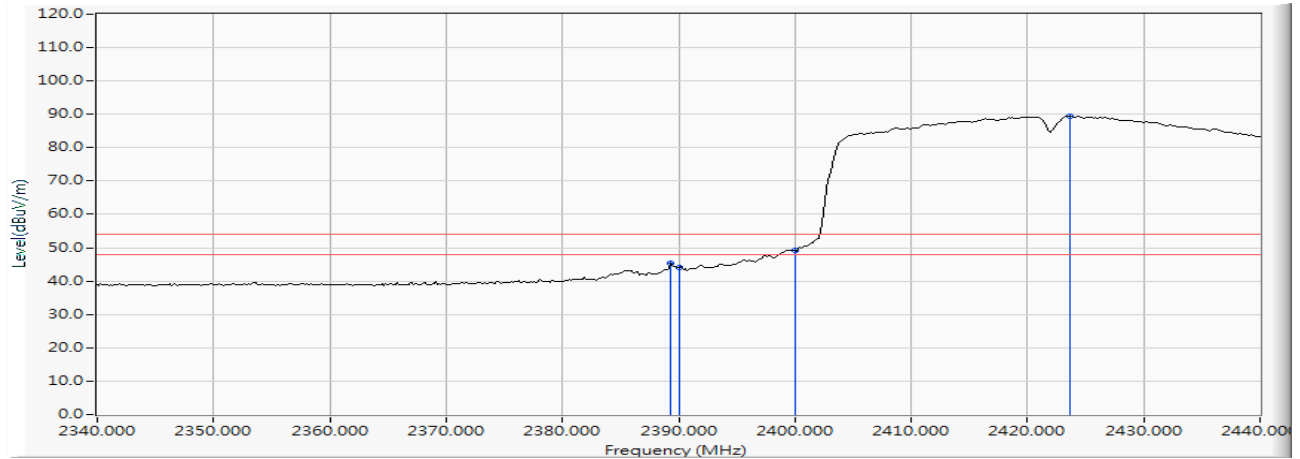
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2388.261	10.834	48.404	59.238	-14.762	74.000	PEAK
2		2390.000	10.841	44.484	55.325	-18.675	74.000	PEAK
3		2400.000	10.884	51.431	62.315	--	--	PEAK
4	*	2417.971	10.958	87.567	98.525	--	--	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps) (2422MHz)
 Test Date : 2019/07/10

Horizontal

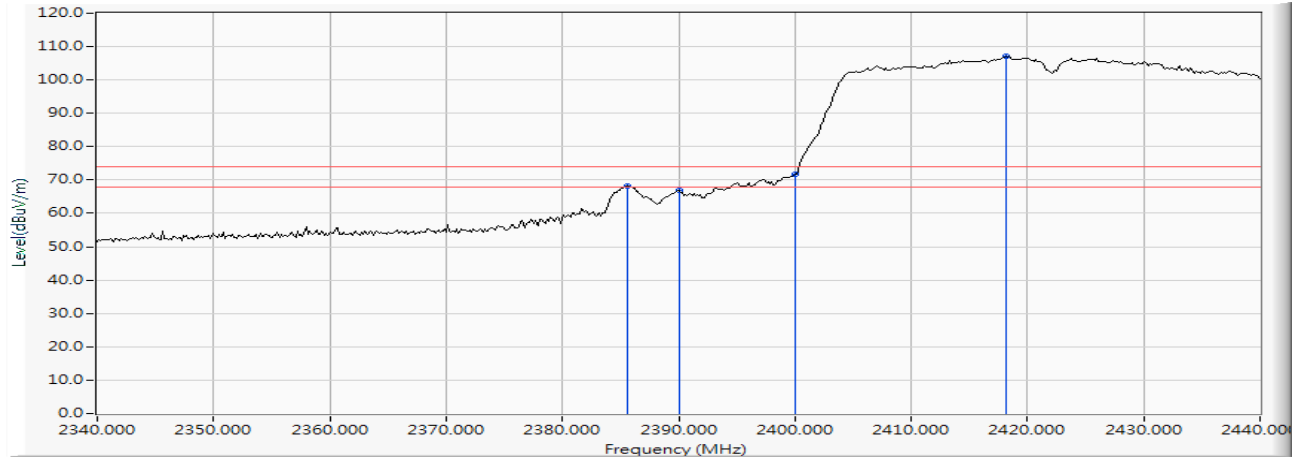


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2389.275	10.839	34.604	45.442	-8.558	54.000	AVERAGE
2		2390.000	10.841	33.370	44.211	-9.789	54.000	AVERAGE
3		2400.000	10.884	38.494	49.378	--	--	AVERAGE
4	*	2423.623	10.982	78.440	89.422	--	--	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps) (2422MHz)
 Test Date : 2019/07/10

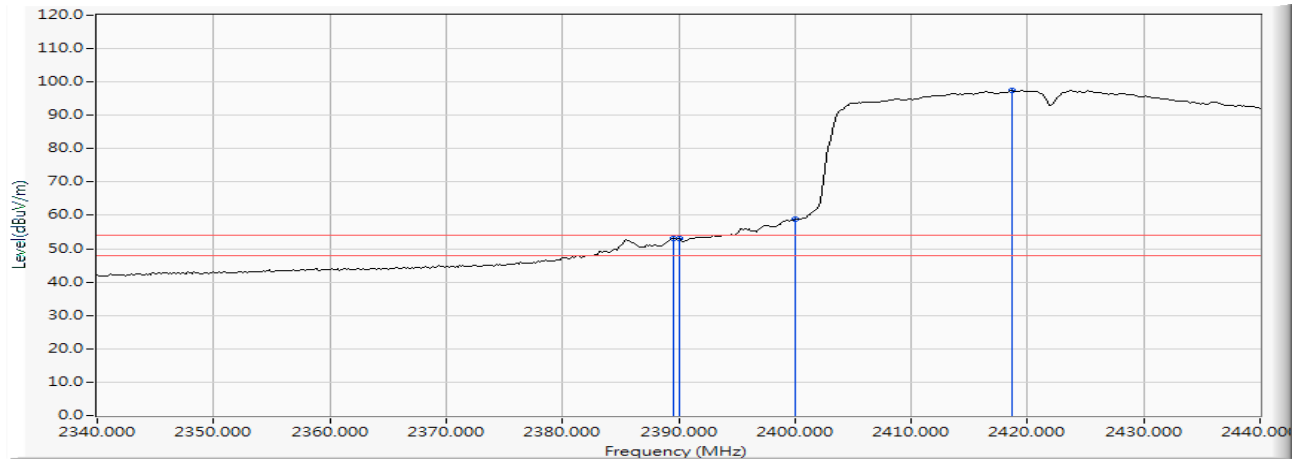
Vertical

		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2385.652	10.823	57.462	68.285	-5.715	74.000	PEAK
2		2390.000	10.841	56.017	66.858	-7.142	74.000	PEAK
3		2400.000	10.884	60.918	71.802	--	--	PEAK
4	*	2418.116	10.958	96.275	107.233	--	--	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps) (2422MHz)
 Test Date : 2019/07/10

Vertical

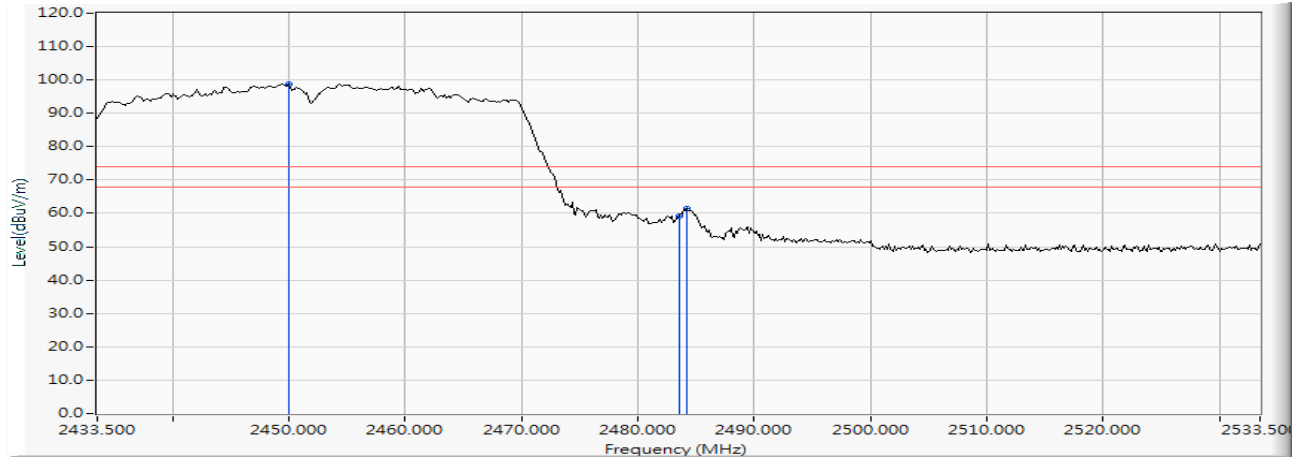
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2389.565	10.840	42.317	53.157	-0.843	54.000	AVERAGE
2		2390.000	10.841	42.108	52.949	-1.051	54.000	AVERAGE
3		2400.000	10.884	47.841	58.725	--	--	AVERAGE
4	*	2418.696	10.961	86.474	97.435	--	--	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps) (2452MHz)
 Test Date : 2019/07/10

Horizontal



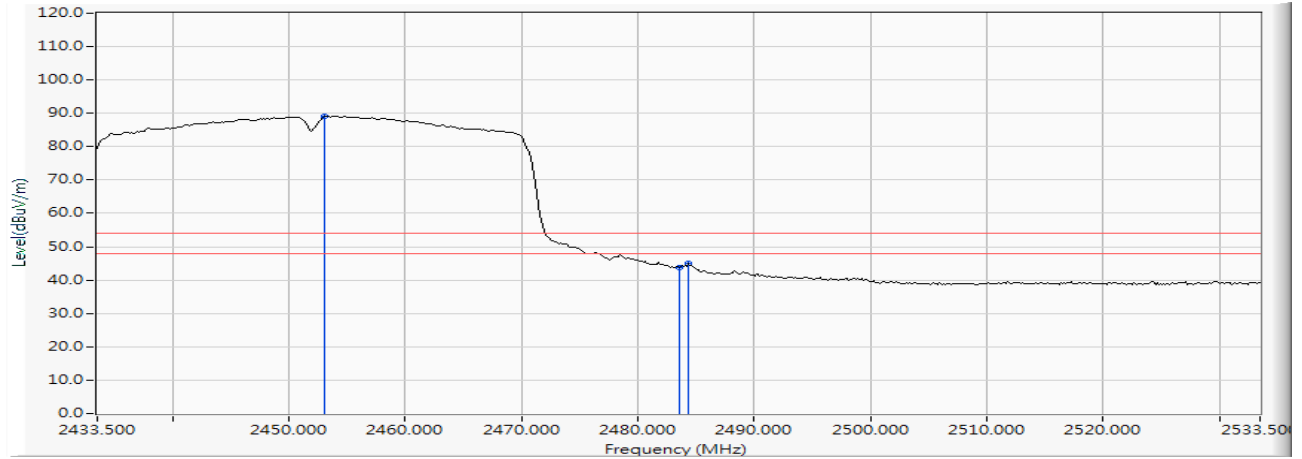
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2450.022	11.087	87.832	98.919	--	--	PEAK
2		2483.500	11.229	47.875	59.105	-14.895	74.000	PEAK
3		2484.225	11.233	50.069	61.301	-12.699	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps) (2452MHz)
 Test Date : 2019/07/10

Horizontal

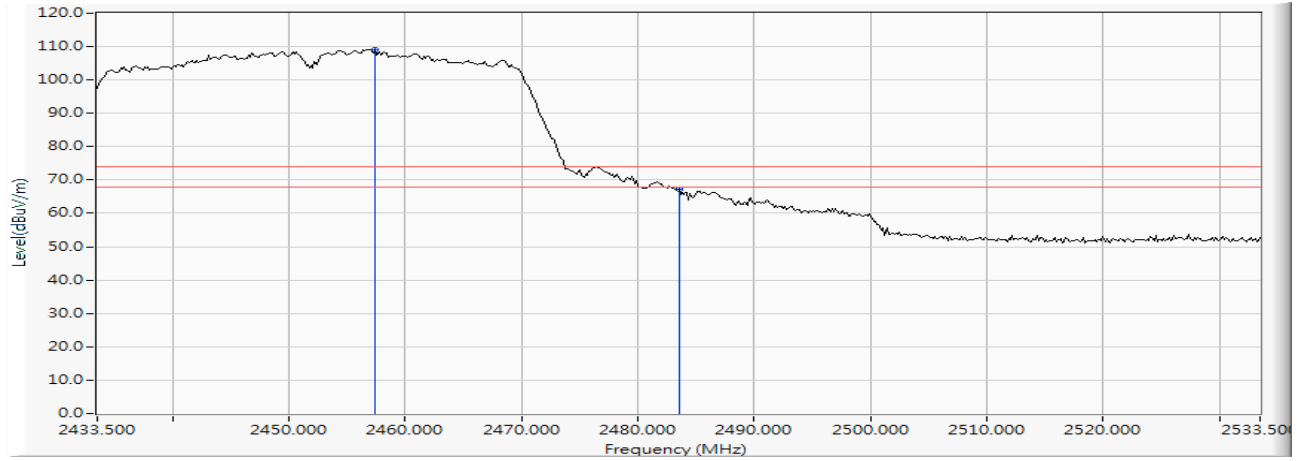


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2453.065	11.098	78.043	89.141	--	--	AVERAGE
2		2483.500	11.229	32.467	43.697	-10.303	54.000	AVERAGE
3		2484.370	11.233	33.742	44.975	-9.025	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps) (2452MHz)
 Test Date : 2019/07/10

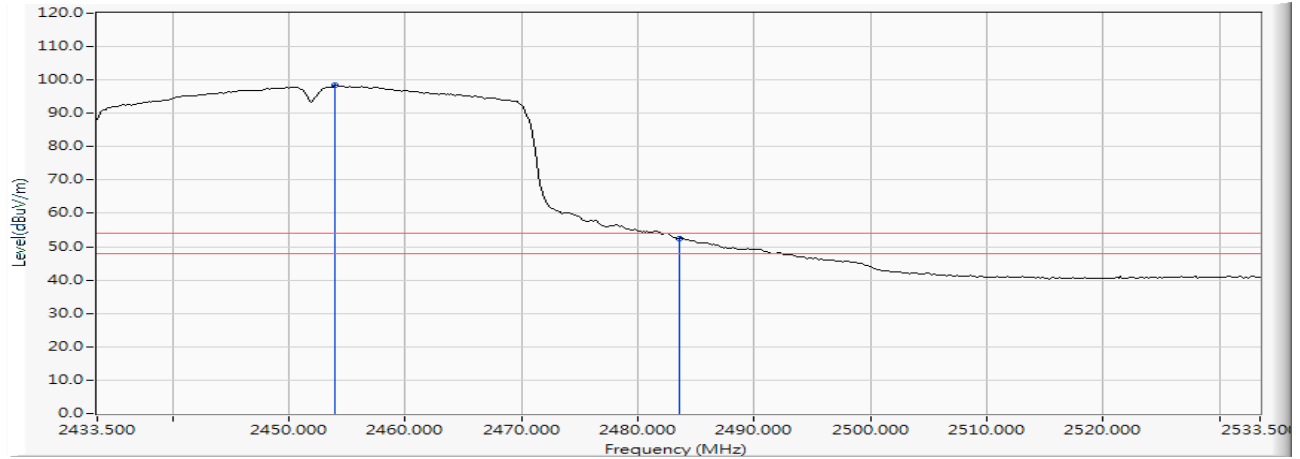
Vertical

		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2457.413	11.114	97.978	109.093	--	--	PEAK
2		2483.500	11.229	56.033	67.263	-6.737	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : GigaConnect® Smart Gateway
 Test Item : Band Edge Data
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps) (2452MHz)
 Test Date : 2019/07/10

Vertical

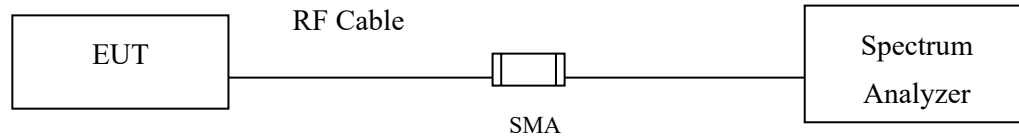
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2453.935	11.100	87.224	98.325	--	--	AVERAGE
2		2483.500	11.229	41.369	52.599	-1.401	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

7. 6dB Bandwidth

7.1. Test Setup



7.2. Limits

The minimum bandwidth shall be at least 500 kHz.

7.3. Test Procedure

Tested according to DTS test procedure of KDB558074 section 8.2 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 1-5% of the emission bandwidth, $VBW \geq 3 * RBW$

7.4. Uncertainty

$\pm 279.2\text{Hz}$

7.5. Test Result of 6dB Bandwidth

Product : GigaConnect® Smart Gateway
 Test Item : 6dB Bandwidth Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412	10100	>500	Pass
06	2437	10100	>500	Pass
11	2462	10150	>500	Pass

Figure Channel 01:

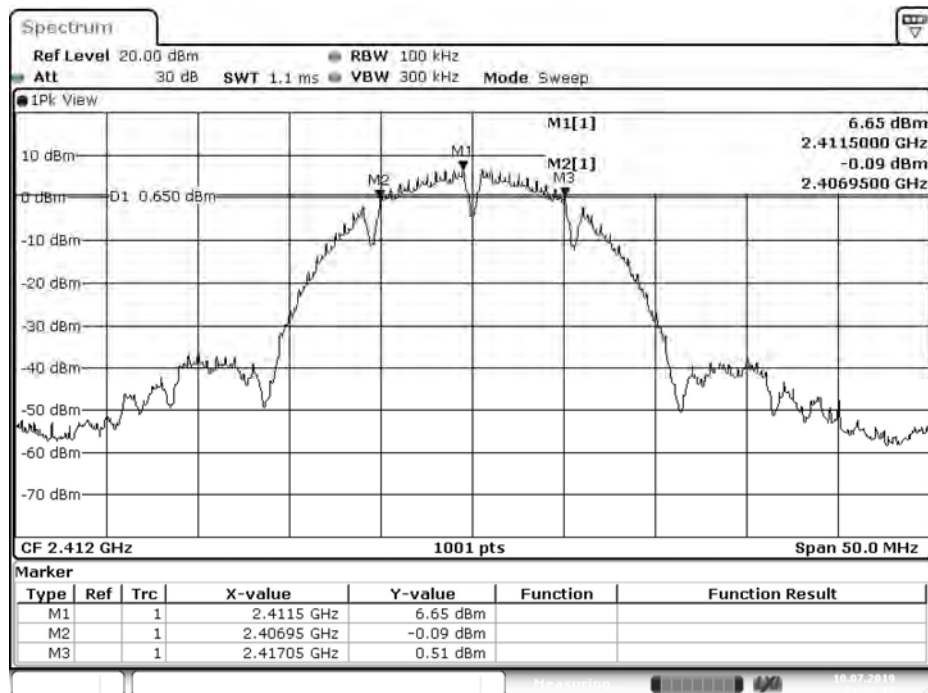
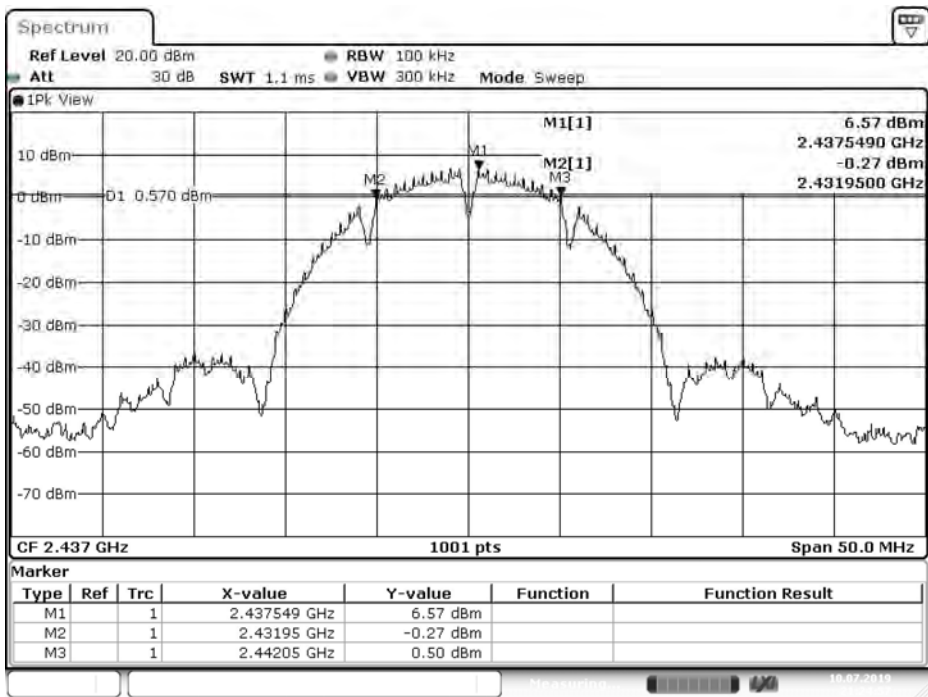
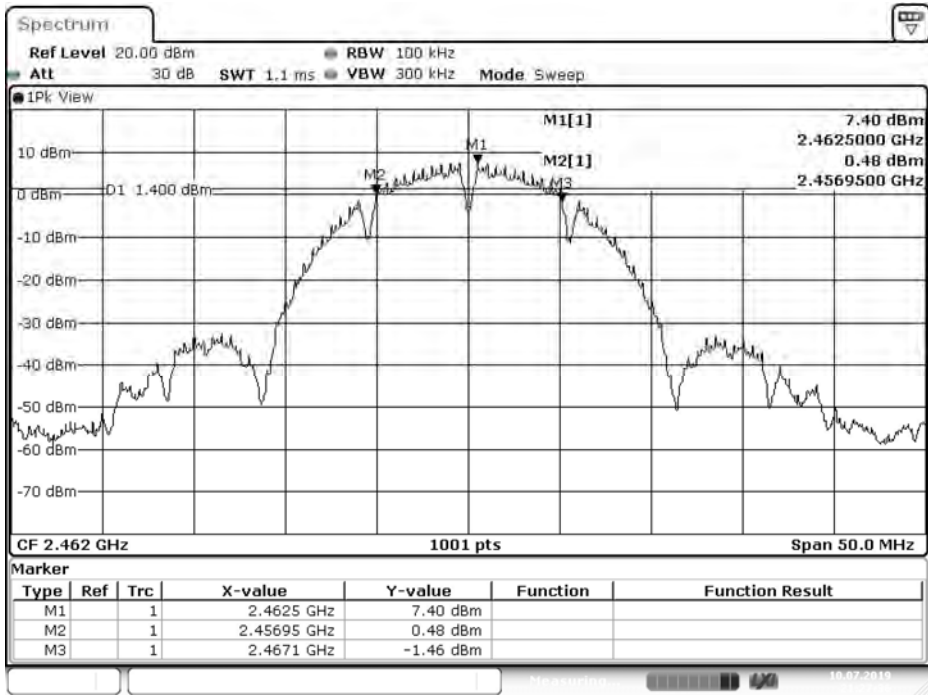


Figure Channel 06:



Date: 10.JUL.2019 21:24:57

Figure Channel 11:

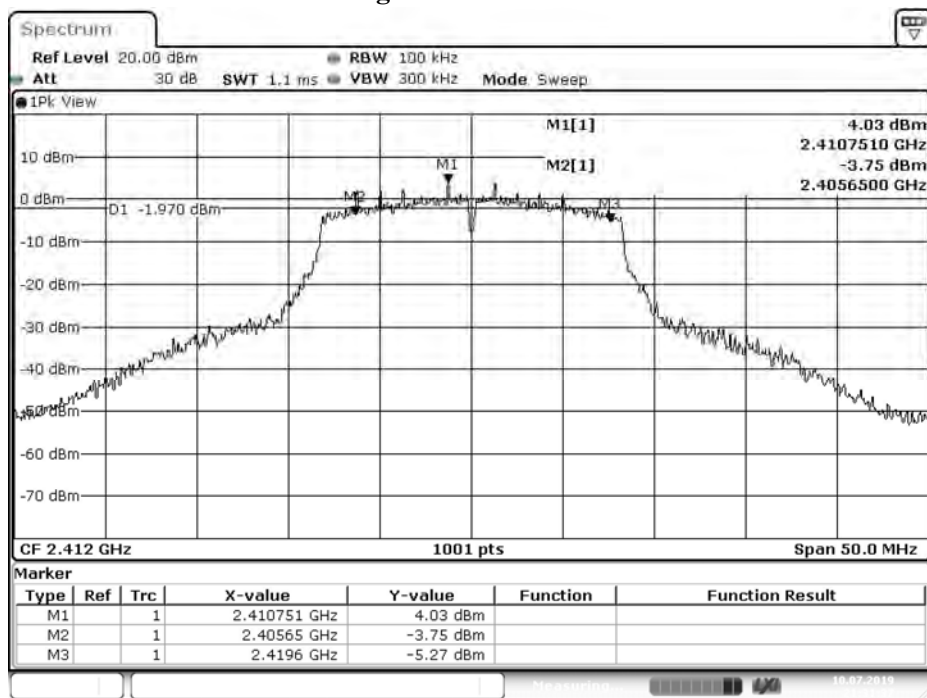


Date: 10.JUL.2019 21:27:36

Product : GigaConnect® Smart Gateway
 Test Item : 6dB Bandwidth Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

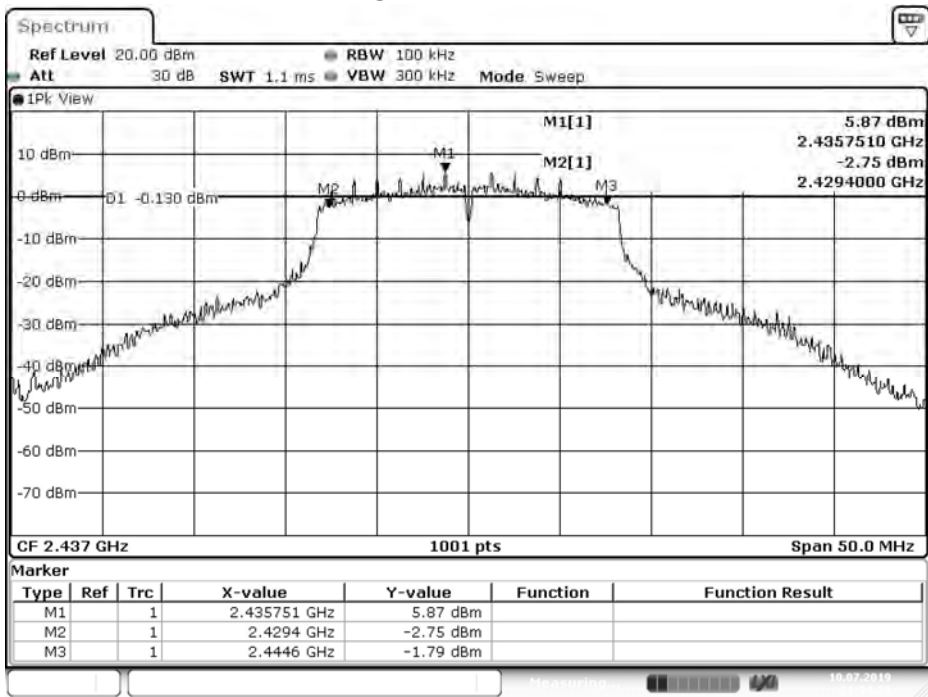
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412	13950	>500	Pass
06	2437	15200	>500	Pass
11	2462	15150	>500	Pass

Figure Channel 01:



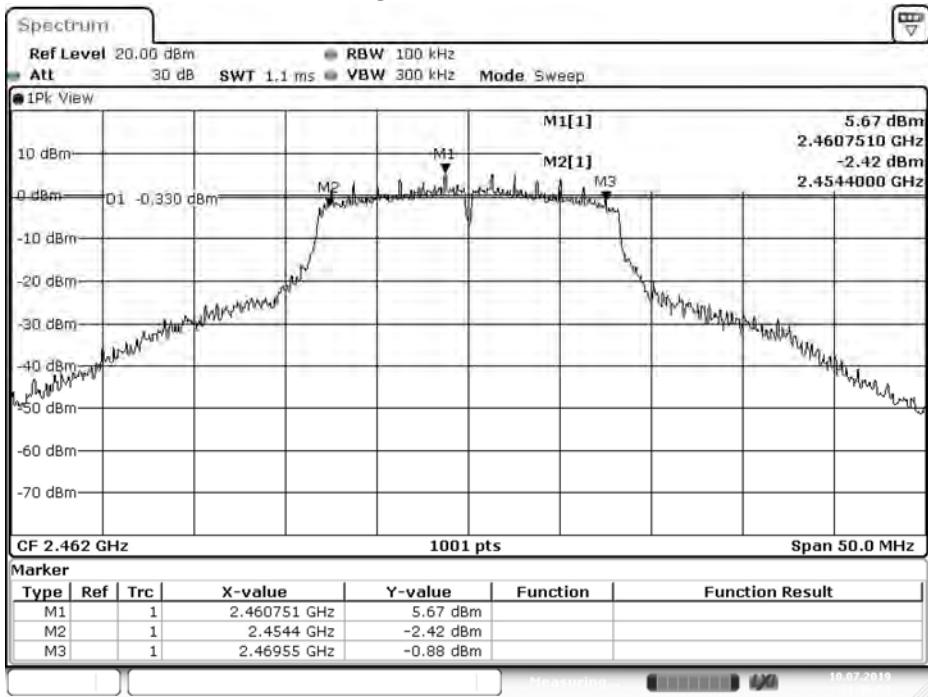
Date: 10.JUL.2019 21:31:38

Figure Channel 06:



Date: 10.JUL.2019 21:34:23

Figure Channel 11:

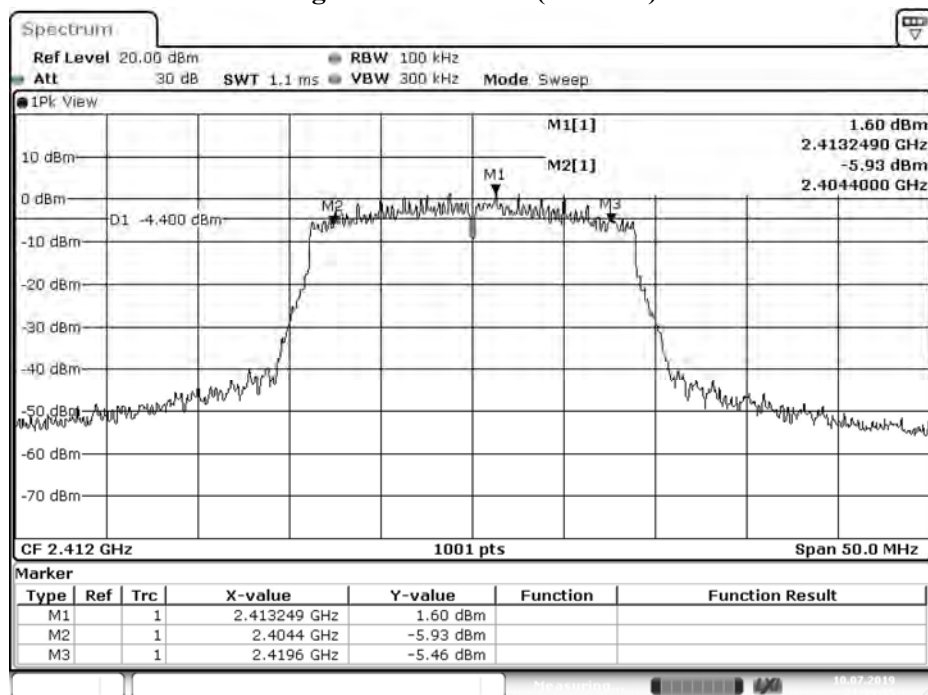


Date: 10.JUL.2019 21:36:59

Product : GigaConnect® Smart Gateway
 Test Item : 6dB Bandwidth Data
 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps)

Chain A

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412	15200	>500	Pass
06	2437	15800	>500	Pass
11	2462	15200	>500	Pass

Figure Channel 01: (Chain A)

Date: 10.JUL.2019 21:39:35

Figure Channel 06: (Chain A)

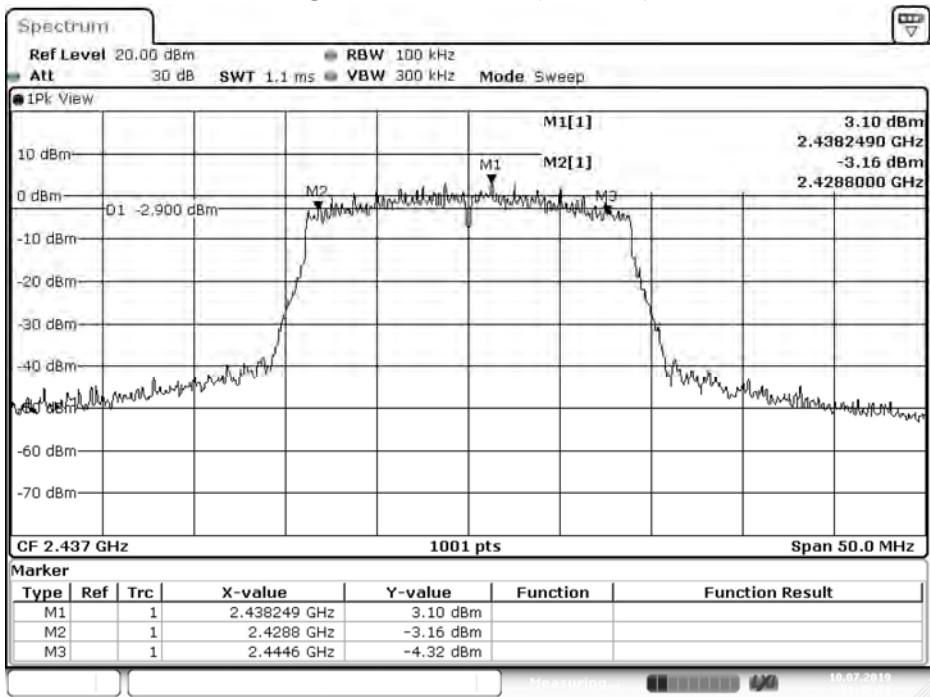
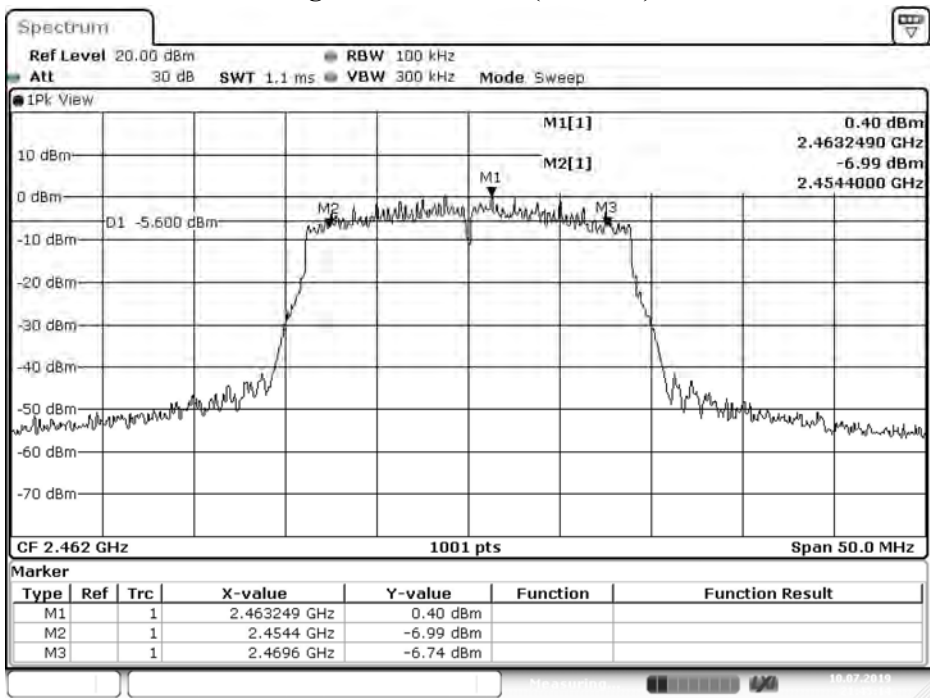


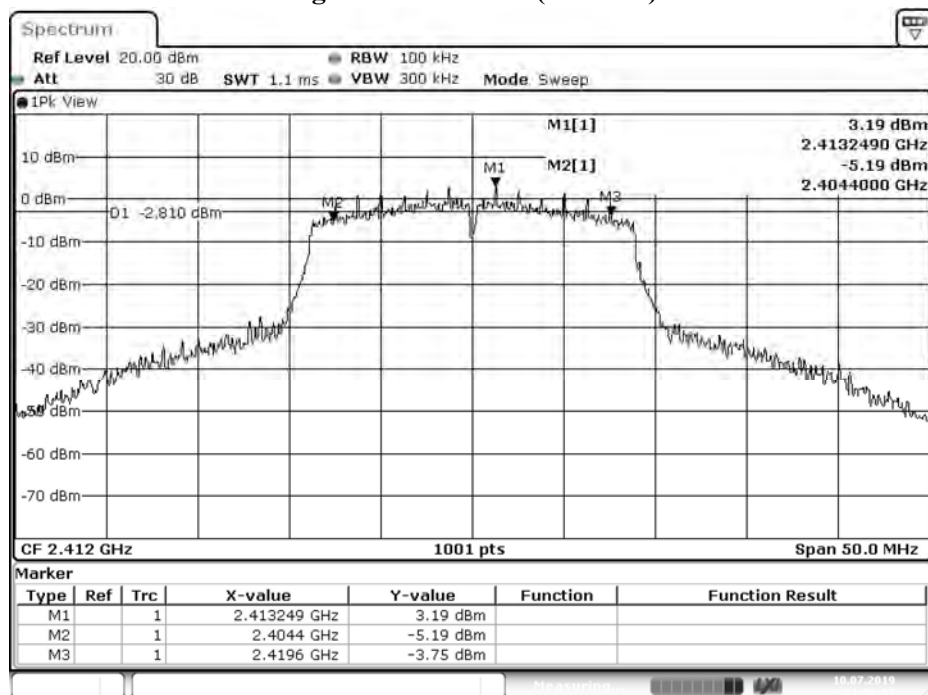
Figure Channel 11: (Chain A)



Product : GigaConnect® Smart Gateway
 Test Item : 6dB Bandwidth Data
 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps)

Chain B

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412	15200	>500	Pass
06	2437	15200	>500	Pass
11	2462	15200	>500	Pass

Figure Channel 01: (Chain B)

Date: 10.JUL.2019 21:56:58

Figure Channel 06: (Chain B)

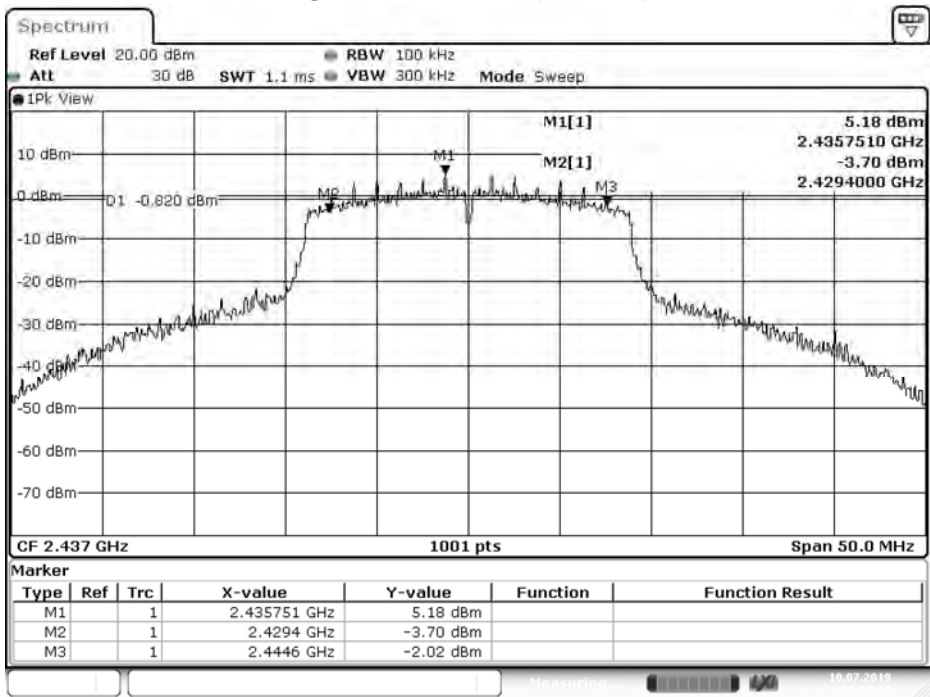
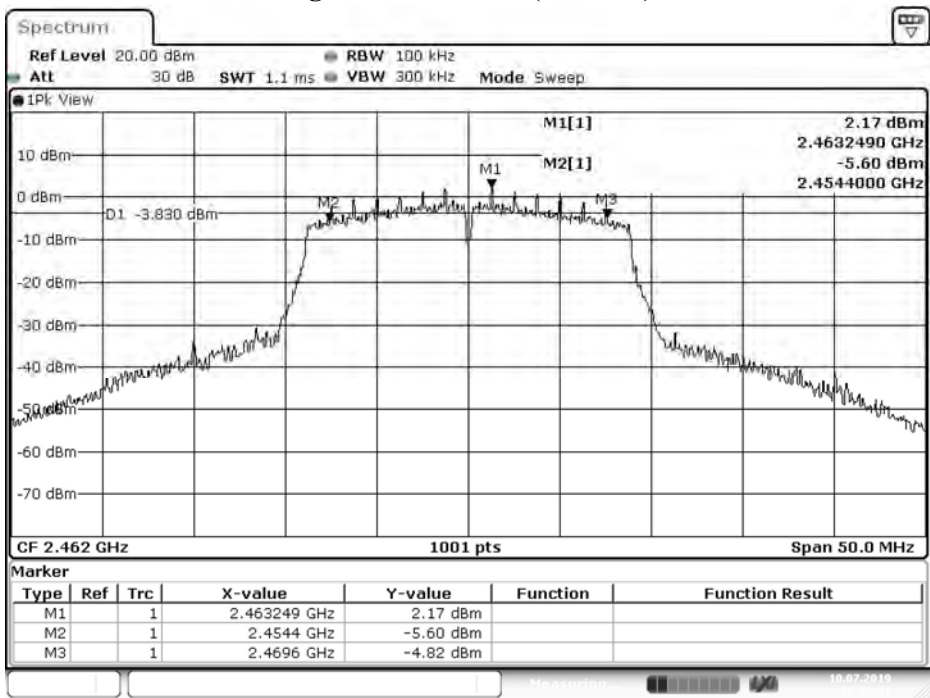


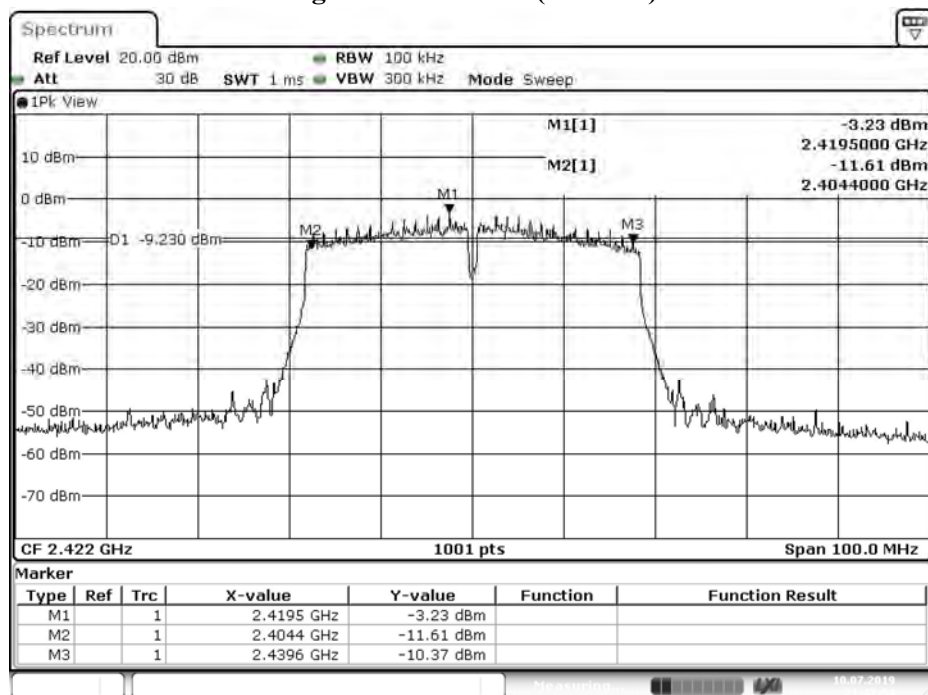
Figure Channel 11: (Chain B)



Product : GigaConnect® Smart Gateway
 Test Item : 6dB Bandwidth Data
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps)

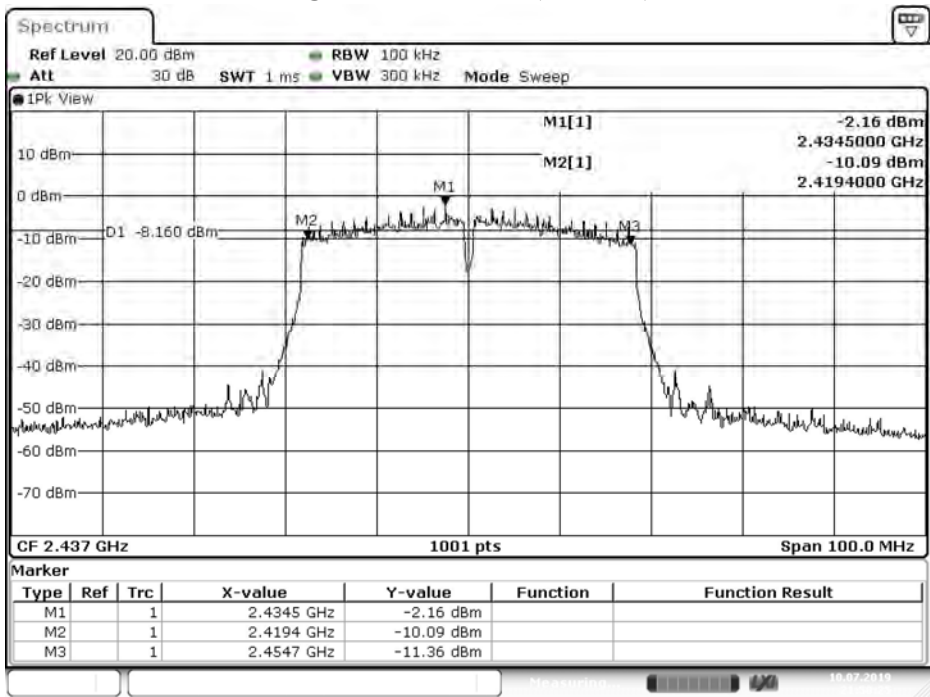
Chain A

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
03	2422	35200	>500	Pass
06	2437	35300	>500	Pass
09	2452	35300	>500	Pass

Figure Channel 03: (Chain A)

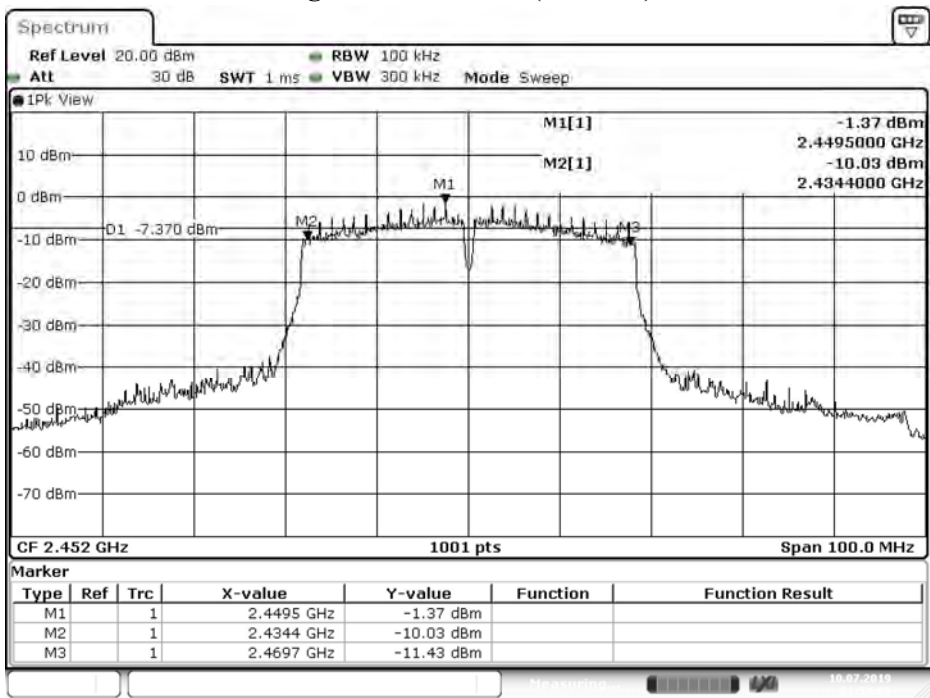
Date: 10.JUL.2019 21:47:54

Figure Channel 06: (Chain A)



Date: 10.JUL.2019 21:50:26

Figure Channel 09: (Chain A)

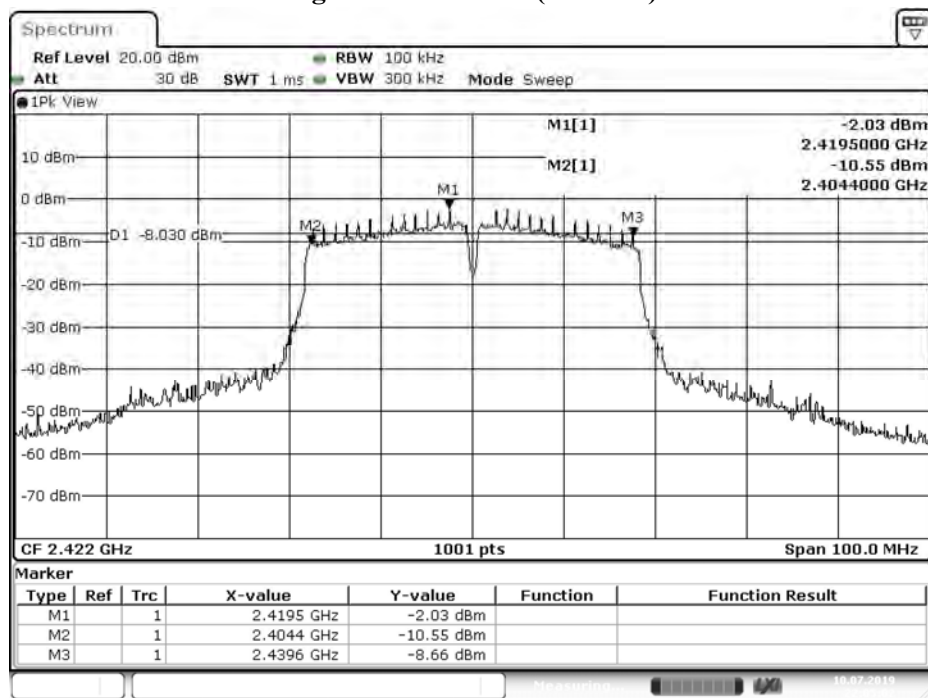


Date: 10.JUL.2019 21:53:10

Product : GigaConnect® Smart Gateway
 Test Item : 6dB Bandwidth Data
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps)

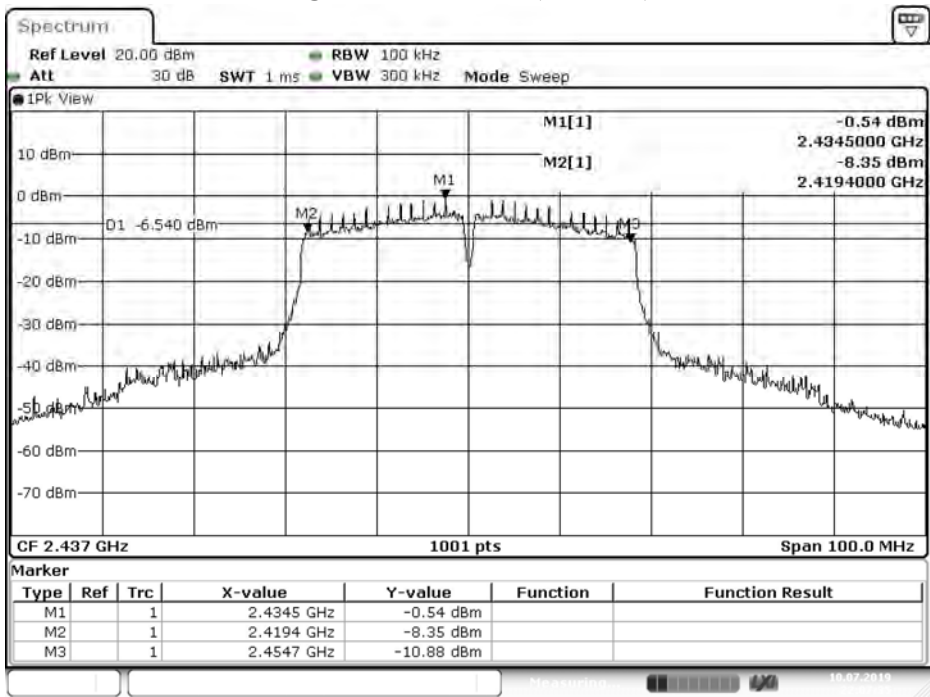
Chain B

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
03	2422	35200	>500	Pass
06	2437	35300	>500	Pass
09	2452	35300	>500	Pass

Figure Channel 03: (Chain B)

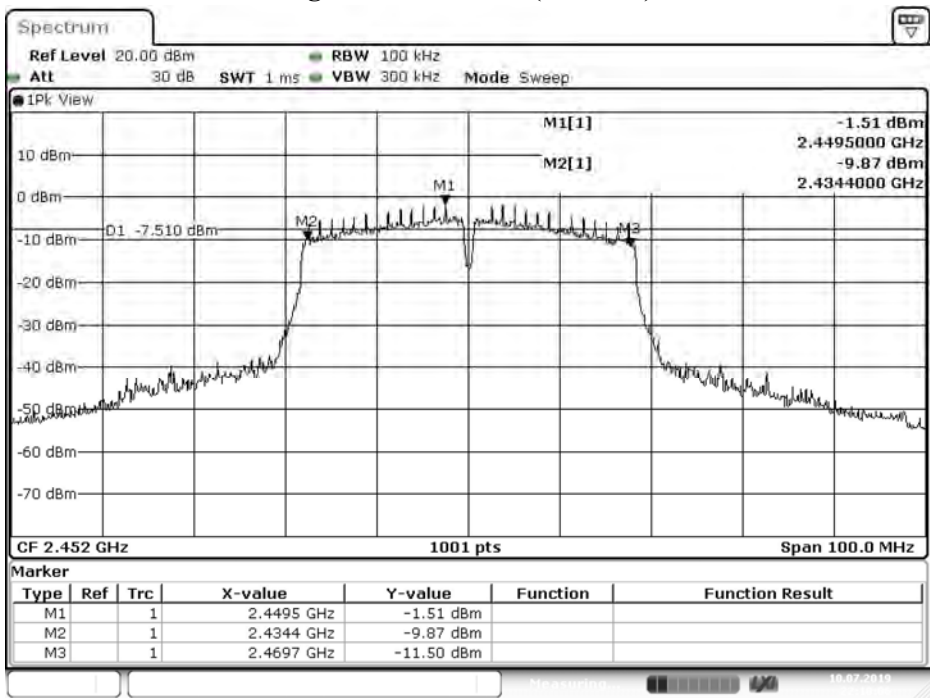
Date: 10.JUL.2019 22:05:03

Figure Channel 06: (Chain B)



Date: 10.JUL.2019 22:07:36

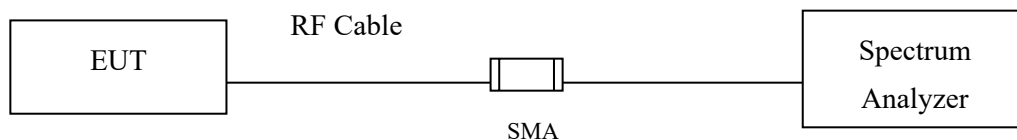
Figure Channel 09: (Chain B)



Date: 10.JUL.2019 22:10:07

8. Power Density

8.1. Test Setup



8.2. Limits

The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3kHz bandwidth.

8.3. Test Procedure

Tested according to DTS test procedure of KDB558074 section 8.4 for compliance to FCC 47CFR 15.247 requirements.

8.4. Uncertainty

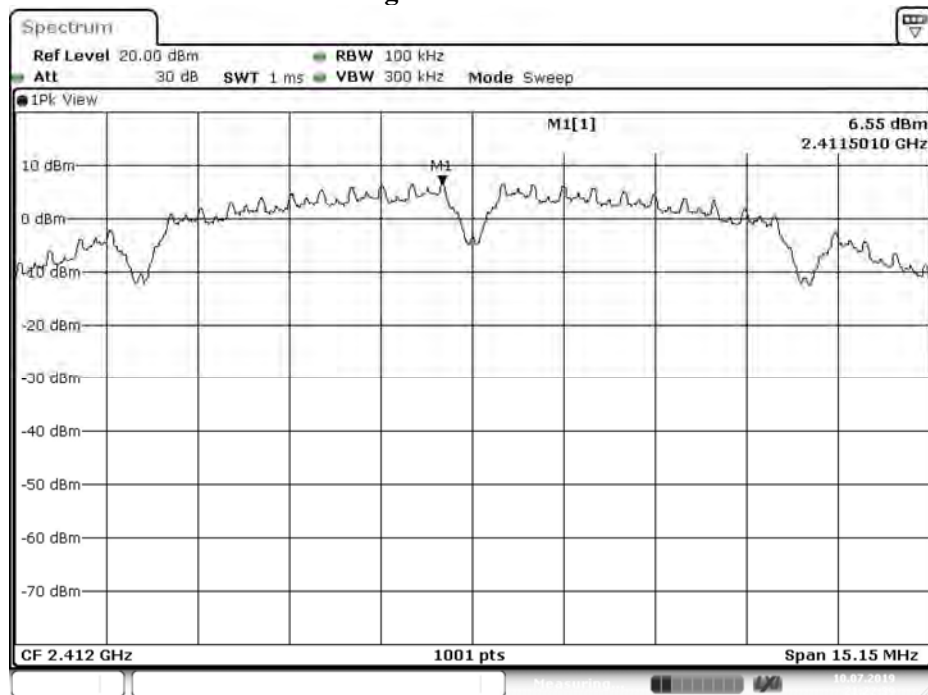
± 1.23 dB

8.5. Test Result of Power Density

Product : GigaConnect® Smart Gateway
 Test Item : Power Density Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

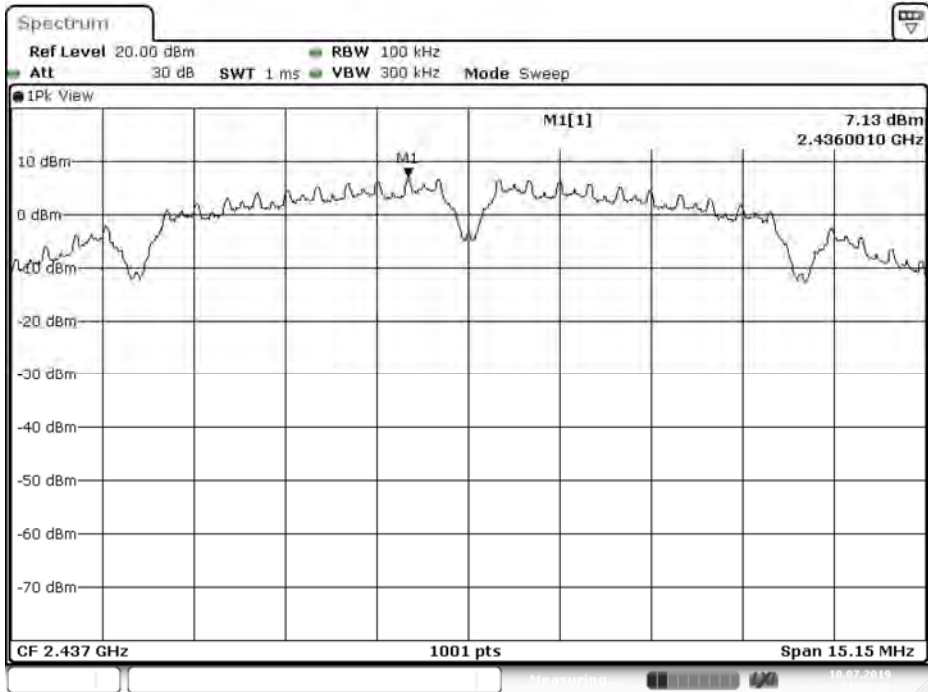
Channel No.	Frequency (MHz)	PPSD/MHz (dBm)	Limit (dBm)	Result
01	2412.000	6.550	≤ 8 dBm	Pass
06	2437.000	7.130	≤ 8 dBm	Pass
11	2462.000	7.330	≤ 8 dBm	Pass

Figure Channel 1:



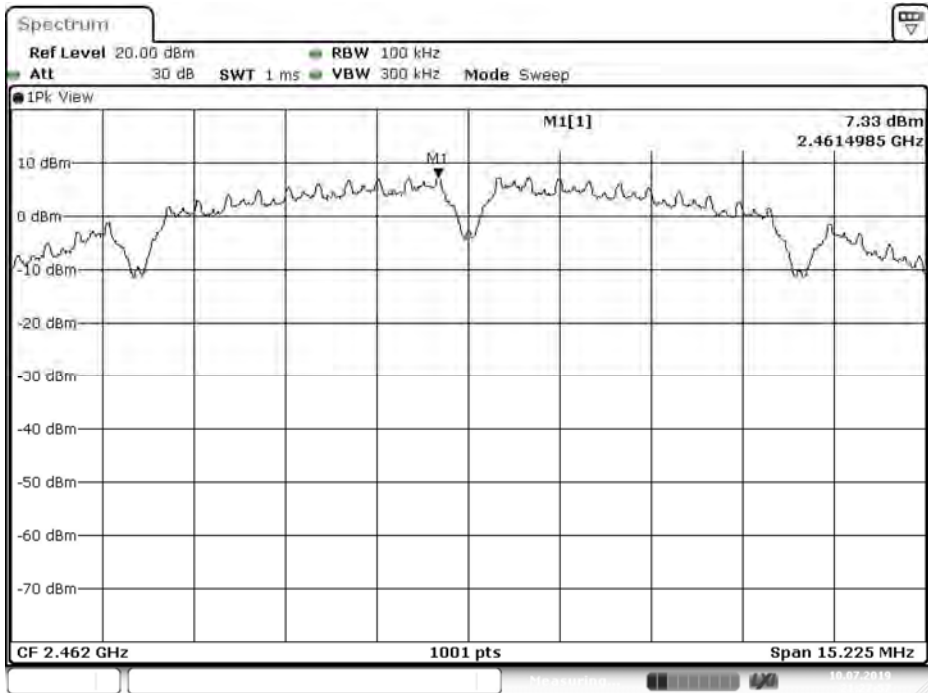
Date: 10.JUL.2019 21:22:39

Figure Channel 6:



Date: 10.JUL.2019 21:25:20

Figure Channel 11:

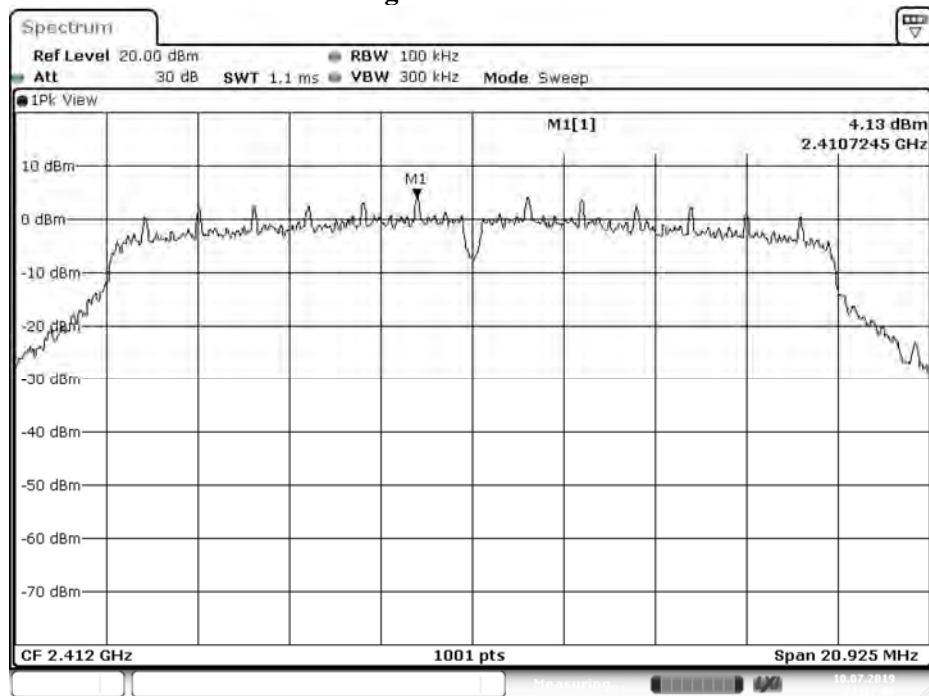


Date: 10.JUL.2019 21:27:58

Product : GigaConnect® Smart Gateway
 Test Item : Power Density Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

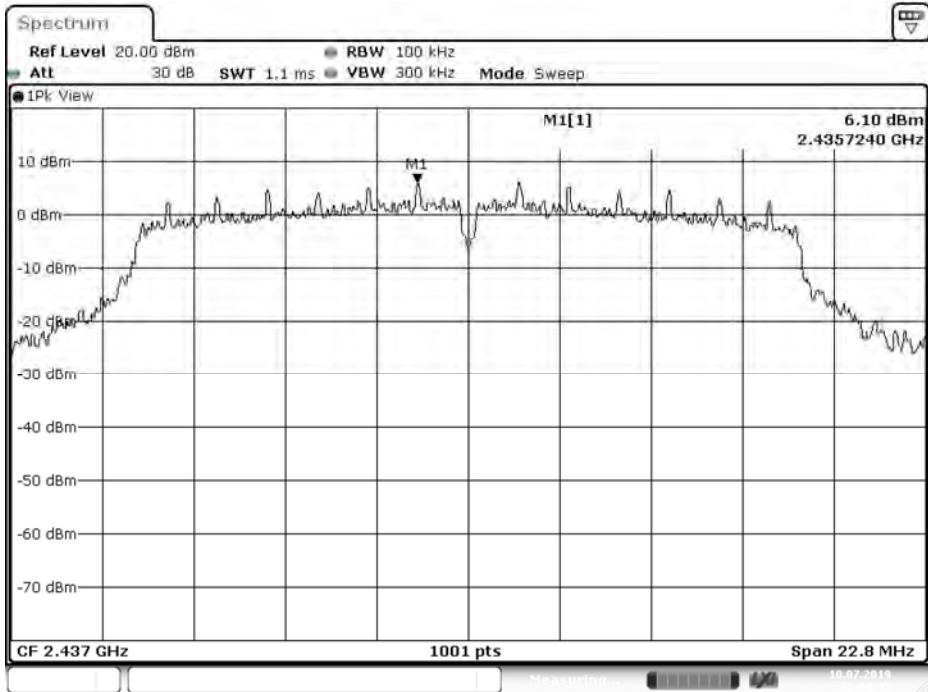
Channel No.	Frequency (MHz)	PPSD/MHz (dBm)	Limit (dBm)	Result
01	2412.000	4.130	≤ 8 dBm	Pass
06	2437.000	6.100	≤ 8 dBm	Pass
11	2462.000	5.380	≤ 8 dBm	Pass

Figure Channel 1:



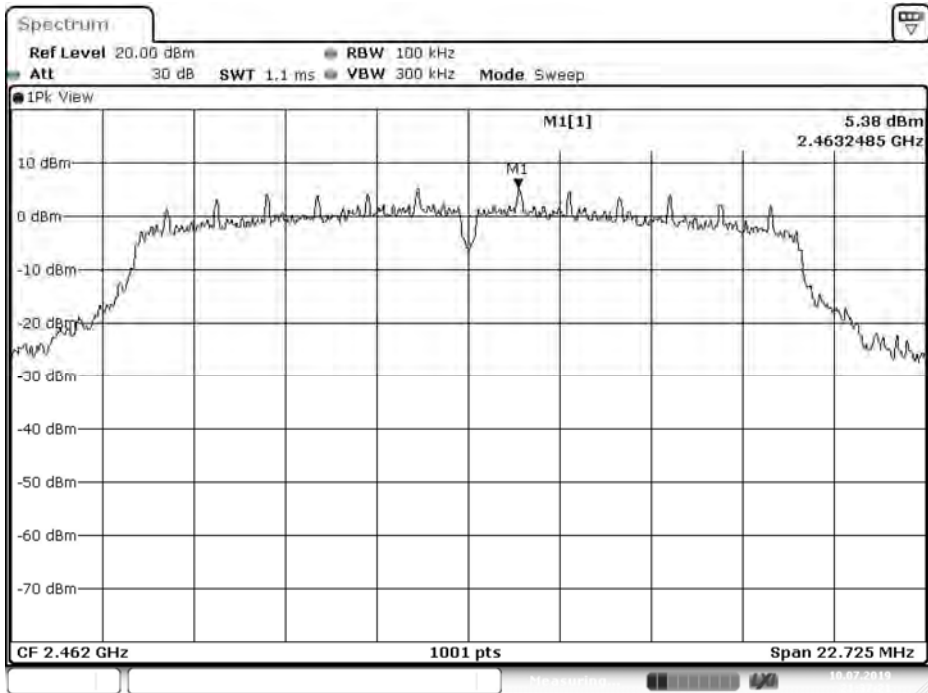
Date: 10. JUL 2019 21:32:00

Figure Channel 6:



Date: 10 JUL 2019 21:34:45

Figure Channel 11:



Date: 10 JUL 2019 21:37:22

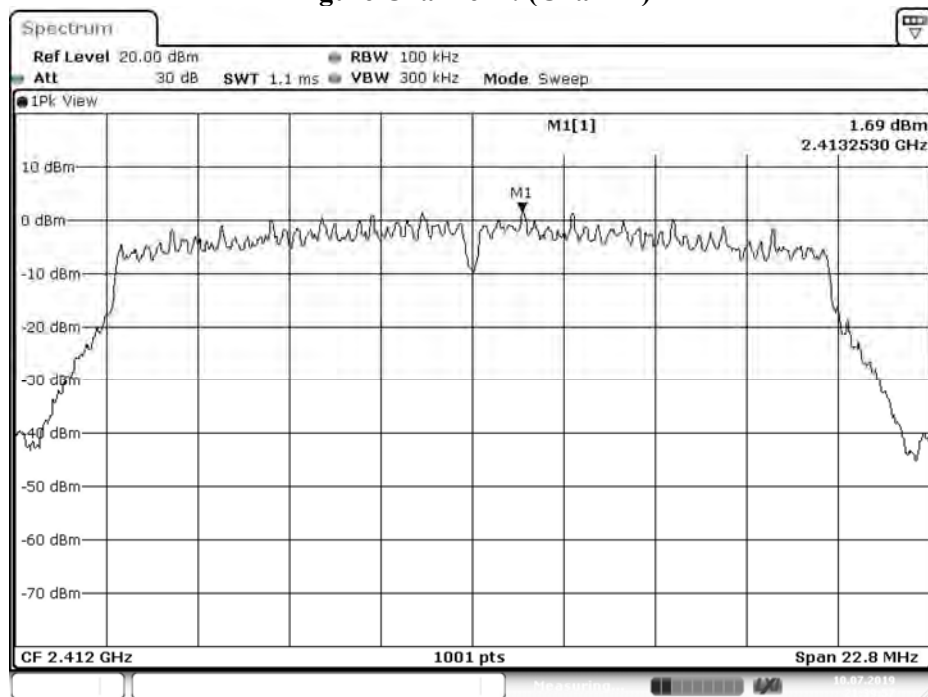
Product : GigaConnect® Smart Gateway
 Test Item : Power Density Data
 Test Mode : Mode 3: Transmit (802.11n-20MBW 14.4Mbps)

Channel No.	Frequency (MHz)	Chain	PPSD/MHz (dBm)	Total PPSD/MHz (dBm)	Limit (dBm)	Result
01	2412.000	A	1.690	4.700	$\leq 8\text{dBm}$	Pass
		B	3.160	6.170	$\leq 8\text{dBm}$	Pass
06	2437.000	A	3.180	6.190	$\leq 8\text{dBm}$	Pass
		B	4.840	7.850	$\leq 8\text{dBm}$	Pass
11	2462.000	A	0.440	3.450	$\leq 8\text{dBm}$	Pass
		B	2.260	5.270	$\leq 8\text{dBm}$	Pass

Note :

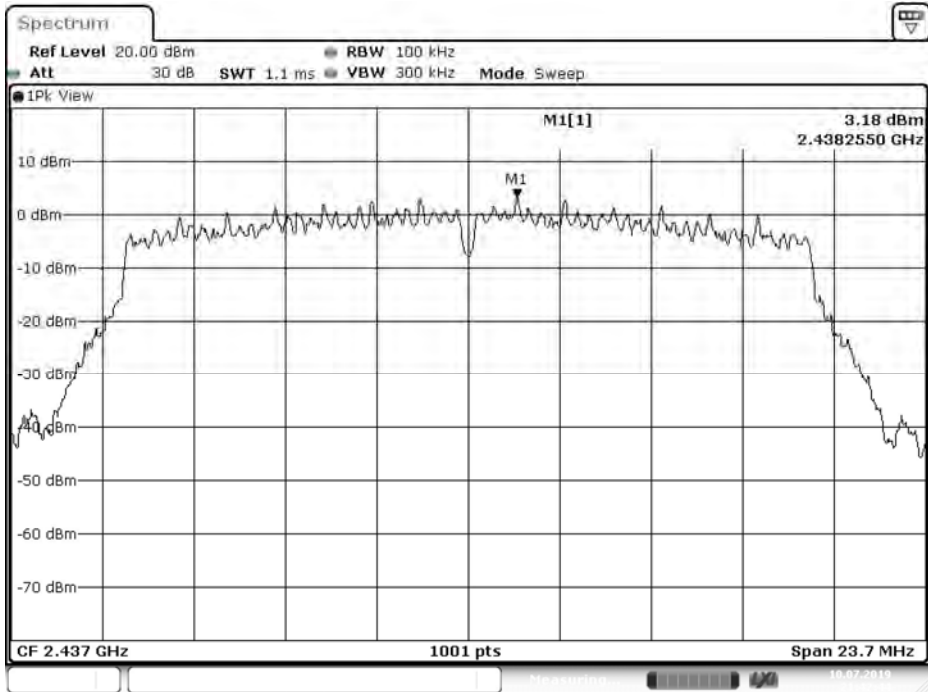
The quantity $10 \cdot \log 2$ (two antennas) is added to the spectrum peak value according to document 662911 D01.

Figure Channel 1: (Chain A)



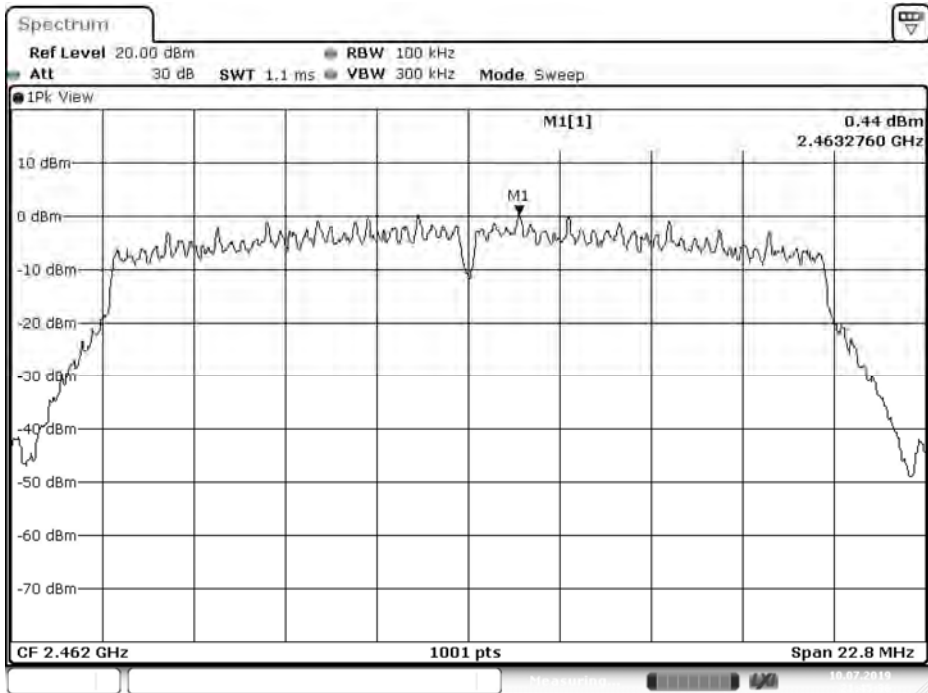
Date: 10 JUL 2019 21:39:58

Figure Channel 6: (Chain A)



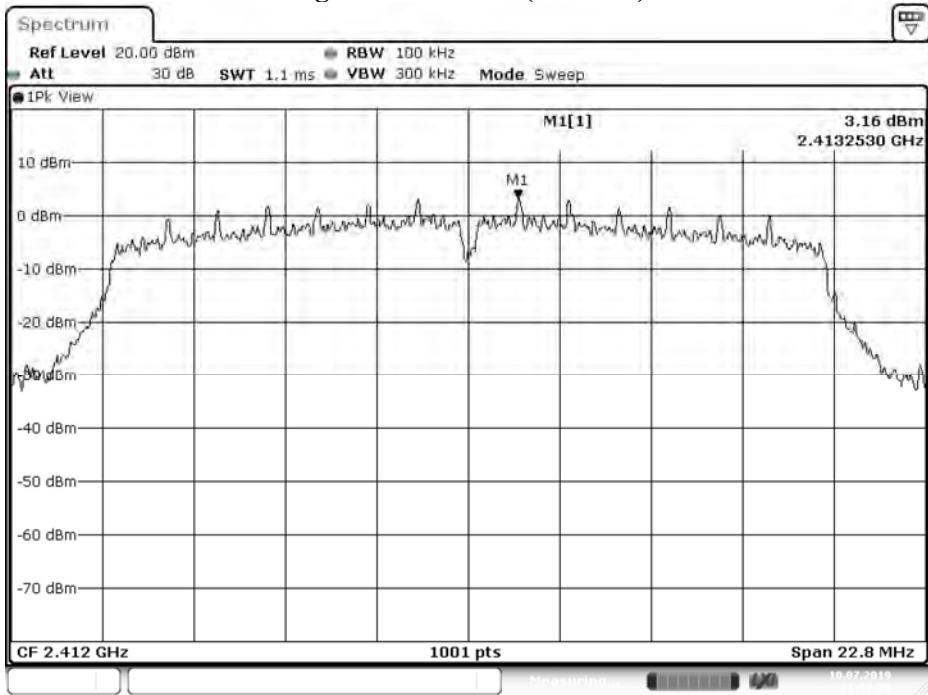
Date: 10.JUL.2019 21:42:44

Figure Channel 11: (Chain A)



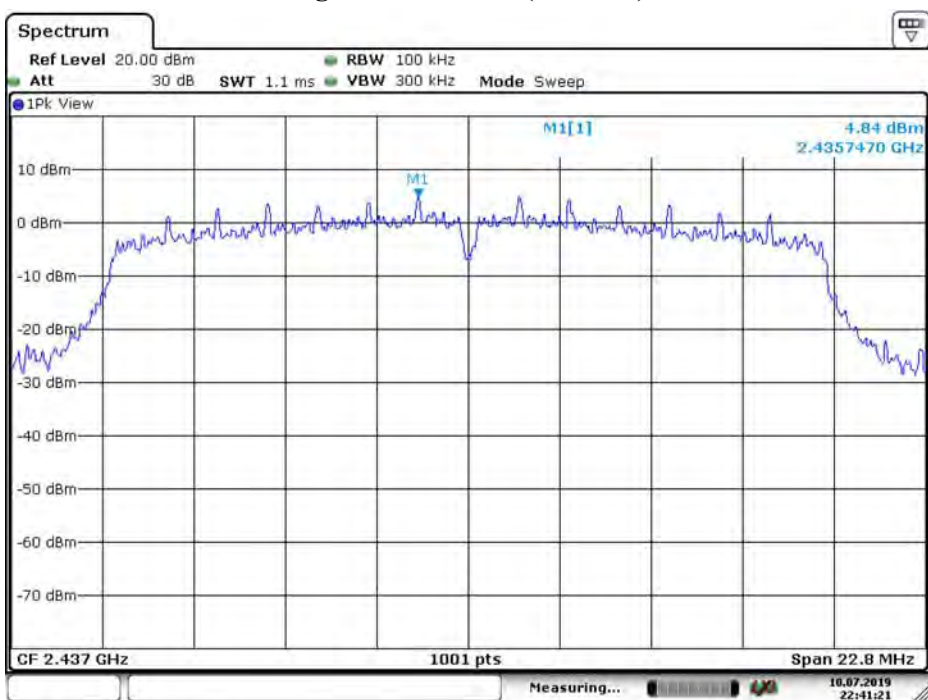
Date: 10.JUL.2019 21:45:37

Figure Channel 1: (Chain B)



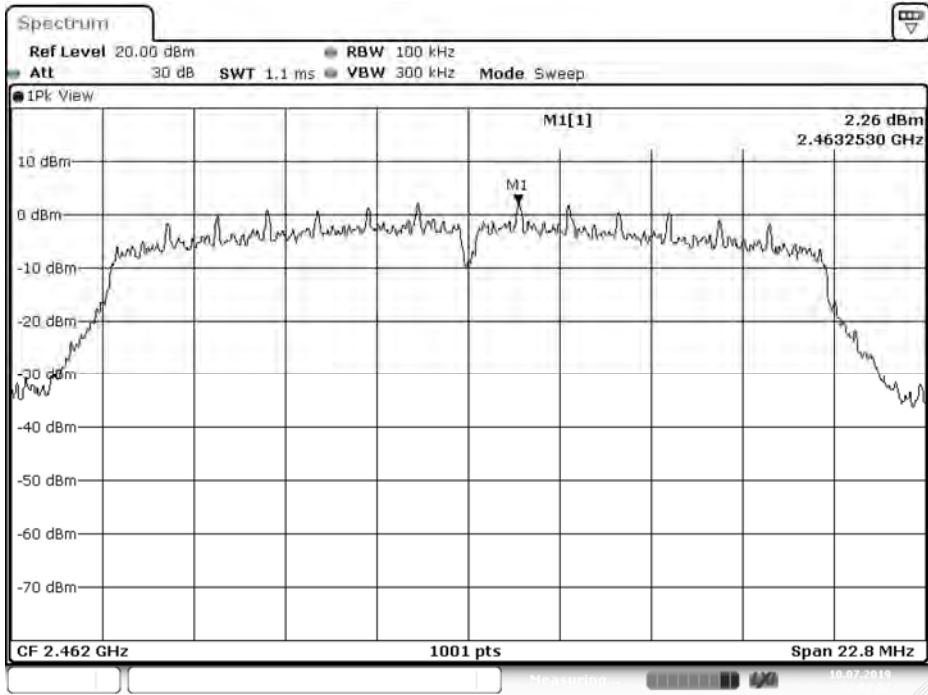
Date: 10 JUL 2019 21:57:20

Figure Channel 6: (Chain B)



Date: 10 JUL 2019 22:41:22

Figure Channel 11: (Chain B)



Date: 10.JUL.2019 22:02:53

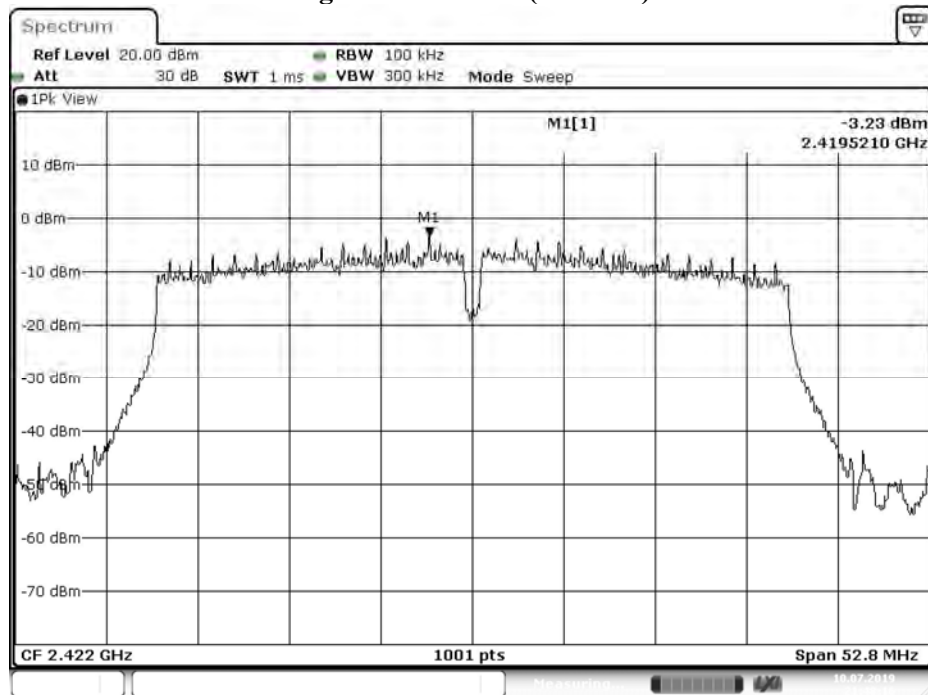
Product : GigaConnect® Smart Gateway
 Test Item : Power Density Data
 Test Mode : Mode 4: Transmit (802.11n-40MBW 30Mbps)

Channel No.	Frequency (MHz)	Chain	PPSD/MHz (dBm)	Total PPSD/MHz (dBm)	Limit (dBm)	Result
03	2422.000	A	-3.230	-0.220	≤ 8 dBm	Pass
		B	-2.130	0.880	≤ 8 dBm	Pass
06	2437.000	A	-2.280	0.730	≤ 8 dBm	Pass
		B	-0.590	2.420	≤ 8 dBm	Pass
09	2452.000	A	-1.300	1.710	≤ 8 dBm	Pass
		B	-1.550	1.460	≤ 8 dBm	Pass

Note :

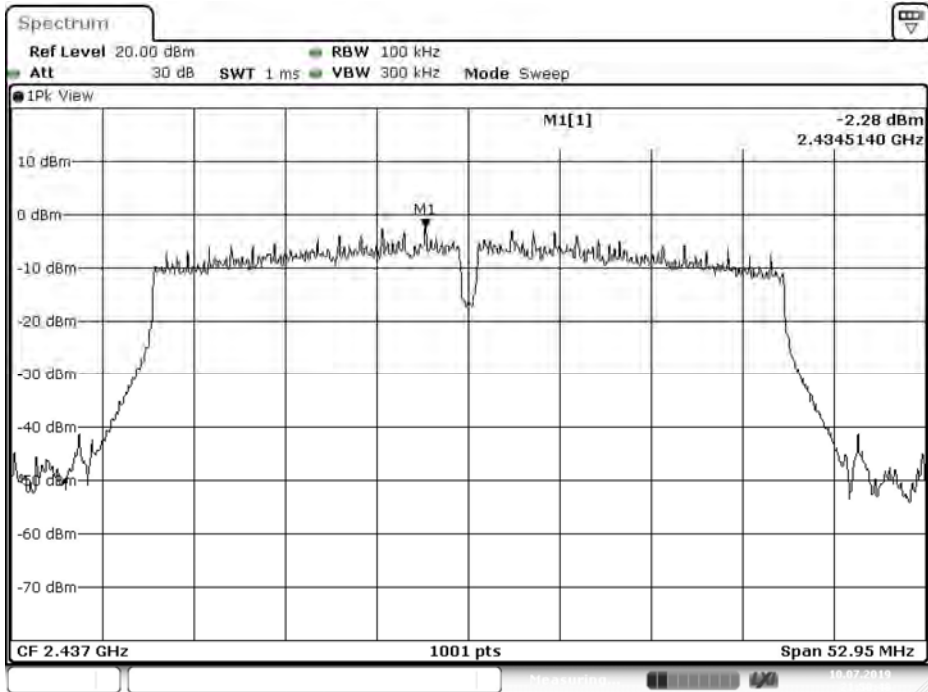
The quantity $10 \cdot \log 2$ (two antennas) is added to the spectrum peak value according to document 662911 D01.

Figure Channel 3: (Chain A)



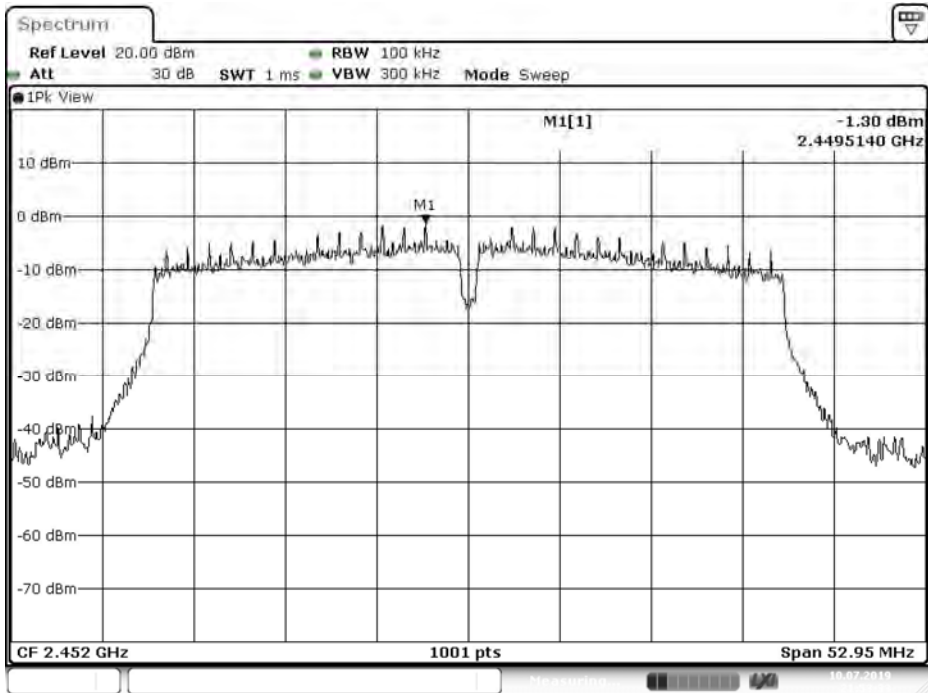
Date: 10 JUL 2019 21:48:17

Figure Channel 6: (Chain A)



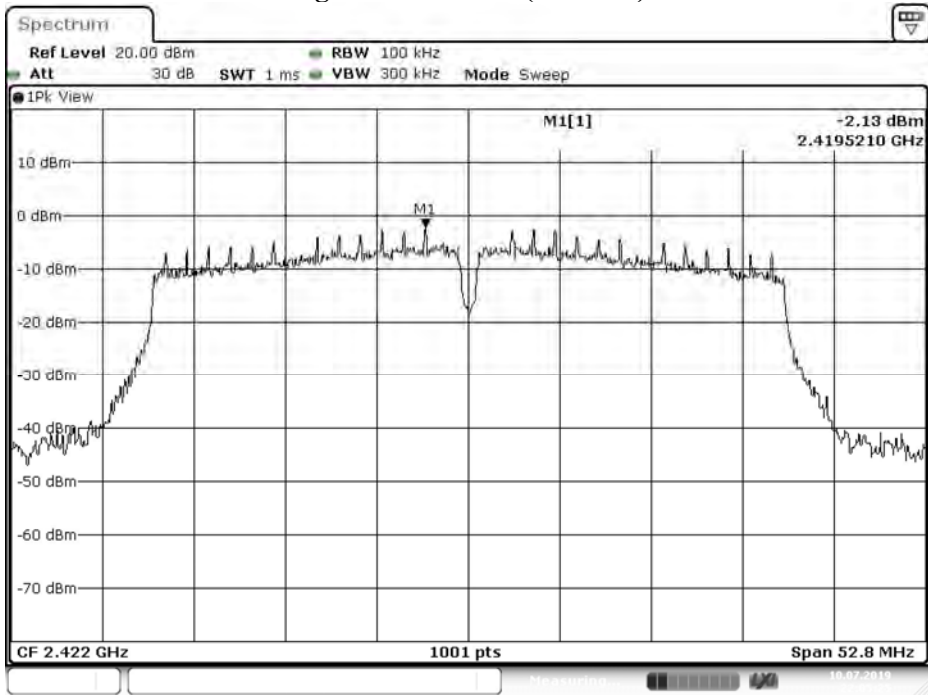
Date: 10 JUL 2019 21:50:48

Figure Channel 9: (Chain A)



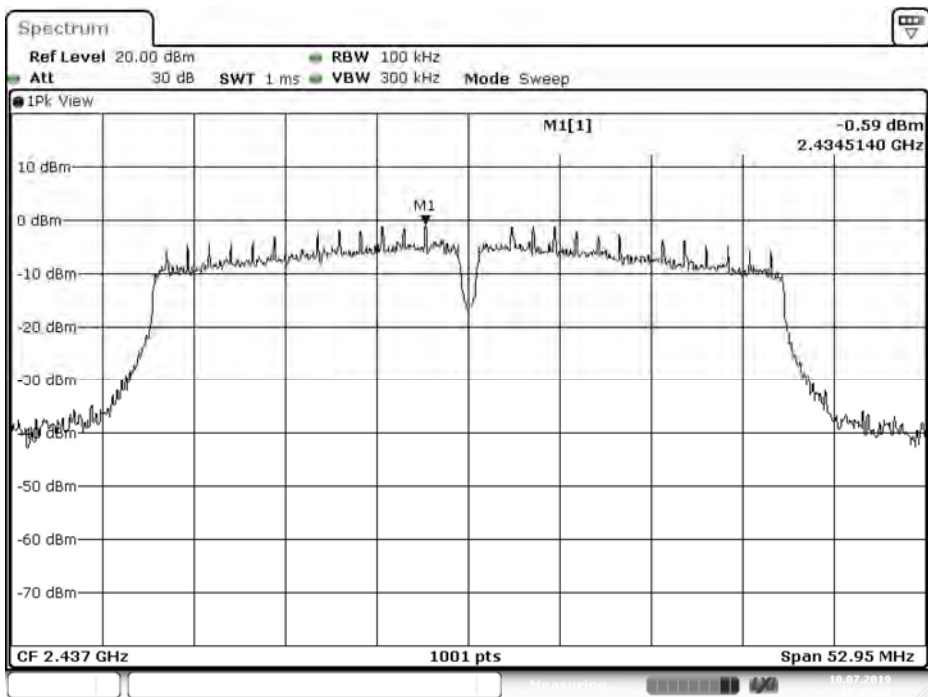
Date: 10 JUL 2019 21:53:33

Figure Channel 3: (Chain B)



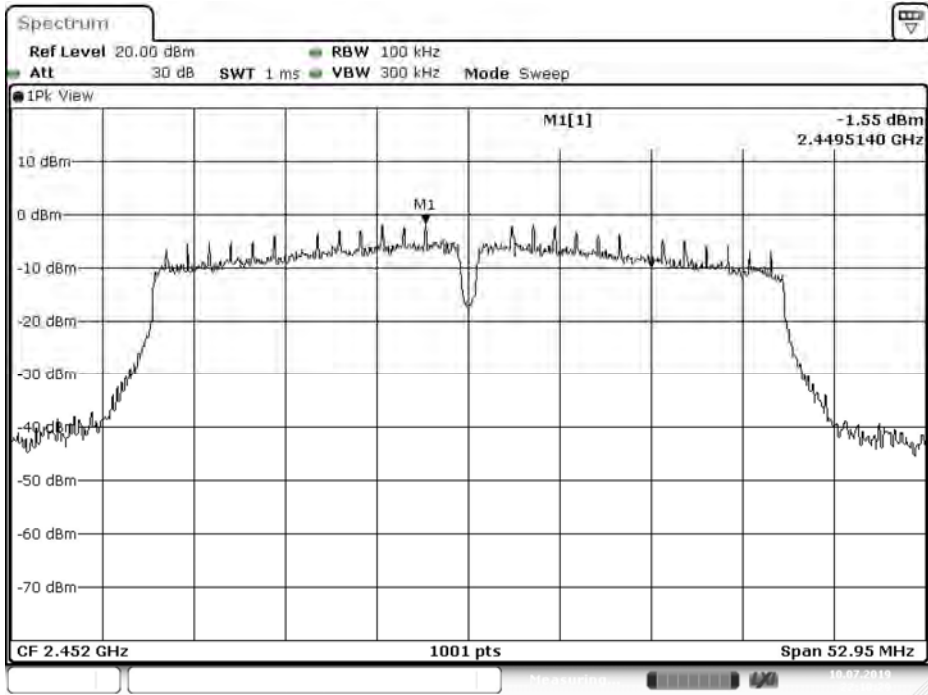
Date: 10 JUL 2019 22:05:26

Figure Channel 6: (Chain B)



Date: 10 JUL 2019 22:07:57

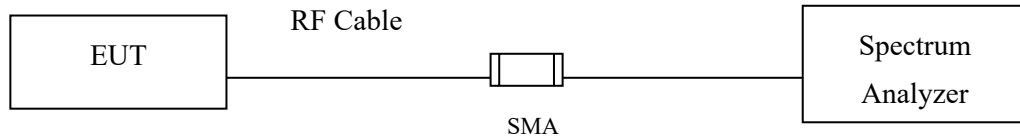
Figure Channel 9: (Chain B)



Date: 10. JUL. 2019 22:10:29

9. Duty Cycle

9.1. Test Setup



9.2. Test Procedure

The EUT was setup according to ANSI C63.10 2013; tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

9.3. Uncertainty

$\pm 2.31\text{msec}$

9.4. Test Result of Duty Cycle

Product : GigaConnect® Smart Gateway
Test Item : Duty Cycle
Test Mode : Transmit

Duty Cycle Formula:

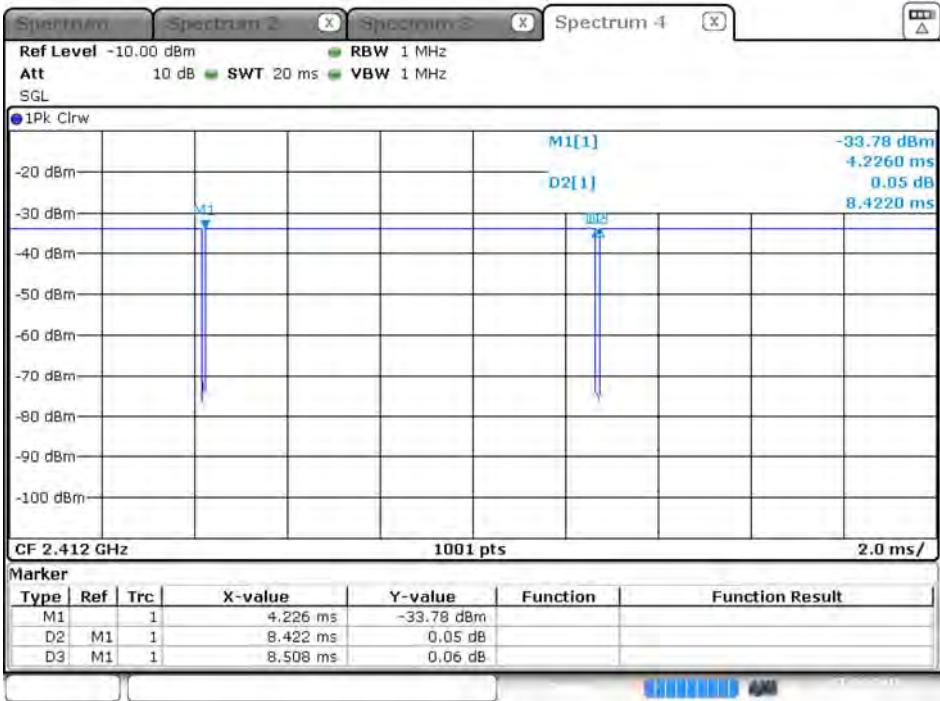
$\text{Duty Cycle} = \text{Ton} / (\text{Ton} + \text{Toff})$

$\text{Duty Factor} = 10 \text{ Log } (1/\text{Duty Cycle})$

Results:

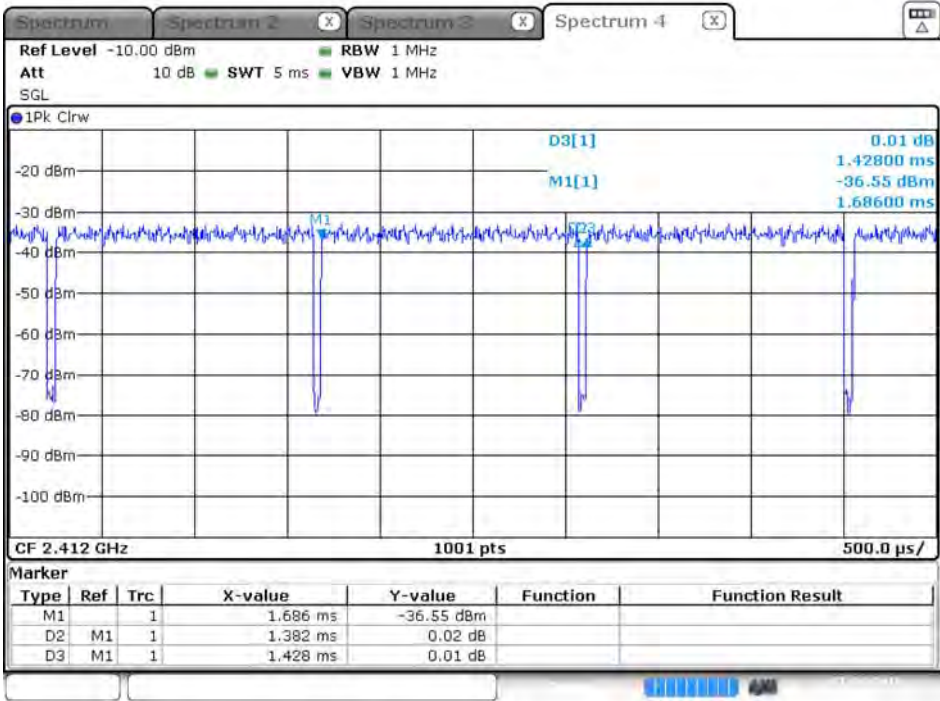
2.4GHz band	Ton (ms)	Ton + Toff (ms)	Duty Cycle (%)	Duty Factor (dB)
802.11b	8.4220	8.5080	98.99	0.04
802.11g	1.3820	1.4280	96.78	0.14
802.11n20	0.6680	0.8020	83.29	0.79
802.11n40	0.3160	0.5100	61.96	2.08

802.11b



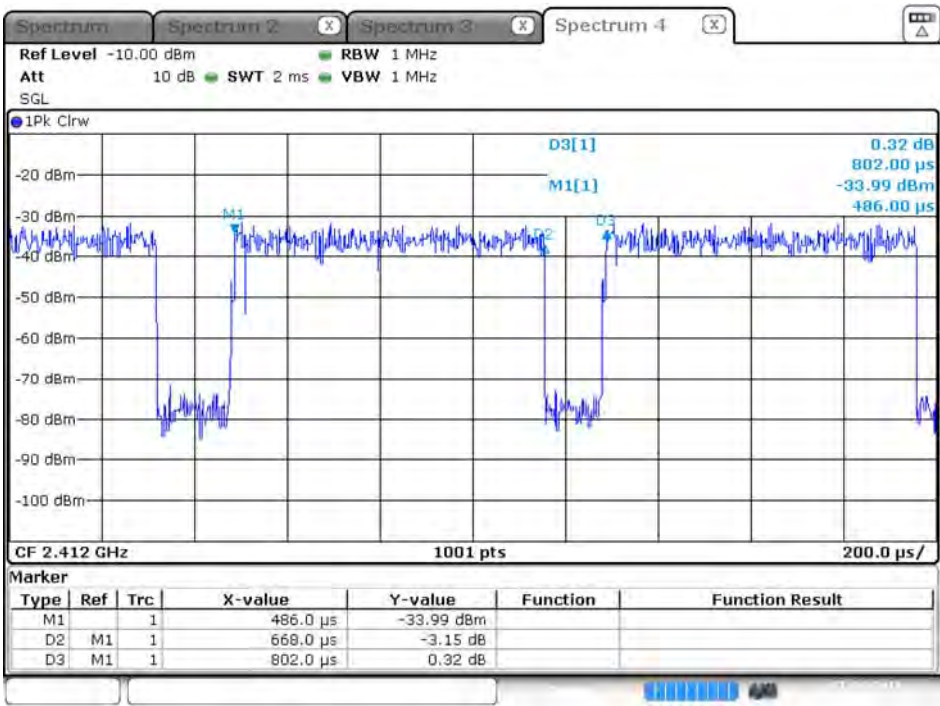
Date: 4.JUL.2019 18:57:09

802.11g



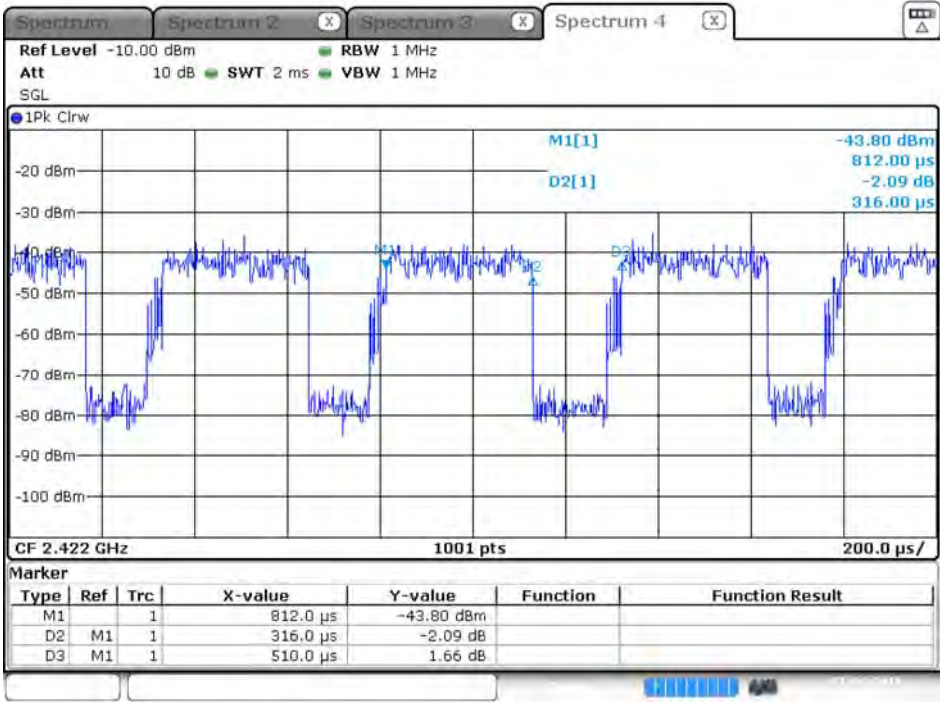
Date: 4.JUL.2019 18:55:55

802.11n20



Date: 4.JUL.2019 18:58:15

802.11n40



Date: 4.JUL.2019 19:00:00

10. EMI Reduction Method During Compliance Testing

No modification was made during testing.