FCC Test Report

Product Name	UNIT ASSY DA
Model No	AH2001
FCC ID.	ACJ932AH2001

Applicant	Panasonic Corporation
Address	4261 Ikonobe-cho, Tsuzuki-ku, Yokohama-shi, Kanagawa-ken, 224-8520, Japan

Date of Receipt	Oct. 26, 2018
Issue Date	Sep. 05, 2019
Report No.	18A0361R-RFUSP26V00
Report Version	V1.0

Testing Laboratory
3023

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

Issue Date: Sep. 05, 2019
Report No.: 18A0361R-RFUSP26V00

Product Name	UNIT ASSY DA
Applicant	Panasonic Corporation
Address	4261 Ikonobe-cho, Tsuzuki-ku, Yokohama-shi, Kanagawa-ken, 224-8520, Japan
Manufacturer	Panasonic Corporation
Model No.	AH2001
FCC ID.	ACJ932AH2001
EUT Rated Voltage	DC 10.8V-16V
EUT Test Voltage	DC 13.2V
Trade Name	Panasonic Corporation
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2018 ANSI C63.4: 2014, ANSI C63.10: 2013
Test Result	Complied

Documented By : Jinn Chen

(Senior Adm. Specialist / Jinn Chen)

Tested By : Steven Tsai

(Senior Engineer / Steven Tsai)

Approved By :

(Director / Vincent Lin)

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	UNIT ASSY DA
Trade Name	Panasonic Corporation
Model No.	AH2001
FCC ID.	ACJ932AH2001
Frequency Range	2412-2462MHz for 802.11b/g/n-20MHz, 2422-2452MHz for 802.11n-40MHz
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 150Mbps
Channel separation	802.11b/g/n: 5MHz
Type of Modulation	802.11b:DSSS (DBPSK, DQPSK, CCK) 802.11g/n:OFDM (BPSK, QPSK, 16QAM, 64QAM)
Antenna Type	PIFA Antenna
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	Panasonic	Antenna1	PIFA Antenna	-1.5dBi for 2.4GHz

Note: The antenna of EUT is conforming to FCC 15.203.

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 an UNIT ASSY DA with a built-in WLAN and Bluetooth transceiver, this report for 2.4GHz WLAN.
2. The EUT is installed in vehicle.
3. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
4. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11b is 1Mbps、802.11g is 6Mbps、802.11n(20M-BW) is 7.2Mbps and 802.11n(40M-BW) is 15Mbps)
5. 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 MCS0 7.2Mbps 20M-BW)
	Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

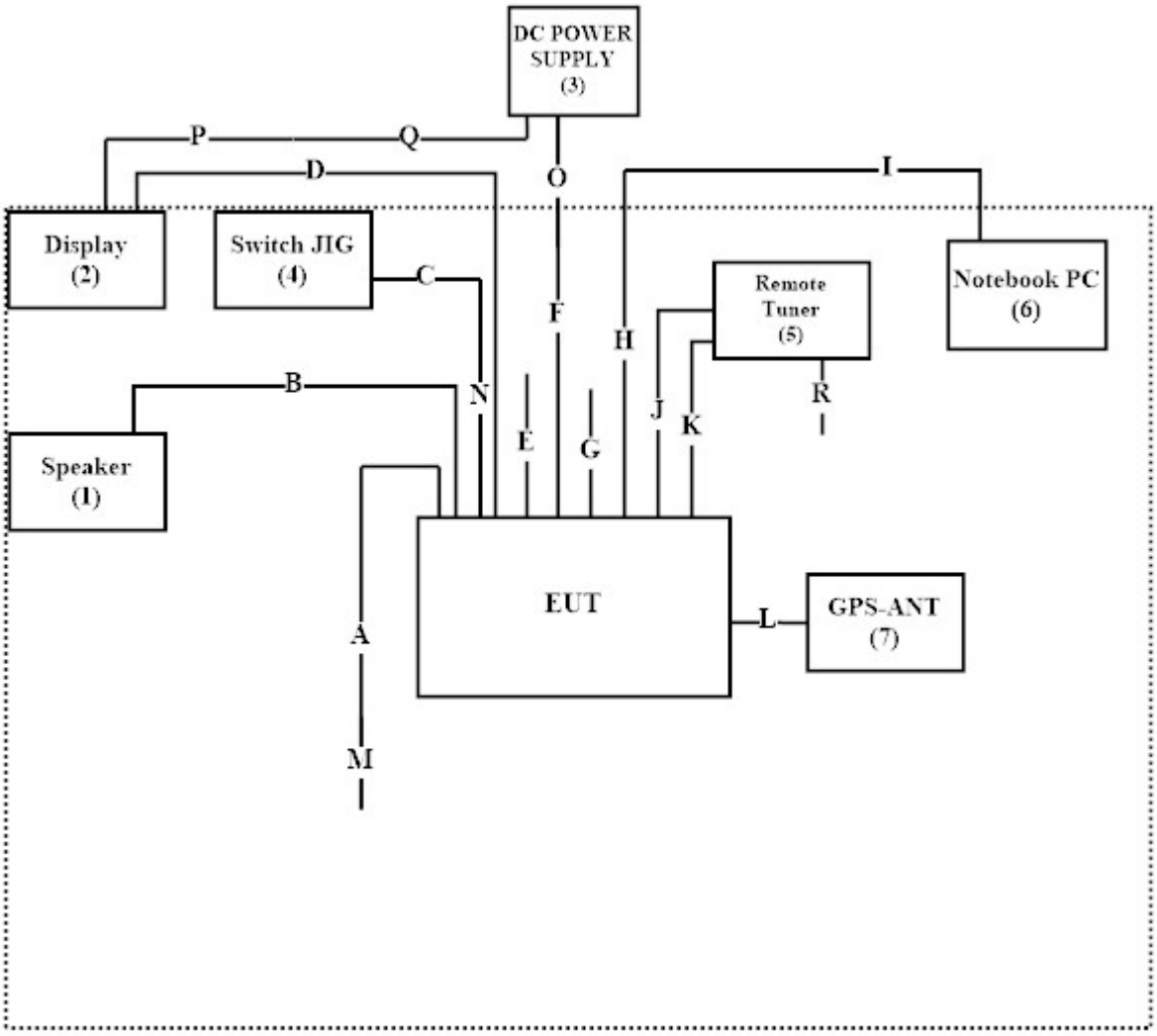
1.3. Tested System Details

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	Speaker	Panasonic	N/A	N/A	N/A
2	Display	Honda	39710-TVA-A110-M1	N/A	N/A
3	DC POWER SUPPLY	GWInstek	SPD-3606	GEQ820915	Non-shielded, 1.8m
4	Switch JIG	N/A	N/A	N/A	N/A
5	Remote Tuner	Panasonic	N/A	N/A	N/A
6	Notebook PC	Fujitsu	FMVNP5NE	N/A	Non-shielded, 0.9m
7	GPS-ANT	Honda	N/A	N/A	N/A

Signal Cable Type		Signal cable Description
A	USB Cable	Shielded, 1.0m
B	Main Cable	Non-shielded, 1.0m
C	Signal Cable	Non-shielded, 0.5m
D	LVDS Cable	Non-shielded, 1.0m
E	EXT2 Cable	Non-shielded, 0.5m
F	Main Cable	Non-shielded, 1.0m
G	EXT1 Cable	Non-shielded, 0.5m
H	USB Cable	Shielded, 1.0m
I	USB Cable	Shielded, 1.0m
J	RS485 Cable	Non-shielded, 1.0m
K	S/PDIF Cable	Non-shielded, 1.0m
L	GPS ANT Cable	Non-shielded, 0.6m
M	USB Cable	Non-shielded, 0.15m
N	Power Cable	Non-shielded, 0.8m
O	Power Cable	Non-shielded, 1.8m
P	Power Cable	Non-shielded, 0.85m
Q	Power Cable	Non-shielded, 1.8m
R	ANT Cable	Non-shielded, 0.17m

1.4. Configuration of Tested System



1.5. EUT Exercise Software

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

1.6. Test Facility

Ambient conditions in the laboratory:

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

USA : FCC Registration Number: TW0023

Canada : IC Registration Number: 4075A

Site Description : Accredited by TAF
Accredited Number: 3023

Test Laboratory : DEKRA Testing and Certification Co., Ltd
Address : No.159, Sec. 2, Wenhua 1st Rd., Linkou Dist.,
New Taipei City 24457, Taiwan, R.O.C.
Phone number : 886-2-2602-7968
Fax number : 866-2-2602-3286
Email address : info.tw@dekra.com
Website : http://www.dekra.com.tw

1.7. List of Test Item and Equipment

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
	Bluetooth Tester	R&S	CBT	101238	2019.01.21	2020.01.20

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

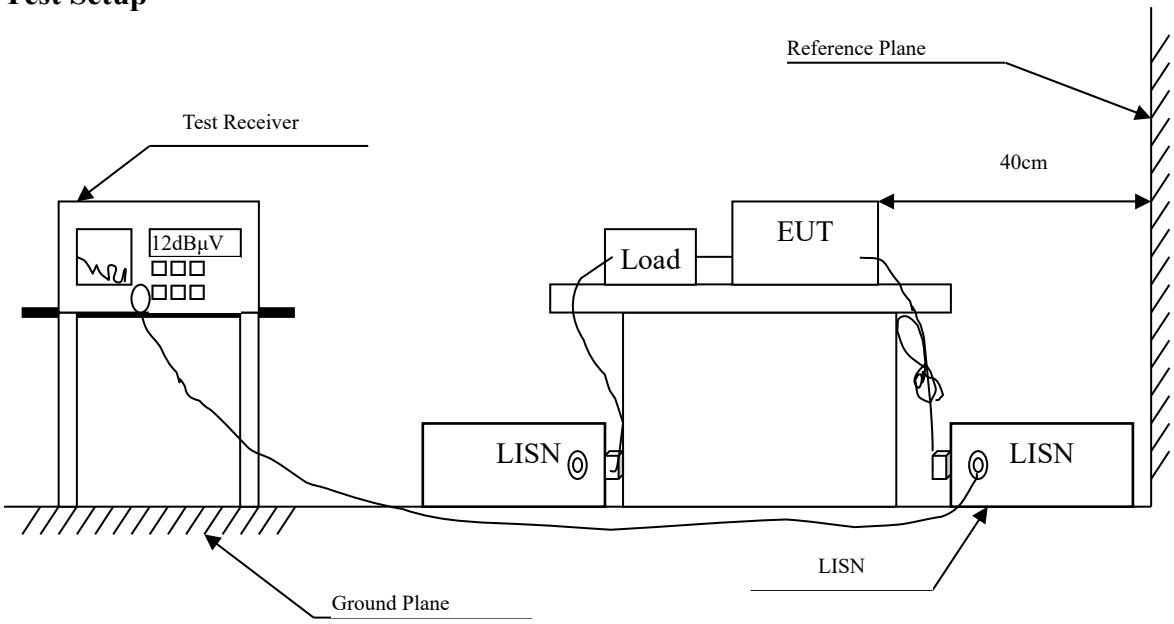
For Radiated measurements /ACB1

	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	9168-675	2018.06.05	2019.06.04
X	Horn Antenna	ETS-Lindgren	3117	00203800	2018.12.11	2019.12.10
X	Horn Antenna	Com-Power	AH-840	101087	2018.06.01	2019.05.31
X	Pre-Amplifier	EMCI	EMC001330	980316	2018.06.01	2019.05.31
X	Pre-Amplifier	EMCI	EMC051835SE	980311	2018.06.04	2019.06.03
X	Pre-Amplifier	EMCI	EMC05820SE	980310	2018.06.04	2019.06.03
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 (dBµV) 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 invested 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

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

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 : UNIT ASSY DA
Test Item : Peak Power Output Data
Test Mode : Mode 1: Transmit (802.11b 1Mbps)
Test Date : 2019/05/03

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	15.16	--	--	--	17.98	<30dBm	Pass
06	2437	14.96	14.91	14.87	14.82	17.74	<30dBm	Pass
11	2462	14.90	--	--	--	17.71	<30dBm	Pass

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

Product : UNIT ASSY DA
Test Item : Peak Power Output Data
Test Mode : Mode 2: Transmit (802.11g 6Mbps)
Test Date : 2019/05/03

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		6	9	12	18	24	36	48	54	6		
		Measurement Level (dBm)										
01	2412	8.95	--	--	--	--	--	--	--	14.98	<30dBm	Pass
06	2437	12.81	12.77	12.72	12.67	12.61	12.57	12.52	12.47	18.86	<30dBm	Pass
11	2462	12.71	--	--	--	--	--	--	--	18.74	<30dBm	Pass

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

Product : UNIT ASSY DA
Test Item : Peak Power Output Data
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)
Test Date : 2019/05/03

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		7.2	14.4	21.7	28.9	43.3	57.8	65	72.2	7.2		
		Measurement Level (dBm)										
01	2412	7.92	--	--	--	--	--	--	--	13.96	<30dBm	Pass
06	2437	11.69	11.63	11.58	11.52	11.47	11.43	11.37	11.32	17.81	<30dBm	Pass
11	2462	11.64	--	--	--	--	--	--	--	17.67	<30dBm	Pass

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

Product : UNIT ASSY DA
Test Item : Peak Power Output Data
Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)
Test Date : 2019/05/03

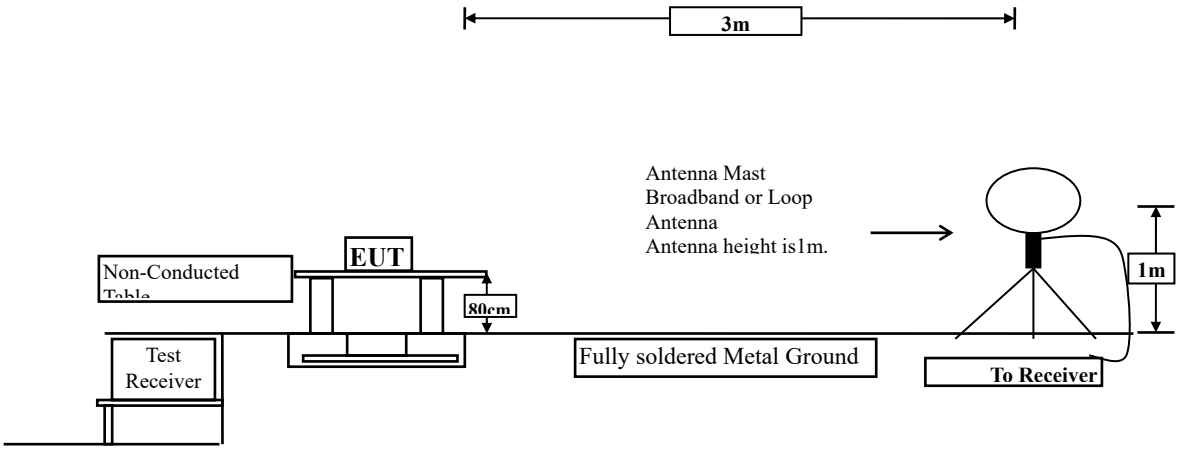
Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		15	30	45	60	90	120	135	150	15		
		Measurement Level (dBm)										
03	2422	7.13	--	--	--	--	--	--	--	13.11	<30dBm	Pass
06	2437	11.23	11.18	11.12	11.07	11.02	10.97	10.93	10.87	17.54	<30dBm	Pass
09	2452	11.25	--	--	--	--	--	--	--	17.61	<30dBm	Pass

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

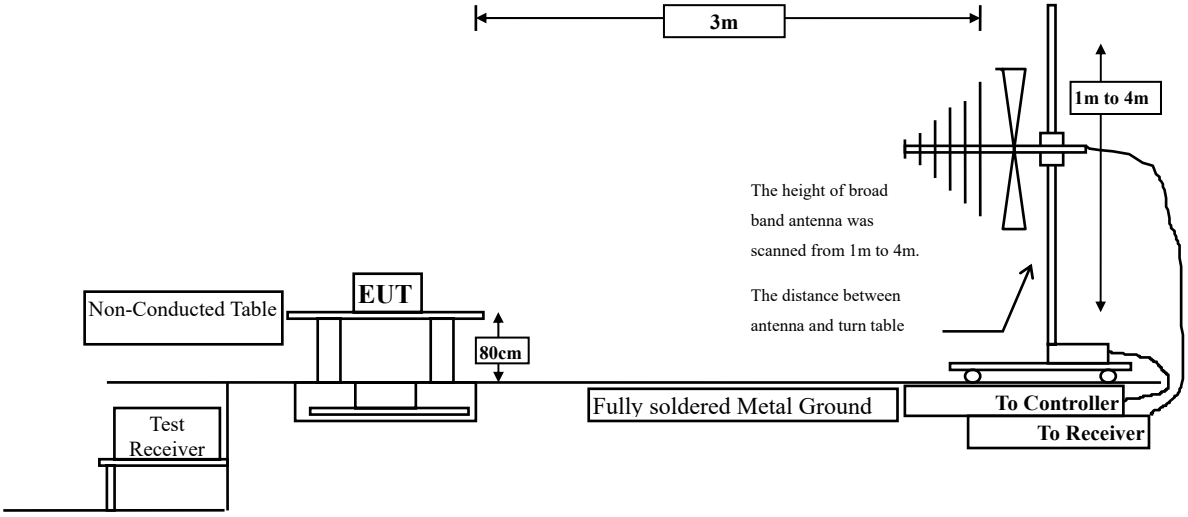
4. Radiated Emission

4.1. Test Setup

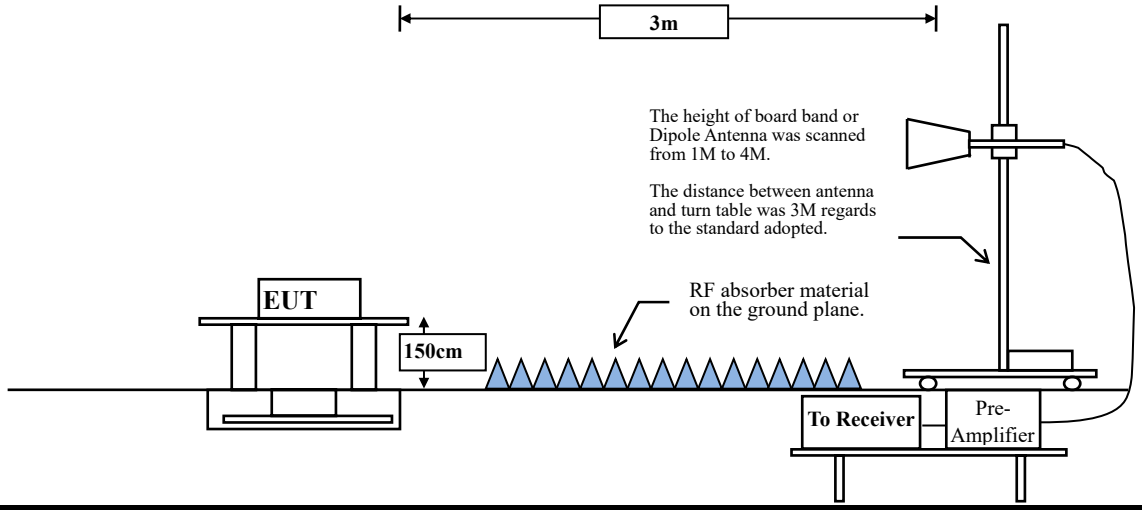
Radiated Emission Under 30MHz



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 form 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 ≥ 3 x 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 ≥ 98 %

VBW ≥ 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	97.68	3.6566	273	300
802.11g	97.62	3.5666	280	300
802.11n20	97.35	3.5566	281	300
802.11n40	96.26	3.5266	284	300

Note: Duty Cycle Refer to Section 9

4.4. Uncertainty

Horizontal polarization：

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

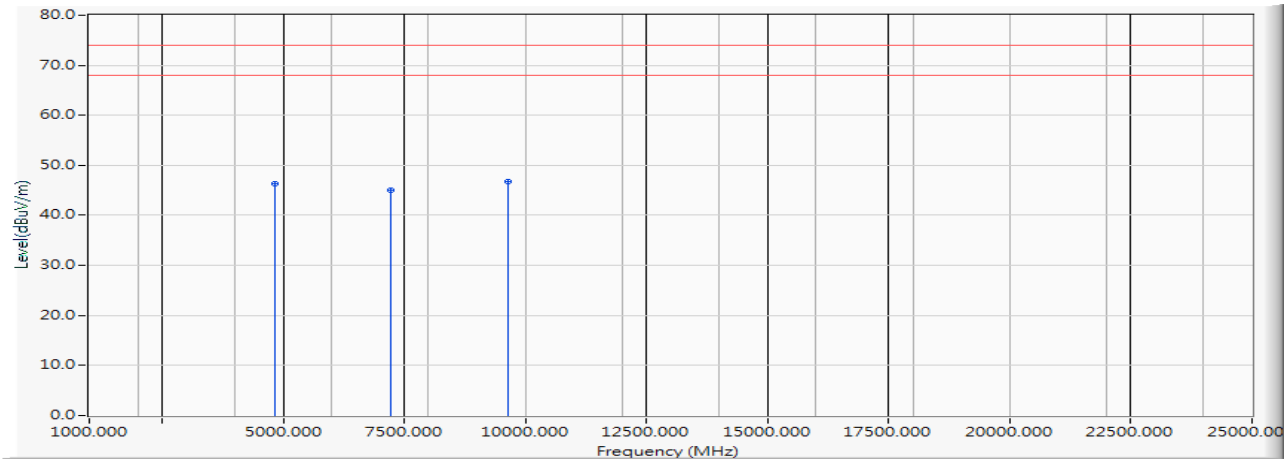
Vertical polarization：

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

4.5. Test Result of Radiated Emission

Product : UNIT ASSY DA
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)
Test Date : 2019/05/04

Horizontal



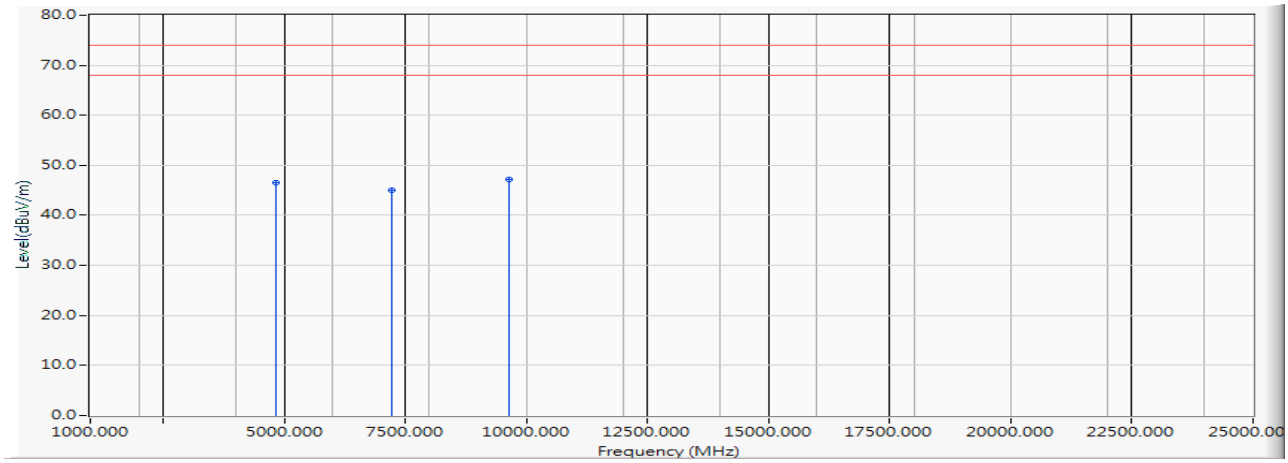
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4824.000	-6.086	52.310	46.225	-27.775	74.000	PEAK
2		7236.000	-3.033	48.070	45.037	-28.963	74.000	PEAK
3	*	9648.000	-0.680	47.440	46.760	-27.240	74.000	PEAK

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 : UNIT ASSY DA
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)
Test Date : 2019/05/04

Vertical



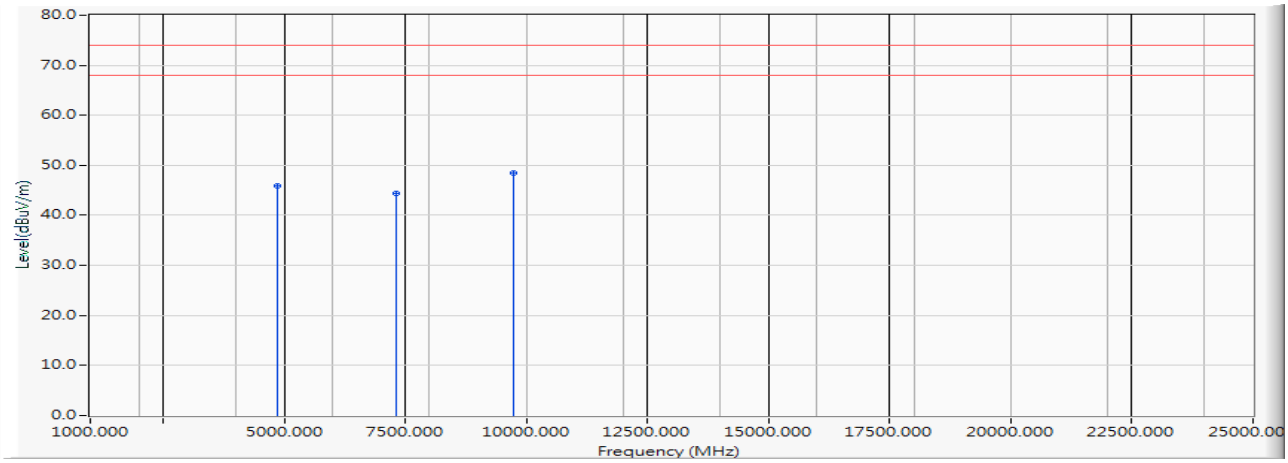
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4824.000	-6.086	52.620	46.535	-27.465	74.000	PEAK
2		7236.000	-3.033	48.150	45.117	-28.883	74.000	PEAK
3	*	9648.000	-0.680	47.960	47.280	-26.720	74.000	PEAK

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	:	UNIT ASSY DA
Test Item	:	Harmonic Radiated Emission Data
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)
Test Date	:	2019/05/04

Horizontal



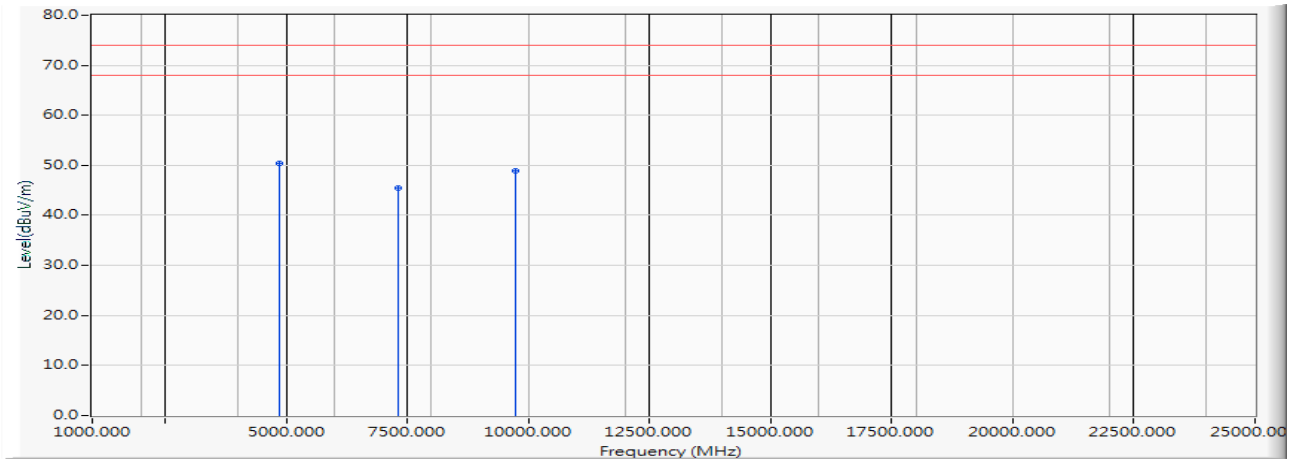
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4874.000	-6.055	51.980	45.925	-28.075	74.000	PEAK
2		7311.000	-2.976	47.330	44.355	-29.645	74.000	PEAK
3	*	9748.000	-0.502	49.000	48.498	-25.502	74.000	PEAK

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	:	UNIT ASSY DA
Test Item	:	Harmonic Radiated Emission Data
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)
Test Date	:	2019/05/04

Vertical



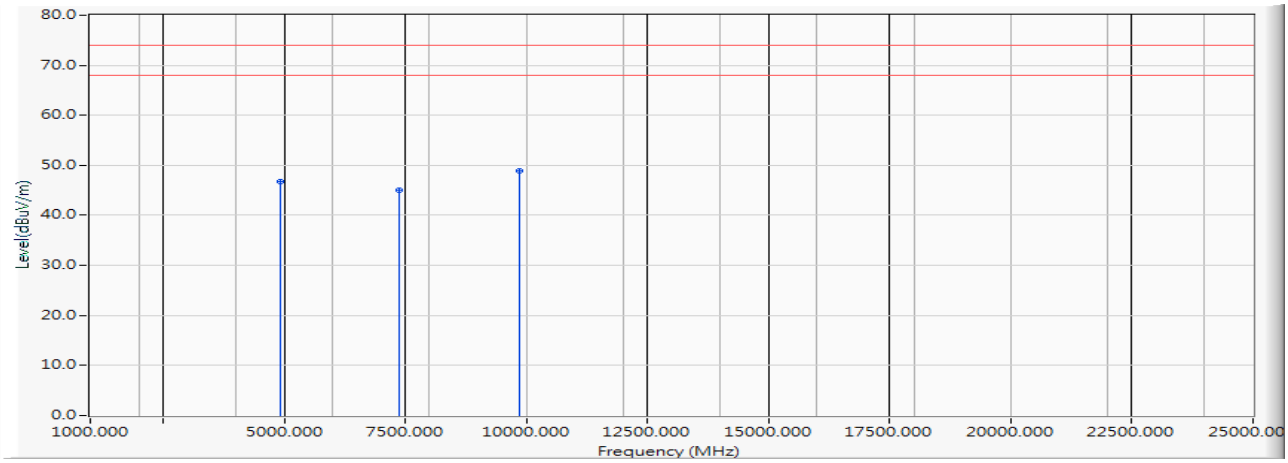
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4874.000	-6.055	56.350	50.295	-23.705	74.000	PEAK
2		7311.000	-2.976	48.390	45.415	-28.585	74.000	PEAK
3		9748.000	-0.502	49.370	48.868	-25.132	74.000	PEAK

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 : UNIT ASSY DA
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462 MHz)
Test Date : 2019/05/04

Horizontal



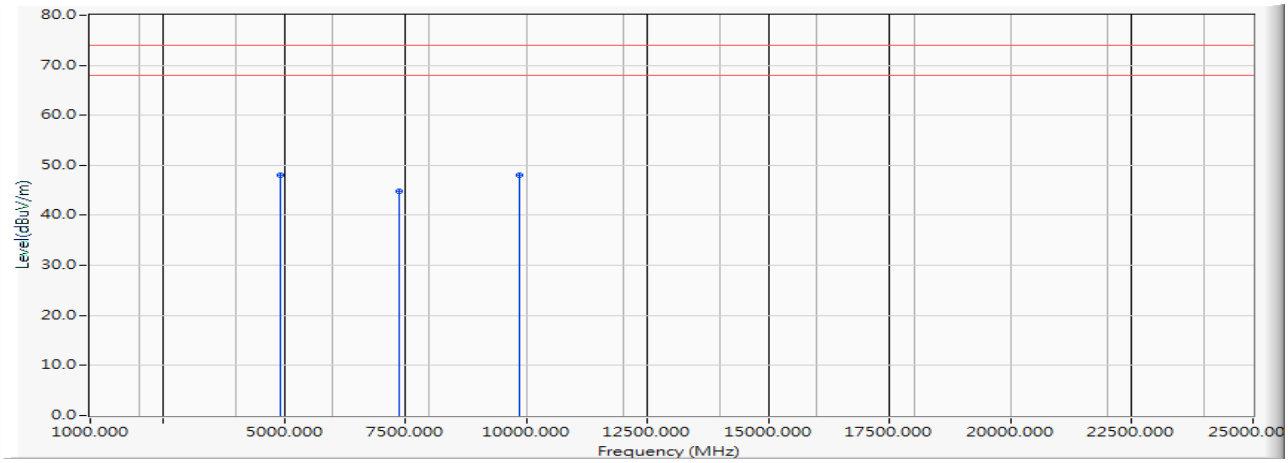
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4924.000	-6.041	52.790	46.750	-27.250	74.000	PEAK
2		7386.000	-2.861	48.000	45.138	-28.862	74.000	PEAK
3	*	9848.000	-0.399	49.300	48.901	-25.099	74.000	PEAK

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 : UNIT ASSY DA
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462 MHz)
Test Date : 2019/05/04

Vertical



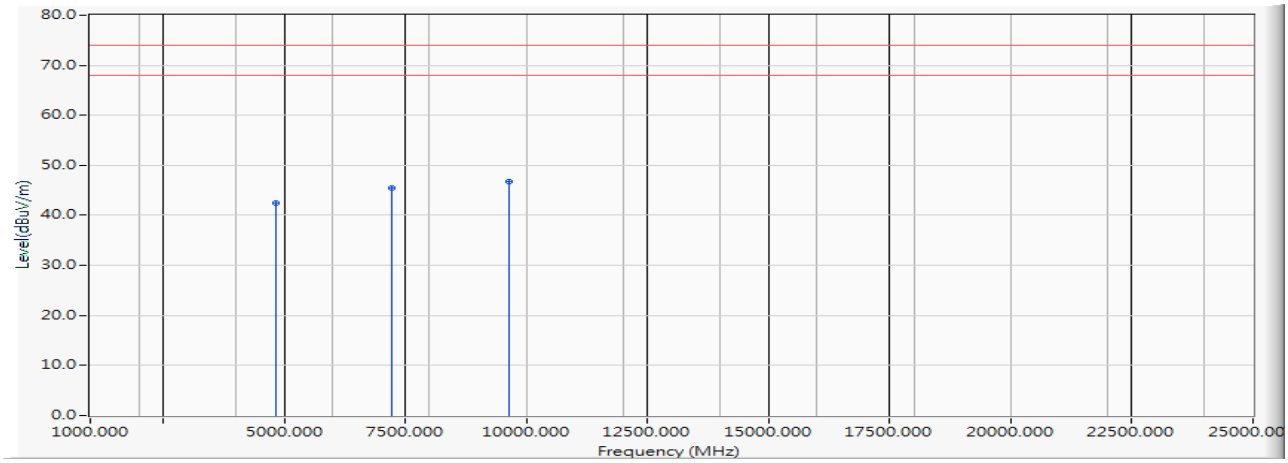
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4924.000	-6.041	54.010	47.970	-26.030	74.000	PEAK
2		7386.000	-2.861	47.740	44.878	-29.122	74.000	PEAK
3	*	9848.000	-0.399	48.510	48.111	-25.889	74.000	PEAK

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 : UNIT ASSY DA
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)
Test Date : 2019/05/04

Horizontal



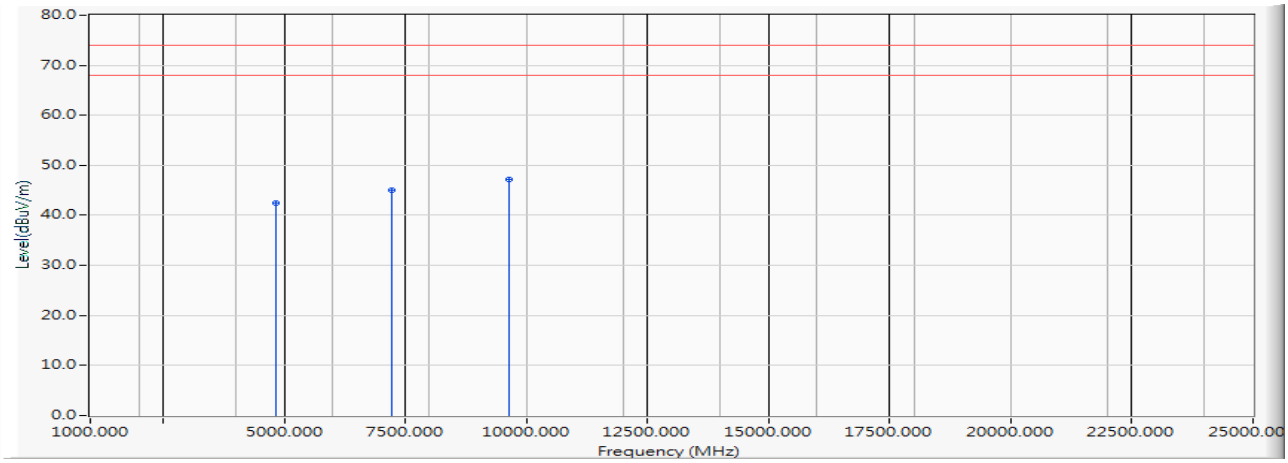
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4824.000	-6.086	48.550	42.465	-31.535	74.000	PEAK
2		7236.000	-3.033	48.460	45.427	-28.573	74.000	PEAK
3	*	9648.000	-0.680	47.340	46.660	-27.340	74.000	PEAK

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 : UNIT ASSY DA
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)
Test Date : 2019/05/04

Vertical



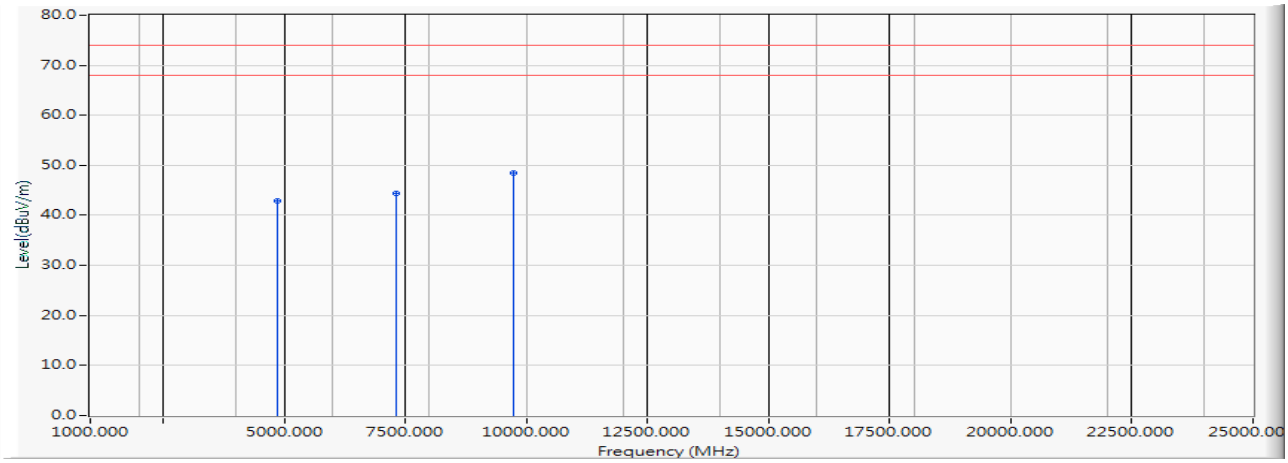
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4824.000	-6.086	48.520	42.435	-31.565	74.000	PEAK
2		7236.000	-3.033	48.160	45.127	-28.873	74.000	PEAK
3	*	9648.000	-0.680	47.790	47.110	-26.890	74.000	PEAK

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 : UNIT ASSY DA
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437 MHz)
Test Date : 2019/05/04

Horizontal



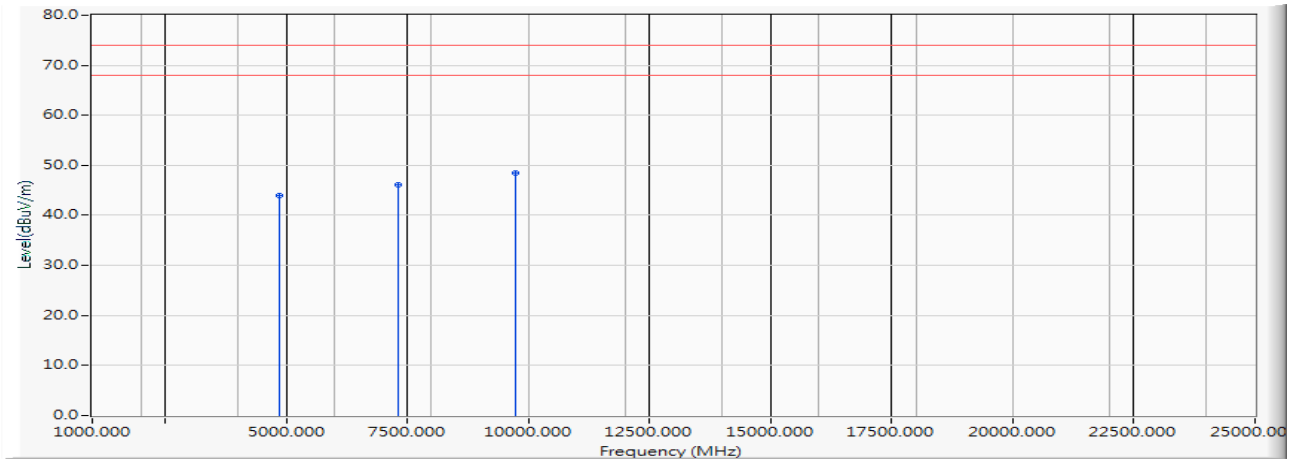
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4874.000	-6.055	48.900	42.845	-31.155	74.000	PEAK
2		7311.000	-2.976	47.340	44.365	-29.635	74.000	PEAK
3	*	9748.000	-0.502	48.990	48.488	-25.512	74.000	PEAK

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.

Product : UNIT ASSY DA
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437 MHz)
Test Date : 2019/05/04

Vertical



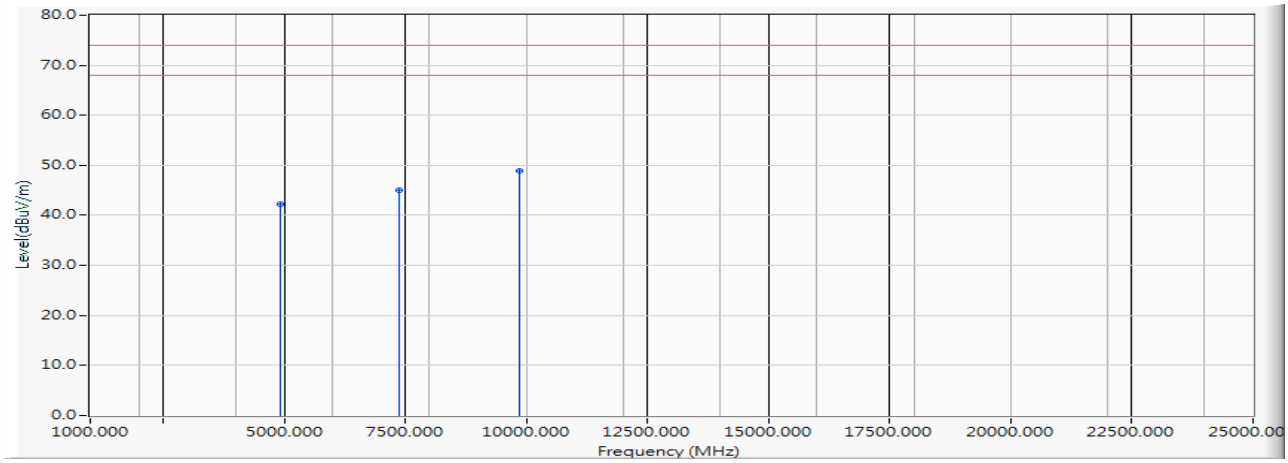
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4874.000	-6.055	49.970	43.915	-30.085	74.000	PEAK
2		7311.000	-2.976	49.180	46.205	-27.795	74.000	PEAK
3	*	9748.000	-0.502	49.010	48.508	-25.492	74.000	PEAK

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 : UNIT ASSY DA
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462 MHz)
Test Date : 2019/05/04

Horizontal



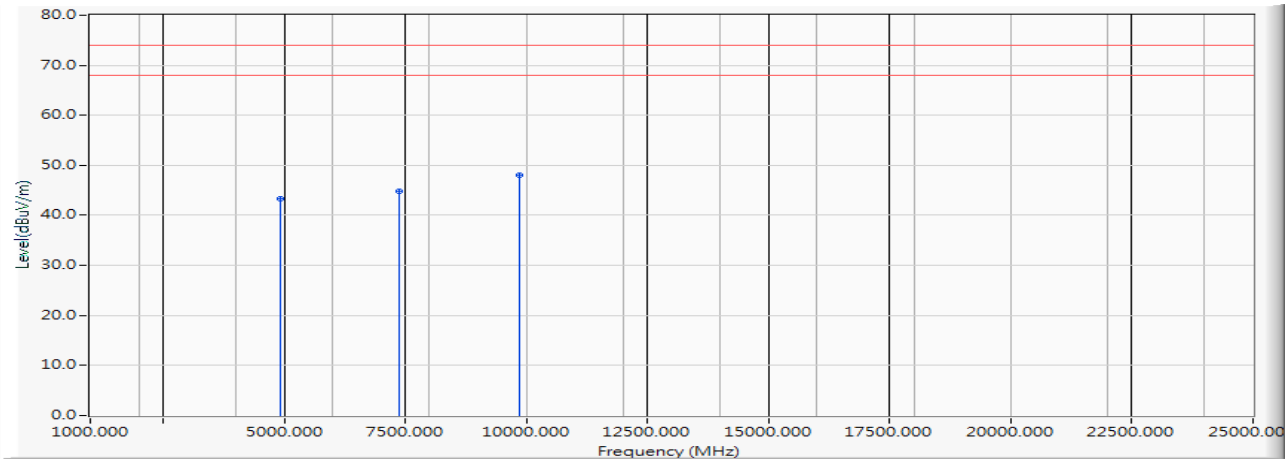
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4924.000	-6.041	48.260	42.220	-31.780	74.000	PEAK
2		7386.000	-2.861	47.930	45.068	-28.932	74.000	PEAK
3	*	9848.000	-0.399	49.200	48.801	-25.199	74.000	PEAK

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 : UNIT ASSY DA
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462 MHz)
Test Date : 2019/05/04

Vertical



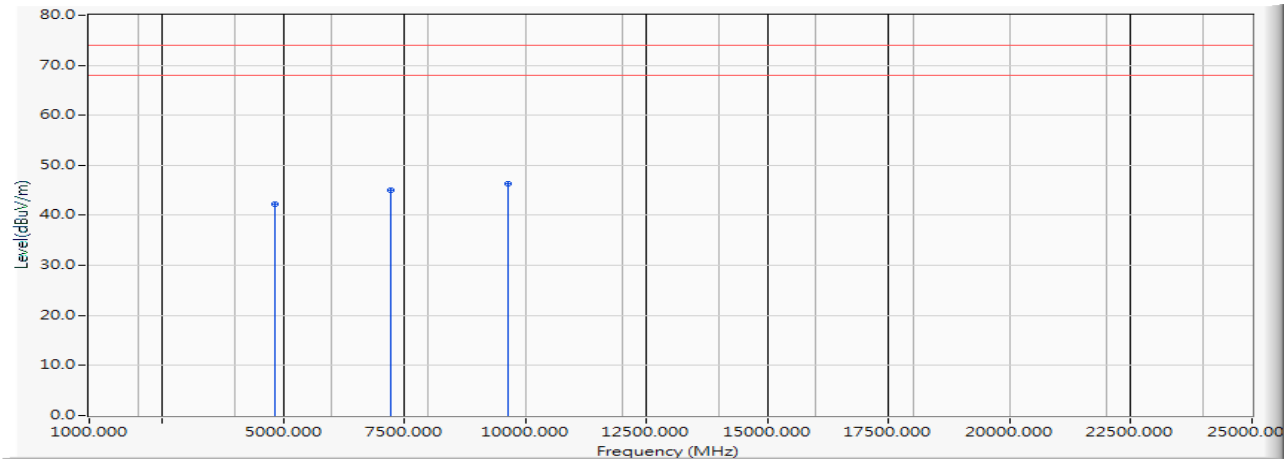
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4924.000	-6.041	49.440	43.400	-30.600	74.000	PEAK
2		7386.000	-2.861	47.750	44.888	-29.112	74.000	PEAK
3	*	9848.000	-0.399	48.530	48.131	-25.869	74.000	PEAK

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 : UNIT ASSY DA
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)(2412MHz)
Test Date : 2019/05/04

Horizontal



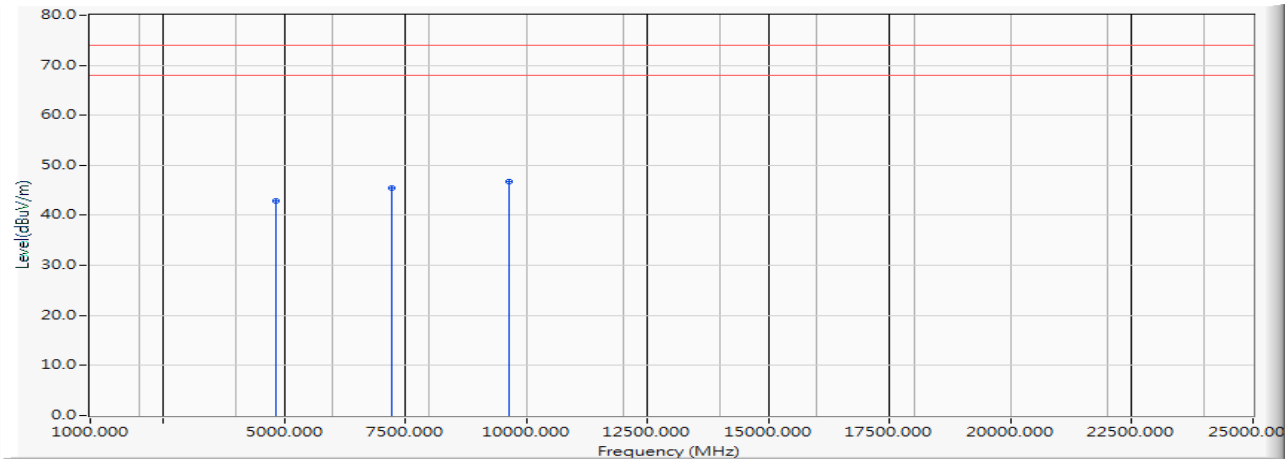
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4824.000	-6.086	48.420	42.335	-31.665	74.000	PEAK
2		7236.000	-3.033	48.100	45.067	-28.933	74.000	PEAK
3	*	9648.000	-0.680	46.930	46.250	-27.750	74.000	PEAK

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 : UNIT ASSY DA
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)(2412MHz)
Test Date : 2019/05/04

Vertical



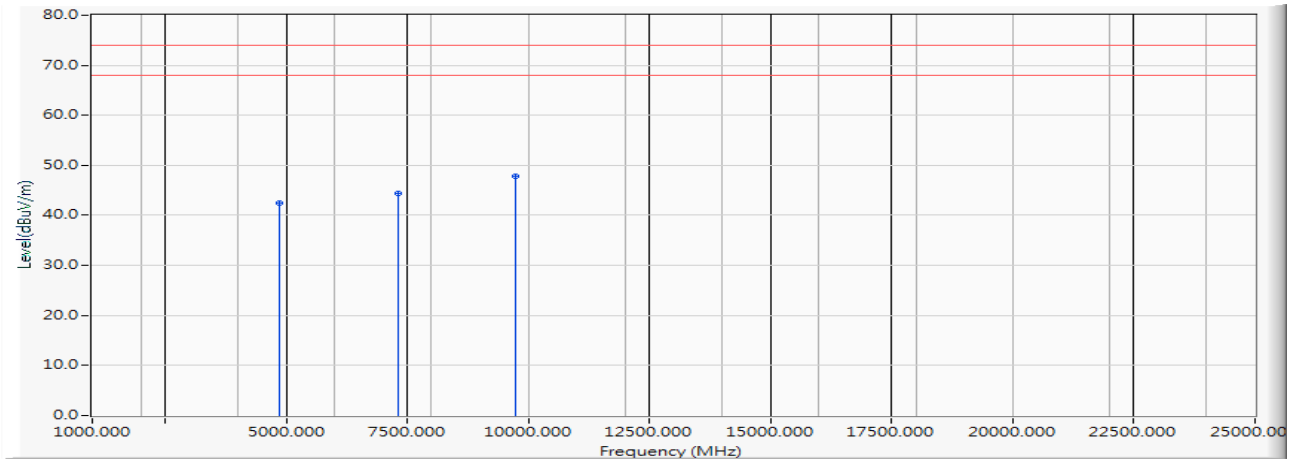
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4824.000	-6.086	48.920	42.835	-31.165	74.000	PEAK
2		7236.000	-3.033	48.420	45.387	-28.613	74.000	PEAK
3	*	9648.000	-0.680	47.330	46.650	-27.350	74.000	PEAK

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	:	UNIT ASSY DA
Test Item	:	Harmonic Radiated Emission Data
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2437 MHz)
Test Date	:	2019/05/04

Horizontal



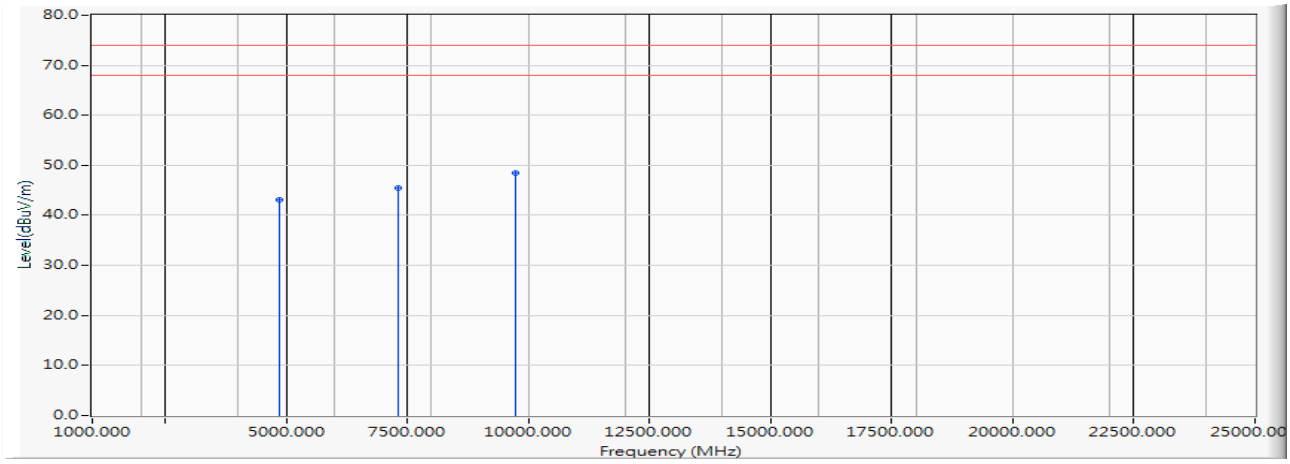
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4874.000	-6.055	48.530	42.475	-31.525	74.000	PEAK
2		7311.000	-2.976	47.420	44.445	-29.555	74.000	PEAK
3	*	9748.000	-0.502	48.370	47.868	-26.132	74.000	PEAK

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	:	UNIT ASSY DA
Test Item	:	Harmonic Radiated Emission Data
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2437 MHz)
Test Date	:	2019/05/04

Vertical



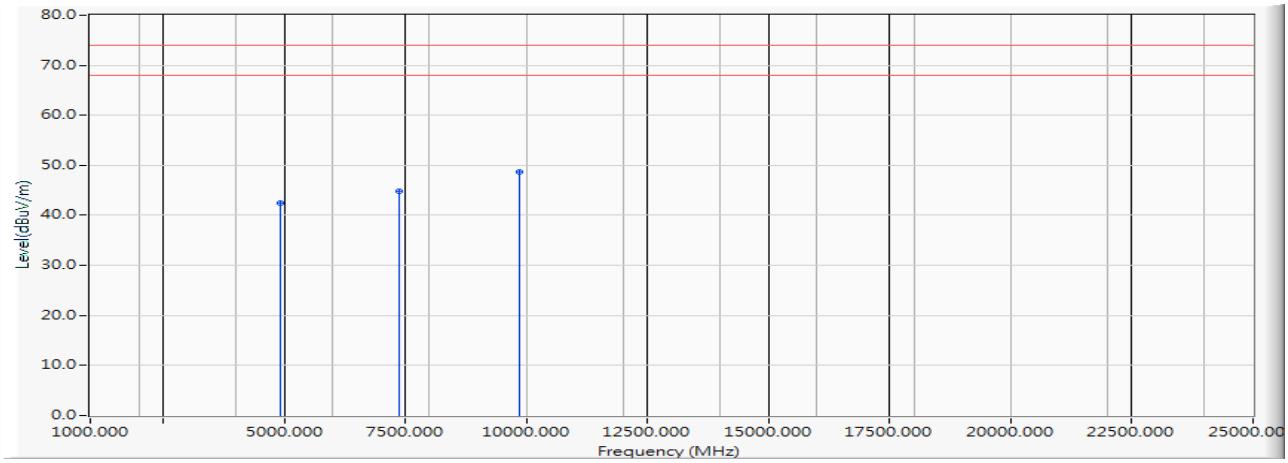
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4874.000	-6.055	49.060	43.005	-30.995	74.000	PEAK
2		7311.000	-2.976	48.450	45.475	-28.525	74.000	PEAK
3	*	9748.000	-0.502	48.960	48.458	-25.542	74.000	PEAK

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 : UNIT ASSY DA
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462 MHz)
Test Date : 2019/05/04

Horizontal



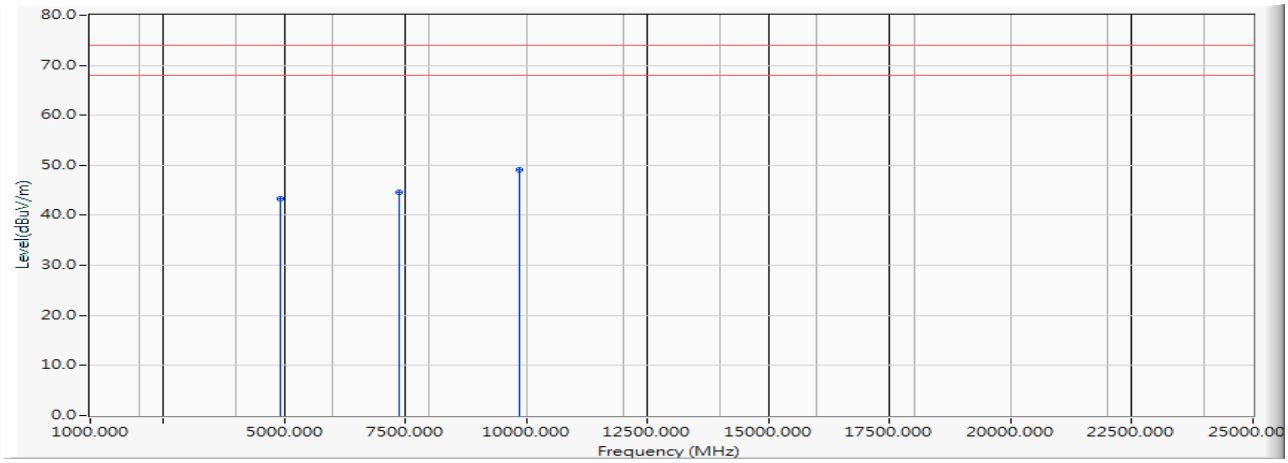
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4924.000	-6.041	48.440	42.400	-31.600	74.000	PEAK
2		7386.000	-2.861	47.680	44.818	-29.182	74.000	PEAK
3	*	9848.000	-0.399	49.040	48.641	-25.359	74.000	PEAK

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 : UNIT ASSY DA
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462 MHz)
Test Date : 2019/05/04

Vertical



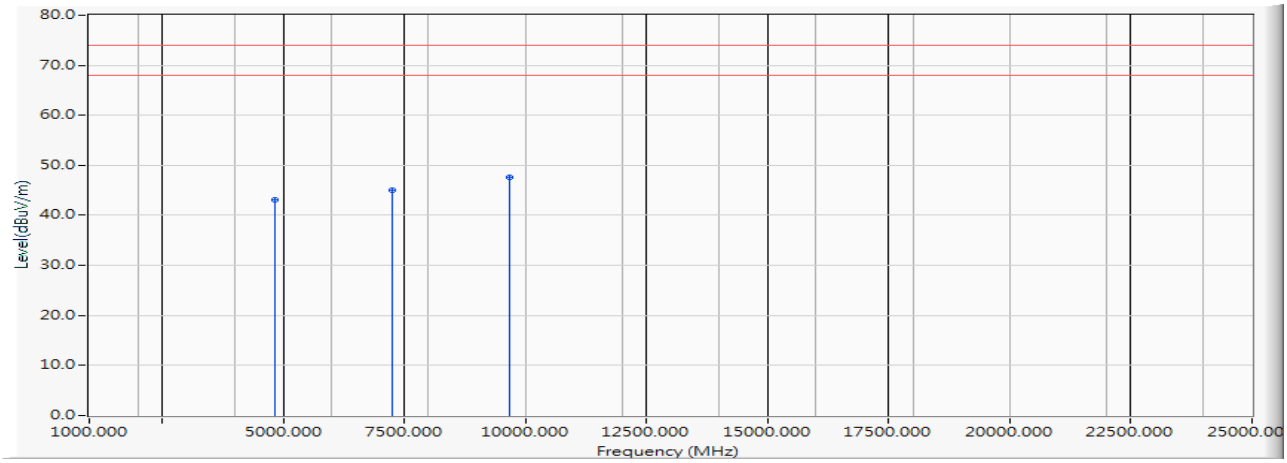
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4924.000	-6.041	49.260	43.220	-30.780	74.000	PEAK
2		7386.000	-2.861	47.560	44.698	-29.302	74.000	PEAK
3	*	9848.000	-0.399	49.450	49.051	-24.949	74.000	PEAK

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 : UNIT ASSY DA
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)(2422MHz)
Test Date : 2019/05/04

Horizontal



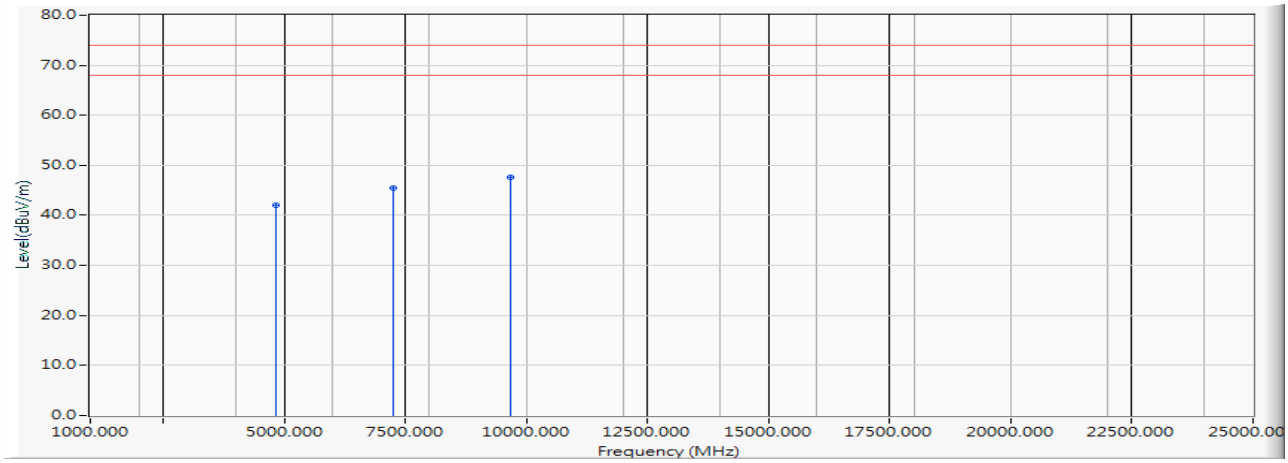
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4844.000	-6.075	49.170	43.094	-30.906	74.000	PEAK
2		7266.000	-3.025	48.160	45.134	-28.866	74.000	PEAK
3	*	9688.000	-0.618	48.300	47.683	-26.317	74.000	PEAK

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 : UNIT ASSY DA
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)(2422MHz)
Test Date : 2019/05/04

Vertical



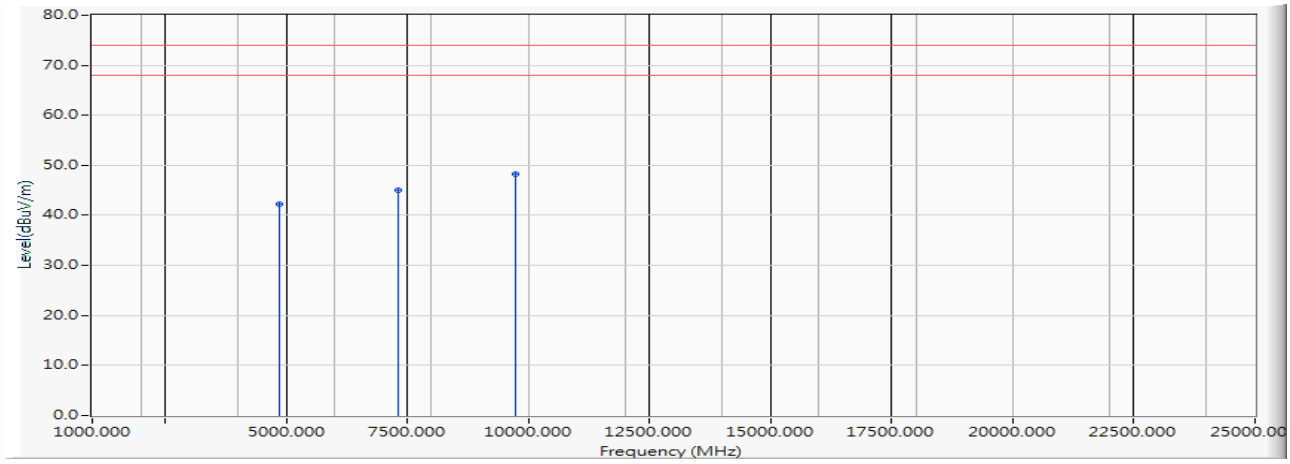
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4844.000	-6.075	48.210	42.134	-31.866	74.000	PEAK
2		7266.000	-3.025	48.570	45.544	-28.456	74.000	PEAK
3	*	9688.000	-0.618	48.280	47.663	-26.337	74.000	PEAK

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 : UNIT ASSY DA
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2437 MHz)
Test Date : 2019/05/04

Horizontal



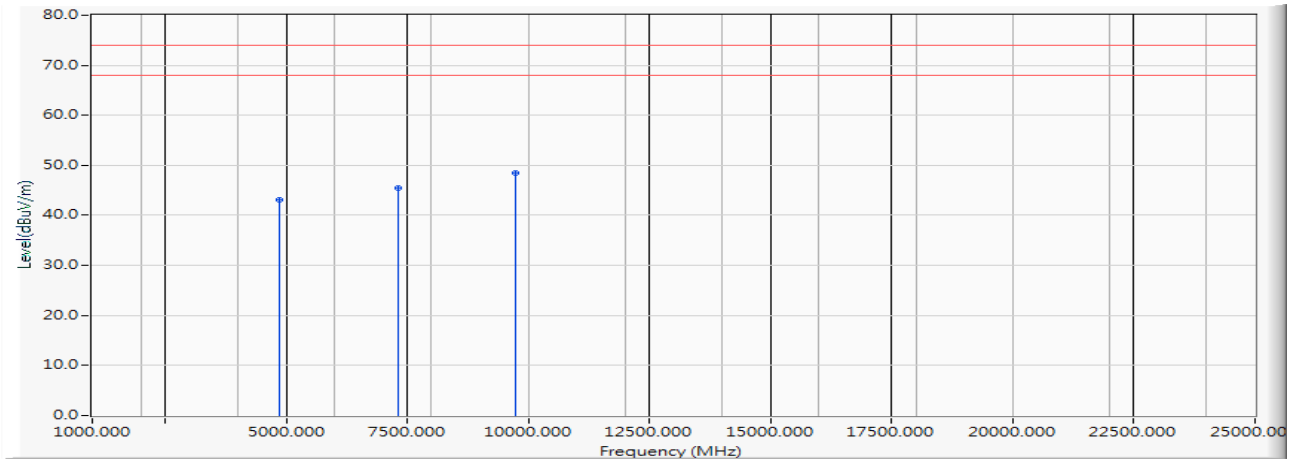
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4874.000	-6.055	48.300	42.245	-31.755	74.000	PEAK
2		7311.000	-2.976	47.970	44.995	-29.005	74.000	PEAK
3	*	9748.000	-0.502	48.750	48.248	-25.752	74.000	PEAK

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 : UNIT ASSY DA
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2437 MHz)
Test Date : 2019/05/04

Vertical



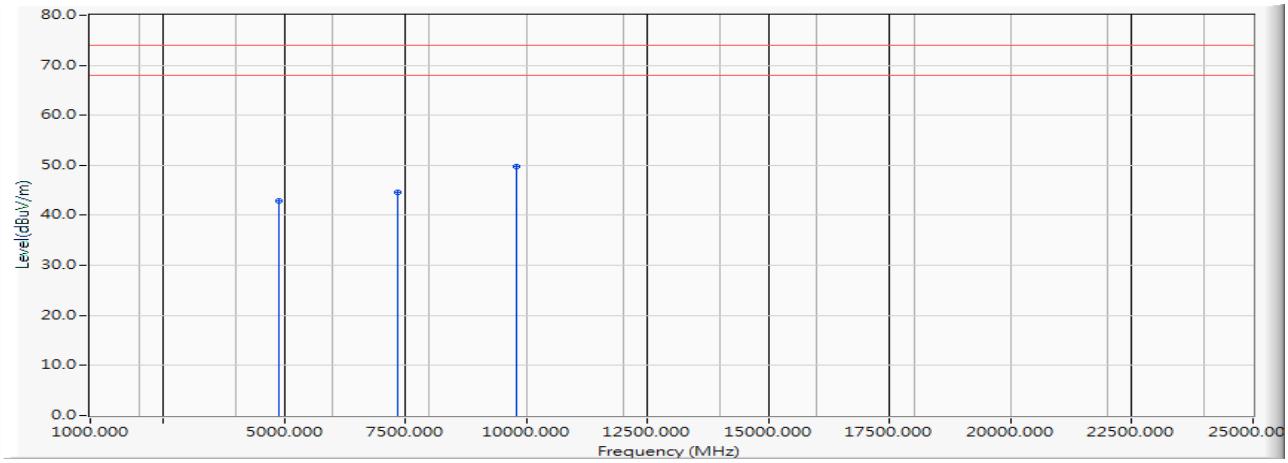
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4874.000	-6.055	49.090	43.035	-30.965	74.000	PEAK
2		7311.000	-2.976	48.550	45.575	-28.425	74.000	PEAK
3	*	9748.000	-0.502	49.070	48.568	-25.432	74.000	PEAK

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 : UNIT ASSY DA
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)(2452 MHz)
Test Date : 2019/05/04

Horizontal



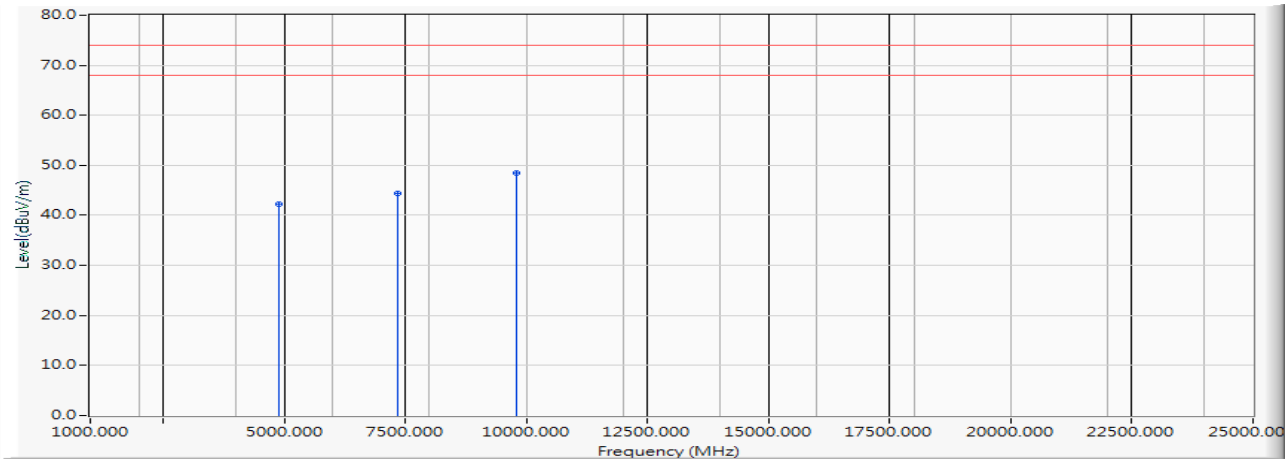
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4904.000	-6.069	48.990	42.921	-31.079	74.000	PEAK
2		7356.000	-2.911	47.440	44.530	-29.470	74.000	PEAK
3	*	9808.000	-0.445	50.120	49.675	-24.325	74.000	PEAK

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 : UNIT ASSY DA
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)(2452 MHz)
Test Date : 2019/05/04

Vertical



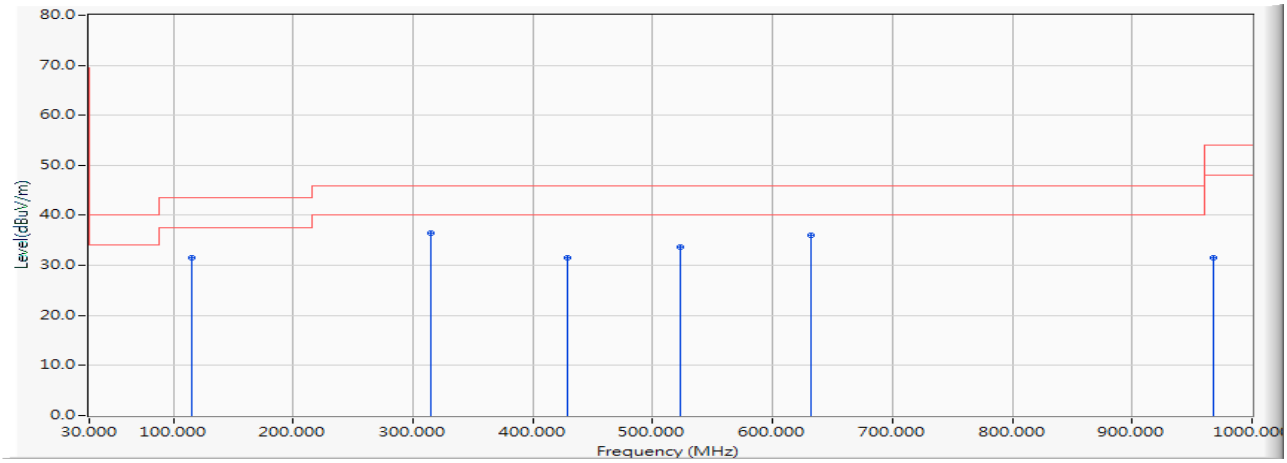
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4904.000	-6.069	48.370	42.301	-31.699	74.000	PEAK
2		7356.000	-2.911	47.350	44.440	-29.560	74.000	PEAK
3	*	9808.000	-0.445	49.020	48.575	-25.425	74.000	PEAK

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 : UNIT ASSY DA
Test Item : General Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11b 1Mbps)(2437 MHz)
Test Date : 2019/05/13

Horizontal



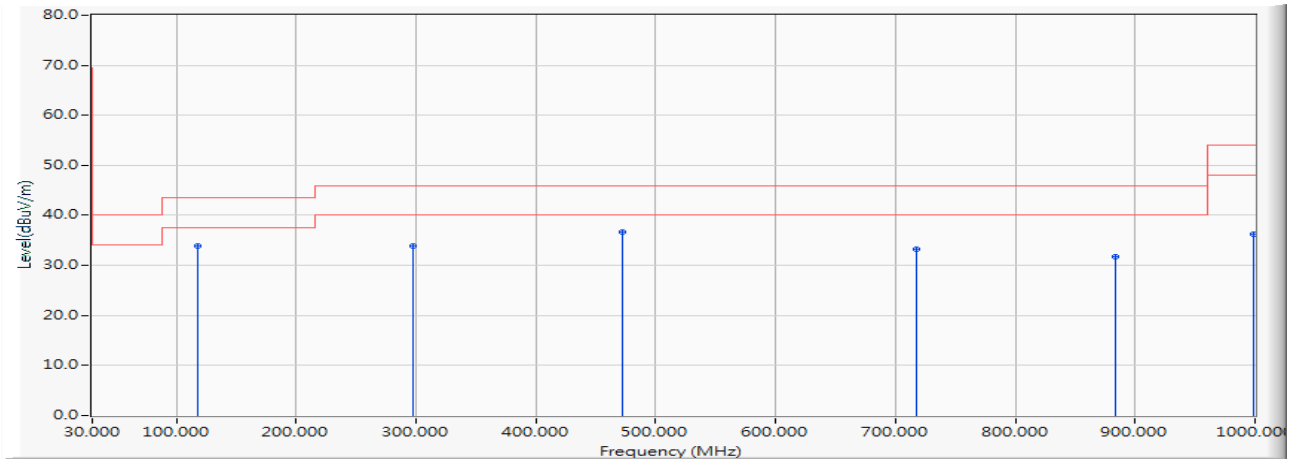
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		115.754	-13.260	44.723	31.463	-12.037	43.500	QUASIPEAK
2	*	315.377	-9.252	45.629	36.377	-9.623	46.000	QUASIPEAK
3		429.246	-6.356	37.819	31.463	-14.537	46.000	QUASIPEAK
4		523.435	-4.494	38.182	33.688	-12.312	46.000	QUASIPEAK
5		631.681	-2.481	38.608	36.127	-9.873	46.000	QUASIPEAK
6		967.667	2.023	29.517	31.540	-22.460	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 : UNIT ASSY DA
Test Item : General Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11b 1Mbps)(2437 MHz)
Test Date : 2019/05/13

Vertical



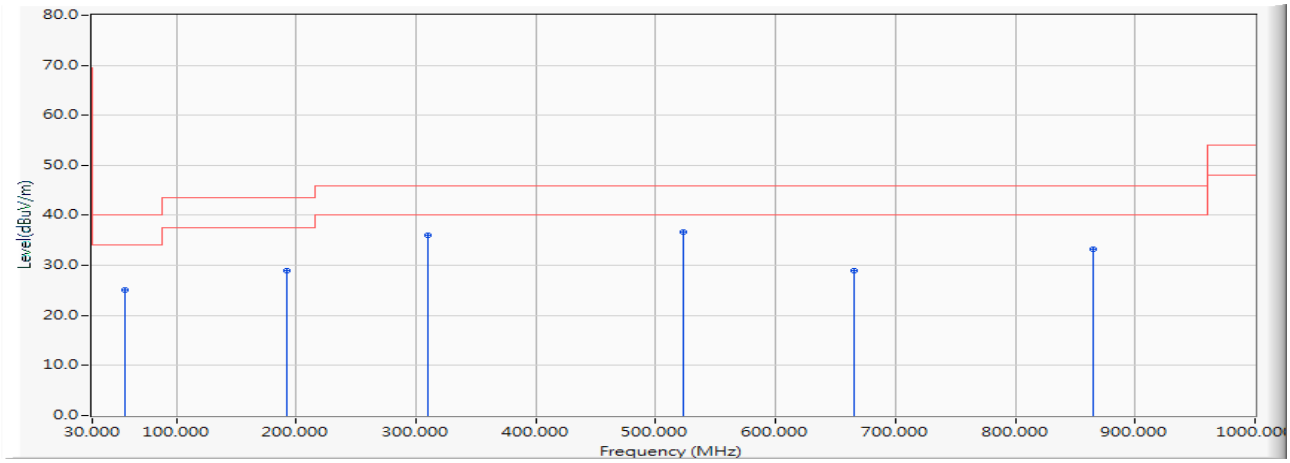
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		118.565	-12.958	46.951	33.992	-9.508	43.500	QUASIPEAK
2		297.101	-9.675	43.575	33.899	-12.101	46.000	QUASIPEAK
3	*	472.826	-5.452	42.064	36.613	-9.387	46.000	QUASIPEAK
4		717.435	-1.130	34.384	33.254	-12.746	46.000	QUASIPEAK
5		883.319	1.008	30.697	31.705	-14.295	46.000	QUASIPEAK
6		998.594	2.490	33.656	36.146	-17.854	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 : UNIT ASSY DA
Test Item : General Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11g 6Mbps)(2437 MHz)
Test Date : 2019/05/13

Horizontal



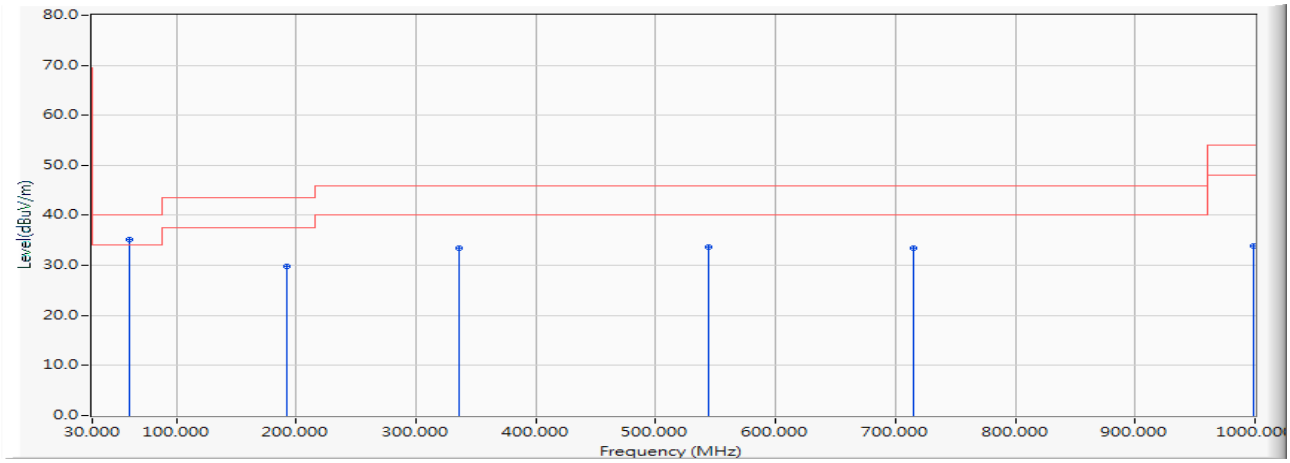
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		56.710	-11.308	36.307	24.999	-15.001	40.000	QUASIPEAK
2		191.667	-13.115	42.057	28.941	-14.559	43.500	QUASIPEAK
3		309.754	-9.385	45.453	36.068	-9.932	46.000	QUASIPEAK
4	*	523.435	-4.494	41.173	36.679	-9.321	46.000	QUASIPEAK
5		665.420	-2.043	30.934	28.891	-17.109	46.000	QUASIPEAK
6		865.043	0.787	32.509	33.295	-12.705	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 : UNIT ASSY DA
Test Item : General Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11g 6Mbps)(2437 MHz)
Test Date : 2019/05/13

Vertical



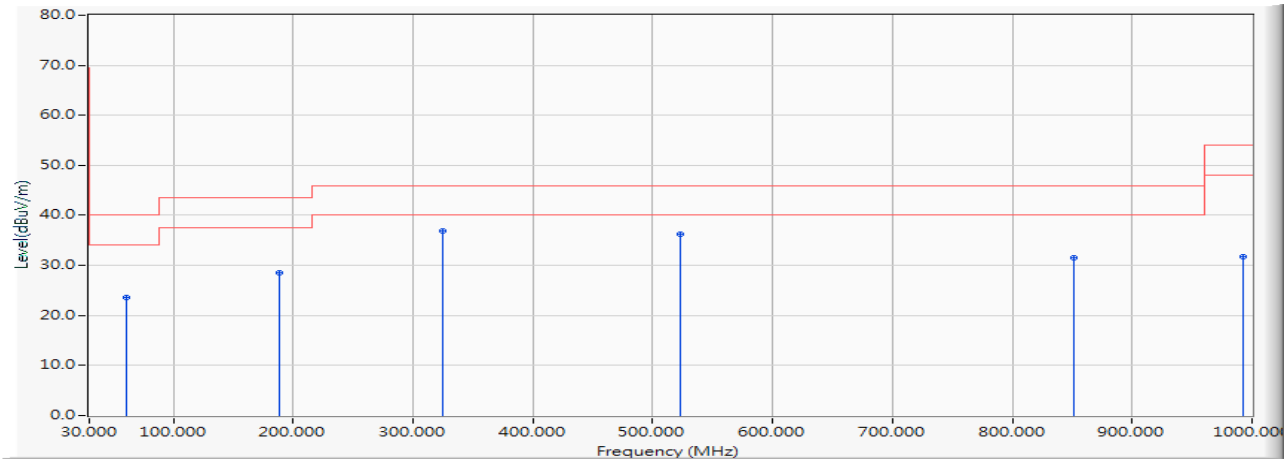
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	60.928	-11.804	46.974	35.170	-4.830	40.000	QUASIPEAK
2		191.667	-13.115	42.912	29.796	-13.704	43.500	QUASIPEAK
3		336.464	-8.752	42.265	33.513	-12.487	46.000	QUASIPEAK
4		544.522	-4.070	37.695	33.625	-12.375	46.000	QUASIPEAK
5		714.623	-1.173	34.554	33.381	-12.619	46.000	QUASIPEAK
6		998.594	2.490	31.464	33.954	-20.046	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 : UNIT ASSY DA
Test Item : General Radiated Emission Data
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)(2437 MHz)
Test Date : 2019/05/13

Horizontal



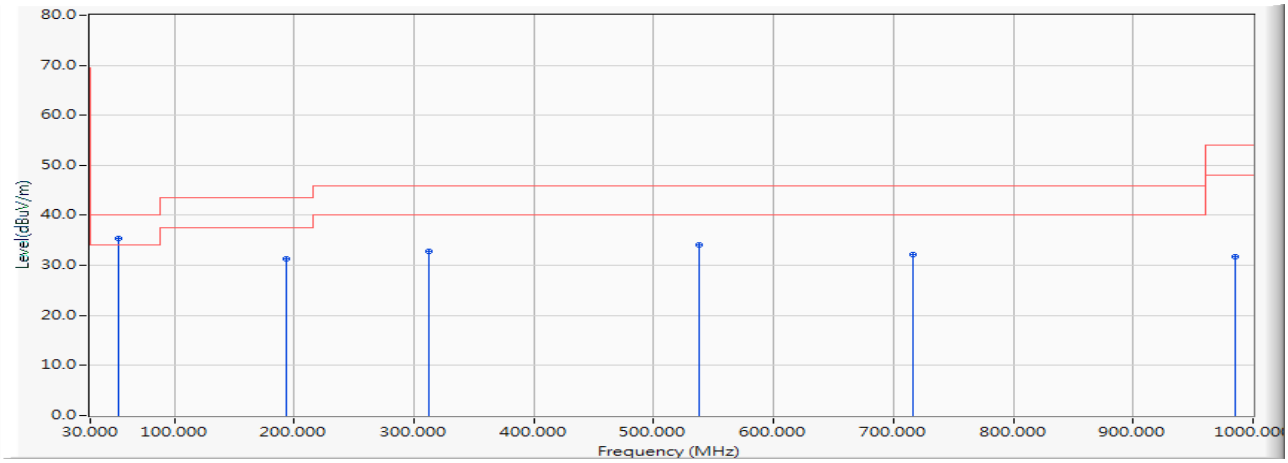
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		60.928	-11.804	35.444	23.640	-16.360	40.000	QUASIPEAK
2		188.855	-12.964	41.538	28.574	-14.926	43.500	QUASIPEAK
3	*	325.217	-9.045	45.877	36.832	-9.168	46.000	QUASIPEAK
4		523.435	-4.494	40.773	36.279	-9.721	46.000	QUASIPEAK
5		850.986	0.605	30.986	31.591	-14.409	46.000	QUASIPEAK
6		992.971	2.405	29.376	31.781	-22.219	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 : UNIT ASSY DA
Test Item : General Radiated Emission Data
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)(2437 MHz)
Test Date : 2019/05/13

Vertical



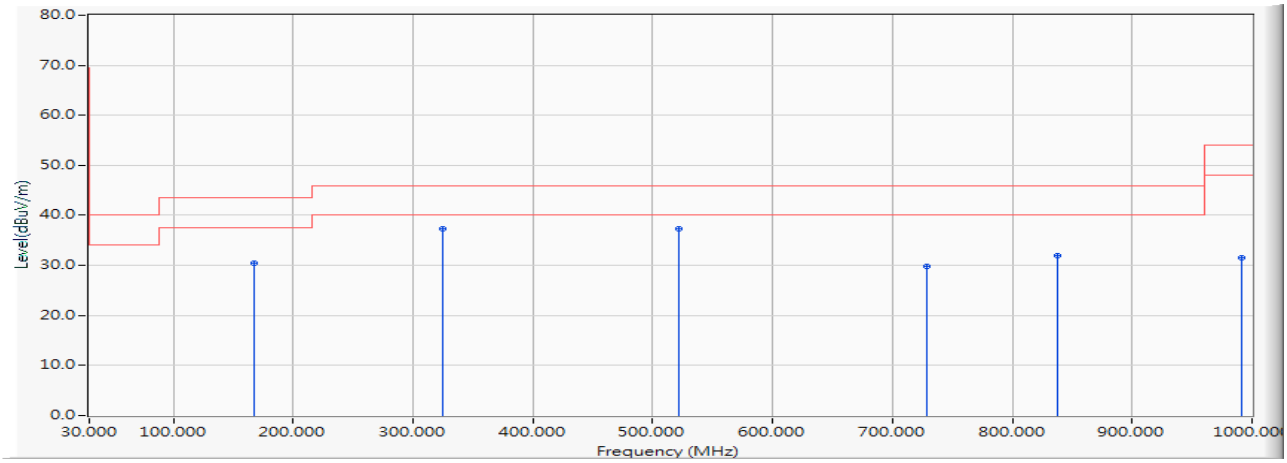
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	53.899	-11.024	46.426	35.402	-4.598	40.000	QUASIPEAK
2		193.072	-13.135	44.492	31.356	-12.144	43.500	QUASIPEAK
3		312.565	-9.326	42.115	32.789	-13.211	46.000	QUASIPEAK
4		537.493	-4.216	38.425	34.209	-11.791	46.000	QUASIPEAK
5		716.029	-1.143	33.323	32.180	-13.820	46.000	QUASIPEAK
6		984.536	2.282	29.473	31.754	-22.246	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 : UNIT ASSY DA
Test Item : General Radiated Emission Data
Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)(2437 MHz)
Test Date : 2019/05/13

Horizontal



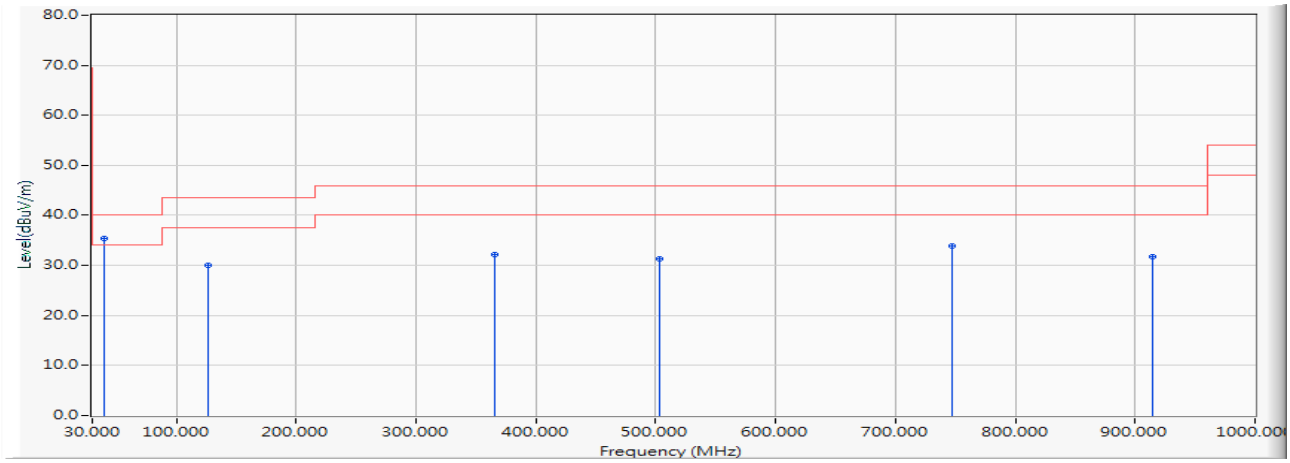
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		167.768	-10.521	40.965	30.444	-13.056	43.500	QUASIPEAK
2	*	325.217	-9.045	46.277	37.232	-8.768	46.000	QUASIPEAK
3		522.029	-4.520	41.743	37.223	-8.777	46.000	QUASIPEAK
4		728.681	-0.959	30.877	29.918	-16.082	46.000	QUASIPEAK
5		838.333	0.453	31.471	31.925	-14.075	46.000	QUASIPEAK
6		991.565	2.386	29.081	31.467	-22.533	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 : UNIT ASSY DA
Test Item : General Radiated Emission Data
Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)(2437 MHz)
Test Date : 2019/05/13

Vertical



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	39.841	-10.908	46.280	35.373	-4.627	40.000	QUASIPEAK
2		127.000	-12.046	42.136	30.090	-13.410	43.500	QUASIPEAK
3		365.986	-8.015	40.257	32.242	-13.758	46.000	QUASIPEAK
4		503.754	-4.892	36.234	31.342	-14.658	46.000	QUASIPEAK
5		746.957	-0.662	34.466	33.804	-12.196	46.000	QUASIPEAK
6		914.246	1.365	30.360	31.725	-14.275	46.000	QUASIPEAK

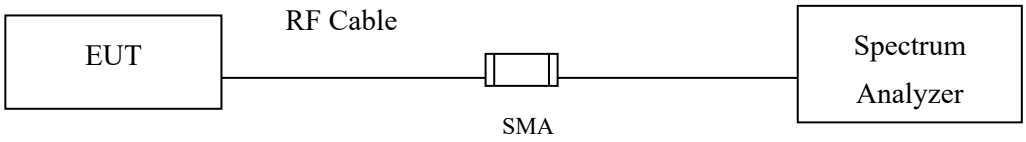
Note:

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.

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.

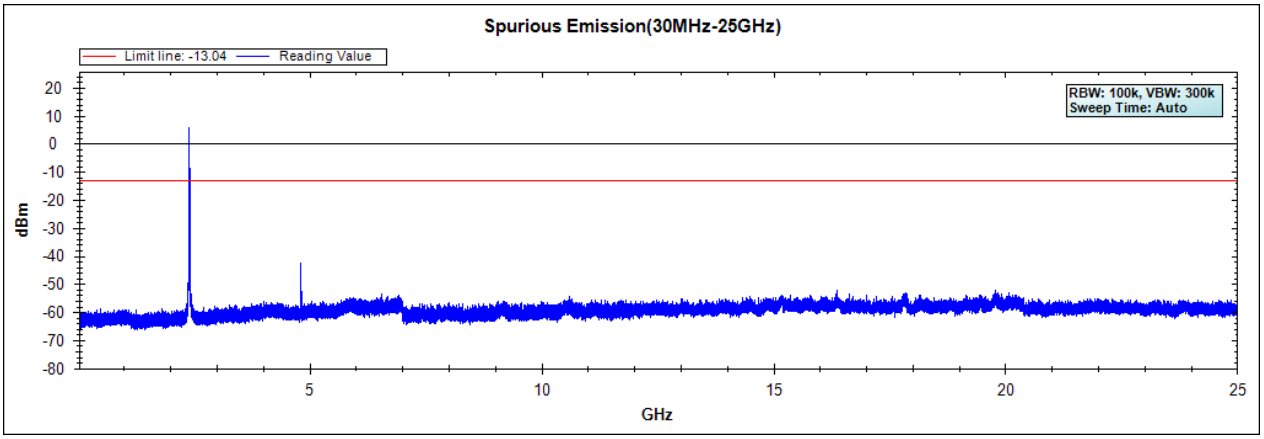
5.4. Uncertainty

±1.23dB

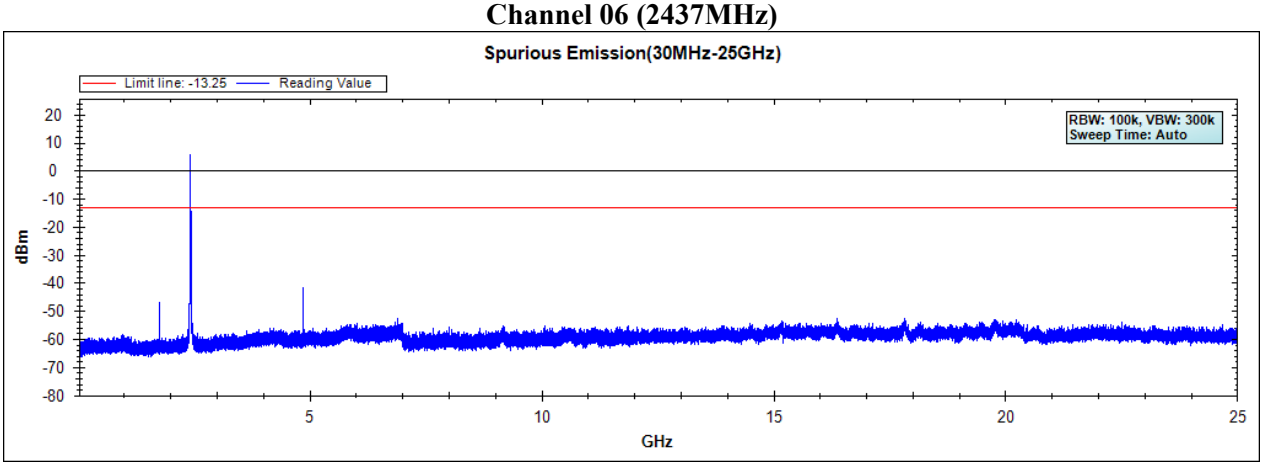
5.5. Test Result of RF antenna conducted test

Product : UNIT ASSY DA
Test Item : RF antenna conducted test
Test Mode : Mode 1: Transmit (802.11b 1Mbps)
Test Date : 2019/05/02

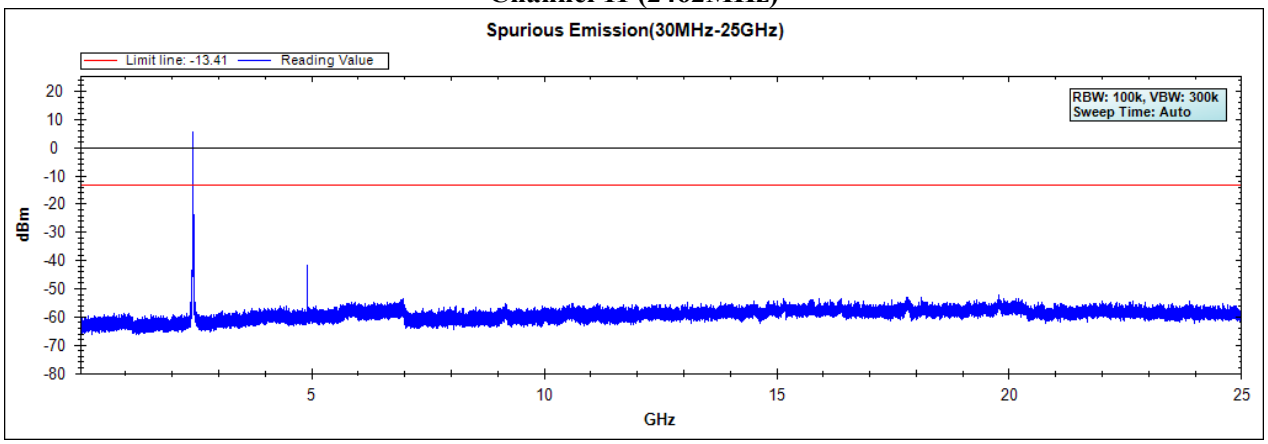
Channel 01 (2412MHz)



Channel 06 (2437MHz)



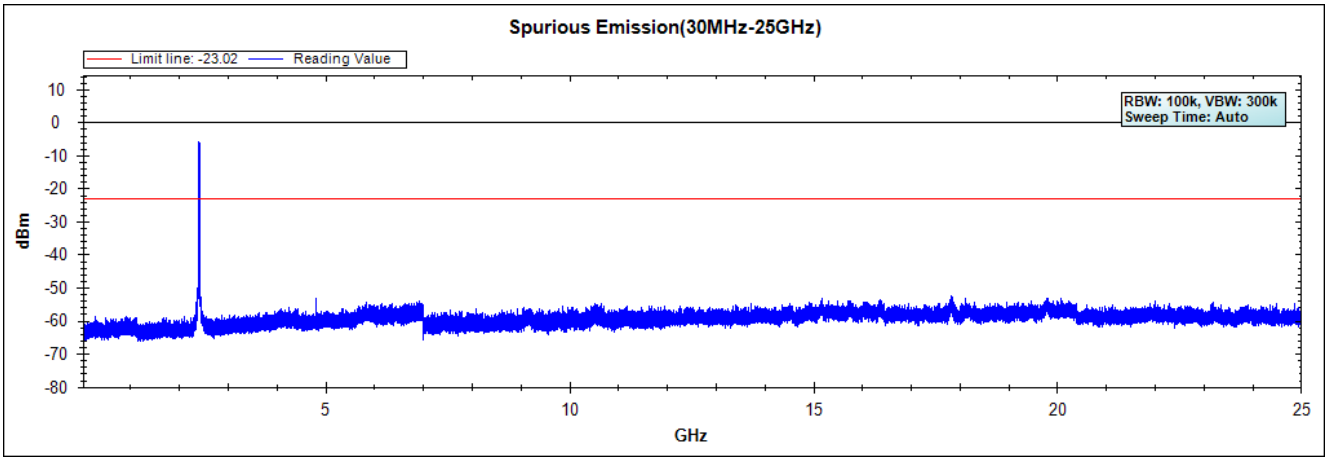
Channel 11 (2462MHz)



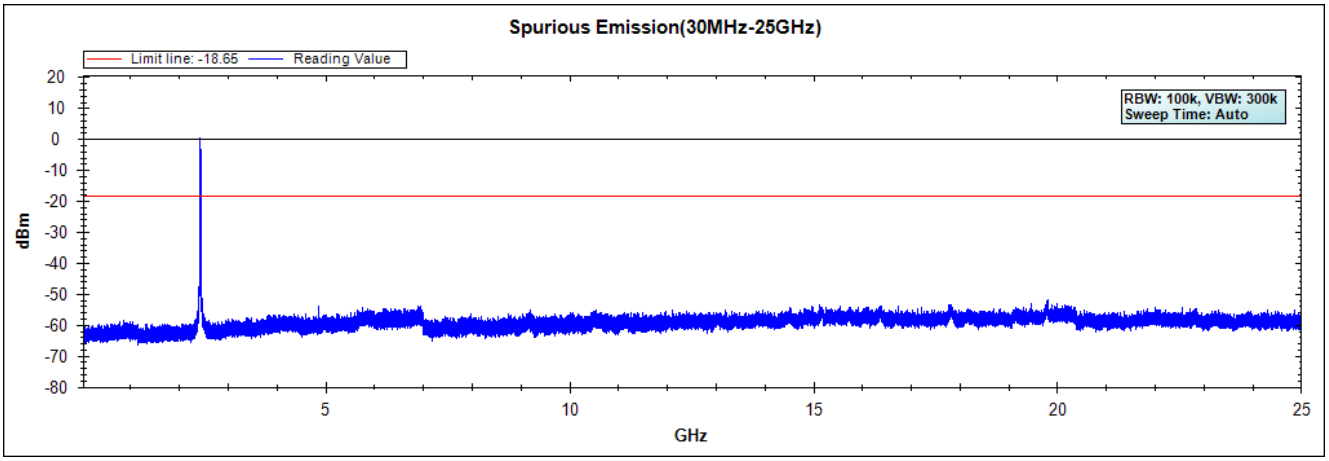
Note: The above test pattern is synthesized by multiple of the frequency range.

Product	:	UNIT ASSY DA
Test Item	:	RF Antenna Conducted Spurious
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps)
Test Date	:	2019/05/02

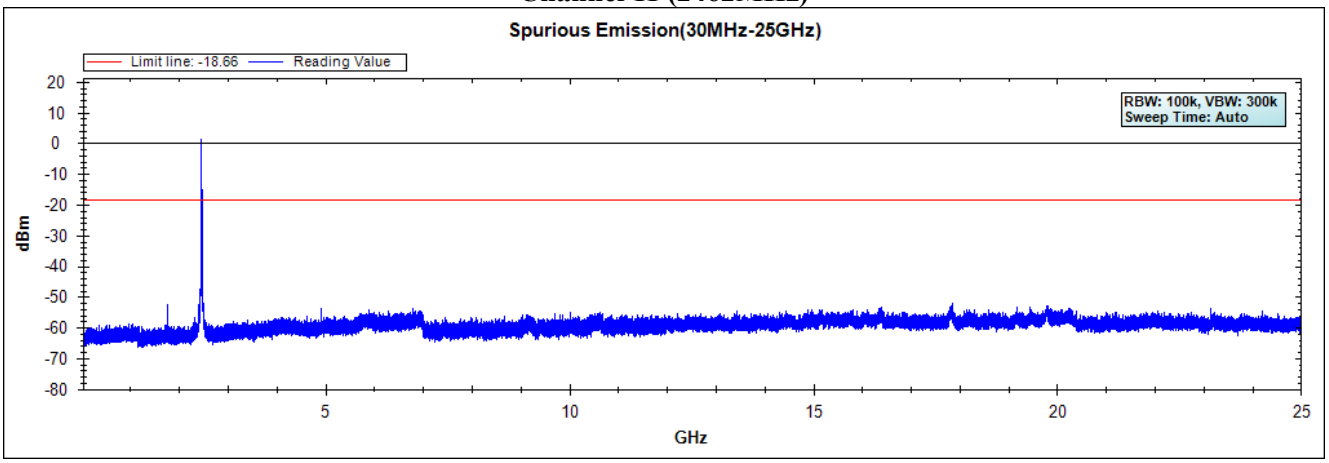
Channel 01 (2412MHz)



Channel 06 (2437MHz)



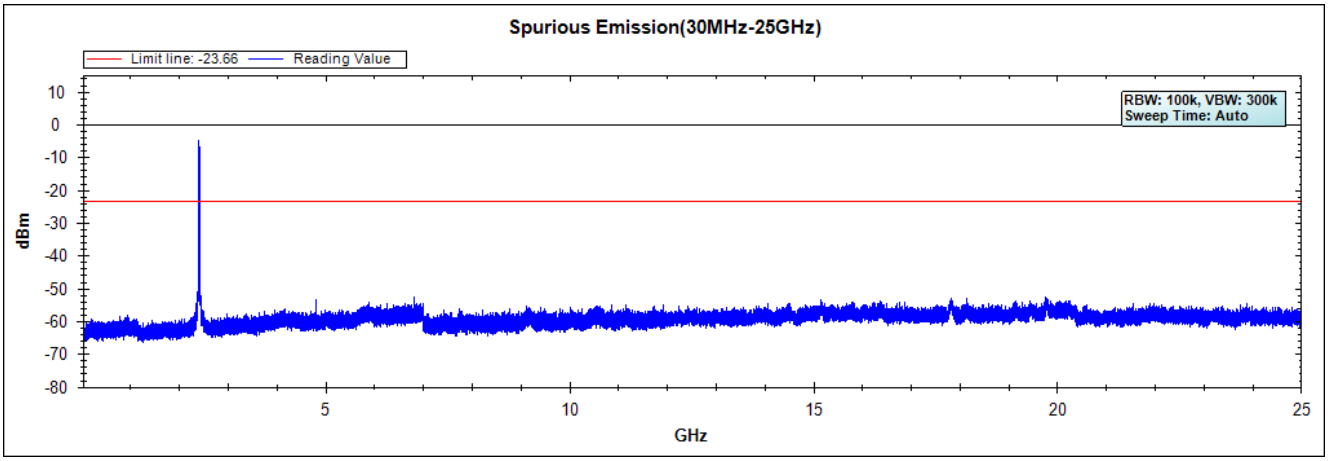
Channel 11 (2462MHz)



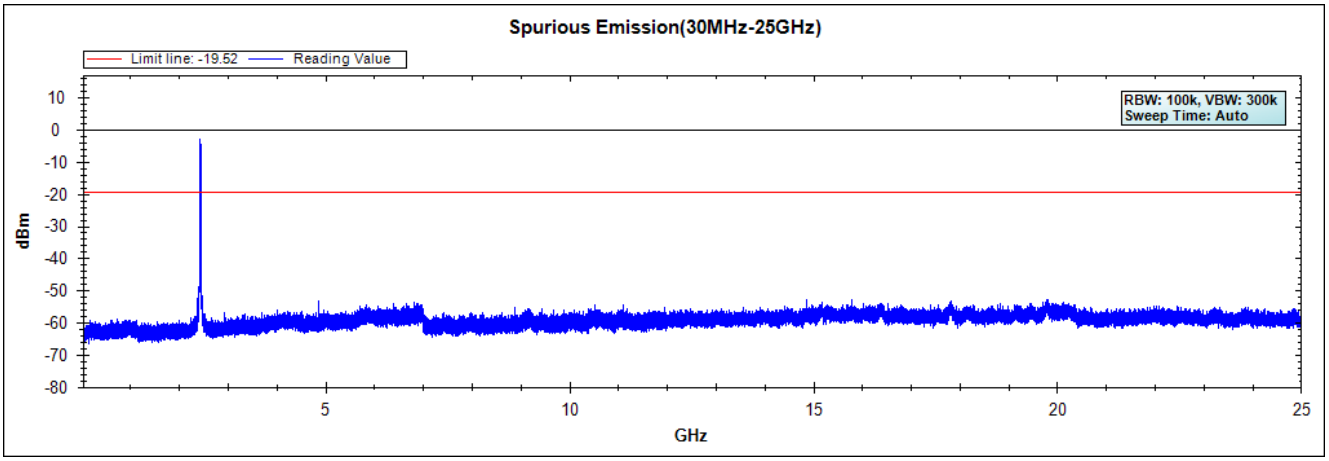
Note: The above test pattern is synthesized by multiple of the frequency range.

Product	:	UNIT ASSY DA
Test Item	:	RF Antenna Conducted Spurious
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)
Test Date	:	2019/05/02

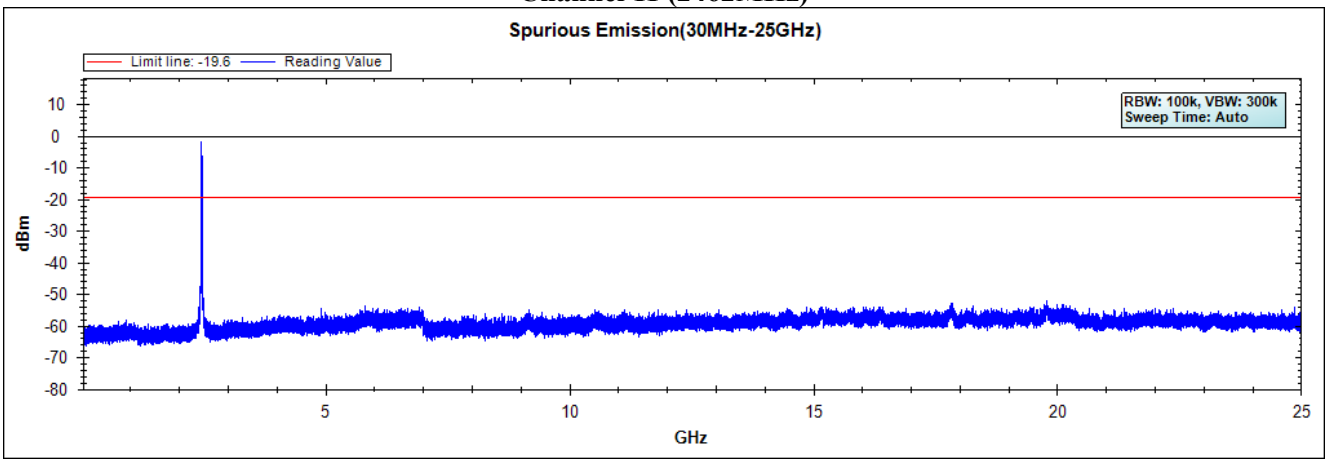
Channel 01 (2412MHz)



Channel 06 (2437MHz)



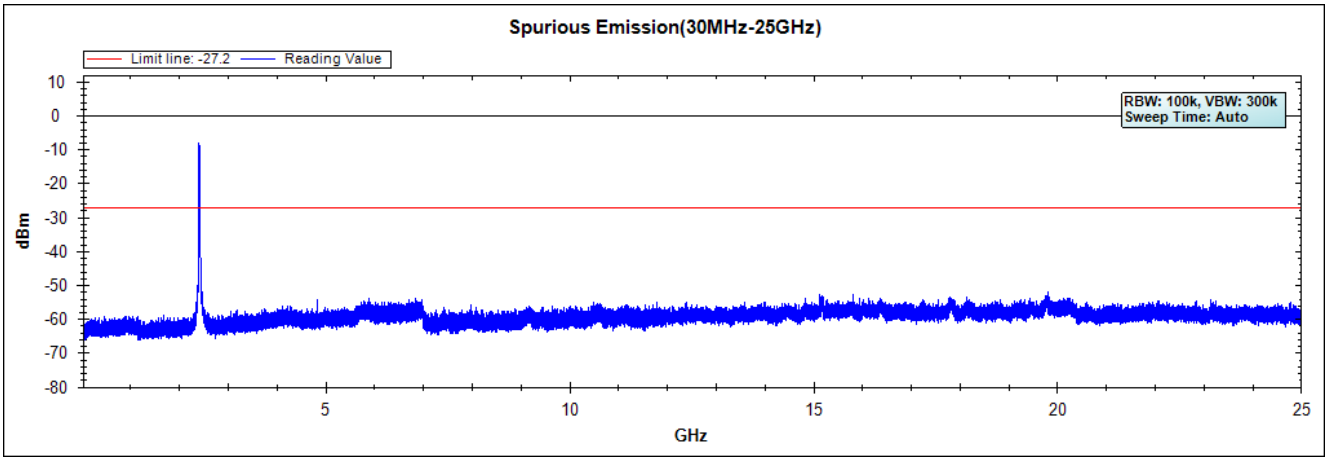
Channel 11 (2462MHz)



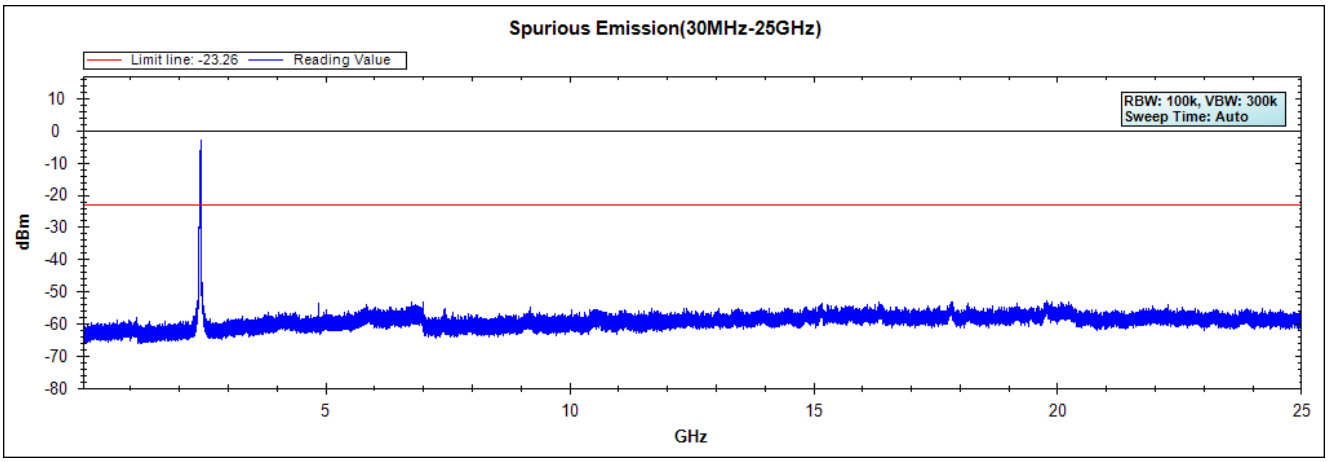
Note: The above test pattern is synthesized by multiple of the frequency range.

Product	:	UNIT ASSY DA
Test Item	:	RF Antenna Conducted Spurious
Test Mode	:	Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)
Test Date	:	2019/05/02

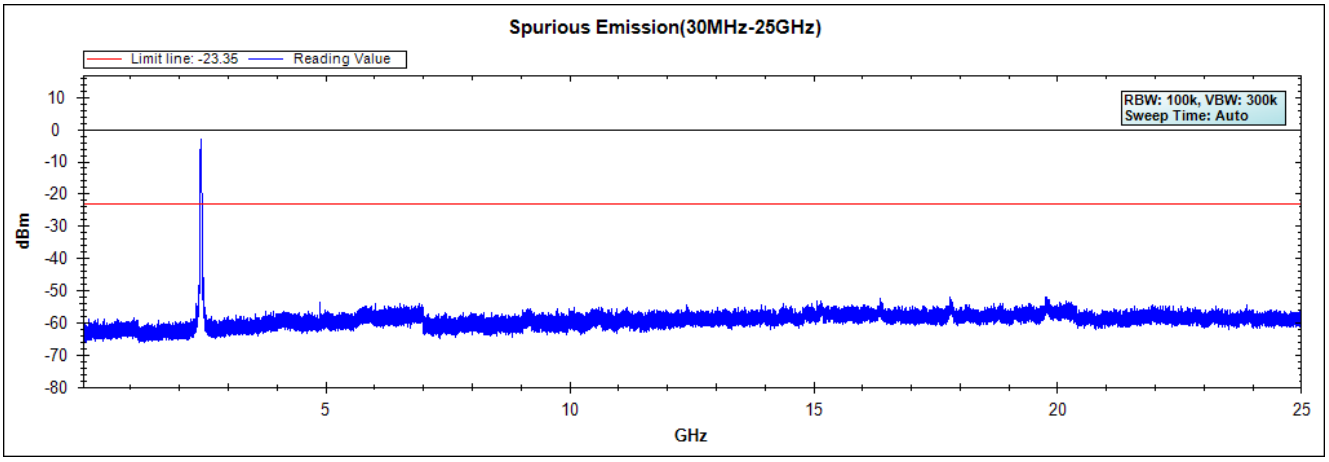
Channel 03 (2422MHz)



Channel 06 (2437MHz)



Channel 09 (2452MHz)

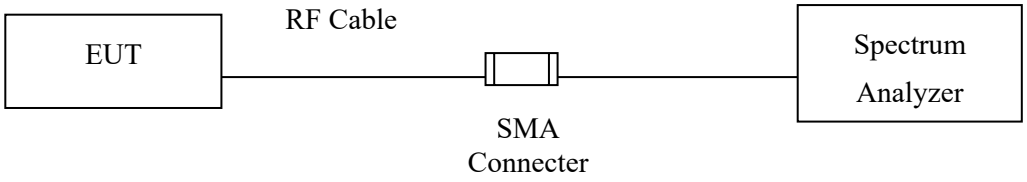


Note: The above test pattern is synthesized by multiple of the frequency range.

6. Band Edge

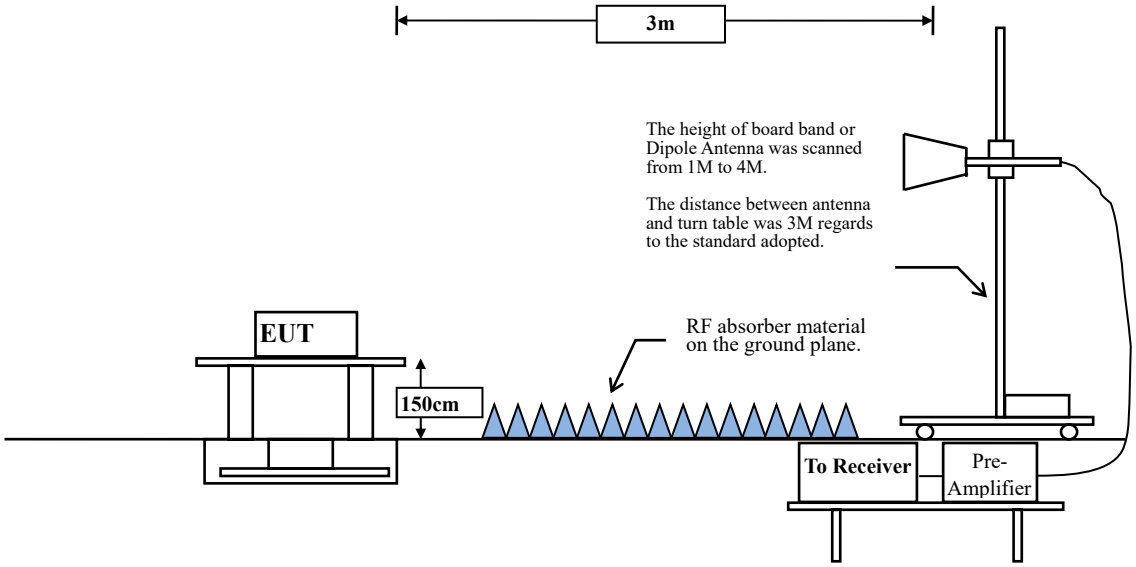
6.1. Test Setup

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 ≥ 3 x 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 ≥ 98 %

VBW ≥ 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	97.68	3.6566	273	300
802.11g	97.62	3.5666	280	300
802.11n20	97.35	3.5566	281	300
802.11n40	96.26	3.5266	284	300

Note: Duty Cycle Refer to Section 9

6.4. Uncertainty

Conducted: ±1.23dB

Radiated:

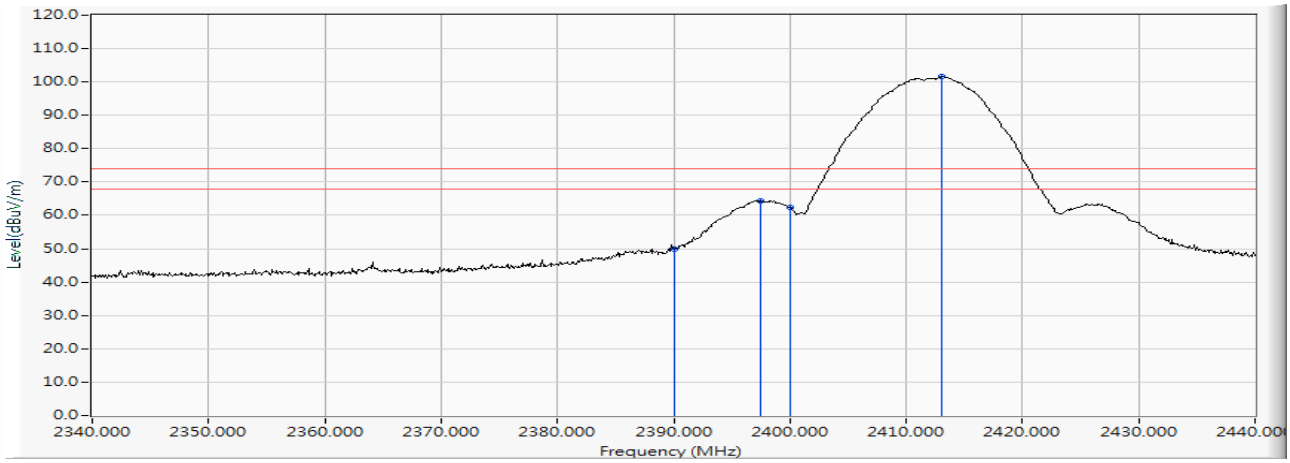
Horizontal polarization：1-18GHz: ±3.77dB

Vertical polarization：1-18GHz : ±3.83dB

6.5. Test Result of Band Edge

Product	:	UNIT ASSY DA
Test Item	:	Band Edge Data
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2412MHz)
Test Date	:	2019/05/03

Horizontal



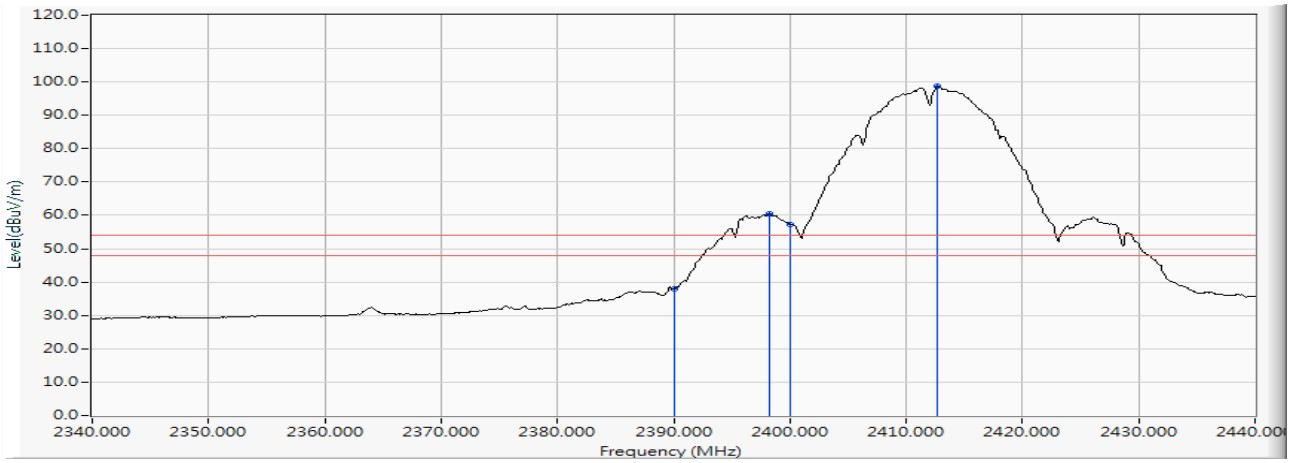
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	10.262	39.571	49.833	-24.167	74.000	PEAK
2		2397.500	10.293	54.102	64.395	--	--	PEAK
3		2400.000	10.304	51.982	62.285	--	--	PEAK
4	*	2413.000	10.355	91.188	101.544	--	--	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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)
Test Date : 2019/05/03

Horizontal



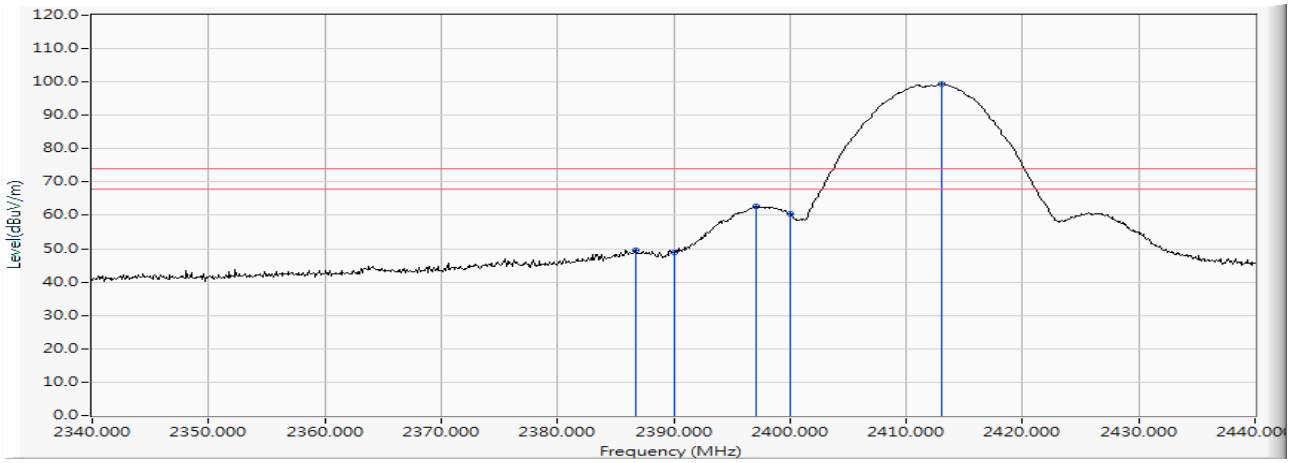
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	10.262	27.766	38.028	-15.972	54.000	AVERAGE
2		2398.300	10.296	50.109	60.405	--	--	AVERAGE
3		2400.000	10.304	47.072	57.375	--	--	AVERAGE
4	*	2412.700	10.354	88.262	98.617	--	--	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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)
Test Date : 2019/05/04

Vertical



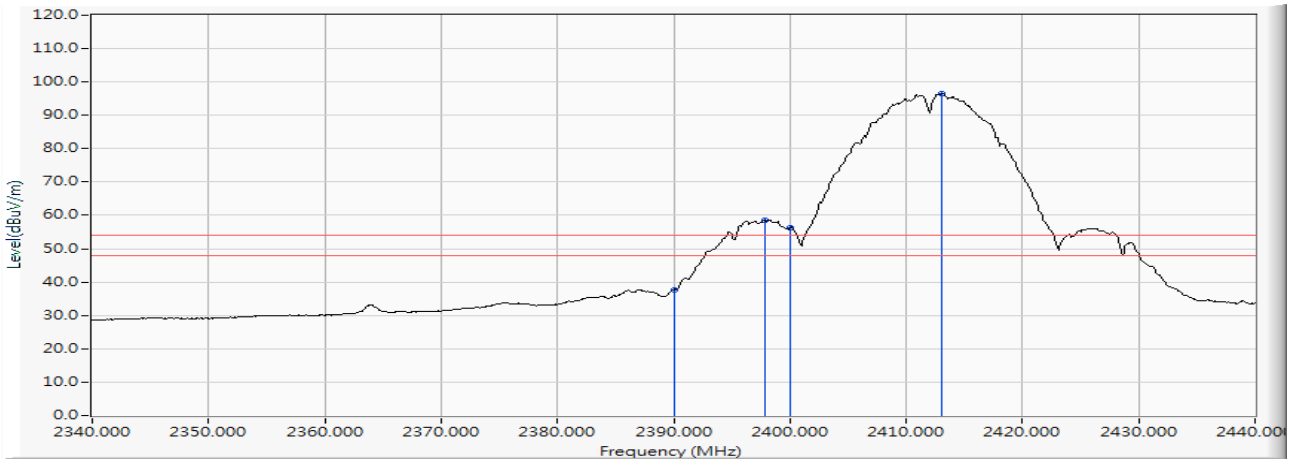
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2386.700	10.248	39.349	49.597	-24.403	74.000	PEAK
2		2390.000	10.262	38.760	49.022	-24.978	74.000	PEAK
3		2397.100	10.291	52.530	62.821	--	--	PEAK
4		2400.000	10.304	50.053	60.356	--	--	PEAK
5	*	2413.000	10.355	89.042	99.398	--	--	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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)
Test Date : 2019/05/04

Vertical



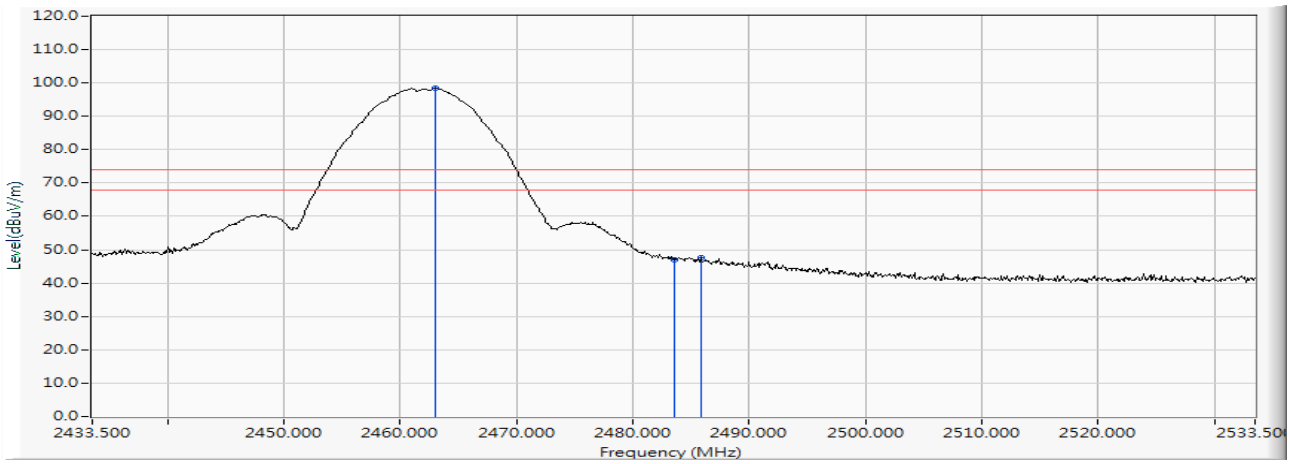
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	10.262	27.421	37.683	-16.317	54.000	AVERAGE
2		2397.800	10.294	48.354	58.648	--	--	AVERAGE
3		2400.000	10.304	46.112	56.415	--	--	AVERAGE
4	*	2413.100	10.357	86.155	96.511	--	--	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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)
Test Date : 2019/05/04

Horizontal



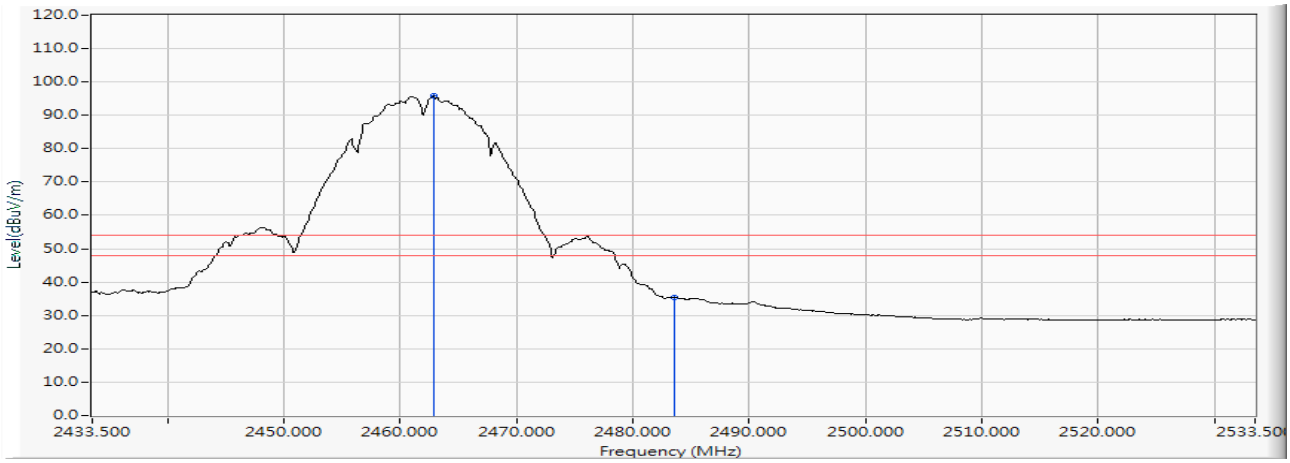
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2463.000	10.554	87.810	98.364	--	--	PEAK
2		2483.500	10.640	36.222	46.863	-27.137	74.000	PEAK
3		2485.800	10.651	37.079	47.729	-26.271	74.000	PEAK

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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)
Test Date : 2019/05/04

Horizontal



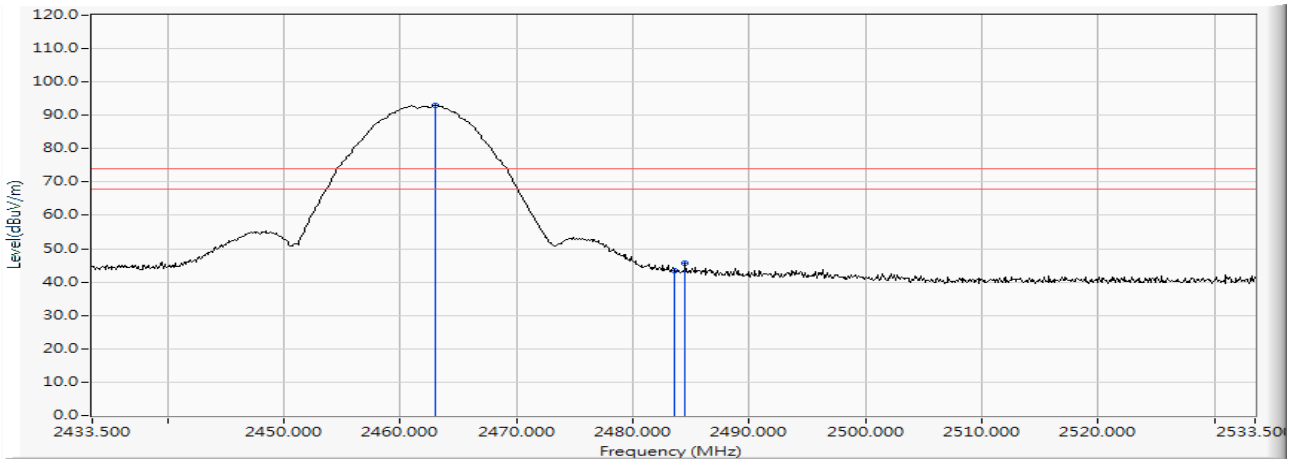
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2462.900	10.554	85.174	95.728	--	--	AVERAGE
2		2483.500	10.640	24.753	35.394	-18.606	54.000	AVERAGE

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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)
Test Date : 2019/05/04

Vertical



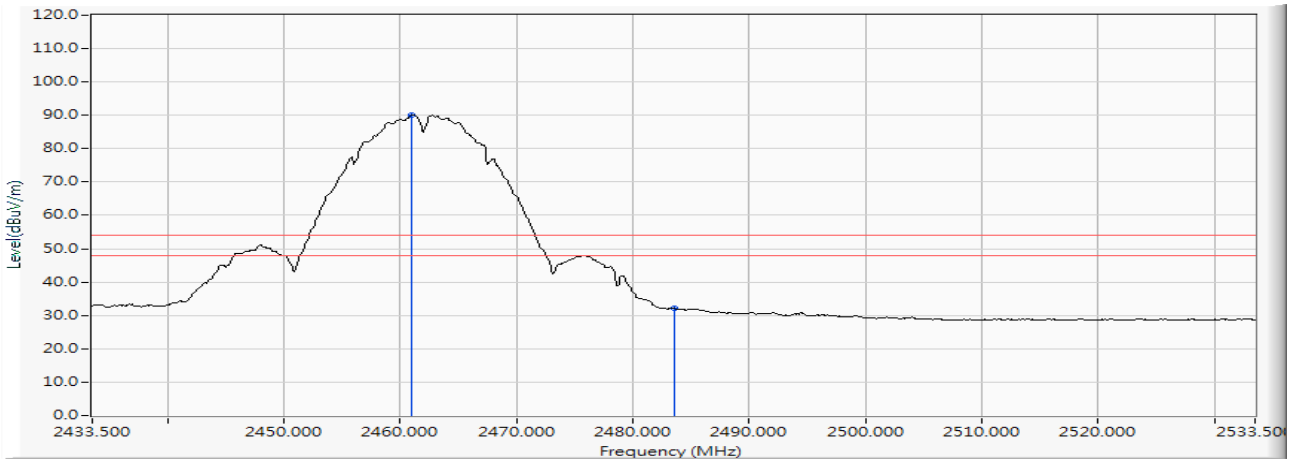
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2463.000	10.554	82.436	92.990	--	--	PEAK
2		2483.500	10.640	32.943	43.584	-30.416	74.000	PEAK
3		2484.500	10.645	34.909	45.554	-28.446	74.000	PEAK

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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)
Test Date : 2019/05/04

Vertical



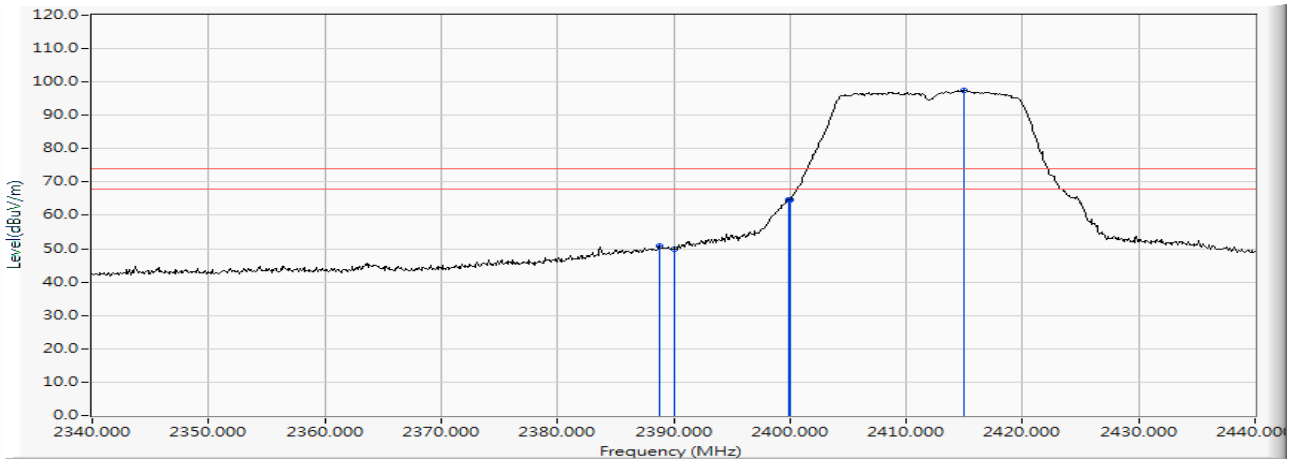
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2461.000	10.545	79.674	90.219	--	--	AVERAGE
2		2483.500	10.640	21.455	32.096	-21.904	54.000	AVERAGE

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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)
Test Date : 2019/05/04

Horizontal



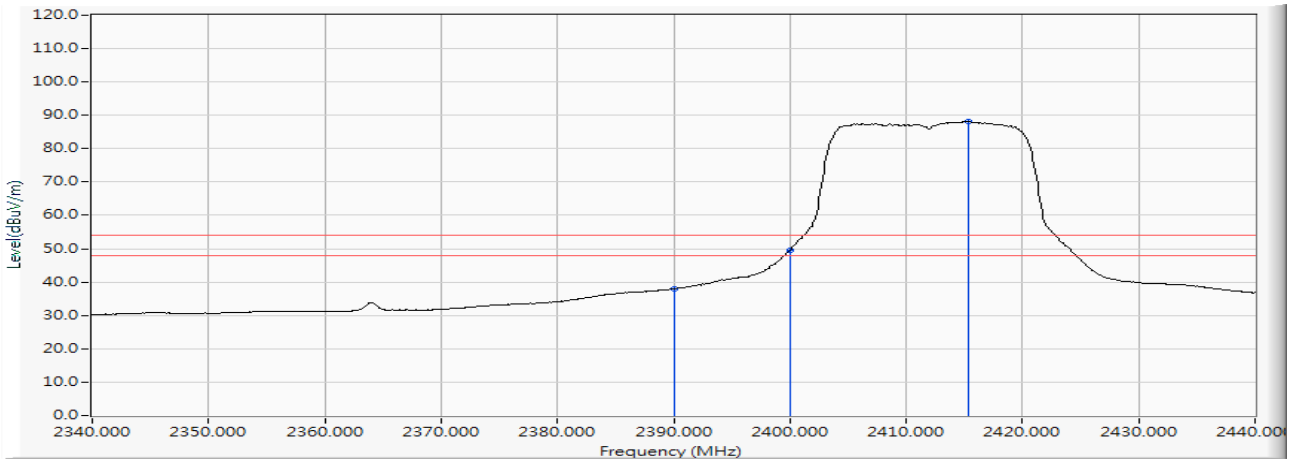
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2388.800	10.257	40.448	50.705	-23.295	74.000	PEAK
2		2390.000	10.262	39.483	49.745	-24.255	74.000	PEAK
3		2399.900	10.304	54.420	64.723	--	--	PEAK
4		2400.000	10.304	54.277	64.580	--	--	PEAK
5	*	2415.000	10.364	87.174	97.538	--	--	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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)
Test Date : 2019/05/04

Horizontal



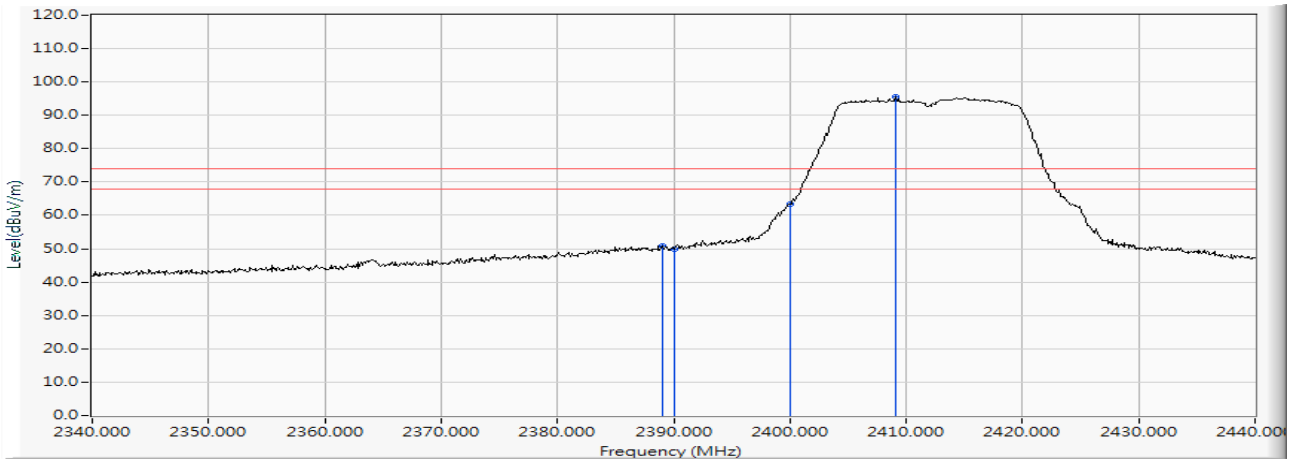
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	10.262	27.739	38.001	-15.999	54.000	AVERAGE
2		2400.000	10.304	39.203	49.506	--	--	AVERAGE
3	*	2415.300	10.365	77.863	88.228	--	--	AVERAGE

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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)
Test Date : 2019/05/04

Vertical



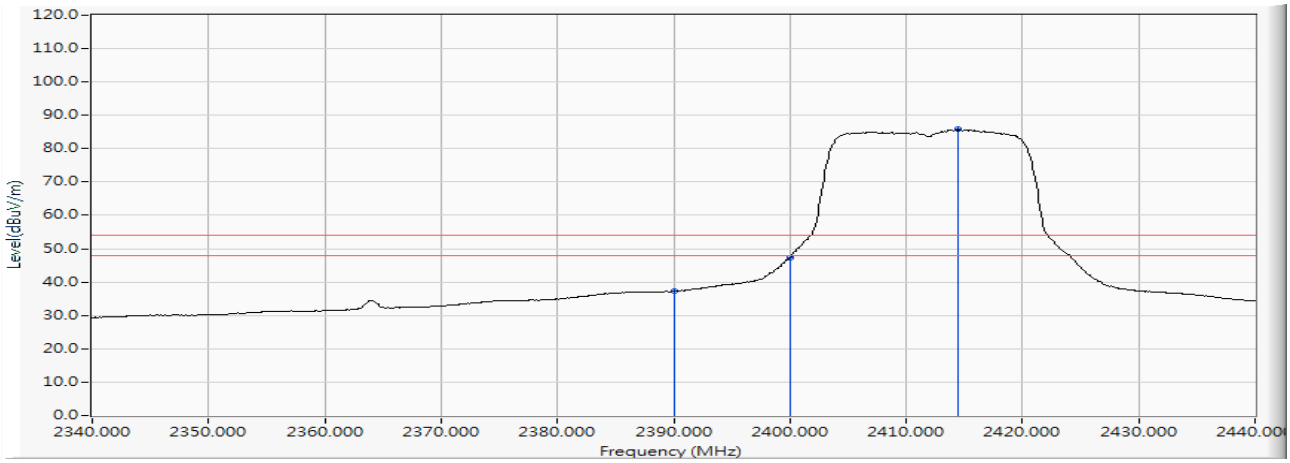
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2389.000	10.258	40.688	50.946	-23.054	74.000	PEAK
2		2390.000	10.262	39.526	49.788	-24.212	74.000	PEAK
3		2400.000	10.304	53.078	63.381	--	--	PEAK
4	*	2409.100	10.340	85.102	95.442	--	--	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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)
Test Date : 2019/05/04

Vertical



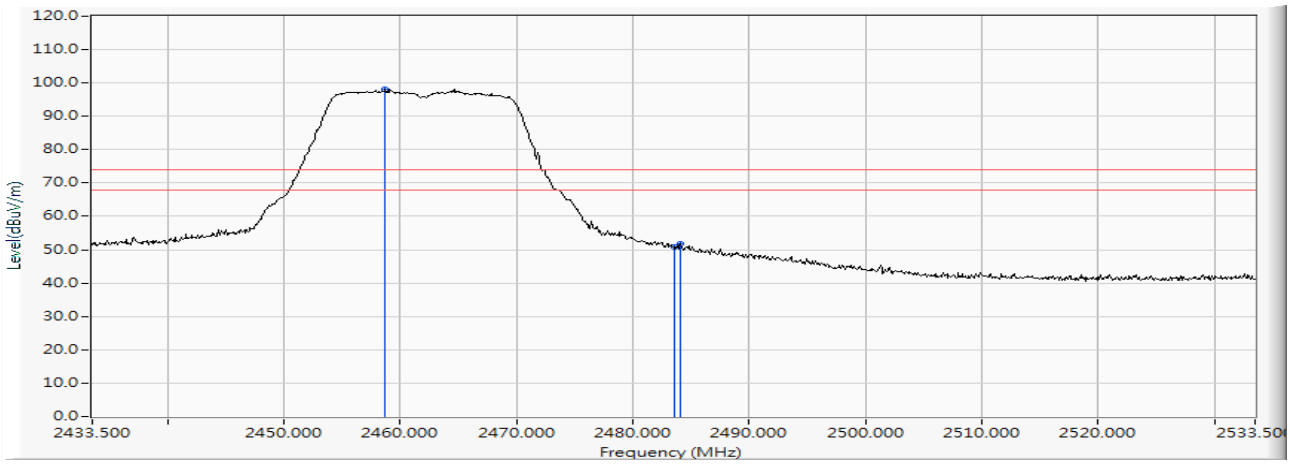
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	10.262	27.006	37.268	-16.732	54.000	AVERAGE
2		2400.000	10.304	37.009	47.312	--	--	AVERAGE
3	*	2414.400	10.361	75.383	85.745	--	--	AVERAGE

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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)
Test Date : 2019/05/04

Horizontal



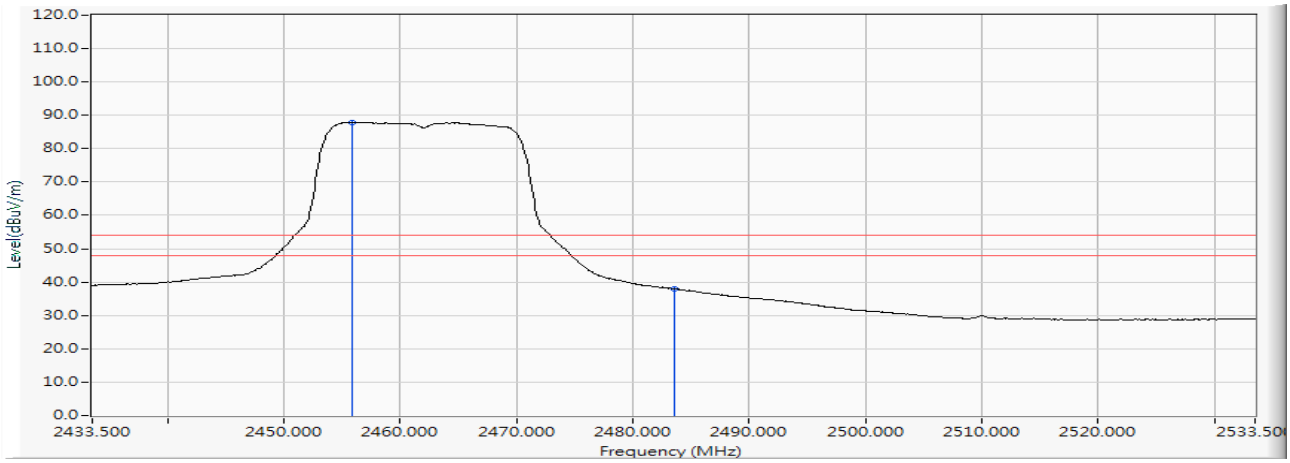
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2458.700	10.535	87.674	98.209	--	--	PEAK
2		2483.500	10.640	40.151	50.792	-23.208	74.000	PEAK
3		2484.100	10.644	41.190	51.834	-22.166	74.000	PEAK

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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)
Test Date : 2019/05/04

Horizontal



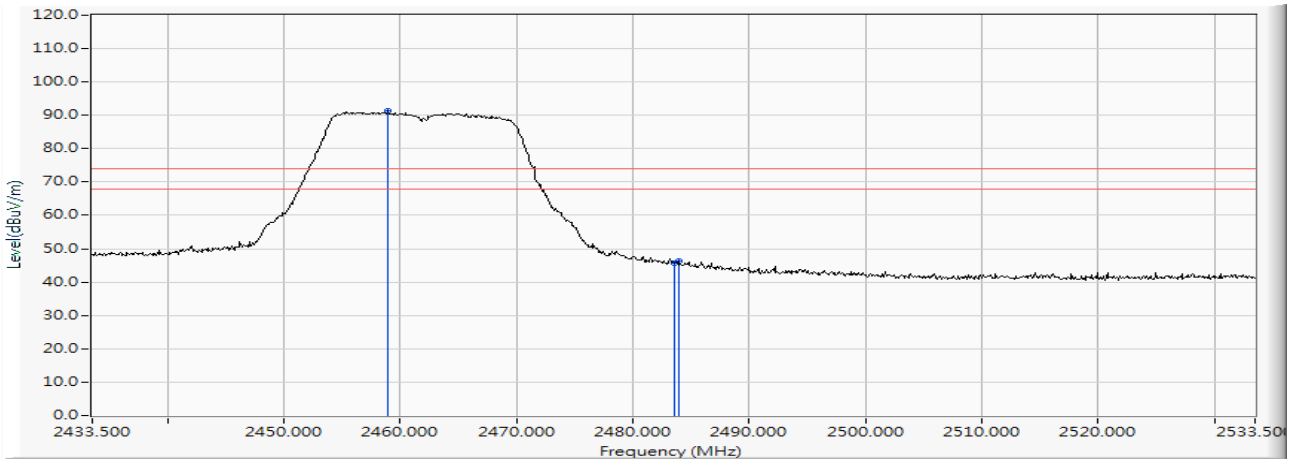
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2455.900	10.524	77.369	87.892	--	--	AVERAGE
2		2483.500	10.640	27.333	37.974	-16.026	54.000	AVERAGE

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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)
Test Date : 2019/05/04

Vertical



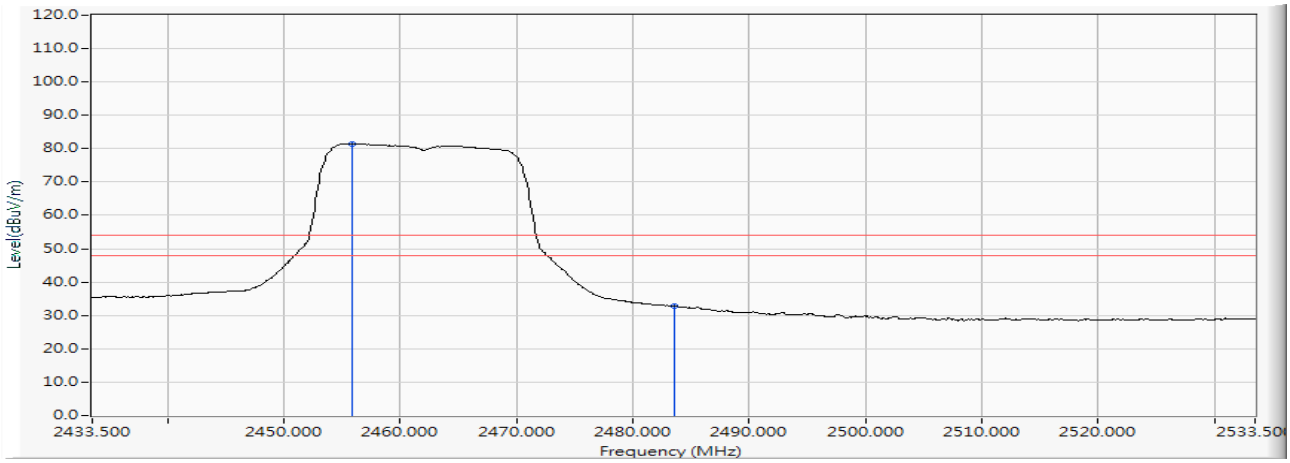
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2458.900	10.536	80.761	91.297	--	--	PEAK
2		2483.500	10.640	35.195	45.836	-28.164	74.000	PEAK
3		2483.900	10.644	35.597	46.240	-27.760	74.000	PEAK

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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)
Test Date : 2019/05/04

Vertical



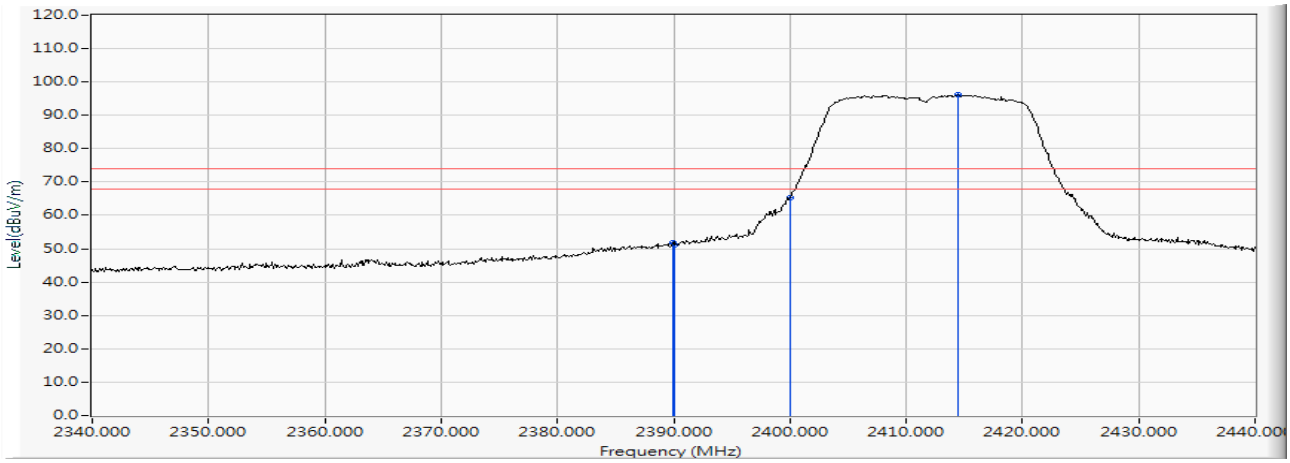
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2455.800	10.523	71.020	81.542	--	--	AVERAGE
2		2483.500	10.640	22.020	32.661	-21.339	54.000	AVERAGE

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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2412MHz)
Test Date : 2019/05/04

Horizontal



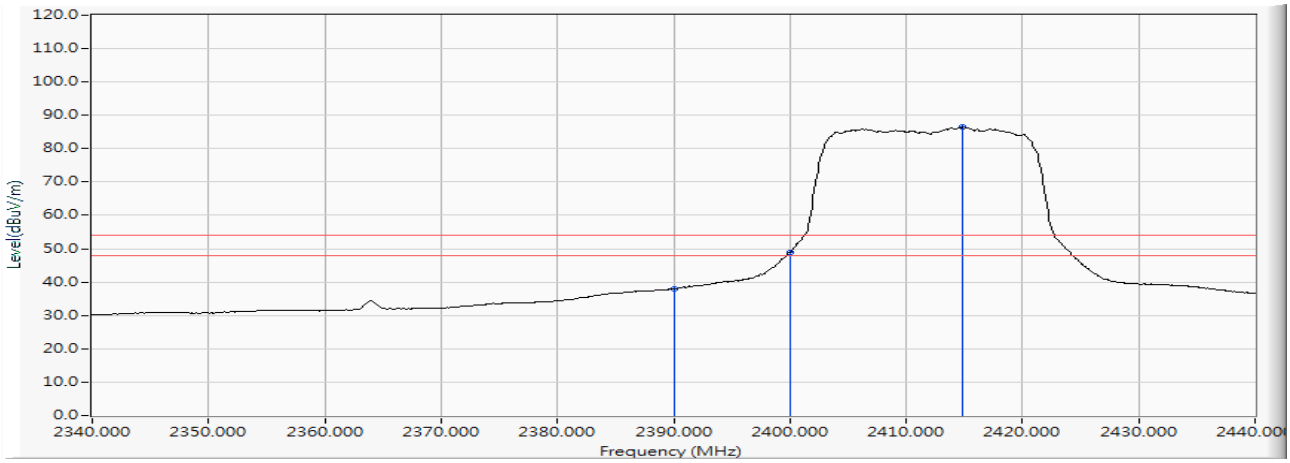
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2389.900	10.262	41.633	51.895	-22.105	74.000	PEAK
2		2390.000	10.262	41.036	51.298	-22.702	74.000	PEAK
3		2400.000	10.304	55.124	65.427	--	--	PEAK
4	*	2414.400	10.361	85.764	96.126	--	--	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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2412MHz)
Test Date : 2019/05/04

Horizontal



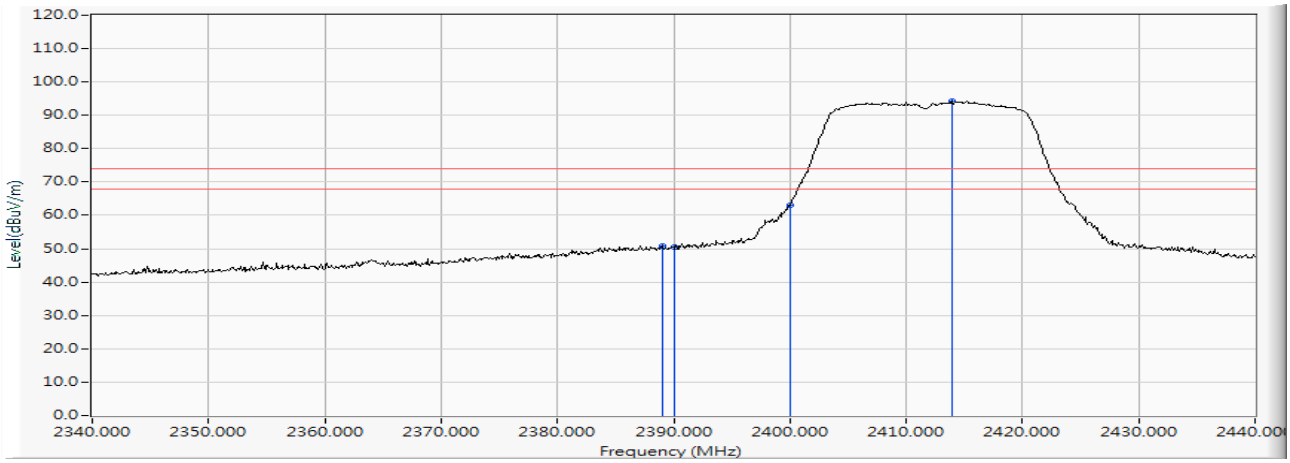
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	10.262	27.717	37.979	-16.021	54.000	AVERAGE
2		2400.000	10.304	38.469	48.772	--	--	AVERAGE
3	*	2414.900	10.364	76.038	86.402	--	--	AVERAGE

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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2412MHz)
Test Date : 2019/05/04

Vertical



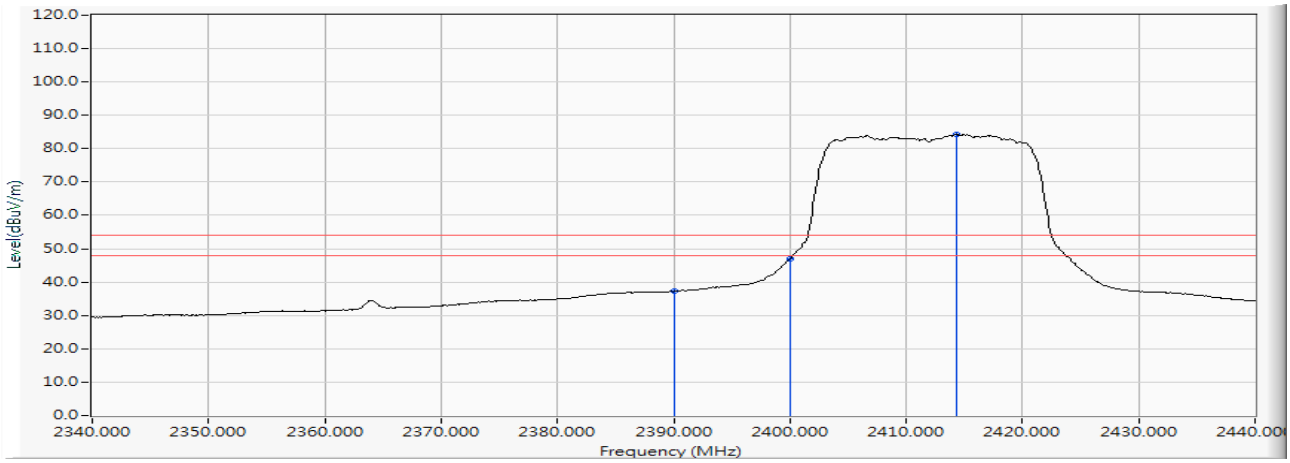
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2389.000	10.258	40.503	50.761	-23.239	74.000	PEAK
2		2390.000	10.262	40.168	50.430	-23.570	74.000	PEAK
3		2400.000	10.304	52.780	63.083	--	--	PEAK
4	*	2413.900	10.359	83.787	94.147	--	--	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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2412MHz)
Test Date : 2019/05/04

Vertical



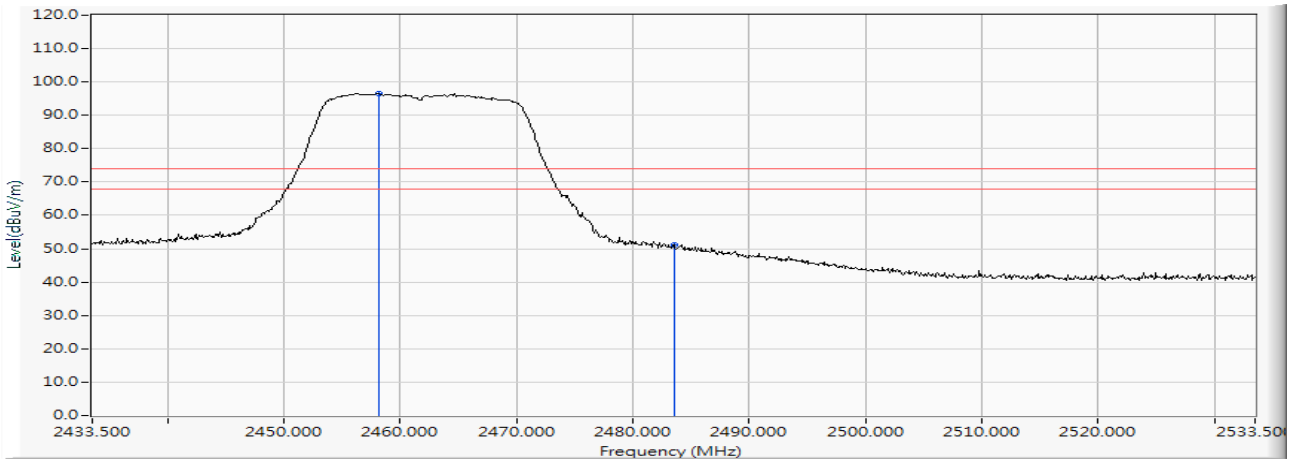
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	10.262	26.919	37.181	-16.819	54.000	AVERAGE
2		2400.000	10.304	36.609	46.912	--	--	AVERAGE
3	*	2414.300	10.361	73.978	84.339	--	--	AVERAGE

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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462MHz)
Test Date : 2019/05/04

Horizontal



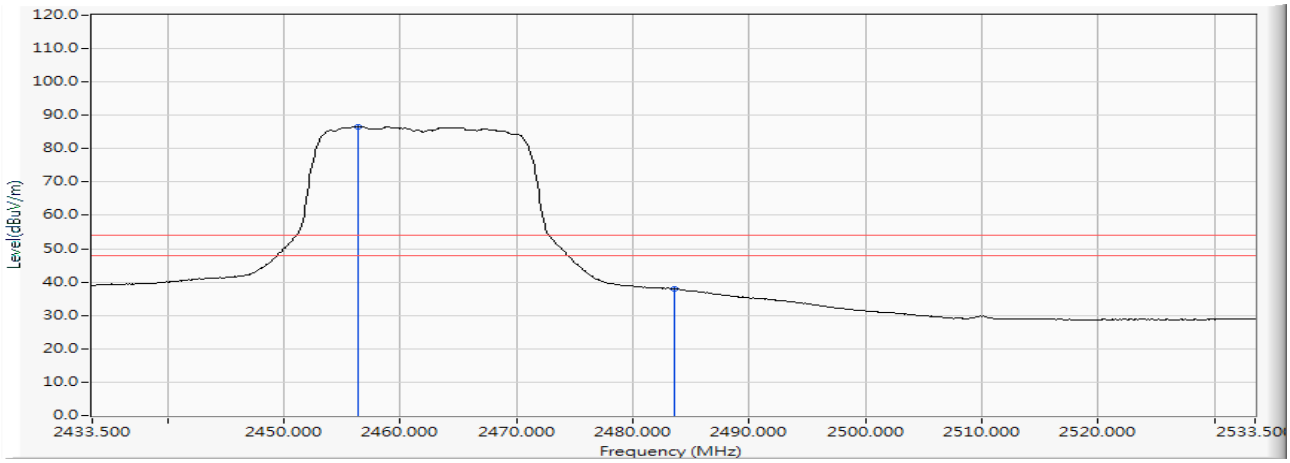
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2458.100	10.533	86.102	96.634	--	--	PEAK
2		2483.500	10.640	40.363	51.004	-22.996	74.000	PEAK

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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462MHz)
Test Date : 2019/05/04

Horizontal



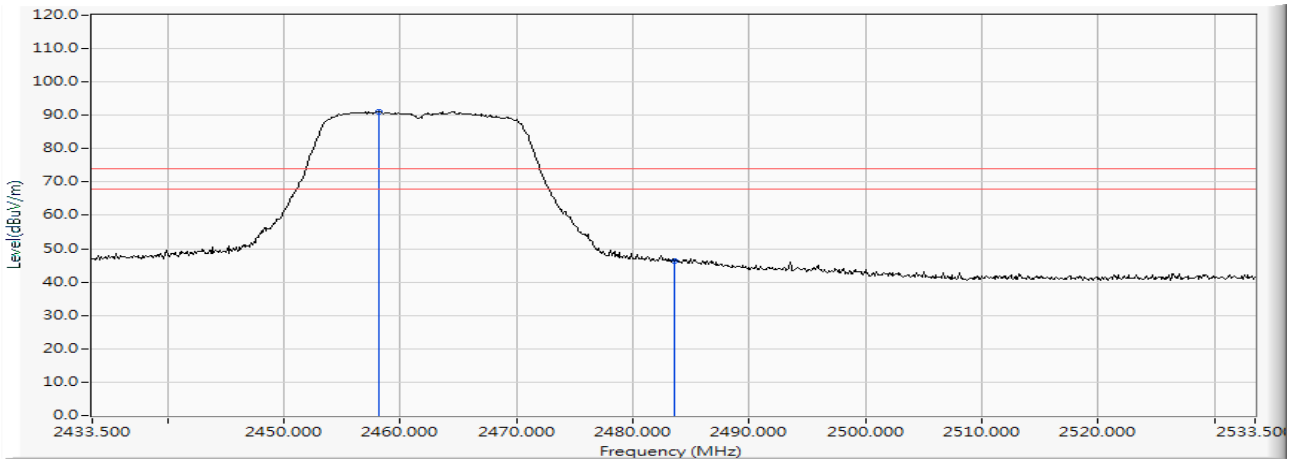
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2456.300	10.525	76.169	86.693	--	--	AVERAGE
2		2483.500	10.640	27.279	37.920	-16.080	54.000	AVERAGE

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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462MHz)
Test Date : 2019/05/04

Vertical



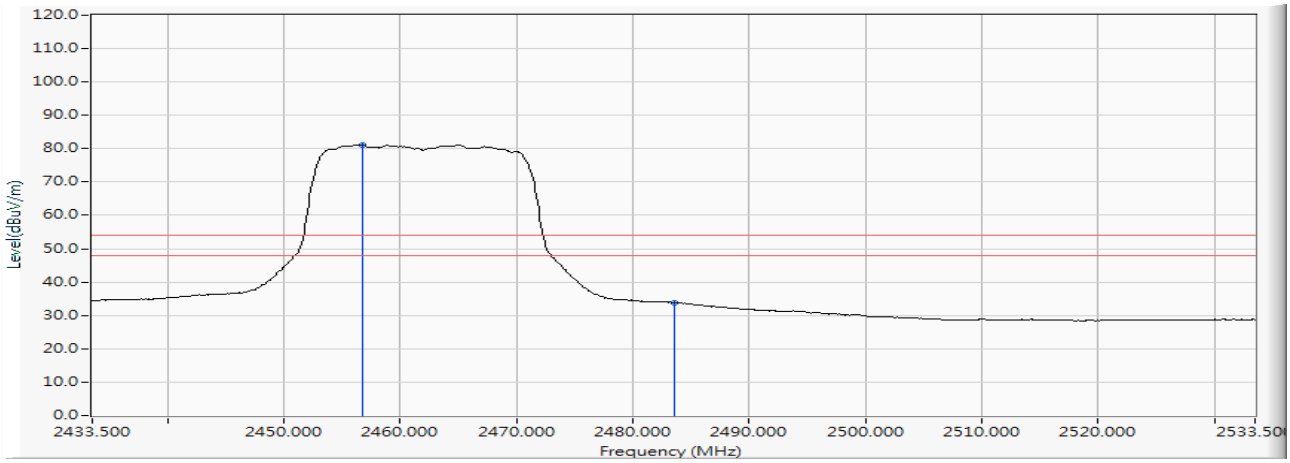
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2458.100	10.533	80.568	91.100	--	--	PEAK
2		2483.500	10.640	35.799	46.440	-27.560	74.000	PEAK

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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462MHz)
Test Date : 2019/05/04

Vertical



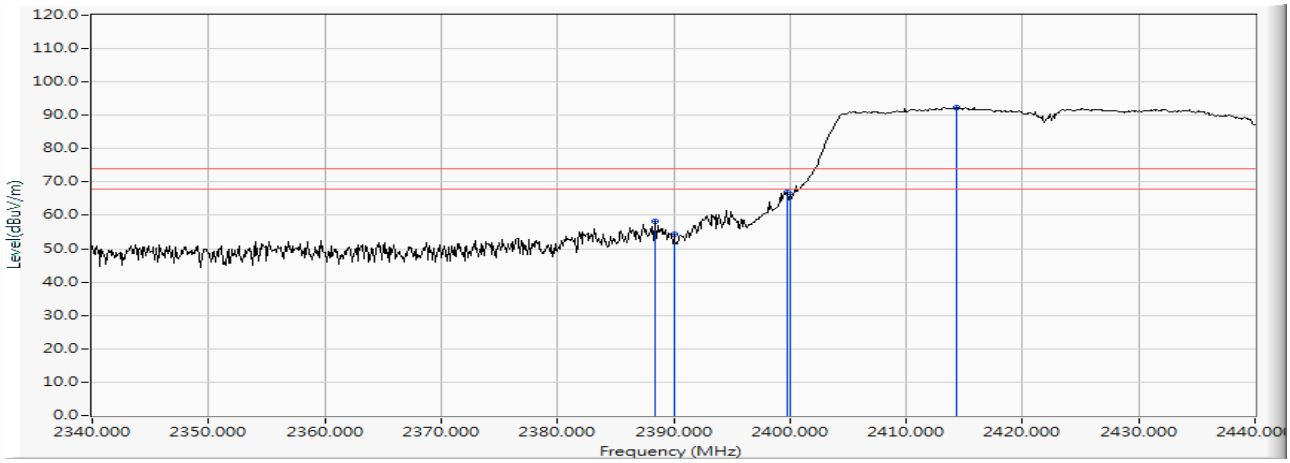
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2456.700	10.526	70.669	81.195	--	--	AVERAGE
2		2483.500	10.640	23.208	33.849	-20.151	54.000	AVERAGE

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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2422MHz)
Test Date : 2019/05/04

Horizontal



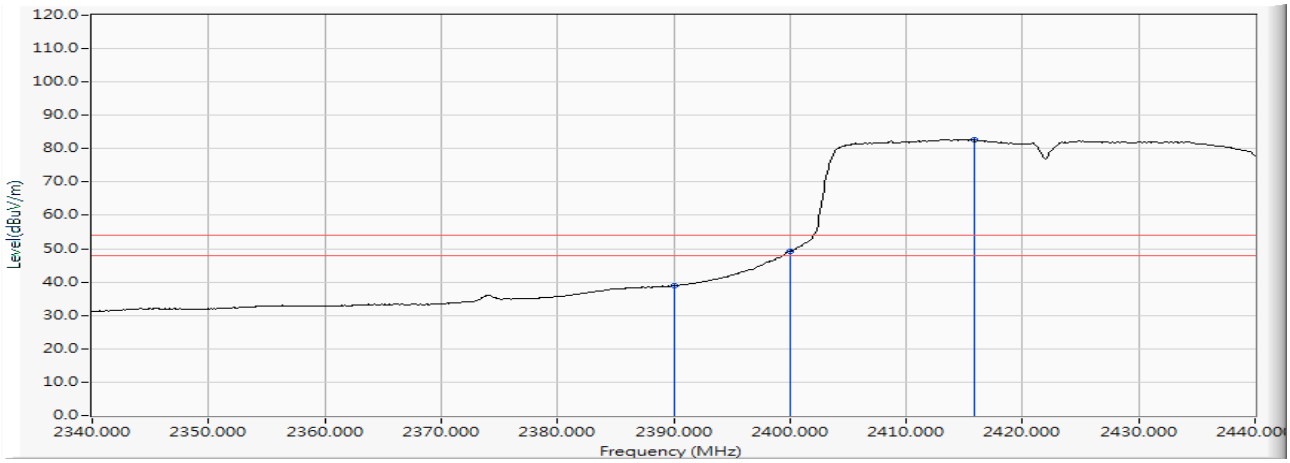
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2388.400	10.256	47.865	58.120	-15.880	74.000	PEAK
2		2390.000	10.262	44.072	54.334	-19.666	74.000	PEAK
3		2399.800	10.302	56.666	66.969	--	--	PEAK
4		2400.000	10.304	56.115	66.418	--	--	PEAK
5	*	2414.300	10.361	82.019	92.380	--	--	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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2422MHz)
Test Date : 2019/05/04

Horizontal



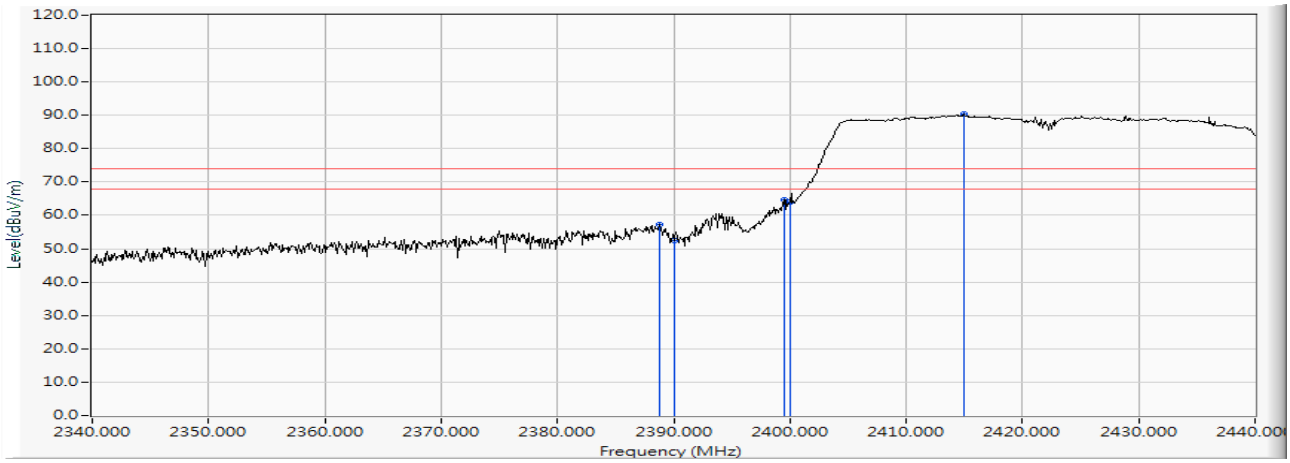
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	10.262	28.737	38.999	-15.001	54.000	AVERAGE
2		2400.000	10.304	38.792	49.095	--	--	AVERAGE
3	*	2415.800	10.367	72.417	82.784	--	--	AVERAGE

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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2422MHz)
Test Date : 2019/05/04

Vertical



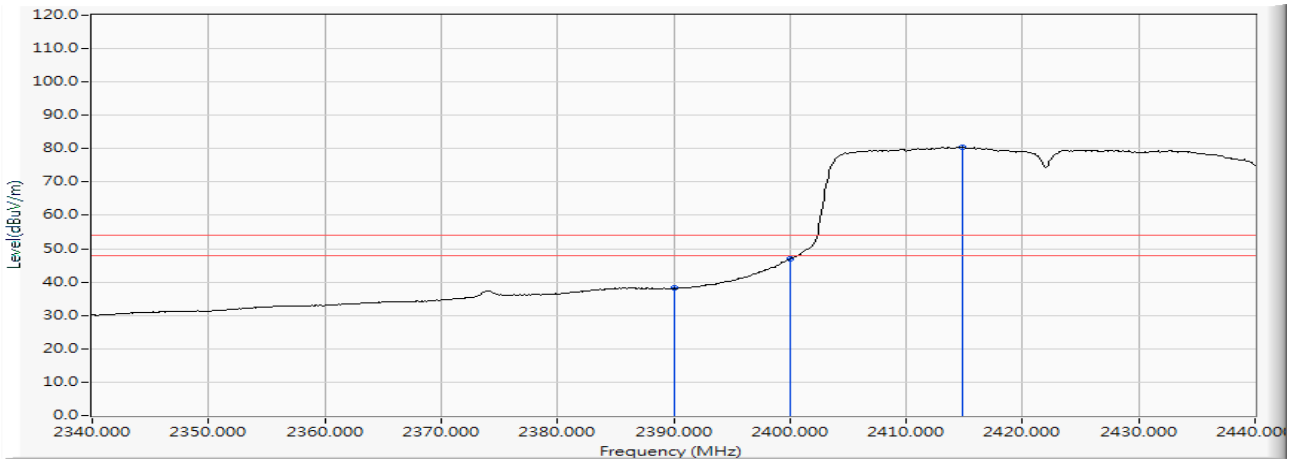
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2388.800	10.257	47.020	57.277	-16.723	74.000	PEAK
2		2390.000	10.262	42.236	52.498	-21.502	74.000	PEAK
3		2399.500	10.301	54.483	64.784	--	--	PEAK
4		2400.000	10.304	53.773	64.076	--	--	PEAK
5	*	2415.000	10.364	79.924	90.288	--	--	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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2422MHz)
Test Date : 2019/05/04

Vertical



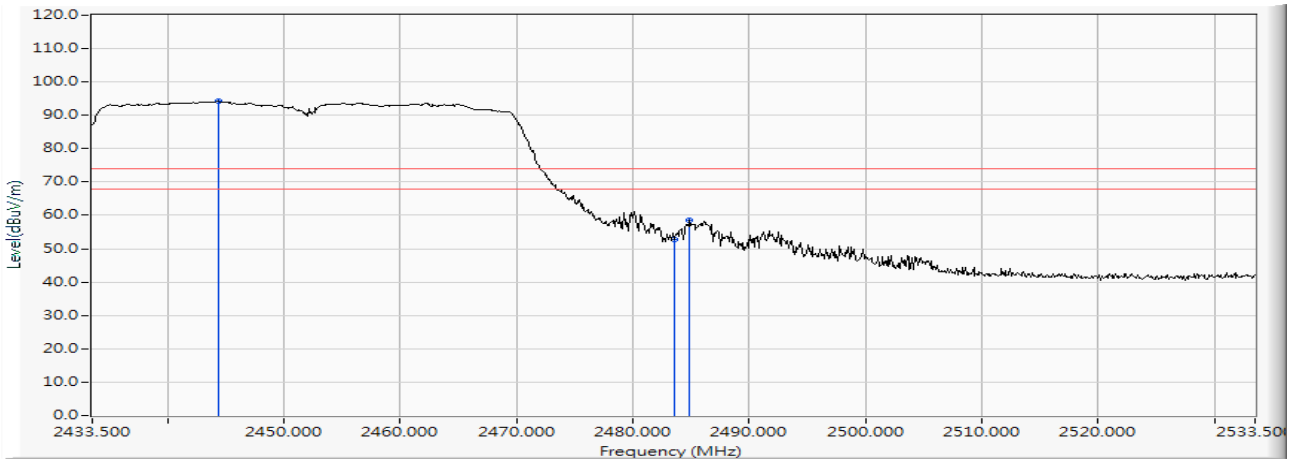
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	10.262	27.947	38.209	-15.791	54.000	AVERAGE
2		2400.000	10.304	36.727	47.030	--	--	AVERAGE
3	*	2414.900	10.364	70.129	80.493	--	--	AVERAGE

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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2452MHz)
Test Date : 2019/05/04

Horizontal



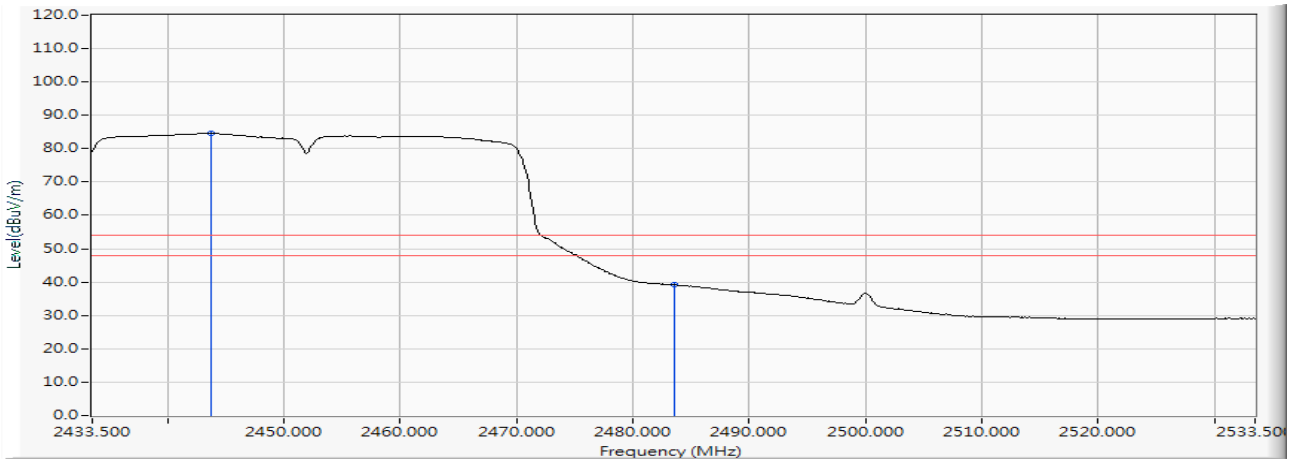
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2444.300	10.482	83.689	94.171	--	--	PEAK
2		2483.500	10.640	42.086	52.727	-21.273	74.000	PEAK
3		2484.900	10.647	47.794	58.441	-15.559	74.000	PEAK

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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2452MHz)
Test Date : 2019/05/04

Horizontal



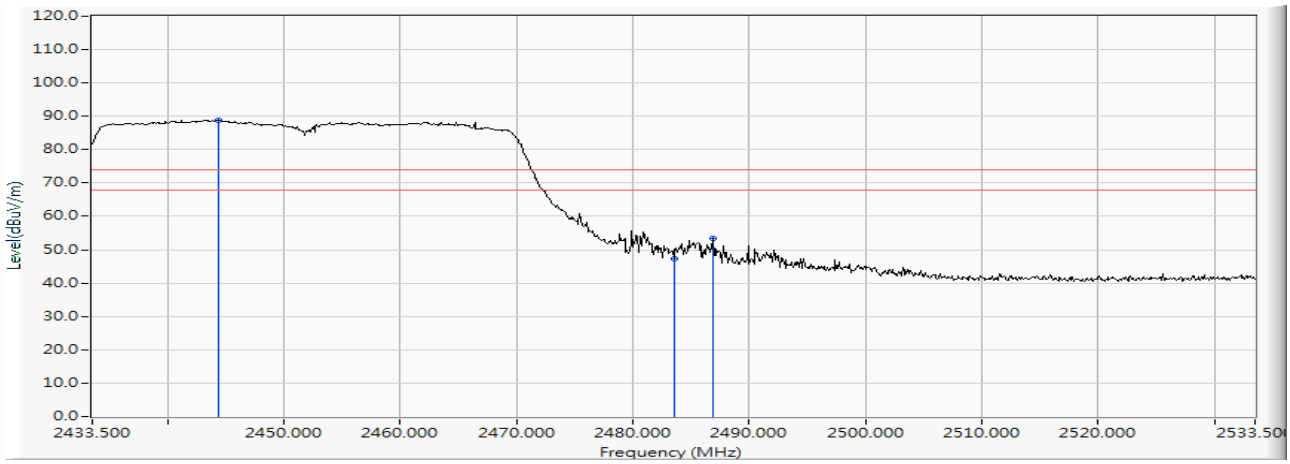
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2443.700	10.480	74.083	84.563	--	--	AVERAGE
2		2483.500	10.640	28.509	39.150	-14.850	54.000	AVERAGE

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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2452MHz)
Test Date : 2019/05/04

Vertical



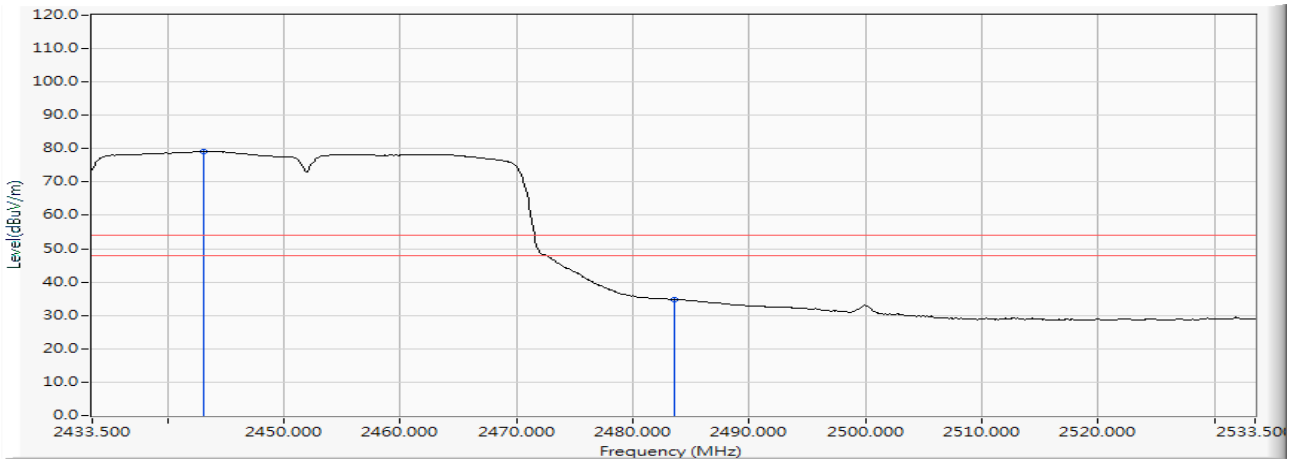
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2444.300	10.482	78.343	88.825	--	--	PEAK
2		2483.500	10.640	36.689	47.330	-26.670	74.000	PEAK
3		2486.900	10.654	42.864	53.518	-20.482	74.000	PEAK

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 : UNIT ASSY DA
Test Item : Band Edge Data
Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2452MHz)
Test Date : 2019/05/04

Vertical



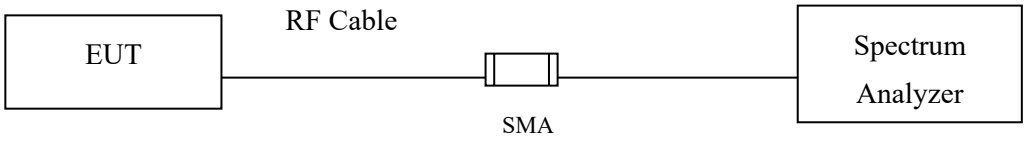
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2443.100	10.478	68.741	79.219	--	--	AVERAGE
2		2483.500	10.640	24.169	34.810	-19.190	54.000	AVERAGE

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≥3*RBW

7.4. Uncertainty

± 279.2Hz

7.5. Test Result of 6dB Bandwidth

Product : UNIT ASSY DA
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	8150	>500	Pass
06	2437	8150	>500	Pass
11	2462	8150	>500	Pass

Figure Channel 01:

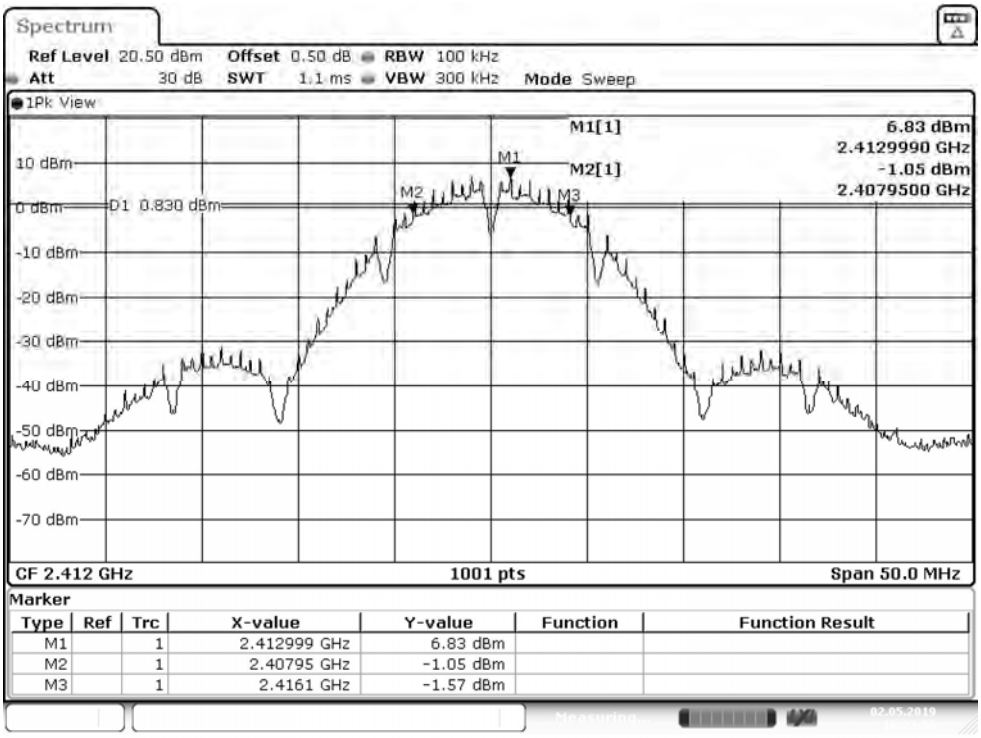


Figure Channel 06:

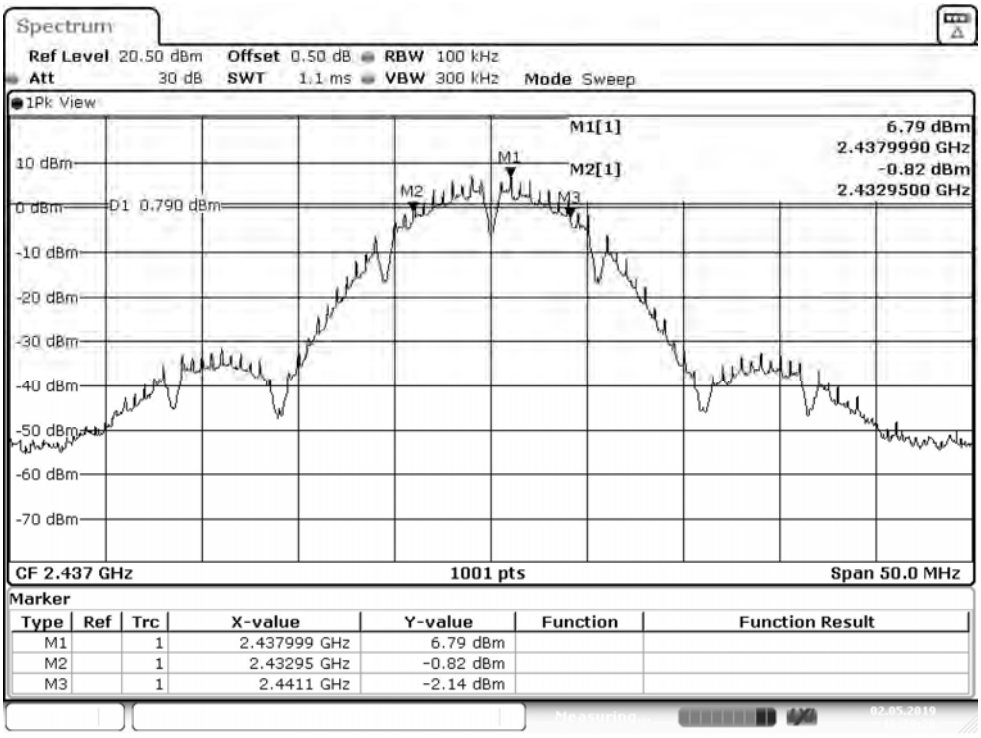
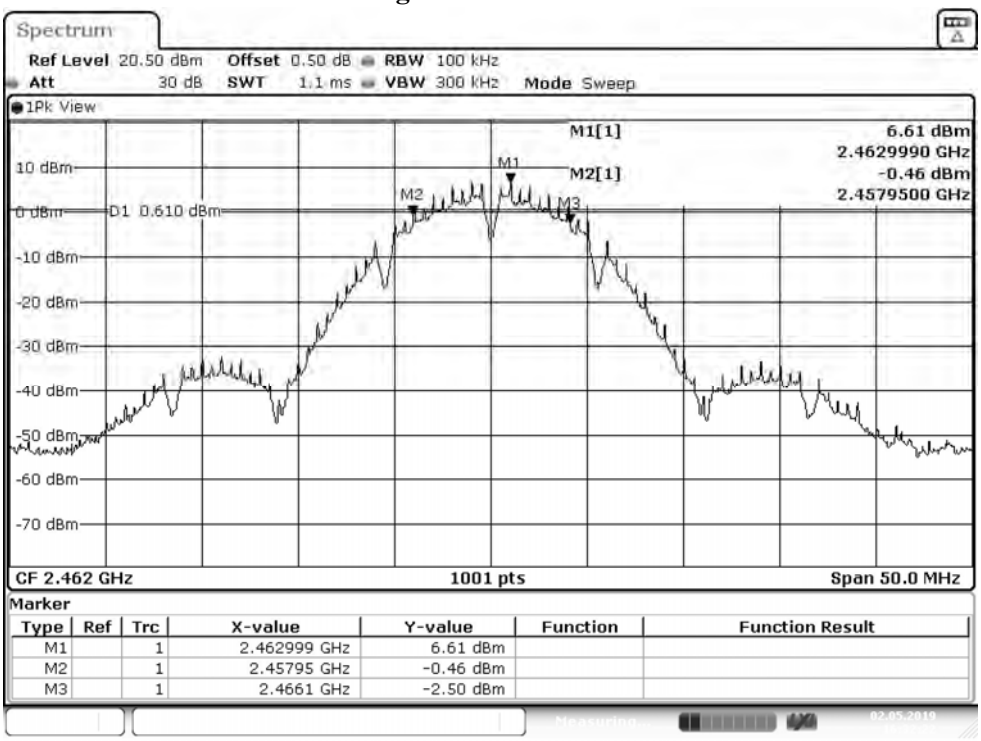


Figure Channel 11:



Product : UNIT ASSY DA
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	16150	>500	Pass
06	2437	16350	>500	Pass
11	2462	16400	>500	Pass

Figure Channel 01:

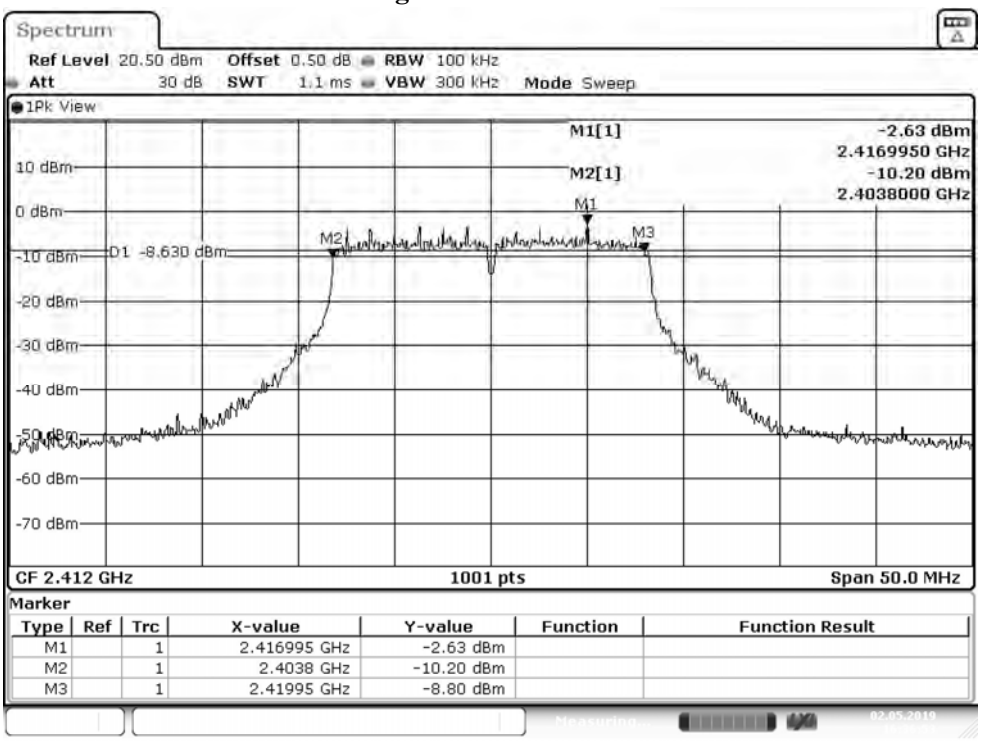


Figure Channel 06:

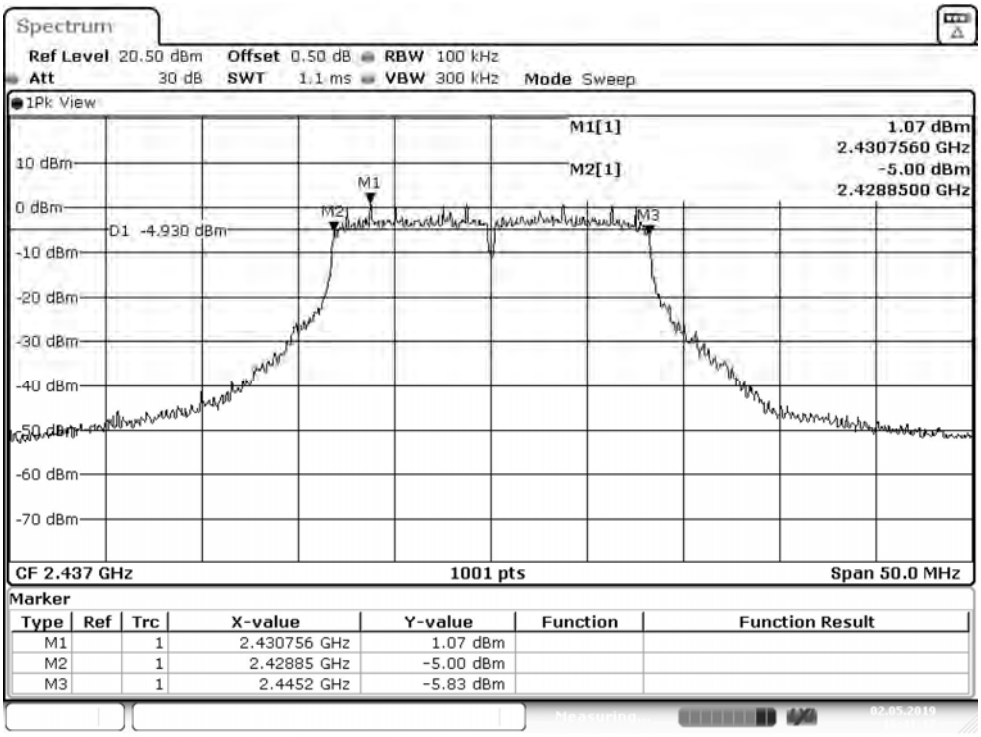
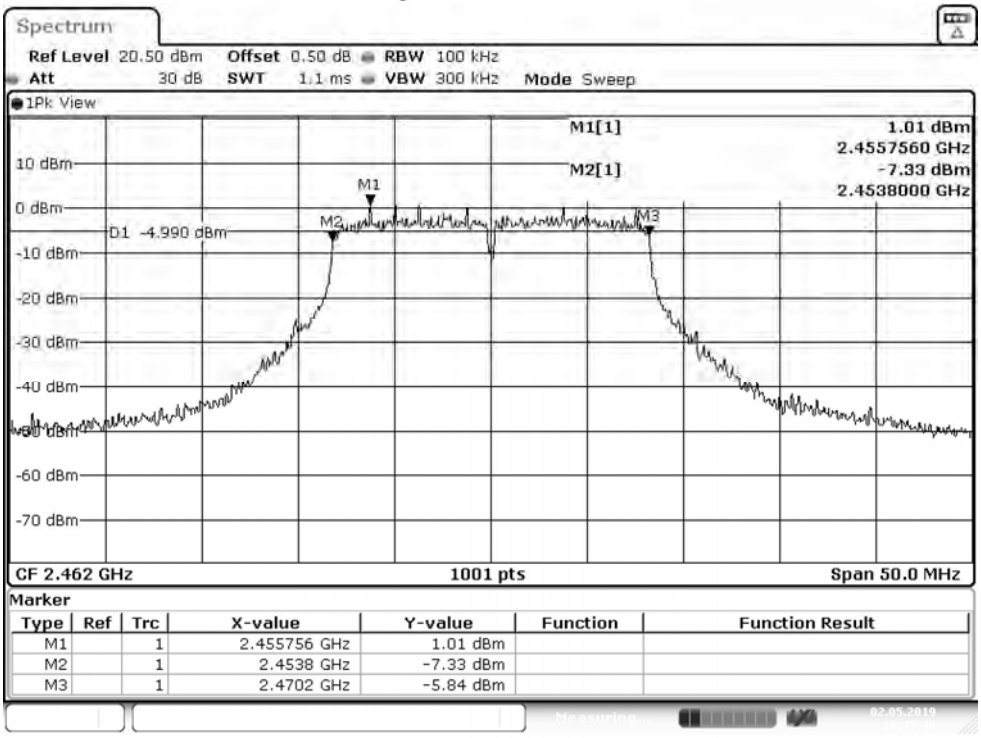


Figure Channel 11:



Product : UNIT ASSY DA
Test Item : 6dB Bandwidth Data
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412	16950	>500	Pass
06	2437	16900	>500	Pass
11	2462	16900	>500	Pass

Figure Channel 01:

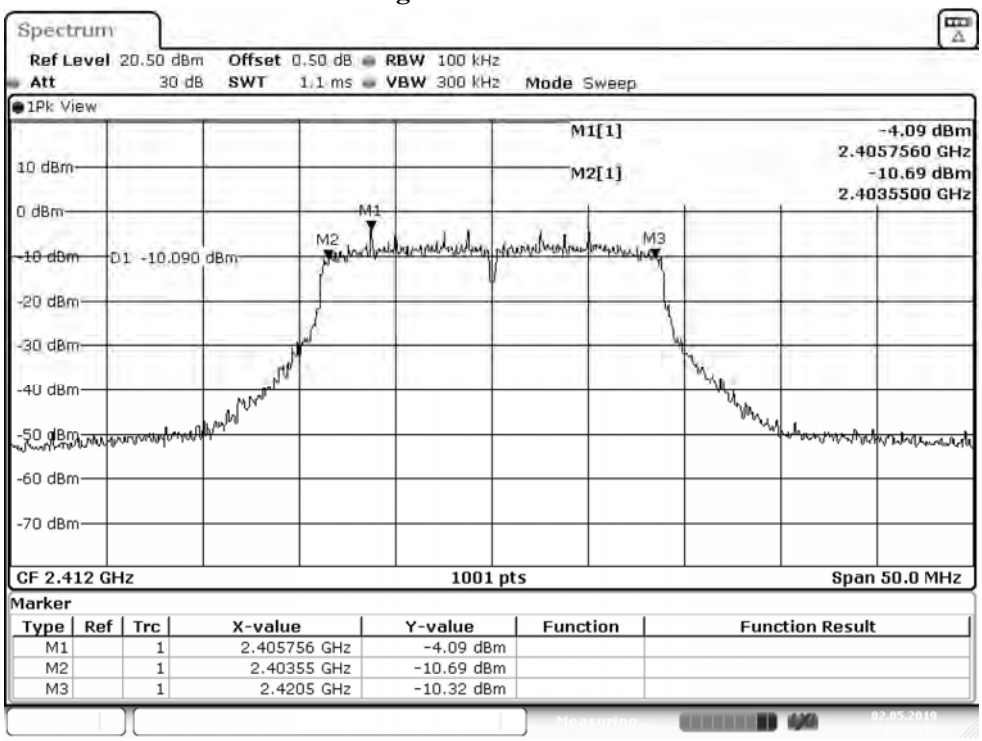


Figure Channel 06:

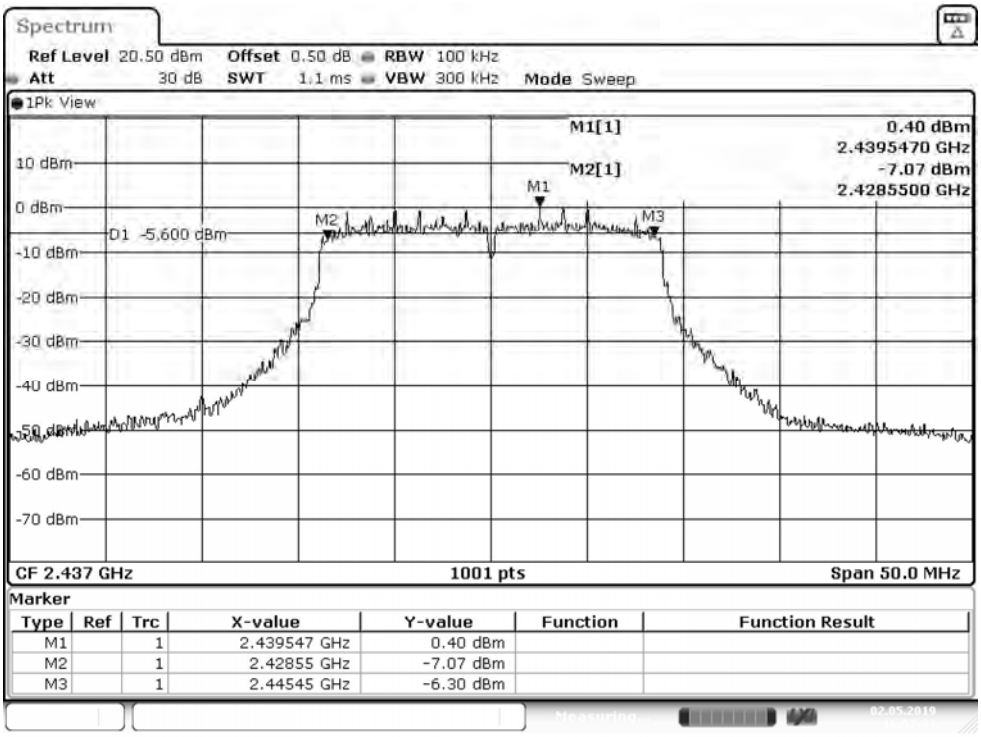
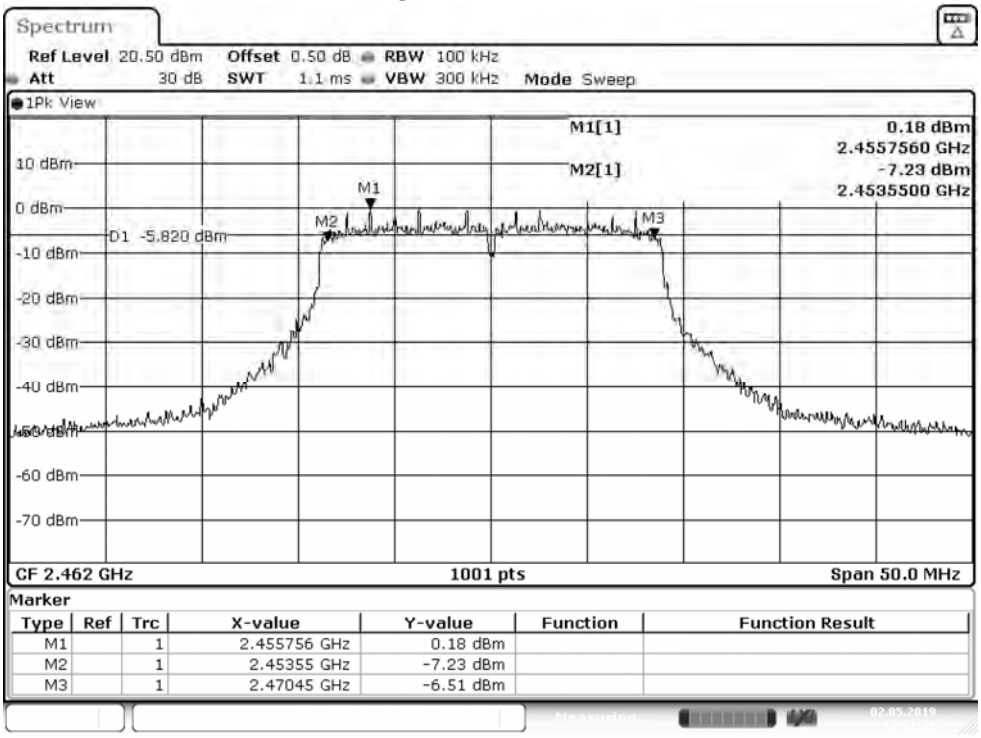


Figure Channel 11:



Product : UNIT ASSY DA
Test Item : 6dB Bandwidth Data
Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
03	2422	35800	>500	Pass
06	2437	35700	>500	Pass
09	2452	35500	>500	Pass

Figure Channel 03:

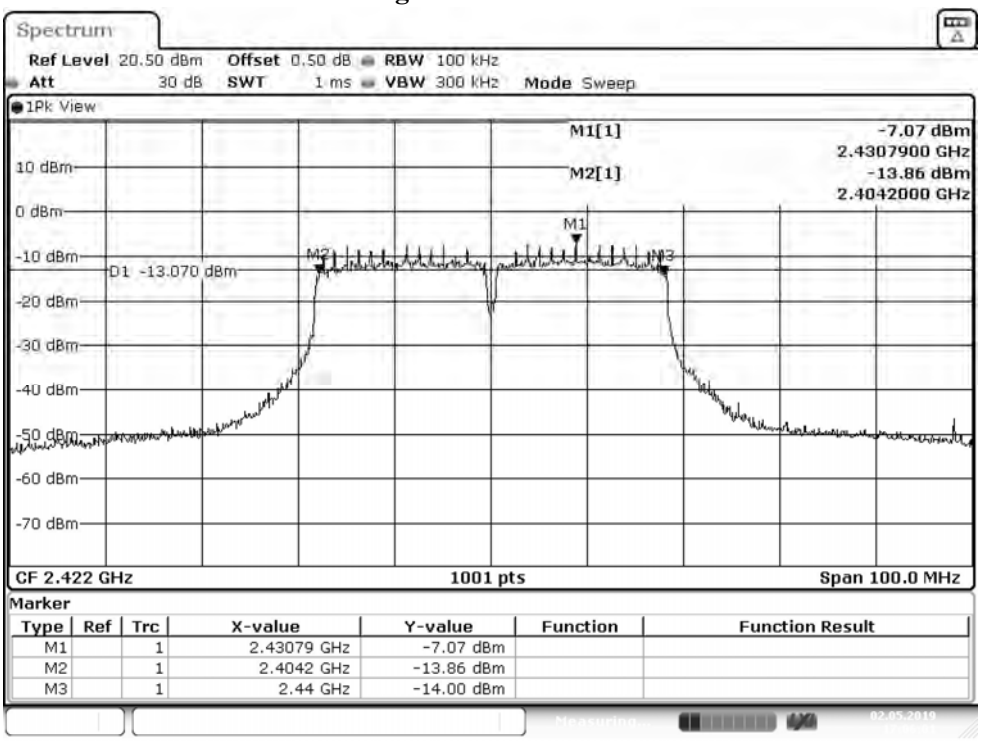


Figure Channel 06:

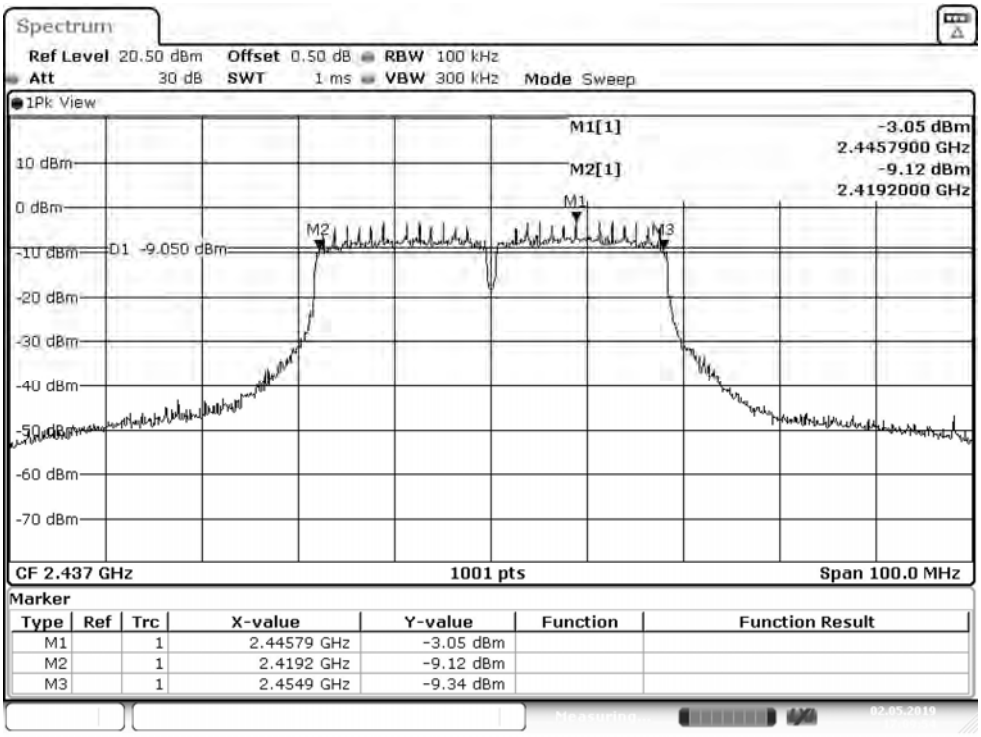
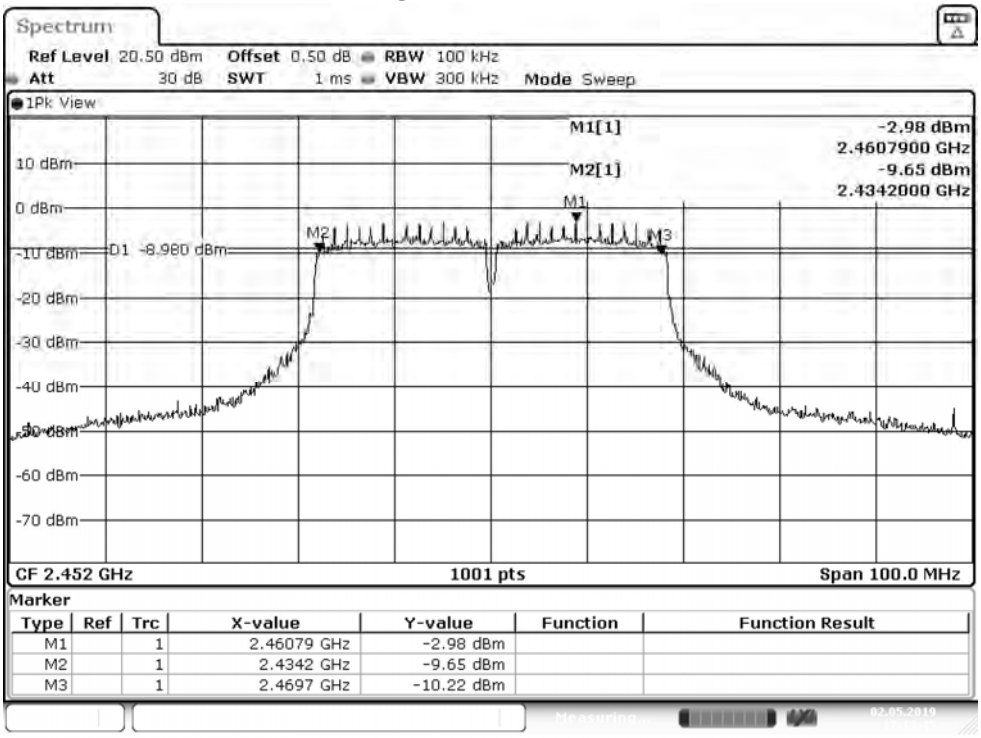
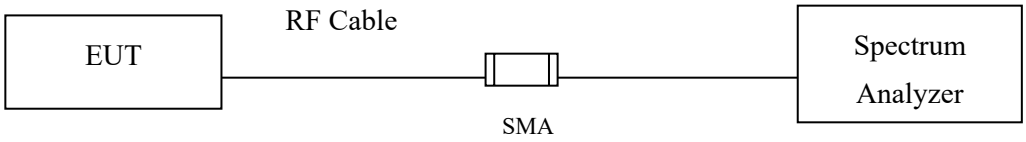


Figure Channel 09:



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 : UNIT ASSY DA
Test Item : Power Density Data
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
01	2412	6.96	≦8dBm	Pass
06	2437	6.75	≦8dBm	Pass
11	2462	6.59	≦8dBm	Pass

Figure Channel 01:

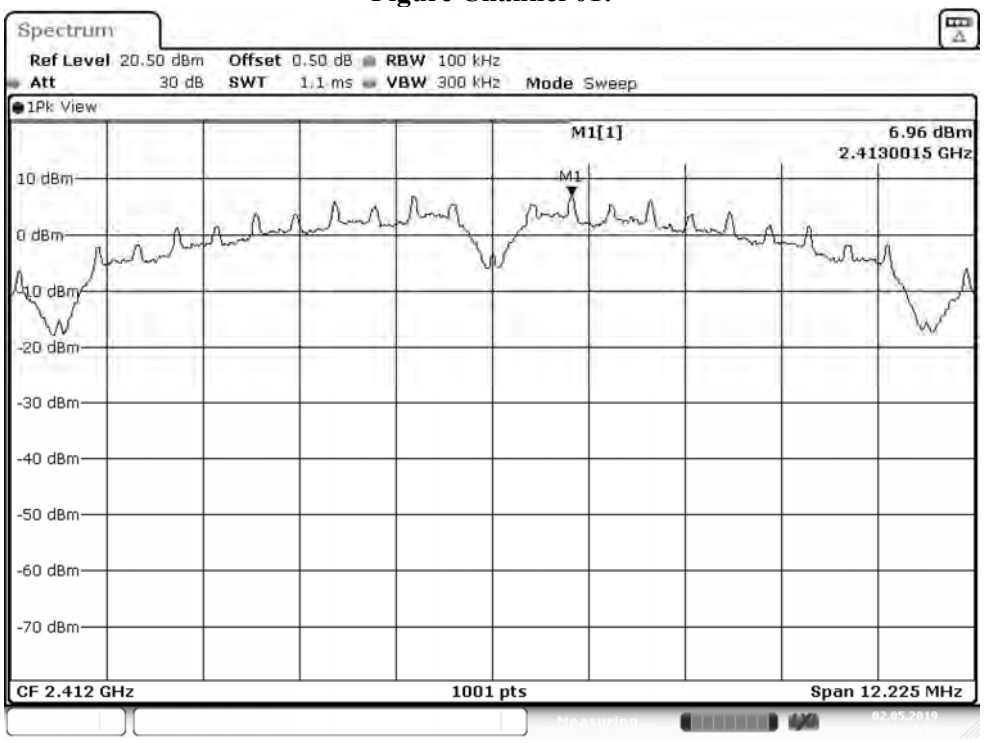


Figure Channel 06:

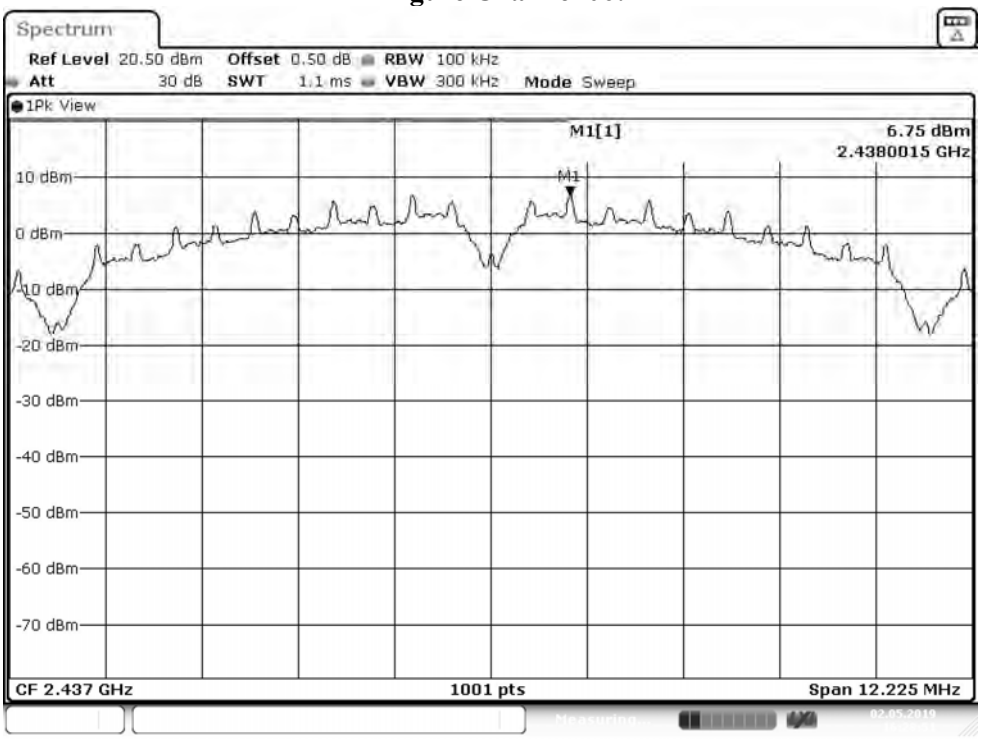
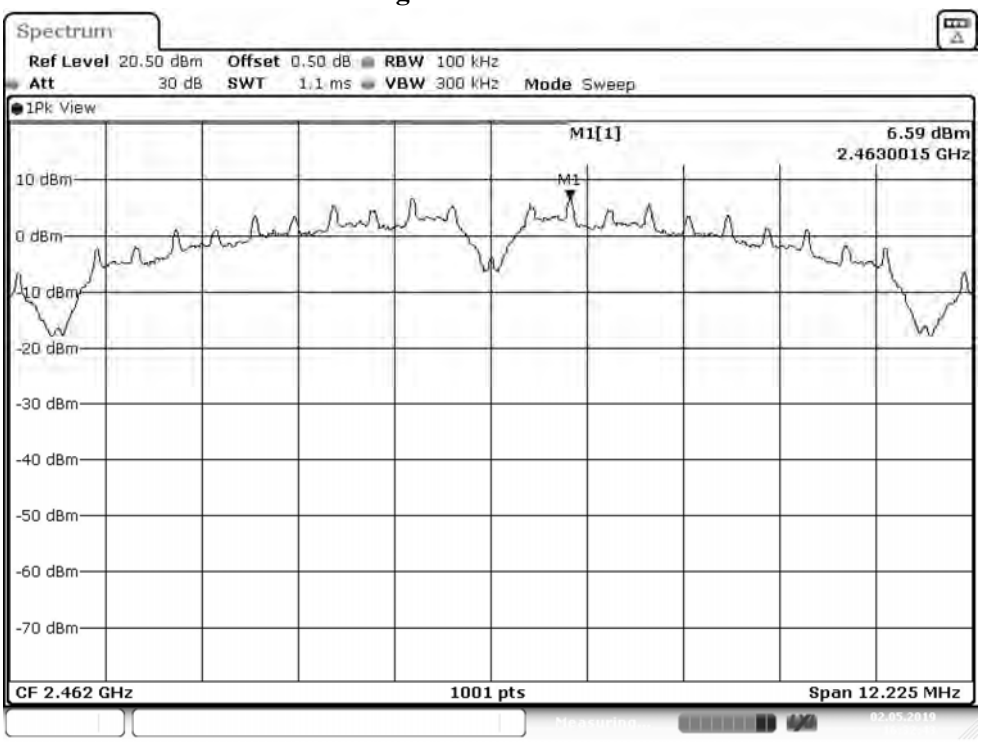


Figure Channel 11:



Product : UNIT ASSY DA
Test Item : Power Density Data
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
01	2412	-3.02	≦8dBm	Pass
06	2437	1.35	≦8dBm	Pass
11	2462	1.34	≦8dBm	Pass

Figure Channel 01:

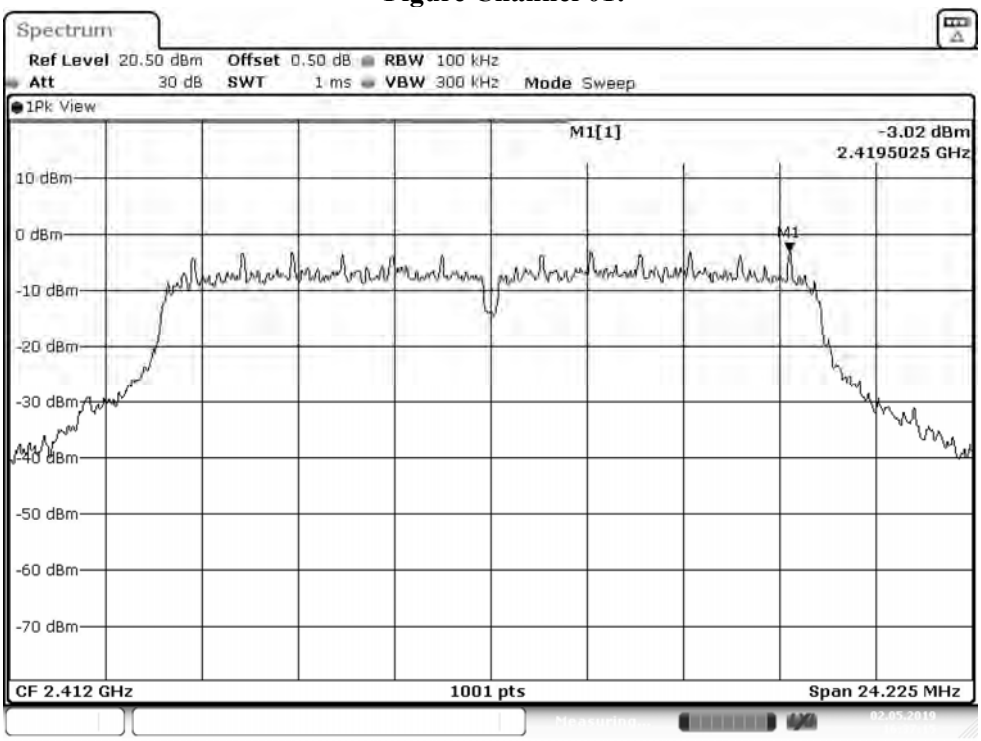


Figure Channel 06:

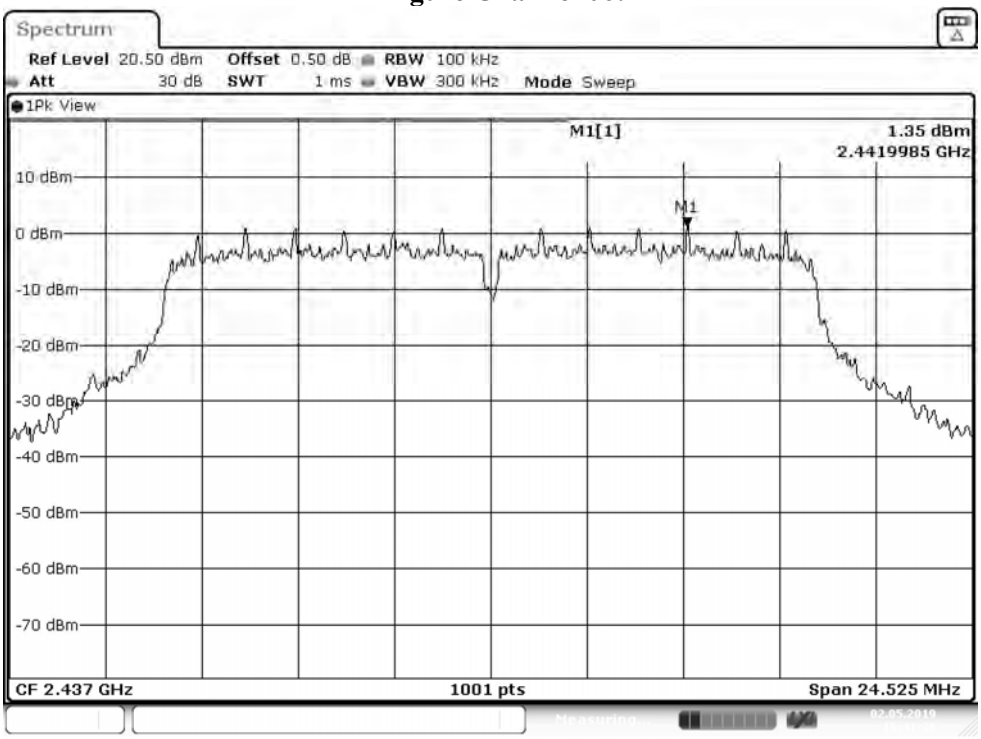
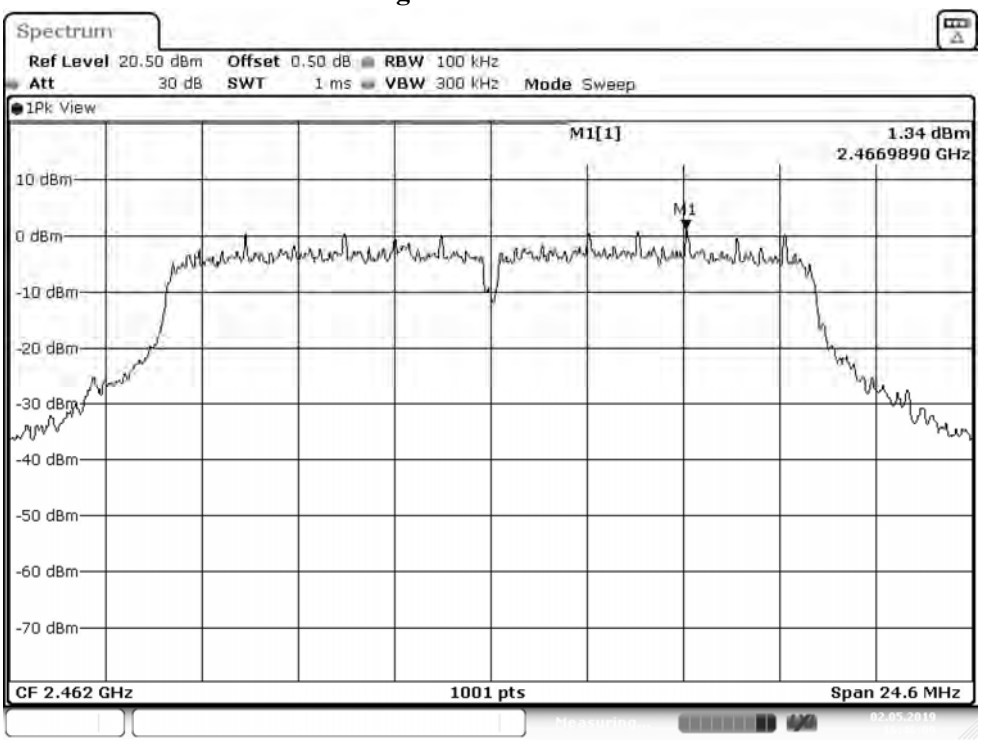


Figure Channel 11:



Product : UNIT ASSY DA
Test Item : Power Density Data
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
01	2412	-3.66	≦8dBm	Pass
06	2437	0.48	≦8dBm	Pass
11	2462	0.40	≦8dBm	Pass

Figure Channel 01:

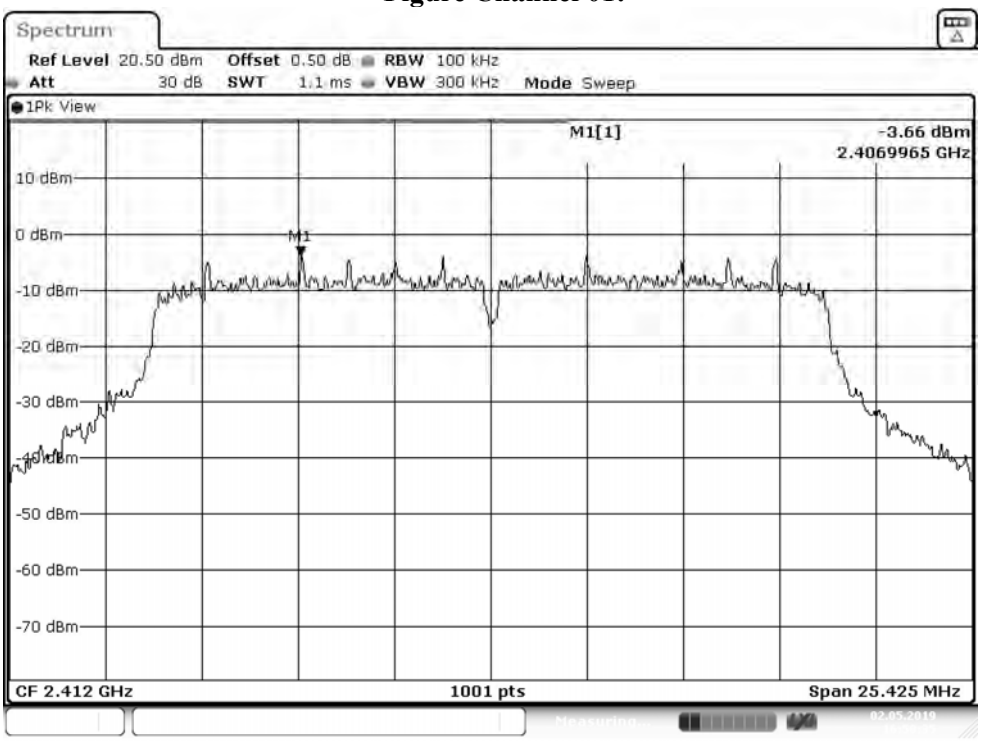


Figure Channel 06:

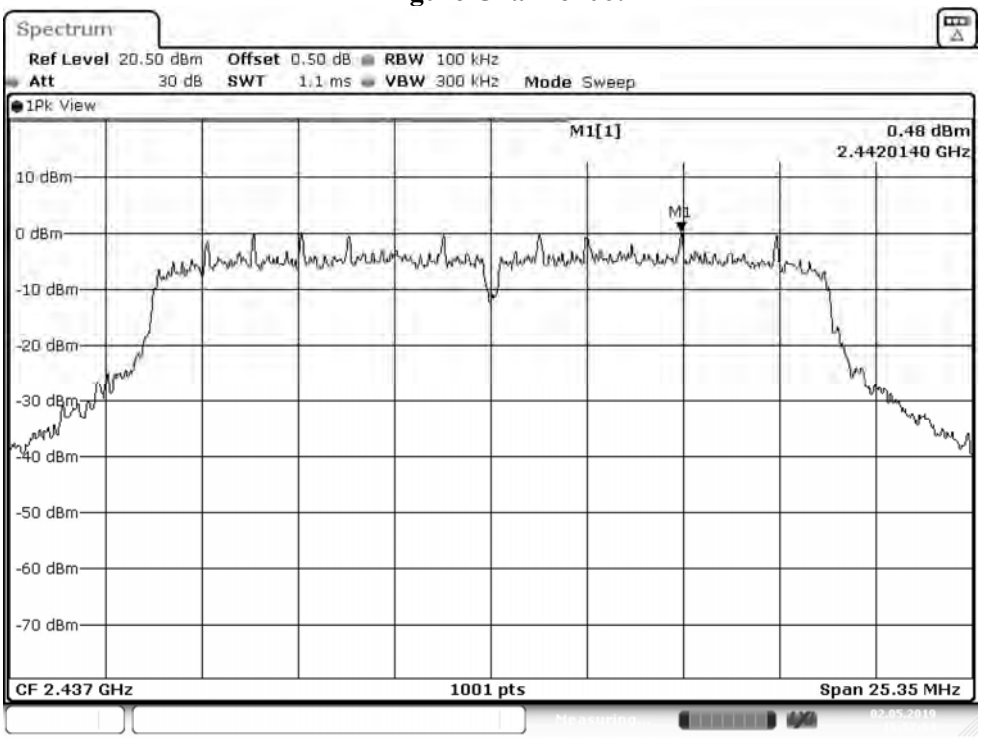
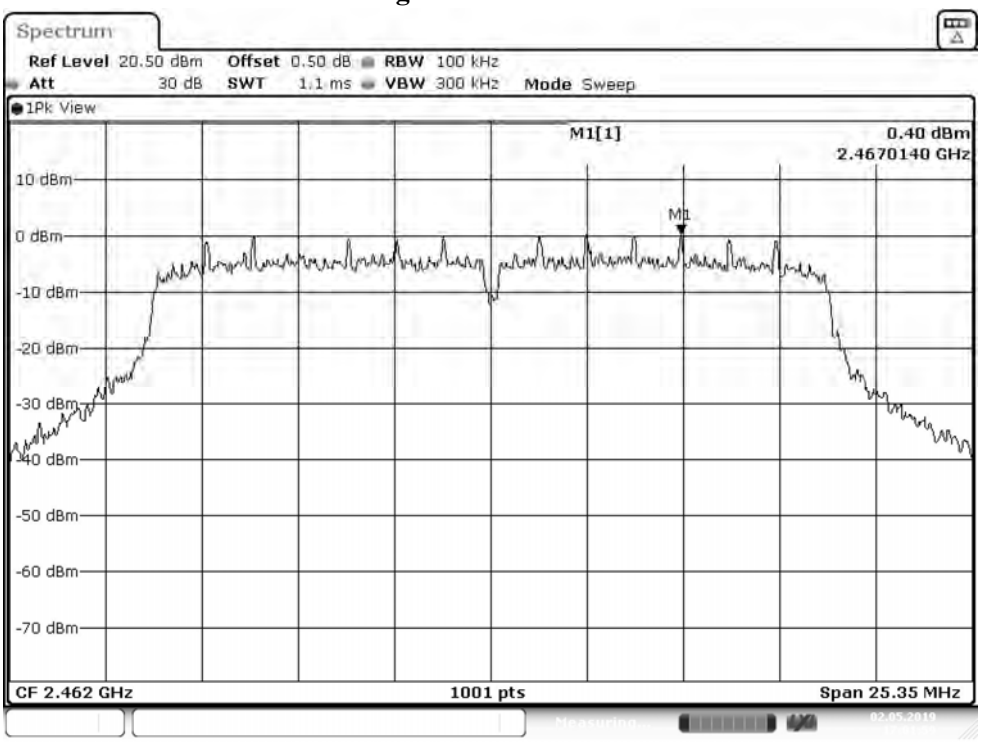


Figure Channel 11:



Product : UNIT ASSY DA
Test Item : Power Density Data
Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
03	2422	-7.20	≦8dBm	Pass
06	2437	-3.26	≦8dBm	Pass
09	2452	-3.35	≦8dBm	Pass

Figure Channel 03:

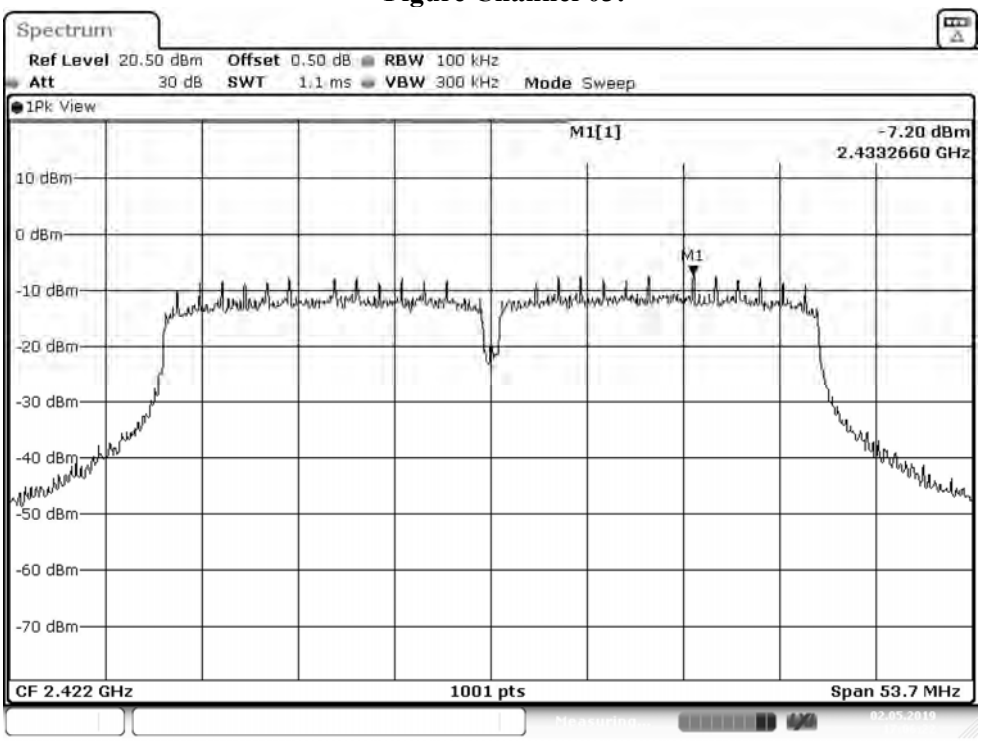


Figure Channel 06:

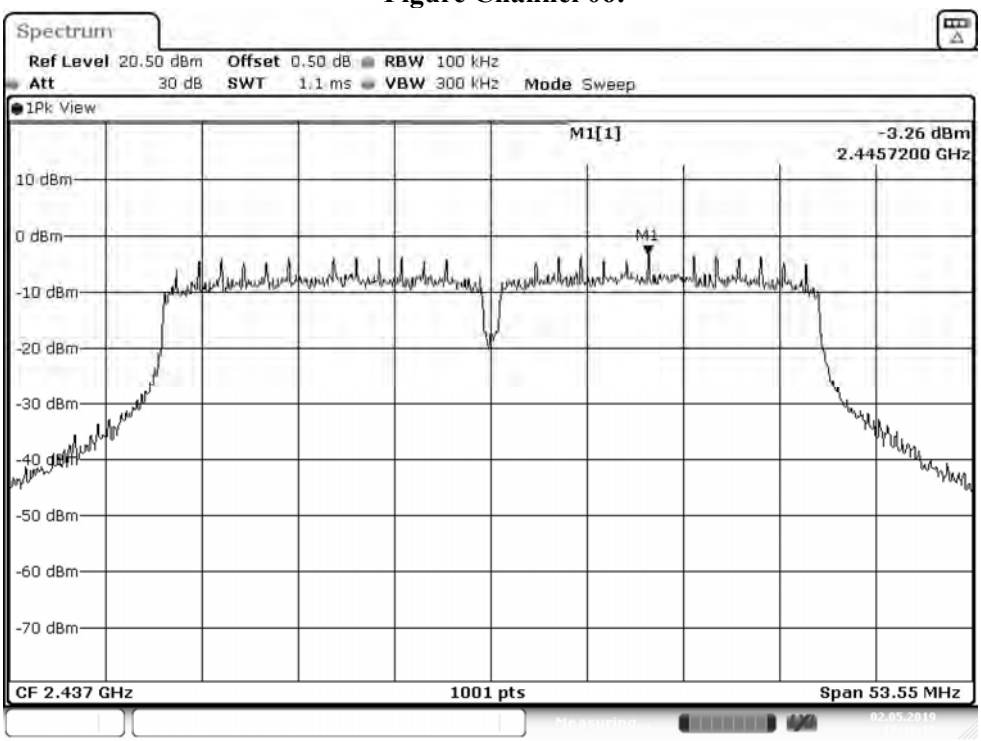
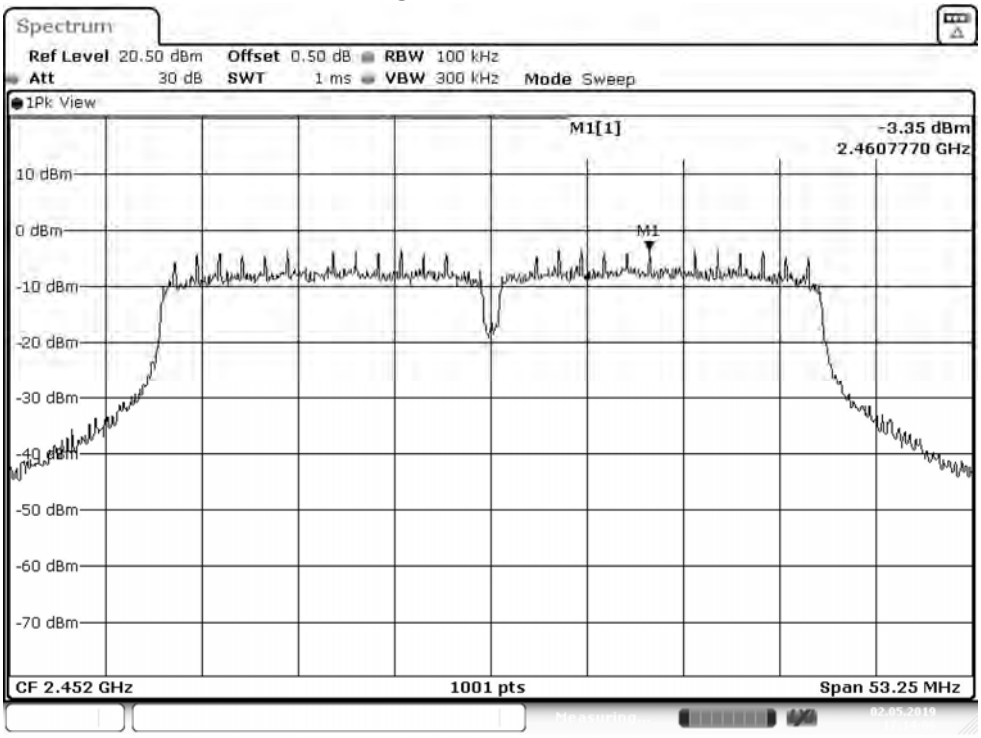
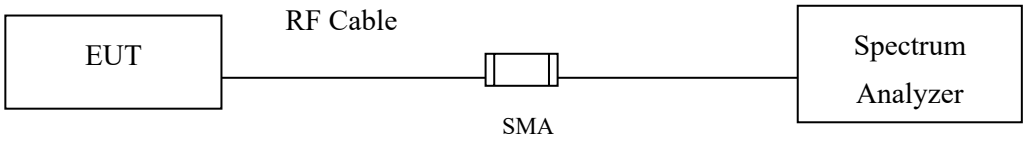


Figure Channel 09:



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

± 2.31msec

9.4. Test Result of Duty Cycle

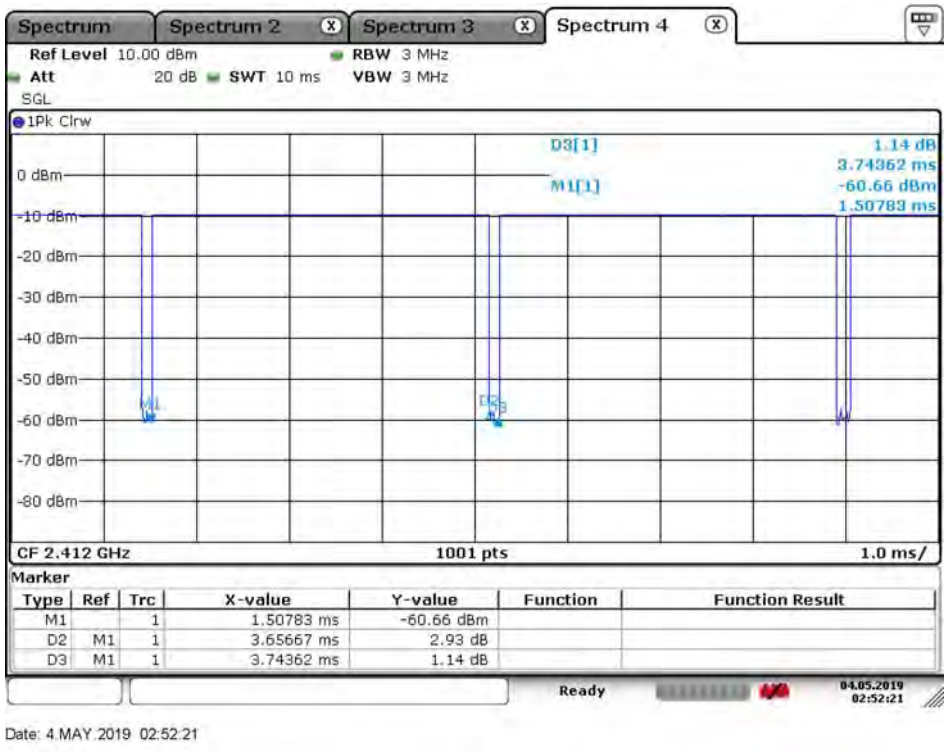
Product : UNIT ASSY DA
Test Item : Duty Cycle
Test Mode : Transmit

Duty Cycle Formula:
Duty Cycle = Ton / (Ton + Toff)
Duty Factor = 10 Log (1/Duty Cycle)

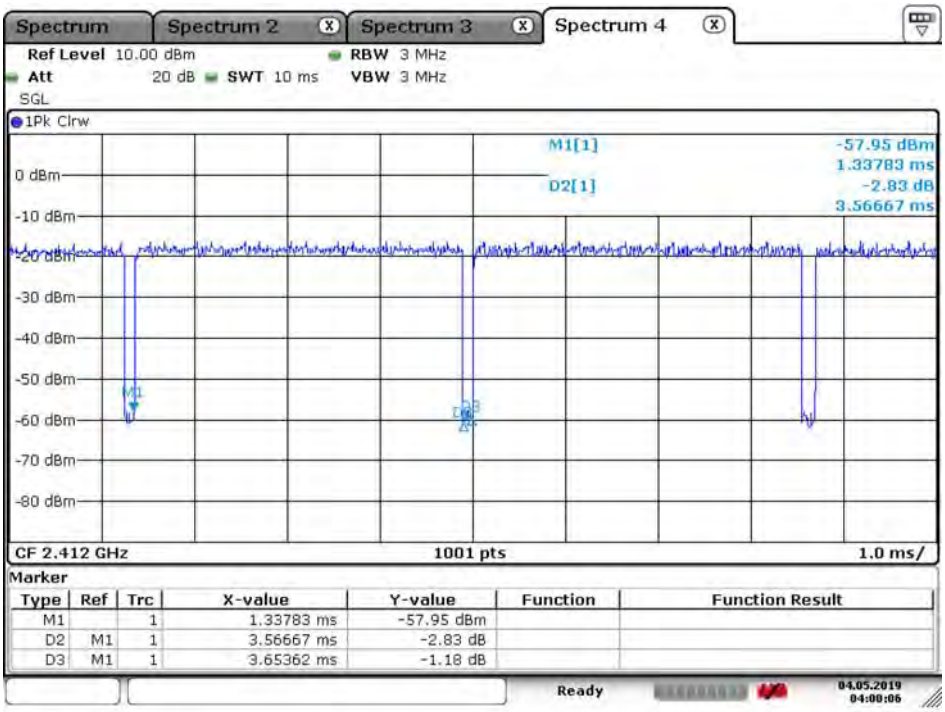
Results:

2.4GHz band	Ton (ms)	Ton + Toff (ms)	Duty Cycle (%)	Duty Factor (dB)
802.11b	3.6566	3.7436	97.68	0.10
802.11g	3.5666	3.6536	97.62	0.10
802.11n20	3.5566	3.6536	97.35	0.12
802.11n40	3.5266	3.6636	96.26	0.17

802.11b

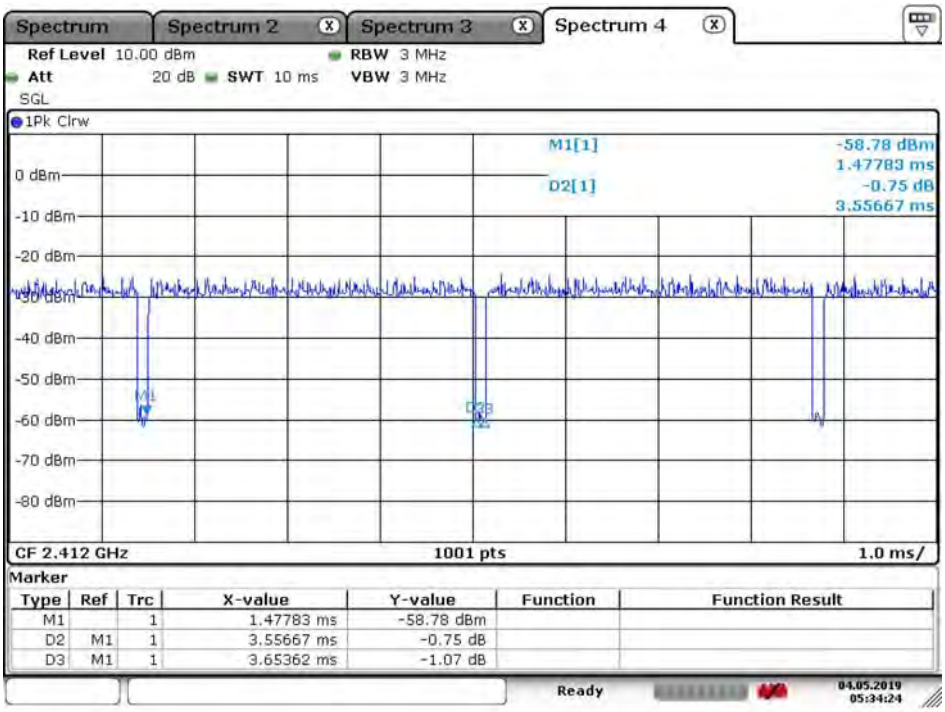


802.11g



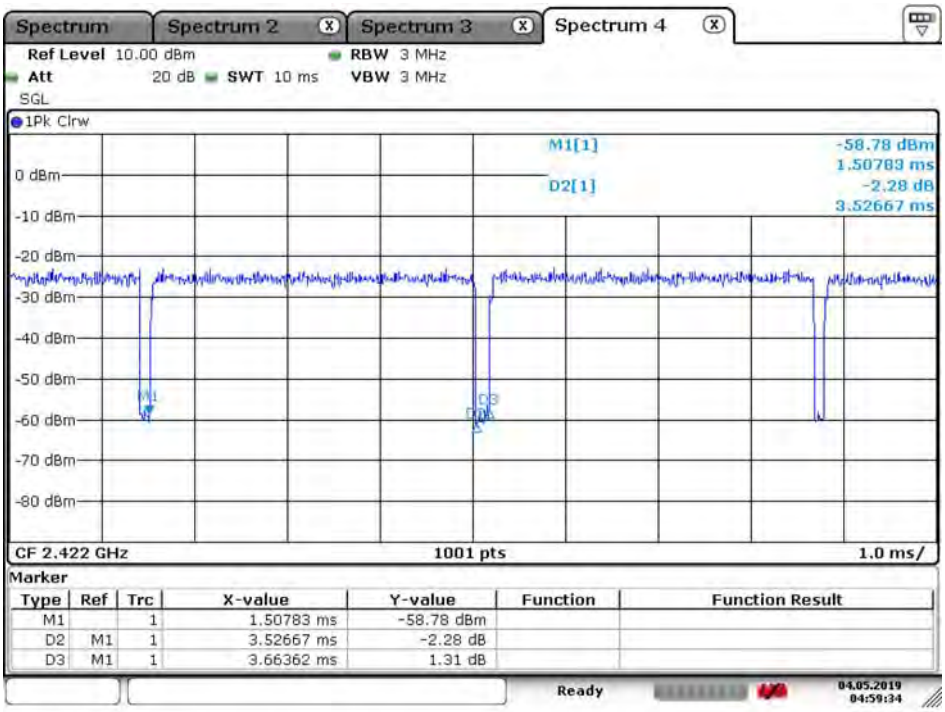
Date: 4.MAY.2019 04:00:07

802.11n20



Date: 4.MAY.2019 05:34:25

802.11n40



Date: 4.MAY.2019 04:59:34

10. EMI Reduction Method During Compliance Testing

No modification was made during testing.