



FCC RADIO TEST REPORT

Applicant : Promethean Ltd

Address : Promethean House, Lower Philips Rd Whitebirk,
Blackburn, United Kingdom

Equipment : Promethean WiFi Module (Nickel/Cobalt)

Model No. : AP-WIFI-A

Trade Name : Promethean

FCC ID : QAM-AP-WIFI-A

I HEREBY CERTIFY THAT :

The sample was received on Nov. 22, 2018 and the testing was carried out on Dec. 10, 2018 at CerpPASS Technology Corp. The test result refers exclusively to the test presented test model / sample. Without written approval of CerpPASS Technology Corp., the test report shall not be reproduced except in full.

Approved by:

Tested by:

Mark Liao / Assistant Manager

Amos / Engineer

Laboratory Accreditation:

CerpPASS Technology Corporation Test Laboratory

TAF LAB Code:	1439
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CONTENTS

1. Summary of Test Procedure and Test Results	5
1.1 Applicable Standards.....	5
2. Test Configuration of Equipment under Test	6
2.1 Feature of Equipment under Test.....	6
2.2 Carrier Frequency of Channels.....	7
2.3 Test Mode and Test Software.....	8
2.4 Description of Test System.....	8
2.5 General Information of Test.....	9
2.6 Measurement Uncertainty.....	9
2.7 Duty cycle.....	10
3. Test Equipment and Ancillaries Used for Tests	11
4. Antenna Requirements	12
4.1 Standard Applicable.....	12
4.2 Antenna Construction and Directional Gain.....	12
5. Test of AC Power Line Conducted Emission	13
5.1 Test Limit.....	13
5.2 Test Procedures.....	13
5.3 Typical Test Setup.....	13
5.4 Test Result and Data.....	14
6. Test of Spurious Emission (Radiated)	16
6.1 Test Limit.....	16
6.2 Test Procedures.....	16
6.3 Typical Test Setup.....	17
6.4 Test Result and Data (9KHz ~ 30MHz).....	18
6.5 Test Result and Data (30MHz ~ 1GHz).....	18
6.6 Test Result and Data (1GHz ~ 25GHz).....	20
6.7 Restricted Bands of Operation.....	56
6.8 Restrict Band Emission Measurement Data.....	57
7. Test of Spurious Emission (Conducted)	81
7.1 Test Limit.....	81
7.2 Test Procedure.....	81
7.3 Test Setup Layout.....	81
7.4 Test Result and Data.....	82
8. 6dB Bandwidth Measurement Data	90
8.1 Test Limit.....	90
8.2 Test Procedures.....	90
8.3 Test Setup Layout.....	90
8.4 Test Result and Data.....	91
9. Maximum Peak Output Power	96
9.1 Test Limit.....	96
9.2 Test Procedures.....	96
9.3 Test Setup Layout.....	96
9.4 Test Result and Data.....	97
10. Power Spectral Density	99
10.1 Test Limit.....	99



10.2 Test Procedures 99
10.3 Test Setup Layout..... 99
10.4 Test Result and Data 100



History of this test report

ORIGINAL

Additional attachment as following record:

Attachment No.	Issue Date	Description



1. Summary of Test Procedure and Test Results

1.1 Applicable Standards

ANSI C63.10: 2013

KDB 558074 D01 DTS Meas Guidance v03r05

FCC Rules and Regulations Part 15 Subpart C §15.247

FCC Rule	Description of Test	Result
FCC CFR Title 47 Part 15 Subpart C: Section 15.203/15.247 (b)	. Antenna Requirement	Pass
FCC CFR Title 47 Part 15 Subpart C: Section 15.207	. AC Power Line Conducted Emission	Pass
FCC CFR Title 47 Part 15 Subpart C: Section 15.205/15.209; Part2 section 2.1051, 2.1053, 2.1057	. Spurious Emission(Radiated)	Pass
FCC CFR Title 47 Part 15 Subpart C: Section 15.247(d); Part2 section 2.1051 and 2.1057	. Spurious Emission(Conducted)	Pass
FCC CFR Title 47 Part 15 Subpart C: Section 15.247(a)(2); Part2 section 2.1049	. 6dB Bandwidth	Pass
FCC CFR Title 47 Part 15 Subpart C: Section 15.247(b); Part2 section 2.1046	. Maximum Peak Output Power	Pass
FCC CFR Title 47 Part 15 Subpart C: Section 15.247(e)	. Power Spectral Density	Pass



2. Test Configuration of Equipment under Test

2.1 Feature of Equipment under Test

Main Chip	RTL8812AU-VS-CG
Host Interface	USB 2.0
IEEE Standards	IEEE 802.11a/b/g/n/ac
Operating Frequencies	2.4GHz~2.4835GHz /5.150~5.85GHz
Modulation	802.11b: CCK, DQPSK, DBPSK 802.11a/g: 64-QAM,16-QAM, QPSK, BPSK 802.11n: 64-QAM,16-QAM, QPSK, BPSK 802.11ac: 256-QAM,64-QAM,16-QAM, QPSK, BPSK
Working Mode	Infrastructure, Ad-Hoc
Wireless Data Rate	802.11b: 1, 2, 5.5, 11Mbps 802.11a/g: 6,9,12,18,24,36,48,54Mbps 802.11n: HT20 reach up to144.4Mbps, HT40 reach up to300Mbps 802.11ac: VHT20 reach up to173.3Mbps, VHT40 reach up to400Mbps, VHT80 reach up to866.7Mbps
Rx Sensitivity	-95dBm (Min)
TX Power	18.5dBm (Max)
Antenna Type	Connect to external antenna through the IPEX connector
Dimension(L*W*H)	27.0*17.7*3.6mm (L*W*H) ,Tolerance: ± 0.15 mm
Power Supply	3.3V \pm 0.2V
Power Consumption	Standby 192mA@5V (Max) TX mode 908 mA@5V (Max)
Clock Source	40MHz
Working Temperature	-10 °C to +50 °C
Storage Temperature	-40 °C to +70 °C

Note: for more details, please refer to the User's manual of the EUT.



2.2 Carrier Frequency of Channels

802.11b, 802.11g, 802.11n HT 20 (2412MHz~2462MHz)

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

802.11an HT40(2422-2452MHz)

Channel	Frequency(MHz)	Channel	Frequency(MHz)
---	---	07	2442
---	---	08	2447
*03	2422	*09	2452
04	2427	---	---
05	2432	---	---
*06	2437	---	---

Note: Channels remarked * are selected to perform test.



2.3 Test Mode and Test Software

- a. During testing, the interface cables and equipment positions were varied according to ANSI C63.4.
- b. The complete test system included support units and EUT for the RF test.
- c. An executive program, “**REALTEK 11ac 8812AU USB WLAN NIC Massproduction Kit**” which transmits and receives data through Wireless.
- d. The EUT had been tested under operating condition
After verification, all tests were carried out with the worst case test modes as shown below except radiated spurious emission below 1GHz and power line conducted emissions below 30MHz, which worst case was in normal link mode only.
EUT staying in continuous transmitting mode was programmed.
- e. Test modes:

Conducted Emissions from the AC mains power ports / Radiation Emissions (30MHz ~ 1GHz)	
Test Mode	Operating Description
1	802.11b (1 Mbps)
2	802.11g (6 Mbps)
3	802.11n HT20 (6.5 Mbps)
4	802.11n HT40 (13.5 Mbps)
caused “Test Mode 1 ” generated the worst case, it was reported as the final data.	
Radiated emission (above 1GHz For 1TX)	
Test Mode	Operating Description
1	802.11b (1 Mbps)
2	802.11g (6 Mbps)
3	802.11n HT20 (6.5 Mbps)
4	802.11n HT40 (13.5 Mbps)
caused “Test Mode 1~4” generated the worst case, it was reported as the final data.	
Radiated emission (above 1GHz For 2TX)	
Test Mode	Operating Description
1	802.11n HT20 (13 Mbps)
2	802.11n HT40 (27 Mbps)
caused “Test Mode 1~2” generated the worst case, it was reported as the final data.	

2.4 Description of Test System

No	Device	Manufacturer	Model No.	Description
1	Notebook	SONY	PCG-71811P	Power Cable, Unshielded, 1.7m



2.5 General Information of Test

☒	Test Site	CerpPASS Technology Corporation Test Laboratory Address: No.10, Ln. 2, Lianfu St., Luzhu Dist., Taoyuan City 33848, Taiwan (R.O.C.) Tel:+886-3-3226-888 Fax:+886-3-3226-881 Address: No.68-1, Shihbachongsi, Shihding Township, New Taipei City 223, Taiwan, R.O.C. Tel: +886-2-2663-8582
	FCC	TW1079, TW1061, TW1439
	IC	4934E-1, 4934E-2
	VCCI	T-2205 for Telecommunication Test C-4663 for Conducted emission test R-4399,R-4218 for Radiated emission test G-10812, G-10813 for radiated disturbance above 1GHz
Frequency Range Investigated:		Conducted: from 150kHz to 30 MHz Radiation: from 30 MHz to 25000MHz
Test Distance:		The test distance of radiated emission from antenna to EUT is 3 M.

2.6 Measurement Uncertainty

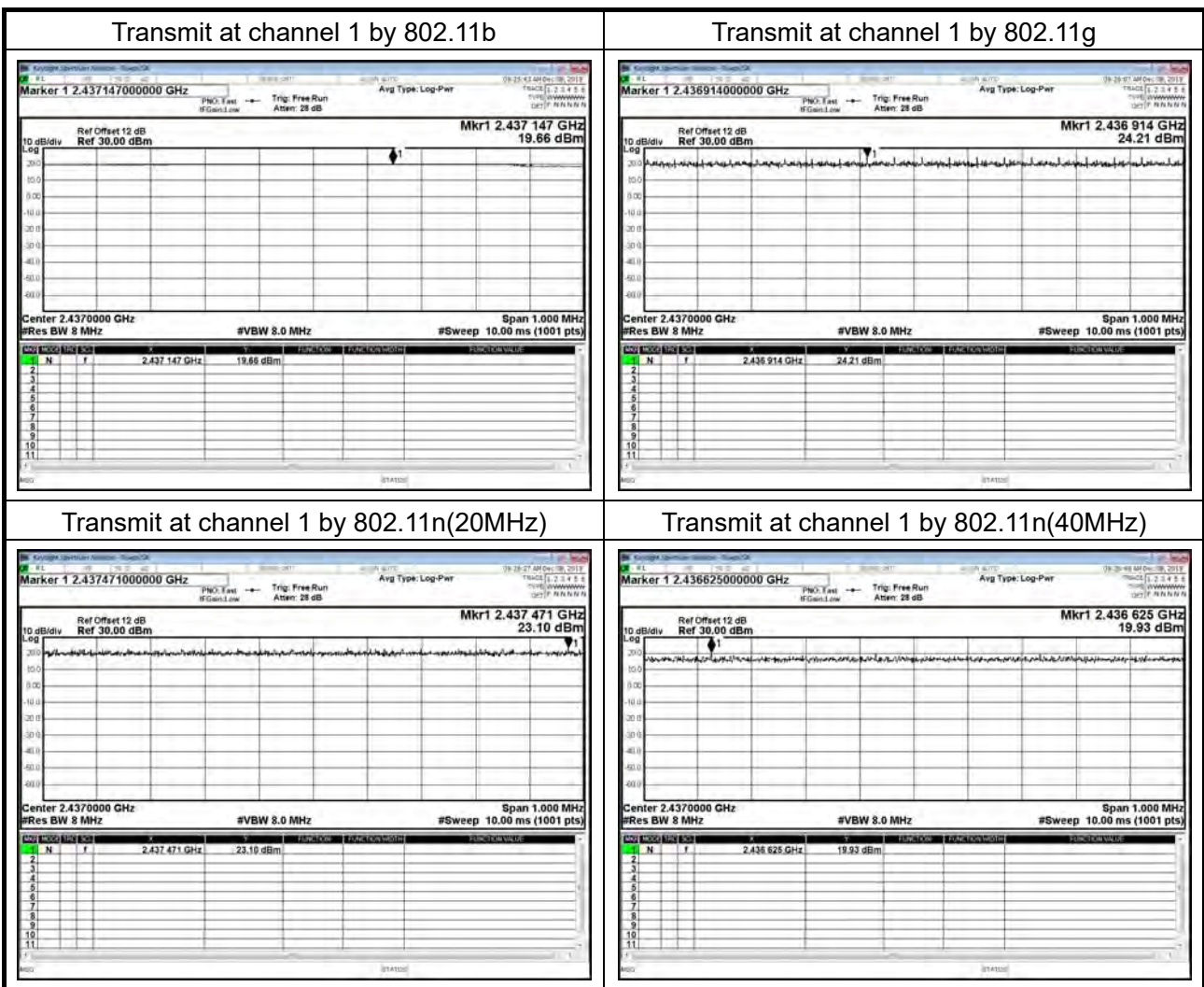
Measurement Item	Uncertainty
Radiated Spurious Emission(9KHz~30MHz)	±5.007dB
Radiated Spurious Emission(30MHz~1GHz)	±5.157dB
Radiated Spurious Emission(1GHz~18GHz)	±6.383dB
Radiated Spurious Emission(18GHz~40GHz)	±6.648dB
Conducted Spurious Emission	±1.253dB
6dB Bandwidth	±6.89%
Power Spectral Density	±0.630dB
26 dB Occupied Bandwidth	±6.10%
Frequency Stability	±375KHz
Channel Frequencies Separation	±6.10%
20dB Bandwidth	±6.12%
Dwell Time	±1.34%
Peak Output Power(Conducted Power Meter)	±0.86dB
Temperature	±1.2oC
Humidity	±2.7%
Channel Move Time	±4.53%
Channel Closing Transmission Time	±6.61%
Threshold	±0.631dB
Non occupancy period	±1.17%



2.7 Duty cycle

Test Item	Duty cycle
Test Date	Dec. 08, 2018

Mode	Frequency (MHz)	Measurement (%)
802.11b	2412	100
802.11g	2412	100
802.11n(20MHz)	2412	100
802.11n(40MHz)	2412	100





3. Test Equipment and Ancillaries Used for Tests

Instrument	Manufacturer	Model No	Serial No	Calibration Date	Valid Date
EMI Receiver	R&S	ESCI3	100443	2018/03/15	2019/03/14
LISN	Schwarzbeck	NSLK 8127	8127-568	2018/02/26	2019/02/25
Pulse Limiter	R&S	ESH3-Z2	101934	2018/02/22	2019/02/21
Bilog Antenna	Schwarzbeck	VULB9168	275	2018/09/17	2019/09/16
Active Loop Antenna	EMCO	6507	40855	2018/05/22	2019/05/21
Horn Antenna	EMCO	3115	31601	2018/09/26	2019/09/25
Horn Antenna	EMCO	3116	31970	2018/03/23	2019/03/22
Preamplifier	EM	EM330	60660	2018/03/08	2019/03/07
Preamplifier	EMC INSTRUMENTS	EMC051845SE	980333	2018/09/18	2019/09/17
Preamplifier	EMC INSTRUMENTS	EMC184045	980065	2018/10/31	2019/10/30
MXG MW Analog Signal Generator	KEYSIGHT	N5183A	MY50142931	2018/04/10	2019/04/09
Spectrum Analyzer	R&S	FSP40	100219	2018/07/03	2019/07/02
BLUETOOTH TESTER	R&S	CBT	101133	2018/04/02	2019/04/01
Attenuator	KEYSIGHT	8491B	MY39250705	2018/09/04	2019/09/03
Rotary Attenuator	Agilent	8495B	MY42146680	2018/03/29	2019/03/28
Temp & Humi chamber	T-MACHINE	TMJ-9712	T-12-040111	2018/08/30	2019/08/29
Series Power Meter	Anritsu	ML2495A	1224005	2018/03/23	2019/03/22
Power Sensor	Anritsu	MA2411B	1207295	2018/03/23	2019/03/22
Software	Farad	Ez-EMC	ver.ct3a1	N/A	N/A
Software	AUDIX	E3	V8.2014-8-6	N/A	N/A
Software	Keysight	N7607B Signal Studio	V3.0.0.0	N/A	N/A
Software	Keysight	Inservice MonitorUtility	N/A	N/A	N/A



4. Antenna Requirements

4.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

4.2 Antenna Construction and Directional Gain

Antenna	Peak Gain
Dipole Antenna	2400MHz-2500MHz: ANT A: 2.0 dBi ; ANT B: 2.0 dBi
	5150MHz-5250MHz: ANT A: 2.0 dBi ; ANT B: 2.0 dBi
	5250MHz-5350MHz: ANT A: 2.0 dBi ; ANT B: 2.0 dBi
	5470MHz-5725MHz: ANT A: 2.0 dBi ; ANT B: 2.0 dBi
	5725MHz-5850MHz: ANT A: 2.0 dBi ; ANT B: 2.0 dBi



5. Test of AC Power Line Conducted Emission

5.1 Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz on the 120 VAC power and return leads of the EUT according to the methods defined in ANSI C63.10-2013. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 6.2.2. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

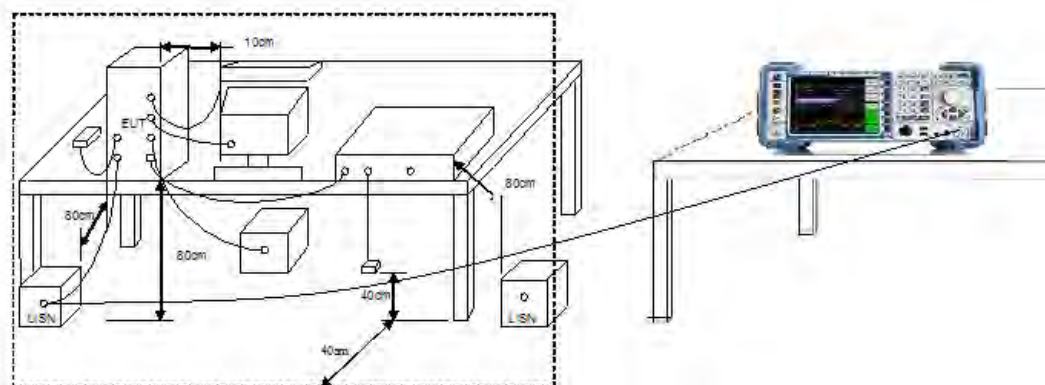
Frequency (MHz)	Quasi Peak (dB μ V)	Average (dB μ V)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

*Decreases with the logarithm of the frequency.

5.2 Test Procedures

The EUT was setup according to ANSI C63.10, 2013 and tested according to DTS test procedure of Oct 2014 KDB558074 for compliance to FCC 47CFR 15.247 requirements. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs) Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

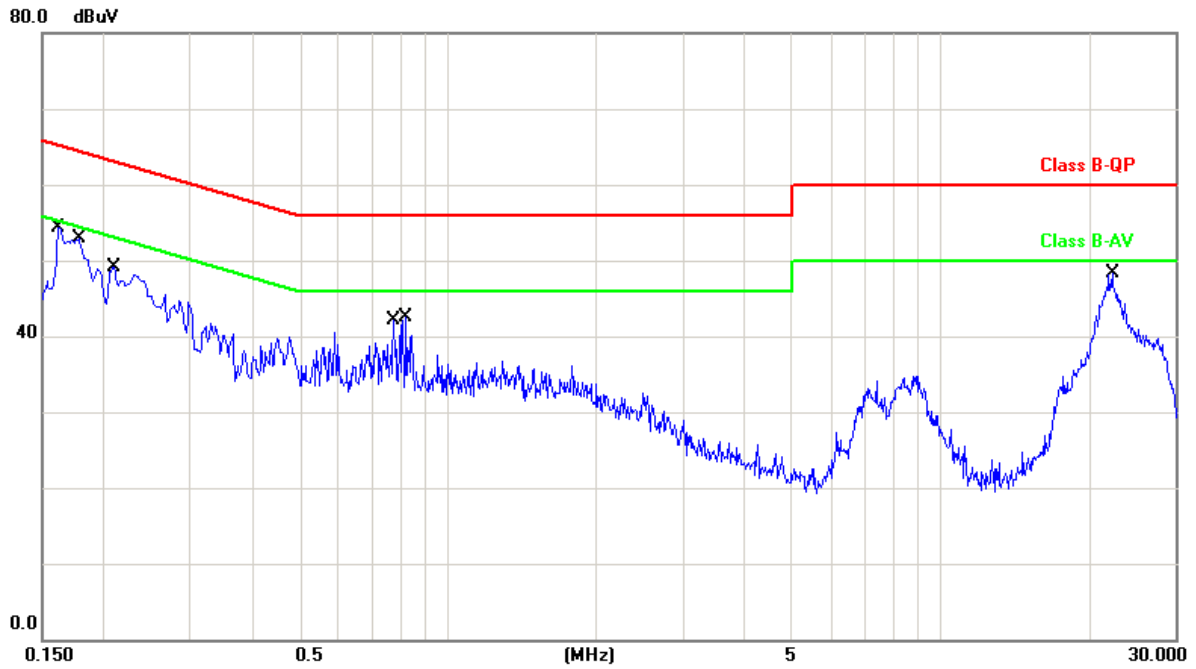
5.3 Typical Test Setup





5.4 Test Result and Data

Power	: AC 120V	Pol/Phase	: LINE
Test Mode	: Mode 1	Temperature	: 26 °C
Test date	: Dec. 08, 2018	Humidity	: 48 %
Memo	:	Atmospheric Pressure	: 1008 hpa

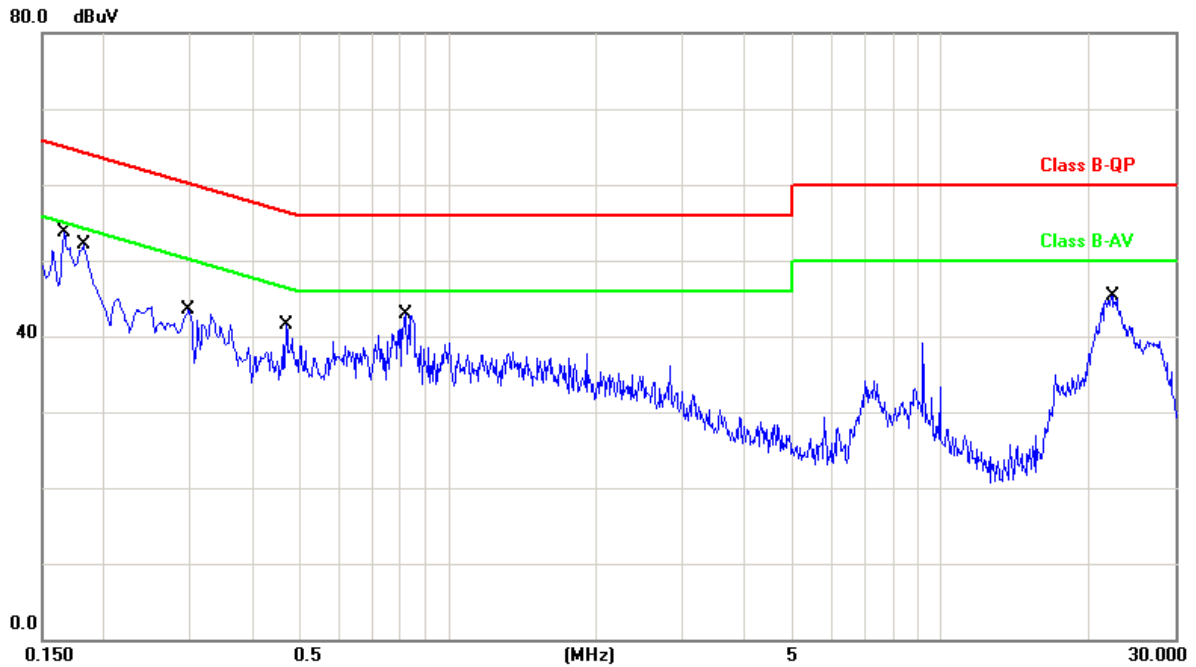


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1620	10.06	40.12	50.18	65.36	-15.18	QP
2	0.1620	10.06	25.47	35.53	55.36	-19.83	AVG
3	0.1780	10.06	38.16	48.22	64.57	-16.35	QP
4	0.1780	10.06	22.94	33.00	54.57	-21.57	AVG
5	0.2100	10.05	34.65	44.70	63.20	-18.50	QP
6	0.2100	10.05	20.49	30.54	53.20	-22.66	AVG
7	0.7780	10.09	22.20	32.29	56.00	-23.71	QP
8	0.7780	10.09	14.97	25.06	46.00	-20.94	AVG
9	0.8260	10.10	23.33	33.43	56.00	-22.57	QP
10	0.8260	10.10	15.19	25.29	46.00	-20.71	AVG
11	22.3220	10.58	30.10	40.68	60.00	-19.32	QP
12	22.3220	10.58	22.44	33.02	50.00	-16.98	AVG

Note: Level = Reading + Factor
Margin = Level – Limit



Power	: AC 120V	Pol/Phase	: NEUTRAL
Test Mode	: Mode 1	Temperature	: 26 °C
Test date	: Dec. 08, 2018	Humidity	: 48 %
Memo	:	Atmospheric Pressure	: 1008 hpa



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1660	10.06	39.55	49.61	65.15	-15.54	QP
2	0.1660	10.06	26.98	37.04	55.15	-18.11	AVG
3	0.1819	10.06	36.37	46.43	64.39	-17.96	QP
4	0.1819	10.06	22.03	32.09	54.39	-22.30	AVG
5	0.2980	10.00	28.87	38.87	60.30	-21.43	QP
6	0.2980	10.00	18.01	28.01	50.30	-22.29	AVG
7	0.4700	9.91	24.82	34.73	56.51	-21.78	QP
8	0.4700	9.91	15.84	25.75	46.51	-20.76	AVG
9	0.8220	10.09	25.94	36.03	56.00	-19.97	QP
10	0.8220	10.09	15.62	25.71	46.00	-20.29	AVG
11	22.3980	10.58	28.63	39.21	60.00	-20.79	QP
12	22.3980	10.58	20.88	31.46	50.00	-18.54	AVG

Note: Level = Reading + Factor
Margin = Level – Limit



6. Test of Spurious Emission (Radiated)

6.1 Test Limit

In any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. If the transmitter measurement is based on the maximum conducted output power, the attenuation required under this paragraph shall be 30dB instead of 20dB. In addition, radiated emissions which fall in section 15.205(a) the restricted bands must also comply with the radiated emission limit specified in section 15.209(a).

FREQUENCIES(MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE(meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

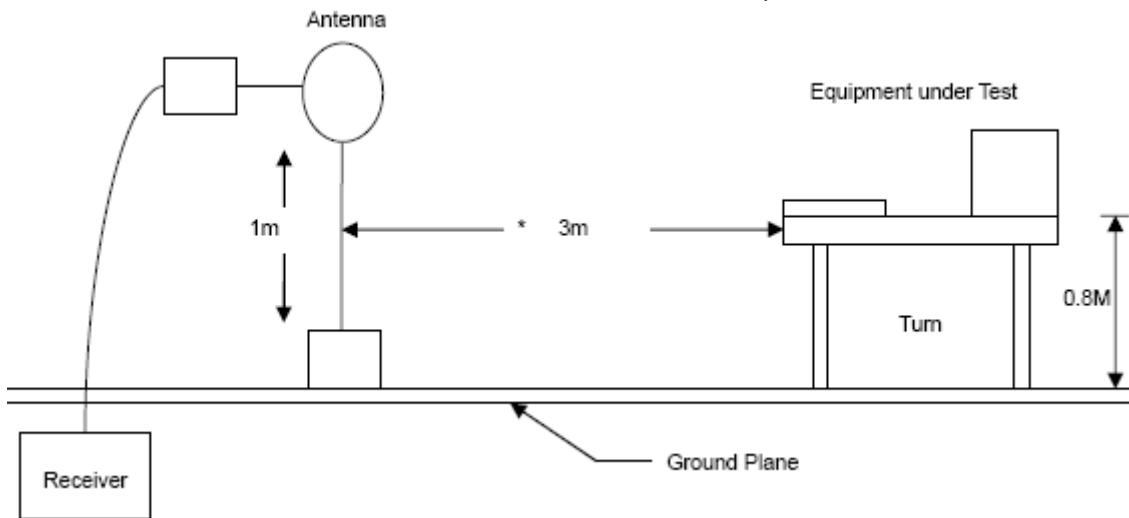
6.2 Test Procedures

- The EUT was placed on a rotatable table top 0.8 meter for frequency below 1GHz and 1.5meter for frequency above 1GHz above ground.
- The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- The table was rotated 360 degrees to determine the position of the highest radiation.
- The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
- For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
- Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.
- For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than AVG limit (that means the emission level in peak mode also complies with the limit in AVG mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in AVG mode again and reported.

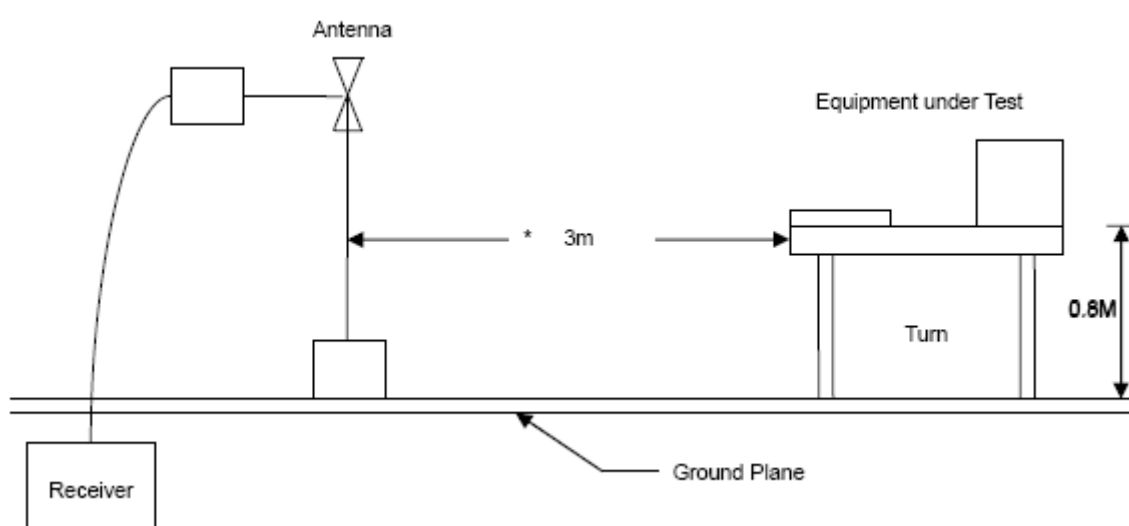


6.3 Typical Test Setup

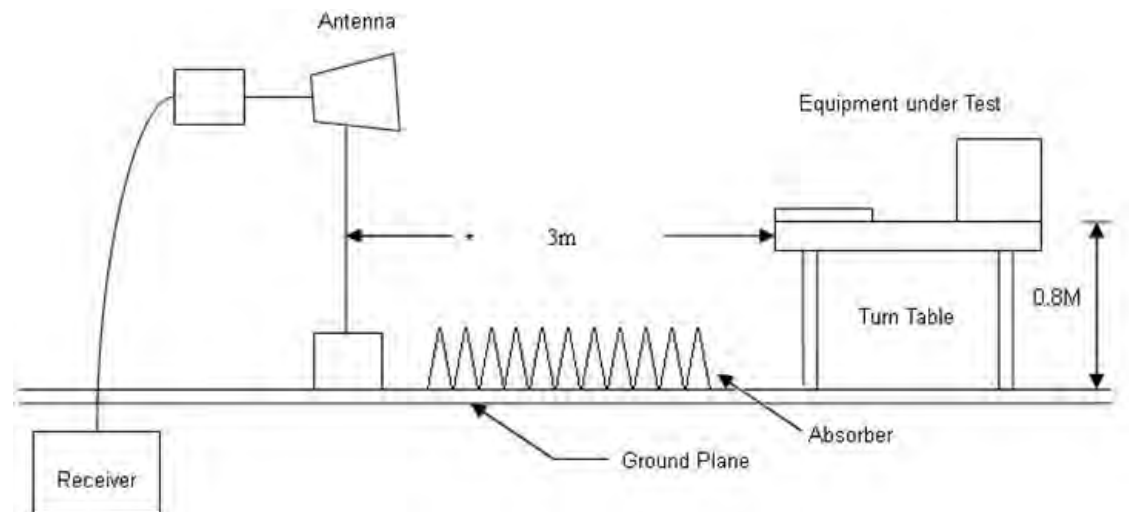
Below 30MHz Test Setup



30M - 1GHz Test Setup



Above 1GHz Test Setup



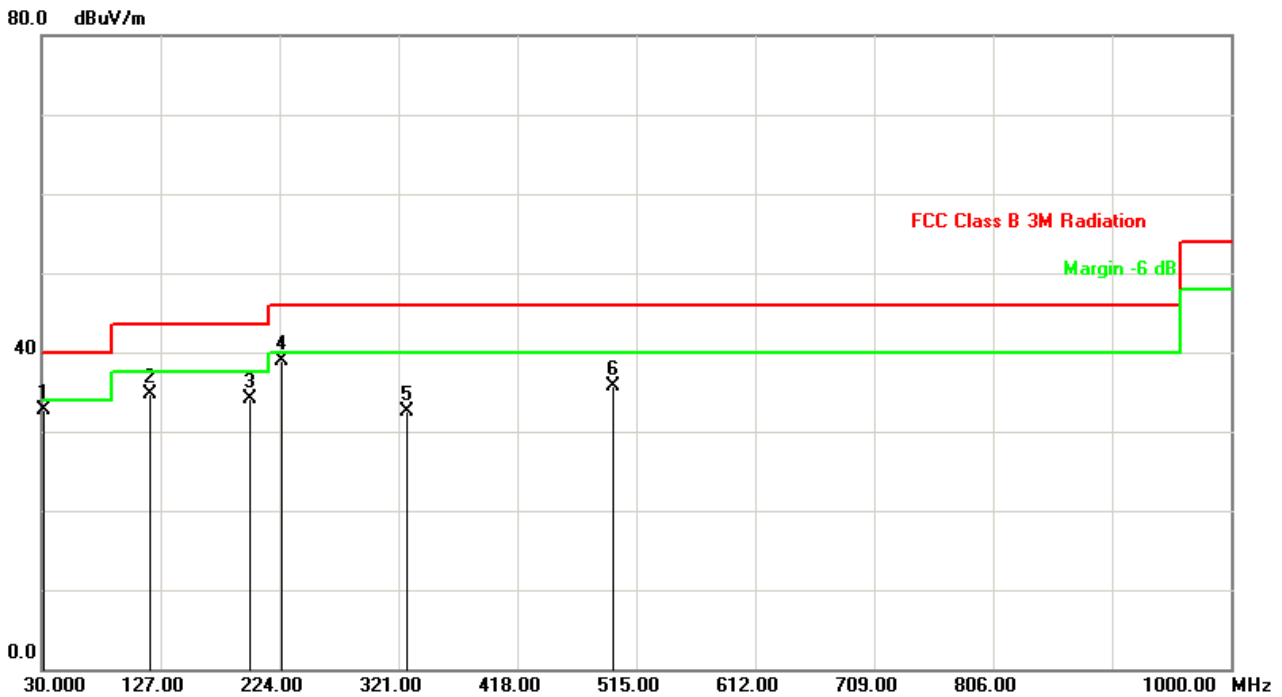


6.4 Test Result and Data (9KHz ~ 30MHz)

The 9kHz-30MHz spurious emission is under limit 20dB more.

6.5 Test Result and Data (30MHz ~ 1GHz)

Power	:	DC 5V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1	Temperature	:	18 °C
Test Date	:	Dec. 10, 2018	Humidity	:	49 %
Memo	:		Atmospheric Pressure	:	1008 hpa

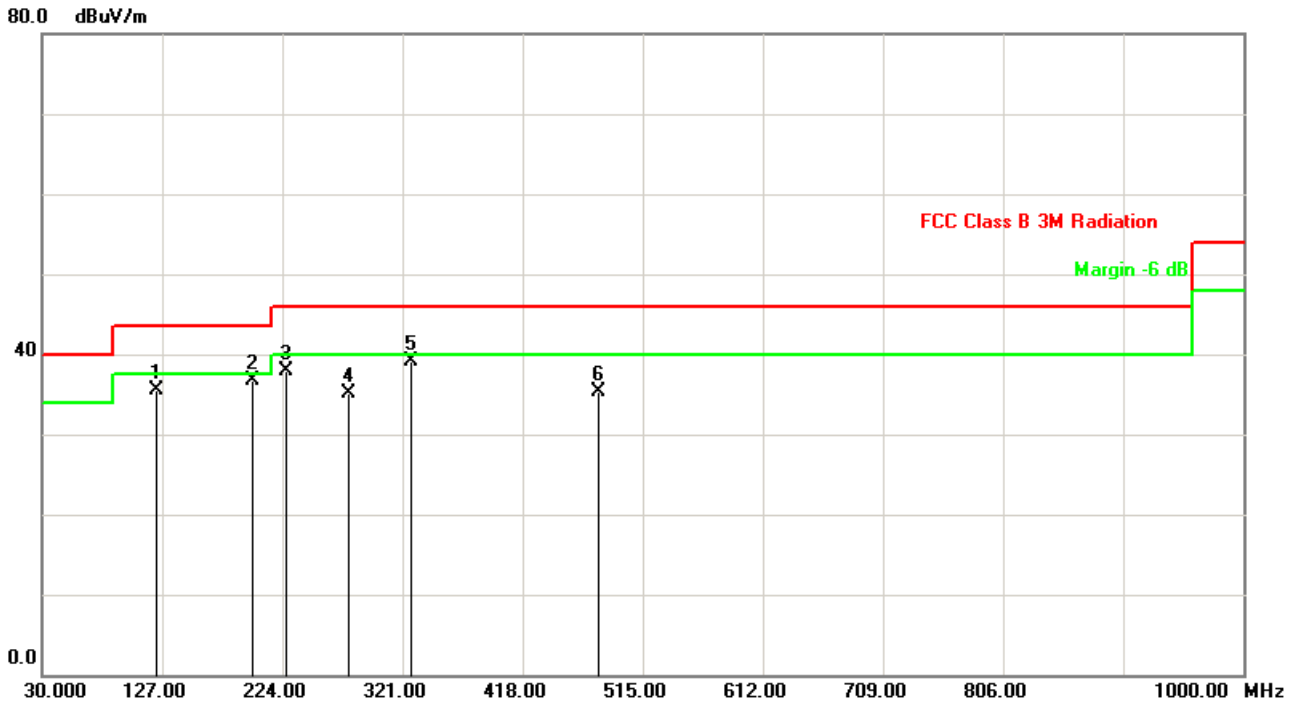


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	31.9400	-6.76	39.48	32.72	40.00	-7.28	peak	100	321
2	119.2399	-10.36	44.97	34.61	43.50	-8.89	peak	100	26
3	200.7198	-8.76	42.91	34.15	43.50	-9.35	peak	100	118
4	225.9399	-7.59	46.55	38.96	46.00	-7.04	peak	100	348
5	327.7900	-6.25	38.66	32.41	46.00	-13.59	peak	200	106
6	495.6000	-2.72	38.48	35.76	46.00	-10.24	peak	100	68

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 1	Temperature	: 18 °C
Test Date	: Dec. 10, 2018	Humidity	: 49 %
Memo	:	Atmospheric Pressure	: 1008 hpa



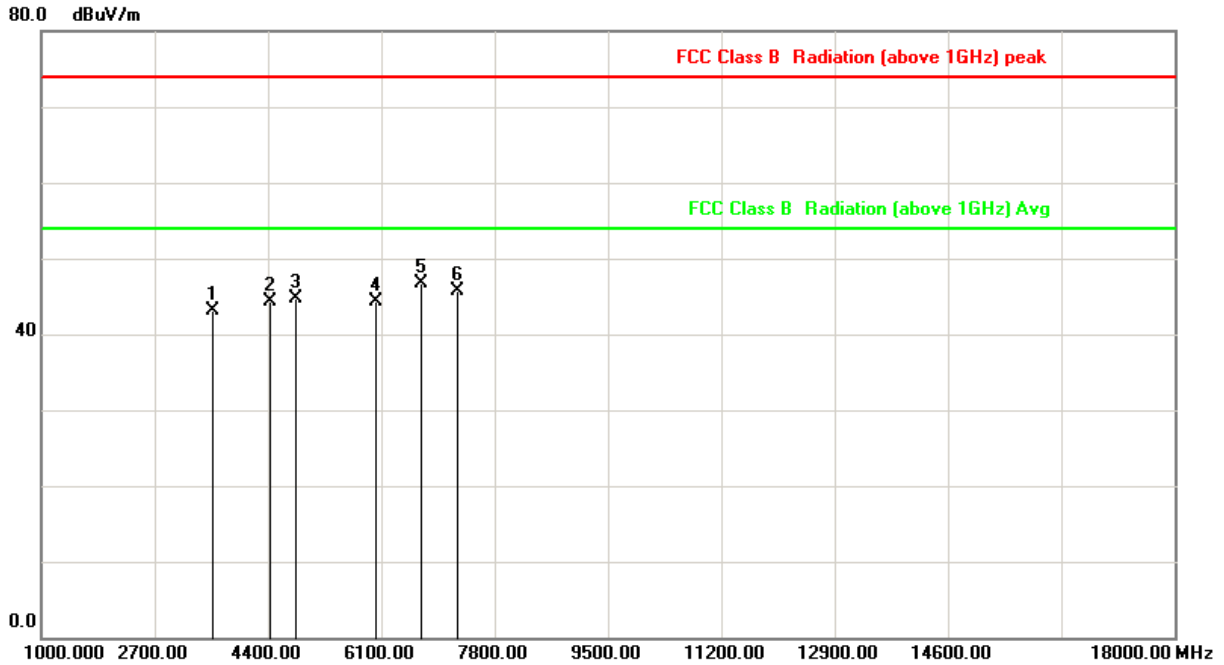
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	122.1500	-10.44	45.91	35.47	43.50	-8.03	peak	100	241
2	200.7199	-9.76	46.44	36.68	43.50	-6.82	peak	200	56
3	226.9099	-7.90	45.78	37.88	46.00	-8.12	peak	200	128
4	277.3500	-6.51	41.65	35.14	46.00	-10.86	peak	100	103
5	327.7900	-6.25	45.29	39.04	46.00	-6.96	peak	300	116
6	480.0799	-1.92	37.19	35.27	46.00	-10.73	peak	200	9

Note: Level = Reading + Factor
 Margin = Level – Limit
 Factor= Antenna Factor + Cable Loss - Amplifier Factor



6.6 Test Result and Data (1GHz ~ 25GHz)

Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 1, CH01 (1TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

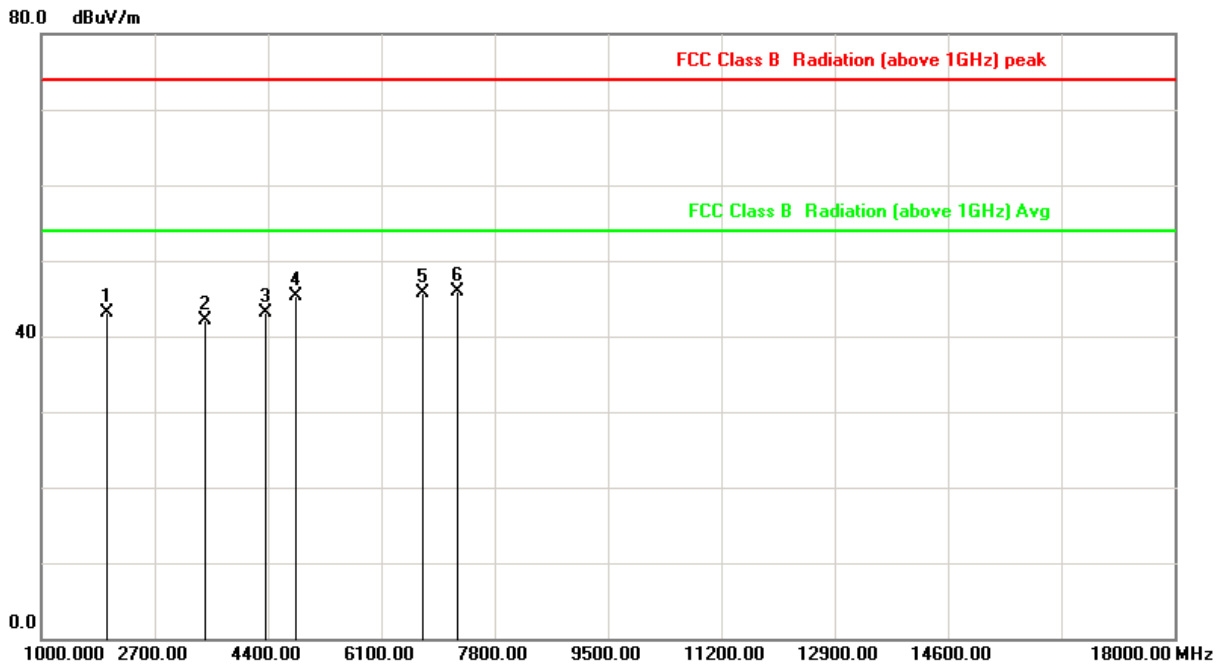


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3578.333	-3.33	46.52	43.19	74.00	-30.81	peak
2	4428.333	0.29	43.96	44.25	74.00	-29.75	peak
3	4824.000	1.27	43.35	44.62	74.00	-29.38	peak
4	6015.000	3.27	41.07	44.34	74.00	-29.66	peak
5	6695.000	4.09	42.57	46.66	74.00	-27.34	peak
6	7236.000	6.00	39.62	45.62	74.00	-28.38	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: Mode 1, CH01 (1TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

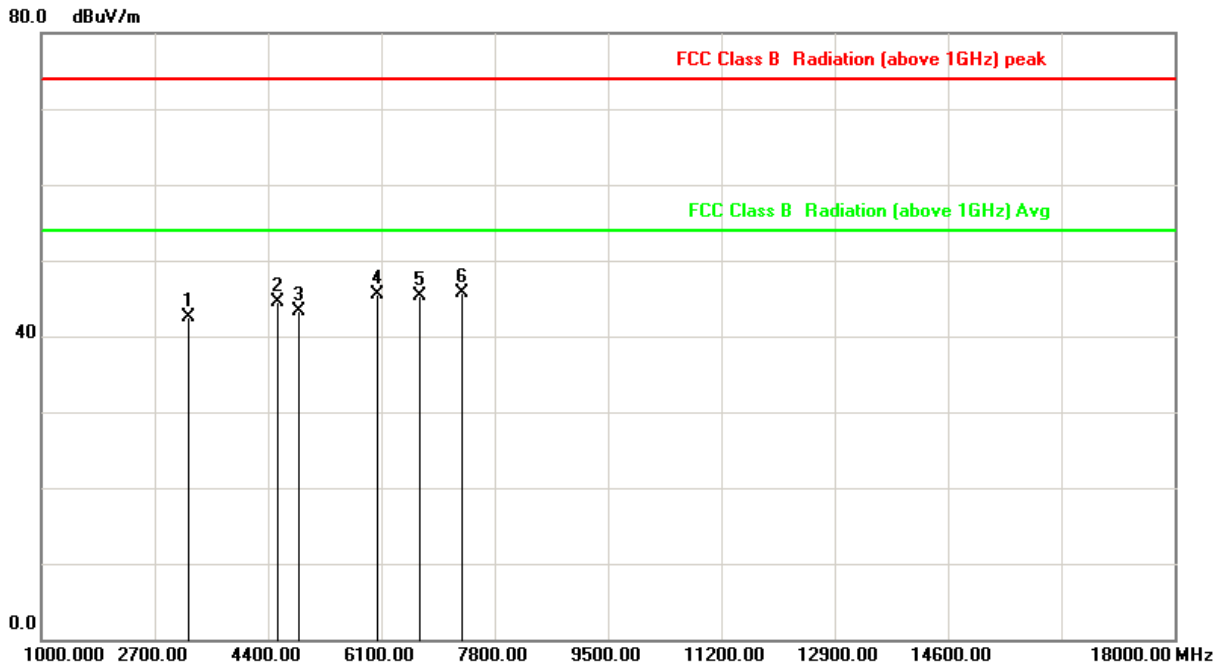


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1991.667	-11.78	54.86	43.08	74.00	-30.92	peak
2	3465.000	-3.78	45.80	42.02	74.00	-31.98	peak
3	4371.667	0.01	43.12	43.13	74.00	-30.87	peak
4	4824.000	1.27	43.97	45.24	74.00	-28.76	peak
5	6723.333	4.18	41.48	45.66	74.00	-28.34	peak
6	7236.000	6.00	39.91	45.91	74.00	-28.09	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 1, CH06 (1TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

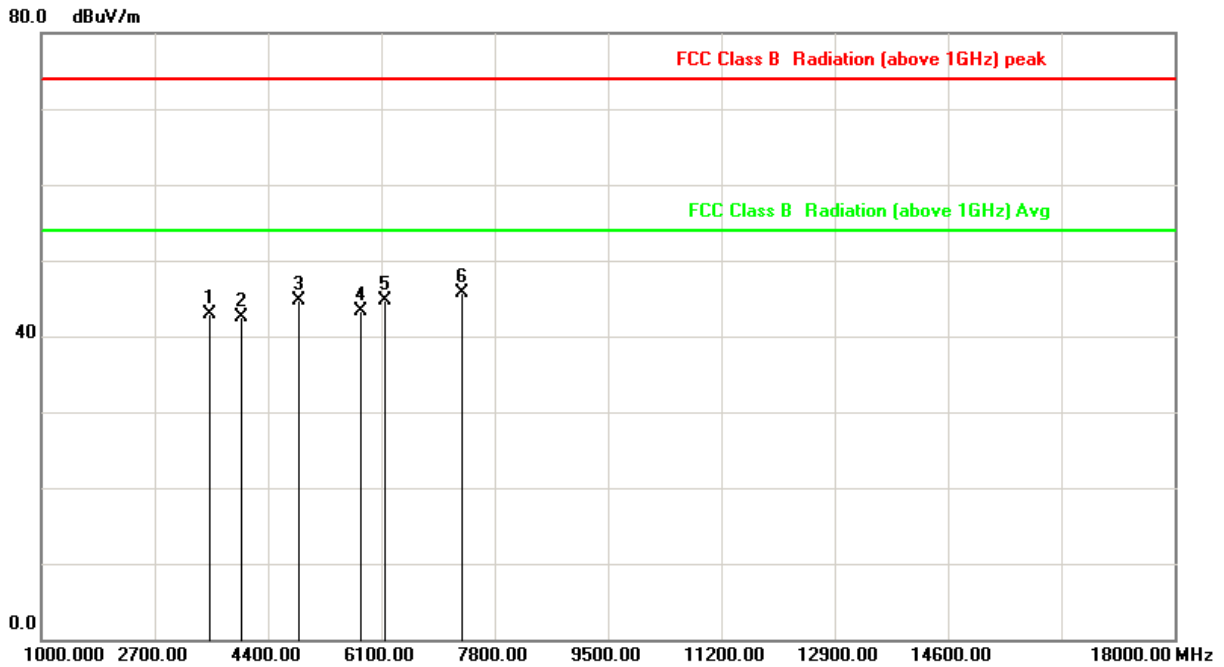


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3210.000	-5.13	47.58	42.45	74.00	-31.55	peak
2	4541.667	0.74	43.71	44.45	74.00	-29.55	peak
3	4874.000	1.36	41.95	43.31	74.00	-30.69	peak
4	6043.333	3.28	42.17	45.45	74.00	-28.55	peak
5	6666.667	4.00	41.34	45.34	74.00	-28.66	peak
6	7311.000	6.29	39.47	45.76	74.00	-28.24	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: Mode 1, CH06 (1TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

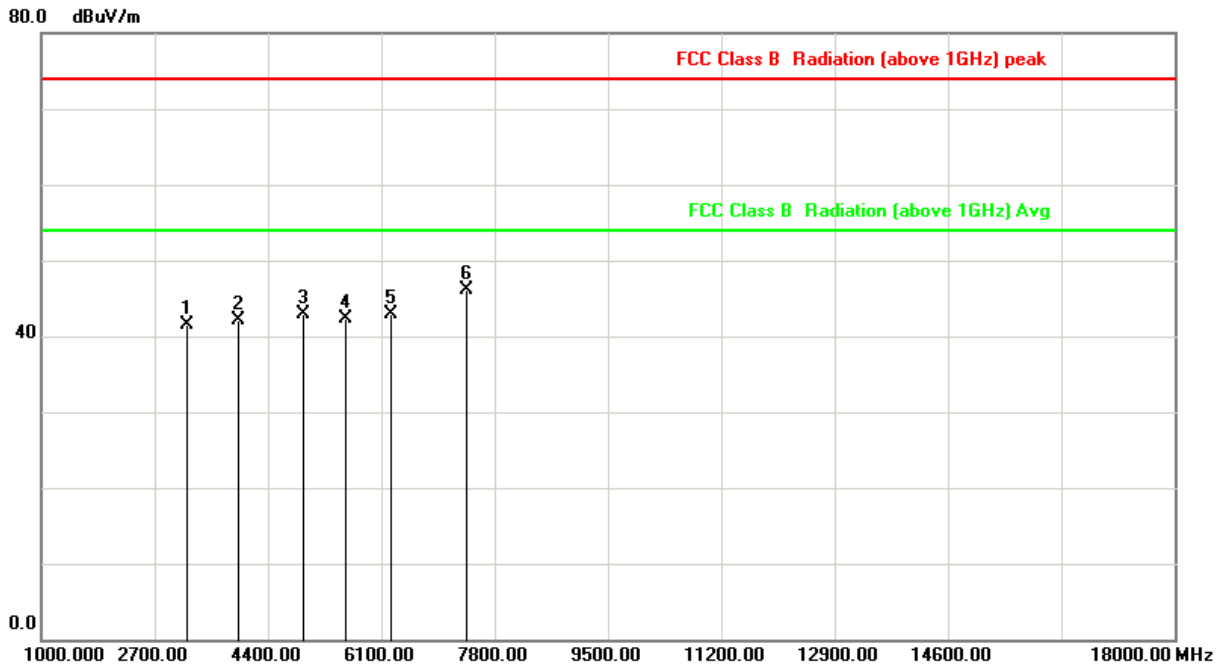


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3521.667	-3.53	46.52	42.99	74.00	-31.01	peak
2	4003.333	-1.87	44.36	42.49	74.00	-31.51	peak
3	4874.000	1.36	43.43	44.79	74.00	-29.21	peak
4	5788.333	2.74	40.47	43.21	74.00	-30.79	peak
5	6156.667	3.32	41.30	44.62	74.00	-29.38	peak
6	7311.000	6.29	39.51	45.80	74.00	-28.20	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 1, CH11 (1TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

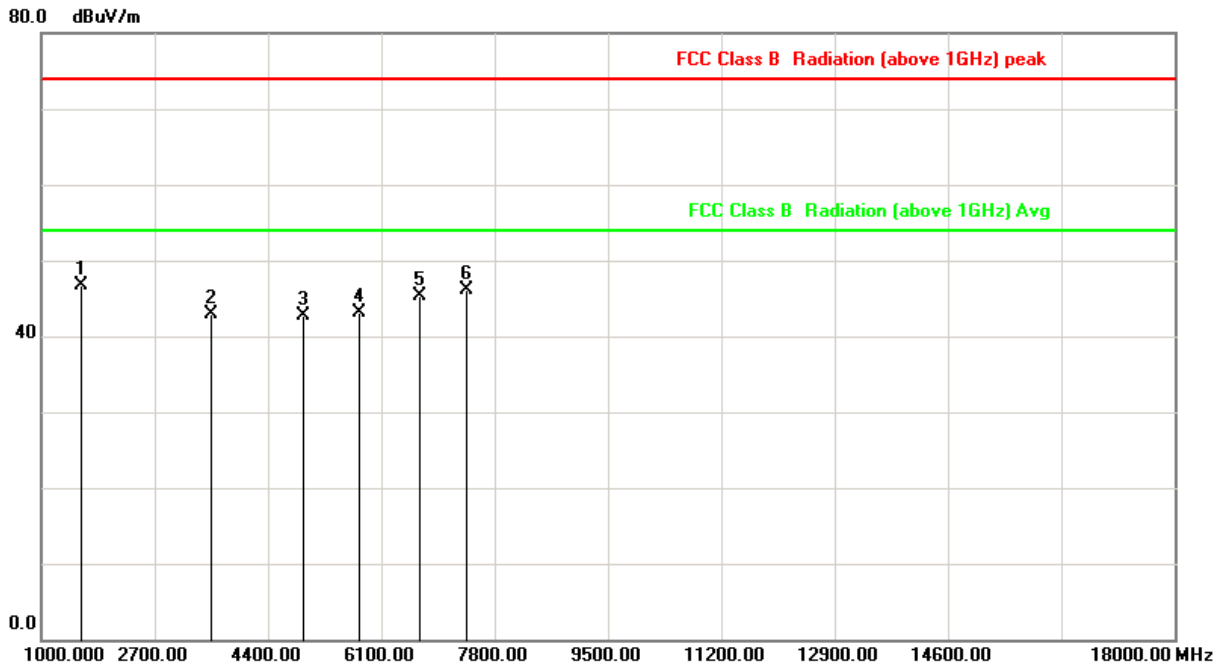


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3181.667	-5.27	46.75	41.48	74.00	-32.52	peak
2	3946.667	-2.07	44.13	42.06	74.00	-31.94	peak
3	4924.000	1.46	41.49	42.95	74.00	-31.05	peak
4	5561.667	2.17	40.18	42.35	74.00	-31.65	peak
5	6241.667	3.36	39.49	42.85	74.00	-31.15	peak
6	7386.000	6.59	39.45	46.04	74.00	-27.96	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: Mode 1, CH11 (1TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

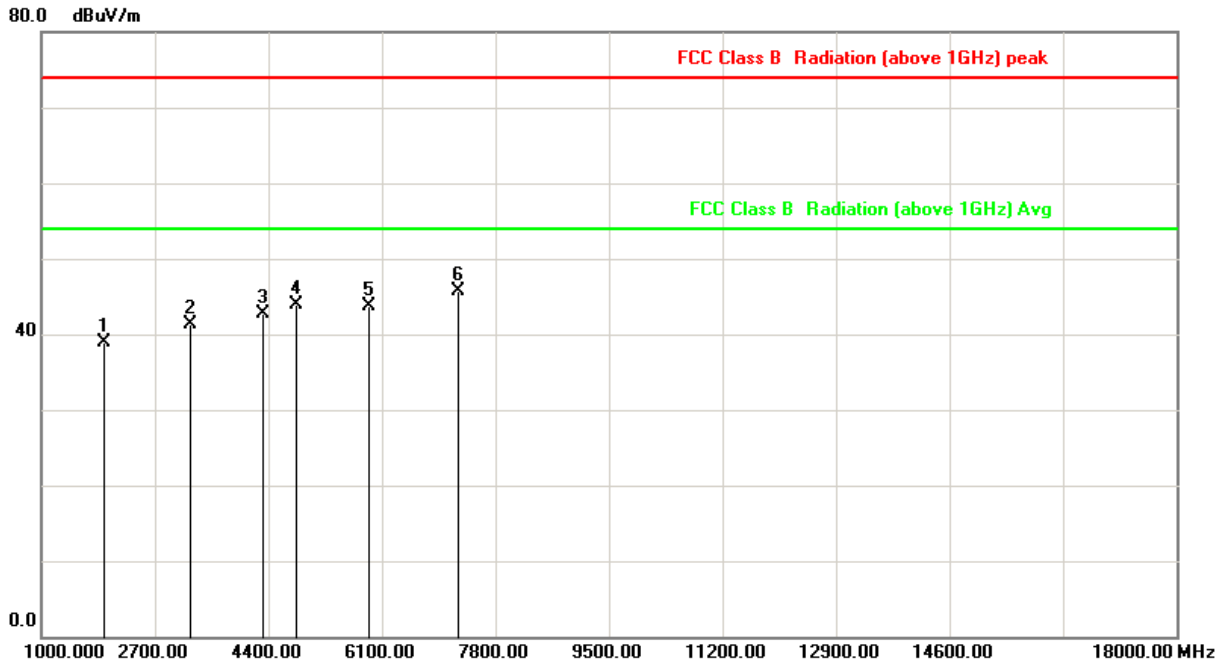


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1595.000	-14.06	60.71	46.65	74.00	-27.35	peak
2	3550.000	-3.43	46.41	42.98	74.00	-31.02	peak
3	4924.000	1.46	41.34	42.80	74.00	-31.20	peak
4	5760.000	2.66	40.42	43.08	74.00	-30.92	peak
5	6666.667	4.00	41.23	45.23	74.00	-28.77	peak
6	7386.000	6.59	39.57	46.16	74.00	-27.84	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 2, CH01 (1TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

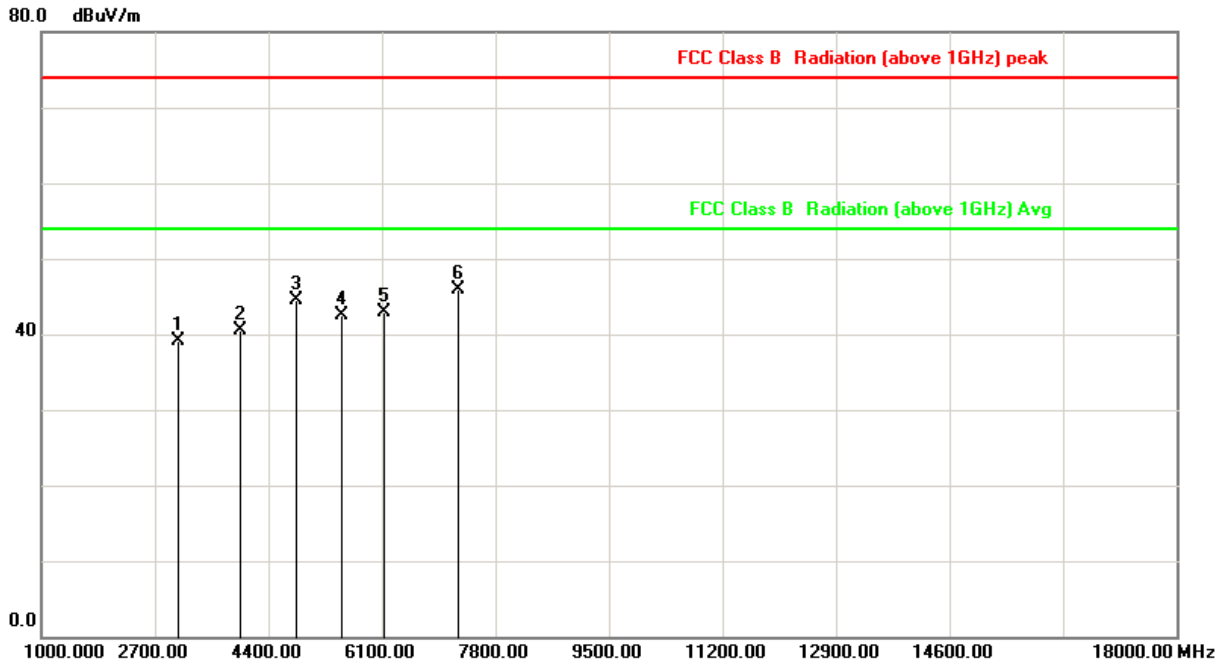


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1935.000	-12.10	51.07	38.97	74.00	-35.03	peak
2	3238.333	-4.98	46.29	41.31	74.00	-32.69	peak
3	4315.000	-0.28	43.04	42.76	74.00	-31.24	peak
4	4824.000	1.27	42.63	43.90	74.00	-30.10	peak
5	5901.667	3.02	40.68	43.70	74.00	-30.30	peak
6	7236.000	6.00	39.66	45.66	74.00	-28.34	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: Mode 2, CH01 (1TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

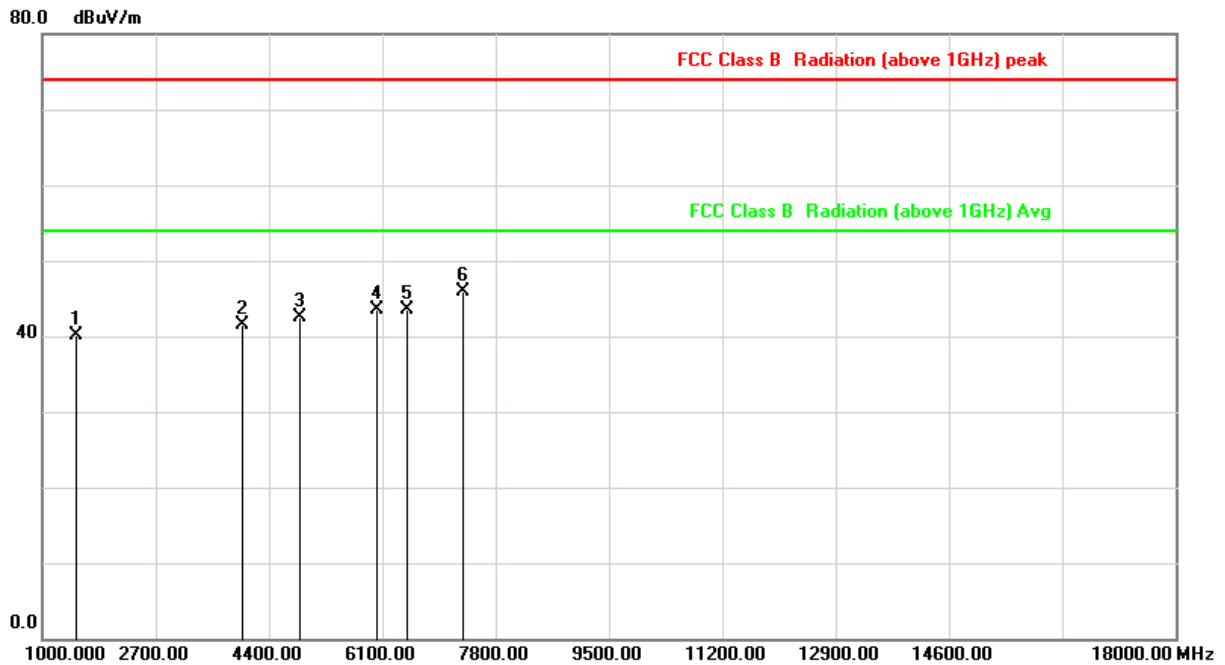


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3040.000	-6.02	45.09	39.07	74.00	-34.93	peak
2	3975.000	-1.98	42.40	40.42	74.00	-33.58	peak
3	4824.000	1.27	43.26	44.53	74.00	-29.47	peak
4	5505.000	2.03	40.44	42.47	74.00	-31.53	peak
5	6128.333	3.31	39.57	42.88	74.00	-31.12	peak
6	7236.000	6.00	39.92	45.92	74.00	-28.08	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 2, CH06 (1TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

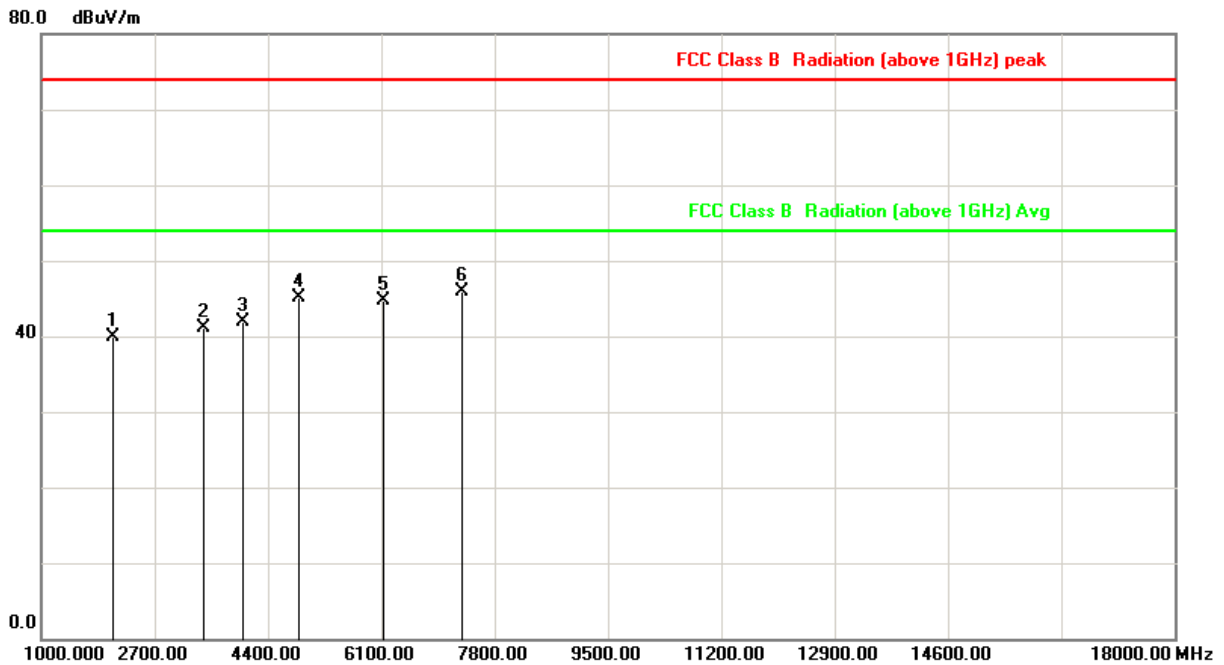


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1510.000	-14.55	54.68	40.13	74.00	-33.87	peak
2	4003.333	-1.87	43.37	41.50	74.00	-32.50	peak
3	4874.000	1.36	41.23	42.59	74.00	-31.41	peak
4	6015.000	3.27	40.27	43.54	74.00	-30.46	peak
5	6468.333	3.45	40.09	43.54	74.00	-30.46	peak
6	7311.000	6.29	39.55	45.84	74.00	-28.16	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: Mode 2, CH06 (1TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

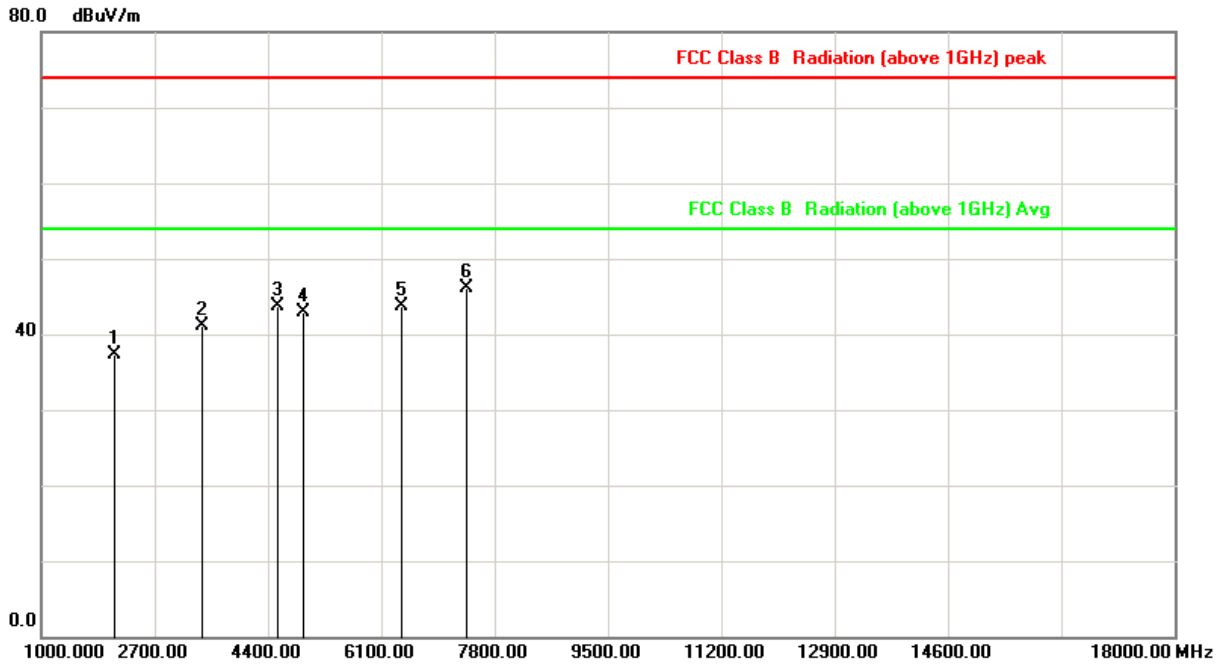


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2076.667	-11.40	51.37	39.97	74.00	-34.03	peak
2	3436.667	-3.93	45.13	41.20	74.00	-32.80	peak
3	4031.667	-1.73	43.57	41.84	74.00	-32.16	peak
4	4874.000	1.36	43.69	45.05	74.00	-28.95	peak
5	6128.333	3.31	41.31	44.62	74.00	-29.38	peak
6	7311.000	6.29	39.62	45.91	74.00	-28.09	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 2, CH11 (1TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

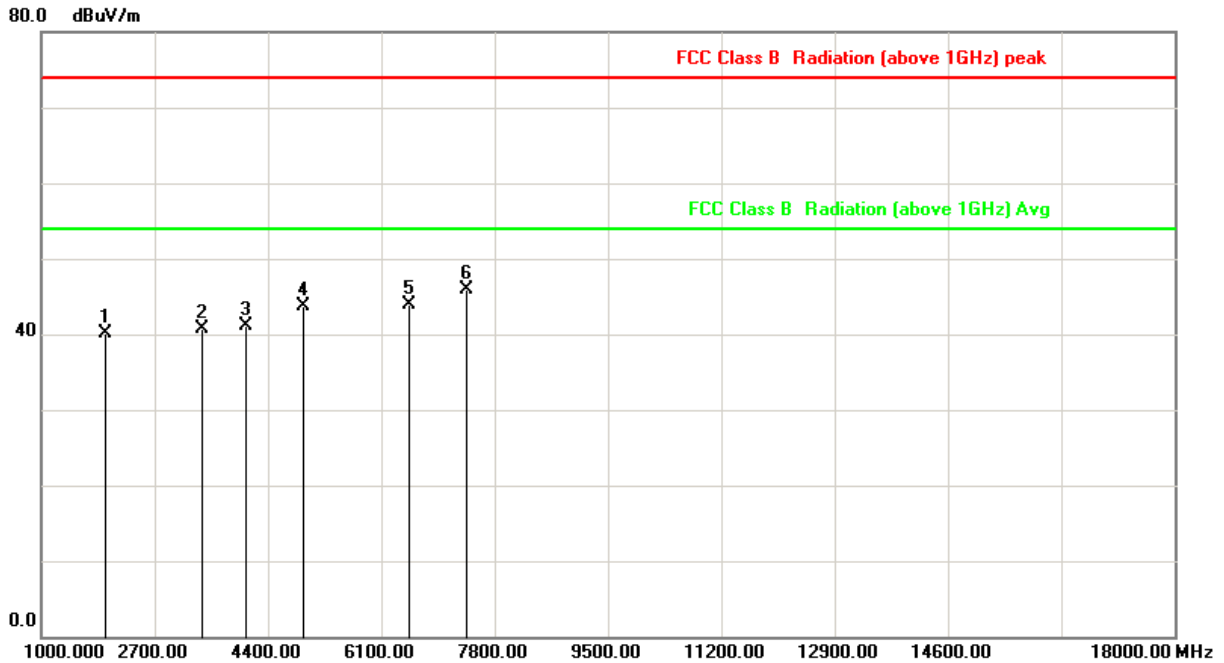


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2105.000	-11.28	48.67	37.39	74.00	-36.61	peak
2	3408.333	-4.08	45.18	41.10	74.00	-32.90	peak
3	4541.667	0.74	42.90	43.64	74.00	-30.36	peak
4	4924.000	1.46	41.53	42.99	74.00	-31.01	peak
5	6411.667	3.42	40.35	43.77	74.00	-30.23	peak
6	7386.000	6.59	39.56	46.15	74.00	-27.85	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: Mode 2, CH11 (1TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

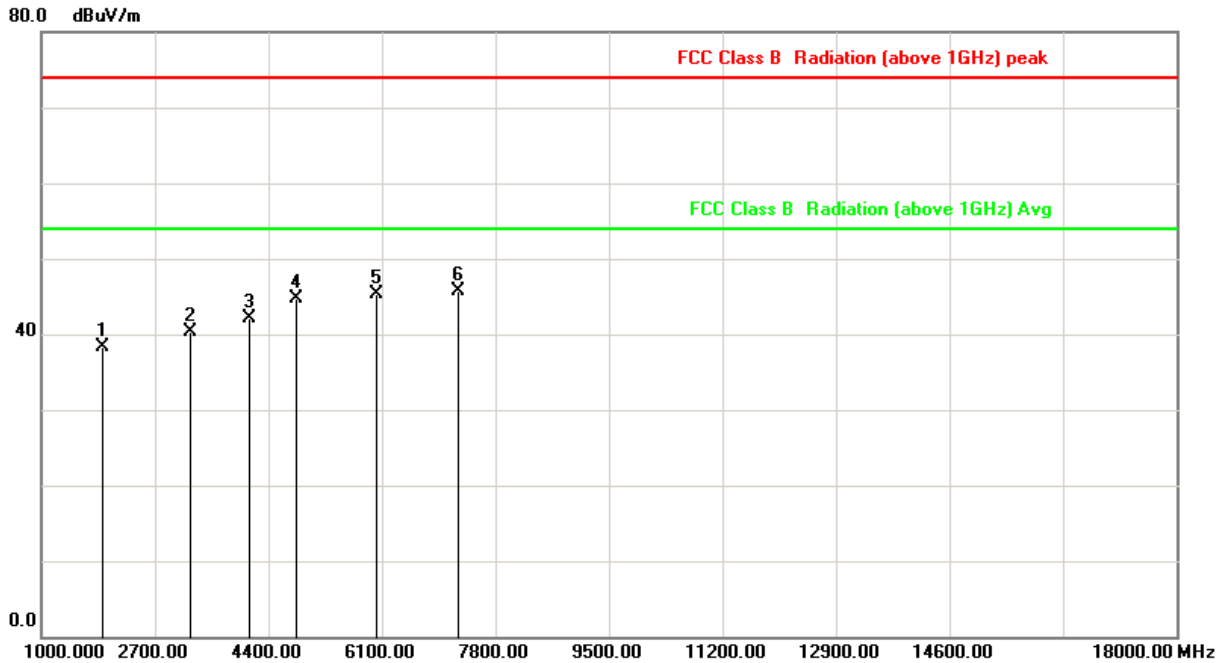


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1963.333	-11.94	52.08	40.14	74.00	-33.86	peak
2	3408.333	-4.08	44.76	40.68	74.00	-33.32	peak
3	4060.000	-1.58	42.73	41.15	74.00	-32.85	peak
4	4924.000	1.46	42.31	43.77	74.00	-30.23	peak
5	6525.000	3.54	40.37	43.91	74.00	-30.09	peak
6	7386.000	6.59	39.25	45.84	74.00	-28.16	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 3, CH01 (1TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

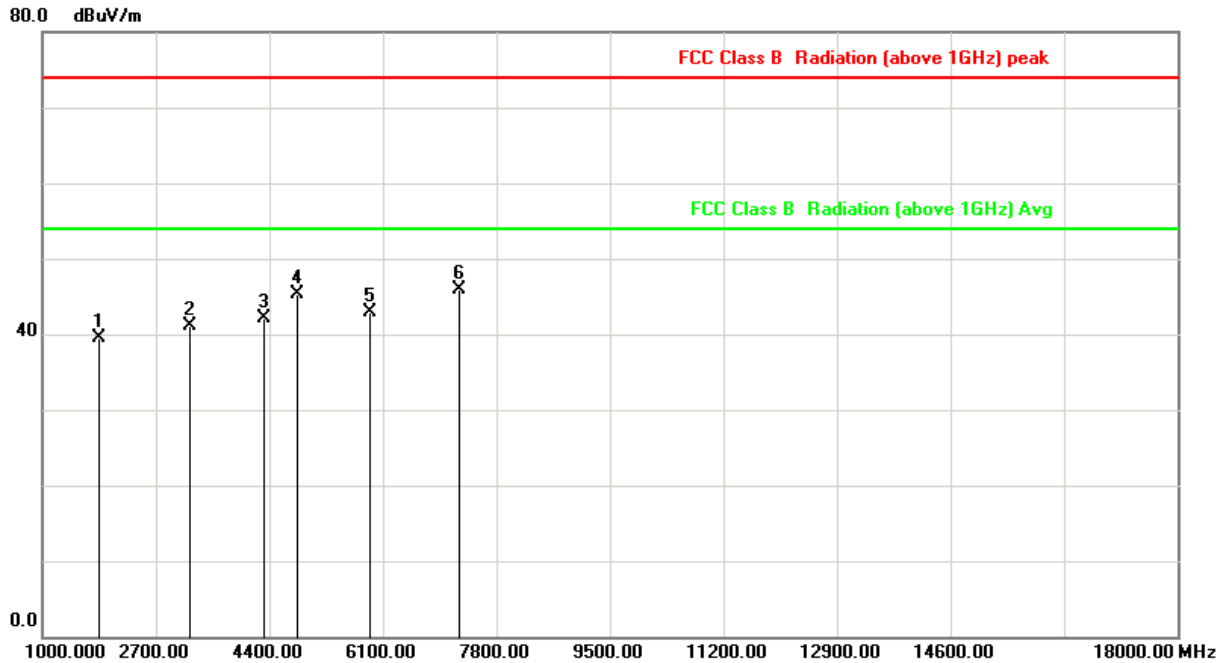


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1906.667	-12.27	50.50	38.23	74.00	-35.77	peak
2	3238.333	-4.98	45.29	40.31	74.00	-33.69	peak
3	4116.667	-1.29	43.42	42.13	74.00	-31.87	peak
4	4824.000	1.27	43.52	44.79	74.00	-29.21	peak
5	6015.000	3.27	42.07	45.34	74.00	-28.66	peak
6	7236.000	6.00	39.64	45.64	74.00	-28.36	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: Mode 3, CH01 (1TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

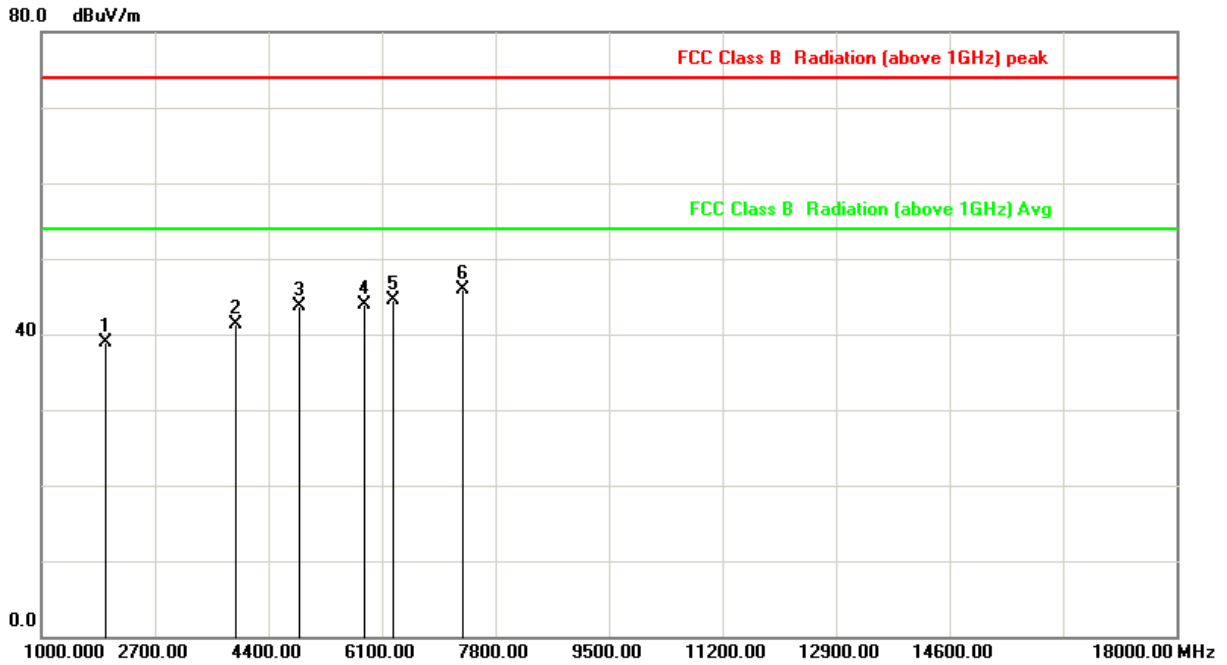


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1850.000	-12.59	52.02	39.43	74.00	-34.57	peak
2	3210.000	-5.13	46.14	41.01	74.00	-32.99	peak
3	4315.000	-0.28	42.31	42.03	74.00	-31.97	peak
4	4824.000	1.27	44.10	45.37	74.00	-28.63	peak
5	5901.667	3.02	39.84	42.86	74.00	-31.14	peak
6	7236.000	6.00	39.98	45.98	74.00	-28.02	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 3, CH06 (1TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

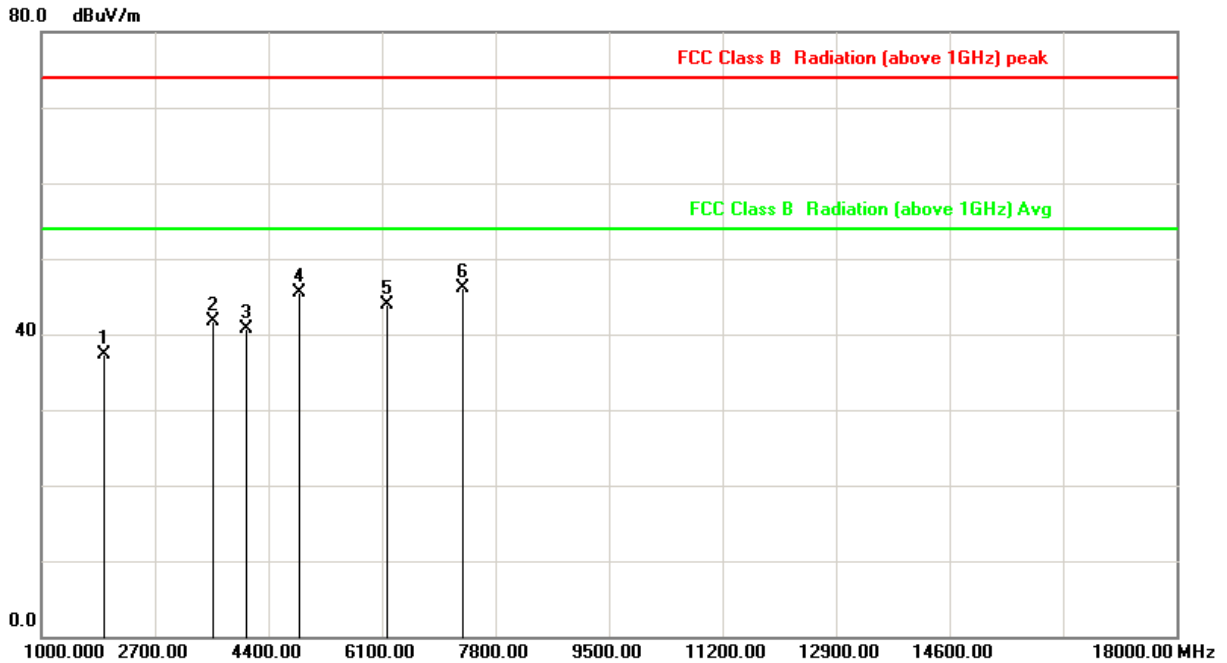


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1963.333	-11.94	50.79	38.85	74.00	-35.15	peak
2	3918.333	-2.17	43.51	41.34	74.00	-32.66	peak
3	4874.000	1.36	42.31	43.67	74.00	-30.33	peak
4	5845.000	2.88	41.06	43.94	74.00	-30.06	peak
5	6270.000	3.37	41.11	44.48	74.00	-29.52	peak
6	7311.000	6.29	39.67	45.96	74.00	-28.04	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: Mode 3, CH01 (1TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

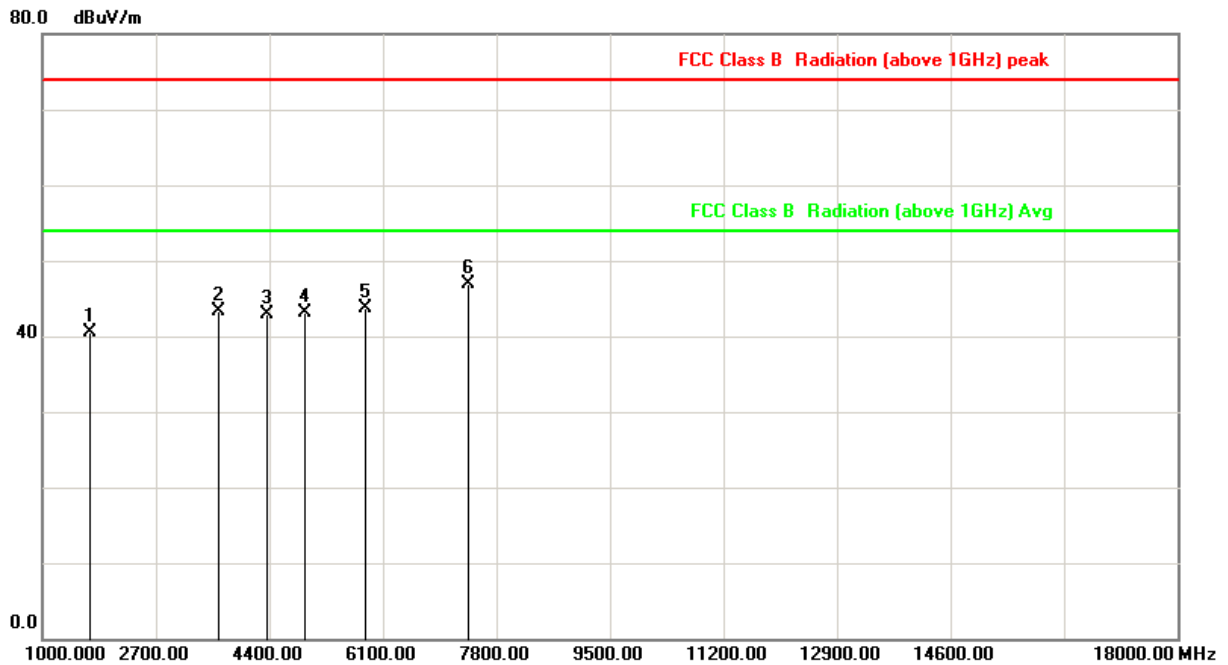


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1935.000	-12.10	49.49	37.39	74.00	-36.61	peak
2	3578.333	-3.33	45.13	41.80	74.00	-32.20	peak
3	4060.000	-1.58	42.32	40.74	74.00	-33.26	peak
4	4874.000	1.36	44.10	45.46	74.00	-28.54	peak
5	6185.000	3.33	40.50	43.83	74.00	-30.17	peak
6	7311.000	6.29	39.89	46.18	74.00	-27.82	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 3, CH11 (1TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

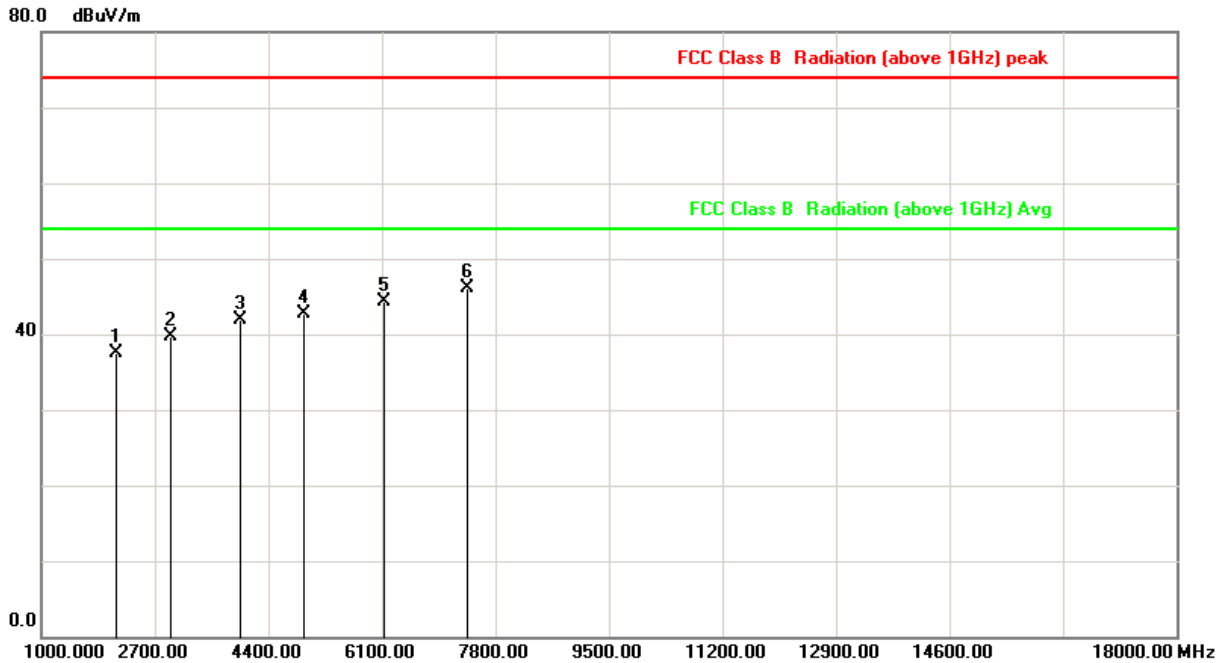


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1708.333	-13.41	53.93	40.52	74.00	-33.48	peak
2	3635.000	-3.14	46.42	43.28	74.00	-30.72	peak
3	4371.667	0.01	42.83	42.84	74.00	-31.16	peak
4	4924.000	1.46	41.63	43.09	74.00	-30.91	peak
5	5845.000	2.88	40.77	43.65	74.00	-30.35	peak
6	7386.000	6.59	40.24	46.83	74.00	-27.17	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: Mode 3, CH11 (1TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

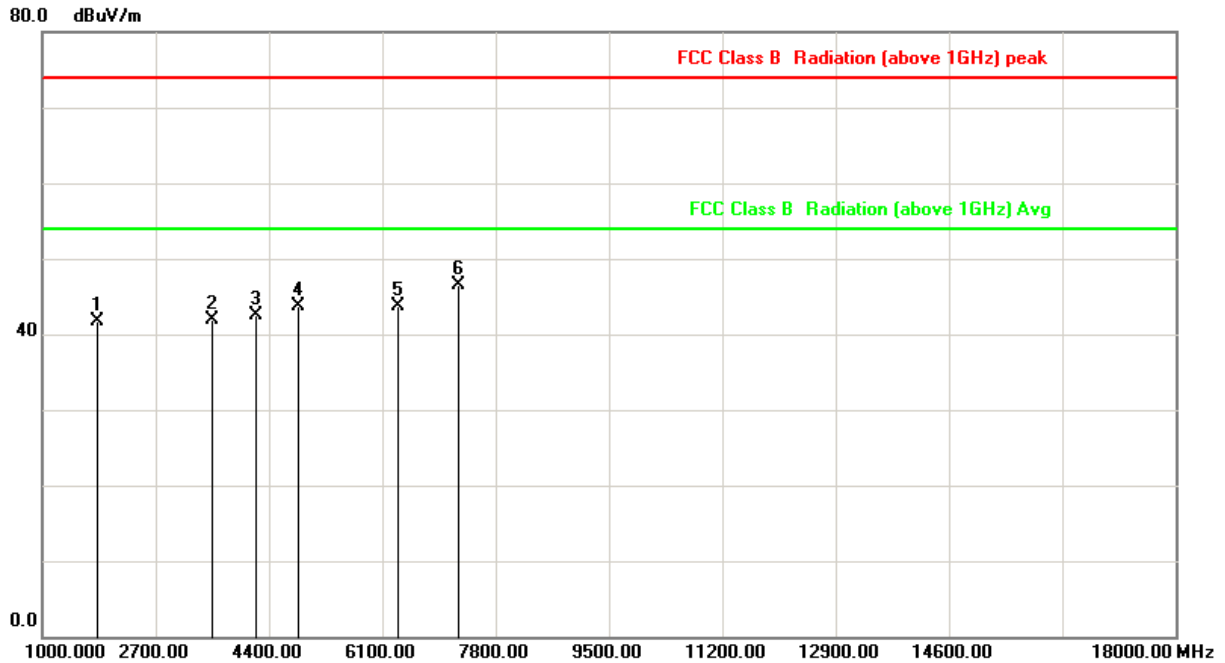


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2133.333	-11.16	48.75	37.59	74.00	-36.41	peak
2	2926.667	-6.72	46.39	39.67	74.00	-34.33	peak
3	3975.000	-1.98	43.84	41.86	74.00	-32.14	peak
4	4924.000	1.46	41.20	42.66	74.00	-31.34	peak
5	6128.333	3.31	41.00	44.31	74.00	-29.69	peak
6	7386.000	6.59	39.46	46.05	74.00	-27.95	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 4, CH03 (1TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

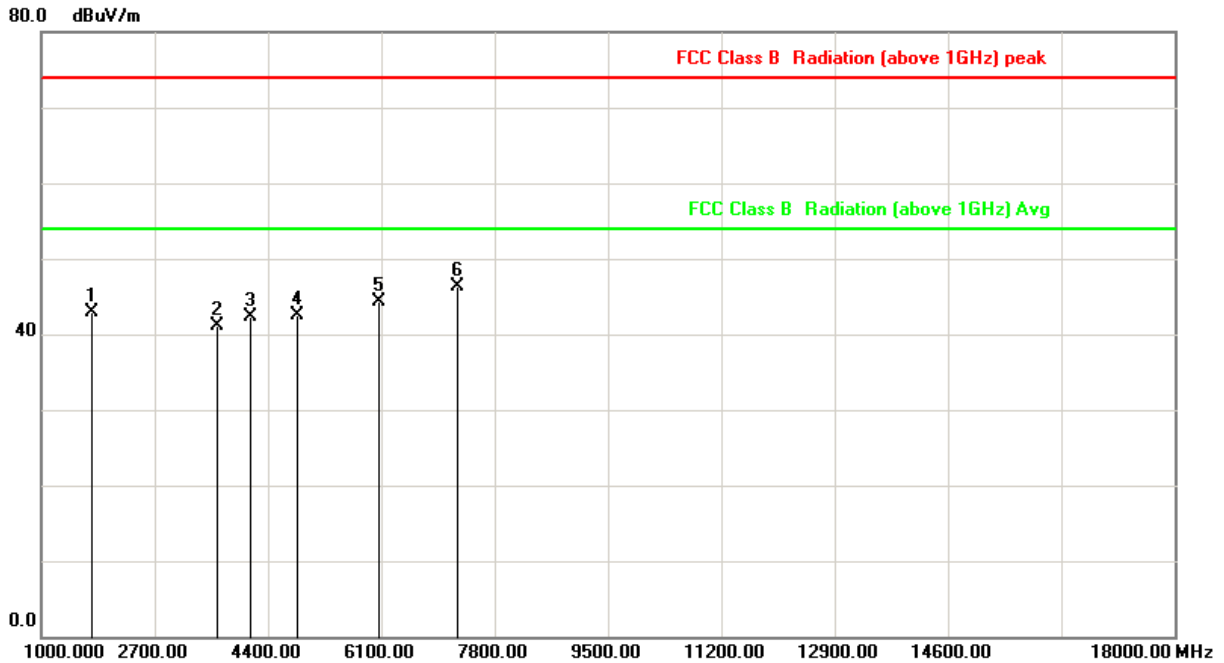


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1821.667	-12.76	54.49	41.73	74.00	-32.27	peak
2	3550.000	-3.43	45.25	41.82	74.00	-32.18	peak
3	4201.667	-0.86	43.27	42.41	74.00	-31.59	peak
4	4844.000	1.31	42.31	43.62	74.00	-30.38	peak
5	6326.667	3.39	40.23	43.62	74.00	-30.38	peak
6	7236.000	6.00	40.53	46.53	74.00	-27.47	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: Mode 4, CH03 (1TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

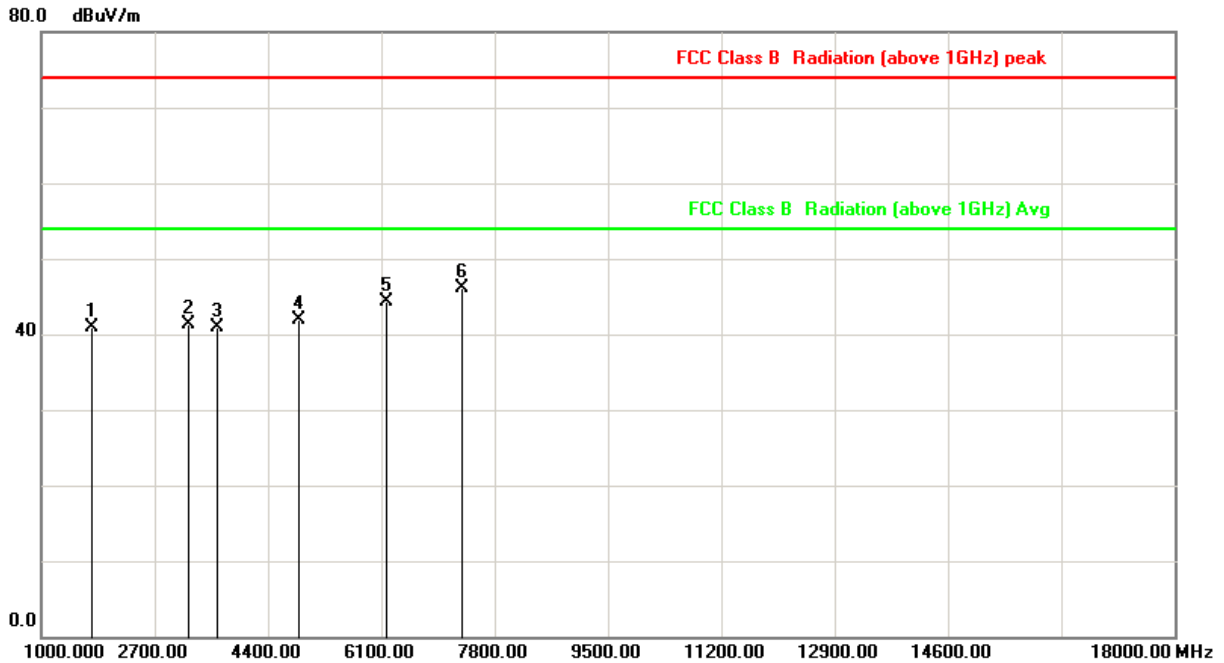


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1765.000	-13.08	55.91	42.83	74.00	-31.17	peak
2	3635.000	-3.14	44.19	41.05	74.00	-32.95	peak
3	4145.000	-1.15	43.48	42.33	74.00	-31.67	peak
4	4844.000	1.31	41.24	42.55	74.00	-31.45	peak
5	6071.667	3.29	41.08	44.37	74.00	-29.63	peak
6	7236.000	6.00	40.33	46.33	74.00	-27.67	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 4, CH06 (1TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

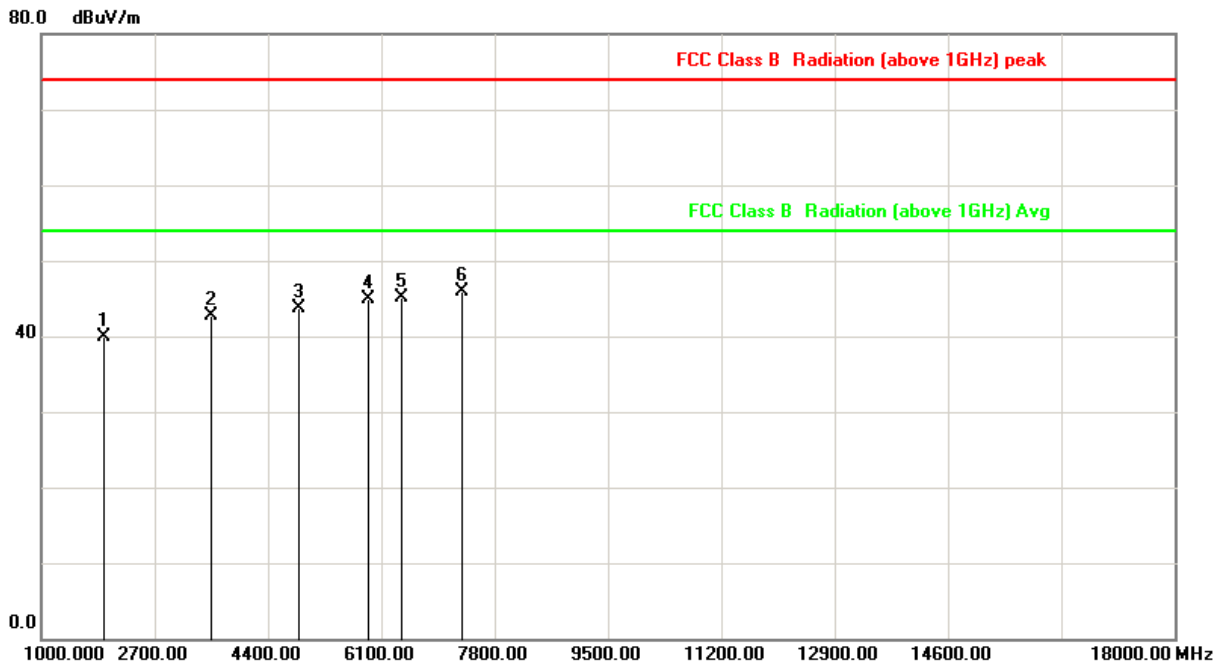


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1765.000	-13.08	53.94	40.86	74.00	-33.14	peak
2	3210.000	-5.13	46.43	41.30	74.00	-32.70	peak
3	3635.000	-3.14	44.09	40.95	74.00	-33.05	peak
4	4874.000	1.36	40.59	41.95	74.00	-32.05	peak
5	6185.000	3.33	40.91	44.24	74.00	-29.76	peak
6	7311.000	6.29	39.87	46.16	74.00	-27.84	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: Mode 4, CH06 (1TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

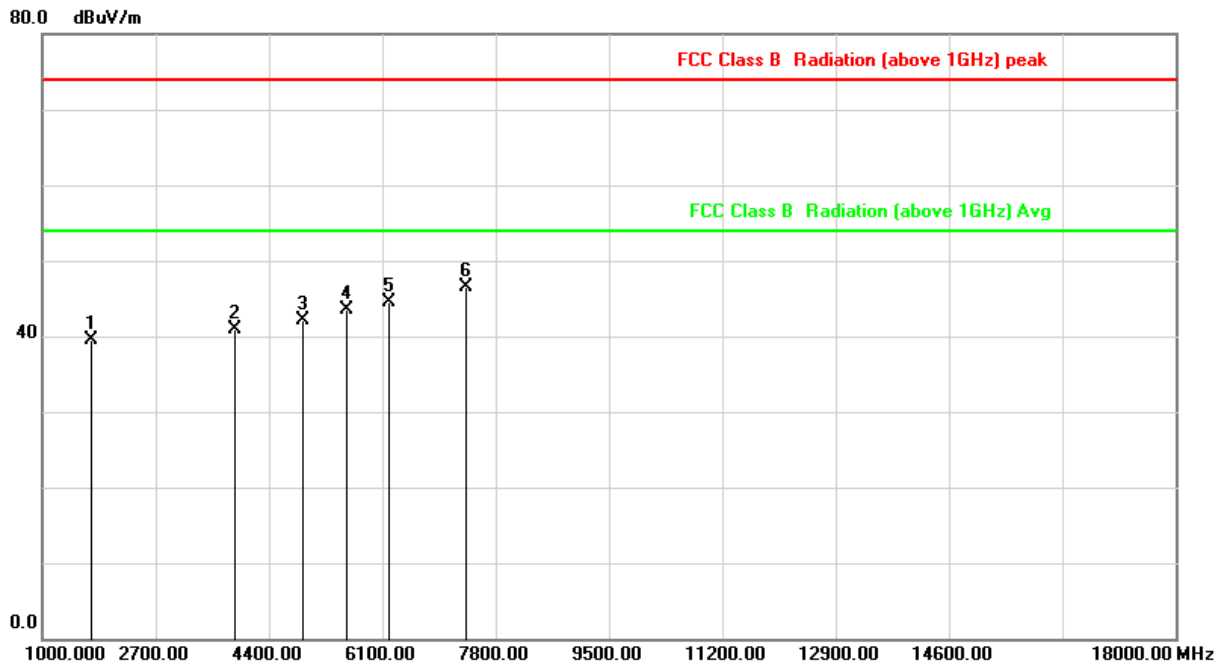


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1935.000	-12.10	51.94	39.84	74.00	-34.16	peak
2	3550.000	-3.43	46.10	42.67	74.00	-31.33	peak
3	4874.000	1.36	42.31	43.67	74.00	-30.33	peak
4	5901.667	3.02	41.89	44.91	74.00	-29.09	peak
5	6411.667	3.42	41.74	45.16	74.00	-28.84	peak
6	7311.000	6.29	39.67	45.96	74.00	-28.04	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 4, CH09 (1TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

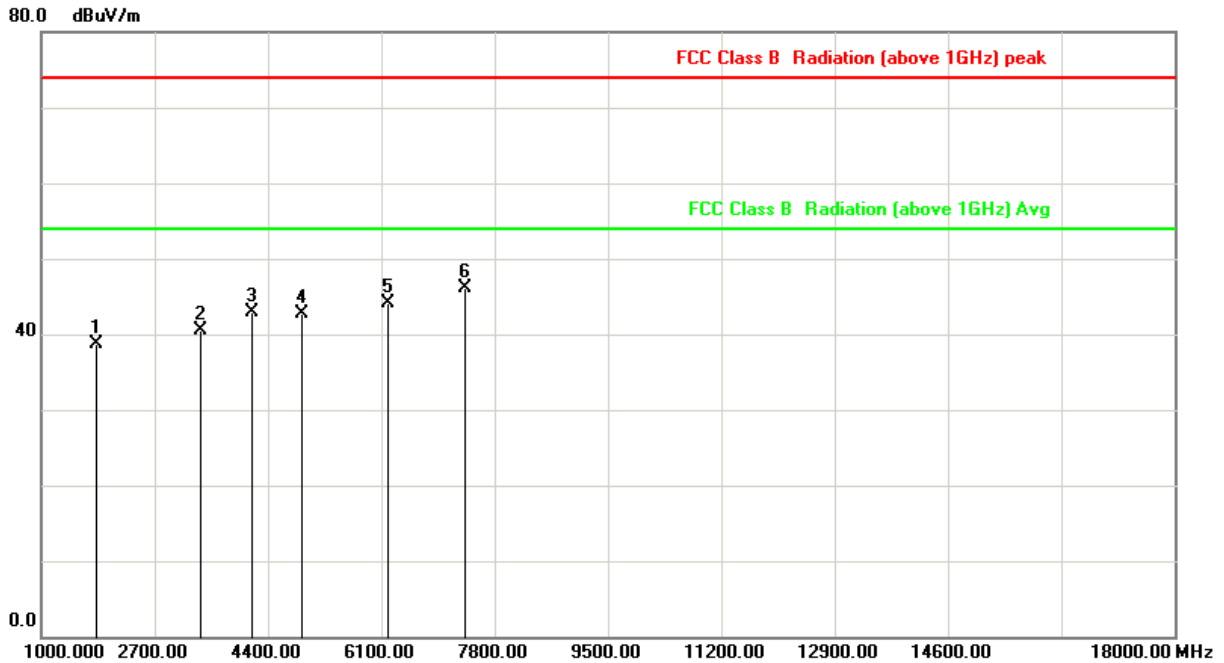


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1736.667	-13.25	52.85	39.60	74.00	-34.40	peak
2	3890.000	-2.27	43.10	40.83	74.00	-33.17	peak
3	4904.000	1.42	40.59	42.01	74.00	-31.99	peak
4	5561.667	2.17	41.30	43.47	74.00	-30.53	peak
5	6213.333	3.35	41.11	44.46	74.00	-29.54	peak
6	7356.000	6.47	40.11	46.58	74.00	-27.42	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: Mode 4, CH09 (1TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

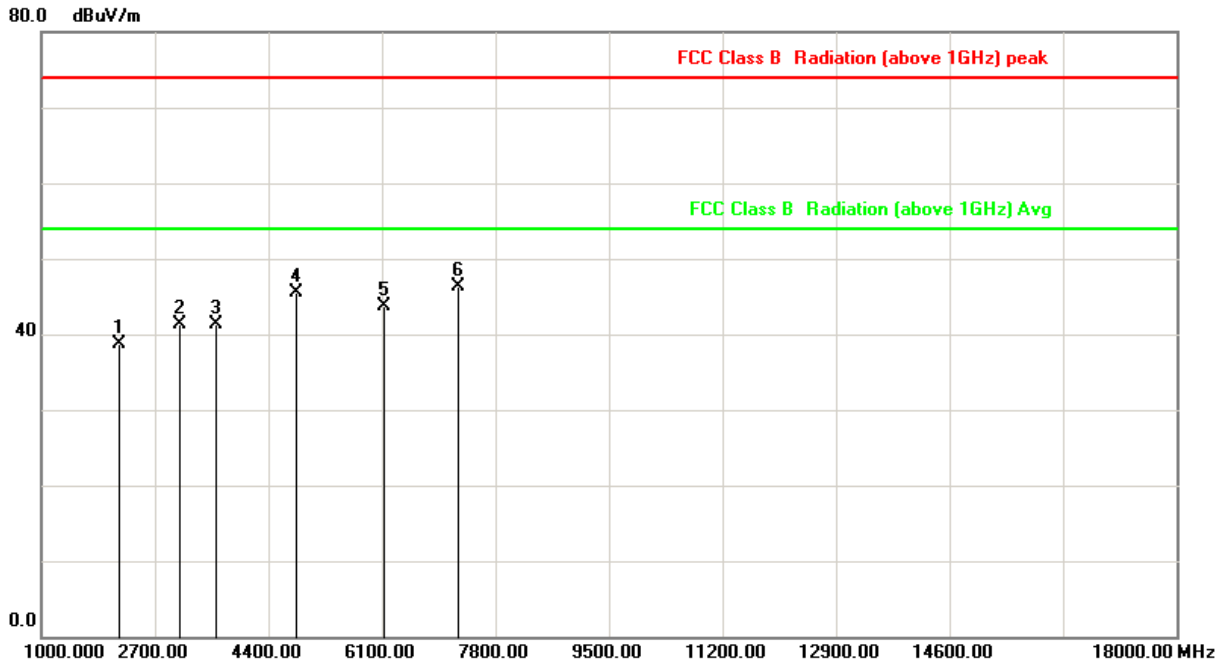


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1821.667	-12.76	51.39	38.63	74.00	-35.37	peak
2	3380.000	-4.23	44.72	40.49	74.00	-33.51	peak
3	4173.333	-1.01	43.86	42.85	74.00	-31.15	peak
4	4904.000	1.42	41.35	42.77	74.00	-31.23	peak
5	6213.333	3.35	40.69	44.04	74.00	-29.96	peak
6	7356.000	6.47	39.61	46.08	74.00	-27.92	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 1, CH01 (2TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

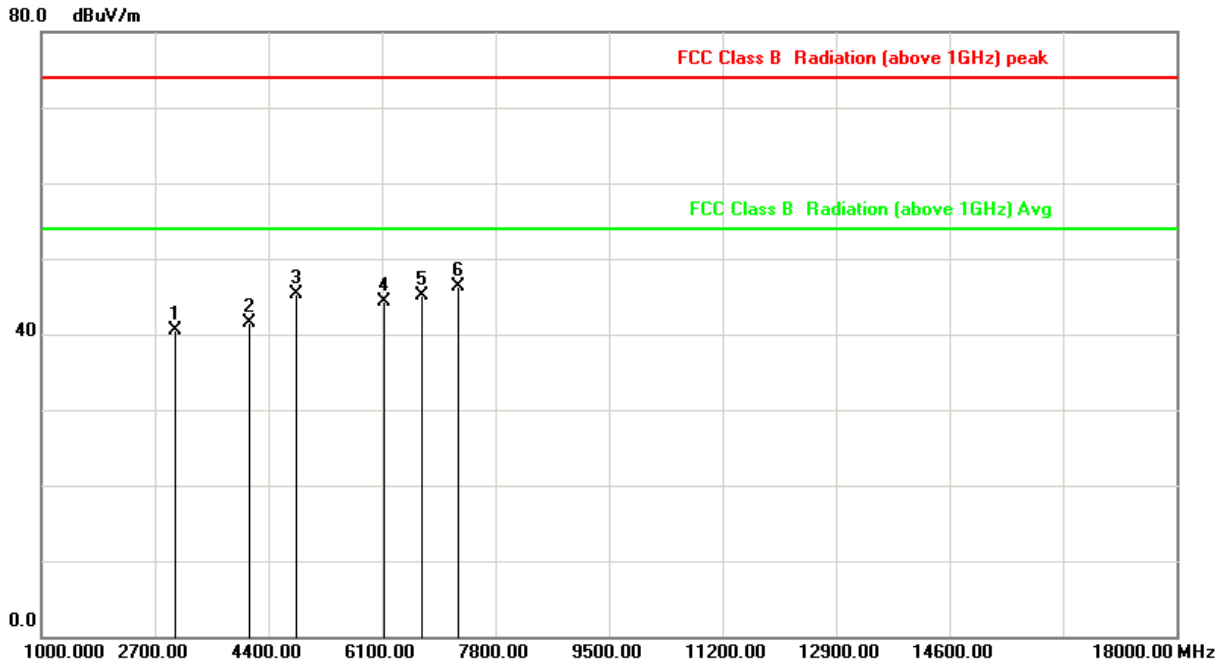


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2161.667	-11.03	49.82	38.79	74.00	-35.21	peak
2	3068.333	-5.87	47.16	41.29	74.00	-32.71	peak
3	3606.667	-3.24	44.64	41.40	74.00	-32.60	peak
4	4824.000	1.27	44.31	45.58	74.00	-28.42	peak
5	6128.333	3.31	40.36	43.67	74.00	-30.33	peak
6	7236.000	6.00	40.26	46.26	74.00	-27.74	peak

Note: Level = Reading + Factor
 Margin = Level – Limit
 Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: Mode 1, CH01 (2TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

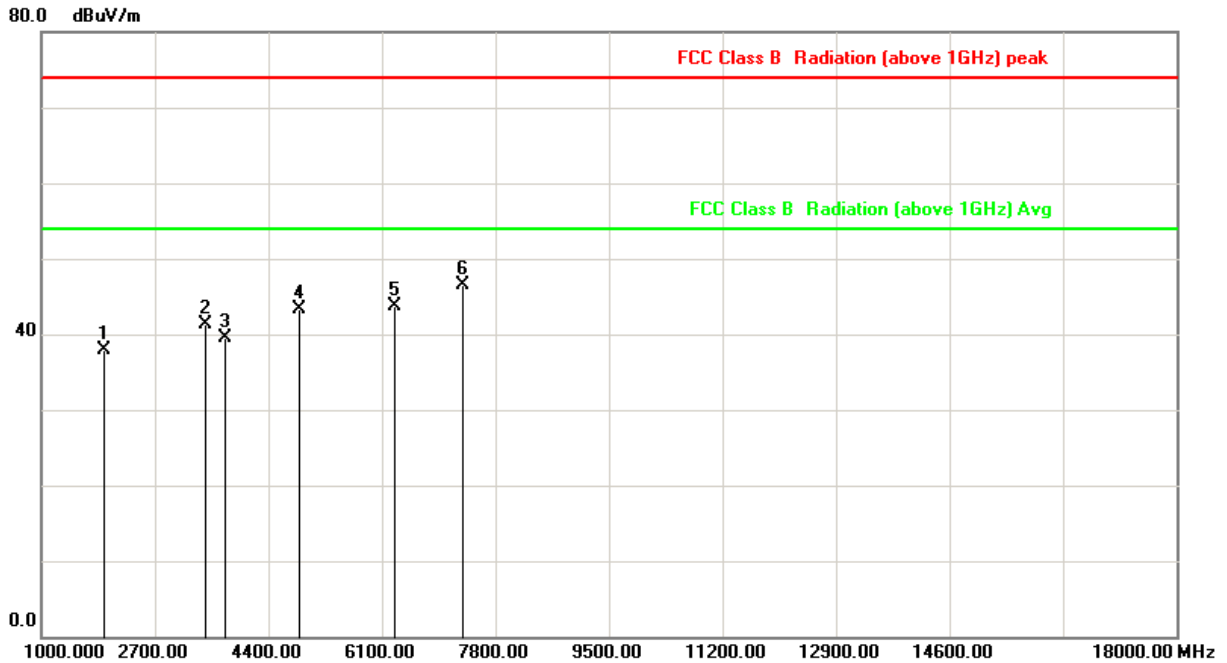


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3011.667	-6.17	46.70	40.53	74.00	-33.47	peak
2	4116.667	-1.29	42.83	41.54	74.00	-32.46	peak
3	4824.000	1.27	43.95	45.22	74.00	-28.78	peak
4	6128.333	3.31	41.07	44.38	74.00	-29.62	peak
5	6695.000	4.09	40.92	45.01	74.00	-28.99	peak
6	7236.000	6.00	40.21	46.21	74.00	-27.79	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 1, CH06 (2TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

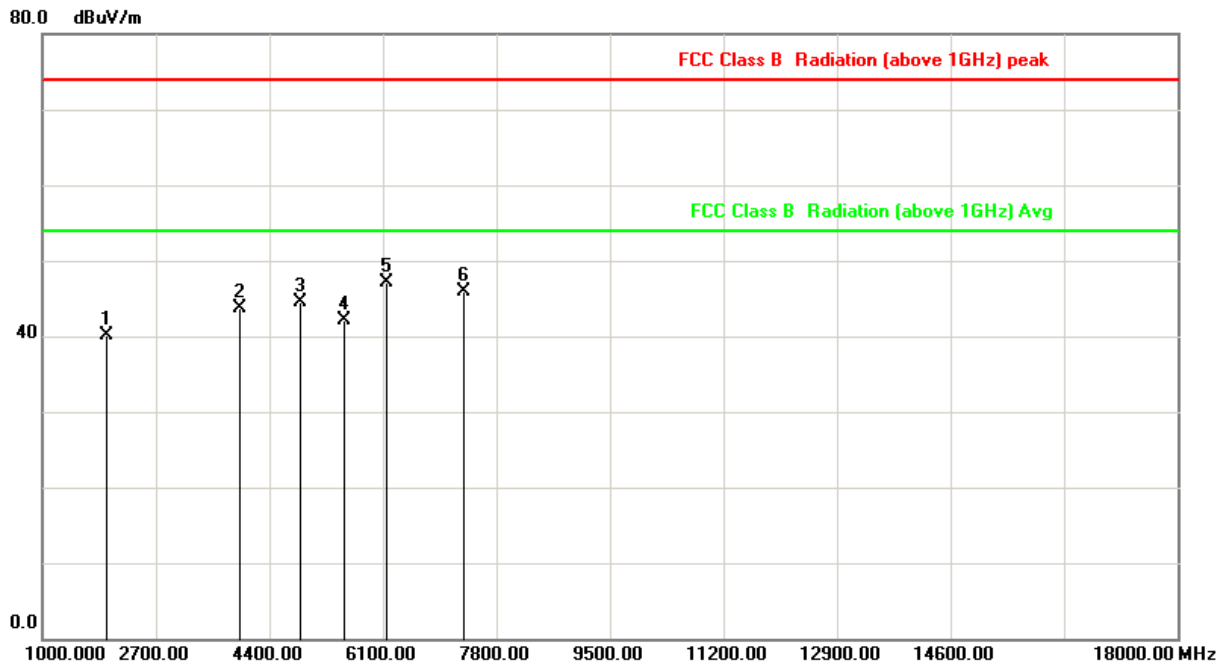


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1935.000	-12.10	50.01	37.91	74.00	-36.09	peak
2	3465.000	-3.78	45.00	41.22	74.00	-32.78	peak
3	3748.333	-2.75	42.28	39.53	74.00	-34.47	peak
4	4874.000	1.36	41.95	43.31	74.00	-30.69	peak
5	6298.333	3.38	40.29	43.67	74.00	-30.33	peak
6	7311.000	6.29	40.26	46.55	74.00	-27.45	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: Mode 1, CH06 (2TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

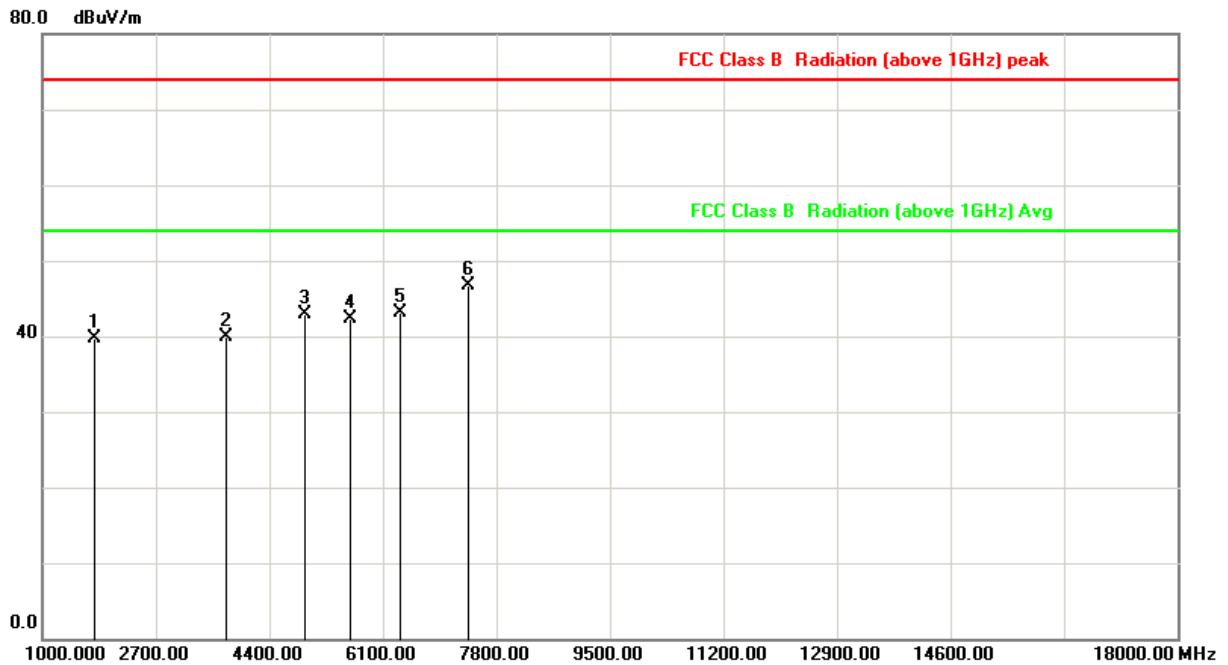


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1963.333	-11.94	51.98	40.04	74.00	-33.96	peak
2	3946.667	-2.07	45.87	43.80	74.00	-30.20	peak
3	4874.000	1.36	43.20	44.56	74.00	-29.44	peak
4	5533.333	2.10	39.93	42.03	74.00	-31.97	peak
5	6156.667	3.32	43.80	47.12	74.00	-26.88	peak
6	7311.000	6.29	39.68	45.97	74.00	-28.03	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 1, CH11 (2TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

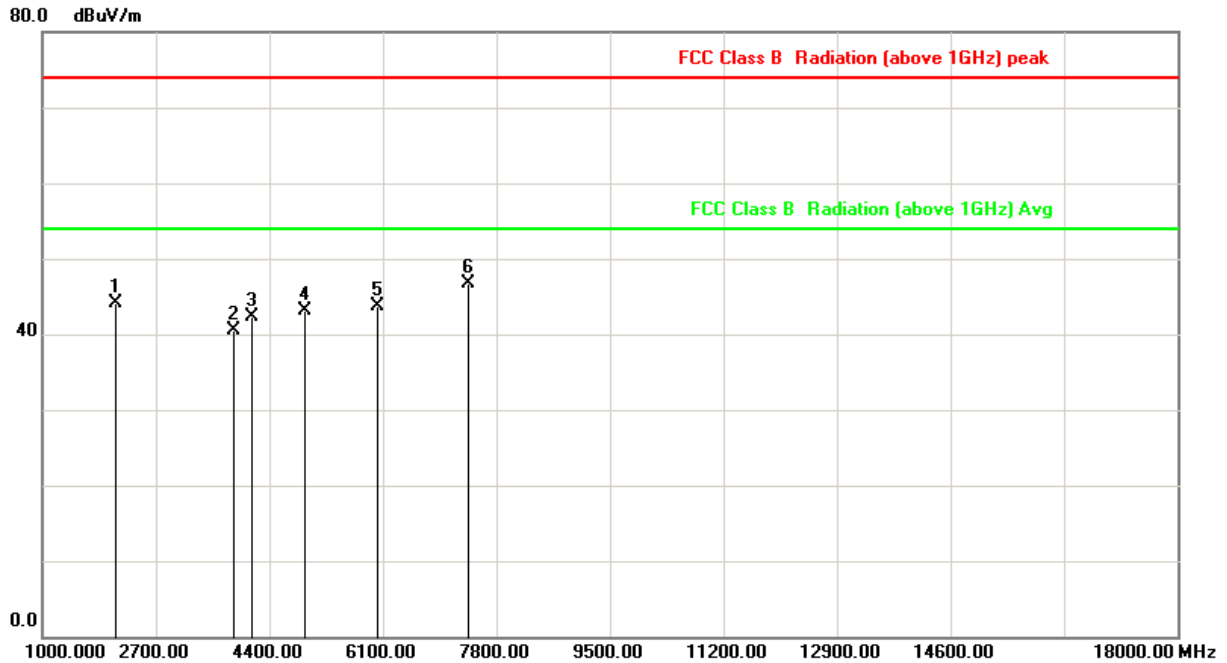


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1793.333	-12.92	52.72	39.80	74.00	-34.20	peak
2	3748.333	-2.75	42.63	39.88	74.00	-34.12	peak
3	4924.000	1.46	41.39	42.85	74.00	-31.15	peak
4	5618.333	2.31	40.07	42.38	74.00	-31.62	peak
5	6355.000	3.40	39.67	43.07	74.00	-30.93	peak
6	7386.000	6.59	40.20	46.79	74.00	-27.21	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: Mode 1, CH11 (2TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

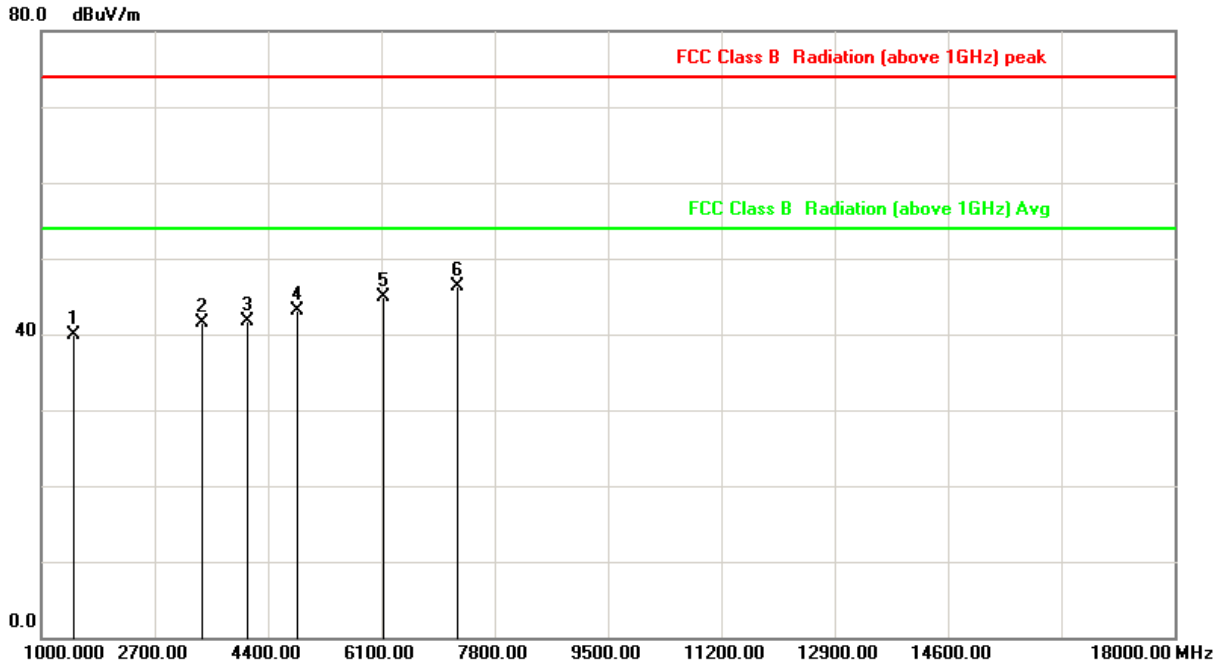


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2105.000	-11.28	55.34	44.06	74.00	-29.94	peak
2	3861.667	-2.36	42.78	40.42	74.00	-33.58	peak
3	4145.000	-1.15	43.45	42.30	74.00	-31.70	peak
4	4924.000	1.46	41.56	43.02	74.00	-30.98	peak
5	6015.000	3.27	40.38	43.65	74.00	-30.35	peak
6	7386.000	6.59	40.12	46.71	74.00	-27.29	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 2, CH03 (2TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

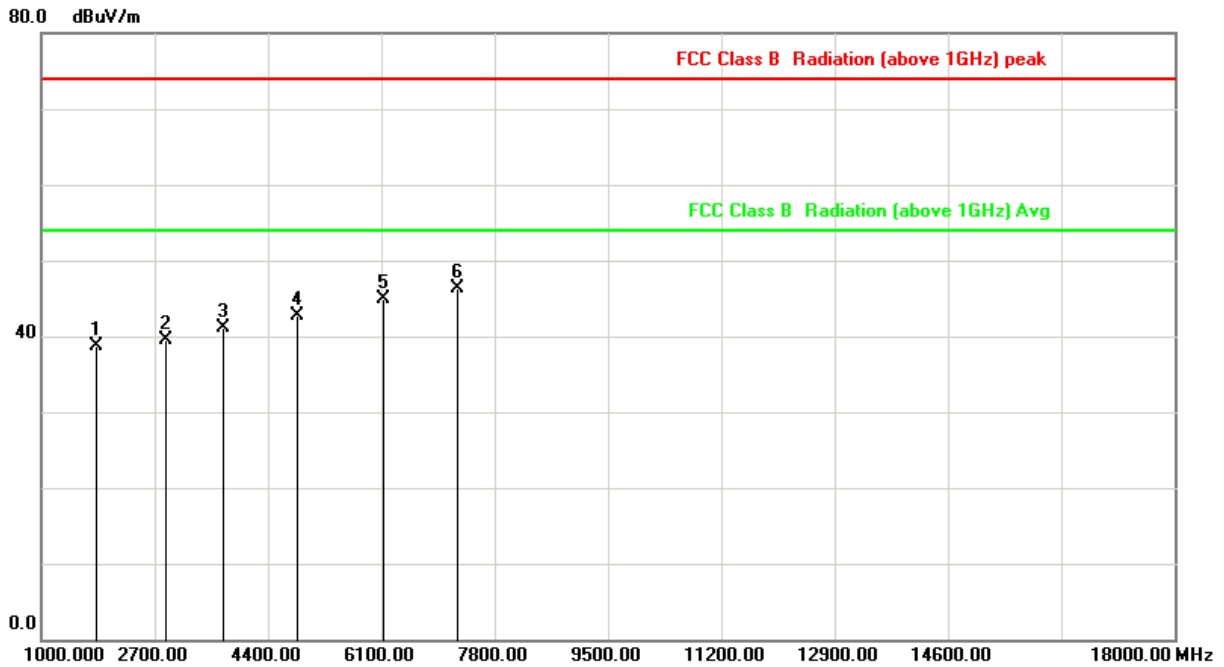


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1481.667	-14.78	54.77	39.99	74.00	-34.01	peak
2	3408.333	-4.08	45.55	41.47	74.00	-32.53	peak
3	4088.333	-1.44	43.06	41.62	74.00	-32.38	peak
4	4844.000	1.31	41.89	43.20	74.00	-30.80	peak
5	6128.333	3.31	41.52	44.83	74.00	-29.17	peak
6	7236.000	6.00	40.37	46.37	74.00	-27.63	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: Mode 2, CH03 (2TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

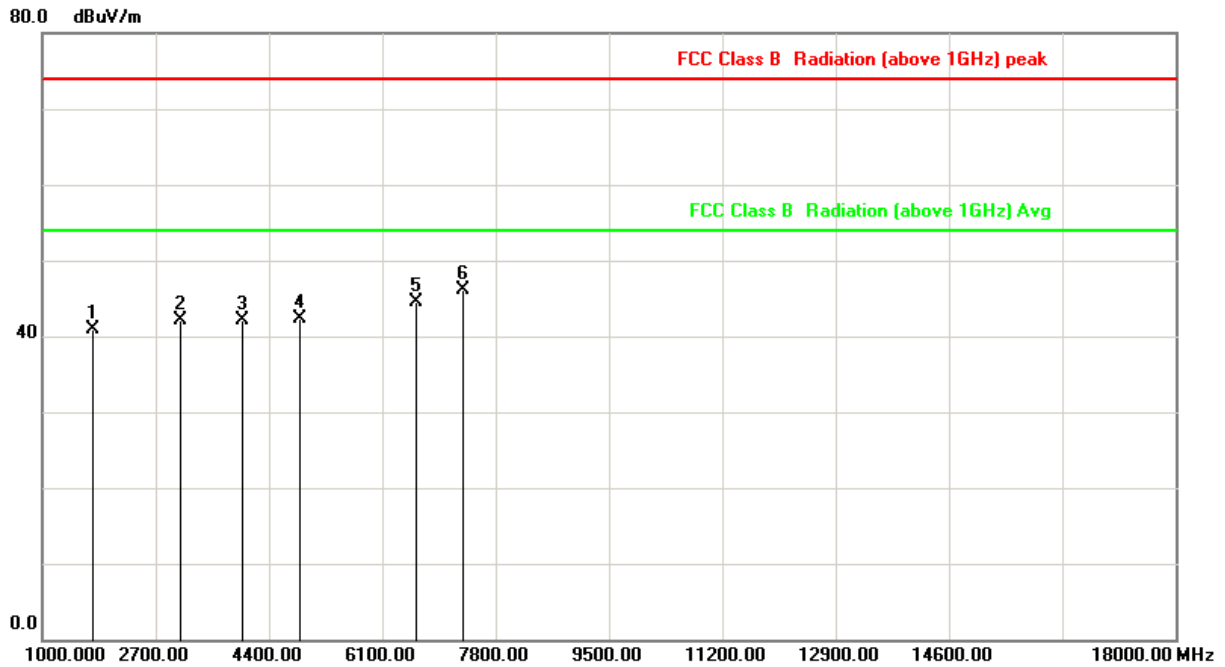


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1821.667	-12.76	51.39	38.63	74.00	-35.37	peak
2	2870.000	-7.10	46.60	39.50	74.00	-34.50	peak
3	3720.000	-2.85	43.88	41.03	74.00	-32.97	peak
4	4844.000	1.31	41.42	42.73	74.00	-31.27	peak
5	6128.333	3.31	41.67	44.98	74.00	-29.02	peak
6	7236.000	6.00	40.26	46.26	74.00	-27.74	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 2, CH06 (2TX)	Temperature	: 18 °C
Memo	: CH 01	Atmospheric Pressure	: 1008 hpa

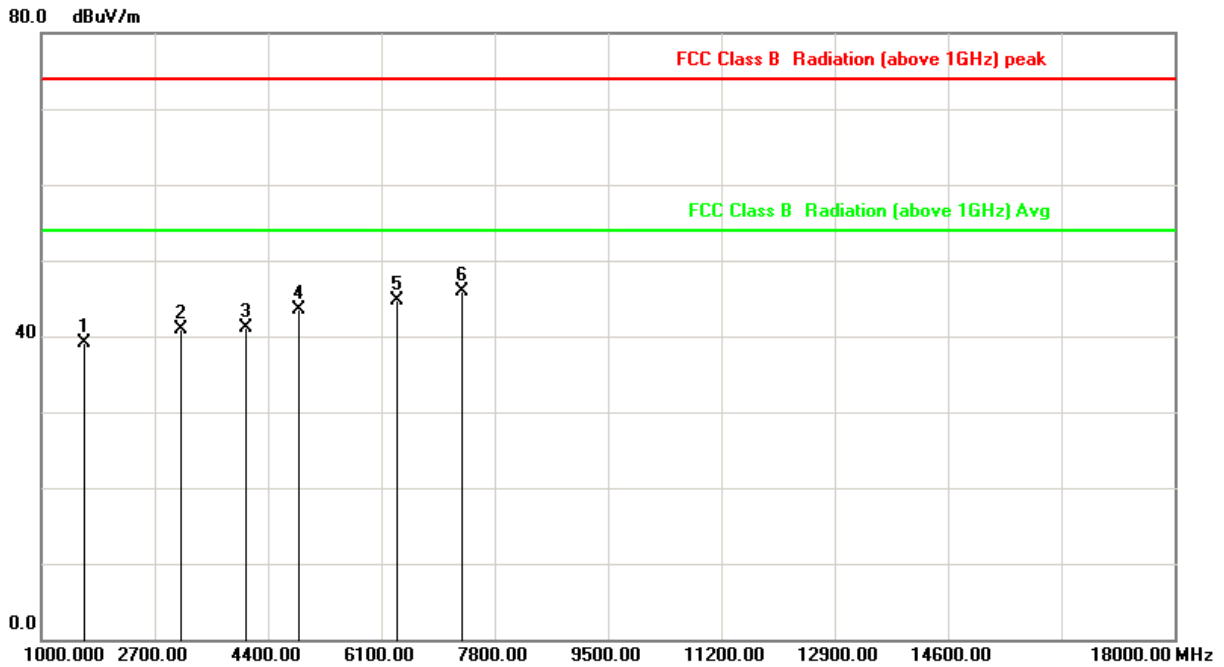


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1765.000	-13.08	53.94	40.86	74.00	-33.14	peak
2	3068.333	-5.87	47.96	42.09	74.00	-31.91	peak
3	4003.333	-1.87	44.01	42.14	74.00	-31.86	peak
4	4874.000	1.36	40.90	42.26	74.00	-31.74	peak
5	6610.000	3.82	40.72	44.54	74.00	-29.46	peak
6	7311.000	6.29	39.80	46.09	74.00	-27.91	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: Mode 2, CH06 (2TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

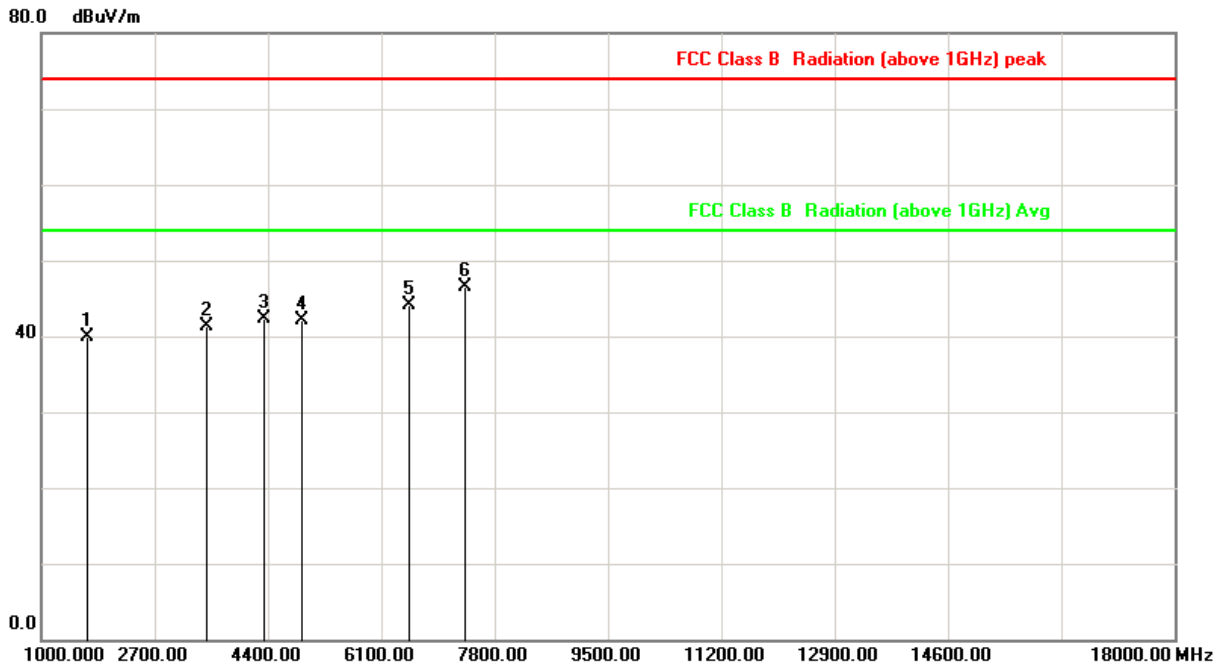


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1651.667	-13.74	52.79	39.05	74.00	-34.95	peak
2	3096.667	-5.72	46.68	40.96	74.00	-33.04	peak
3	4060.000	-1.58	42.59	41.01	74.00	-32.99	peak
4	4874.000	1.36	42.14	43.50	74.00	-30.50	peak
5	6326.667	3.39	41.32	44.71	74.00	-29.29	peak
6	7311.000	6.29	39.60	45.89	74.00	-28.11	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 2, CH09 (2TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %

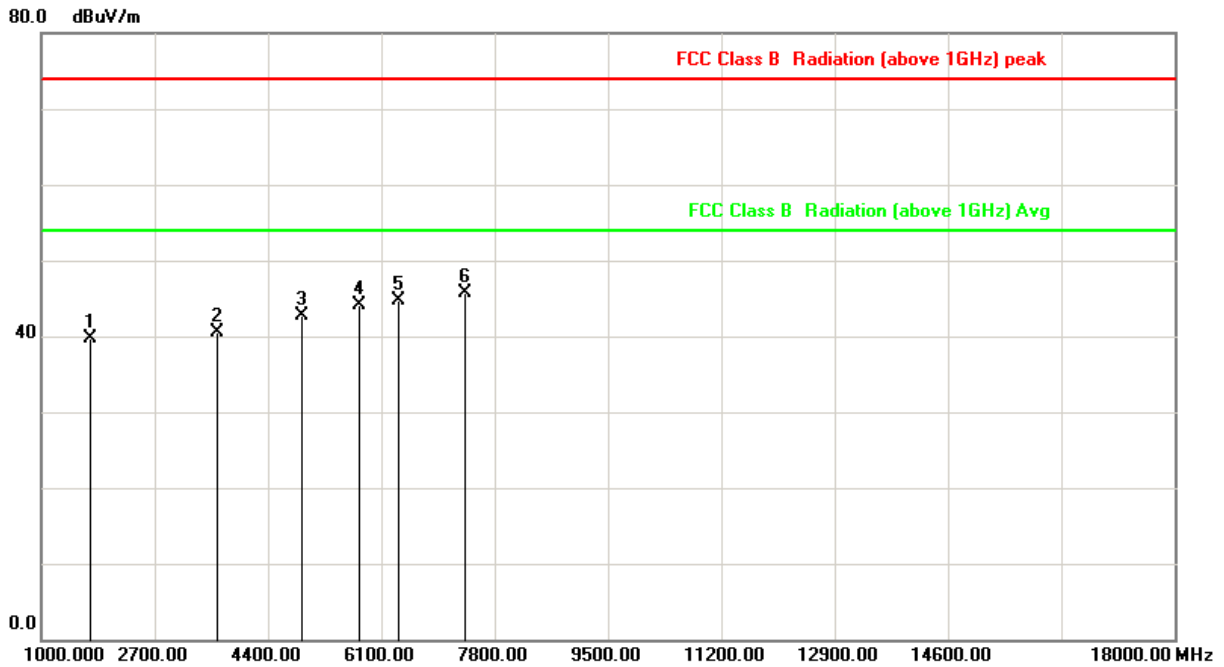


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1680.000	-13.57	53.52	39.95	74.00	-34.05	peak
2	3493.333	-3.64	45.00	41.36	74.00	-32.64	peak
3	4343.333	-0.14	42.45	42.31	74.00	-31.69	peak
4	4904.000	1.42	40.72	42.14	74.00	-31.86	peak
5	6525.000	3.54	40.51	44.05	74.00	-29.95	peak
6	7356.000	6.47	40.07	46.54	74.00	-27.46	peak

Note: Level = Reading + Factor
 Margin = Level – Limit
 Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: Mode 2, CH09 (2TX)	Temperature	: 18 °C
Test Date	: Dec. 09, 2018	Humidity	: 49 %



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1736.667	-13.25	52.95	39.70	74.00	-34.30	peak
2	3635.000	-3.14	43.69	40.55	74.00	-33.45	peak
3	4904.000	1.42	41.19	42.61	74.00	-31.39	peak
4	5760.000	2.66	41.36	44.02	74.00	-29.98	peak
5	6355.000	3.40	41.32	44.72	74.00	-29.28	peak
6	7356.000	6.47	39.30	45.77	74.00	-28.23	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor



6.7 Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below:

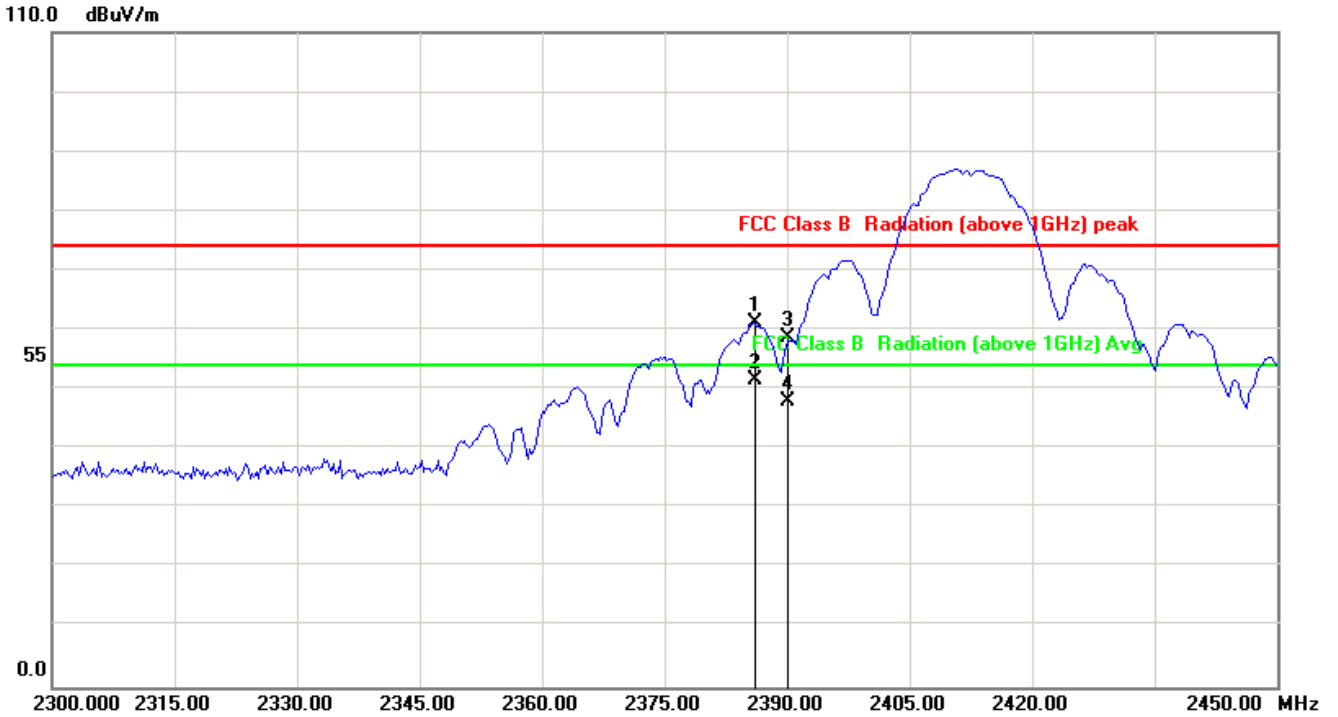
MHz	MHz	MHz	GHz
0.09000 – 0.11000	16.42000 – 16.42300	399.9 – 410.0	4.500 – 5.250
0.49500 – 0.505**	16.69475 – 16.69525	608.0 – 614.0	5.350 – 5.460
2.17350 – 2.19050	16.80425 – 16.80475	960.0 – 1240.0	7.250 – 7.750
4.12500 – 4.12800	25.50000 – 25.67000	1300.0 – 1427.0	8.025 – 8.500
4.17725 – 4.17775	37.50000 – 38.25000	1435.0 – 1626.5	9.000 – 9.200
4.20725 – 4.20775	73.00000 – 74.60000	1645.5 – 1646.5	9.300 – 9.500
6.21500 – 6.21800	74.80000 – 75.20000	1660.0 – 1710.0	10.600 – 12.700
6.26775 – 6.26825	108.00000 – 121.94000	1718.8 – 1722.2	13.250 – 13.400
6.31175 – 6.31225	123.00000 – 138.00000	2200.0 – 2300.0	14.470 – 14.500
8.29100 – 8.29400	149.90000 – 150.05000	2310.0 – 2390.0	15.350 – 16.200
8.36200 – 8.36600	156.52475 – 156.52525	2483.5 – 2500.0	17.700 – 21.400
8.37625 – 8.38675	156.70000 – 156.90000	2655.0 – 2900.0	22.010 – 23.120
8.41425 – 8.41475	162.01250 – 167.17000	3260.0 – 3267.0	23.600 – 24.000
12.29000 – 12.29300	167.72000 – 173.20000	3332.0 – 3339.0	31.200 – 31.800
12.51975 – 12.52025	240.00000 – 285.00000	3345.8 – 3358.0	36.430 – 36.500
12.57675 – 12.57725	322.00000 – 335.40000	3600.0 – 4400.0	Above 38.6
13.36000 – 13.41000			

** : Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz



6.8 Restrict Band Emission Measurement Data

Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: 802.11b, CH1 1TX	Temperature	: 24 °C
Test Date	: Dec. 09, 2018	Humidity	: 61 %



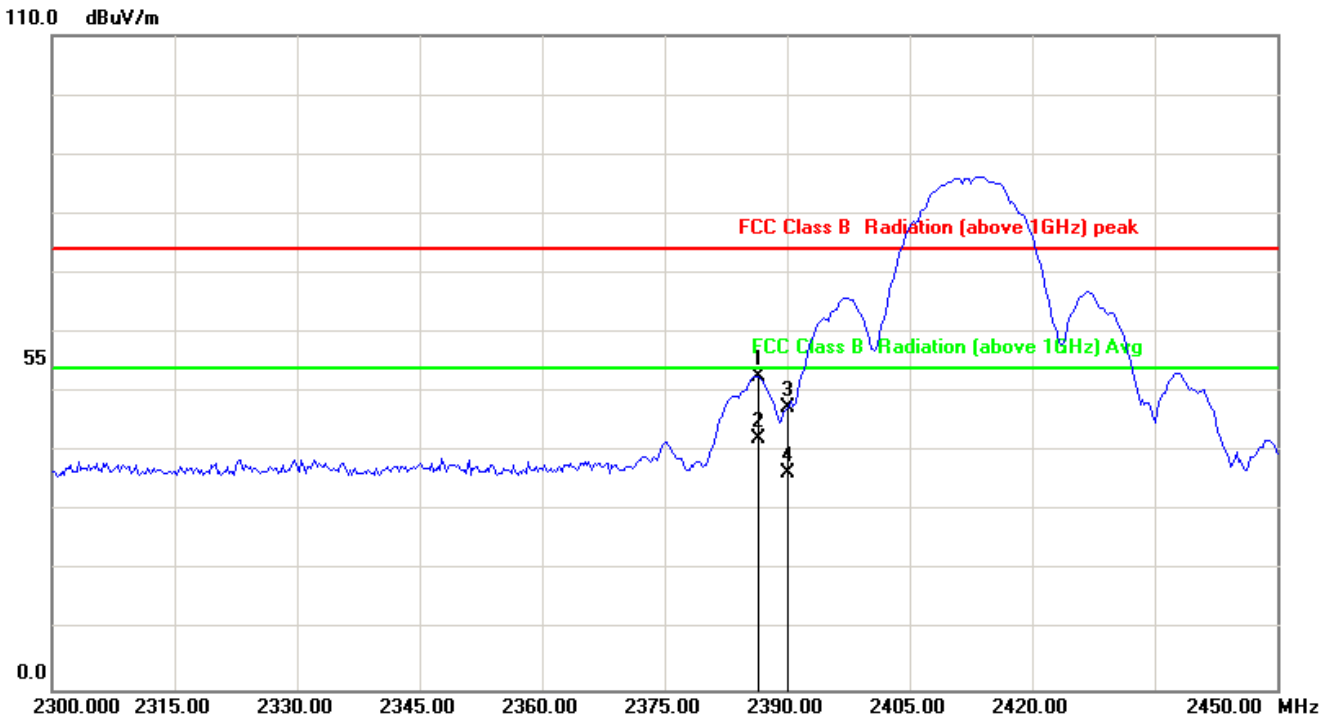
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2386.000	-10.07	71.18	61.11	74.00	-12.89	peak
2	2386.000	-10.07	61.70	51.63	54.00	-2.37	AVG
3	2390.000	-10.05	68.70	58.65	74.00	-15.35	peak
4	2390.000	-10.05	58.13	48.08	54.00	-5.92	AVG

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: 802.11b, CH1 1TX	Temperature	: 24 °C
Test Date	: Dec. 09, 2018	Humidity	: 61 %



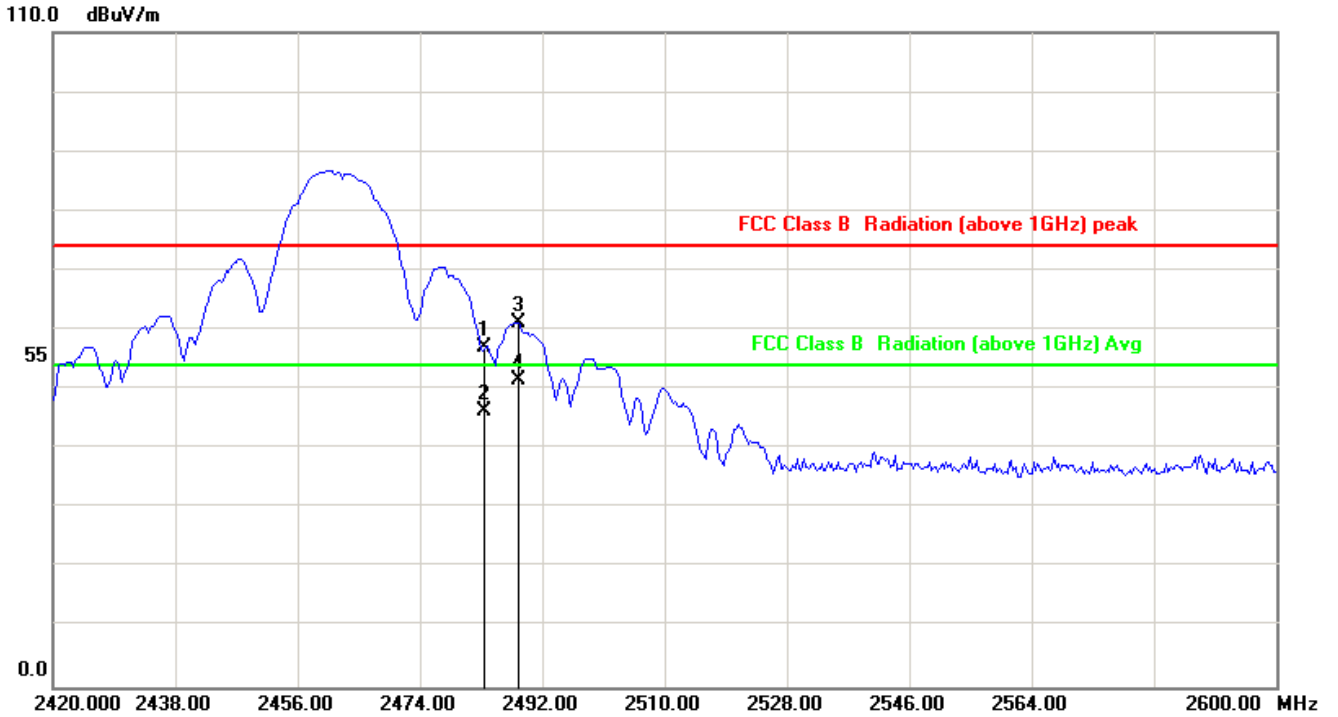
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2386.500	-10.07	62.83	52.76	74.00	-21.24	peak
2	2386.500	-10.07	52.37	42.30	54.00	-11.70	AVG
3	2390.000	-10.05	57.42	47.37	74.00	-26.63	peak
4	2390.000	-10.05	46.58	36.53	54.00	-17.47	AVG

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: 802.11b, CH11 1TX	Temperature	: 24 °C
Test Date	: Dec. 09, 2018	Humidity	: 61 %



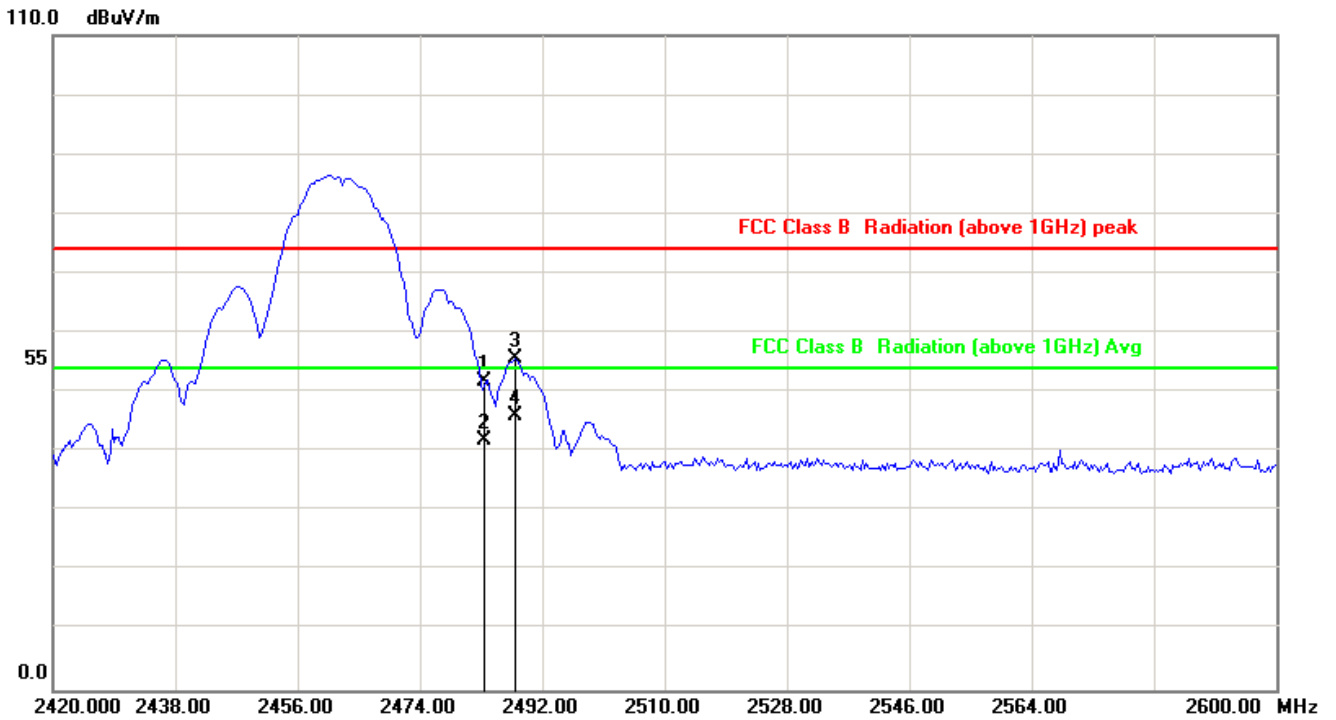
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	-9.65	66.81	57.16	74.00	-16.84	peak
2	2483.500	-9.65	56.10	46.45	54.00	-7.55	AVG
3	2488.400	-9.63	70.73	61.10	74.00	-12.90	peak
4	2488.400	-9.63	61.22	51.59	54.00	-2.41	AVG

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: 802.11b, CH11 1TX	Temperature	: 24 °C
Test Date	: Dec. 09, 2018	Humidity	: 61 %



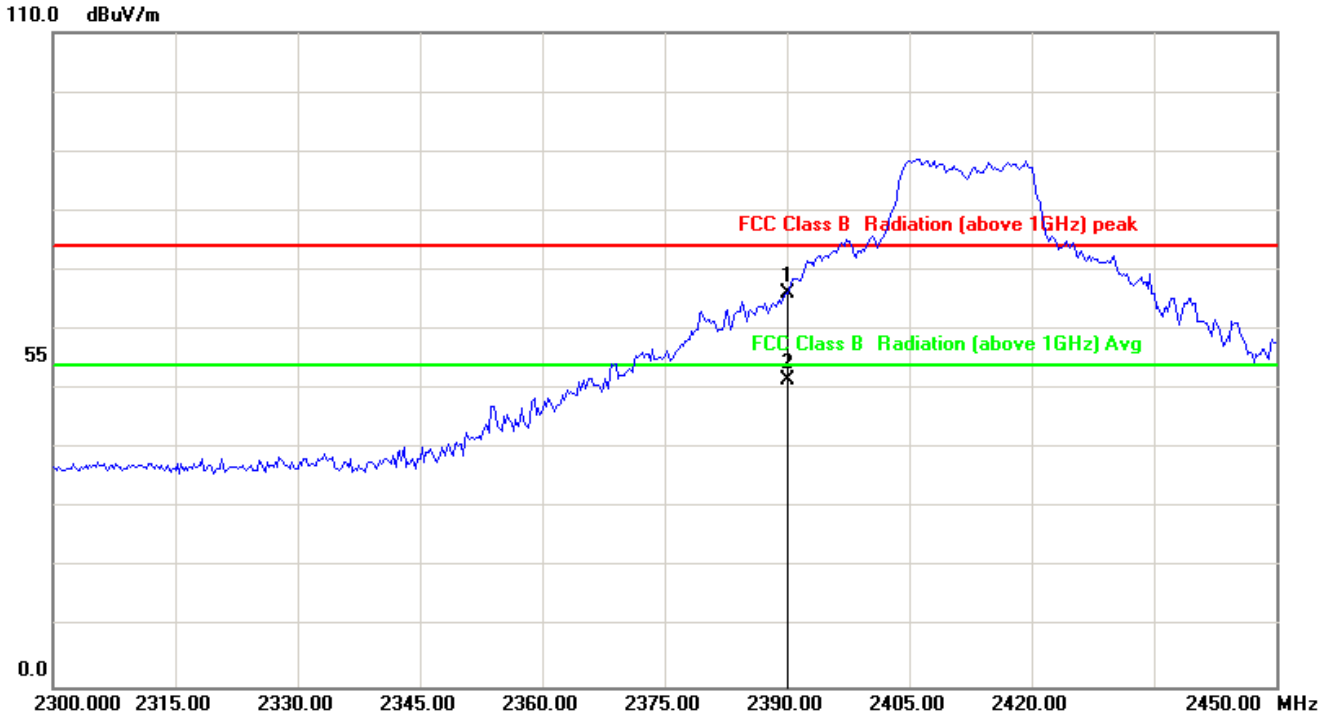
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	-9.65	61.62	51.97	74.00	-22.03	peak
2	2483.500	-9.65	51.67	42.02	54.00	-11.98	AVG
3	2488.100	-9.63	65.40	55.77	74.00	-18.23	peak
4	2488.100	-9.63	55.63	46.00	54.00	-8.00	AVG

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: 802.11g, CH1 1TX	Temperature	: 24 °C
Test Date	: Dec. 09, 2018	Humidity	: 61 %



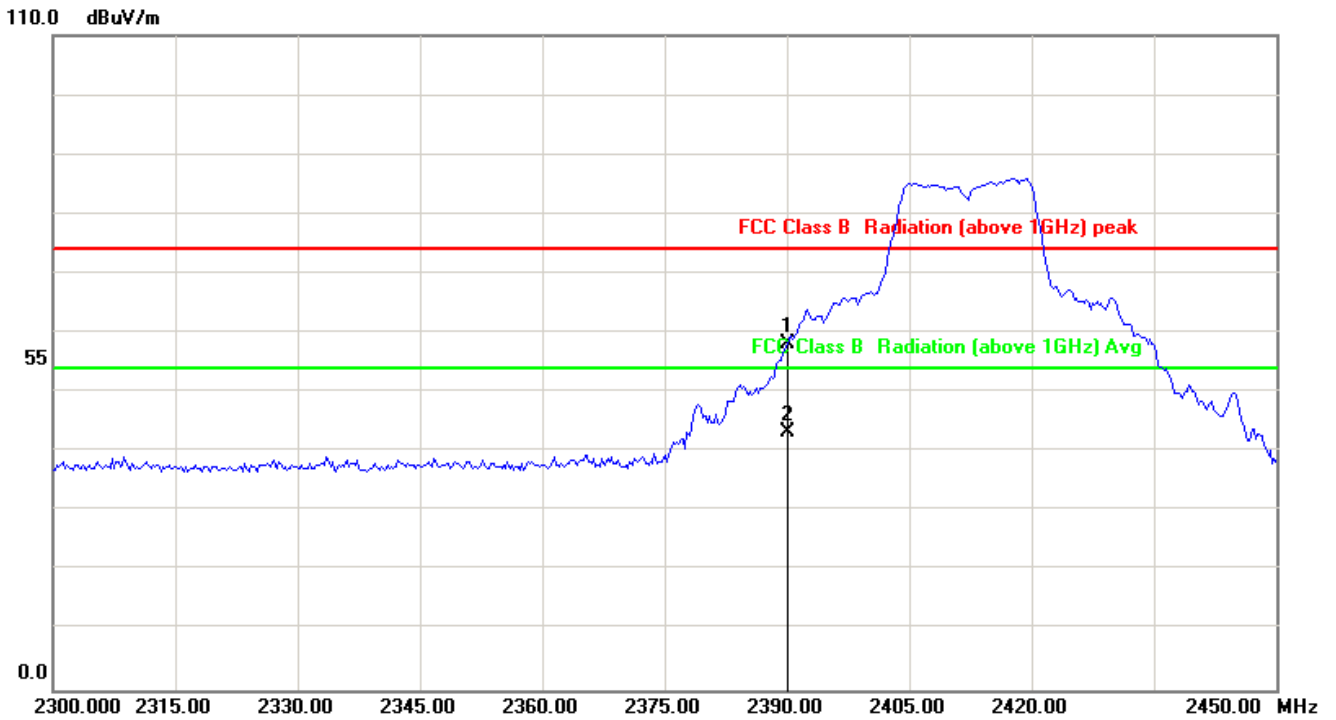
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.000	-10.05	76.21	66.16	74.00	-7.84	peak
2	2390.000	-10.05	61.66	51.61	54.00	-2.39	AVG

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: 802.11g, CH1 1TX	Temperature	: 24 °C
Test Date	: Dec. 09, 2018	Humidity	: 61 %



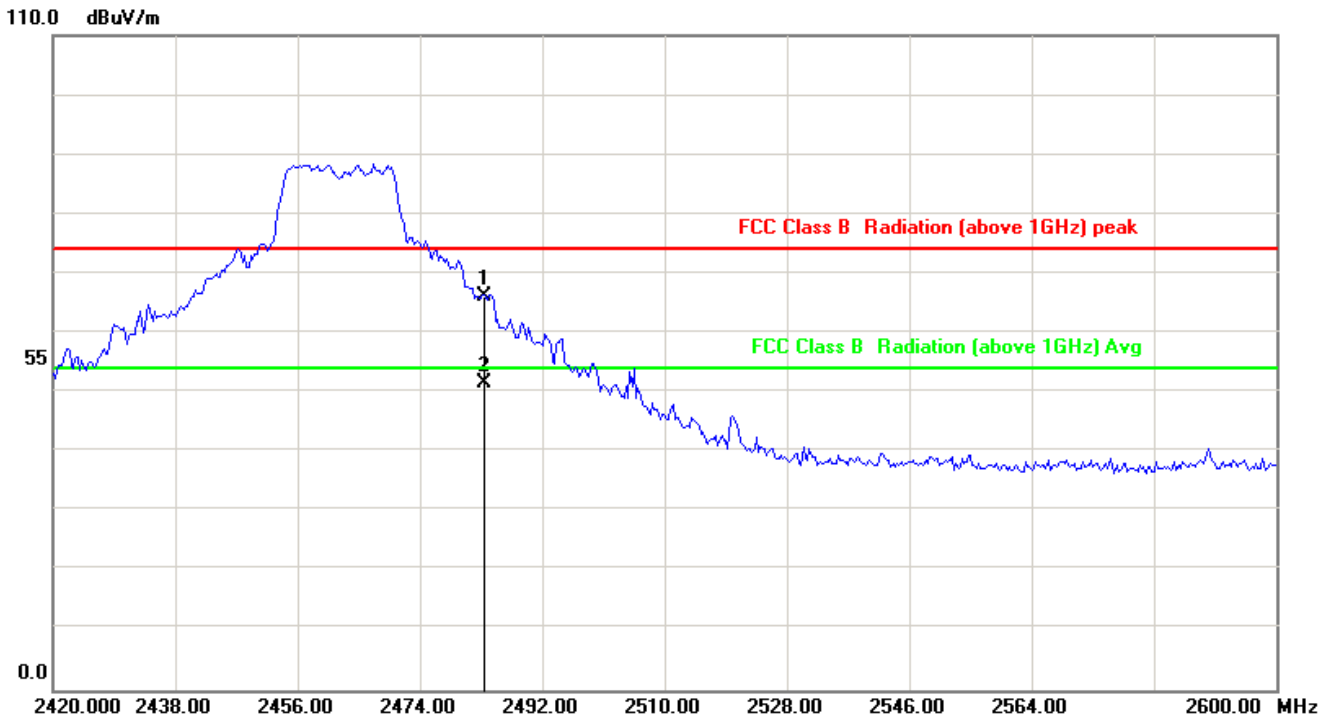
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.000	-10.05	68.18	58.13	74.00	-15.87	peak
2	2390.000	-10.05	53.27	43.22	54.00	-10.78	AVG

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: 802.11g, CH11 1TX	Temperature	: 24 °C
Test Date	: Dec. 09, 2018	Humidity	: 61 %



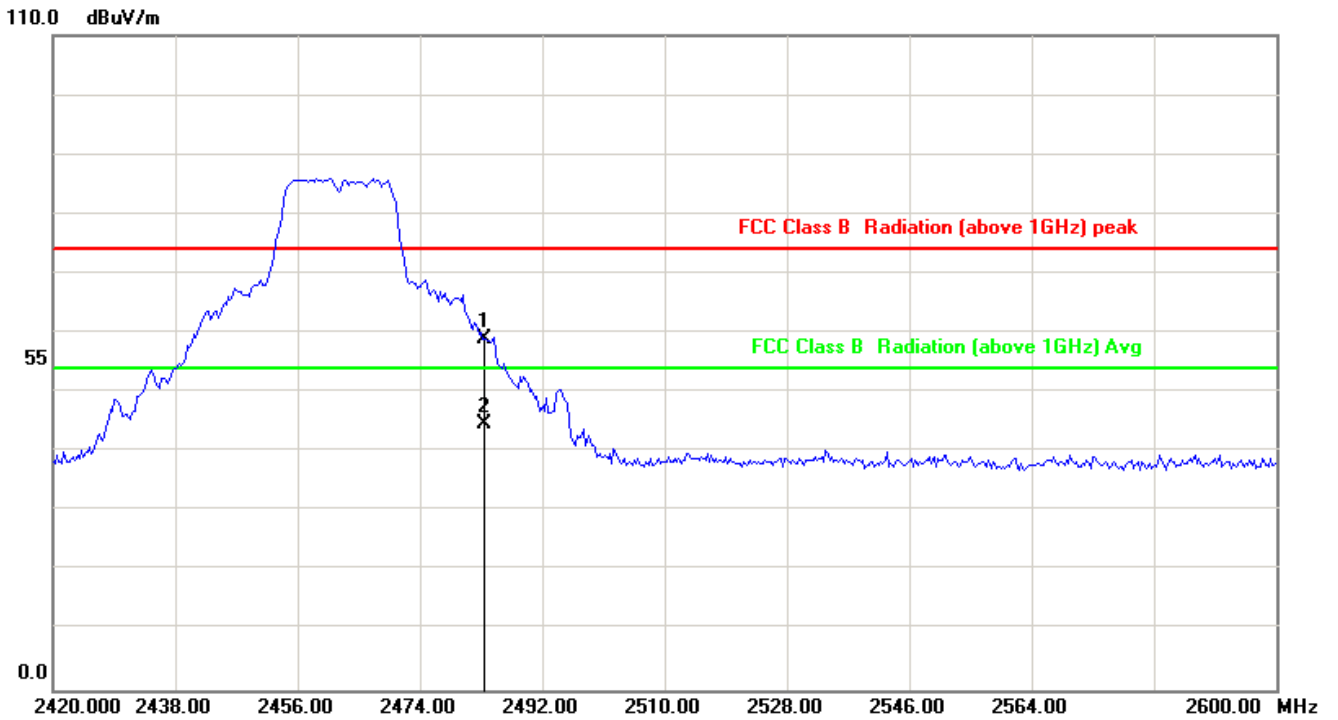
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	-9.65	75.84	66.19	74.00	-7.81	peak
2	2483.500	-9.65	61.11	51.46	54.00	-2.54	AVG

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: 802.11g, CH11 1TX	Temperature	: 24 °C
Test Date	: Dec. 09, 2018	Humidity	: 61 %



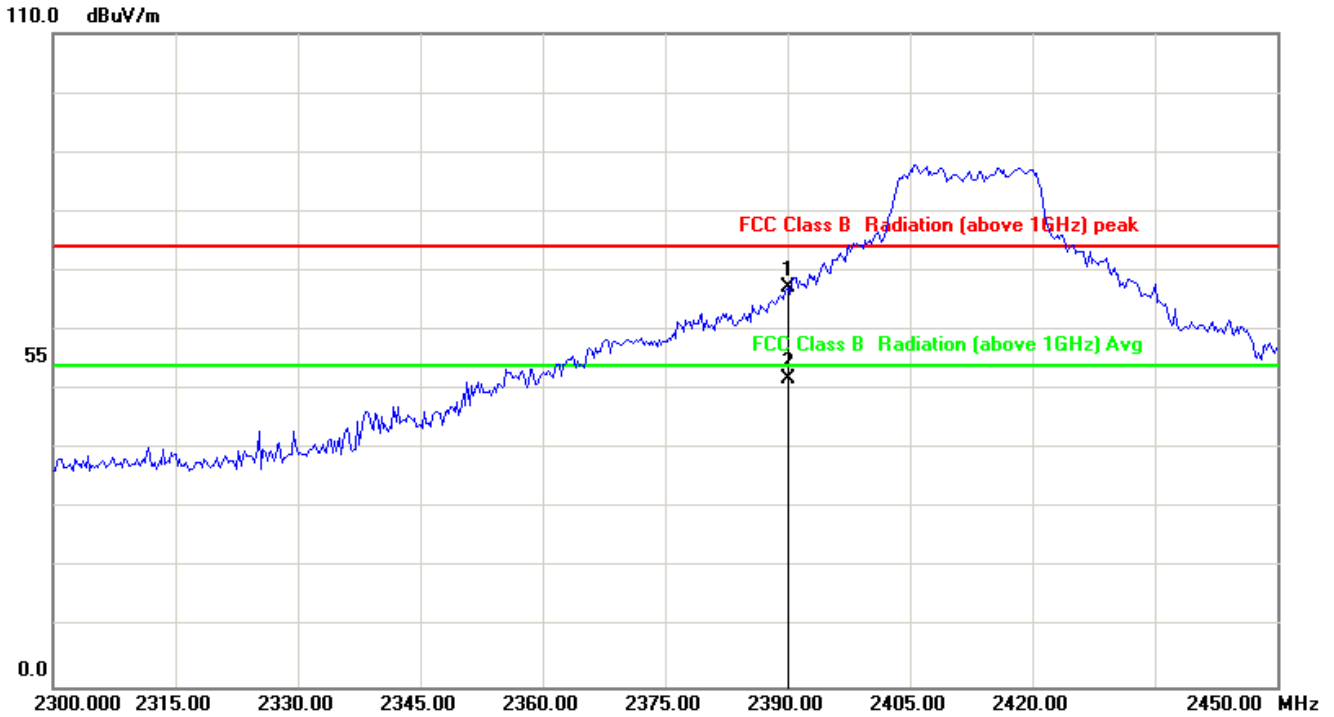
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	-9.65	68.68	59.03	74.00	-14.97	peak
2	2483.500	-9.65	54.39	44.74	54.00	-9.26	AVG

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: 802.11n HT20, CH1 1TX	Temperature	: 24 °C
Test Date	: Dec. 09, 2018	Humidity	: 61 %



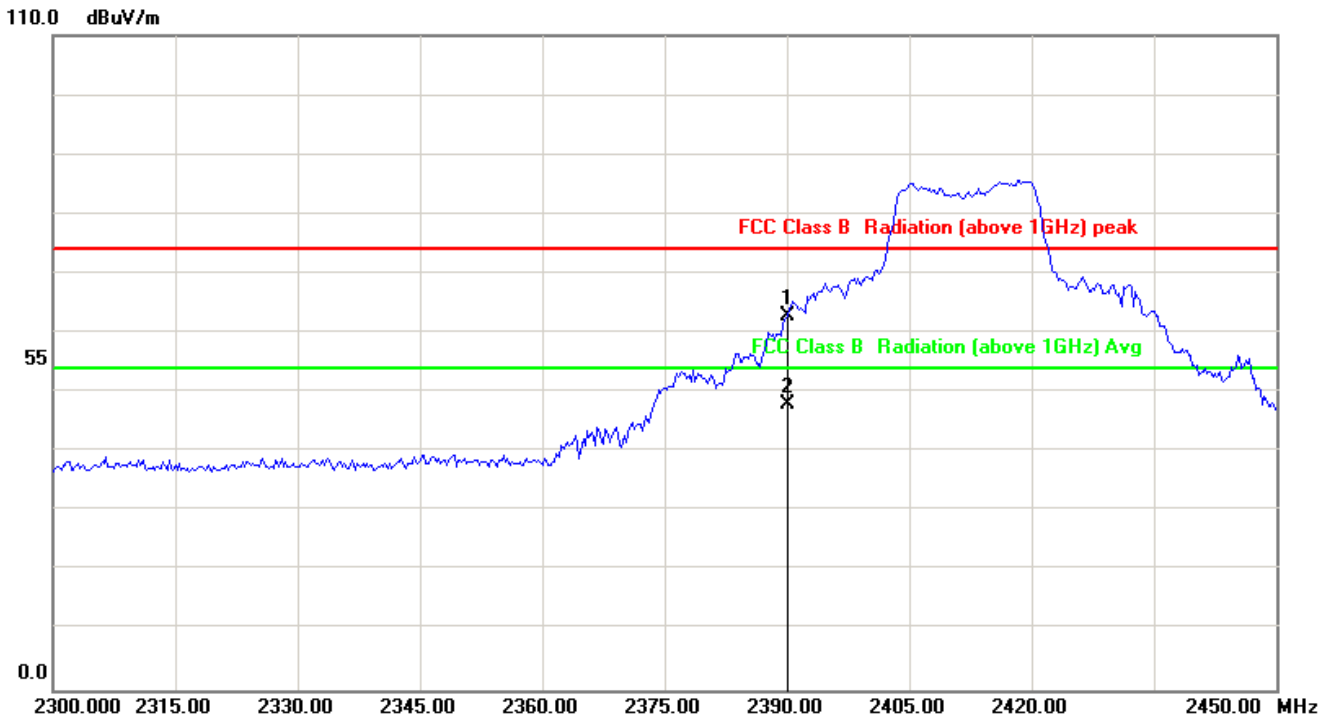
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.000	-10.05	77.19	67.14	74.00	-6.86	peak
2	2390.000	-10.05	62.02	51.97	54.00	-2.03	AVG

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: 802.11n HT20, CH1 1TX	Temperature	: 24 °C
Test Date	: Dec. 09, 2018	Humidity	: 61 %



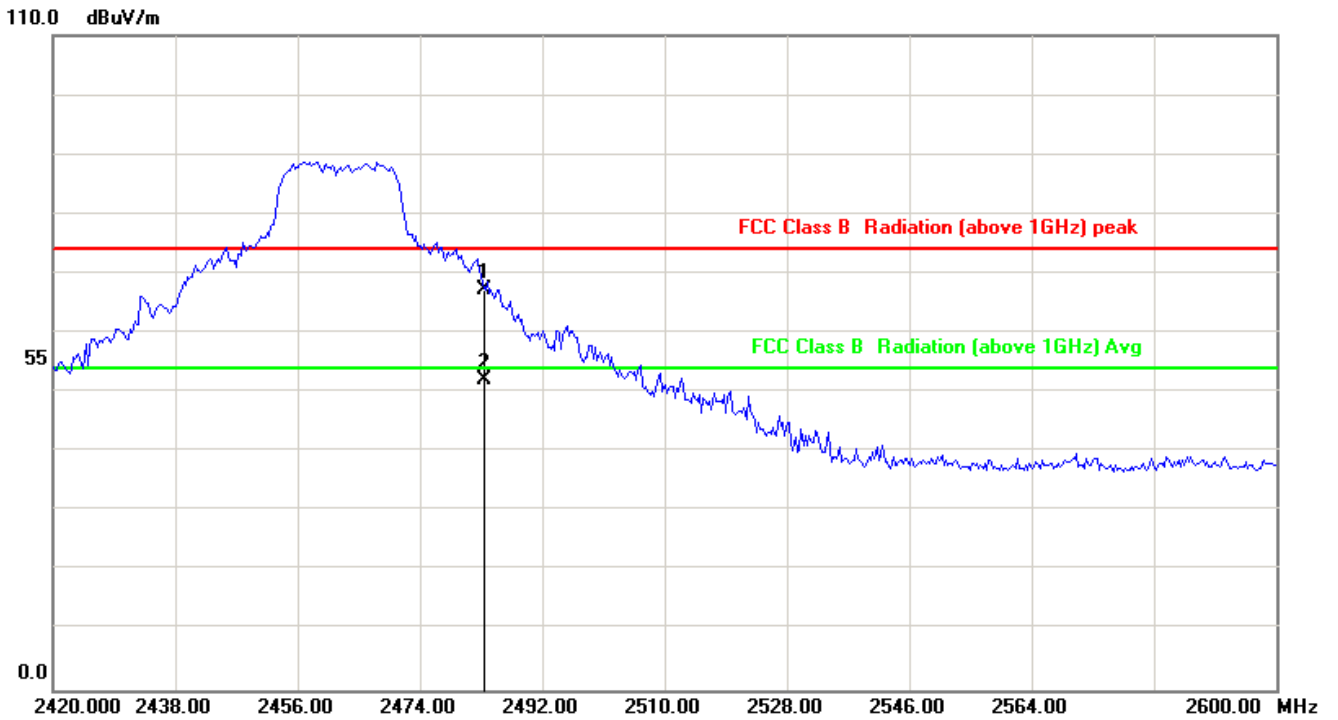
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.000	-10.05	72.81	62.76	74.00	-11.24	peak
2	2390.000	-10.05	58.10	48.05	54.00	-5.95	AVG

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: 802.11n HT20, CH11 1TX	Temperature	: 24 °C
Test Date	: Dec. 09, 2018	Humidity	: 61 %



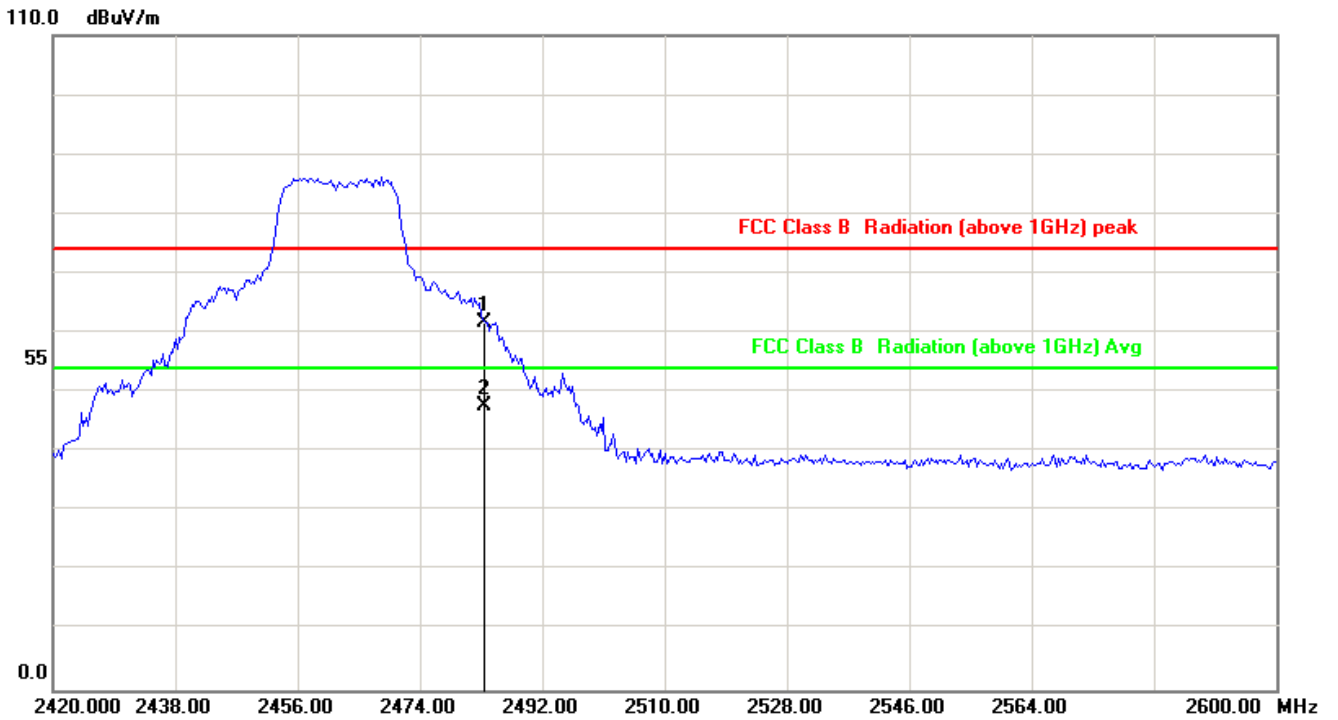
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	-9.65	76.87	67.22	74.00	-6.78	peak
2	2483.500	-9.65	61.81	52.16	54.00	-1.84	AVG

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: 802.11n HT20, CH11 1TX	Temperature	: 24 °C
Test Date	: Dec. 09, 2018	Humidity	: 61 %



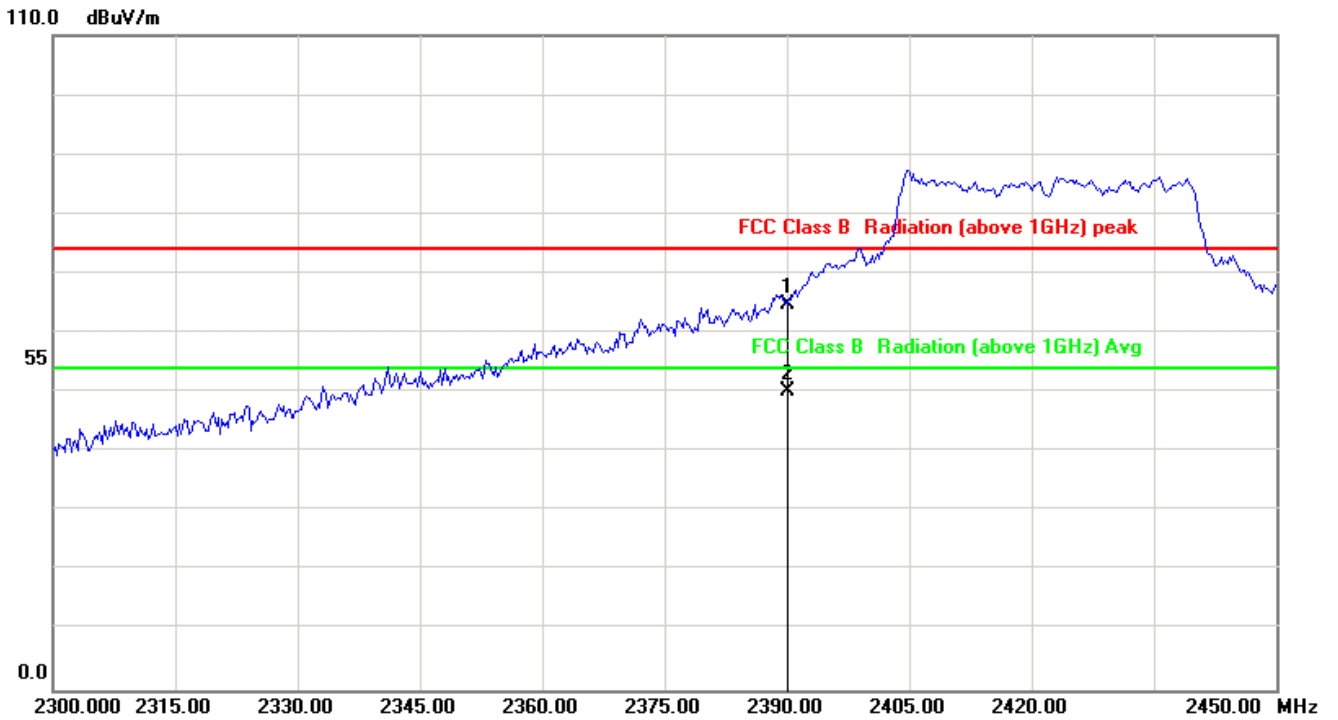
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	-9.65	71.35	61.70	74.00	-12.30	peak
2	2483.500	-9.65	57.24	47.59	54.00	-6.41	AVG

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: 802.11n HT40, CH3 1TX	Temperature	: 24 °C
Test Date	: Dec. 09, 2018	Humidity	: 61 %



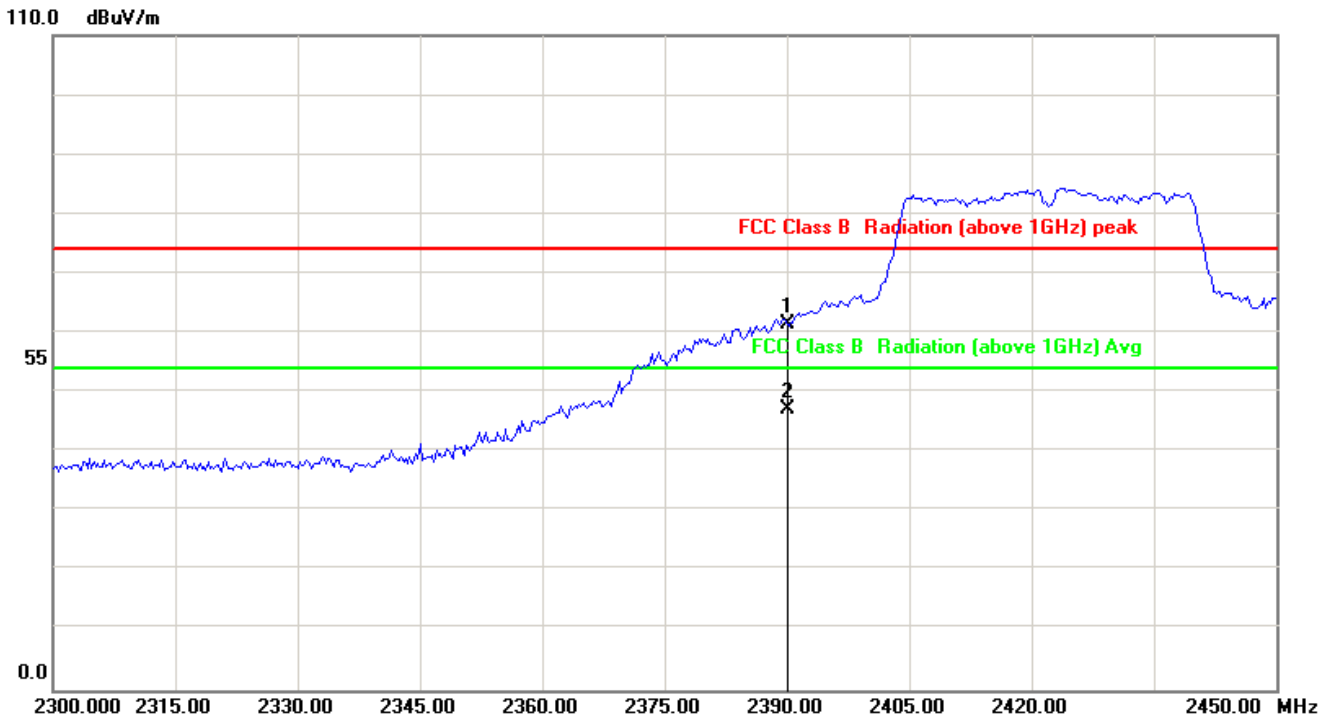
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.000	-10.05	74.90	64.85	74.00	-9.15	peak
2	2390.000	-10.05	60.21	50.16	54.00	-3.84	AVG

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: 802.11n HT40, CH3 1TX	Temperature	: 24 °C
Test Date	: Dec. 09, 2018	Humidity	: 61 %



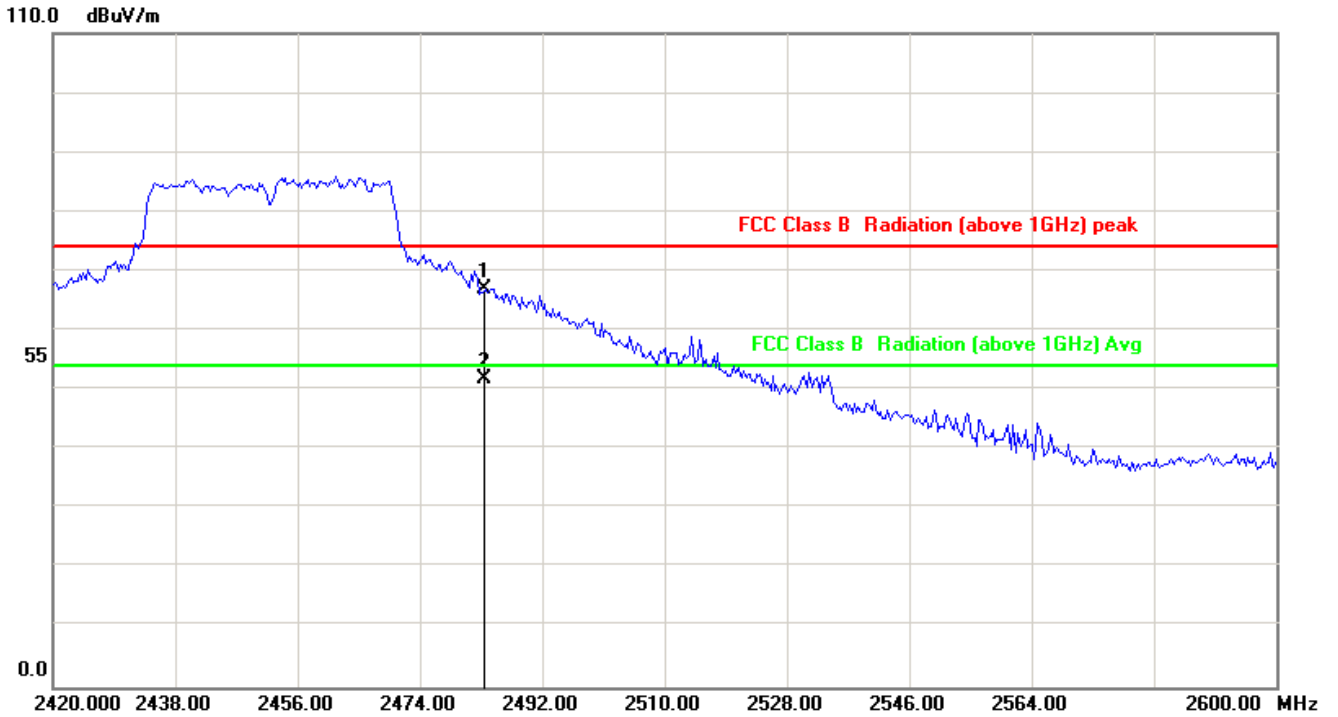
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.000	-10.05	71.47	61.42	74.00	-12.58	peak
2	2390.000	-10.05	57.31	47.26	54.00	-6.74	AVG

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: 802.11n HT40, CH9 1TX	Temperature	: 24 °C
Test Date	: Dec. 09, 2018	Humidity	: 61 %



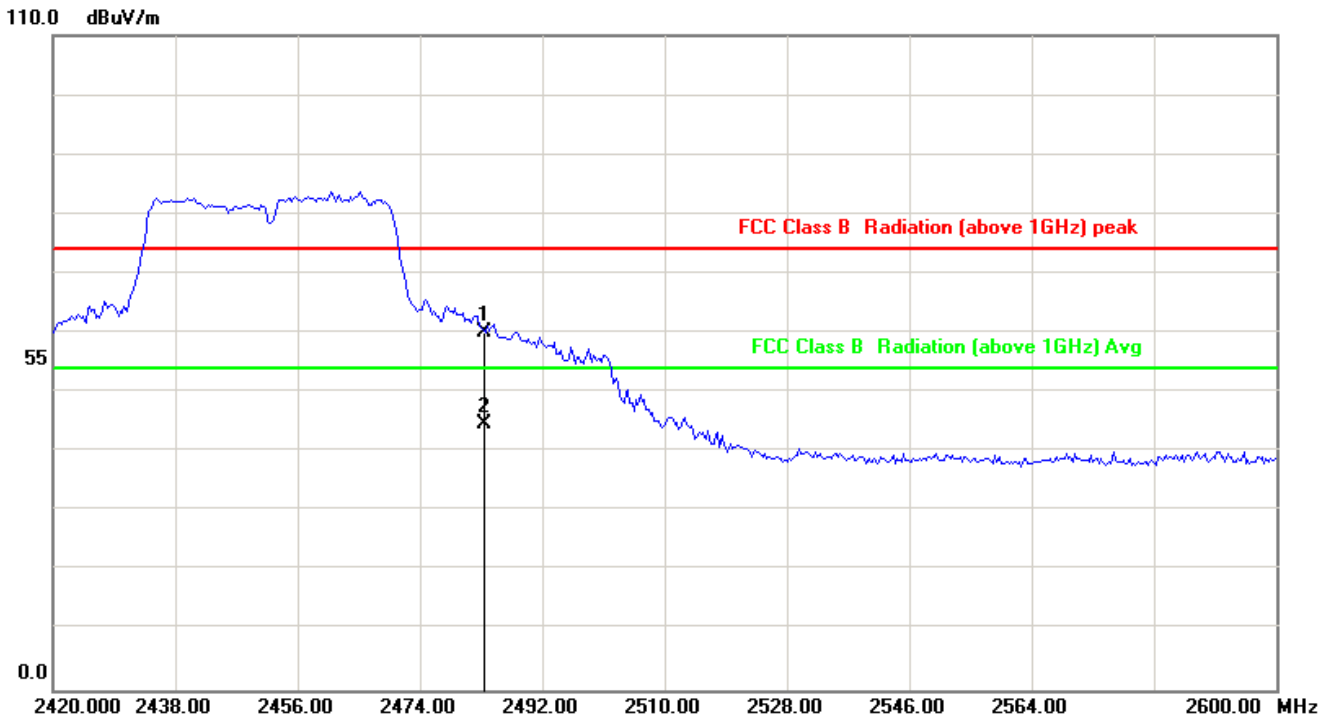
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	-9.65	76.52	66.87	74.00	-7.13	peak
2	2483.500	-9.65	61.58	51.93	54.00	-2.07	AVG

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: 802.11n HT40, CH9 1TX	Temperature	: 24 °C
Test Date	: Dec. 09, 2018	Humidity	: 61 %



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	-9.65	69.75	60.10	74.00	-13.90	peak
2	2483.500	-9.65	54.31	44.66	54.00	-9.34	AVG

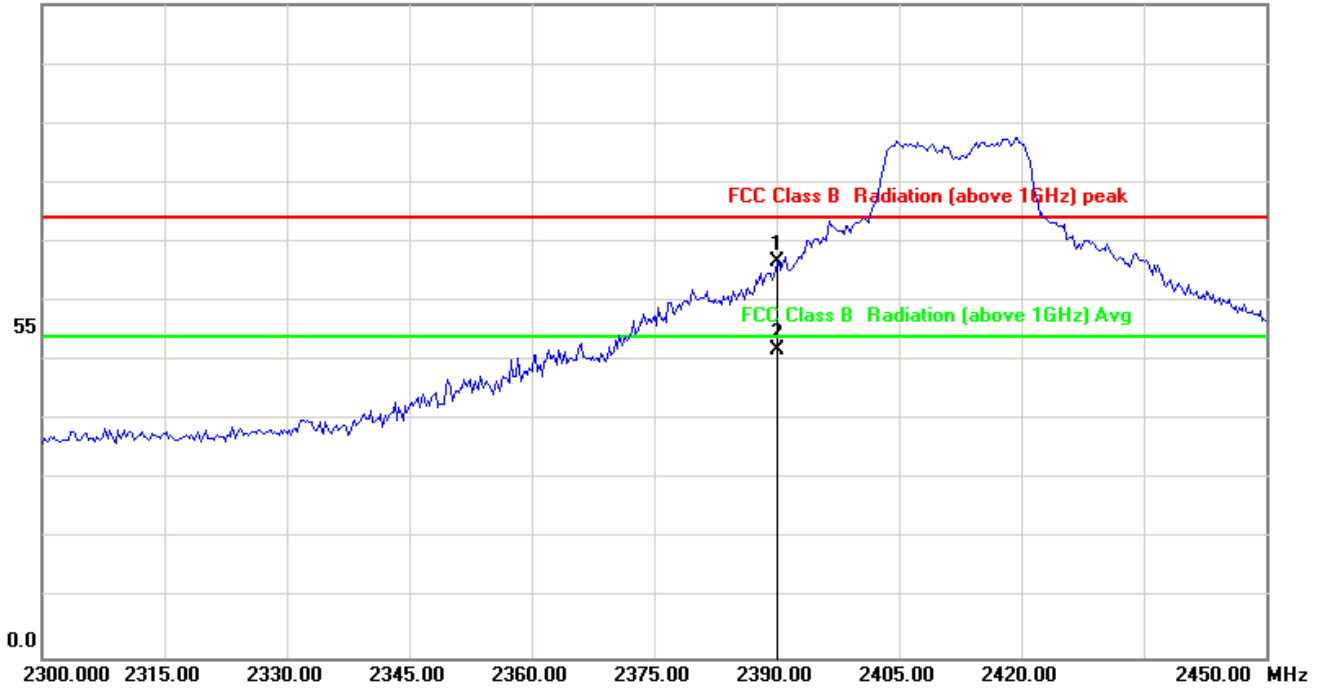
Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: 802.11n HT20, CH1 2TX	Temperature	: 24 °C
Test Date	: Dec. 09, 2018	Humidity	: 61 %

110.0 dBuV/m



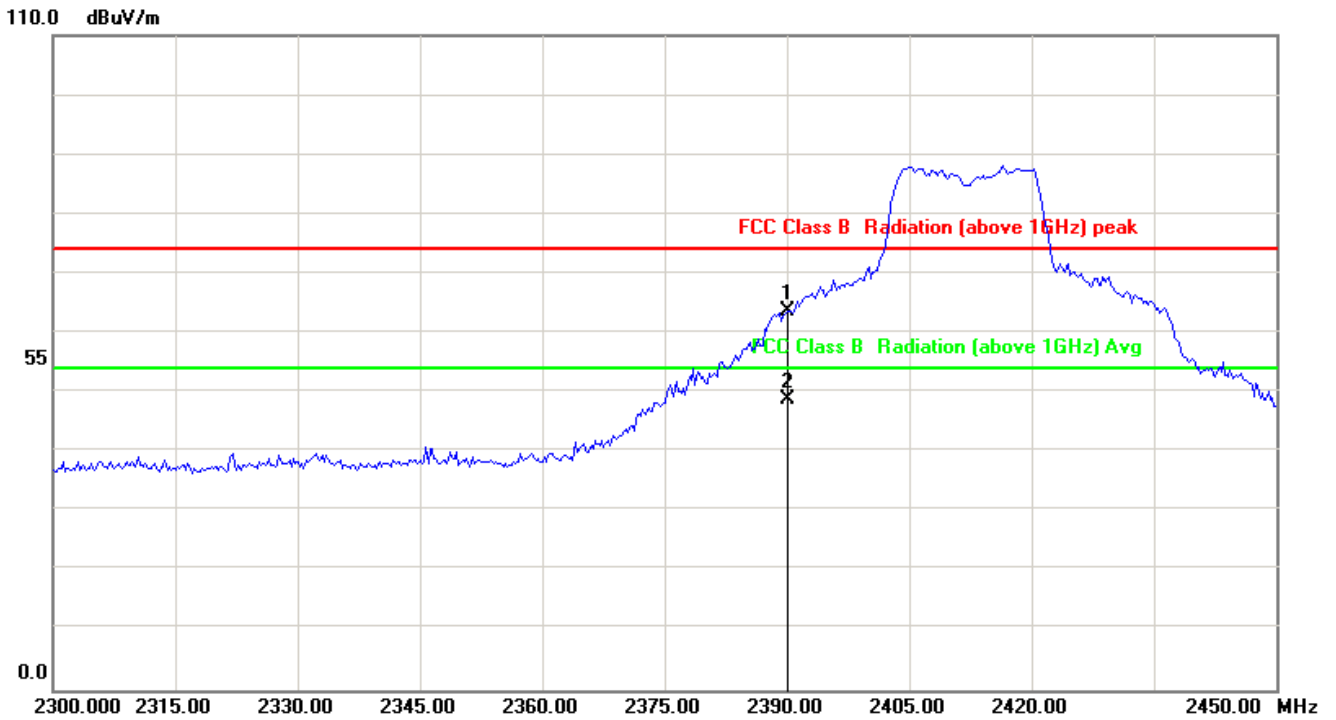
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.000	-10.05	76.66	66.61	74.00	-7.39	peak
2	2390.000	-10.05	61.89	51.84	54.00	-2.16	AVG

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: 802.11n HT20, CH1 2TX	Temperature	: 24 °C
Test Date	: Dec. 09, 2018	Humidity	: 61 %



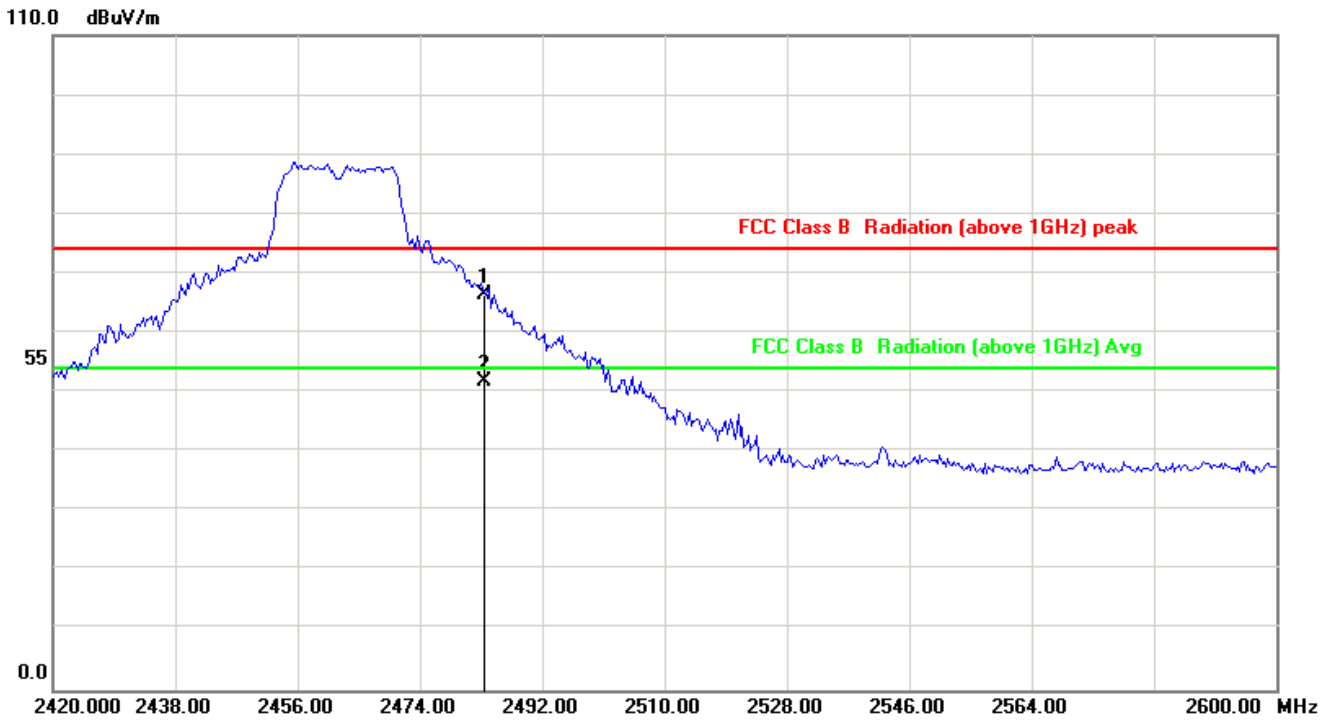
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.000	-10.05	73.79	63.74	74.00	-10.26	peak
2	2390.000	-10.05	58.94	48.89	54.00	-5.11	AVG

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: 802.11n HT20, CH11 2TX	Temperature	: 24 °C
Test Date	: Dec. 09, 2018	Humidity	: 61 %



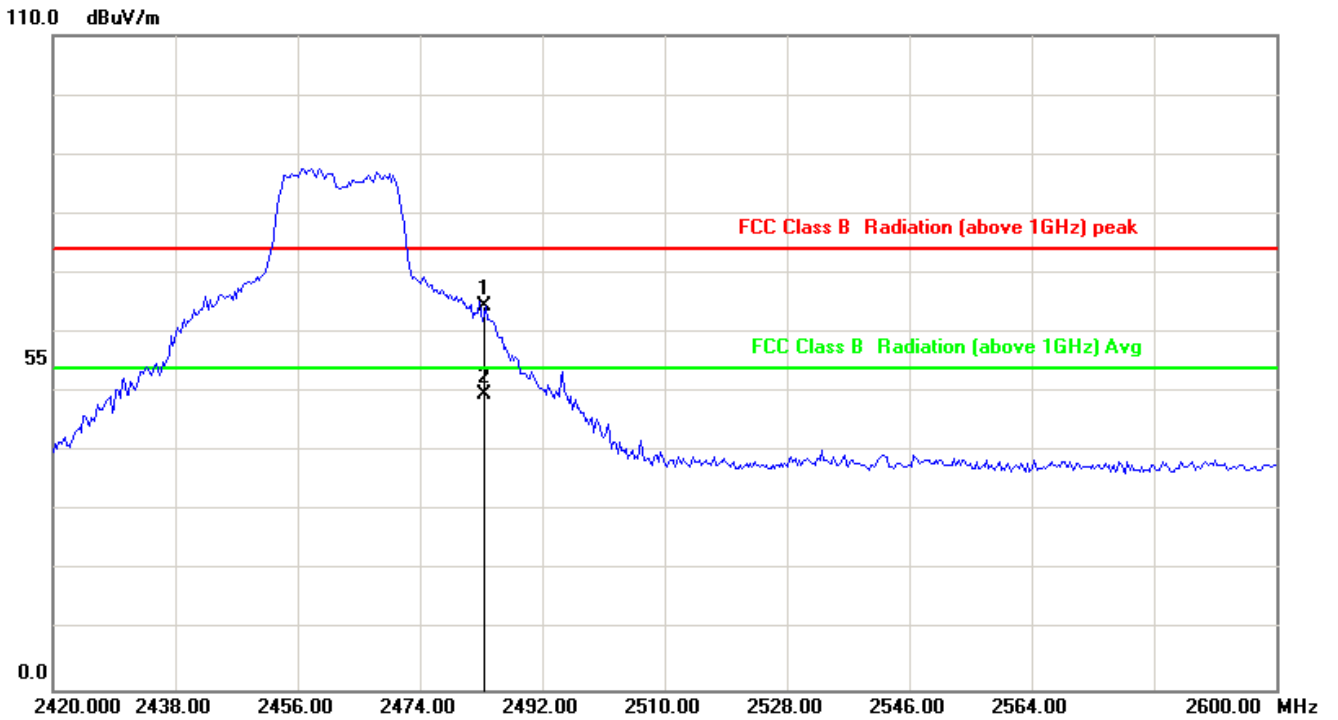
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	-9.65	76.11	66.46	74.00	-7.54	peak
2	2483.500	-9.65	61.49	51.84	54.00	-2.16	AVG

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: 802.11n HT20, CH11 2TX	Temperature	: 24 °C
Test Date	: Dec. 09, 2018	Humidity	: 61 %



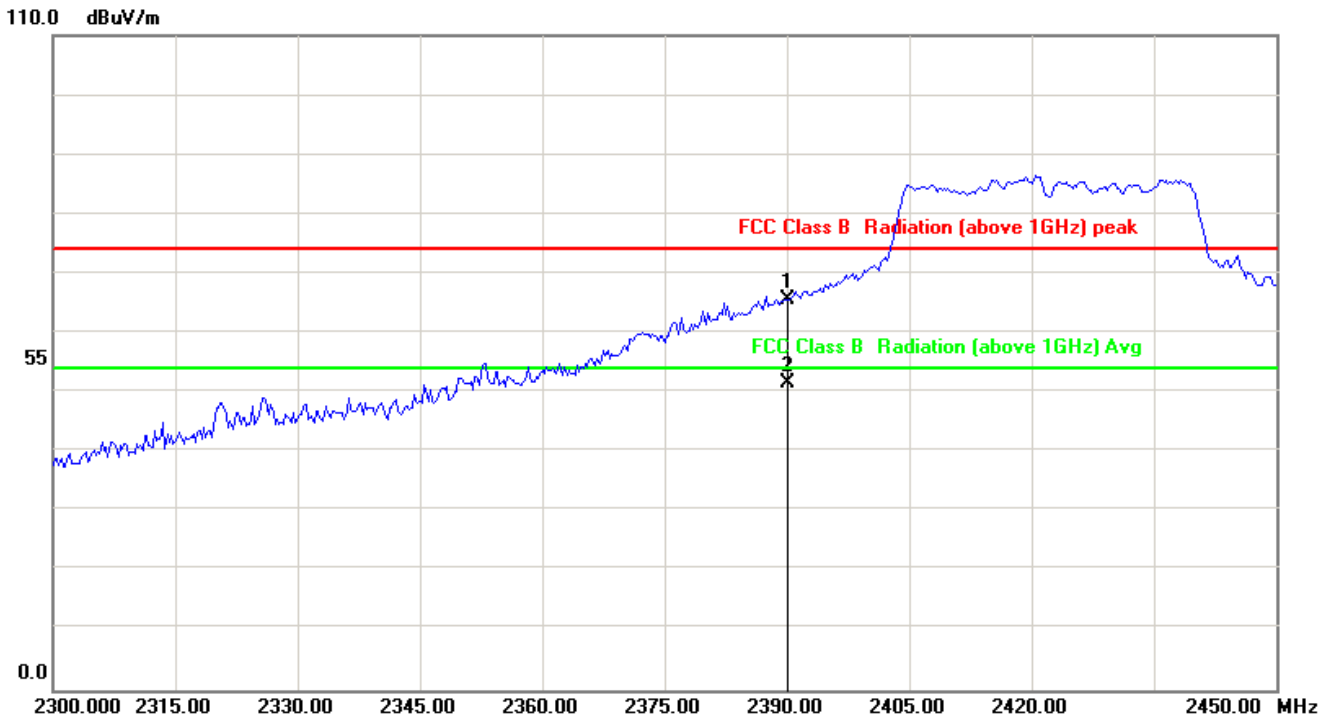
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	-9.65	74.21	64.56	74.00	-9.44	peak
2	2483.500	-9.65	59.41	49.76	54.00	-4.24	AVG

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: 802.11n HT40, CH3 2TX	Temperature	: 24 °C
Test Date	: Dec. 09, 2018	Humidity	: 61 %



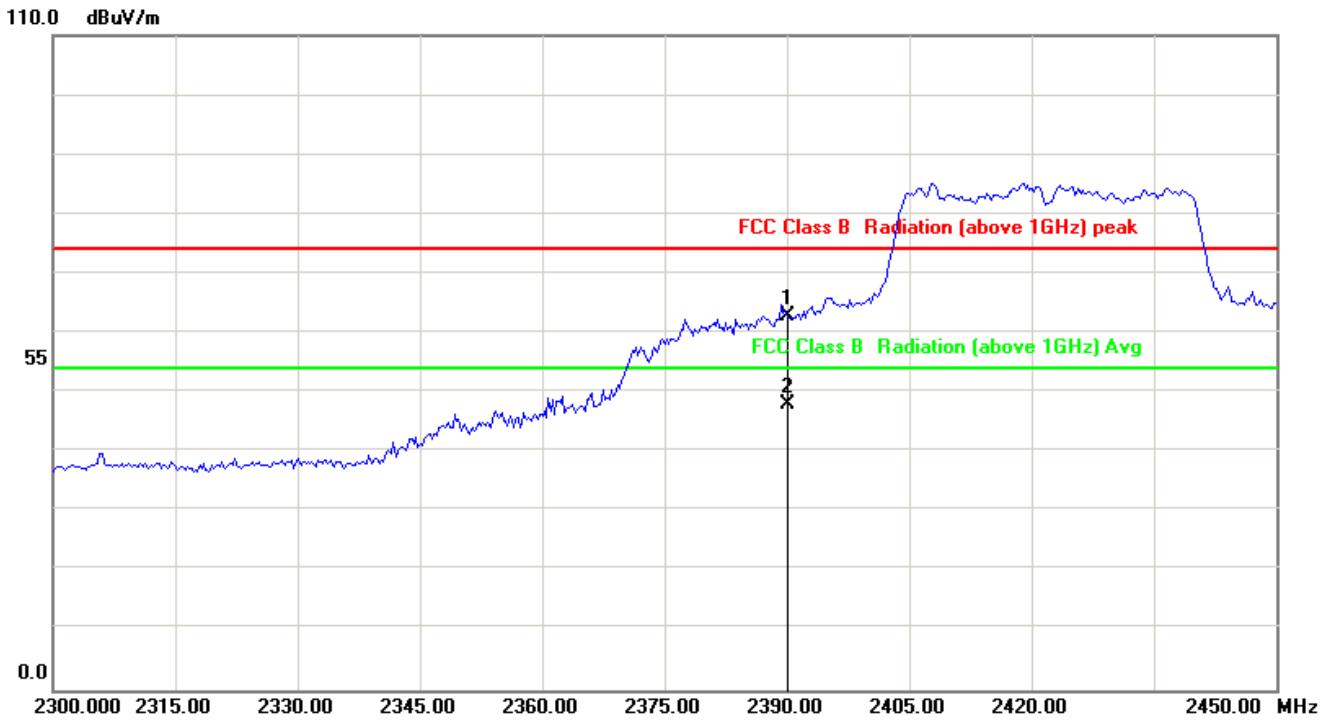
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.000	-10.05	75.61	65.56	74.00	-8.44	peak
2	2390.000	-10.05	61.62	51.57	54.00	-2.43	AVG

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: 802.11n HT40, CH3 2TX	Temperature	: 24 °C
Test Date	: Dec. 09, 2018	Humidity	: 61 %



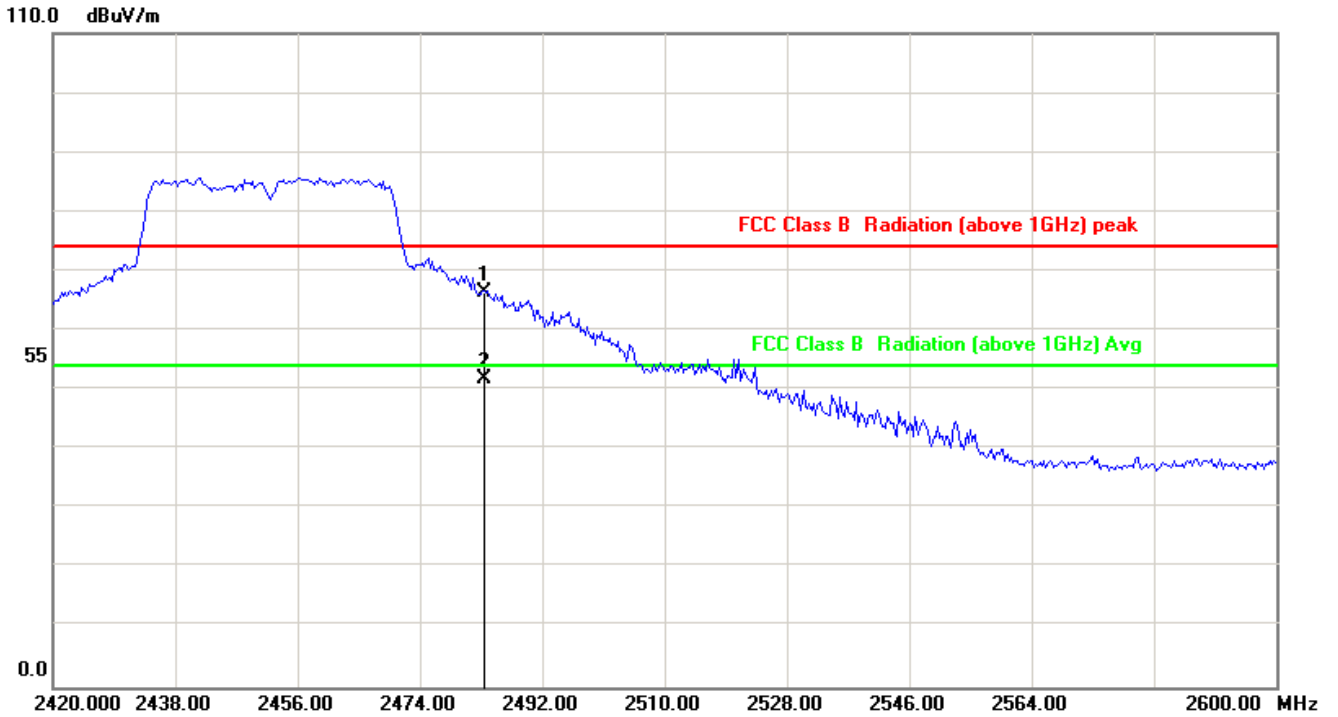
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.000	-10.05	72.98	62.93	74.00	-11.07	peak
2	2390.000	-10.05	58.10	48.05	54.00	-5.95	AVG

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Power	: DC 5V	Pol/Phase	: VERTICAL
Test Mode	: 802.11n HT40, CH9 2TX	Temperature	: 24 °C
Test Date	: Dec. 09, 2018	Humidity	: 61 %



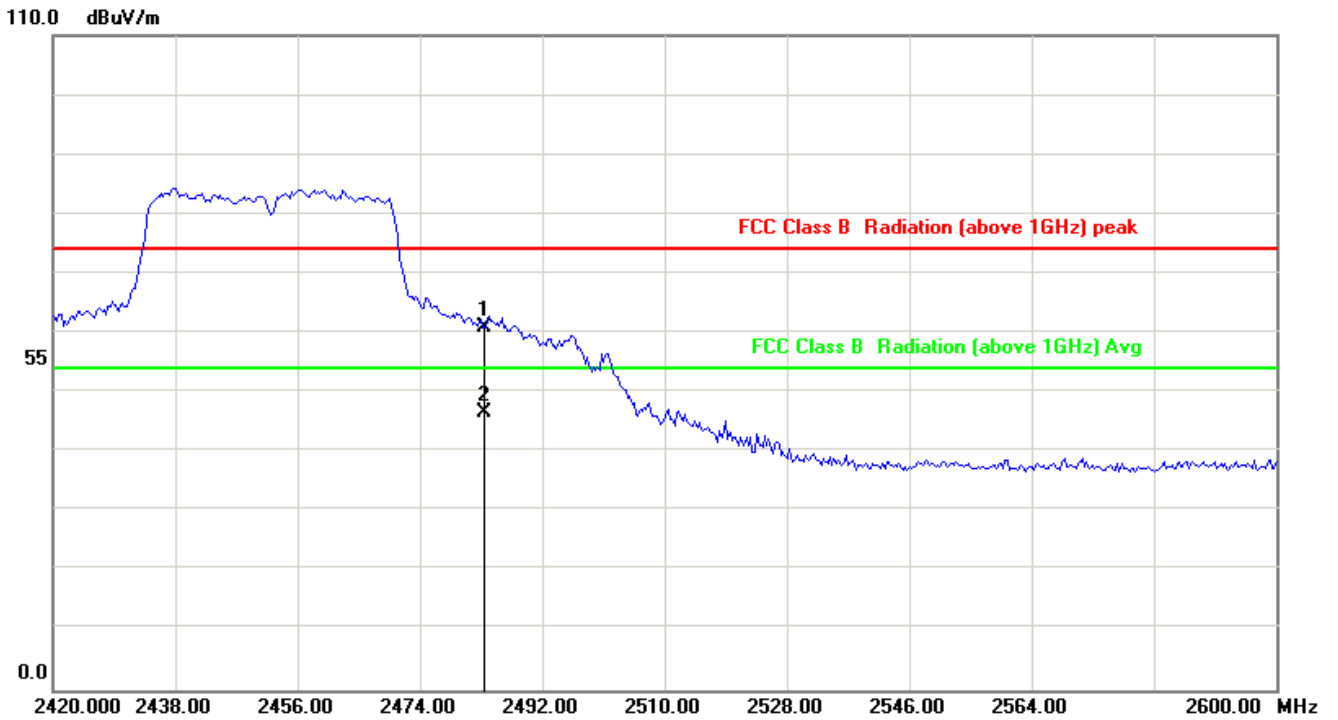
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	-9.65	75.97	66.32	74.00	-7.68	peak
2	2483.500	-9.65	61.51	51.86	54.00	-2.14	AVG

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Power	: DC 5V	Pol/Phase	: HORIZONTAL
Test Mode	: 802.11n HT40, CH9 2TX	Temperature	: 24 °C
Test Date	: Dec. 09, 2018	Humidity	: 61 %



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	-9.65	70.45	60.80	74.00	-13.20	peak
2	2483.500	-9.65	56.31	46.66	54.00	-7.34	AVG

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



7. Test of Spurious Emission (Conducted)

7.1 Test Limit

In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement and 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).

7.2 Test Procedure

KDB 558074 D01 DTS Meas Guidance v03r05

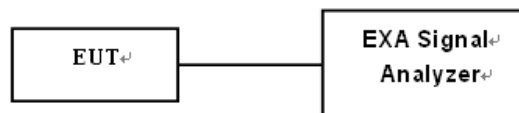
1. Reference level measurement

- (a) Set instrument center frequency to DTS channel center frequency
- (b) Set the span to ≥ 1.5 times the DTS bandwidth
- (c) Set the RBW = 100 kHz
- (d) Set the VBW $\geq 3 \times$ RBW
- (e) Detector = peak
- (f) Sweep time = auto couple
- (g) Trace mode = max hold
- (h) Allow trace to fully stabilize

2. Emission level measurement

- (a) Set the center frequency and span to encompass frequency range to be measured
- (b) RBW = 100kHz
- (c) VBW = 300kHz
- (d) Detector = Peak
- (e) Trace mode = max hold
- (f) Sweep time = auto couple
- (g) The trace was allowed to stabilize

7.3 Test Setup Layout



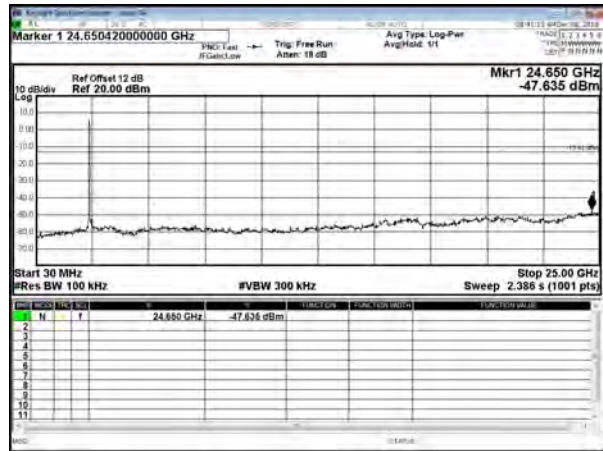
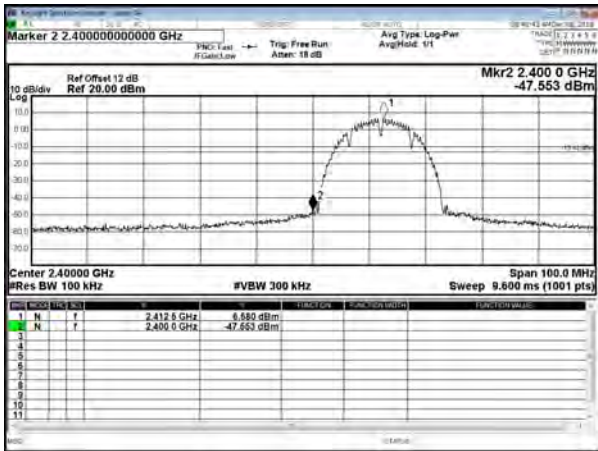


7.4 Test Result and Data

For 1TX

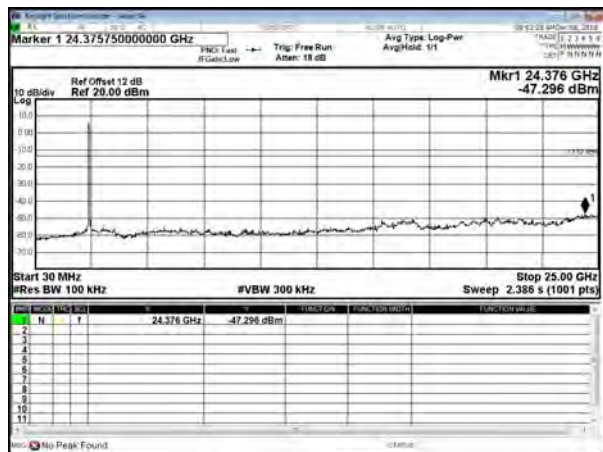
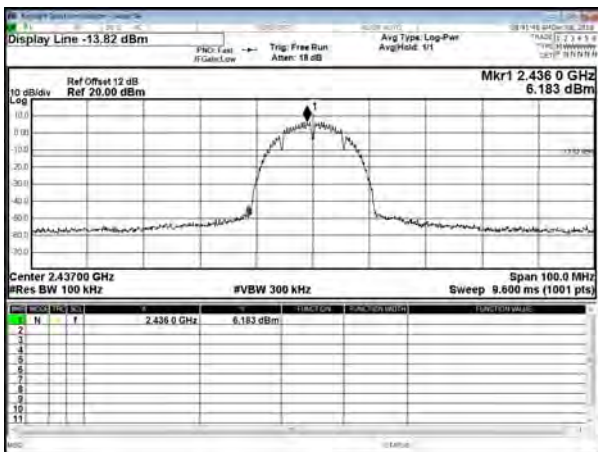
Modulation Standard: 802.11b

Channel: 01



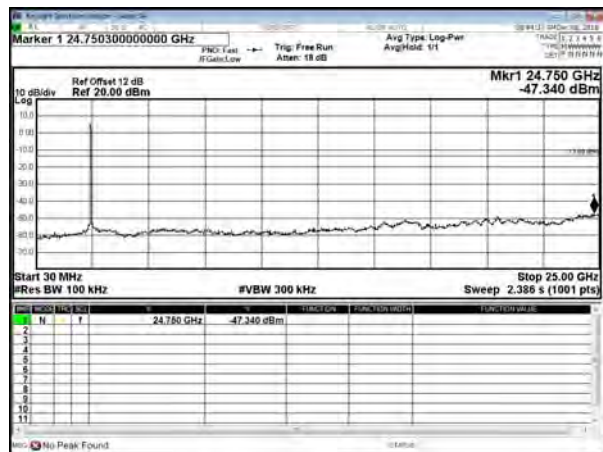
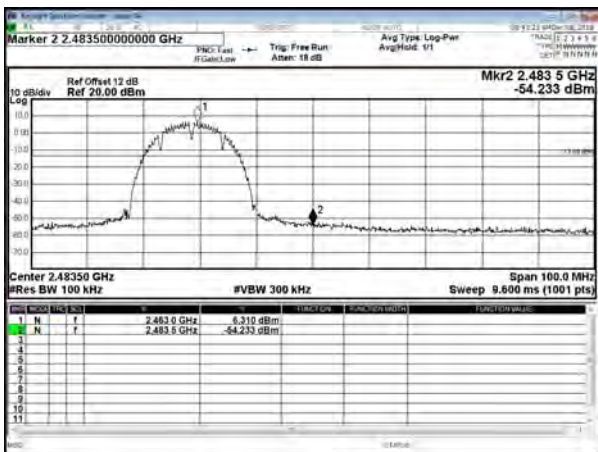
Modulation Standard: 802.11b

Channel: 06



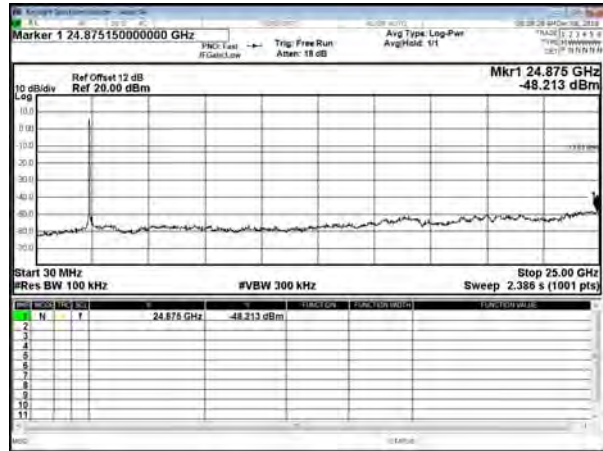
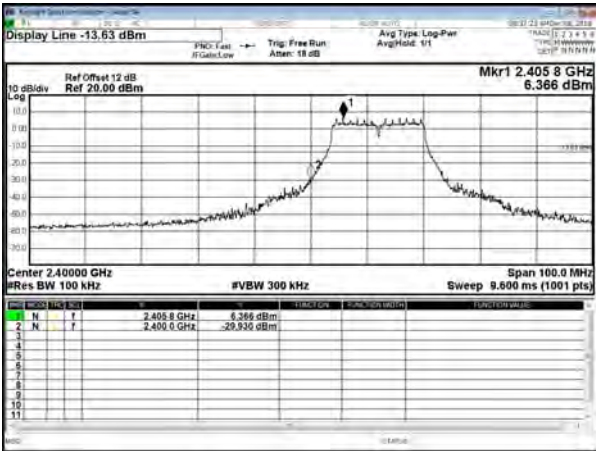
Modulation Standard: 802.11b

Channel: 11

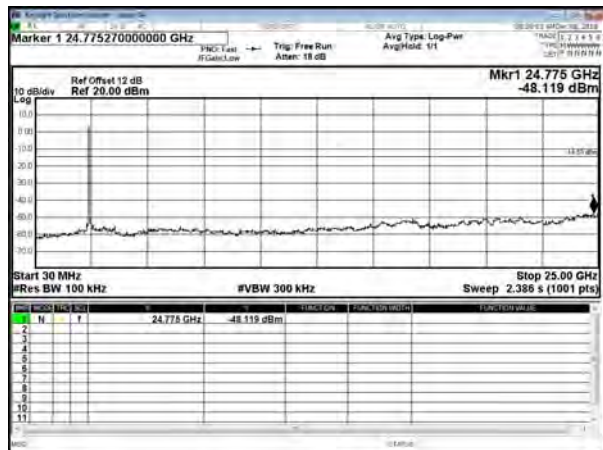
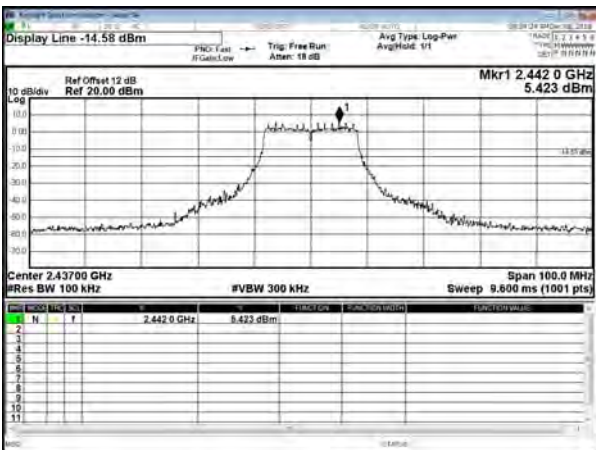




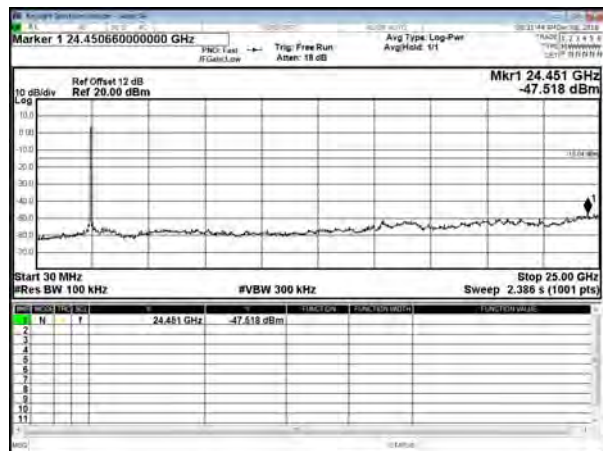
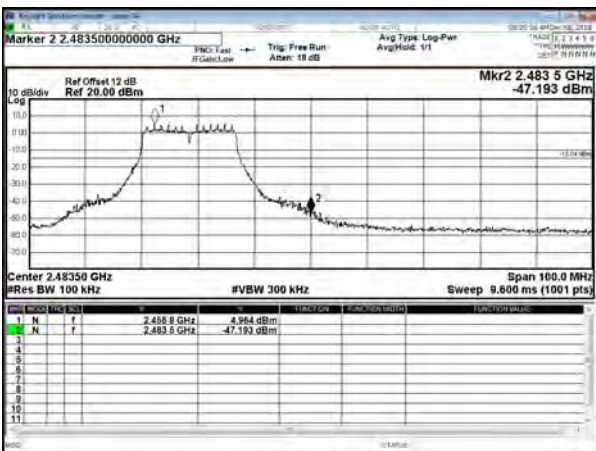
Modulation Standard: 802.11g
Channel: 01



Modulation Standard: 802.11g
Channel: 06

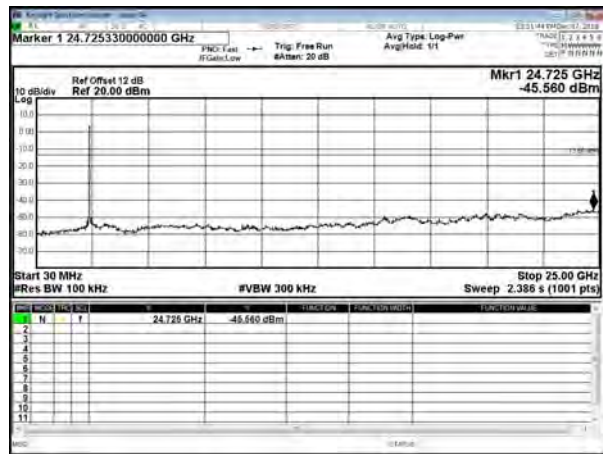
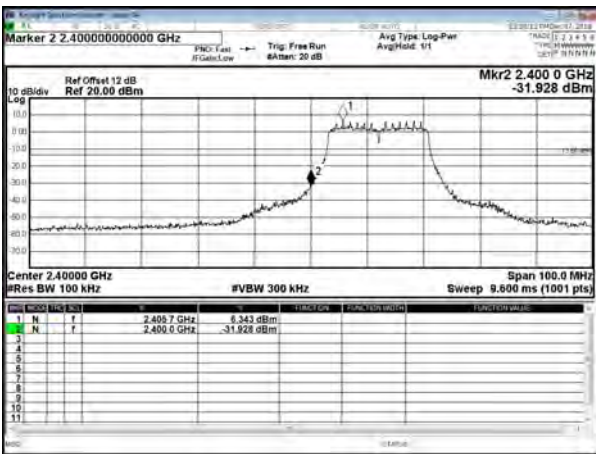


Modulation Standard: 802.11g
Channel: 11

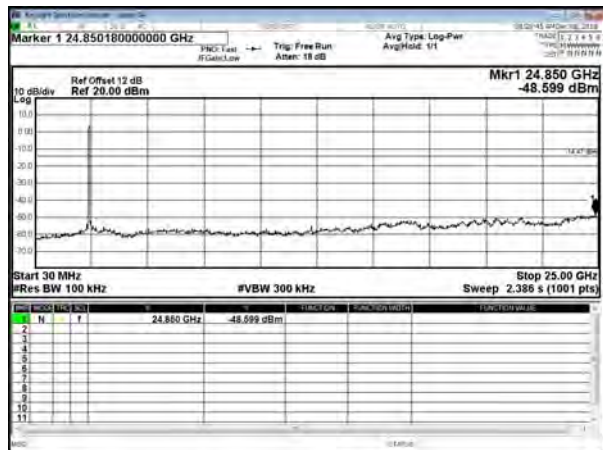
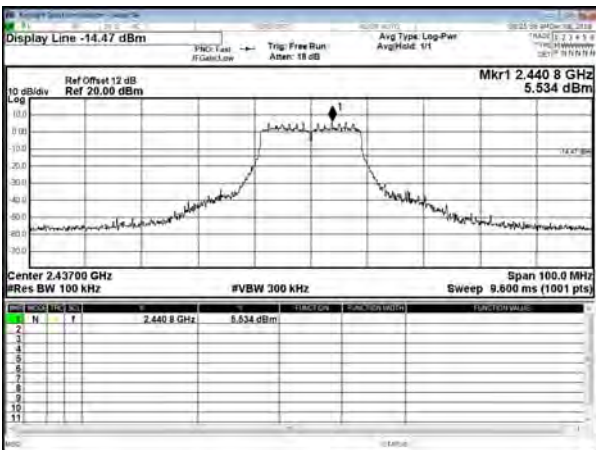




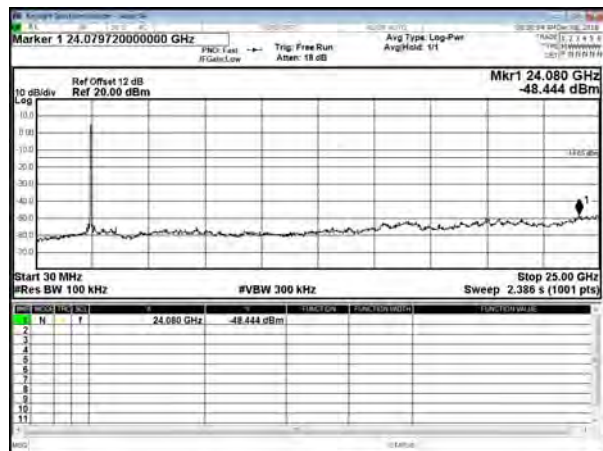
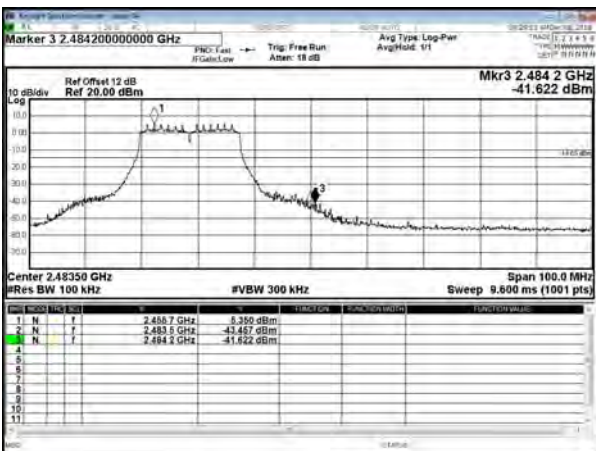
Modulation Standard: 802.11n HT20
Channel: 01



Modulation Standard: 802.11n HT20
Channel: 06

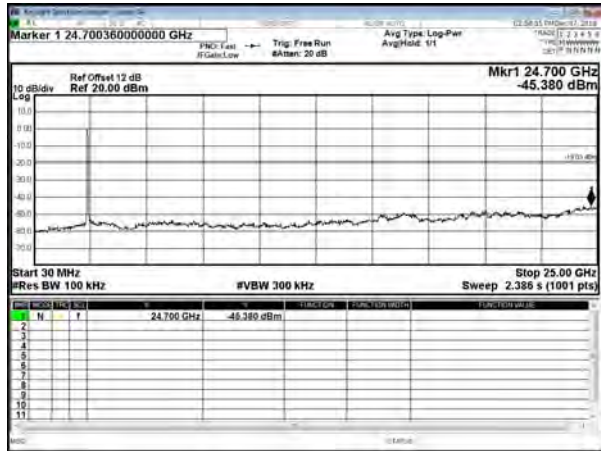


Modulation Standard: 802.11n HT20
Channel: 11

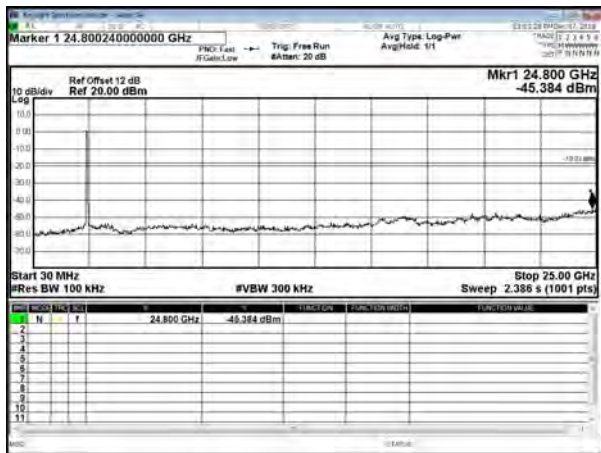
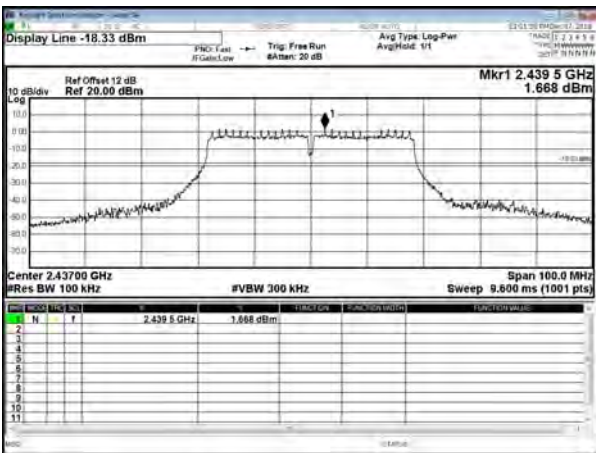




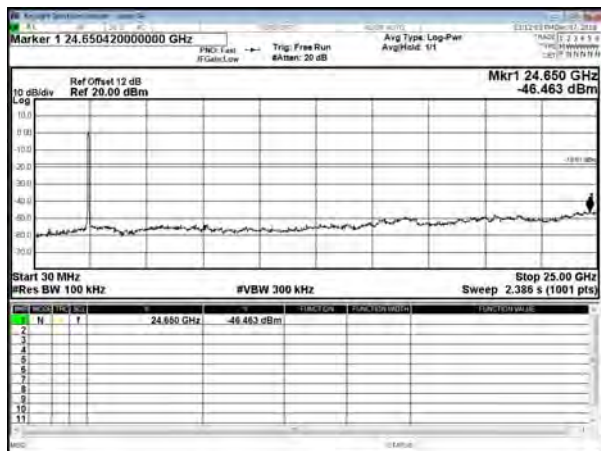
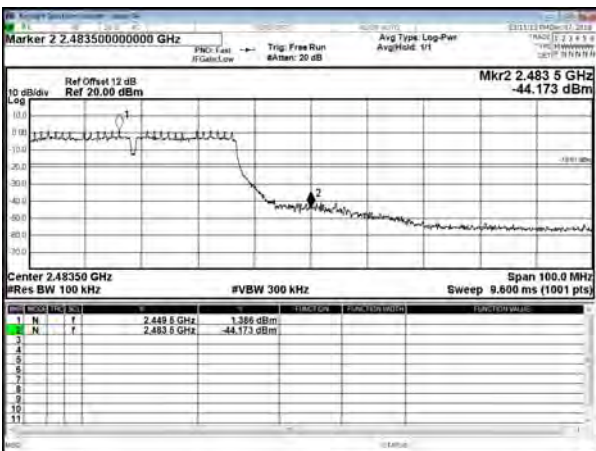
Modulation Standard: 802.11n HT40
Channel: 03



Modulation Standard: 802.11n HT40
Channel: 06

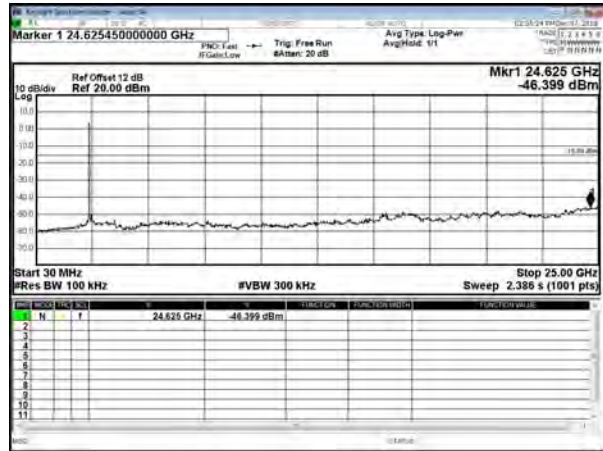
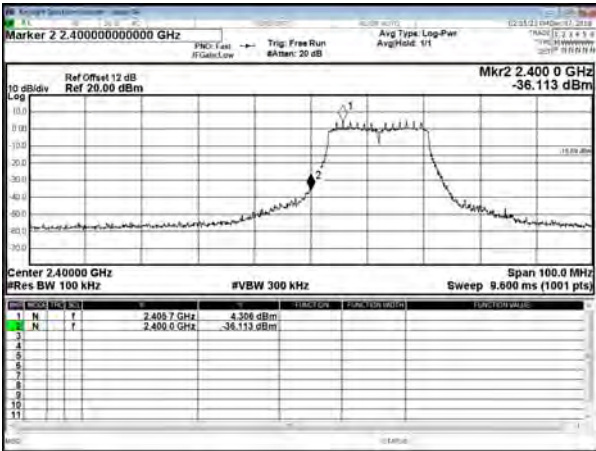


Modulation Standard: 802.11n HT40
Channel: 09

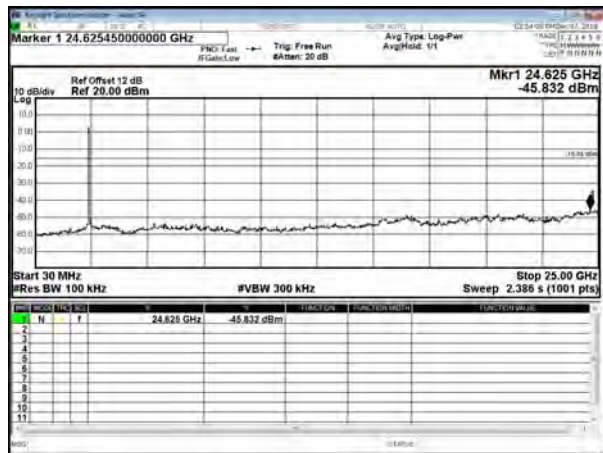
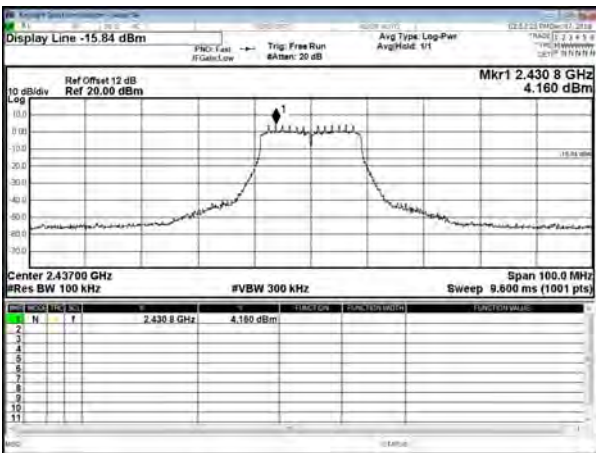




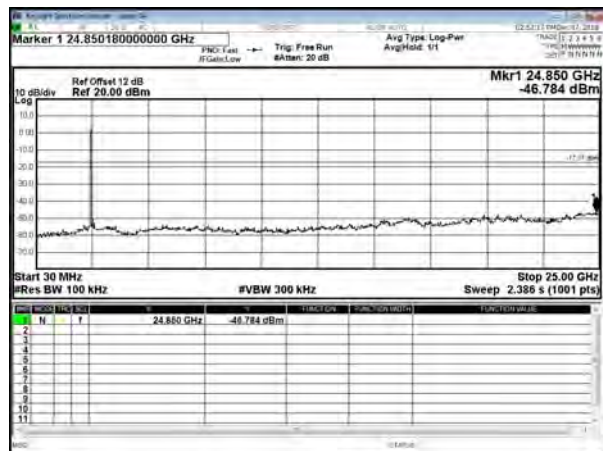
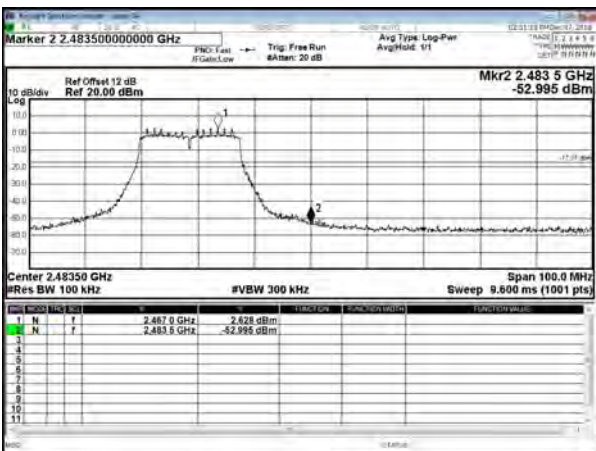
For 2TX
Modulation Standard: 802.11n HT20
Channel: 01 ANT A



Modulation Standard: 802.11n HT20
Channel: 06 ANT A

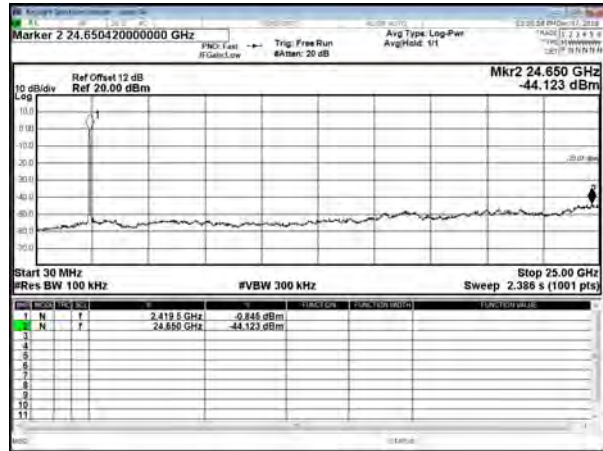


Modulation Standard: 802.11n HT20
Channel: 11 ANT A

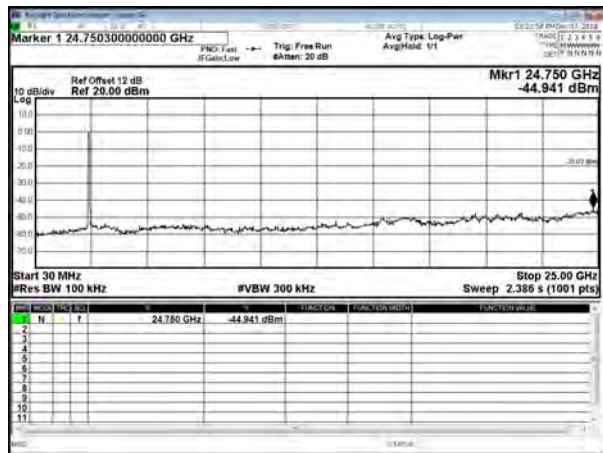
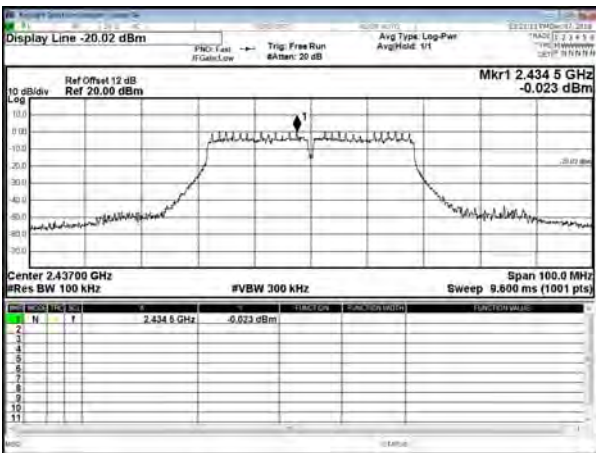




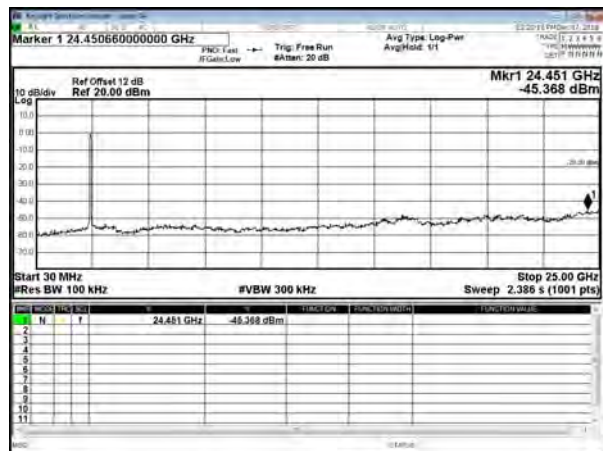
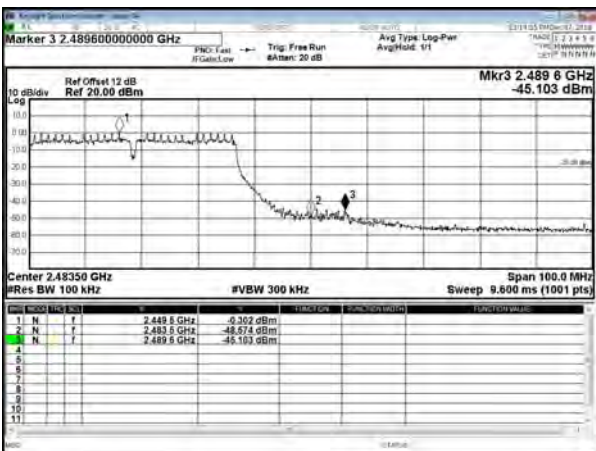
Modulation Standard: 802.11n HT40
Channel: 03 ANT A



Modulation Standard: 802.11n HT40
Channel: 06 ANT A

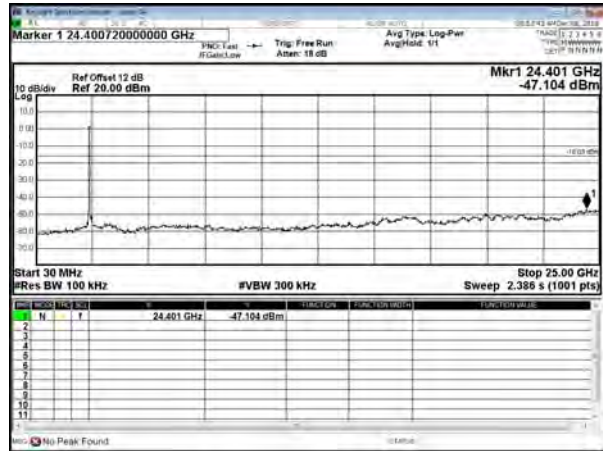


Modulation Standard: 802.11n HT40
Channel: 09 ANT A

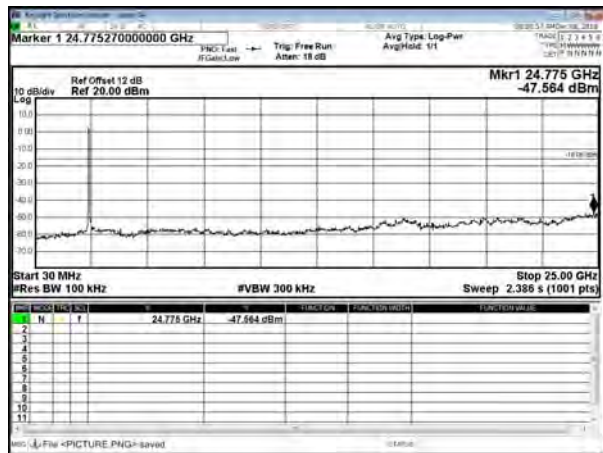
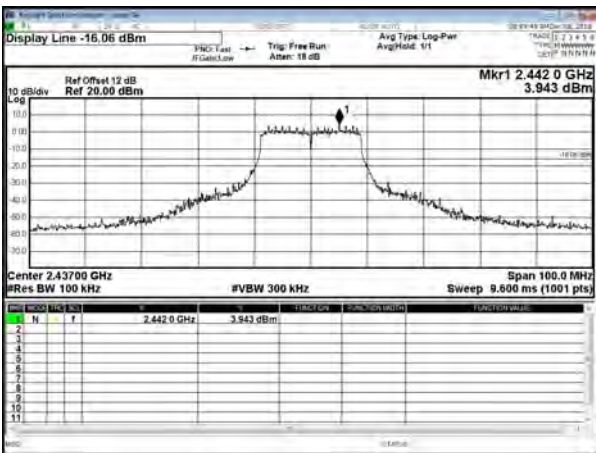




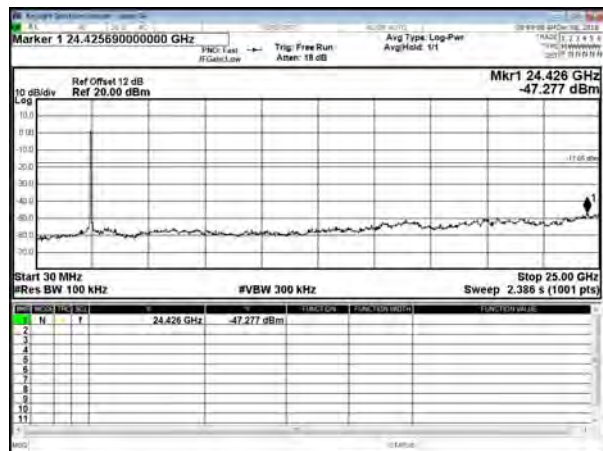
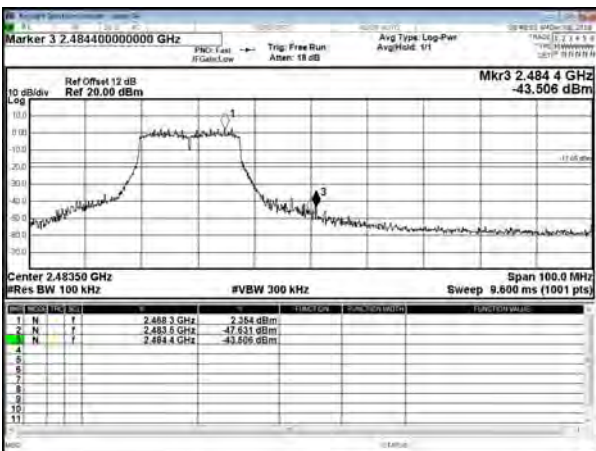
Modulation Standard: 802.11n HT20
Channel: 01 ANT B



Modulation Standard: 802.11n HT20
Channel: 06 ANT B

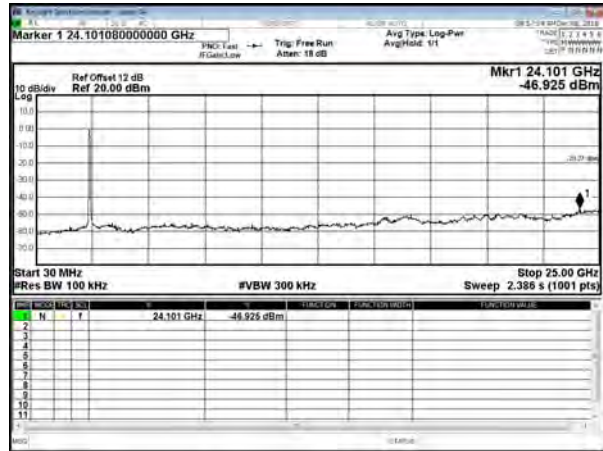


Modulation Standard: 802.11n HT20
Channel: 11 ANT B

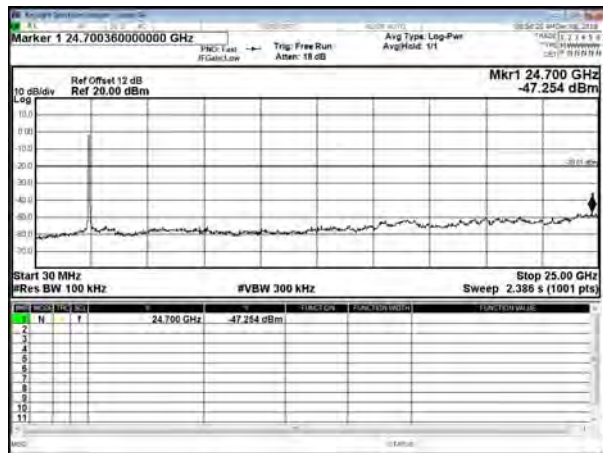
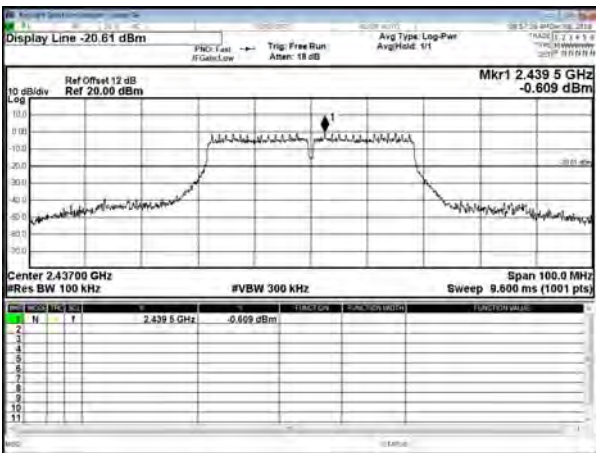




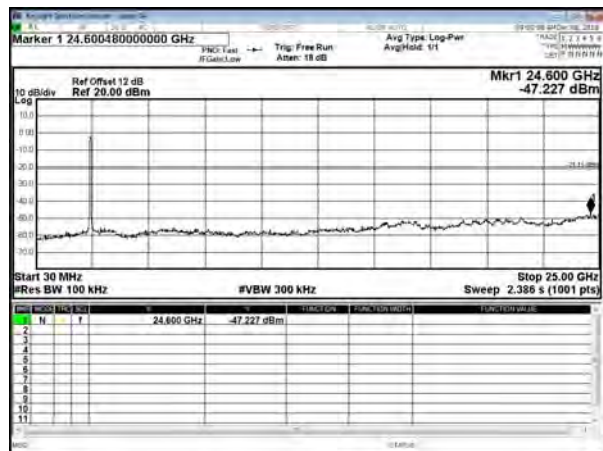
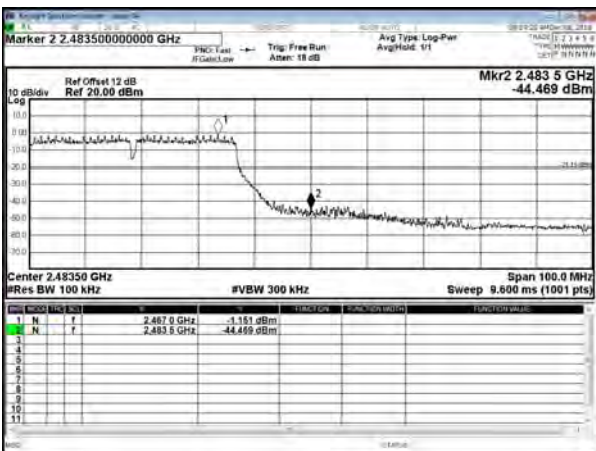
Modulation Standard: 802.11n HT40
Channel: 03 ANT B



Modulation Standard: 802.11n HT40
Channel: 06 ANT B



Modulation Standard: 802.11n HT40
Channel: 09 ANT B





8. 6dB Bandwidth Measurement Data

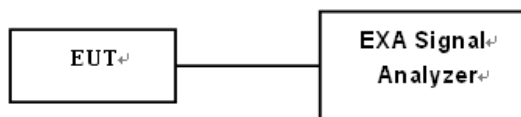
8.1 Test Limit

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

8.2 Test Procedures

- a. The transmitter output was connected to the spectrum analyzer.
- b. Set RBW of spectrum analyzer to 100 KHz and VBW to 300 KHz.
- c. Set spectrum analyzer X dB to 6 dB.
- d. Set spectrum analyzer peak detector with maximum hold.

8.3 Test Setup Layout





8.4 Test Result and Data

Test Result : PASS Temperature : 23°C
 Test Date : Dec. 07, 2018 Humidity : 64%

For 1TX

Modulation Type	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	
			ANT A	
IEEE 802.11b (1Mbps)	01	2412	10.12	
	06	2437	10.14	
	11	2462	10.10	
IEEE 802.11g (6Mbps)	01	2412	16.40	
	06	2437	16.41	
	11	2462	16.36	
IEEE 802.11n HT20 (6.5Mbps)	01	2412	17.60	
	06	2437	17.62	
	11	2462	17.56	
IEEE 802.11n HT40 (13.5Mbps)	03	2422	36.31	
	06	2437	36.31	
	09	2452	35.74	

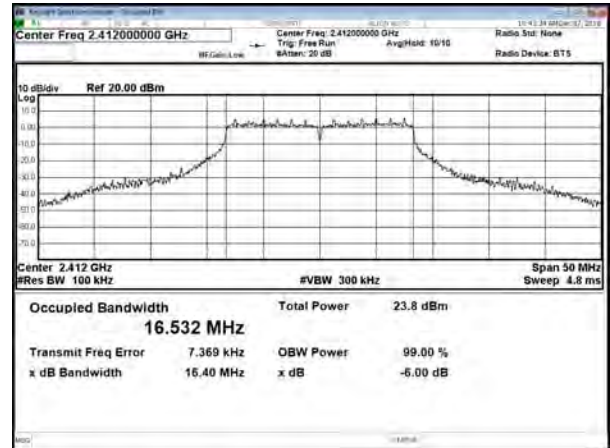
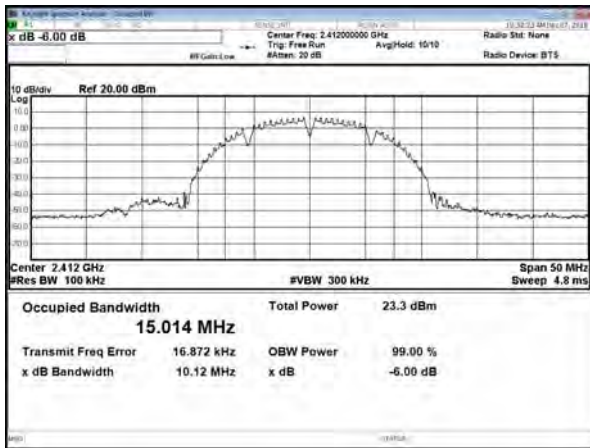
For 2TX

Modulation Type	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	
			ANT A	ANT B
IEEE 802.11n HT20 (13Mbps)	01	2412	17.12	17.57
	06	2437	17.21	17.62
	11	2462	17.54	17.59
IEEE 802.11n HT40 (27Mbps)	03	2422	35.85	36.33
	06	2437	35.84	36.38
	09	2452	35.88	36.08



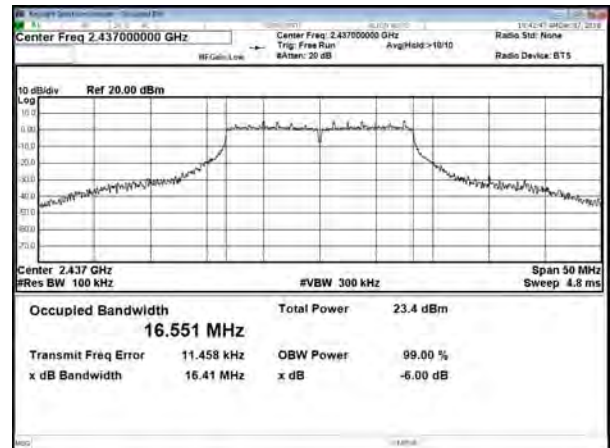
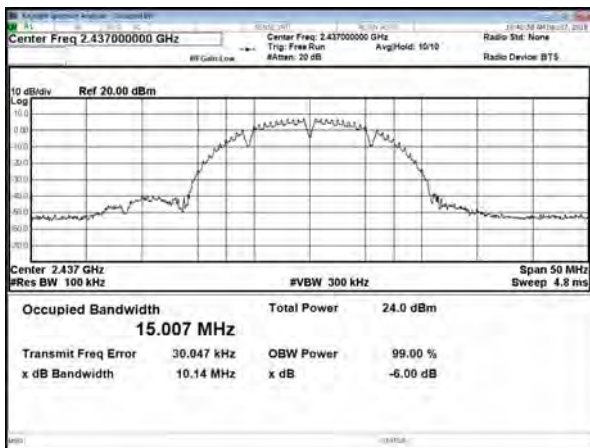
For 1TX
Modulation Standard: 802.11b (1Mbps)
Channel: 01

Modulation Standard: 802.11g (6Mbps)
Channel: 01



CH06

CH06



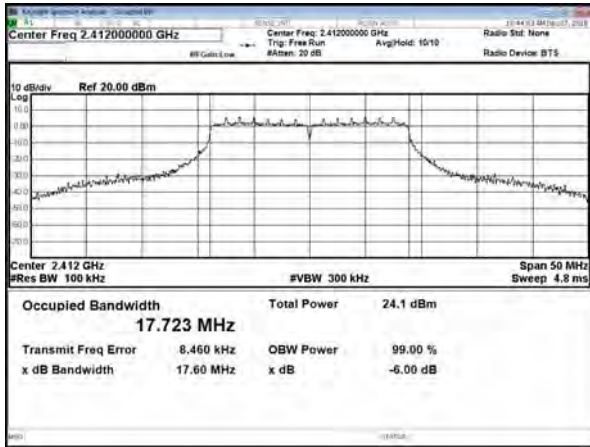
CH11

CH11





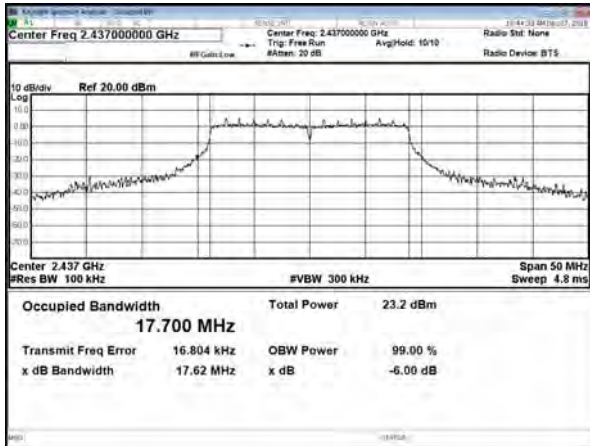
Modulation Standard: 802.11n HT20 (6.5Mbps)
Channel: 01



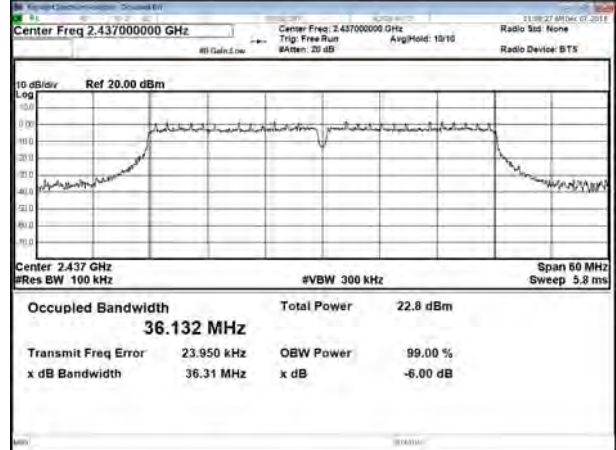
Modulation Standard: 802.11n HT40 (13.5Mbps)
Channel: 03



CH06



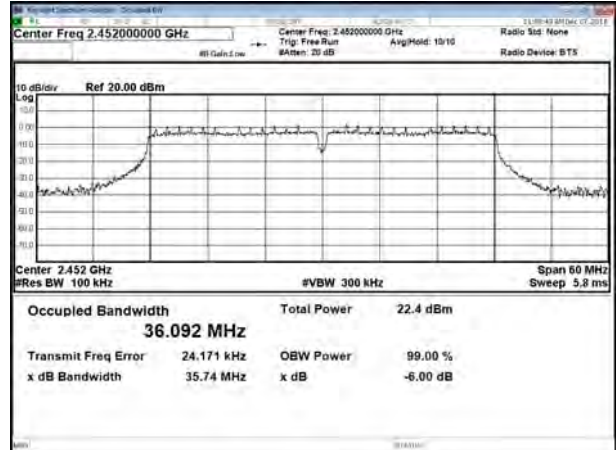
CH06



CH11



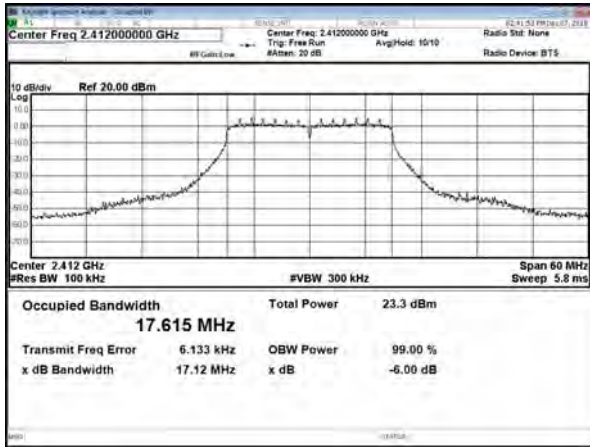
CH09



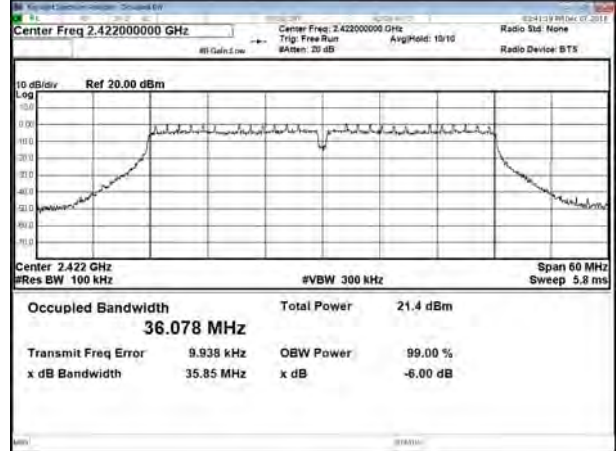


For 2TX

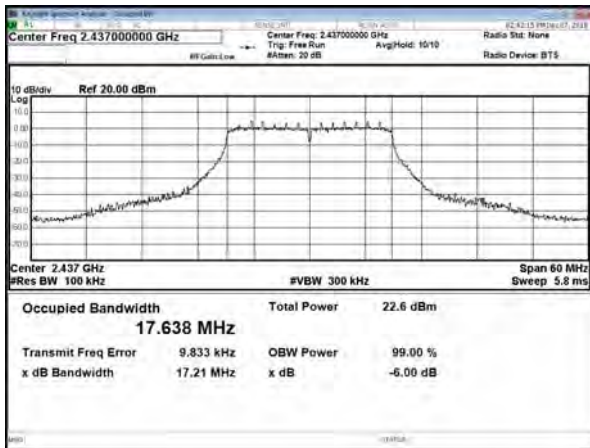
Modulation Standard: 802.11n HT20 (13Mbps)
Channel: 01 (ANT A)



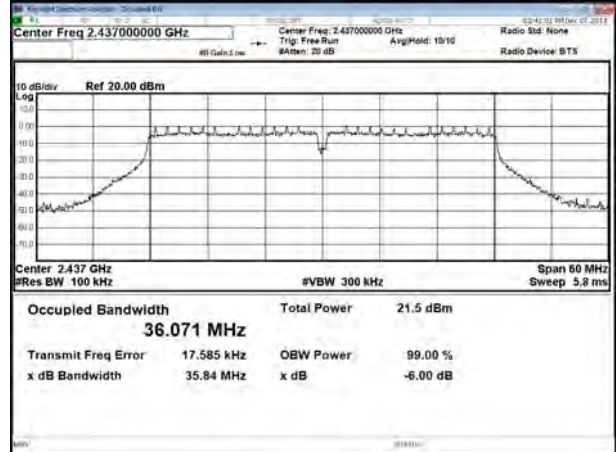
Modulation Standard: 802.11n HT40 (27Mbps)
Channel: 03 (ANT A)



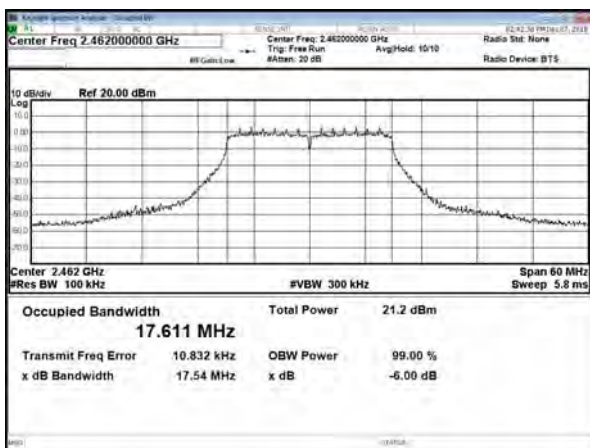
CH06 (ANT A)



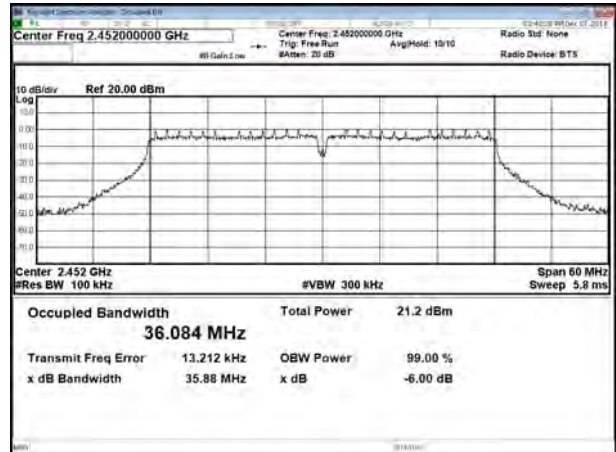
CH06 (ANT A)



CH11 (ANT A)

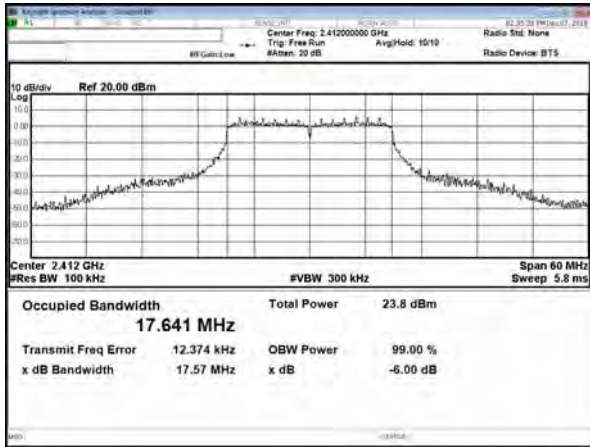


CH09 (ANT A)





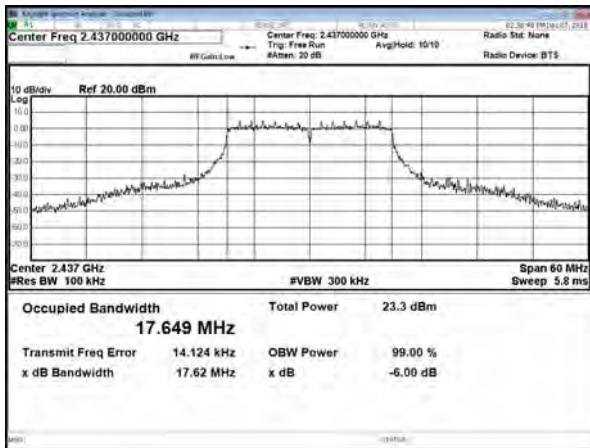
Modulation Standard: 802.11n HT20 (13Mbps)
Channel: 01 (ANT B)



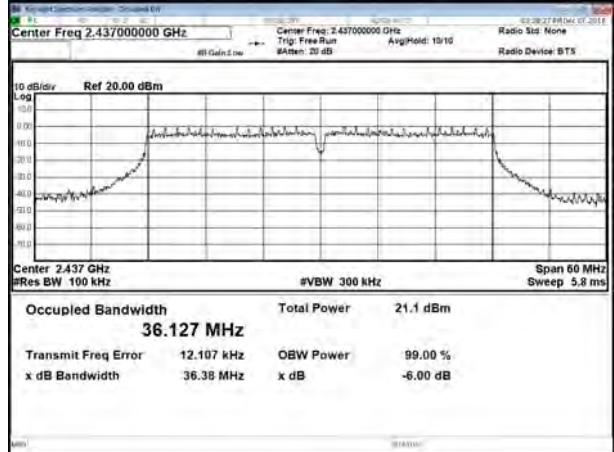
Modulation Standard: 802.11n HT40 (27Mbps)
Channel: 03 (ANT B)



CH06 (ANT B)



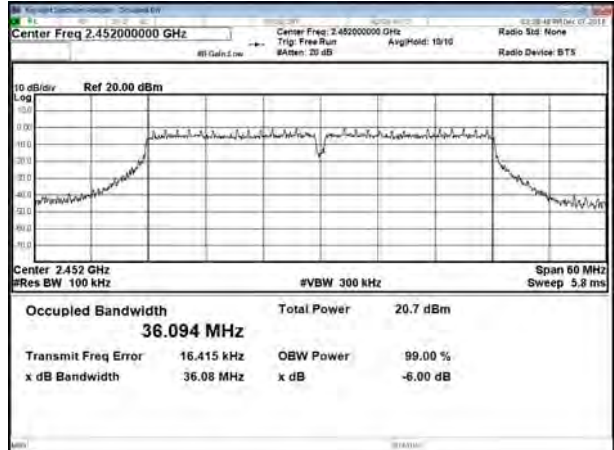
CH06 (ANT B)



CH11 (ANT B)



CH11 (ANT B)





9. Maximum Peak Output Power

9.1 Test Limit

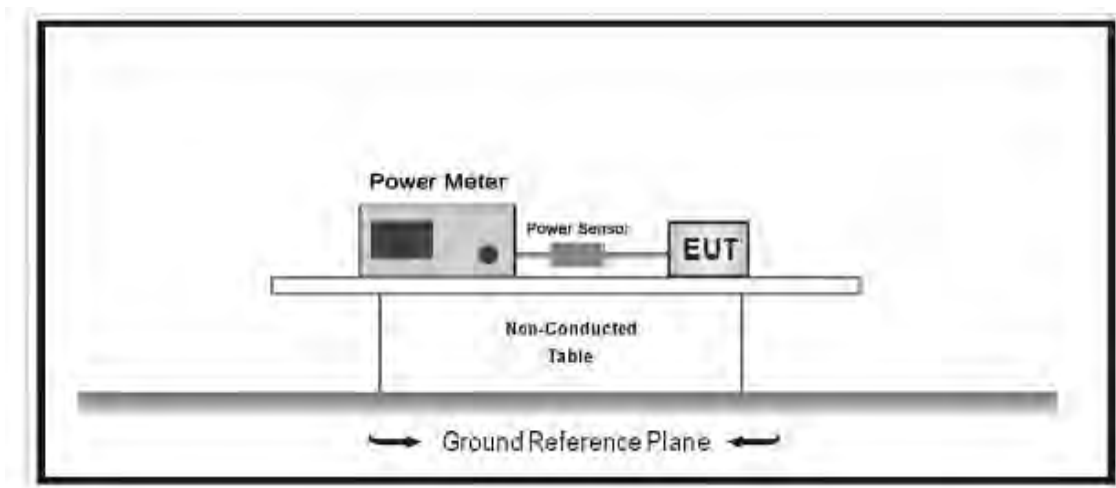
The Maximum Peak Output Power Measurement is 30dBm.

9.2 Test Procedures

Test procedure refers to KDB 558074 D01 DTS Meas Guidance v03r05 Peak power meter method.

The antenna port (RF output) of the EUT was connected to the input (RF input) of a power meter. Power was read directly from the meter and cable loss connection was added to the reading to obtain power at the EUT antenna terminal. The EUT Output Power was set to maximum to produce the worse case test result.

9.3 Test Setup Layout





9.4 Test Result and Data

Test Result : PASS

Temperature : 23°C

Test Date : Dec. 07, 2018

Humidity : 64%

For 1TX

Modulation Type	Channel	Frequency (MHz)	Peak Power Output (dBm)	Total Power (dBm)	Total Power (mW)	Power Limit (dBm)
			ANT A			
802.11b (1Mbps)	01	2412	16.35	16.35	43.152	30.00
	06	2437	16.81	16.81	47.973	30.00
	11	2462	16.12	16.12	40.926	30.00
802.11g (6Mbps)	01	2412	23.15	23.15	206.538	30.00
	06	2437	24.13	24.13	258.821	30.00
	11	2462	22.37	22.37	172.584	30.00
802.11n HT20 (6.5Mbps)	01	2412	21.72	21.72	148.594	30.00
	06	2437	23.89	23.89	244.906	30.00
	11	2462	21.42	21.42	138.676	30.00
802.11n HT40 (13.5Mbps)	03	2422	19.89	19.89	97.499	30.00
	06	2437	23.33	23.33	215.278	30.00
	09	2452	19.67	19.67	92.683	30.00

Modulation Type	Channel	Frequency (MHz)	Average Power Output (dBm)	Total Power (dBm)	Total Power (mW)	Power Limit (dBm)
			ANT A			
802.11b (1Mbps)	01	2412	13.76	13.76	23.768	30.00
	06	2437	13.89	13.89	24.491	30.00
	11	2462	13.35	13.35	21.627	30.00
802.11g (6Mbps)	01	2412	13.92	13.92	24.660	30.00
	06	2437	15.55	15.55	35.892	30.00
	11	2462	13.31	13.31	21.429	30.00
802.11n HT20 (6.5Mbps)	01	2412	12.92	12.92	19.588	30.00
	06	2437	15.68	15.68	36.983	30.00
	11	2462	12.25	12.25	16.788	30.00
802.11n HT40 (13.5Mbps)	03	2422	11.89	11.89	15.453	30.00
	06	2437	14.79	14.79	30.130	30.00
	09	2452	11.61	11.61	14.488	30.00



For 2TX

Modulation Type	Channel	Frequency (MHz)	Peak Power Output (dBm)		Total Power (dBm)	Total Power (mW)	Power Limit (dBm)
			ANT A	ANT B			
802.11n HT20 (13Mbps)	01	2412	20.53	19.54	23.07	202.768	30.00
	06	2437	22.51	21.24	24.93	311.172	30.00
	11	2462	20.10	18.97	22.58	181.134	30.00
802.11n HT40 (27Mbps)	03	2422	19.34	18.76	22.07	161.065	30.00
	06	2437	21.03	20.95	24.00	251.189	30.00
	09	2452	19.17	18.93	22.06	160.694	30.00

Modulation Type	Channel	Frequency (MHz)	Average Power Output (dBm)		Total Power (dBm)	Total Power (mW)	Power Limit (dBm)
			ANT A	ANT B			
802.11n HT20 (13Mbps)	01	2412	12.68	11.74	15.25	33.497	30.00
	06	2437	13.59	13.16	16.39	43.551	30.00
	11	2462	11.28	10.85	14.08	25.586	30.00
802.11n HT40 (27Mbps)	03	2422	11.10	10.69	13.91	24.604	30.00
	06	2437	13.24	13.05	16.16	41.305	30.00
	09	2452	10.69	10.29	13.50	22.387	30.00



10. Power Spectral Density

10.1 Test Limit

The Maximum of Power Spectral Density Measurement is 8dBm.

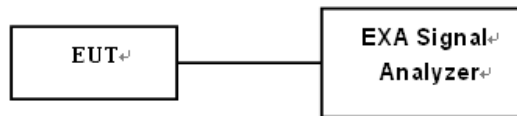
10.2 Test Procedures

Test procedure refers to section 11.10.2 Method PKPSD (peak PSD).

The following procedure shall be used if maximum peak conducted output power was used to determine compliance, and it is optional if the maximum conducted (average) output power was used to determine compliance:

- a) Set analyzer center frequency to DTS channel center frequency.
- b) Set the span to 1.5 times the DTS bandwidth.
- c) Set the RBW to $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
- d) Set the VBW $\geq [3 \times \text{RBW}]$.
- e) Detector = peak.
- f) Sweep time = auto couple.
- g) Trace mode = max hold.
- h) Allow trace to fully stabilize.
 - i) Use the peak marker function to determine the maximum amplitude level within the RBW.
 - j) If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.

10.3 Test Setup Layout



**10.4 Test Result and Data**

Test Result : PASS Temperature : 23°C
 Test Date : Dec. 08, 2018 Humidity : 64%

For 1TX

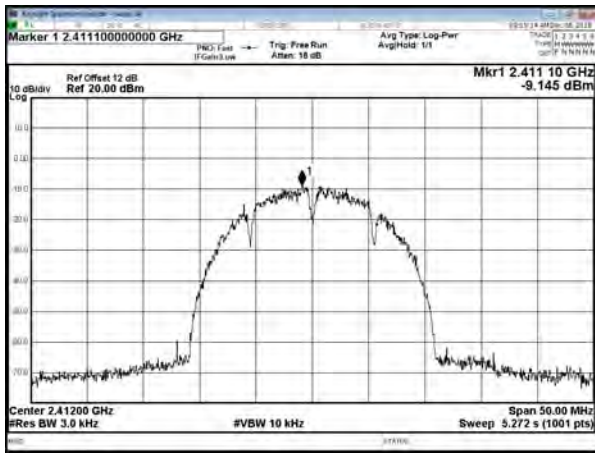
Modulation Type	Channel	Frequency (MHz)	Maximum Power Density of 3 kHz Bandwidth (dBm)		Sum chain (dBm)	Duty Cycle CF(dB)	Total PSD (dBm)	Limit (dBm)
			ANT A					
IEEE 802.11b (1Mbps)	01	2412	-9.15		-9.15	0.00	-9.15	8.00
	06	2437	-6.89		-6.89	0.00	-6.89	8.00
	11	2462	-7.70		-7.70	0.00	-7.70	8.00
IEEE 802.11g (6Mbps)	01	2412	-8.65		-8.65	0.00	-8.65	8.00
	06	2437	-8.22		-8.22	0.00	-8.22	8.00
	11	2462	-10.28		-10.28	0.00	-10.28	8.00
IEEE 802.11n HT20 (6.5Mbps)	01	2412	-8.82		-8.82	0.00	-8.82	8.00
	06	2437	-9.59		-9.59	0.00	-9.59	8.00
	11	2462	-10.21		-10.21	0.00	-10.21	8.00
IEEE 802.11n HT40 (13.5Mbps)	03	2422	-12.70		-12.70	0.00	-12.70	8.00
	06	2437	-12.67		-12.67	0.00	-12.67	8.00
	09	2452	-13.68		-13.68	0.00	-13.68	8.00

For 2TX

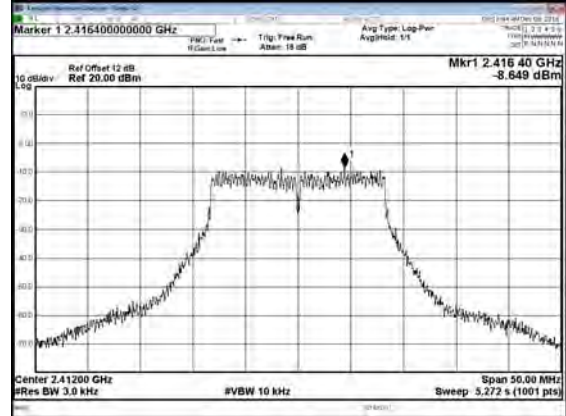
Modulation Type	Channel	Frequency (MHz)	Maximum Power Density of 3 kHz Bandwidth (dBm)		Sum chain (dBm)	Duty Cycle CF(dB)	Total PSD (dBm)	Limit (dBm)
			ANT A	ANT B				
IEEE 802.11n HT20 (13Mbps)	01	2412	-10.40	-9.73	-7.04	0.00	-7.04	8.00
	06	2437	-10.61	-10.51	-7.55	0.00	-7.55	8.00
	11	2462	-12.41	-13.31	-9.83	0.00	-9.83	8.00
IEEE 802.11n HT40 (27Mbps)	03	2422	-15.03	-15.26	-12.13	0.00	-12.13	8.00
	06	2437	-13.84	-15.68	-11.65	0.00	-11.65	8.00
	09	2452	-14.51	-14.83	-11.66	0.00	-11.66	8.00



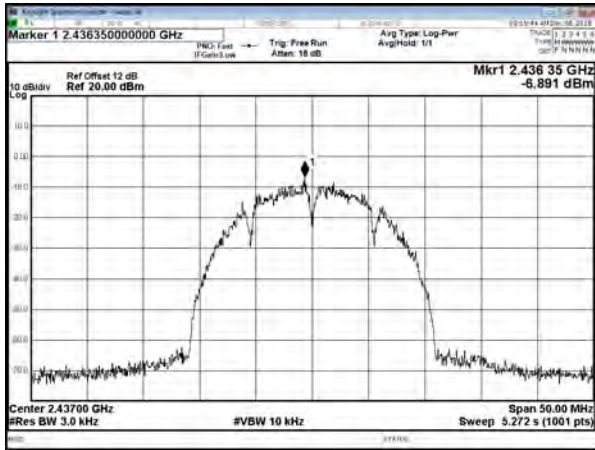
For 1TX
Modulation Standard: 802.11b (1Mbps)
Channel: 01 (ANT A)



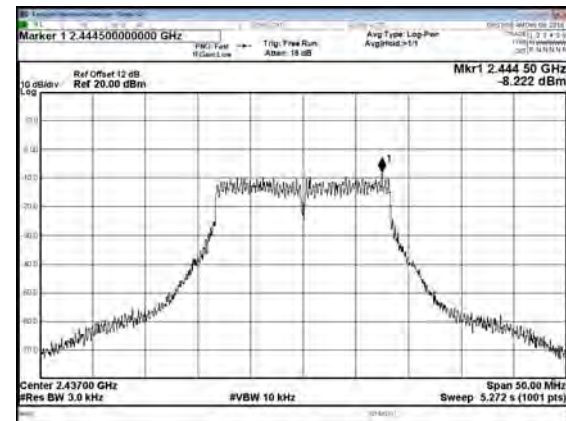
Modulation Standard: 802.11g (6Mbps)
Channel: 01 (ANT A)



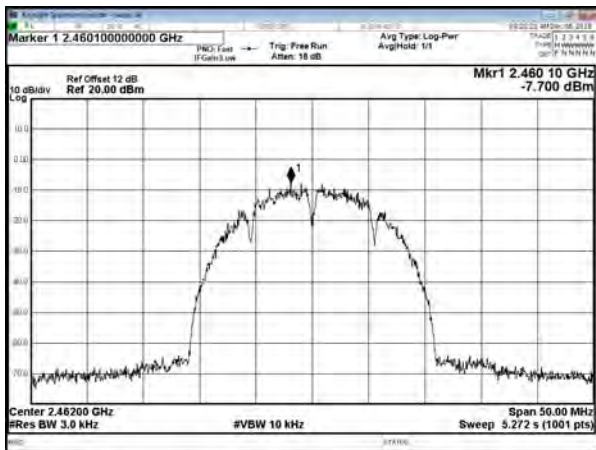
CH06



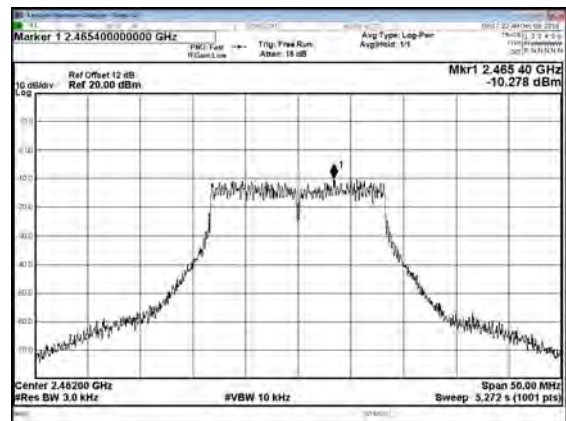
CH06



CH11



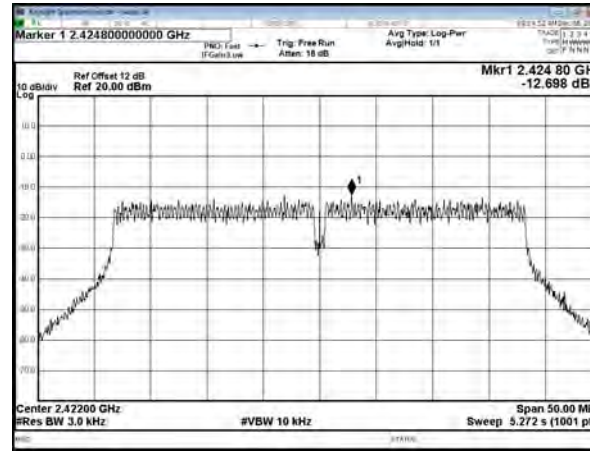
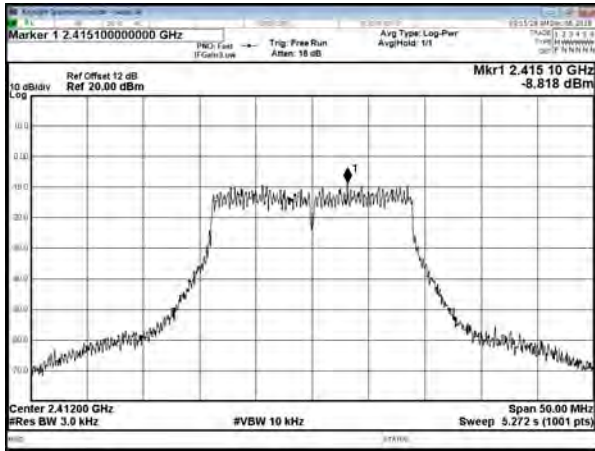
CH11





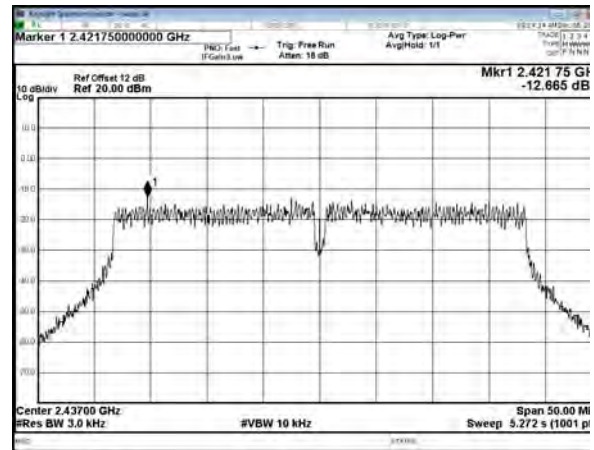
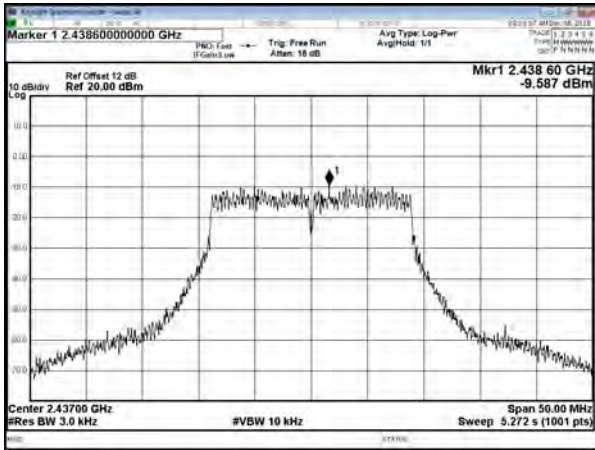
Modulation Standard: 802.11n HT20 (6.5Mbps)
Channel: 01 (ANT A)

Modulation Standard: 802.11n HT40 (13.5Mbps)
Channel: 03 (ANT A)



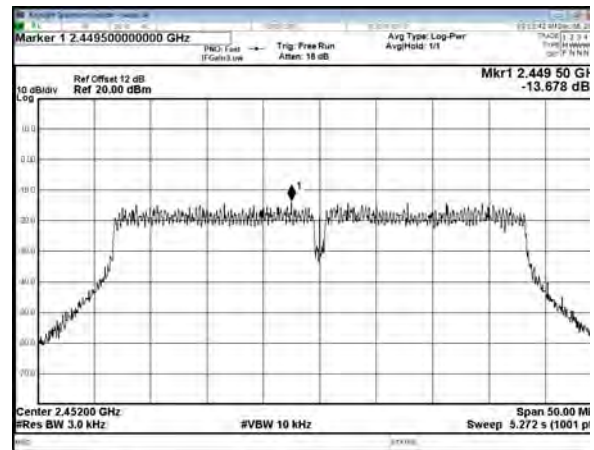
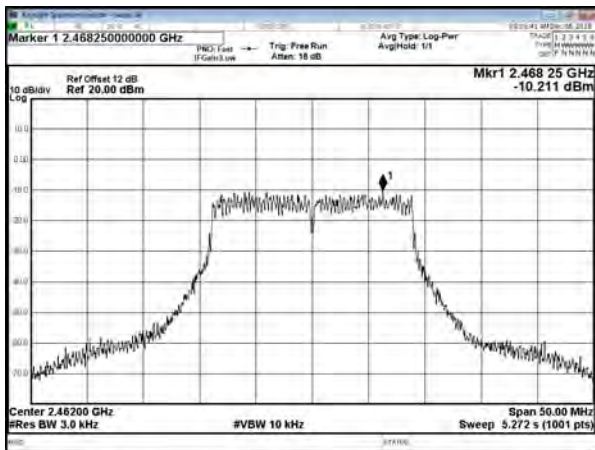
CH06

CH06



CH11

CH09

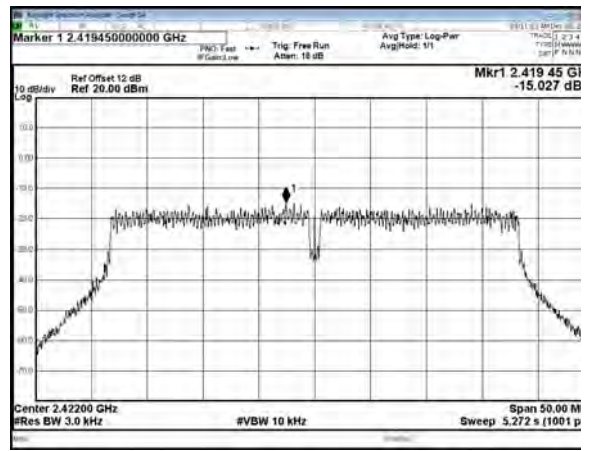
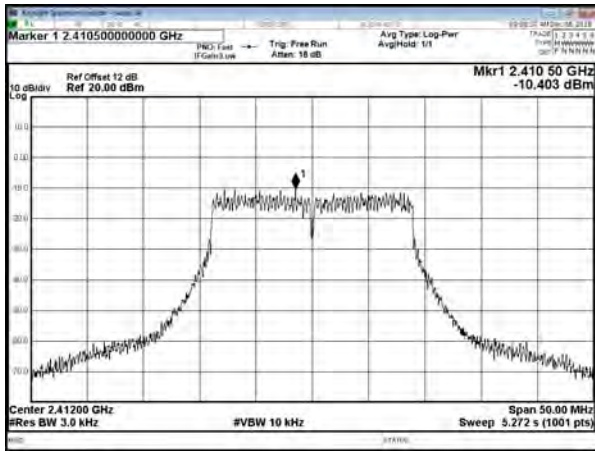




For 2TX

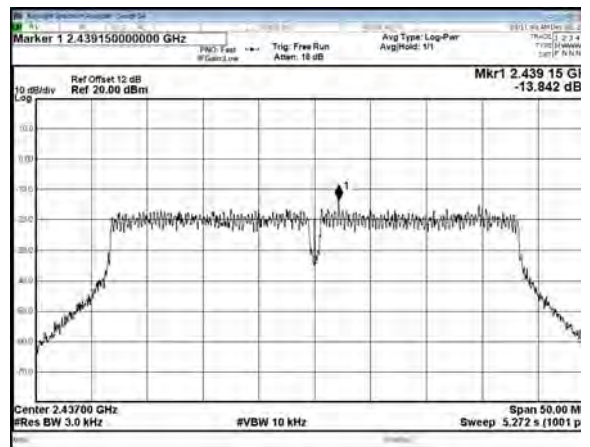
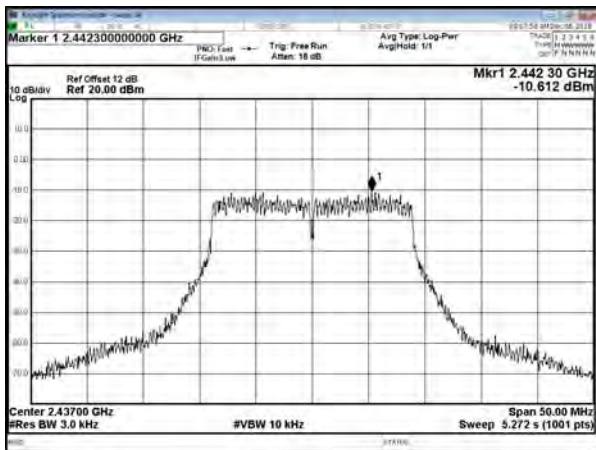
Modulation Standard: 802.11n HT20 (13Mbps)
Channel: 01 (ANT A)

Modulation Standard: 802.11n HT40 (27Mbps)
Channel: 03 (ANT A)



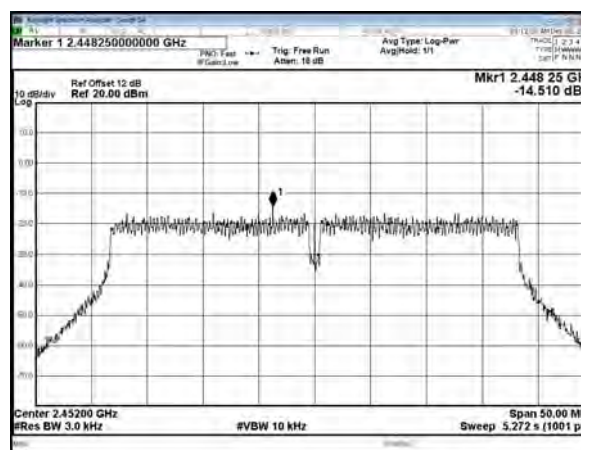
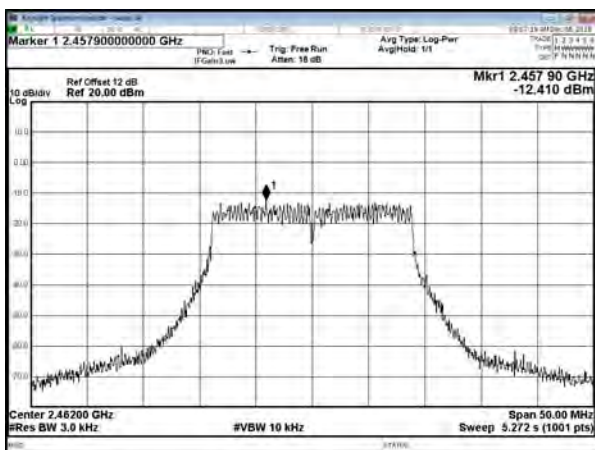
CH06

CH06



CH11

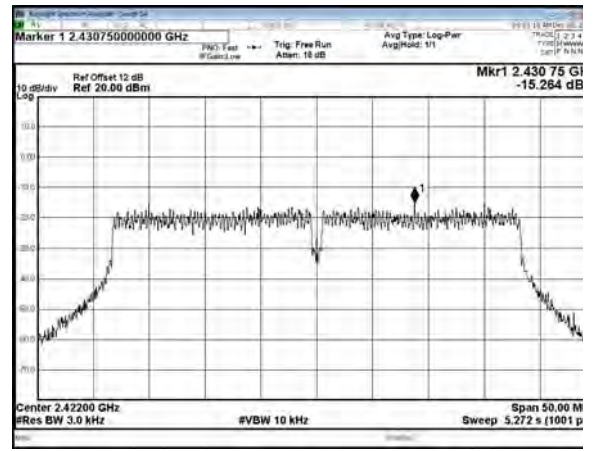
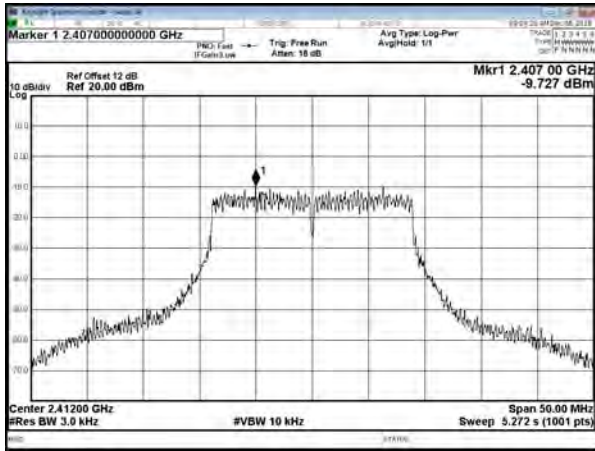
CH09





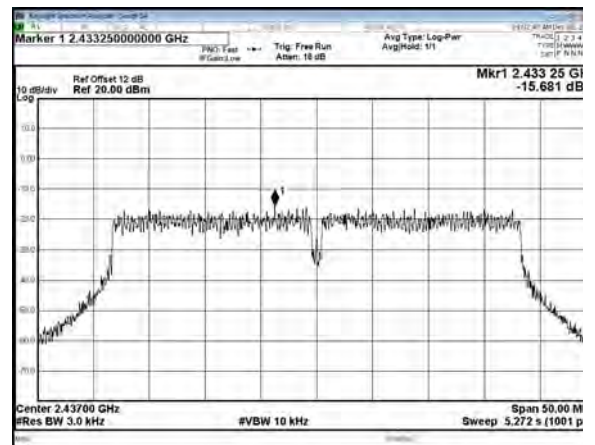
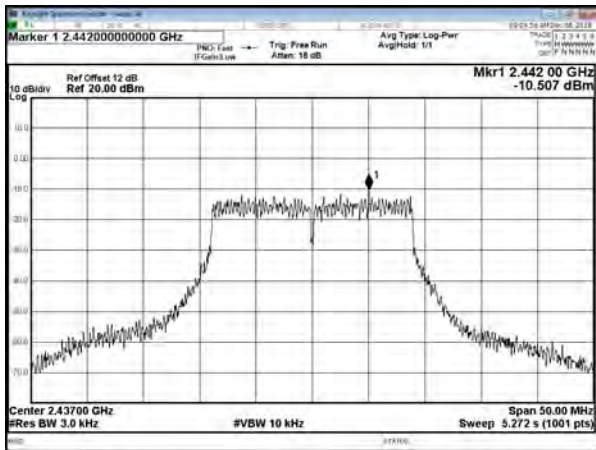
Modulation Standard: 802.11n HT20 (13Mbps)
Channel: 01 (ANT B)

Modulation Standard: 802.11n HT40 (27Mbps)
Channel: 03 (ANT B)



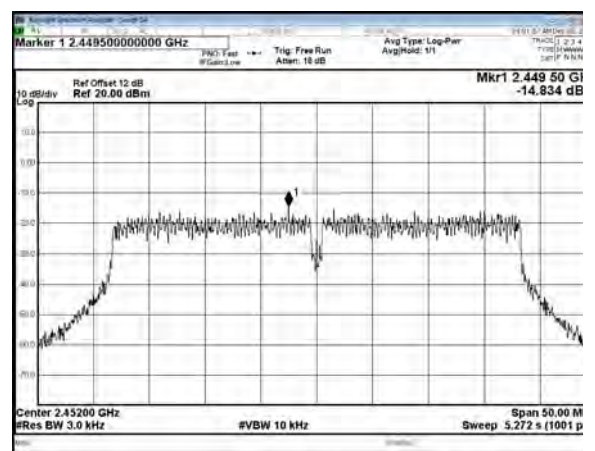
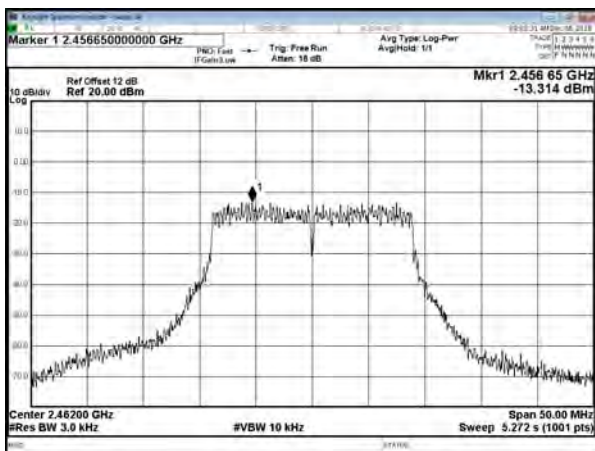
CH06

CH06



CH11

CH09



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