FCC RADIO TEST REPORT

Applicant	:	Guangzhou Shirui Electronics Co.,Ltd.
Address	:	No.192, KeZhu Road, Science Park, Economic -Technological Development Area, Guangzhou, Guangdong, China
Equipment	:	WIFI module
Model No.	:	WIFI-2-R812USA2
Trade Name	:	N/A
FCC ID	:	2AFG6-R812USA2

I HEREBY CERTIFY THAT :

The sample was received on Jul. 17, 2017 and the testing was carried out on Aut. 11, 2017 at Cerpass Technology Corp. The test result refers exclusively to the test presented test model / sample. Without written approval of Cerpass Technology Corp., the test report shall not be reproduced except in full.

Approved by:

Mark Liao

Assistant Manager

Laboratory Accreditation:

☒ Cerpass Technology Corporation Test Laboratory

TAF LAB Code:	**1439**

CONTENTS

History of this test report

Report No.	Issue Date	Description
DEFE1707059	Aug. 13, 2017	Original

1. Summary of Test Procedure and Test Results

1.1. Applicable Standards

ANSI C63.4:2014
ANSI C63.10:2013
FCC Rules and Regulations Part 15 Subpart E §15.407
First R&O 14-30
KDB662911
KDB789033
KDB644545

FCC Rule	Description of Test	Result
15.203	Antenna Requirement	Pass
15.207(a)	AC Power Line Conducted Emission	Pass
15.407(b) 15.209	Radiated Spurious Emission	Pass
15.407(a)	26 dB Occupied Bandwidth	Pass
15.407	6 dB Bandwidth	Pass
15.407 (a) & (a)(3)	Average Power	Pass
15.407(a)	Output and PPSD	Pass
15.407	Dynamic Frequency Selection	Pass

2. Test Configuration of Equipment under Test

2.1. Feature of Equipment under Test

Product	WIFI module
Test Model	WIFI-2-R812USA2
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	DC 3.3V from host equipment
Frequency Range	2.4 GHz ISM radio band / 5 GHz Unlicensed National Information Infrastructure (U-NII) band
Number of Channels	2.4G: 802.11b, 802.11g, 802.11n(HT20):11 802.11n(HT40):7 5G: 802.11a, 802.11n(HT20), 802.11ac(VHT20):4 802.11n(HT40), 802.11ac(VHT40):2 802.11ac (VHT80):1
Modulation	DSSS, OFDM, DBPSK, DQPSK, CCK, 16-QAM, 64-QAM and 256-QAM
Data Rates	802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11b: 1, 2, 5.5, 11Mbps 802.11n: MCS0~MCS15 802.11ac: MCS0NSS1~ MCS8NSS1 MCS0NSS2~ MCS9NSS2

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

Antenna List

Antenna	Manufacturer	Peak Gain
FPCB Antenna	South Star	Chain 1: 3.61dBi for 2400~2500MHz band, 2.76dBi for 5150~5850MHz band. Chain 2: 3.40dBi for 2400~2500MHz band, 2.89dBi for 5150~5850MHz band.

2.2. The EUT does not support a MIMO function.

2.4GHz Band			
MODULATION MODE	**DATE RATE(MCS)**	**TX&RX CONFIGURATION**	
802.11b	1~11Mbps	1TX	1RX
802.11g	6~54Mbps	1TX	1RX
802.11n (HT20)	MCS 0~7	1TX	1RX
	MCS 8~15	2TX	2RX
802.11n (HT40)	MCS 0~7	1TX	1RX
	MCS 8~15	2TX	2RX
5GHz Band			
MODULATION MODE	**DATE RATE(MCS)**	**TX&RX CONFIGURATION**	
802.11a	6~54Mbps	1TX	1RX
802.11n (HT20)	MCS 0~7	1TX	1RX
	MCS 8~15	2TX	2RX
802.11n (HT40)	MCS 0~7	1TX	1RX
	MCS 8~15	2TX	2RX
802.11ac (VHT20)	MCS0NSS1~ MCS8NSS1	1TX	1RX
	MCS0NSS2~ MCS9NSS2	2TX	2RX
802.11ac (VHT40)	MCS0NSS1~ MCS8NSS1	1TX	1RX
	MCS0NSS2~ MCS9NSS2	2TX	2RX
802.11ac (VHT80)	MCS0NSS1~ MCS8NSS1	1TX	1RX
	MCS0NSS2~ MCS9NSS2	2TX	2RX
Note：The modulation and bandwidth are similar for 80211n mode for 20MHz(40MHz) and 802.11ac mode for 20MHz(40MHz),therefore investigated worse case to representative mode in test report.(Final test mode refer section 2.4)			

2.3. Carrier Frequency of Channels

Band: 5150MHz-5250MHz

802.11a, 802.11an HT 20, 802.11ac VHT20

Channel	Frequency(MHz)	Channel	Frequency(MHz)
***36**	**5180**	***44**	**5220**
40	5200	***48**	**5240**

802.11an HT 40, 802.11ac VHT40

Channel	Frequency(MHz)	Channel	Frequency(MHz)
***38**	**5190**	***46**	**5230**

802.11ac VHT80

Channel	Frequency(MHz)
***42**	**5210**

Note: Channels remarked * are selected to perform test.

2.4. 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 EUT for RF test.
c. An executive program," REALTEK 11ac 8812AU USB WLAN NIC Massproduction Kit" under Chrome was executed to transmit and receive data via WLAN.
d. The following test modes were performed for the test:
Test Mode 1: 802.11a (6Mbps)
Test Mode 2: 802.11an HT20 (6.5Mbps)
Test Mode 3: 802.11an HT20 (13Mbps)
Test Mode 4: 802.11an HT40 (13.5Mbps)
Test Mode 5: 802.11an HT40 (27Mbps)
Test Mode 6: 802.11ac VHT20 (6.5Mbps)
Test Mode 7: 802.11ac VHT20 (13Mbps)
Test Mode 8: 802.11ac VHT40 (13.5Mbps)
Test Mode 9: 802.11ac VHT40 (27Mbps)
Test Mode 10: 802.11ac VHT80 (29.3Mbps)
Test Mode 11: 802.11ac VHT80 (58.5Mbps)
For conduction test, caused "Test Mode 1" generated the worst case, it was reported as the final data.
For radiated test (below 1GHz), caused "Test Mode 1" generated the worst case, it was reported as the final data.
For radiated test (above 1GHz), caused "Test Mode 1,6,7,8,9,10,11" generated the worst case, they were reported as the final data.

2.5. Description of Test System

No	Device	Manufacturer	Model No.	Description
1	Notebook	SONY	PCG-71811P	R33021
2	USB Mouse	DELL	OXN967	R41108

Cable:

No.	Cable	Quantity	Description
A	USB Cable	1	0.8m Shielding
B	USB Mouse Cable	1	1.8m Non Shielding
C	DC Cable	1	1.7m Non Shielding

2.6. General Information of Test

Test Site	**Cerpass 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, 390316, 228391, 641184
	IC	4934E-1, 4934E-2
	VCCI	T-2205 for Telecommunication Test C-4663 for Conducted emission test R-4218, R-4399 for Radiated emission test G-812, G-813 for radiated disturbance above 1GHz
Frequency Range Investigated:	Conducted: from 150kHz to 30 MHz Radiation: from 30 MHz to 40,000MHz	
Test Distance:	The test distance of radiated emission from antenna to EUT is 3 M.	

2.7. Measurement Uncertainty

Measurement Item	Measurement Frequency	Polarization	Uncertainty
Conducted Emission	9 kHz ~ 30 MHz	Line / Neutral	±2.9076 dB
Radiated Emission	9 kHz ~ 25,000 MHz	Vertical / Horizontal	±0.948 dB
Spurious Emission (Conducted)	-	-	±4.011 dB
Maximum Peak and Average Output Power	-	-	±0.322 dB
Power Spectral Density	-	-	±0.322 dB
Bandwidth	-	-	74.224Hz

3. Test Equipment and Ancillaries Used for Tests

Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
EMI Receiver	R&S	ESCI	100564	2017.02.14	2018.02.13
LISN	SCHWARZBECK	NSLK 8127	8127748	2017.02.14	2018.02.13
LISN	SCHWARZBECK	NSLK 8127	8127749	2017.02.14	2018.02.13
Pulse Limiter with 10dB Attenuation	SCHWARZBECK	VTSD 9561-F	9561-F106	2017.02.14	2018.02.13
BILOG Antenna	SCHAFFNER	CBL6112D	22241	2017.02.14	2018.02.13
Loop Antenna	R&S	HFH2-Z2	100150	2016.10.24	2017.10.23
Horn Antenna	EMCO	3115	31601	2017.02.18	2018.02.17
Horn Antenna	EMCO	3116	31970	2016.09.01	2017.08.31
EXA Signal Analyzer	Agilent	N9020A	US46220290	2017.05.26	2018.05.25
Preamplifier	EM	EM330	660	2017.03.13	2018.03.12
Preamplifier	EMC INSTRUMENTS	EMC051845SE	980333	2016.09.13	2017.09.12
Preamplifier	Agilent	8449B	3008A01954	2017.02.09	2018.02.08
Preamplifier	EMC INSTRUMENTS	EMC184045	980065	2016.11.04	2017.11.03
MXG VECTOR SIGNAL GENERATOR	Agilent	N5182B	MY53050127	2017.05.26	2018.05.25
Spectrum Analyzer	R&S	FSP40	100219	2017.02.13	2018.02.12
Bluetooth Tester	R&S	CBT	101133	2017.03.10	2018.03.09
Attenuator	KEYSIGHT	8491B	MY39250703	2017.03.07	2018.03.06
Rotary Attenuator	Agilent	8495B	MY42146680	2017.03.13	2018.03.12
Temp&Humidity&barometer	mingle	ETH529	N/A	2017.02.14	2018.02.13
Series Power Meter	Anritsu	ML2495A	1224005	2017.03.01	2018.02.28
Power Sensor	Anritsu	MA2411B	1207295	2017.03.01	2018.02.28
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	v2.0.0.1	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 15.407 (a), 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	Manufacturer	Peak Gain
FPCB Antenna	South Star	Chain 1: 3.61dBi for 2400~2500MHz band, 2.76dBi for 5150~5850MHz band. Chain 2: 3.40dBi for 2400~2500MHz band, 2.89dBi for 5150~5850MHz band.

For Power directional gain= G_{ant}= 2.89 dBi

For PSD directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2 / NANT]$

= 5.84 (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, according to the methods defined in ANSI C63.4-2014. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

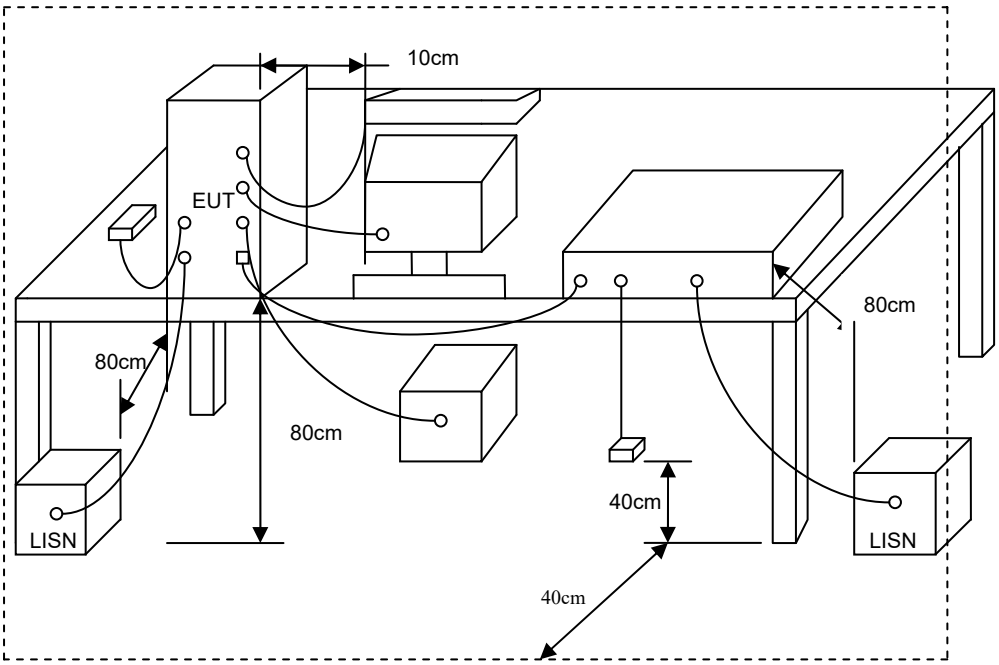
Frequency (MHz)	Quasi Peak (dBμV)	Average (dBμV)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

*Decreases with the logarithm of the frequency.

5.2. Test Procedures

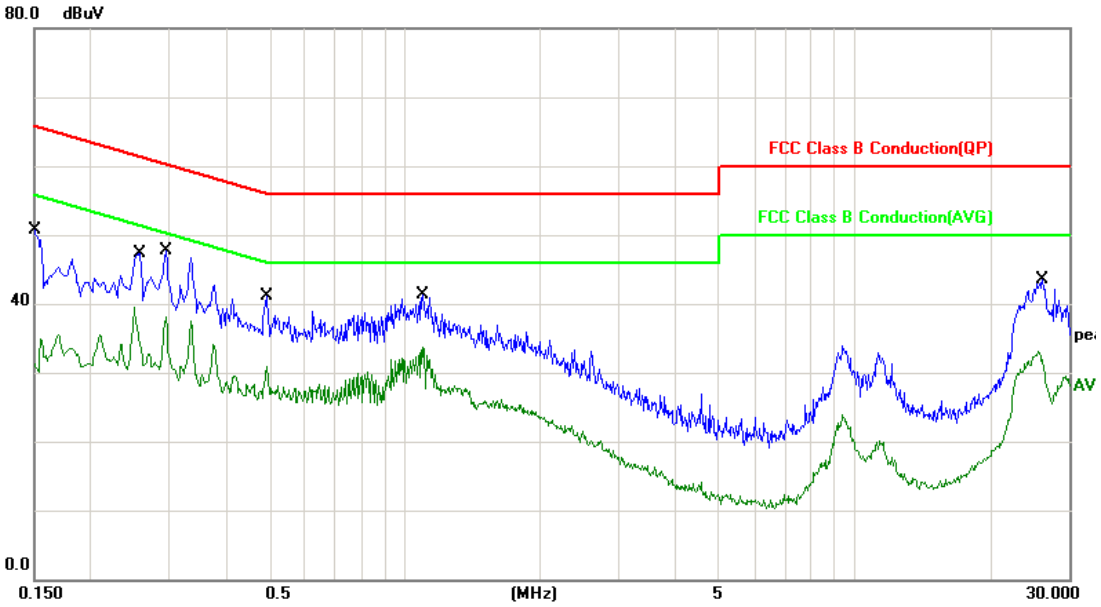
a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
c. All the support units are connecting to the other LISN.
d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
e. The FCC states that a 50 ohm, 50 micro-Henry LISN should be used.
f. Both sides of AC line were checked for maximum conducted interference.
g. The frequency range from 150 kHz to 30 MHz was searched.
h. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

5.3. Typical Test Setup



5.4. Test Result and Data

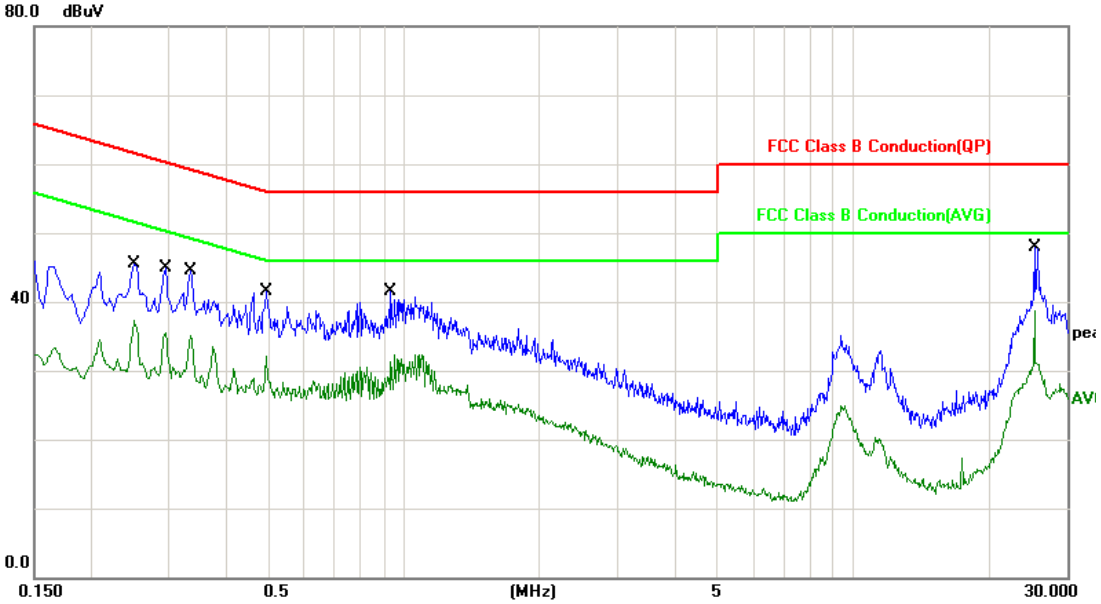
Power	:	AC 120V	Pol/Phase	:	LINE
Test Mode	:	Mode 1, CH36	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1500	10.06	38.60	48.66	65.99	-17.33	QP
2	0.1500	10.06	22.75	32.81	55.99	-23.18	AVG
3	0.2580	10.03	28.77	38.80	61.49	-22.69	QP
4	0.2580	10.03	21.72	31.75	51.49	-19.74	AVG
5	0.2940	10.01	32.86	42.87	60.41	-17.54	QP
6	0.2940	10.01	27.06	37.07	50.41	-13.34	AVG
7	0.4940	9.89	30.43	40.32	56.10	-15.78	QP
8	0.4940	9.89	24.94	34.83	46.10	-11.27	AVG
9	1.0940	10.21	26.27	36.48	56.00	-19.52	QP
10	1.0940	10.21	22.41	32.62	46.00	-13.38	AVG
11	26.1460	10.61	26.41	37.02	60.00	-22.98	QP
12	26.1460	10.61	19.46	30.07	50.00	-19.93	AVG

Note: Level = Reading + Factor
Margin = Level – Limit
Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss+ Attenuator

Power	:	AC 120V	Pol/Phase	:	NEUTRAL
Test Mode	:	Mode 1, CH36	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.2500	10.03	34.21	44.24	61.75	-17.51	QP
2	0.2500	10.03	29.10	39.13	51.75	-12.62	AVG
3	0.2940	10.01	33.02	43.03	60.41	-17.38	QP
4	0.2940	10.01	27.48	37.49	50.41	-12.92	AVG
5	0.3339	9.98	33.01	42.99	59.35	-16.36	QP
6	0.3339	9.98	27.88	37.86	49.35	-11.49	AVG
7	0.4940	9.89	30.13	40.02	56.10	-16.08	QP
8	0.4940	9.89	24.86	34.75	46.10	-11.35	AVG
9	0.9380	10.12	25.97	36.09	56.00	-19.91	QP
10	0.9380	10.12	21.08	31.20	46.00	-14.80	AVG
11	25.3620	10.61	24.74	35.35	60.00	-24.65	QP
12	25.3620	10.61	18.63	29.24	50.00	-20.76	AVG

Note: Level = Reading + Factor
Margin = Level – Limit
Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss+ Attenuator

5.5. Test Photographs

Front View

Rear View

6. Test of Spurious Emission (Radiated)

6.1. Test Limit

Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band:
All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27dBm/MHz at the band edge.

(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

(7) The provisions of §15.205 apply to intentional radiators operating under this section.

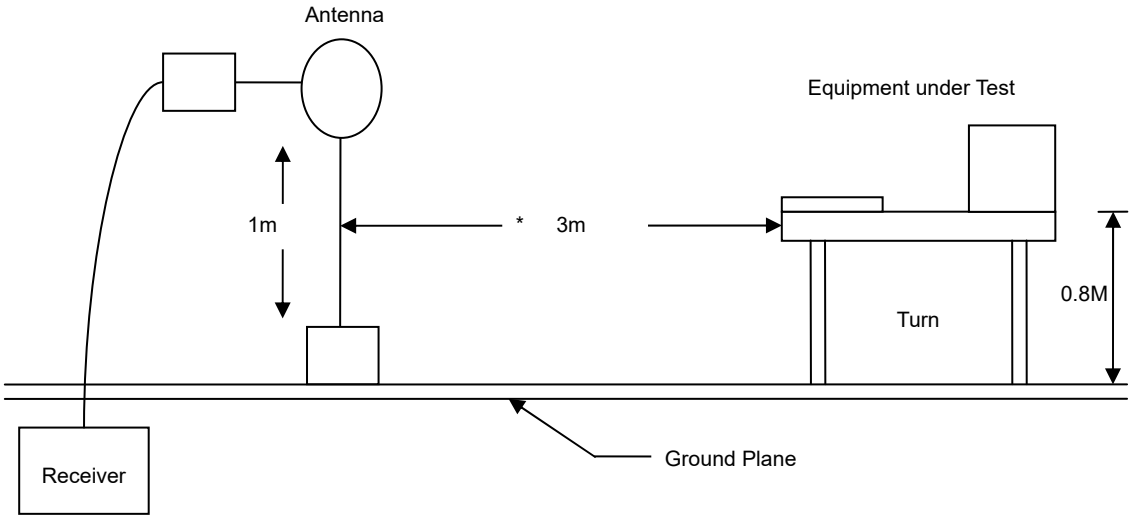
(8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

6.2. Test Procedures

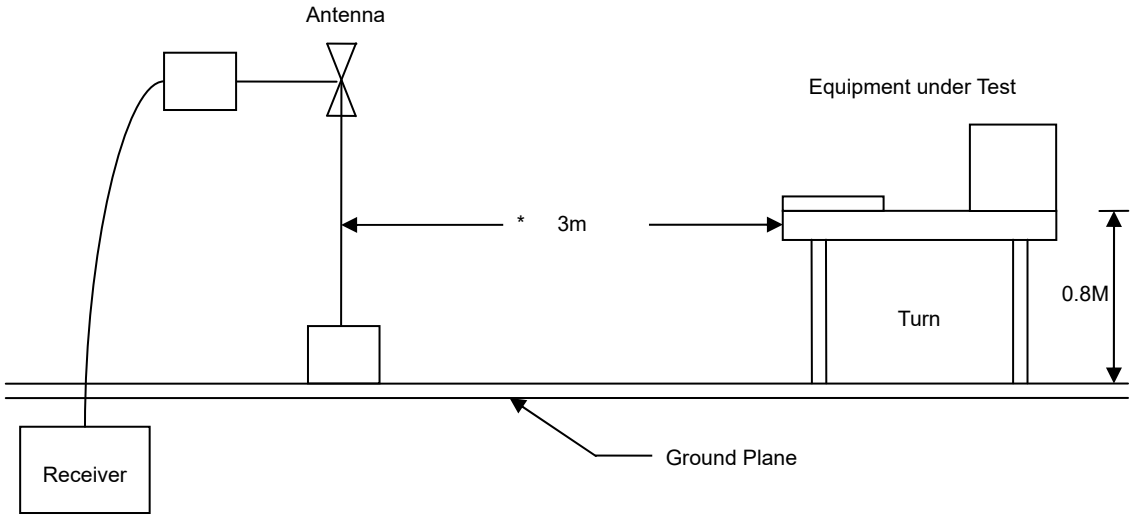
a. The EUT was placed on a rotatable table top 0.8 meter above ground.
b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
c. The table was rotated 360 degrees to determine the position of the highest radiation.
d. The antenna 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.
e. 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.
f. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
g. 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.
h. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
i. “Cone of radiation” has been considered to be 3dB bandwidth of the measurement antenna.

6.3. Typical Test Setup

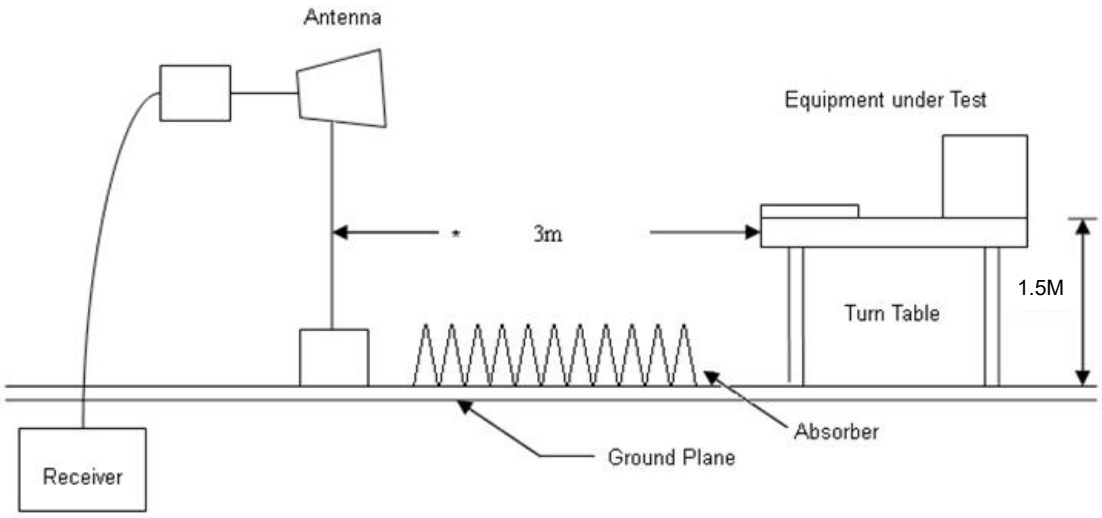
Below 30MHz test setup



30MHz- 1GHz Test Setup



Above 1GHz Test Setup

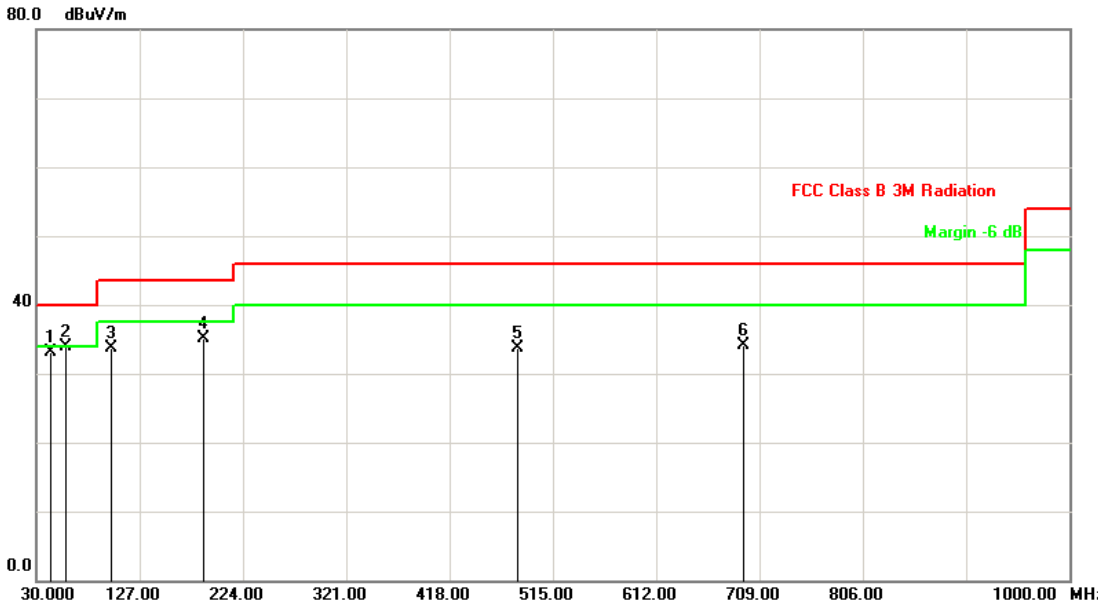


6.4. Test Result and Data (9kHz ~ 30MHz)

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

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

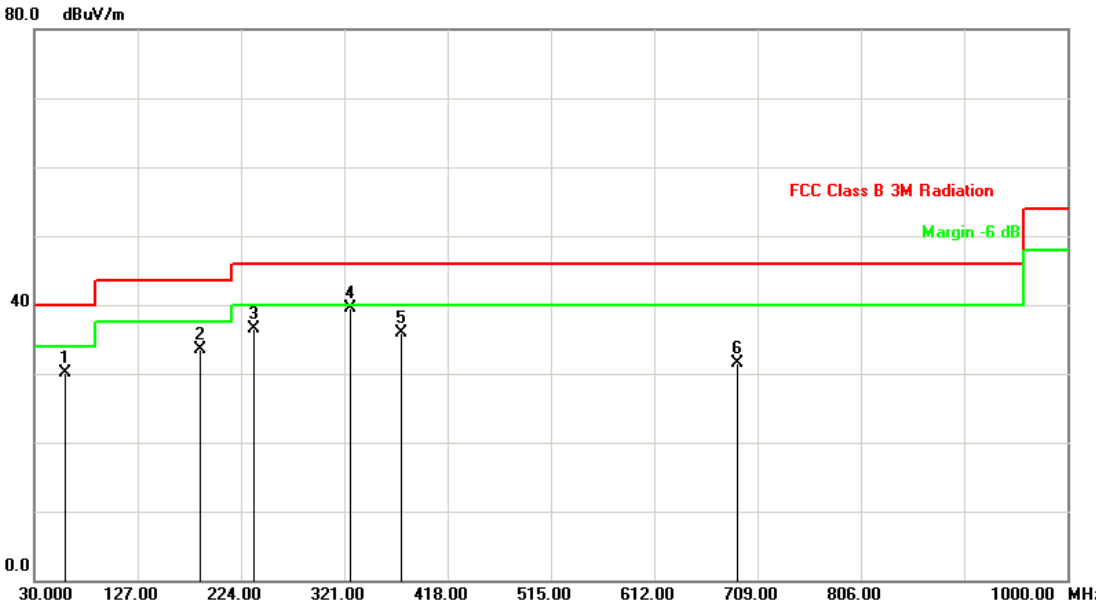
Power	:	DC 3.3V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1, CH36	Temperature	:	24 °C
Test Date	:	Aug. 29, 2017	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	43.5800	-11.77	44.93	33.16	40.00	-6.84	peak
2	58.1300	-15.58	49.51	33.93	40.00	-6.07	peak
3	100.8100	-9.54	43.22	33.68	43.50	-9.82	peak
4	187.1400	-10.59	45.74	35.15	43.50	-8.35	peak
5	482.0200	-1.22	34.85	33.63	46.00	-12.37	peak
6	693.4800	-1.20	35.25	34.05	46.00	-11.95	peak

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

Power	:	DC 3.3V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1, CH36	Temperature	:	24 °C
Test Date	:	Aug. 29, 2017	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	59.1000	-15.54	45.55	30.01	40.00	-9.99	peak
2	186.1699	-10.69	44.26	33.57	43.50	-9.93	peak
3	236.6100	-9.23	45.68	36.45	46.00	-9.55	peak
4	326.8199	-4.93	44.53	39.60	46.00	-6.40	peak
5	374.3500	-4.91	40.80	35.89	46.00	-10.11	peak
6	689.6000	-1.23	32.69	31.46	46.00	-14.54	peak

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

6.6. Test Result and Data (1GHz ~ 40GHz)

Power	:	DC 3.3V	Temperature	:	24°C
Test Mode	:	Mode 1, CH36（for Ant A）	Humidity	:	63%
Test Date	:	Aug. 29, 2017			

Pol/Phase：VERTICAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10360.000	19.85	34.67	54.52	74.00	-19.48	peak
2	10360.000	19.85	24.32	44.17	54.00	-9.83	AVG
3	15540.000	32.25	24.35	56.60	74.00	-17.40	peak
4	15540.000	32.25	14.38	46.63	54.00	-7.37	AVG

Pol/Phase：HORIZONTAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10360.000	19.85	35.62	55.47	74.00	-18.53	peak
2	10360.000	19.85	25.31	45.16	54.00	-8.84	AVG
3	15540.000	32.25	24.63	56.88	74.00	-17.12	peak
4	15540.000	32.25	14.82	47.07	54.00	-6.93	AVG

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

Power	:	DC 3.3V	Temperature	:	24°C
Test Mode	:	Mode 1, CH44（for Ant A）	Humidity	:	63%
Test Date	:	Aug. 29, 2017			

Pol/Phase：VERTICAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10440.000	20.03	35.42	55.45	74.00	-18.55	peak
2	10440.000	20.03	25.37	45.40	54.00	-8.60	AVG
3	15660.000	32.30	23.56	55.86	74.00	-18.14	peak
4	15660.000	32.30	12.75	45.05	54.00	-8.95	AVG

Pol/Phase：HORIZONTAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10440.000	20.03	34.52	54.55	74.00	-19.45	peak
2	10440.000	20.03	24.63	44.66	54.00	-9.34	AVG
3	15660.000	32.30	24.32	56.62	74.00	-17.38	peak
4	15660.000	32.30	13.51	45.81	54.00	-8.19	AVG

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

Power	:	DC 3.3V	Temperature	:	24°C
Test Mode	:	Mode 1, CH48（for Ant A）	Humidity	:	63%
Test Date	:	Aug. 29, 2017			

Pol/Phase：VERTICAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10480.000	20.12	34.68	54.80	74.00	-19.20	peak
2	10480.000	20.12	23.51	43.63	54.00	-10.37	AVG
3	15720.000	32.33	22.24	54.57	74.00	-19.43	peak
4	15720.000	32.33	12.13	44.46	54.00	-9.54	AVG

Pol/Phase：HORIZONTAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10480.000	20.12	34.26	54.38	74.00	-19.62	peak
2	10480.000	20.12	25.61	45.73	54.00	-8.27	AVG
3	15720.000	32.33	23.47	55.80	74.00	-18.20	peak
4	15720.000	32.33	14.32	46.65	54.00	-7.35	AVG

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

Power	:	DC 3.3V	Temperature	:	24°C
Test Mode	:	Mode 1, CH36（for Ant B）	Humidity	:	63%
Test Date	:	Aug. 29, 2017			

Pol/Phase：VERTICAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10360.000	19.85	34.87	54.72	74.00	-19.28	peak
2	10360.000	19.85	22.56	42.41	54.00	-11.59	AVG
3	15540.000	32.25	24.53	56.78	74.00	-17.22	peak
4	15540.000	32.25	12.69	44.94	54.00	-9.06	AVG

Pol/Phase：HORIZONTAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10360.000	19.85	35.41	55.26	74.00	-18.74	peak
2	10360.000	19.85	25.31	45.16	54.00	-8.84	AVG
3	15540.000	32.25	24.62	56.87	74.00	-17.13	peak
4	15540.000	32.25	13.58	45.83	54.00	-8.17	AVG

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

Power	:	DC 3.3V	Temperature	:	24°C
Test Mode	:	Mode 1, CH44（for Ant B）	Humidity	:	63%
Test Date	:	Aug. 29, 2017			

Pol/Phase：VERTICAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10440.000	20.03	35.17	55.20	74.00	-18.80	peak
2	10440.000	20.03	25.34	45.37	54.00	-8.63	AVG
3	15660.000	32.30	24.31	56.61	74.00	-17.39	peak
4	15660.000	32.30	13.26	45.56	54.00	-8.44	AVG

Pol/Phase：HORIZONTAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10440.000	20.03	34.26	54.29	74.00	-19.71	peak
2	10440.000	20.03	25.31	45.34	54.00	-8.66	AVG
3	15660.000	32.30	24.25	56.55	74.00	-17.45	peak
4	15660.000	32.30	13.42	45.72	54.00	-8.28	AVG

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

Power	:	DC 3.3V	Temperature	:	24°C
Test Mode	:	Mode 1, CH48（for Ant B）	Humidity	:	63%
Test Date	:	Aug. 29, 2017			

Pol/Phase：VERTICAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10480.000	20.12	34.78	54.90	74.00	-19.10	peak
2	10480.000	20.12	23.26	43.38	54.00	-10.62	AVG
3	15720.000	32.33	22.34	54.67	74.00	-19.33	peak
4	15720.000	32.33	12.95	45.28	54.00	-8.72	AVG

Pol/Phase：HORIZONTAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10480.000	20.12	34.76	54.88	74.00	-19.12	peak
2	10480.000	20.12	25.31	45.43	54.00	-8.57	AVG
3	15720.000	32.33	23.49	55.82	74.00	-18.18	peak
4	15720.000	32.33	14.32	46.65	54.00	-7.35	AVG

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

Power	:	DC 3.3V	Temperature	:	24°C
Test Mode	:	Mode 6, CH36（for Ant A）	Humidity	:	63%
Test Date	:	Aug. 29, 2017			

Pol/Phase：VERTICAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10360.000	19.85	35.22	55.07	74.00	-18.93	peak
2	10360.000	19.85	22.41	42.26	54.00	-11.74	AVG
3	15540.000	32.25	25.36	57.61	74.00	-16.39	peak
4	15540.000	32.25	14.38	46.63	54.00	-7.37	AVG

Pol/Phase：HORIZONTAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10360.000	19.85	35.17	55.02	74.00	-18.98	peak
2	10360.000	19.85	23.24	43.09	54.00	-10.91	AVG
3	15540.000	32.25	25.33	57.58	74.00	-16.42	peak
4	15540.000	32.25	12.68	44.93	54.00	-9.07	AVG

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

Power	:	DC 3.3V	Temperature	:	24°C
Test Mode	:	Mode 6, CH44（for Ant A）	Humidity	:	63%
Test Date	:	Aug. 29, 2017			

Pol/Phase：VERTICAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10440.000	20.03	35.22	55.25	74.00	-18.75	peak
2	10440.000	20.03	24.31	44.34	54.00	-9.66	AVG
3	15660.000	32.30	24.26	56.56	74.00	-17.44	peak
4	15660.000	32.30	13.27	45.57	54.00	-8.43	AVG

Pol/Phase：HORIZONTAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10440.000	20.03	35.21	55.24	74.00	-18.76	peak
2	10440.000	20.03	24.35	44.38	54.00	-9.62	AVG
3	15660.000	32.30	24.32	56.62	74.00	-17.38	peak
4	15660.000	32.30	14.24	46.54	54.00	-7.46	AVG

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

Power	:	DC 3.3V	Temperature	:	24°C
Test Mode	:	Mode 6, CH48（for Ant A）	Humidity	:	63%
Test Date	:	Aug. 29, 2017			

Pol/Phase：VERTICAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10480.000	20.12	35.21	55.33	74.00	-18.67	peak
2	10480.000	20.12	24.13	44.25	54.00	-9.75	AVG
3	15720.000	32.33	23.51	55.84	74.00	-18.16	peak
4	15720.000	32.33	12.18	44.51	54.00	-9.49	AVG

Pol/Phase：HORIZONTAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10480.000	20.12	35.23	55.35	74.00	-18.65	peak
2	10480.000	20.12	25.16	45.28	54.00	-8.72	AVG
3	15720.000	32.33	24.38	56.71	74.00	-17.29	peak
4	15720.000	32.33	12.59	44.92	54.00	-9.08	AVG

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

Power	:	DC 3.3V	Temperature	:	24°C
Test Mode	:	Mode 6, CH36（for Ant B）	Humidity	:	63%
Test Date	:	Aug. 29, 2017			

Pol/Phase：VERTICAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10360.000	19.85	34.76	54.61	74.00	-19.39	peak
2	10360.000	19.85	23.52	43.37	54.00	-10.63	AVG
3	15540.000	32.25	24.58	56.83	74.00	-17.17	peak
4	15540.000	32.25	14.63	46.88	54.00	-7.12	AVG

Pol/Phase：HORIZONTAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10360.000	19.85	35.46	55.31	74.00	-18.69	peak
2	10360.000	19.85	25.31	45.16	54.00	-8.84	AVG
3	15540.000	32.25	25.28	57.53	74.00	-16.47	peak
4	15540.000	32.25	15.31	47.56	54.00	-6.44	AVG

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

Power	:	DC 3.3V	Temperature	:	24°C
Test Mode	:	Mode 6, CH44（for Ant B）	Humidity	:	63%
Test Date	:	Aug. 29, 2017			

Pol/Phase：VERTICAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10440.000	20.03	35.26	55.29	74.00	-18.71	peak
2	10440.000	20.03	26.34	46.37	54.00	-7.63	AVG
3	15660.000	32.30	24.31	56.61	74.00	-17.39	peak
4	15660.000	32.30	12.63	44.93	54.00	-9.07	AVG

Pol/Phase：HORIZONTAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10440.000	20.03	34.52	54.55	74.00	-19.45	peak
2	10440.000	20.03	25.31	45.34	54.00	-8.66	AVG
3	15660.000	32.30	24.33	56.63	74.00	-17.37	peak
4	15660.000	32.30	13.26	45.56	54.00	-8.44	AVG

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

Power	:	DC 3.3V	Temperature	:	24°C
Test Mode	:	Mode 6, CH48（for Ant B）	Humidity	:	63%
Test Date	:	Aug. 29, 2017			

Pol/Phase：VERTICAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10480.000	20.12	34.52	54.64	74.00	-19.36	peak
2	10480.000	20.12	22.64	42.76	54.00	-11.24	AVG
3	15720.000	32.33	23.13	55.46	74.00	-18.54	peak
4	15720.000	32.33	11.67	44.00	54.00	-10.00	AVG

Pol/Phase：HORIZONTAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10480.000	20.12	34.53	54.65	74.00	-19.35	peak
2	10480.000	20.12	23.51	43.63	54.00	-10.37	AVG
3	15720.000	32.33	22.48	54.81	74.00	-19.19	peak
4	15720.000	32.33	11.57	43.90	54.00	-10.10	AVG

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

Power	:	DC 3.3V	Temperature	:	24°C
Test Mode	:	Mode 7, CH36（for Ant A+B）	Humidity	:	63%
Test Date	:	Aug. 29, 2017			

Pol/Phase：VERTICAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10360.000	19.85	35.14	54.99	74.00	-19.01	peak
2	10360.000	19.85	23.54	43.39	54.00	-10.61	AVG
3	15540.000	32.25	23.61	55.86	74.00	-18.14	peak
4	15540.000	32.25	14.52	46.77	54.00	-7.23	AVG

Pol/Phase：HORIZONTAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10360.000	19.85	35.42	55.27	74.00	-18.73	peak
2	10360.000	19.85	23.61	43.46	54.00	-10.54	AVG
3	15540.000	32.25	22.35	54.60	74.00	-19.40	peak
4	15540.000	32.25	12.54	44.79	54.00	-9.21	AVG

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

Power	:	DC 3.3V	Temperature	:	24°C
Test Mode	:	Mode 7, CH44（for Ant A+B）	Humidity	:	63%
Test Date	:	Aug. 29, 2017			

Pol/Phase：VERTICAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10440.000	20.03	34.68	54.71	74.00	-19.29	peak
2	10440.000	20.03	24.23	44.26	54.00	-9.74	AVG
3	15660.000	32.30	24.11	56.41	74.00	-17.59	peak
4	15660.000	32.30	14.20	46.50	54.00	-7.50	AVG

Pol/Phase：HORIZONTAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10440.000	20.03	34.56	54.59	74.00	-19.41	peak
2	10440.000	20.03	25.31	45.34	54.00	-8.66	AVG
3	15660.000	32.30	24.52	56.82	74.00	-17.18	peak
4	15660.000	32.30	12.68	44.98	54.00	-9.02	AVG

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

Power	:	DC 3.3V	Temperature	:	24°C
Test Mode	:	Mode 7, CH48（for Ant A+B）	Humidity	:	63%
Test Date	:	Aug. 29, 2017			

Pol/Phase：VERTICAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10480.000	20.12	35.11	55.23	74.00	-18.77	peak
2	10480.000	20.12	23.28	43.40	54.00	-10.60	AVG
3	15720.000	32.33	22.34	54.67	74.00	-19.33	peak
4	15720.000	32.33	12.67	45.00	54.00	-9.00	AVG

Pol/Phase：HORIZONTAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10480.000	20.12	34.56	54.68	74.00	-19.32	peak
2	10480.000	20.12	24.31	44.43	54.00	-9.57	AVG
3	15720.000	32.33	23.18	55.51	74.00	-18.49	peak
4	15720.000	32.33	13.27	45.60	54.00	-8.40	AVG

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

Power	:	DC 3.3V	Temperature	:	24°C
Test Mode	:	Mode 8, CH38（for Ant A）	Humidity	:	63%
Test Date	:	Aug. 29, 2017			

Pol/Phase：VERTICAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10380.000	19.89	35.42	55.31	74.00	-18.69	peak
2	10380.000	19.89	23.43	43.32	54.00	-10.68	AVG
3	15570.000	32.26	25.41	57.67	74.00	-16.33	peak
4	15570.000	32.26	12.64	44.90	54.00	-9.10	AVG

Pol/Phase：HORIZONTAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10380.000	19.89	35.26	55.15	74.00	-18.85	peak
2	10380.000	19.89	23.11	43.00	54.00	-11.00	AVG
3	15570.000	32.26	24.53	56.79	74.00	-17.21	peak
4	15570.000	32.26	12.38	44.64	54.00	-9.36	AVG

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

Power	:	DC 3.3V	Temperature	:	24°C
Test Mode	:	Mode 8, CH46（for Ant A）	Humidity	:	63%
Test Date	:	Aug. 29, 2017			

Pol/Phase：VERTICAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10460.000	20.07	35.61	55.68	74.00	-18.32	peak
2	10460.000	20.07	24.12	44.19	54.00	-9.81	AVG
3	15690.000	32.32	23.56	55.88	74.00	-18.12	peak
4	15690.000	32.32	13.49	45.81	54.00	-8.19	AVG

Pol/Phase：HORIZONTAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10460.000	20.07	35.79	55.86	74.00	-18.14	peak
2	10460.000	20.07	23.15	43.22	54.00	-10.78	AVG
3	15690.000	32.32	24.53	56.85	74.00	-17.15	peak
4	15690.000	32.32	13.45	45.77	54.00	-8.23	AVG

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

Power	:	DC 3.3V	Temperature	:	24°C
Test Mode	:	Mode 8, CH38（for Ant B）	Humidity	:	63%
Test Date	:	Aug. 29, 2017			

Pol/Phase：VERTICAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10380.000	19.89	35.33	55.22	74.00	-18.78	peak
2	10380.000	19.89	24.52	44.41	54.00	-9.59	AVG
3	15570.000	32.26	25.34	57.60	74.00	-16.40	peak
4	15570.000	32.26	12.67	44.93	54.00	-9.07	AVG

Pol/Phase：HORIZONTAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10380.000	19.89	35.46	55.35	74.00	-18.65	peak
2	10380.000	19.89	22.49	42.38	54.00	-11.62	AVG
3	15570.000	32.26	24.35	56.61	74.00	-17.39	peak
4	15570.000	32.26	11.47	43.73	54.00	-10.27	AVG

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

Power	:	DC 3.3V	Temperature	:	24°C
Test Mode	:	Mode 8, CH46（for Ant B）	Humidity	:	63%
Test Date	:	Aug. 29, 2017			

Pol/Phase：VERTICAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10460.000	20.07	36.14	56.21	74.00	-17.79	peak
2	10460.000	20.07	23.95	44.02	54.00	-9.98	AVG
3	15690.000	32.32	24.35	56.67	74.00	-17.33	peak
4	15690.000	32.32	13.29	45.61	54.00	-8.39	AVG

Pol/Phase：HORIZONTAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10460.000	20.07	35.76	55.83	74.00	-18.17	peak
2	10460.000	20.07	22.42	42.49	54.00	-11.51	AVG
3	15690.000	32.32	23.11	55.43	74.00	-18.57	peak
4	15690.000	32.32	14.09	46.41	54.00	-7.59	AVG

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

Power	:	DC 3.3V	Temperature	:	24°C
Test Mode	:	Mode 9, CH38（for Ant A+B）	Humidity	:	63%
Test Date	:	Aug. 29, 2017			

Pol/Phase：VERTICAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10380.000	19.89	35.61	55.50	74.00	-18.50	peak
2	10380.000	19.89	24.32	44.21	54.00	-9.79	AVG
3	15570.000	32.26	23.51	55.77	74.00	-18.23	peak
4	15570.000	32.26	12.43	44.69	54.00	-9.31	AVG

Pol/Phase：HORIZONTAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10380.000	19.89	35.21	55.10	74.00	-18.90	peak
2	10380.000	19.89	22.32	42.21	54.00	-11.79	AVG
3	15570.000	32.26	24.53	56.79	74.00	-17.21	peak
4	15570.000	32.26	11.35	43.61	54.00	-10.39	AVG

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

Power	:	DC 3.3V	Temperature	:	24°C
Test Mode	:	Mode 9, CH46（for Ant A+B）	Humidity	:	63%
Test Date	:	Aug. 29, 2017			

Pol/Phase：VERTICAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10460.000	20.07	35.61	55.68	74.00	-18.32	peak
2	10460.000	20.07	23.42	43.49	54.00	-10.51	AVG
3	15690.000	32.32	24.13	56.45	74.00	-17.55	peak
4	15690.000	32.32	12.37	44.69	54.00	-9.31	AVG

Pol/Phase：HORIZONTAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10460.000	20.07	35.67	55.74	74.00	-18.26	peak
2	10460.000	20.07	22.43	42.50	54.00	-11.50	AVG
3	15690.000	32.32	23.64	55.96	74.00	-18.04	peak
4	15690.000	32.32	13.42	45.74	54.00	-8.26	AVG

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

Power	:	DC 3.3V	Temperature	:	24°C
Test Mode	:	Mode 10, CH42（for Ant A）	Humidity	:	63%
Test Date	:	Aug. 29, 2017			

Pol/Phase：VERTICAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10420.000	19.98	35.72	55.70	74.00	-18.30	peak
2	10420.000	19.98	24.26	44.24	54.00	-9.76	AVG
3	15630.000	32.29	24.35	56.64	74.00	-17.36	peak
4	15630.000	32.29	13.18	45.47	54.00	-8.53	AVG

Pol/Phase：HORIZONTAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10420.000	19.98	35.46	55.44	74.00	-18.56	peak
2	10420.000	19.98	22.67	42.65	54.00	-11.35	AVG
3	15630.000	32.29	24.53	56.82	74.00	-17.18	peak
4	15630.000	32.29	13.31	45.60	54.00	-8.40	AVG

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

Power	:	DC 3.3V	Temperature	:	24°C
Test Mode	:	Mode 10, CH42（for Ant B）	Humidity	:	63%
Test Date	:	Aug. 29, 2017			

Pol/Phase：VERTICAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10420.000	19.98	35.79	55.77	74.00	-18.23	peak
2	10420.000	19.98	25.10	45.08	54.00	-8.92	AVG
3	15630.000	32.29	24.31	56.60	74.00	-17.40	peak
4	15630.000	32.29	14.67	46.96	54.00	-7.04	AVG

Pol/Phase：HORIZONTAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10420.000	19.98	35.41	55.39	74.00	-18.61	peak
2	10420.000	19.98	23.12	43.10	54.00	-10.90	AVG
3	15630.000	32.29	25.37	57.66	74.00	-16.34	peak
4	15630.000	32.29	14.74	47.03	54.00	-6.97	AVG

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

Power	:	DC 3.3V	Temperature	:	24°C
Test Mode	:	Mode 11, CH42（for Ant A+B）	Humidity	:	63%
Test Date	:	Aug. 29, 2017			

Pol/Phase：VERTICAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10420.000	19.98	35.42	55.40	74.00	-18.60	peak
2	10420.000	19.98	25.31	45.29	54.00	-8.71	AVG
3	15630.000	32.29	24.16	56.45	74.00	-17.55	peak
4	15630.000	32.29	12.58	44.87	54.00	-9.13	AVG

Pol/Phase：HORIZONTAL

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10420.000	19.98	35.43	55.41	74.00	-18.59	peak
2	10420.000	19.98	23.21	43.19	54.00	-10.81	AVG
3	15630.000	32.29	24.32	56.61	74.00	-17.39	peak
4	15630.000	32.29	12.64	44.93	54.00	-9.07	AVG

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

6.7. Restricted Bands of Operation

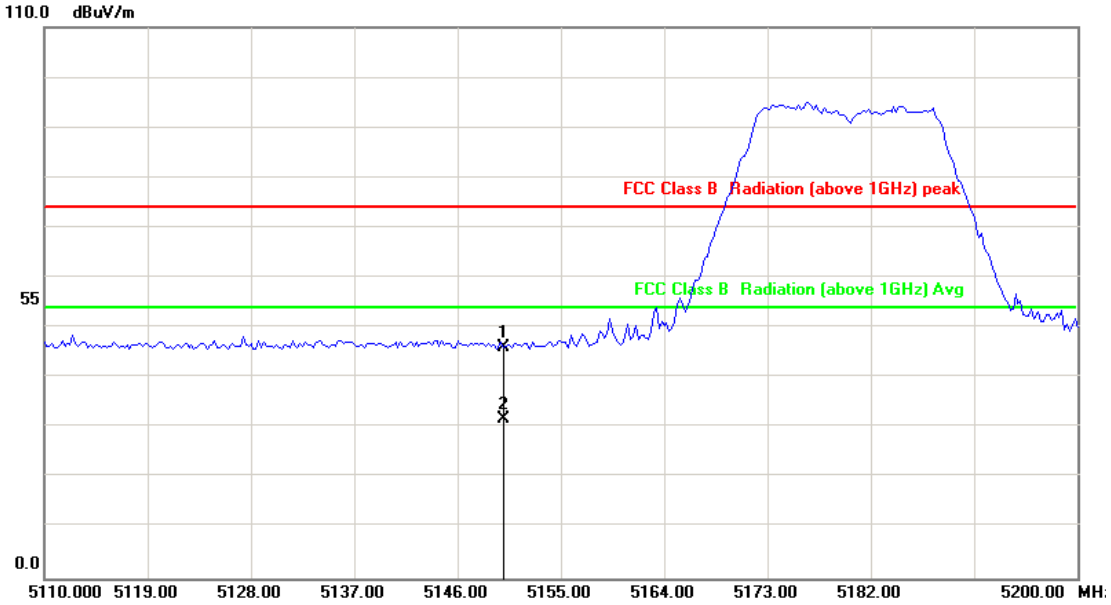
Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.09000 – 0.11000	16.42000 – 16.42300	399.9 – 410.0	4.500 – 5.150
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 3.3V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1, CH36 (for Ant A)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

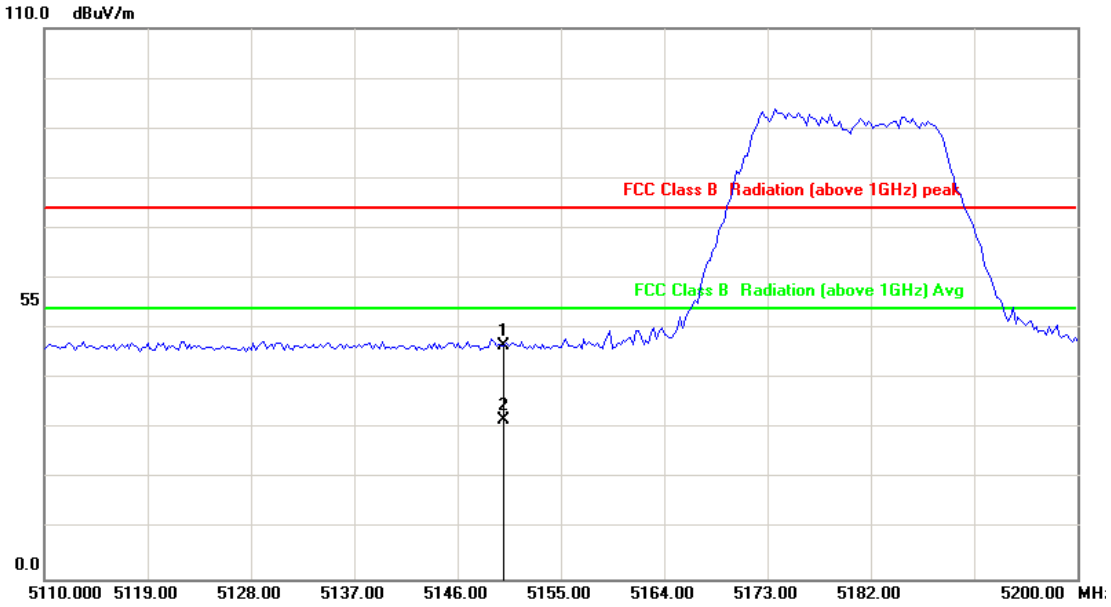


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5150.000	8.73	37.34	46.07	74.00	-27.93	peak
2	5150.000	8.73	23.12	31.85	54.00	-22.15	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1, CH36 (for Ant A)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

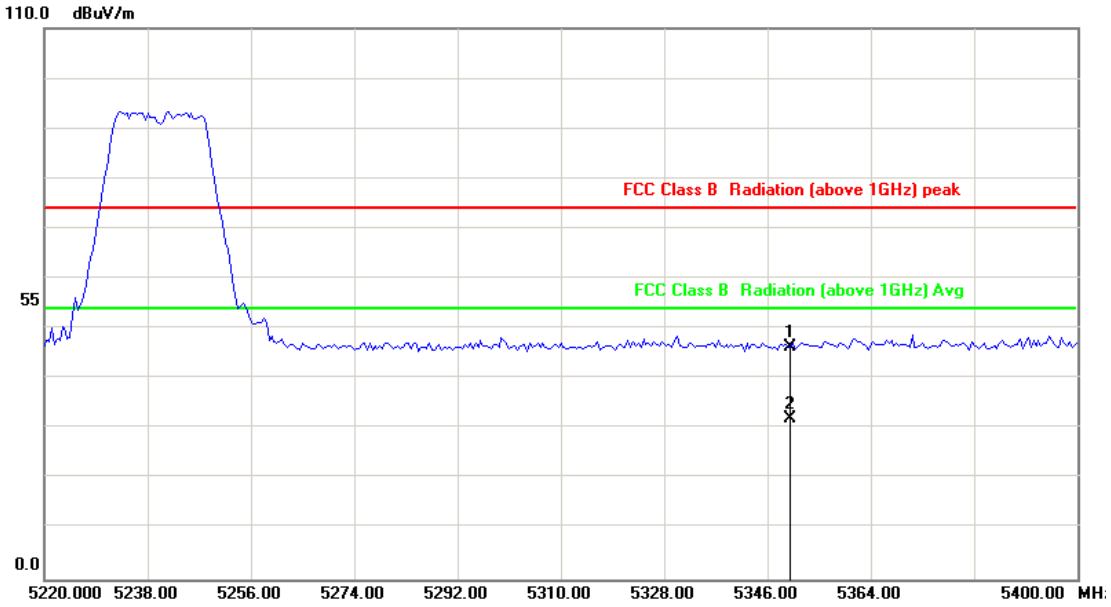


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5150.000	8.73	37.87	46.60	74.00	-27.40	peak
2	5150.000	8.73	23.16	31.89	54.00	-22.11	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1, CH48 (for Ant A)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

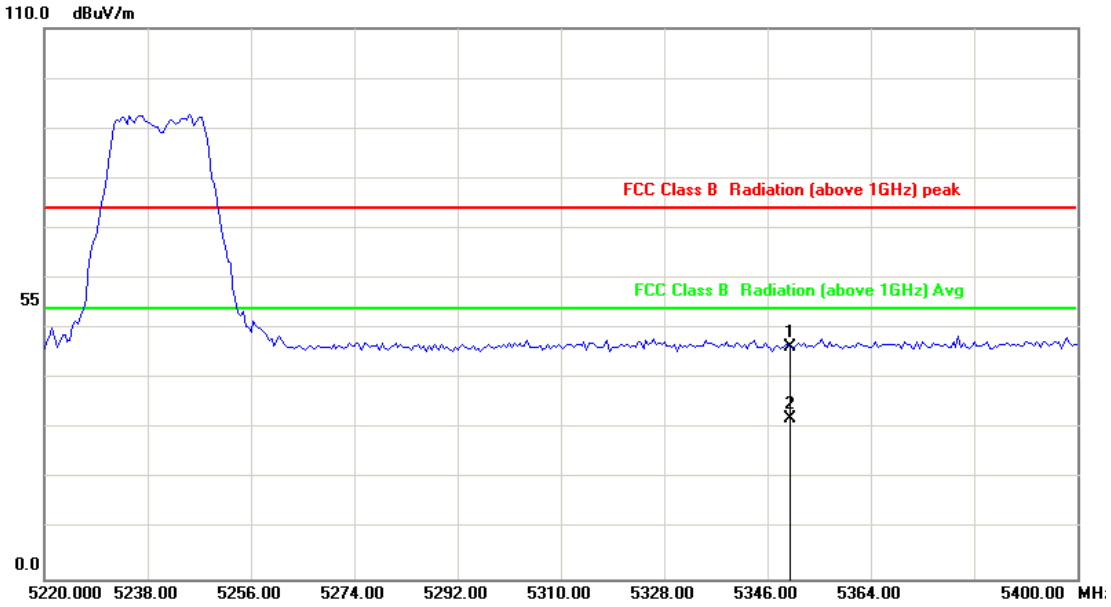


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5350.000	8.89	37.51	46.40	74.00	-27.60	peak
2	5350.000	8.89	23.24	32.13	54.00	-21.87	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1, CH48 (for Ant A)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

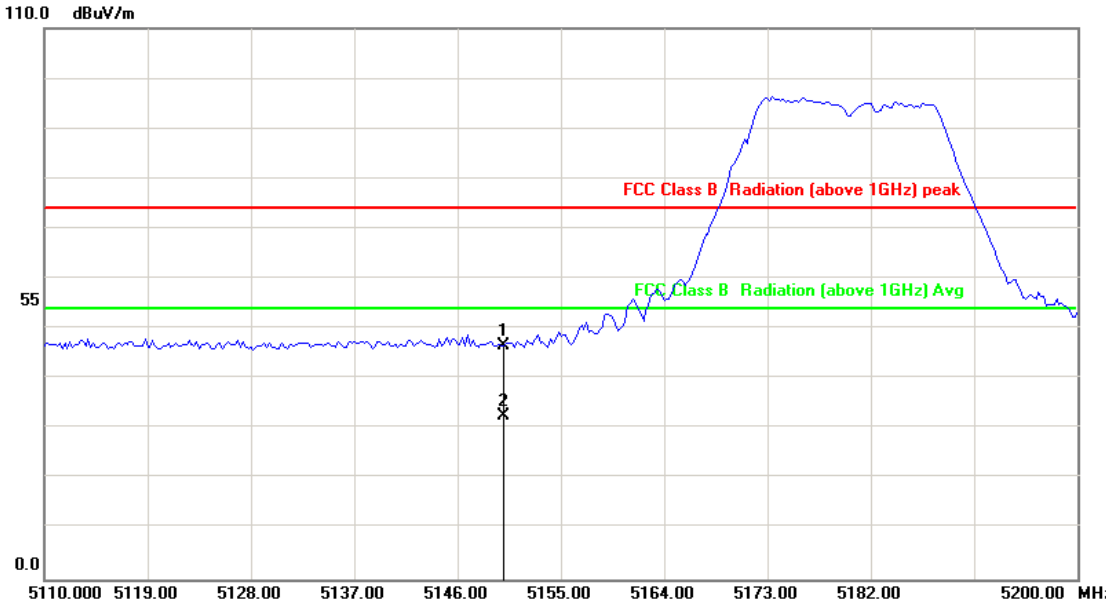


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5350.000	8.89	37.37	46.26	74.00	-27.74	peak
2	5350.000	8.89	23.15	32.04	54.00	-21.96	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1, CH36 (for Ant B)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

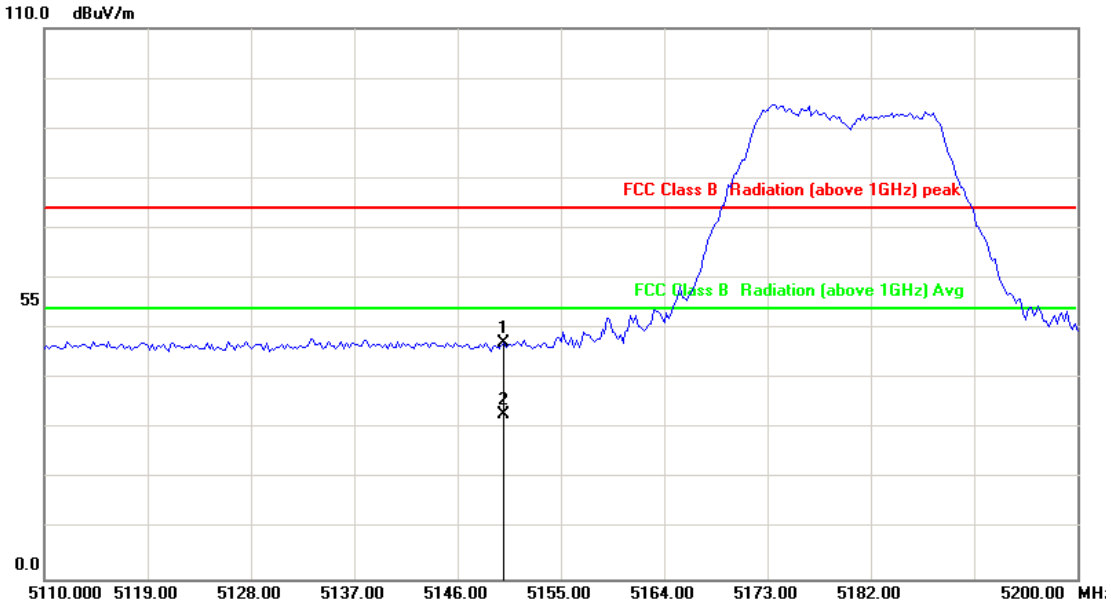


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5150.000	8.73	37.91	46.64	74.00	-27.36	peak
2	5150.000	8.73	23.82	32.55	54.00	-21.45	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1, CH36 (for Ant B)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

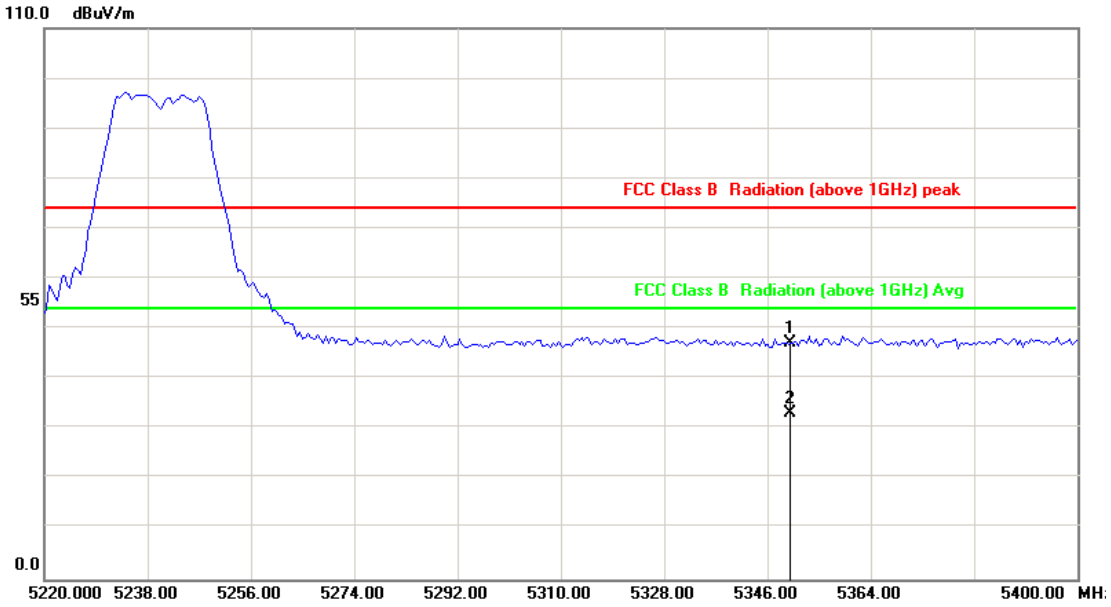


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5150.000	8.73	38.40	47.13	74.00	-26.87	peak
2	5150.000	8.73	24.12	32.85	54.00	-21.15	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1, CH48 (for Ant B)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

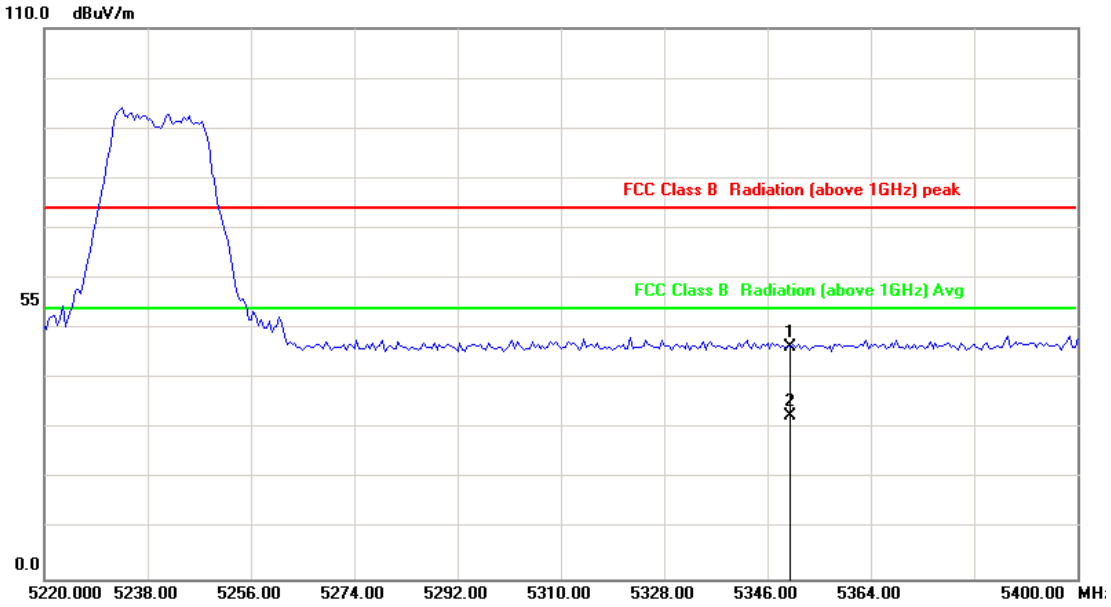


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5350.000	8.89	38.31	47.20	74.00	-26.80	peak
2	5350.000	8.89	24.36	33.25	54.00	-20.75	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1, CH48 (for Ant B)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

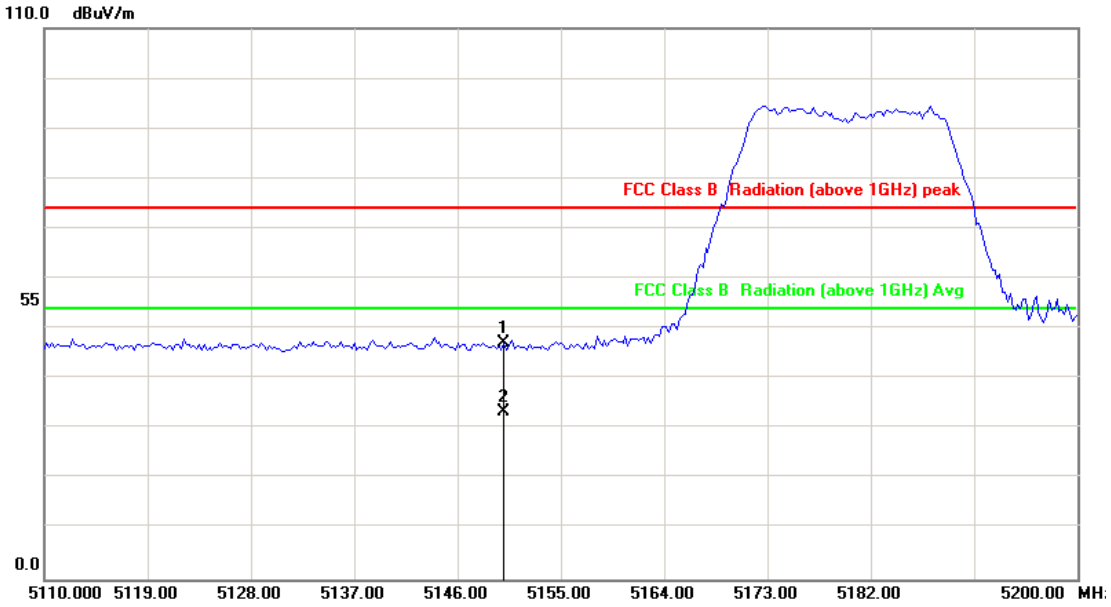


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5350.000	8.89	37.49	46.38	74.00	-27.62	peak
2	5350.000	8.89	23.65	32.54	54.00	-21.46	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 6, CH36 (for Ant A)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

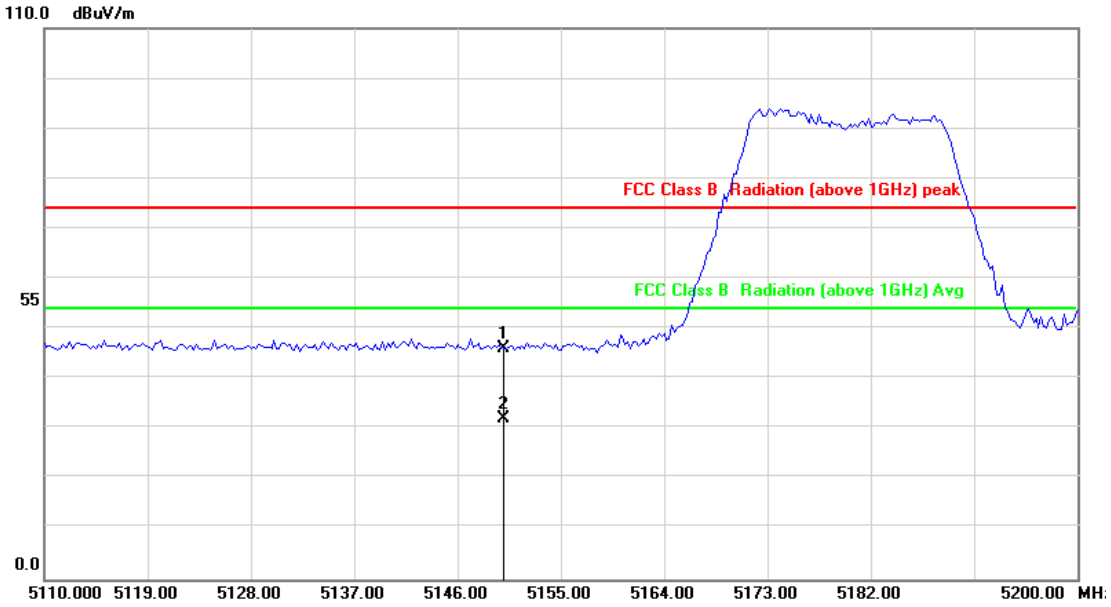


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5150.000	8.73	38.36	47.09	74.00	-26.91	peak
2	5150.000	8.73	24.65	33.38	54.00	-20.62	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 6, CH36 (for Ant A)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

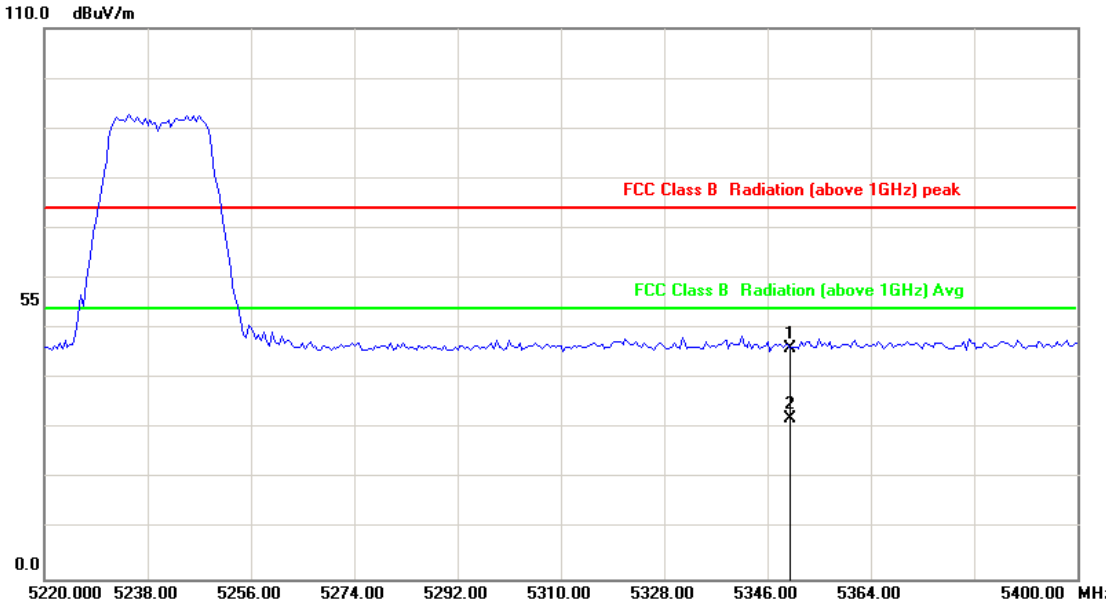


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5150.000	8.73	37.40	46.13	74.00	-27.87	peak
2	5150.000	8.73	23.21	31.94	54.00	-22.06	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 6, CH48 (for Ant A)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

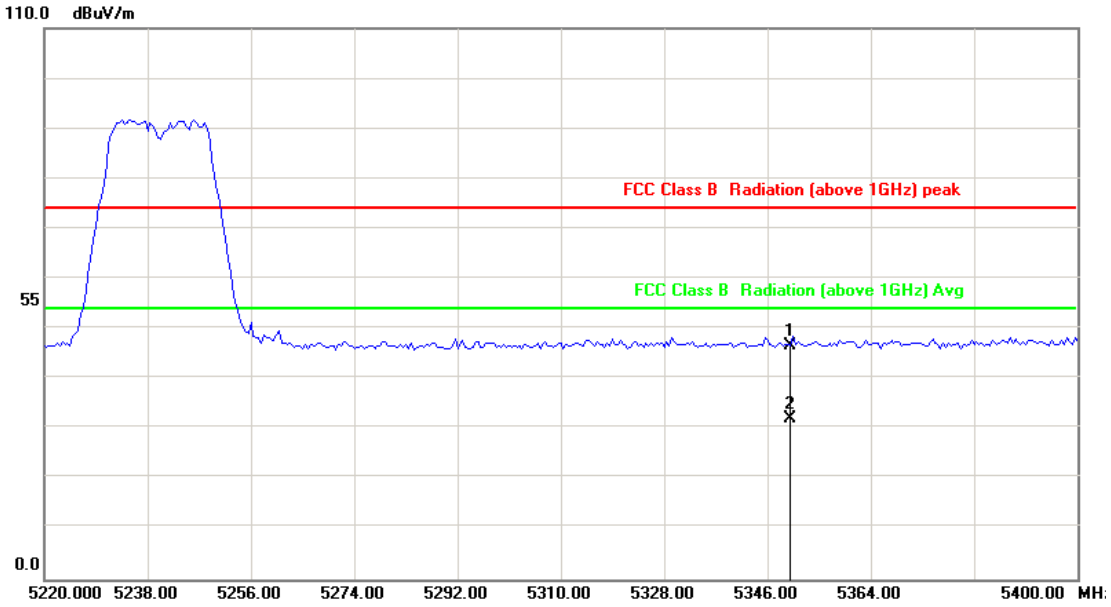


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5350.000	8.89	37.21	46.10	74.00	-27.90	peak
2	5350.000	8.89	23.21	32.10	54.00	-21.90	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 6, CH48 (for Ant A)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

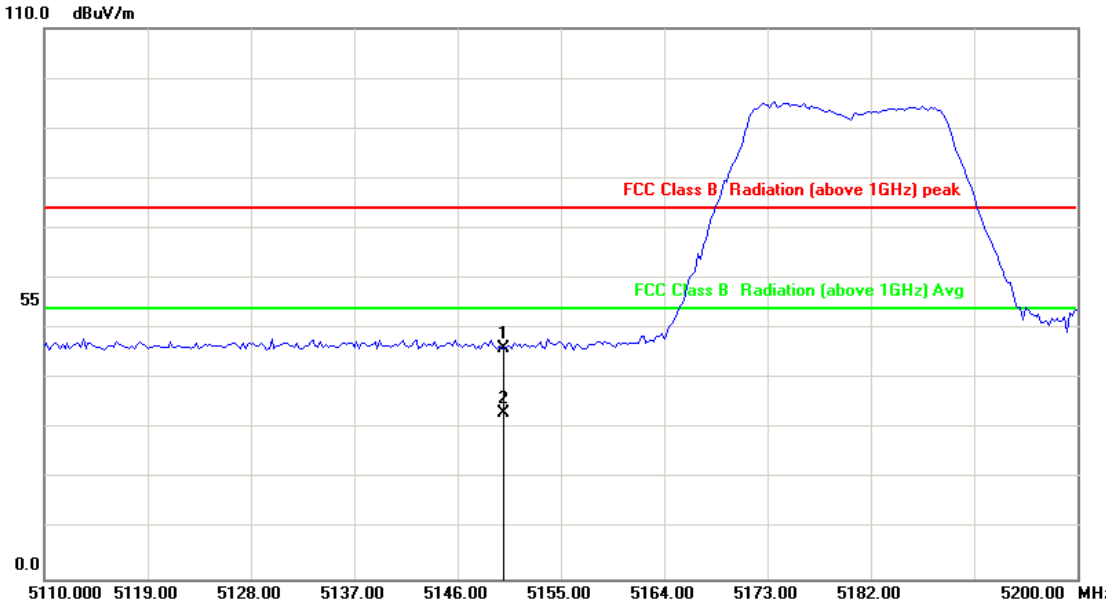


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5350.000	8.89	37.81	46.70	74.00	-27.30	peak
2	5350.000	8.89	23.22	32.11	54.00	-21.89	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 6, CH36 (for Ant B)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

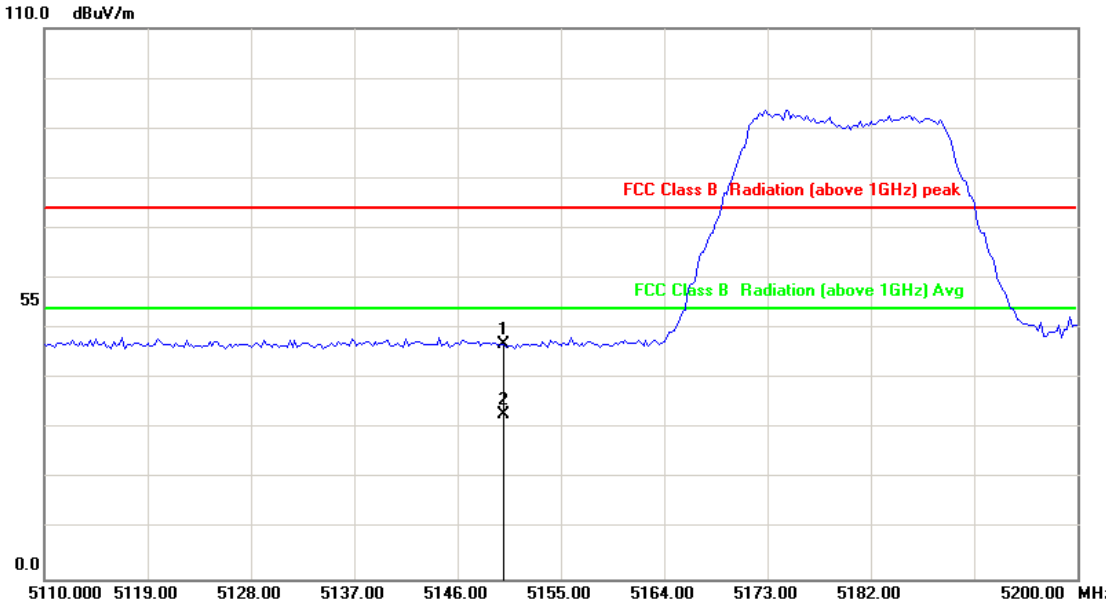


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5150.000	8.73	37.33	46.06	74.00	-27.94	peak
2	5150.000	8.73	24.31	33.04	54.00	-20.96	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 6, CH36 (for Ant B)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

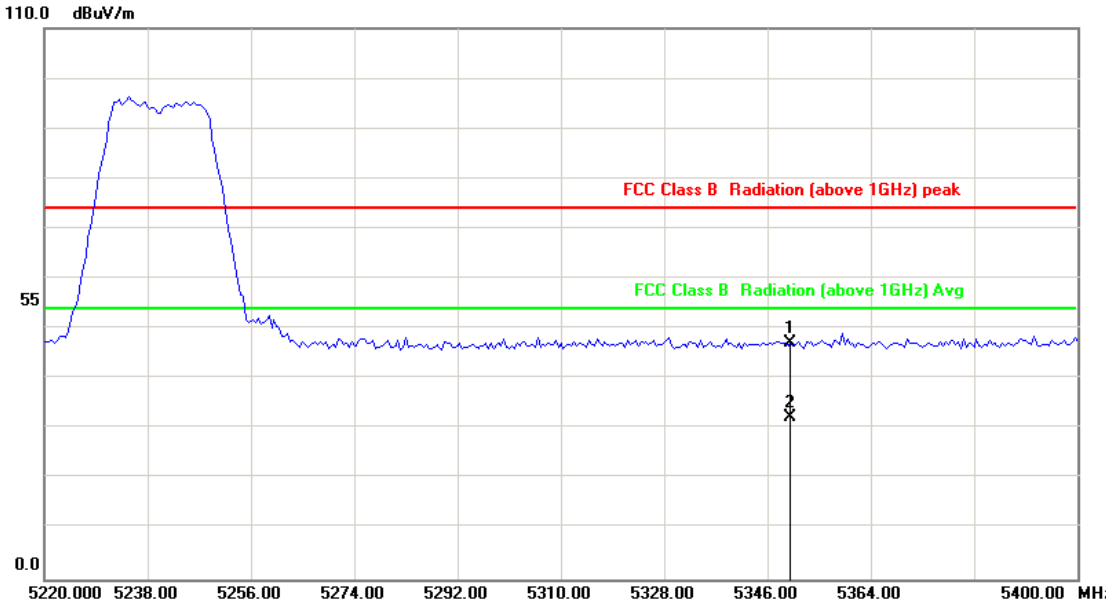


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5150.000	8.73	38.19	46.92	74.00	-27.08	peak
2	5150.000	8.73	24.16	32.89	54.00	-21.11	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 6, CH48 (for Ant B)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

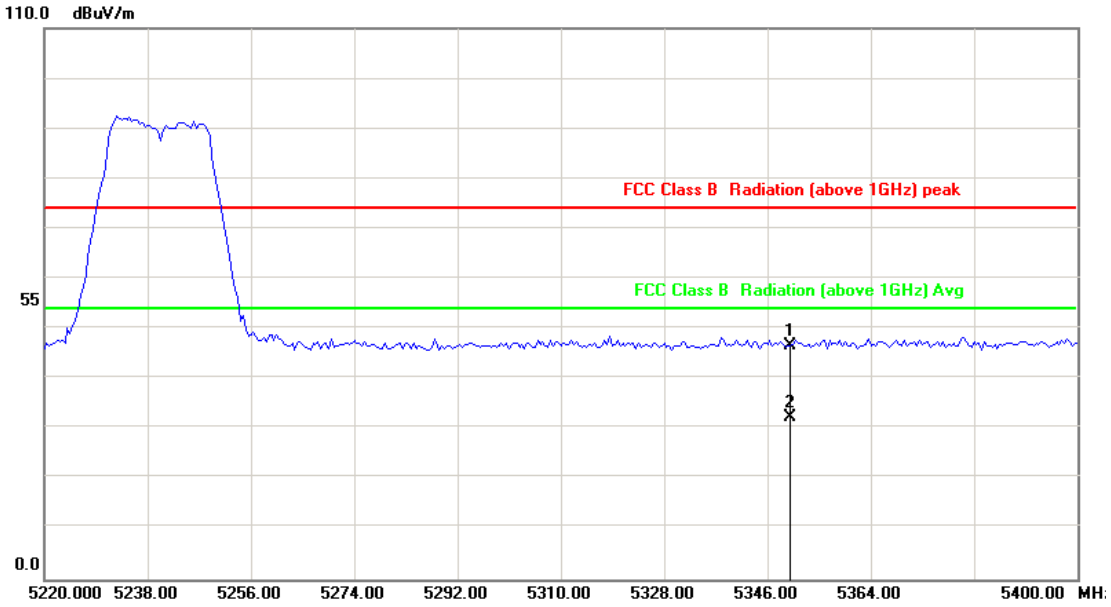


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5350.000	8.89	38.34	47.23	74.00	-26.77	peak
2	5350.000	8.89	23.51	32.40	54.00	-21.60	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 6, CH48 (for Ant B)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

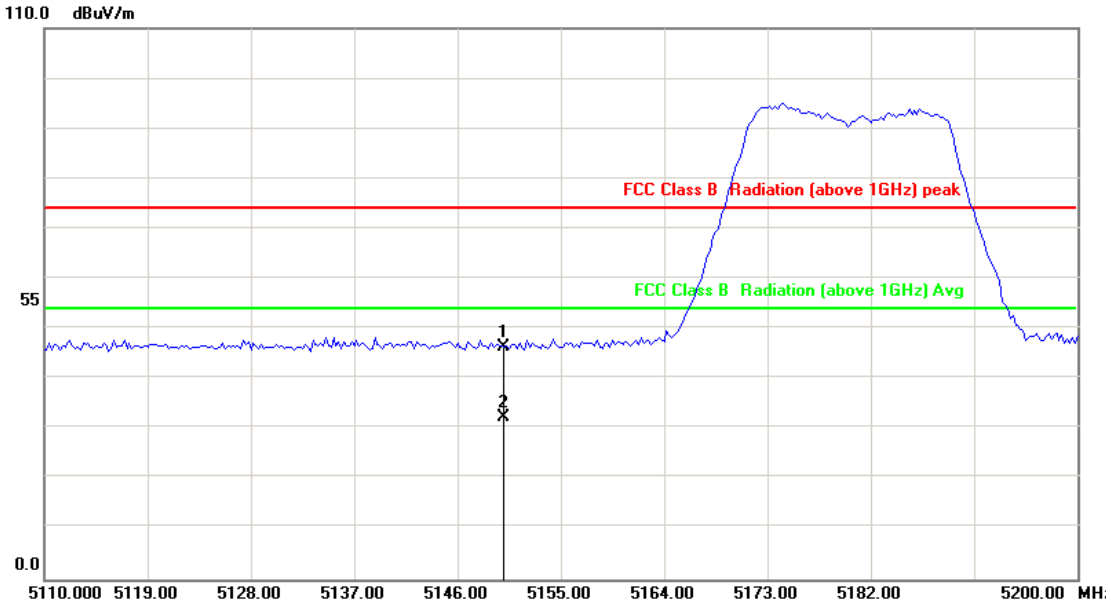


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5350.000	8.89	37.67	46.56	74.00	-27.44	peak
2	5350.000	8.89	23.31	32.20	54.00	-21.80	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 7, CH36 (for Ant A+B)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

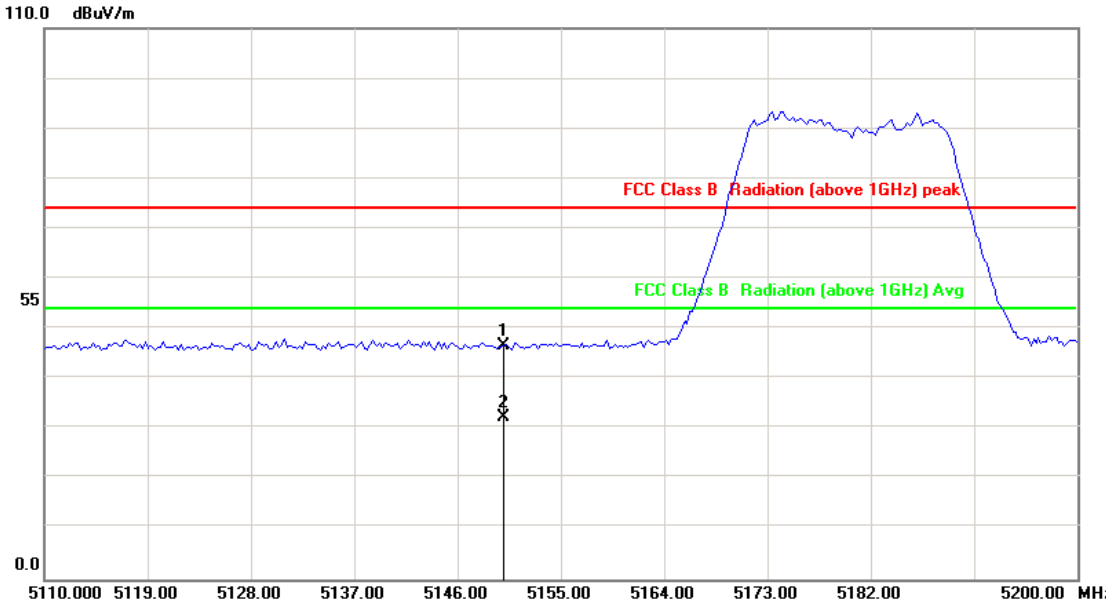


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5150.000	8.73	37.65	46.38	74.00	-27.62	peak
2	5150.000	8.73	23.57	32.30	54.00	-21.70	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 7, CH36 (for Ant A+B)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

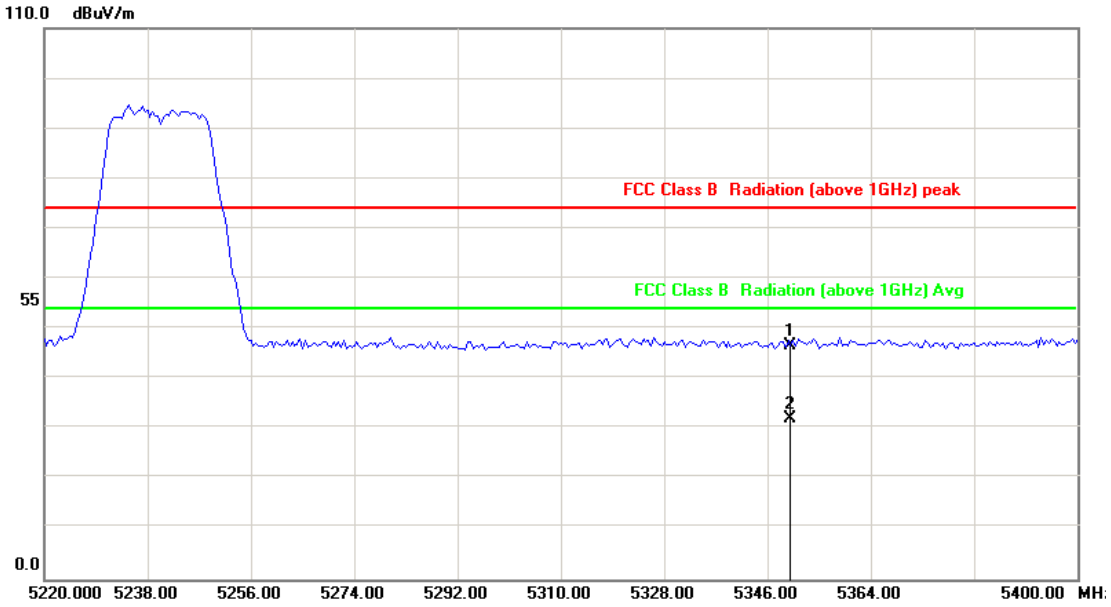


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5150.000	8.73	37.76	46.49	74.00	-27.51	peak
2	5150.000	8.73	23.67	32.40	54.00	-21.60	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 7, CH48 (for Ant A+B)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

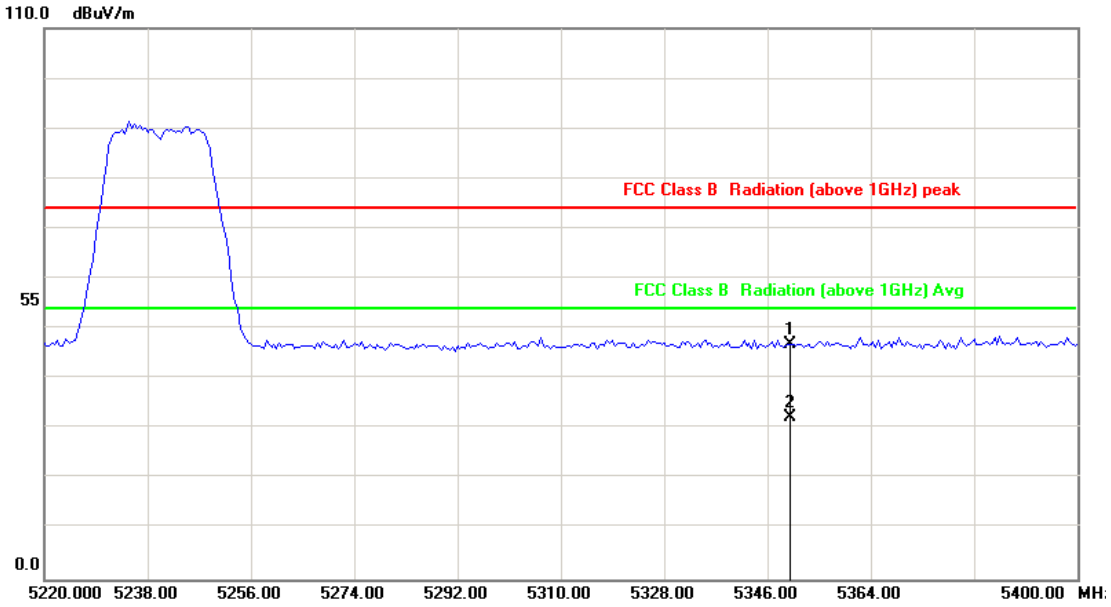


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5350.000	8.89	37.60	46.49	74.00	-27.51	peak
2	5350.000	8.89	23.24	32.13	54.00	-21.87	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 7, CH48 (for Ant A+B)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

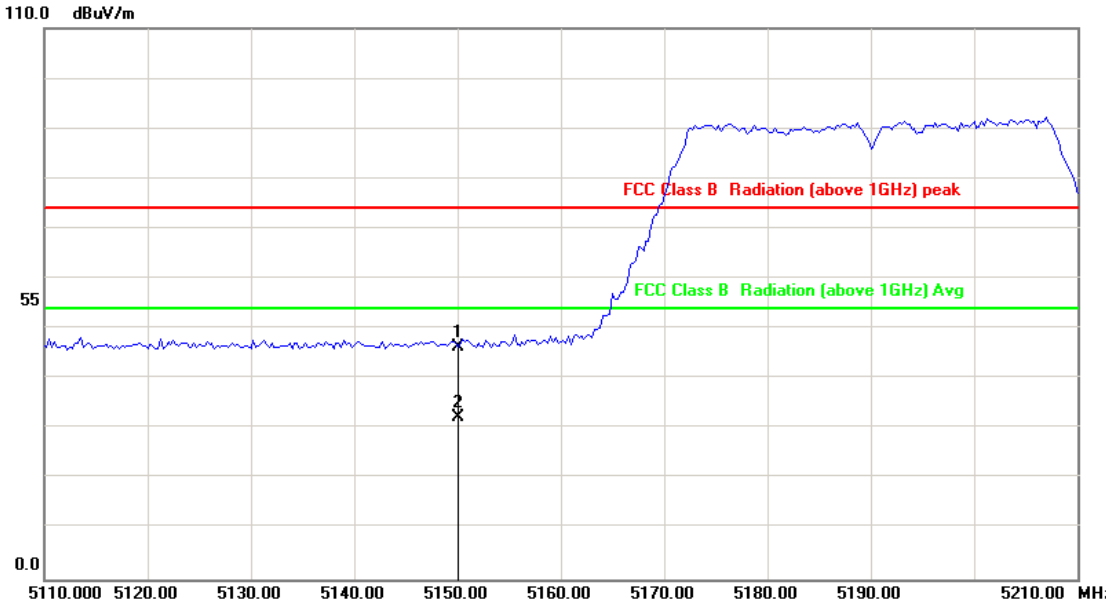


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5350.000	8.89	37.92	46.81	74.00	-27.19	peak
2	5350.000	8.89	23.43	32.32	54.00	-21.68	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 8, CH38 (for Ant A)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

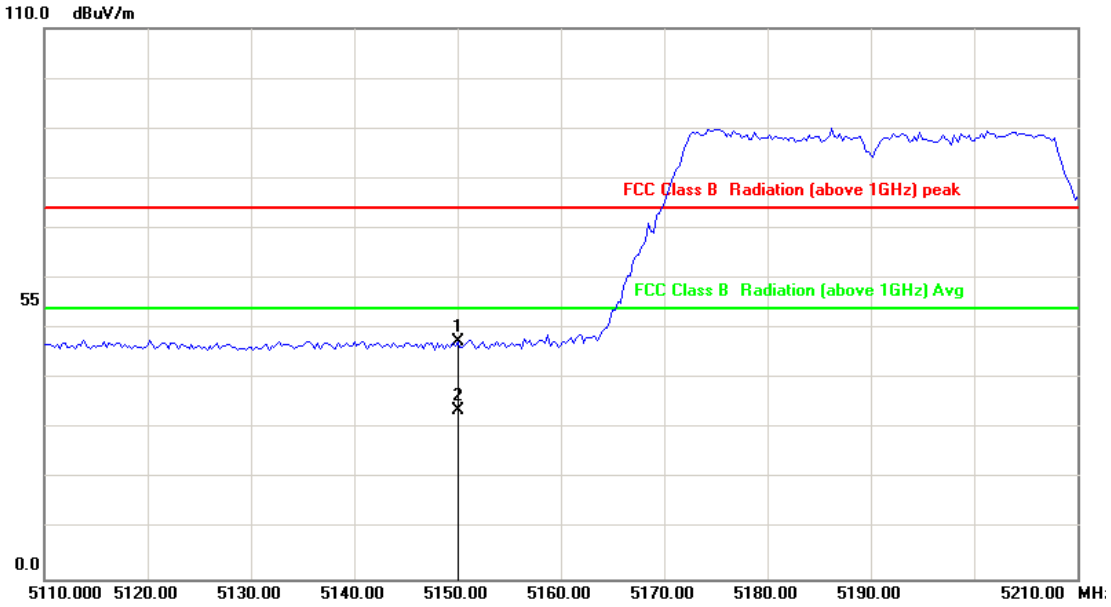


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5150.000	8.73	37.74	46.47	74.00	-27.53	peak
2	5150.000	8.73	23.65	32.38	54.00	-21.62	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 8, CH38 (for Ant A)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

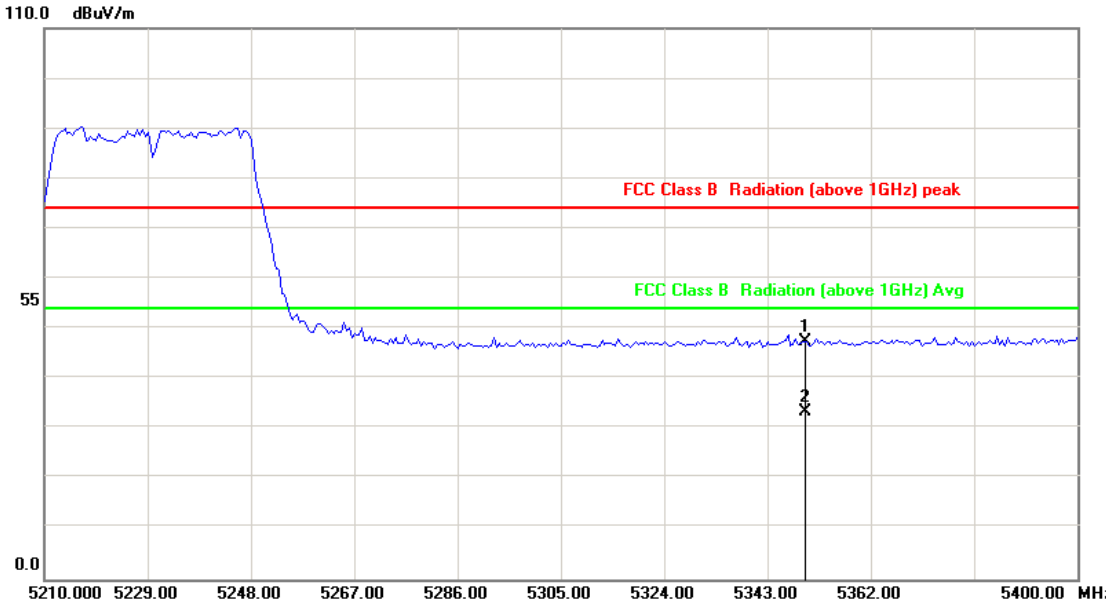


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5150.000	8.73	38.60	47.33	74.00	-26.67	peak
2	5150.000	8.73	24.89	33.62	54.00	-20.38	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 8, CH46 (for Ant A)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

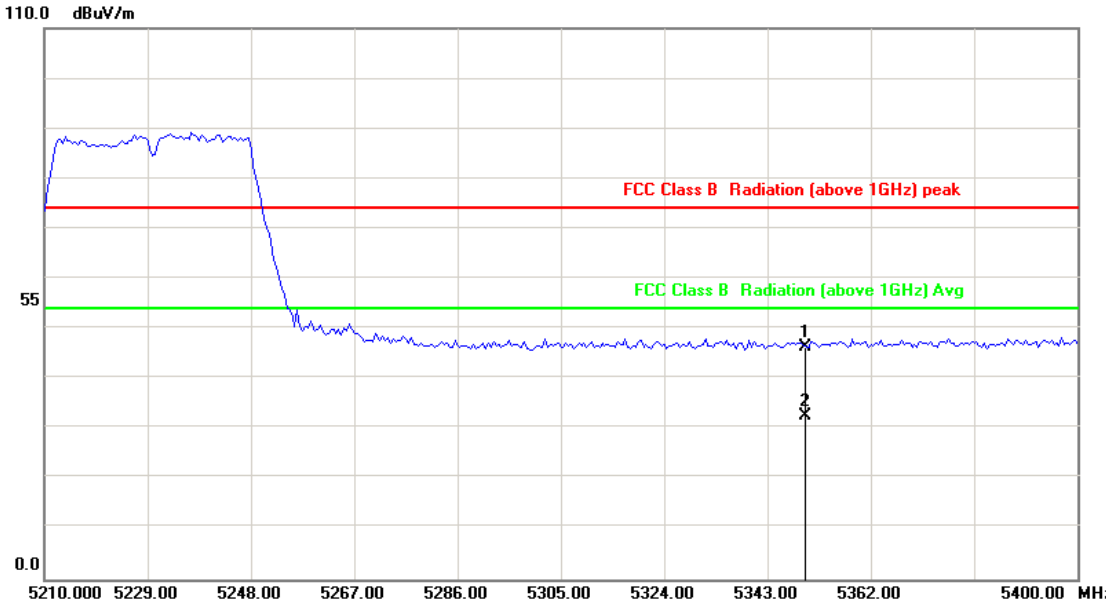


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5350.000	8.89	38.53	47.42	74.00	-26.58	peak
2	5350.000	8.89	24.51	33.40	54.00	-20.60	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 8, CH46 (for Ant A)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

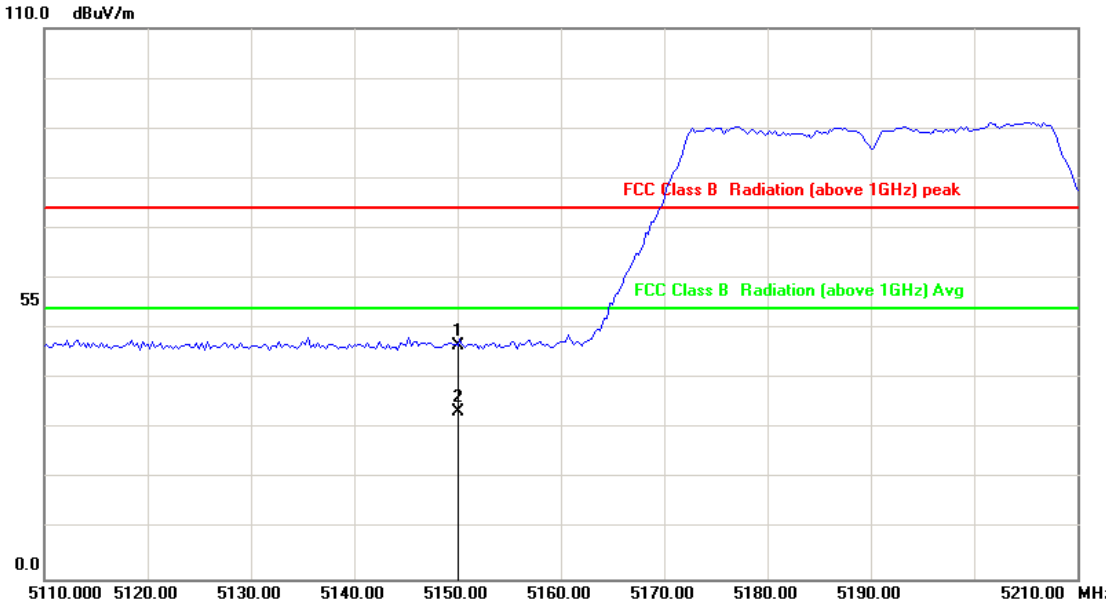


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5350.000	8.89	37.52	46.41	74.00	-27.59	peak
2	5350.000	8.89	23.67	32.56	54.00	-21.44	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 8, CH38 (for Ant B)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

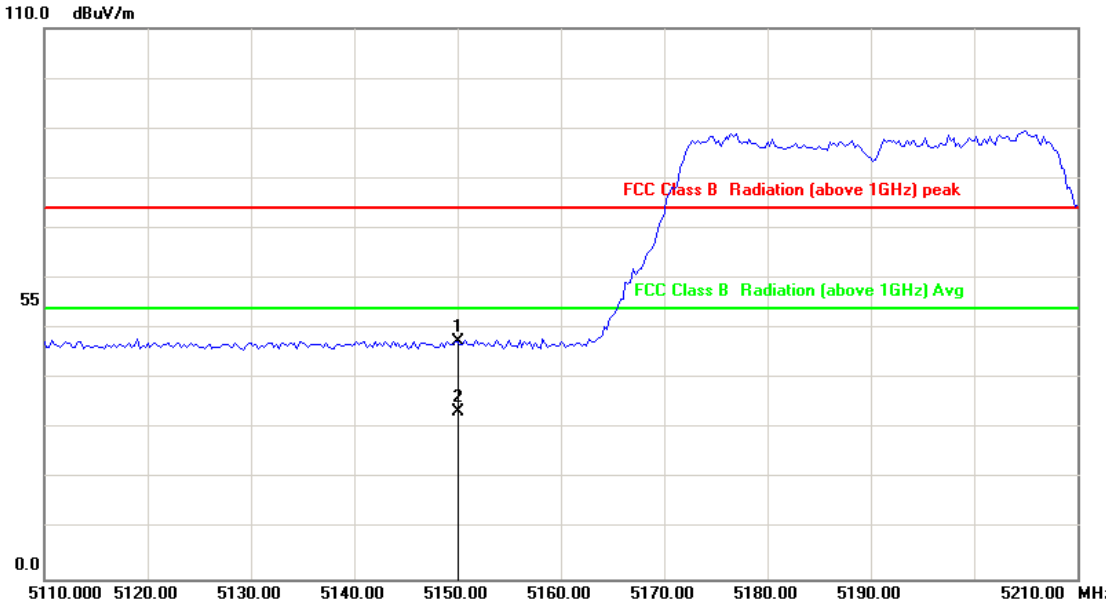


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5150.000	8.73	37.83	46.56	74.00	-27.44	peak
2	5150.000	8.73	24.68	33.41	54.00	-20.59	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 8, CH38 (for Ant B)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

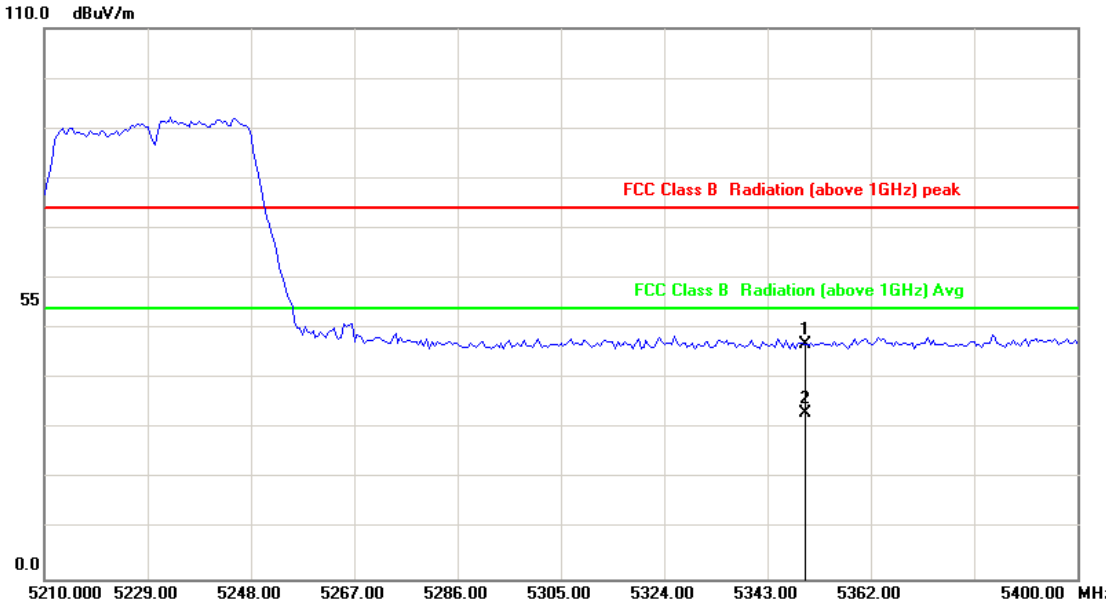


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5150.000	8.73	38.65	47.38	74.00	-26.62	peak
2	5150.000	8.73	24.69	33.42	54.00	-20.58	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 8, CH46 (for Ant B)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

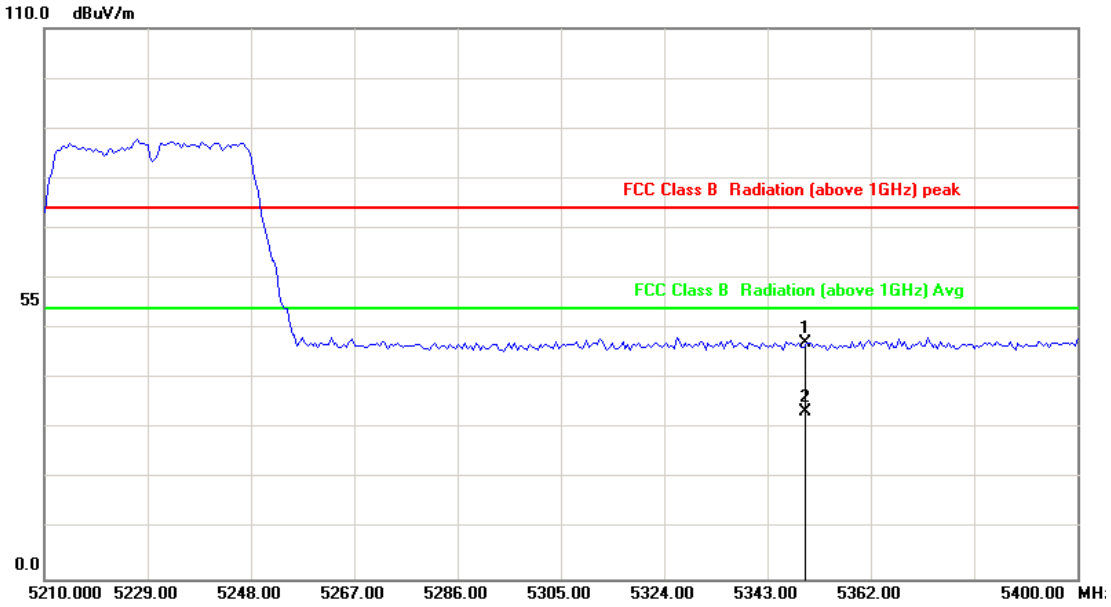


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5350.000	8.89	37.99	46.88	74.00	-27.12	peak
2	5350.000	8.89	24.36	33.25	54.00	-20.75	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 8, CH46 (for Ant B)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

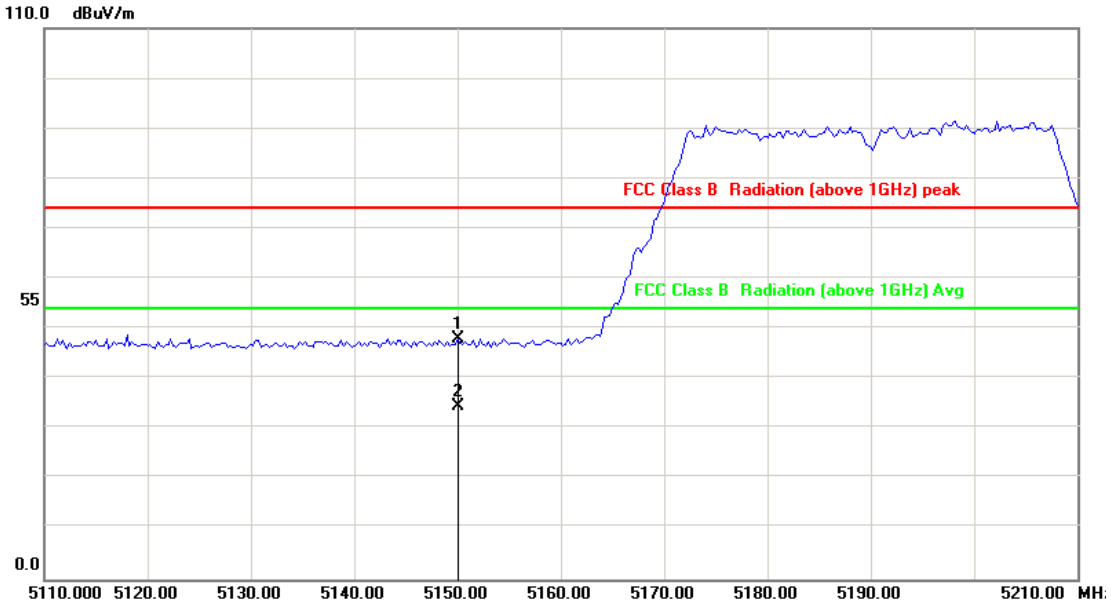


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5350.000	8.89	38.20	47.09	74.00	-26.91	peak
2	5350.000	8.89	24.65	33.54	54.00	-20.46	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 9, CH38 (for Ant A+B)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

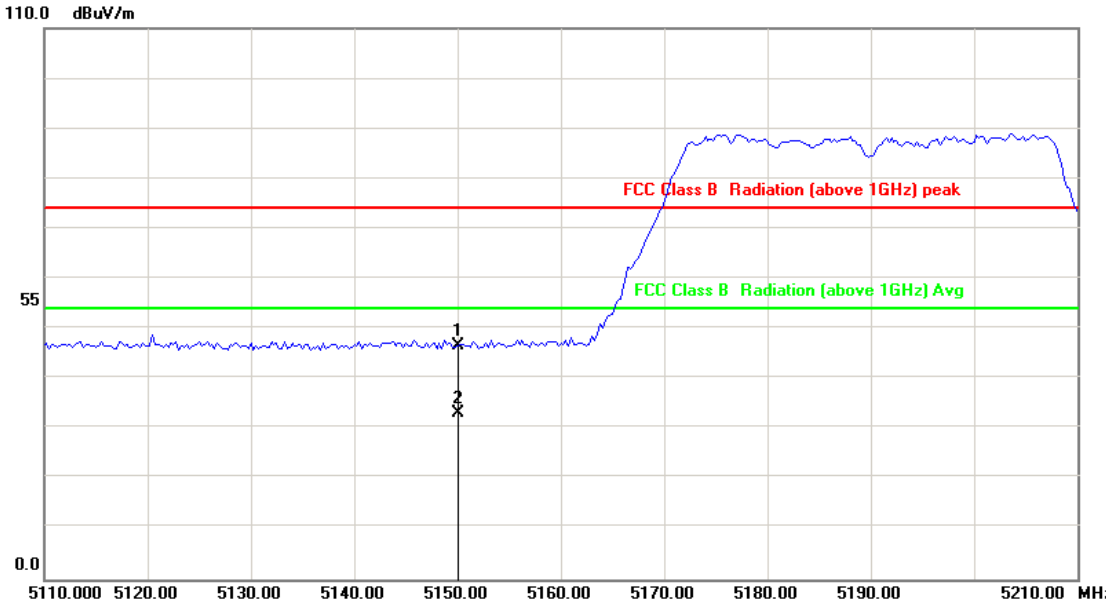


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5150.000	8.73	39.27	48.00	74.00	-26.00	peak
2	5150.000	8.73	25.84	34.57	54.00	-19.43	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 9, CH38 (for Ant A+B)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

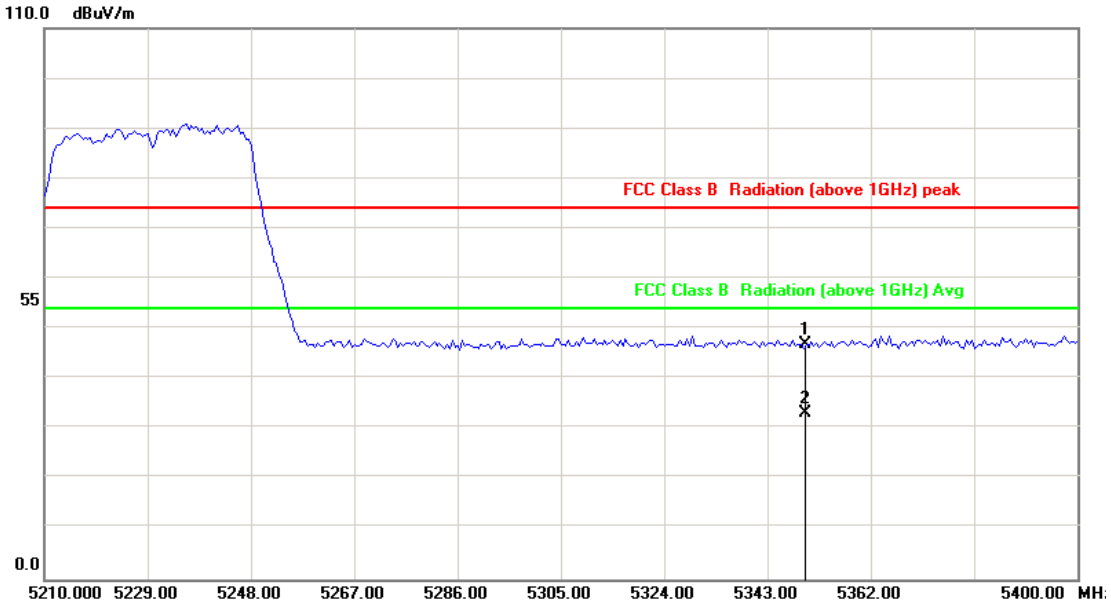


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5150.000	8.73	37.98	46.71	74.00	-27.29	peak
2	5150.000	8.73	24.51	33.24	54.00	-20.76	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 9, CH46 (for Ant A+B)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

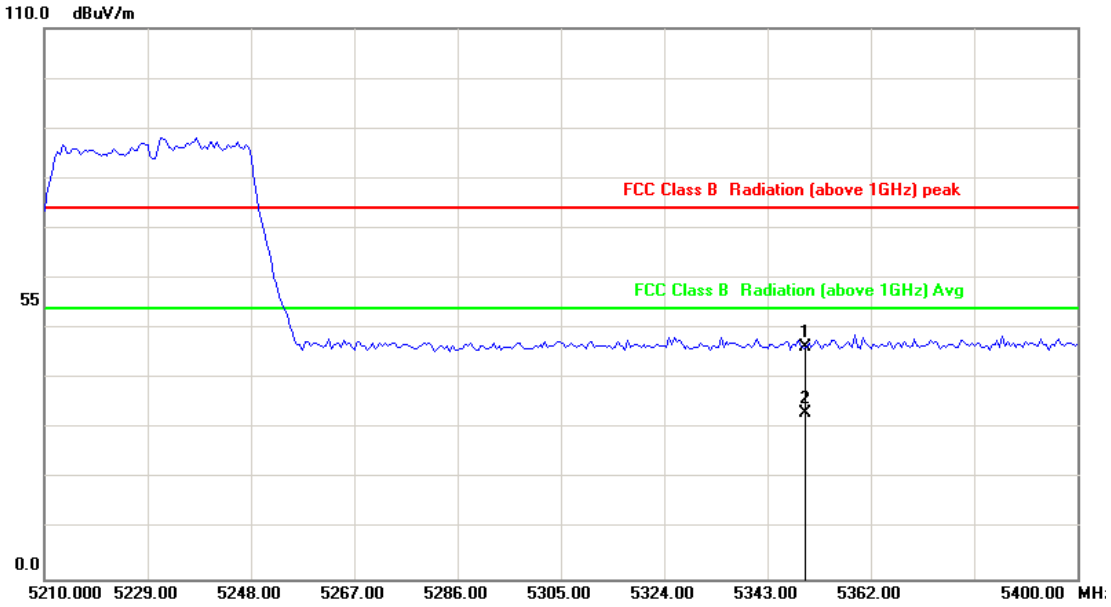


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5350.000	8.89	37.92	46.81	74.00	-27.19	peak
2	5350.000	8.89	24.31	33.20	54.00	-20.80	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 9, CH46 (for Ant A+B)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

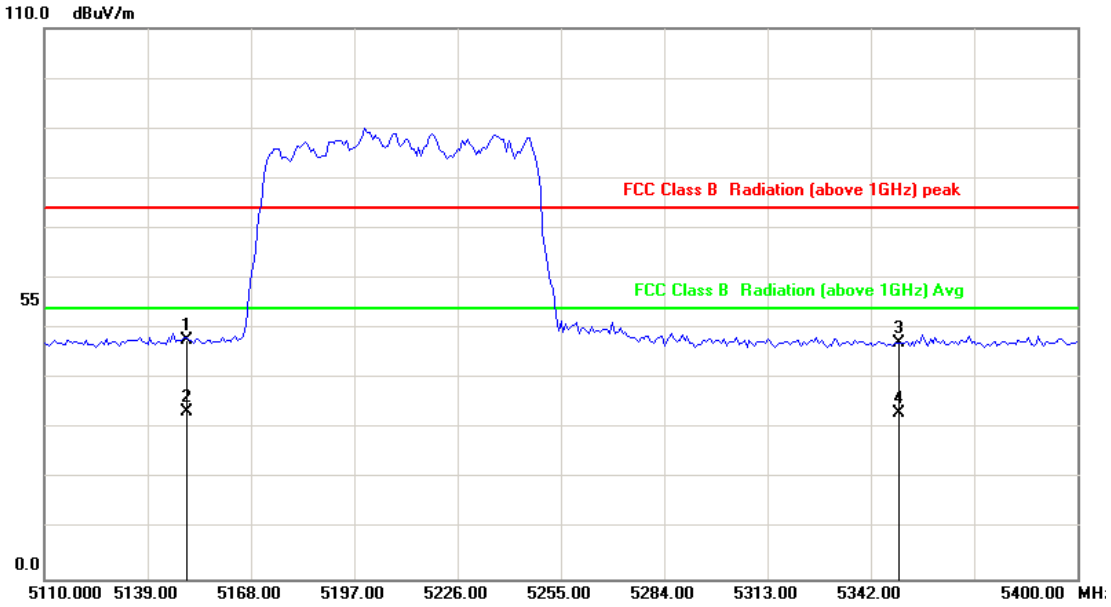


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5350.000	8.89	37.38	46.27	74.00	-27.73	peak
2	5350.000	8.89	24.31	33.20	54.00	-20.80	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 10, CH42 (for Ant A)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

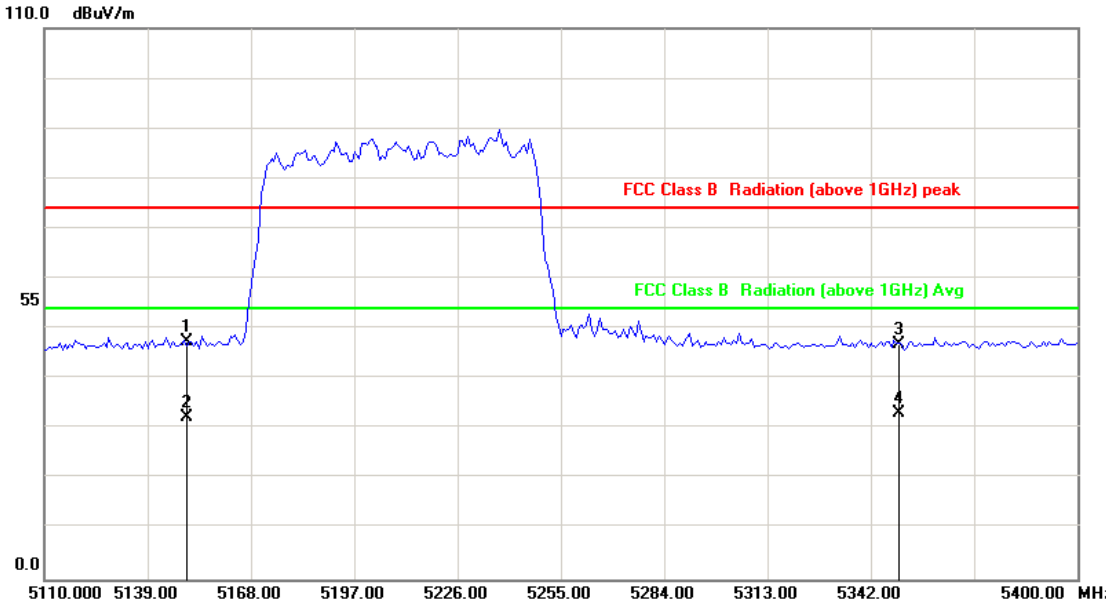


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5150.000	8.73	38.85	47.58	74.00	-26.42	peak
2	5150.000	8.73	24.67	33.40	54.00	-20.60	AVG
3	5350.000	8.89	38.22	47.11	74.00	-26.89	peak
4	5350.000	8.89	24.16	33.05	54.00	-20.95	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 10, CH42 (for Ant A)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

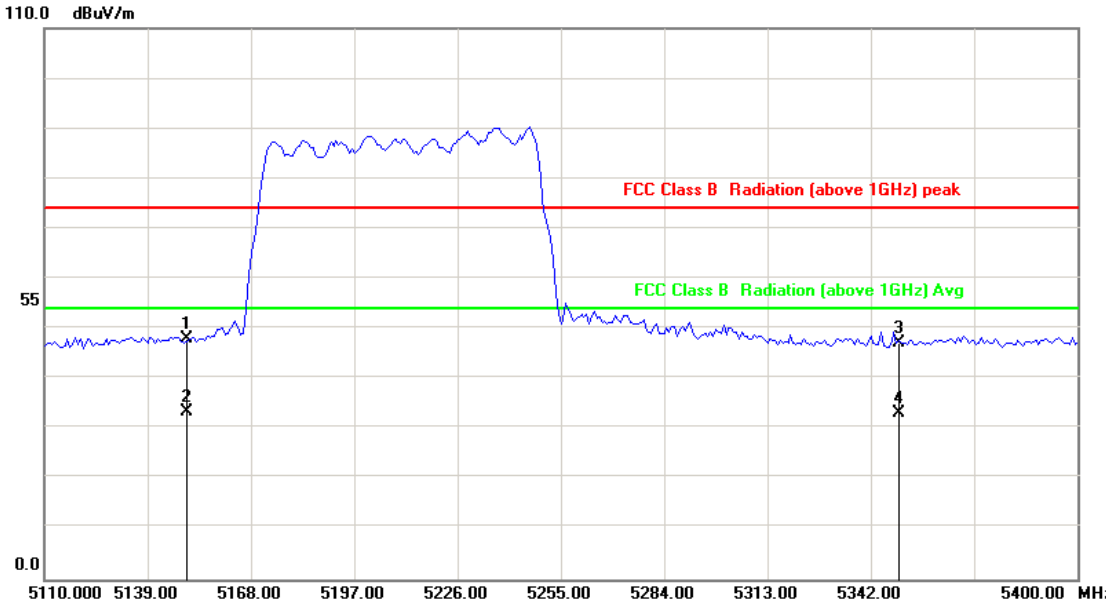


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5150.000	8.73	38.60	47.33	74.00	-26.67	peak
2	5150.000	8.73	23.67	32.40	54.00	-21.60	AVG
3	5350.000	8.89	38.08	46.97	74.00	-27.03	peak
4	5350.000	8.89	24.31	33.20	54.00	-20.80	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 10, CH42 (for Ant B)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

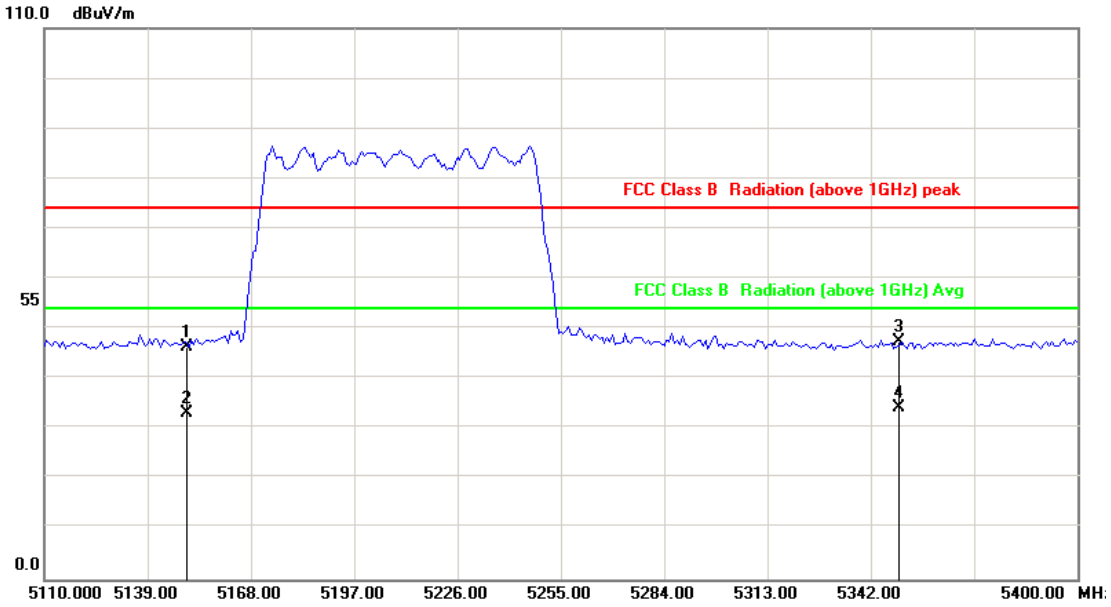


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5150.000	8.73	39.17	47.90	74.00	-26.10	peak
2	5150.000	8.73	24.67	33.40	54.00	-20.60	AVG
3	5350.000	8.89	38.39	47.28	74.00	-26.72	peak
4	5350.000	8.89	24.35	33.24	54.00	-20.76	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 10, CH42 (for Ant B)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

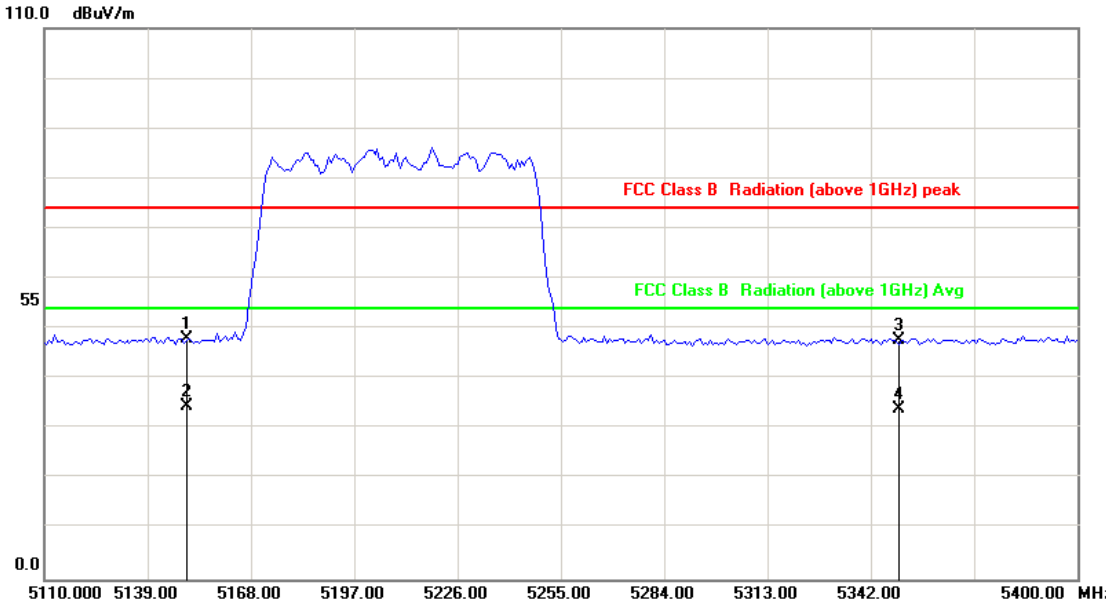


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5150.000	8.73	37.65	46.38	74.00	-27.62	peak
2	5150.000	8.73	24.31	33.04	54.00	-20.96	AVG
3	5350.000	8.89	38.45	47.34	74.00	-26.66	peak
4	5350.000	8.89	25.32	34.21	54.00	-19.79	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 10, CH42 (for Ant A+B)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %

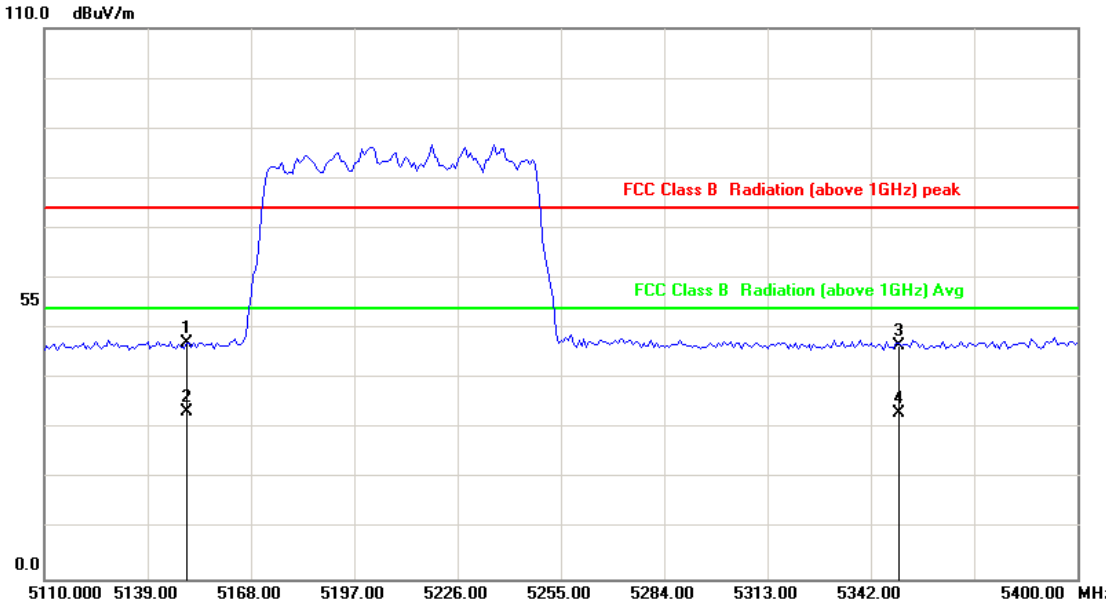


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5150.000	8.73	39.28	48.01	74.00	-25.99	peak
2	5150.000	8.73	25.67	34.40	54.00	-19.60	AVG
3	5350.000	8.89	38.91	47.80	74.00	-26.20	peak
4	5350.000	8.89	24.95	33.84	54.00	-20.16	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

Power	:	DC 3.3V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 11, CH42 (for Ant A+B)	Temperature	:	22 °C
Test date	:	Aug. 29, 2017	Humidity	:	56 %



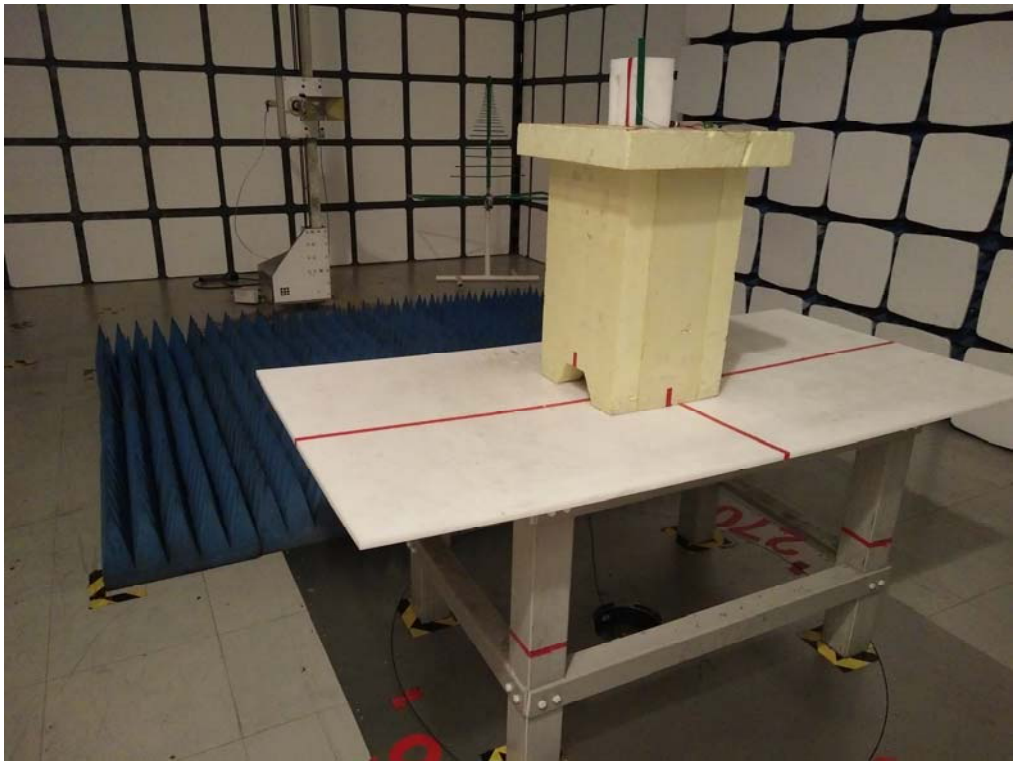
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	5150.000	8.73	38.51	47.24	74.00	-26.76	peak
2	5150.000	8.73	24.68	33.41	54.00	-20.59	AVG
3	5350.000	8.89	37.76	46.65	74.00	-27.35	peak
4	5350.000	8.89	24.31	33.20	54.00	-20.80	AVG

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10 Hz (detector sample mode) for Average detection at frequency above 1GHz.

6.9. Test Photographs (30MHz ~ 1GHz)

6.10.Test Photographs (1GHz ~ 40GHz)



7. On Time, Duty Cycle and Measurement methods

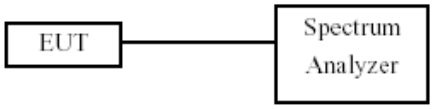
7.1. Test Limit

None; for reporting purposes only.

7.2. Test Procedure

KDB 789033 Zero-Span Spectrum Analyzer Method.

7.3. Test Setup Layout



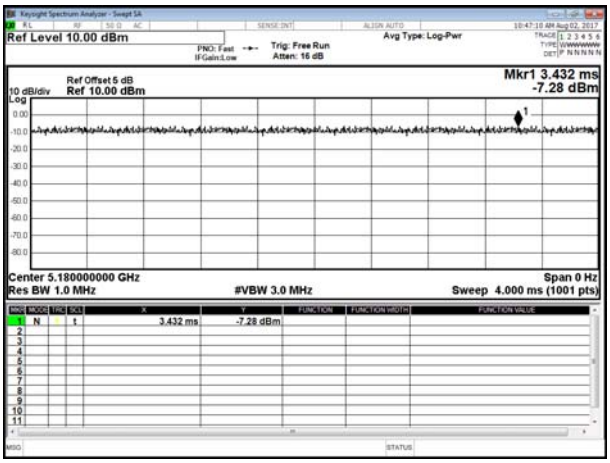
7.4. Test Result and Data

Temperature: 21°C Humidity: 58%

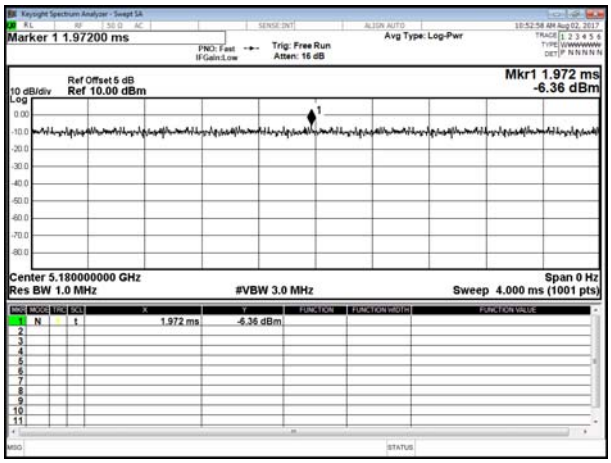
Test Date: Aug. 02, 2017

Modulation Type	On Time (msec)	Period Time (msec)	Duty Cycle (%)	1/T Minimum VBW(Hz)	Duty Cycle correction Factor (dB)
802.11a	100.00	100.00	100.00%	10.00	0.00
802.11n HT20	100.00	100.00	100.00%	10.00	0.00
802.11n HT40	100.00	100.00	100.00%	10.00	0.00
802.11ac VHT20	100.00	100.00	100.00%	10.00	0.00
802.11ac VHT40	100.00	100.00	100.00%	10.00	0.00
802.11ac VHT80	100.00	100.00	100.00%	10.00	0.00

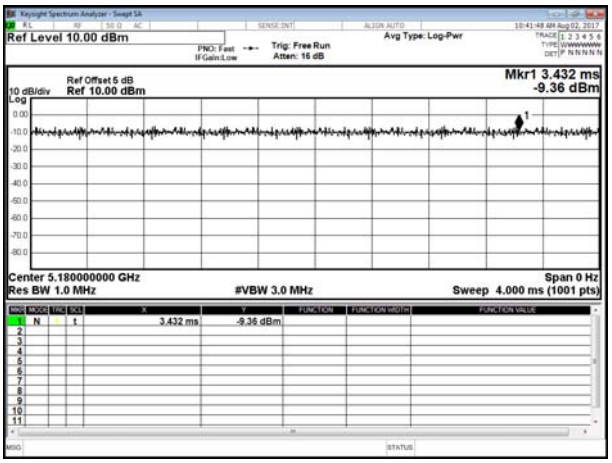
Modulation Standard: 802.11a Modulation Standard: 802.11ac, VHT20



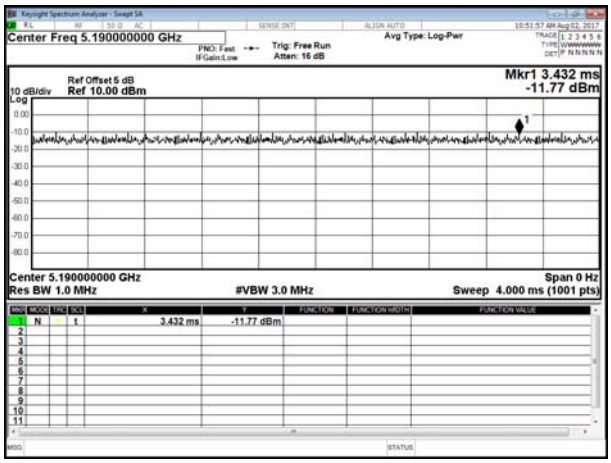
Modulation Standard: 802.11n, HT20



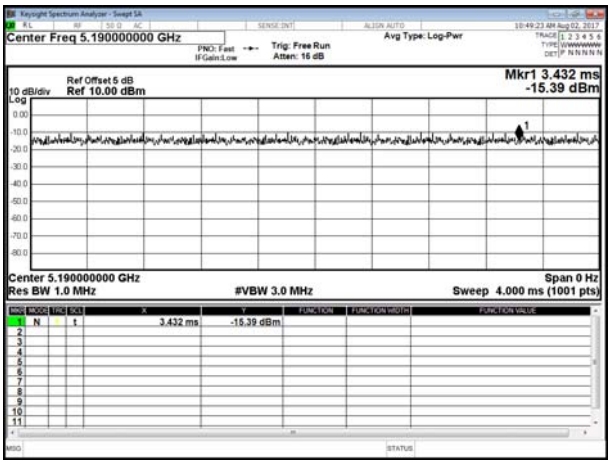
Modulation Standard: 802.11ac, VHT40

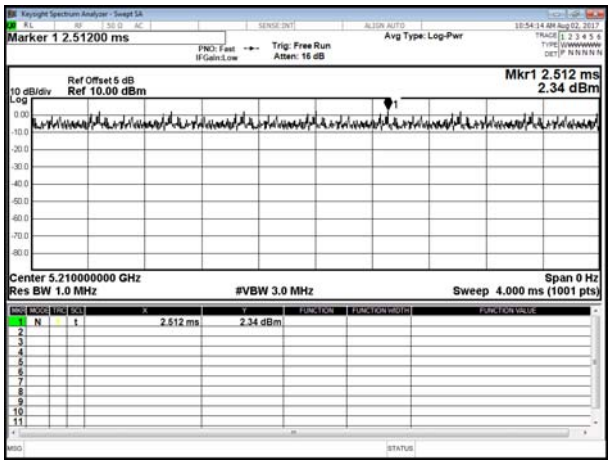


Modulation Standard: 802.11n, HT40



Modulation Standard: 802.11ac, VHT80





7.5. Measurement Methods

26 dB and 6dB Emission BW	KDB 789033 D02 v01, Section C
99% Occupied BW	KDB 789033 D02 v01, Section D
Conducted Output Power	KDB 789033 D02 v01, Section E.2.d and E.3.b (Method PM-G)
Power Spectral Density	KDB 789033 D02 v01, Section F
Unwanted emissions in restricted bands	KDB 789033 D02 v01, Sections G and H
Unwanted emissions in non-restricted bands	KDB 789033 D02 v01, Sections G and H

8. 6dB Bandwidth

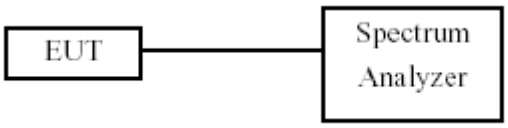
8.1. Test Limit

FCC §15.407
The minimum 6 dB bandwidth shall be at least 500 kHz.

8.2. Test Procedure

Reference to 789033 D02 General UNII Test Procedures New Rules v01: The transmitter output is connected to a spectrum analyzer with the RBW set to100KHz, the VBW >= 3 x RBW, peak detector and max hold.

8.3. Test Setup Layout



8.4. Test Result and Data

This item is not applicable, since the device of frequency range is 5150MHz-5250MHz.

9. 26dB Bandwidth

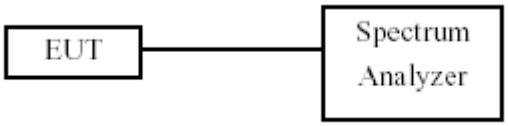
9.1. Test Limit

None; for reporting purposes only.

9.2. Test Procedure

Reference to 789033 D02 General UNII Test Procedures New Rules v01: The transmitter output is connected to a spectrum analyzer with the RBW = approximately 1% of the emission bandwidth, the VBW >= 3 x RBW, peak detector and max hold.

9.3. Test Setup Layout



9.4. Test Result and Data

Temperature: 21°C Humidity: 58%

Test Date: Aug. 02, 2017

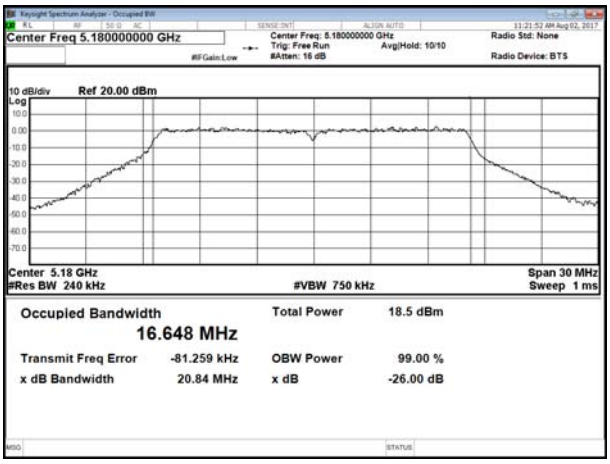
In the 5.2G Band

Modulation Type	Channel	Frequency (MHz)	26dB Bandwidth (MHz)	
			ANT A	ANT B
802.11a	36	5180	20.84	21.43
	44	5220	20.92	21.61
	48	5240	20.92	21.66
802.11ac VHT20	36	5180	21.61	22.53
	44	5220	21.66	22.39
	48	5240	21.61	22.45
802.11ac VHT40	38	5190	44.17	43.76
	46	5230	43.76	43.72
802.11ac VHT80	42	5210	83.03	84.54

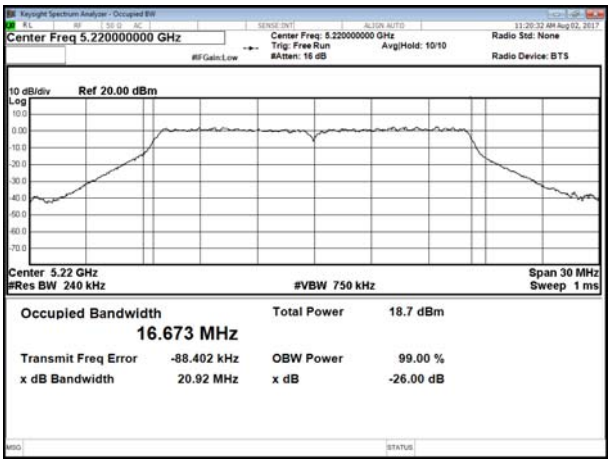
Antenna A

Modulation Standard: 802.11a (6Mbps)

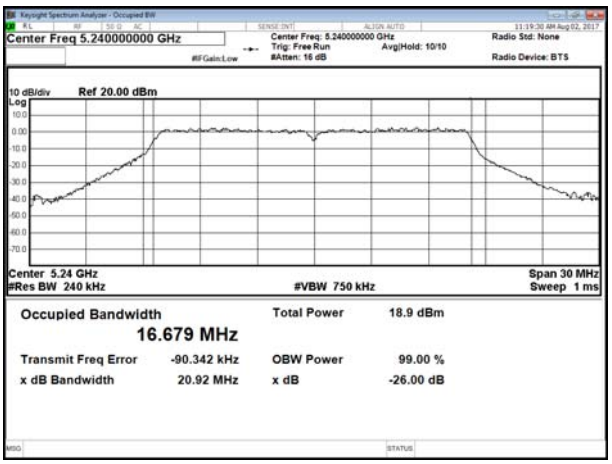
CH36



CH44

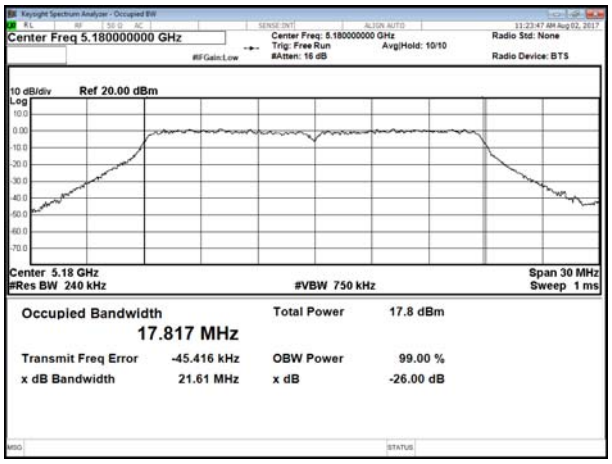


CH48

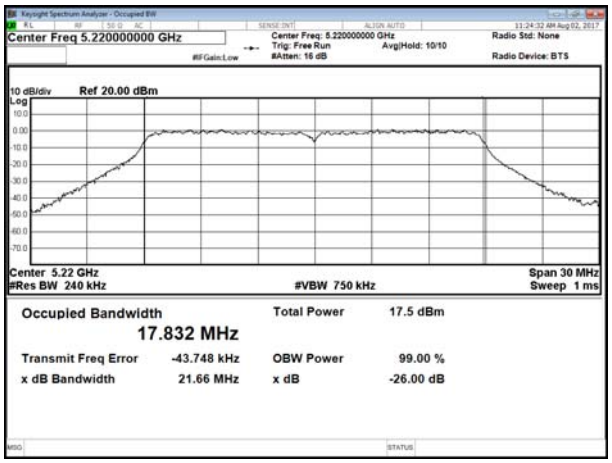


Modulation Standard: 802.11ac VHT20 (6.5Mbps)

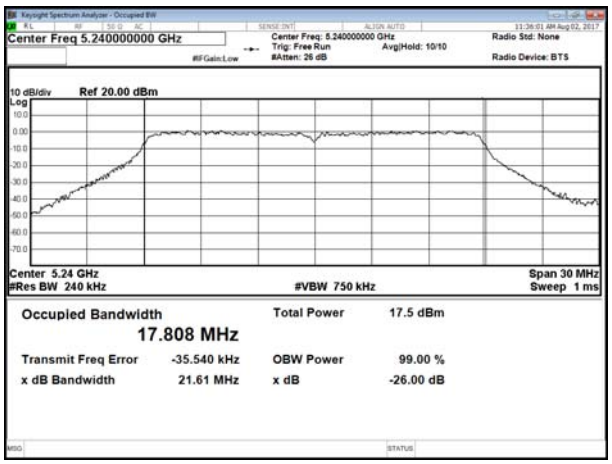
CH36



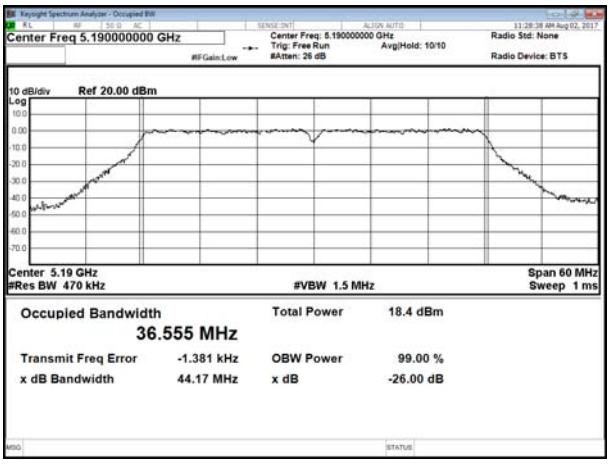
CH44



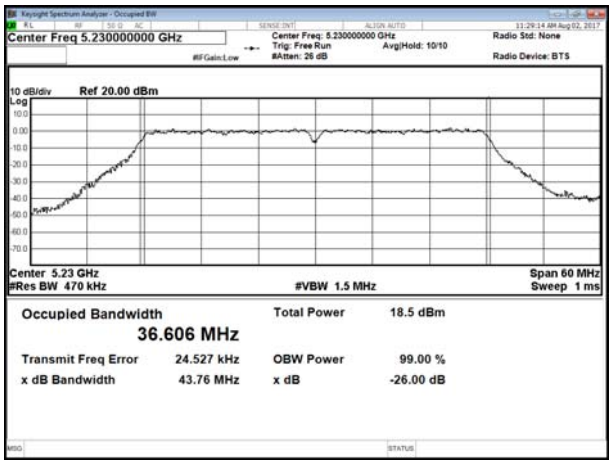
CH48



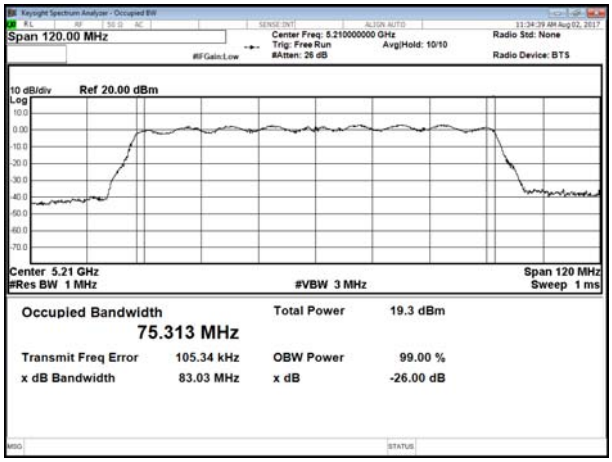
Antenna A
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH38



CH46



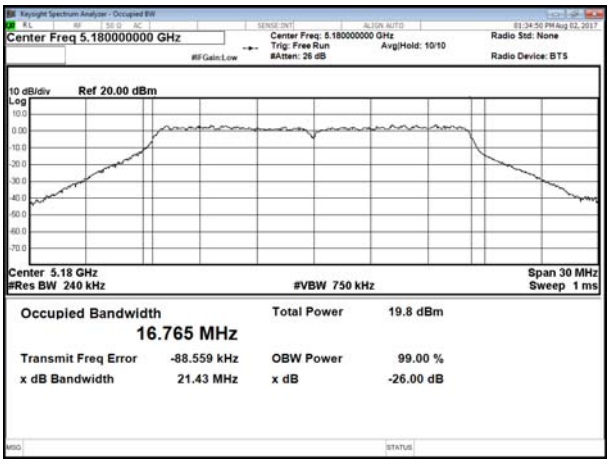
Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH42



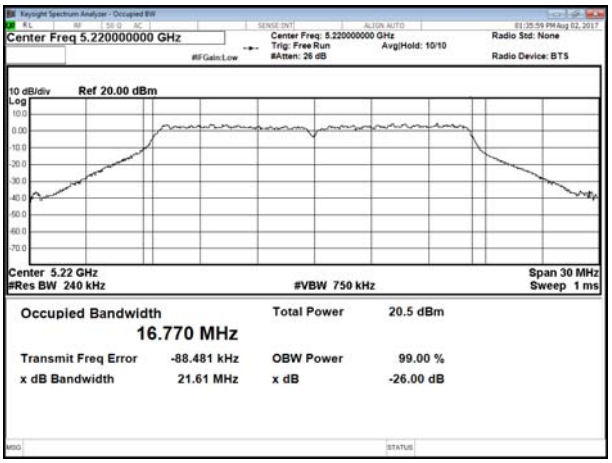
Antenna B

Modulation Standard: 802.11a (6Mbps)

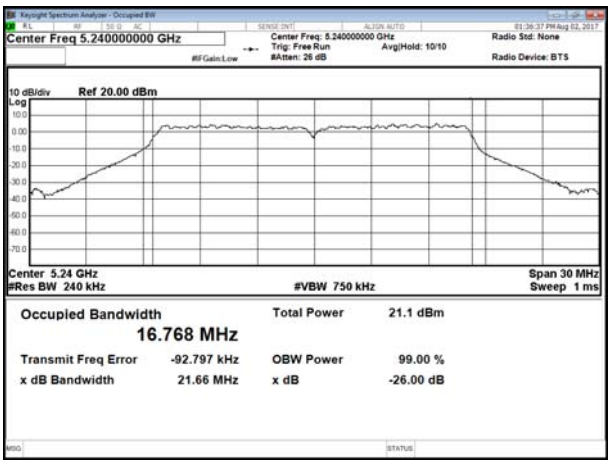
CH36



CH44

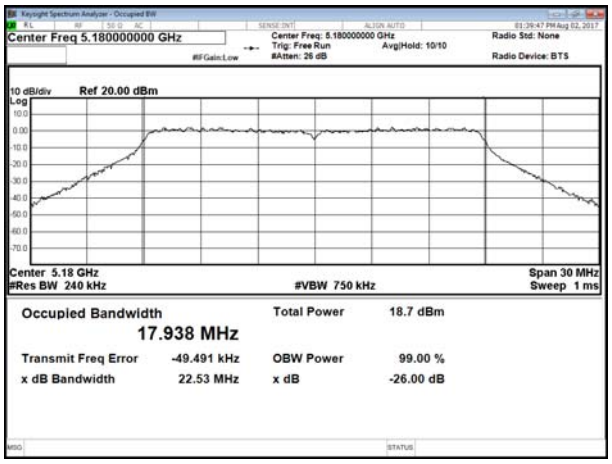


CH48

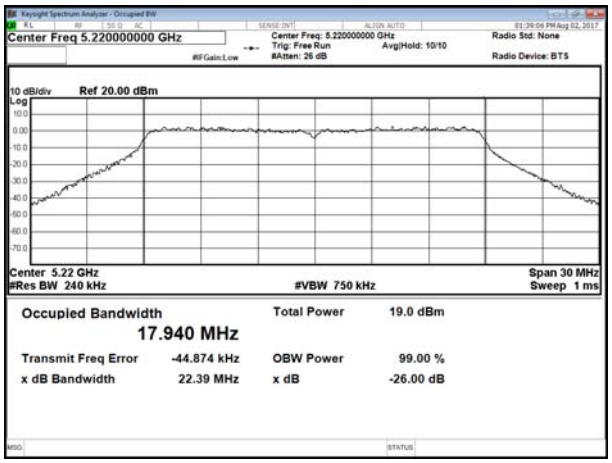


Modulation Standard: 802.11ac VHT20 (6.5Mbps)

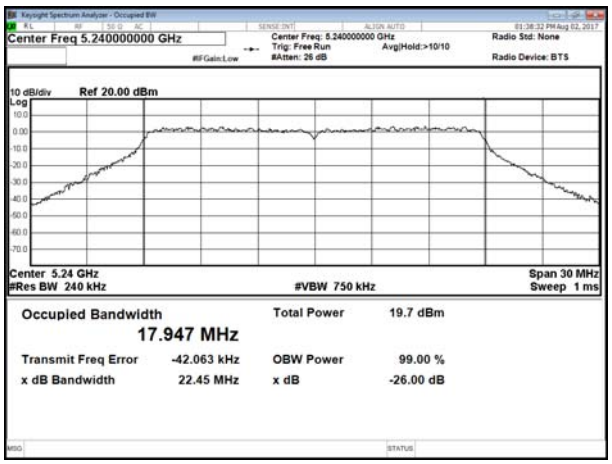
CH36



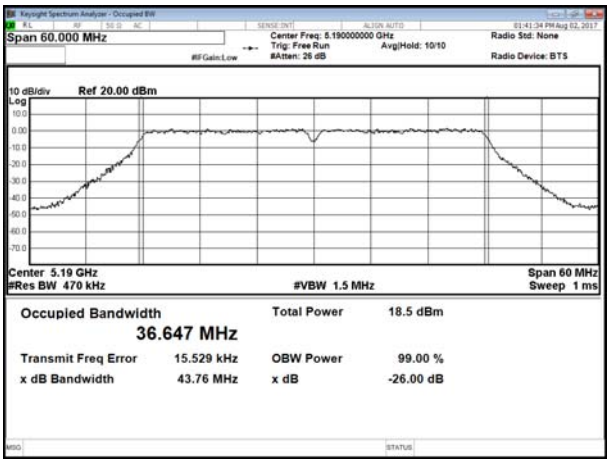
CH44



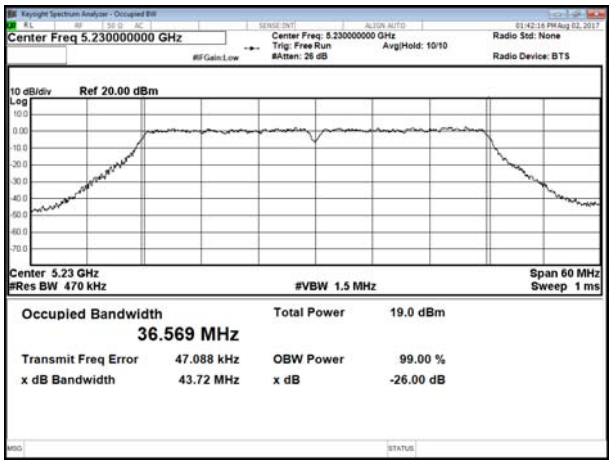
CH48



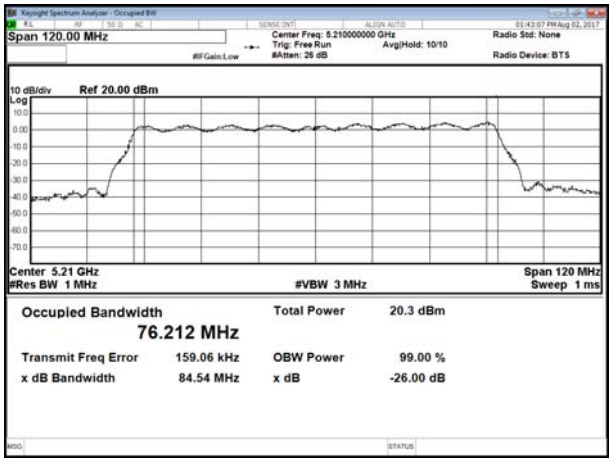
Antenna B
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH38



CH46



Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH42



10. Average Power

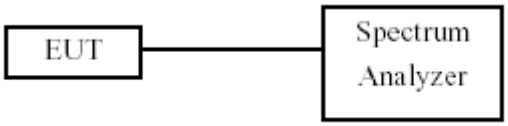
10.1. Test Limit

None; for reporting purposes only.

10.2. Test Procedure

The transmitter output is connected to a power meter.
The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

10.3. Test Setup Layout



10.4.Test Result and Data

Temperature: 21°C Humidity: 58%

Test Date: Jul. 28, 2017

In the 5.2G Band

SISO Mode

Modulation Type	Channel	Frequency (MHz)	Avg Power Output (dBm)		Avg Power Output (mW)		Power Limit (dBm)
			ANT A	ANT B	ANT A	ANT B	
802.11a	36	5180	11.97	11.96	15.74	15.70	24.00
	44	5220	12.39	12.19	17.34	16.56	24.00
	48	5240	12.50	12.43	17.78	17.50	24.00
802.11an HT20	36	5180	11.84	11.97	15.28	15.74	24.00
	44	5220	12.34	12.63	17.14	18.32	24.00
	48	5240	12.74	12.81	18.79	19.10	24.00
802.11an HT40	38	5190	12.59	11.98	18.16	15.78	24.00
	46	5230	12.64	12.60	18.37	18.20	24.00
802.11ac VHT20	36	5180	12.00	11.94	15.85	15.63	24.00
	44	5220	12.46	12.63	17.62	18.32	24.00
	48	5240	12.83	12.95	19.19	19.72	24.00
802.11ac VHT40	38	5190	12.60	11.96	18.20	15.70	24.00
	46	5230	12.68	12.55	18.54	17.99	24.00
802.11ac VHT80	42	5210	12.03	12.40	15.96	17.38	24.00

MIMO Mode

Modulation Type	Channel	Frequency (MHz)	Avg Power Output (dBm)		Total Power (dBm)	Total Power (mW)	Power Limit (dBm)
			ANT A	ANT B	A+B	A+B	
802.11an HT20	36	5180	8.56	9.02	11.81	15.17	24.00
	44	5220	9.25	9.51	12.39	17.34	24.00
	48	5240	9.30	9.56	12.44	17.54	24.00
802.11an HT40	38	5190	9.01	9.31	12.17	16.48	24.00
	46	5230	9.20	9.49	12.36	17.22	24.00
802.11ac VHT20	36	5180	8.59	9.10	11.86	15.35	24.00
	44	5220	9.27	9.57	12.43	17.50	24.00
	48	5240	9.35	9.63	12.50	17.78	24.00
802.11ac VHT40	38	5190	9.12	9.38	12.26	16.83	24.00
	46	5230	9.19	9.51	12.36	17.22	24.00
802.11ac VHT80	42	5210	8.75	9.14	11.96	15.70	24.00

11. Output Power and PPSD

11.1.Test Limit

Output Power:

Frequency Band			Limit
☒	5.15~5.25GHz		
	Operating Mode		
	☐	Outdoor access point	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30degrees as measured from the horizon must not exceed125 mW (21 dBm).
	☐	Indoor access point	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
	☐	Fixed point-to-point access points	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm). Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi.
	☒	Mobile and portable client devices	The maximum conducted output power over the frequency band of operation shall not exceed 250 mW (24dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Frequency Band		Limit
☐	5.25-5.35 GHz	The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
☐	5.470-5.725 GHz	
☐	5.725~5.85 GHz	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm). If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power.

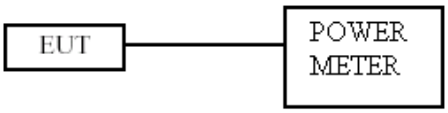
PSD:

Frequency Band			Limit
☒	5.15~5.25GHz		
	Operating Mode		
	☐	Outdoor access point	17 dBm/MHz
	☐	Indoor access point	17 dBm/MHz
	☐	Fixed point-to-point access points	17 dBm/MHz
	☒	Mobile and portable client devices	11 dBm/MHz
☐	5.25~5.35 GHz		11 dBm/MHz
☐	5.470-5.725 GHz		11 dBm/MHz
☐	5.725~5.85 GHz		30 dBm/500kHz

11.2.Test Procedure

As an alternative to FCC KDB-789033, the EUT maximum conducted output power was Measured with an average power meter employing a video bandwidth greater than 6dB BW of the emission under test. Maximum conducted output power was read directly from the meter across all data rates, and across three channels within each sub-band. Special care was used to make sure that the EUT was transmitting in continuous mode. This method exceeds the limitations of FCC KDB-789033, and provides more accurate measurements.
802.11an (BW≦40MHz) Maximum conducted output power using KDB 789033 section E)3)b) Method PM-G (Measurement using a gated RF average power meter)
Note: the power meter have a video bandwidth that is greater than or equal to the measurement bandwidth, (Anritsu/ MA2411B video bandwidth: 65MHz)
802.11ac (BW=80MHz) Maximum conducted output power using KDB 789033 section E)2)b) Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep).
When transmitted signals consist of two or more non-contiguous spectrum segments (e.g., 80+80 MHz mode) or when a single spectrum segment of a transmission crosses the boundary between two adjacent U-NII bands, KDB 644545 D01 section F) procedure is used for measurements.

11.3.Test Setup Layout



11.4. Test Result and Data

Temperature: 21°C Humidity: 58%

Test Date: Aug. 10, 2017

In the 5.2G Band

SISO Mode

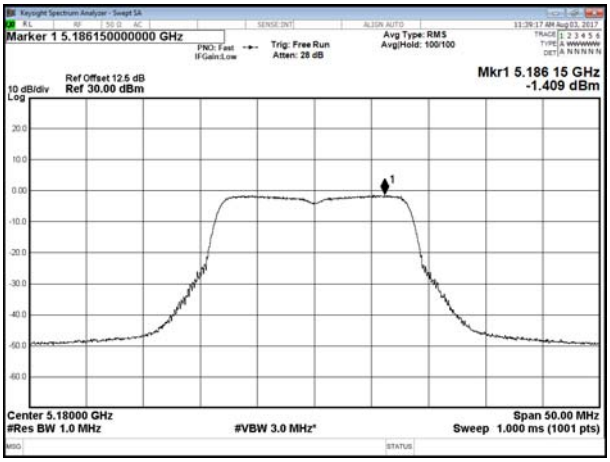
Modulation Type	CH	Freq. (MHz)	Meas PPSD (dBm/MHz)		Duty Cycle CF(dB)	Total Corr'd PPSD(dBm/MHz)		PPSD Limit (dBm/MHz)
			ANT A	ANT B		ANT A	ANT B	
802.11a	36	5180	-1.490	0.224	0.00	-1.490	0.224	11.00
	44	5220	-1.004	0.255	0.00	-1.004	0.255	11.00
	48	5240	-0.491	0.956	0.00	-0.491	0.956	11.00
802.11ac VHT20	36	5180	-2.288	-1.522	0.00	-2.288	-1.522	11.00
	44	5220	-2.768	-0.913	0.00	-2.768	-0.913	11.00
	48	5240	-2.197	-0.471	0.00	-2.197	-0.471	11.00
802.11ac VHT40	38	5190	-5.742	-5.360	0.00	-5.742	-5.360	11.00
	46	5230	-5.467	-5.142	0.00	-5.467	-5.142	11.00
802.11ac VHT80	42	5210	-8.898	-6.266	0.00	-8.898	-6.266	11.00

MIMO Mode

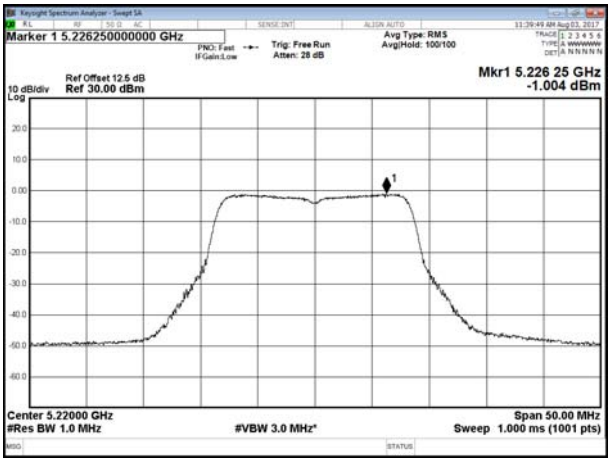
Modulation Type	CH	Freq. (MHz)	Meas PPSD (dBm/MHz)		Sum chain (dBm)	Duty Cycle CF(dB)	Total Corr'd PPSD (dBm/MHz)	PPSD Limit (dBm/MHz)
			ANT A	ANT B				
802.11ac VHT20	36	5180	-3.890	-3.198	-0.52	0.00	-0.52	11.00
	44	5220	-4.725	-2.241	-0.30	0.00	-0.30	11.00
	48	5240	-4.559	-1.682	0.12	0.00	0.12	11.00
802.11ac VHT40	38	5190	-6.170	-6.170	-3.16	0.00	-3.16	11.00
	46	5230	-6.205	-5.415	-2.78	0.00	-2.78	11.00
802.11ac VHT80	42	5210	-8.539	-9.009	-5.76	0.00	-5.76	11.00

5.2G Band
SISO Mode-Antenna A
Modulation Standard: 802.11a (6Mbps)

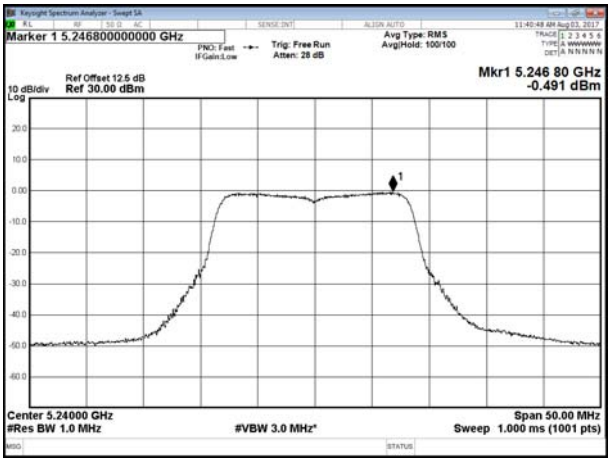
CH36



CH44

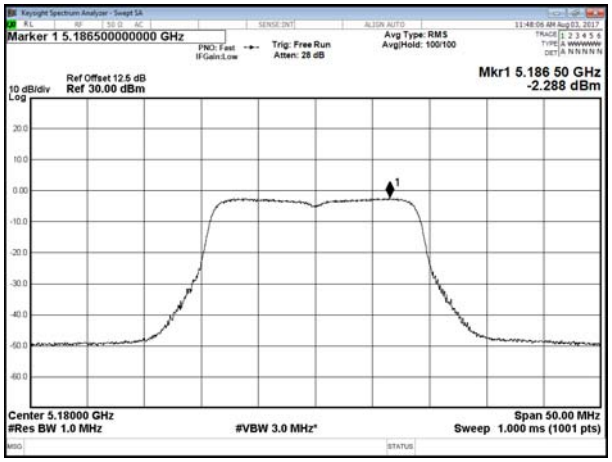


CH48



Modulation Standard: 802.11ac VHT20 (6.5Mbps)

CH36



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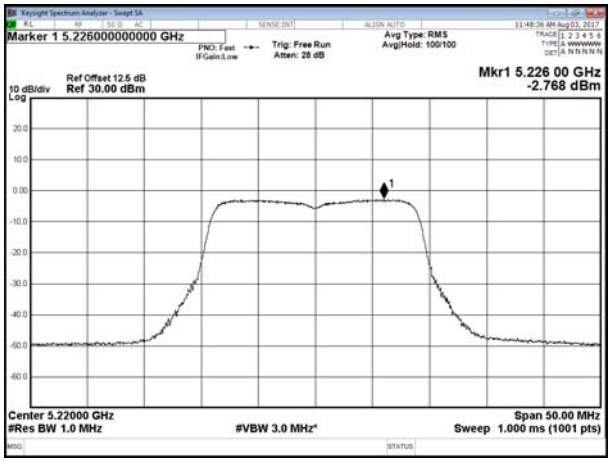

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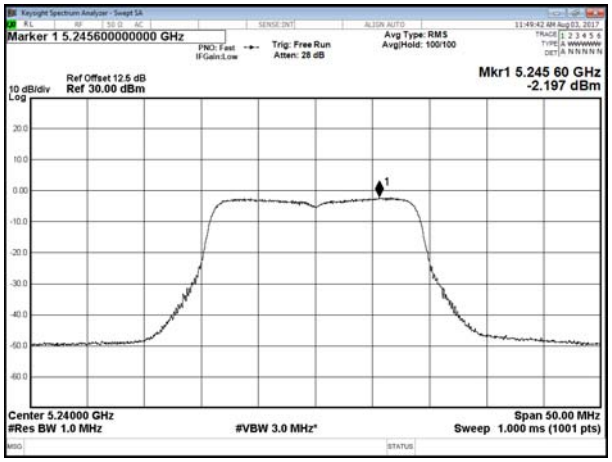
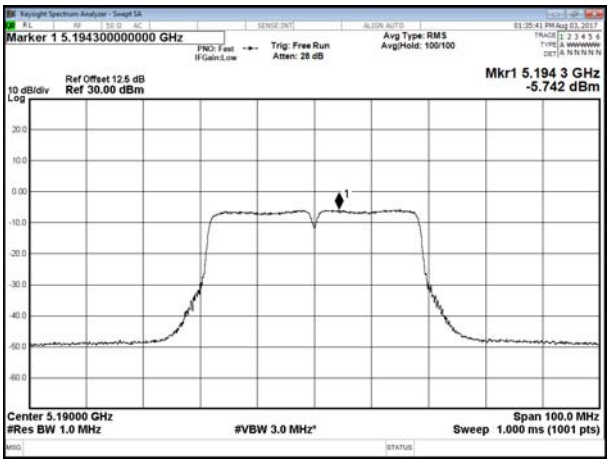


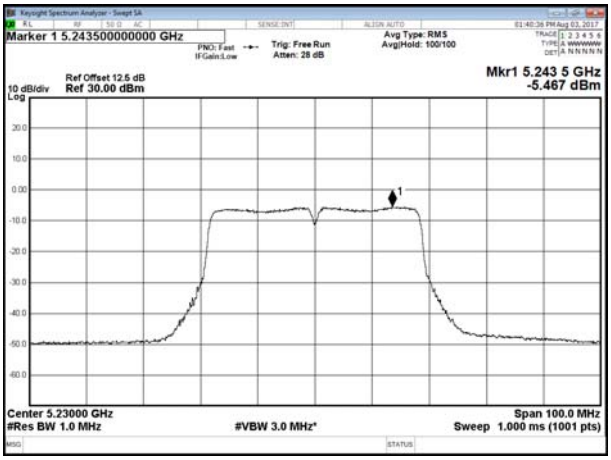
SISO Mode-Antenna A

Modulation Standard: 802.11ac VHT40 (13.5Mbps)

CH38

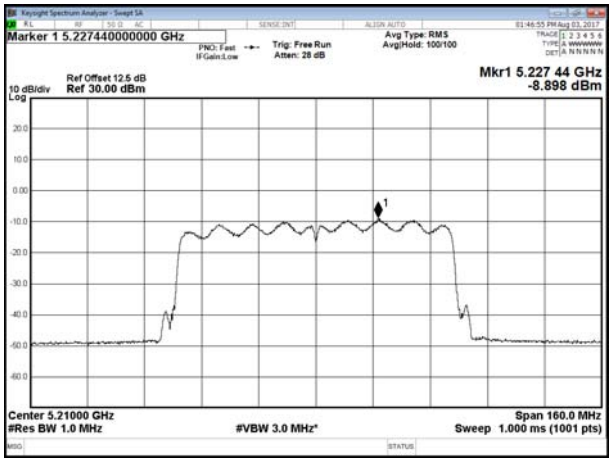


CH46



Modulation Standard: 802.11ac VHT80 (29.3Mbps)

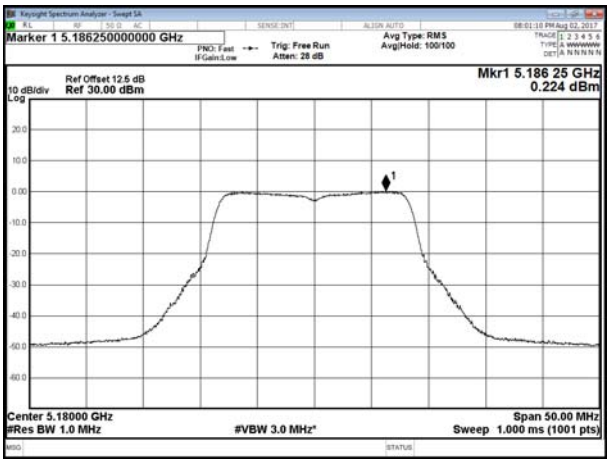
CH42



SISO Mode-Antenna B

Modulation Standard: 802.11a (6Mbps)

CH36



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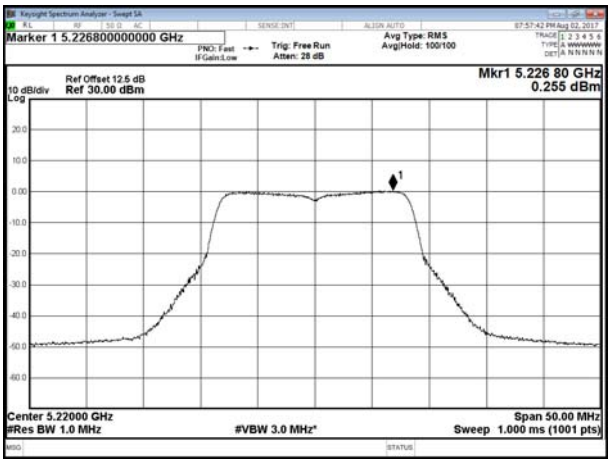

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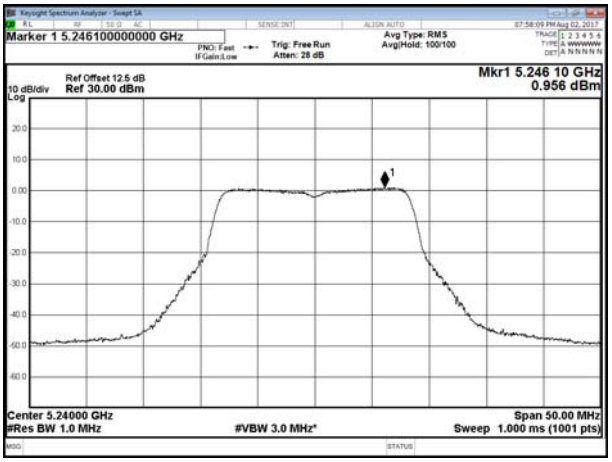
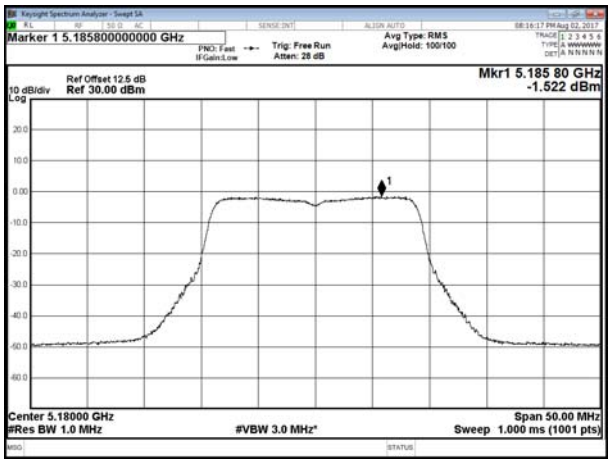


Modulation Standard: 802.11ac VHT20 (6.5Mbps)

CH36



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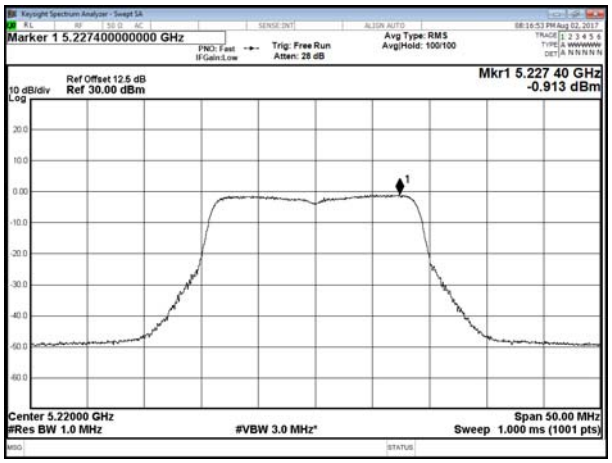

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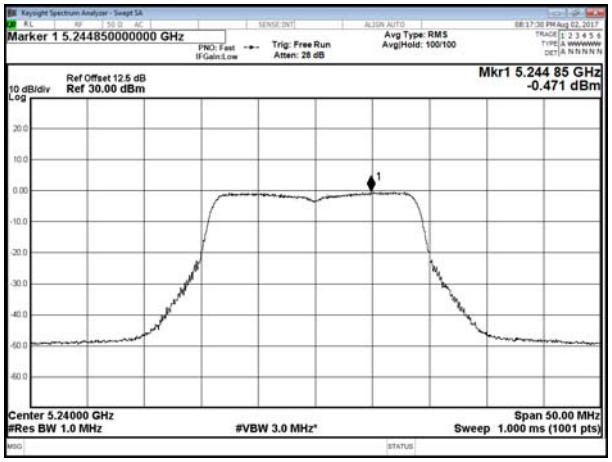
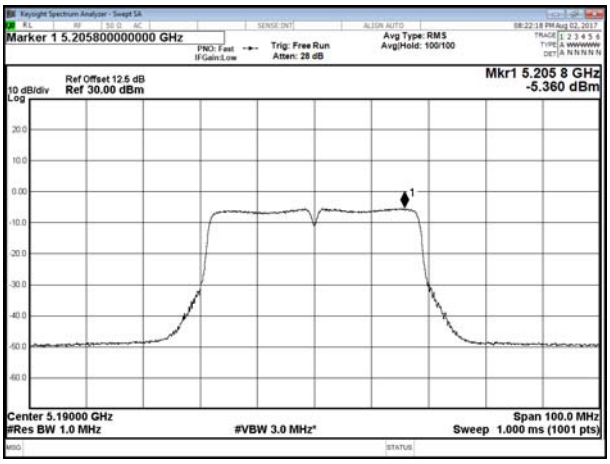
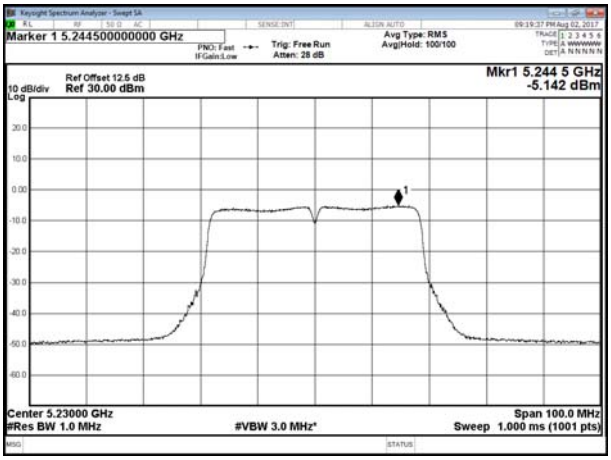


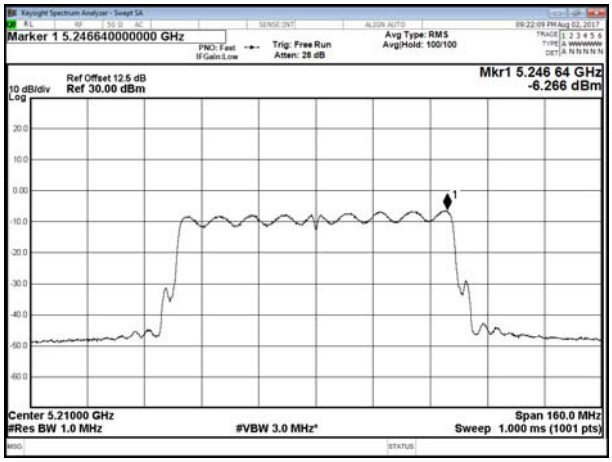
SISO Mode-Antenna B
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH38



CH46



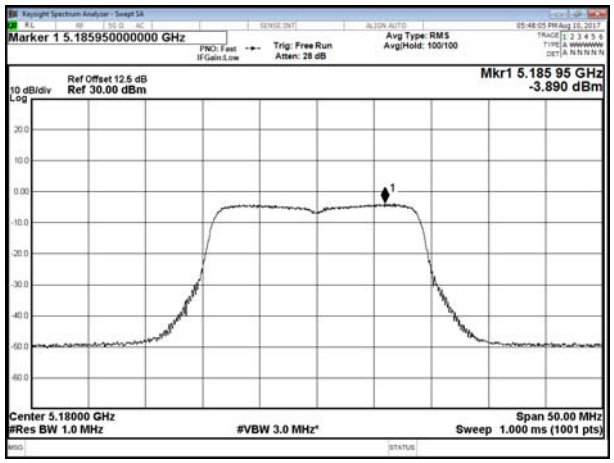
Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH42



MIMO Mode-Antenna A

Modulation Standard: 802.11ac VHT20 (13Mbps)

CH36



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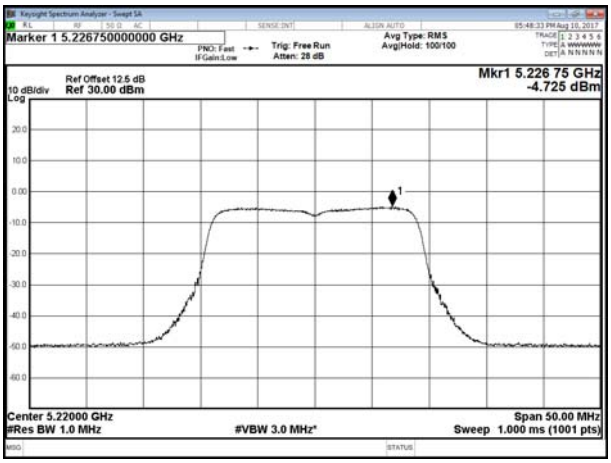

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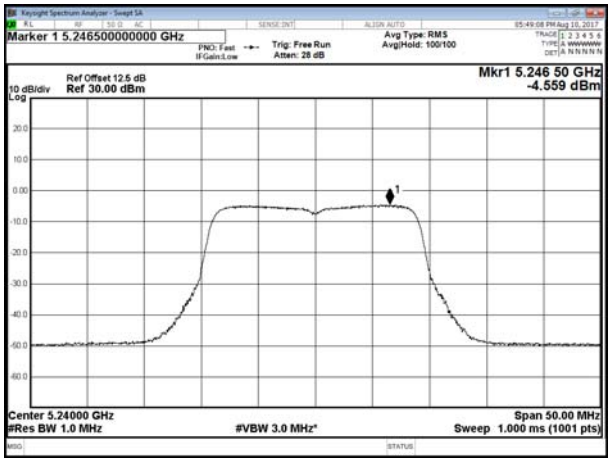
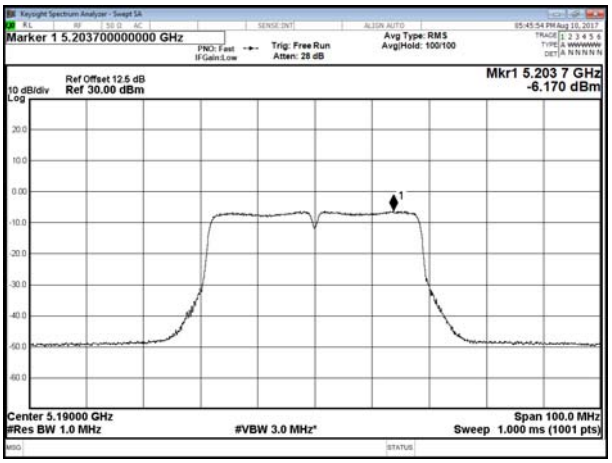


Modulation Standard: 802.11ac VHT40 (27Mbps)

CH38



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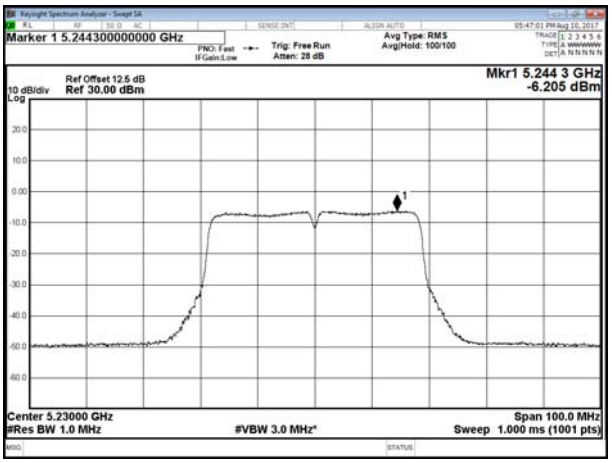
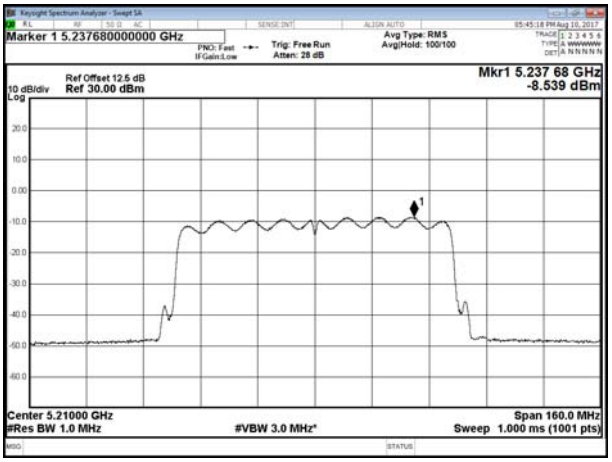


Modulation Standard: 802.11ac VHT80 (58.5Mbps)

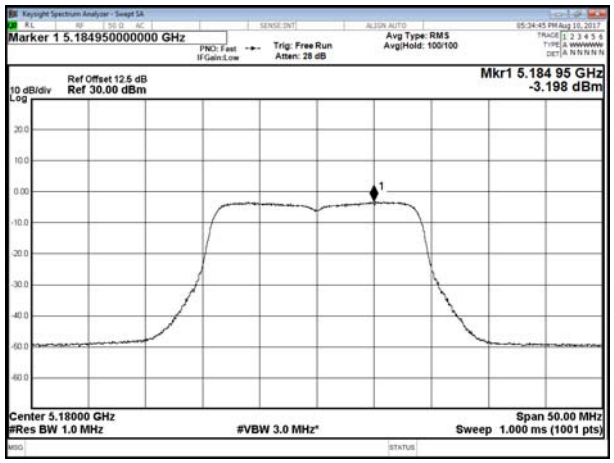
CH42



MIMO Mode-Antenna B

Modulation Standard: 802.11ac VHT20 (13Mbps)

CH36



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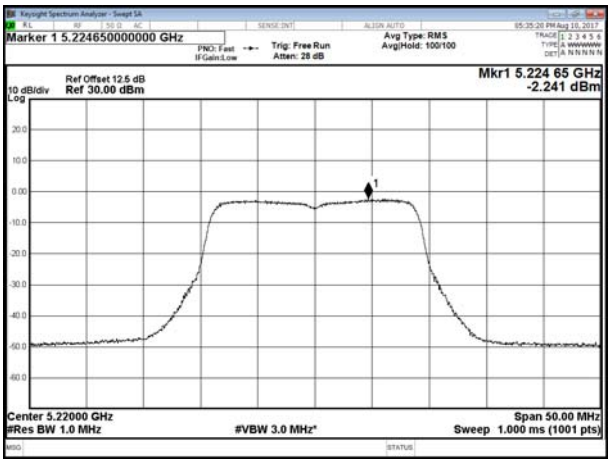

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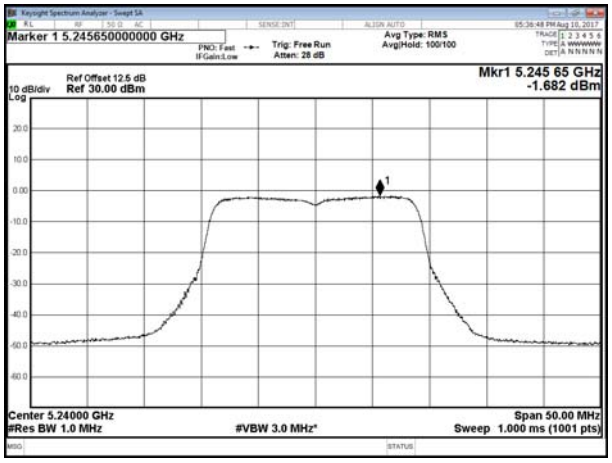
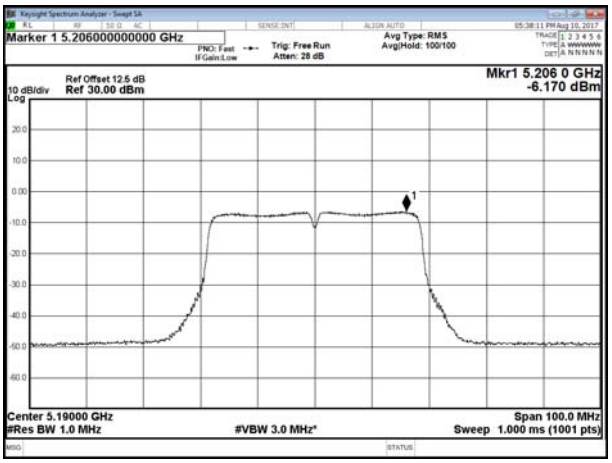


Modulation Standard: 802.11ac VHT40 (27Mbps)

CH38



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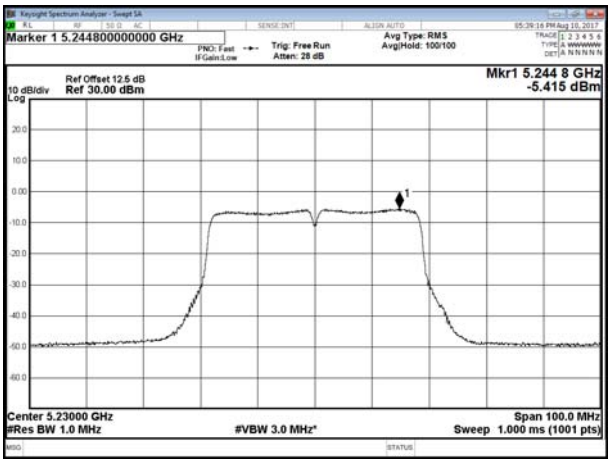
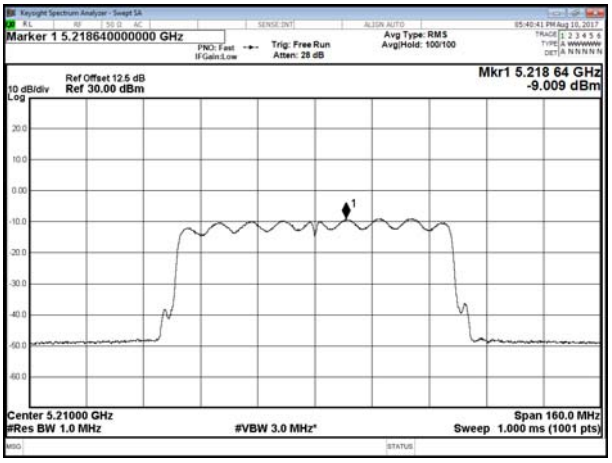


Modulation Standard: 802.11ac VHT80 (58.5Mbps)

CH42

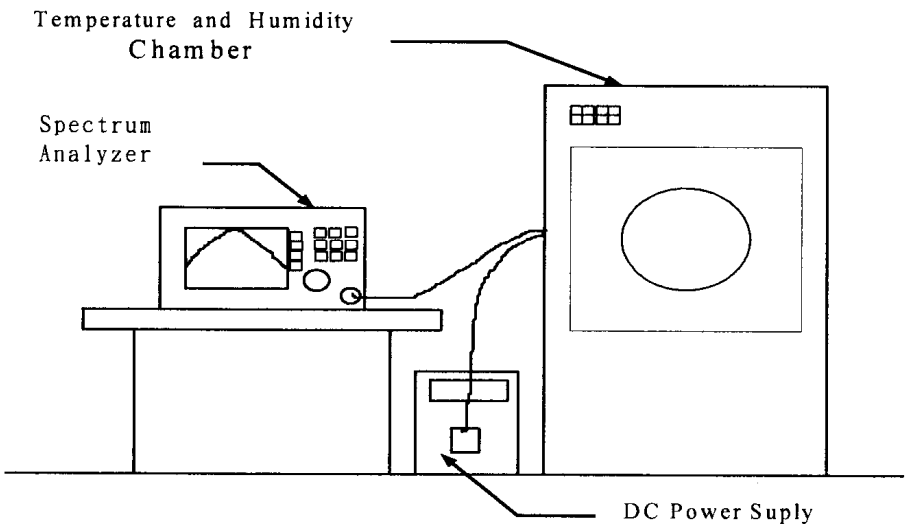


12. Frequency Stability

12.1.Test Procedure

1. The EUT was placed inside the Temperature and Humidity chamber.
2. The transmitter output was connected to spectrum analyzer.
3. Turn the EUT on and couple its output to a spectrum analyzer.
4. Turn the EUT off and set the chamber to the highest temperature specified.
5. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
6. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
7. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

12.2.Test Setup Layout



12.3.Test Result and Data

Temperature: 21°C Humidity: 58%

Test Date: Aug. 08, 2017

Operating frequency: 5240 MHz							
Temp	Power supply	2 minute		5 minute		10 minute	
(℃)	(V)	(MHz)	Pass/Fail	(MHz)	Pass/Fail	(MHz)	Pass/Fail
40	102	5239.9363	Pass	5239.9366	Pass	5239.9365	Pass
	120	5239.9366	Pass	5239.9367	Pass	5239.9370	Pass
	138	5239.9364	Pass	5239.9365	Pass	5239.9368	Pass
30	102	5239.9362	Pass	5239.9364	Pass	5239.9365	Pass
	120	5239.9360	Pass	5239.9364	Pass	5239.9368	Pass
	138	5239.9362	Pass	5239.9363	Pass	5239.9366	Pass
20	102	5239.9542	Pass	5239.9546	Pass	5239.9552	Pass
	120	5239.9546	Pass	5239.9546	Pass	5239.9550	Pass
	138	5239.9538	Pass	5239.9540	Pass	5239.9548	Pass
10	102	5239.9742	Pass	5239.9745	Pass	5239.9748	Pass
	120	5239.9740	Pass	5239.9742	Pass	5239.9746	Pass
	138	5239.9742	Pass	5239.9742	Pass	5239.9745	Pass
0	102	5239.9816	Pass	5239.9816	Pass	5239.9818	Pass
	120	5239.9816	Pass	5239.9818	Pass	5239.9820	Pass
	138	5239.9815	Pass	5239.9814	Pass	5239.9818	Pass

Limit:

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

13. Automatically Discontinue Transmission

13.1. Limit of Automatically Discontinue Transmission

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

13.2. Test Result of Automatically Discontinue Transmission

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

14. Dynamic Frequency Selection

This item is not applicable; since the device of frequency range is 5150-5250.