CFR 47 FCC PART 15 SUBPART C
ISED RSS-210 ISSUE 9

TEST REPORT

For

Soundbar Speaker

MODEL NUMBER: HTL3310/XX

FCC ID: 2AR2SHTL3310

REPORT NUMBER: 4788995020-5

ISSUE DATE: May 30, 2019

Prepared for

MMD Hong Kong Holding Limited
Units 1006-1007,10/F, C-Bons International Center 108 Wai Yip Street, Kwun Tong, Kowloon, Hong Kong

Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	05/30/2019	Initial Issue	

Summary of Test Results			
Clause	Test Items	FCC Rules	Test Results
1	20dB Bandwidth and 99% Occupied Bandwidth	CFR 47 FCC 15.249(d)	Pass
2	Radiated emission	CFR 47 FCC §15.249 (a)(d)(e) CFR 47 FCC §15.205 and §15.209	Pass
3	Antenna Requirement	FCC Part 15.203	Pass
4	Conducted Emission Test For AC Power Port	FCC 15.207	Pass

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1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name:	MMD Hong Kong Holding Limited
Address:	Units 1006-1007,10/F, C-Bons International Center 108 Wai Yip Street, Kwun Tong, Kowloon, Hong Kong

Manufacturer Information

Company Name:	MMD Hong Kong Holding Limited
Address:	Units 1006-1007,10/F, C-Bons International Center 108 Wai Yip Street, Kwun Tong, Kowloon, Hong Kong

EUT Description

EUT Name:	Soundbar Speaker
Model:	HTL3310/XX
Model difference:	XX=blank or /00 to /99, denoted for different country destination
Brand Name:	Philips
Sample Status:	Normal
Sample Received Date:	May 20, 2019
Date of Tested:	May 21~28, 2019

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 FCC PART 15 SUBPART C	PASS

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with KDB 414788 D01 Radiated Test Site v01r01, FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2013, ISED RSS-210 Issue 9 and RSS-GEN Issue 5.

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	**A2LA (Certificate No.: 4102.01)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA. **FCC (FCC Designation No.: CN1187)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Delcaration of Conformity (DoC) and Certification rules **IC(Company No.: 21320)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. The Company Number is 21320. **VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name: Chamber D, the VCCI registration No. is G-20019 and R-20004 Shielding Room B , the VCCI registration No. is C-20012 and T-20011

Note:

1. All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China
2. The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.
3. For below 30MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30MHz had been correlated to measurements performed on an OFS.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Item	Uncertainty
Conduction emission	3.62dB
Radiation Emission test(include Fundamental emission) (9KHz-30MHz)	2.2dB
Radiation Emission test(include Fundamental emission) (30MHz-1GHz)	4.00dB
Radiation Emission test (1GHz to 26GHz)(include Fundamental emission)	5.78dB (1GHz-18Gz)
	5.23dB (18GHz-26Gz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name	Soundbar Speaker			
Model	HTL3310/XX			
Model difference	XX=blank or /00 to /99, denoted for different country destination			
Product Description	Operation Frequency		2404.5 MHz ~ 2479.5 MHz	
	Modulation Type		FSK	
Supply Voltage	☒AC mains State	AC 120V,60Hz		
	☐DC State	☐Internal Power Supply		
		☐External Power Supply or AC/DC adapter	Rate Input:	
			Rate Output:	
		☐Battery		

5.2. MAXIMUM OUTPUT POWER

Frequency Range (MHz)	Number of Transmit Chains (NTX)	Frequency (MHz)	Channel Number	Max Power (dBµV/m)
2404.5 ~ 2479.5	1	2479.5	16	85.37

5.3. CHANNEL LIST

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2404.5	5	2424.5	9	2444.5	13	2464.5
2	2409.5	6	2429.5	10	2449.5	14	2469.5
3	2414.5	7	2434.5	11	2454.5	15	2474.5
4	2419.5	8	2439.5	12	2459.5	16	2479.5

5.4. DESCRIPTION OF AVAILABLE ANTENNAS

Ant.	Frequency (MHz)	Antenna Type	Antenna Gain (dBi)
1	2404.5 ~ 2479.5	Integral antenna	0

Test Mode	Transmit and Receive Mode	Description
FSK	☒1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.

5.5. TEST CHANNEL CONFIGURATION

Test Mode	Test Channel	Frequency
FSK	CH 1, CH 9, CH 16	2404.5MHz, 2444.5MHz, 2479.5MHz

5.6. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter under 2402 ~ 2483.5MHz Band				
Test Software		/		
Modulation Type	Transmit Antenna Number	Test Channel		
		CH 1	CH 9	CH 16
FSK	1	Default	Default	Default

5.7. TEST ENVIRONMENT

Environment Parameter	Selected Values During Tests	
Relative Humidity	55 ~ 65%	
Atmospheric Pressure:	1025Pa	
Temperature	TN	22 ~ 28°C
Voltage :	VL	N/A
	VN	AC 120V,60Hz
	VH	N/A

Note: VL= Lower Extreme Test Voltage
VN= Nominal Voltage
VH= Upper Extreme Test Voltage
TN= Normal Temperature

5.8. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	P/N
1	/	/	/	/

I/O CABLES

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	/	/	/	/	/

ACCESSORY

Item	Accessory	Brand Name	Model Name	Description
1	Power Line	/	/	/

TEST SETUP

The EUT have the engineering mode inside.

SETUP DIAGRAM FOR TEST

EUT

5.9. MEASURING INSTRUMENT AND SOFTWARE USED

Conducted Emissions						
Instrument						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☑	EMI Test Receiver	R&S	ESR3	101961	Dec.10,2018	Dec.10,2019
☑	Two-Line V-Network	R&S	ENV216	101983	Dec.10,2018	Dec.10,2019
☑	Artificial Mains Networks	Schwarzbeck	NSLK 8126	8126465	Dec.10,2018	Dec.10,2019
Software						
Used	Description		Manufacturer	Name	Version	
☑	Test Software for Conducted disturbance		Farad	EZ-EMC	Ver. UL-3A1	
Radiated Emissions						
Instrument						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☑	MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Dec.10,2018	Dec.10,2019
☑	Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	Sep.17,2018	Sep.17,2021
☑	Preamplifier	HP	8447D	2944A09099	Dec.10,2018	Dec.10,2019
☑	EMI Measurement Receiver	R&S	ESR26	101377	Dec.10,2018	Dec.10,2019
☑	Horn Antenna	TDK	HRN-0118	130939	Sep.17,2018	Sep.17,2021
☑	High Gain Horn Antenna	Schwarzbeck	BBHA-9170	691	Aug.18,2018	Aug.18,2021
☑	Preamplifier	TDK	PA-02-0118	TRS-305-00066	Dec.10,2018	Dec.10,2019
☑	Preamplifier	TDK	PA-02-2	TRS-307-00003	Dec.10,2018	Dec.10,2019
☑	Loop antenna	Schwarzbeck	1519B	00008	Jan.01,2019	Jan.01, 2022
Software						
Used	Description		Manufacturer	Name	Version	
☑	Test Software for Radiated disturbance		Farad	EZ-EMC	Ver. UL-3A1	
Other instruments						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☑	Spectrum Analyzer	Keysight	N9030A	MY55410512	Dec.10,2018	Dec.10,2019
☑	Band Reject Filter	Wainwright	WRCJV8-2350-2400-2483.5-2533.5-40SS	4	Dec.10,2018	Dec.10,2019
☑	High Pass Filter	Wi	WHKX10-2700-3000-18000-40SS	23	Dec.10,2018	Dec.10,2019

6. ANTENNA PORT TEST RESULTS

6.1. 20 dB BANDWIDTH AND 99% OCCUPIED BANDWIDTH

LIMITS

CFR 47 FCC Part15 (15.249) , Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.249(d)	20dB Bandwidth	for reporting purposes only	2400-2483.5
C63.10 Clause 6.9.3	99% Occupied Bandwidth	For reporting purposes only.	2400-2483.5

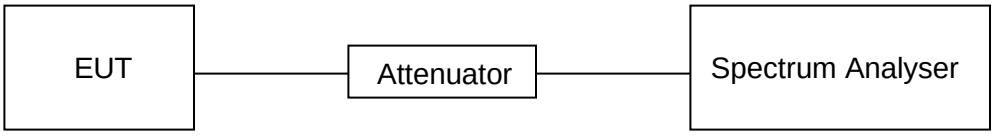
TEST PROCEDURE

Connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	1% to 5% of the occupied bandwidth
VBW	approximately 3×RBW
Trace	Max hold
Sweep	Auto couple

Allow the trace to stabilize and measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 20 dB and 99% relative to the maximum level measured in the fundamental emission.

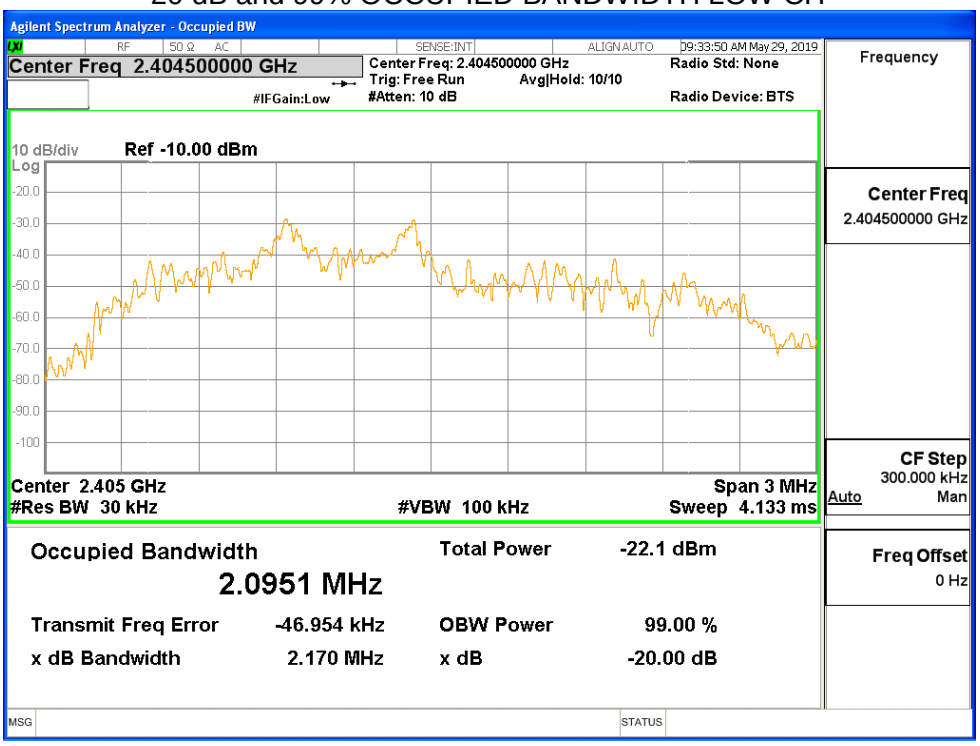
TEST SETUP



RESULTS

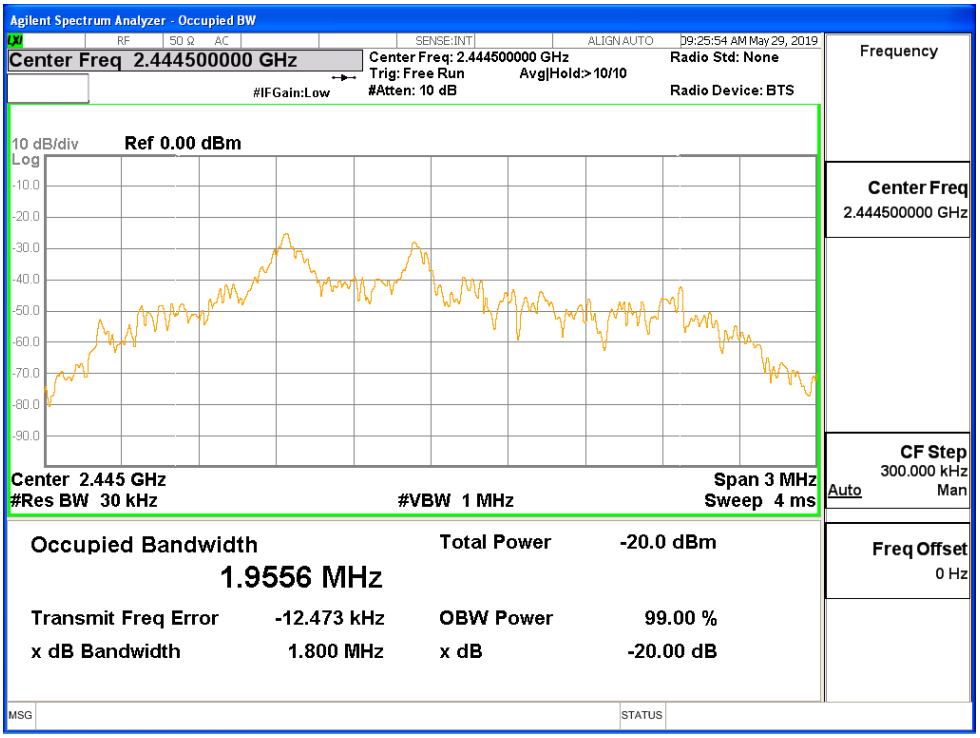
Frequency (MHz)	20dB bandwidth (MHz)	99% bandwidth (MHz)	Result
2404.5	2.170	2.0951	PASS

20 dB and 99% OCCUPIED BANDWIDTH LOW CH



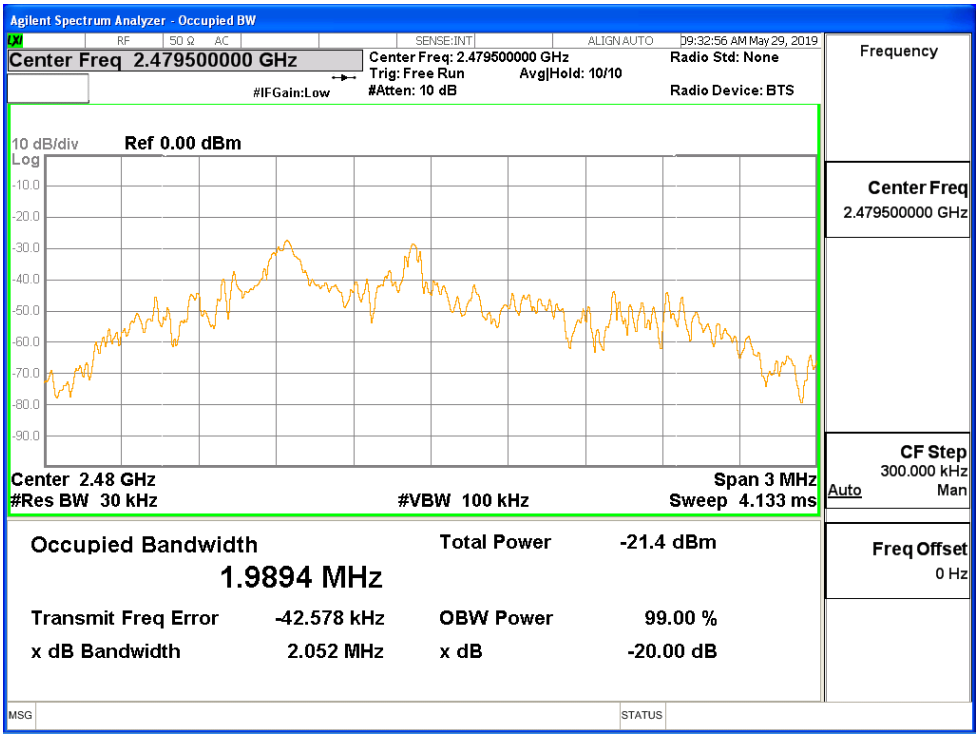
Frequency (MHz)	20dB bandwidth (MHz)	99% bandwidth (MHz)	Result
2444.5	1.800	1.9556	PASS

20 dB and 99% OCCUPIED BANDWIDTH MID CH



Frequency (MHz)	20dB bandwidth (MHz)	99% bandwidth (MHz)	Result
2479.5	2.052	1.9894	PASS

20 dB and 99% OCCUPIED BANDWIDTH HIG CH



7. RADIATED TEST RESULTS

7.1. LIMITS AND PROCEDURE

LIMITS

CFR 47 FCC §15.205 and §15.209

CFR 47 FCC §15.249 (a)(d)(e)

The field strength of emissions from intentional radiators operated within these frequency bands			
Frequency (MHz)	Field strength of Fundamental	Field strength of Harmonics	Distance (m)
902 - 928	50 mV/m (94dBuV/m)	500 uV/m (54dBuV/m)	3
2400 – 2483.5	50 mV/m (94dBuV/m)	500 uV/m (54dBuV/m)	3
5725 – 5875	50 mV/m (94dBuV/m)	500 uV/m (54dBuV/m)	3

Emissions radiated outside of the specified frequency bands above 30MHz			
Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m	
		Quasi-Peak	
30 - 88	100	40	
88 - 216	150	43.5	
216 - 960	200	46	
Above 960	500	54	
Above 1000	500	Peak	Average
		74	54

Emissions radiated outside of the specified frequency bands below 30MHz		
Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30

FCC Restricted bands of operation:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	([2])
13.36-13.41			

Note: [1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
[2]Above 38.6c

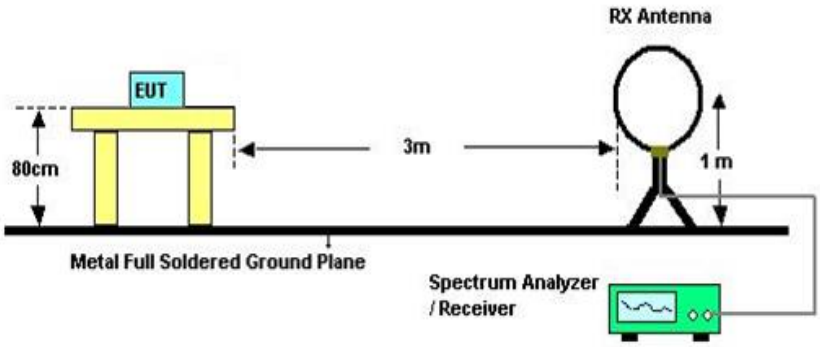
IC Restricted bands please refer to ISED RSS-GEN Clause 8.10

Table 7 – Restricted frequency bands[Note 1]		
MHz	**MHz**	**GHz**
0.090 - 0.110	149.9 - 150.05	9.0 - 9.2
0.495 - 0.505	156.52475 - 156.52525	9.3 - 9.5
2.1735 - 2.1905	156.7 - 156.9	10.6 - 12.7
3.020 - 3.026	162.0125 - 167.17	13.25 - 13.4
4.125 - 4.128	167.72 - 173.2	14.47 - 14.5
4.17725 - 4.17775	240 – 285	15.35 - 16.2
4.20725 - 4.20775	322 - 335.4	17.7 - 21.4
5.677 - 5.683	399.9 - 410	22.01 - 23.12
6.215 - 6.218	608 - 614	23.6 - 24.0
6.26775 - 6.26825	960 - 1427	31.2 - 31.8
6.31175 - 6.31225	1435 - 1626.5	36.43 - 36.5
8.291 - 8.294	1645.5 - 1646.5	Above 38.6
8.362 - 8.366	1660 - 1710	
8.37625 - 8.38675	1718.8 - 1722.2	
8.41425 - 8.41475	2200 - 2300	
12.29 - 12.293	2310 - 2390	
12.51975 - 12.52025	2483.5 - 2500	
12.57675 - 12.57725	2655 - 2900	
13.36 - 13.41	3260 – 3267	
16.42 - 16.423	3332 - 3339	
16.69475 - 16.69525	3345.8 - 3358	
16.80425 - 16.80475	3500 - 4400	
25.5 - 25.67	4500 - 5150	
37.5 - 38.25	5350 - 5460	
73 - 74.6	7250 - 7750	
74.8 - 75.2	8025 – 8500	
108 – 138		

Note 1: Certain frequency bands listed in table 7 and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.

TEST SETUP AND PROCEDURE

Below 30MHz



The setting of the spectrum analyser

RBW	200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz)
VBW	200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz)
Sweep	Auto
Detector	Peak/QP/ Average
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013

2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80cm meter above ground.

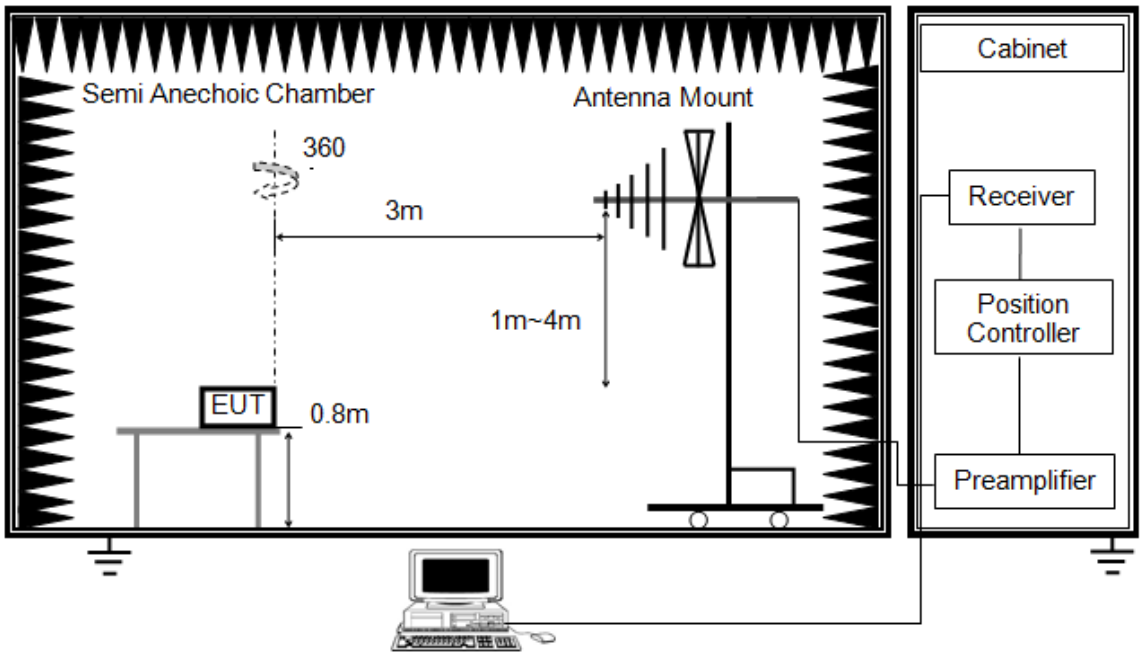
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

6. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30m open field site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

Below 1G



The setting of the spectrum analyser

RBW	120K
VBW	300K
Sweep	Auto
Detector	Peak/QP
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013.

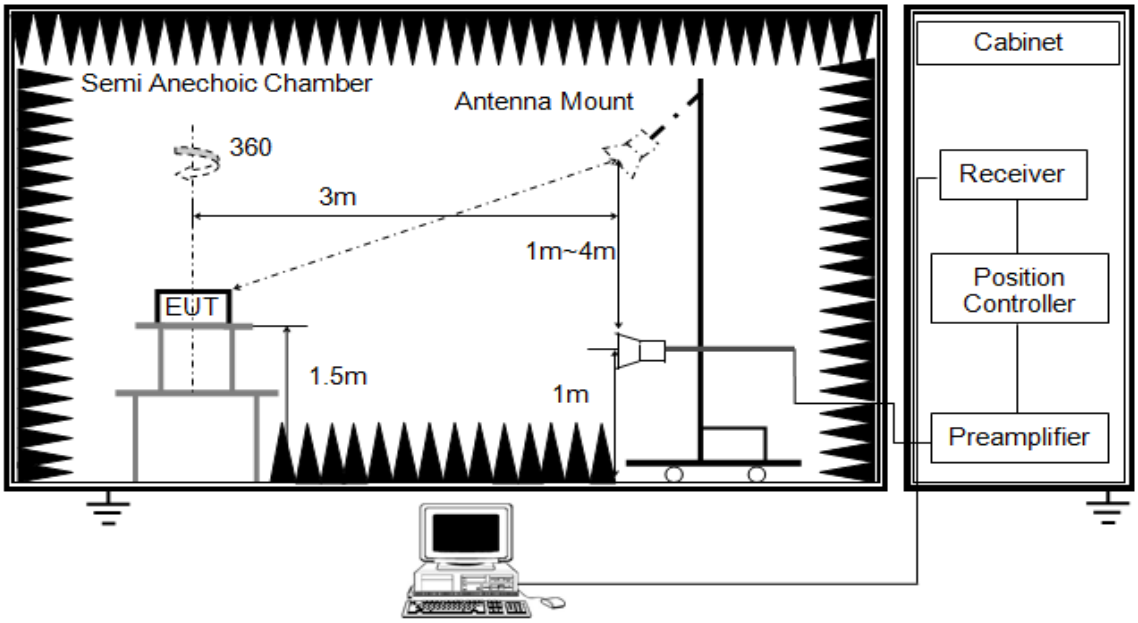
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80cm above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

Above 1G



The setting of the spectrum analyser

RBW	1M
VBW	PEAK: 3M AVG: see note 6
Sweep	Auto
Detector	Peak
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013.

2. The EUT was arranged to its worst case and then tune the antenna tower (1.5 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

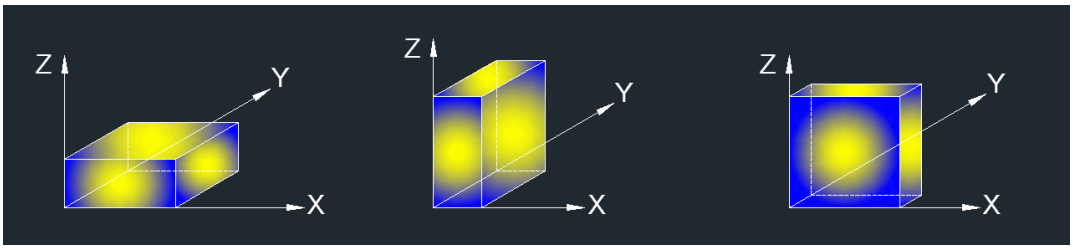
3. The EUT was placed on a turntable with 80cm above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement above 1GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.

6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements. Where necessary, average emission are determined by applying the Duty Cycle Correction Factor to the peak measurements.

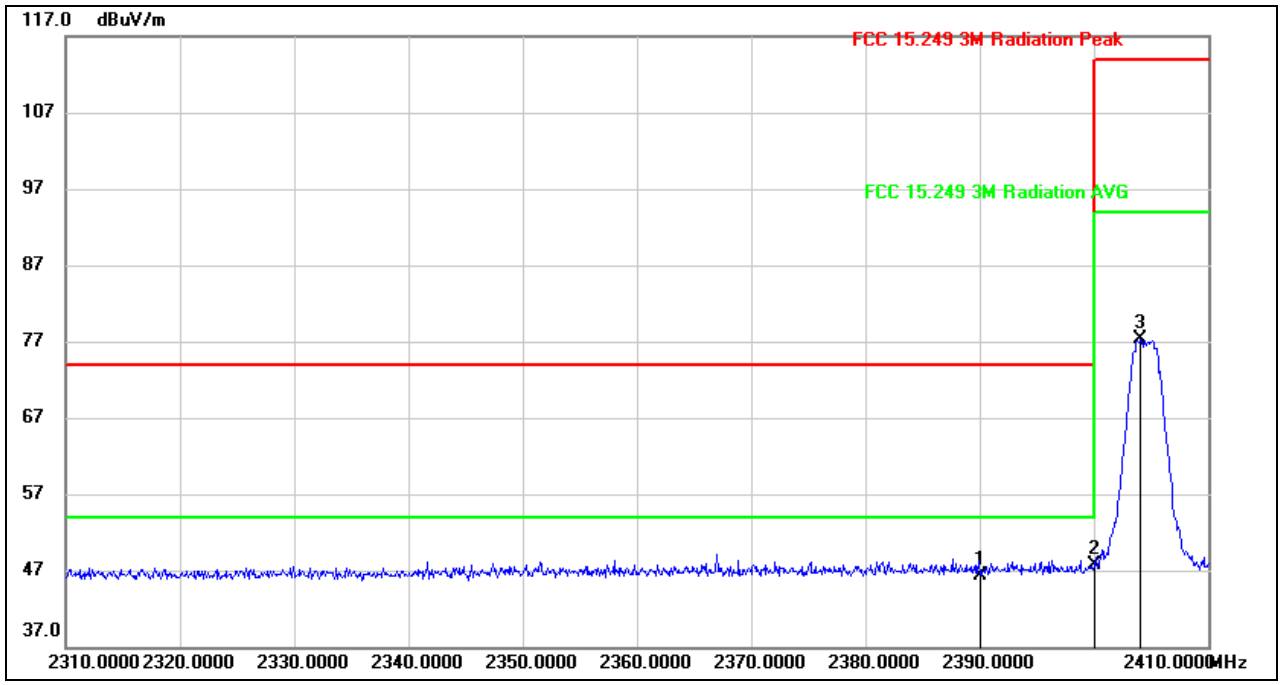
X axis, Y axis, Z axis positions:



Note 1: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

7.2. RESTRICTED BANDEDGE AND FIELD STRENGTH OF INTENTIONAL EMISSIONS

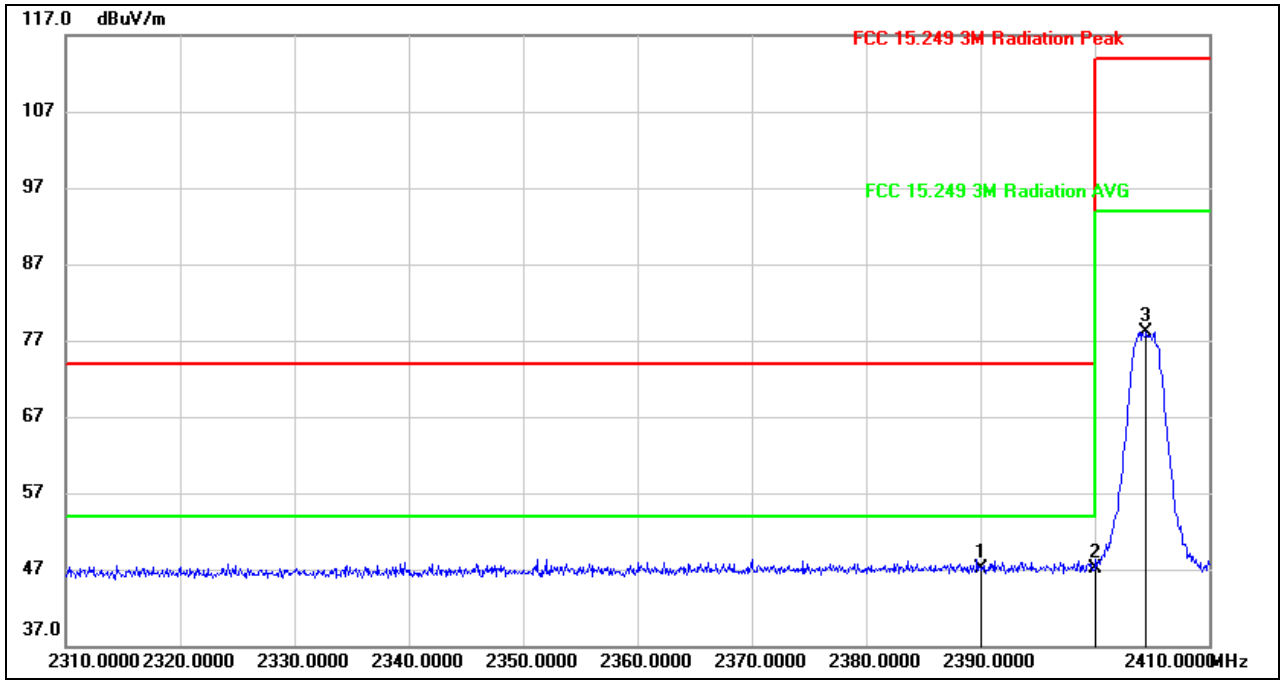
RESTRICTED BANDEDGE AND FIELD STRENGTH OF INTENTIONAL EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	13.40	32.94	46.34	74.00	-27.66	peak
2	2400.000	14.73	32.98	47.71	74.00	-26.29	peak
3	2404.100	44.22	33.01	77.23	114.00	-36.77	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

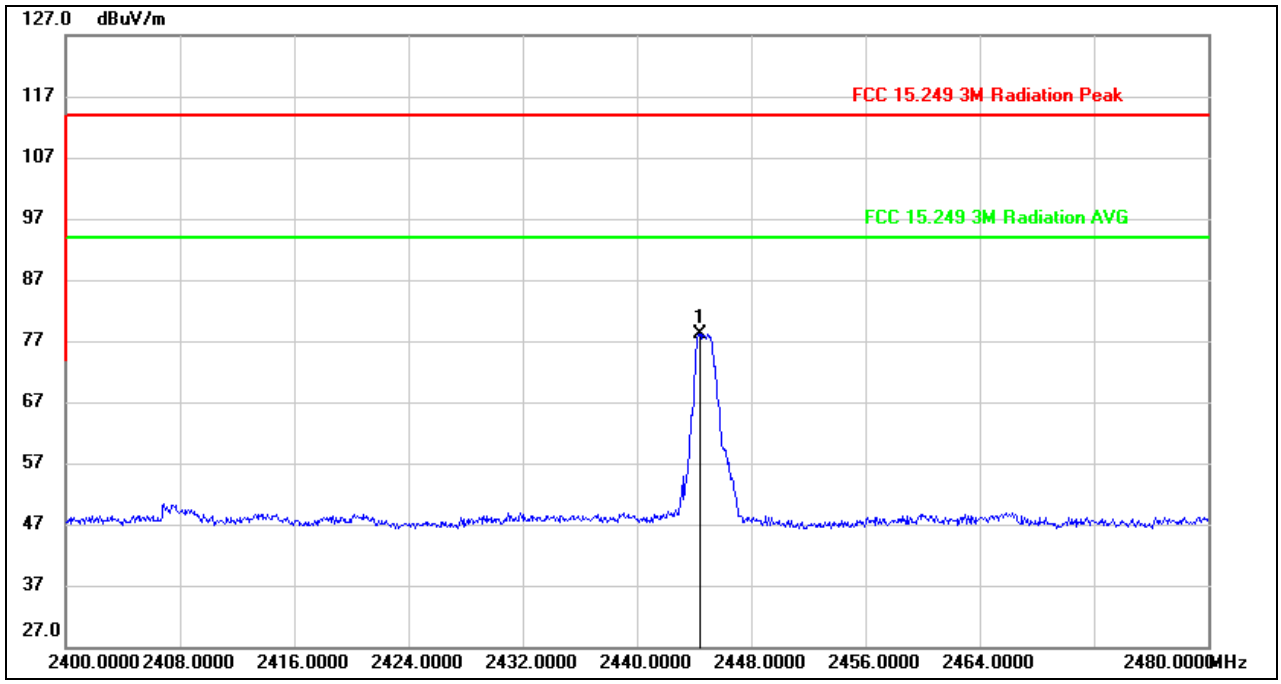
RESTRICTED BANDEDGE AND FIELD STRENGTH OF INTENTIONAL EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	14.23	32.94	47.17	74.00	-26.83	peak
2	2400.000	14.19	32.98	47.17	74.00	-26.83	peak
3	2404.500	45.07	33.01	78.08	114.00	-35.92	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

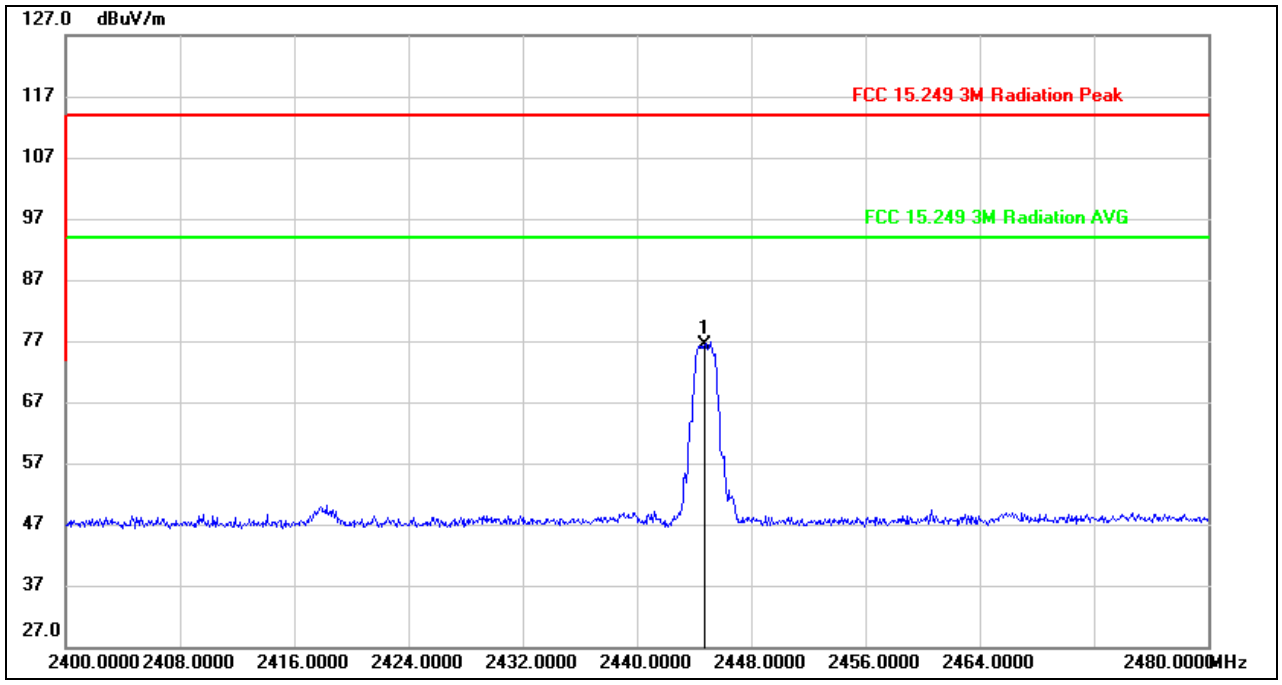
FIELD STRENGTH OF INTENTIONAL EMISSIONS (MIDDLE CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2444.400	44.91	33.30	78.21	114.00	-35.79	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

FIELD STRENGTH OF INTENTIONAL EMISSIONS (MIDDLE CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2444.720	43.06	33.30	76.36	114.00	-37.64	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

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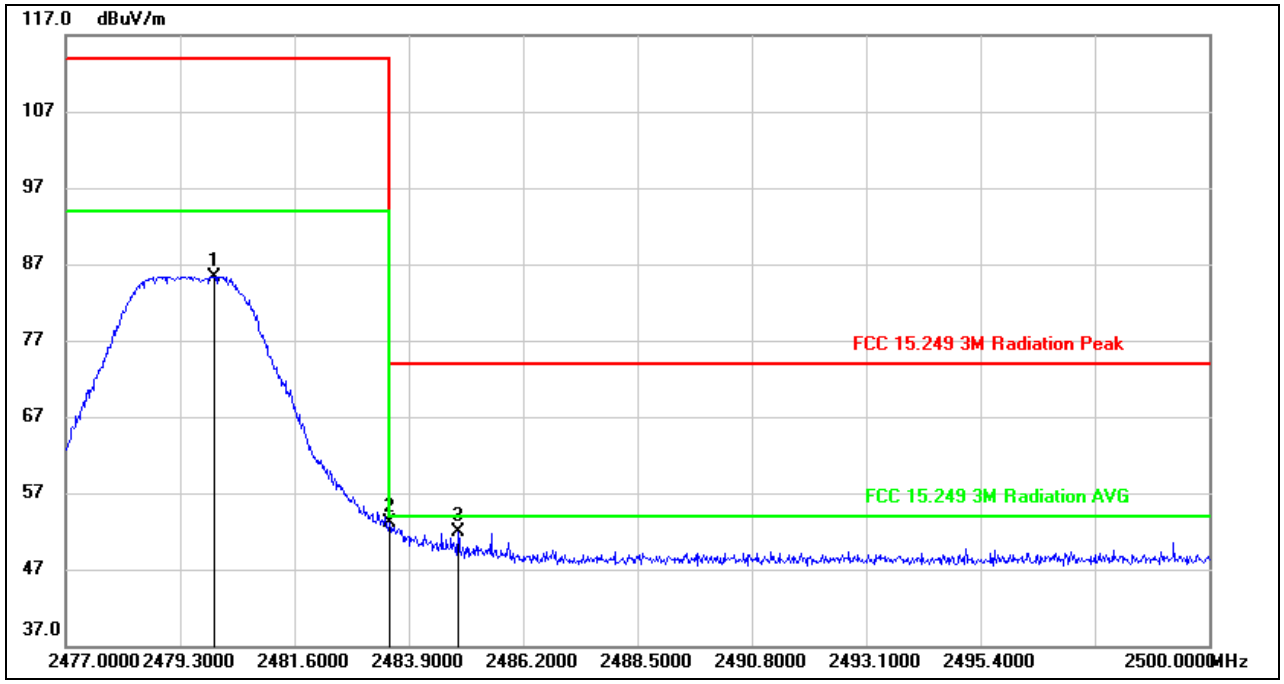
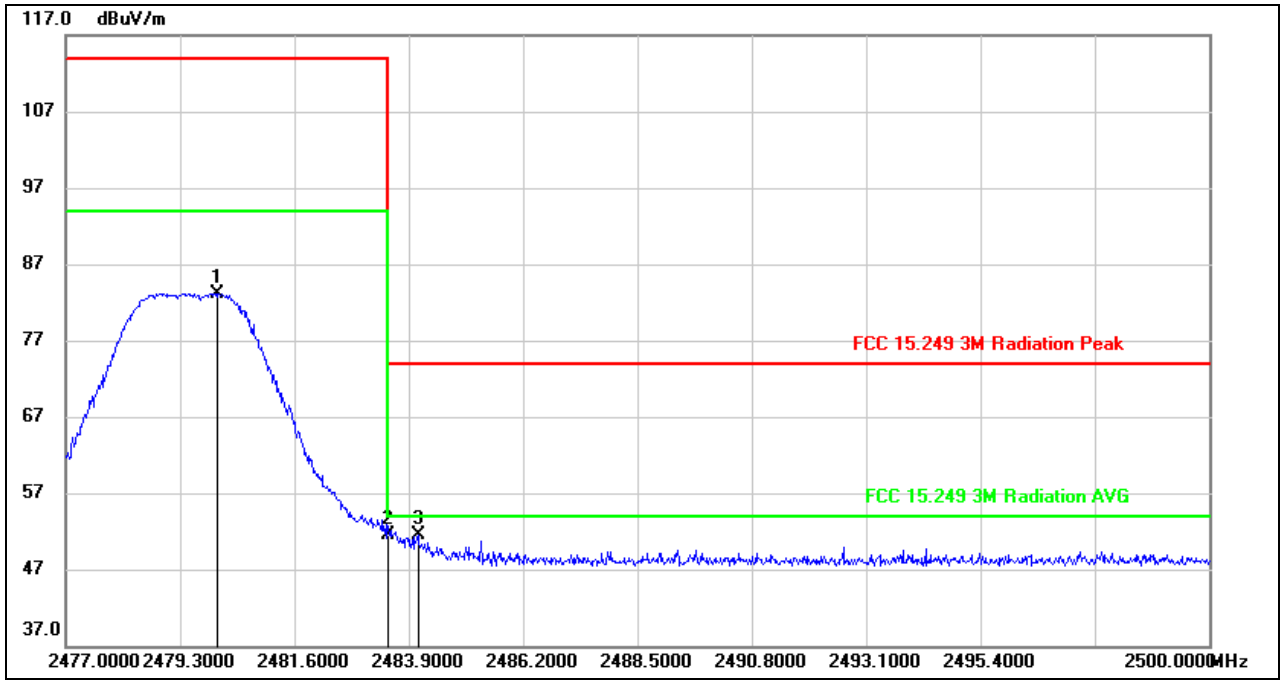
RESTRICTED BANDEDGE AND FIELD STRENGTH OF INTENTIONAL EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2479.990	51.82	33.55	85.37	114.00	-28.63	peak
2	2483.500	19.43	33.58	53.01	74.00	-20.99	peak
3	2484.889	18.24	33.59	51.83	74.00	-22.17	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE AND FIELD STRENGTH OF INTENTIONAL EMISSIONS (HIGH CHANNEL, VERTICAL)

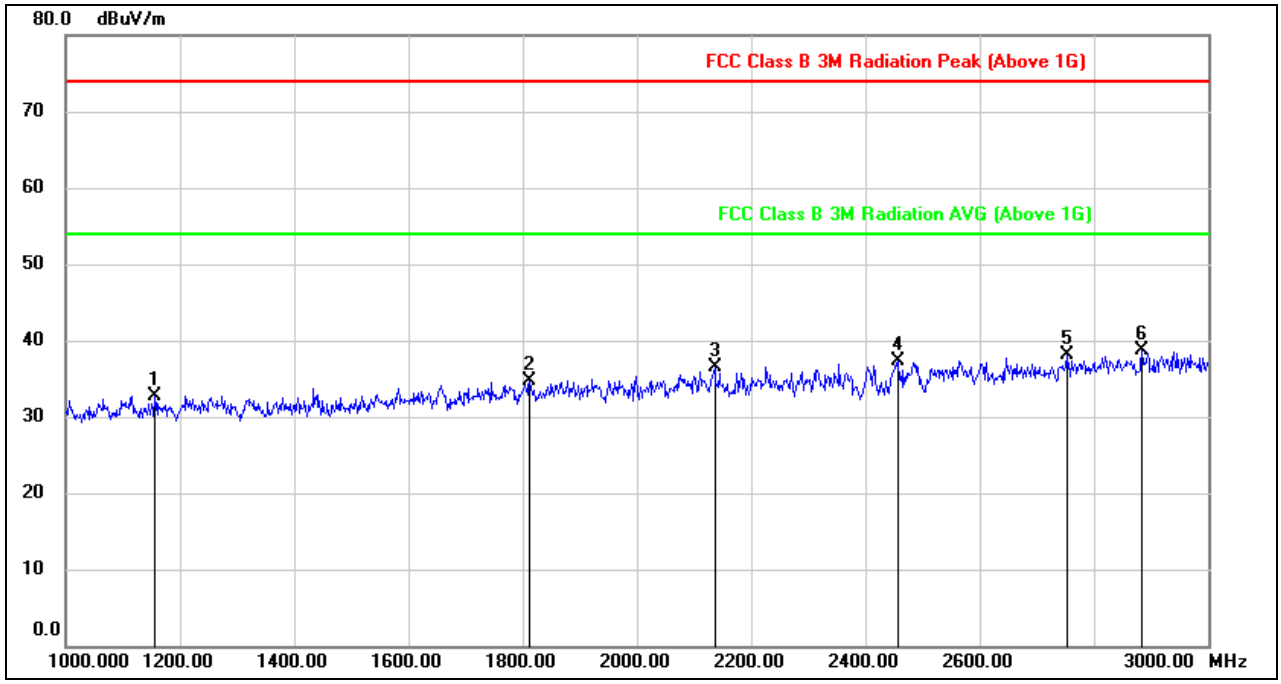


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.059	49.59	33.55	83.14	114.00	-30.86	peak
2	2483.500	17.93	33.58	51.51	74.00	-22.49	peak
3	2484.084	18.02	33.58	51.60	74.00	-22.40	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

7.3. SPURIOUS EMISSIONS (1~3GHz)

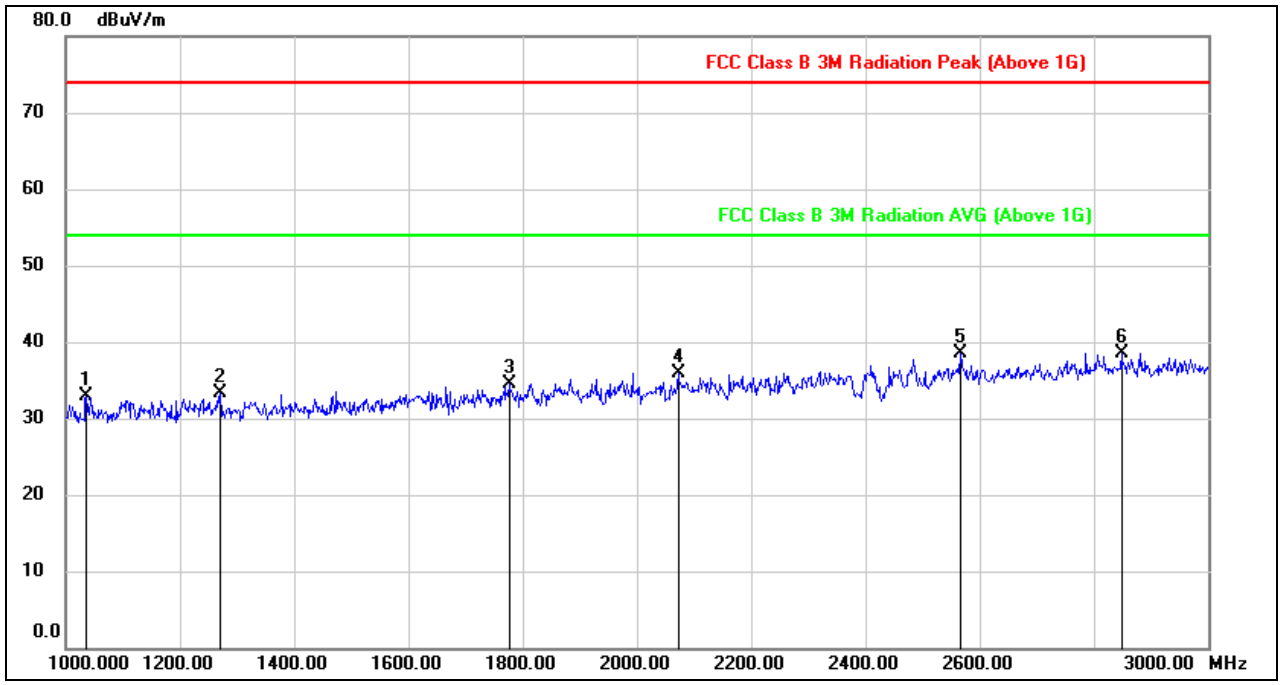
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1156.000	45.40	-12.62	32.78	74.00	-41.22	peak
2	1812.000	44.27	-9.58	34.69	74.00	-39.31	peak
3	2136.000	45.01	-8.41	36.60	74.00	-37.40	peak
4	2458.000	43.83	-6.53	37.30	74.00	-36.70	peak
5	2752.000	43.74	-5.61	38.13	74.00	-35.87	peak
6	2884.000	43.51	-4.83	38.68	74.00	-35.32	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. The Band Reject filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

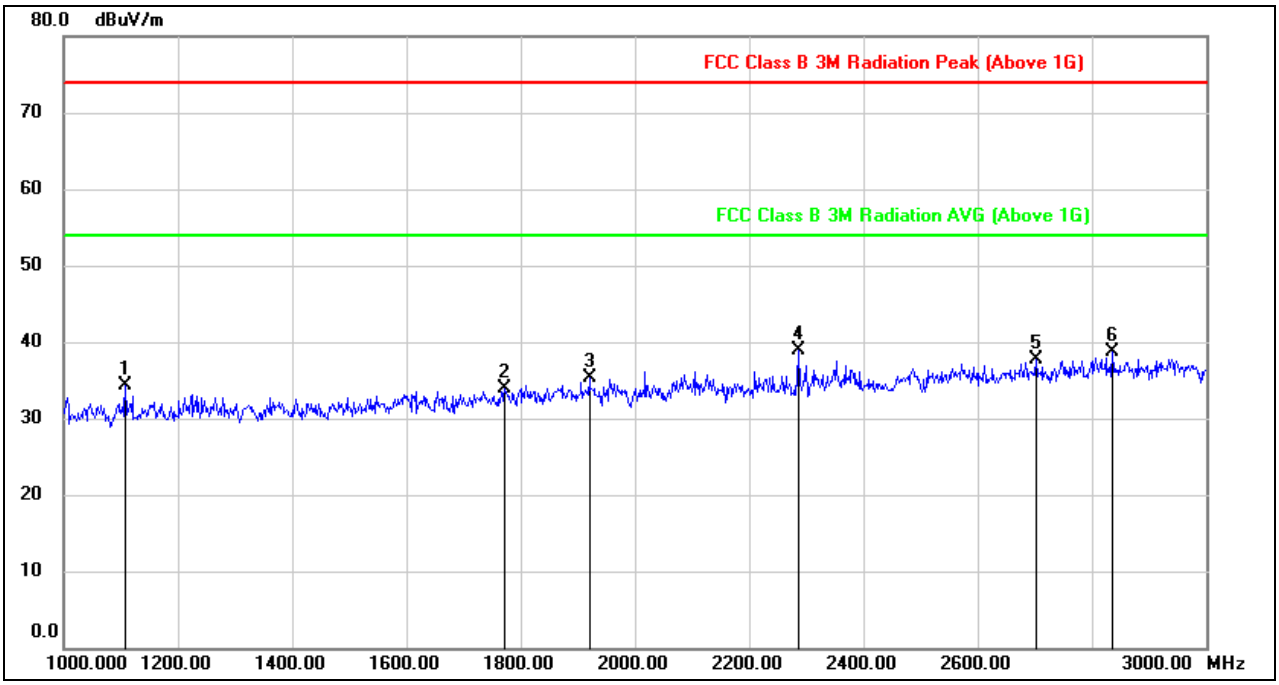
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1036.000	46.18	-13.28	32.90	74.00	-41.10	peak
2	1270.000	45.18	-11.95	33.23	74.00	-40.77	peak
3	1776.000	44.36	-9.86	34.50	74.00	-39.50	peak
4	2072.000	44.74	-8.83	35.91	74.00	-38.09	peak
5	2566.000	44.99	-6.44	38.55	74.00	-35.45	peak
6	2848.000	43.58	-5.03	38.55	74.00	-35.45	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. The Band Reject filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

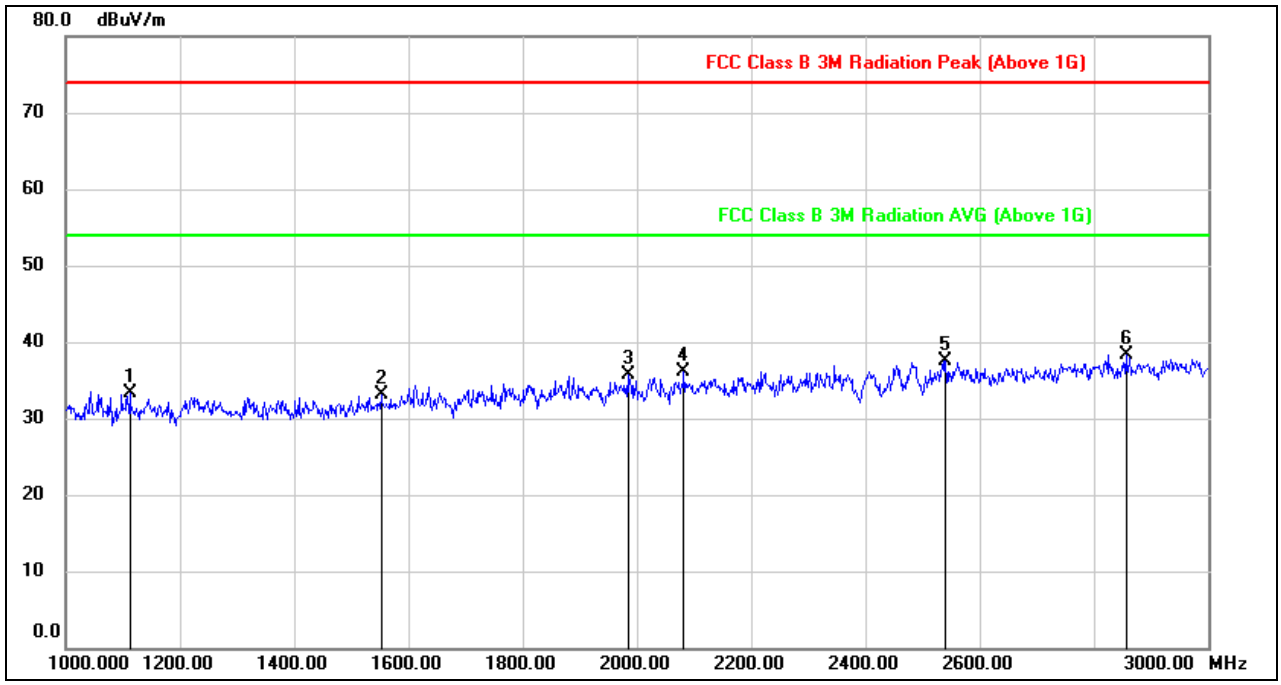
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1108.000	47.41	-13.07	34.34	74.00	-39.66	peak
2	1772.000	43.83	-9.90	33.93	74.00	-40.07	peak
3	1920.000	44.60	-9.36	35.24	74.00	-38.76	peak
4	2286.000	46.42	-7.56	38.86	74.00	-35.14	peak
5	2702.000	43.57	-5.96	37.61	74.00	-36.39	peak
6	2836.000	43.72	-5.09	38.63	74.00	-35.37	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. The Band Reject filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

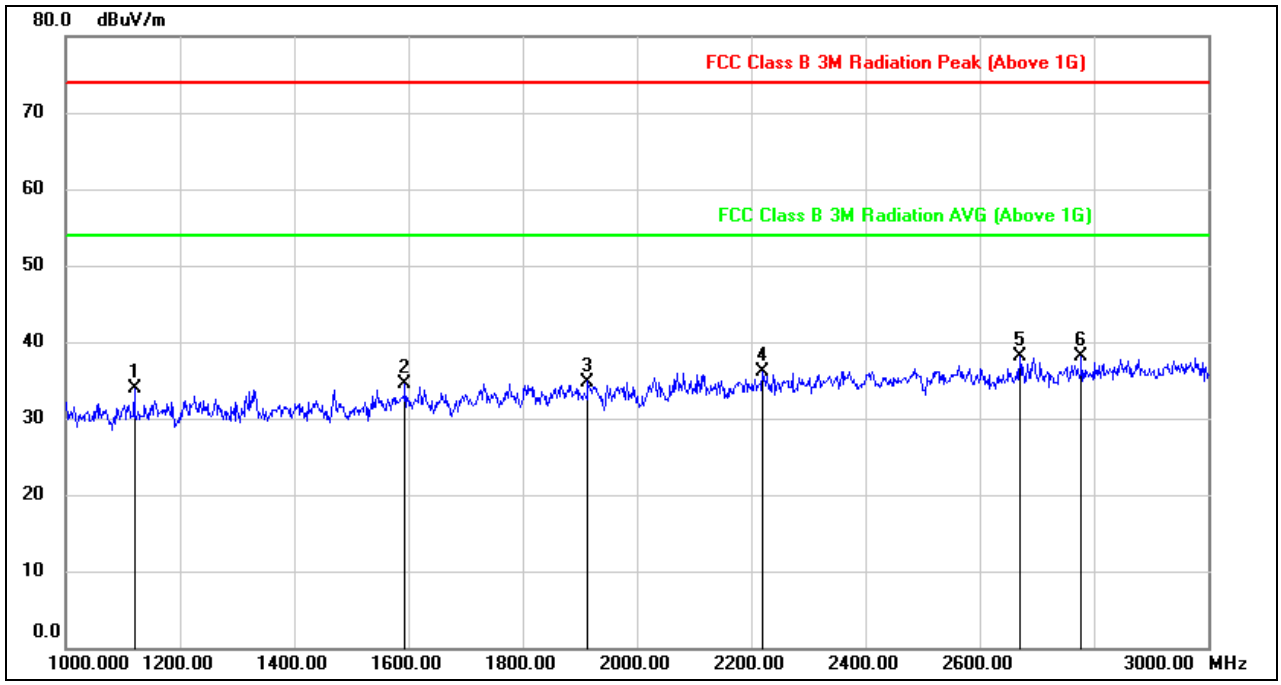
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1112.000	46.33	-13.03	33.30	74.00	-40.70	peak
2	1552.000	44.40	-11.28	33.12	74.00	-40.88	peak
3	1984.000	45.15	-9.42	35.73	74.00	-38.27	peak
4	2082.000	44.83	-8.74	36.09	74.00	-37.91	peak
5	2540.000	43.90	-6.34	37.56	74.00	-36.44	peak
6	2856.000	43.35	-4.99	38.36	74.00	-35.64	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. The Band Reject filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

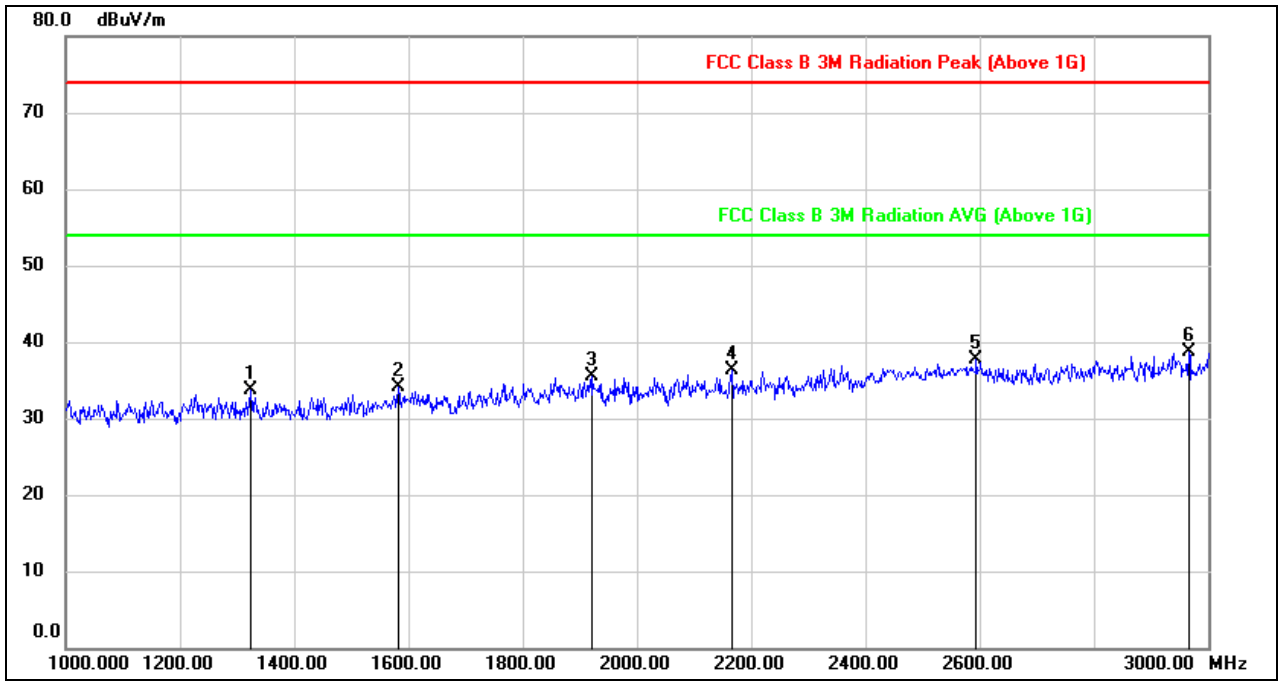
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1120.000	46.77	-12.95	33.82	74.00	-40.18	peak
2	1594.000	45.43	-10.88	34.55	74.00	-39.45	peak
3	1914.000	44.16	-9.36	34.80	74.00	-39.20	peak
4	2220.000	44.08	-7.97	36.11	74.00	-37.89	peak
5	2670.000	44.33	-6.16	38.17	74.00	-35.83	peak
6	2778.000	43.46	-5.44	38.02	74.00	-35.98	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. The Band Reject filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

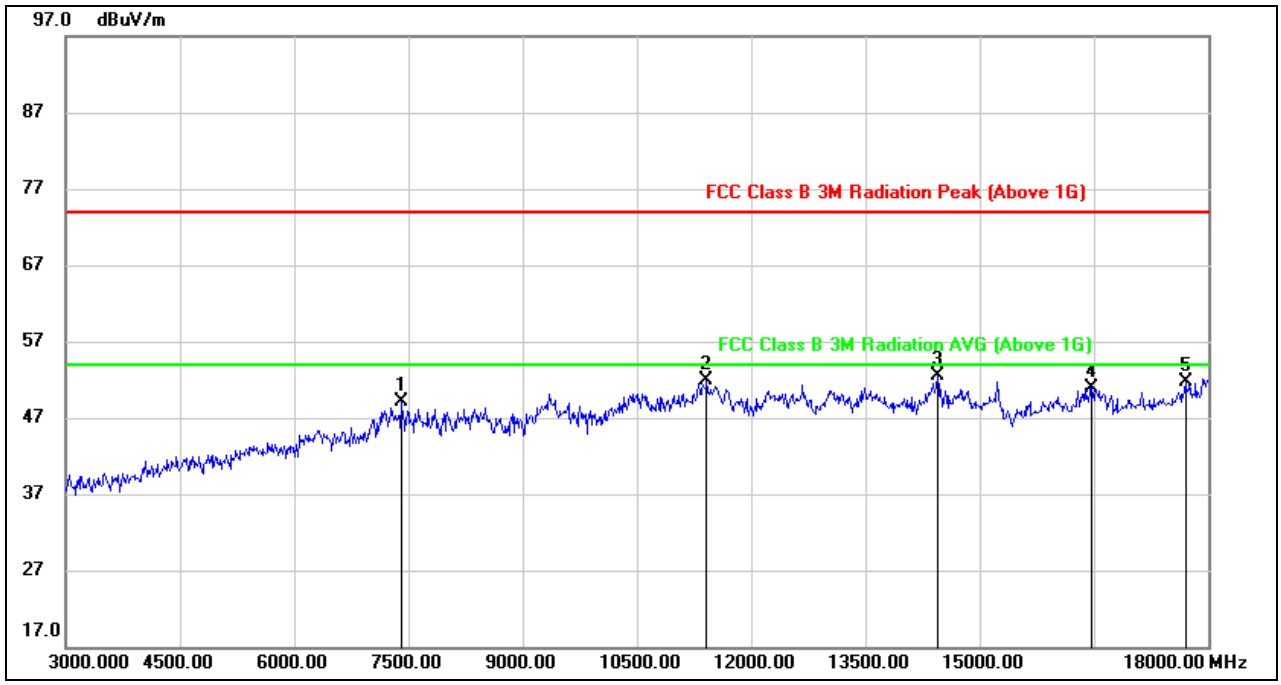


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1324.000	45.57	-11.87	33.70	74.00	-40.30	peak
2	1582.000	45.09	-11.00	34.09	74.00	-39.91	peak
3	1922.000	44.97	-9.37	35.60	74.00	-38.40	peak
4	2166.000	44.50	-8.26	36.24	74.00	-37.76	peak
5	2594.000	44.20	-6.56	37.64	74.00	-36.36	peak
6	2966.000	43.14	-4.46	38.68	74.00	-35.32	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. The Band Reject filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

7.4. SPURIOUS EMISSIONS (3~18GHz)

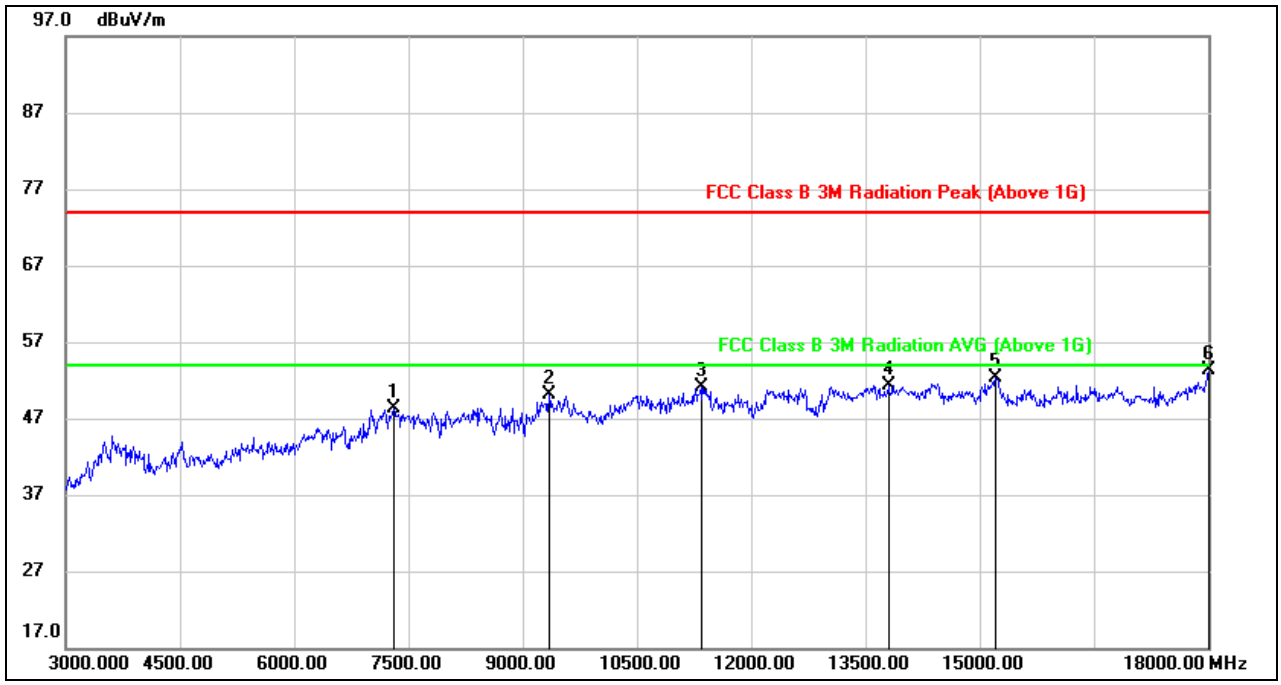
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	7410.000	40.69	8.32	49.01	74.00	-24.99	peak
2	11415.000	36.03	15.89	51.92	74.00	-22.08	peak
3	14445.000	33.28	19.29	52.57	74.00	-21.43	peak
4	16470.000	28.69	22.30	50.99	74.00	-23.01	peak
5	17700.000	26.12	25.58	51.70	74.00	-22.30	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. The High Pass filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

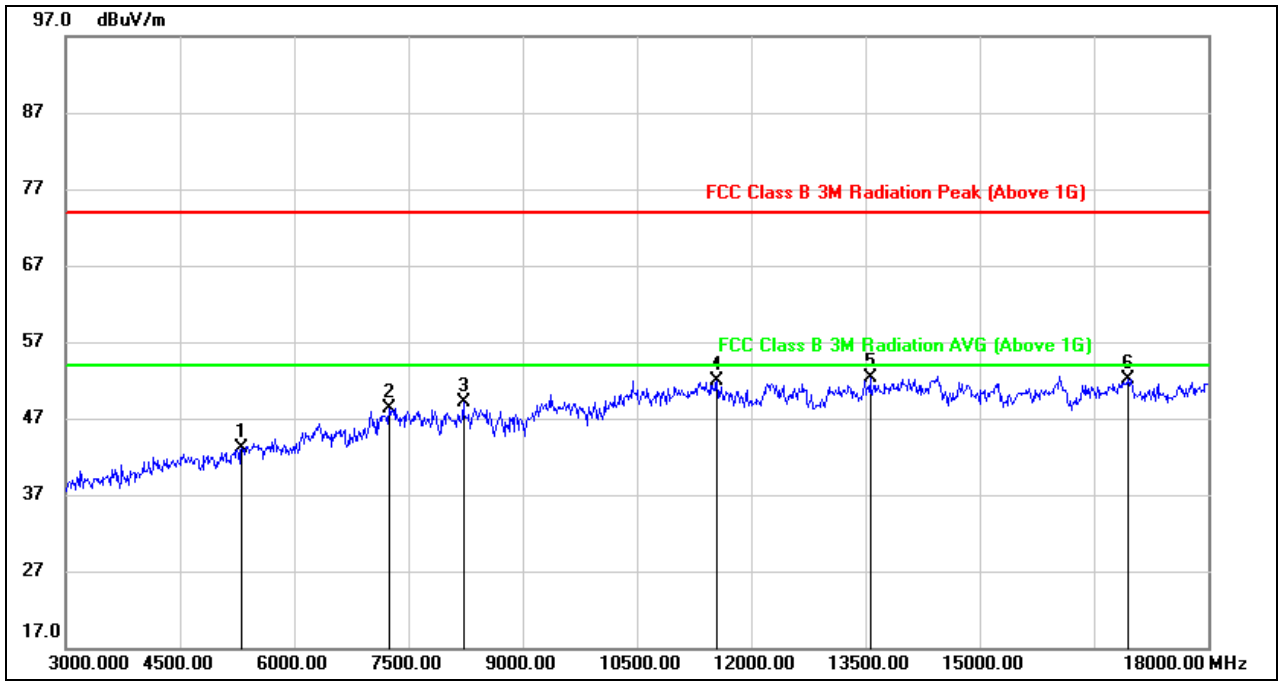
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7305.000	39.57	8.82	48.39	74.00	-25.61	peak
2	9345.000	38.65	11.53	50.18	74.00	-23.82	peak
3	11340.000	35.35	15.70	51.05	74.00	-22.95	peak
4	13800.000	31.95	19.42	51.37	74.00	-22.63	peak
5	15210.000	33.21	19.03	52.24	74.00	-21.76	peak
6	18000.000	26.04	27.26	53.30	74.00	-20.70	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. The High Pass filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

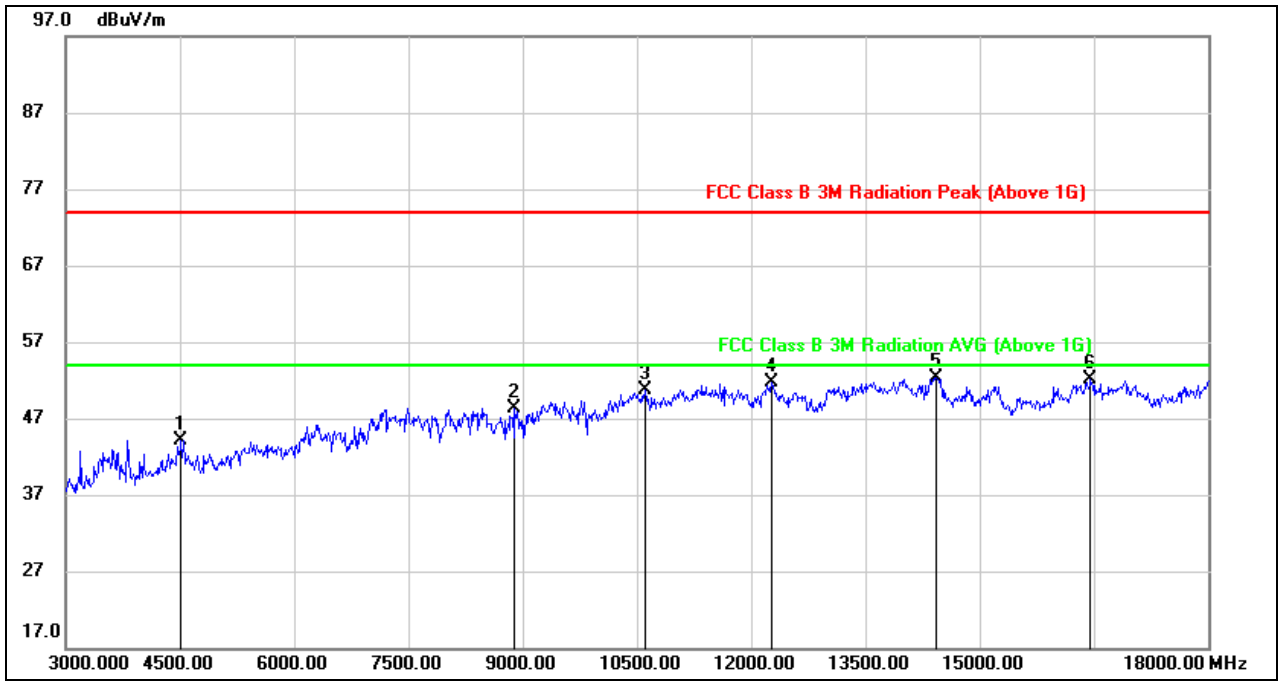
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5310.000	40.27	2.87	43.14	74.00	-30.86	peak
2	7245.000	39.62	8.69	48.31	74.00	-25.69	peak
3	8220.000	39.18	10.00	49.18	74.00	-24.82	peak
4	11550.000	35.75	16.14	51.89	74.00	-22.11	peak
5	13560.000	33.45	18.88	52.33	74.00	-21.67	peak
6	16950.000	27.97	24.08	52.05	74.00	-21.95	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. The High Pass filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

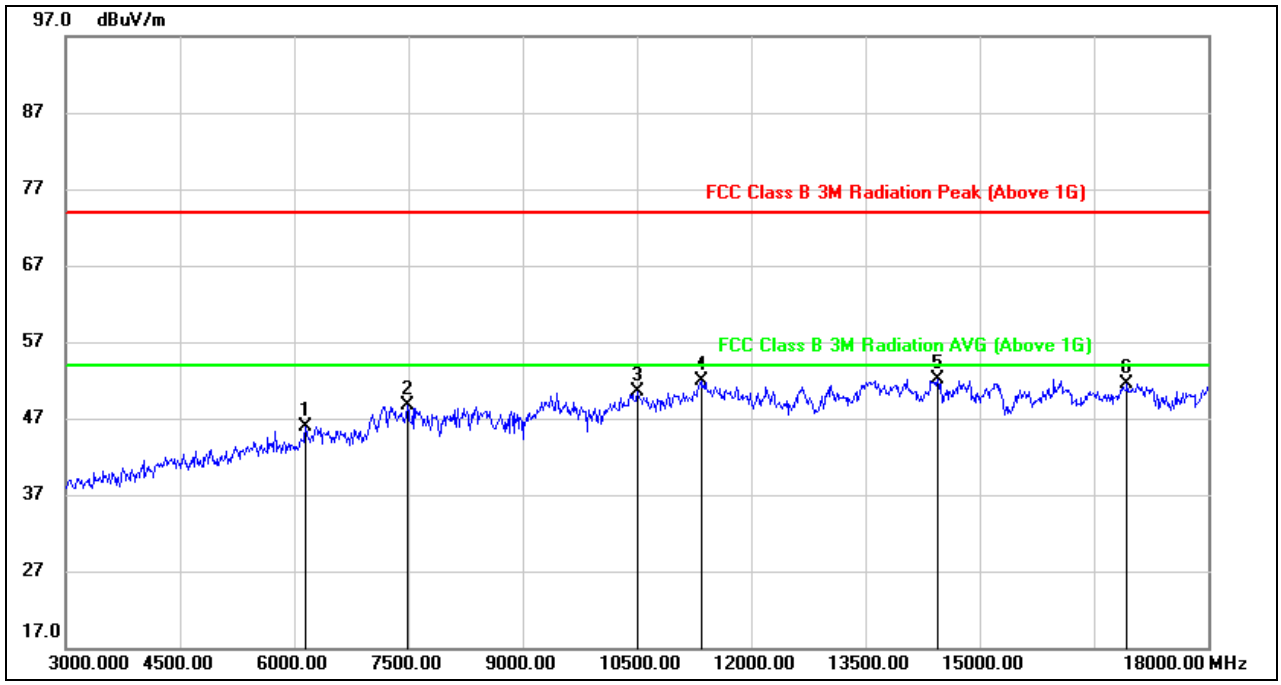
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4515.000	43.97	0.21	44.18	74.00	-29.82	peak
2	8895.000	37.83	10.48	48.31	74.00	-25.69	peak
3	10605.000	36.67	14.10	50.77	74.00	-23.23	peak
4	12270.000	34.82	16.84	51.66	74.00	-22.34	peak
5	14430.000	32.87	19.41	52.28	74.00	-21.72	peak
6	16455.000	29.78	22.24	52.02	74.00	-21.98	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. The High Pass filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

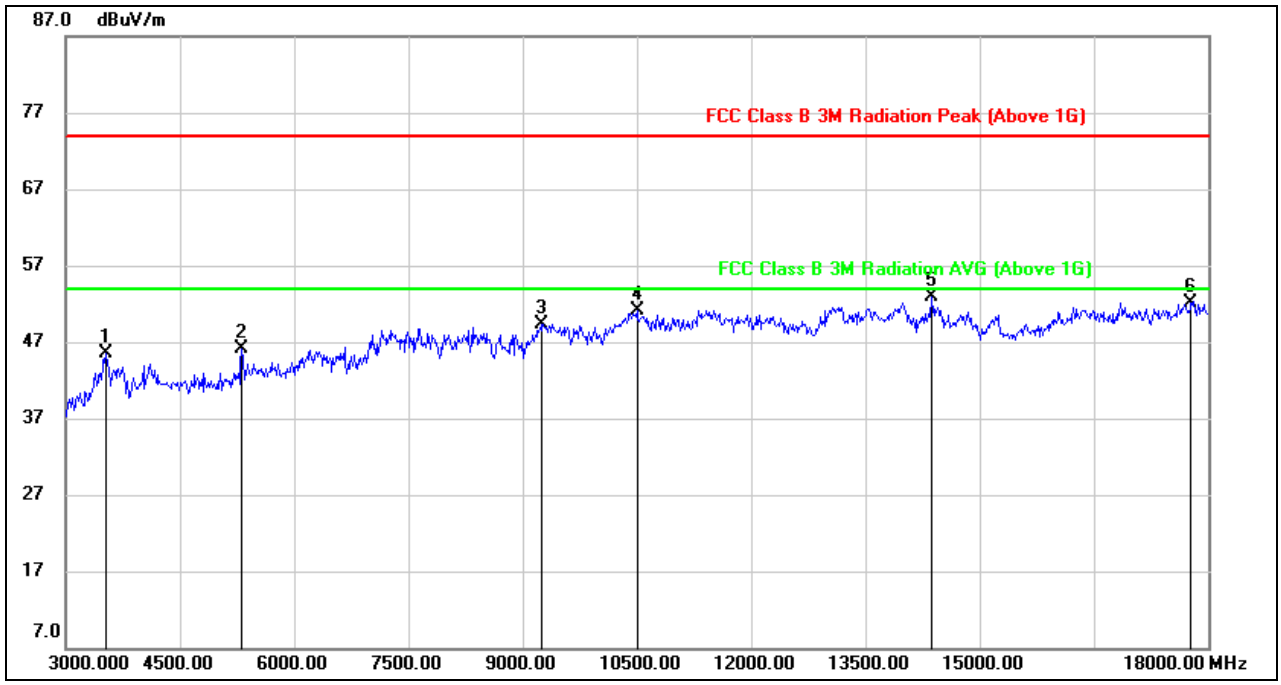
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6150.000	40.41	5.48	45.89	74.00	-28.11	peak
2	7485.000	39.56	9.23	48.79	74.00	-25.21	peak
3	10500.000	36.34	14.19	50.53	74.00	-23.47	peak
4	11355.000	36.12	15.74	51.86	74.00	-22.14	peak
5	14445.000	32.82	19.29	52.11	74.00	-21.89	peak
6	16935.000	27.54	24.03	51.57	74.00	-22.43	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. The High Pass filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

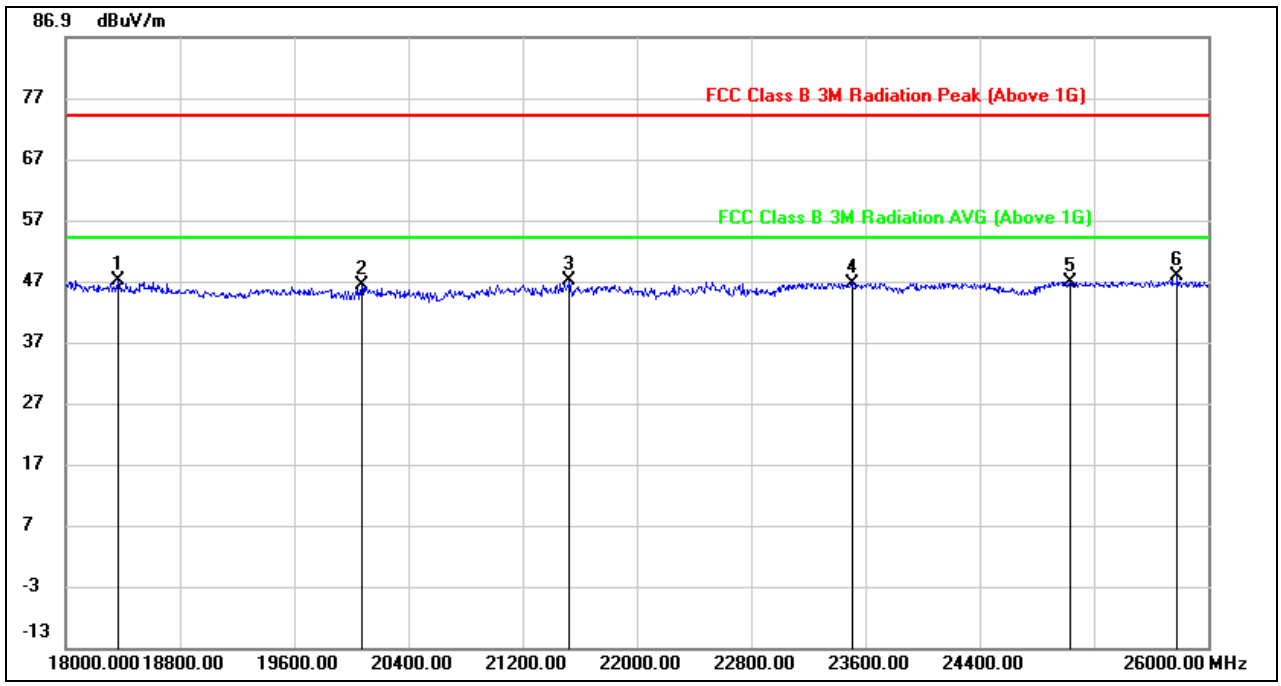


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3525.000	48.50	-3.03	45.47	74.00	-28.53	peak
2	5310.000	43.26	2.87	46.13	74.00	-27.87	peak
3	9240.000	37.95	11.39	49.34	74.00	-24.66	peak
4	10500.000	37.00	14.19	51.19	74.00	-22.81	peak
5	14370.000	33.45	19.52	52.97	74.00	-21.03	peak
6	17775.000	26.05	26.13	52.18	74.00	-21.82	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. The High Pass filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

7.5. SPURIOUS EMISSIONS (18~26GHz)

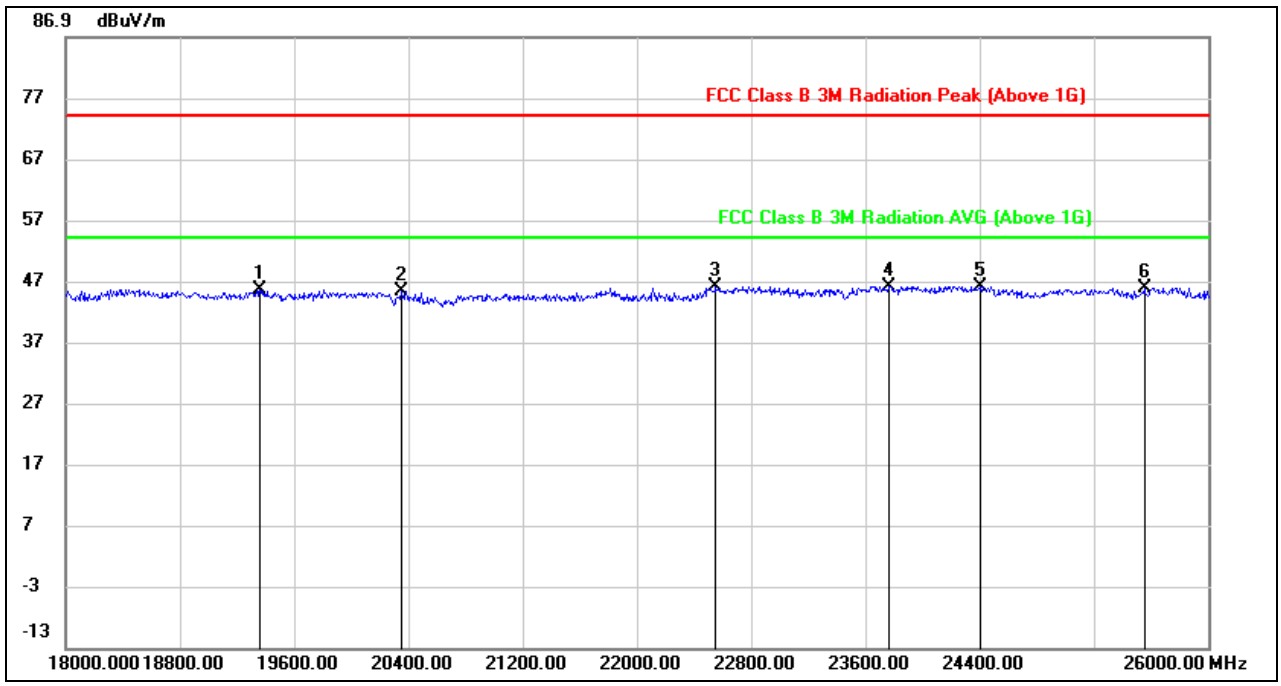
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18368.000	51.51	-4.38	47.13	74.00	-26.87	peak
2	20072.000	50.84	-4.51	46.33	74.00	-27.67	peak
3	21528.000	52.92	-5.78	47.14	74.00	-26.86	peak
4	23504.000	51.41	-4.76	46.65	74.00	-27.35	peak
5	25032.000	47.98	-1.09	46.89	74.00	-27.11	peak
6	25784.000	49.23	-1.49	47.74	74.00	-26.26	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. High pass filter losses had already added into the correct factor.

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	19360.000	50.54	-4.93	45.61	74.00	-28.39	peak
2	20352.000	50.21	-4.91	45.30	74.00	-28.70	peak
3	22552.000	51.89	-5.78	46.11	74.00	-27.89	peak
4	23768.000	50.73	-4.59	46.14	74.00	-27.86	peak
5	24400.000	49.14	-2.99	46.15	74.00	-27.85	peak
6	25552.000	47.51	-1.72	45.79	74.00	-28.21	peak

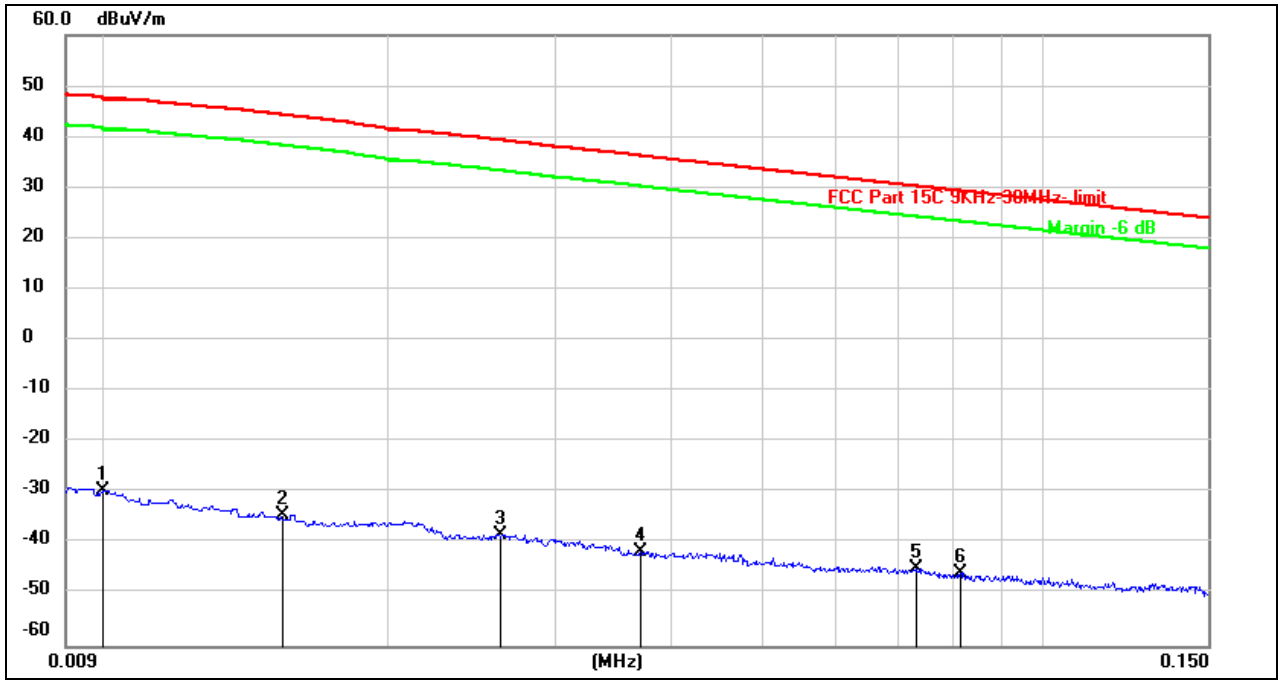
Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. High pass filter losses had already added into the correct factor.

Note: All test mode has been tested, only the worst data record in the report.

7.6. SPURIOUS EMISSIONS BELOW 30M

(LOW CHANNEL, LOOP ANTENNA FACE ON TO THE EUT, WORST-CASE CONFIGURATION)

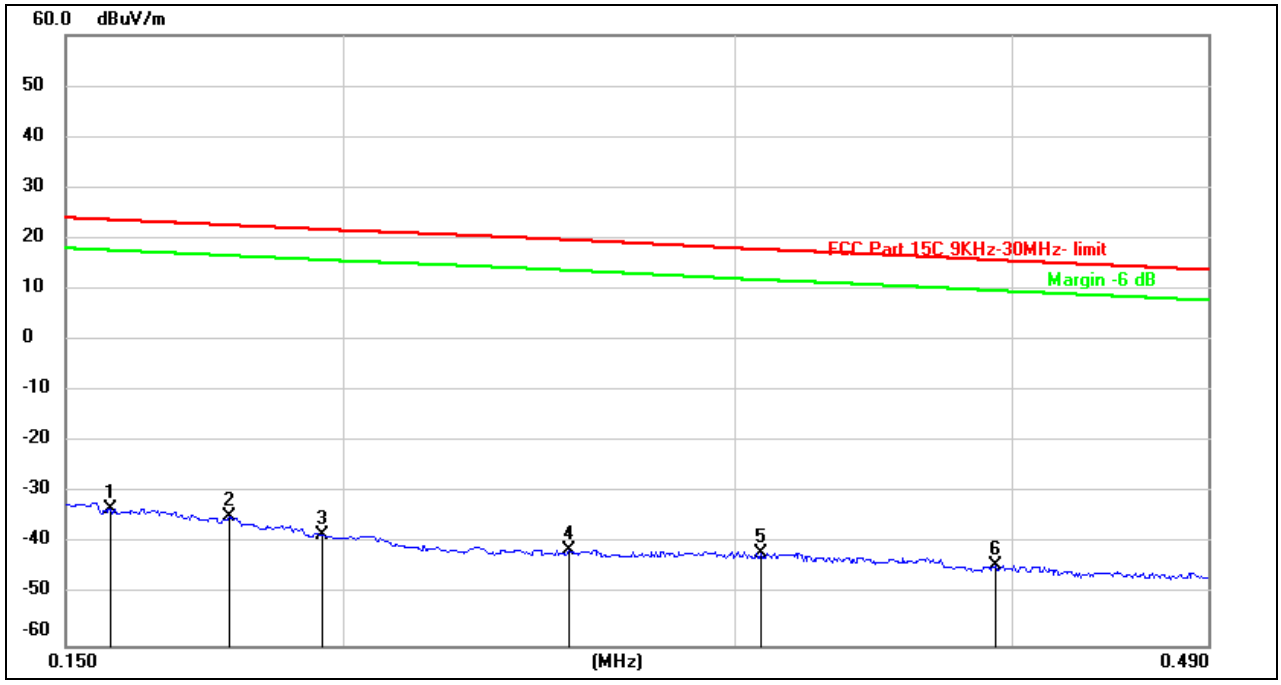
9kHz~ 150kHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.0100	71.72	-101.40	-29.68	47.60	-77.28	peak
2	0.0154	66.94	-101.37	-34.43	44.35	-78.78	peak
3	0.0263	63.25	-101.37	-38.12	39.36	-77.48	peak
4	0.0371	59.89	-101.42	-41.53	36.29	-77.82	peak
5	0.0733	56.66	-101.58	-44.92	30.32	-75.24	peak
6	0.0815	55.91	-101.65	-45.74	29.39	-75.13	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.
3. All 3 polarizations(Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

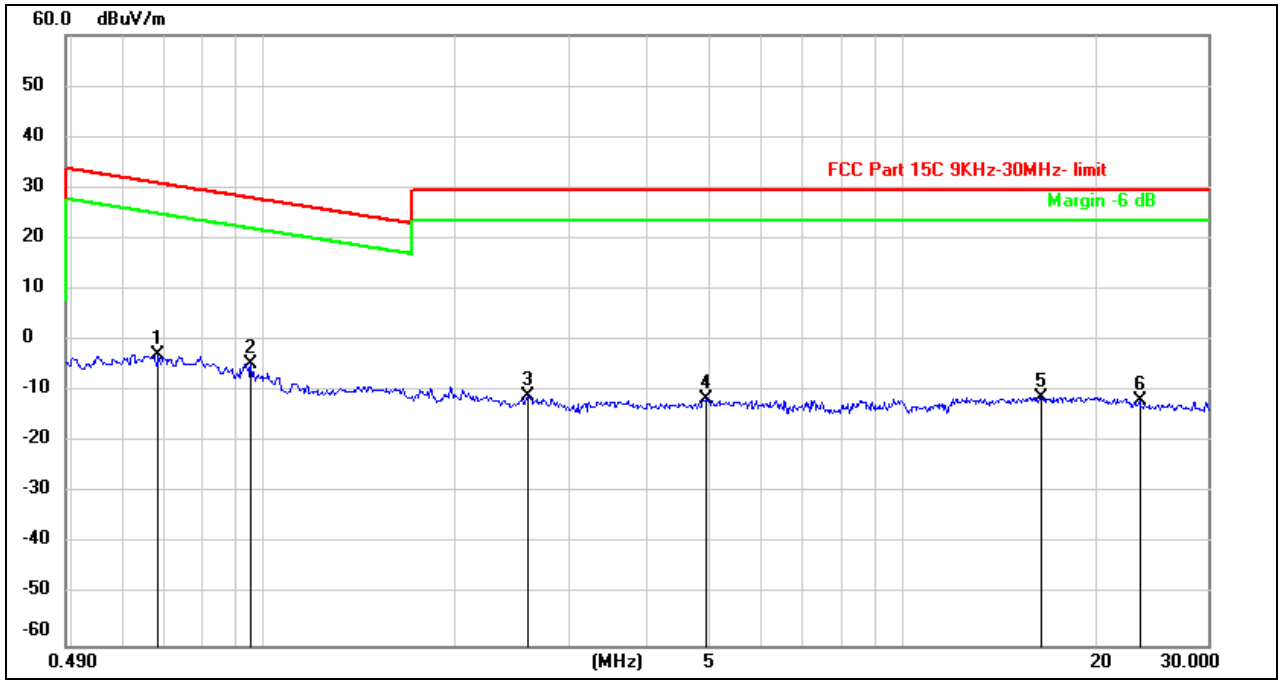
150kHz ~ 490kHz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.1570	68.53	-101.65	-33.12	23.69	-56.81	peak
2	0.1776	66.95	-101.68	-34.73	22.62	-57.35	peak
3	0.1955	63.35	-101.71	-38.36	21.78	-60.14	peak
4	0.2530	60.59	-101.80	-41.21	19.71	-60.92	peak
5	0.3084	59.95	-101.86	-41.91	17.85	-59.76	peak
6	0.3933	57.72	-101.96	-44.24	15.73	-59.97	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.
3. All 3 polarizations(Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

490kHz ~ 30MHz



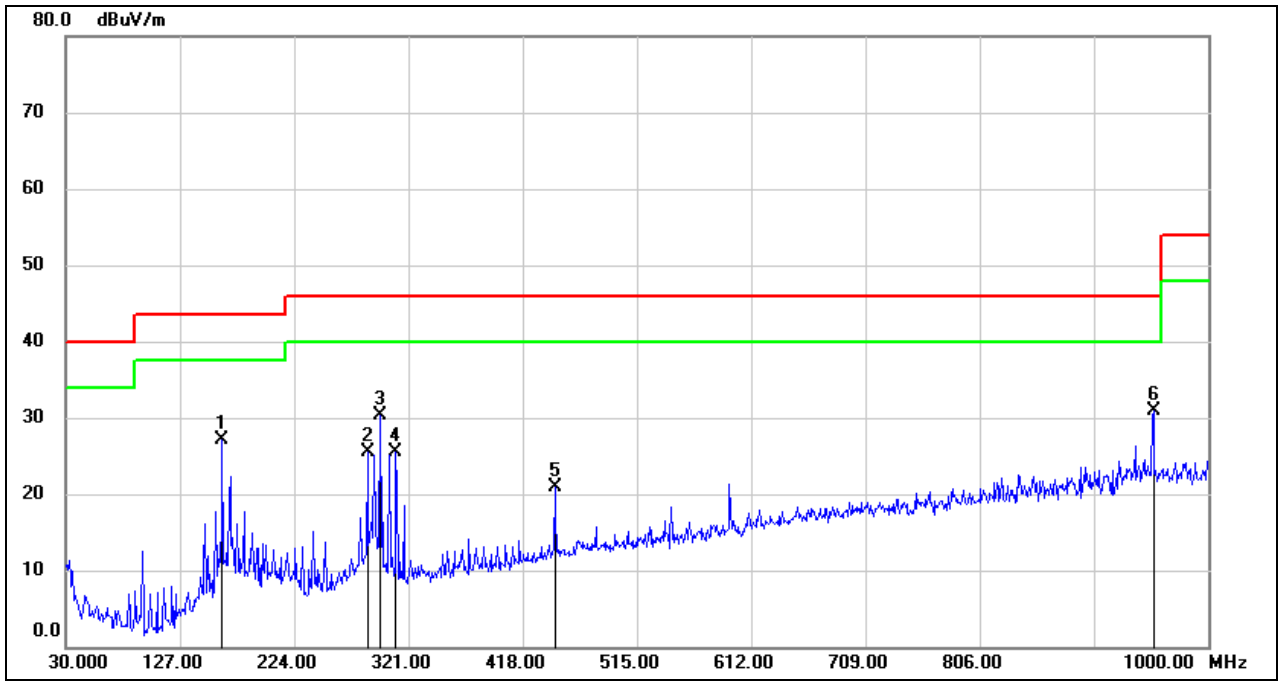
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.6834	59.21	-62.11	-2.90	30.92	-33.82	peak
2	0.9543	57.54	-62.24	-4.70	28.02	-32.72	peak
3	2.5935	50.61	-61.68	-11.07	29.54	-40.61	peak
4	4.9165	49.88	-61.48	-11.60	29.54	-41.14	peak
5	16.4543	49.75	-60.96	-11.21	29.54	-40.75	peak
6	23.4783	48.74	-60.56	-11.82	29.54	-41.36	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.
3. All 3 polarizations(Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

Note: All test mode has been tested, only the worst data record in the report.

7.7. SPURIOUS EMISSIONS BELOW 1 GHz

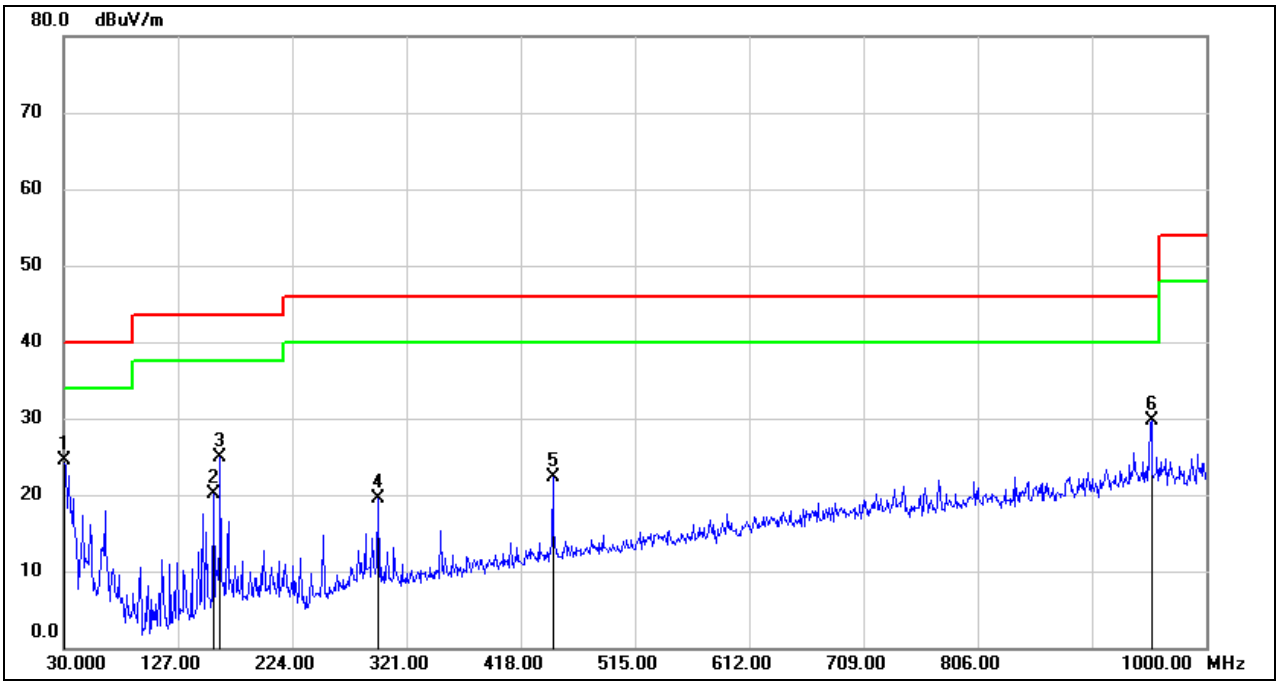
SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	162.8900	44.69	-17.62	27.07	43.50	-16.43	QP
2	286.0799	40.05	-14.55	25.50	46.00	-20.50	QP
3	296.7500	44.40	-14.04	30.36	46.00	-15.64	QP
4	310.3299	39.20	-13.79	25.41	46.00	-20.59	QP
5	445.1600	32.32	-11.50	20.82	46.00	-25.18	QP
6	953.4400	34.22	-3.37	30.85	46.00	-15.15	QP

Note: 1. Result Level = Read Level + Correct Factor.
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.0000	41.53	-17.00	24.53	40.00	-15.47	QP
2	157.0700	38.05	-17.88	20.17	43.50	-23.33	QP
3	162.8900	42.49	-17.62	24.87	43.50	-18.63	QP
4	296.7500	33.59	-14.04	19.55	46.00	-26.45	QP
5	445.1600	33.73	-11.50	22.23	46.00	-23.77	QP
6	953.4400	33.16	-3.37	29.79	46.00	-16.21	QP

Note: 1. Result Level = Read Level + Correct Factor.
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto

Note: All test mode has been tested, only the worst data record in the report.

8. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

Please refer to CFR 47 FCC §15.207 (a).

FREQUENCY (MHz)	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

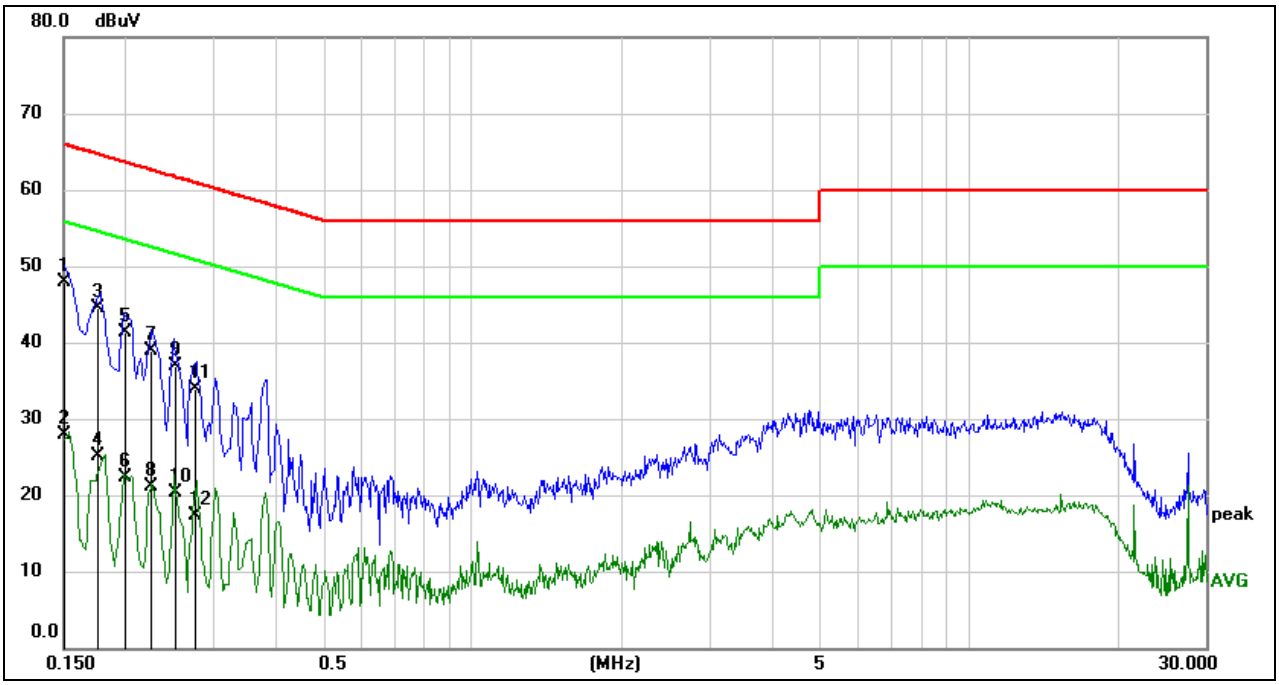
TEST SETUP AND PROCEDURE

The EUT is put on a table of non-conducting material that is 12mm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 6.2 of ANSI C63.10-2013.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9kHz.
The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

RESULTS

TEST RESULTS (LOW CHANNEL, WORST-CASE CONFIGURATION)

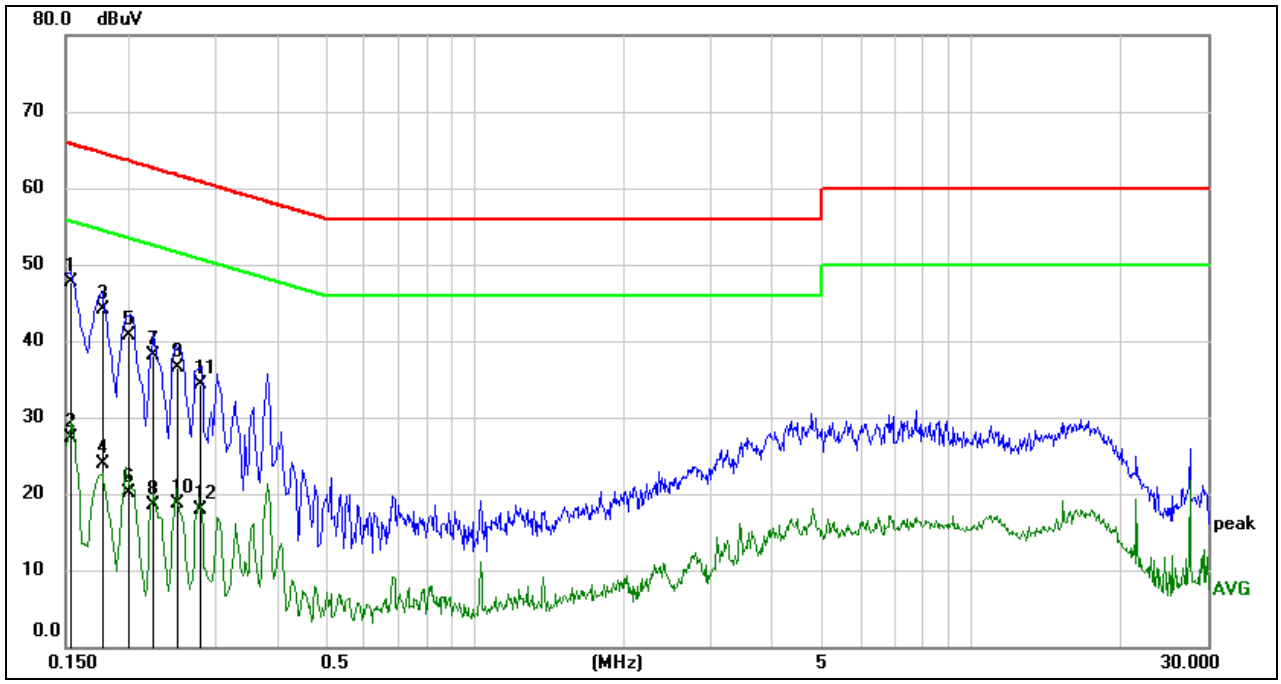
LINE N RESULTS



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1502	38.36	9.60	47.96	65.99	-18.03	QP
2	0.1502	18.28	9.60	27.88	55.99	-28.11	AVG
3	0.1756	34.95	9.60	44.55	64.69	-20.14	QP
4	0.1756	15.58	9.60	25.18	54.69	-29.51	AVG
5	0.2004	31.64	9.60	41.24	63.59	-22.35	QP
6	0.2004	12.76	9.60	22.36	53.59	-31.23	AVG
7	0.2265	29.37	9.60	38.97	62.58	-23.61	QP
8	0.2265	11.47	9.60	21.07	52.58	-31.51	AVG
9	0.2522	27.34	9.60	36.94	61.68	-24.74	QP
10	0.2522	10.69	9.60	20.29	51.68	-31.39	AVG
11	0.2746	24.22	9.60	33.82	60.98	-27.16	QP
12	0.2746	7.74	9.60	17.34	50.98	-33.64	AVG

Note: 1. Result = Reading +Correct Factor.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

LINE L RESULTS



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1525	38.03	9.61	47.64	65.86	-18.22	QP
2	0.1525	17.63	9.61	27.24	55.86	-28.62	AVG
3	0.1780	34.47	9.61	44.08	64.58	-20.50	QP
4	0.1780	14.30	9.61	23.91	54.58	-30.67	AVG
5	0.2002	31.09	9.60	40.69	63.60	-22.91	QP
6	0.2002	10.59	9.60	20.19	53.60	-33.41	AVG
7	0.2257	28.59	9.60	38.19	62.61	-24.42	QP
8	0.2257	8.97	9.60	18.57	52.61	-34.04	AVG
9	0.2532	26.85	9.60	36.45	61.65	-25.20	QP
10	0.2532	9.01	9.60	18.61	51.65	-33.04	AVG
11	0.2790	24.71	9.60	34.31	60.85	-26.54	QP
12	0.2790	8.25	9.60	17.85	50.85	-33.00	AVG

Note: 1. Result = Reading +Correct Factor.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

Note: All test mode has been tested, only the worst data record in the report.

9. ANTENNA REQUIREMENTS

APPLICABLE REQUIREMENTS

Please refer to FCC §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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Please refer to FCC §15.247(b)(4)
The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

RESULTS

Complies

END OF REPORT