CFR 47 FCC PART 15 SUBPART C

CERTIFICATION TEST REPORT

For

Kasa Smart Doorbell

MODEL NUMBER: KD110

FCC ID: 2AXJ4KD110V2

REPORT NUMBER: 4790122292.1-1

ISSUE DATE: January 14, 2022

Prepared for

TP-Link Corporation Limited
Room 901, 9/F. , New East Ocean Centre, 9 Science Museum Road, Tsim Sha Tsui, Kowloon, Hong Kong

Prepared by

UL Verification Services (Guangzhou) Co., Ltd, Song Shan Lake Branch

Building 10, Innovation Technology Park, No. 1, Li Bin Road, Song Shan Lake Hi-Tech Development Zone Dongguan, 523808, People's Republic of China

Tel: +86 769 22038881
Fax: +86 769 33244054
Website: www.ul.com

Revision History

Rev.	Issue Date	Revisions	Revised By
V0	1/14/2022	Initial Issue	

Summary of Test Results			
Clause	**Test Items**	**FCC Rules**	**Test Results**
1	6dB Bandwidth and 99% Occupied Bandwidth	FCC Part 15.247 (a) (2)	Pass
2	Conducted Output Power	FCC Part 15.247 (b) (3)	Pass
3	Power Spectral Density	FCC Part 15.247 (e)	Pass
4	Conducted Bandedge and Spurious Emission	FCC Part 15.247 (d)	Pass
5	Radiated Bandedge and Spurious Emission	FCC Part 15.247 (d) FCC Part 15.209 FCC Part 15.205	Pass
6	Conducted Emission Test for AC Power Port	FCC Part 15.207	Pass
7	Antenna Requirement	FCC Part 15.203	Pass

Note:
1.This test report is only published to and used by the applicant, and it is not for evidence purpose in China.
2. The measurement result for the sample received is <Pass> according to < CFR 47 FCC PART 15 SUBPART C >< ISED RSS-247 > when <Accuracy Method> decision rule is applied.

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name:	TP-Link Corporation Limited
Address:	Room 901, 9/F. , New East Ocean Centre, 9 Science Museum Road, Tsim Sha Tsui, Kowloon, Hong Kong

Manufacturer Information

Company Name:	TP-Link Corporation Limited
Address:	Room 901, 9/F. , New East Ocean Centre, 9 Science Museum Road, Tsim Sha Tsui, Kowloon, Hong Kong

EUT Information

EUT Name:	Kasa Smart Doorbell
Model:	KD110
Sample Received Date:	September 29, 2021
Sample Status:	Normal
Sample ID:	4265987
Date of Tested:	October 08, 2021 ~ January 14, 2022

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

Prepared By:

Kebo Zhang
Project Engineer

Checked By:

Shawn Wen
Laboratory Leader

Approved By:

Stephen Guo
Laboratory Manager

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with KDB 558074 D01 15.247 Meas Guidance v05r02, KDB 662911 D01 Multiple Transmitter Output v02r01, KDB 414788 D01 Radiated Test Site v01r01, CFR 47 FCC Part 2, CFR 47 FCC Part 15, ANSI C63.10-2013.

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 **ISED (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 and the test lab Conformity Assessment Body Identifier (CABID) is CN0046. **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

Note 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.

Note 3: For below 30 MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30 MHz 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 recognize 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	3.62 dB
Radiated Emission (Included Fundamental Emission) (9 kHz ~ 30 MHz)	2.2 dB
Radiated Emission (Included Fundamental Emission) (30 MHz ~ 1 GHz)	4.00 dB
Radiated Emission (Included Fundamental Emission) (1 GHz to 26 GHz)	5.78 dB (1 GHz ~ 18 GHz)
	5.23 dB (18 GHz ~ 26 GHz)
Duty Cycle	±0.028%
DTS and 99% Occupied Bandwidth	±0.0196%
Maximum Conducted Output Power	±0.686 dB
Maximum Power Spectral Density Level	±0.743 dB
Conducted Band-edge Compliance	±1.328 dB
Conducted Unwanted Emissions In Non-restricted Frequency Bands	±0.746 dB (9 kHz ~ 1 GHz)
	±1.328dB (1 GHz ~ 26 GHz)
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	Kasa Smart Doorbell
Model Name	KD110
Radio Technology	IEEE802.11b/g/n HT20
Operation frequency	IEEE 802.11b: 2412MHz—2462MHz IEEE 802.11g: 2412MHz—2462MHz IEEE 802.11n HT20: 2412MHz—2462MHz
Modulation	IEEE 802.11b: DSSS(CCK) IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK,BPSK)
Rating	16-24Vac~, 50/60Hz, 0.5A

5.2. CHANNEL LIST

Channel List for 802.11b/g/n (20 MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	4	2427	7	2442	10	2457
2	2417	5	2432	8	2447	11	2462
3	2422	6	2437	9	2452	/	/

5.3. MAXIMUM OUTPUT POWER

IEEE Std. 802.11	Frequency (MHz)	Channel Number	Maximum Conducted AVG Output Power (dBm)
b	2412 ~ 2462	1-11[11]	16.63
g	2412 ~ 2462	1-11[11]	20.26
n HT20	2412 ~ 2462	1-11[11]	20.66

5.4. TEST CHANNEL CONFIGURATION

Test Mode	Test Channel	Frequency(MHz)
802.11b	CH 1, CH2 CH 6,CH10, CH 11	2412, 2417, 2437, 2457, 2462
802.11g	CH 1, CH2 CH 6,CH10, CH 11	2412, 2417, 2437, 2457, 2462
802.11n HT20	CH 1, CH2 CH 6,CH10, CH 11	2412, 2417, 2437, 2457, 2462

5.5. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band											
Test Software		Realtek RTL8723AE									
Modulation Mode	Transmit Antenna Number	Test Software Setting Value									
		NCB: 20MHz					NCB: 40MHz				
		CH1	CH2	CH6	CH10	CH11	CH3	CH4	CH6	CH8	CH9
802.11b	1	31	31	30	31	31	NA				
802.11g	1	46	48	48	44	39					
802.11n HT20	1	43	49	48	44	38					

5.6. THE WORSE CASE CONFIGURATIONS

The EUT was tested in the following configuration(s):

Controlled in test mode using a software application on the EUT supplied by customer. The application was used to enable a continuous transmission and to select the mode, test channels, bandwidth, data rates as required.

Worst-case data rates as provided by the client were:

802.11b mode: 1 Mbps
802.11b mode: 6 Mbps
802.11n HT20 mode: MCS0
802.11n HT40 mode: MCS0

The measured additional path loss was included in any path loss calculations for all RF cable used during tested.

5.7. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)
1	2412-2462	PCB antenna	2.69

Test Mode	Transmit and Receive Mode	Description
IEEE 802.11b	☒1TX, 1RX	ANT 1 can be used as transmitting/receiving antenna.
IEEE 802.11g	☒1TX, 1RX	ANT 1 can be used as transmitting/receiving antenna.
IEEE 802.11n HT20	☒1TX, 1RX	ANT 1 can be used as transmitting/receiving antenna.

Note: The value of the antenna gain was declared by customer.

5.8. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	Remarks
1	laptop	Lenovo	TP00094A	/
2	UART	/	/	/
3	Clsaa 2 Transformer	/	C 14758357	Input:120Vac, 60Hz Outout:16-24Vac

I/O CABLES

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

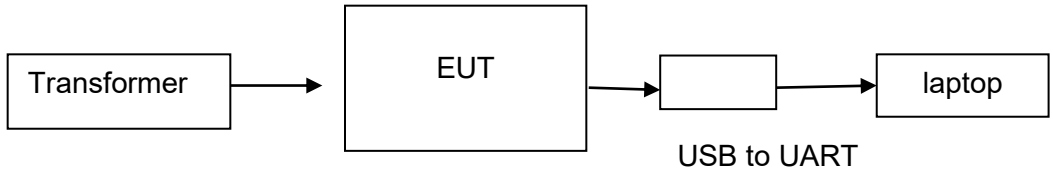
ACCESSORIES

Item	Accessory	Brand Name	Model Name	Description
/	/	/	1m	/

TEST SETUP

The EUT can work in engineering mode with a software through a laptop.

SETUP DIAGRAM FOR TESTS



6. MEASURING INSTRUMENT AND SOFTWARE USED

Conducted Emissions					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date
EMI Test Receiver	R&S	ESR3	101961	Oct.30, 2021	Oct.29, 2022
Two-Line V-Network	R&S	ENV216	101983	Oct.30, 2021	Oct.29, 2022
Artificial Mains Networks	Schwarzbeck	NSLK 8126	8126465	Oct.30, 2021	Oct.29, 2022
Software					
Description			Manufacturer	Name	Version
Test Software for Conducted Emissions			Farad	EZ-EMC	Ver. UL-3A1

Radiated Emissions					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date
MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Oct.30, 2021	Oct.29, 2022
Hybrid Log Periodic Antenna	TDK	HLP-3003C	130959	Aug.02, 2021	Aug.01, 2024
Preamplifier	HP	8447D	2944A09099	Oct.30, 2021	Oct.29, 2022
EMI Measurement Receiver	R&S	ESR26	101377	Oct.30, 2021	Oct.29, 2022
Horn Antenna	TDK	HRN-0118	130940	July 20, 2021	July 19, 2024
Preamplifier	TDK	PA-02-0118	TRS-305-00067	Oct.30, 2021	Oct.29, 2022
Horn Antenna	Schwarzbeck	BBHA9170	697	July 20, 2021	July 19, 2024
Preamplifier	TDK	PA-02-2	TRS-307-00003	Oct.31, 2021	Oct.30, 2022
Preamplifier	TDK	PA-02-3	TRS-308-00002	Oct.31, 2021	Oct.30, 2022
Loop antenna	Schwarzbeck	1519B	00008	Jan.17, 2019	Jan.17,2022
Preamplifier	TDK	PA-02-001-3000	TRS-302-00050	Oct.31, 2021	Oct.30, 2022
Preamplifier	Mini-Circuits	ZX60-83LN-S+	SUP01201941	Oct.31, 2021	Oct.30, 2022
High Pass Filter	Wi	WHKX10-2700-3000-18000-40SS	23	Oct.31, 2021	Oct.30, 2022
Band Reject Filter	Wainwright	WRCJV8-2350-2400-2483.5-2533.5-40SS	4	Oct.31, 2021	Oct.30, 2022
Software					

Description	Manufacturer	Name	Version
Test Software for Radiated Emissions	Farad	EZ-EMC	Ver. UL-3A1

R&S TS 8997 Test System					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
Power sensor, Power Meter	R&S	OSP120	100921	Mar.23,2021	Mar.22,2022
Vector Signal Generator	R&S	SMBV100A	261637	Oct.30, 2021	Oct.29, 2022
Signal Generator	R&S	SMB100A	178553	Oct.30, 2021	Oct.29, 2022
Signal Analyzer	R&S	FSV40	101118	Oct.30, 2021	Oct.29, 2022
Software					
Description	Manufacturer	Name	Version		
For R&S TS 8997 Test System	Rohde & Schwarz	EMC 32	10.60.10		
Tonsend RF Test System					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
Wideband Radio Communication Tester	R&S	CMW500	155523	Oct.30, 2021	Oct.29, 2022
Wireless Connectivity Tester	R&S	CMW270	1201.0002N75-102	Sep.29, 2021	Sep.28, 2022
PXA Signal Analyzer	Keysight	N9030A	MY55410512	Oct.30, 2021	Oct.29, 2022
MXG Vector Signal Generator	Keysight	N5182B	MY56200284	Oct.30, 2021	Oct.29, 2022
MXG Vector Signal Generator	Keysight	N5172B	MY56200301	Oct.30, 2021	Oct.29, 2022
DC power supply	Keysight	E3642A	MY55159130	Oct.30, 2021	Oct.29, 2022
Temperature & Humidity Chamber	SANMOOD	SG-80-CC-2	2088	Nov.20,2020	Nov.19,2022
Software					
Description	Manufacturer	Name	Version		
Tonsend SRD Test System	Tonsend	JS1120-3 RF Test System	2.6.77.0518		

7. ANTENNA PORT TEST RESULTS

7.1. ON TIME AND DUTY CYCLE

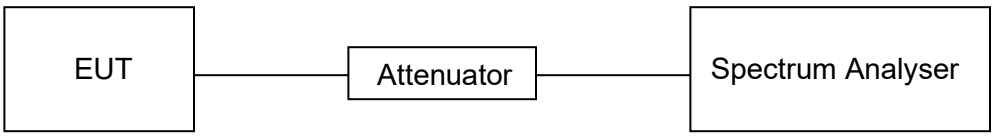
LIMITS

None; for reporting purposes only

PROCEDURE

Refer to ANSI C63.10-2013 clause 11.6 Zero – Span Spectrum Analyzer method.

TEST SETUP



TEST ENVIRONMENT

Temperature	27.5 °C	Relative Humidity	56.4 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120V, 60 HZ

RESULTS

Please refer to appendix G.

7.2. 6 dB DTS BANDWIDTH AND 99 % OCCUPIED BANDWIDTH

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.247(a)(2) ISED RSS-247 5.2 (a)	6 dB Bandwidth	≥ 500 kHz	2400-2483.5
ISED RSS-Gen Clause 6.7	99 % Occupied Bandwidth	For reporting purposes only.	2400-2483.5

TEST PROCEDURE

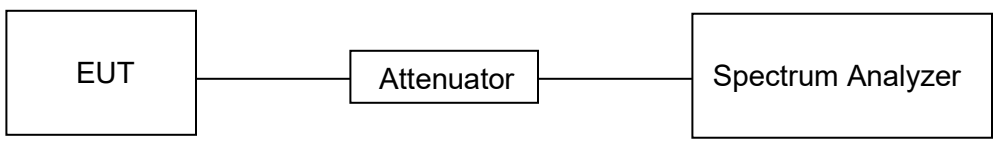
Connect the EUT to the spectrum analyser and use the following settings:

Center Frequency	The center frequency of the channel under test
Frequency Span	Between 1.5 times and 5.0 times the OBW
Detector	Peak
RBW	For 6 dB Bandwidth: 100 kHz For 99 % Occupied Bandwidth: 1 % to 5 % of the occupied bandwidth
VBW	For 6 dB Bandwidth: ≥3 × RBW For 99 % Occupied Bandwidth: ≥3 × RBW
Trace	Max hold
Sweep	Auto couple

a) Use the 99 % power bandwidth function of the instrument, allow the trace to stabilize and report the measured bandwidth.

b) 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 6 dB relative to the maximum level measured in the fundamental emission.

TEST SETUP



TEST ENVIRONMENT

Temperature	27.5 °C	Relative Humidity	56.4 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120V, 60 HZ

RESULTS

Please refer to appendix A & B.

7.3. CONDUCTED OUTPUT POWER

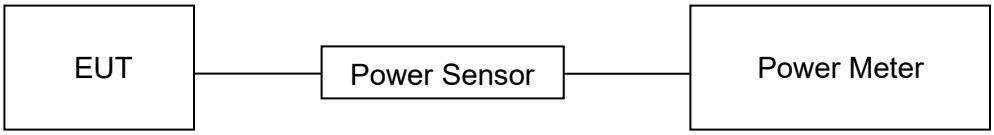
LIMITS

CFR 47 FCC Part15 (15.247) Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.247(b)(3)	AVG Output Power	1 watt or 30 dBm	2400-2483.5

TEST PROCEDURE

Connect the EUT to a low loss RF cable from the antenna port to the power sensor (video bandwidth is greater than the occupied bandwidth).
Measure peak emission level, the indicated level is the average output power, after any corrections for external attenuators and cables.

TEST SETUP



TEST ENVIRONMENT

Temperature	27.5 °C	Relative Humidity	56.4 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120V, 60 HZ

RESULTS

Please refer to appendix C.

7.4. POWER SPECTRAL DENSITY

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC §15.247 (e)	Power Spectral Density	8 dBm/3 kHz	2400-2483.5

TEST PROCEDURE

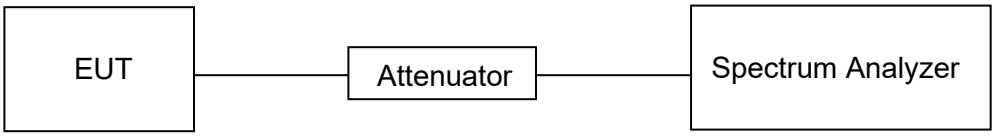
Refer to ANSI C63.10-2013 clause 11.10.

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

Center Frequency	The center frequency of the channel under test
Detector	AVG
RBW	3 kHz ≤ RBW ≤ 100 kHz
VBW	≥3 × RBW
Span	at least 1.5 times the OBW
Trace	Trace average
Sweep time	Auto couple

Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.
If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

TEST SETUP



TEST ENVIRONMENT

Temperature	27.5 °C	Relative Humidity	56.4 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120V, 60 HZ

RESULTS

Please refer to appendix D.

7.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C		
Section	Test Item	Limit
CFR 47 FCC §15.247 (d)	Conducted Bandedge and Spurious Emissions	at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power

TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.11 and 11.13.

Connect the EUT to the spectrum analyser and use the following settings for reference level measurement:

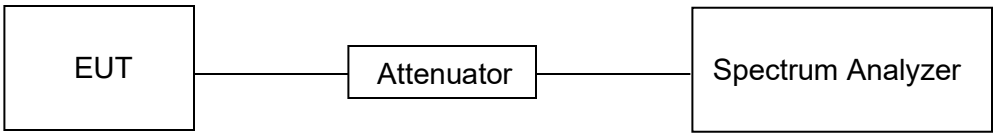
Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	100 kHz
VBW	≥3 × RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

Allow trace to fully stabilize and use the peak marker function to determine the maximum PSD level.
Change the settings for emission level measurement:

Span	Set the center frequency and span to encompass frequency range to be measured
Detector	Peak
RBW	100 kHz
VBW	≥3 × RBW
measurement points	≥span/RBW
Trace	Max hold
Sweep time	Auto couple.

Allow trace to fully stabilize and use the peak marker function to determine the maximum PSD level. Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11.

TEST SETUP



TEST ENVIRONMENT

Temperature	27.5 °C	Relative Humidity	56.4 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120V, 60 HZ

RESULTS

Please refer to appendix E & F.

8. RADIATED TEST RESULTS

LIMITS

Please refer to CFR 47 FCC §15.205 and §15.209.

Radiation Disturbance Test Limit for FCC (Class B) (9 kHz ~ 1 GHz)

Emissions radiated outside of the specified frequency bands above 30 MHz			
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

FCC Emissions radiated outside of the specified frequency bands below 30 MHz		
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

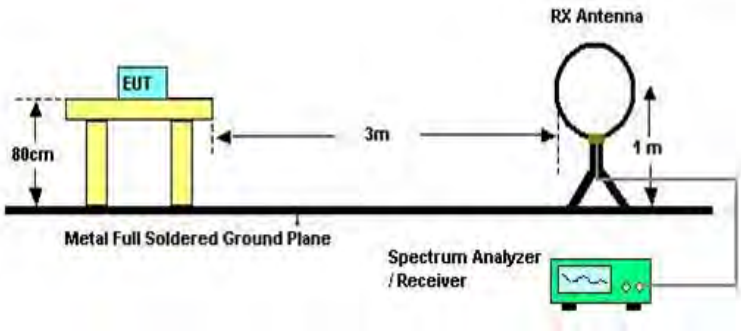
FCC Restricted bands of operation refer to FCC §15.205 (a):

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

TEST SETUP AND PROCEDURE

Below 30 MHz



The setting of the spectrum analyser

RBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
VBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
Sweep	Auto
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.4.

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, Face-on and Face-off polarizations of the antenna are set to make the measurement.

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

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a 1 m height antenna tower.

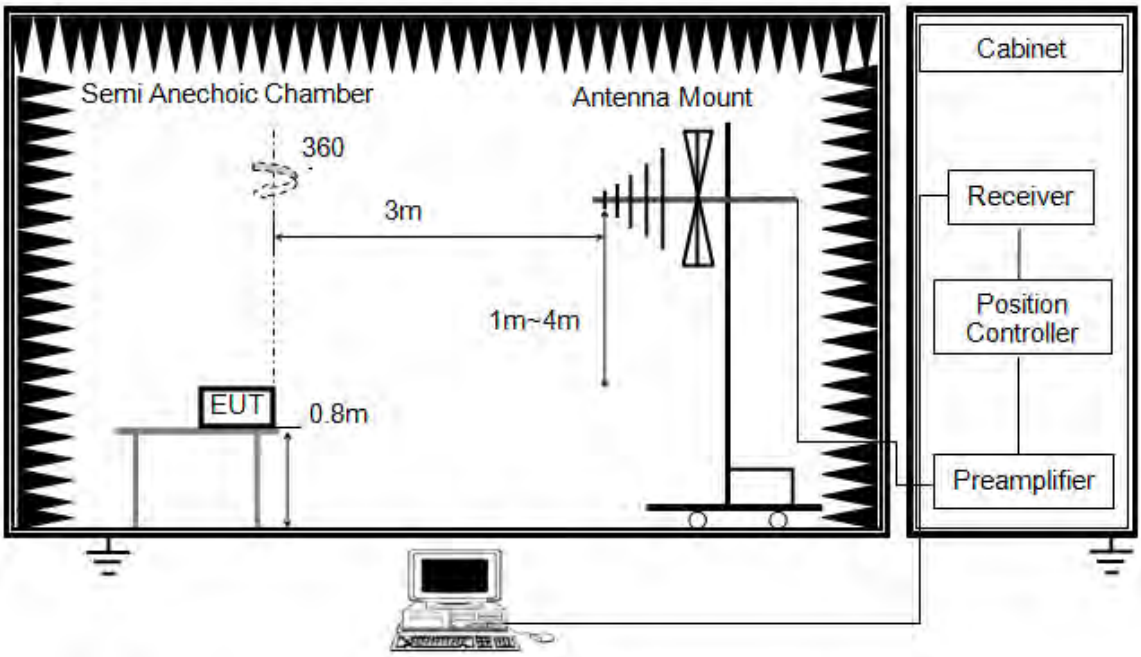
5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

6. For measurement below 1 GHz, 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 and average 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 and average 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 site based on KDB 414788.

8. The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), are identical to those in RSS-GEN Section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377Ω. For example, the measurement frequency X KHz resulted in a level of Y dBuV/m, which is equivalent to Y-51.5 = Z dBuA/m, which has the same margin, W dB, to the corresponding RSS-GEN Table 6 limit as it has to be 15.209(a) limit.

Below 1 GHz and above 30 MHz



The setting of the spectrum analyser

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

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.5.

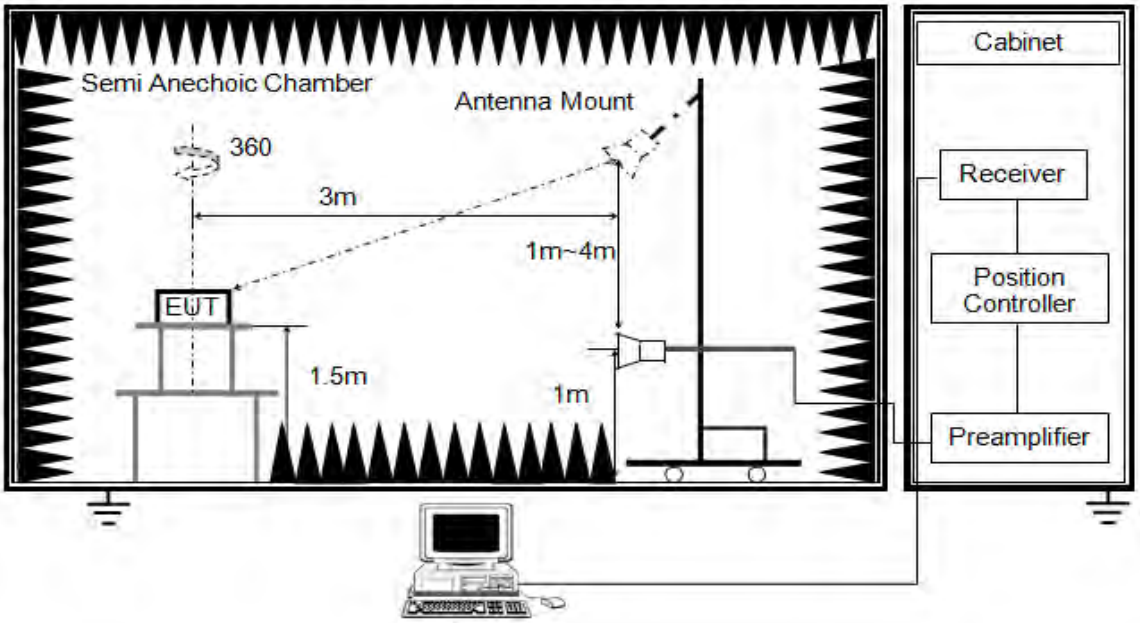
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations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

3. The EUT was placed on a turntable with 80 cm 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 1 GHz, 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 1 GHz



The setting of the spectrum analyser

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

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.6.

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.

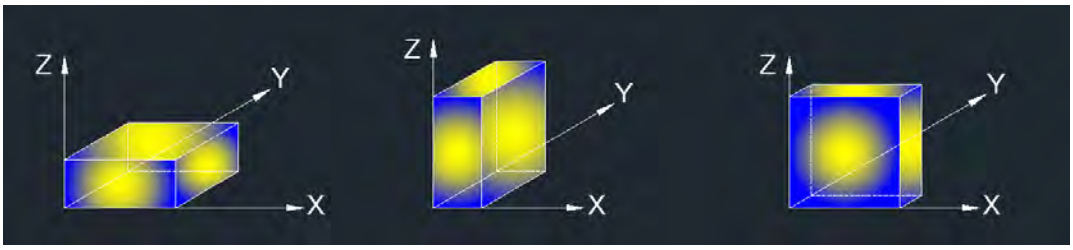
3. The EUT was placed on a turntable with 1.5 m above ground.

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 1 GHz, 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 and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 7.1.ON TIME AND DUTY CYCLE.

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.

TEST ENVIRONMENT

Temperature	24.3 °C	Relative Humidity	61 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120V, 60 HZ

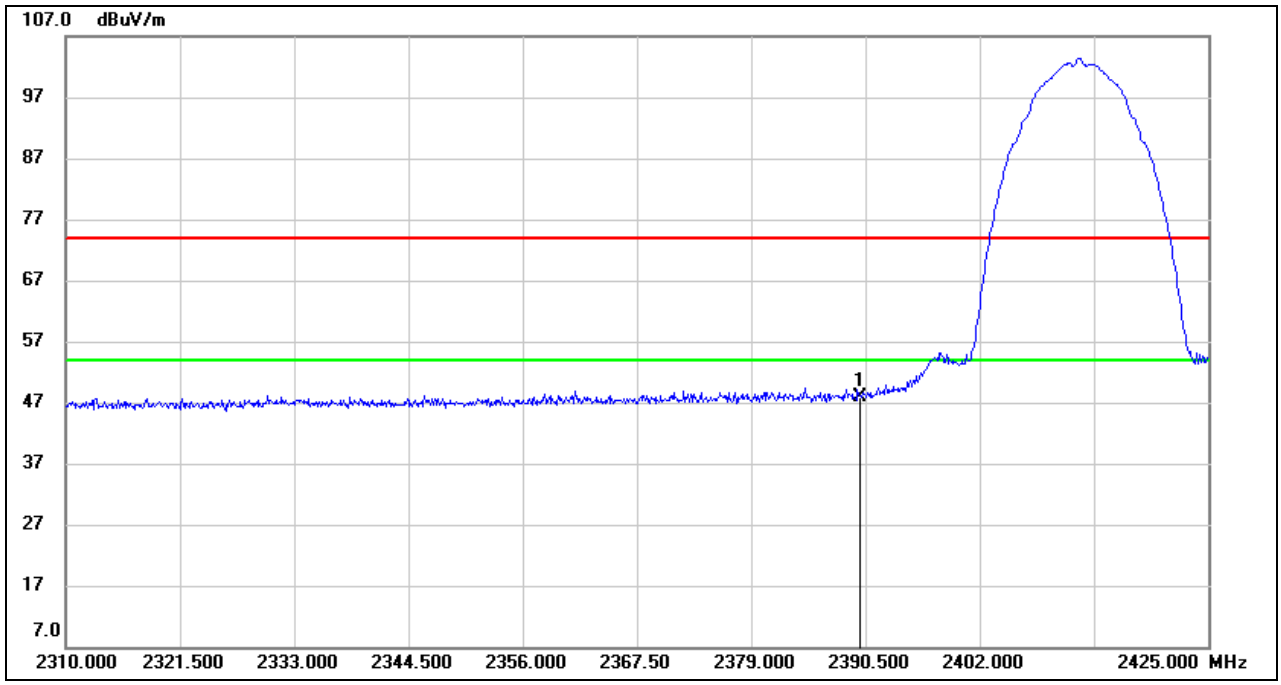
RESULTS

8.1. RESTRICTED BANDEDGE

8.1.1. 802.11b MODE

RESTRICTED BANDEDGE (CHANNEL 1, HORIZONTAL)

PEAK

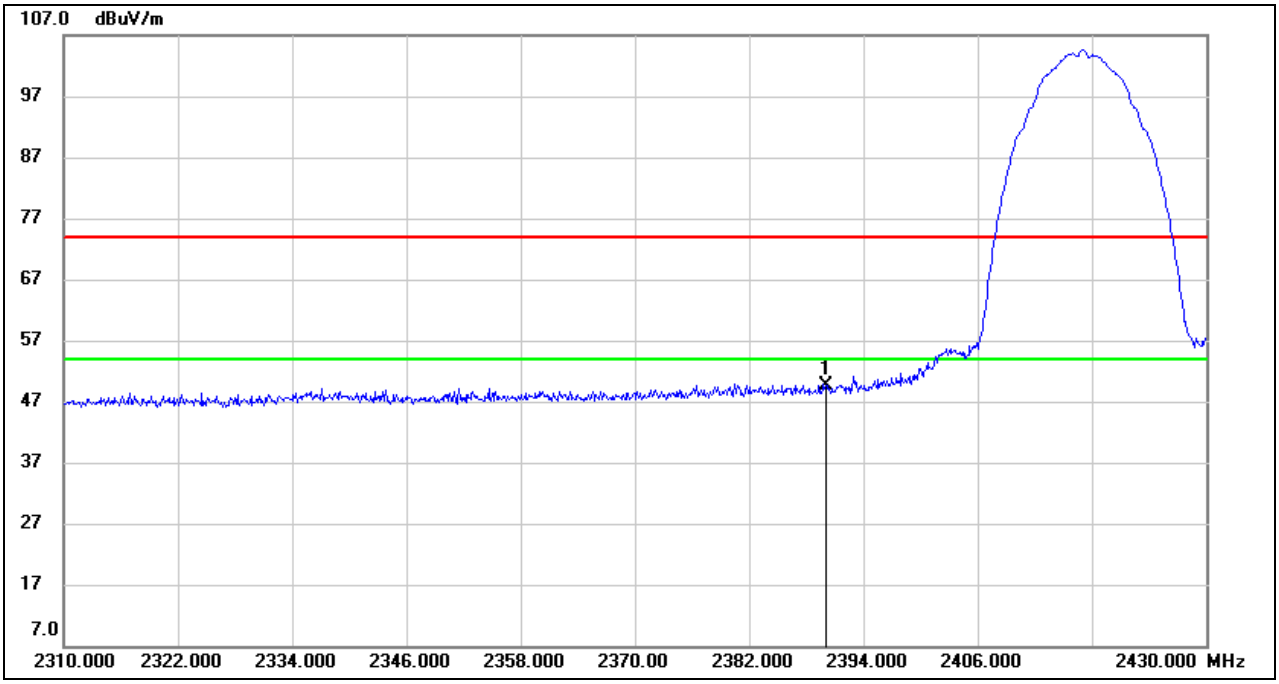


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	14.55	33.35	47.90	74.00	-26.10	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Peak: Peak detector.
3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (CHANNEL 2, HORIZONTAL)

PEAK

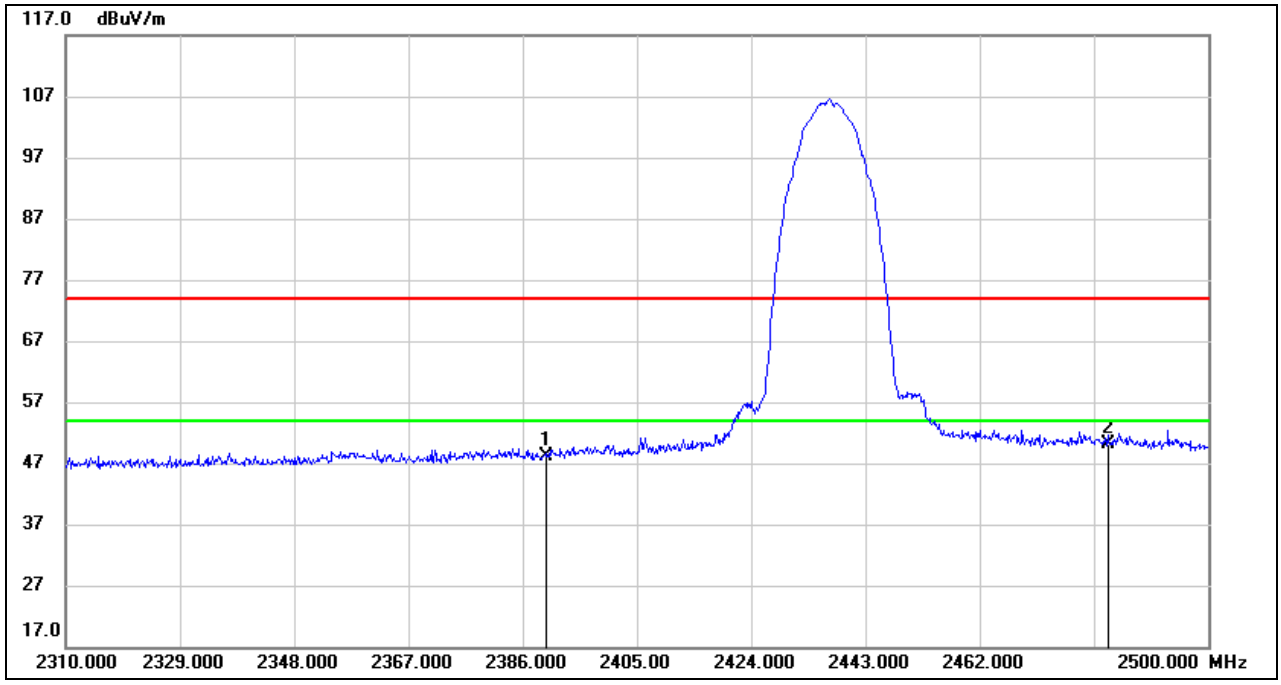


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	16.25	33.35	49.60	74.00	-24.40	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Peak: Peak detector.
3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (CHANNEL 6, HORIZONTAL)

PEAK

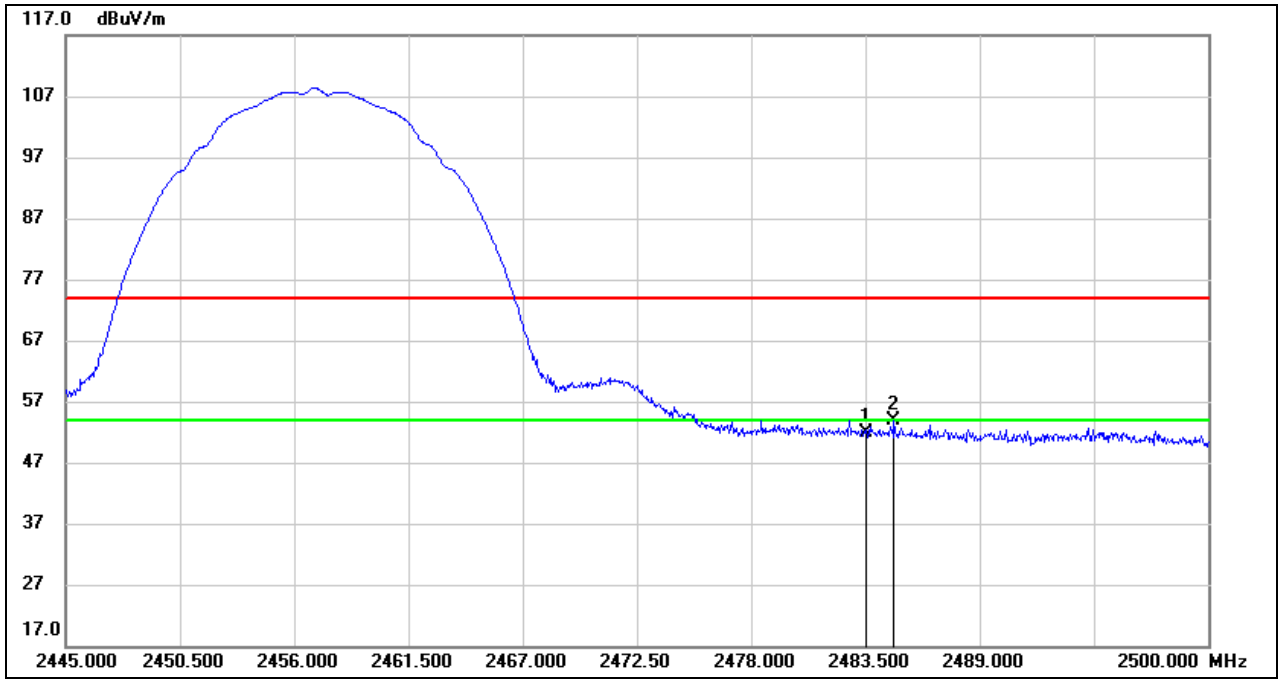


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	14.81	33.35	48.16	74.00	-25.84	peak
2	2483.500	16.49	33.71	50.20	74.00	-23.80	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Peak: Peak detector.
3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (CHANNEL 10, HORIZONTAL)

PEAK

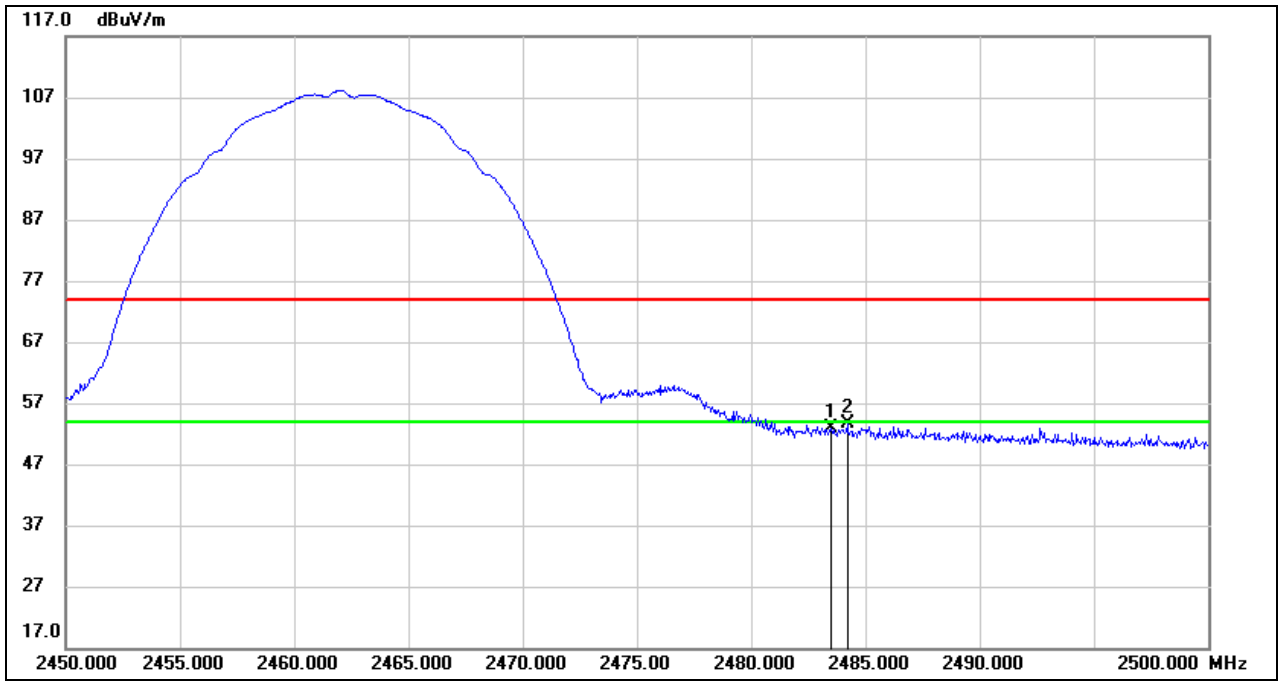


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	18.22	33.71	51.93	74.00	-22.07	peak
2	2484.875	20.22	33.71	53.93	74.00	-20.07	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Peak: Peak detector.
3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (CHANNEL 11, HORIZONTAL)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	19.15	33.71	52.86	74.00	-21.14	peak
2	2484.200	19.95	33.71	53.66	74.00	-20.34	peak

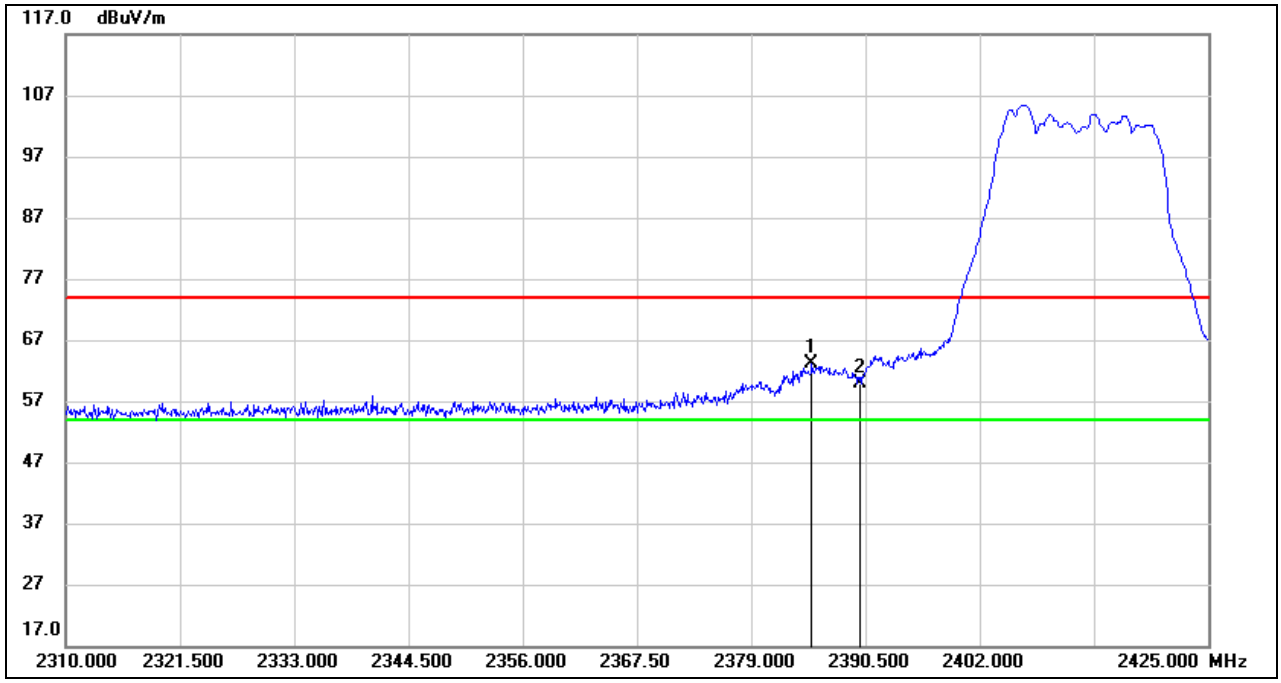
Note: 1. Measurement = Reading Level + Correct Factor.
2. Peak: Peak detector.
3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

Note: Horizontal and Vertical have been tested, only the worst data was recorded in the report.

8.1.2. 802.11g MODE

RESTRICTED BANDEDGE (CHANNEL 1, HORIZONTAL)

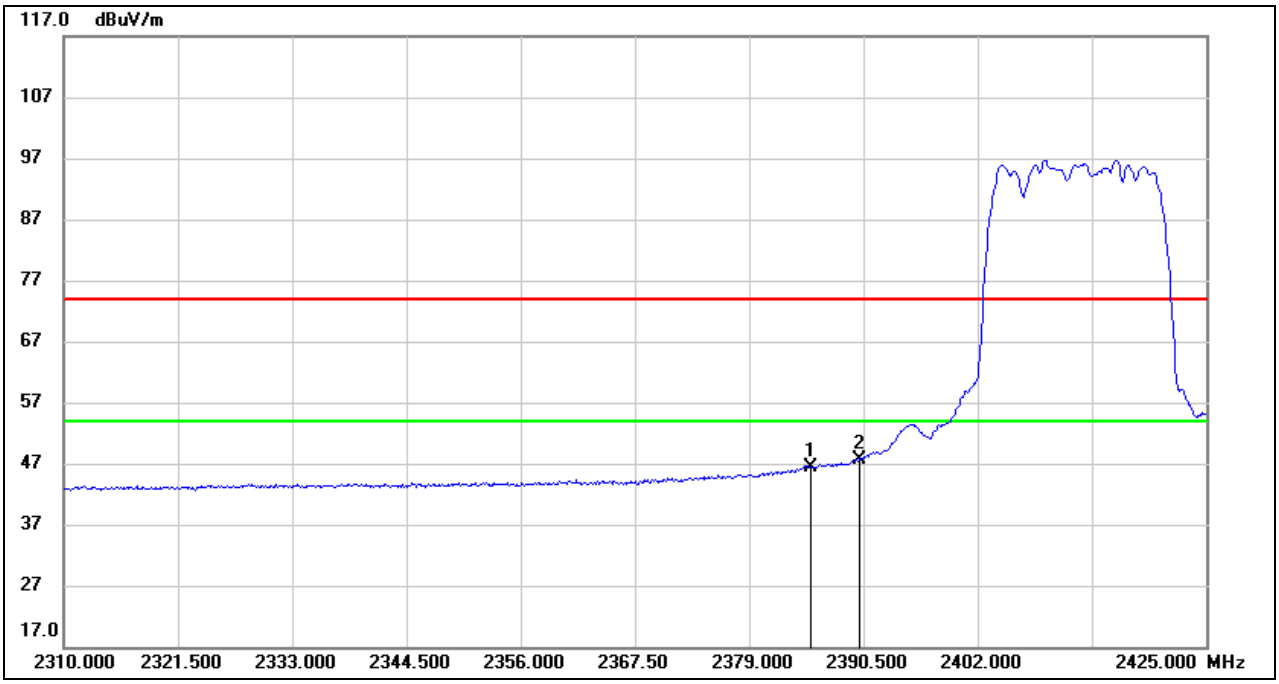
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2385.095	29.75	33.31	63.06	74.00	-10.94	peak
2	2390.000	26.63	33.35	59.98	74.00	-14.02	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Peak: Peak detector.
3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

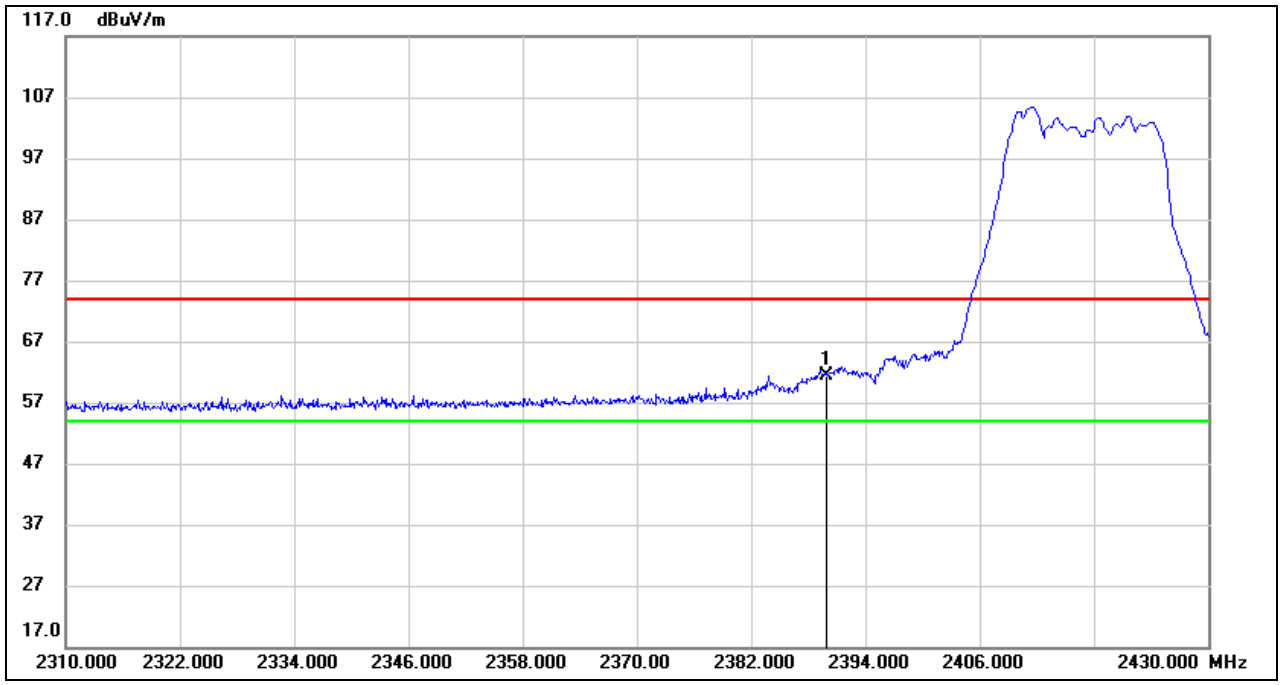


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2385.095	13.03	33.31	46.34	54.00	-7.66	AVG
2	2390.000	14.21	33.35	47.56	54.00	-6.44	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. Peak: Peak detector.
3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (CHANNEL 2, HORIZONTAL)

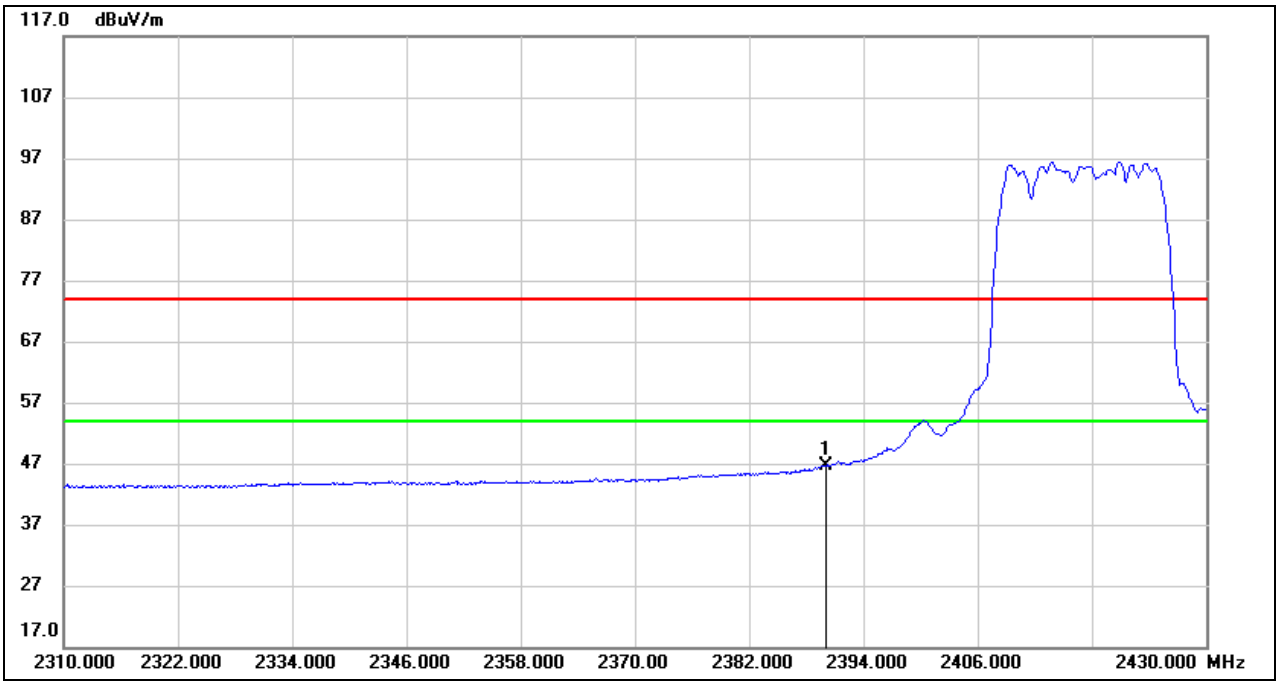
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	28.07	33.35	61.42	74.00	-12.58	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Peak: Peak detector.
3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

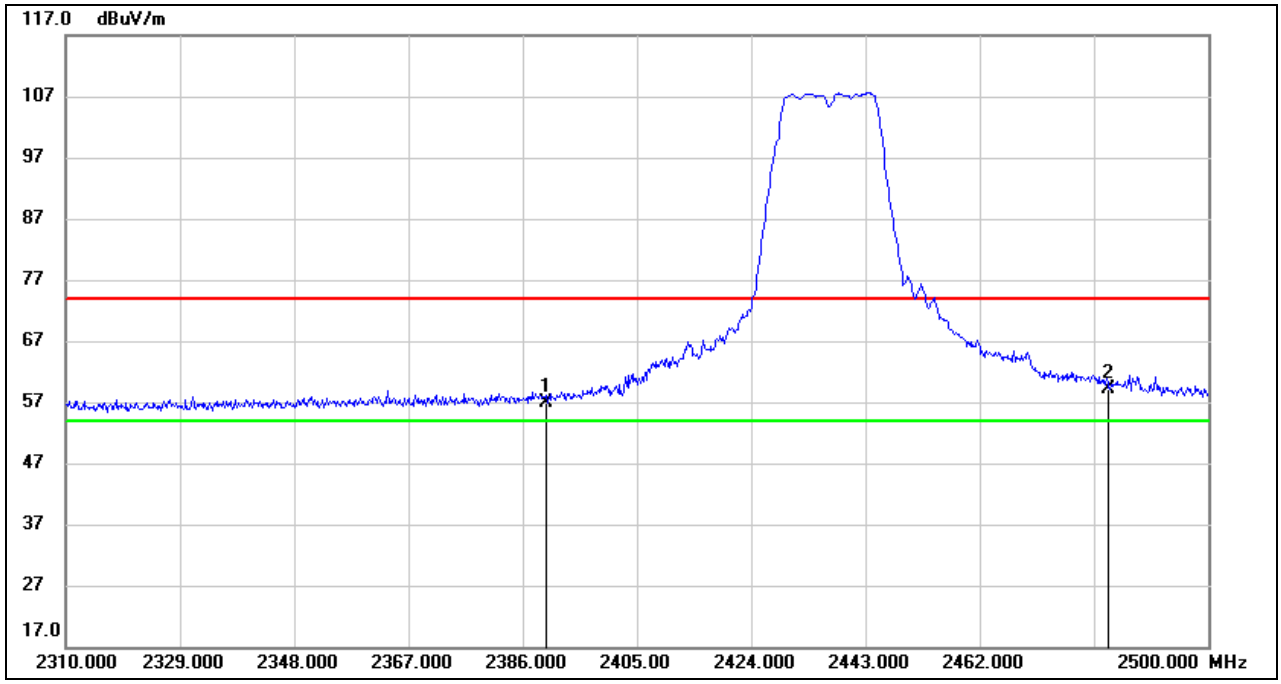


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	13.32	33.35	46.67	54.00	-7.33	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. Peak: Peak detector.
3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (CHANNEL 6, HORIZONTAL)

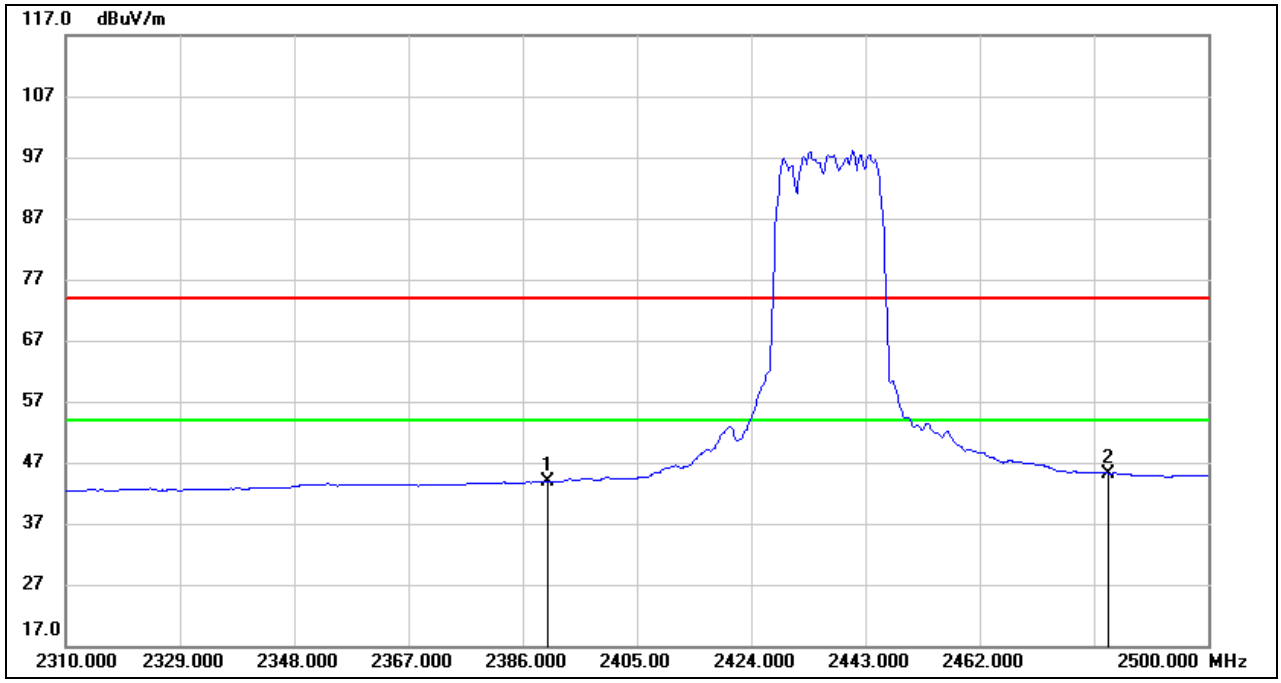
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	23.58	33.35	56.93	74.00	-17.07	peak
2	2483.500	25.47	33.71	59.18	74.00	-14.82	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Peak: Peak detector.
3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

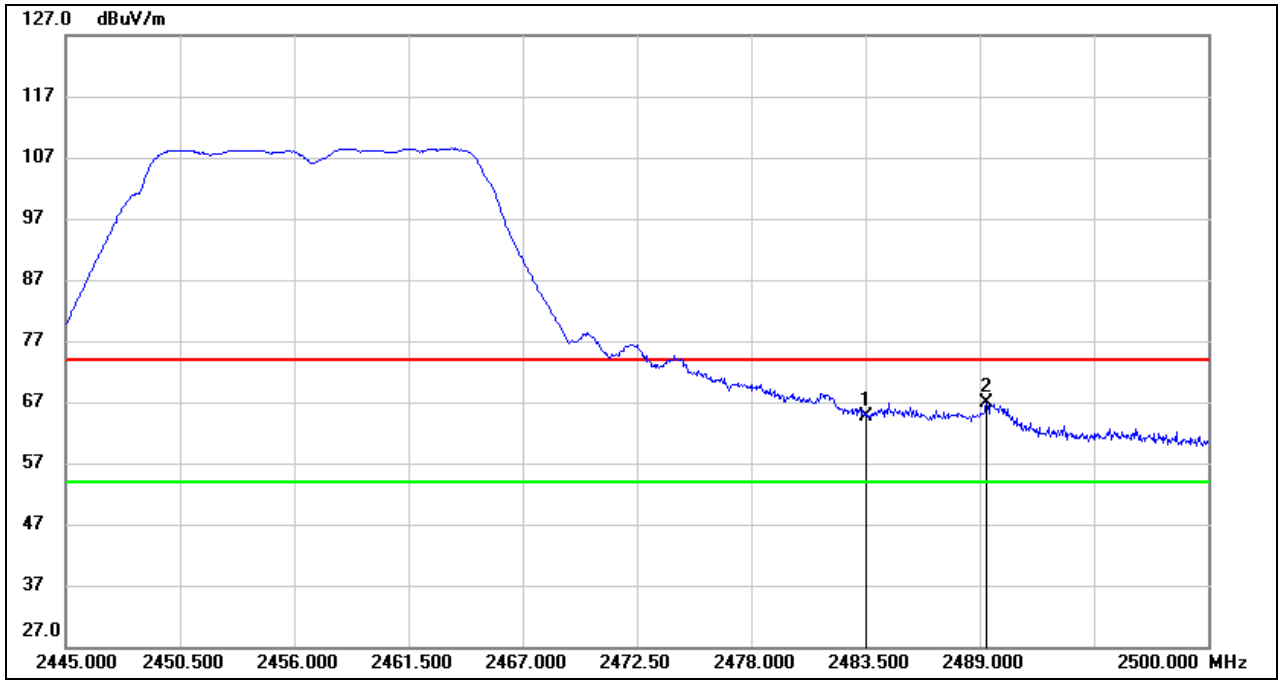


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	10.63	33.35	43.98	54.00	-10.02	AVG
2	2483.500	11.45	33.71	45.16	54.00	-8.84	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. Peak: Peak detector.
3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (CHANNEL 10, HORIZONTAL)

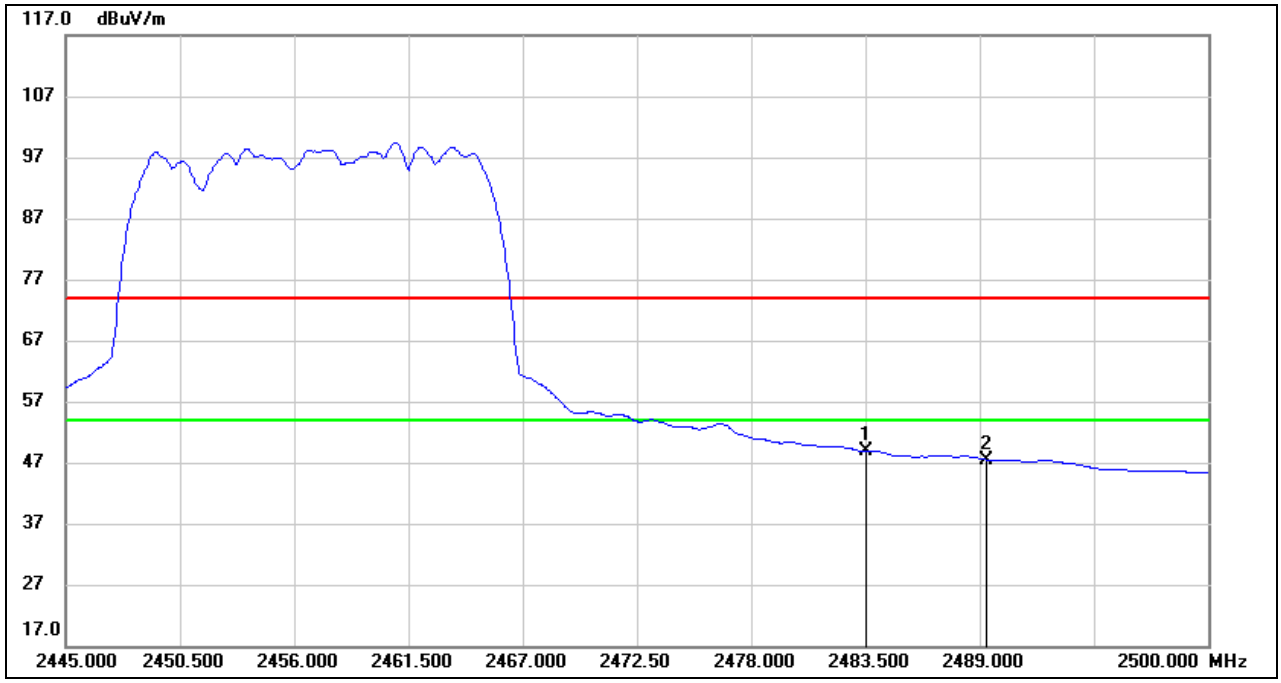
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	30.93	33.71	64.64	74.00	-9.36	peak
2	2489.330	33.23	33.72	66.95	74.00	-7.05	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Peak: Peak detector.
3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

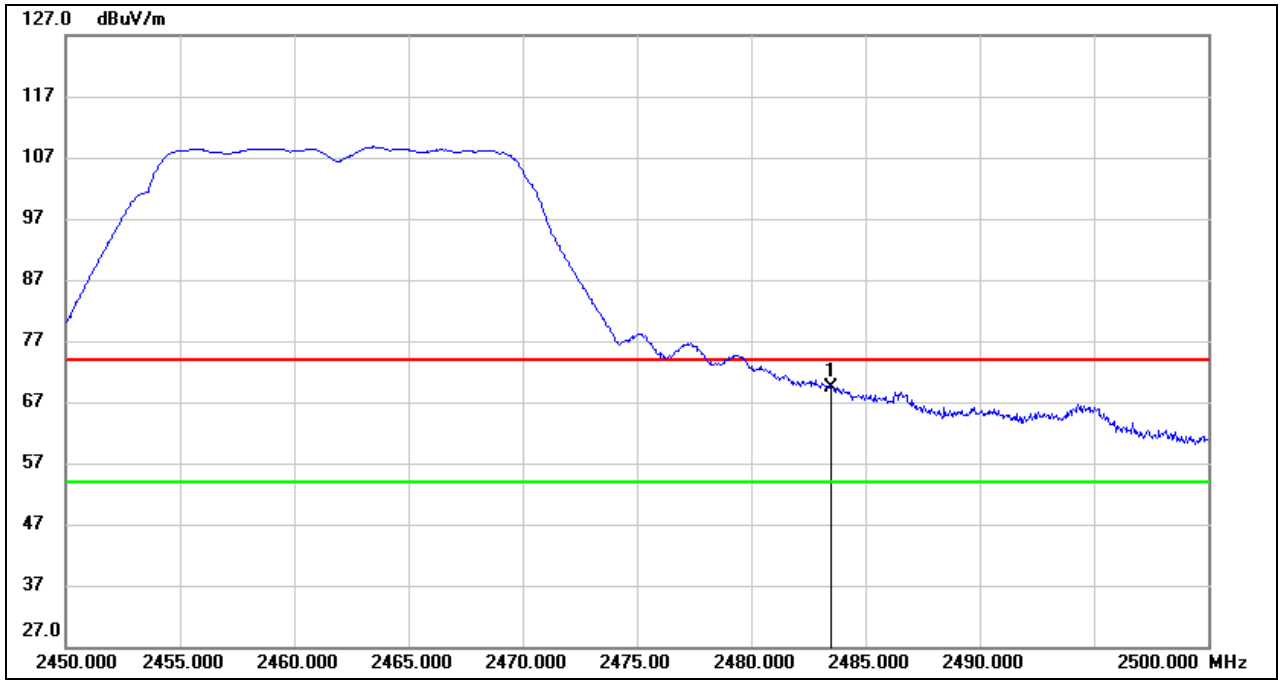


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	15.17	33.71	48.88	54.00	-5.12	AVG
2	2489.330	13.76	33.72	47.48	54.00	-6.52	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. Peak: Peak detector.
3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (CHANNEL 11, HORIZONTAL)

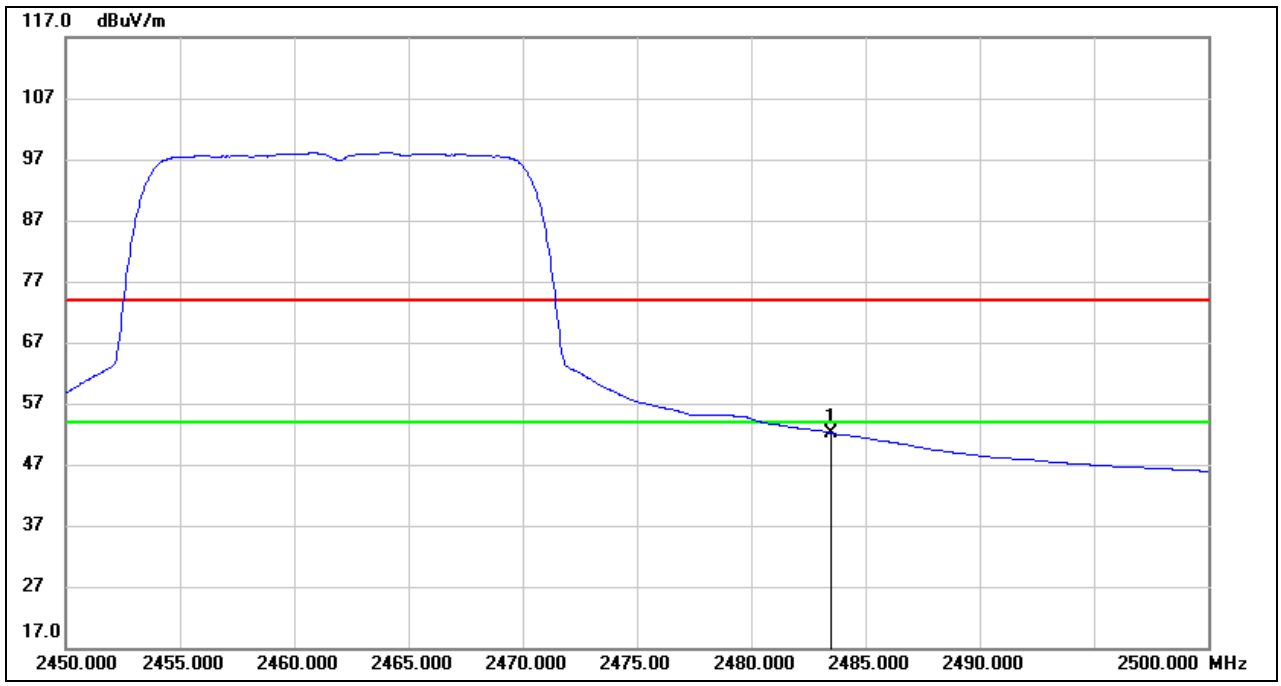
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	35.77	33.71	69.48	74.00	-4.52	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Peak: Peak detector.
3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	18.41	33.71	52.12	54.00	-1.88	AVG

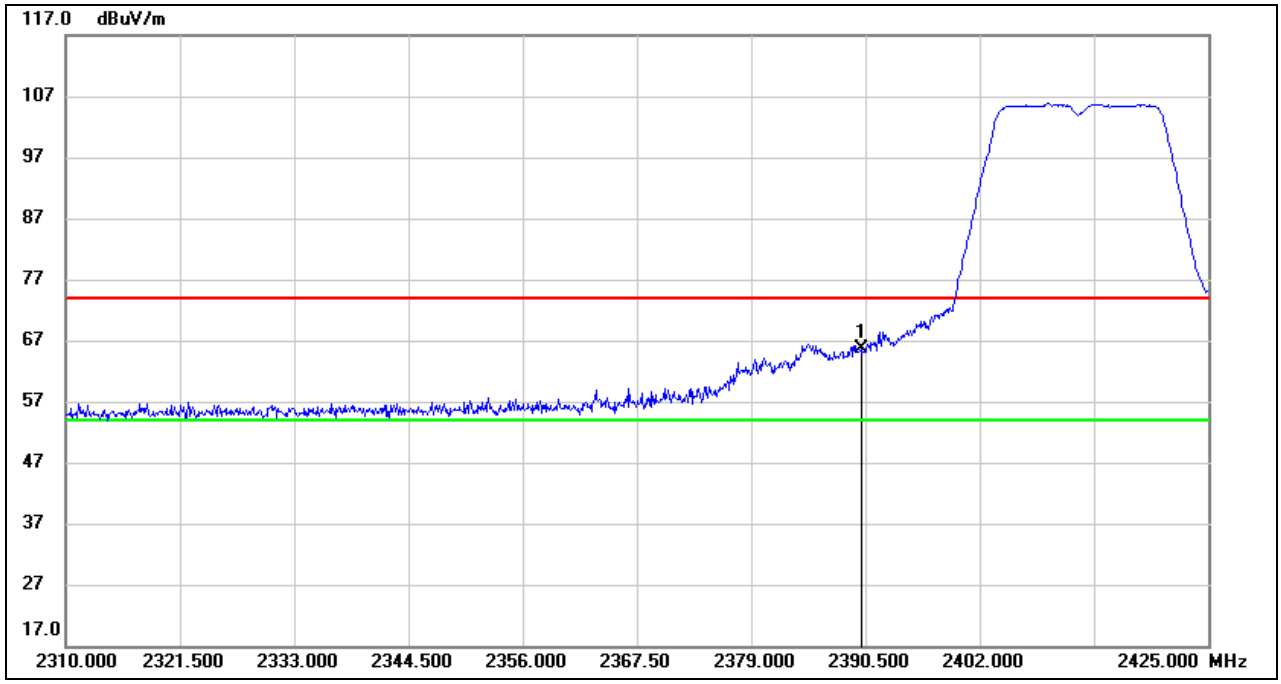
Note: 1. Measurement = Reading Level + Correct Factor.
2. Peak: Peak detector.
3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

Note: Horizontal and Vertical have been tested, only the worst data was recorded in the report.

8.1.3. 802.11n HT20 MODE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

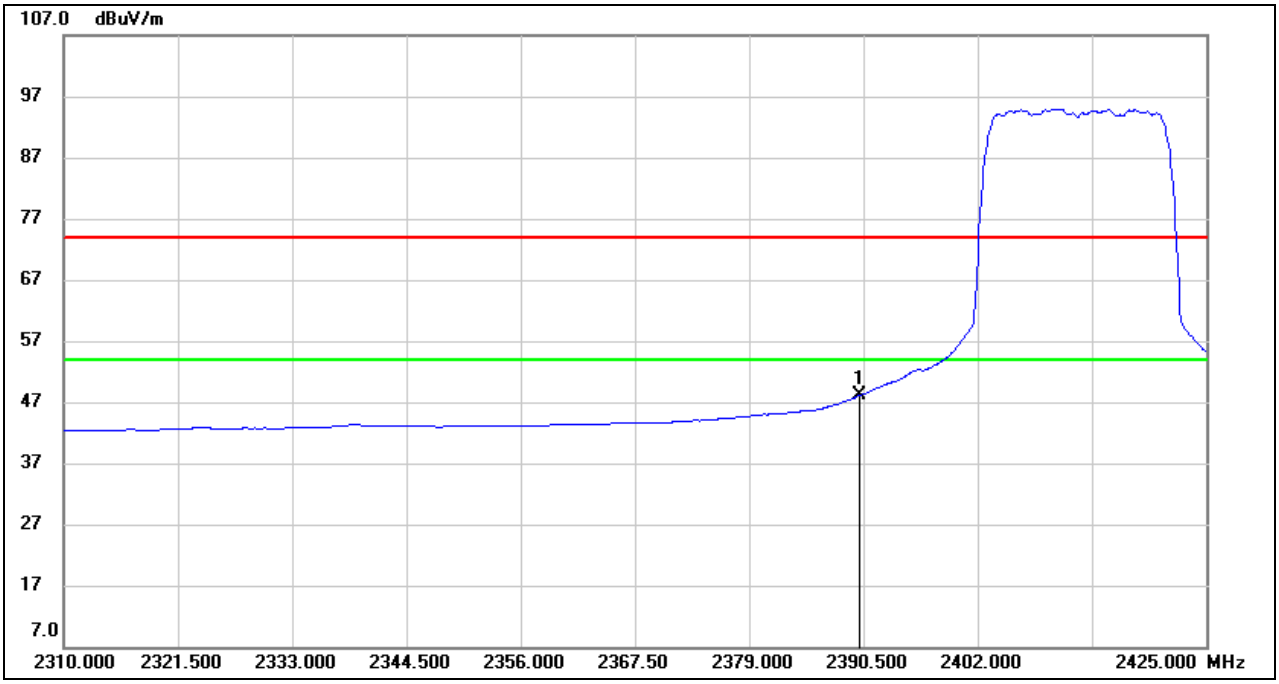
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	32.38	33.35	65.73	74.00	-8.27	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Peak: Peak detector.
3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

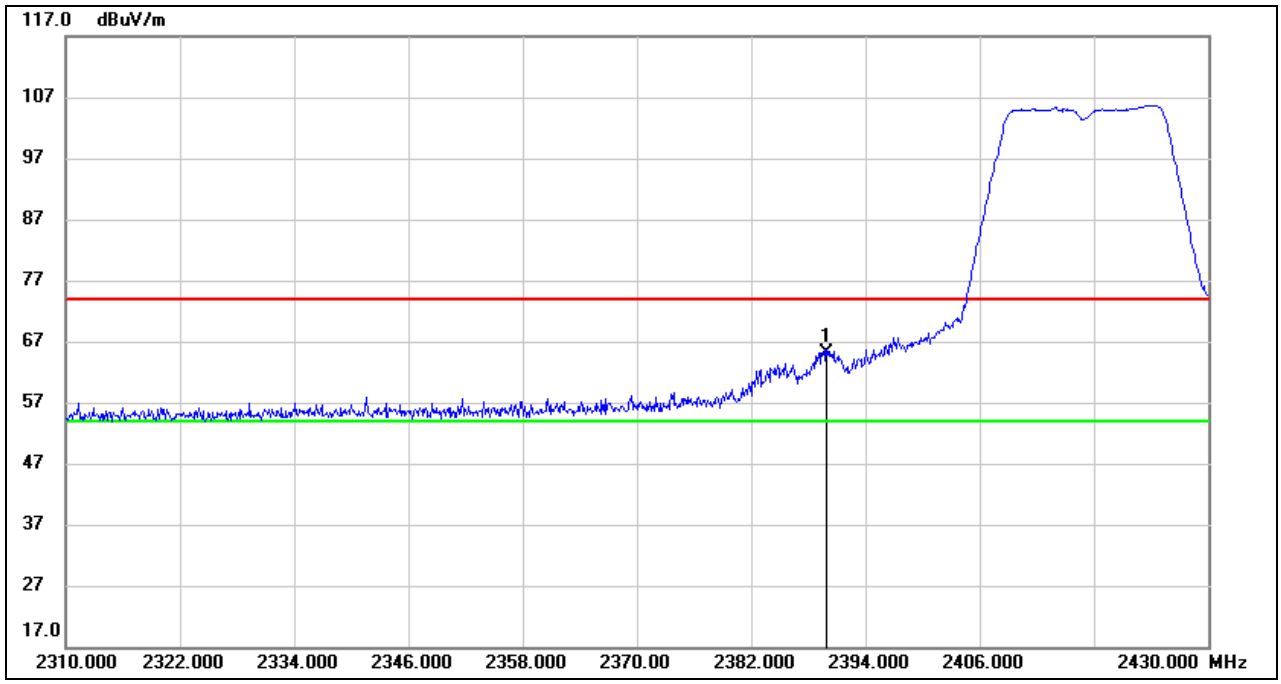


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	14.72	33.35	48.07	54.00	-5.93	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. Peak: Peak detector.
3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (CHANNEL 2, HORIZONTAL)

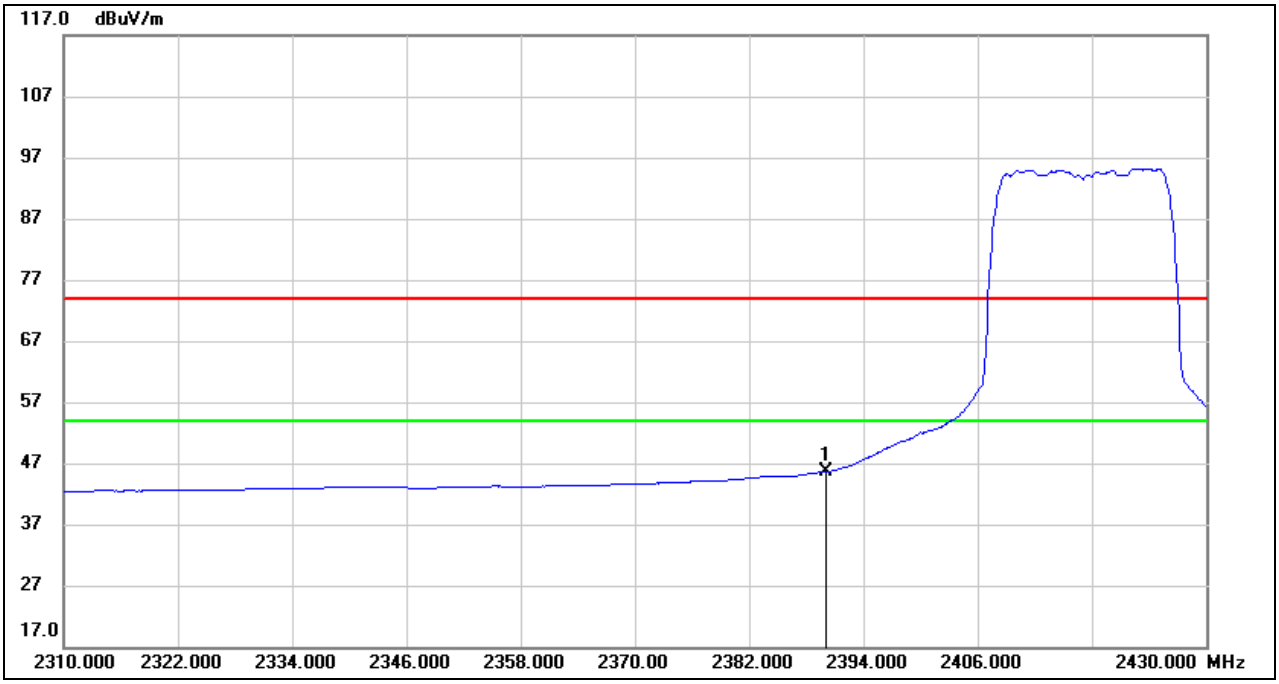
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	31.80	33.35	65.15	74.00	-8.85	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Peak: Peak detector.
3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

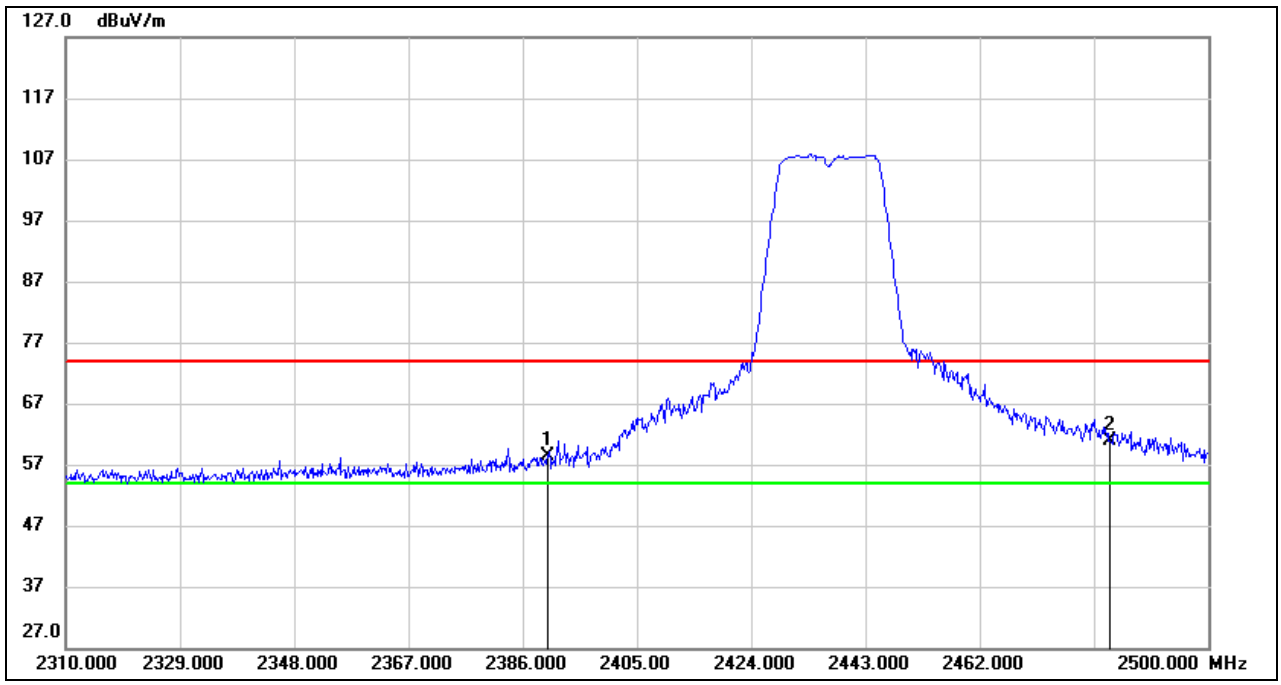


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	12.29	33.35	45.64	54.00	-8.36	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. Peak: Peak detector.
3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (CHANNEL 6, HORIZONTAL)

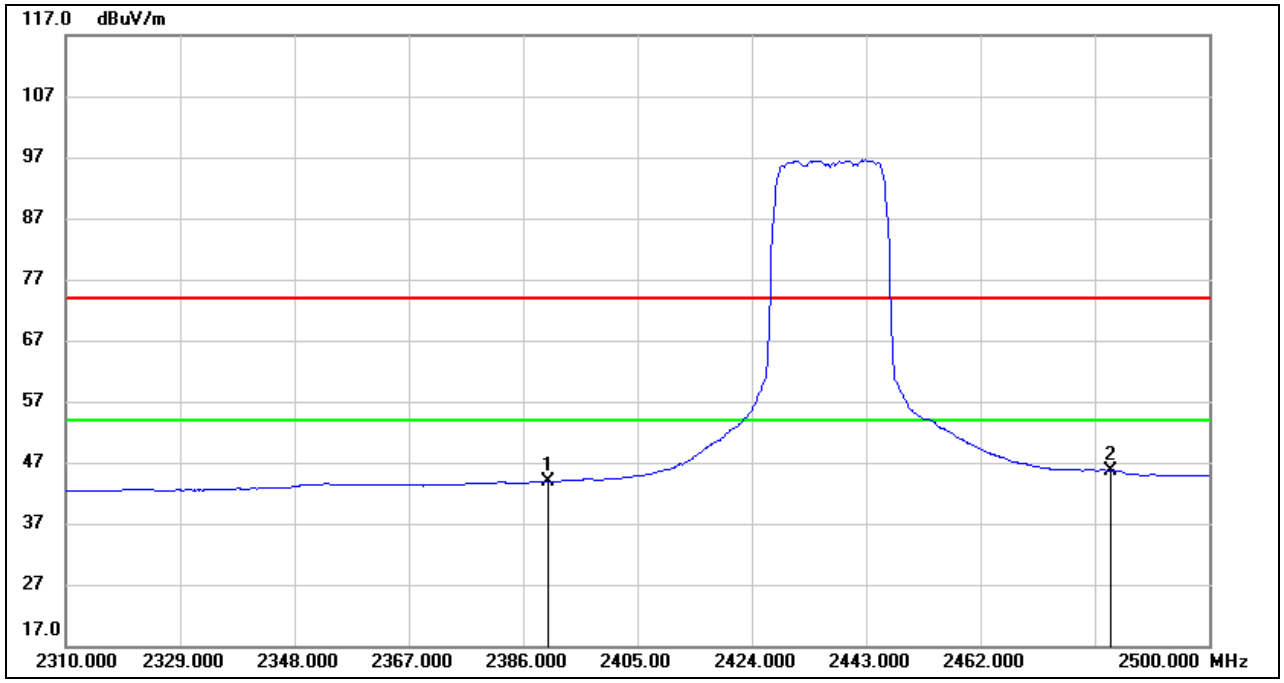
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	25.12	33.35	58.47	74.00	-15.53	peak
2	2483.500	27.12	33.71	60.83	74.00	-13.17	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Peak: Peak detector.
3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

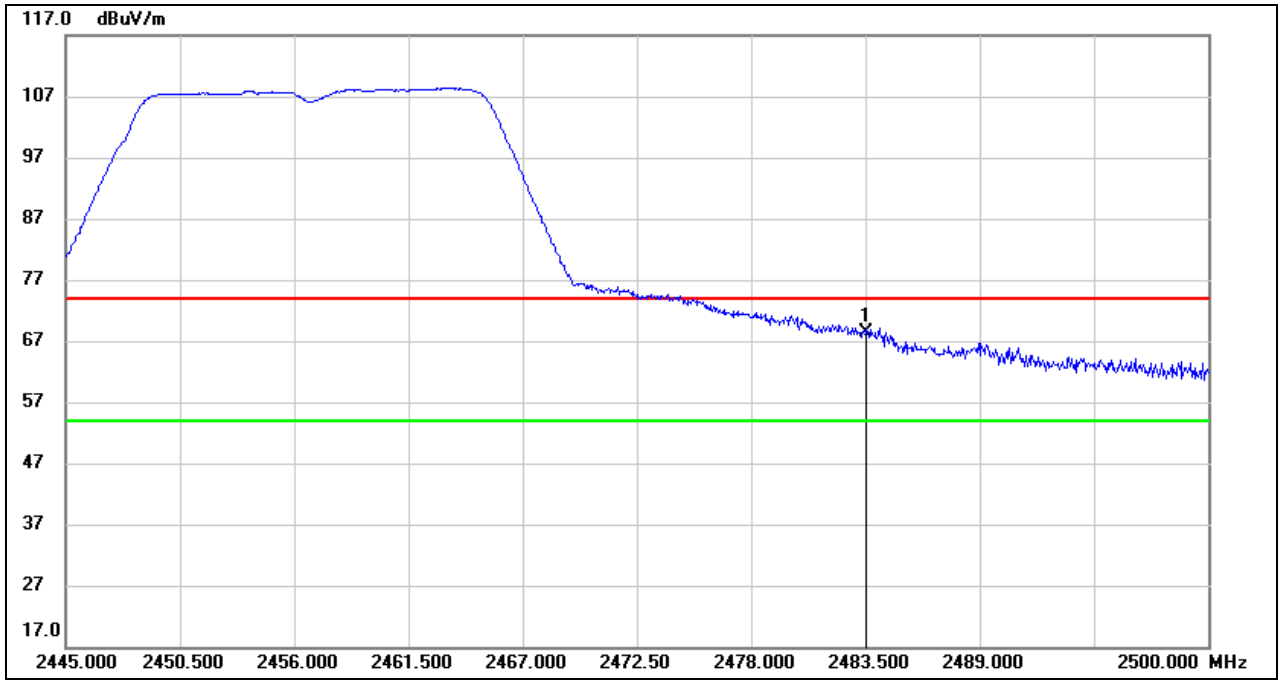


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	10.50	33.35	43.85	54.00	-10.15	AVG
2	2483.500	12.00	33.71	45.71	54.00	-8.29	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. Peak: Peak detector.
3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (CHANNEL 10, HORIZONTAL)

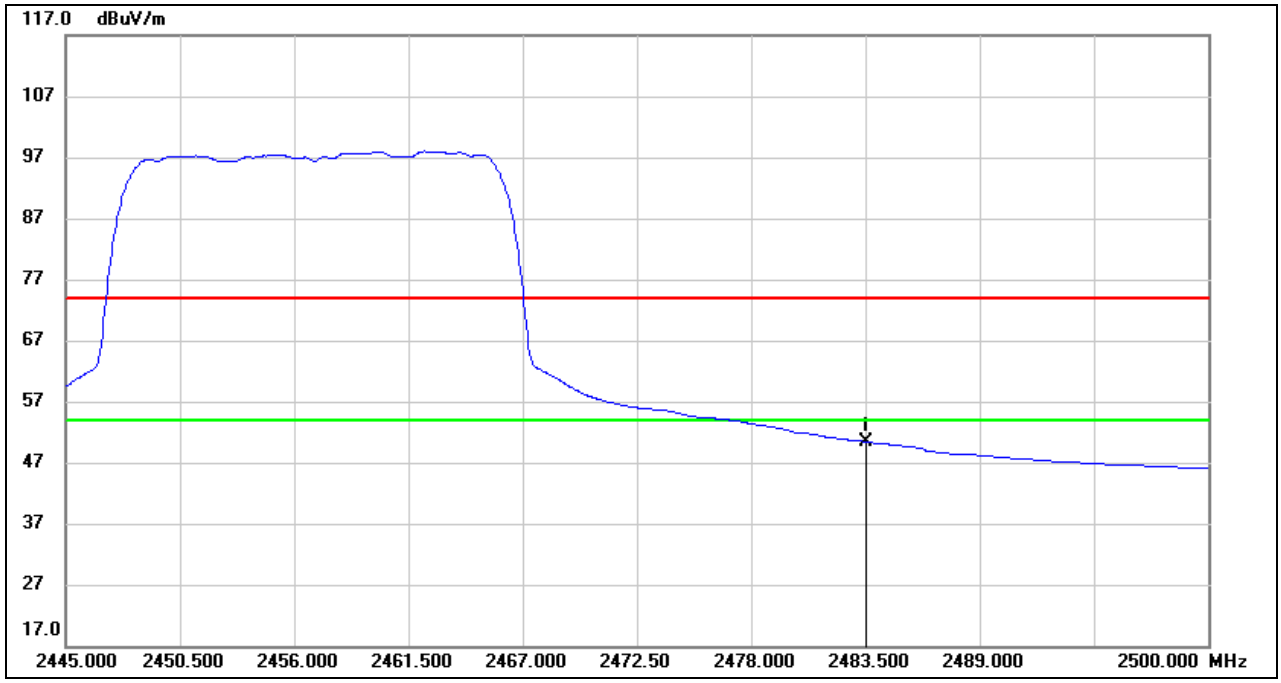
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	34.69	33.71	68.40	74.00	-5.60	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Peak: Peak detector.
3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

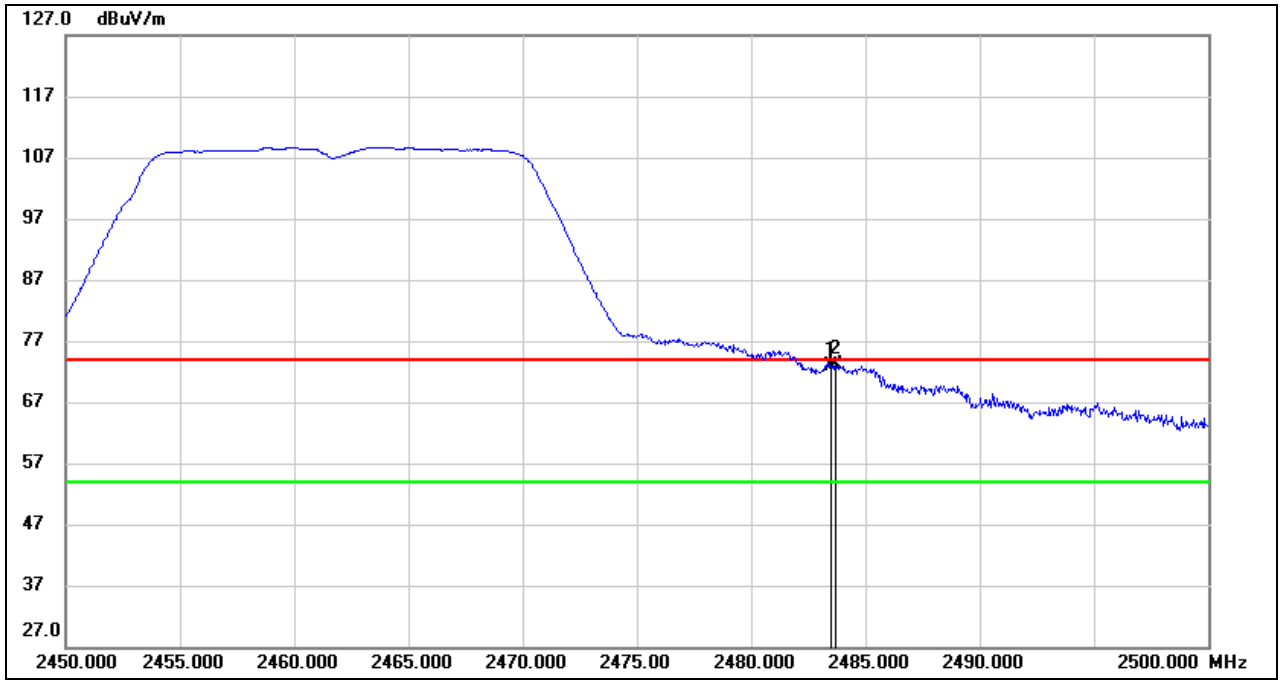


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	16.73	33.71	50.44	54.00	-3.56	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. Peak: Peak detector.
3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (CHANNEL 11, HORIZONTAL)

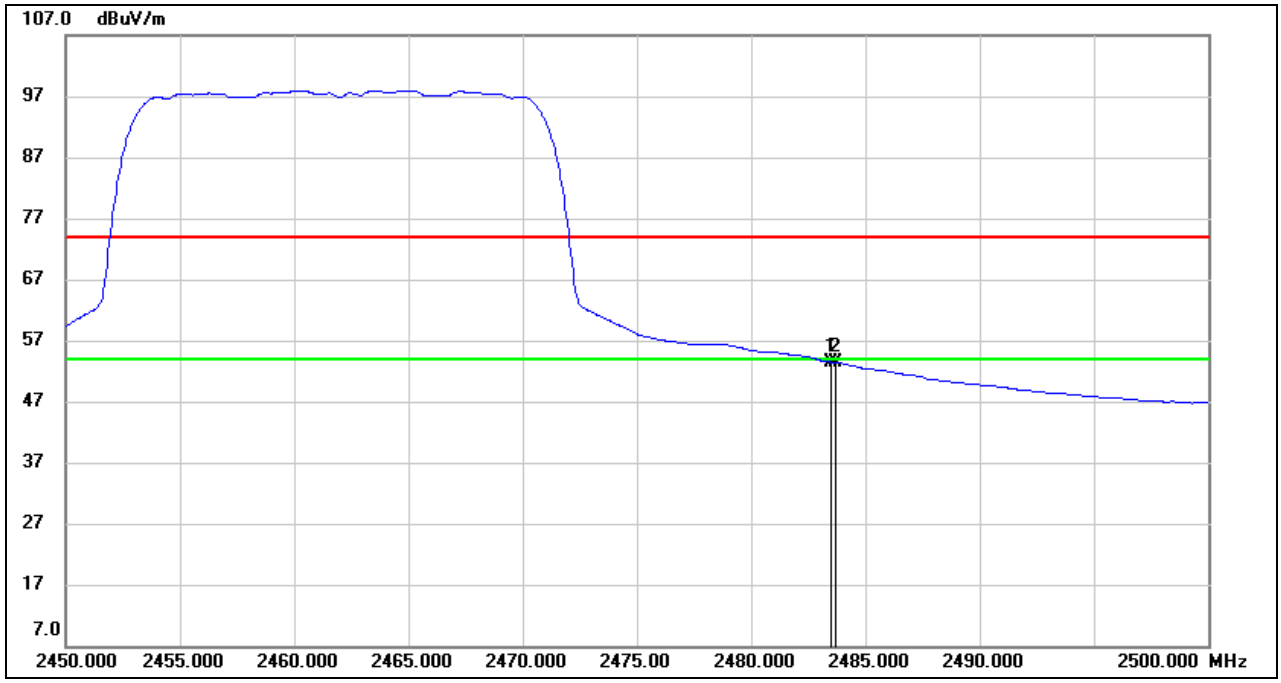
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	39.20	33.71	72.91	74.00	-1.09	peak
2	2483.700	39.42	33.71	73.13	74.00	-0.87	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Peak: Peak detector.
3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	19.78	33.71	53.49	54.00	-0.51	AVG
2	2483.700	19.79	33.71	53.50	54.00	-0.50	AVG

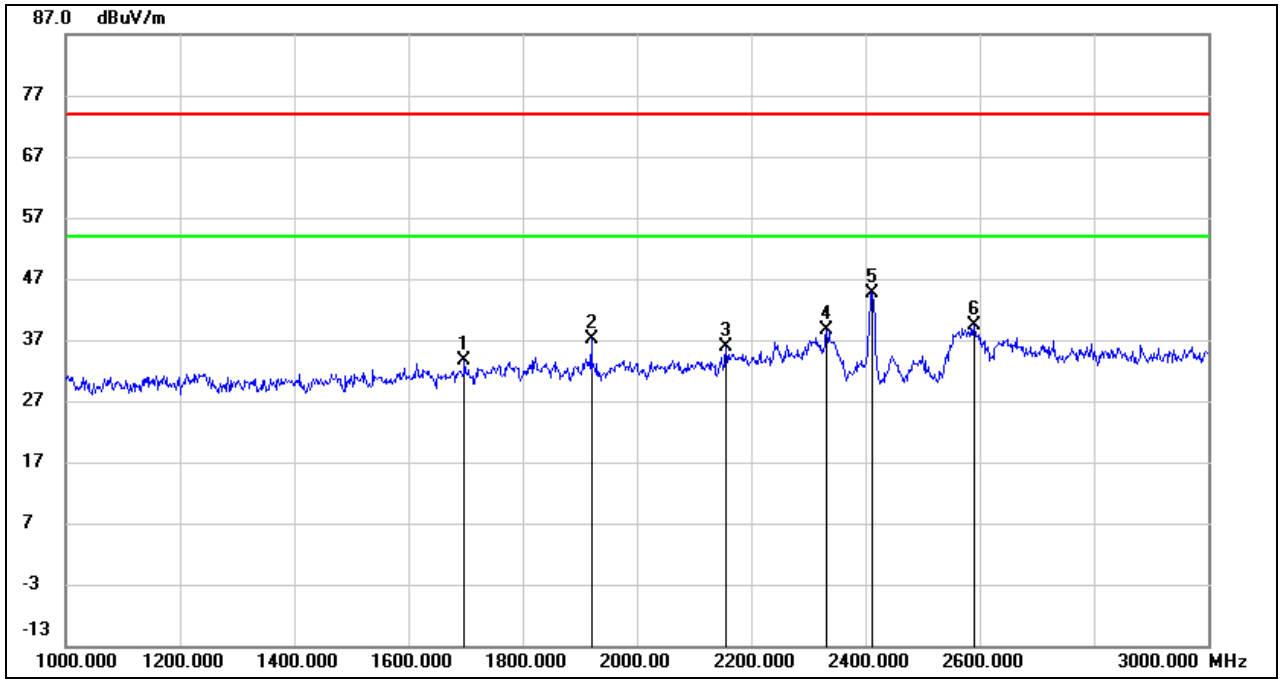
Note: 1. Measurement = Reading Level + Correct Factor.
2. Peak: Peak detector.
3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

Note: Horizontal and Vertical have been tested, only the worst data was recorded in the report.

8.2. SPURIOUS EMISSIONS (1 GHz ~ 3 GHz)

8.2.1. 802.11b MODE

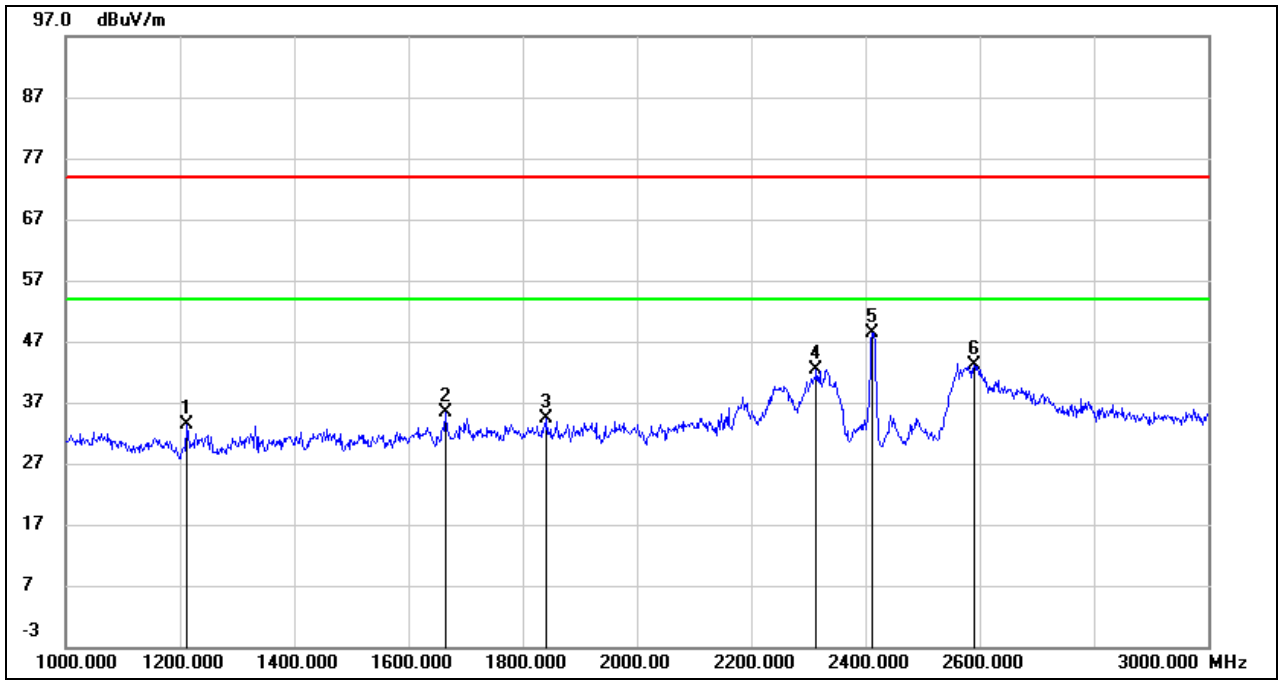
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 1, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1698.000	44.55	-10.82	33.73	74.00	-40.27	peak
2	1920.000	47.27	-10.13	37.14	74.00	-36.86	peak
3	2156.000	45.16	-9.30	35.86	74.00	-38.14	peak
4	2332.000	47.18	-8.61	38.57	74.00	-35.43	peak
5	2412.000	52.89	-8.37	44.52	74.00	-29.48	peak
6	2590.000	47.17	-7.90	39.27	74.00	-34.73	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

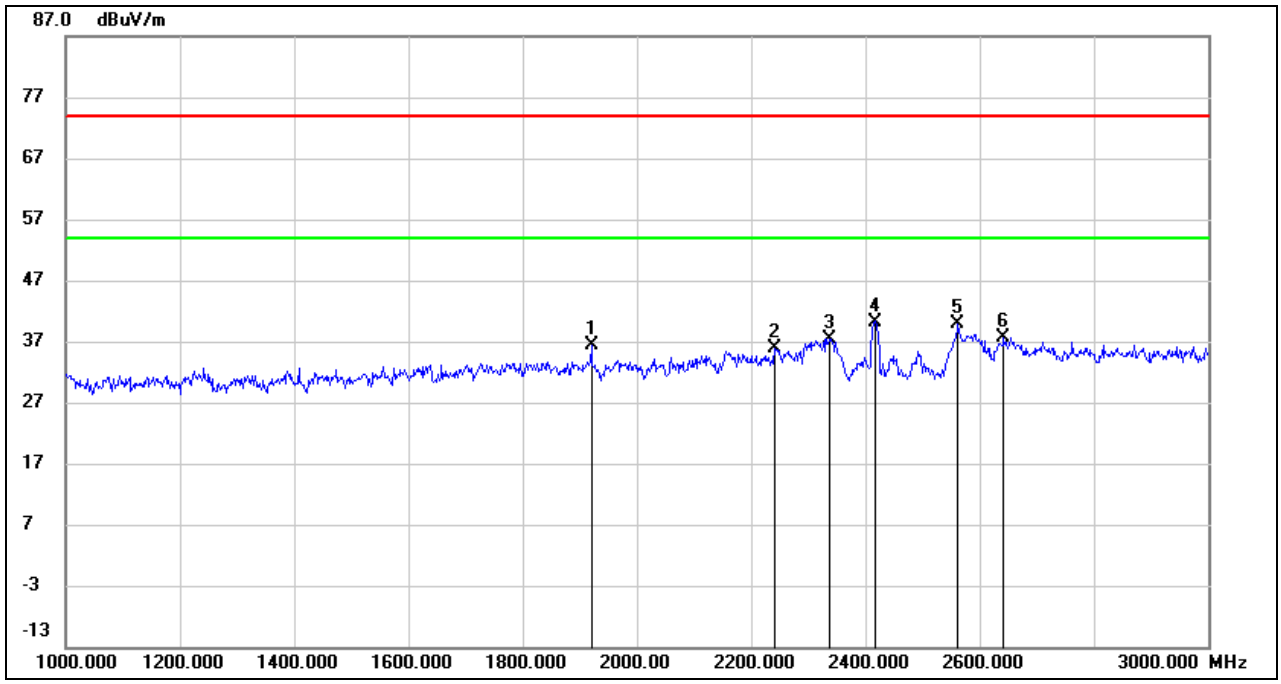
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 1, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1212.000	46.34	-12.97	33.37	74.00	-40.63	peak
2	1664.000	46.49	-11.08	35.41	74.00	-38.59	peak
3	1842.000	44.39	-10.08	34.31	74.00	-39.69	peak
4	2314.000	51.13	-8.67	42.46	74.00	-31.54	peak
5	2412.000	56.67	-8.37	48.30	74.00	-25.70	peak
6	2590.000	50.98	-7.90	43.08	74.00	-30.92	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

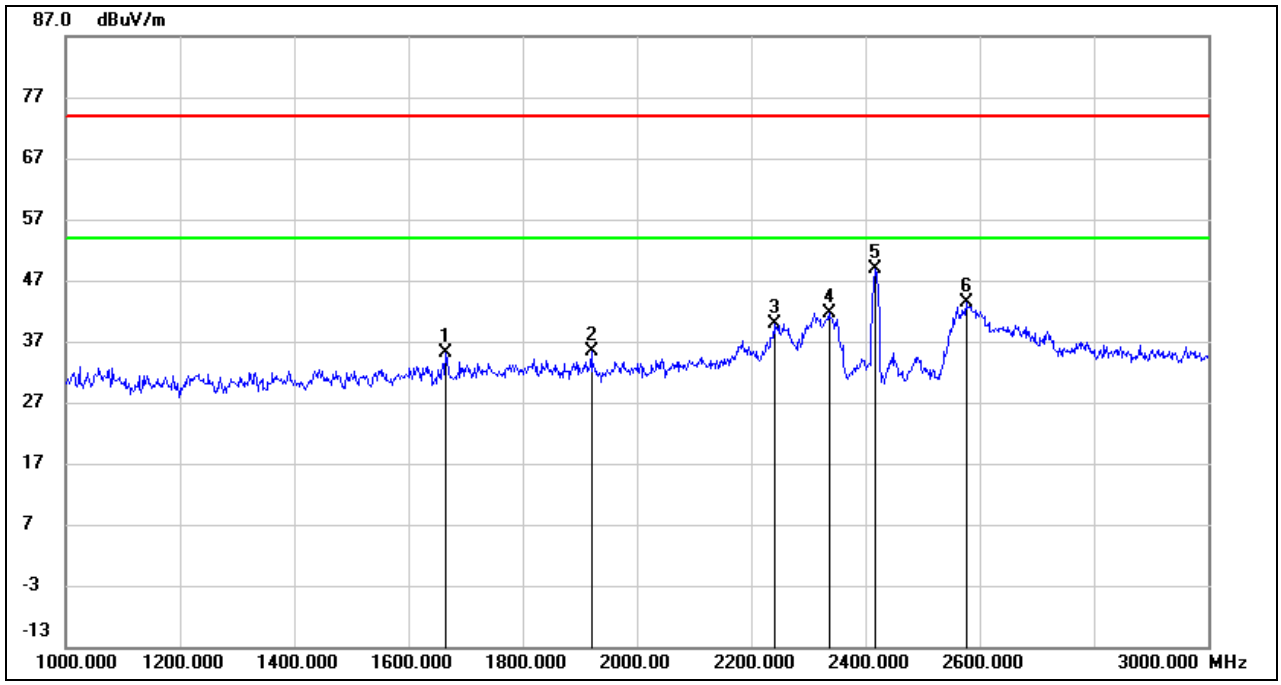
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 2, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1920.000	46.58	-10.13	36.45	74.00	-37.55	peak
2	2240.000	44.74	-8.92	35.82	74.00	-38.18	peak
3	2338.000	46.05	-8.60	37.45	74.00	-36.55	peak
4	2417.000	48.62	-8.37	40.25	74.00	-33.75	peak
5	2562.000	47.76	-8.00	39.76	74.00	-34.24	peak
6	2642.000	45.16	-7.59	37.57	74.00	-36.43	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

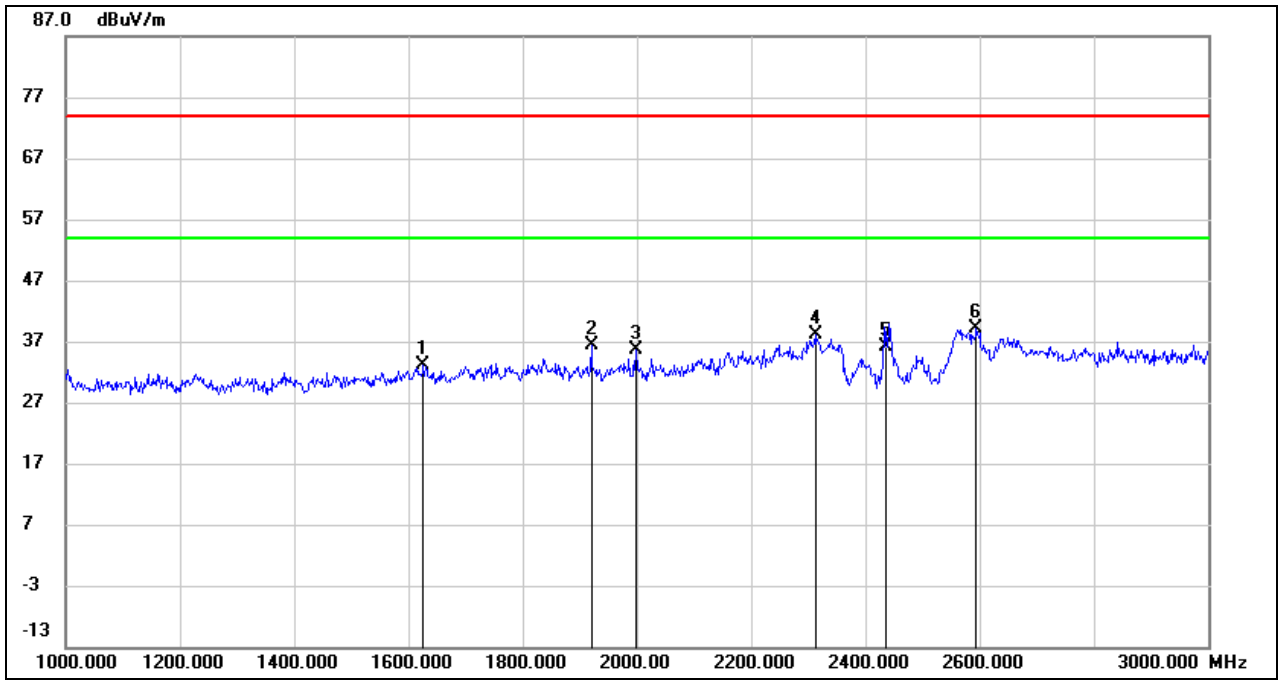
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 2, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1664.000	46.28	-11.08	35.20	74.00	-38.80	peak
2	1920.000	45.63	-10.13	35.50	74.00	-38.50	peak
3	2240.000	48.76	-8.92	39.84	74.00	-34.16	peak
4	2336.000	50.35	-8.61	41.74	74.00	-32.26	peak
5	2417.000	57.31	-8.37	48.94	74.00	-25.06	peak
6	2576.000	51.38	-7.96	43.42	74.00	-30.58	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

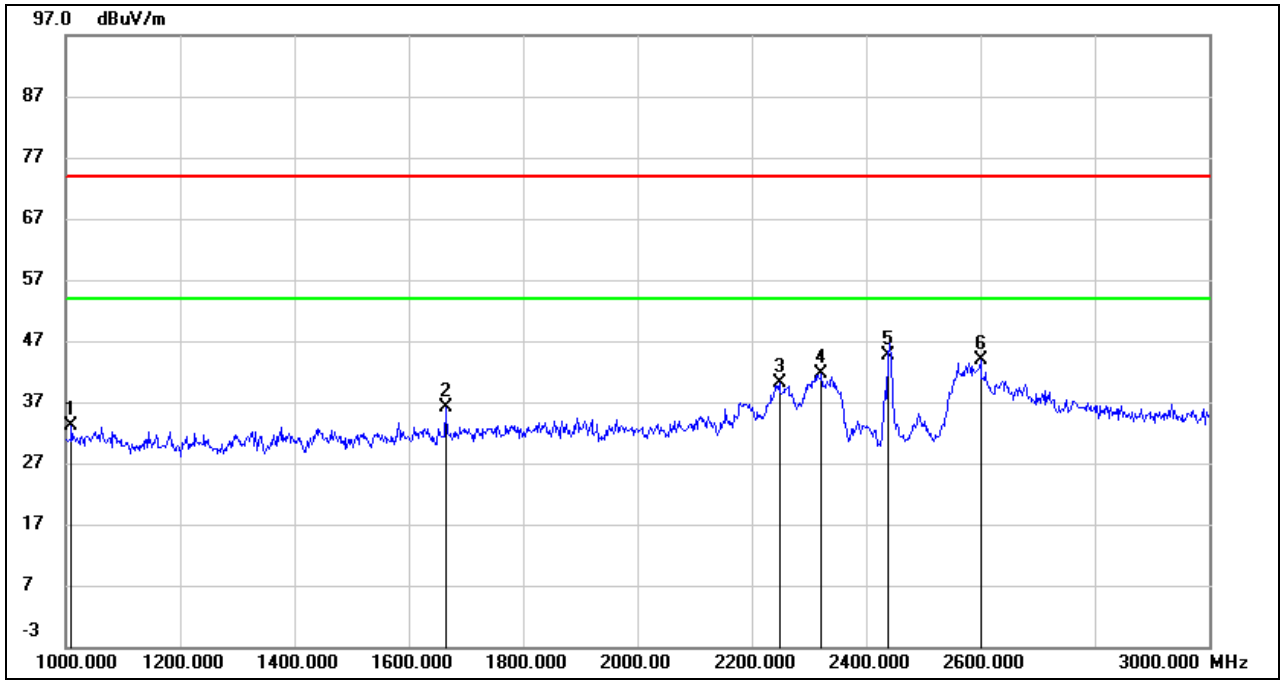
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 6, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1626.000	44.51	-11.36	33.15	74.00	-40.85	peak
2	1920.000	46.59	-10.13	36.46	74.00	-37.54	peak
3	1998.000	45.76	-10.19	35.57	74.00	-38.43	peak
4	2312.000	46.71	-8.68	38.03	74.00	-35.97	peak
5	2437.000	44.34	-8.33	36.01	74.00	-37.99	peak
6	2594.000	47.12	-7.88	39.24	74.00	-34.76	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

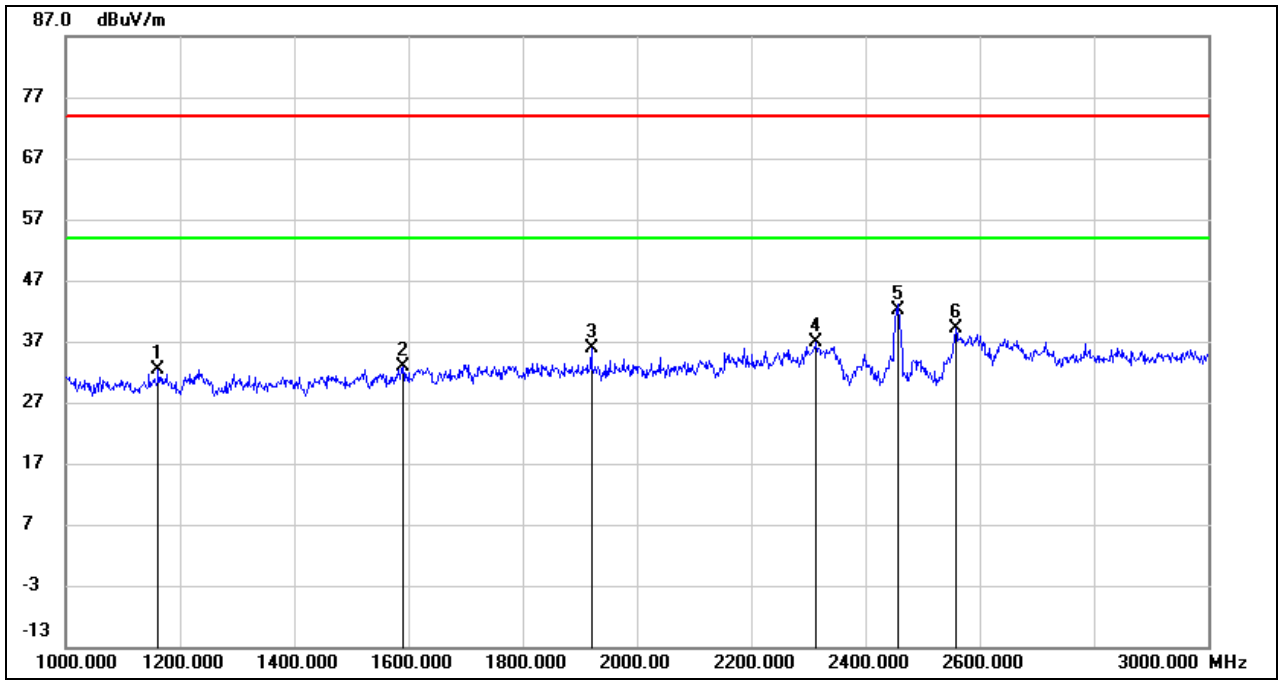
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 6, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1010.000	47.03	-13.93	33.10	74.00	-40.90	peak
2	1664.000	47.12	-11.08	36.04	74.00	-37.96	peak
3	2248.000	49.00	-8.89	40.11	74.00	-33.89	peak
4	2322.000	50.32	-8.65	41.67	74.00	-32.33	peak
5	2437.000	52.96	-8.33	44.63	74.00	-29.37	peak
6	2600.000	51.77	-7.86	43.91	74.00	-30.09	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

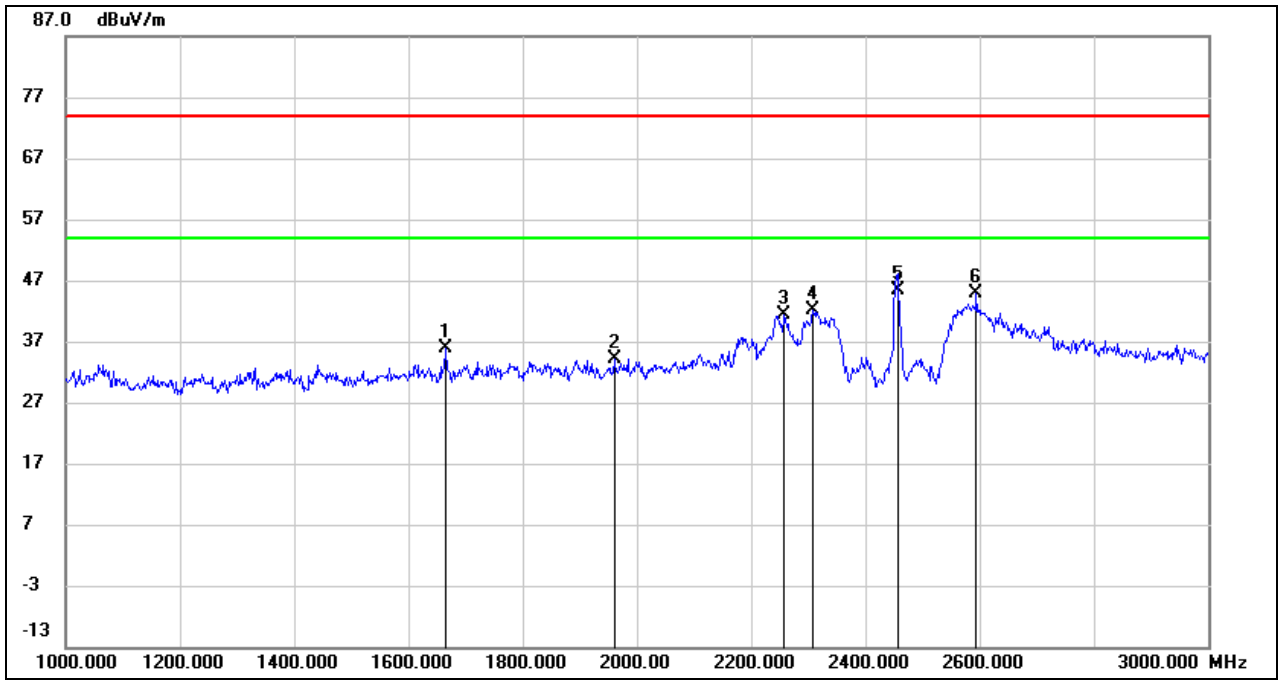
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 10, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1162.000	45.52	-13.18	32.34	74.00	-41.66	peak
2	1590.000	44.45	-11.62	32.83	74.00	-41.17	peak
3	1920.000	46.03	-10.13	35.90	74.00	-38.10	peak
4	2314.000	45.49	-8.67	36.82	74.00	-37.18	peak
5	2457.000	50.38	-8.30	42.08	74.00	-31.92	peak
6	2558.000	47.14	-8.01	39.13	74.00	-34.87	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

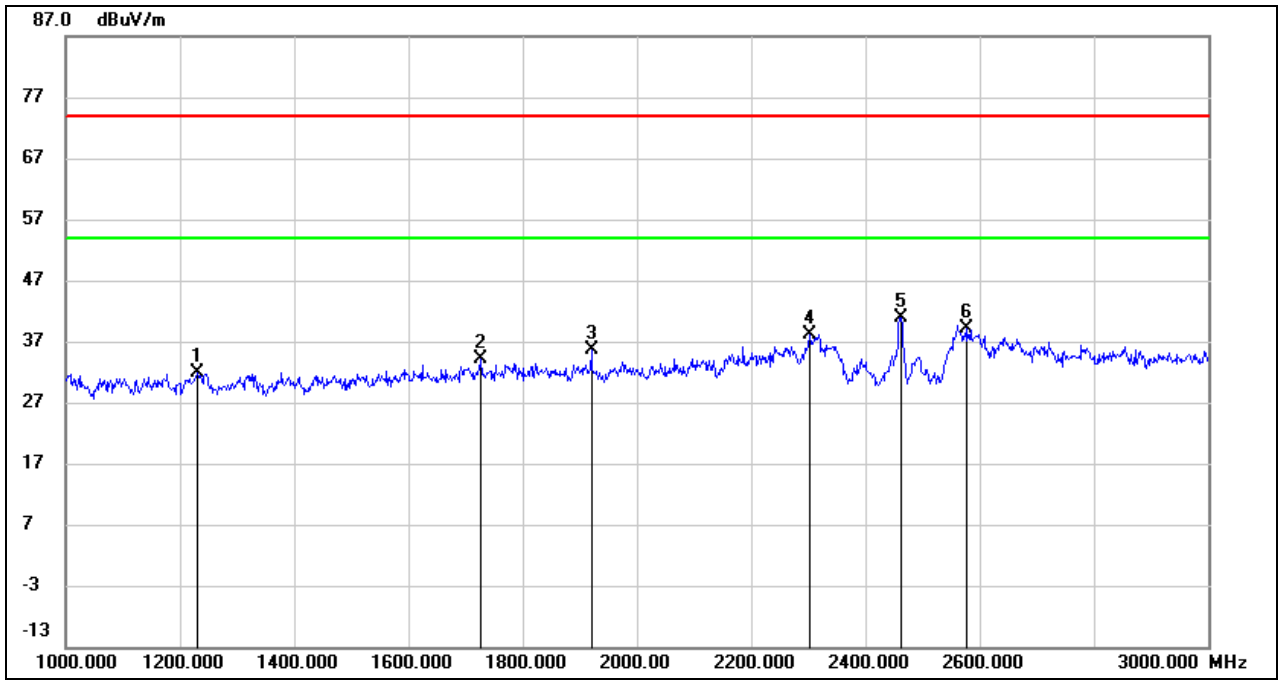
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 10, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1664.000	46.98	-11.08	35.90	74.00	-38.10	peak
2	1960.000	44.25	-10.16	34.09	74.00	-39.91	peak
3	2258.000	50.13	-8.86	41.27	74.00	-32.73	peak
4	2308.000	50.88	-8.70	42.18	74.00	-31.82	peak
5	2457.000	53.79	-8.30	45.49	74.00	-28.51	peak
6	2594.000	52.67	-7.88	44.79	74.00	-29.21	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

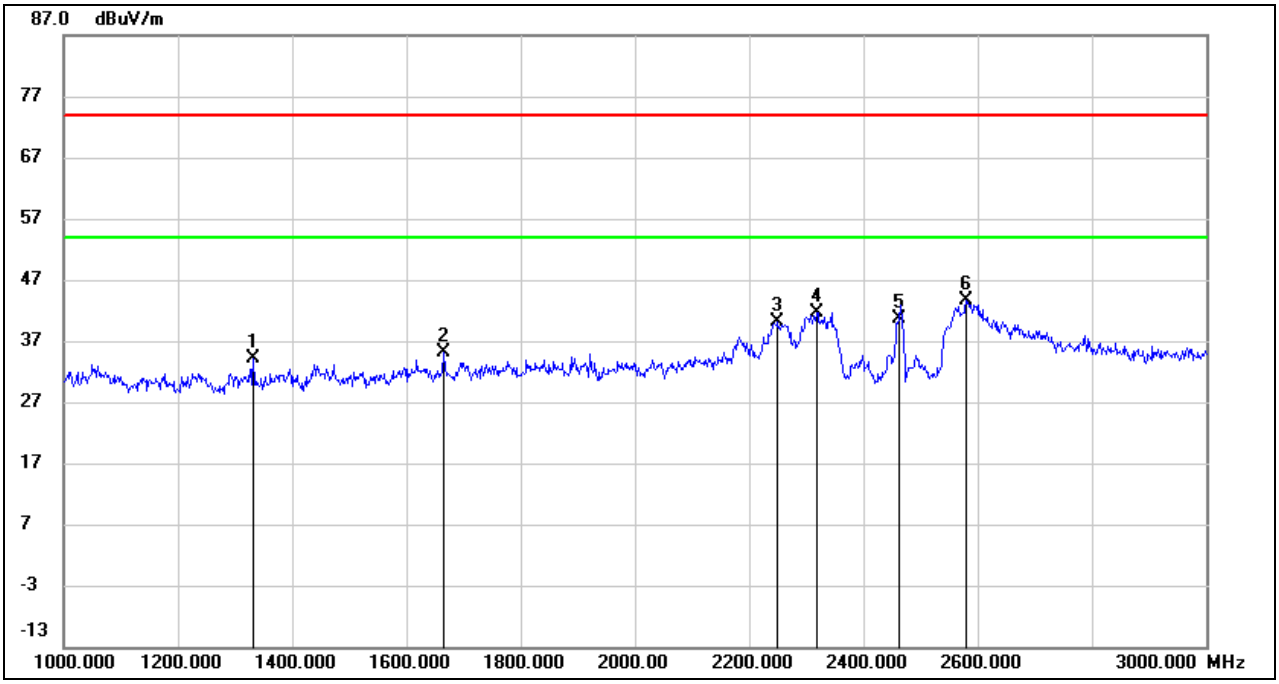
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1230.000	44.82	-12.95	31.87	74.00	-42.13	peak
2	1726.000	44.82	-10.60	34.22	74.00	-39.78	peak
3	1920.000	45.87	-10.13	35.74	74.00	-38.26	peak
4	2302.000	46.97	-8.72	38.25	74.00	-35.75	peak
5	2462.000	49.18	-8.29	40.89	74.00	-33.11	peak
6	2578.000	47.00	-7.95	39.05	74.00	-34.95	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
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	1332.000	47.00	-12.80	34.20	74.00	-39.80	peak
2	1664.000	46.16	-11.08	35.08	74.00	-38.92	peak
3	2250.000	48.94	-8.89	40.05	74.00	-33.95	peak
4	2318.000	50.41	-8.66	41.75	74.00	-32.25	peak
5	2462.000	48.81	-8.29	40.52	74.00	-33.48	peak
6	2580.000	51.48	-7.93	43.55	74.00	-30.45	peak

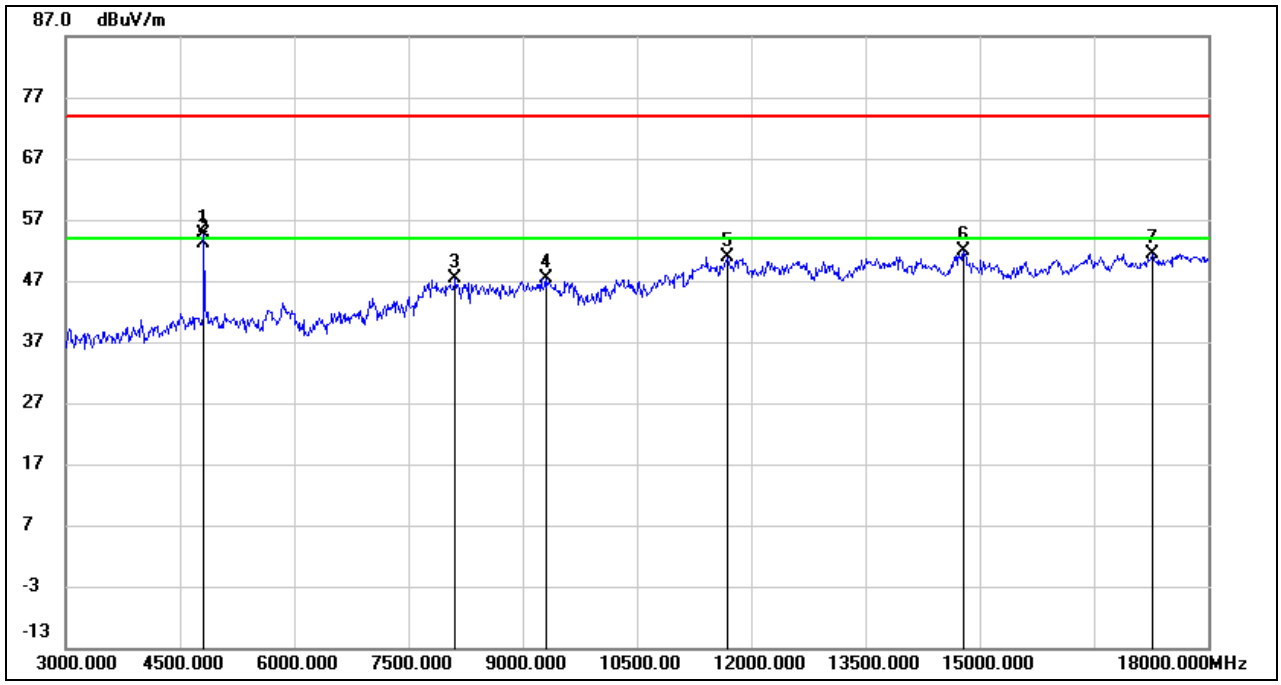
Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

Note: All modes and channels have been tested, only the worst data was recorded in the report.

8.3. SPURIOUS EMISSIONS (3 GHz ~ 18 GHz)

8.3.1. 802.11b MODE

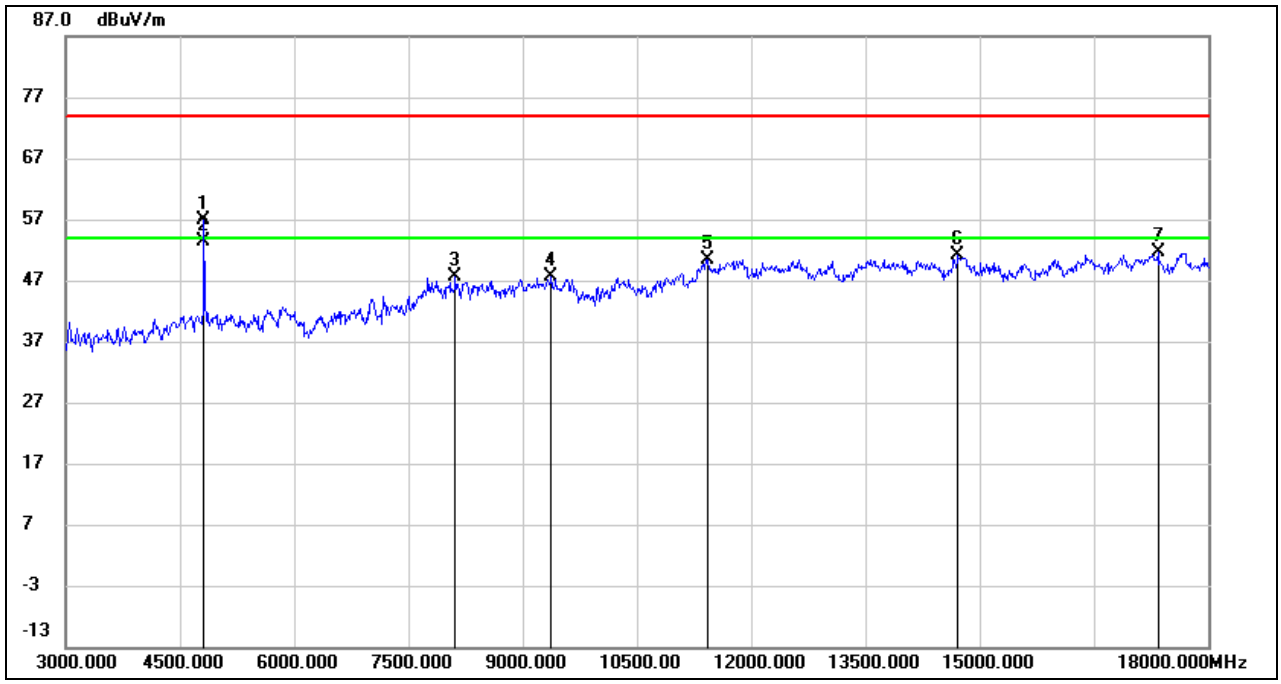
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 1, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4822.500	53.19	1.37	54.56	74.00	-19.44	peak
2	4822.500	51.66	1.37	53.03	54.00	-0.97	AVG
3	8128.125	37.31	10.07	47.38	74.00	-26.62	peak
4	9311.250	36.83	10.47	47.30	74.00	-26.70	peak
5	11690.625	35.53	15.29	50.82	74.00	-23.18	peak
6	14803.125	33.82	18.02	51.84	74.00	-22.16	peak
7	17270.625	28.97	22.43	51.40	74.00	-22.60	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

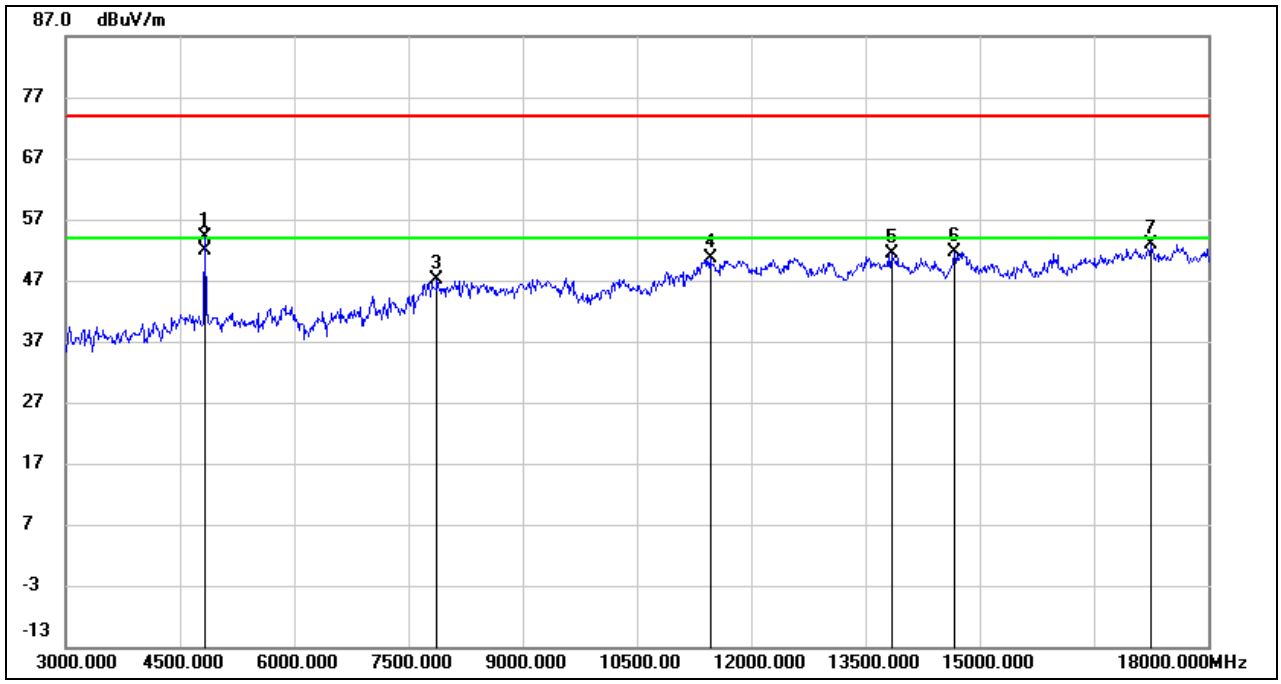
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 1, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4822.500	55.54	1.37	56.91	74.00	-17.09	peak
2	4822.500	52.07	1.37	53.44	54.00	-0.56	AVG
3	8120.625	37.44	10.11	47.55	74.00	-26.45	peak
4	9380.625	36.81	10.86	47.67	74.00	-26.33	peak
5	11437.500	35.60	14.72	50.32	74.00	-23.68	peak
6	14720.625	33.40	17.76	51.16	74.00	-22.84	peak
7	17341.875	29.22	22.30	51.52	74.00	-22.48	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

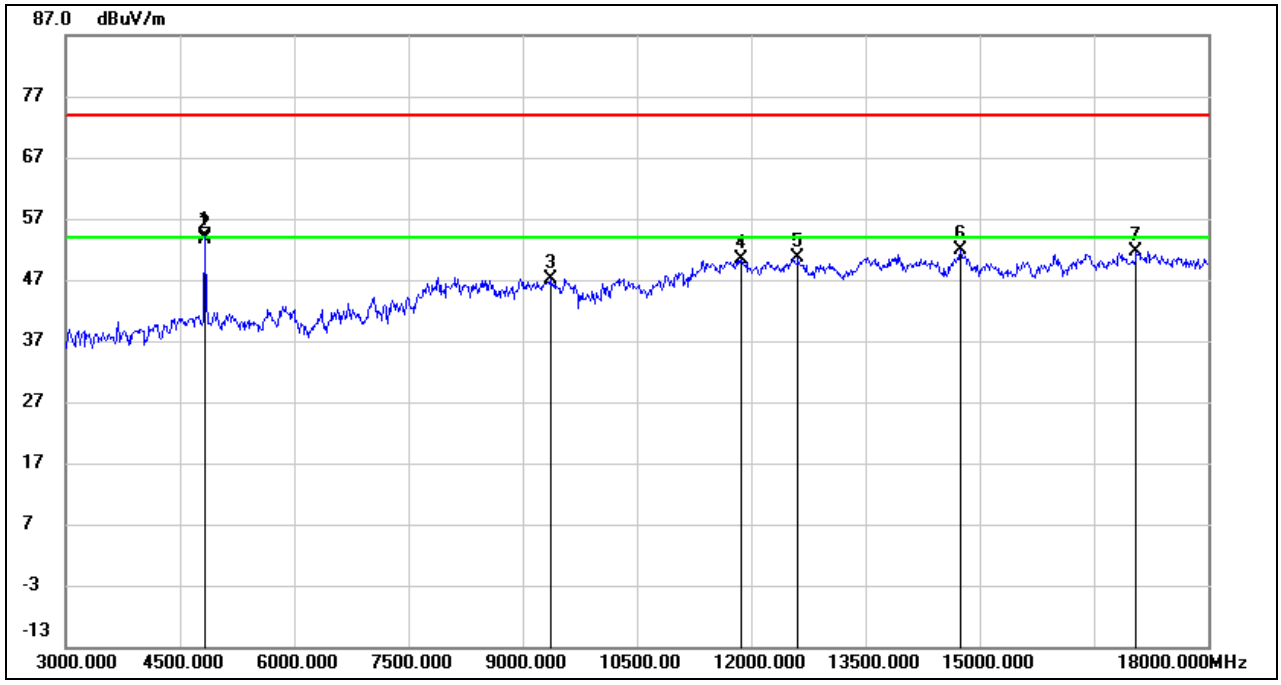
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 2, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4833.750	52.71	1.35	54.06	74.00	-19.94	peak
2	4833.750	50.41	1.35	51.76	54.00	-2.24	AVG
3	7888.125	38.26	8.92	47.18	74.00	-26.82	peak
4	11473.125	35.83	14.68	50.51	74.00	-23.49	peak
5	13856.250	33.79	17.56	51.35	74.00	-22.65	peak
6	14675.625	34.01	17.61	51.62	74.00	-22.38	peak
7	17259.375	30.58	22.36	52.94	74.00	-21.06	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

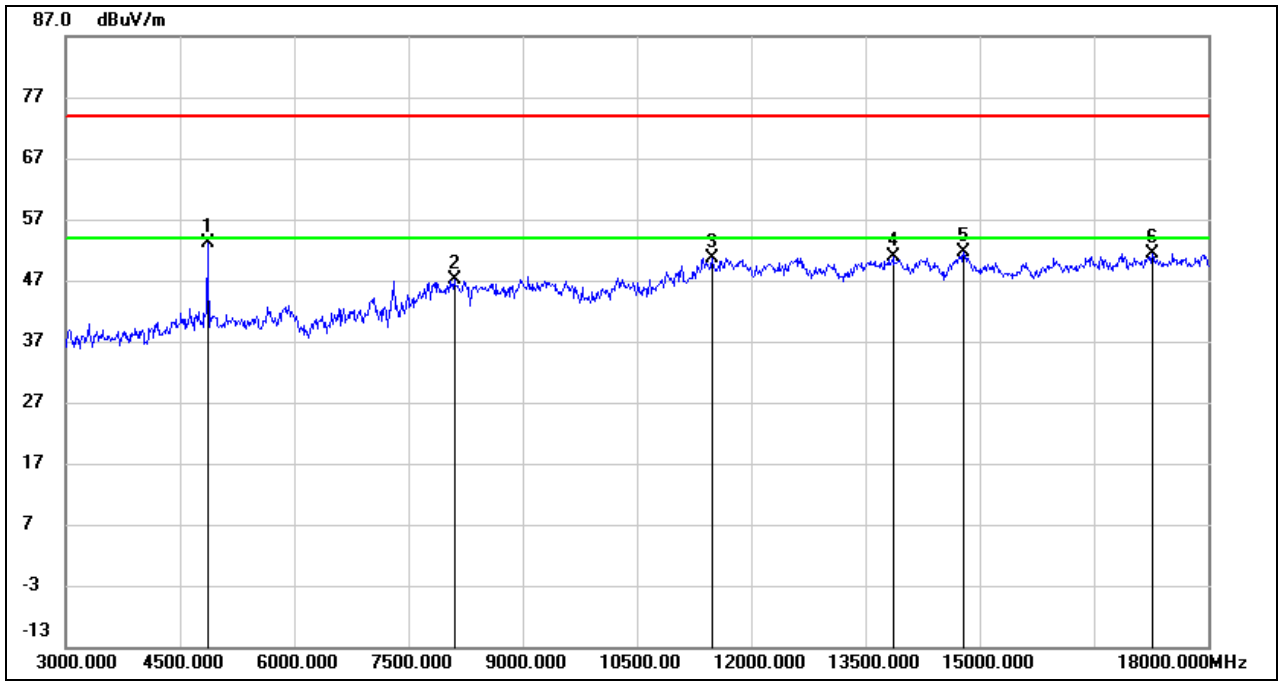
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 2, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4833.750	52.74	1.35	54.09	74.00	-19.91	peak
2	4833.750	52.17	1.35	53.52	54.00	-0.48	AVG
3	9382.500	36.29	10.87	47.16	74.00	-26.84	peak
4	11868.750	34.94	15.44	50.38	74.00	-23.62	peak
5	12622.500	34.91	15.75	50.66	74.00	-23.34	peak
6	14754.375	33.91	17.89	51.80	74.00	-22.20	peak
7	17060.625	30.10	21.64	51.74	74.00	-22.26	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

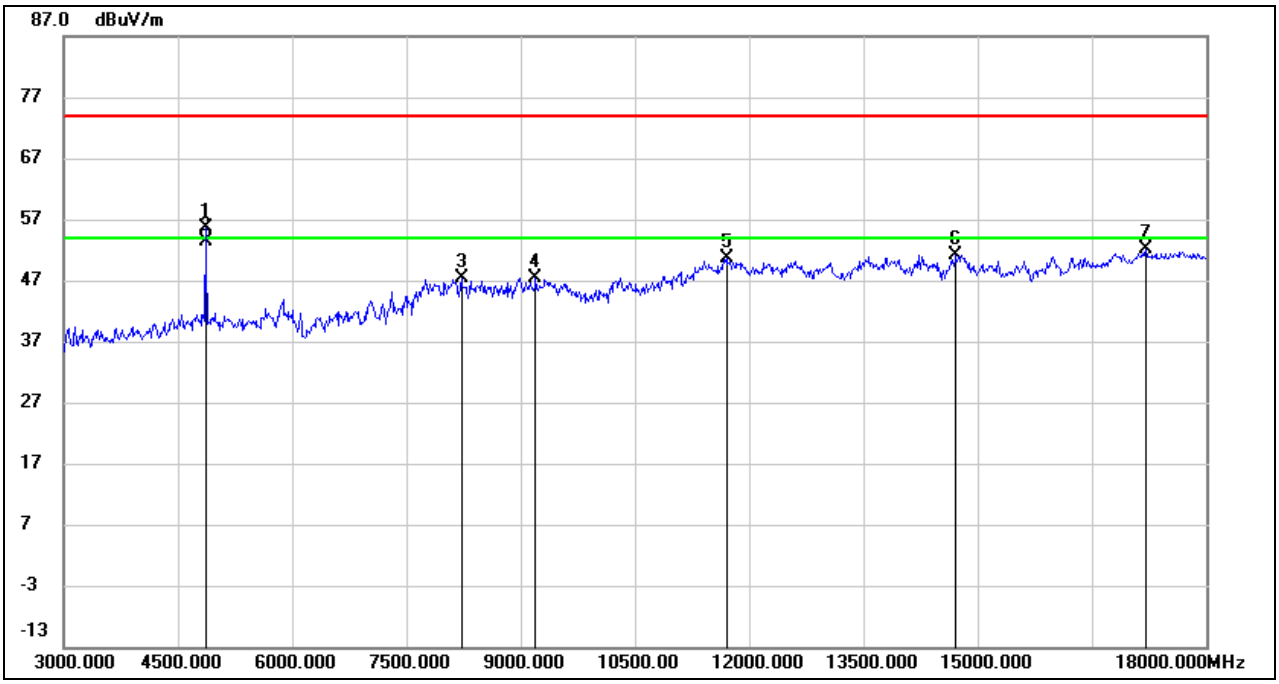
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 6, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4873.125	51.88	1.32	53.20	74.00	-20.80	peak
2	8109.375	37.05	10.15	47.20	74.00	-26.80	peak
3	11501.250	35.98	14.65	50.63	74.00	-23.37	peak
4	13865.625	33.32	17.55	50.87	74.00	-23.13	peak
5	14795.625	33.61	18.02	51.63	74.00	-22.37	peak
6	17274.375	29.04	22.45	51.49	74.00	-22.51	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

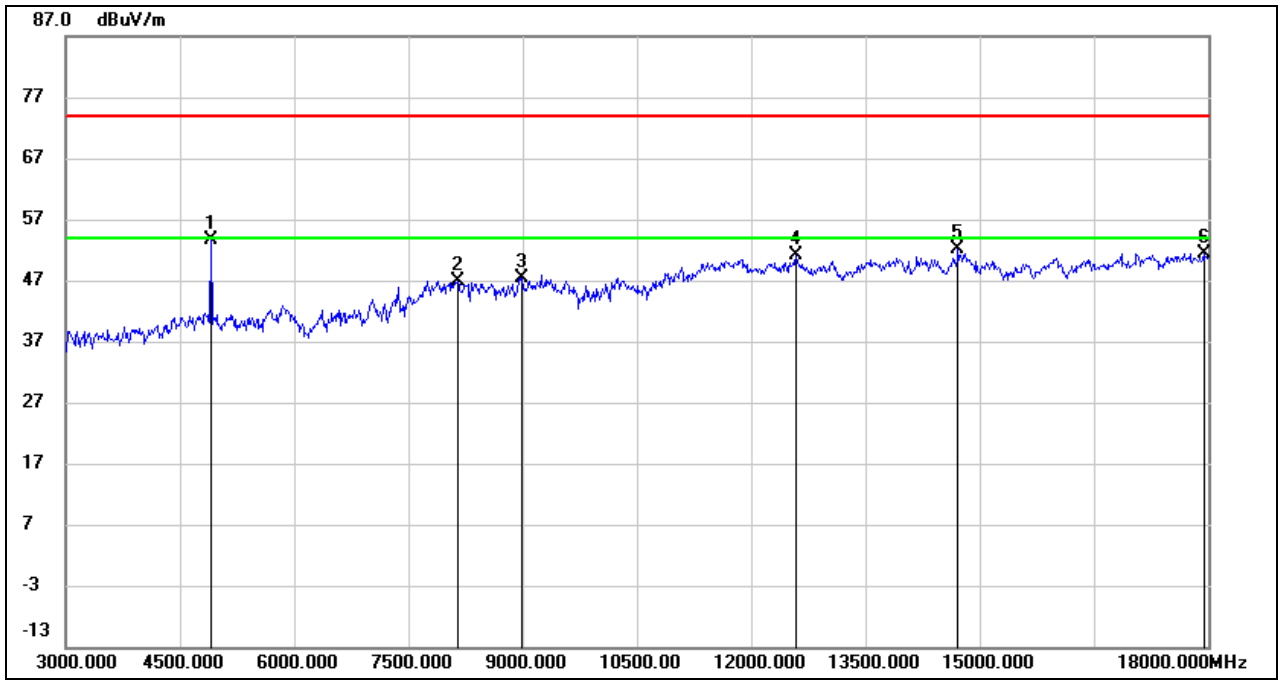
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 6, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4873.125	54.22	1.32	55.54	74.00	-18.46	peak
2	4873.125	52.11	1.32	53.43	54.00	-0.57	AVG
3	8233.125	37.71	9.77	47.48	74.00	-26.52	peak
4	9200.625	37.50	9.91	47.41	74.00	-26.59	peak
5	11711.250	35.41	15.34	50.75	74.00	-23.25	peak
6	14720.625	33.33	17.76	51.09	74.00	-22.91	peak
7	17210.625	30.12	22.06	52.18	74.00	-21.82	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

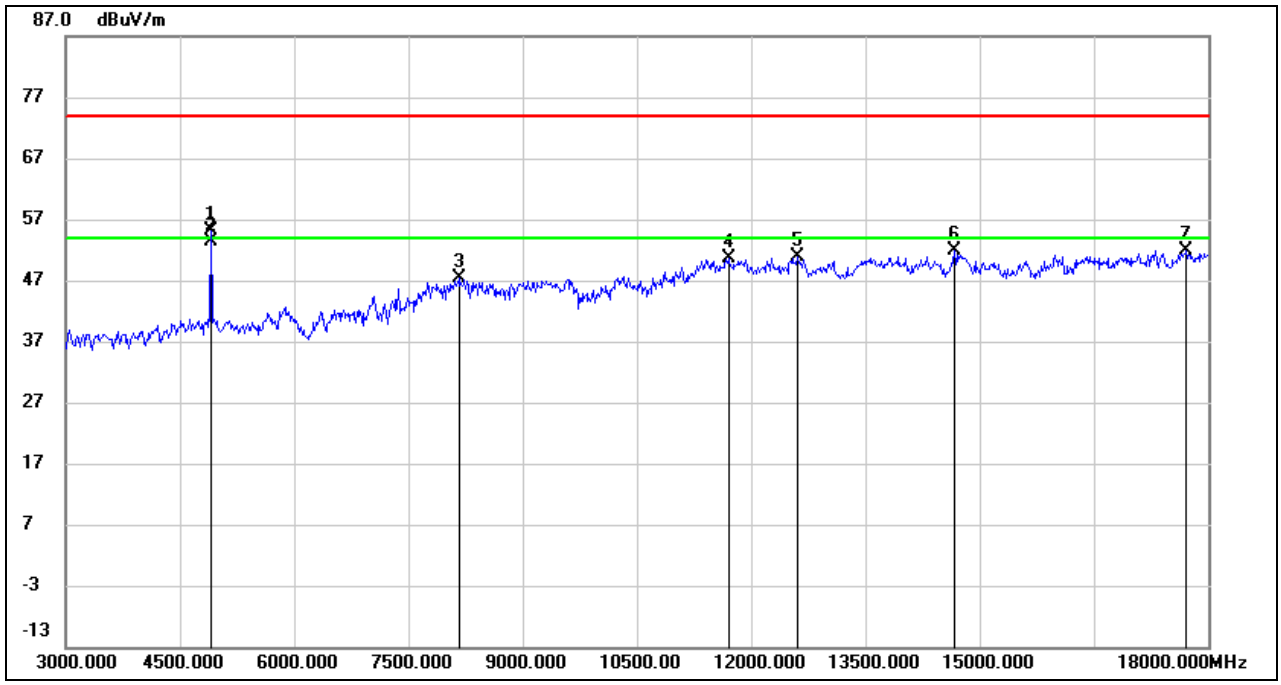
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 10, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4912.500	52.18	1.39	53.57	74.00	-20.43	peak
2	8150.625	37.01	9.99	47.00	74.00	-27.00	peak
3	8986.875	36.31	11.02	47.33	74.00	-26.67	peak
4	12590.625	35.27	15.76	51.03	74.00	-22.97	peak
5	14722.500	34.29	17.77	52.06	74.00	-21.94	peak
6	17945.625	27.32	24.07	51.39	74.00	-22.61	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

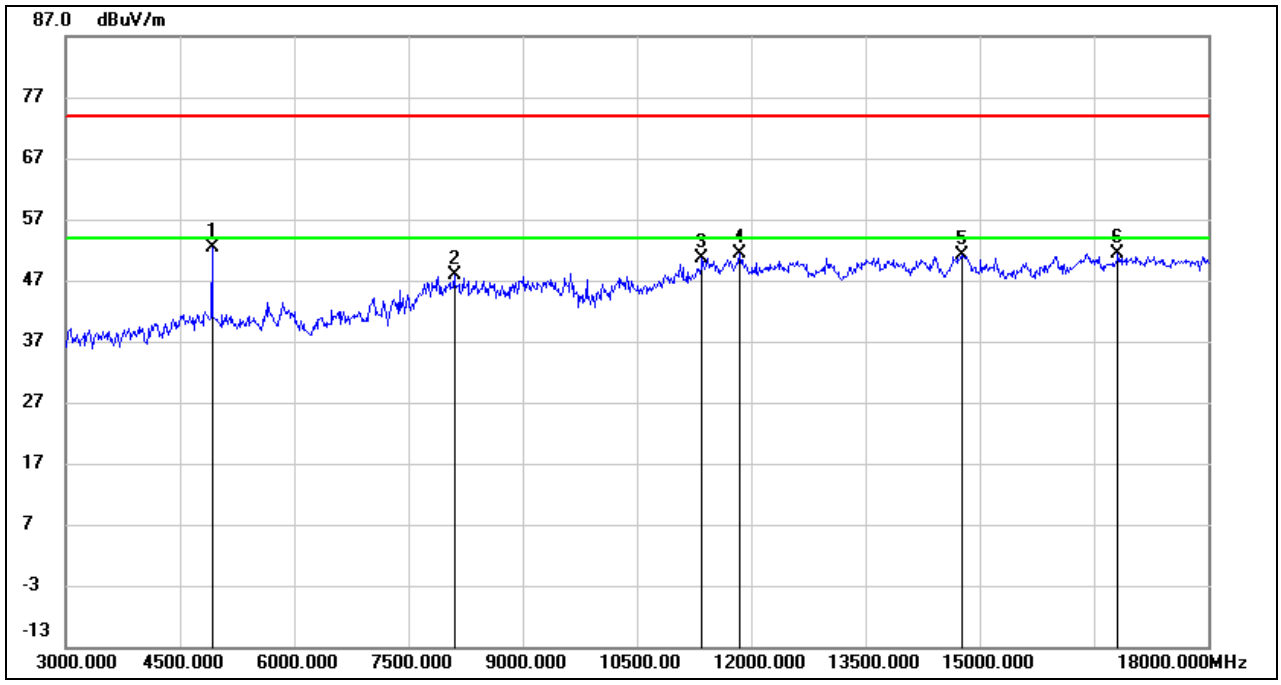
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 10, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4912.500	53.76	1.39	55.15	74.00	-18.85	peak
2	4912.500	52.02	1.39	53.41	54.00	-0.59	AVG
3	8163.750	37.50	9.95	47.45	74.00	-26.55	peak
4	11703.750	35.22	15.34	50.56	74.00	-23.44	peak
5	12609.375	35.15	15.76	50.91	74.00	-23.09	peak
6	14679.375	34.15	17.62	51.77	74.00	-22.23	peak
7	17722.500	28.20	23.60	51.80	74.00	-22.20	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

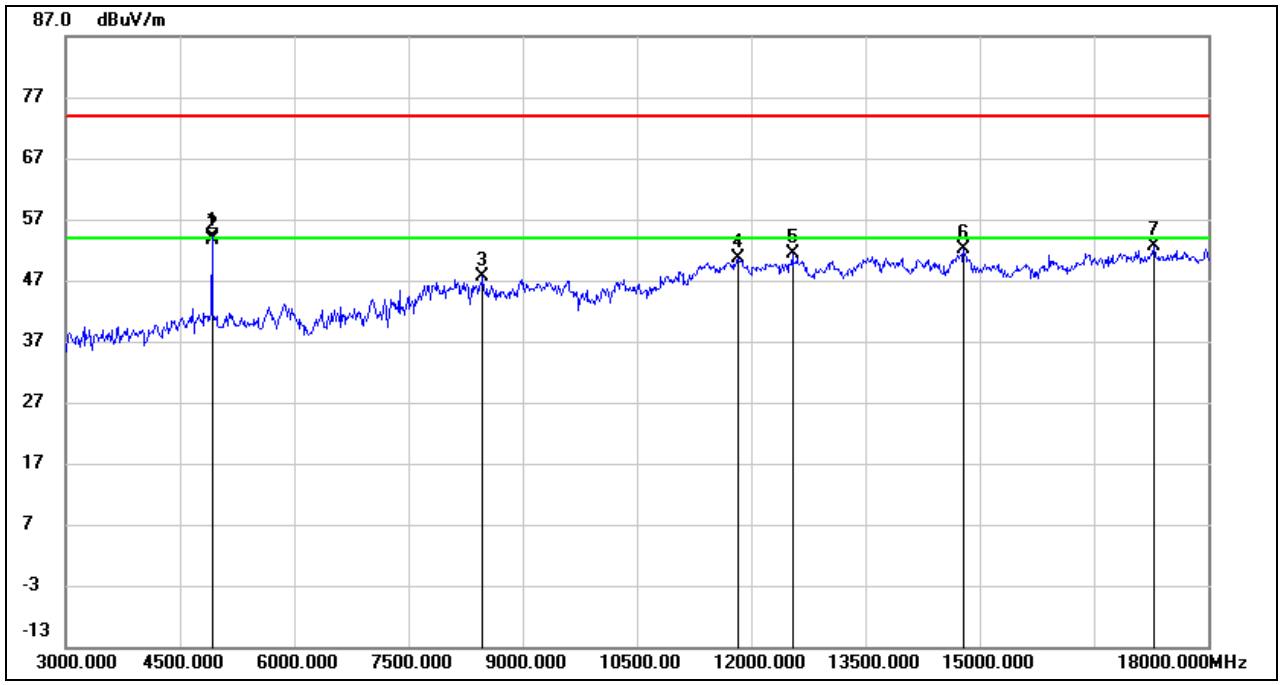
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 11, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4923.750	50.97	1.49	52.46	74.00	-21.54	peak
2	8111.250	37.62	10.14	47.76	74.00	-26.24	peak
3	11356.875	36.32	14.37	50.69	74.00	-23.31	peak
4	11857.500	35.89	15.40	51.29	74.00	-22.71	peak
5	14771.250	33.28	17.94	51.22	74.00	-22.78	peak
6	16824.375	30.56	20.92	51.48	74.00	-22.52	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 11, VERTICAL)



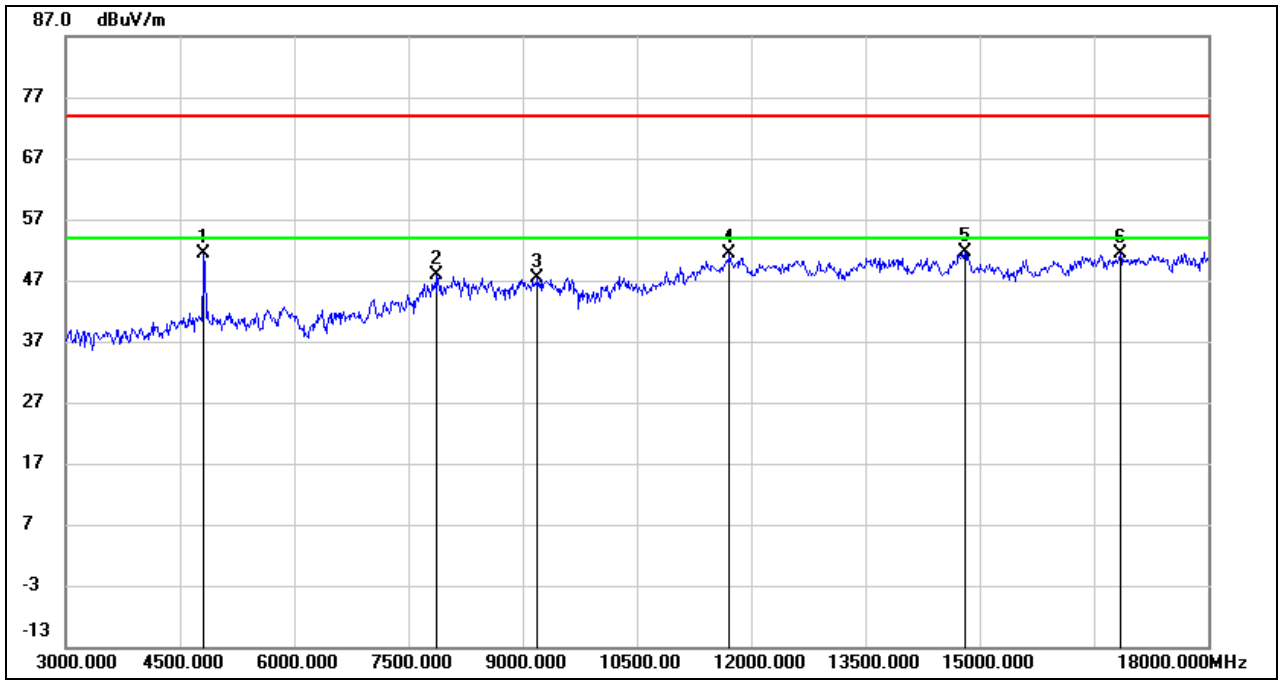
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4923.750	52.73	1.49	54.22	74.00	-19.78	peak
2	4923.750	52.03	1.49	53.52	54.00	-0.48	AVG
3	8475.000	38.46	9.17	47.63	74.00	-26.37	peak
4	11825.625	35.40	15.32	50.72	74.00	-23.28	peak
5	12545.625	35.72	15.72	51.44	74.00	-22.56	peak
6	14803.125	34.00	18.02	52.02	74.00	-21.98	peak
7	17295.000	30.14	22.58	52.72	74.00	-21.28	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

Note: Both the two antennas had been tested, but only the worst data was recorded in the report.

8.3.1. 802.1g MODE

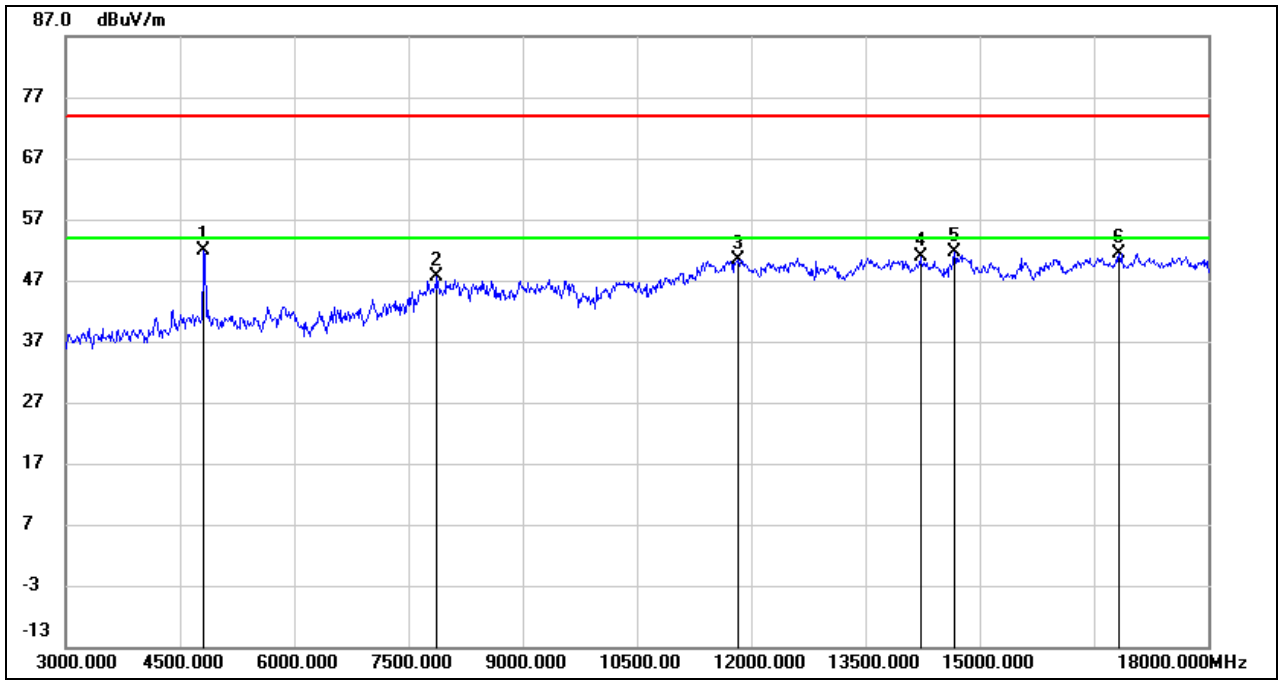
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 1, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4826.250	50.09	1.37	51.46	74.00	-22.54	peak
2	7888.125	39.02	8.92	47.94	74.00	-26.06	peak
3	9202.500	37.44	9.92	47.36	74.00	-26.64	peak
4	11722.500	36.01	15.32	51.33	74.00	-22.67	peak
5	14814.375	33.77	17.95	51.72	74.00	-22.28	peak
6	16845.000	30.34	21.10	51.44	74.00	-22.56	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

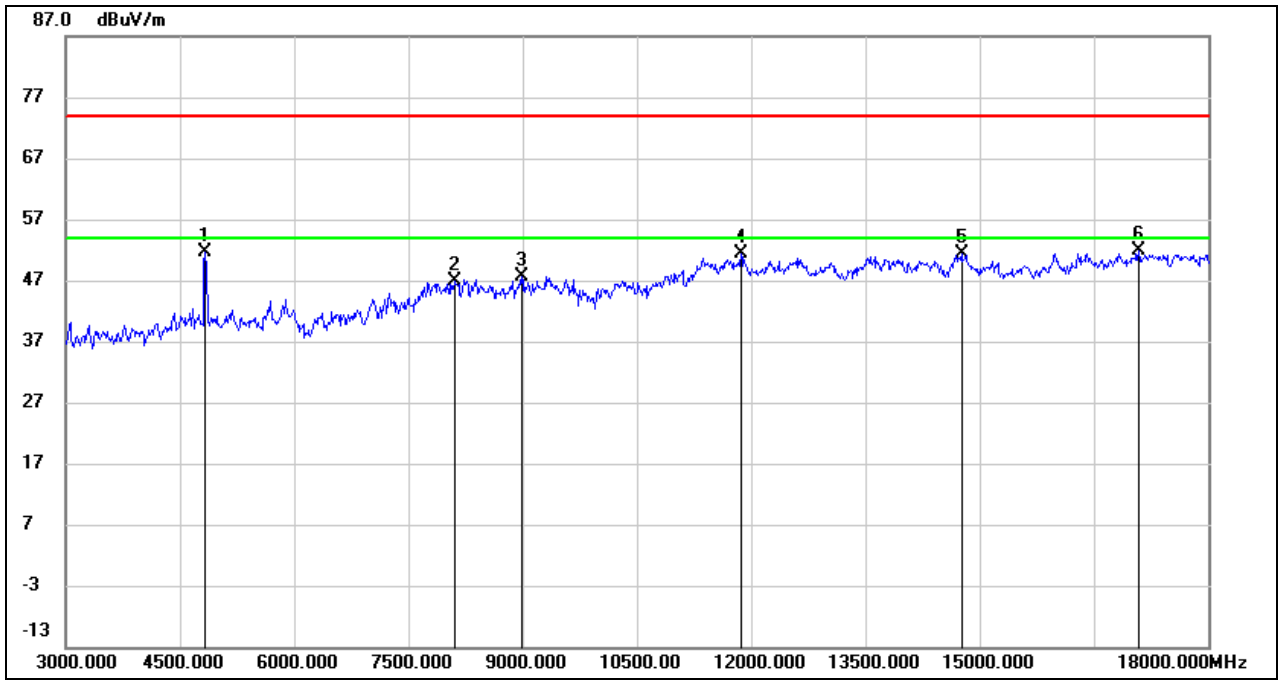
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 1, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4824.375	50.59	1.37	51.96	74.00	-22.04	peak
2	7884.375	38.65	8.94	47.59	74.00	-26.41	peak
3	11833.125	35.17	15.33	50.50	74.00	-23.50	peak
4	14231.250	32.98	17.89	50.87	74.00	-23.13	peak
5	14673.750	33.91	17.61	51.52	74.00	-22.48	peak
6	16841.250	30.35	21.07	51.42	74.00	-22.58	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

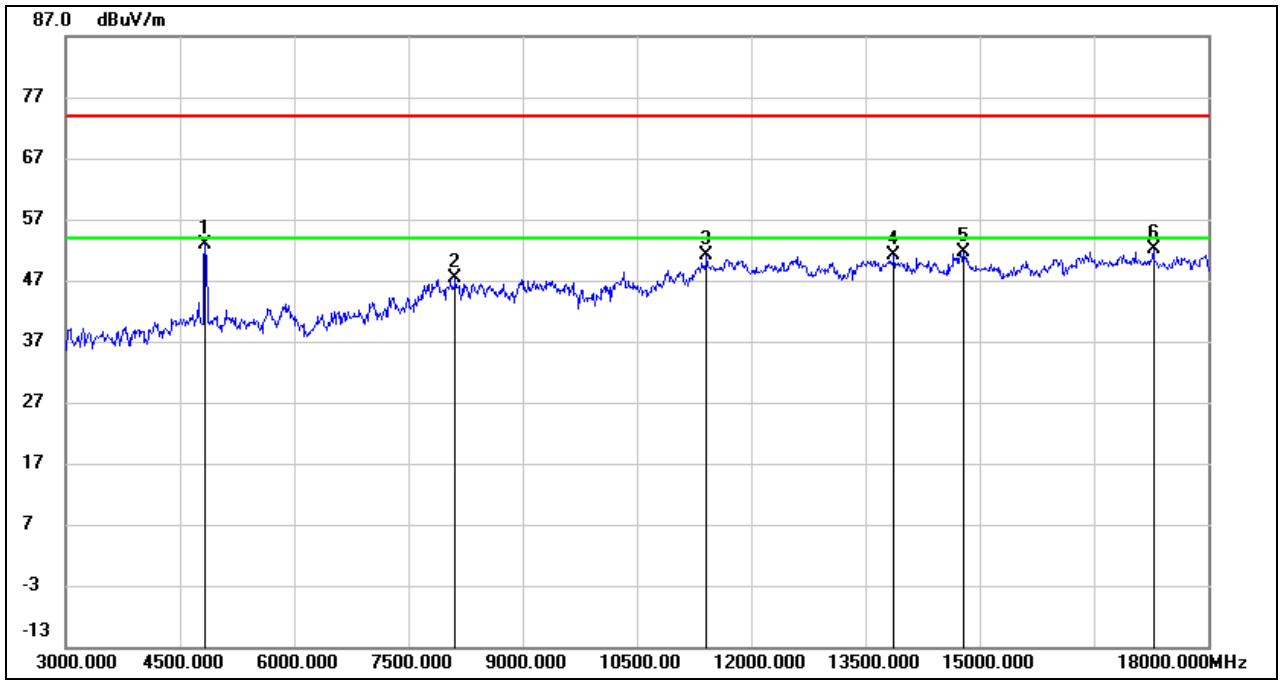
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 2, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4833.750	50.17	1.35	51.52	74.00	-22.48	peak
2	8116.875	36.67	10.12	46.79	74.00	-27.21	peak
3	8988.750	36.56	11.06	47.62	74.00	-26.38	peak
4	11868.750	35.93	15.44	51.37	74.00	-22.63	peak
5	14761.875	33.56	17.91	51.47	74.00	-22.53	peak
6	17088.750	30.13	21.82	51.95	74.00	-22.05	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

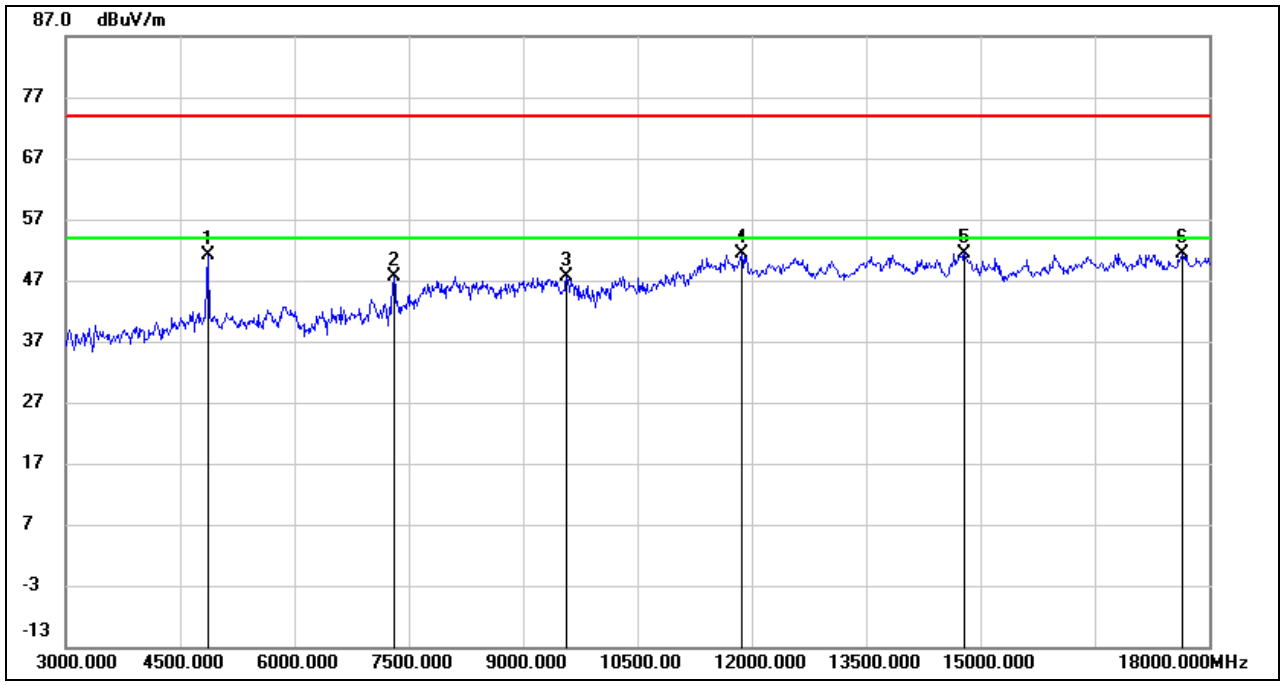
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 2, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4833.750	51.54	1.35	52.89	74.00	-21.11	peak
2	8126.250	37.39	10.08	47.47	74.00	-26.53	peak
3	11418.750	36.43	14.74	51.17	74.00	-22.83	peak
4	13884.375	33.57	17.54	51.11	74.00	-22.89	peak
5	14803.125	33.67	18.02	51.69	74.00	-22.31	peak
6	17280.000	29.72	22.48	52.20	74.00	-21.80	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

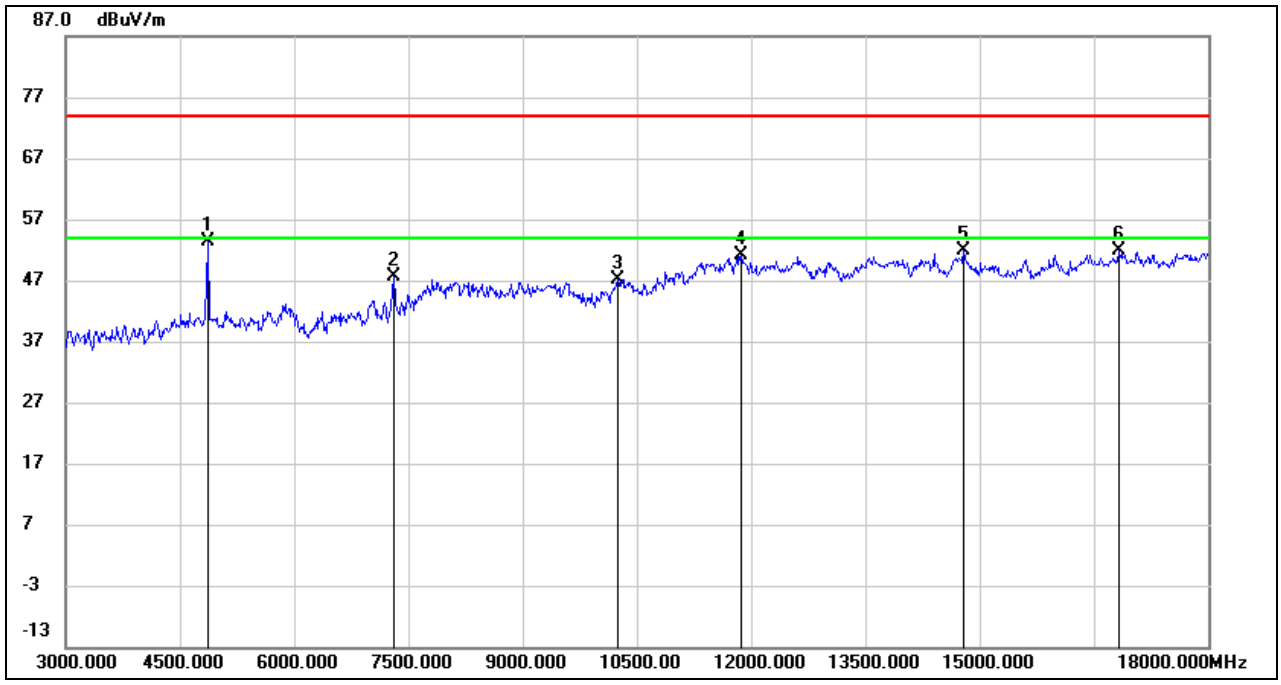
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 6, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4873.125	49.72	1.32	51.04	74.00	-22.96	peak
2	7310.625	40.48	7.20	47.68	74.00	-26.32	peak
3	9571.875	36.78	10.88	47.66	74.00	-26.34	peak
4	11865.000	35.96	15.42	51.38	74.00	-22.62	peak
5	14795.625	33.48	18.02	51.50	74.00	-22.50	peak
6	17658.750	28.22	23.17	51.39	74.00	-22.61	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

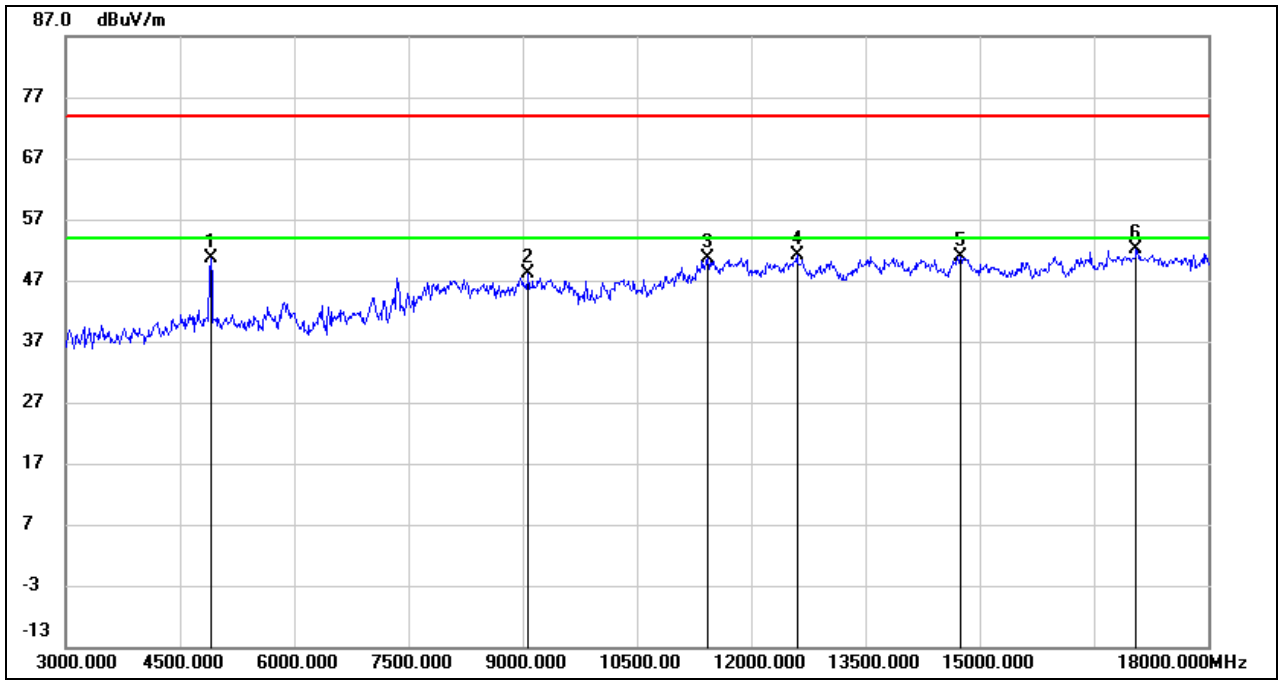
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 6, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4875.000	52.06	1.32	53.38	74.00	-20.62	peak
2	7310.625	40.33	7.20	47.53	74.00	-26.47	peak
3	10252.500	35.54	11.66	47.20	74.00	-26.80	peak
4	11870.625	35.70	15.44	51.14	74.00	-22.86	peak
5	14795.625	33.74	18.02	51.76	74.00	-22.24	peak
6	16843.125	30.86	21.08	51.94	74.00	-22.06	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

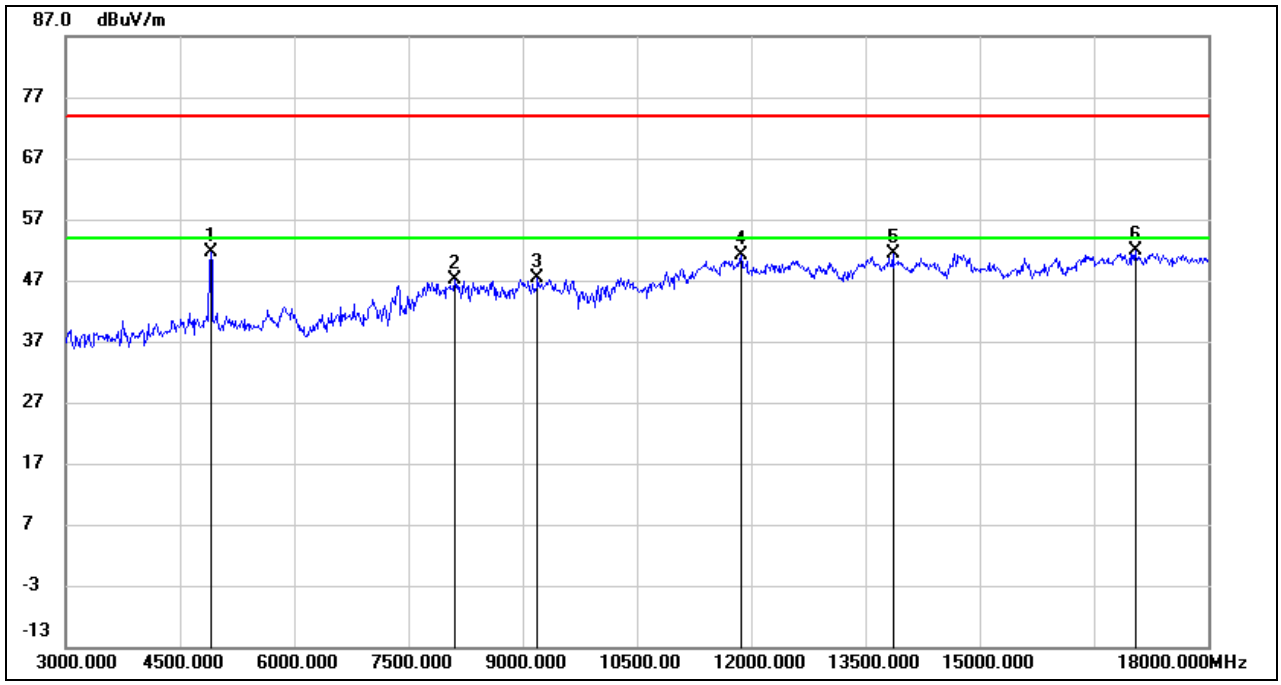
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 10, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4914.375	49.23	1.40	50.63	74.00	-23.37	peak
2	9086.250	37.83	10.29	48.12	74.00	-25.88	peak
3	11430.000	35.95	14.72	50.67	74.00	-23.33	peak
4	12600.000	35.42	15.78	51.20	74.00	-22.80	peak
5	14750.625	33.02	17.87	50.89	74.00	-23.11	peak
6	17064.375	30.46	21.66	52.12	74.00	-21.88	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

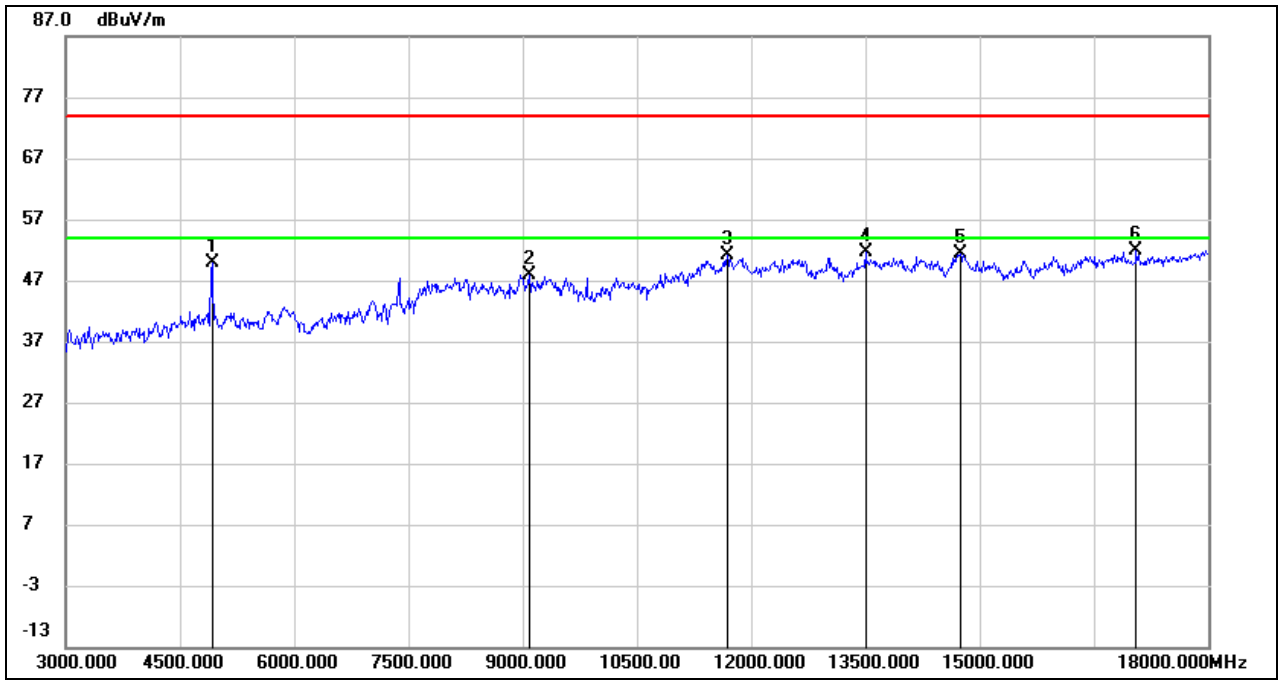
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 10, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4910.625	50.21	1.37	51.58	74.00	-22.42	peak
2	8115.000	36.93	10.13	47.06	74.00	-26.94	peak
3	9195.000	37.37	9.92	47.29	74.00	-26.71	peak
4	11866.875	35.75	15.42	51.17	74.00	-22.83	peak
5	13865.625	33.81	17.55	51.36	74.00	-22.64	peak
6	17053.125	30.26	21.59	51.85	74.00	-22.15	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

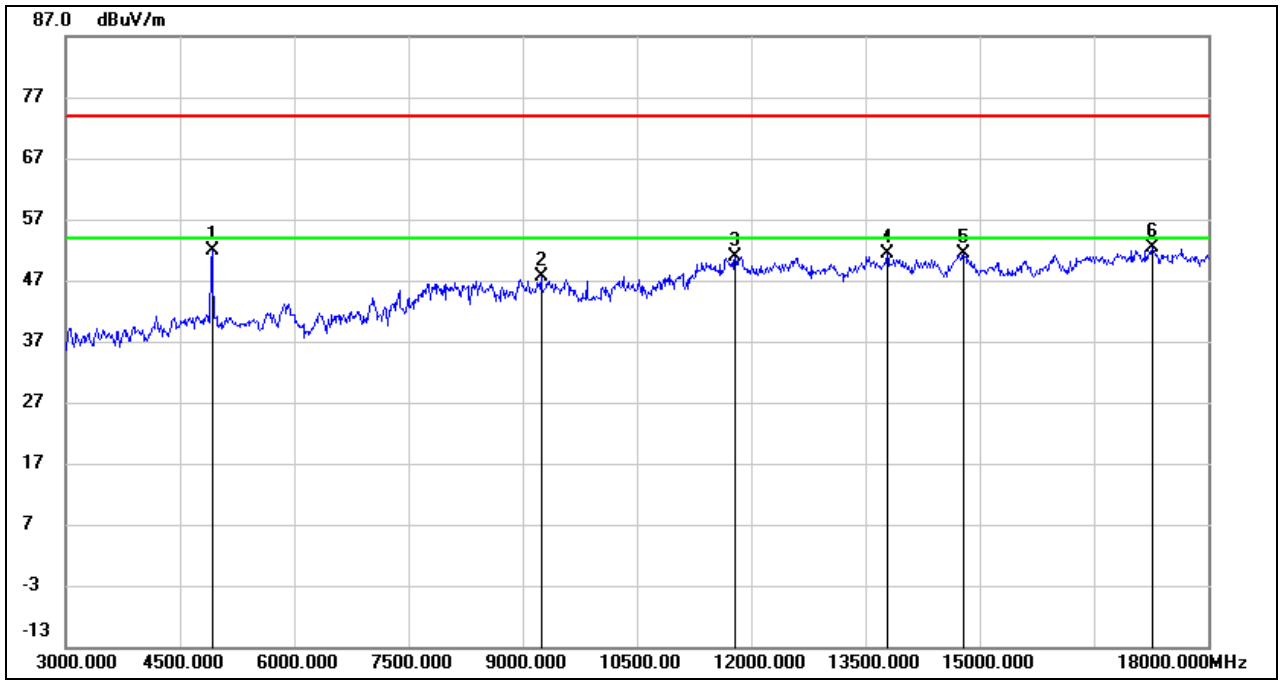
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 11, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4925.625	48.41	1.51	49.92	74.00	-24.08	peak
2	9099.375	37.80	10.15	47.95	74.00	-26.05	peak
3	11696.250	35.73	15.33	51.06	74.00	-22.94	peak
4	13501.875	34.41	17.22	51.63	74.00	-22.37	peak
5	14750.625	33.56	17.87	51.43	74.00	-22.57	peak
6	17064.375	30.11	21.66	51.77	74.00	-22.23	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 11, VERTICAL)



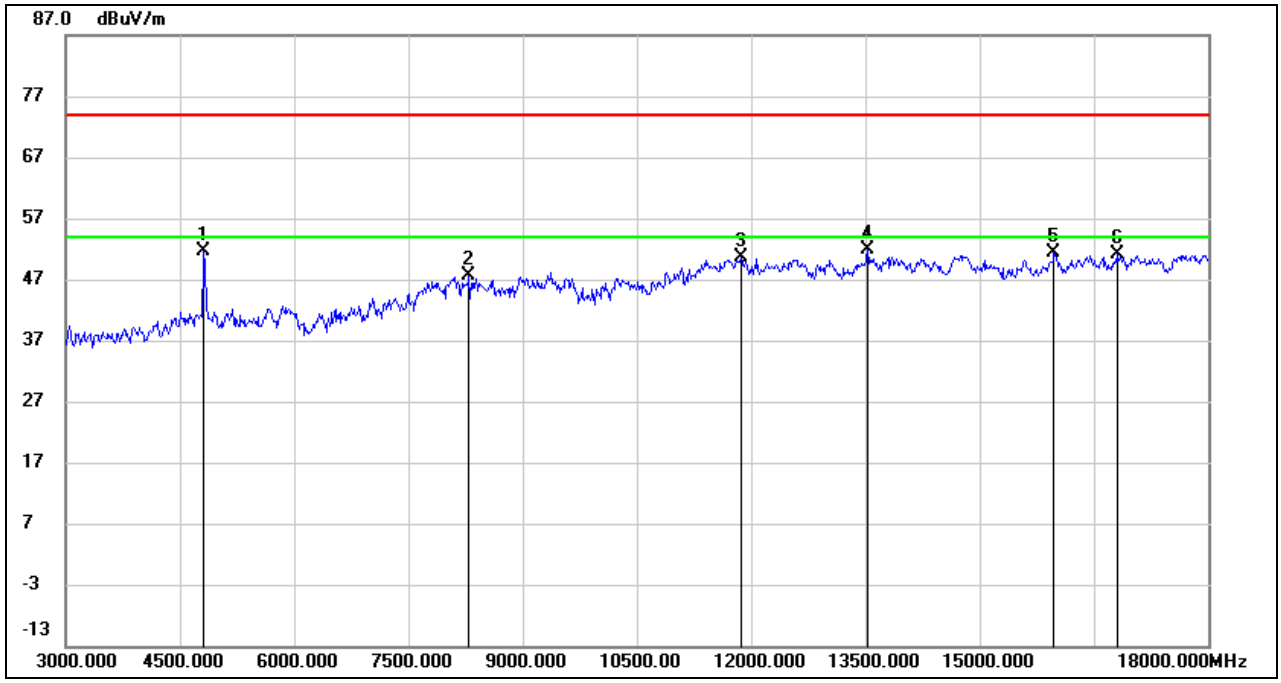
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4925.625	50.27	1.51	51.78	74.00	-22.22	peak
2	9245.625	37.39	10.13	47.52	74.00	-26.48	peak
3	11790.000	35.67	15.26	50.93	74.00	-23.07	peak
4	13790.625	33.81	17.61	51.42	74.00	-22.58	peak
5	14801.250	33.32	18.03	51.35	74.00	-22.65	peak
6	17278.125	29.88	22.47	52.35	74.00	-21.65	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

Note: Both the two antennas had been tested, but only the worst data was recorded in the report.

8.3.2. 802.11n HT20 MODE

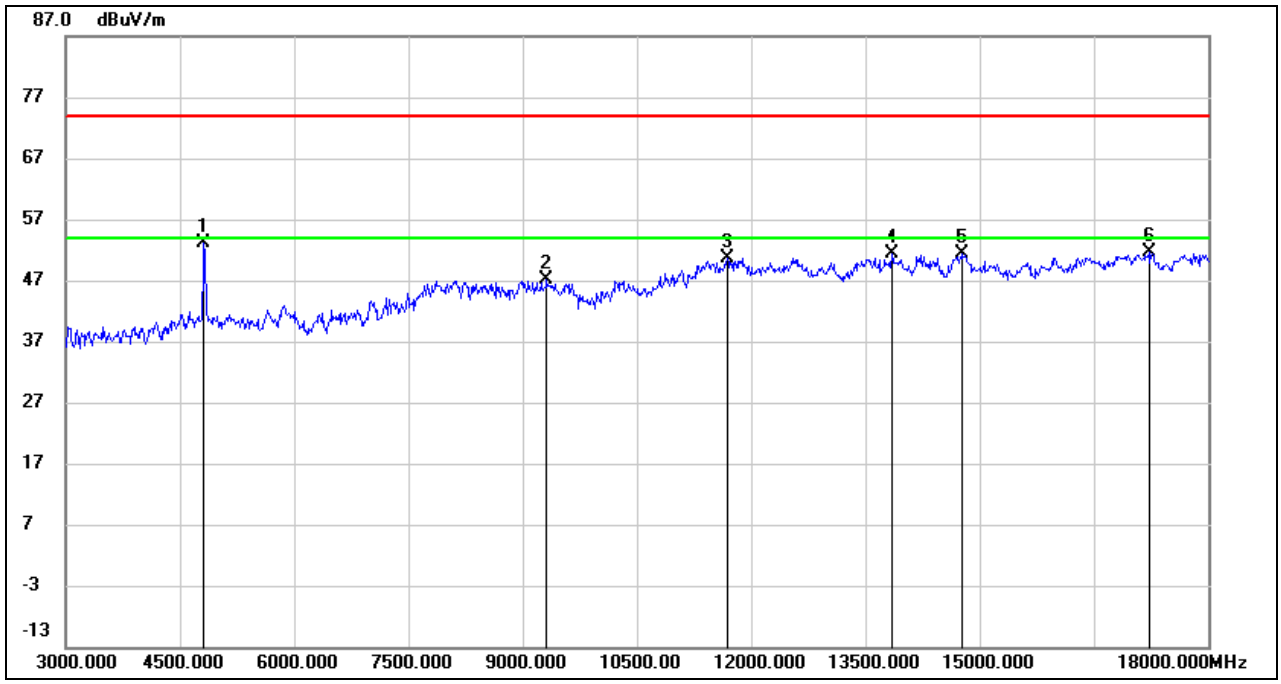
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 1, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4826.250	50.32	1.37	51.69	74.00	-22.31	peak
2	8296.875	37.88	9.69	47.57	74.00	-26.43	peak
3	11868.750	35.17	15.44	50.61	74.00	-23.39	peak
4	13535.625	34.71	17.18	51.89	74.00	-22.11	peak
5	15988.125	32.92	18.37	51.29	74.00	-22.71	peak
6	16805.625	30.26	20.75	51.01	74.00	-22.99	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

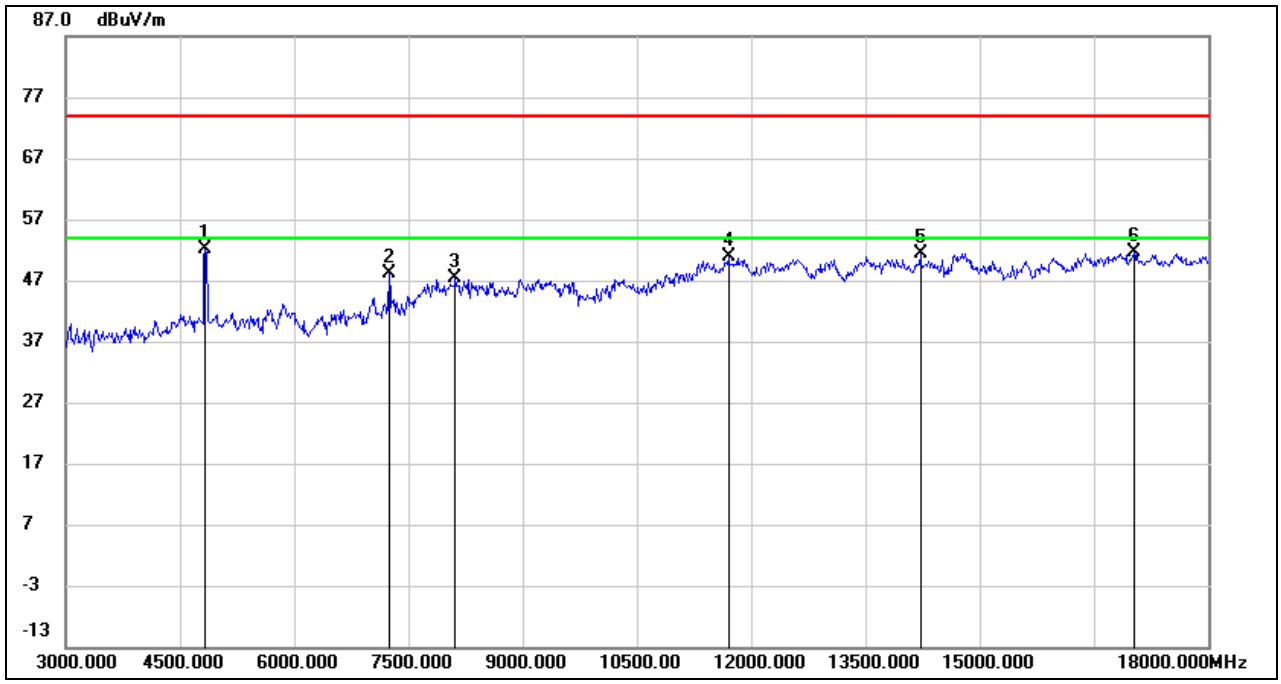
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 1, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4826.250	51.85	1.37	53.22	74.00	-20.78	peak
2	9322.500	36.54	10.53	47.07	74.00	-26.93	peak
3	11688.750	35.44	15.28	50.72	74.00	-23.28	peak
4	13858.125	33.88	17.55	51.43	74.00	-22.57	peak
5	14782.500	33.38	17.98	51.36	74.00	-22.64	peak
6	17229.375	29.40	22.17	51.57	74.00	-22.43	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

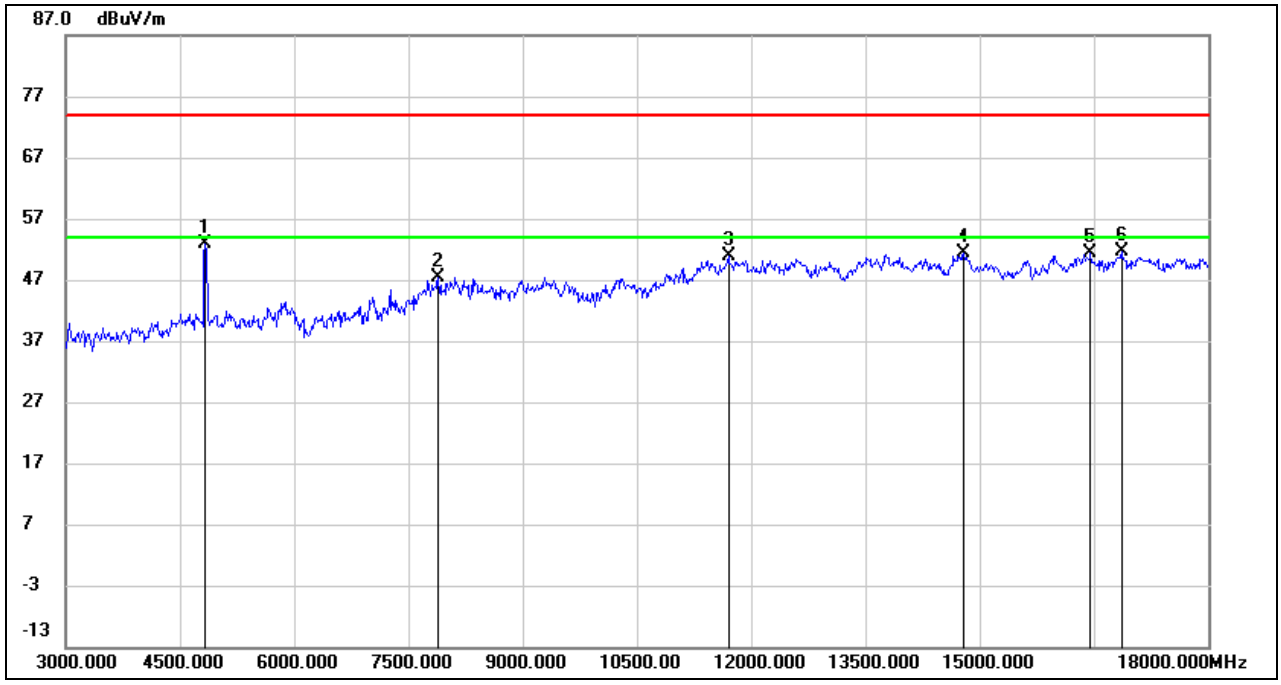
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 2, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4843.125	50.73	1.35	52.08	74.00	-21.92	peak
2	7248.750	40.87	7.23	48.10	74.00	-25.90	peak
3	8116.875	37.37	10.12	47.49	74.00	-26.51	peak
4	11703.750	35.47	15.34	50.81	74.00	-23.19	peak
5	14227.500	33.57	17.88	51.45	74.00	-22.55	peak
6	17025.000	30.18	21.40	51.58	74.00	-22.42	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

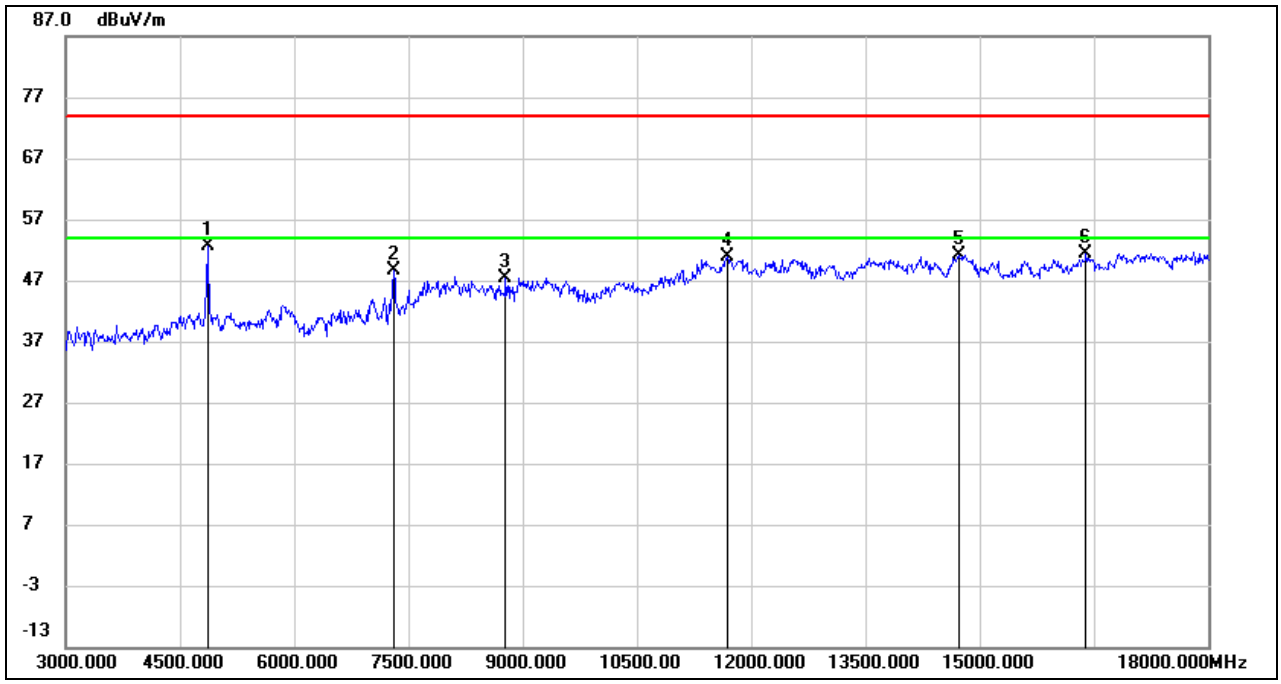
HARMONICS AND SPURIOUS EMISSIONS CHANNEL 2, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4830.000	51.43	1.37	52.80	74.00	-21.20	peak
2	7899.375	38.50	8.86	47.36	74.00	-26.64	peak
3	11705.625	35.53	15.34	50.87	74.00	-23.13	peak
4	14801.250	33.42	18.03	51.45	74.00	-22.55	peak
5	16455.000	31.75	19.68	51.43	74.00	-22.57	peak
6	16865.625	30.32	21.28	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

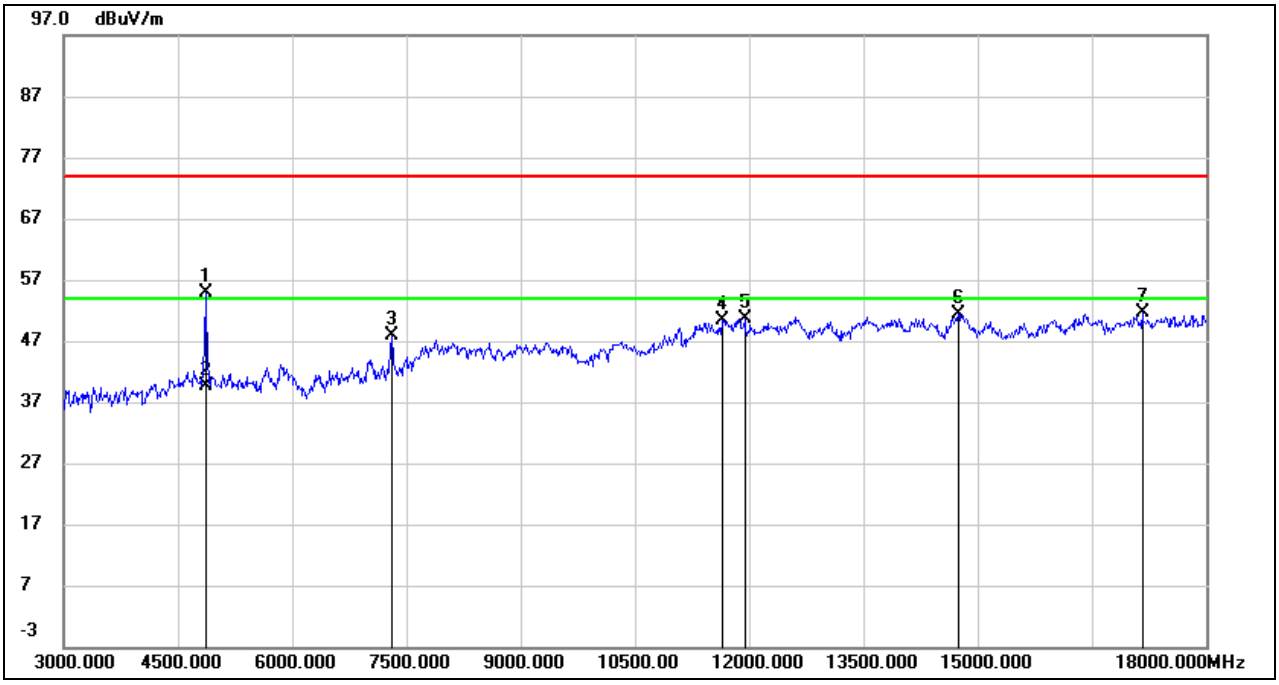
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 6, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4865.625	51.32	1.32	52.64	74.00	-21.36	peak
2	7312.500	41.40	7.21	48.61	74.00	-25.39	peak
3	8788.125	38.12	9.22	47.34	74.00	-26.66	peak
4	11688.750	35.64	15.28	50.92	74.00	-23.08	peak
5	14731.875	33.43	17.80	51.23	74.00	-22.77	peak
6	16395.000	31.77	19.68	51.45	74.00	-22.55	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

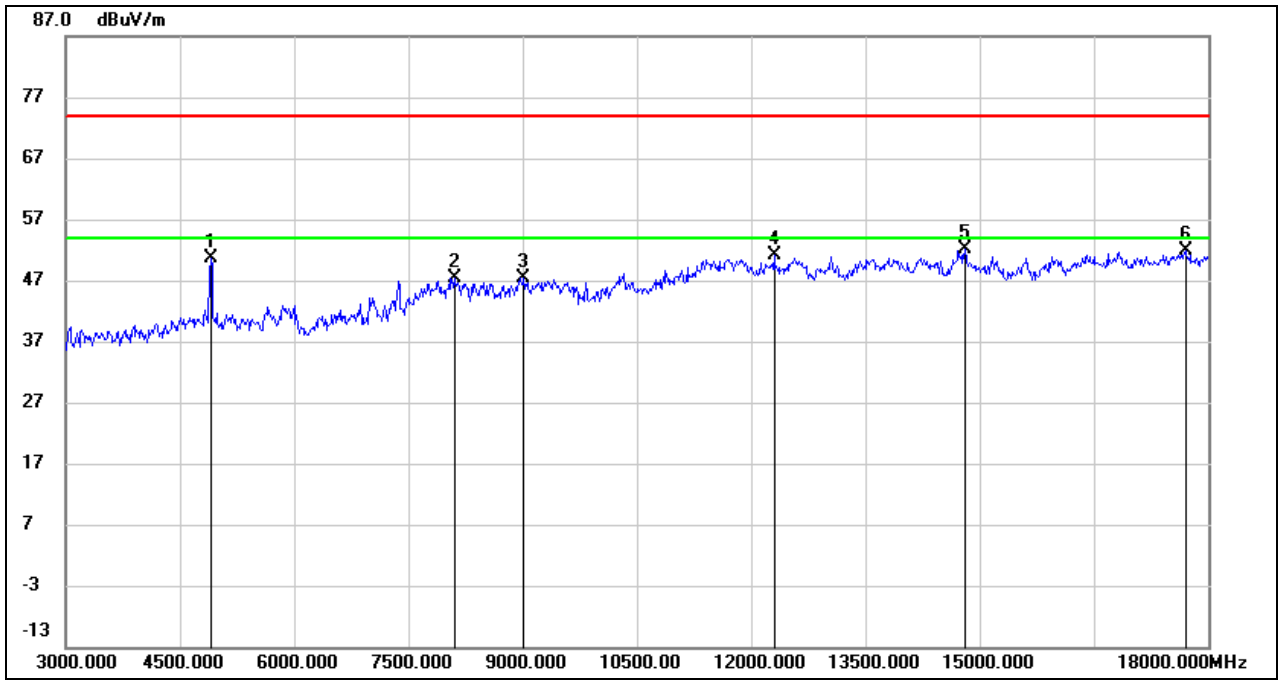
HARMONICS AND SPURIOUS EMISSIONS CHANNEL 6, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4867.500	53.54	1.32	54.86	74.00	-19.14	peak
2	4867.500	38.20	1.32	39.52	54.00	-14.48	AVG
3	7312.500	40.69	7.21	47.90	74.00	-26.10	peak
4	11641.875	35.44	14.98	50.42	74.00	-23.58	peak
5	11947.500	35.13	15.55	50.68	74.00	-23.32	peak
6	14758.125	33.60	17.90	51.50	74.00	-22.50	peak
7	17163.750	29.71	21.96	51.67	74.00	-22.33	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

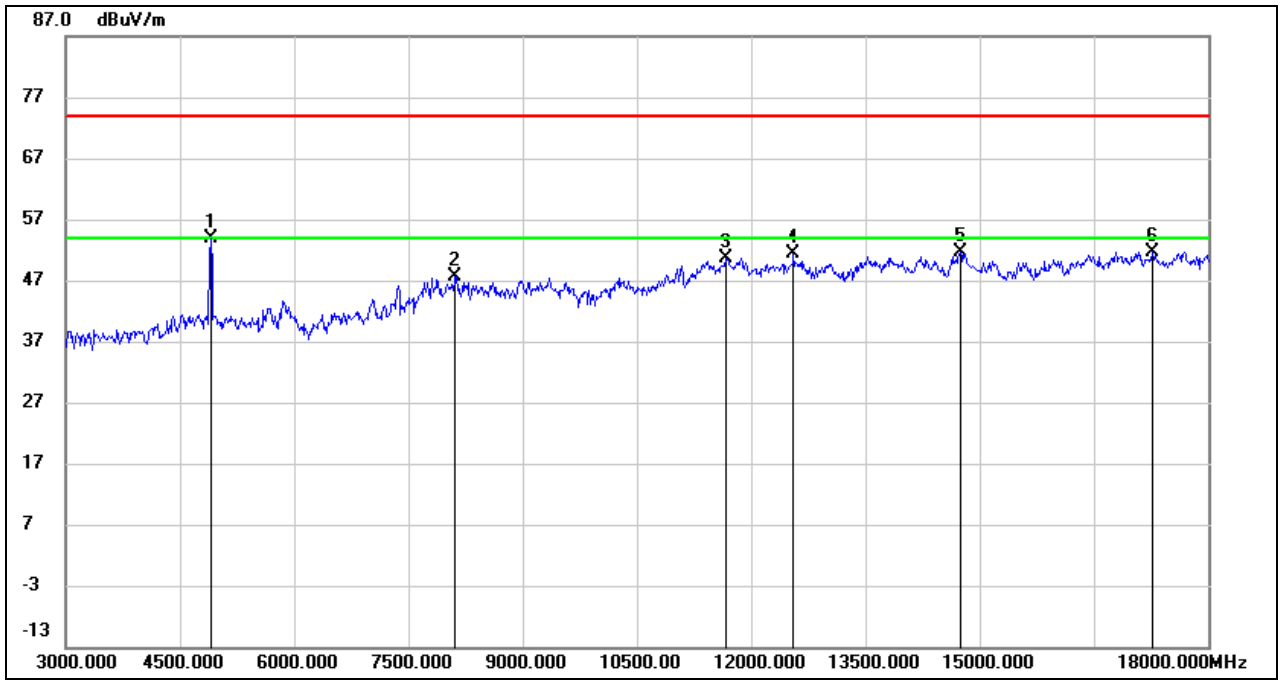
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 10, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4906.875	49.38	1.34	50.72	74.00	-23.28	peak
2	8111.250	37.21	10.14	47.35	74.00	-26.65	peak
3	9026.250	36.42	10.98	47.40	74.00	-26.60	peak
4	12313.125	35.08	16.07	51.15	74.00	-22.85	peak
5	14808.750	34.15	17.98	52.13	74.00	-21.87	peak
6	17703.750	28.36	23.49	51.85	74.00	-22.15	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

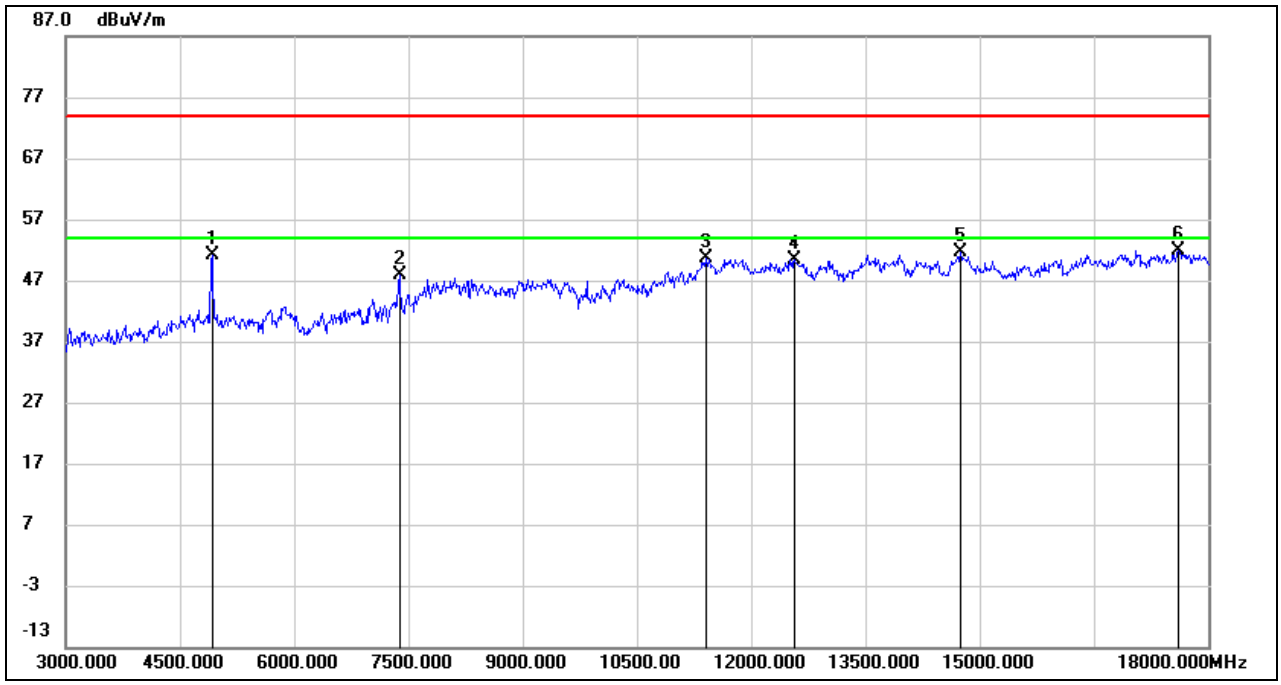
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 10, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4912.500	52.45	1.39	53.84	74.00	-20.16	peak
2	8128.125	37.59	10.07	47.66	74.00	-26.34	peak
3	11677.500	35.42	15.21	50.63	74.00	-23.37	peak
4	12564.375	35.70	15.73	51.43	74.00	-22.57	peak
5	14758.125	33.76	17.90	51.66	74.00	-22.34	peak
6	17274.375	29.30	22.45	51.75	74.00	-22.25	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

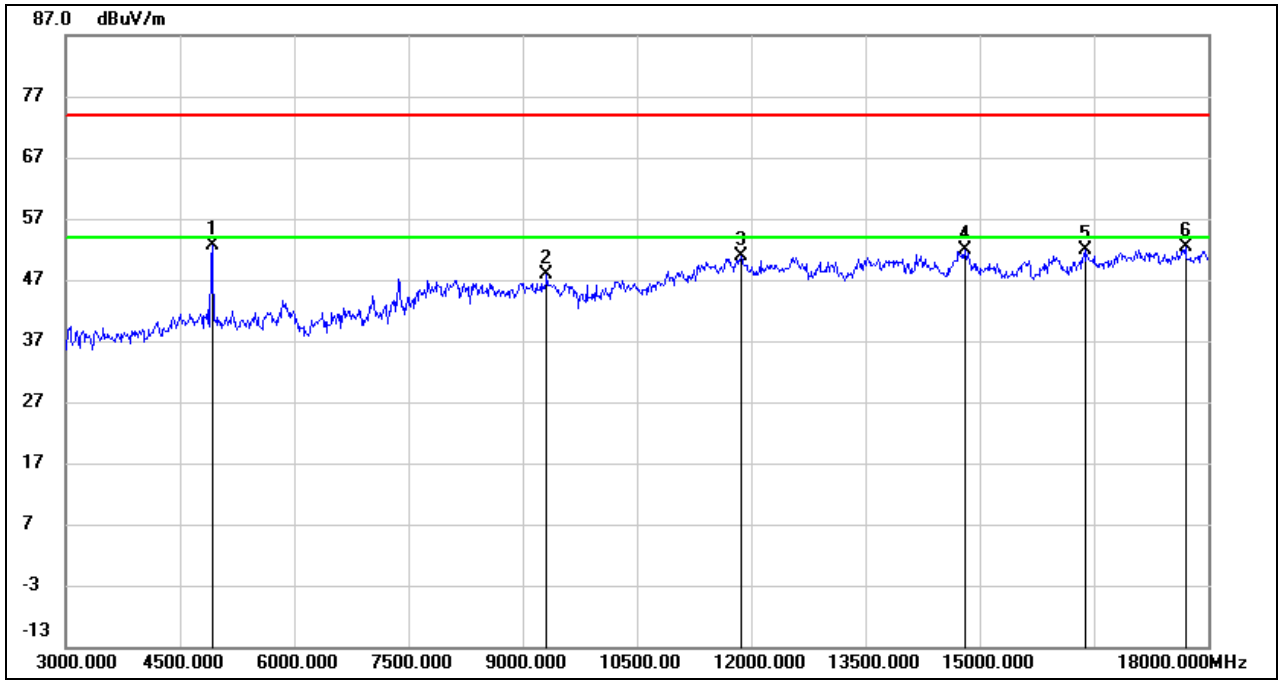
HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 11, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4925.625	49.64	1.51	51.15	74.00	-22.85	peak
2	7380.000	40.17	7.79	47.96	74.00	-26.04	peak
3	11413.125	36.01	14.74	50.75	74.00	-23.25	peak
4	12577.500	34.72	15.75	50.47	74.00	-23.53	peak
5	14746.875	33.82	17.85	51.67	74.00	-22.33	peak
6	17623.125	28.89	22.90	51.79	74.00	-22.21	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 11, VERTICAL)



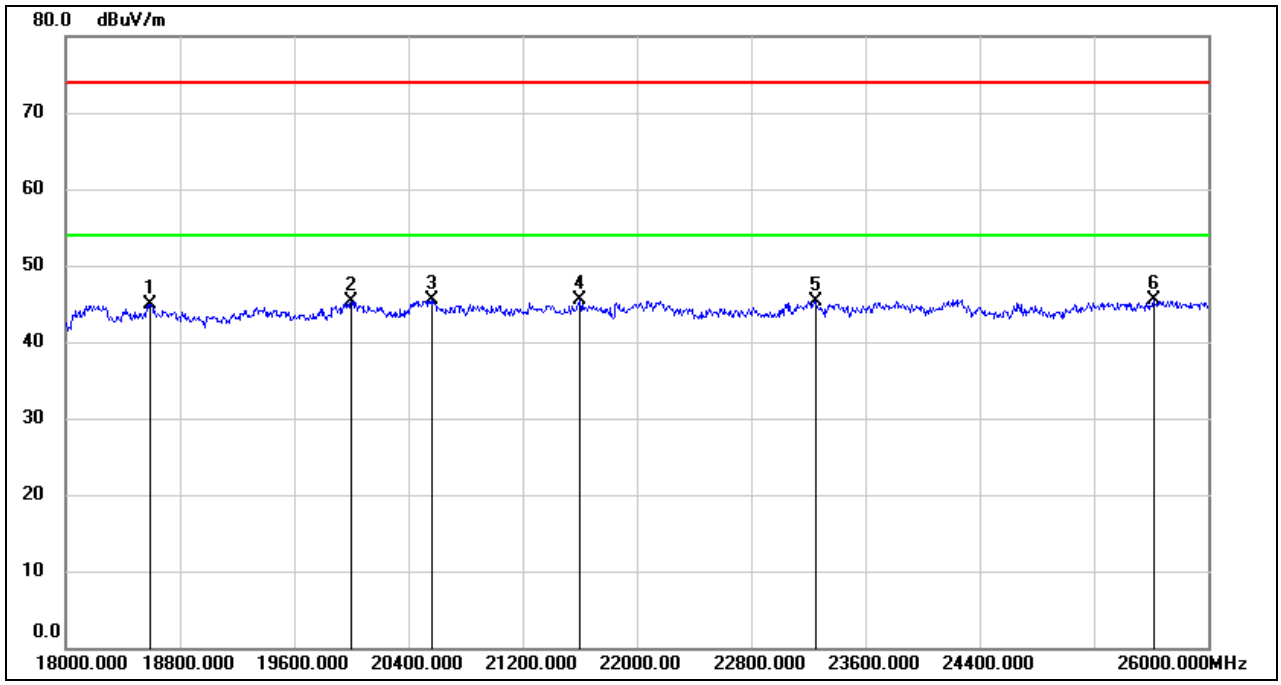
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4921.875	51.08	1.47	52.55	74.00	-21.45	peak
2	9320.625	37.41	10.52	47.93	74.00	-26.07	peak
3	11868.750	35.40	15.44	50.84	74.00	-23.16	peak
4	14805.000	33.76	18.00	51.76	74.00	-22.24	peak
5	16387.500	32.21	19.67	51.88	74.00	-22.12	peak
6	17709.375	28.80	23.52	52.32	74.00	-21.68	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

8.4. SPURIOUS EMISSIONS (18 GHz ~ 26 GHz)

8.4.1. 802.11n HT20 MODE

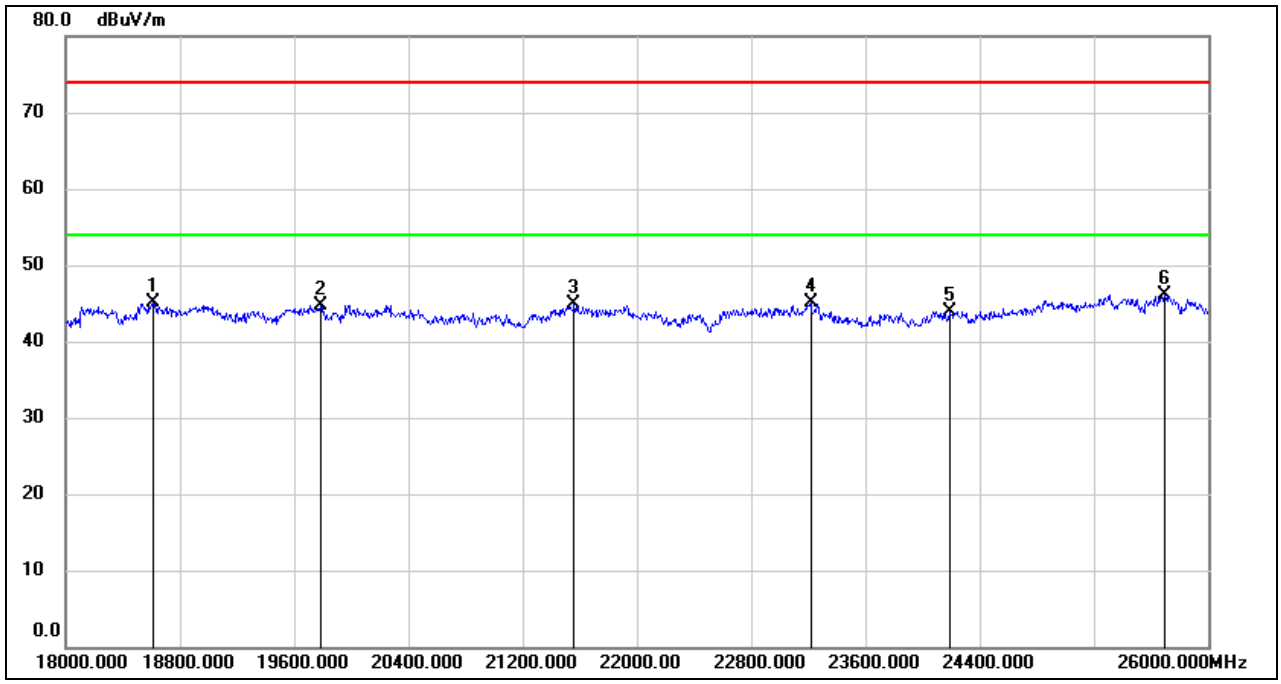
SPURIOUS EMISSIONS (CHANNEL 2, WORST-CASE CONFIGURATION, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18592.000	50.25	-5.31	44.94	74.00	-29.06	peak
2	20000.000	50.81	-5.45	45.36	74.00	-28.64	peak
3	20560.000	50.73	-5.30	45.43	74.00	-28.57	peak
4	21600.000	50.02	-4.54	45.48	74.00	-28.52	peak
5	23256.000	48.72	-3.35	45.37	74.00	-28.63	peak
6	25616.000	46.68	-1.24	45.44	74.00	-28.56	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.

SPURIOUS EMISSIONS (CHANNEL 2, WORST-CASE CONFIGURATION, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18616.000	50.39	-5.34	45.05	74.00	-28.95	peak
2	19784.000	50.07	-5.28	44.79	74.00	-29.21	peak
3	21560.000	49.49	-4.60	44.89	74.00	-29.11	peak
4	23216.000	48.51	-3.38	45.13	74.00	-28.87	peak
5	24192.000	46.71	-2.81	43.90	74.00	-30.10	peak
6	25696.000	46.94	-0.86	46.08	74.00	-27.92	peak

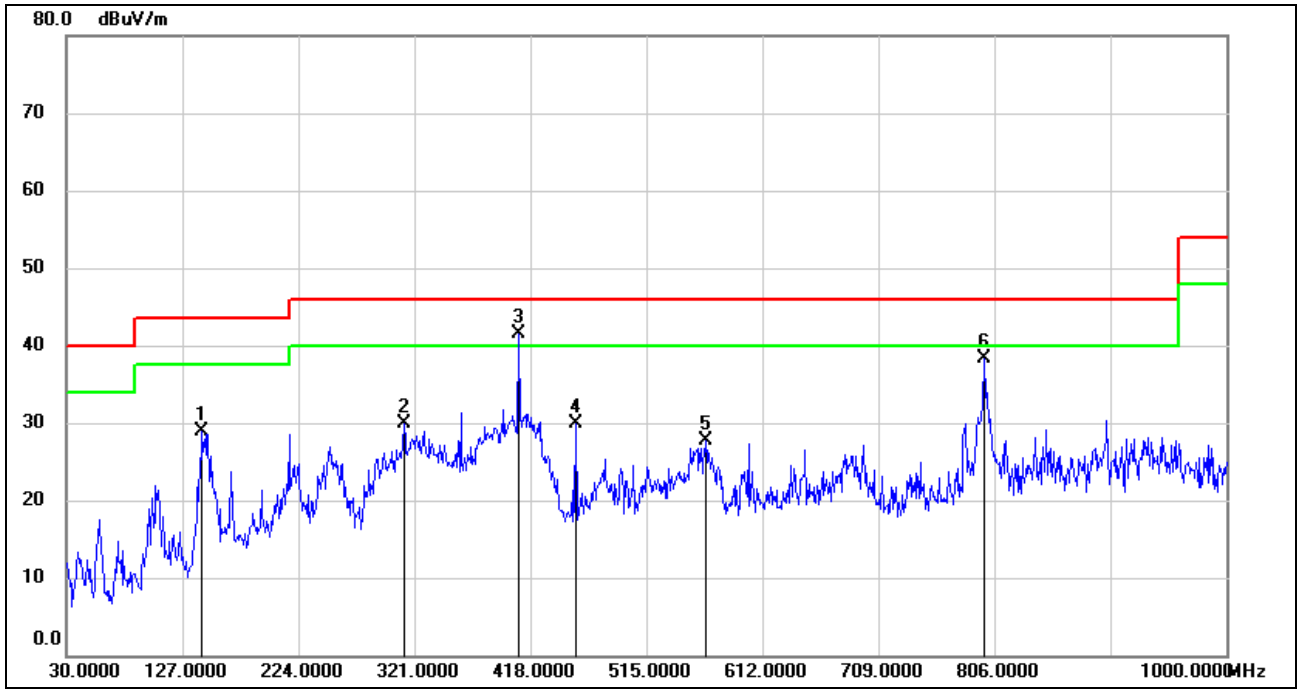
Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

Note: All the modes had been tested, but only the worst data was recorded in the report.

8.5. SPURIOUS EMISSIONS (30 MHz ~ 1 GHz)

8.5.1. 802.11n HT20 MODE

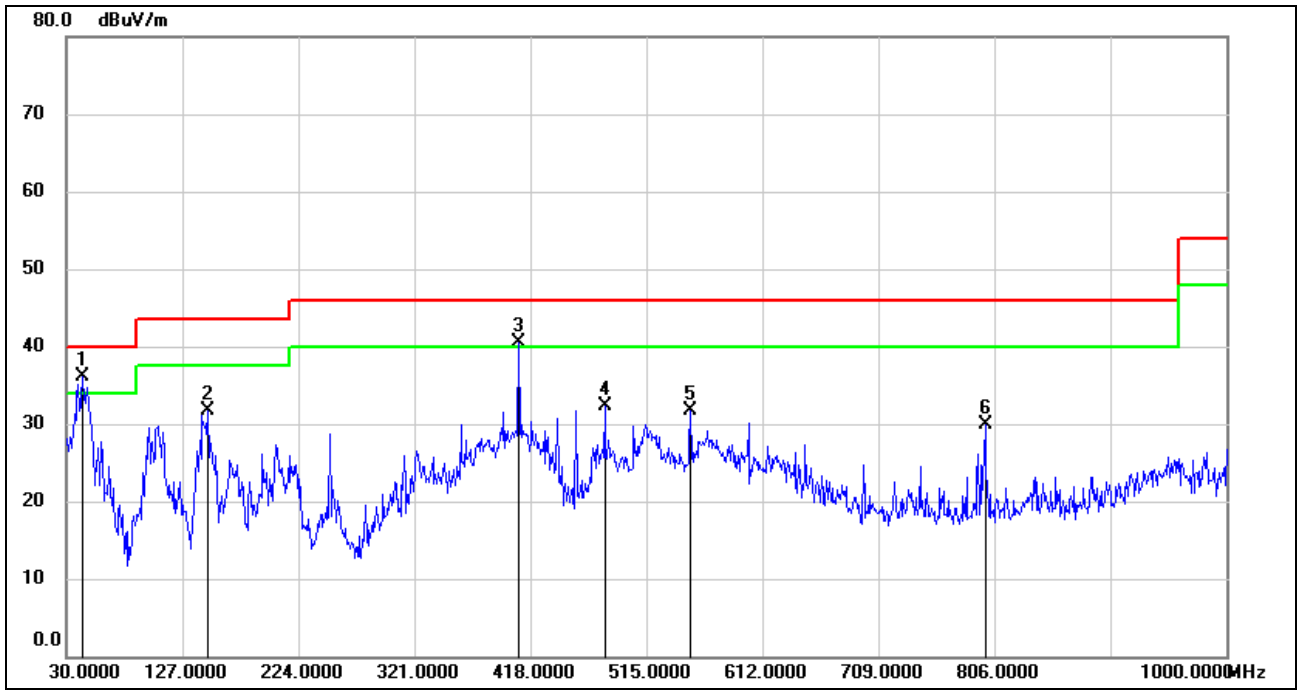
SPURIOUS EMISSIONS (CHANNEL 2, WORST-CASE CONFIGURATION, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	143.4900	47.61	-18.66	28.95	43.50	-14.55	QP
2	312.2700	44.87	-15.01	29.86	46.00	-16.14	QP
3	408.3000	54.59	-13.17	41.42	46.00	-4.58	QP
4	455.8300	42.15	-12.27	29.88	46.00	-16.12	QP
5	564.4699	37.99	-10.20	27.79	46.00	-18.21	QP
6	797.2700	45.57	-7.35	38.22	46.00	-7.78	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 (CHANNEL 2, WORST-CASE CONFIGURATION, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	43.5800	56.24	-20.21	36.03	40.00	-3.97	QP
2	148.3400	50.15	-18.36	31.79	43.50	-11.71	QP
3	408.3000	53.76	-13.17	40.59	46.00	-5.41	QP
4	480.0800	44.02	-11.79	32.23	46.00	-13.77	QP
5	551.8600	42.16	-10.46	31.70	46.00	-14.30	QP
6	798.2400	37.29	-7.34	29.95	46.00	-16.05	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

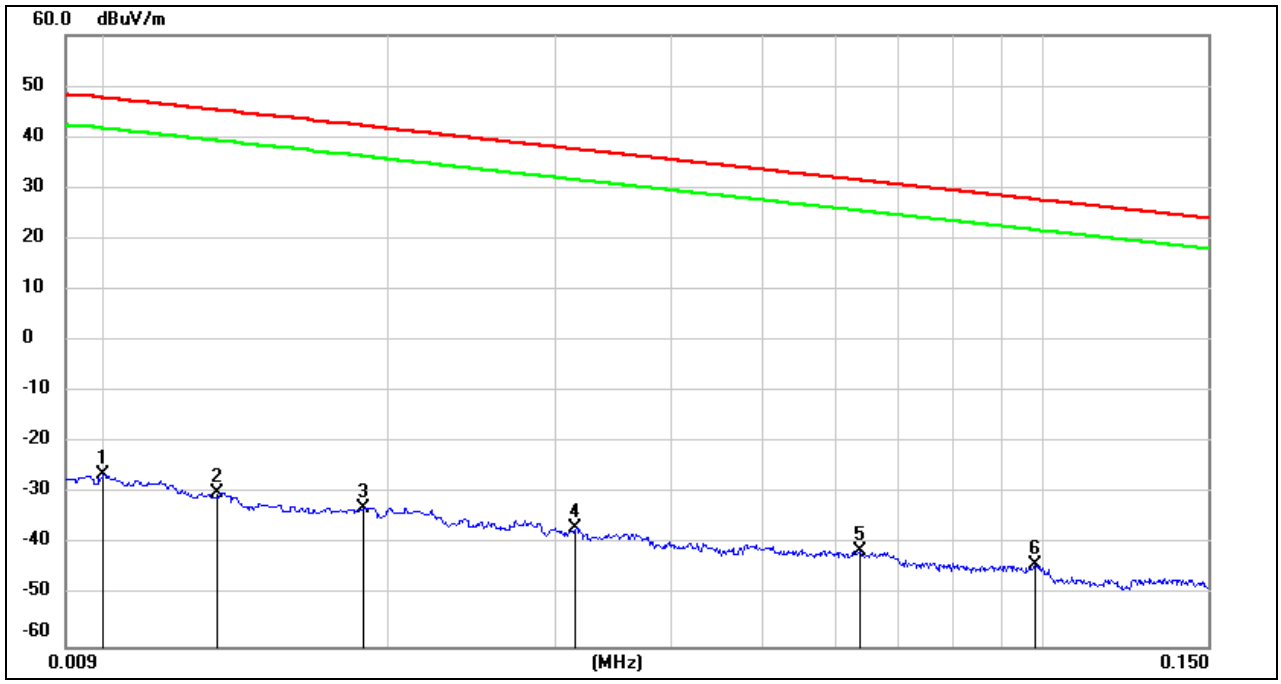
Note: All the modes and channels had been tested, but only the worst data was recorded in the report.

8.6. SPURIOUS EMISSIONS BELOW 30 MHz

8.6.1. 802.11n HT20 MODE

SPURIOUS EMISSIONS (CHANNEL 2, LOOP ANTENNA FACE ON TO THE EUT, WORST-CASE CONFIGURATION)

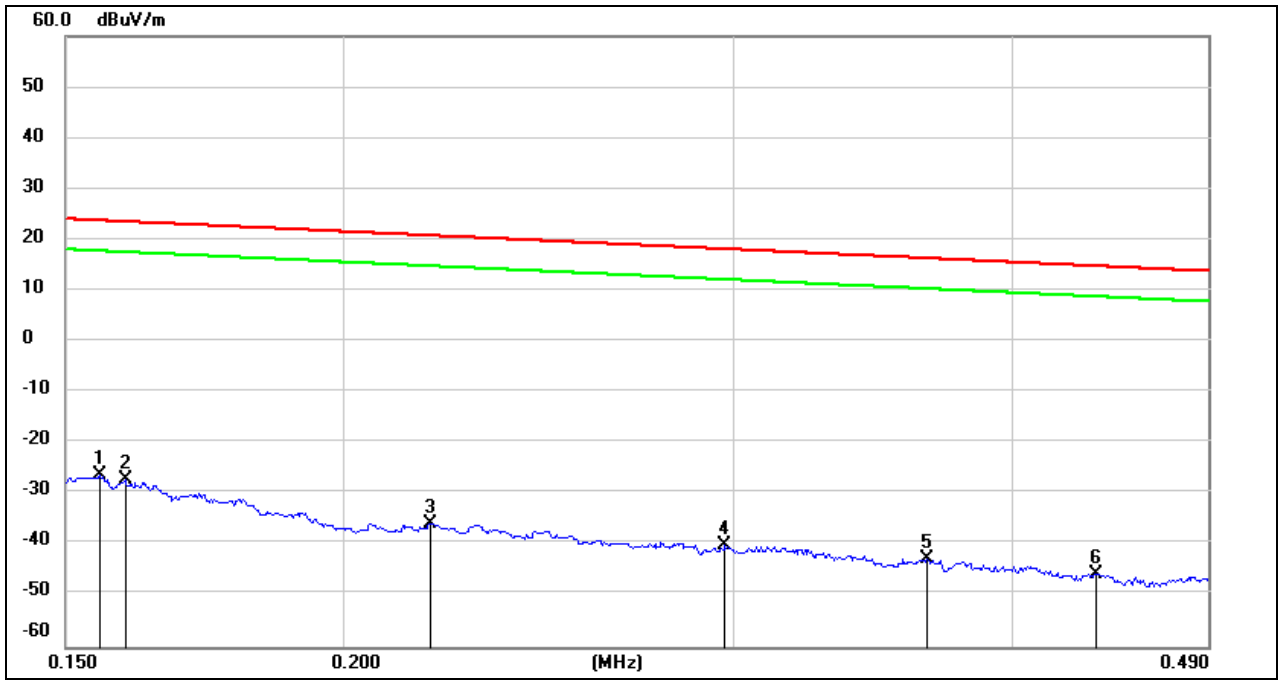
9 kHz~ 150 kHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.0100	75.22	-101.40	-26.18	47.60	-73.78	peak
2	0.0131	71.47	-101.38	-29.91	45.25	-75.16	peak
3	0.0188	68.64	-101.35	-32.71	42.12	-74.83	peak
4	0.0316	64.74	-101.40	-36.66	37.61	-74.27	peak
5	0.0636	60.31	-101.54	-41.23	31.53	-72.76	peak
6	0.0981	57.77	-101.78	-44.01	27.77	-71.78	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.

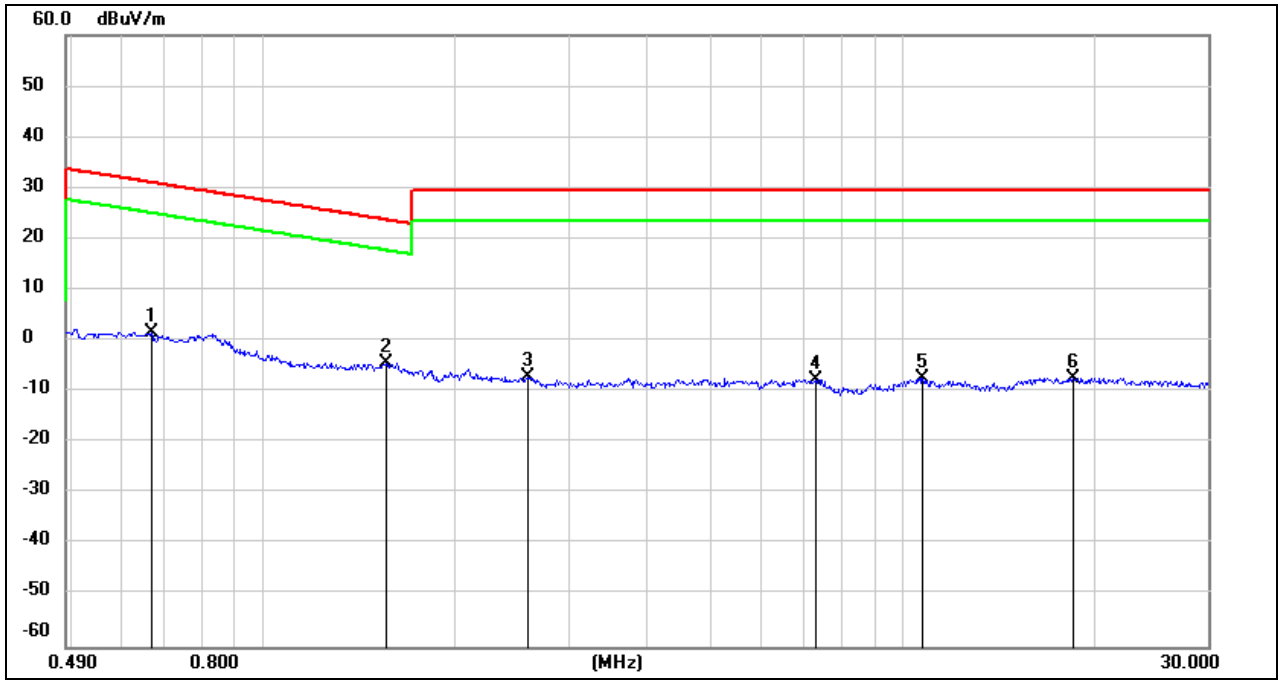
150 kHz ~ 490 kHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.1554	75.27	-101.65	-26.38	23.77	-50.15	peak
2	0.1595	74.36	-101.65	-27.29	23.55	-50.84	peak
3	0.2190	65.77	-101.75	-35.98	20.79	-56.77	peak
4	0.2972	61.66	-101.85	-40.19	18.14	-58.33	peak
5	0.3662	59.08	-101.93	-42.85	16.33	-59.18	peak
6	0.4364	56.36	-101.99	-45.63	14.80	-60.43	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.

490 kHz ~ 30 MHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.6671	63.75	-62.10	1.65	31.12	-29.47	peak
2	1.5564	57.68	-62.02	-4.34	23.76	-28.10	peak
3	2.5935	54.61	-61.68	-7.07	29.54	-36.61	peak
4	7.3361	53.58	-61.17	-7.59	29.54	-37.13	peak
5	10.7299	53.48	-60.83	-7.35	29.54	-36.89	peak
6	18.4908	53.56	-60.89	-7.33	29.54	-36.87	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 the modes and channels had been tested, but only the worst data was recorded in the report.

9. AC POWER LINE CONDUCTED EMISSIONS

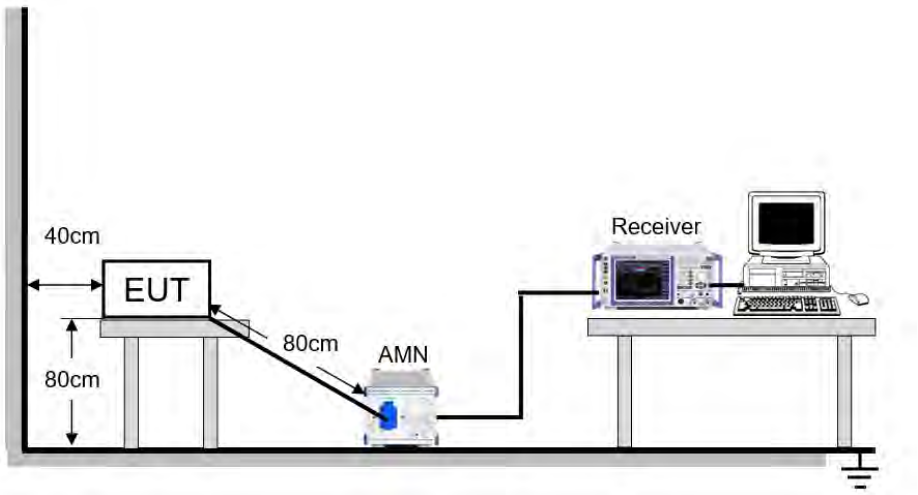
LIMITS

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

Refer to ANSI C63.10-2013 clause 6.2.



The EUT is put on a table of non-conducting material that is 80 cm high. The vertical conducting wall of shielding is located 40 cm 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 30 MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9 kHz.

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.

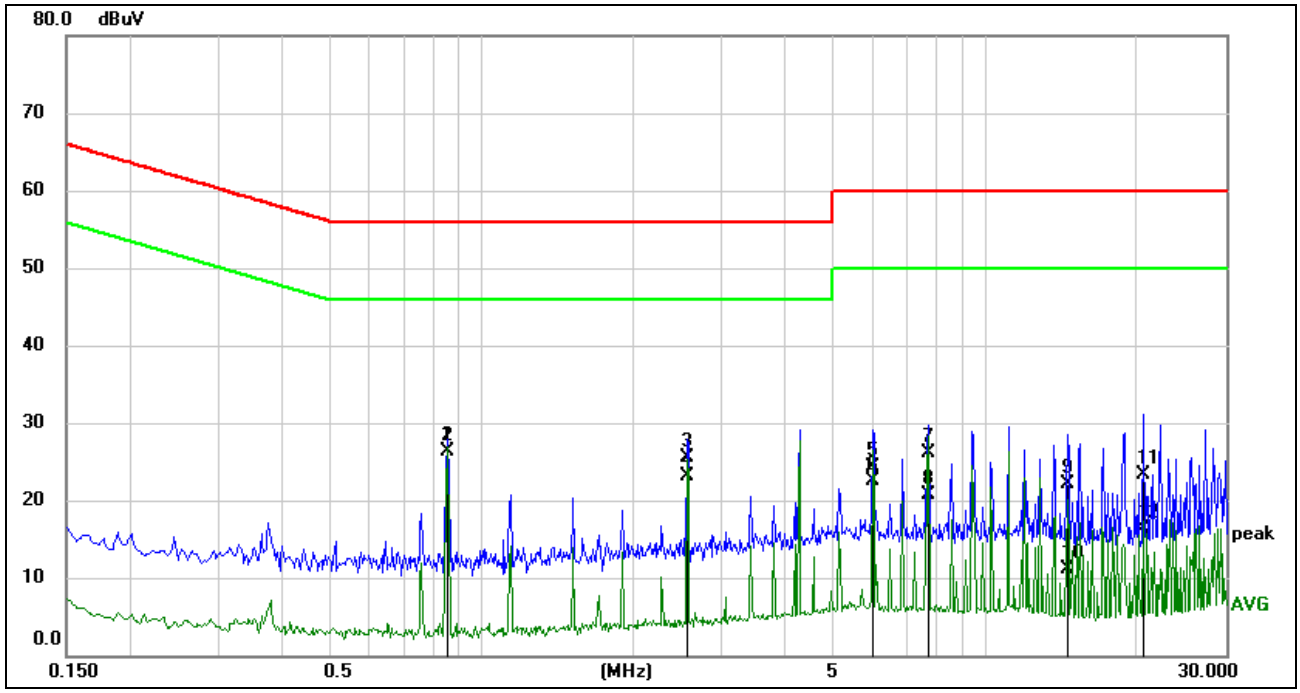
TEST ENVIRONMENT

Temperature	26.1°C	Relative Humidity	63 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120V, 60 HZ

RESULTS

9.1.1. 802.11n HT20 MODE

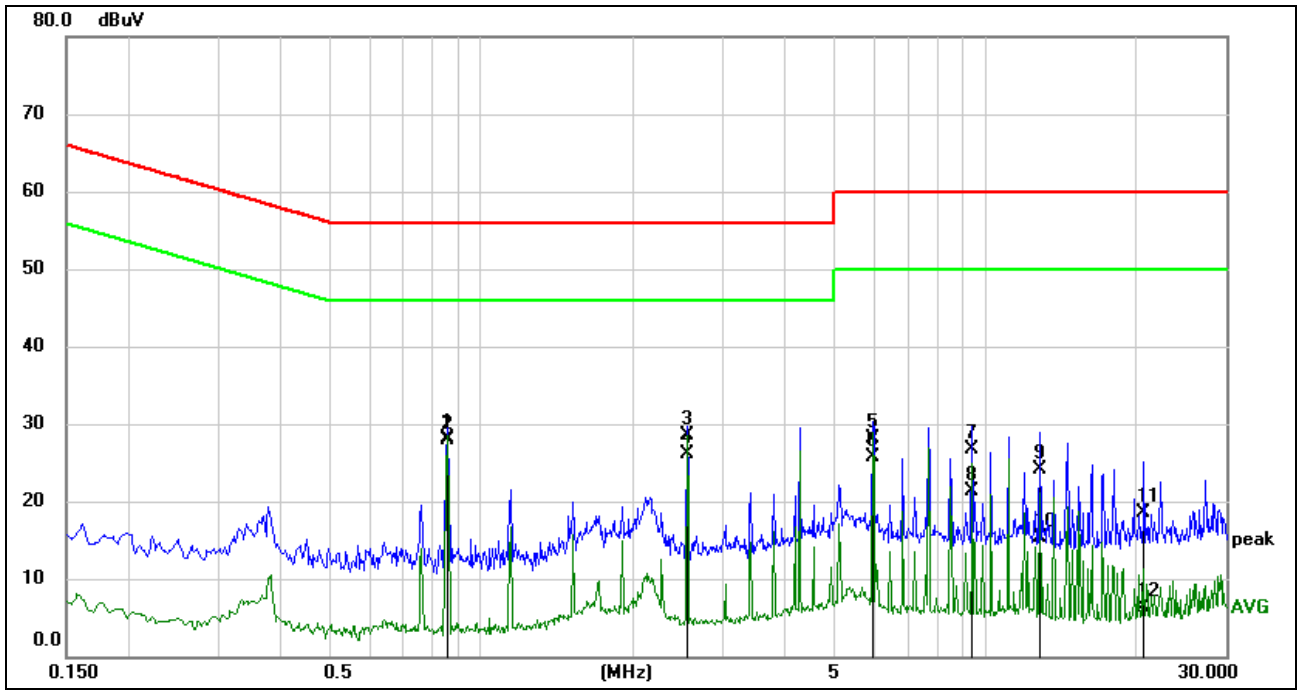
LINE L RESULTS (CHANNEL 2, WORST-CASE CONFIGURATION)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.8552	16.74	9.60	26.34	56.00	-29.66	QP
2	0.8552	16.68	9.60	26.28	46.00	-19.72	AVG
3	2.5681	15.92	9.62	25.54	56.00	-30.46	QP
4	2.5681	13.40	9.62	23.02	46.00	-22.98	AVG
5	5.9768	14.64	9.64	24.28	60.00	-35.72	QP
6	5.9768	12.90	9.64	22.54	50.00	-27.46	AVG
7	7.6961	16.42	9.62	26.04	60.00	-33.96	QP
8	7.6961	11.06	9.62	20.68	50.00	-29.32	AVG
9	14.5552	12.41	9.66	22.07	60.00	-37.93	QP
10	14.5552	1.52	9.66	11.18	50.00	-38.82	AVG
11	20.5401	13.38	9.84	23.22	60.00	-36.78	QP
12	20.5401	6.44	9.84	16.28	50.00	-33.72	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: 80 Hz (0.009 MHz ~ 0.15 MHz), 4 kHz (0.15 MHz ~ 30 MHz), Scan time: auto.

LINE N RESULTS (HIGH CHANNEL, WORST-CASE CONFIGURATION)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.8555	18.47	9.60	28.07	56.00	-27.93	QP
2	0.8555	18.38	9.60	27.98	46.00	-18.02	AVG
3	2.5612	18.82	9.62	28.44	56.00	-27.56	QP
4	2.5612	16.56	9.62	26.18	46.00	-19.82	AVG
5	5.9795	18.38	9.64	28.02	60.00	-31.98	QP
6	5.9795	16.14	9.64	25.78	50.00	-24.22	AVG
7	9.3995	17.05	9.62	26.67	60.00	-33.33	QP
8	9.3995	11.76	9.62	21.38	50.00	-28.62	AVG
9	12.8243	14.36	9.66	24.02	60.00	-35.98	QP
10	12.8243	5.62	9.66	15.28	50.00	-34.72	AVG
11	20.5624	8.70	9.84	18.54	60.00	-41.46	QP
12	20.5624	-3.51	9.84	6.33	50.00	-43.67	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: 80 Hz (0.009 MHz ~ 0.15 MHz), 4 kHz (0.15 MHz ~ 30 MHz), Scan time: auto.

Note: All the modes and channels had been tested, but only the worst data was recorded in the report.

10. 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

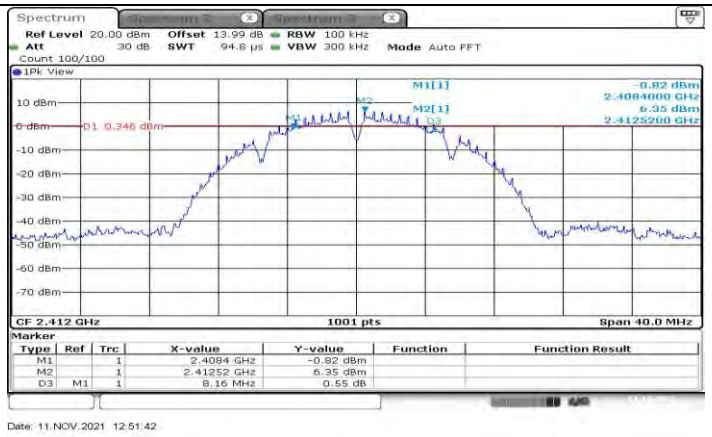
11. Appendix

11.1. Appendix A: DTS Bandwidth

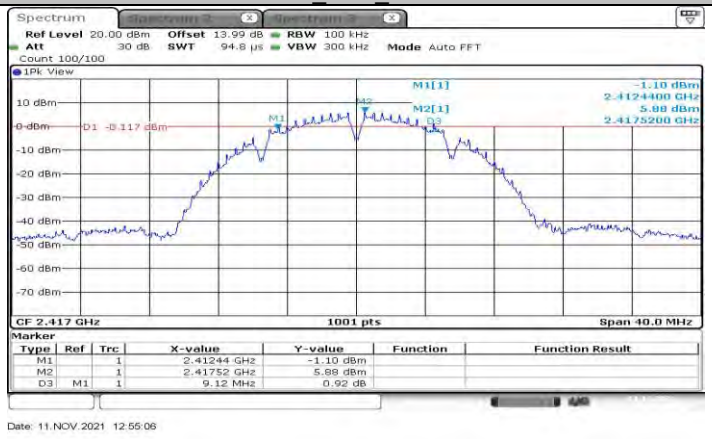
11.1.1. Test Result

Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.160	2408.400	2416.560	0.5	PASS
		2417	9.120	2412.440	2421.560	0.5	PASS
		2437	9.120	2432.440	2441.560	0.5	PASS
		2457	9.120	2452.440	2461.560	0.5	PASS
		2462	9.120	2457.440	2466.560	0.5	PASS
11G	Ant1	2412	16.400	2403.800	2420.200	0.5	PASS
		2417	16.400	2408.800	2425.200	0.5	PASS
		2437	16.400	2428.800	2445.200	0.5	PASS
		2457	16.400	2448.800	2465.200	0.5	PASS
		2462	16.440	2453.800	2470.240	0.5	PASS
11N20SISO	Ant1	2412	17.640	2403.200	2420.840	0.5	PASS
		2417	17.320	2408.480	2425.800	0.5	PASS
		2437	17.400	2428.160	2445.560	0.5	PASS
		2457	17.680	2448.160	2465.840	0.5	PASS
		2462	17.600	2453.200	2470.800	0.5	PASS

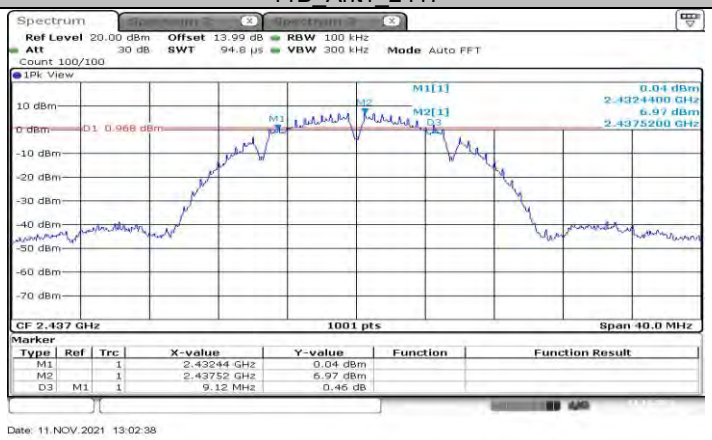
11.1.2. Test Graphs



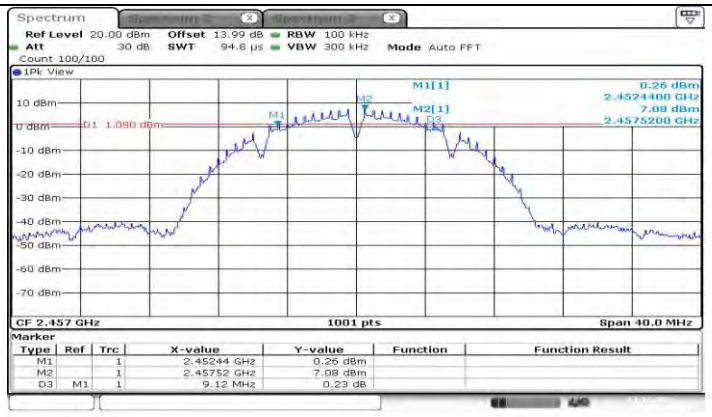
11B_Ant1_2412



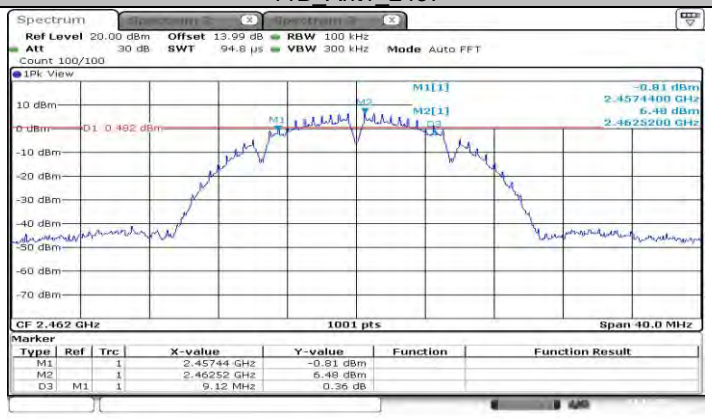
11B_Ant1_2417



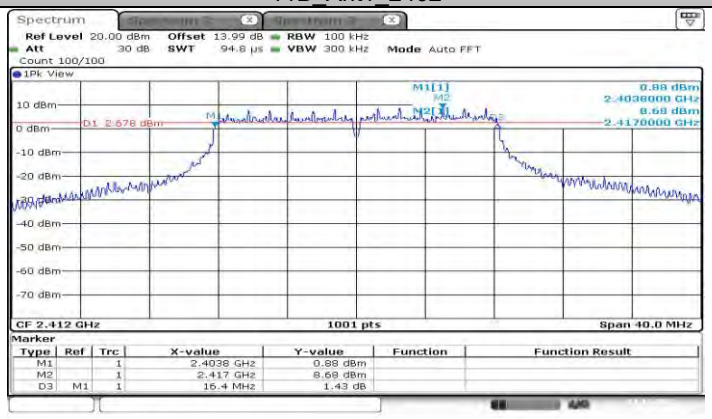
11B_Ant1_2437



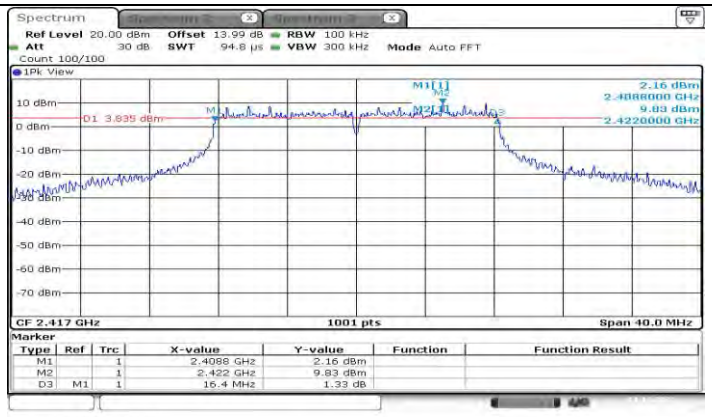
11B_Ant1_2457



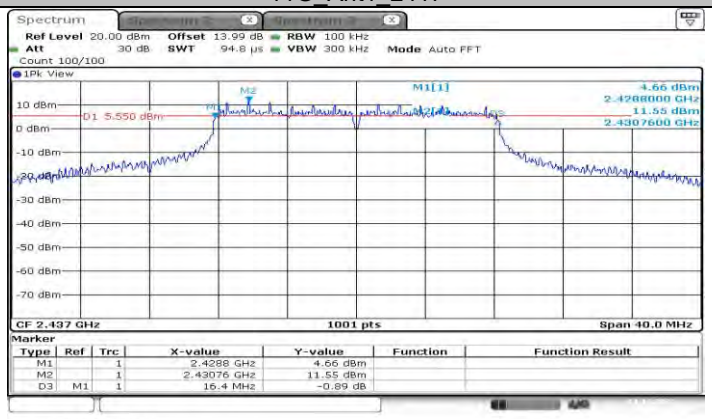
11B_Ant1_2462



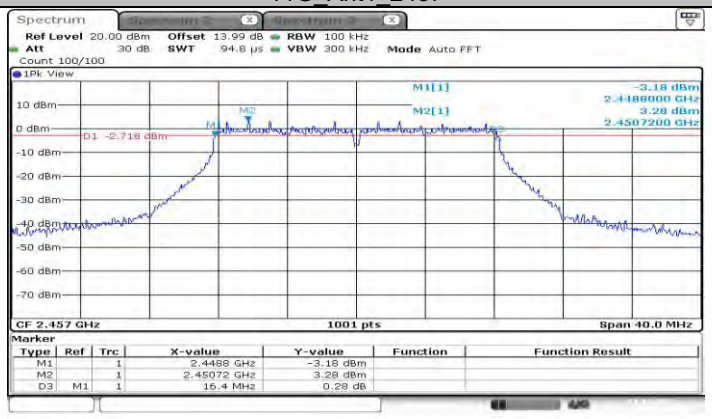
11G_Ant1_2412



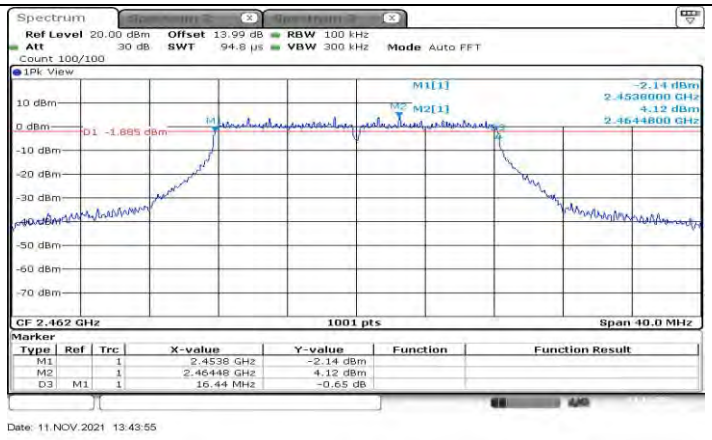
11G_Ant1_2417



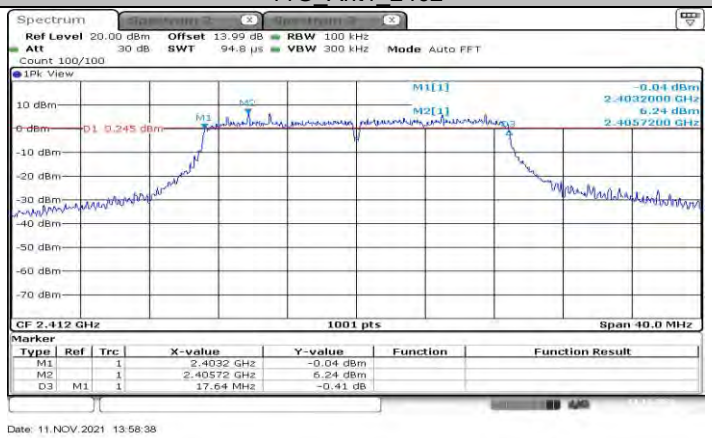
11G_Ant1_2437



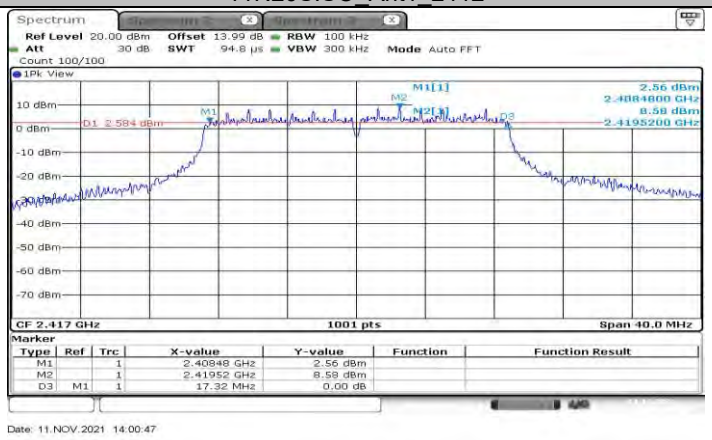
11G_Ant1_2457



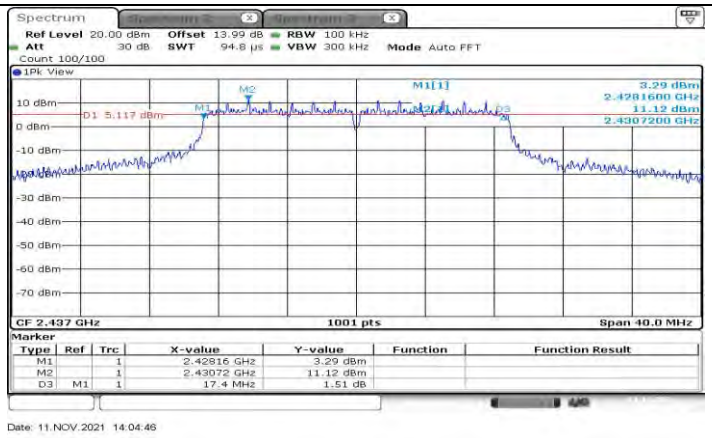
11G_Ant1_2462



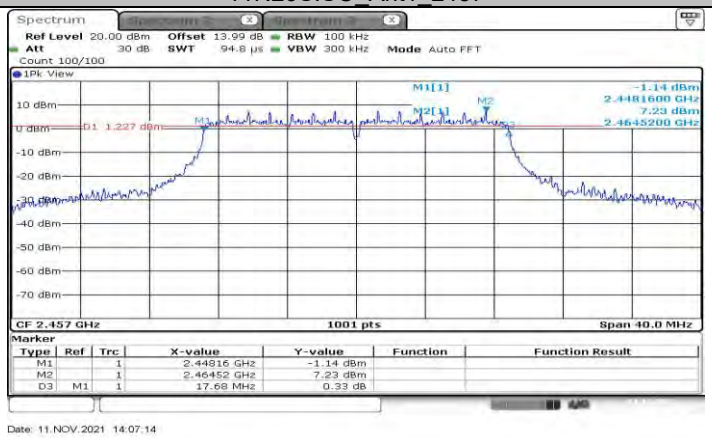
11N20SISO_Ant1_2412



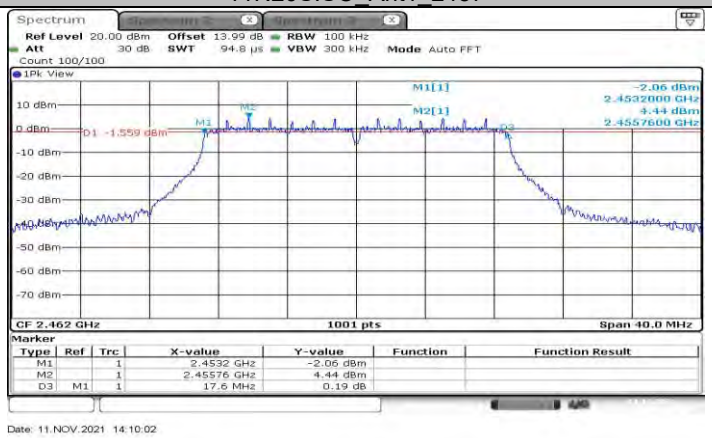
11N20SISO_Ant1_2417



11N20SISO_Ant1_2437



11N20SISO_Ant1_2457



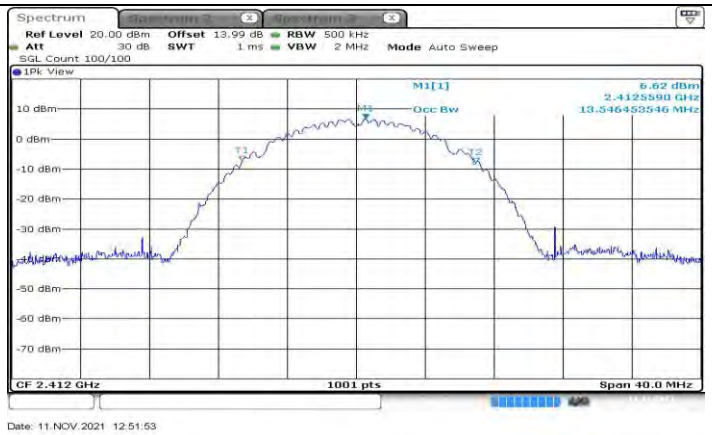
11N20SISO_Ant1_2462

11.2. Appendix B: Occupied Channel Bandwidth

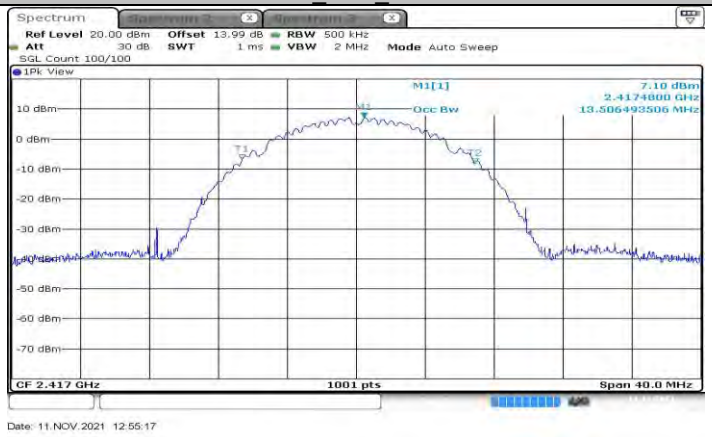
11.2.1. Test Result

Test Mode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	13.546	2405.367	2418.913	---	PASS
		2417	13.506	2410.367	2423.873	---	PASS
		2437	13.546	2430.207	2443.753	---	PASS
		2457	13.427	2450.327	2463.753	---	PASS
		2462	13.506	2455.287	2468.793	---	PASS
11G	Ant1	2412	17.423	2403.409	2420.831	---	PASS
		2417	17.502	2408.369	2425.871	---	PASS
		2437	18.102	2427.809	2445.911	---	PASS
		2457	17.263	2448.369	2465.631	---	PASS
		2462	17.223	2453.369	2470.591	---	PASS
11N20SISO	Ant1	2412	18.222	2402.969	2421.191	---	PASS
		2417	18.342	2407.969	2426.311	---	PASS
		2437	18.981	2427.450	2446.431	---	PASS
		2457	18.262	2447.889	2466.151	---	PASS
		2462	18.182	2452.929	2471.111	---	PASS

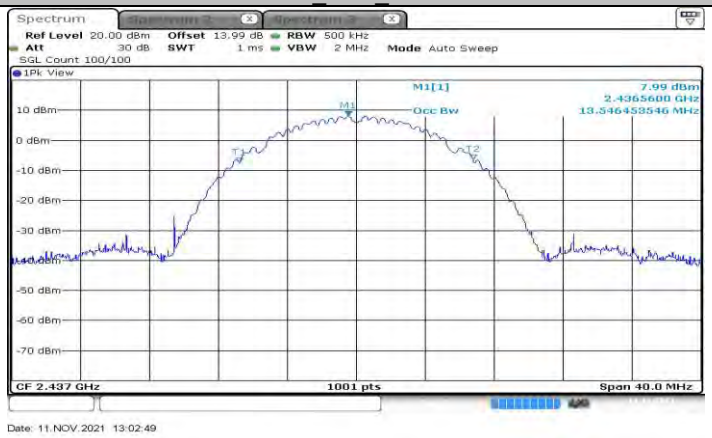
11.2.2. Test Graphs



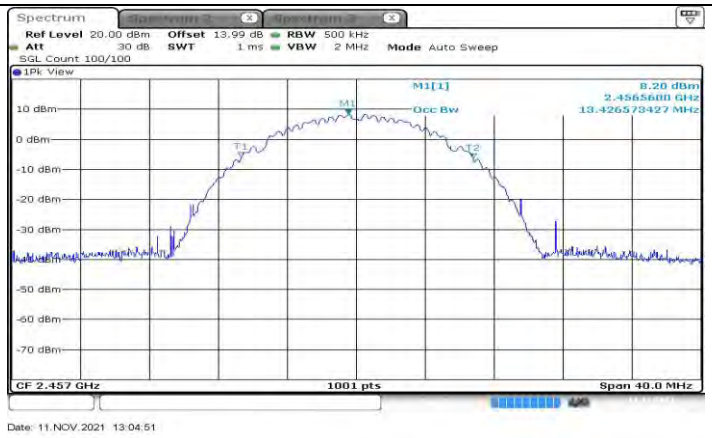
11B_Ant1_2412



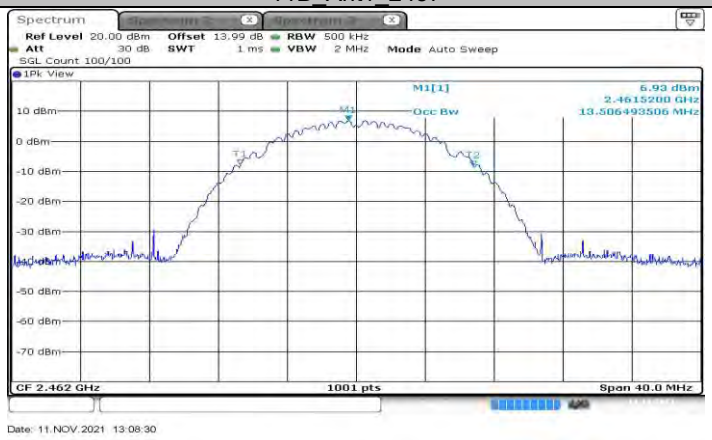
11B_Ant1_2417



11B_Ant1_2437

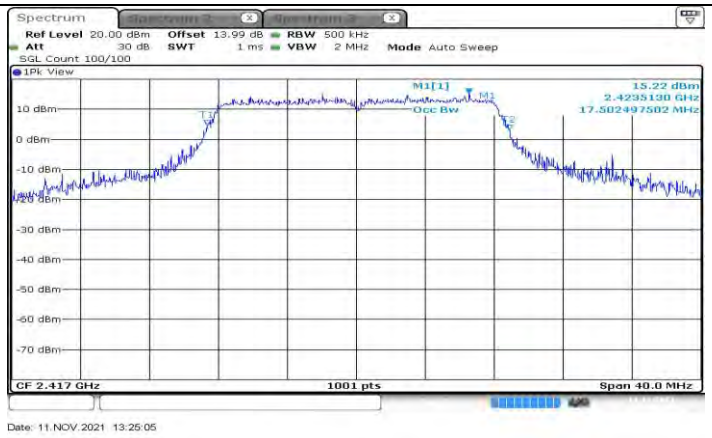


11B_Ant1_2457

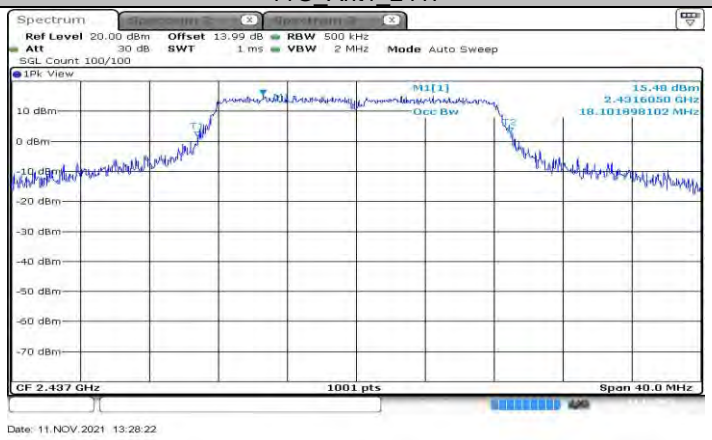


11B_Ant1_2462

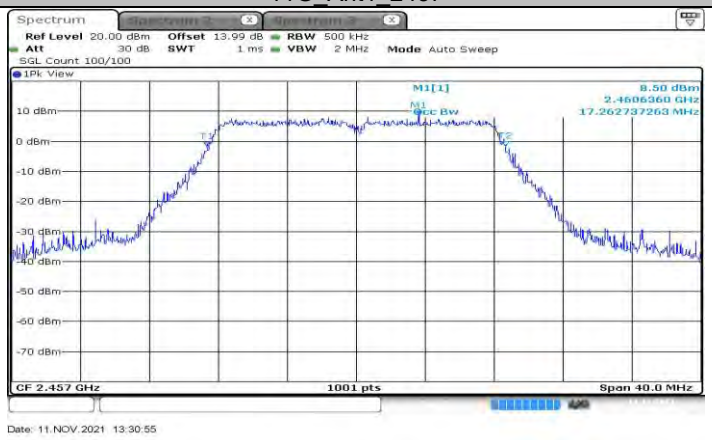
11G_Ant1_2412



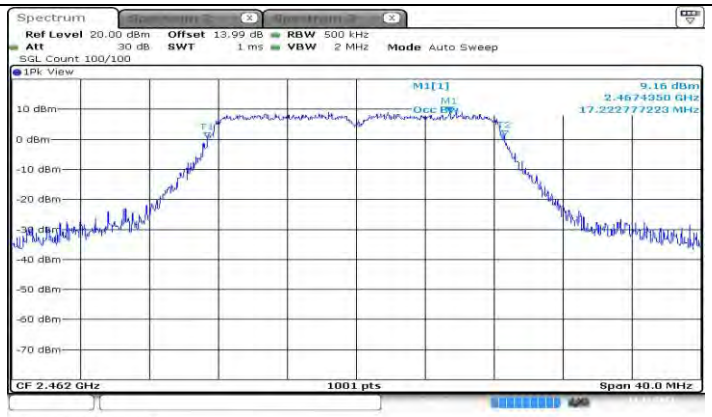
11G_Ant1_2417



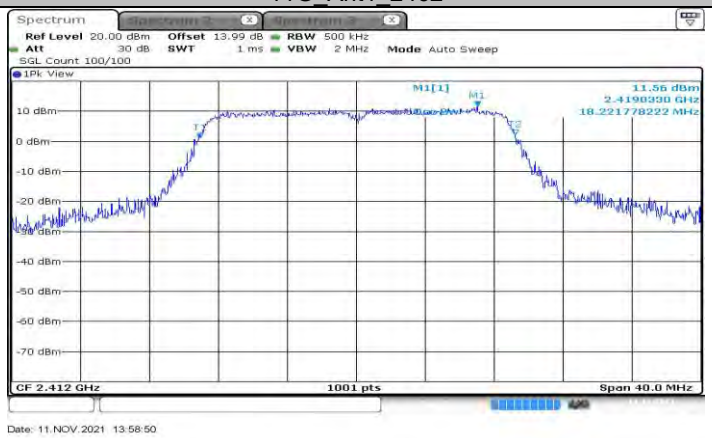
11G_Ant1_2437



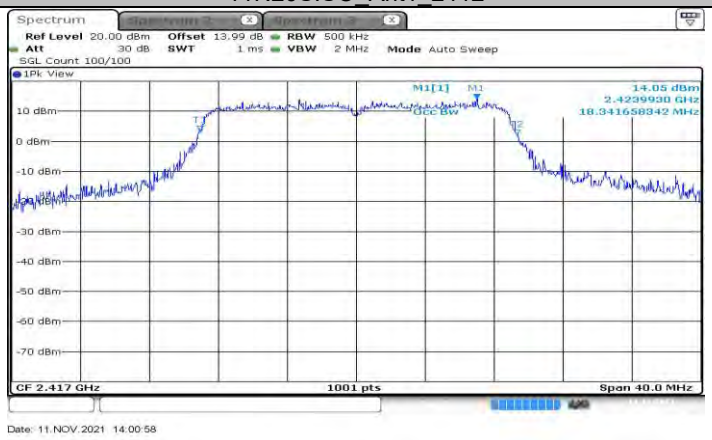
11G_Ant1_2457



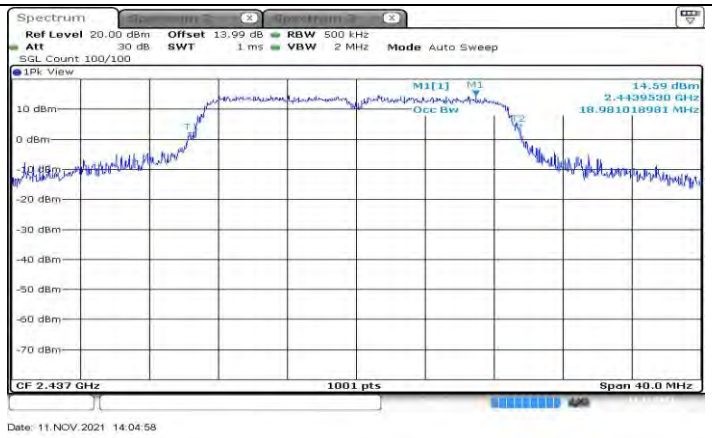
11G_Ant1_2462



11N20SISO_Ant1_2412



11N20SISO_Ant1_2417



11N20SISO_Ant1_2437

11N20SISO_Ant1_2457

11N20SISO_Ant1_2462

11.3. Appendix C: Maximum conducted output power

11.3.1. Test Result

Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	15.28	≤30	PASS
		2417	15.47	≤30	PASS
		2437	15.83	≤30	PASS
		2457	16.35	≤30	PASS
		2462	16.63	≤30	PASS
11G	Ant1	2412	19.29	≤30	PASS
		2417	20.09	≤30	PASS
		2437	20.26	≤30	PASS
		2457	18.57	≤30	PASS
		2462	15.72	≤30	PASS
11N20SISO	Ant1	2412	17.71	≤30	PASS
		2417	20.66	≤30	PASS
		2437	20.10	≤30	PASS
		2457	18.52	≤30	PASS
		2462	15.48	≤30	PASS

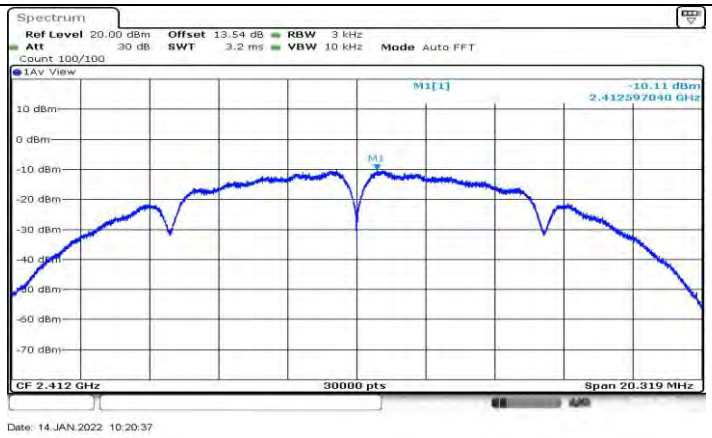
Note: 1. Conducted Power=Meas. Level+ Correction Factor
2. The Duty Cycle Factor (refer to section 7.1) had already compensated to the test data.

11.4. Appendix D: Maximum power spectral density

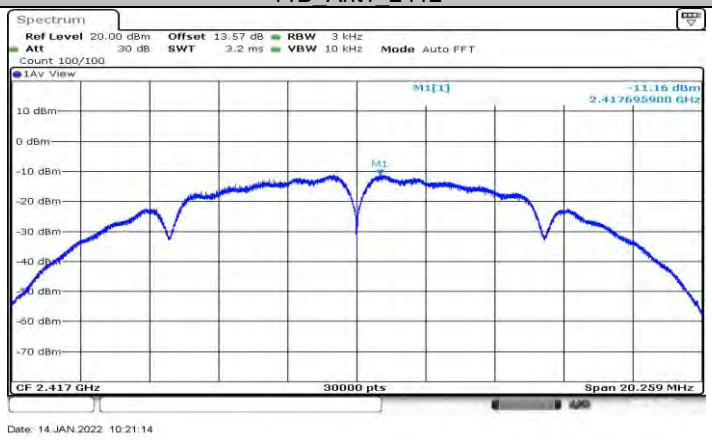
11.4.1. Test Result

Test Mode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-10.11	≤8	PASS
		2417	-11.16	≤8	PASS
		2437	-11.02	≤8	PASS
		2457	-9.85	≤8	PASS
		2462	-10.28	≤8	PASS
11G	Ant1	2412	-11.67	≤8	PASS
		2417	-11.71	≤8	PASS
		2437	-11.26	≤8	PASS
		2457	-11.29	≤8	PASS
		2462	-11.54	≤8	PASS
11N20SISO	Ant1	2412	-11.92	≤8	PASS
		2417	-11.02	≤8	PASS
		2437	-10.94	≤8	PASS
		2457	-11.04	≤8	PASS
		2462	-11.07	≤8	PASS

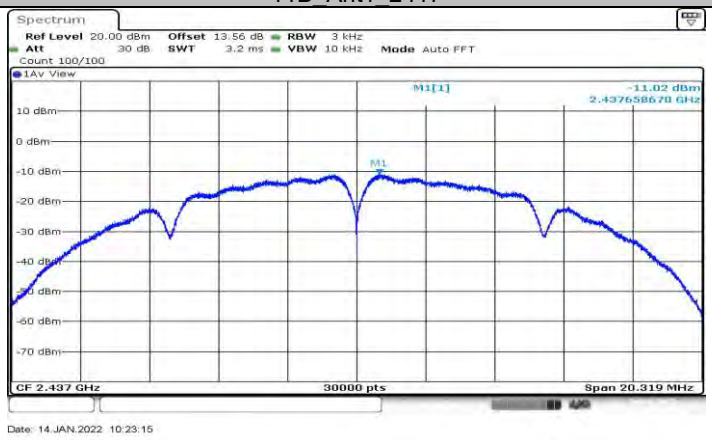
11.4.2. Test Graphs



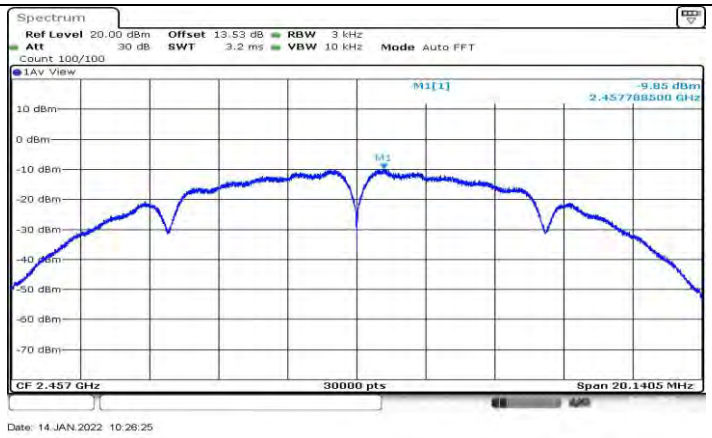
11B_Ant1_2412



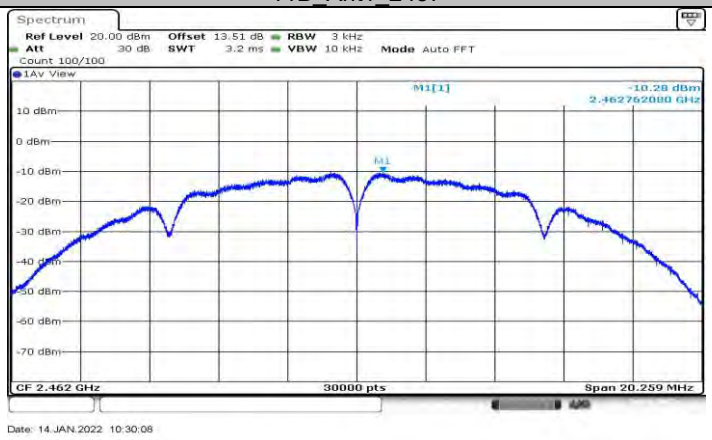
11B_Ant1_2417



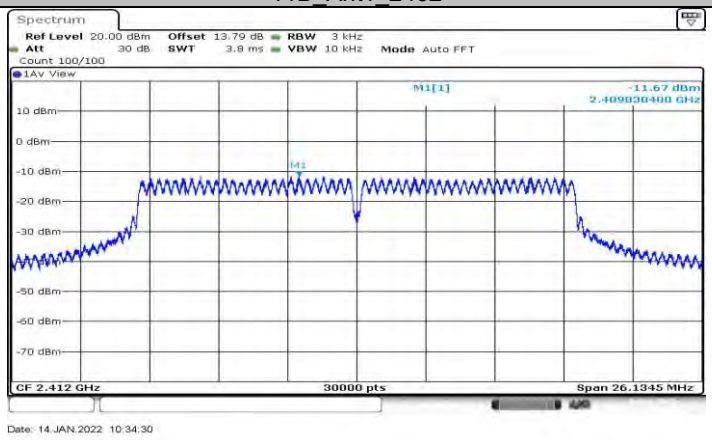
11B_Ant1_2437



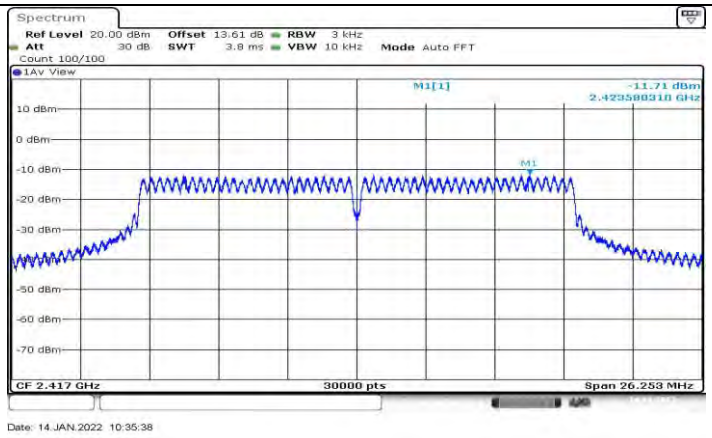
11B_Ant1_2457



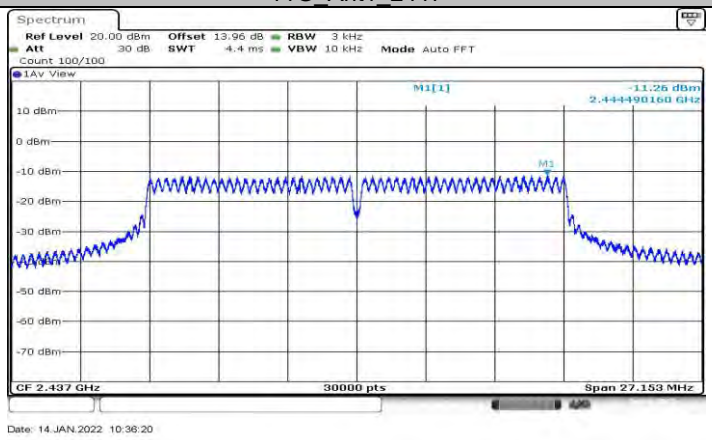
11B_Ant1_2462



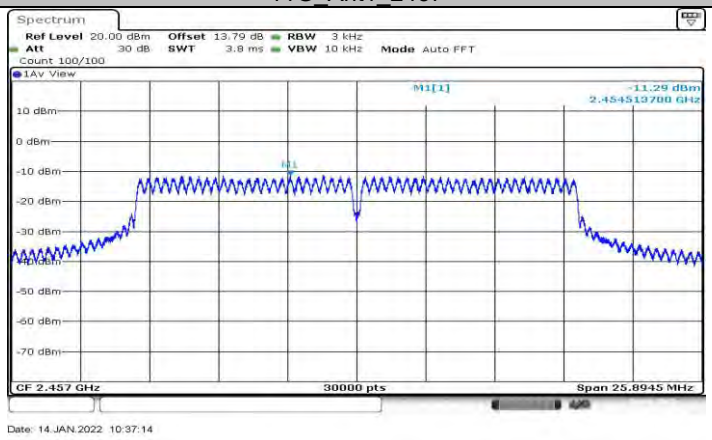
11G_Ant1_2412



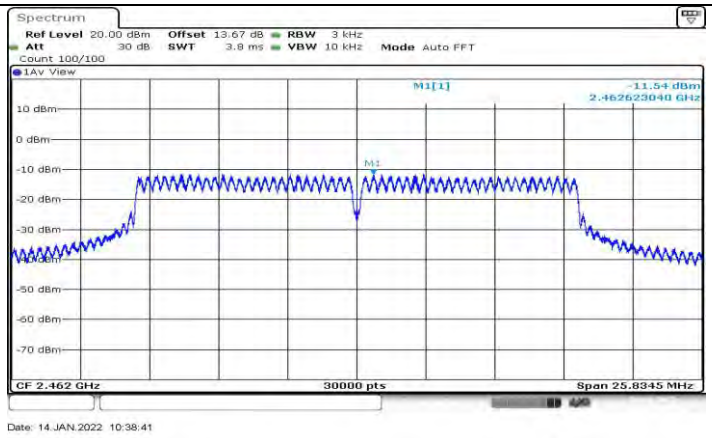
11G_Ant1_2417



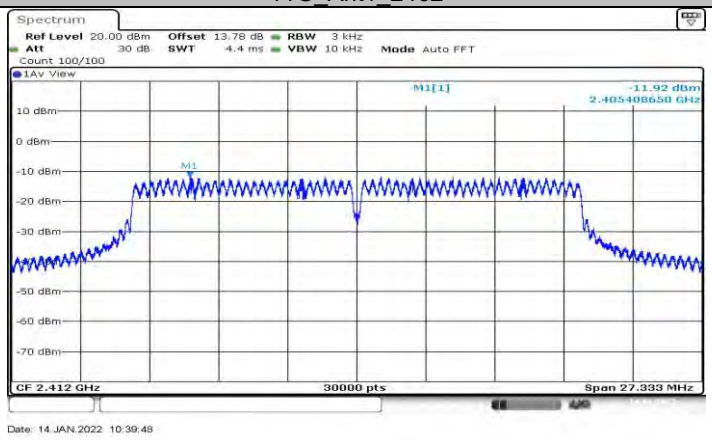
11G_Ant1_2437



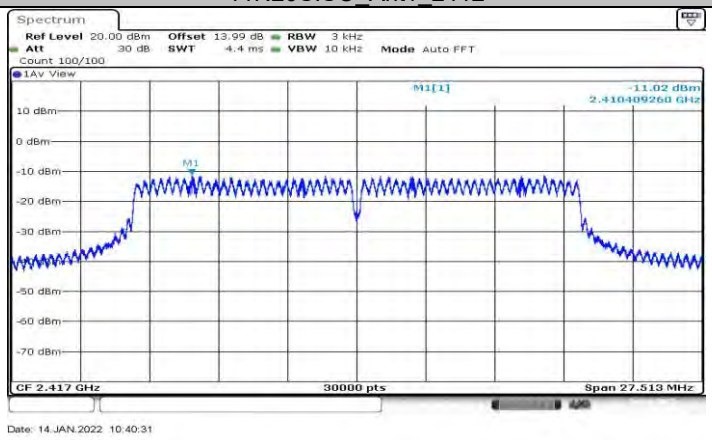
11G_Ant1_2457



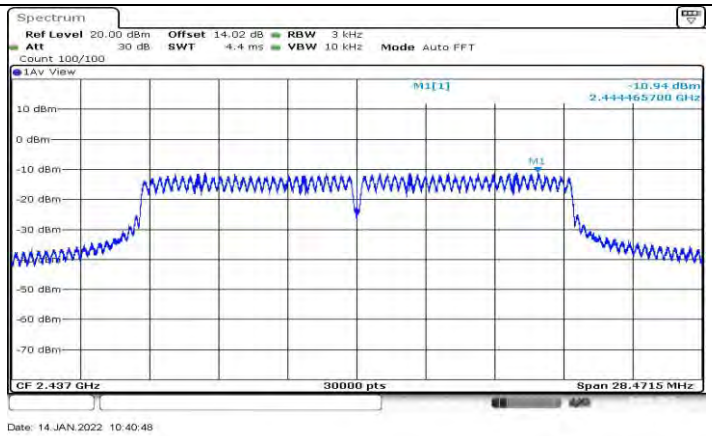
11G_Ant1_2462



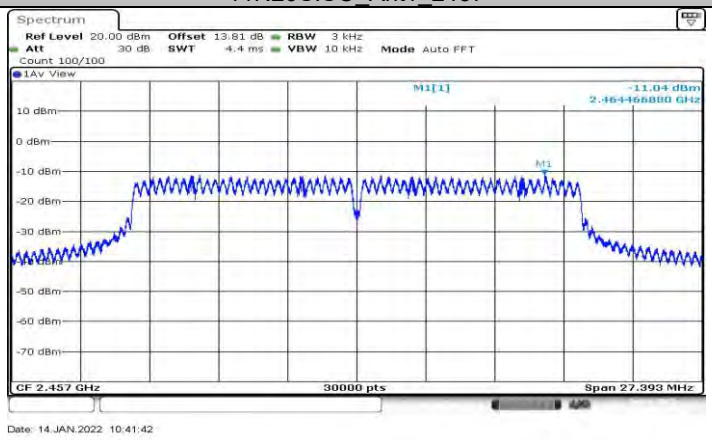
11N20SISO_Ant1_2412



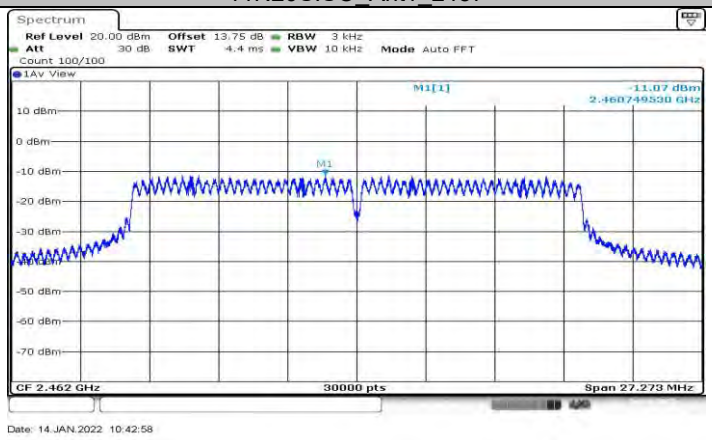
11N20SISO_Ant1_2417



11N20SISO_Ant1_2437



11N20SISO_Ant1_2457



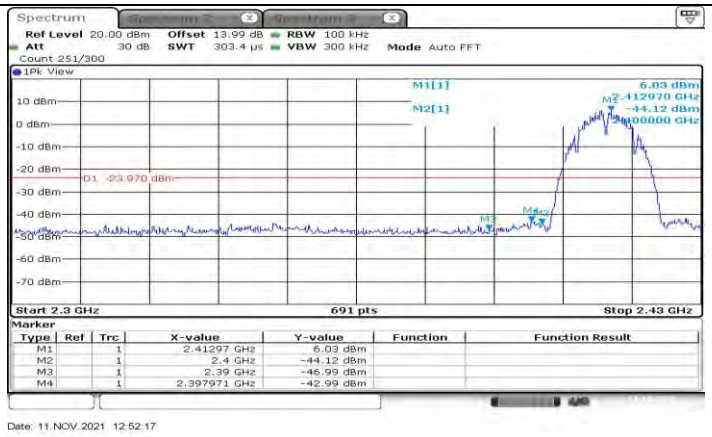
11N20SISO_Ant1_2462

11.5. Appendix E: Band edge measurements

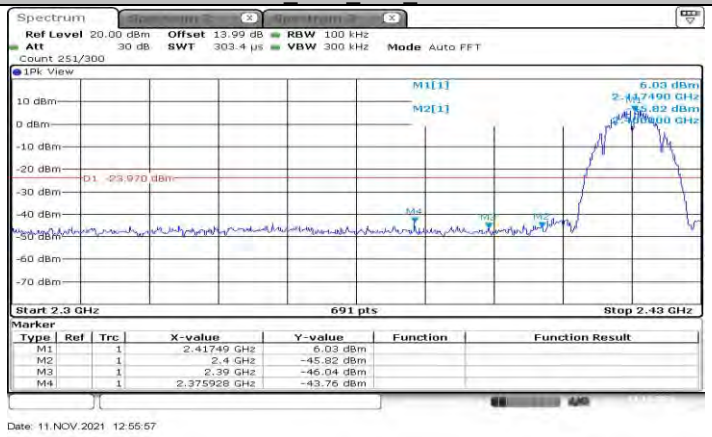
11.5.1. Test Result

Test Mode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	6.03	-42.99	≤-23.97	PASS
			2417	6.03	-43.76	≤-23.97	PASS
		High	2457	7.89	-44.4	≤-22.11	PASS
			2462	6.50	-44.86	≤-23.5	PASS
11G	Ant1	Low	2412	8.32	-21.97	≤-21.68	PASS
			2417	9.55	-25.2	≤-20.45	PASS
		High	2457	7.65	-42.89	≤-22.35	PASS
			2462	5.02	-43.4	≤-24.98	PASS
11N20SISO	Ant1	Low	2412	7.35	-26.6	≤-22.65	PASS
			2417	9.33	-23.16	≤-20.67	PASS
		High	2457	7.27	-42.39	≤-22.73	PASS
			2462	4.64	-41.82	≤-25.36	PASS

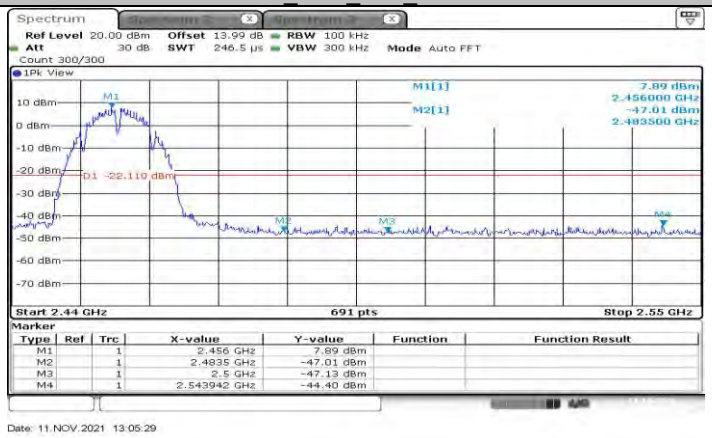
11.5.2. Test Graphs



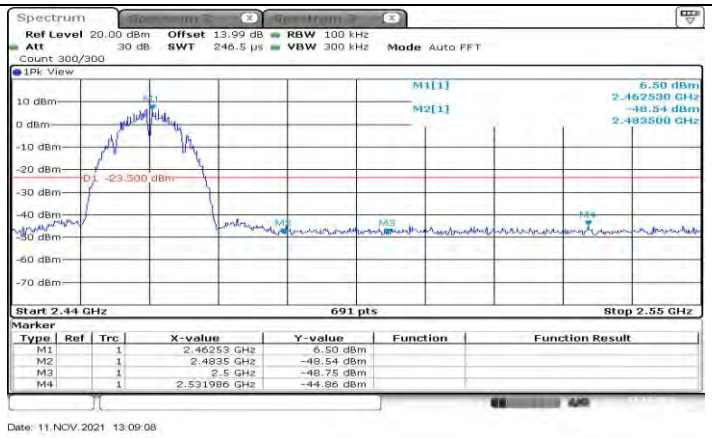
11B_Ant1_Low_2412



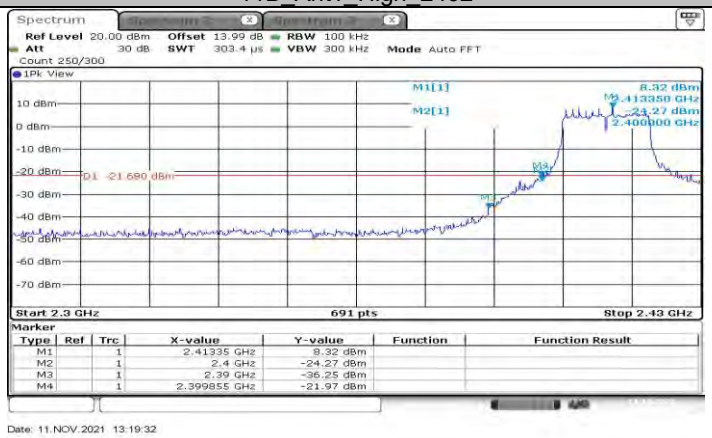
11B_Ant1_Low_2417



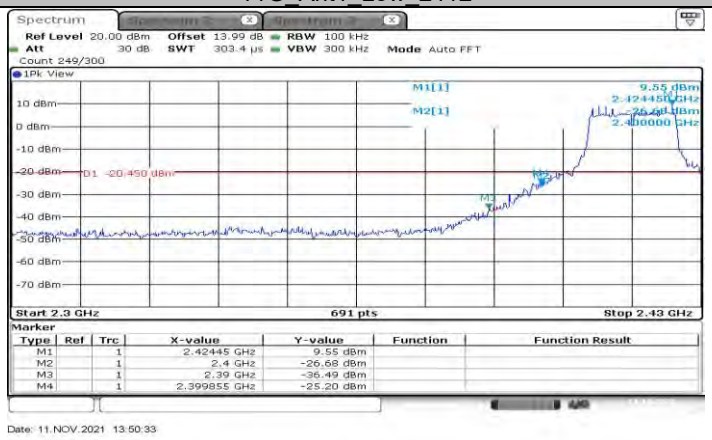
11B_Ant1_High_2457



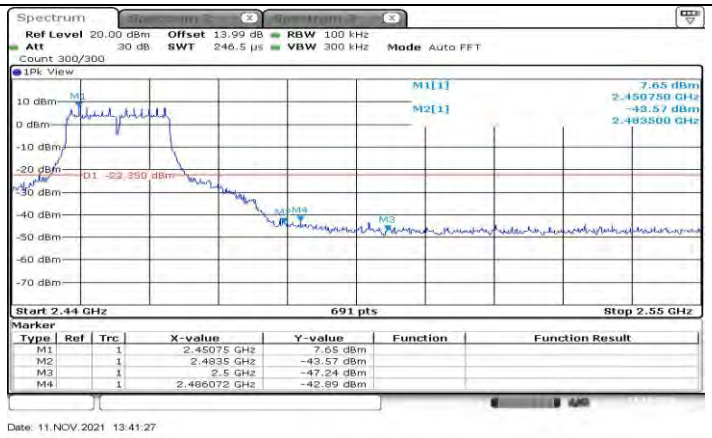
11B_Ant1_High_2462



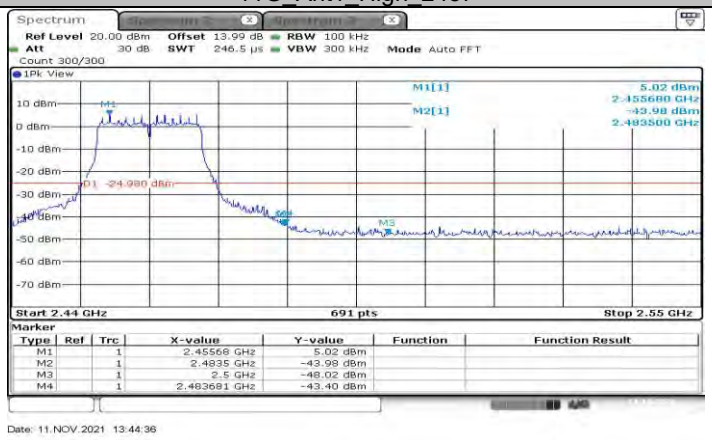
11G_Ant1_Low_2412



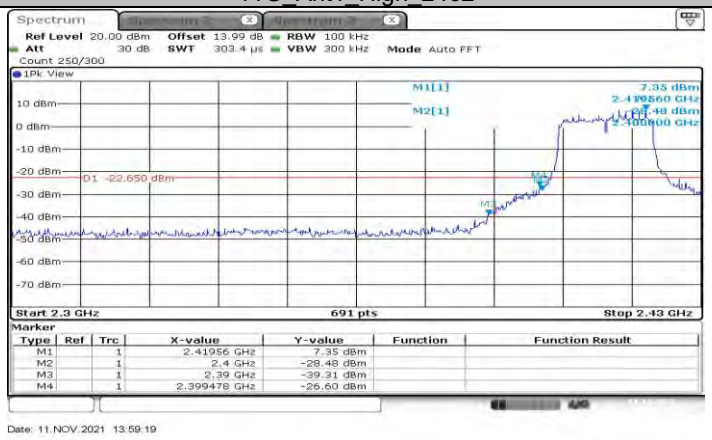
11G_Ant1_Low_2417



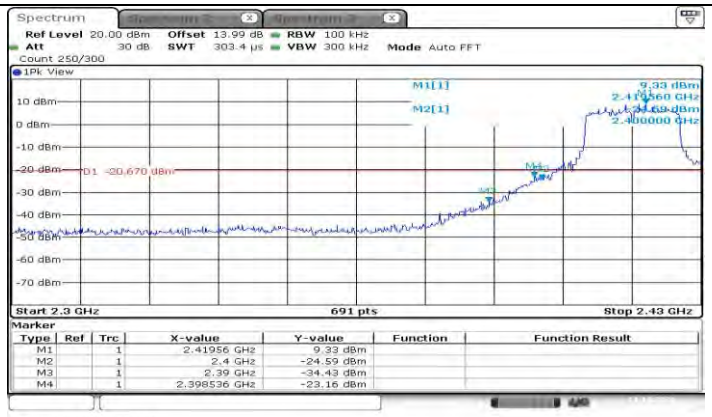
11G_Ant1_High_2457



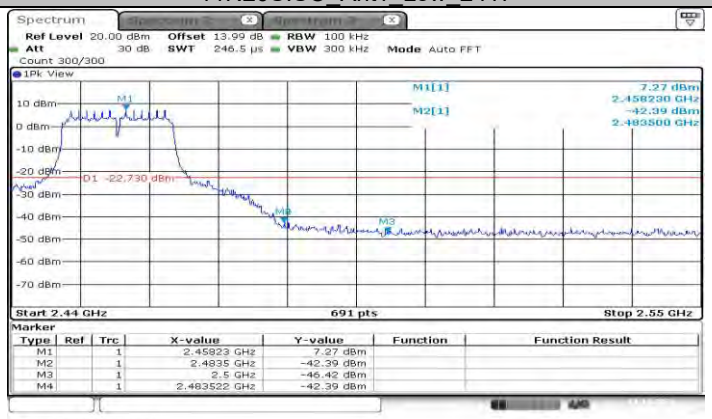
11G_Ant1_High_2462



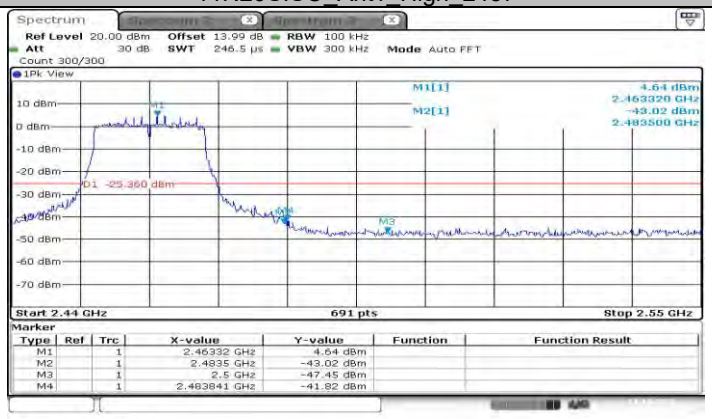
11N20SISO_Ant1_Low_2412



11N20SISO_Ant1_Low_2417



11N20SISO_Ant1_High_2457



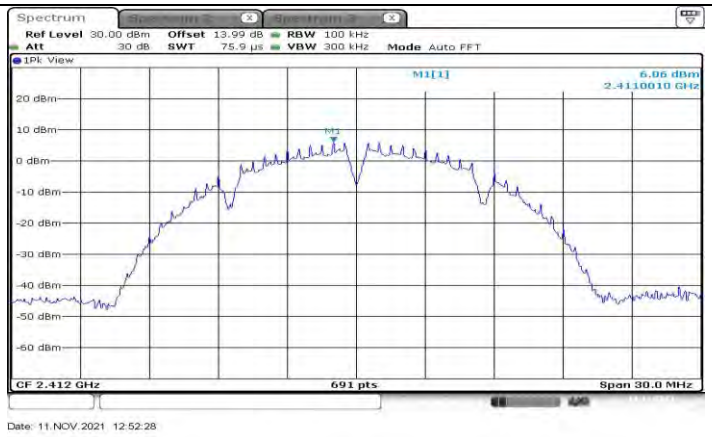
11N20SISO_Ant1_High_2462

11.6. Appendix F: Conducted Spurious Emission

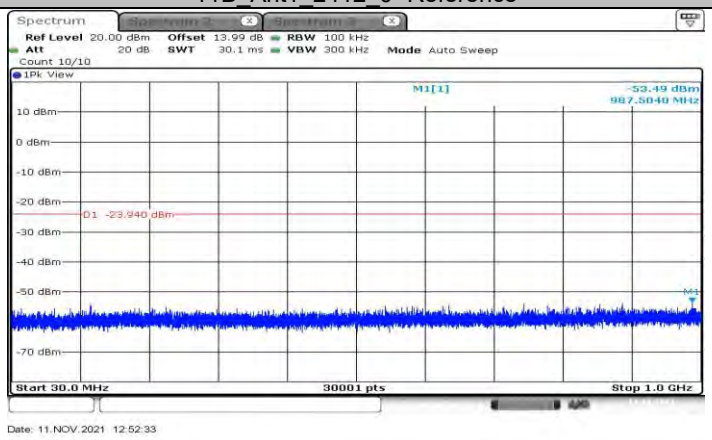
11.6.1. Test Result

Test Mode	Antenna	Channel	FreqRange [Mhz]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	6.06	---	PASS
			30~1000	-53.49	≤-23.94	PASS
			1000~26500	-40.07	≤-23.94	PASS
		2417	Reference	6.99	---	PASS
			30~1000	-54.03	≤-23.01	PASS
			1000~26500	-39.76	≤-23.01	PASS
		2437	Reference	7.48	---	PASS
			30~1000	-54.25	≤-22.52	PASS
			1000~26500	-39.92	≤-22.52	PASS
		2457	Reference	8.20	---	PASS
			30~1000	-53.73	≤-21.8	PASS
			1000~26500	-39.71	≤-21.8	PASS
		2462	Reference	6.18	---	PASS
			30~1000	-54.27	≤-23.82	PASS
			1000~26500	-42.69	≤-23.82	PASS
11G	Ant1	2412	Reference	8.66	---	PASS
			30~1000	-53.98	≤-21.34	PASS
			1000~26500	-40.19	≤-21.34	PASS
		2417	Reference	9.56	---	PASS
			30~1000	-53.95	≤-20.44	PASS
			1000~26500	-41.5	≤-20.44	PASS
		2437	Reference	8.86	---	PASS
			30~1000	-54.04	≤-21.14	PASS
			1000~26500	-41.86	≤-21.14	PASS
		2457	Reference	7.68	---	PASS
			30~1000	-53.87	≤-22.32	PASS
			1000~26500	-45.78	≤-22.32	PASS
		2462	Reference	4.53	---	PASS
			30~1000	-53.78	≤-25.47	PASS
			1000~26500	-48.35	≤-25.47	PASS
11N20SISO	Ant1	2412	Reference	6.58	---	PASS
			30~1000	-53.63	≤-23.42	PASS
			1000~26500	-45.95	≤-23.42	PASS
		2417	Reference	10.05	---	PASS
			30~1000	-53.86	≤-19.95	PASS
			1000~26500	-41.91	≤-19.95	PASS
		2437	Reference	9.60	---	PASS
			30~1000	-54.13	≤-20.4	PASS
			1000~26500	-42.82	≤-20.4	PASS
		2457	Reference	6.22	---	PASS
			30~1000	-53.65	≤-23.78	PASS
			1000~26500	-46.6	≤-23.78	PASS
		2462	Reference	3.93	---	PASS
			30~1000	-53.84	≤-26.07	PASS
			1000~26500	-48.5	≤-26.07	PASS

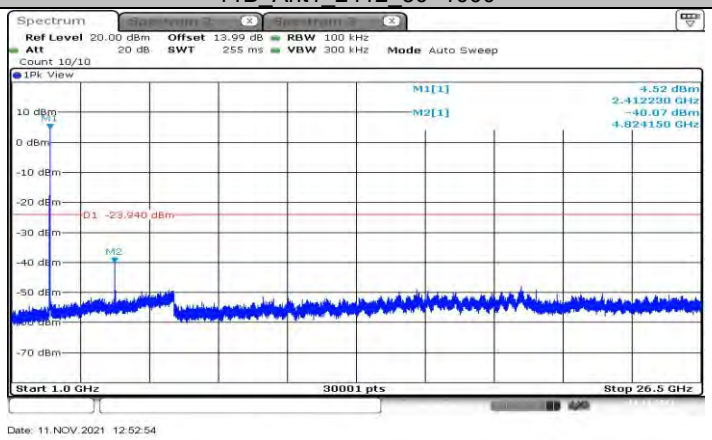
11.6.2. Test Graphs



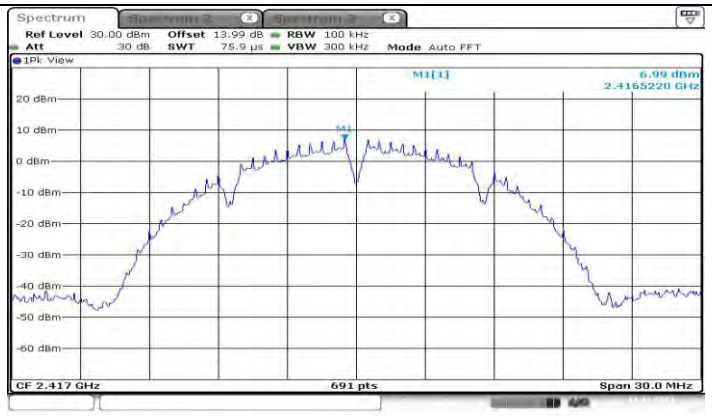
11B_Ant1_2412_0~Reference



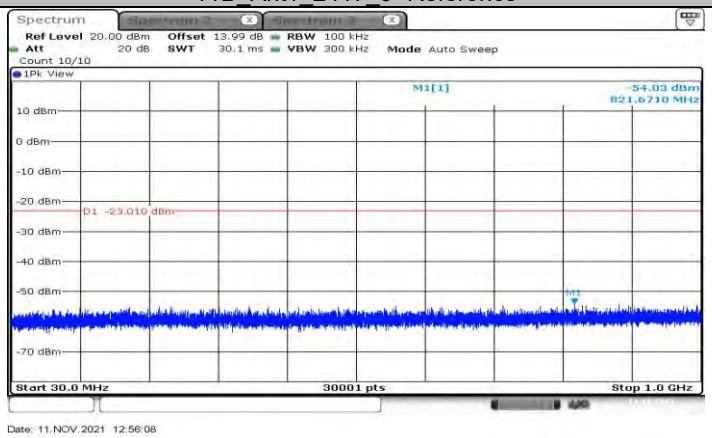
11B_Ant1_2412_30~1000



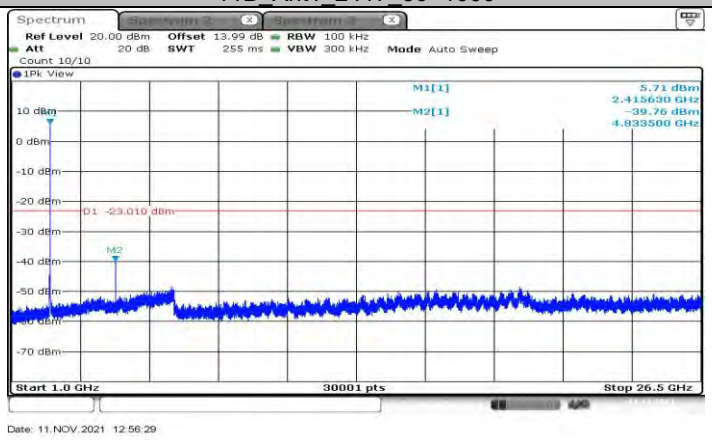
11B_Ant1_2412_1000~26500



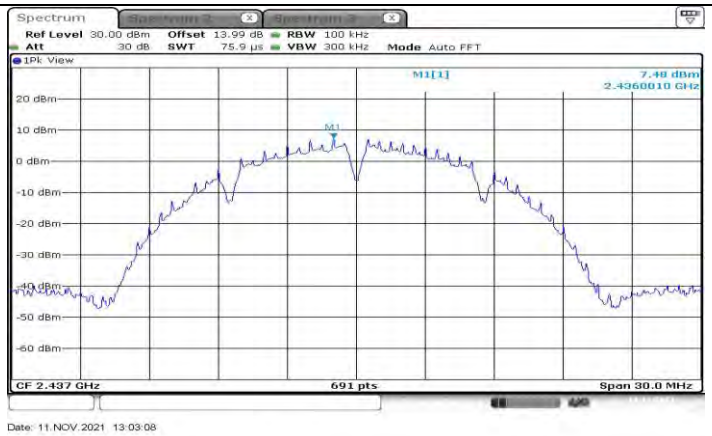
11B_Ant1_2417_0~Reference



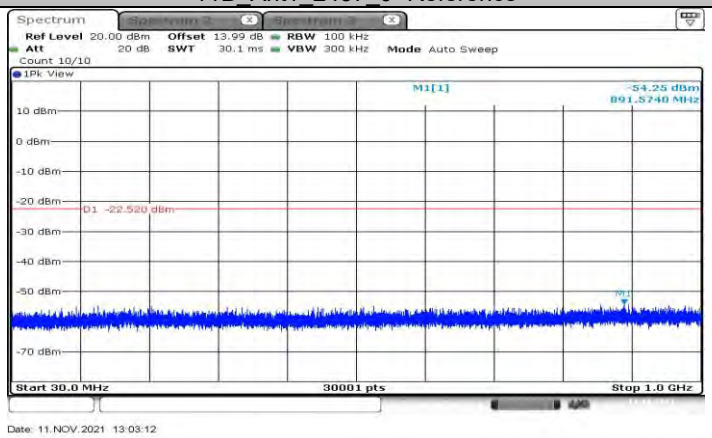
11B_Ant1_2417_30~1000



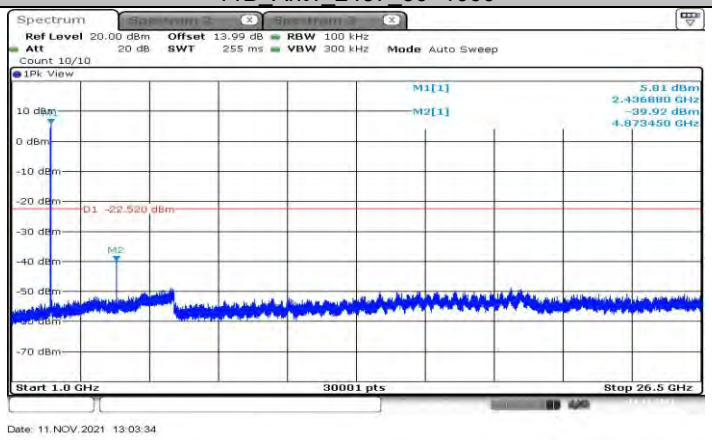
11B_Ant1_2417_1000~26500



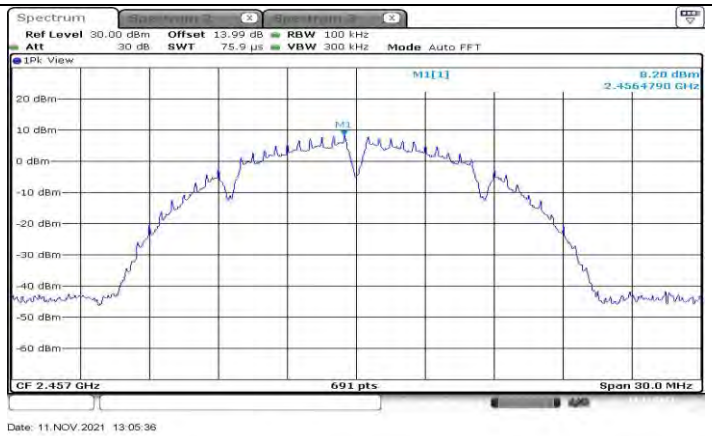
11B_Ant1_2437_0~Reference



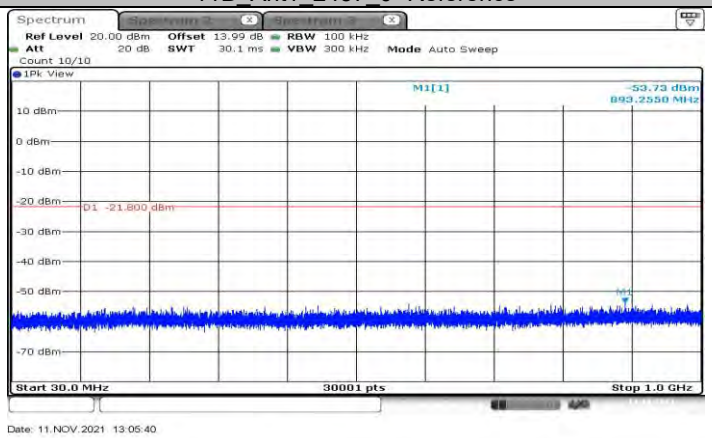
11B_Ant1_2437_30~1000



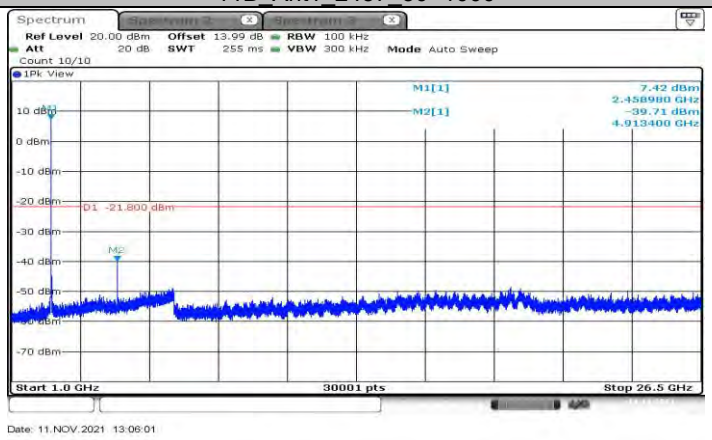
11B_Ant1_2437_1000~26500



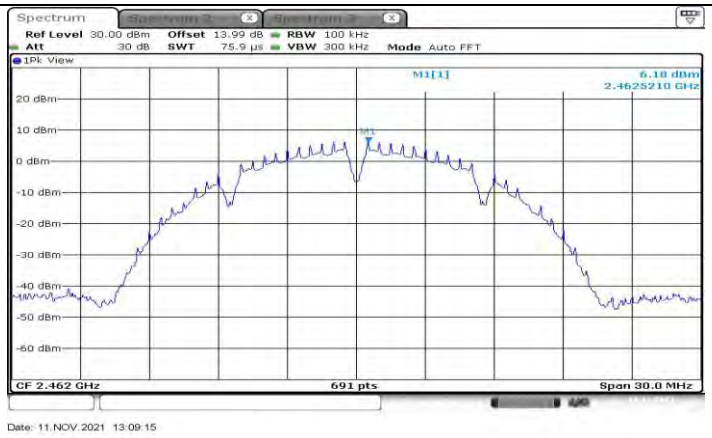
11B_Ant1_2457_0~Reference



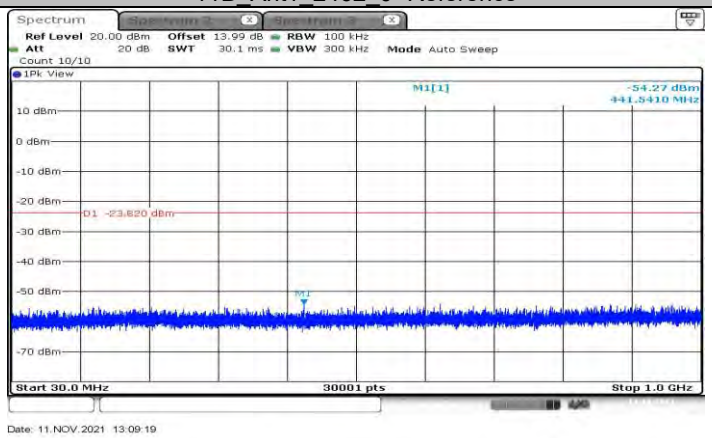
11B_Ant1_2457_30~1000



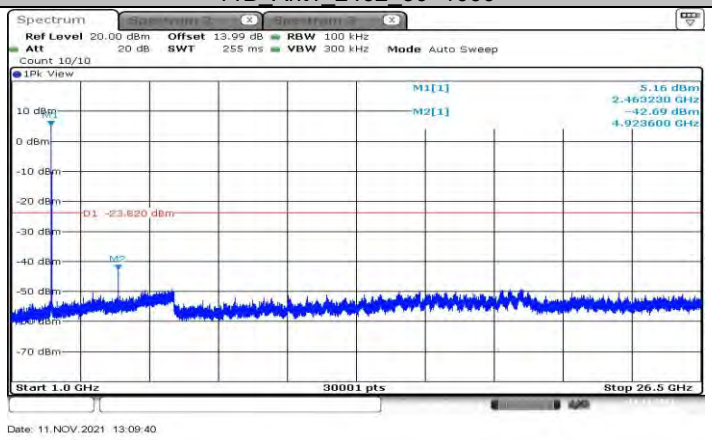
11B_Ant1_2457_1000~26500



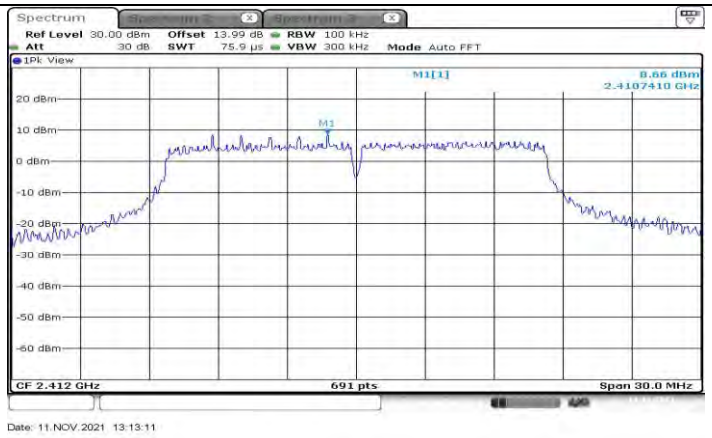
11B_Ant1_2462_0~Reference



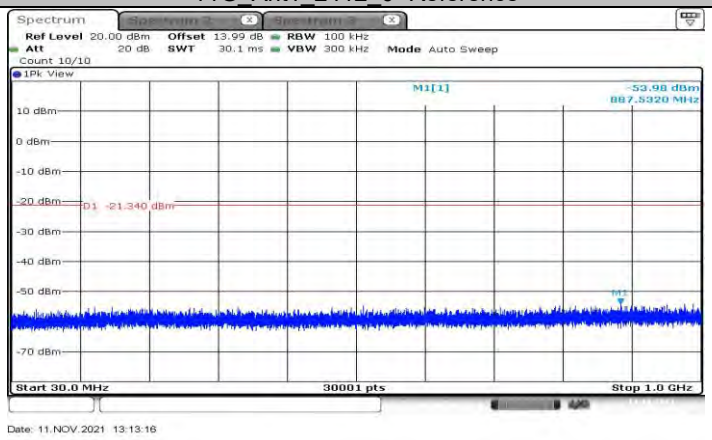
11B_Ant1_2462_30~1000



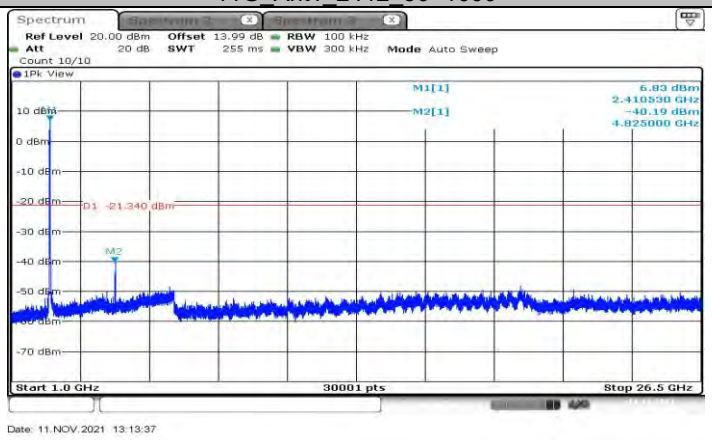
11B_Ant1_2462_1000~26500



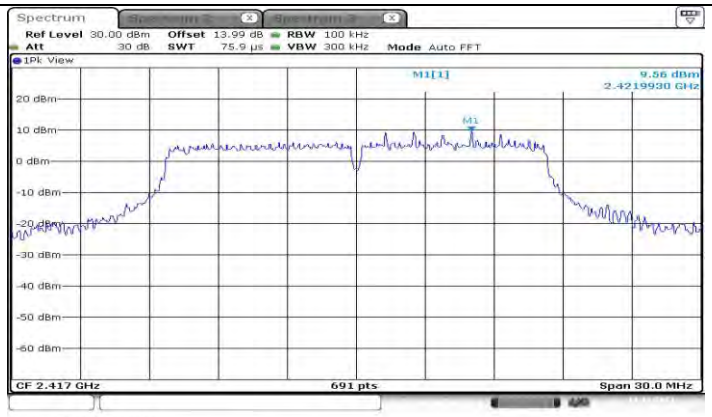
11G_Ant1_2412_0~Reference



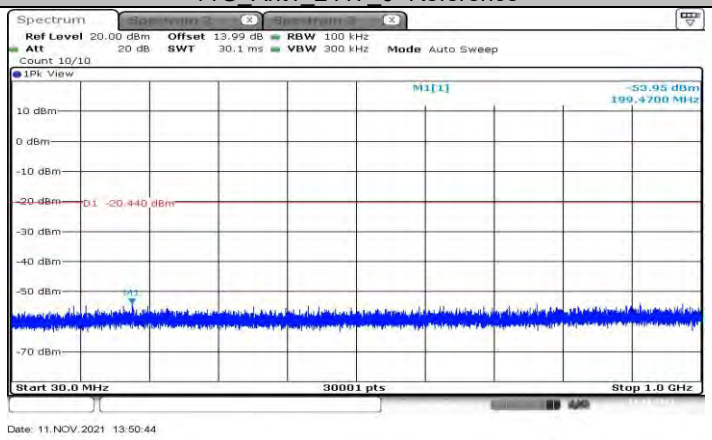
11G_Ant1_2412_30~1000



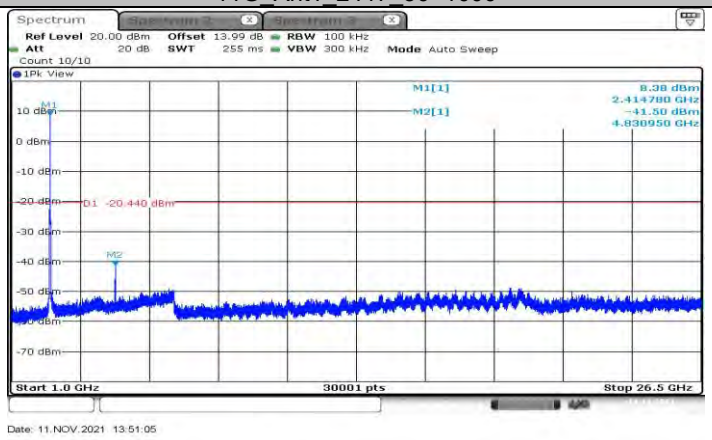
11G_Ant1_2412_1000~26500



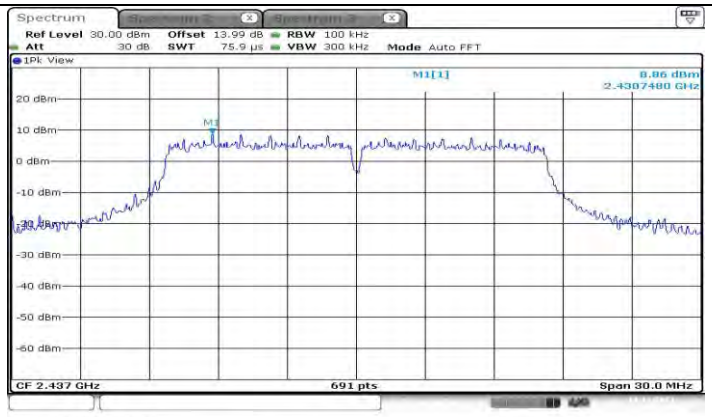
11G_Ant1_2417_0~Reference



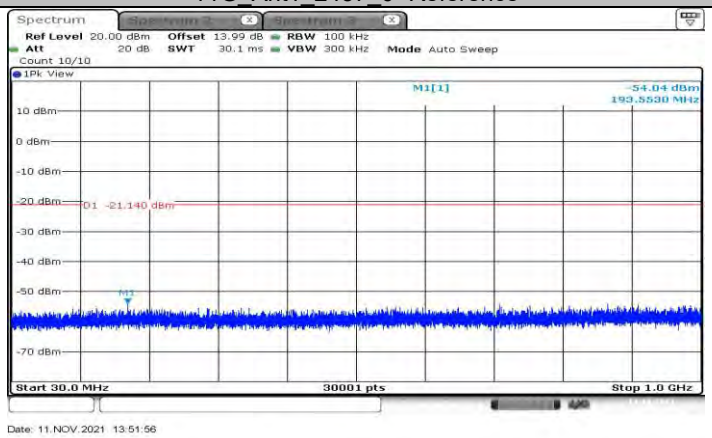
11G_Ant1_2417_30~1000



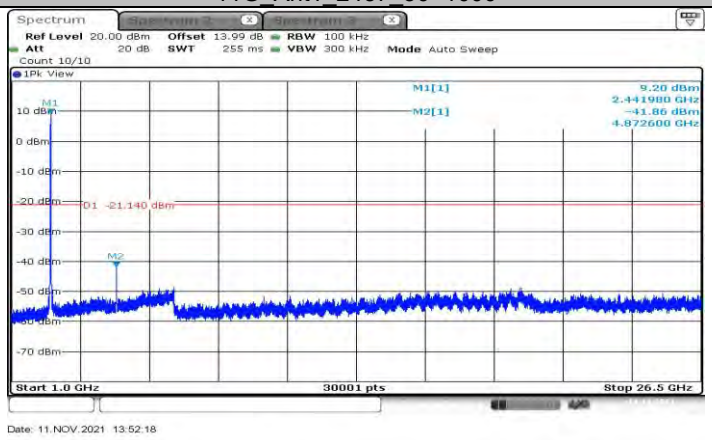
11G_Ant1_2417_1000~26500



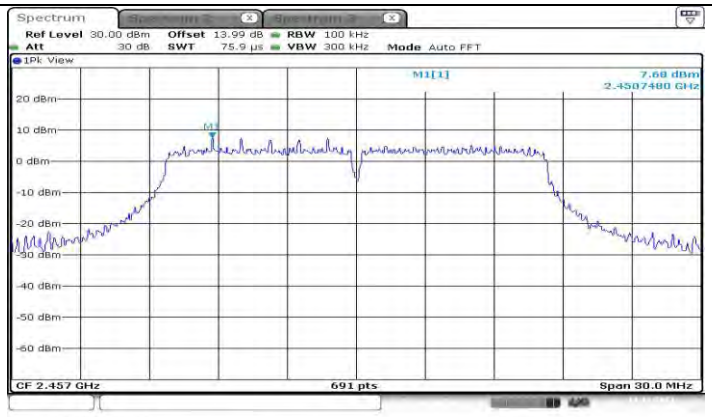
11G_Ant1_2437_0~Reference



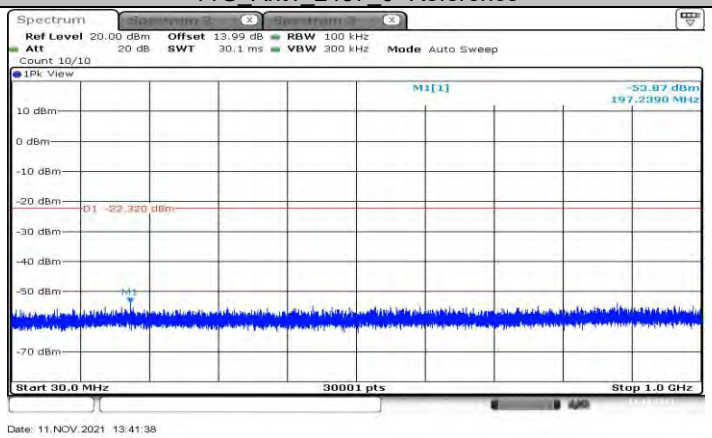
11G_Ant1_2437_30~1000



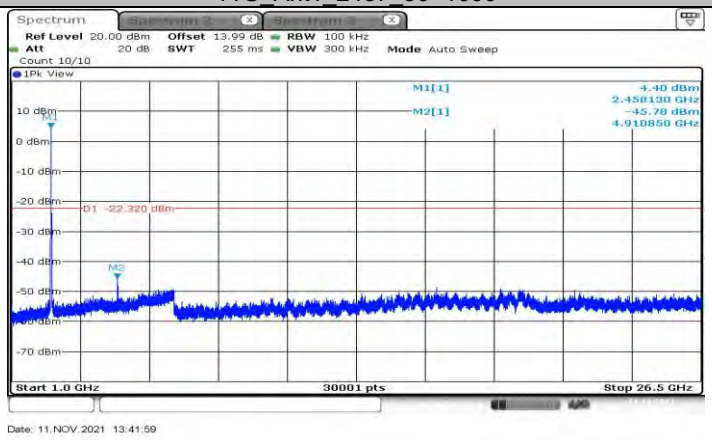
11G_Ant1_2437_1000~26500



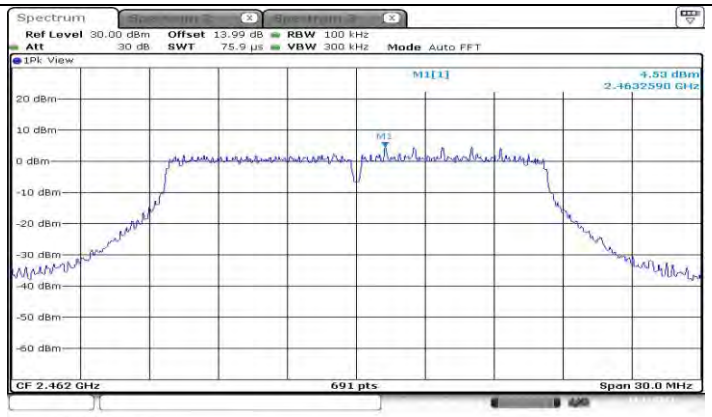
11G_Ant1_2457_0~Reference



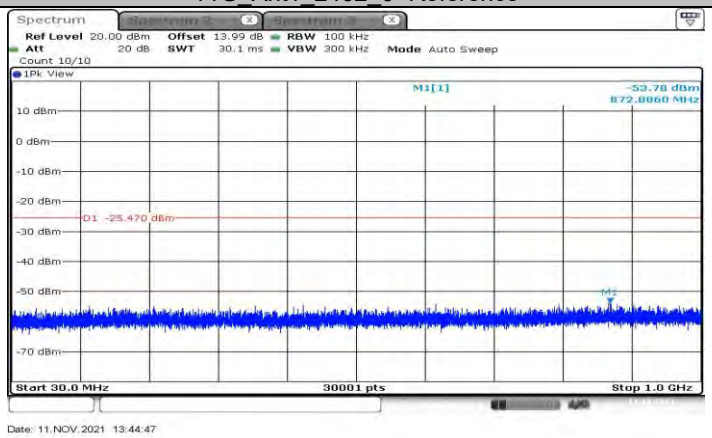
11G_Ant1_2457_30~1000



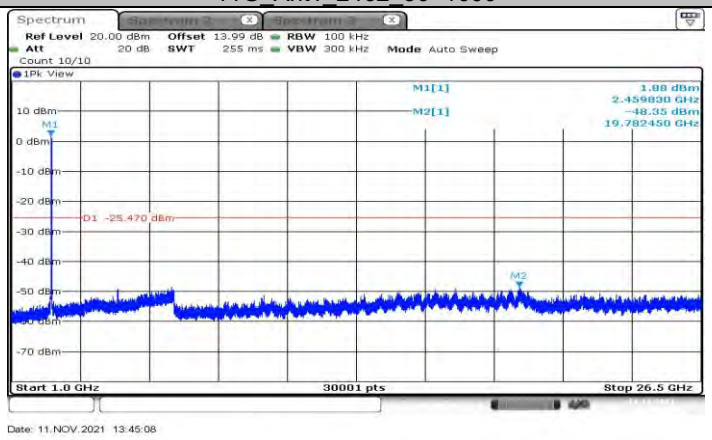
11G_Ant1_2457_1000~26500



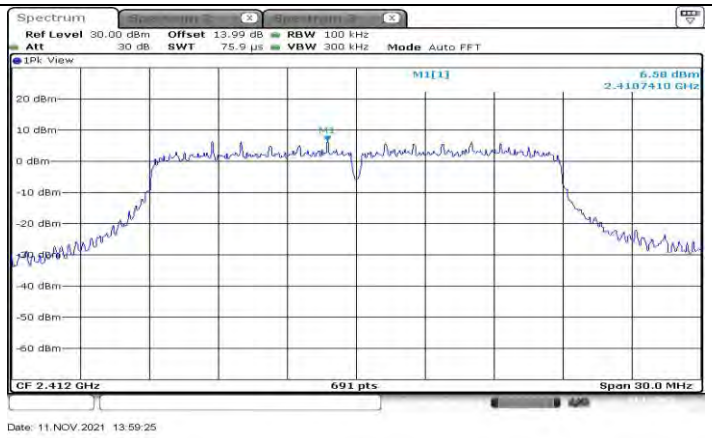
11G_Ant1_2462_0~Reference



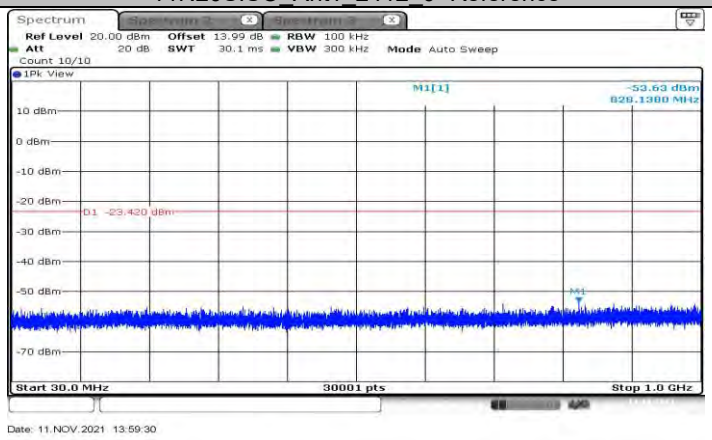
11G_Ant1_2462_30~1000



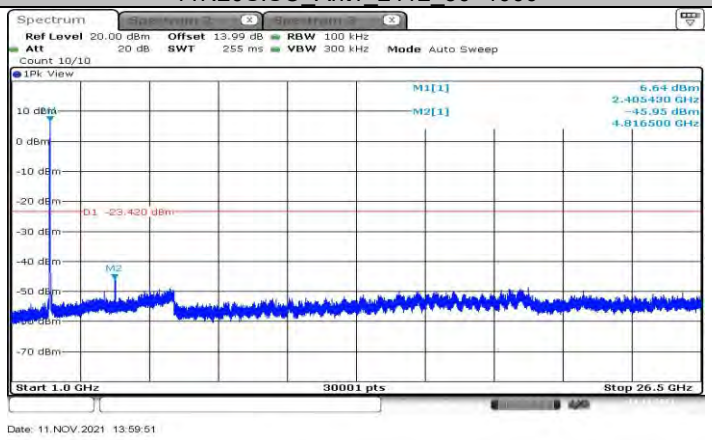
11G_Ant1_2462_1000~26500



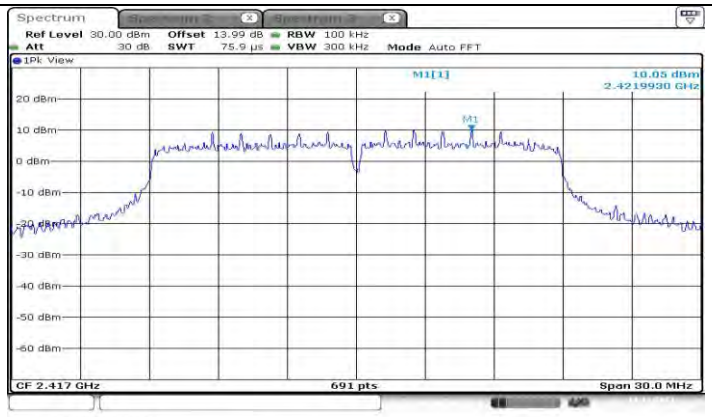
11N20SISO_Ant1_2412_0~Reference



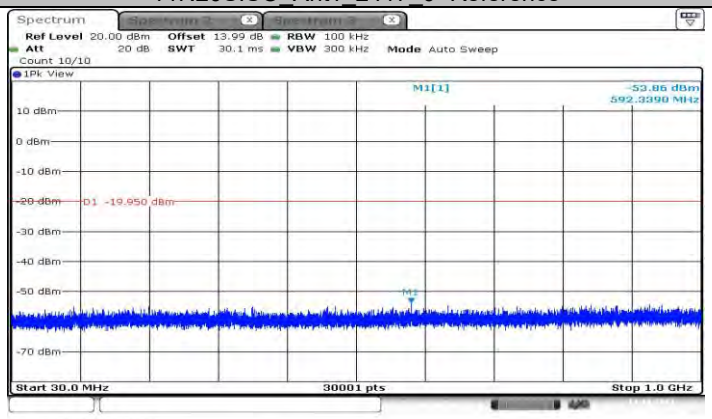
11N20SISO_Ant1_2412_30~1000



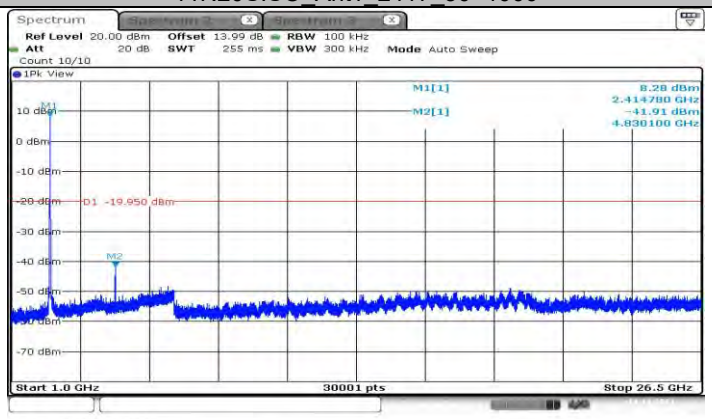
11N20SISO_Ant1_2412_1000~26500



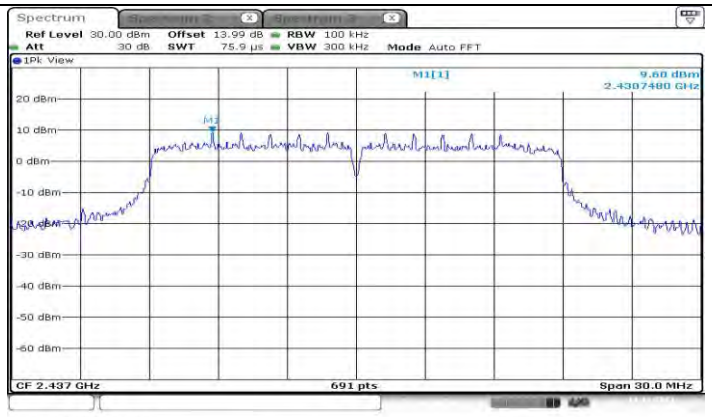
11N20SISO_Ant1_2417_0~Reference



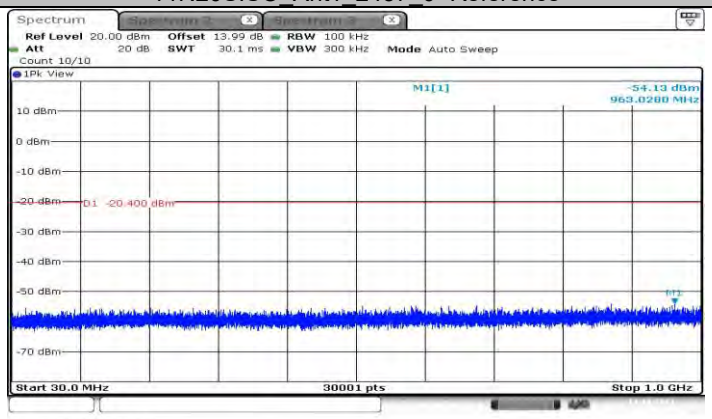
11N20SISO_Ant1_2417_30~1000



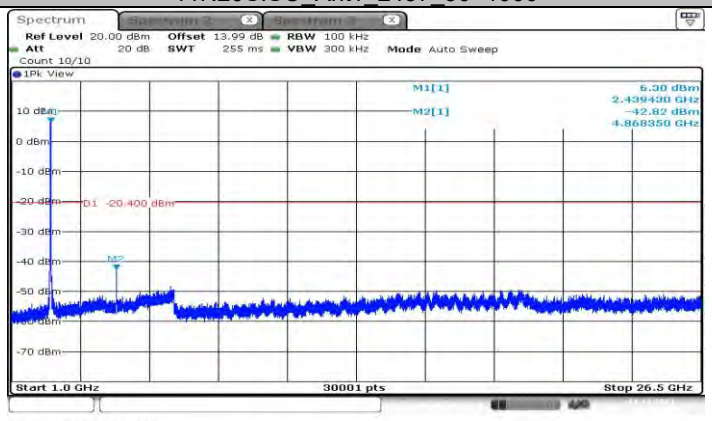
11N20SISO_Ant1_2417_1000~26500



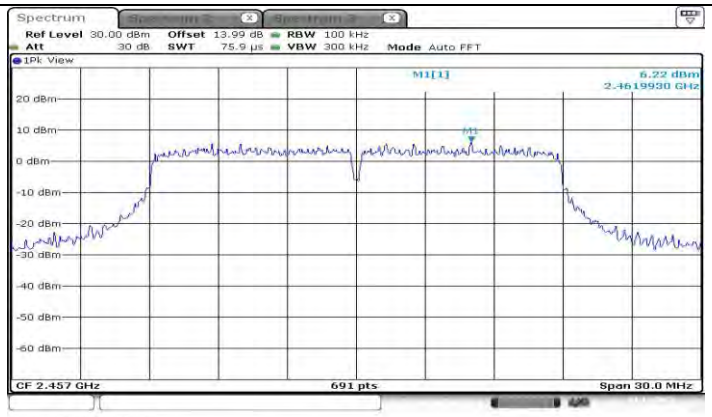
11N20SISO_Ant1_2437_0~Reference



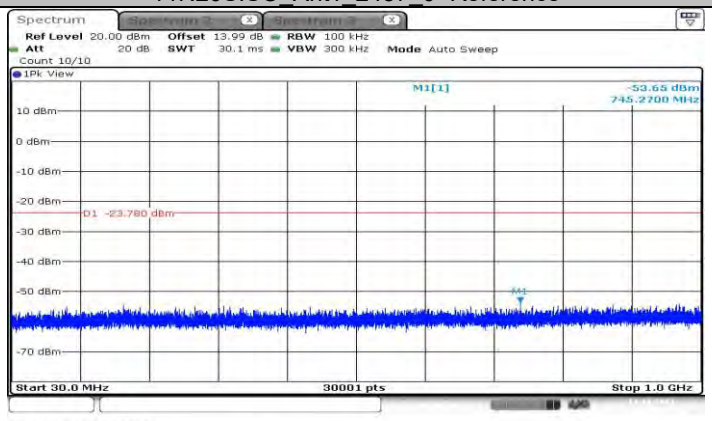
11N20SISO_Ant1_2437_30~1000



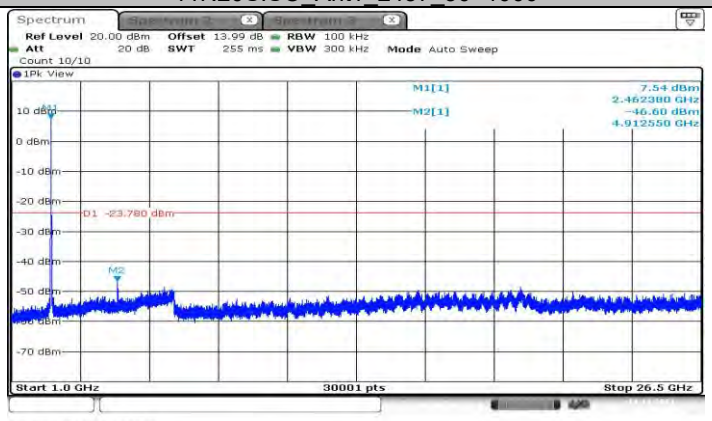
11N20SISO_Ant1_2437_1000~26500



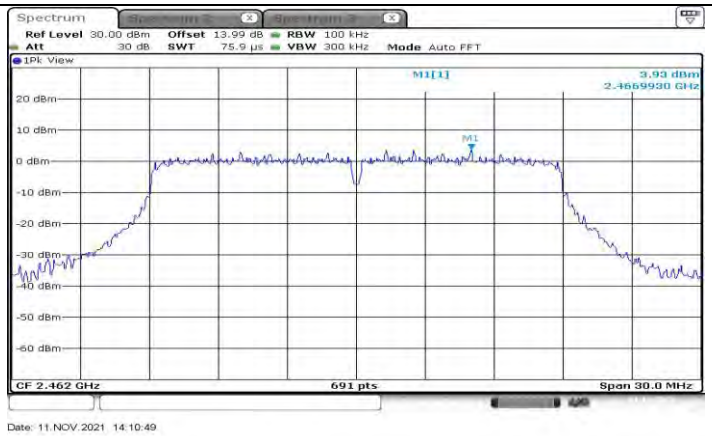
11N20SISO_Ant1_2457_0~Reference



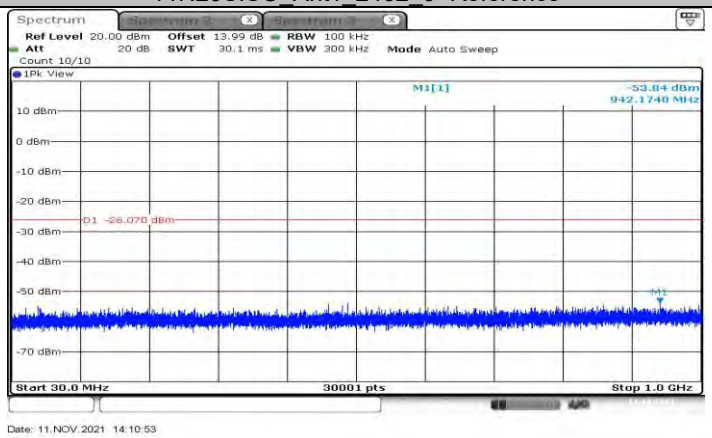
11N20SISO_Ant1_2457_30~1000



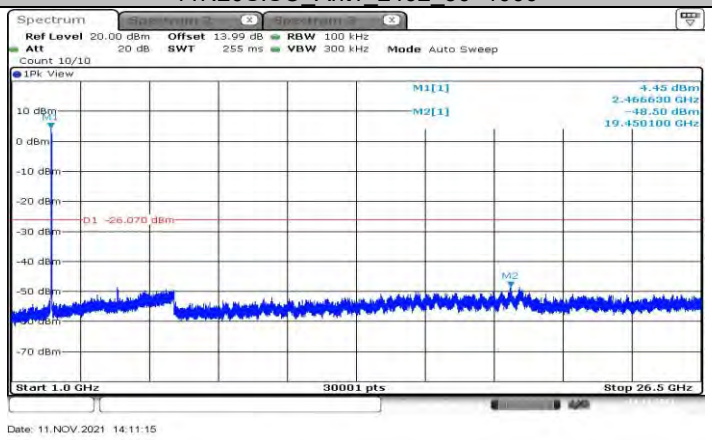
11N20SISO_Ant1_2457_1000~26500



11N20SISO_Ant1_2462_0~Reference



11N20SISO_Ant1_2462_30~1000



11N20SISO_Ant1_2462_1000~26500

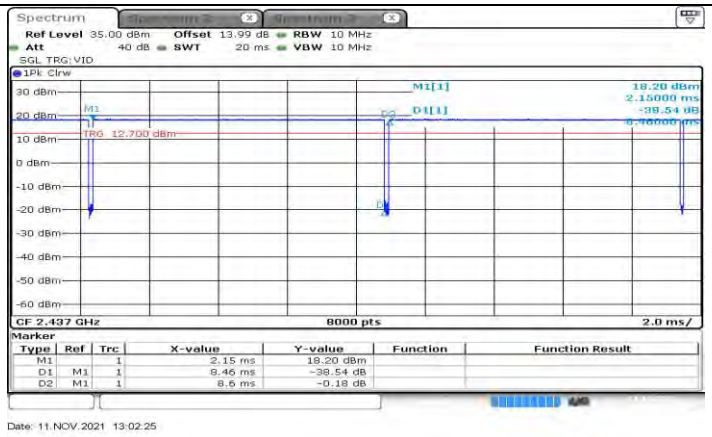
11.7. Appendix G: Duty Cycle

11.7.1. Test Result

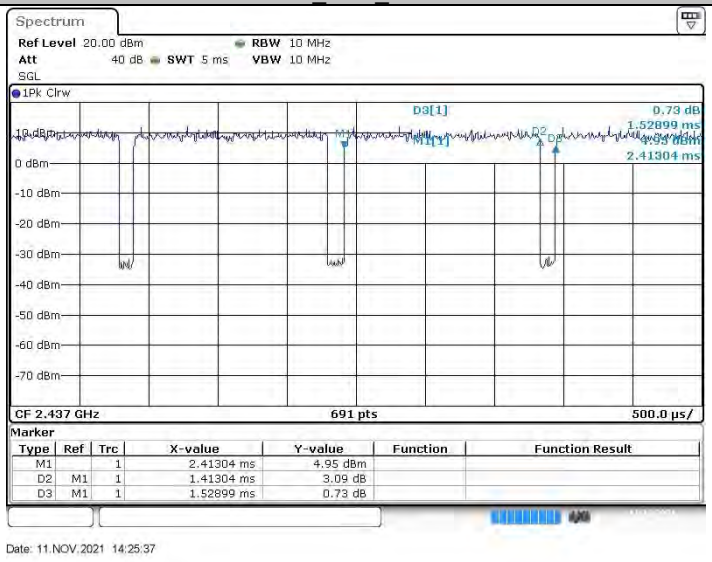
Test Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)	Final setting For VBW (kHz)
11B	8.46	8.60	0.9837	98.37	0.07	0.12	0.01
11G	1.41	1.53	0.9216	92.16	0.35	0.71	1
11N20SISO	1.32	1.42	0.9296	92.96	0.32	0.76	1

Note:
Duty Cycle Correction Factor=10log (1/x).
Where: x is Duty Cycle (Linear)
Where: T is On Time
If that calculated VBW is not available on the analyzer then the next higher value should be used.

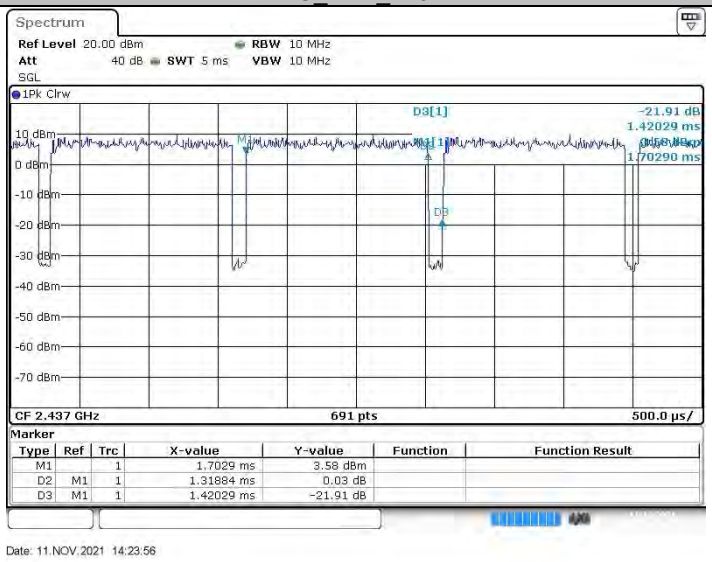
11.7.2. Test Graphs



11B_Ant1_2437



11G_Ant1_2437



11N20SISO_Ant1_2437

END OF REPORT