CFR 47 FCC PART 15 SUBPART C
ISED RSS-247 ISSUE 2

TEST REPORT

For

Soundbar speaker

MODEL NUMBER FOR FCC: B95/37,B95/yy,B97/37,B97/yy (yy=00-99 or NiL ,for country code)
MODEL NUMBER FOR IC: B95/37, B97/37

FCC ID: 2AR2SB97

IC: 24589-B97

REPORT NUMBER: 4789548706-5

ISSUE DATE: September 28, 2020

Prepared for

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

Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	09/28/2020	Initial Issue	

Clause	Test Items	FCC/ISED Rules	Test Results
1	6dB Bandwidth and 99% Occupied Bandwidth	FCC Part 15.247 (a) (2) RSS-247 Clause 5.2 (a) ISED RSS-Gen Clause 6.7	Pass
2	Conducted Output Power	FCC Part 15.247 (b) (3) RSS-247 Clause 5.4 (d)	Pass
3	Power Spectral Density	FCC Part 15.247 (e) RSS-247 Clause 5.2 (b)	Pass
4	Conducted Bandedge and Spurious Emission	FCC Part 15.247 (d) RSS-247 Clause 5.5	Pass
5	Radiated Bandedge and Spurious Emission	FCC Part 15.247 (d) FCC Part 15.209 FCC Part 15.205 RSS-247 Clause 5.5 RSS-GEN Clause 8.9	Pass
6	Conducted Emission Test for AC Power Port	FCC Part 15.207 RSS-GEN Clause 8.8	Pass
7	Antenna Requirement	FCC Part 15.203 RSS-GEN Clause 6.8	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.

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1. ATTESTATION OF TEST RESULTS

Applicant Information

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

Manufacturer Information

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

Factory Information

Company Name: Eastech Electronics (Huiyang) Co.,Ltd.
Address: XINXU,HUIYANG,HUIZHOU CITY GUANGDONG CHINA

EUT Information

EUT Name: Soundbar speaker
Model for FCC: B95/37,B95/yy,B97/37,B97/yy (yy=00-99 or NiL ,for country code)
Model for IC: B95/37,B97/37
Brand: PHILIPS or
Serial Model: Please refer to clause 5.1. Description of EUT
Sample Received Date: July 23, 2020
Sample Status: Normal
Sample ID: 3230144
Date of Tested: July 25, 2020~September 28, 2020

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 FCC PART 15 SUBPART C	PASS
ISED RSS-247 Issue 2	PASS
ISED RSS-GEN Issue 5	PASS

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Approved By:

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Laboratory Manager

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2013, CFR 47 FCC Part 2, CFR 47 FCC Part 15, RSS-GEN Issue 5, KDB 558074 D01 15.247 Meas Guidance v05r02, RSS-247 Issue 2, KDB414788 D01 Radiated Test Site v01, KDB 662911 D01 Multiple Transmitter Output v02r01.

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. **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 30MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30MHz had been correlated to measurements performed on an OFS.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to 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
Uncertainty for Conduction emission test	3.62dB
Uncertainty for Radiation Emission test(include Fundamental emission) (9kHz-30MHz)	2.2dB
Uncertainty for Radiation Emission test(include Fundamental emission) (30MHz-1GHz)	4.00dB
Uncertainty for Radiation Emission test (1GHz to 26GHz)(include Fundamental emission)	5.78dB (1GHz-18GHz)
	5.23dB (18GHz-26GHz)
	5.64dB (26GHz-40GHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name	Soundbar speaker		
EUT Description	The EUT is a Soundbar.		
Test Model	B97/37		
Model for FCC	B95/37,B95/yy,B97/37,B97/yy (yy=00-99 or NiL ,for country code)		
Model for IC	B95/37, B97/37		
Model Difference	B95/yy (yy=00-99 or NiL ,for country code) have the same technical construction including circuit diagram, PCB Layout, components and component layout, all electrical construction and mechanical construction with B95/37. The difference lies only the model number. B97/yy (yy=00-99 or NiL ,for country code) have the same technical construction including circuit diagram, PCB Layout, components and component layout, all electrical construction and mechanical construction with B97/37. The difference lies only the model number. The difference between B95/37 with B97/37 is: B97/37 contains Sound bar: BT+2.4Gwifi+ 5G wifi (band 1+ band4)+ 5.8G wireless Surround (right): 5.8G wireless(only for receiving) Surround (left): 5.8G wireless(only for receiving) B95/37 contains Sound bar: BT+2.4Gwifi+ 5G wifi (band 1+ band4)+ 5.8G wireless		
Radio Technology	5.8G wireless		
Operation frequency	5728.35MHz ~ 5824.35MHz /5729.35MHz ~ 5825.35MHz		
Modulation	Pi/4 DQPSK		
Power Supply	Power Adapter	Input	AC 120V, 60Hz
		Output	DC 19V, 6.32A

Note: The model B97/37 has the most attachments, so only this model has been tested in this report

5.2. MAXIMUM POWER

Test Mode	Number of Transmit chains (NTX)	Frequency (MHz)	Max Conducted Output Power (dBm)
5.8G SSC	2	5728.35-5824.35	9.90
5.8G DSC	2	5729.35-5825.35	9.12

5.3. CHANNEL LIST

5.8G SSC

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	5728.35	14	5754.35	27	5780.35	40	5806.35
2	5730.35	15	5756.35	28	5782.35	41	5808.35
3	5732.35	16	5758.35	29	5784.35	42	5810.35
4	5734.35	17	5760.35	30	5786.35	43	5812.35
5	5736.35	18	5762.35	31	5788.35	44	5814.35
6	5738.35	19	5764.35	32	5790.35	45	5816.35
7	5740.35	20	5766.35	33	5792.35	46	5818.35
8	5742.35	21	5768.35	34	5794.35	47	5820.35
9	5744.35	22	5770.35	35	5796.35	48	5822.35
10	5746.35	23	5772.35	36	5798.35	49	5824.35
11	5748.35	24	5774.35	37	5800.35	/	/
12	5750.35	25	5776.35	38	5802.35	/	/
13	5752.35	26	5778.35	39	5804.35	/	/

5.8G DSC

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	5729.35	14	5755.35	27	5781.35	40	5807.35
2	5731.35	15	5757.35	28	5783.35	41	5809.35
3	5733.35	16	5759.35	29	5785.35	42	5811.35
4	5735.35	17	5761.35	30	5787.35	43	5813.35
5	5737.35	18	5763.35	31	5789.35	44	5815.35
6	5739.35	19	5765.35	32	5791.35	45	5817.35
7	5741.35	20	5767.35	33	5793.35	46	5819.35
8	5743.35	21	5769.35	34	5795.35	47	5821.35
9	5745.35	22	5771.35	35	5797.35	48	5823.35
10	5747.35	23	5773.35	36	5799.35	49	5825.35
11	5749.35	24	5775.35	37	5801.35	/	/
12	5751.35	25	5777.35	38	5803.35	/	/
13	5753.35	26	5779.35	39	5805.35	/	/

5.4. TEST CHANNEL CONFIGURATION

Test Mode	Test Channel	Frequency(MHz)
5.8G SSC	Low	5728.35
	Middle	5776.35
	High	5824.35
5.8G DSC	Low	5729.35
	Middle	5777.35
	High	5825.35

5.5. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter			
Test Software	VMXUI 2.1		
Frequency Band	mode	channel	setting
5728.35MHz ~ 5824.35MHz	5.8G SSC	Low	default
		Middle	default
		High	default
5729.35MHz ~ 5825.35MHz	5.8G DSC	Low	default
		Middle	default
		High	default

5.6. THE WORSE CASE CONFIGURATIONS

Worst-case data rates as provided by the client were:
5.8G SSC TX mode
5.8G DSC TX mode

For SISO modes, there are two transmission antennas. The antenna used in any given time can be either ANTENNA 1 or ANTENNA 2. The output power measurement for SISO modes on both antennas are reported.
For 2TX MIMO modes, ANTENNA 1 and ANTENNA 2, used at the same time.
SISO mode and MIMO mode have the same power setting, so only the worst case MIMO mode will be record in the report.
The SISO mode and MIMO mode have the same power setting, so only the worst case MIMO mode will be record in the report.

5.7. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna No.	Frequency (MHz)	Antenna Type	Max Antenna Gain (dBi)	Directional Gain (dBi)
1	5728.35MHz ~ 5825.35MHz	PCB Antenna	1.2	4.72
2	5728.35MHz ~ 5825.35MHz	PCB Antenna	2.2	

Note 1: MIMO Mode Directional gain= 10 log $[(10^{G1/20} + 10^{G2/20})^2/N_{ANT}]$
G_{ANT}: Average of the Antenna Gain
N_{ANT}: Antenna numbers

TX MODE	Transmit and Receive Mode	Description
5.8G SSC	☒2TX, 2RX	ANT 1 and ANT 2 can be used as transmitting and receiving antenna.
5.8G DSC	☒2TX, 2RX	ANT 1 and ANT 2 can be used as transmitting and receiving antenna.

Note:
1. The value of the antenna gain was declared by customer.
2. The customer declared that WIFI& 5.8G wireless or BT& 5.8G wireless can transmit simultaneously.

5.8. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	Remarks
1	PC	Dell	Vostro 3902	8KNDDB2
2	DVD	Pioneer	DV-410V-K	HGKD001867CN
3	LED TV	INSIGNIA	NS-24DR220NA18	HDMI(ARC)
4	Mobile Phone	HUAWEI	ALP-AL00	/
5	USB TO UART	/	/	/

I/O CABLES

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	USB	/	/	1.0m	/
2	HDMI	/	Shielded	1.8m	/
3	HDMI	/	Shielded	1.0m	/
4	HDMI	/	Shielded	1.2m	/
5	Audio	/	/	1.0m	/
6	Optical	/	/	1.0m	/

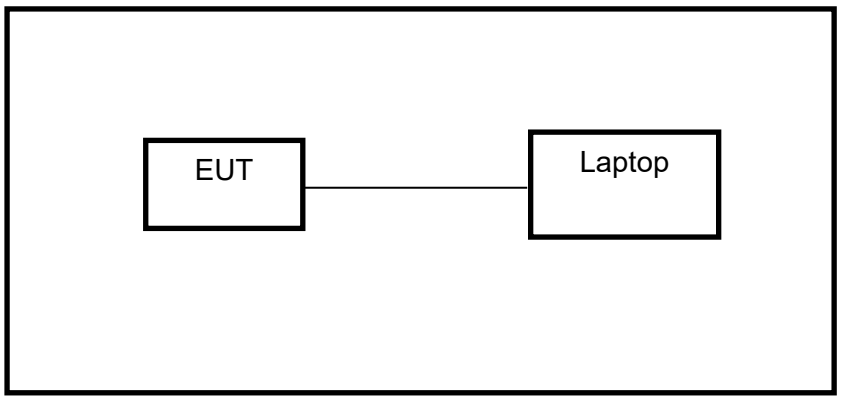
ACCESSORIES

Item	Accessory	Brand Name	Model Name	Description
1	AC Adapter	/	NSA120EC-19063200	Input: AC 100~240V, 50/60Hz, 2.0A Output: DC 19V, 6.32A 120.0W

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						
Instrument						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☑	EMI Test Receiver	R&S	ESR3	101961	Dec.05,2019	Dec.05,2020
☑	Two-Line V-Network	R&S	ENV216	101983	Dec.05,2019	Dec.05,2020
☑	Artificial Mains Networks	Schwarzbeck	NSLK 8126	8126465	Dec.05,2019	Dec.05,2020
Software						
Used	Description		Manufacturer	Name	Version	
☑	Test Software for Conducted disturbance		Farad	EZ-EMC	Ver. UL-3A1	
Radiated Emissions						
Instrument						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☑	MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Dec.06,2019	Dec.06,2020
☑	Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	Sep.17, 2018	Sep.17, 2021
☑	Preamplifier	HP	8447D	2944A09099	Dec.05,2019	Dec.05,2020
☑	EMI Measurement Receiver	R&S	ESR26	101377	Dec.05,2019	Dec.05,2020
☑	Horn Antenna	TDK	HRN-0118	130939	Sep.17, 2018	Sep.17, 2021
☑	High Gain Horn Antenna	Schwarzbeck	BBHA-9170	691	Aug.11, 2018	Aug.11, 2021
☑	Preamplifier	TDK	PA-02-0118	TRS-305-00066	Dec.05,2019	Dec.05,2020
☑	Preamplifier	TDK	PA-02-2	TRS-307-00003	Dec.05,2019	Dec.05,2020
☑	Preamplifier	TDK	PA-02-3	TRS-308-00002	Dec.05,2019	Dec.05,2020
☑	Loop antenna	Schwarzbeck	1519B	00008	Jan.07, 2019	Jan.07, 2022
☑	Band Reject Filter	Wainwright	WRCJV12-5695-5725-5850-5880-40SS	4	Dec.05,2019	Dec.05,2020
☑	Band Reject Filter	Wainwright	WRCJV20-5120-5150-5350-5380-60SS	2	Dec.05,2019	Dec.05,2020
☑	Band Reject Filter	Wainwright	WRCJV20-5440-5470-5725-5755-60SS	1	Dec.05,2019	Dec.05,2020

☑	High Pass Filter	Wainwright	WHKX10-5850-6500-1800-40SS	4	Dec.05,2019	Dec.05,2020

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

Other instruments

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☑	Spectrum Analyzer	Keysight	N9030A	MY55410512	Dec.06,2019	Dec.06,2020
☑	Power sensor, Power Meter	R&S	OSP120	100921	Dec.06,2019	Dec.06,2020

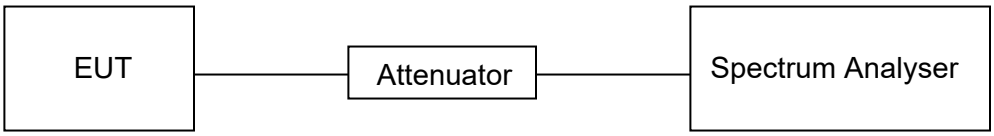
7. ANTENNA PORT TEST RESULTS

7.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only

TEST SETUP



TEST ENVIRONMENT

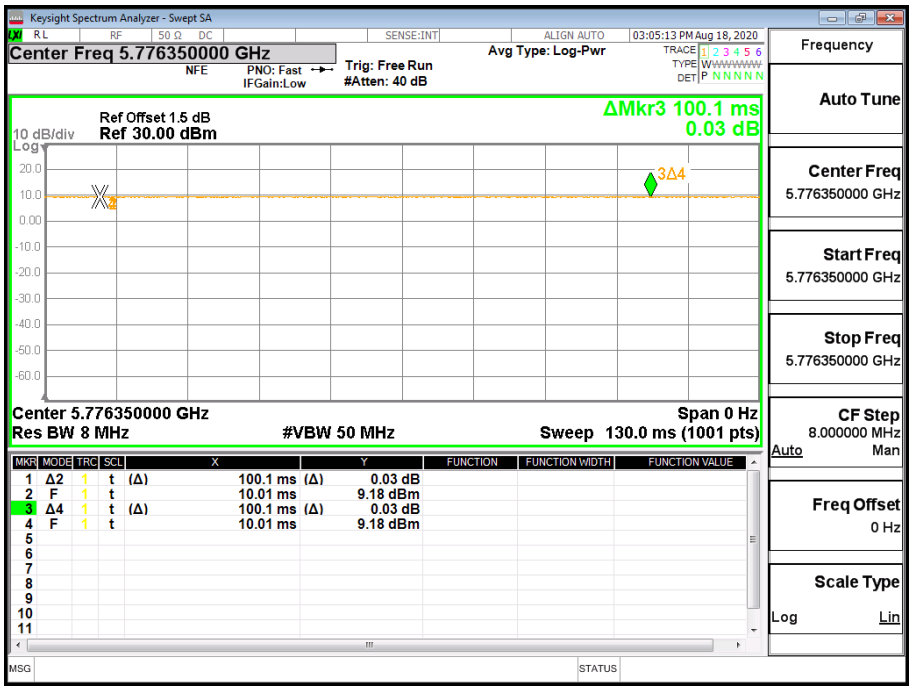
Temperature	24.5°C	Relative Humidity	64.6%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V, 60Hz

RESULTS

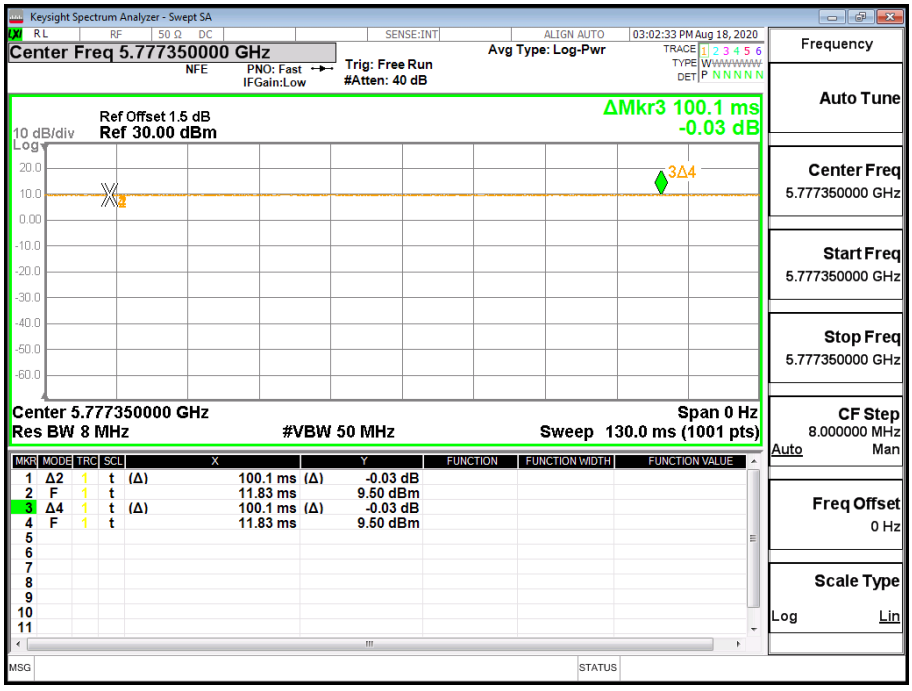
Mode	ON Time (ms)	Period (ms)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)	Final setting For VBW (kHz)
5.8G SSC	100	100	1	100%	0	0.01	0.01
5.8G DSC	100	100	1	100%	0	0.01	0.01

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.

5.8G SSC



5.8G DSC



7.2. 6/99% dB BANDWIDTH

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 2			
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

Refer to ANSI C63.10-2013 clause 11.8 for DTS bandwidth and clause 6.9 for Occupied Bandwidth.

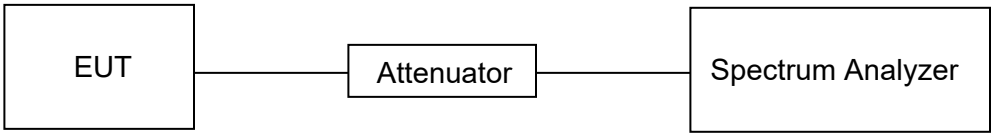
Connect the EUT to the spectrum analyser and use the following settings:

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

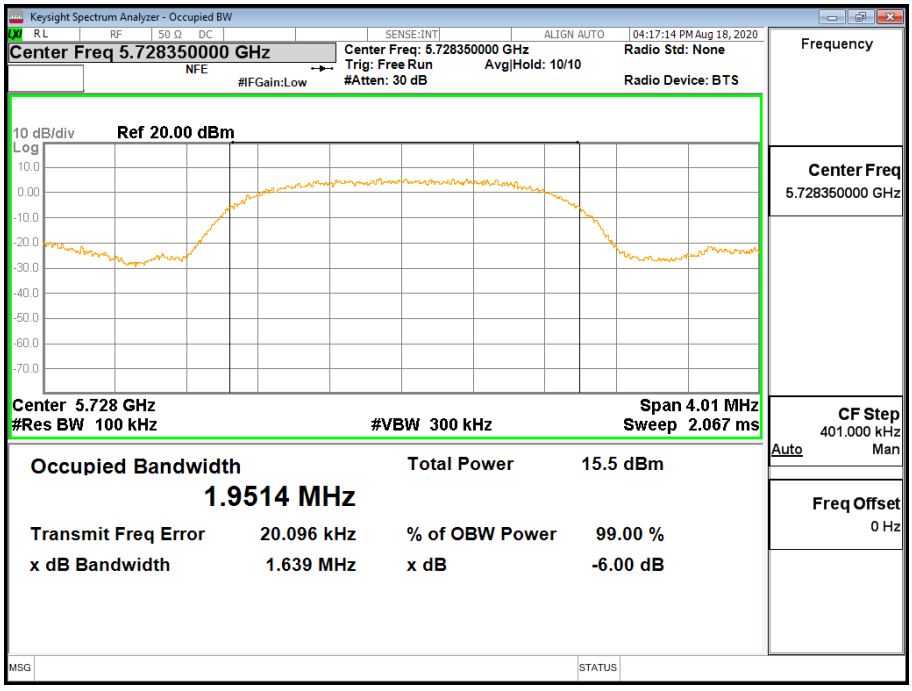
Temperature	24.5°C	Relative Humidity	64.6%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V, 60Hz

RESULTS

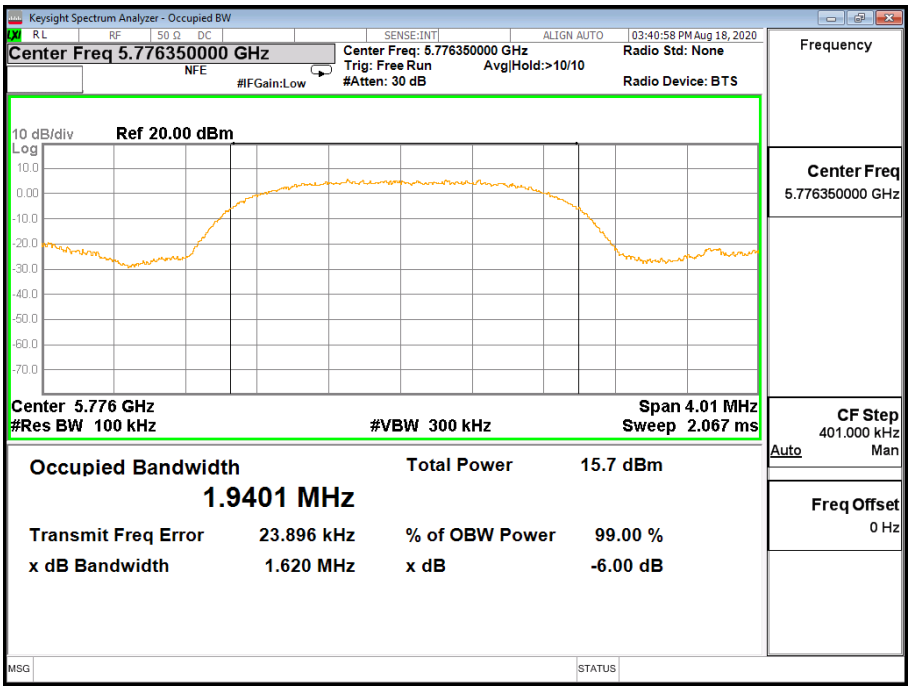
7.2.1. 5.8G SSC

Channel	Frequency (MHz)	6 dB BW (MHz)	99% BW (MHz)	Limit For 6dB BW (kHz)	Result
Low	5728.35	1.639	1.9302	500	PASS
Mid	5776.35	1.620	1.9157	500	PASS
High	5824.35	1.667	1.9203	500	PASS

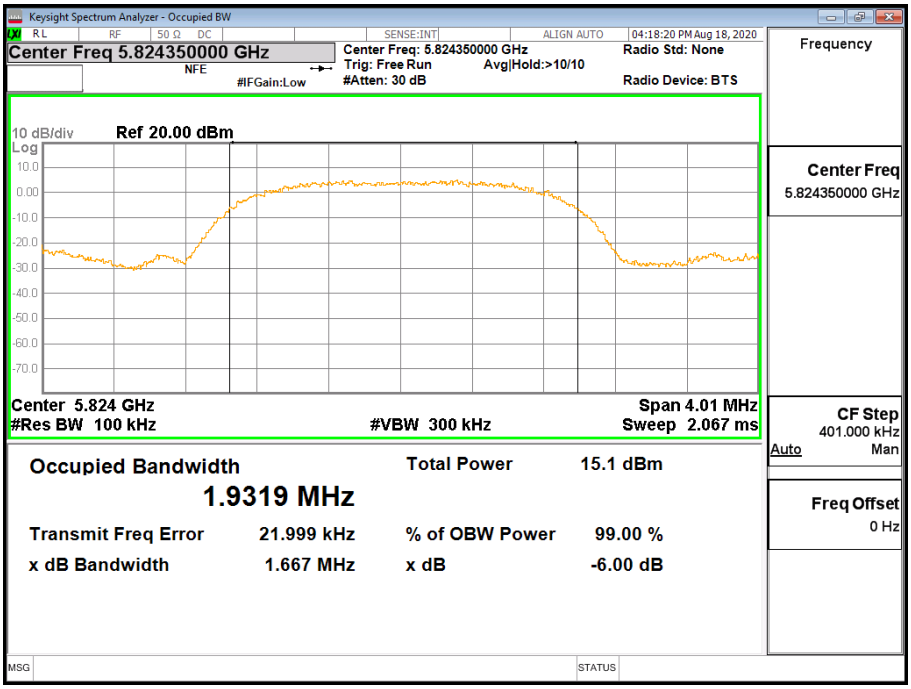
6 dB BW LOW CHANNEL



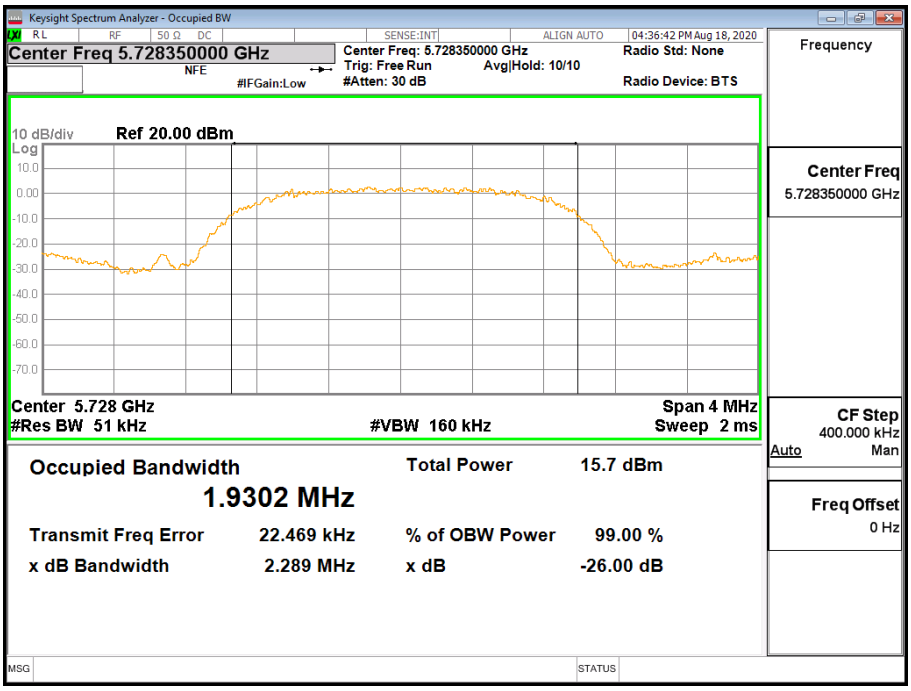
6 dB BW MID CHANNEL



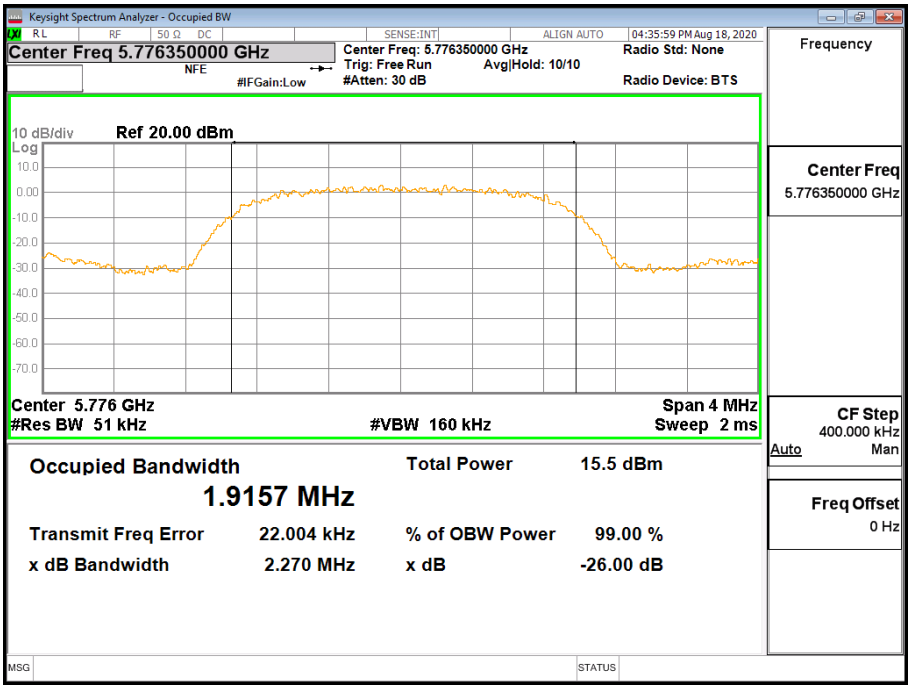
6 dB BW HIGH CHANNEL



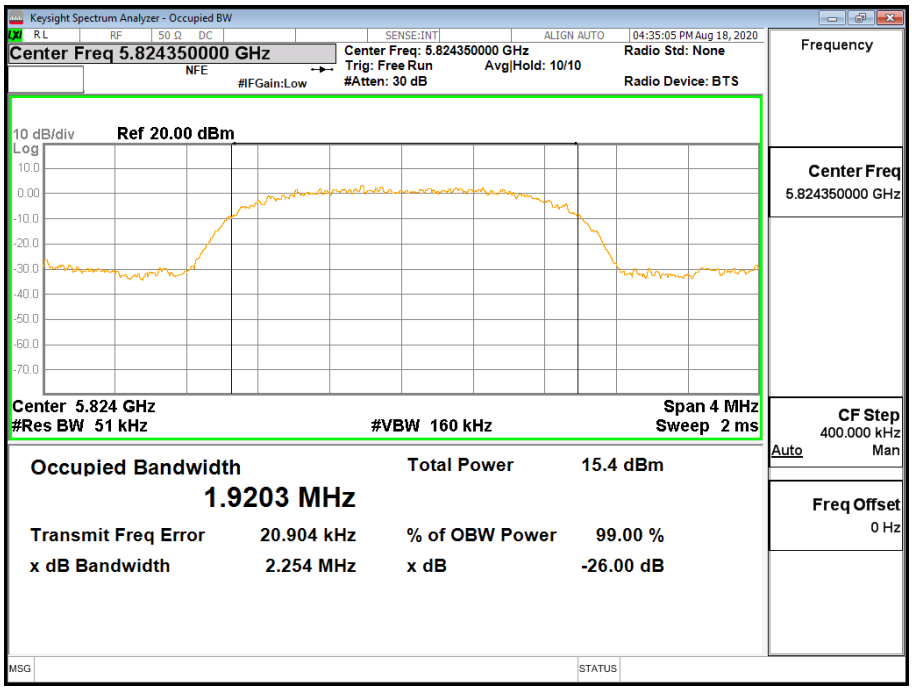
99% BW LOW CHANNEL



99% BW MID CHANNEL



99% BW HIGH CHANNEL

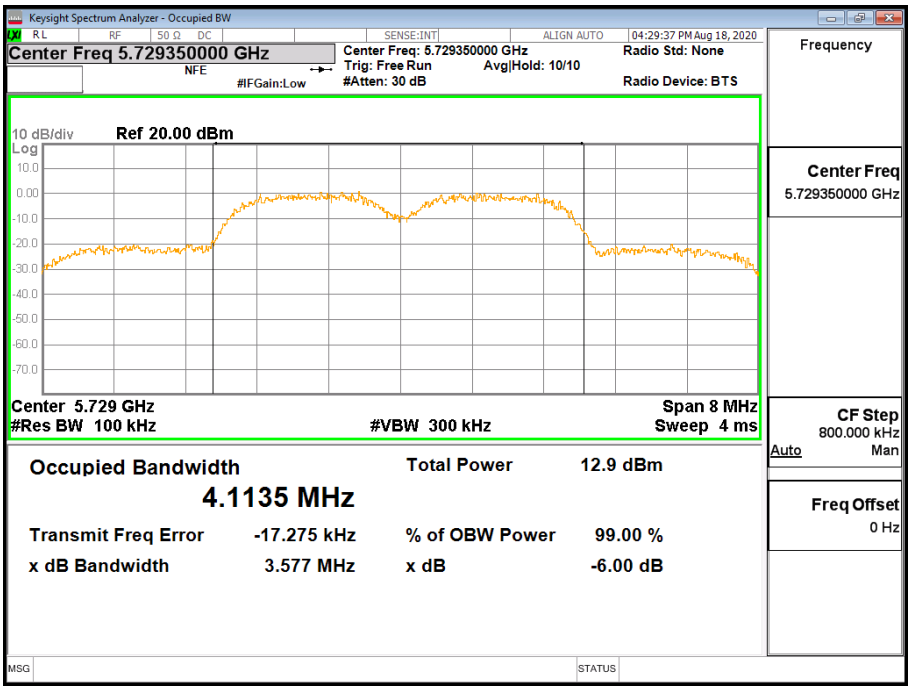


Note: All the modes and antenna ports had been tested, only the worst data recorded in the report.

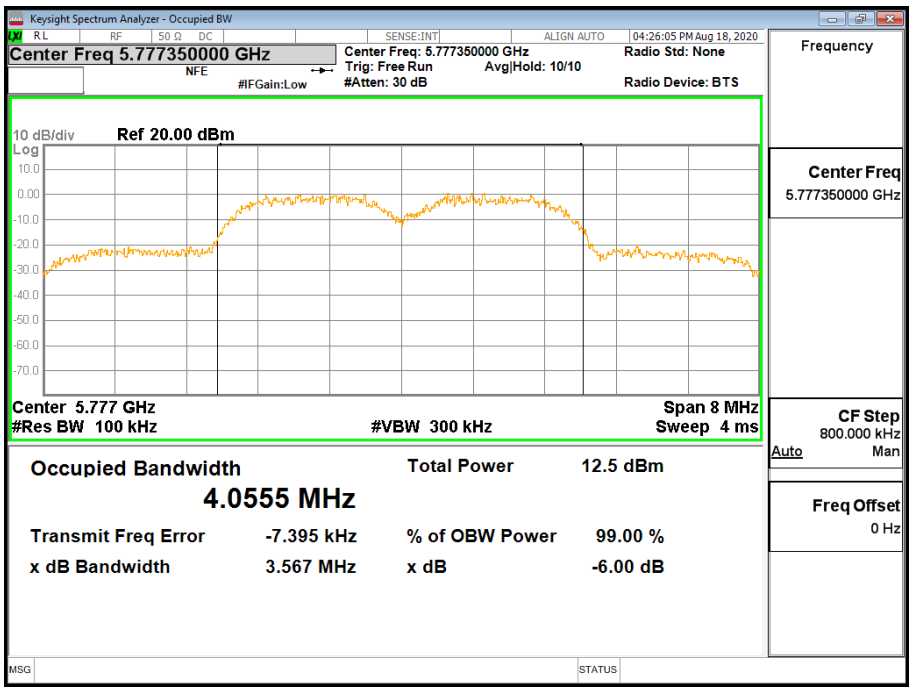
7.2.2. 5.8G DSC

Channel	Frequency (MHz)	6 dB BW (MHz)	99% BW (MHz)	Limit For 6dB BW (kHz)	Result
Low	5729.35	3.577	4.1141	500	PASS
Mid	5777.35	3.567	4.0356	500	PASS
High	5825.35	3.628	3.9610	500	PASS

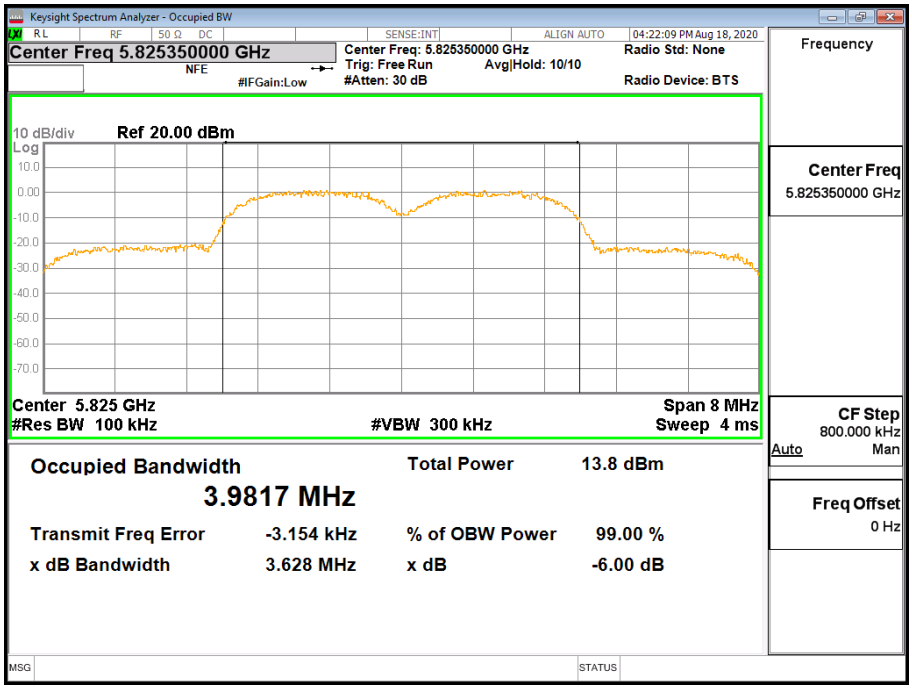
6 dB BW LOW CHANNEL



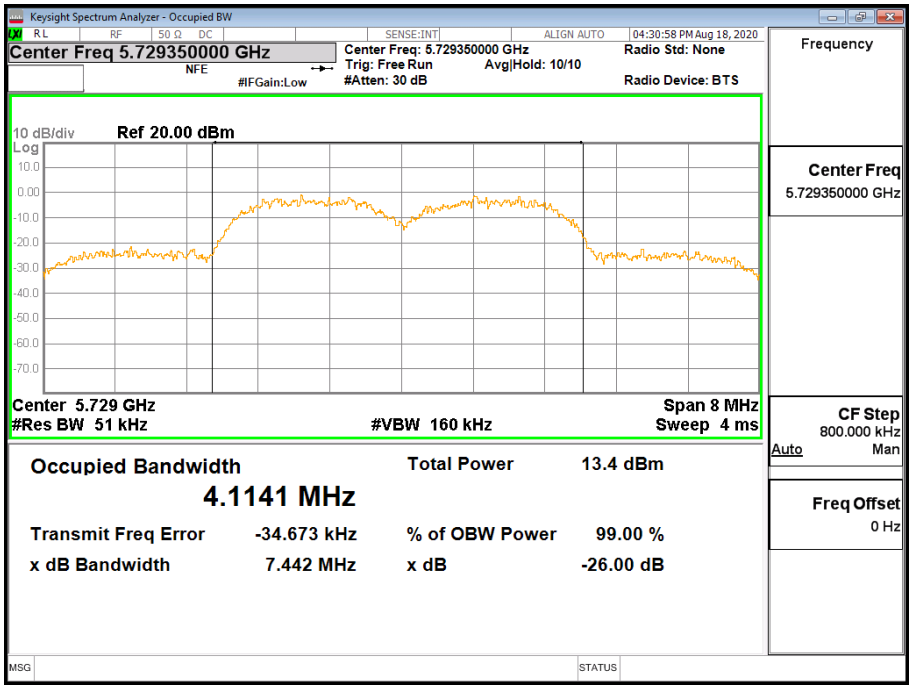
6 dB BW MID CHANNEL



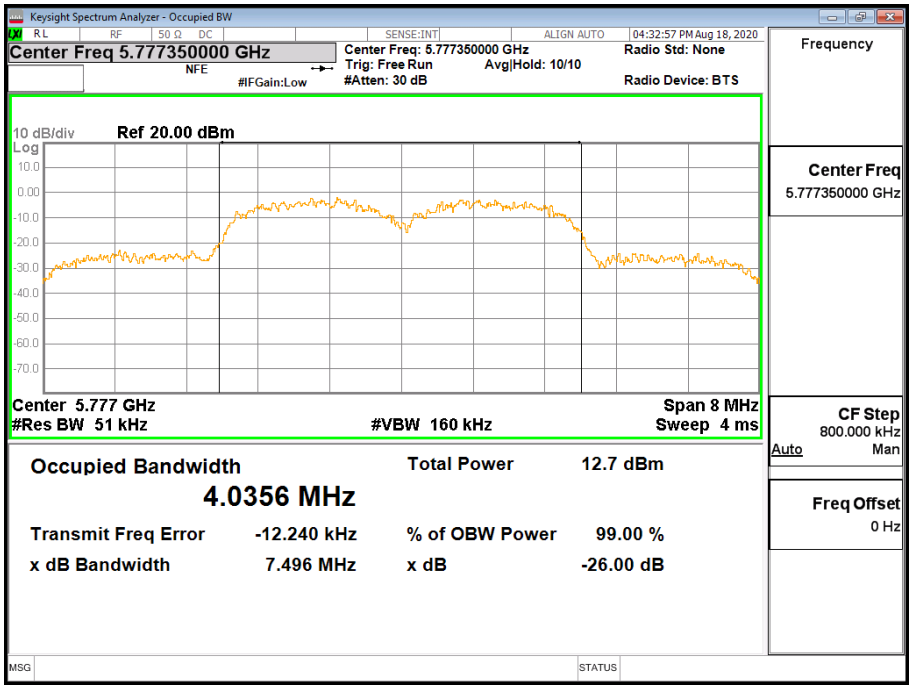
6 dB BW HIGH CHANNEL



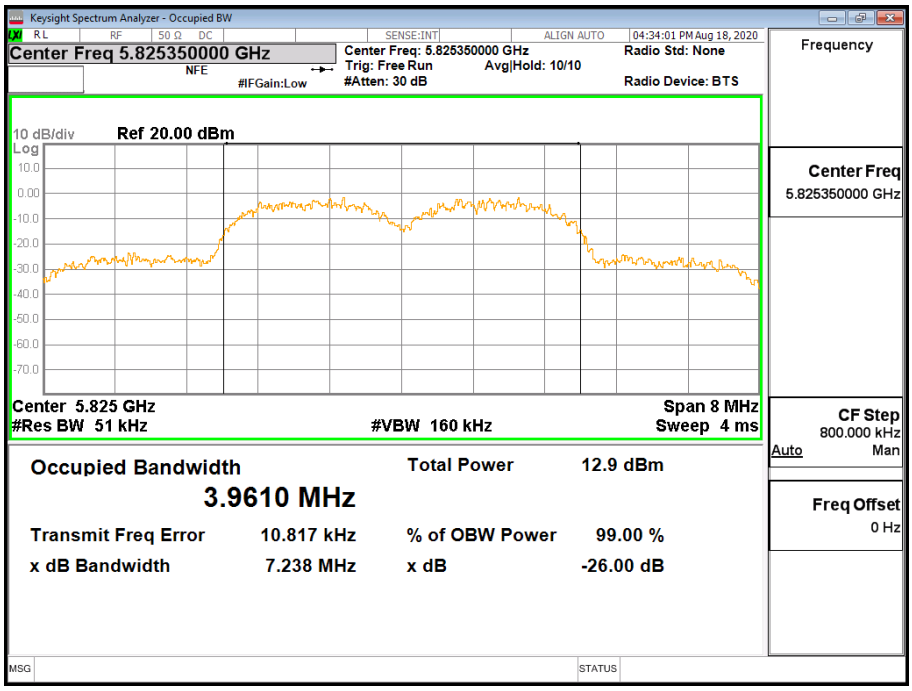
99% BW LOW CHANNEL



99% BW MID CHANNEL



99% BW HIGH CHANNEL



Note: All the modes and antenna ports had been tested, only the worst data recorded in the report.

7.3. MAXIMUM CONDUCTED OUTPUT POWER

LIMITS

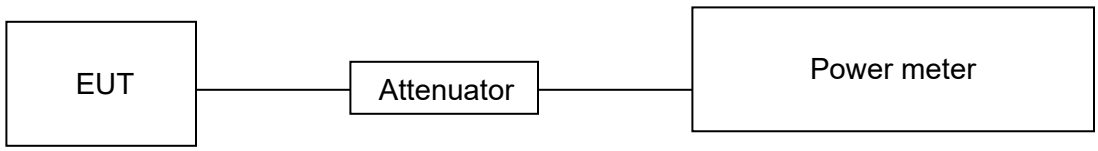
CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 2			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.247(b)(3) ISED RSS-247 5.4 (d)	Peak Output Power	1 watt or 30 dBm	2400-2483.5

Note: If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

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	24.5°C	Relative Humidity	64.6%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V, 60Hz

RESULTS

Test Mode	Test Channel	Antenna	Average Conducted Power		Limit	Result
			SISO(dBm)	Total(dBm)	(dBm)	
5.8G SSC	Low	1	6.10	9.68	30	PASS
		2	7.17			PASS
	Middle	1	6.68	9.90	30	PASS
		2	7.09			PASS
	High	1	6.57	9.80	30	PASS
		2	6.99			PASS
5.8G DSC	Low	1	5.94	9.12	30	PASS
		2	6.27			PASS
	Middle	1	5.86	9.03	30	PASS
		2	6.18			PASS
	High	1	5.81	8.94	30	PASS
		2	6.05			PASS

Note: 1.Conducted Power=Meas. Level+ Correction Factor
2.The test results have already included the duty cycle correction factor. About correction Factor please refer to section 7.1

7.4. POWER SPECTRAL DENSITY

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 2			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC §15.247 (e) ISED RSS-247 5.2 (b)	Power Spectral Density	8 dBm/3 kHz	2400-2483.5

TEST PROCEDURE

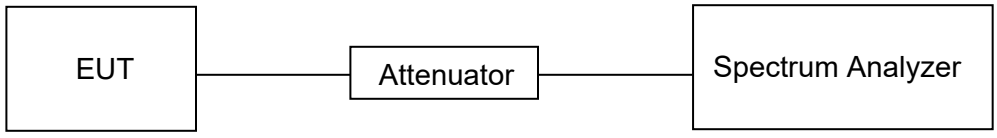
Refer to ANSI C63.10-2013 clause 11.10.

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

Center Frequency	The center frequency of the channel under test
Detector	RMS
RBW	3 kHz ≤ 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 amplitude level within the RBW.
If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

TEST SETUP



TEST ENVIRONMENT

Temperature	24.5°C	Relative Humidity	64.6%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V, 60Hz

RESULTS

7.4.1. 5.8G SSC

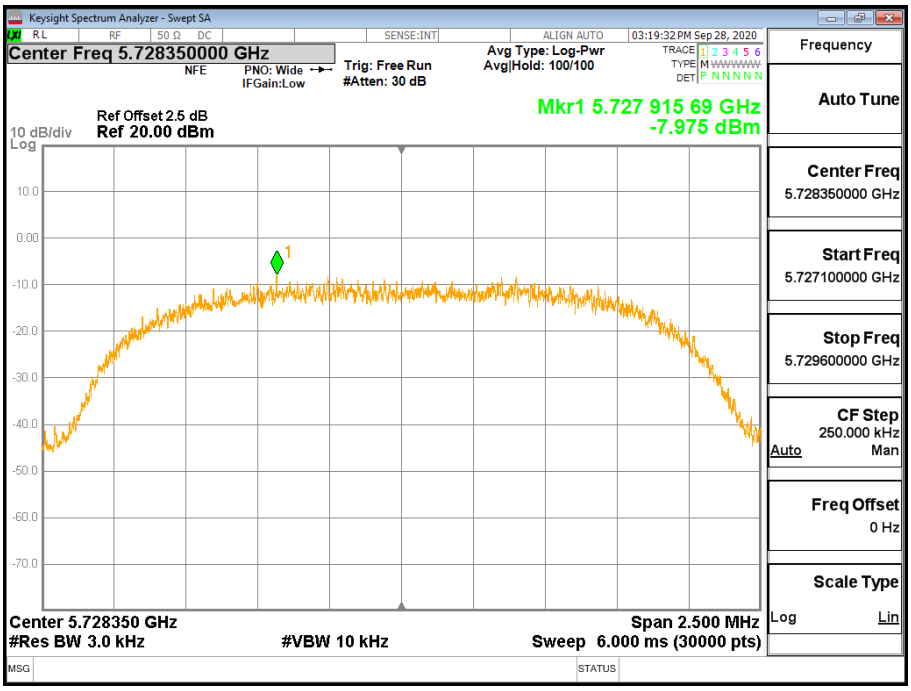
Test Channel	Frequency (MHz)	ANT	DCCF (dB)	PSD Result (dBm/3kHz)	PSD Result (dBm/3kHz) Total	Limit ((dBm/3kHz)
Low	5728.35	1	0	-7.975	-4.46	8
		2	0	-7.016		
Mid	5776.35	1	0	-7.247	-5.04	
		2	0	-9.040		
High	5824.35	1	0	-8.737	-5.67	
		2	0	-8.633		

Note:

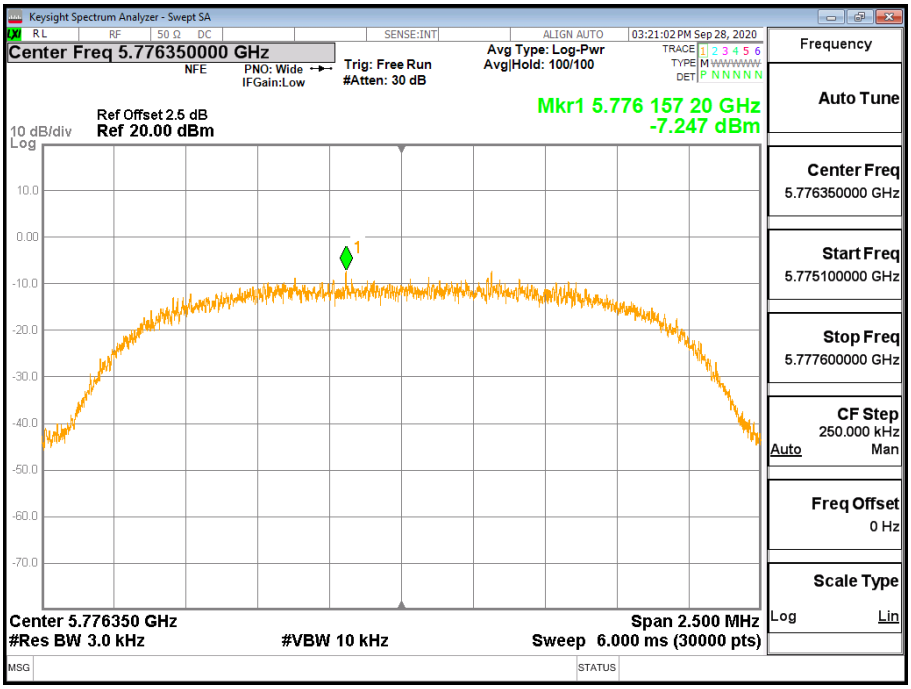
1. For test plots, it does not include the duty cycle correction factor.
2. PSD result=Test plots result+ Duty Cycle Correction Factor
3. The test results have already included the duty cycle correction factor. About correction Factor please refer to section 7.1.

ANT 1

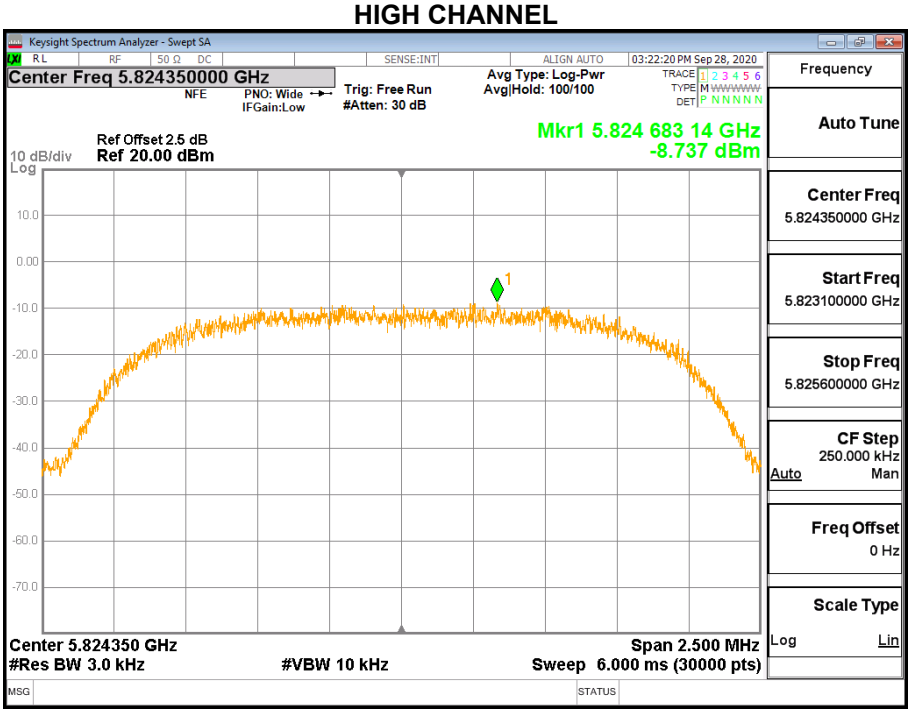
LOW CHANNEL



MID CHANNEL

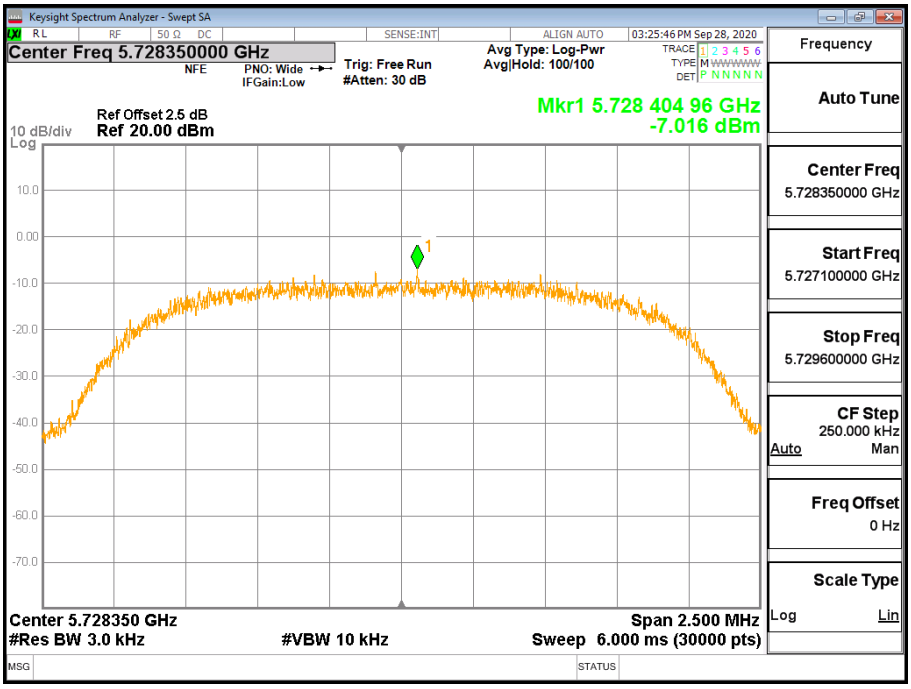


HIGH CHANNEL

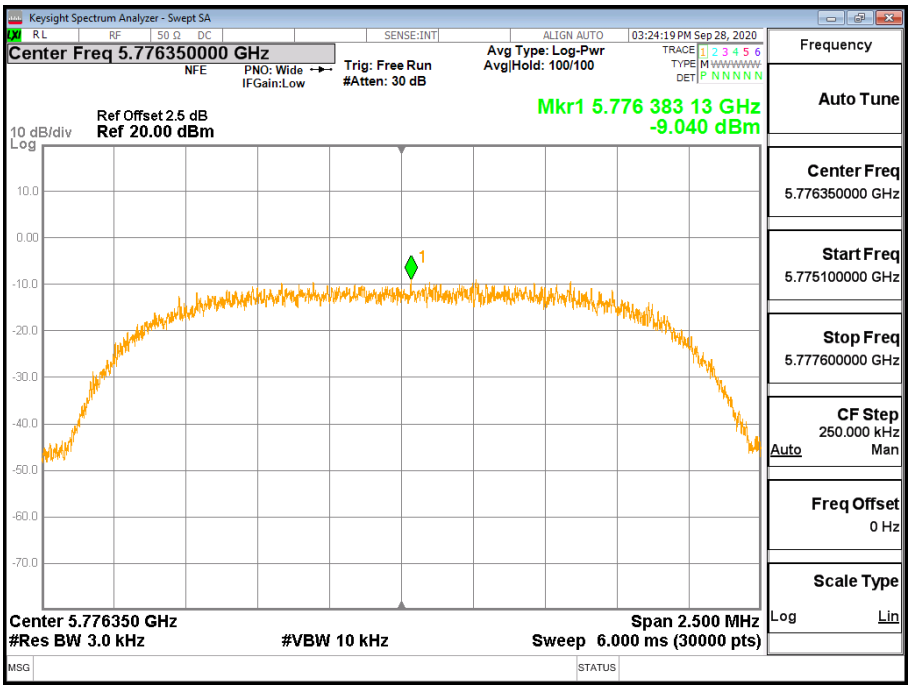


ANT 2

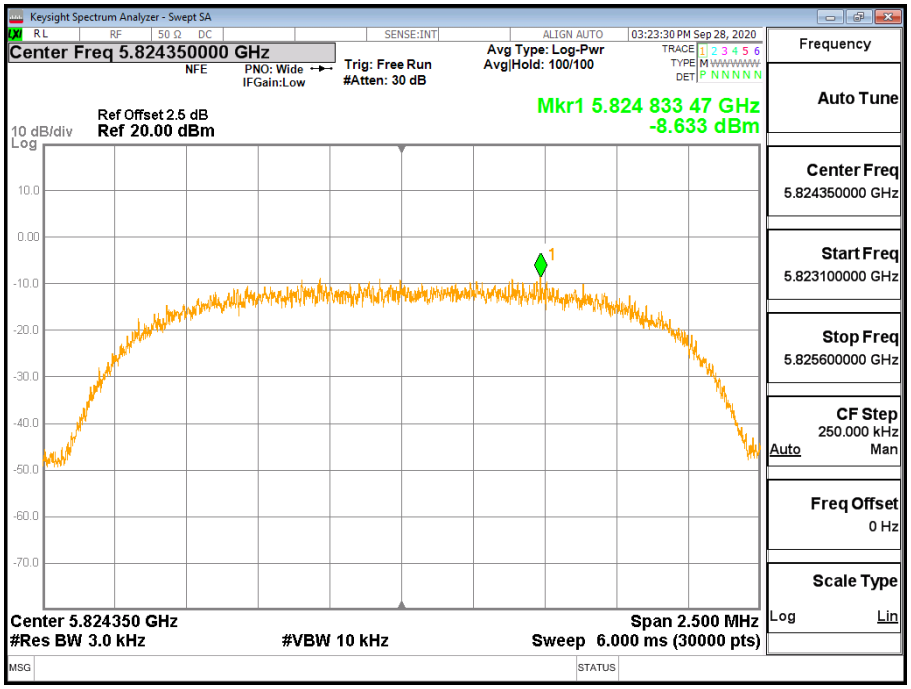
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



7.4.2. 5.8G DSC

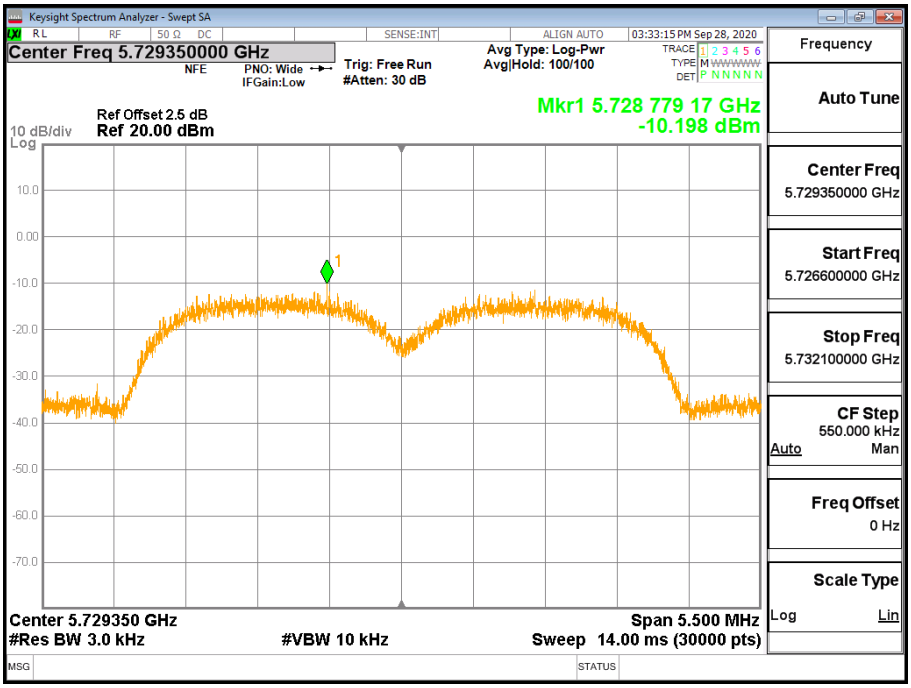
Test Channel	Frequency (MHz)	ANT	DCCF (dB)	PSD Result (dBm/3kHz)	PSD Result (dBm/3kHz) Total	Limit ((dBm/3kHz)
Low	5729.35	1	0	-10.198	-8.22	8
		2	0	-12.588		
Mid	5777.35	1	0	-11.410	-8.25	
		2	0	-11.113		
High	5825.35	1	0	-12.158	-8.58	
		2	0	-11.089		

Note:

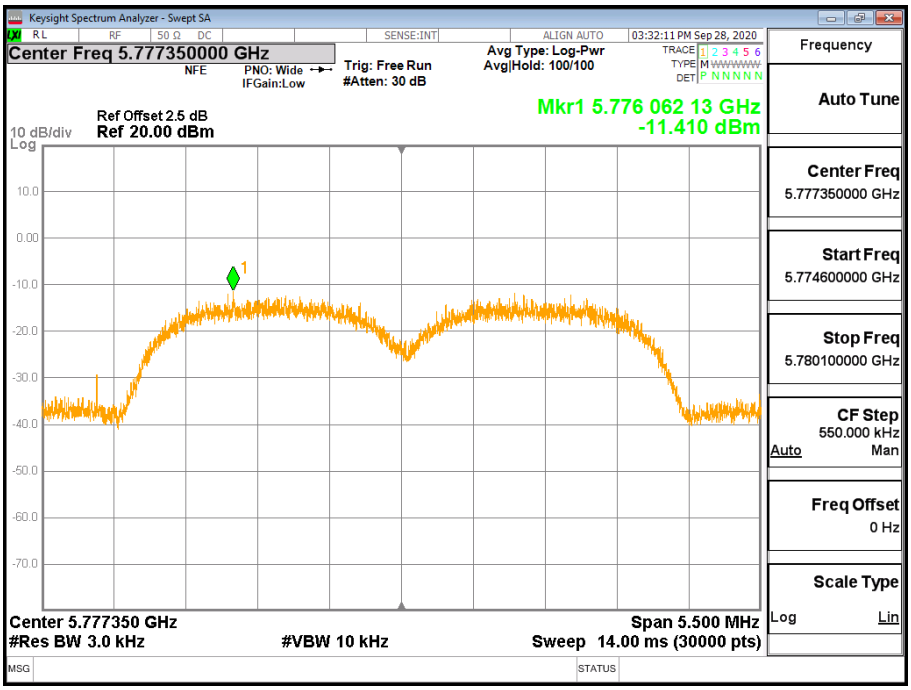
1. For test plots, it does not include the duty cycle correction factor.
2. PSD result=Test plots result+ Duty Cycle Correction Factor
3. The test results have already included the duty cycle correction factor. About correction Factor please refer to section 7.1.

ANT 1

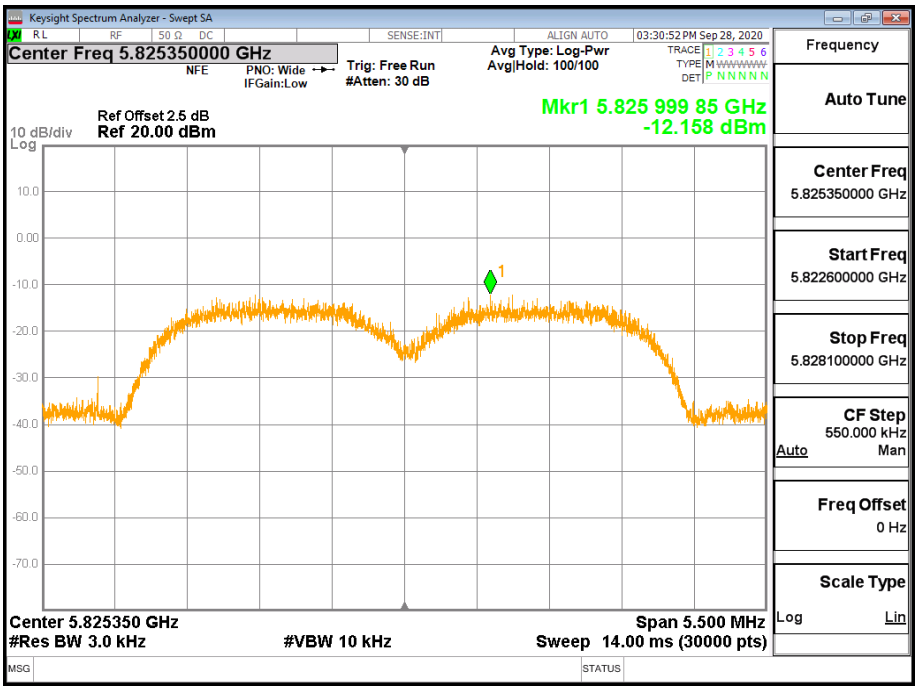
LOW CHANNEL



MID CHANNEL

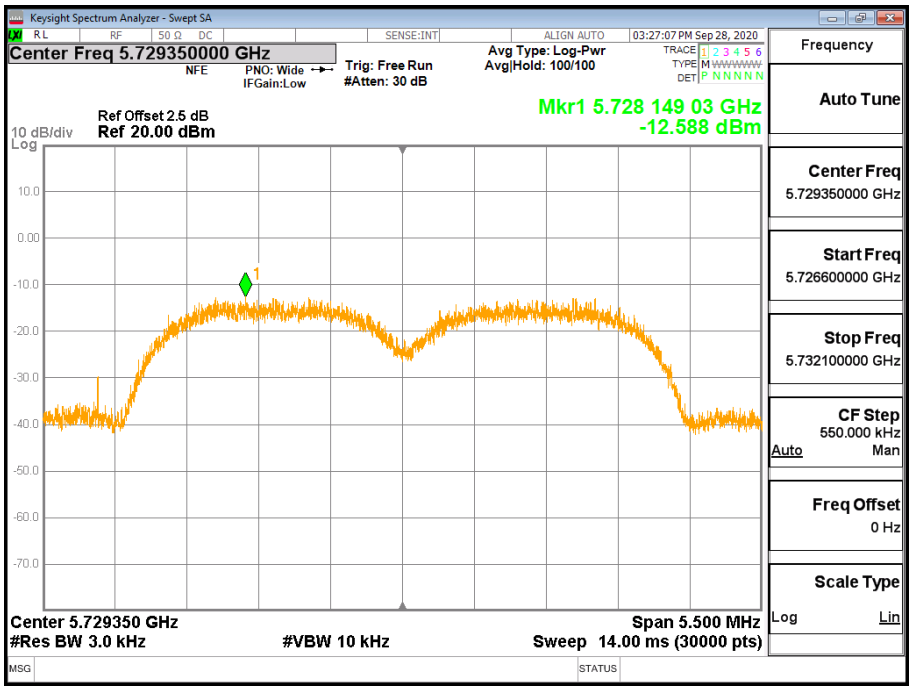


HIGH CHANNEL

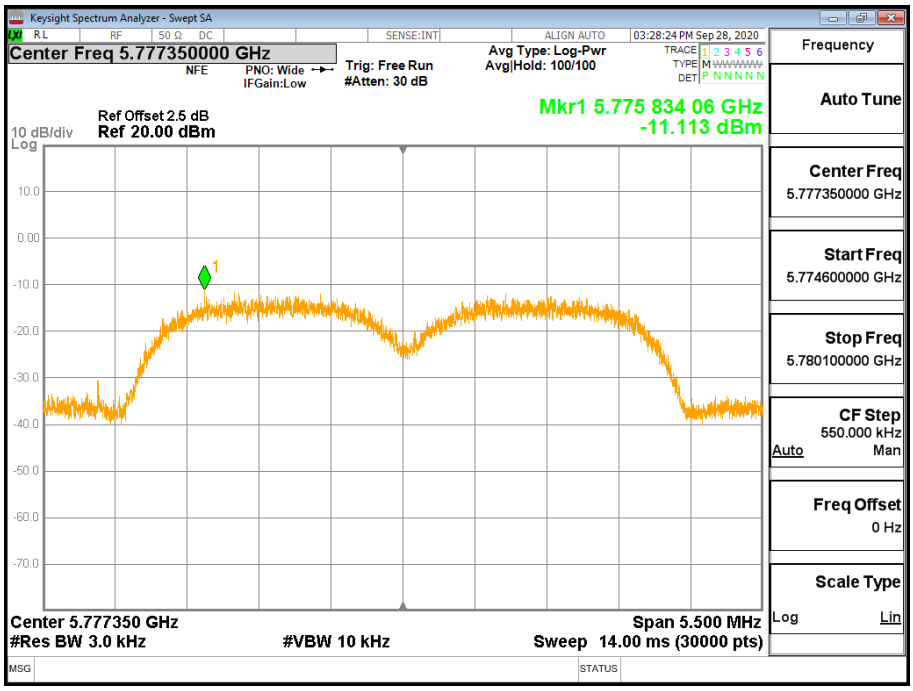


ANT 2

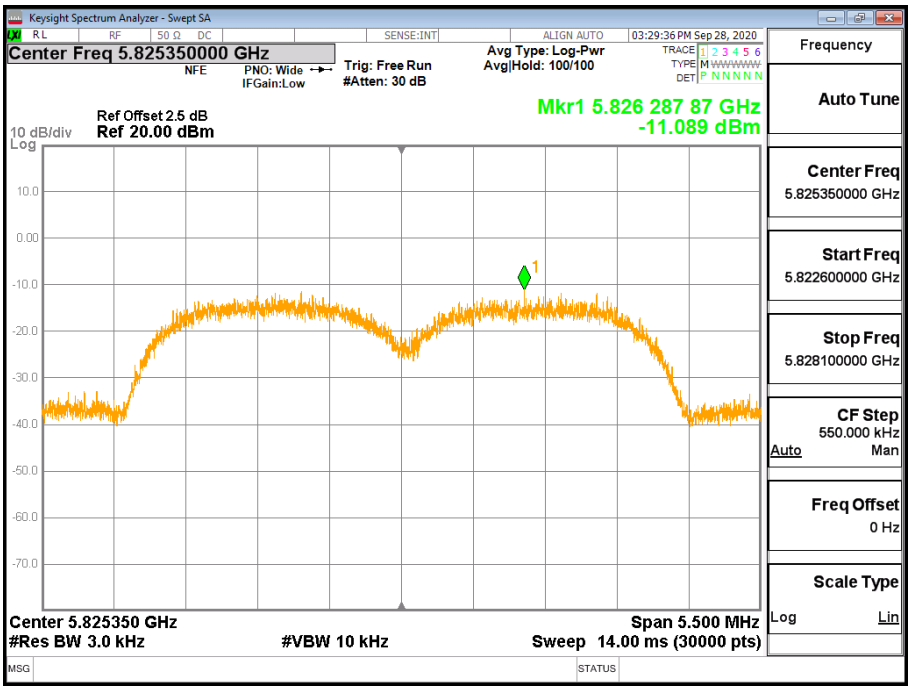
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



7.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 2		
Section	Test Item	Limit
CFR 47 FCC §15.247 (d) ISED RSS-247 5.5	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:

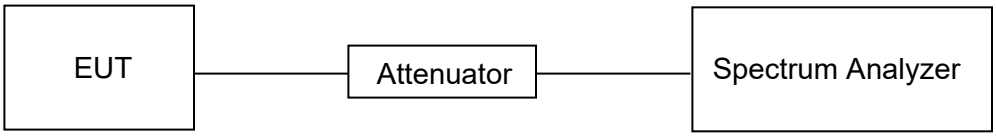
Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	100 kHz
VBW	≥3 × RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

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

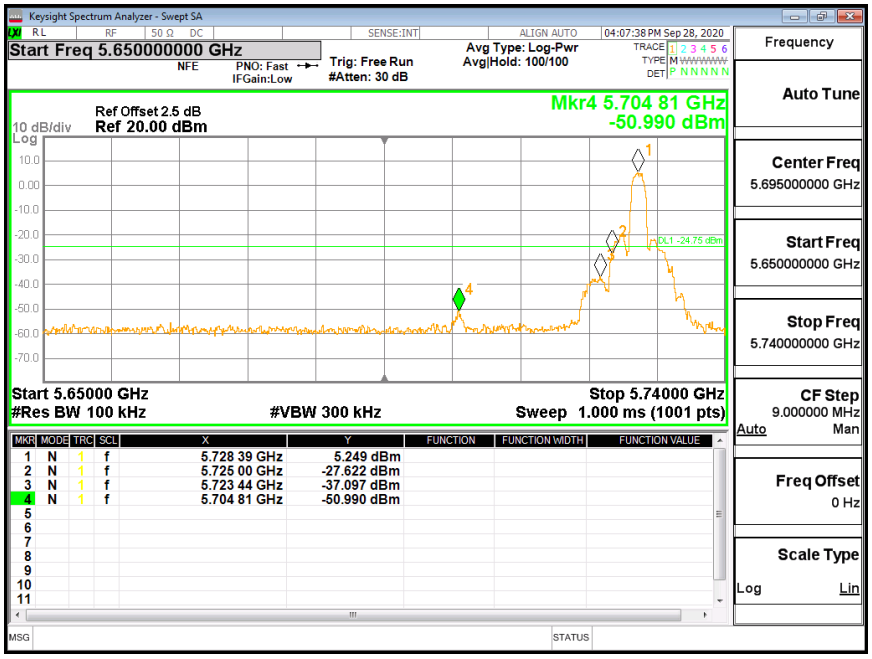
Temperature	24.5°C	Relative Humidity	64.6%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V, 60Hz

RESULTS

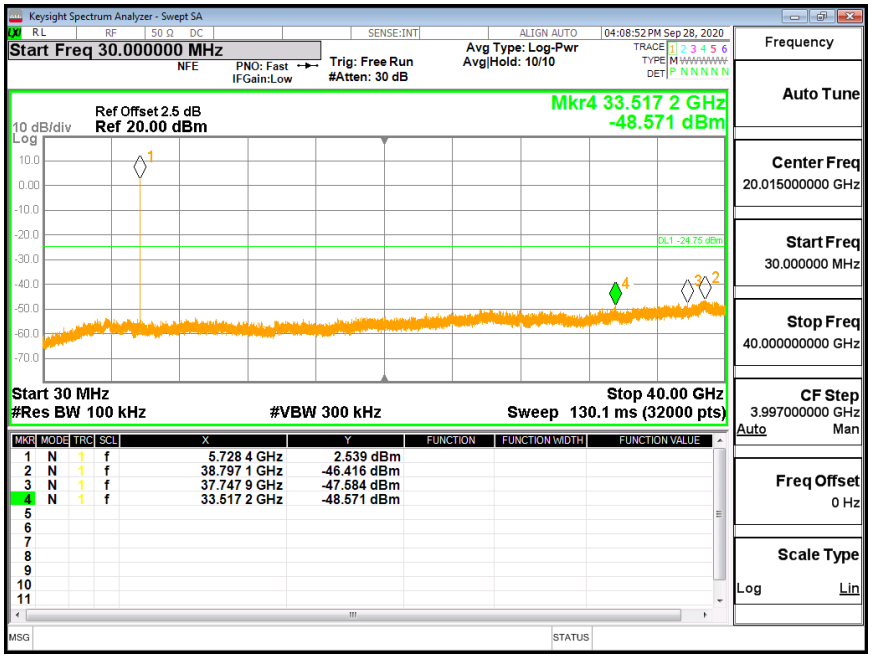
7.5.1. 5.8G SSC

Antenna 1

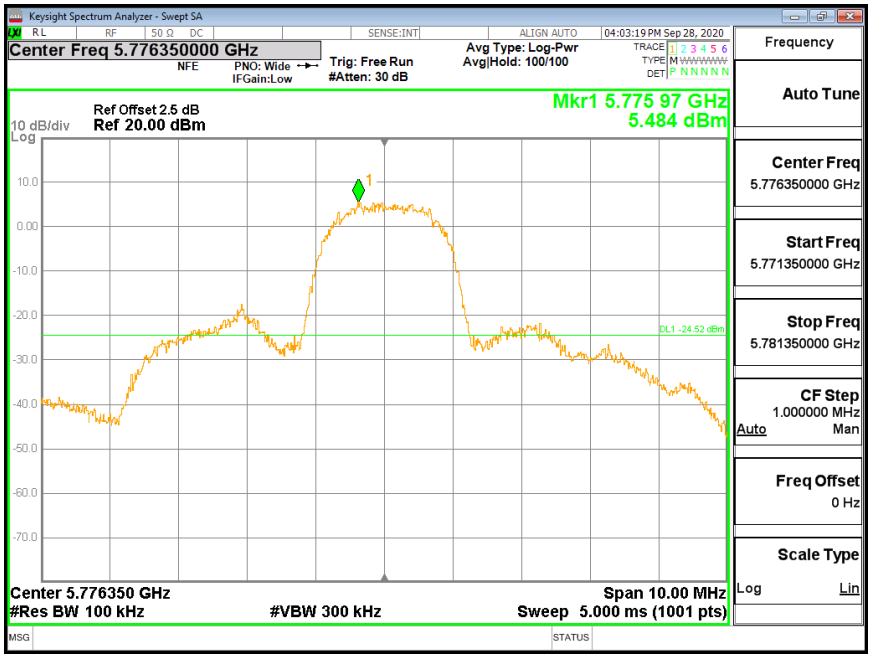
LOW CH BANDEDAGE



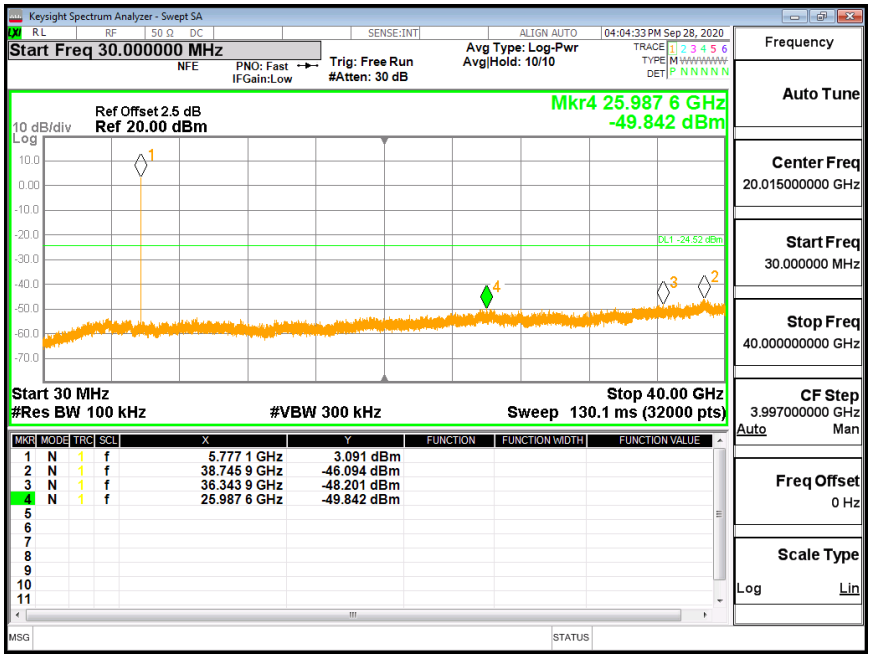
LOW CH SPURIOUS EMISSIONS 30M-26G



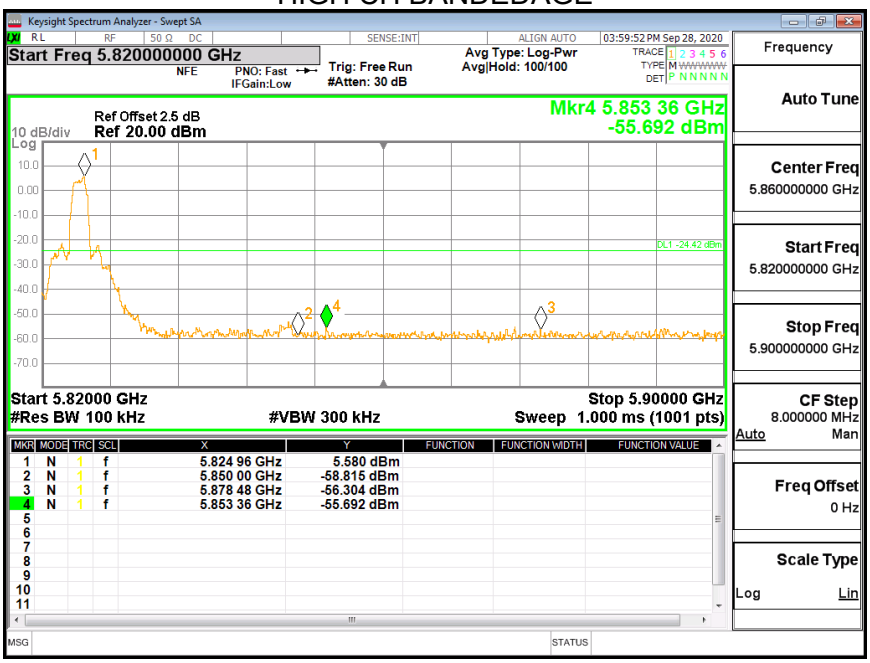
MID CH REFERENCE



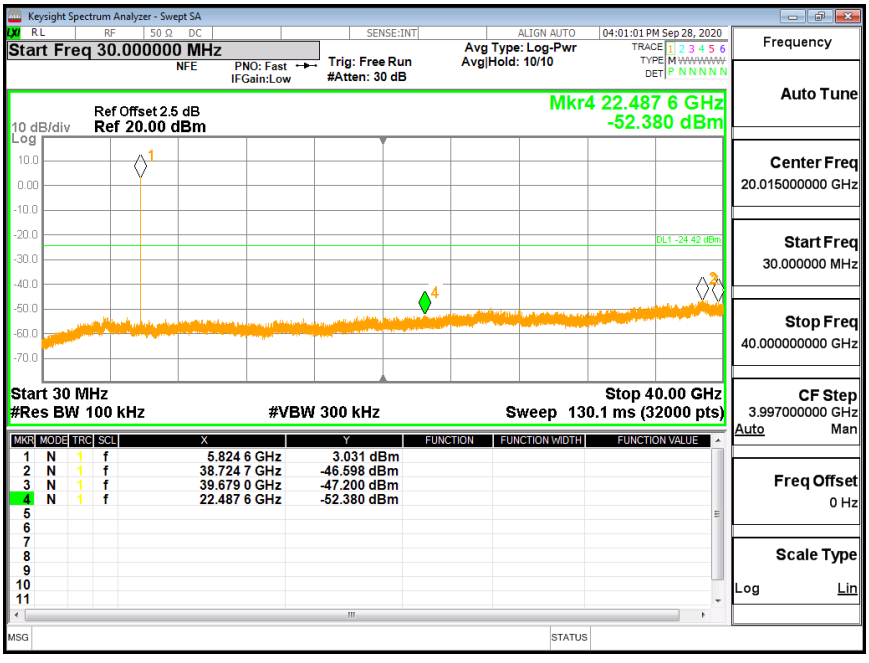
MID CH SPURIOUS EMISSIONS 30M-26G



HIGH CH BANDEDAGE



HIGH CH SPURIOUS EMISSIONS 30M-26G

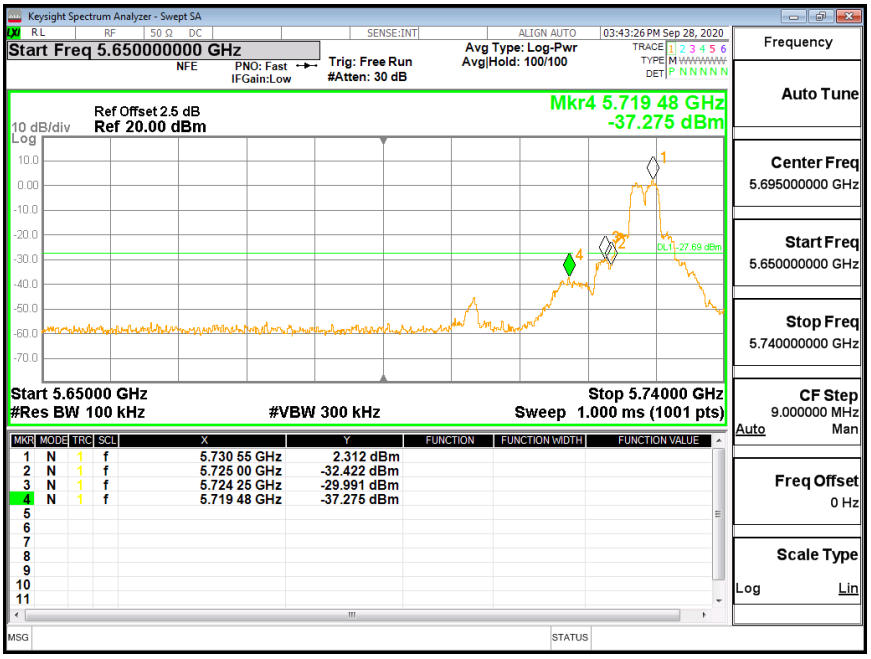


Note: All the modes and antennas had been tested, but only the worst data was recorded in the report.

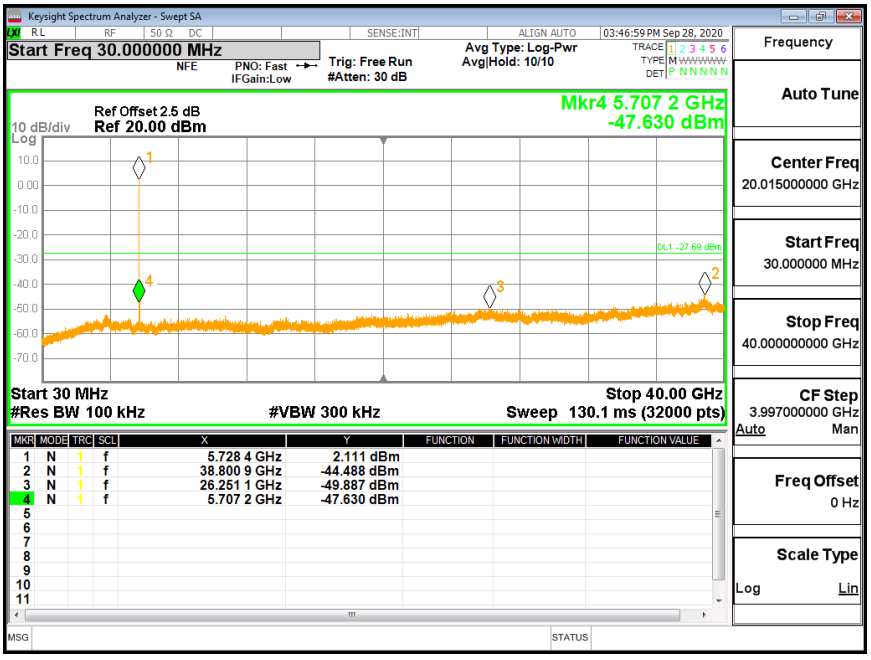
7.5.2. 5.8G DSC

Antenna 1

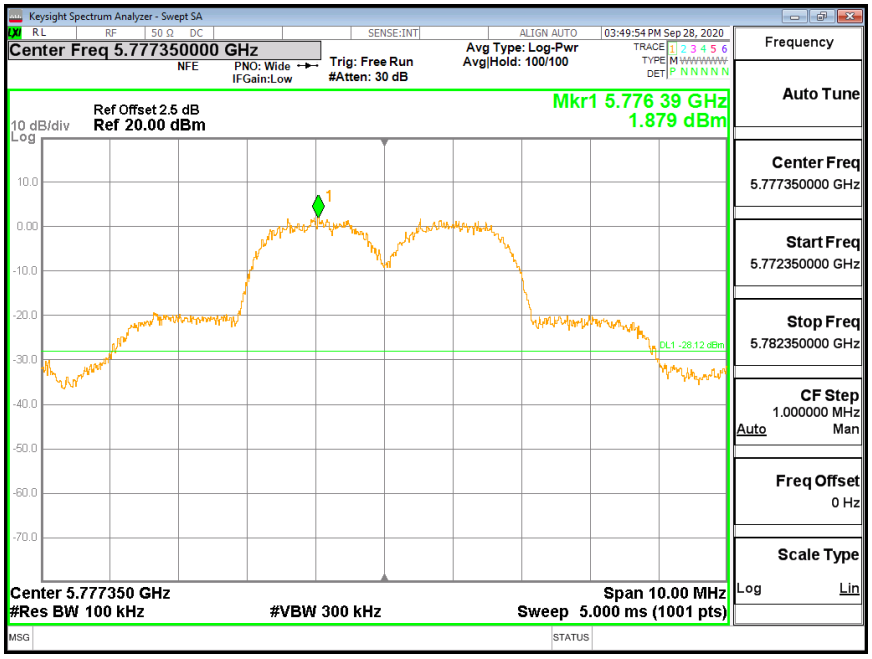
LOW CH BANDEDAGE



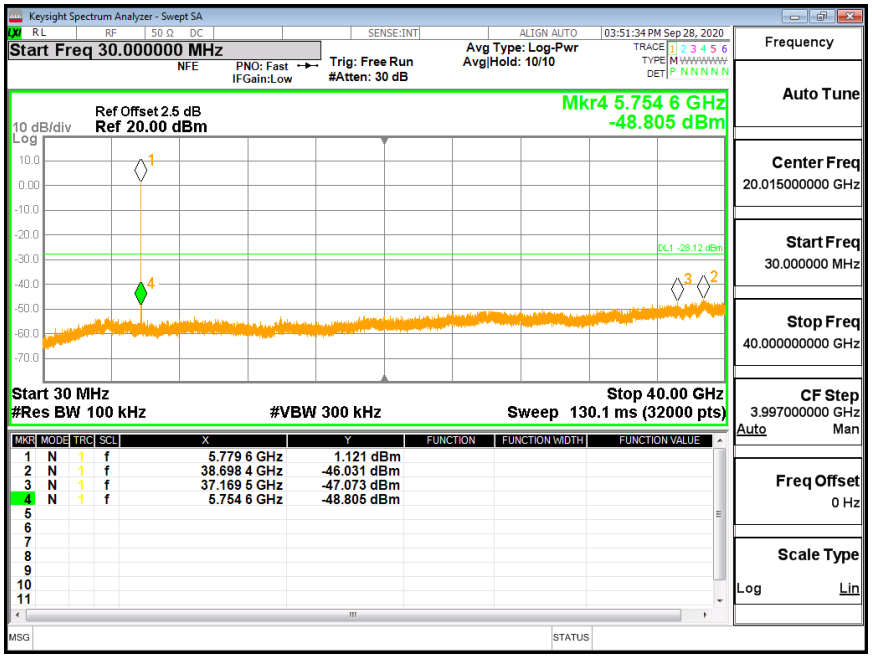
LOW CH SPURIOUS EMISSIONS 30M-26G



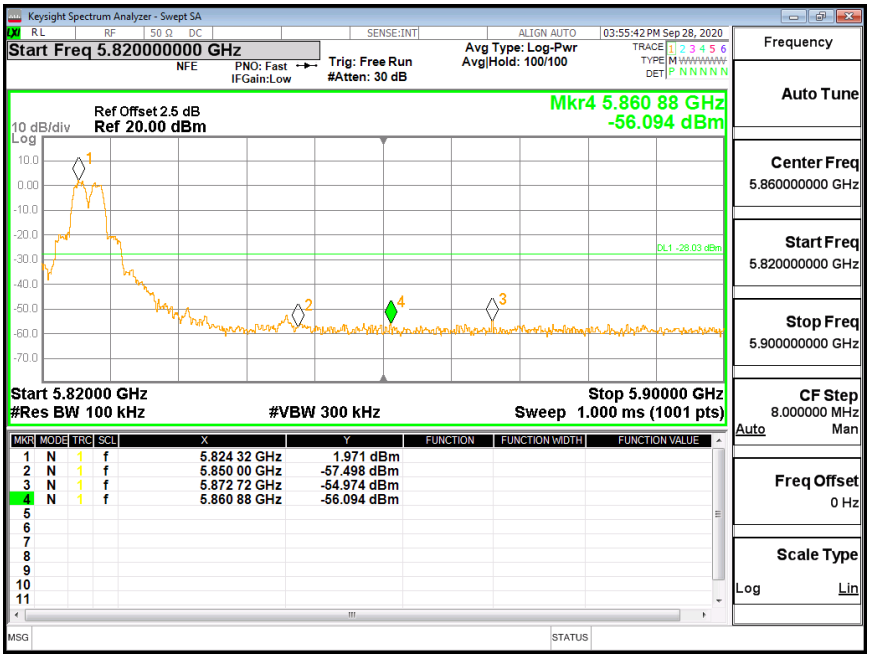
MID CH REFERENCE



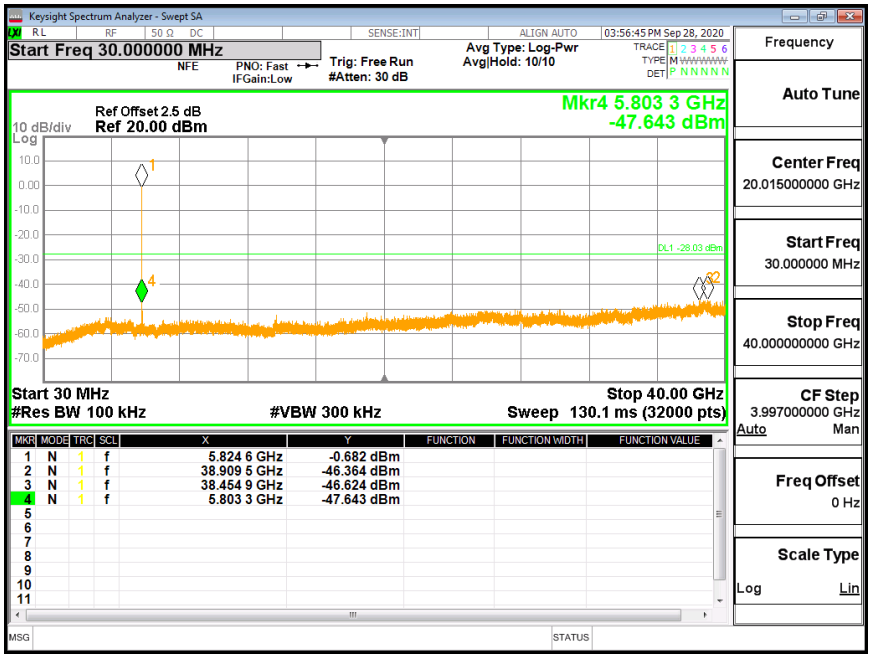
MID CH SPURIOUS EMISSIONS 30M-26G



HIGH CH BANDEDAGE



HIGH CH SPURIOUS EMISSIONS 30M-26G



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

8. RADIATED TEST RESULTS

LIMITS

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

Please refer to ISED RSS-GEN Clause 8.9 and Clause 8.10.

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

ISED General field strength limits at frequencies below 30 MHz

Table 6 – General field strength limits at frequencies below 30 MHz

Frequency	Magnetic field strength (H-Field) (µA/m)	Measurement distance (m)
9 - 490 kHz[Note 1]	6.37/F (F in kHz)	300
490 - 1705 kHz	63.7/F (F in kHz)	30
1.705 - 30 MHz	0.08	30

Note 1: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

ISED Restricted bands refer to ISED RSS-GEN Clause 8.10

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

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

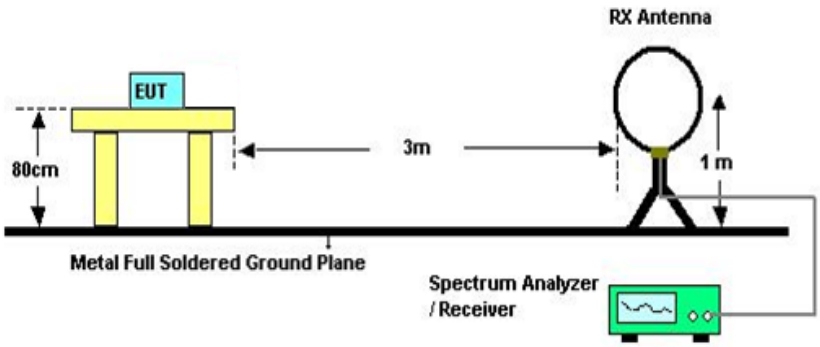
FCC Restricted bands of operation refer to FCC §15.205 (a):

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 30MHz



The setting of the spectrum analyser

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

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

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

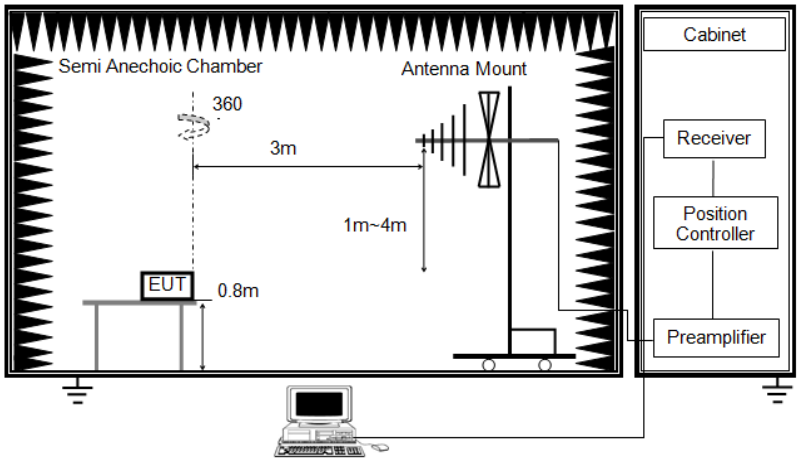
3. The EUT was placed on a turntable with 0.8 meter above ground.

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

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

6. 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.

Below 1G



The setting of the spectrum analyser

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

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

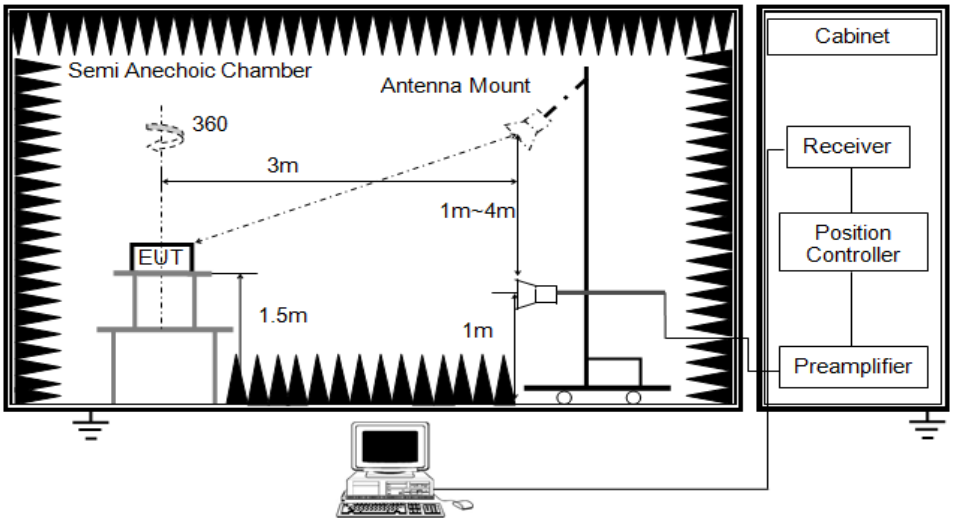
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations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

3. The EUT was placed on a turntable with 0.8 meter above ground.

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

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

Above 1G



The setting of the spectrum analyser

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

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

2. The EUT was arranged to its worst case and then tune the antenna tower (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.

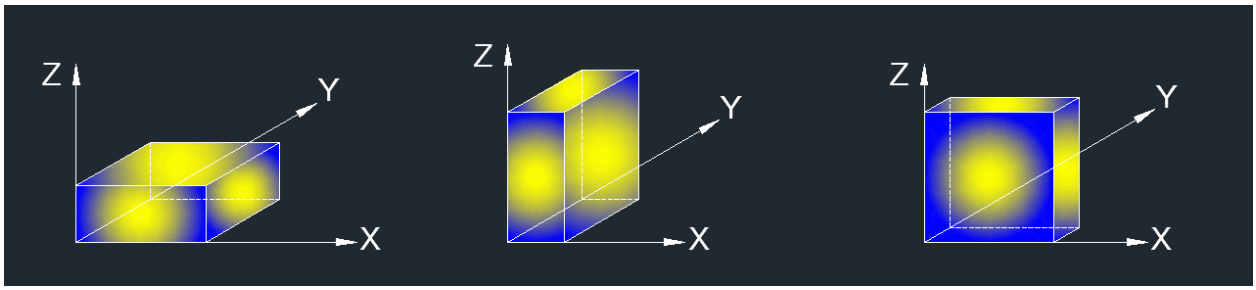
3. The EUT was placed on a turntable with 1.5m above ground.

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

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

6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements 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 (Y axis) data recorded in the report.

Note 2: The EUT was fully exercised with external accessories during the test. In the case of multiple accessory external ports, an external accessory shall be connected to one of each type of port.

Note 3: Simultaneous transmission had been evaluated with the WIFI& 5.8G wireless and BT& 5.8G wireless transmitter and there were no any additional or worse emissions found. Only the worst data was recorded in the test report.

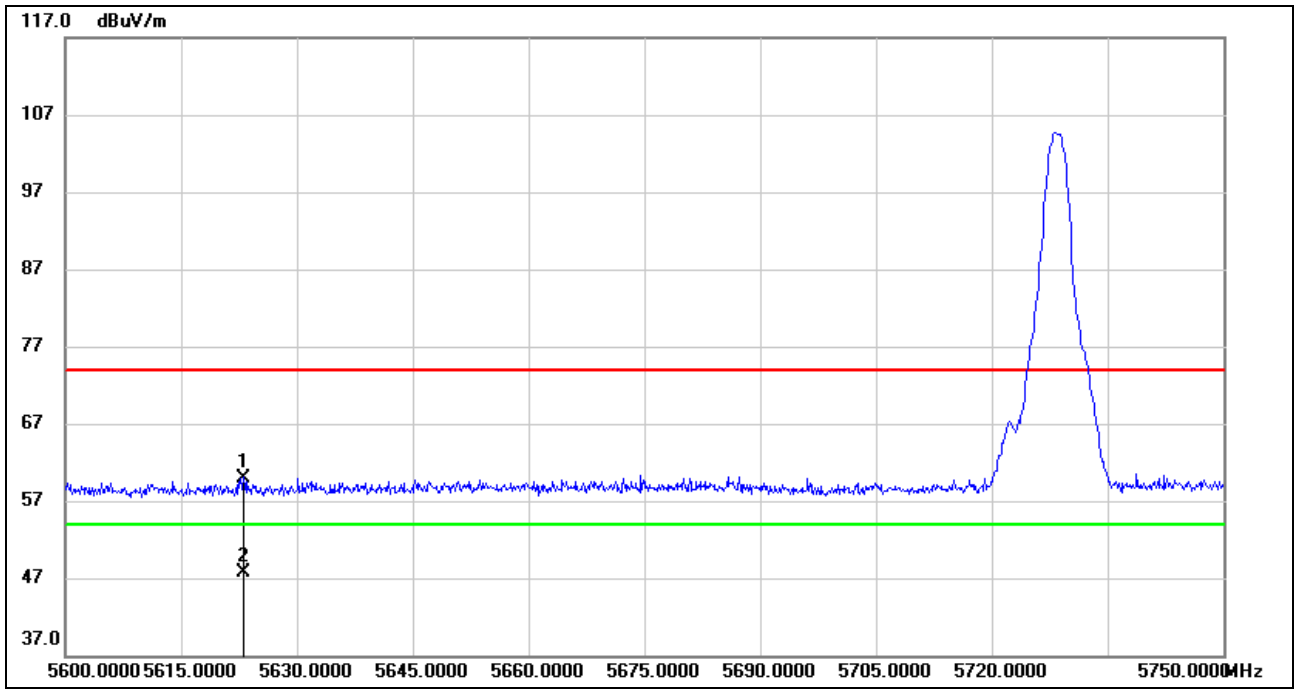
TEST ENVIRONMENT

Temperature	24.5°C	Relative Humidity	64.6%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V, 60Hz

8.1. 5.8G SSC TX MODE

RESTRICTED BANDEDGE LOW CHANNEL

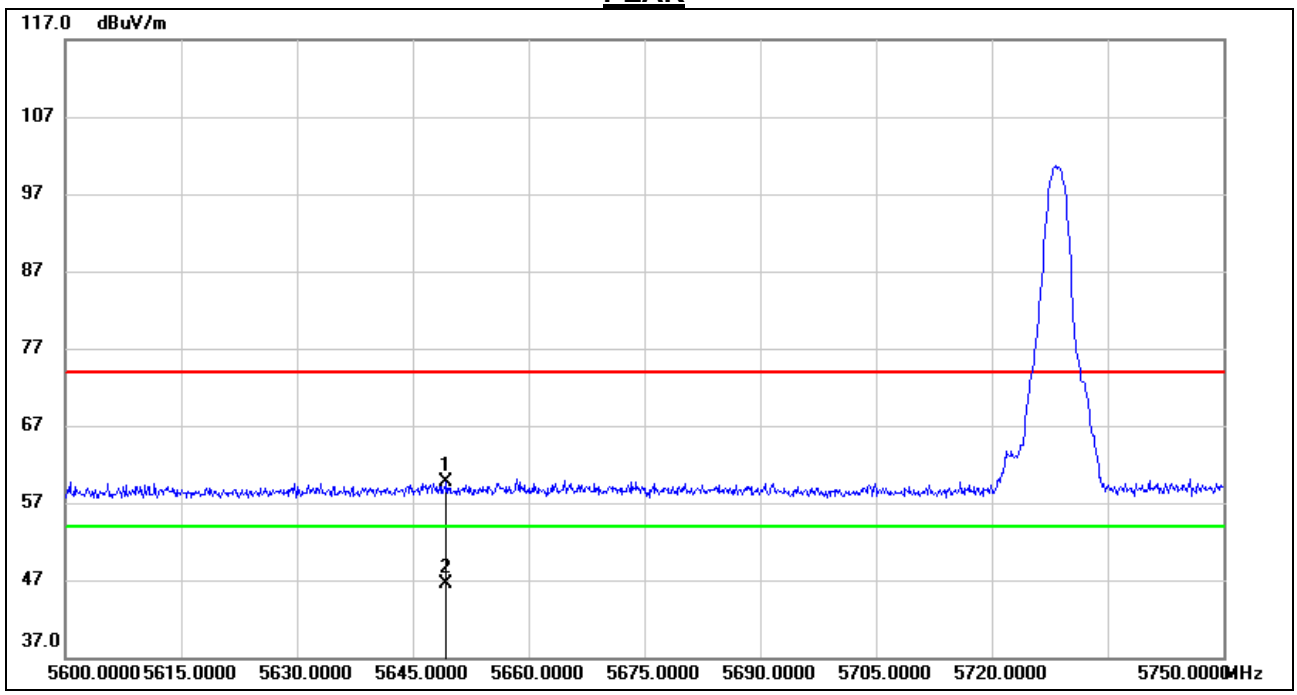
HORIZONTAL RESULTS
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	5623.100	18.53	41.47	60.00	/	/	peak
2*	5623.100	6.28	41.47	47.75	/	/	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. * indicates frequency out of Restricted Band
3. The restricted frequency band is far away from the main frequency, So only the worst case data of the main frequency edge was recorded in the report.

VERTICAL RESULTS
PEAK

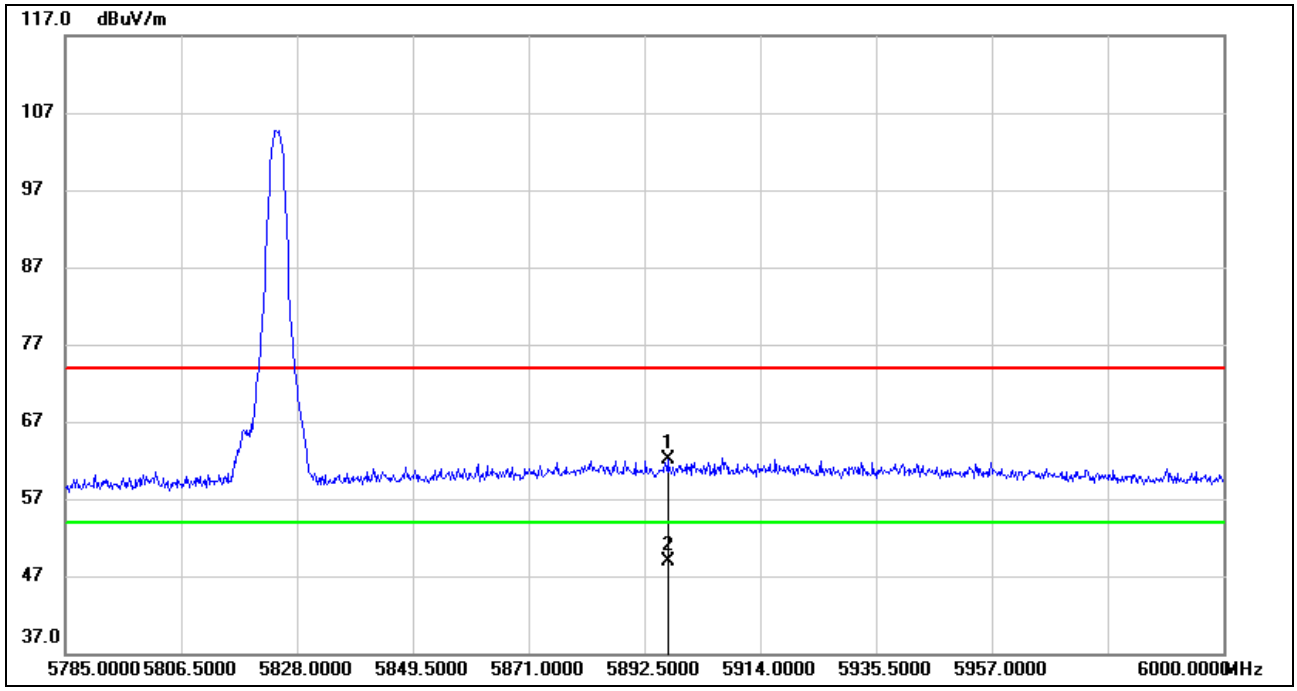


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	5649.350	18.18	41.48	59.66	/	/	peak
2*	5649.350	5.08	41.48	46.56	/	/	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. * indicates frequency out of Restricted Band
3. The restricted frequency band is far away from the main frequency, So only the worst case data of the main frequency edge was recorded in the report.

RESTRICTED BANDEDGE HIGH CHANNEL

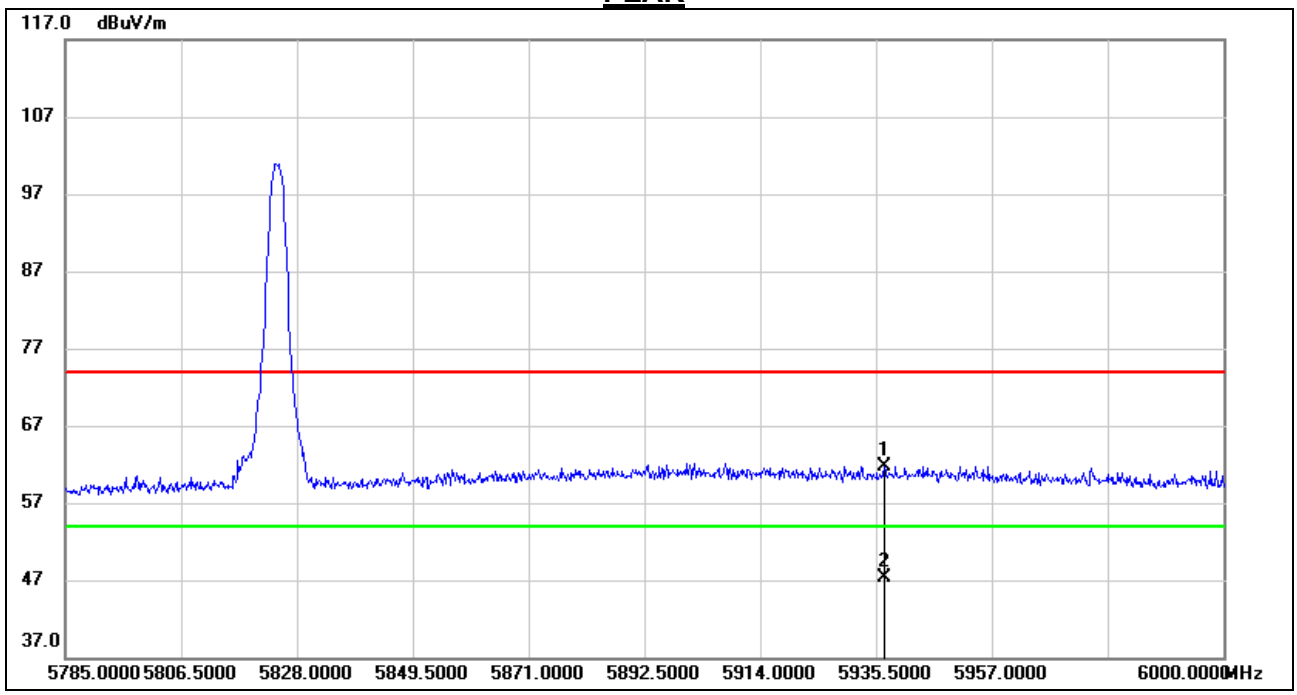
HORIZONTAL RESULTS
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	5896.800	18.34	43.79	62.13	/	/	peak
2*	5896.800	5.11	43.79	48.90	/	/	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. * indicates frequency out of Restricted Band
3. The restricted frequency band is far away from the main frequency, So only the worst case data of the main frequency edge was recorded in the report.

VERTICAL RESULTS
PEAK

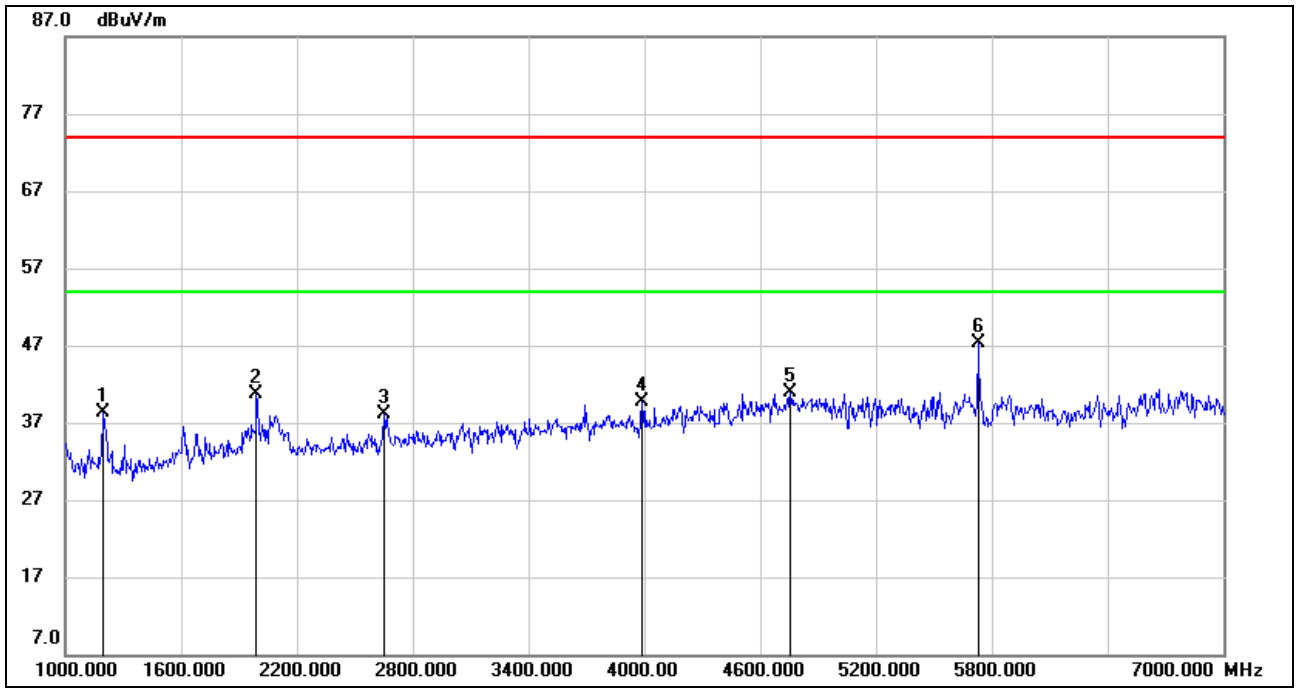


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	5896.800	18.34	43.79	62.13	/	/	peak
2*	5896.800	5.11	43.79	48.90	/	/	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. * indicates frequency out of Restricted Band
3. The restricted frequency band is far away from the main frequency, So only the worst case data of the main frequency edge was recorded in the report.

HARMONICS AND SPURIOUS EMISSIONS LOW CHANNEL

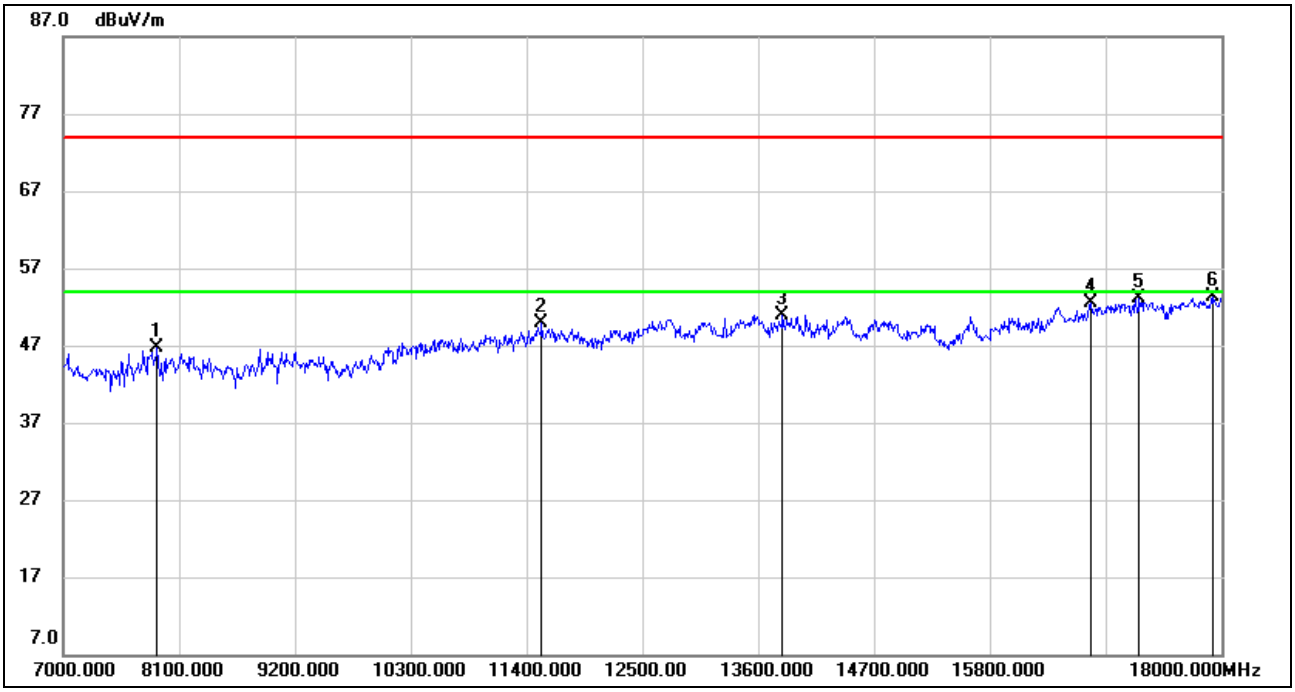
HORIZONTAL RESULTS
1-7GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1198.000	51.31	-13.08	38.23	74.00	-35.77	peak
2	1990.000	51.03	-10.24	40.79	74.00	-33.21	peak
3	2650.000	46.05	-7.87	38.18	74.00	-35.82	peak
4	3988.000	43.36	-3.72	39.64	74.00	-34.36	peak
5	4756.000	40.61	0.26	40.87	74.00	-33.13	peak
6	5727.000	45.42	1.97	47.39	74.00	-26.61	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.

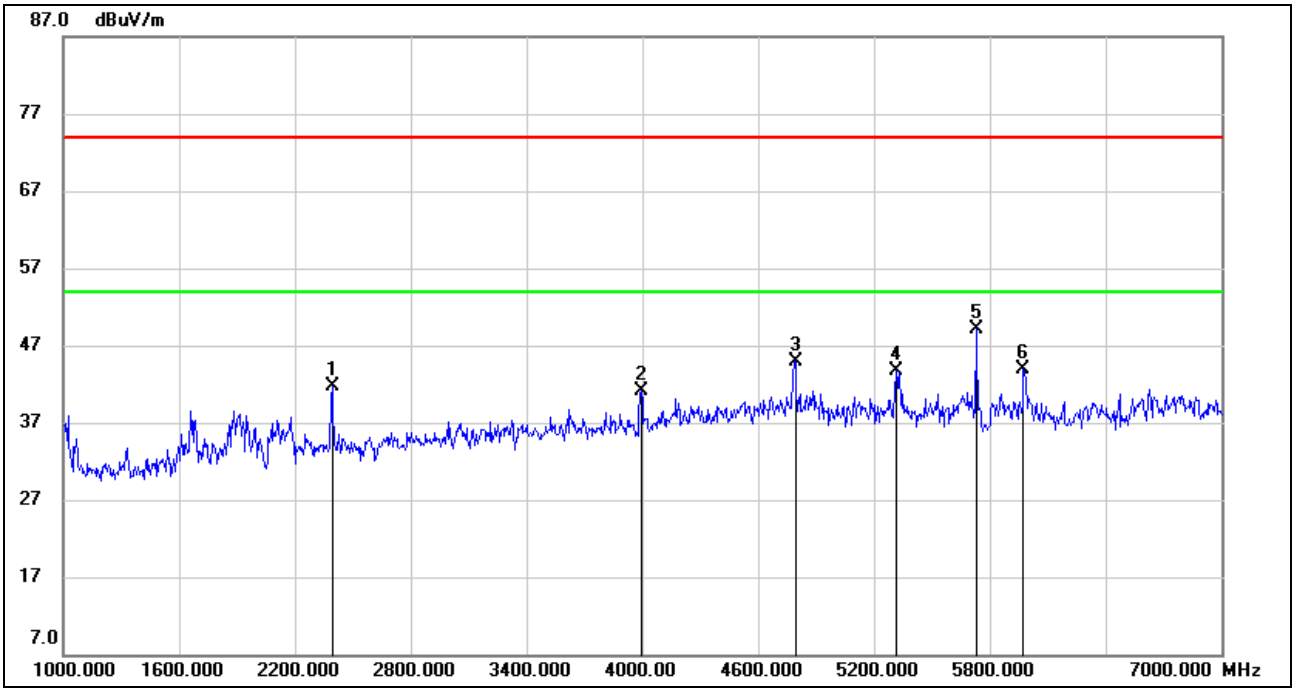
HORIZONTAL RESULTS
7-18GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7891.000	38.96	7.66	46.62	74.00	-27.38	peak
2	11543.000	36.44	13.44	49.88	74.00	-24.12	peak
3	13831.000	34.15	16.79	50.94	74.00	-23.06	peak
4	16757.000	32.33	20.13	52.46	74.00	-21.54	peak
5	17219.000	31.74	21.34	53.08	74.00	-20.92	peak
6	17912.000	29.92	23.42	53.34	74.00	-20.66	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 High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

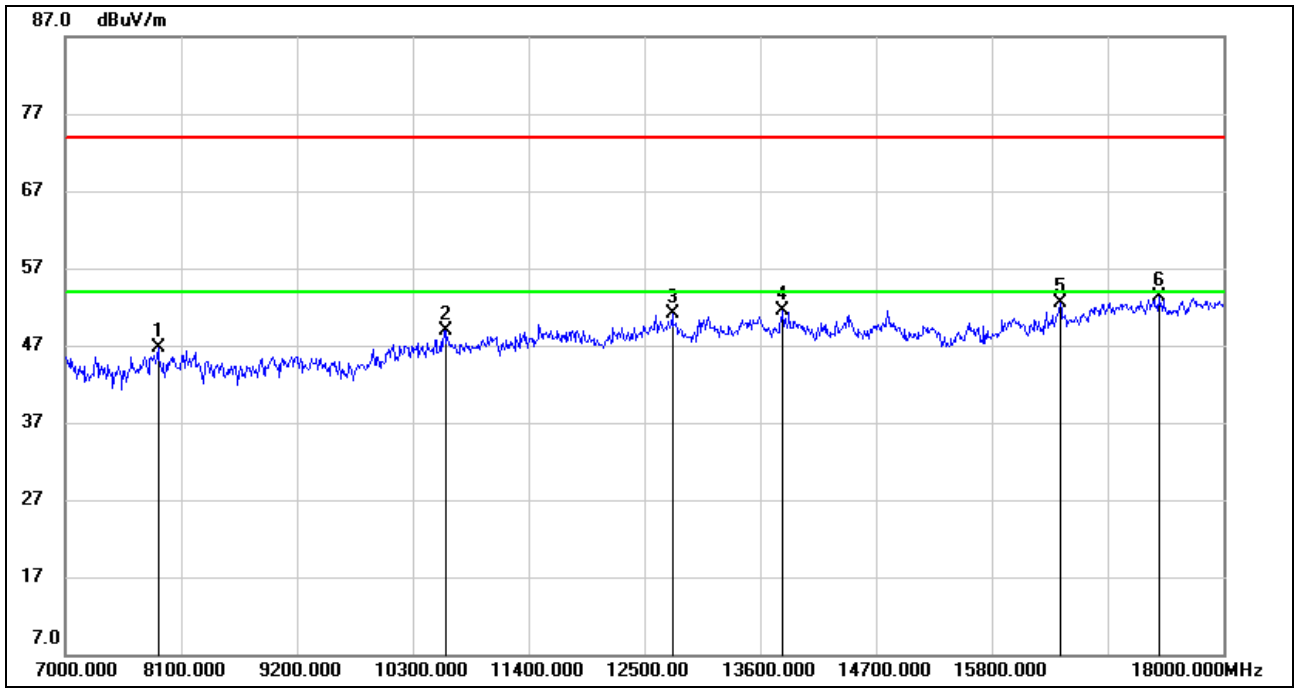
VERTICAL RESULTS
1-7GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2392.000	50.43	-8.63	41.80	74.00	-32.20	peak
2	3994.000	44.92	-3.73	41.19	74.00	-32.81	peak
3	4792.000	44.47	0.47	44.94	74.00	-29.06	peak
4	5314.000	41.88	1.73	43.61	74.00	-30.39	peak
5	5727.000	47.09	1.97	49.06	74.00	-24.94	peak
6	5974.000	41.38	2.53	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.

7-18GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7880.000	38.97	7.72	46.69	74.00	-27.31	peak
2	10608.000	36.60	12.39	48.99	74.00	-25.01	peak
3	12764.000	35.54	15.54	51.08	74.00	-22.92	peak
4	13809.000	34.45	16.99	51.44	74.00	-22.56	peak
5	16449.000	33.08	19.45	52.53	74.00	-21.47	peak
6	17384.000	31.75	21.60	53.35	74.00	-20.65	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.

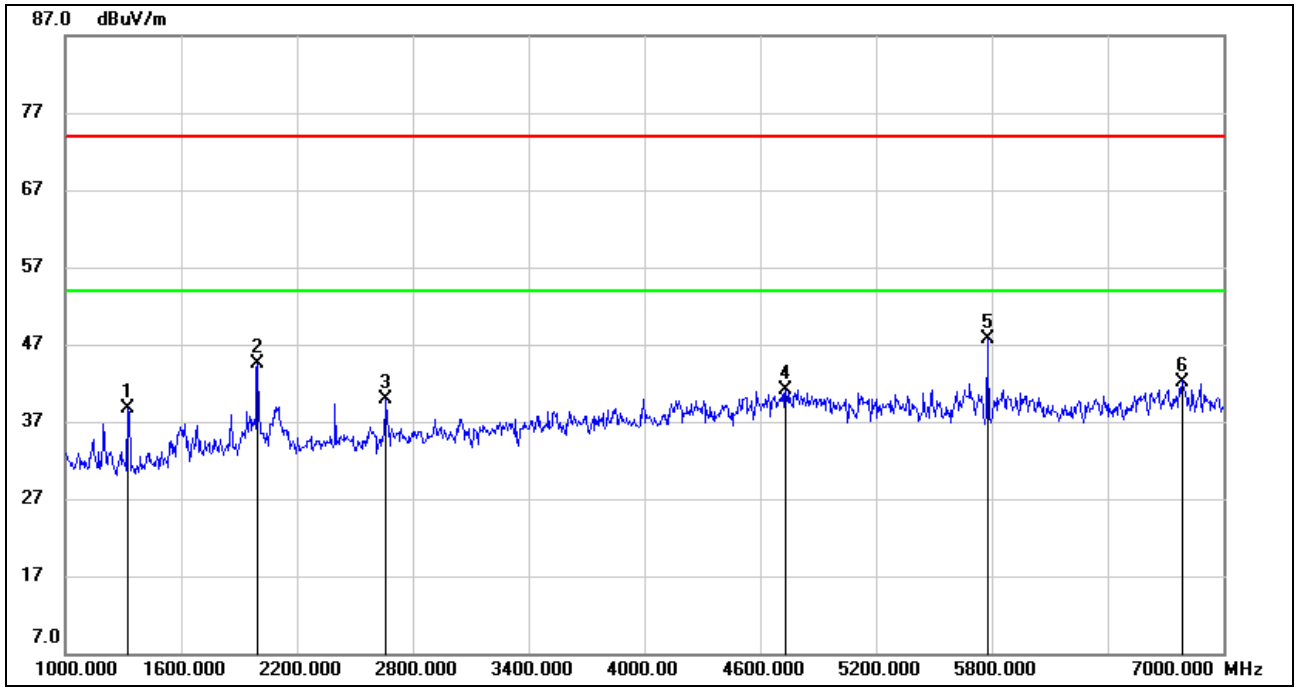
3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS MID CHANNEL

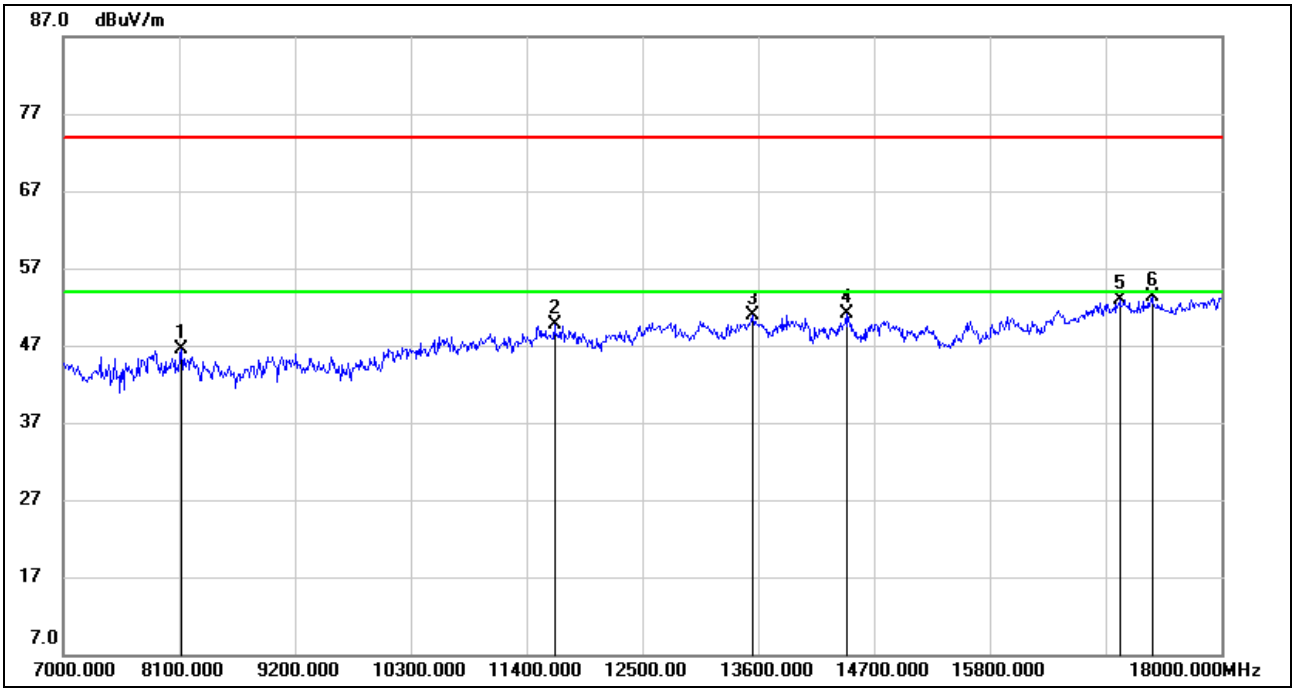
HORIZONTAL RESULTS
1-7GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1324.000	51.61	-12.89	38.72	74.00	-35.28	peak
2	1996.000	54.73	-10.24	44.49	74.00	-29.51	peak
3	2662.000	47.70	-7.80	39.90	74.00	-34.10	peak
4	4732.000	41.05	0.12	41.17	74.00	-32.83	peak
5	5775.000	45.76	1.95	47.71	74.00	-26.29	peak
6	6784.000	37.76	4.44	42.20	74.00	-31.80	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.

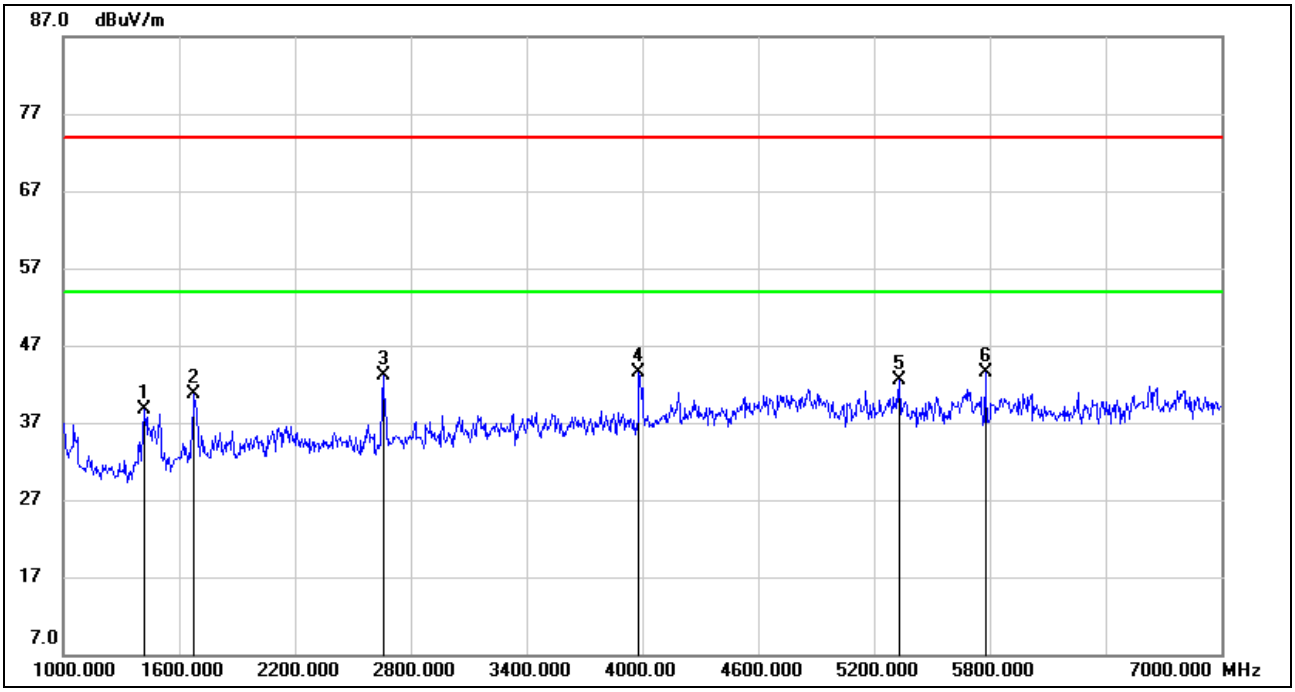
HORIZONTAL RESULTS
7-18GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8122.000	38.23	8.29	46.52	74.00	-27.48	peak
2	11664.000	36.41	13.22	49.63	74.00	-24.37	peak
3	13545.000	34.83	15.98	50.81	74.00	-23.19	peak
4	14436.000	34.56	16.64	51.20	74.00	-22.80	peak
5	17032.000	32.15	20.72	52.87	74.00	-21.13	peak
6	17340.000	31.52	21.74	53.26	74.00	-20.74	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 High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

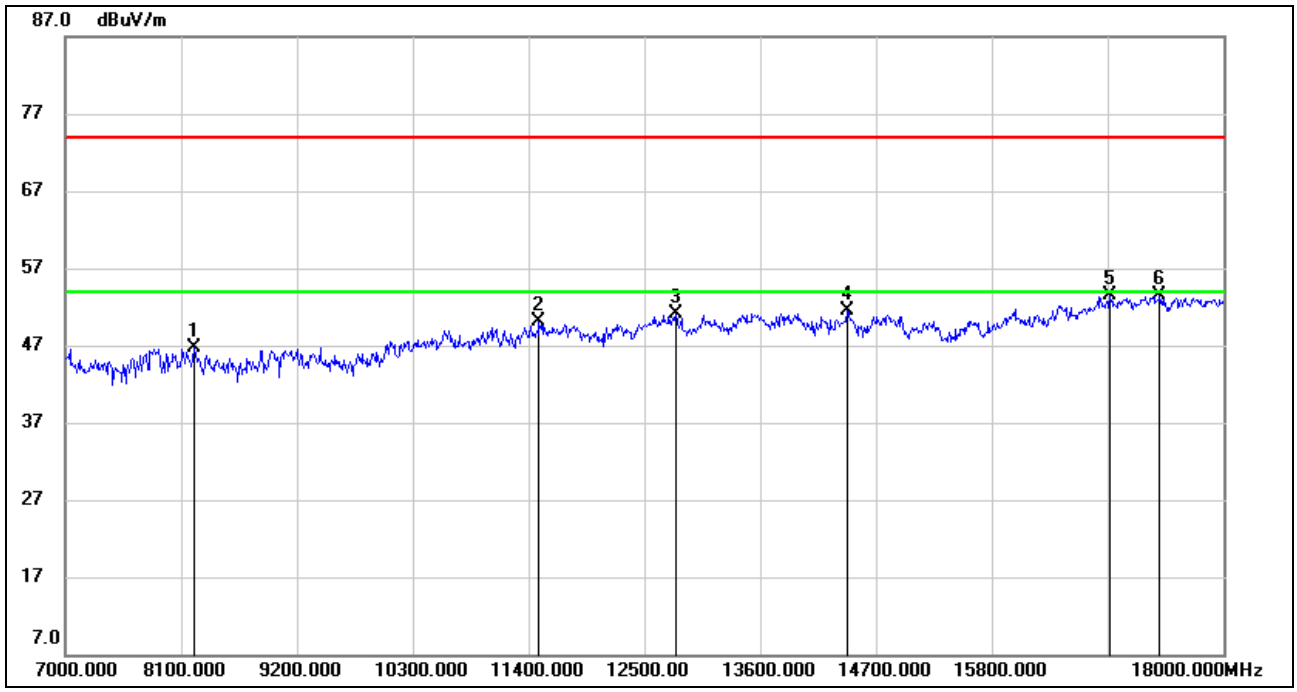
VERTICAL RESULTS
1-7GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1420.000	51.35	-12.68	38.67	74.00	-35.33	peak
2	1678.000	51.73	-11.02	40.71	74.00	-33.29	peak
3	2656.000	50.97	-7.83	43.14	74.00	-30.86	peak
4	3982.000	47.15	-3.71	43.44	74.00	-30.56	peak
5	5332.000	40.73	1.69	42.42	74.00	-31.58	peak
6	5775.000	41.54	1.95	43.49	74.00	-30.51	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.

7-18GHz

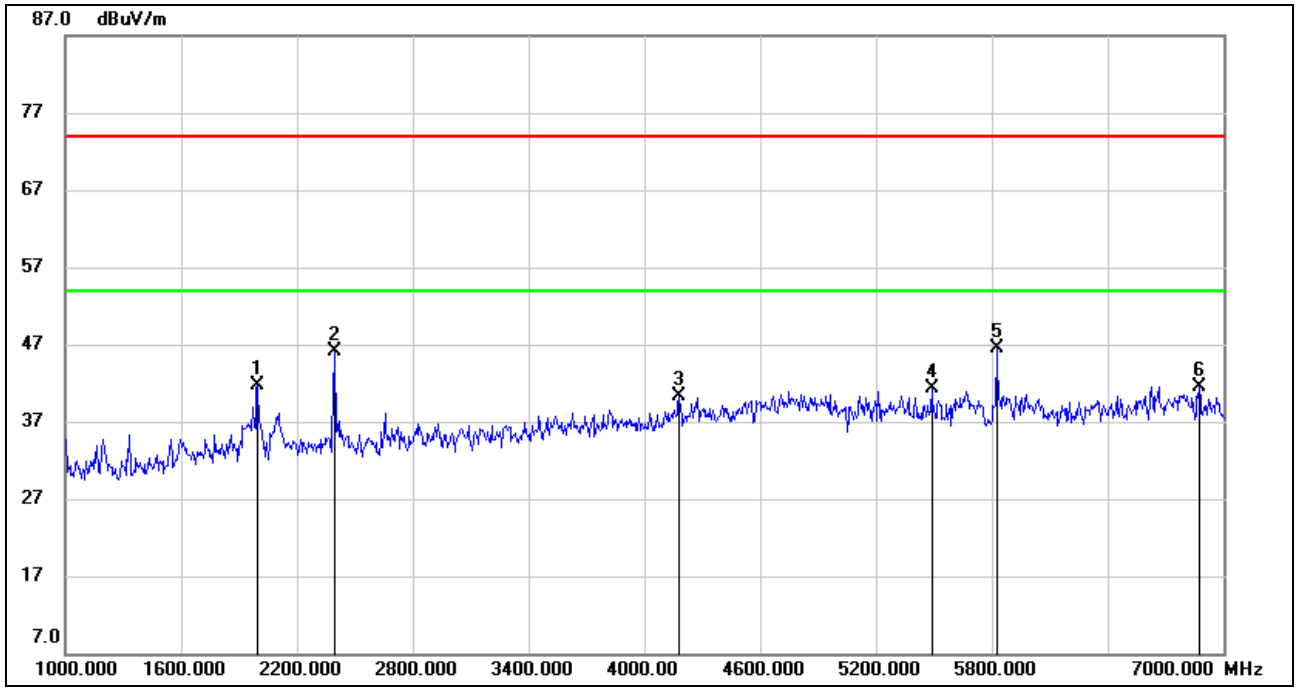


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8221.000	38.05	8.59	46.64	74.00	-27.36	peak
2	11499.000	36.72	13.35	50.07	74.00	-23.93	peak
3	12797.000	34.96	16.12	51.08	74.00	-22.92	peak
4	14425.000	34.78	16.65	51.43	74.00	-22.57	peak
5	16922.000	33.25	20.22	53.47	74.00	-20.53	peak
6	17395.000	31.93	21.55	53.48	74.00	-20.52	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 High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS HIGH CHANNEL

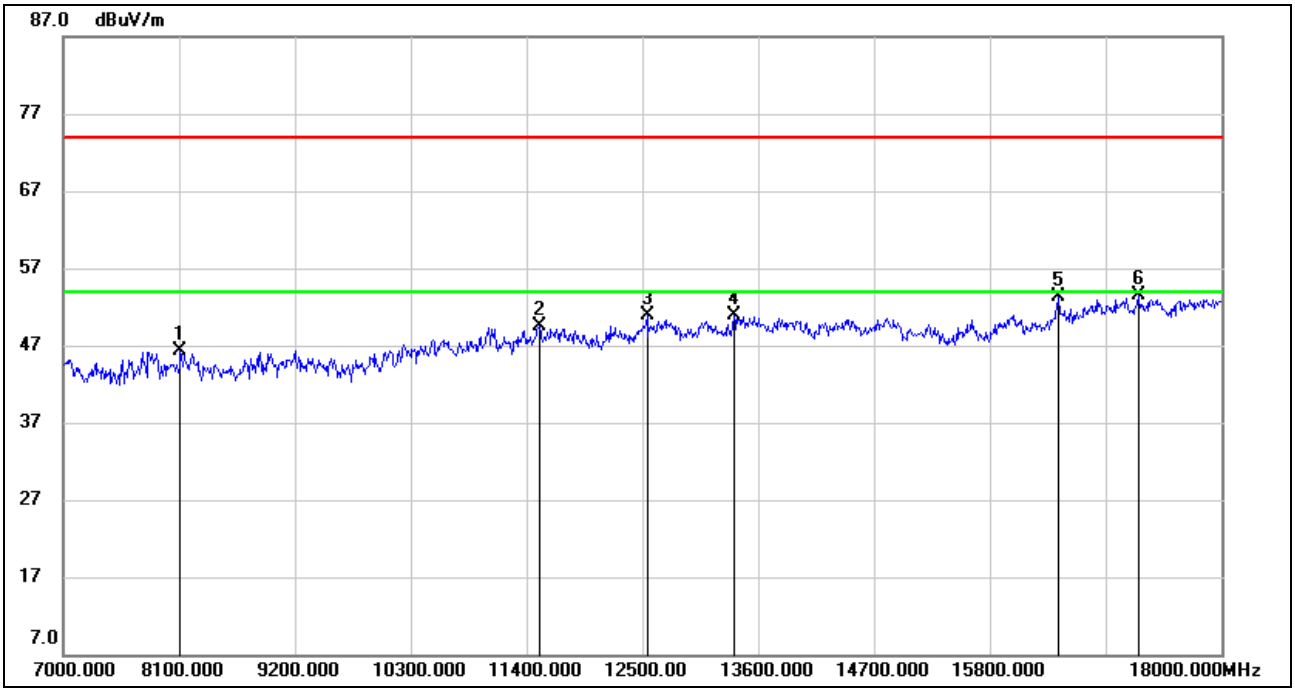
HORIZONTAL RESULTS
1-7GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1996.000	51.92	-10.24	41.68	74.00	-32.32	peak
2	2398.000	54.77	-8.62	46.15	74.00	-27.85	peak
3	4180.000	42.26	-1.98	40.28	74.00	-33.72	peak
4	5488.000	39.50	1.77	41.27	74.00	-32.73	peak
5	5823.000	44.57	2.03	46.60	74.00	-27.40	peak
6	6874.000	36.89	4.61	41.50	74.00	-32.50	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.

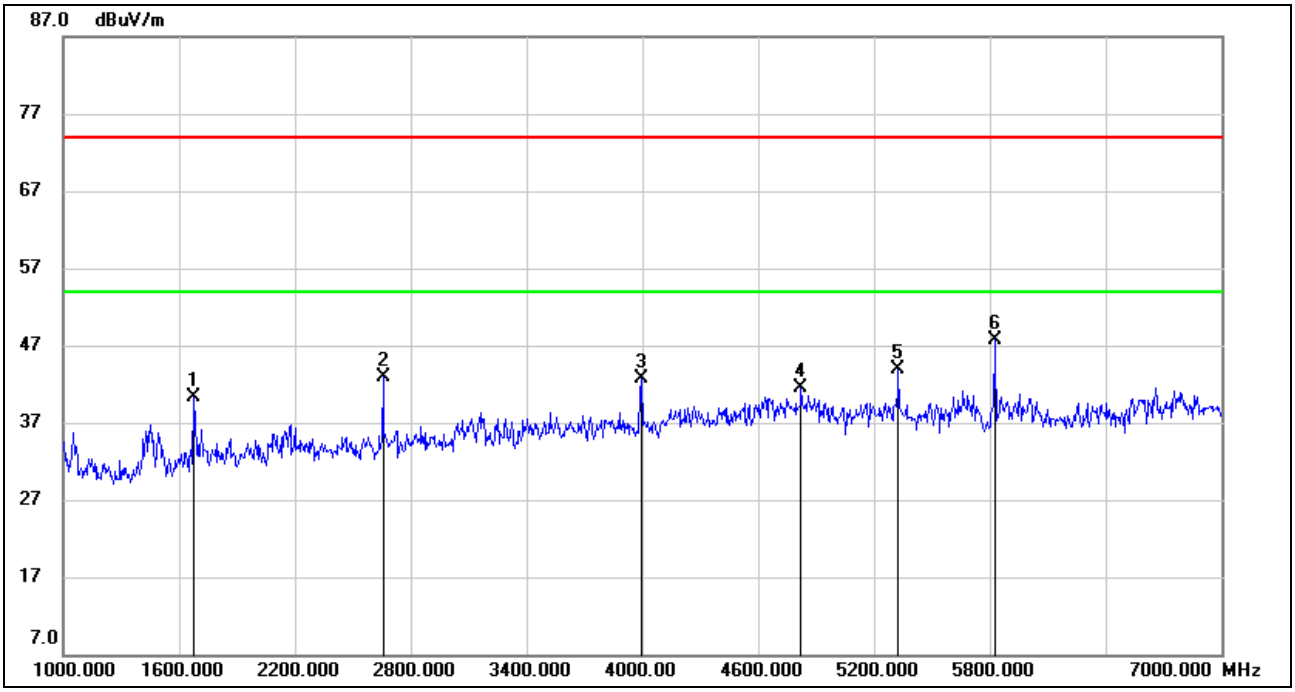
HORIZONTAL RESULTS
7-18GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8111.000	38.15	8.21	46.36	74.00	-27.64	peak
2	11521.000	36.17	13.40	49.57	74.00	-24.43	peak
3	12544.000	36.30	14.57	50.87	74.00	-23.13	peak
4	13369.000	34.74	16.07	50.81	74.00	-23.19	peak
5	16449.000	33.90	19.45	53.35	74.00	-20.65	peak
6	17208.000	32.34	21.26	53.60	74.00	-20.40	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 High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

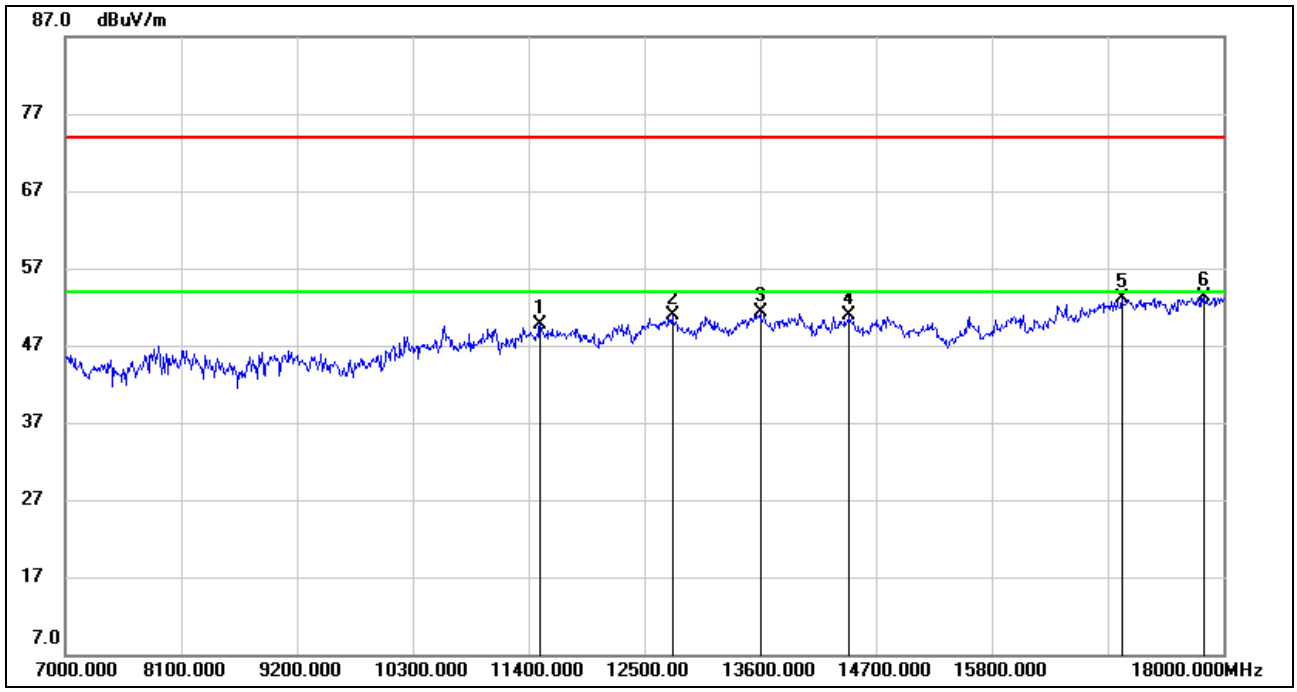
VERTICAL RESULTS
1-7GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1672.000	51.42	-11.08	40.34	74.00	-33.66	peak
2	2656.000	50.72	-7.83	42.89	74.00	-31.11	peak
3	3994.000	46.42	-3.73	42.69	74.00	-31.31	peak
4	4822.000	41.02	0.56	41.58	74.00	-32.42	peak
5	5326.000	42.26	1.70	43.96	74.00	-30.04	peak
6	5823.000	45.59	2.03	47.62	74.00	-26.38	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.

7-18GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11510.000	36.29	13.39	49.68	74.00	-24.32	peak
2	12764.000	35.29	15.54	50.83	74.00	-23.17	peak
3	13600.000	35.18	16.10	51.28	74.00	-22.72	peak
4	14447.000	34.36	16.63	50.99	74.00	-23.01	peak
5	17032.000	32.40	20.72	53.12	74.00	-20.88	peak
6	17813.000	29.98	23.41	53.39	74.00	-20.61	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.

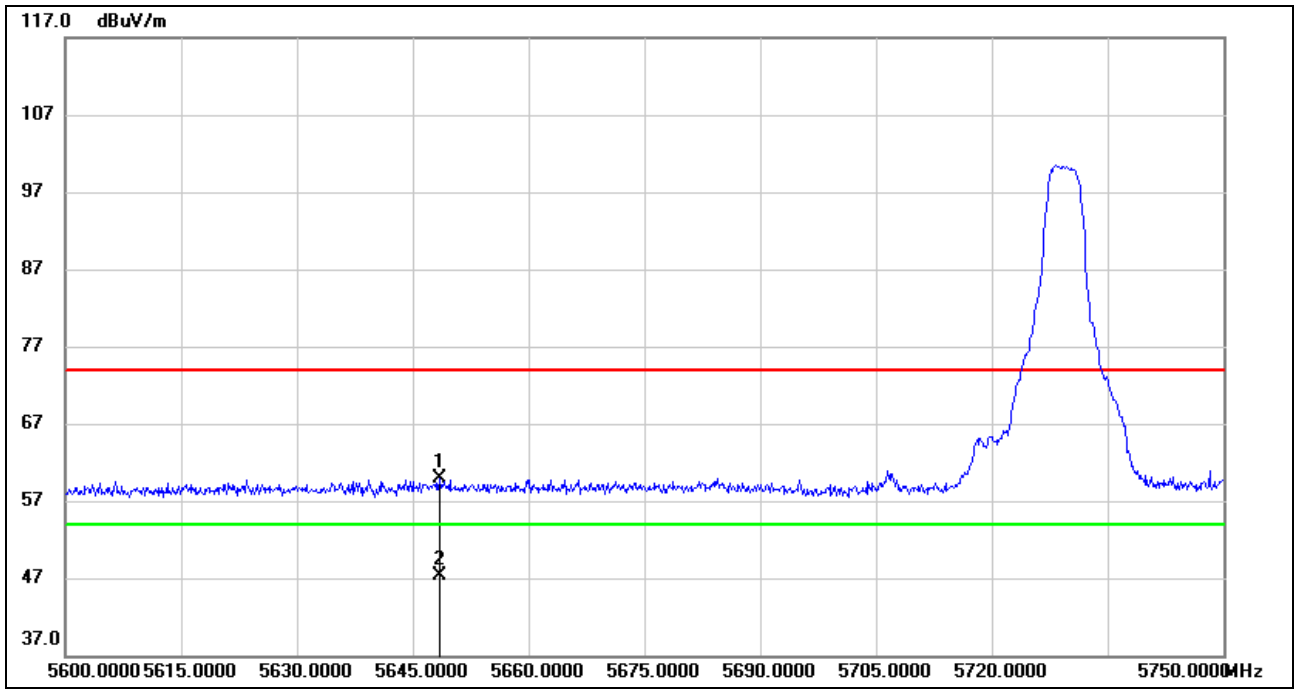
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

8.2. 5.8G DSC TX MODE

RESTRICTED BANDEDGE LOW CHANNEL

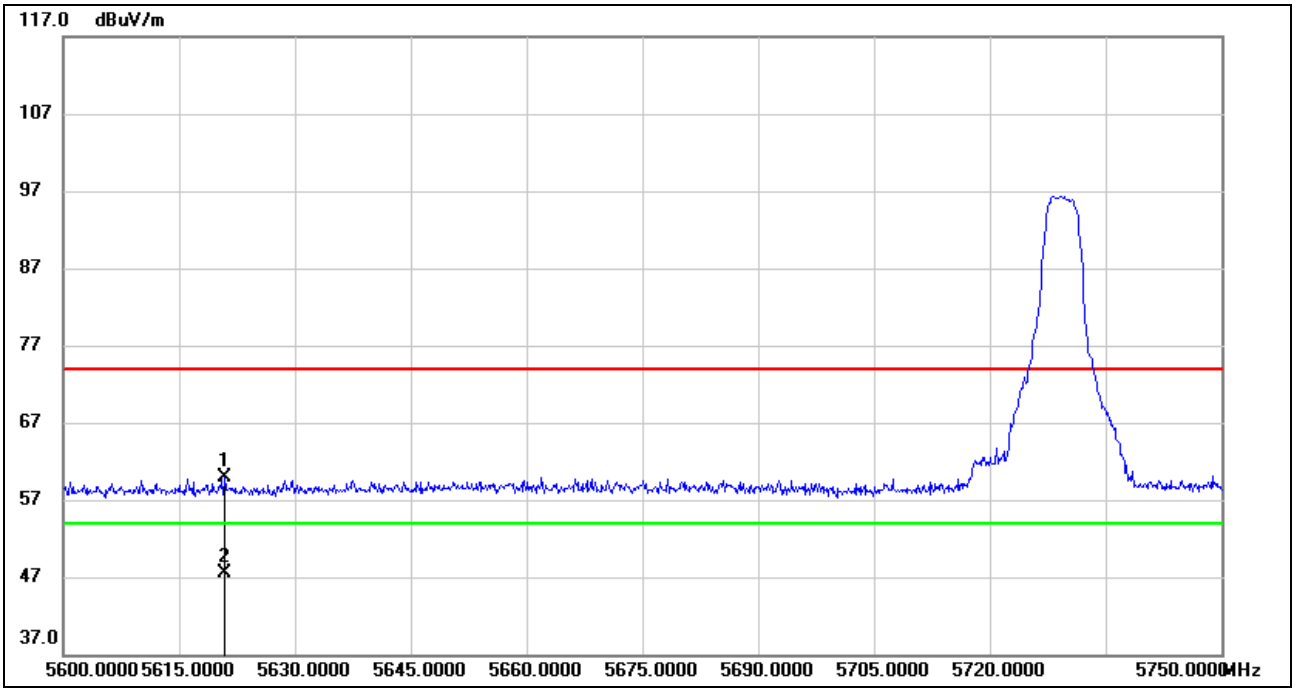
HORIZONTAL RESULTS
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	5648.450	18.42	41.48	59.90	/	/	peak
2*	5648.450	5.88	41.48	47.36	/	/	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. * indicates frequency out of Restricted Band
3. The restricted frequency band is far away from the main frequency, So only the worst case data of the main frequency edge was recorded in the report.

VERTICAL RESULTS
PEAK

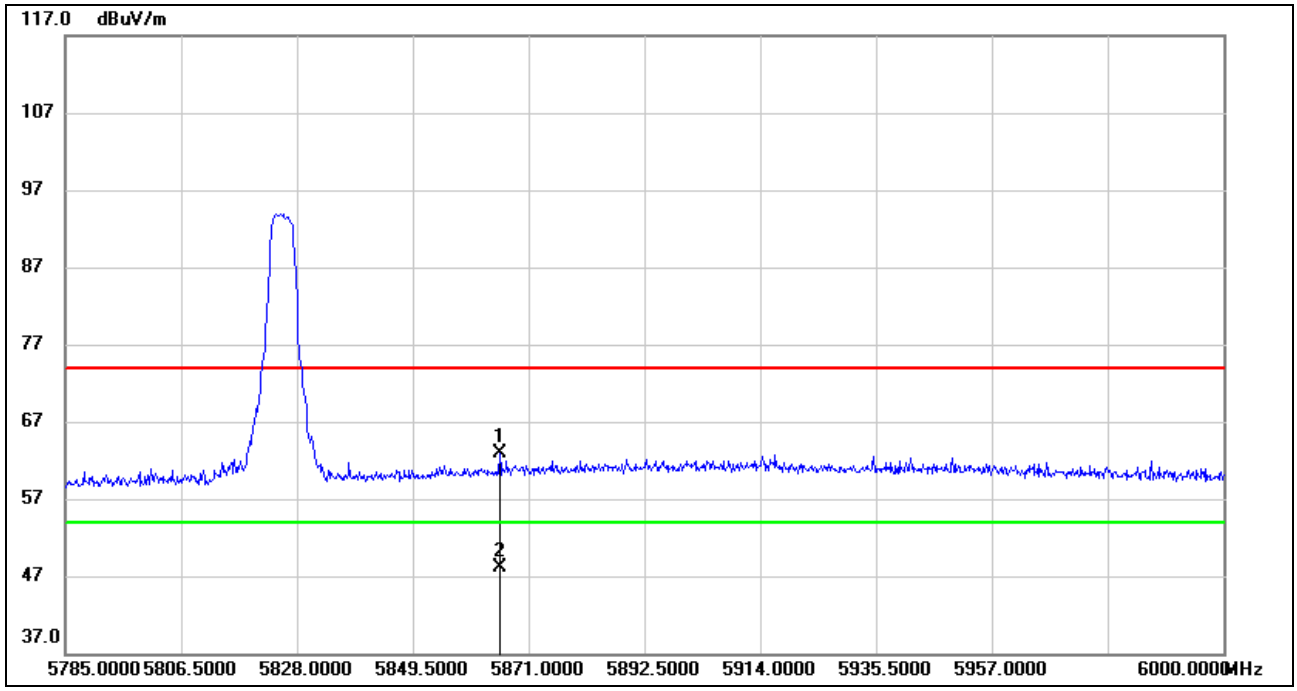


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	5620.850	18.49	41.46	59.95	/	/	peak
2*	5620.850	6.01	41.46	47.47	/	/	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. * indicates frequency out of Restricted Band
3. The restricted frequency band is far away from the main frequency, So only the worst case data of the main frequency edge was recorded in the report.

RESTRICTED BANDEDGE HIGH CHANNEL

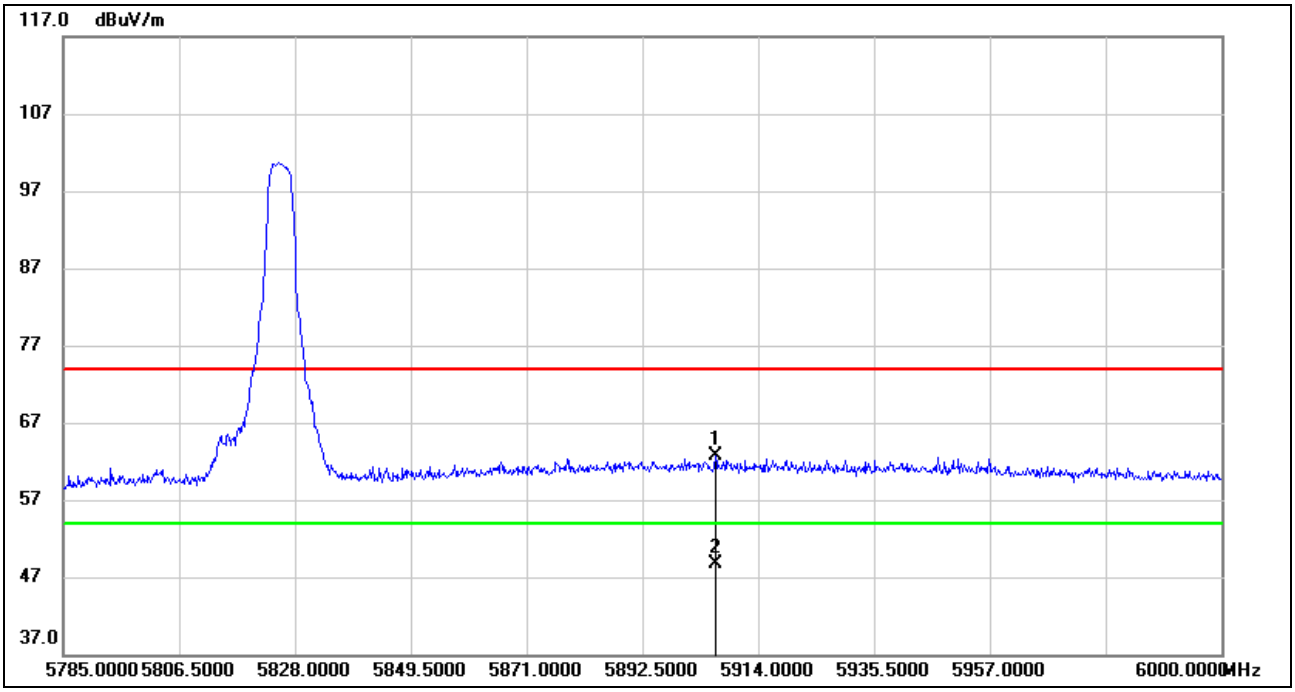
HORIZONTAL RESULTS
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	5865.625	19.67	43.19	62.86	/	/	peak
2*	5865.625	4.87	43.19	48.06	/	/	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. * indicates frequency out of Restricted Band
3. The restricted frequency band is far away from the main frequency, So only the worst case data of the main frequency edge was recorded in the report.

VERTICAL RESULTS
PEAK

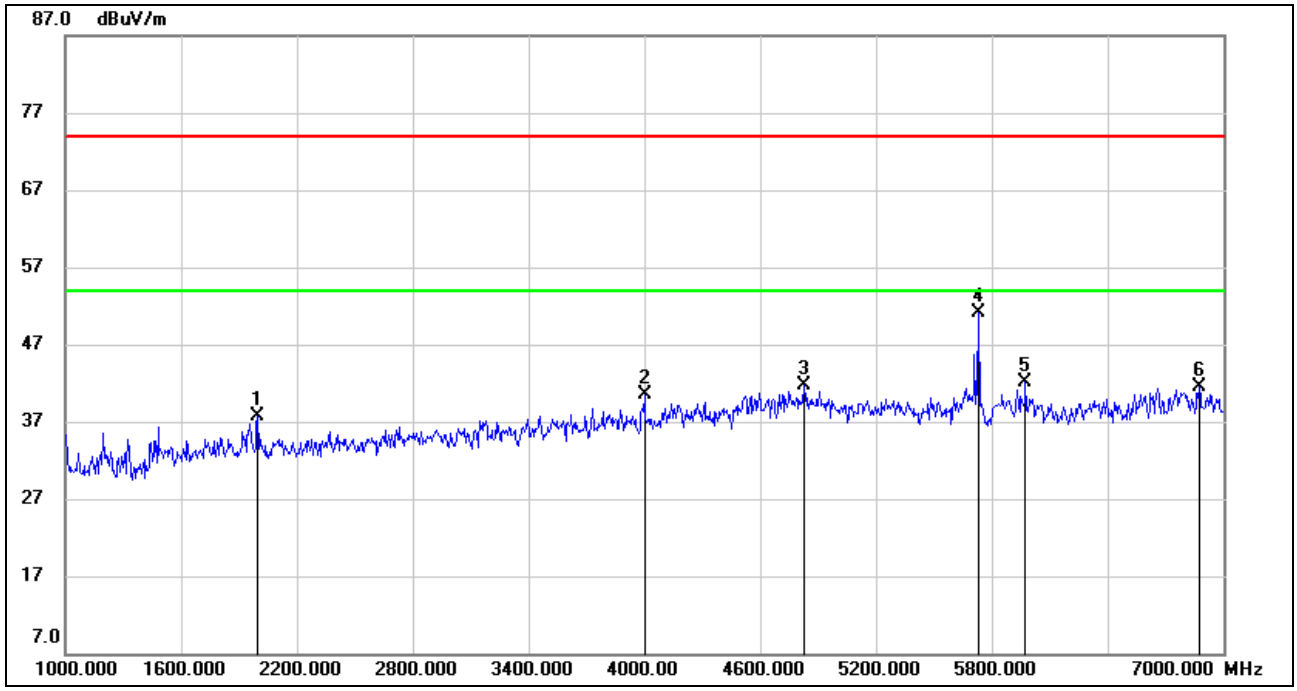


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	5906.045	18.91	43.75	62.66	/	/	peak
2*	5906.045	4.97	43.75	48.72	/	/	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. * indicates frequency out of Restricted Band
3. The restricted frequency band is far away from the main frequency, So only the worst case data of the main frequency edge was recorded in the report.

HARMONICS AND SPURIOUS EMISSIONS LOW CHANNEL

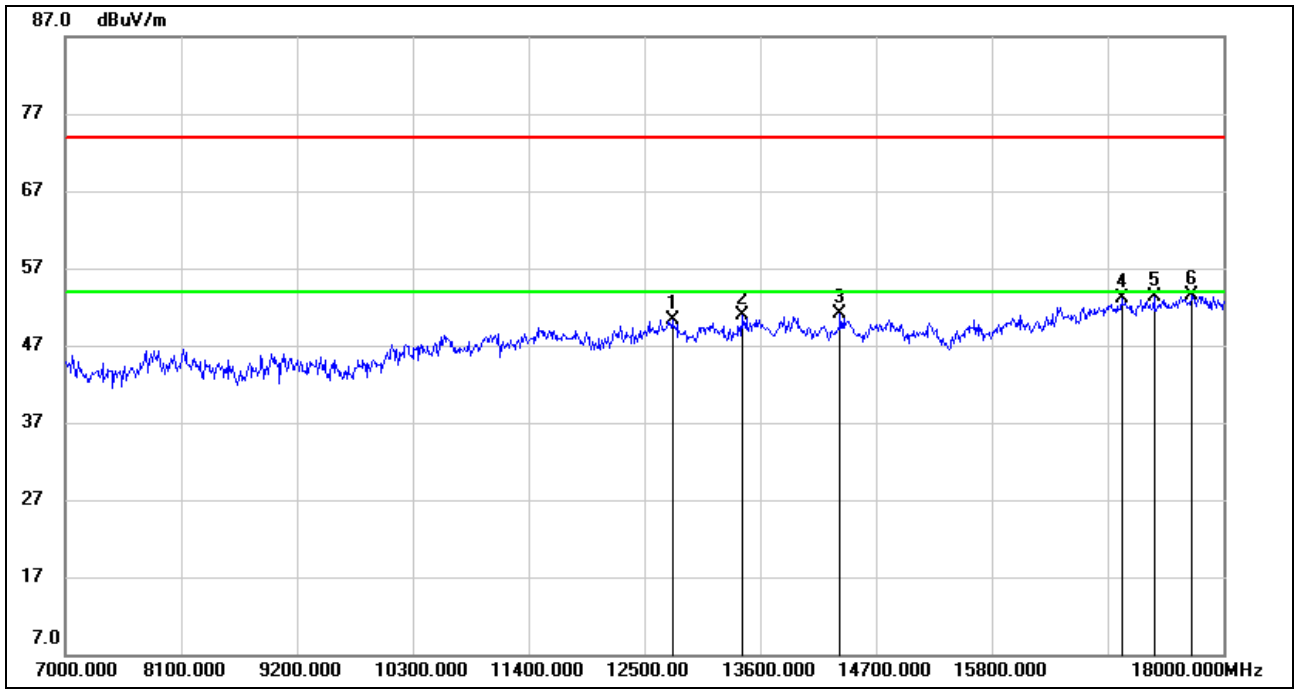
HORIZONTAL RESULTS
1-7GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1996.000	48.00	-10.24	37.76	74.00	-36.24	peak
2	4000.000	44.22	-3.74	40.48	74.00	-33.52	peak
3	4828.000	41.15	0.56	41.71	74.00	-32.29	peak
4	5727.000	49.13	1.97	51.10	74.00	-22.90	peak
5	5974.000	39.62	2.53	42.15	74.00	-31.85	peak
6	6874.000	36.82	4.61	41.43	74.00	-32.57	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.

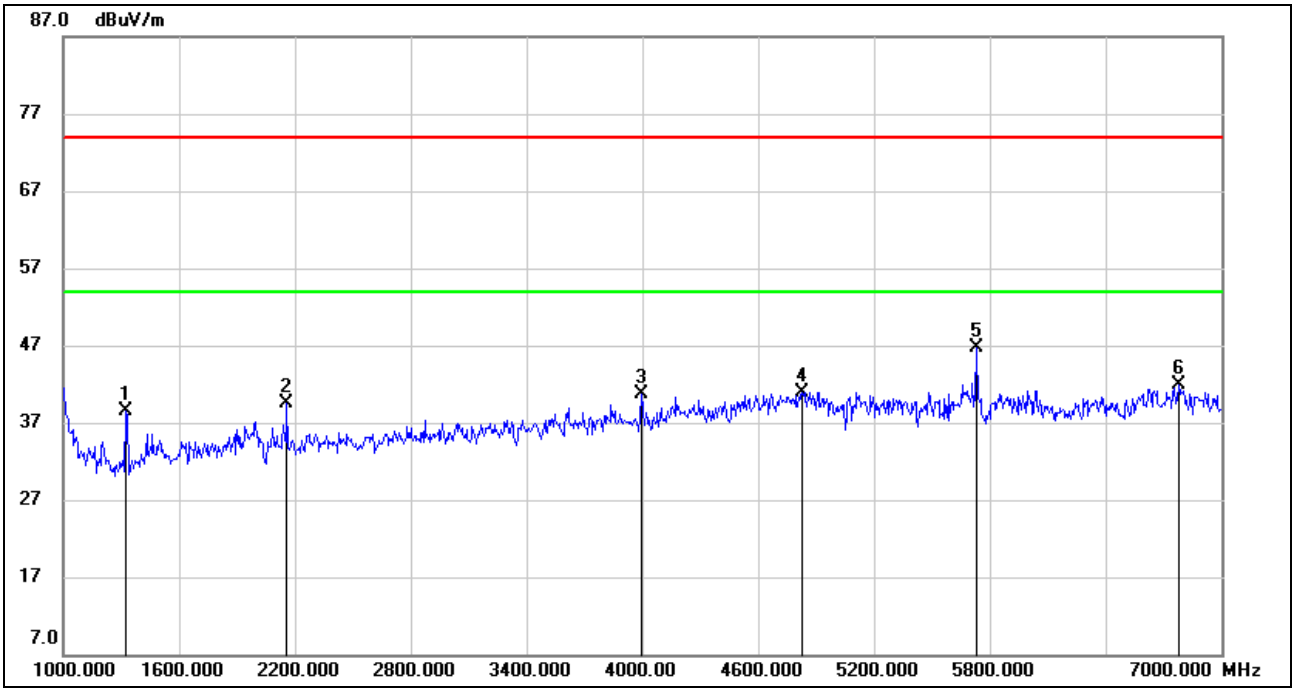
HORIZONTAL RESULTS
7-18GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	12764.000	34.78	15.54	50.32	74.00	-23.68	peak
2	13424.000	34.71	16.11	50.82	74.00	-23.18	peak
3	14359.000	34.49	16.54	51.03	74.00	-22.97	peak
4	17032.000	32.41	20.72	53.13	74.00	-20.87	peak
5	17340.000	31.53	21.74	53.27	74.00	-20.73	peak
6	17703.000	31.07	22.52	53.59	74.00	-20.41	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 High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

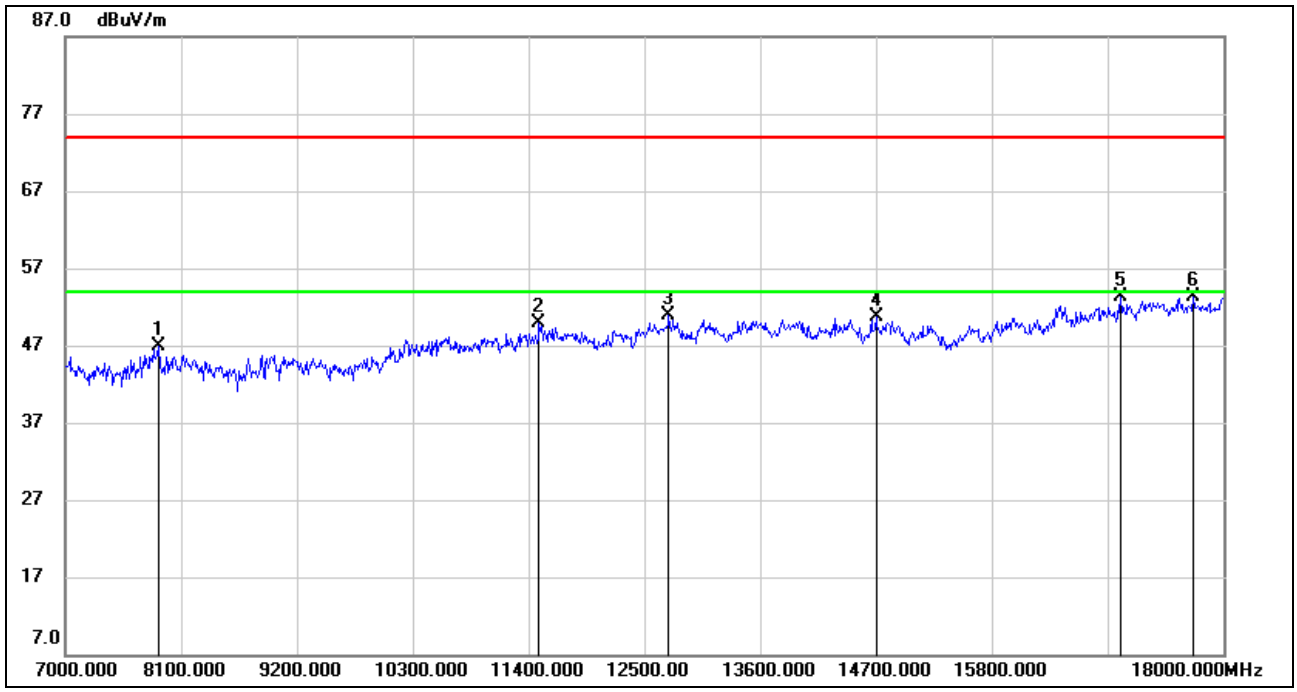
VERTICAL RESULTS
1-7GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1324.000	51.40	-12.89	38.51	74.00	-35.49	peak
2	2158.000	48.99	-9.41	39.58	74.00	-34.42	peak
3	3994.000	44.34	-3.73	40.61	74.00	-33.39	peak
4	4828.000	40.34	0.56	40.90	74.00	-33.10	peak
5	5727.000	44.72	1.97	46.69	74.00	-27.31	peak
6	6778.000	37.44	4.44	41.88	74.00	-32.12	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.

7-18GHz

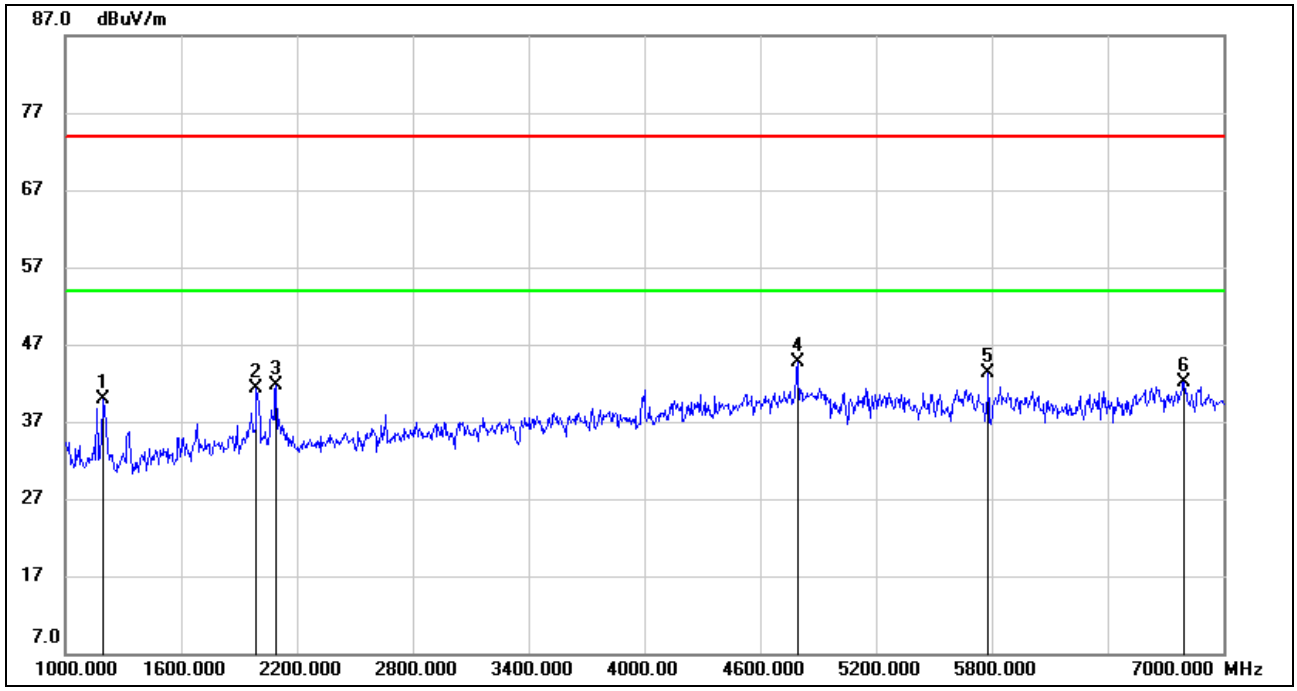


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7880.000	39.22	7.72	46.94	74.00	-27.06	peak
2	11499.000	36.55	13.35	49.90	74.00	-24.10	peak
3	12731.000	35.87	14.97	50.84	74.00	-23.16	peak
4	14700.000	34.46	16.23	50.69	74.00	-23.31	peak
5	17021.000	32.66	20.69	53.35	74.00	-20.65	peak
6	17714.000	30.59	22.62	53.21	74.00	-20.79	peak

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

HARMONICS AND SPURIOUS EMISSIONS MID CHANNEL

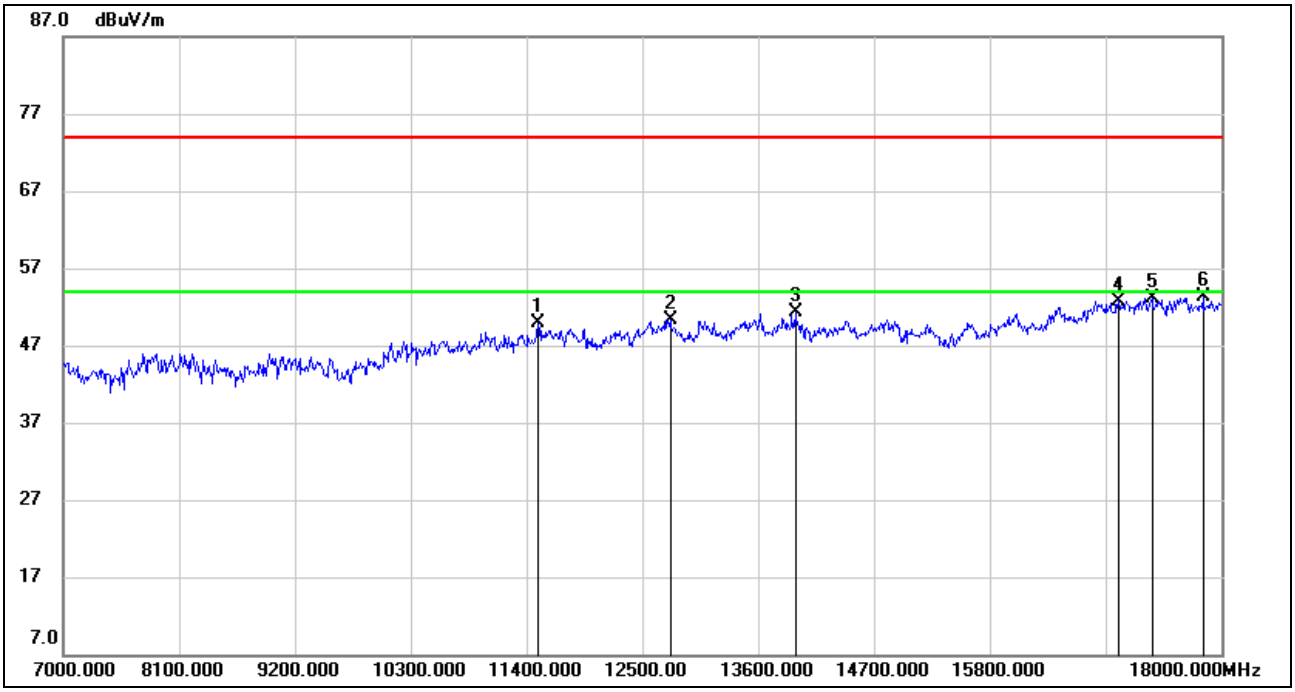
HORIZONTAL RESULTS
1-7GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1198.000	53.03	-13.08	39.95	74.00	-34.05	peak
2	1990.000	51.61	-10.24	41.37	74.00	-32.63	peak
3	2092.000	51.53	-9.75	41.78	74.00	-32.22	peak
4	4792.000	44.30	0.47	44.77	74.00	-29.23	peak
5	5775.000	41.37	1.95	43.32	74.00	-30.68	peak
6	6796.000	37.70	4.44	42.14	74.00	-31.86	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.

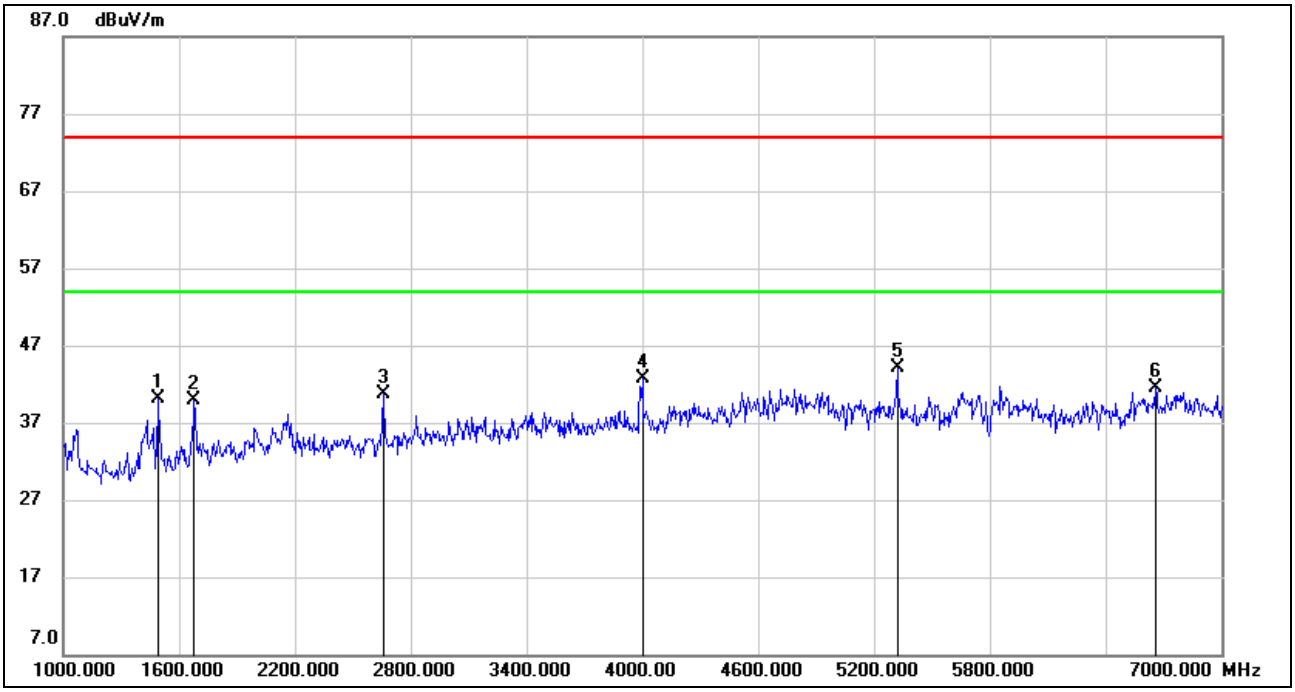
HORIZONTAL RESULTS
7-18GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11510.000	36.43	13.39	49.82	74.00	-24.18	peak
2	12764.000	34.84	15.54	50.38	74.00	-23.62	peak
3	13952.000	35.13	16.16	51.29	74.00	-22.71	peak
4	17021.000	32.11	20.69	52.80	74.00	-21.20	peak
5	17340.000	31.45	21.74	53.19	74.00	-20.81	peak
6	17824.000	29.85	23.42	53.27	74.00	-20.73	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 High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

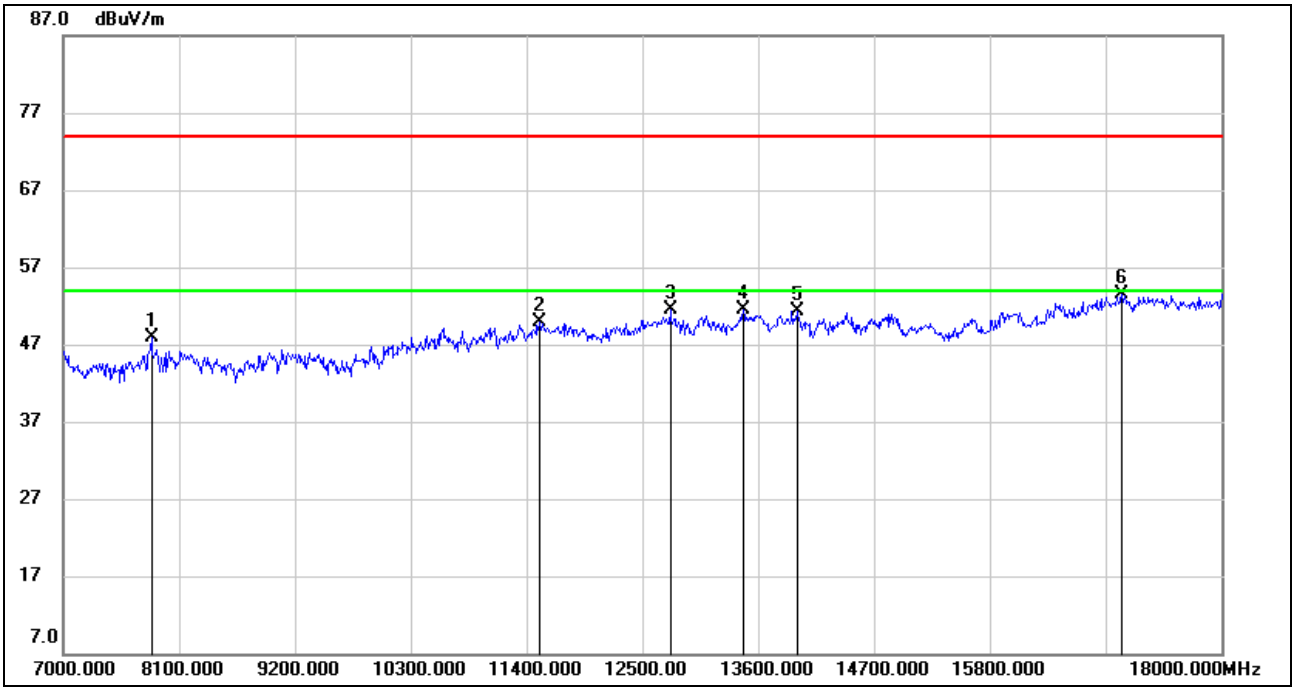
VERTICAL RESULTS
1-7GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1492.000	52.35	-12.33	40.02	74.00	-33.98	peak
2	1678.000	50.86	-11.02	39.84	74.00	-34.16	peak
3	2656.000	48.59	-7.83	40.76	74.00	-33.24	peak
4	4000.000	46.49	-3.74	42.75	74.00	-31.25	peak
5	5320.000	42.37	1.70	44.07	74.00	-29.93	peak
6	6658.000	37.01	4.46	41.47	74.00	-32.53	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.

7-18GHz

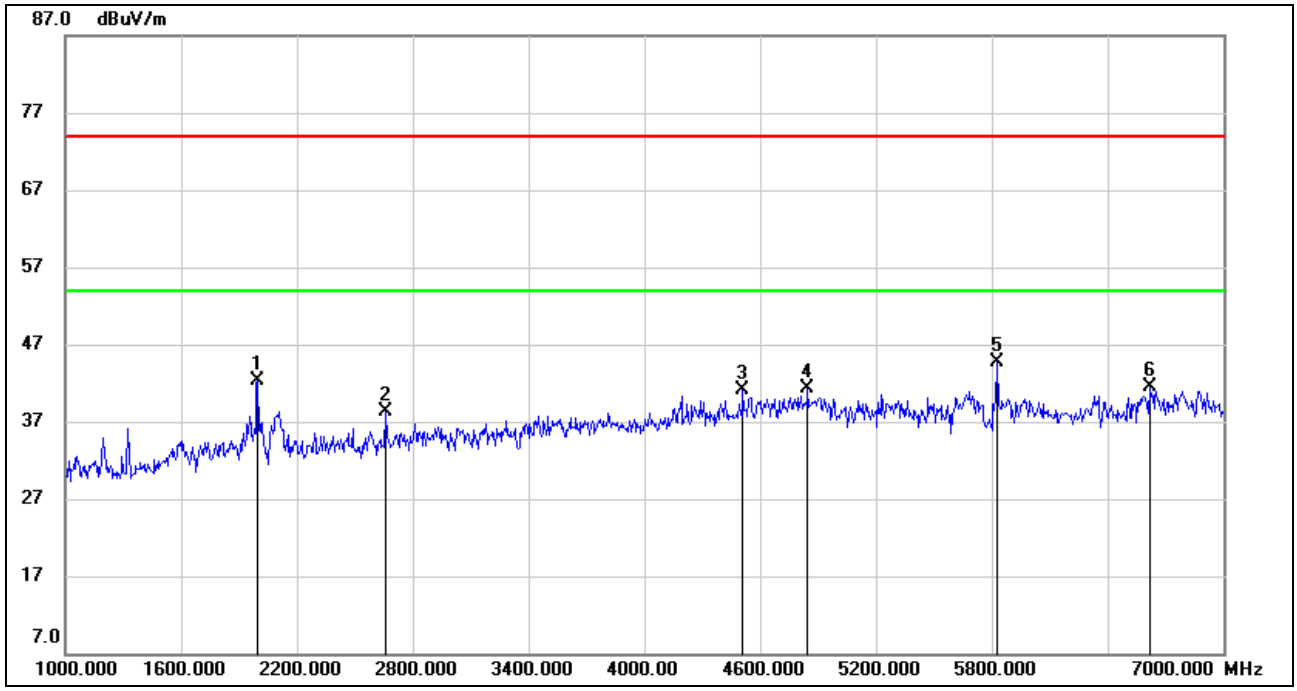


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7836.000	39.92	7.96	47.88	74.00	-26.12	peak
2	11521.000	36.56	13.40	49.96	74.00	-24.04	peak
3	12764.000	36.01	15.54	51.55	74.00	-22.45	peak
4	13457.000	35.56	16.02	51.58	74.00	-22.42	peak
5	13974.000	35.22	16.16	51.38	74.00	-22.62	peak
6	17054.000	32.71	20.76	53.47	74.00	-20.53	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 High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS HIGH CHANNEL

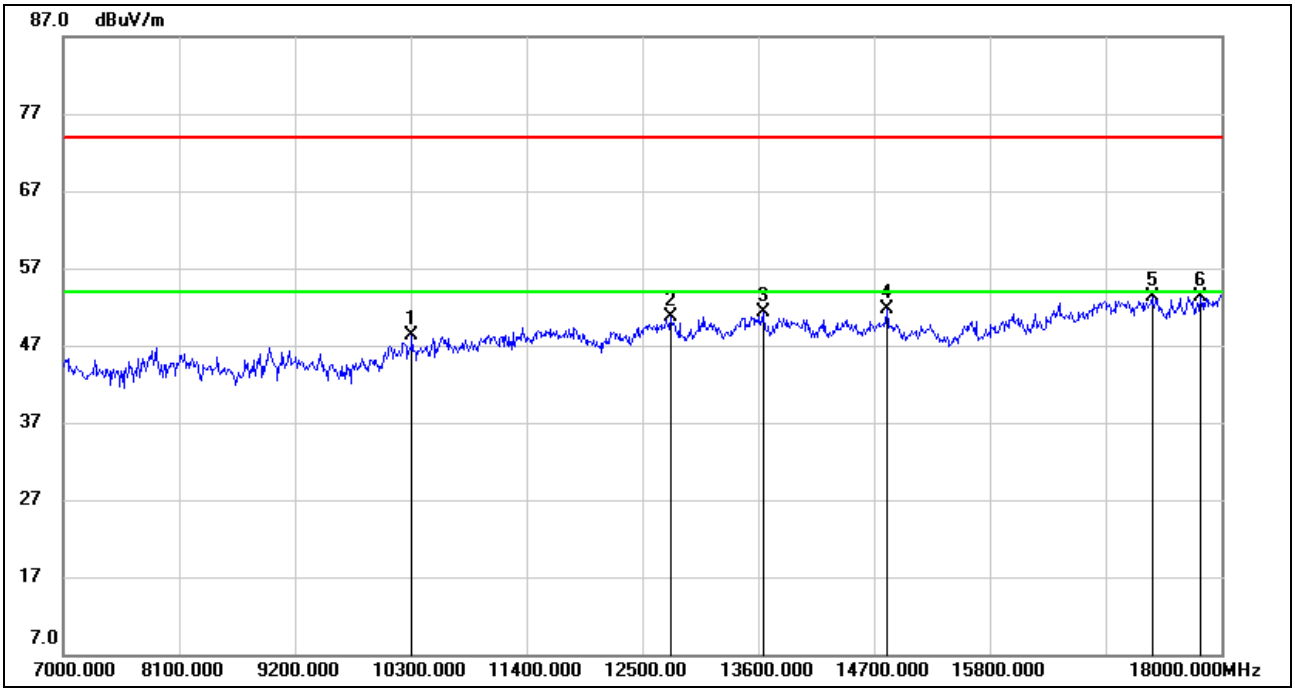
HORIZONTAL RESULTS
1-7GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1996.000	52.52	-10.24	42.28	74.00	-31.72	peak
2	2662.000	46.07	-7.80	38.27	74.00	-35.73	peak
3	4510.000	42.31	-1.26	41.05	74.00	-32.95	peak
4	4846.000	40.78	0.60	41.38	74.00	-32.62	peak
5	5823.000	42.75	2.03	44.78	74.00	-29.22	peak
6	6616.000	37.02	4.48	41.50	74.00	-32.50	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.

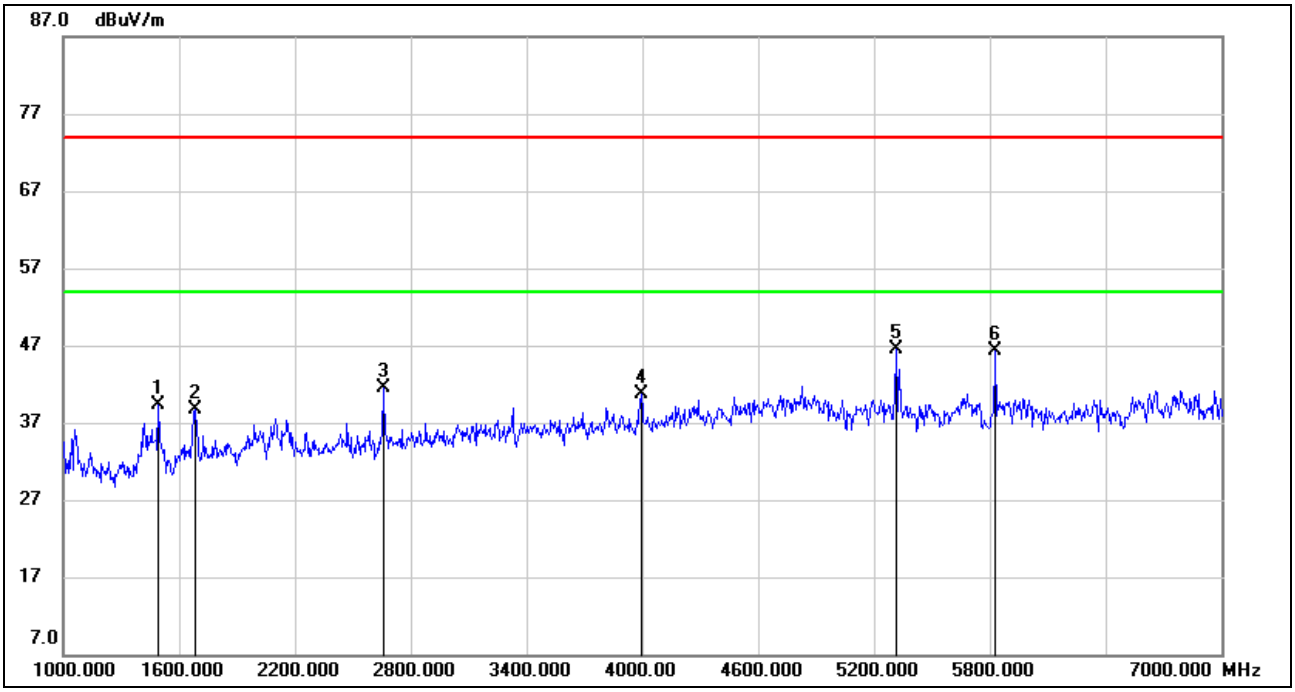
HORIZONTAL RESULTS
7-18GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10311.000	37.10	11.29	48.39	74.00	-25.61	peak
2	12764.000	35.14	15.54	50.68	74.00	-23.32	peak
3	13644.000	35.18	16.08	51.26	74.00	-22.74	peak
4	14821.000	35.57	16.09	51.66	74.00	-22.34	peak
5	17340.000	31.50	21.74	53.24	74.00	-20.76	peak
6	17802.000	29.86	23.41	53.27	74.00	-20.73	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 High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

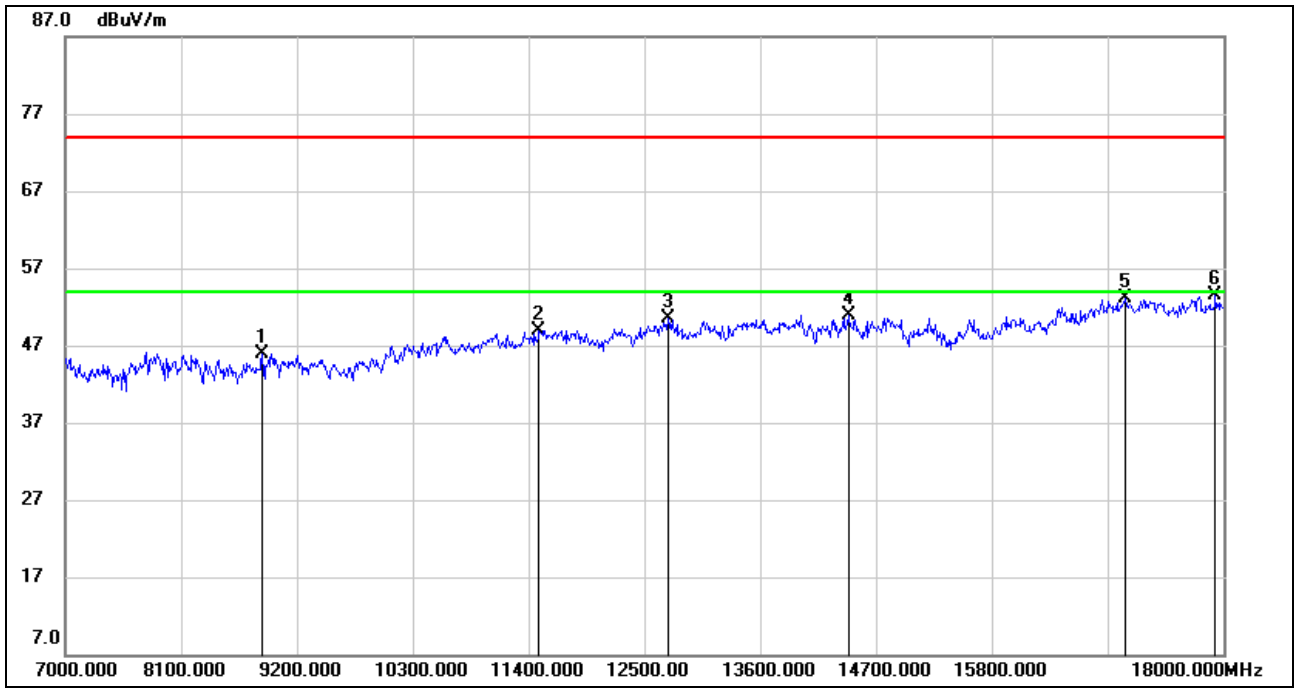
VERTICAL RESULTS
1-7GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1492.000	51.57	-12.33	39.24	74.00	-34.76	peak
2	1684.000	49.59	-10.98	38.61	74.00	-35.39	peak
3	2656.000	49.29	-7.83	41.46	74.00	-32.54	peak
4	3994.000	44.35	-3.73	40.62	74.00	-33.38	peak
5	5314.000	44.77	1.73	46.50	74.00	-27.50	peak
6	5823.000	44.29	2.03	46.32	74.00	-27.68	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.

7-18GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8870.000	37.33	8.58	45.91	74.00	-28.09	peak
2	11499.000	35.57	13.35	48.92	74.00	-25.08	peak
3	12731.000	35.51	14.97	50.48	74.00	-23.52	peak
4	14436.000	34.22	16.64	50.86	74.00	-23.14	peak
5	17065.000	32.24	20.79	53.03	74.00	-20.97	peak
6	17923.000	30.05	23.42	53.47	74.00	-20.53	peak

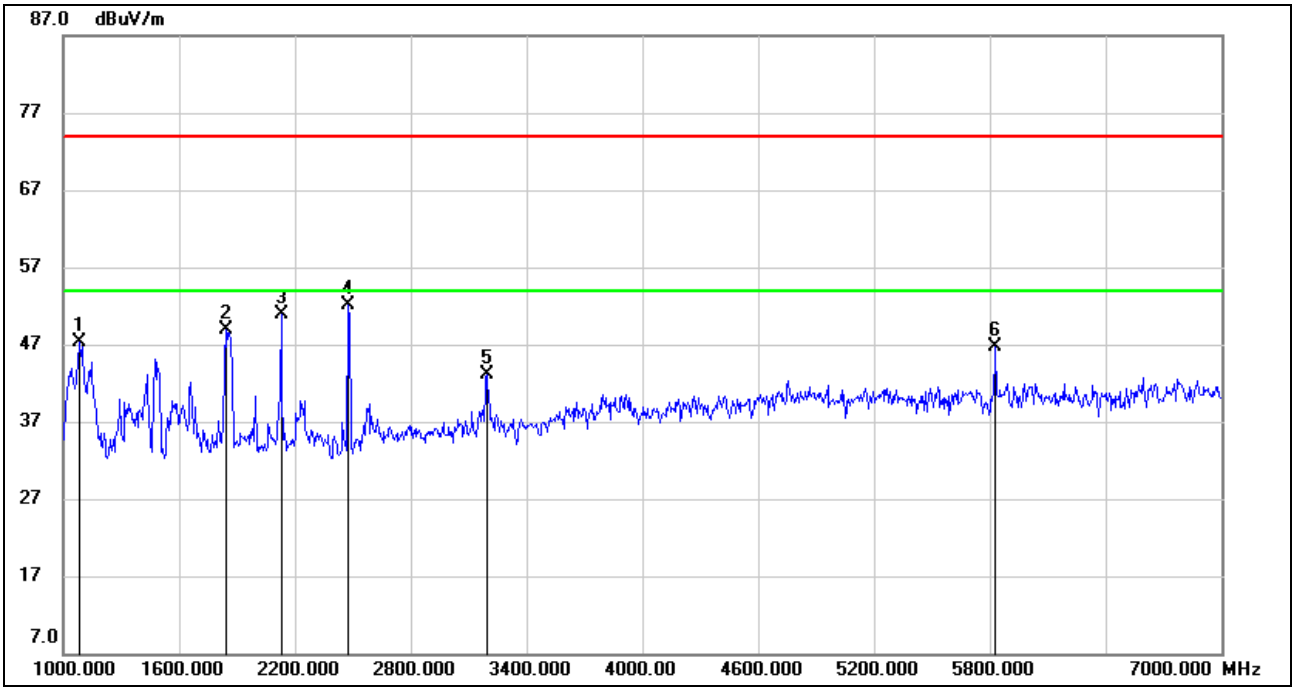
Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.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

8.3. Simultaneous transmission

HARMONICS AND SPURIOUS EMISSIONS

BT GFSK HIGH CHANNEL & 5.8G DSC TX MODE HIGH CHANNEL

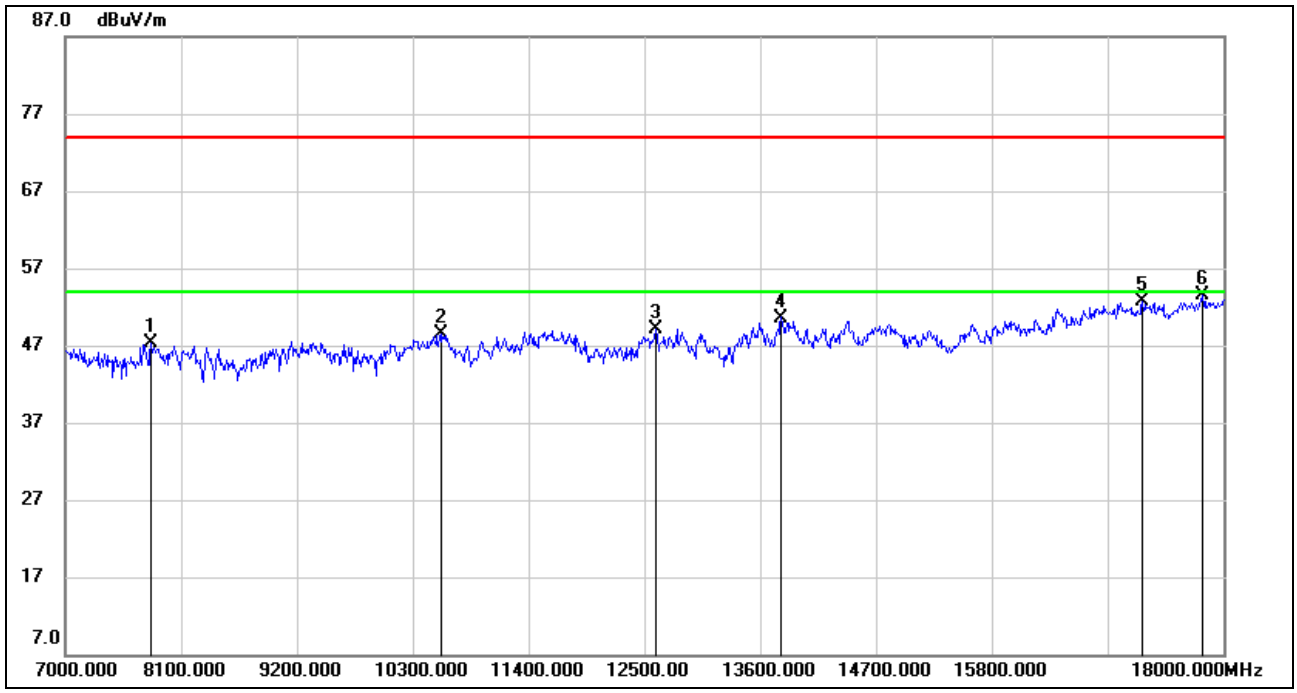
HORIZONTAL RESULTS
1-7GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1084.000	61.02	-13.65	47.37	74.00	-26.63	peak
2	1840.000	58.96	-10.13	48.83	74.00	-25.17	peak
3	2128.000	60.42	-9.56	50.86	74.00	-23.14	peak
4	2480.000	60.61	-8.52	52.09	74.00	-21.91	peak
5	3196.000	48.84	-5.67	43.17	74.00	-30.83	peak
6	5823.000	44.64	2.03	46.67	74.00	-27.33	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.

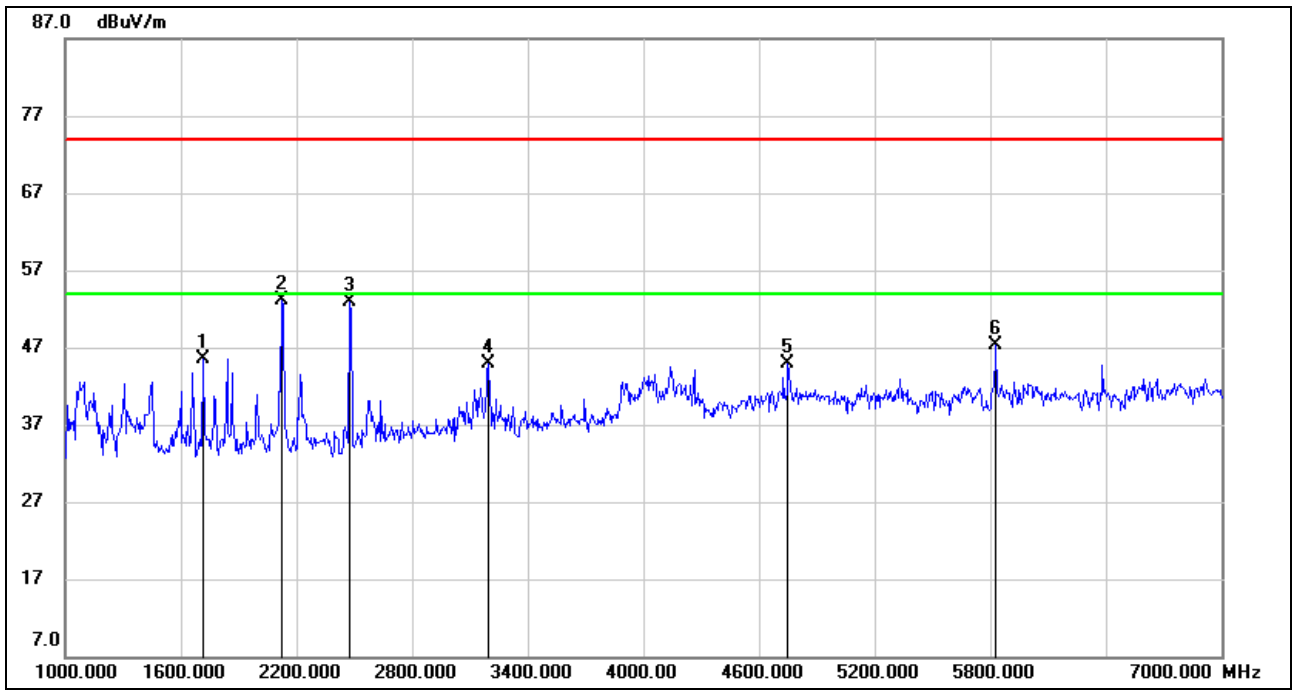
HORIZONTAL RESULTS
7-18GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7814.000	39.11	8.10	47.21	74.00	-26.79	peak
2	10564.000	36.42	12.06	48.48	74.00	-25.52	peak
3	12610.000	34.98	14.21	49.19	74.00	-24.81	peak
4	13798.000	33.55	17.05	50.60	74.00	-23.40	peak
5	17230.000	31.23	21.41	52.64	74.00	-21.36	peak
6	17802.000	30.17	23.41	53.58	74.00	-20.42	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 High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

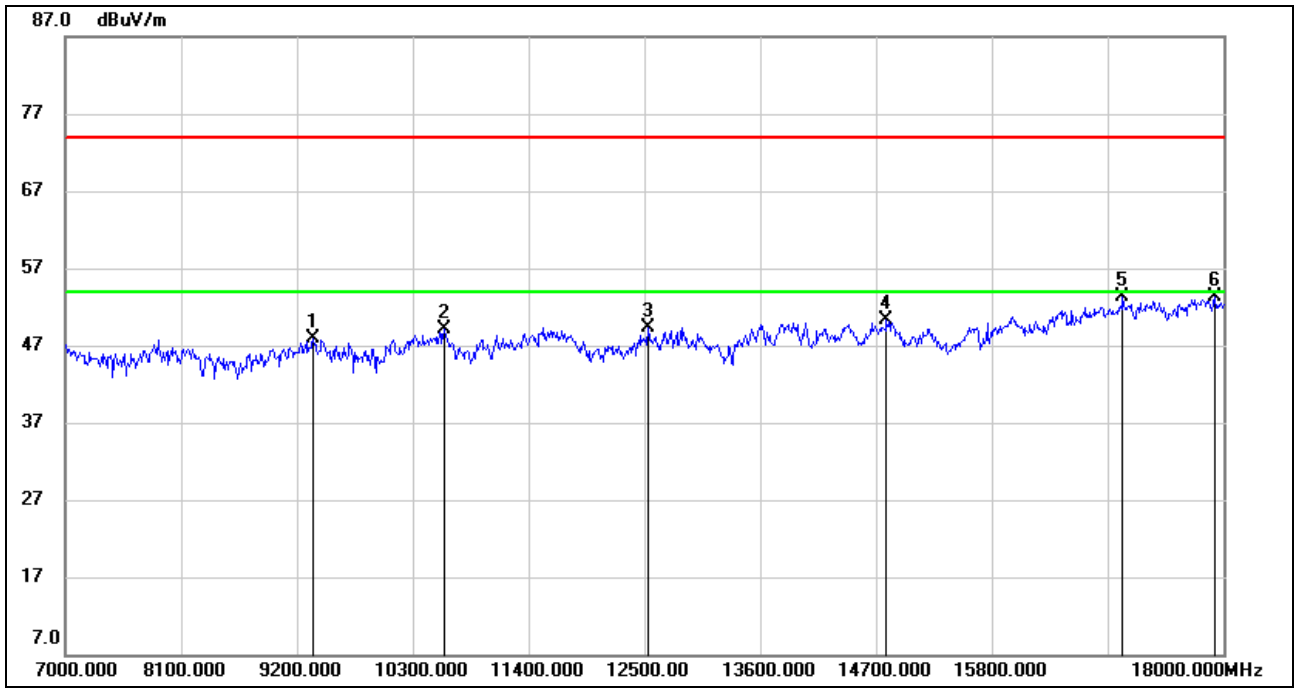
VERTICAL RESULTS
1-7GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1714.000	56.32	-10.76	45.56	74.00	-28.44	peak
2	2122.000	62.74	-9.60	53.14	74.00	-20.86	peak
3	2480.000	61.39	-8.52	52.87	74.00	-21.13	peak
4	3196.000	50.53	-5.67	44.86	74.00	-29.14	peak
5	4750.000	44.73	0.23	44.96	74.00	-29.04	peak
6	5823.000	45.20	2.03	47.23	74.00	-26.77	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. 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.

7-18GHz



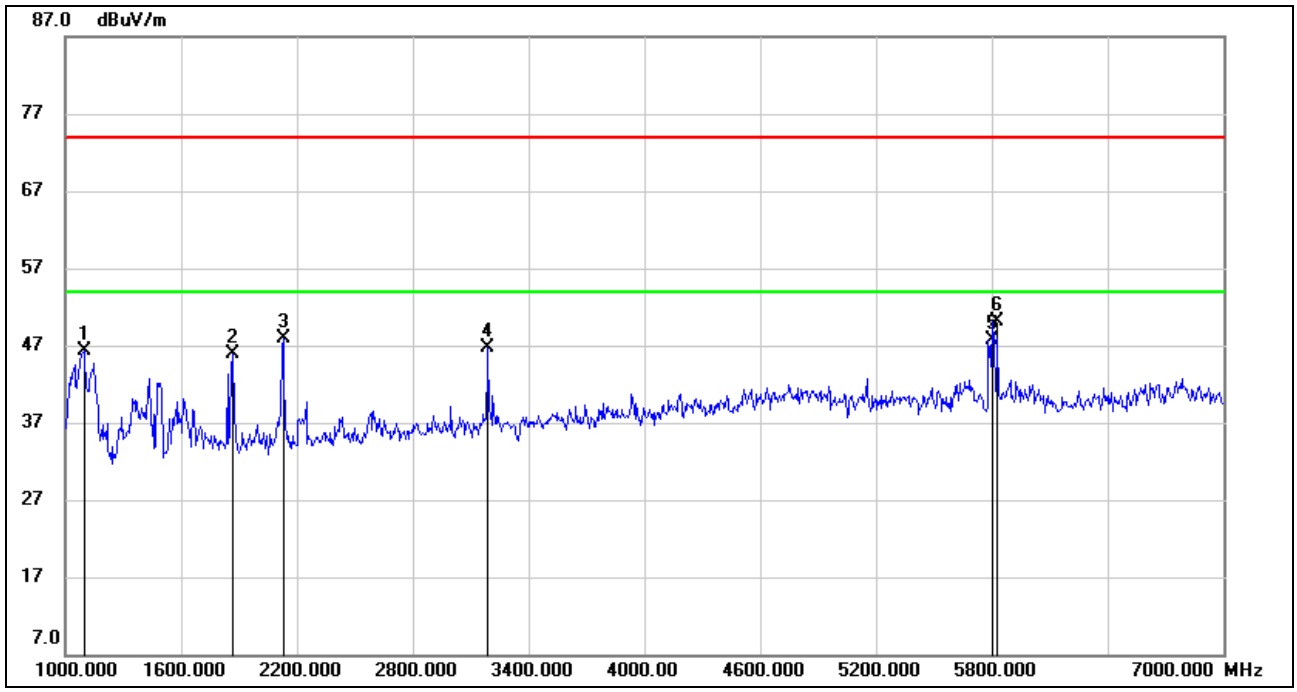
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9354.000	38.19	9.64	47.83	74.00	-26.17	peak
2	10597.000	36.74	12.43	49.17	74.00	-24.83	peak
3	12533.000	34.72	14.65	49.37	74.00	-24.63	peak
4	14799.000	34.28	16.06	50.34	74.00	-23.66	peak
5	17043.000	32.55	20.74	53.29	74.00	-20.71	peak
6	17912.000	29.89	23.42	53.31	74.00	-20.69	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 High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS

UNII-3 BAND 11n HT40 MODE HIGH CHANNEL & 5.8G DSC TX MODE HIGH CHANNEL

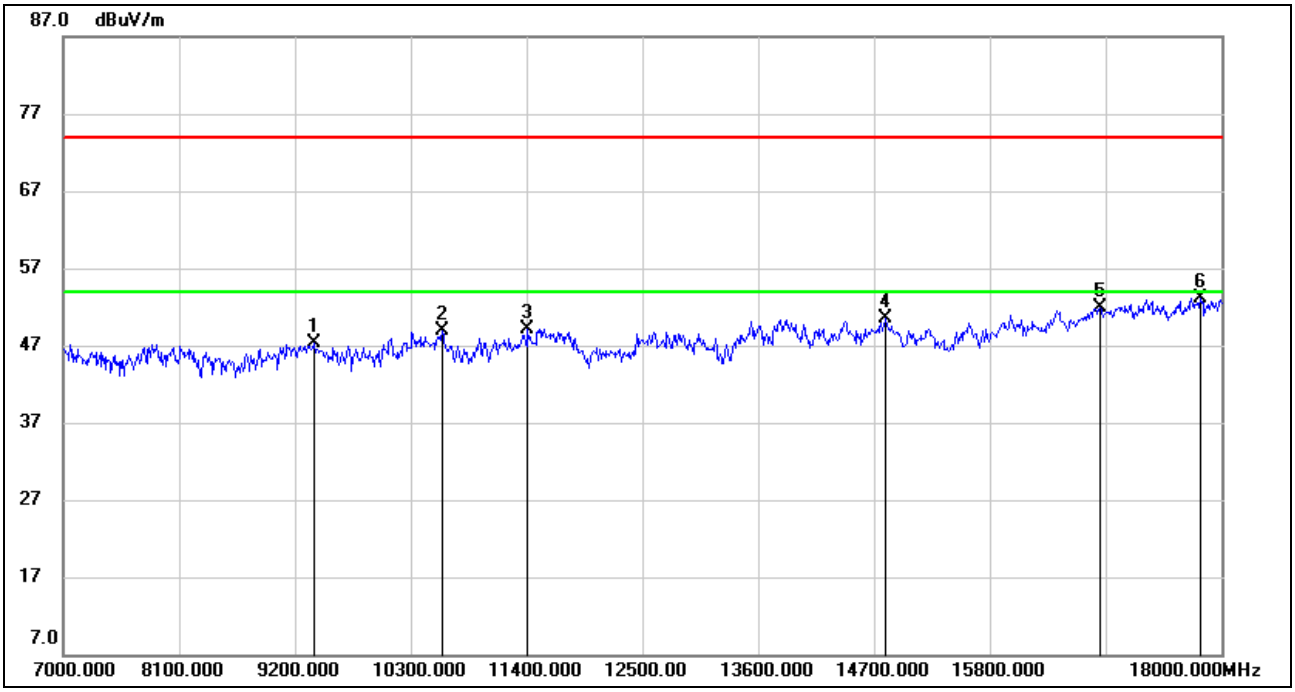
HORIZONTAL RESULTS
1-7GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1096.000	59.84	-13.59	46.25	74.00	-27.75	peak
2	1870.000	56.13	-10.15	45.98	74.00	-28.02	peak
3	2128.000	57.38	-9.56	47.82	74.00	-26.18	peak
4	3190.000	52.45	-5.69	46.76	74.00	-27.24	peak
5	5795.000	45.67	1.95	47.62	74.00	-26.38	peak
6	5823.000	48.13	2.03	50.16	74.00	-23.84	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.

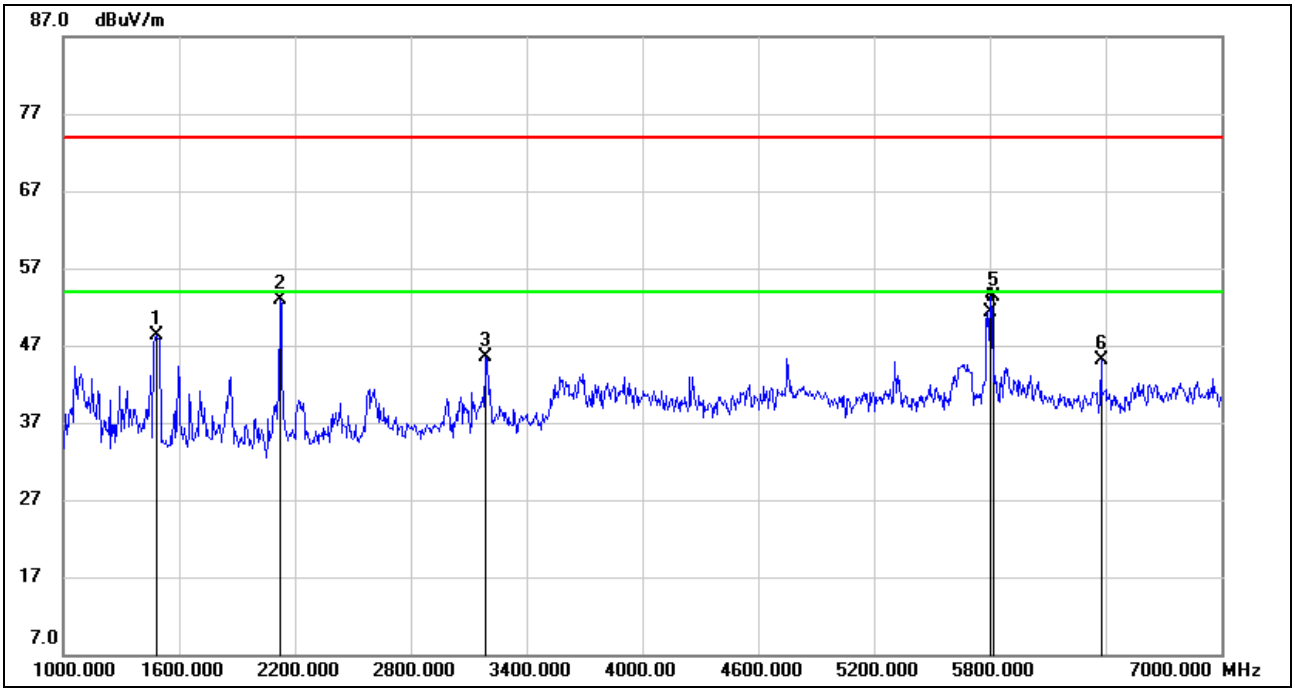
HORIZONTAL RESULTS
7-18GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9376.000	37.45	9.79	47.24	74.00	-26.76	peak
2	10597.000	36.40	12.43	48.83	74.00	-25.17	peak
3	11411.000	36.31	12.81	49.12	74.00	-24.88	peak
4	14810.000	34.35	16.07	50.42	74.00	-23.58	peak
5	16845.000	31.76	20.15	51.91	74.00	-22.09	peak
6	17802.000	29.60	23.41	53.01	74.00	-20.99	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 High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

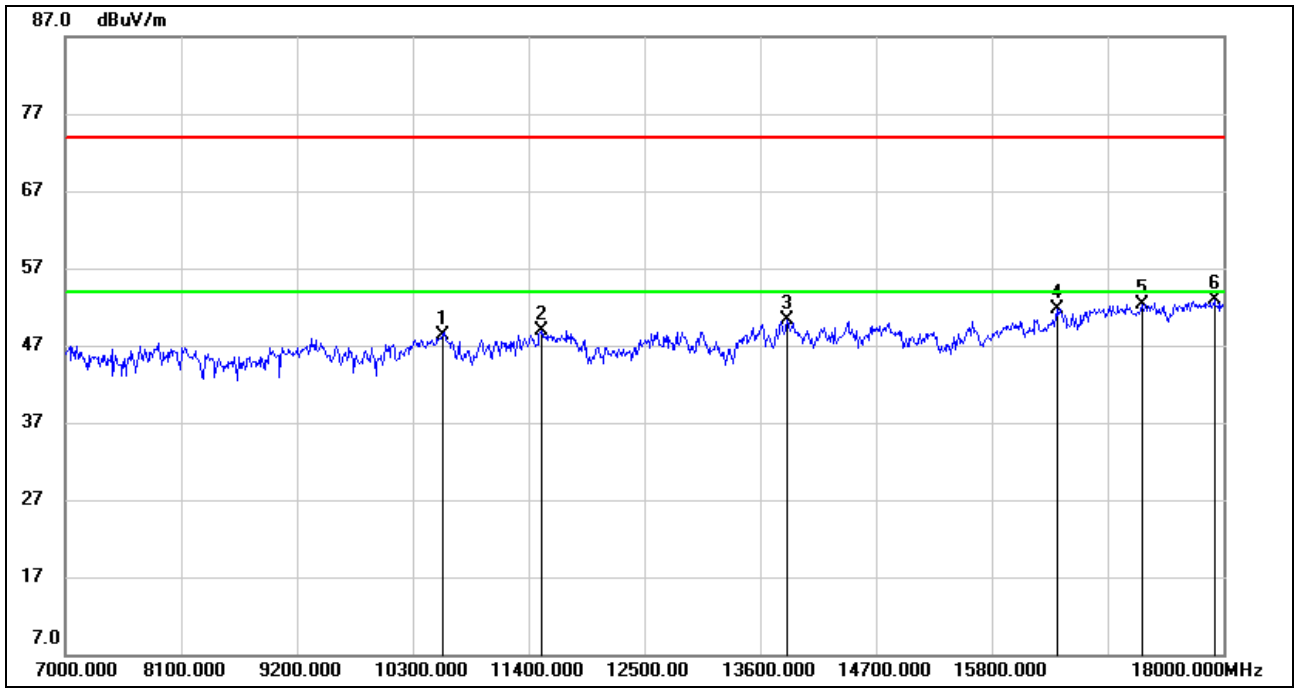
VERTICAL RESULTS
1-7GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1480.000	60.63	-12.40	48.23	74.00	-25.77	peak
2	2122.000	62.58	-9.60	52.98	74.00	-21.02	peak
3	3190.000	51.20	-5.69	45.51	74.00	-28.49	peak
4	5795.000	49.27	1.95	51.22	74.00	-22.78	peak
5	5823.000	51.22	2.03	53.25	74.00	-20.75	peak
6	6376.000	41.79	3.34	45.13	74.00	-28.87	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.

7-18GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10586.000	35.93	12.30	48.23	74.00	-25.77	peak
2	11521.000	35.59	13.40	48.99	74.00	-25.01	peak
3	13853.000	33.78	16.59	50.37	74.00	-23.63	peak
4	16416.000	32.42	19.33	51.75	74.00	-22.25	peak
5	17230.000	30.86	21.41	52.27	74.00	-21.73	peak
6	17912.000	29.56	23.42	52.98	74.00	-21.02	peak

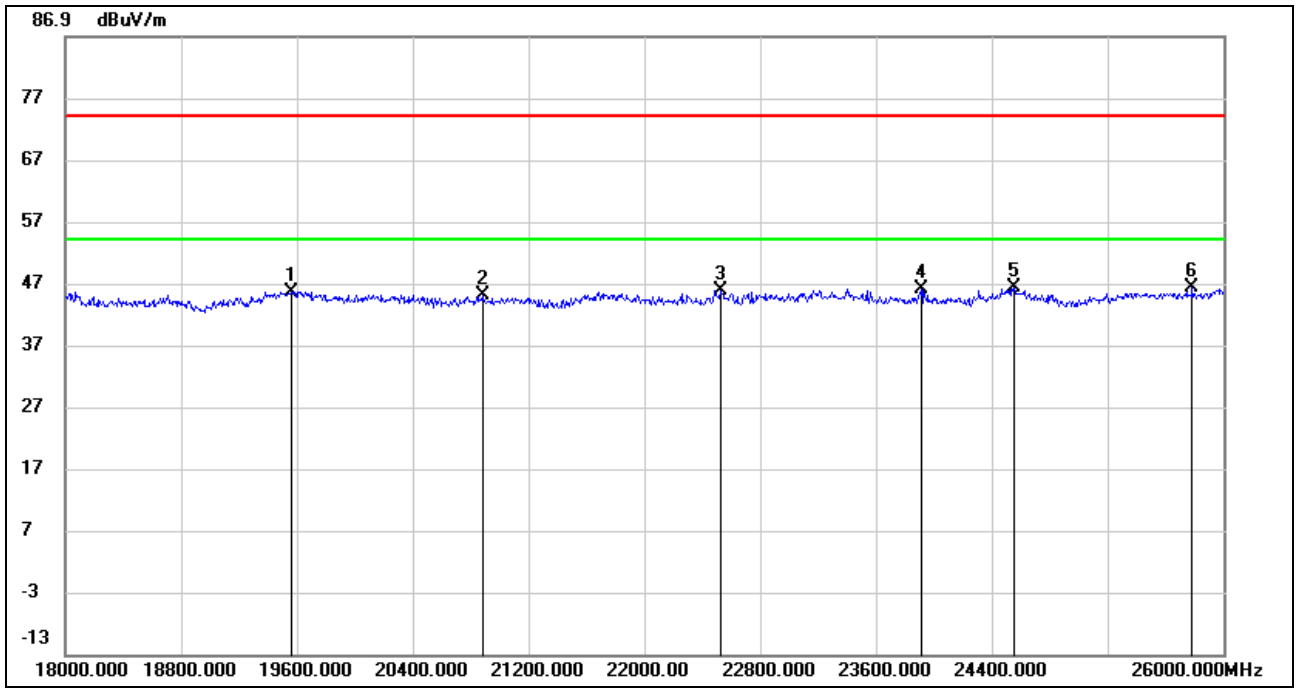
Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.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

Note: All the test modes have been tested, only the worst data record in the report.

8.4. SPURIOUS EMISSIONS 18~26GHz

8.4.1. 5.8G SSC TX MODE

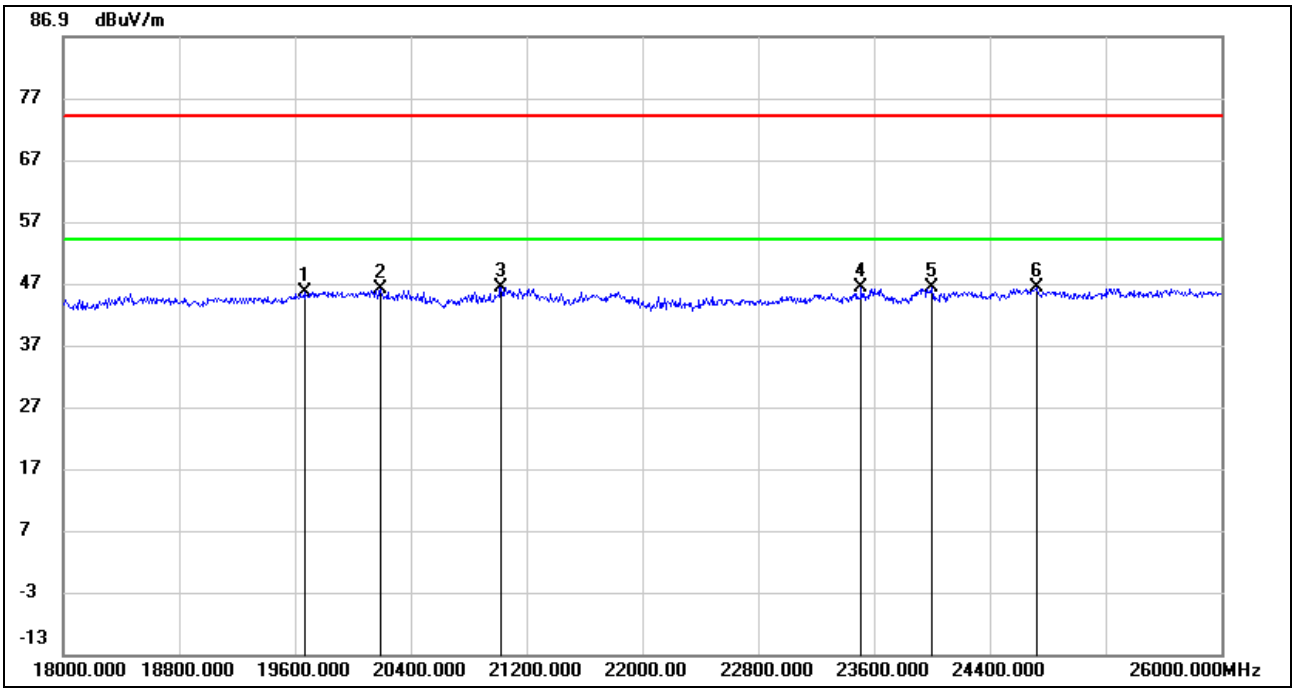
SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL, WORST-CASE CONFIGURATION)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	19560.000	50.31	-4.69	45.62	74.00	-28.38	peak
2	20880.000	50.34	-5.21	45.13	74.00	-28.87	peak
3	22528.000	51.66	-5.79	45.87	74.00	-28.13	peak
4	23912.000	50.32	-4.23	46.09	74.00	-27.91	peak
5	24552.000	48.64	-2.46	46.18	74.00	-27.82	peak
6	25784.000	47.73	-1.49	46.24	74.00	-27.76	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.

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



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	19672.000	49.95	-4.48	45.47	74.00	-28.53	peak
2	20192.000	50.87	-4.76	46.11	74.00	-27.89	peak
3	21024.000	51.64	-5.30	46.34	74.00	-27.66	peak
4	23512.000	51.01	-4.76	46.25	74.00	-27.75	peak
5	24000.000	50.41	-4.01	46.40	74.00	-27.60	peak
6	24720.000	48.37	-2.02	46.35	74.00	-27.65	peak

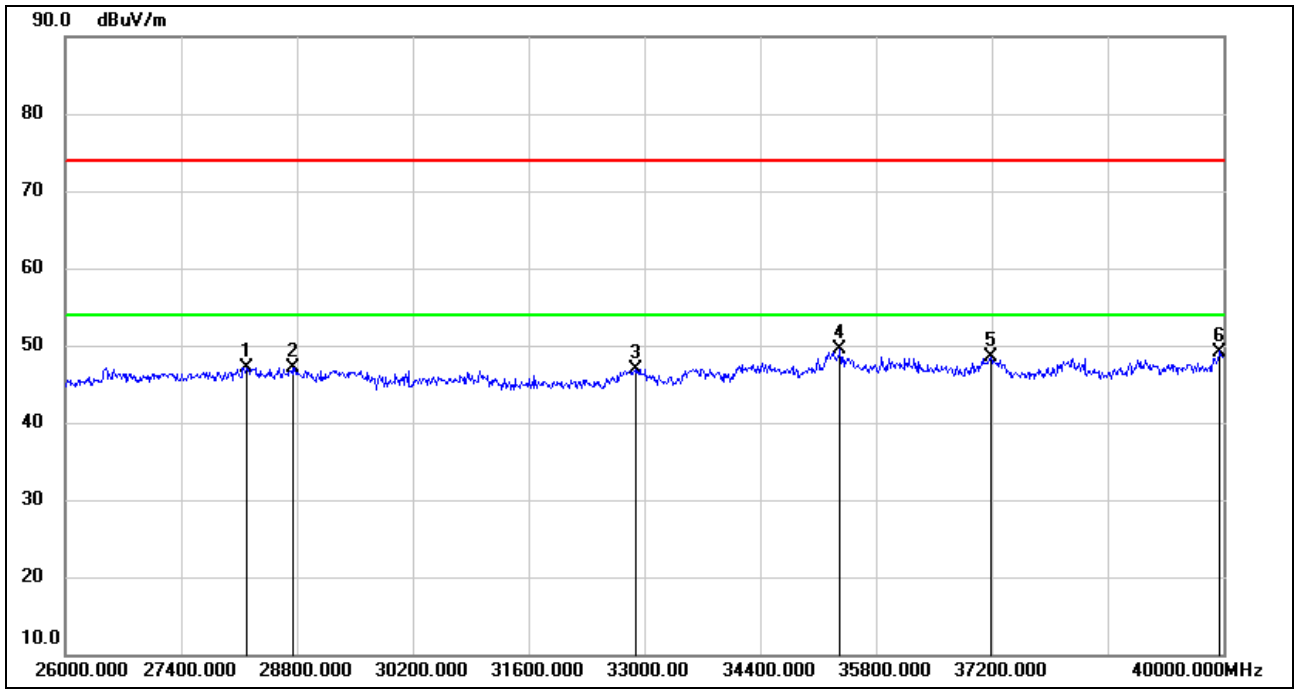
Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

Note: All the test modes have been tested, only the worst data record in the report.

8.5. SPURIOUS EMISSIONS 26~40GHz

8.5.1. 5.8G SSC TX MODE

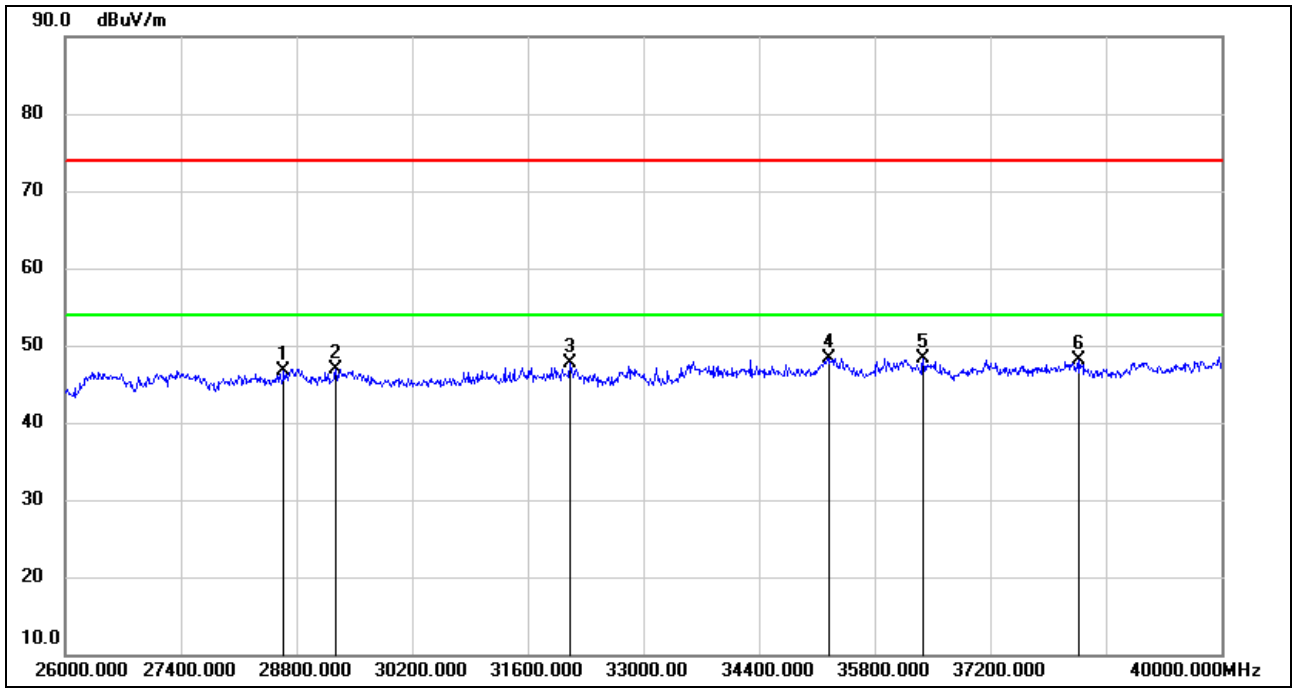
SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL, WORST-CASE CONFIGURATION)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	28198.000	49.87	-2.74	47.13	74.00	-26.87	peak
2	28758.000	47.71	-0.54	47.17	74.00	-26.83	peak
3	32888.000	47.86	-0.91	46.95	74.00	-27.05	peak
4	35366.000	46.90	2.59	49.49	74.00	-24.51	peak
5	37186.000	45.33	3.16	48.49	74.00	-25.51	peak
6	39958.000	44.08	5.12	49.20	74.00	-24.80	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. Proper operation of the transmitter prior to adding the filter to the measurement chain.

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



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	28646.000	48.22	-1.44	46.78	74.00	-27.22	peak
2	29276.000	48.01	-1.01	47.00	74.00	-27.00	peak
3	32104.000	49.49	-1.75	47.74	74.00	-26.26	peak
4	35254.000	45.62	2.65	48.27	74.00	-25.73	peak
5	36388.000	44.82	3.52	48.34	74.00	-25.66	peak
6	38278.000	44.32	3.82	48.14	74.00	-25.86	peak

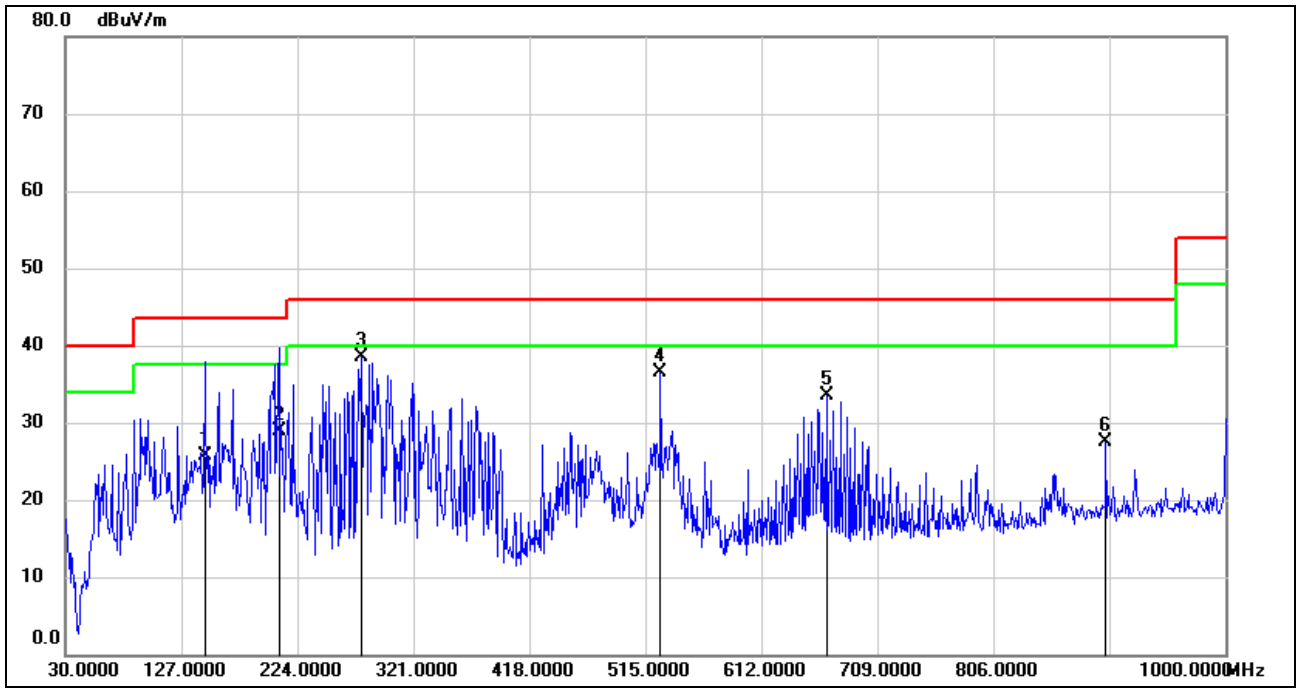
Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Proper operation of the transmitter prior to adding the filter to the measurement chain.

Note: All the test modes have been tested, only the worst data record in the report.

8.6. SPURIOUS EMISSIONS 30M ~ 1 GHz

8.6.1. 5.8G SSC TX MODE

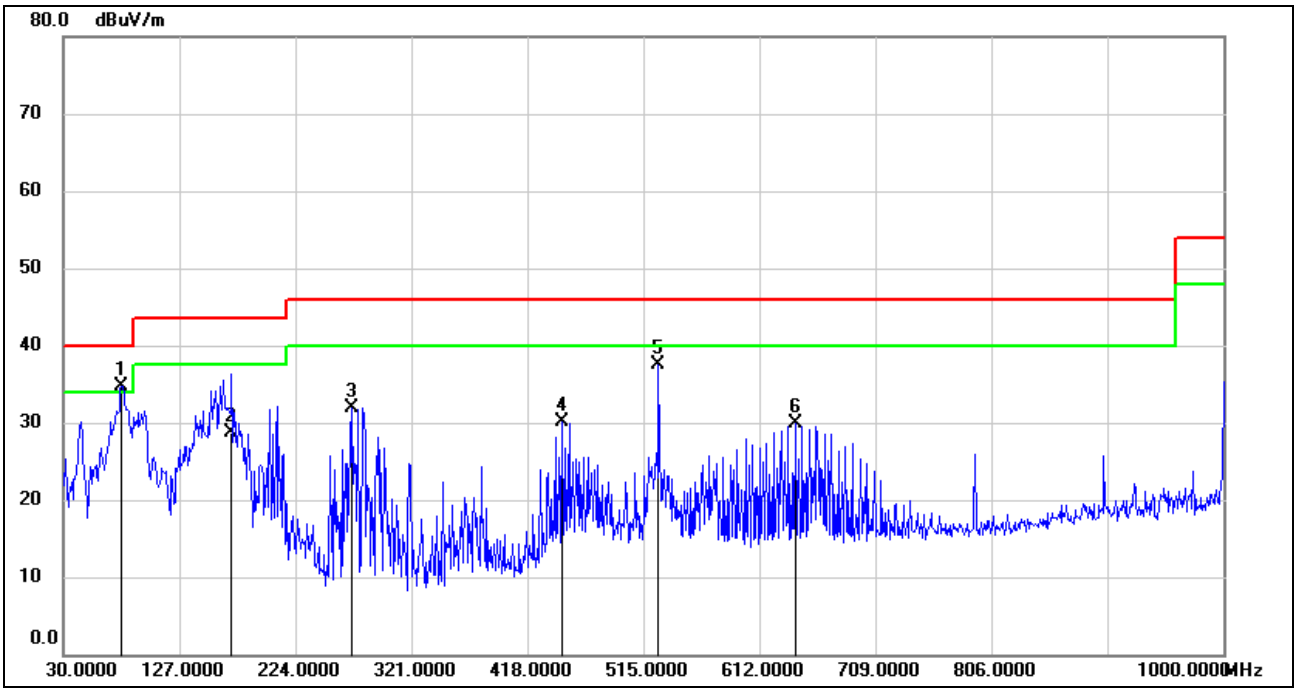
SPURIOUS EMISSIONS (MID CHANNEL HORIZONTAL, WORST-CASE CONFIGURATION)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	146.4000	44.31	-18.70	25.61	43.50	-17.89	QP
2	208.4800	46.28	-17.35	28.93	43.50	-14.57	QP
3	277.3500	55.94	-17.36	38.58	46.00	-7.42	QP
4	527.6100	47.57	-11.13	36.44	46.00	-9.56	QP
5	666.3200	42.71	-9.18	33.53	46.00	-12.47	QP
6	900.0900	33.09	-5.65	27.44	46.00	-18.56	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 (MID CHANNEL, VERTICAL, WORST-CASE CONFIGURATION)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	78.5000	56.14	-21.39	34.75	40.00	-5.25	QP
2	170.6500	45.93	-17.17	28.76	43.50	-14.74	QP
3	271.5300	49.83	-17.89	31.94	46.00	-14.06	QP
4	447.1000	42.67	-12.52	30.15	46.00	-15.85	QP
5	527.6100	48.72	-11.13	37.59	46.00	-8.41	QP
6	642.0700	39.32	-9.47	29.85	46.00	-16.15	QP

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

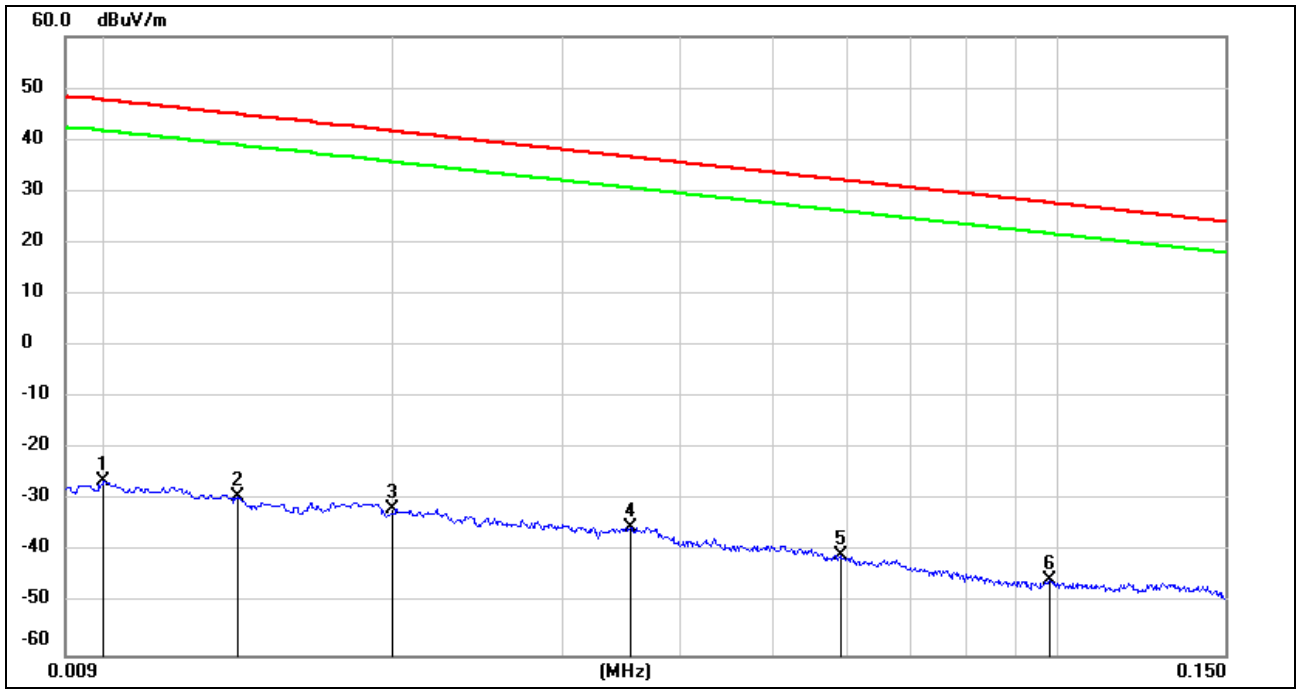
Note: All the test modes have been tested, only the worst data record in the report.

8.7. SPURIOUS EMISSIONS BELOW 30M

8.7.1. 5.8G SSC TX MODE

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

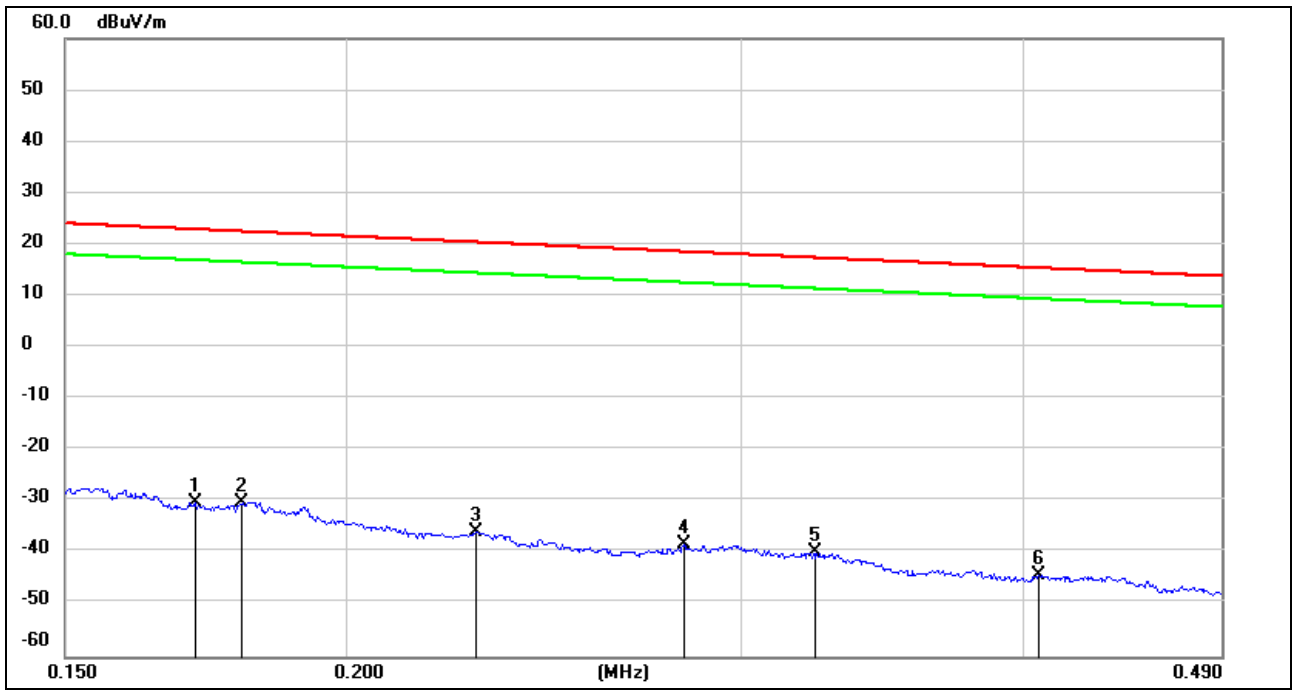
9kHz~ 150kHz



No.	Frequency	Reading	Correct	Result	Limit	ISED Result	ISED Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.0100	75.22	-101.40	-26.18	47.60	-77.68	-3.90	-73.78	peak
2	0.0137	72.22	-101.38	-29.16	44.87	-80.66	-6.63	-74.03	peak
3	0.0200	69.68	-101.34	-31.66	41.58	-83.16	-9.92	-73.24	peak
4	0.0354	66.26	-101.41	-35.15	36.62	-86.65	-14.88	-71.77	peak
5	0.0589	60.81	-101.52	-40.71	32.20	-92.21	-19.30	-72.91	peak
6	0.0981	56.27	-101.78	-45.51	27.77	-97.01	-23.73	-73.28	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.
4. dBuA/m = dBuV/m – 20log10(120π) = dBuV/m -51.5

150kHz ~ 490kHz



No.	Frequency	Reading	Correct	Result	Limit	ISED Result	ISED Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.1713	71.67	-101.67	-30.00	22.93	-81.50	-28.57	-52.93	peak
2	0.1800	71.62	-101.68	-30.06	22.50	-81.56	-29.00	-52.56	peak
3	0.2285	65.90	-101.77	-35.87	20.42	-87.37	-31.08	-56.29	peak
4	0.2826	63.49	-101.83	-38.34	18.58	-89.84	-32.92	-56.92	peak
5	0.3234	61.98	-101.88	-39.90	17.41	-91.40	-34.09	-57.31	peak
6	0.4062	57.64	-101.96	-44.32	15.43	-95.82	-36.07	-59.75	peak

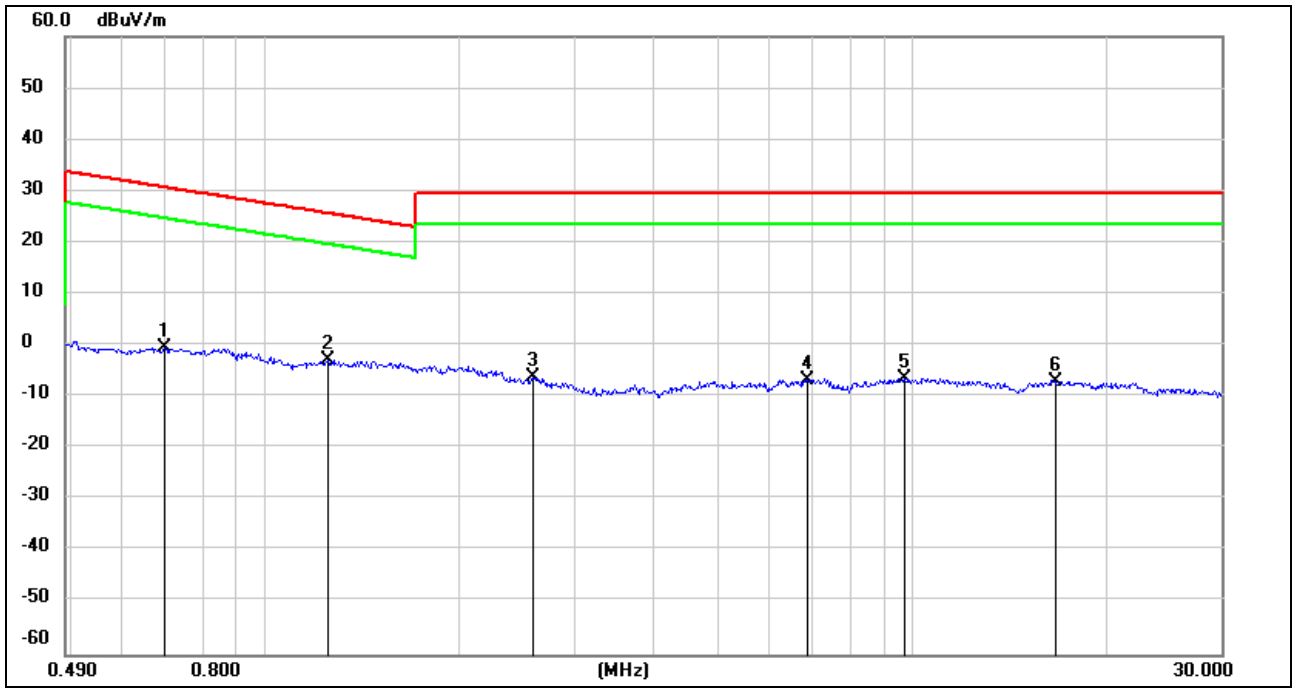
Note: 1. Measurement = Reading Level + Correct Factor.

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.

4. dBuA/m = dBuV/m – 20log10(120π) = dBuV/m -51.5

490kHz ~ 30MHz



No.	Frequency	Reading	Correct	Result	Limit	ISED Result	ISED Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.6975	61.53	-62.11	-0.58	30.73	-52.08	-20.77	-31.31	peak
2	1.2459	59.25	-62.16	-2.91	25.70	-54.41	-25.80	-28.61	peak
3	2.5935	55.61	-61.68	-6.07	29.54	-57.57	-21.96	-35.61	peak
4	6.8936	54.59	-61.22	-6.63	29.54	-58.13	-21.96	-36.17	peak
5	9.7263	54.44	-60.84	-6.40	29.54	-57.90	-21.96	-35.94	peak
6	16.7205	54.04	-60.95	-6.91	29.54	-58.41	-21.96	-36.45	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.
4. dBuA/m = dBuV/m – 20log10(120π) = dBuV/m -51.5

Note: All the test modes have been tested, only the worst data record in the report.

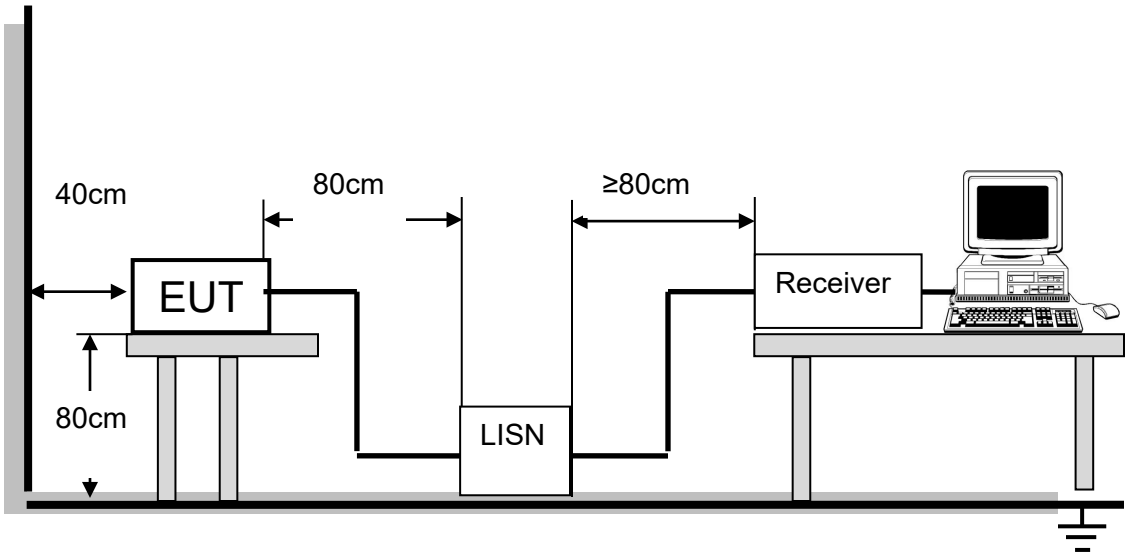
9. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

Please refer to CFR 47 FCC §15.207 (a) and ISED RSS-Gen Clause 8.8

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

TEST SETUP AND PROCEDURE



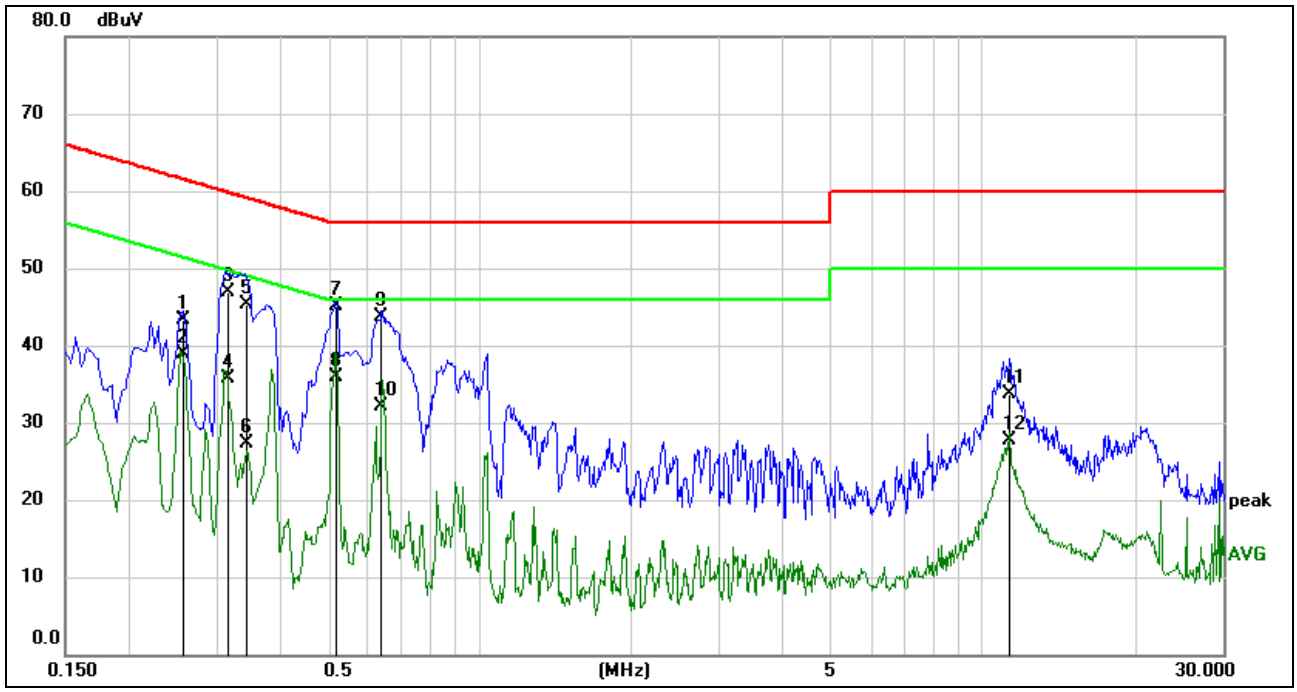
The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through an Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 6.2 of ANSI C63.10 -2013.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9kHz.

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

TEST RESULTS

9.1. 5.8G SSC TX MODE

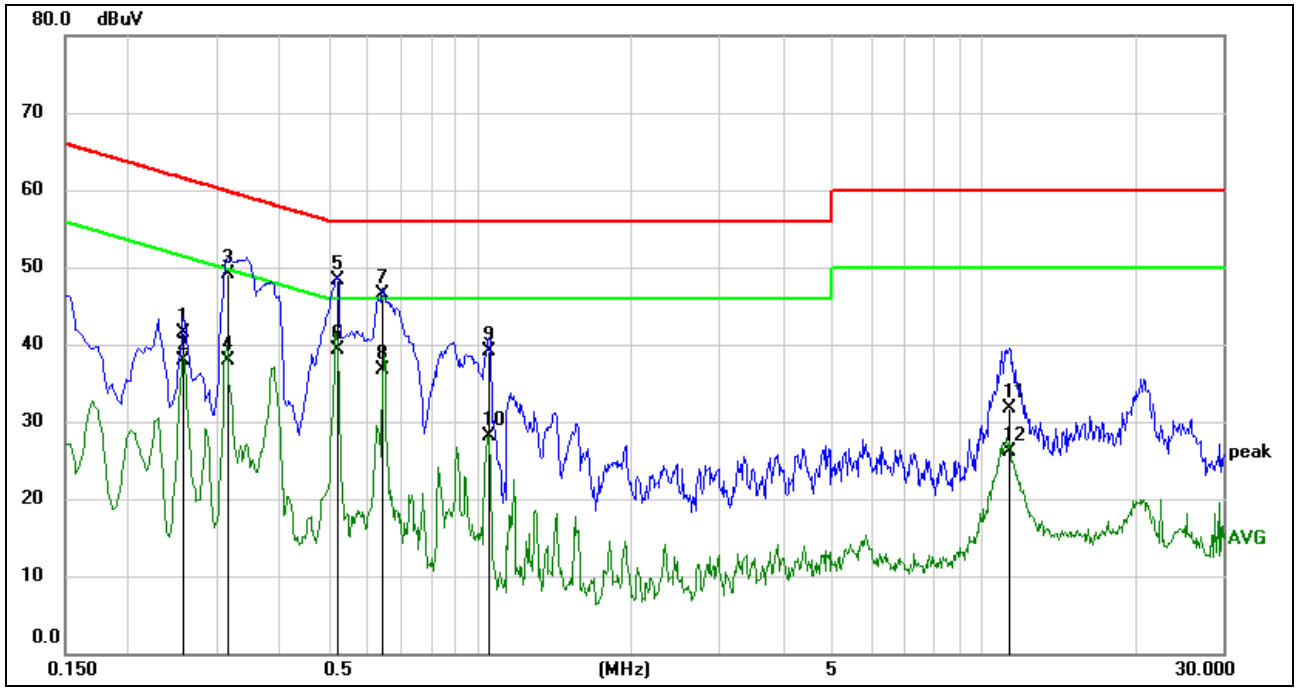
LINE N RESULTS (MID CHANNEL, WORST-CASE CONFIGURATION)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.2565	33.78	9.60	43.38	61.54	-18.16	QP
2	0.2565	29.27	9.60	38.87	51.54	-12.67	AVG
3	0.3157	37.37	9.60	46.97	59.82	-12.85	QP
4	0.3157	26.11	9.60	35.71	49.82	-14.11	AVG
5	0.3447	35.73	9.60	45.33	59.09	-13.76	QP
6	0.3447	17.65	9.60	27.25	49.09	-21.84	AVG
7	0.5212	35.48	9.60	45.08	56.00	-10.92	QP
8	0.5212	26.23	9.60	35.83	46.00	-10.17	AVG
9	0.6406	34.09	9.60	43.69	56.00	-12.31	QP
10	0.6406	22.45	9.60	32.05	46.00	-13.95	AVG
11	11.2903	23.97	9.79	33.76	60.00	-26.24	QP
12	11.2903	17.83	9.79	27.62	50.00	-22.38	AVG

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

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



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.2574	31.91	9.60	41.51	61.51	-20.00	QP
2	0.2574	28.38	9.60	37.98	51.51	-13.53	AVG
3	0.3160	39.55	9.60	49.15	59.81	-10.66	QP
4	0.3160	28.23	9.60	37.83	49.81	-11.98	AVG
5	0.5237	38.74	9.60	48.34	56.00	-7.66	QP
6	0.5237	29.62	9.60	39.22	46.00	-6.78	AVG
7	0.6438	36.98	9.60	46.58	56.00	-9.42	QP
8	0.6438	27.18	9.60	36.78	46.00	-9.22	AVG
9	1.0451	29.48	9.61	39.09	56.00	-16.91	QP
10	1.0451	18.55	9.61	28.16	46.00	-17.84	AVG
11	11.2903	22.02	9.77	31.79	60.00	-28.21	QP
12	11.2903	16.34	9.77	26.11	50.00	-23.89	AVG

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

Note: All the test modes have been tested, only the worst data record 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

END OF REPORT