CFR 47 FCC PART 15 SUBPART C
ISED RSS-210 ISSUE 10

TEST REPORT

For

Forward Phased Array Radar

MODEL NUMBER: RD241608RFV2

REPORT NUMBER: 4791309052-5-3

ISSUE DATE: August 9, 2024

FCC ID: SS3-RD241608RF2
IC: 11805A-RD241608RF2

Prepared for

SZ DJI TECHNOLOGY CO.,LTD.
Lobby of T2, DJI Sky City, No. 53 Xianyuan Road, Xili Community, Xili Street, Nanshan District, Shenzhen

Prepared by

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

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	August 9, 2024	Initial Issue	

Summary of Test Results			
Clause	Test Items	FCC/IC Rules	Test Results
1	20dB Bandwidth	FCC Part 2.1049	Pass
2	99%dB Bandwidth	RSS-Gen Clause 6.7	Pass
3	TX Spurious Emission	CFR 47 FCC §15.249 (a)(d)(e) ISED RSS-210 Annex B B.10 CFR 47 FCC §15.205 and §15.209 RSS-GEN Clause 8.9 RSS-GEN Clause 8.10	Pass
Note 1: This test report is only published to and used by the applicant, and it is not for evidence purpose in China. Note 2: The measurement result for the sample received is <Pass> according to < CFR 47 FCC PART 15 SUBPART C, ISED RSS-210 ISSUE 10 > when <Simple Acceptance> decision rule is applied.			

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1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name:	SZ DJI TECHNOLOGY CO.,LTD.
Address:	Lobby of T2, DJI Sky City, No. 53 Xianyuan Road, Xili Community, Xili Street, Nanshan District, Shenzhen

Manufacturer Information

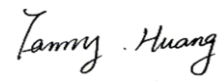
Company Name:	SZ DJI TECHNOLOGY CO.,LTD.
Address:	Lobby of T2, DJI Sky City, No. 53 Xianyuan Road, Xili Community, Xili Street, Nanshan District, Shenzhen

EUT Description

EUT Name:	Forward Phased Array Radar
Model:	RD241608RFV2
Brand Name:	DJI
Sample Status:	normal
Sample ID:	7201002-2
Sample Received Date:	May 10, 2024
Date of Tested:	May 10, 2024 ~ July 10, 2024

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 FCC PART 15 SUBPART C	PASS
ISED RSS-210 ISSUE 10	PASS

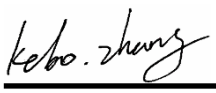
Prepared By:



Fanny Huang

Engineer Project Associate

Checked By:



Kebo Zhang

Senior Project Engineer

Approved By:

Stephen Guo

Operations Manager

2. TEST METHODOLOGY

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

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	**A2LA (Certificate No.: 4102.01)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA. **FCC (FCC Designation No.: CN1187)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules **ISED (Company No.: 21320)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. The Company Number is 21320 and the test lab Conformity Assessment Body Identifier (CABID) is CN0046. **VCCI (Registration No.: G-20192, C-20153, T-20155 and R-20202)** 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-20192 and R-20202 Shielding Room B, the VCCI registration No. is C-20153 and T-20155

Note 1:
All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, No. 1, Li Bin Road, Song Shan Lake Hi-Tech Development Zone Dongguan, 523808, People's Republic of China.

Note 2:
The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd.
Song Shan Lake Branch had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.

Note 3:
For below 30 MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30 MHz had been correlated to measurements performed on an OFS.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. MEASUREMENT UNCERTAINTY

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

Test Item	Uncertainty
Conduction emission	3.62dB
Radiation Emission test(include Fundamental emission) (9kHz-30MHz)	2.2dB
Radiation Emission test(include Fundamental emission) (30MHz-1GHz)	4.00dB
Radiation Emission test (1GHz to 26GHz)(include Fundamental emission)	5.78dB (1GHz-18GHz)
	5.23dB (18GHz-26GHz)
Radiated Emission (Included Fundamental Emission) (40 GHz to 110 GHz)	5.385 dB (40 GHz ~ 60 GHz)
	5.320 dB (60 GHz ~ 90 GHz)
	5.312 dB (90 GHz ~ 110 GHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name	Forward Phased Array Radar
Model	RD241608RFV2

Frequency Range:	24.05 ~ 24.25 GHz
Channel Number:	1
Center Frequency:	24.15GHz
Type of Modulation:	FMCW
Antenna Type:	Antenna for Forward Radar: Linear Antenna Antenna for Upward Radar: Linear Antenna
Antenna Gain:	Antenna gain for Forward Radar: 10 dBi Antenna gain for Upward Radar: 10 dBi
Normal Test Voltage:	DC 52.22 V

5.2. SUPPORT UNITS FOR SYSTEM TEST

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	Remarks
1	Power adapter board	DJ	/	/

I/O CABLES

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	DC In	/	Unshielded	1.0	/

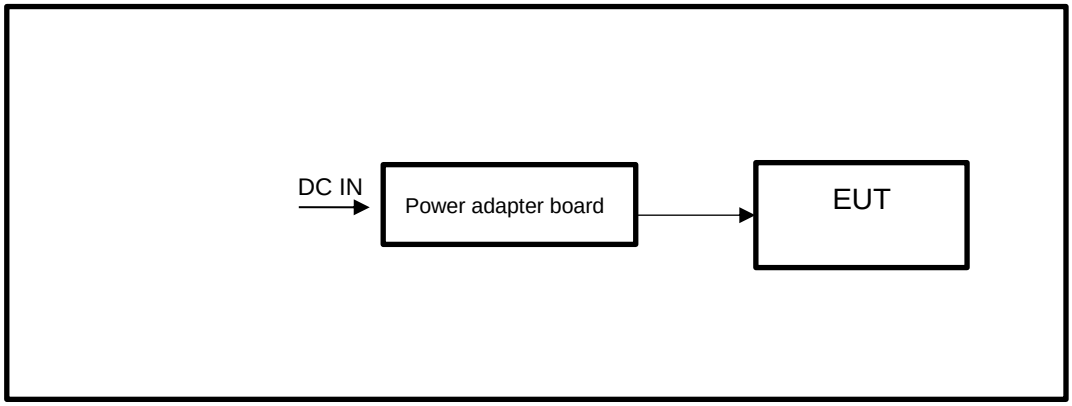
ACCESSORIES

Item	Accessory	Brand Name	Model Name	Description
/	/	/	/	/

TEST SETUP

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

SETUP DIAGRAM FOR TESTS



6. MEASURING EQUIPMENT AND SOFTWARE USED

Radiated Emissions						
Equipment	Manufacturer	Model No.	Serial No.	Upper Last Cal.	Last Cal.	Due Date
MXE EMI Receiver	KESIGHT	N9038A	MY56400036	/	Oct.12, 2023	Oct.11, 2024
Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	Aug.02, 2021	June 28, 2024	June 27, 2027
Preamplifier	HP	8447D	2944A09099	/	Oct.12, 2023	Oct.11, 2024
EMI Measurement Receiver	R&S	ESR26	101377	/	Oct.12, 2023	Oct.11, 2024
Horn Antenna	TDK	HRN-0118	130939	/	Apr.29, 2022	Apr.28, 2025
Preamplifier	TDK	PA-02-0118	TRS-305-00067	/	Oct.12, 2023	Oct.11, 2024
Horn Antenna	Schwarzbeck	BBHA9170	697	July 20, 2021	June 30, 2024	June 29, 2027
Preamplifier	TDK	PA-02-2	TRS-307-00003	/	Oct.12, 2023	Oct.11, 2024
Preamplifier	TDK	PA-02-3	TRS-308-00002	/	Oct.12, 2023	Oct.11, 2024
Loop antenna	Schwarzbeck	1519B	00008	/	Dec.14, 2021	Dec.13, 2024
Preamplifier	TDK	PA-02-001-3000	TRS-302-00050	/	Oct.12, 2023	Oct.11, 2024

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

Radiated Emissions for above 40GHz					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
MXA Signal Analyzer	KESIGHT	N9020A	MY54432249	Mar.07, 2024	Mar.07, 2025
Millimeter Wave Frequency Conversion Receiving Unit and Antenna (40-60GHz)	Tonscend	Tonscend MMFC-R190-L0F0	202305240000	May 14, 2024	May 13, 2025
Millimeter Wave Frequency Conversion Receiving Unit and Antenna (60-90GHz)	Tonscend	Tonscend MMFC-R120-L0F0	202305240000	Jan.01, 2024	Jan.01, 2025
Millimeter Wave Frequency Conversion Receiving Unit and Antenna (75-110GHz)	Tonscend	Tonscend MMFC-R100-L0F0	202305240000	May 09, 2024	May 08, 2025

Software			
Description	Manufacturer	Name	Version
mmWave Test Software	Tonscend	JS1120-mmWave Test Software	V1.0

7. TEST RESULTS

7.1. ON TIME AND DUTY CYCLE

LIMITS

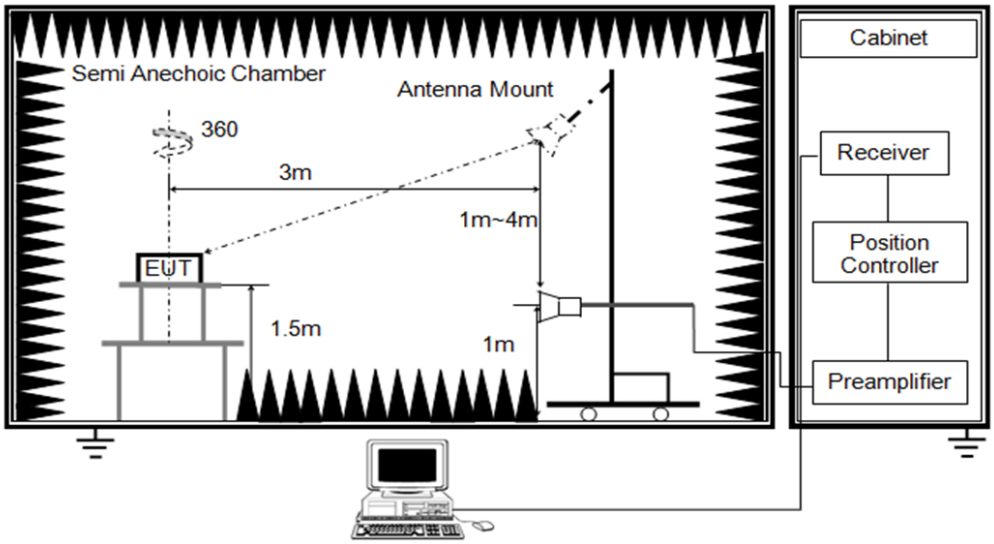
None; for reporting purposes only.

TEST PROCEDURE

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

TEST SETUP

Above 1 GHz



a. Set RBW of spectrum analyzer to 8 MHz and VBW to 8 MHz.
b. Use a video trigger with the trigger level set to enable triggering only on full pulses.
c. Sweep Time is at least a 100 ms.
d. Set the center frequency on any frequency would be measure and set the frequency span to zero span.
e. Measure the maximum time duration of one single pulse.

TEST ENVIRONMENT

Temperature	22.1°C	Relative Humidity	62%
Atmosphere Pressure	101kPa	Test Voltage	DC 52.22 V

RESULTS

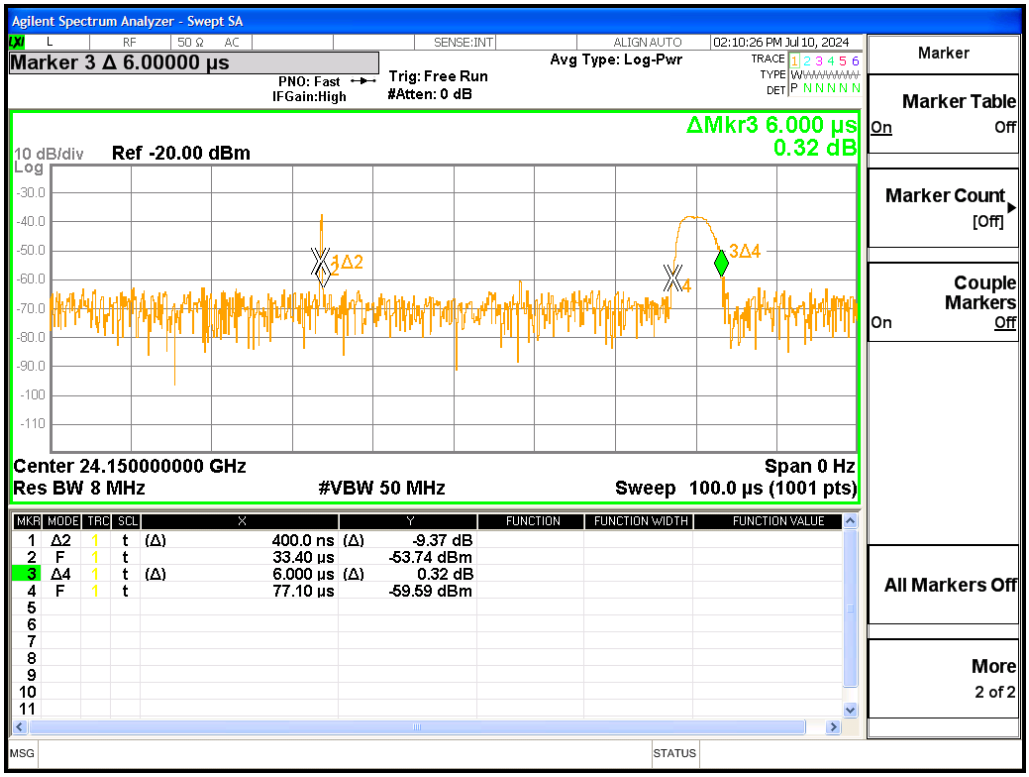
Test data for Forward Radar:

Ton1 (ms)	Ton2 (ms)	Total Ton times (ms)
0.0004	0.0060	0.0064

Total Ton times (ms)	Period (ms)	Duty Cycle (Linear)	Duty Cycle Correction Factor
0.0064	0.0902	0.071	-22.97

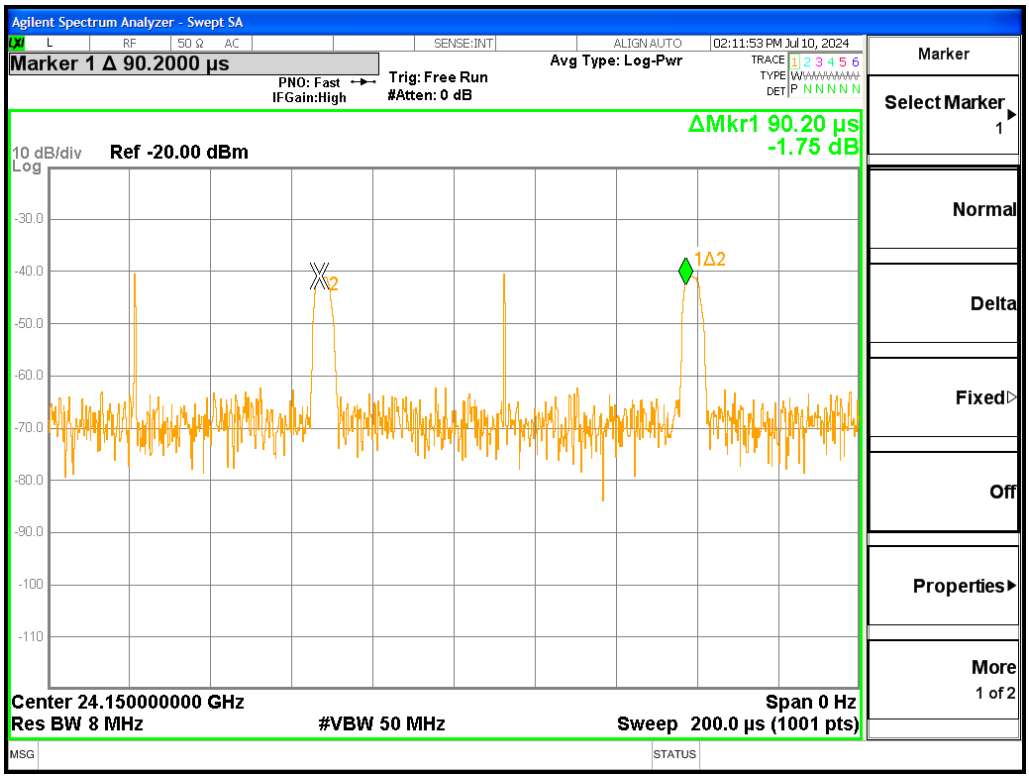
Note: Duty Cycle Correction Factor=20log(x).
Where: x is Duty Cycle

Ton



Period

(ms)



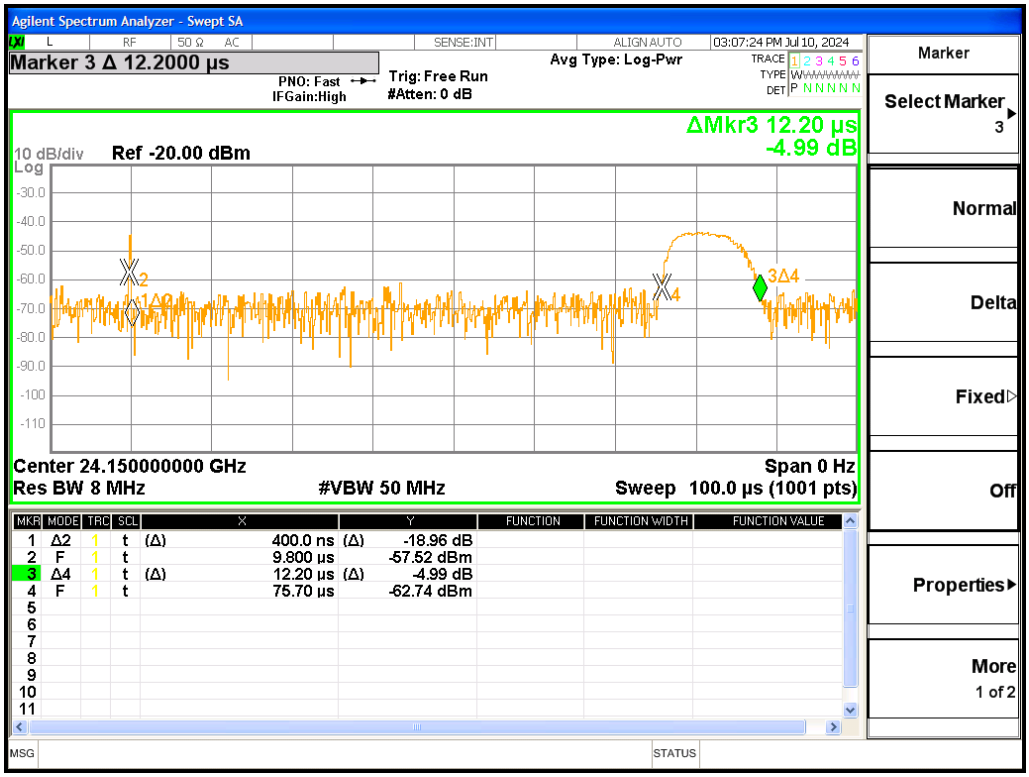
Test data for Upward Radar:

Ton1 (ms)	Ton2 (ms)	Total Ton times (ms)
0.0004	0.0122	0.0126

Total Ton times (ms)	Period (ms)	Duty Cycle (Linear)	Duty Cycle Correction Factor
0.0126	0.161	0.078	-22.16

Note: Duty Cycle Correction Factor=20log(x).
Where: x is Duty Cycle

Ton



Period

(ms)

7.2. 20 DB BANDWIDTH AND 99 % OCCUPIED BANDWIDTH

LIMITS

CFR 47 FCC Part15 (15.249) Subpart C RSS-Gen Issue 5			
Section	Test Item	Limit	Frequency Range (GHz)
CFR 47 FCC 15.249(d)	20dB Bandwidth	for reporting purposes only	24~24.25 GHz
ISED RSS-Gen Clause 6.7 Issue 5	99% Bandwidth	N/A	24~24.25 GHz

TEST PROCEDURE

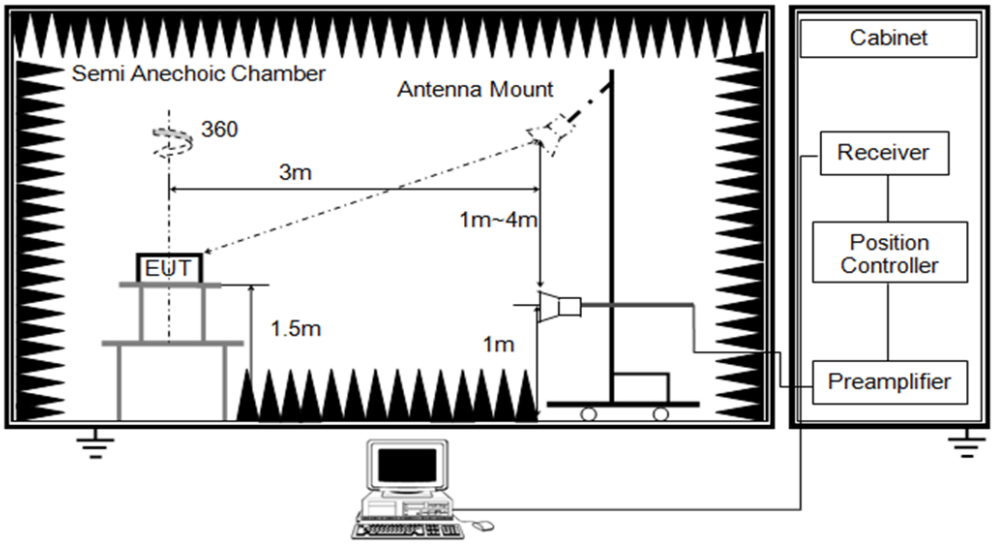
Spectrum analyzer and use the following settings:

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

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

TEST SETUP

Above 1 GHz



TEST ENVIRONMENT

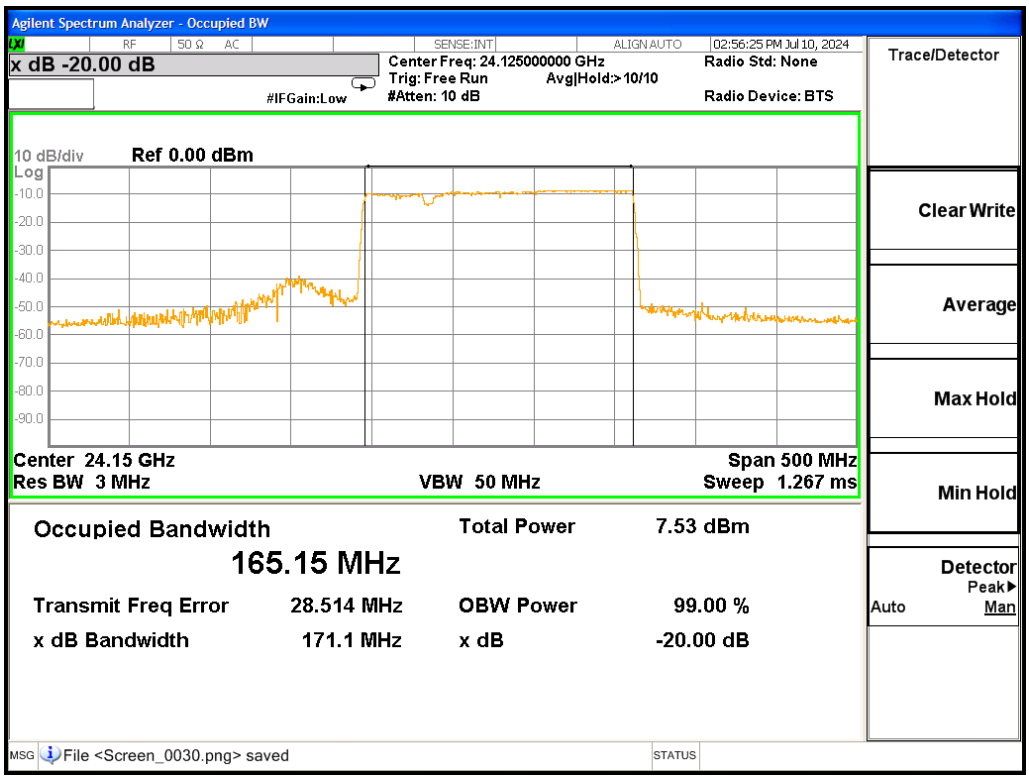
Temperature	23.6 °C	Relative Humidity	60 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 52.22 V

RESULTS

Test data for Forward Radar:

Channel	20 dB bandwidth (MHz)	99 % bandwidth (MHz)	Result
1	171.1	165.15	PASS

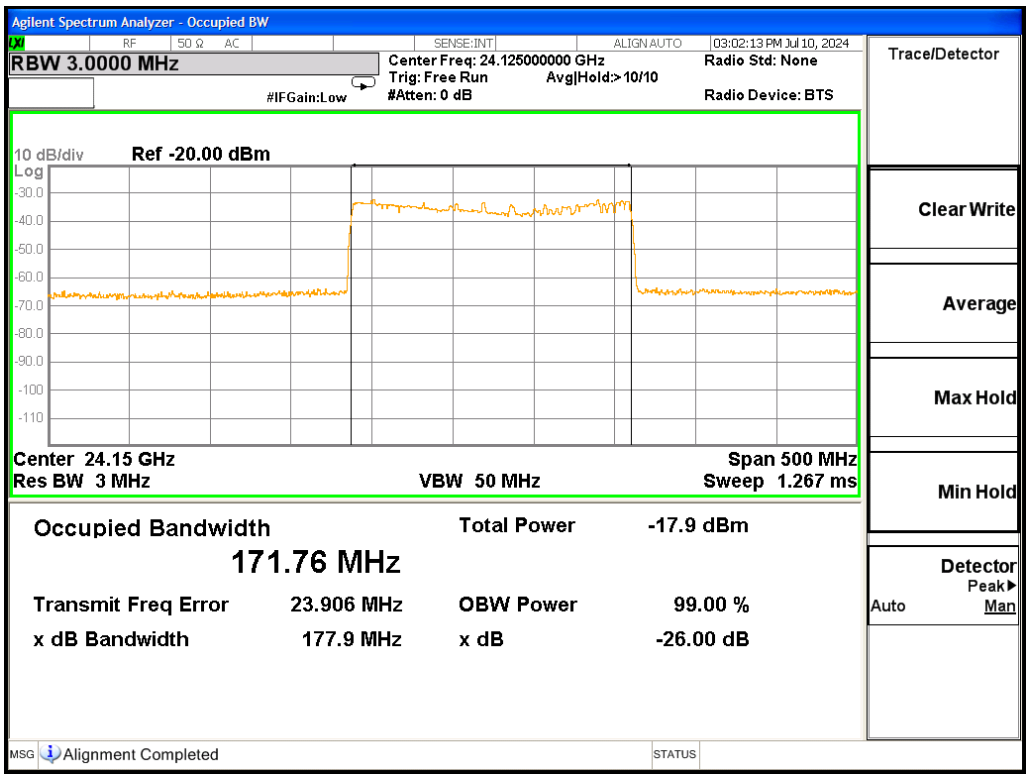
BANDWIDTH CH1



Test data for Upward Radar:

Channel	20 dB bandwidth (MHz)	99 % bandwidth (MHz)	Result
1	177.9	171.76	PASS

BANDWIDTH CH1



7.3. RADIATED TEST RESULTS

LIMITS

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

CFR 47 FCC §15.249 (a)(d)(c)(e) and ISED RSS-210 Issue 10 Annex B B.10

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

The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

The field strength of emissions from intentional radiators operated within these frequency bands			
Frequency (MHz)	Average Field strength of Fundamental	Average Field strength of Harmonics	Distance (m)
24000 - 24250	250 mV/m (107.96dBuV/m)	2500 uV/m (67.96dBuV/m)	3
	Peak Field strength of Fundamental	Peak Field strength of Harmonics	3
	127.96dBuV/m	87.96dBuV/m	3

Frequency (MHz)	Average Field strength of Fundamental	Average Field strength of Harmonics	Distance (m)
24000 - 24250	117.50	77.50	1
	Peak Field strength of Fundamental	Peak Field strength of Harmonics	1
	137.50	97.50	1

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation.

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		Field Strength Limit (dBuV/m) at 1 m		Field Strength Limit (dBuV/m) at 0.75 m	
		Quasi-Peak		Quasi-Peak		Quasi-Peak	
30 - 88	100	40		/		/	
88 - 216	150	43.5		/		/	
216 - 960	200	46		/		/	
Above 960	500	54		/		/	
Above 1000	500	Peak	Average	Peak	Average	Peak	Average
		74	54	83.5	63.5	86	66

$$E_{SpecLimit} = E_{Meas} + 20\log\left(\frac{d_{Meas}}{d_{SpecLimit}}\right) \quad (20)$$

where

$E_{SpecLimit}$ is the field strength of the emission at the distance specified by the limit, in dBµV/m
E_{Meas} is the field strength of the emission at the measurement distance, in dBµV/m
d_{Meas} is the measurement distance, in m
$d_{SpecLimit}$ is the distance specified by the limit, in m

Distance factor:
26 GHz to 90 GHz=20log (1.00 m/3.00 m) = -9.5 dB
90 GHz to 110 GHz=20log (0.75 m/3.00 m) = -12 dB

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 please refer to ISED RSS-GEN Clause 8.10

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

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

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 PROCEDURE

Below 30 MHz

The setting of the spectrum analyzer

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

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

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

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

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

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

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

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

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

Below 1 GHz and above 30 MHz

The setting of the spectrum analyzer

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

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

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

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

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

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

Above 1 GHz to 18 GHz

The setting of the spectrum analyzer

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

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

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

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

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

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

6. For average value=peak average + Duty Correction Factor

For the Duty Cycle and Correction Factor please refer to clause 7.1.ON TIME AND DUTY CYCLE.

Above 18 GHz to 90 GHz

The setting of the spectrum analyzer

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

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

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

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

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

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

6. For average value=peak average + Duty Correction Factor

For the Duty Cycle and Correction Factor please refer to clause 7.1.ON TIME AND DUTY CYCLE.

Above 90 GHz to 110 GHz

The setting of the spectrum analyzer

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

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

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

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

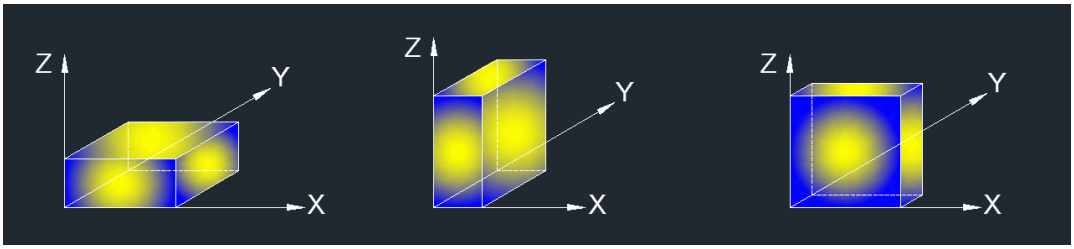
4. The EUT was set 0.75 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

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

6. For average value=peak average + Duty Correction Factor

For the Duty Cycle and Correction Factor please refer to clause 7.1.ON TIME AND DUTY CYCLE.

X axis, Y axis, Z axis positions:



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

For Radiate Spurious emission (9 kHz ~ 30 MHz):
Note:
1. Measurement = Reading Level + Correct Factor.
2. If the peak values are less than the QP limit, the QP result is deemed to comply with QP 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. All modes have been tested, but only the worst data was recorded in the report.
5. dBuA/m= dBuV/m- 20Log10[120π] = dBuV/m- 51.5

For Radiate Spurious Emission (30 MHz ~ 1 GHz):
Note:
1. Result Level = Read Level + Correct Factor.
2. If the peak values are less than the QP limit, the QP result is deemed to comply with QP limit.
3. All modes have been tested, but only the worst data was recorded in the report.

For Radiate Spurious Emission (1 GHz ~ 3 GHz):
1. Measurement = Reading Level + Correct Factor.
2. If the peak values are less than the average limit of 54 dBuV/m, the average result is deemed to comply with average limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.7.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
8. All modes have been tested, but only the worst data was recorded in the report.

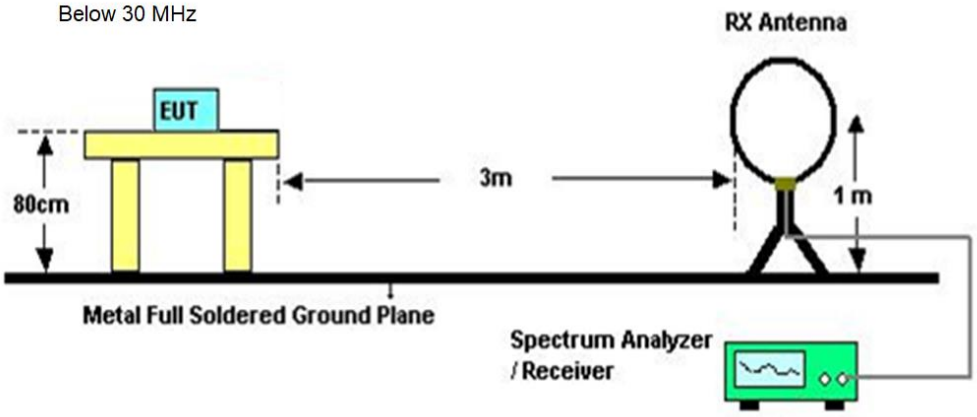
For Radiate Spurious Emission (3 GHz ~ 18 GHz):
Note:
1. Peak Result = Reading Level + Correct Factor.
2. If the peak values are less than the average limit of 54 dBuV/m, the average result is deemed to comply with average limit.
3. Peak: Peak detector.
4. AVG Result=Peak Result + Duty Cycle Correction Factor.
5. For the transmitting duration, please refer to clause 7.7.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
8. All modes have been tested, but only the worst data was recorded in the report.

For Radiate Spurious emission (18 GHz ~ 26 GHz):
Note:
1. Measurement = Reading Level + Correct Factor.
2. If the peak values are less than the average limit of 54 dBuV/m, the average result is deemed to comply with average limit.
3. Peak: Peak detector.
4. AVG Result=Peak Result + Duty Cycle Correction Factor.
5. All modes have been tested, but only the worst data was recorded in the report.

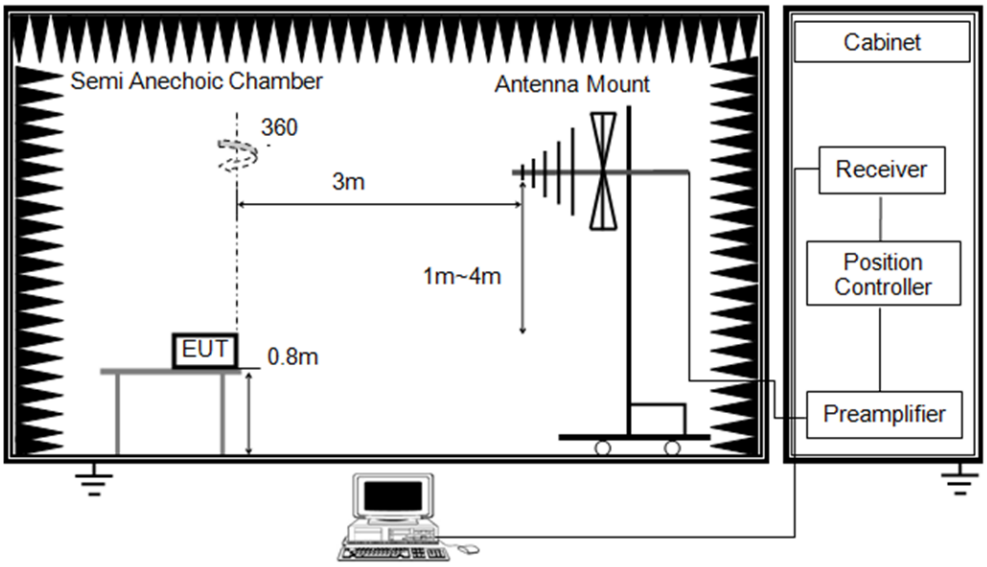
For Radiate Spurious emission (26 GHz ~ 110 GHz):
Note:
1. Measurement = Reading Level + Correct Factor.
2. If the peak values are less than the average limit of 54 dBuV/m, the average result is deemed to comply with average limit.
3. Peak: Peak detector.
4. AVG Result=Peak Result + Duty Cycle Correction Factor.
5. All modes have been tested, but only the worst data was recorded in the report.

TEST SETUP

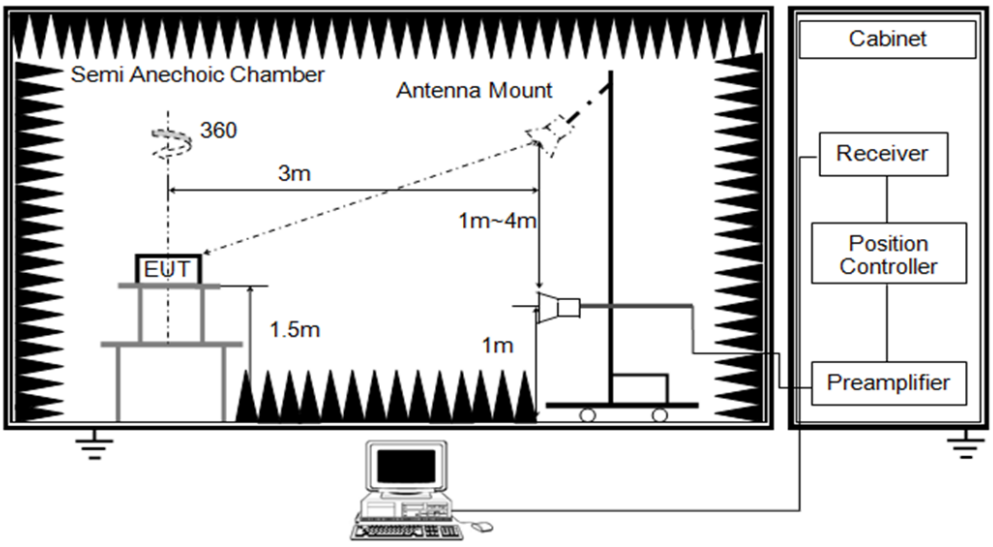
Below 30 MHz



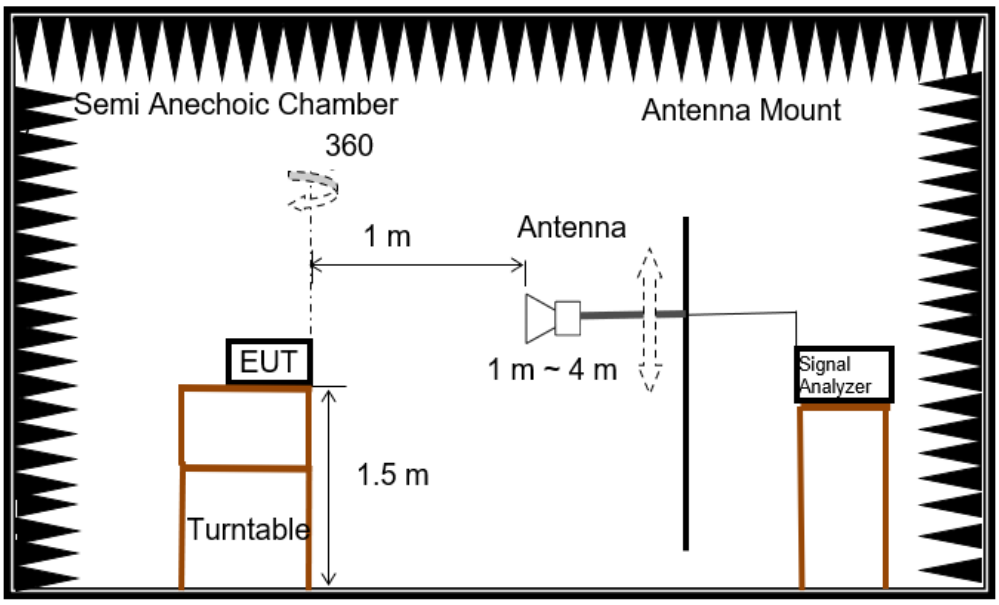
Below 1 GHz and above 30 MHz



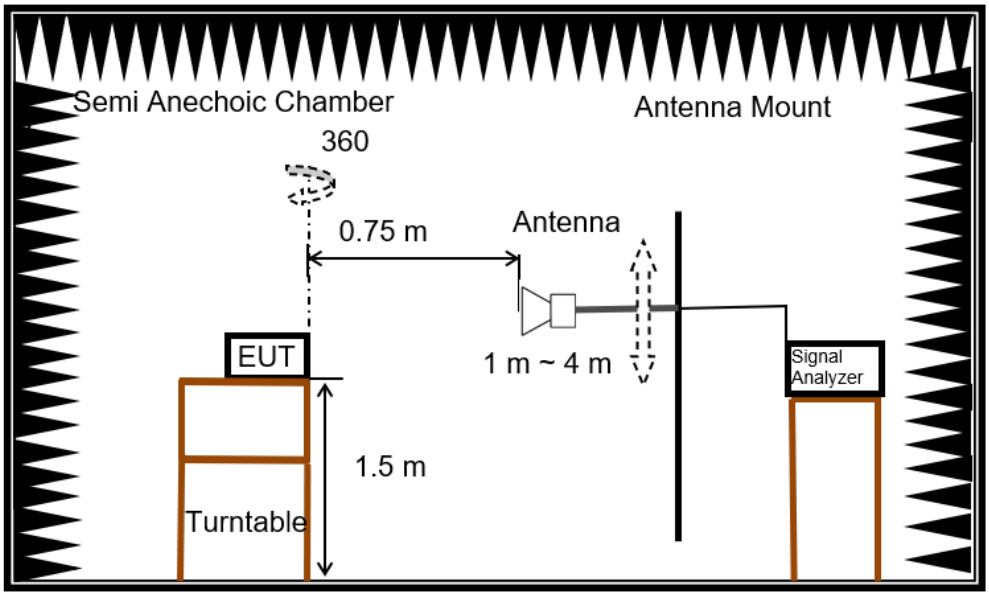
Above 1 GHz



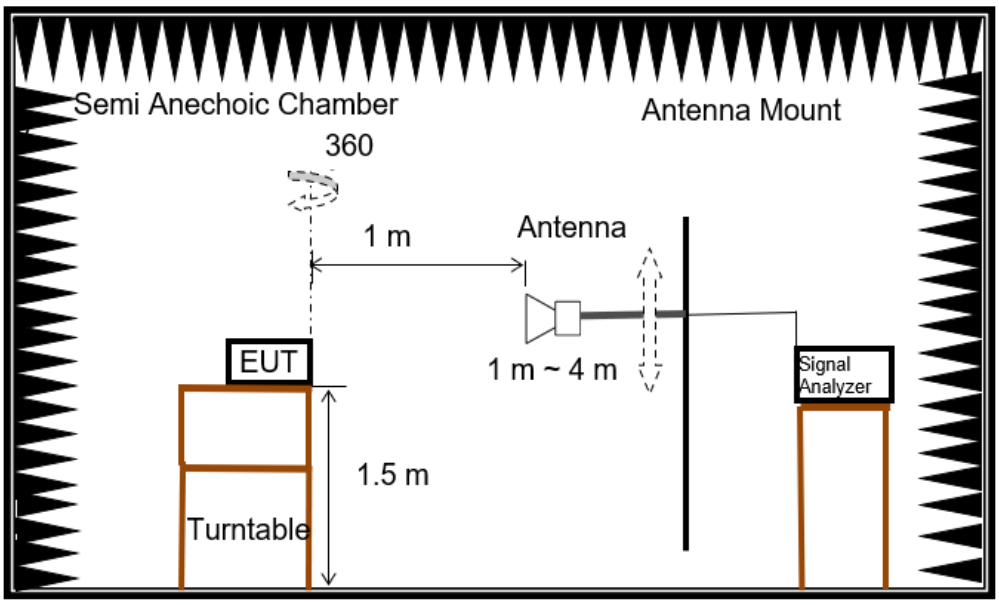
Above 26~90 GHz



Above 90~110 GHz



For Bandedge and Fundamental



TEST ENVIRONMENT

Temperature	24.3 °C	Relative Humidity	61%
Atmosphere Pressure	101 kPa	Test Voltage	DC 52.22 V

TEST RESULTS

7.3.1. FIELD STRENGTH OF INTENTIONAL EMISSIONS

Test data for Forward Radar:

Frequency	Reading	Correct	Peak Result@1m	AVG Result@1m	Peak	AVG	Margin Peak	Margin AVG	Polarity
					Limit@1m	Limit@1m			
(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	
24150	84.26	-0.8	83.46	60.49	137.5	117.5	-54.04	-57.01	H
	108.5	-0.83	107.67	84.7	137.5	117.5	-29.83	-32.8	V

Peak Result@3m	AVG Result@3m	Peak	AVG	Margin Peak	Margin	Polarity
		Limit@3m	Limit@3m		AVG	
(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	
73.96	50.99	128	108	-54.04	-57.01	H
98.17	75.2	128	108	-29.83	-32.8	V

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

Test data for Upward Radar:

Frequency	Reading	Correct	Peak Result@1m	AVG Result@1m	Peak	AVG	Margin Peak	Margin AVG	Polarity
					Limit@1m	Limit@1m			
(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	
24150	104.75	-0.6	104.15	81.99	137.5	117.5	-33.35	-35.51	H
	110.31	-0.57	109.74	87.58	137.5	117.5	-27.76	-29.92	V

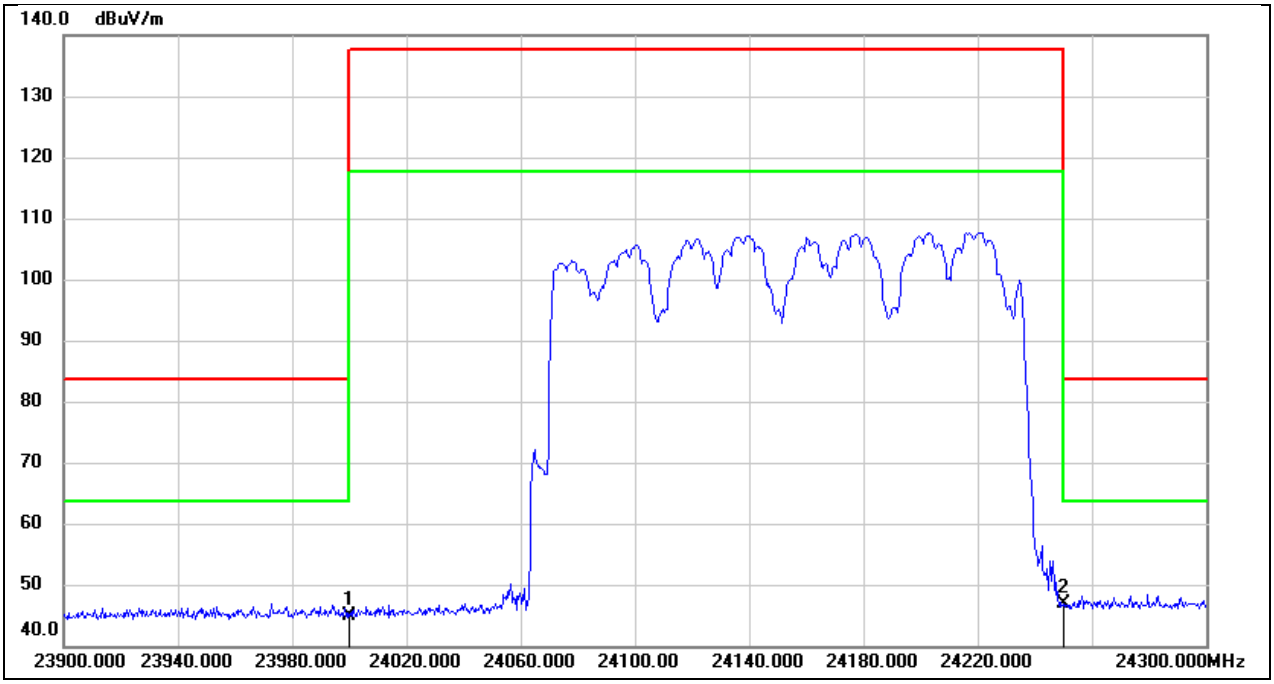
Peak Result@3m	AVG Result@3m	Peak	AVG	Margin Peak	Margin	Polarity
		Limit@3m	Limit@3m		AVG	
(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	
94.65	72.49	128	108	-33.35	-35.51	H
100.24	78.08	128	108	-27.76	-29.92	V

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

7.3.2. RESTRICTED BANDEDGE

Test data for Forward Radar:

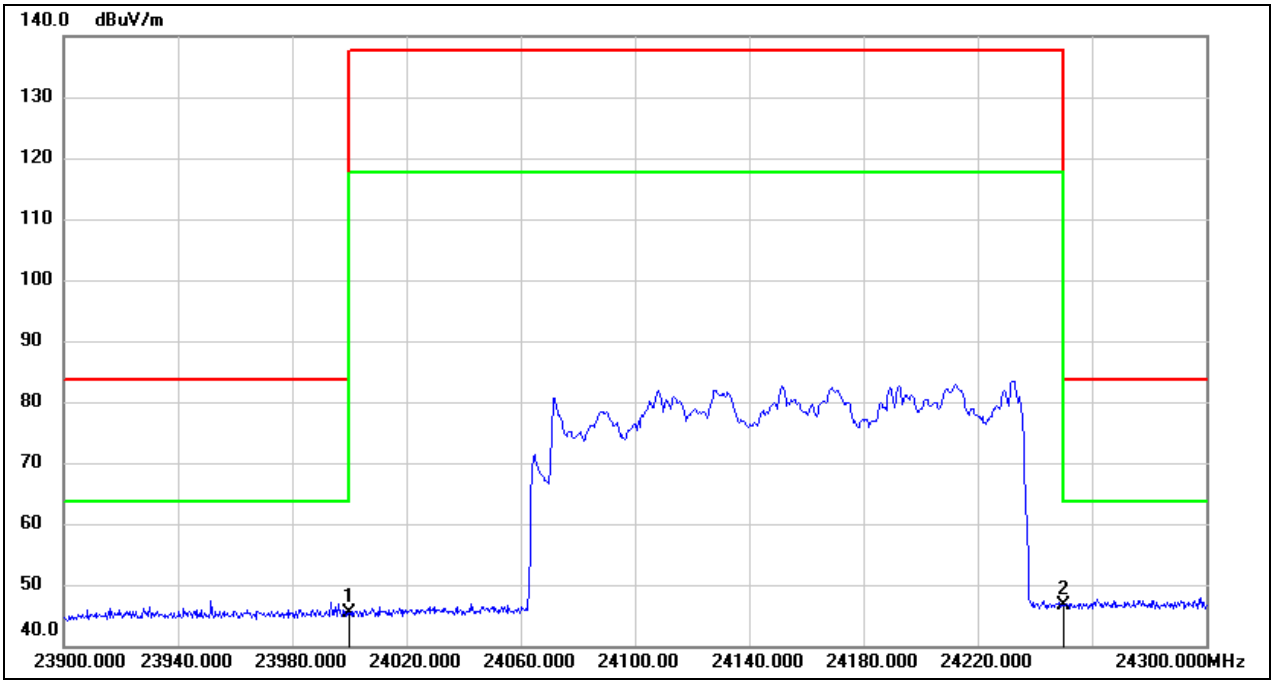
Test Mode:	FMCW	Test Channel:	1
Polarity:	Horizontal	Test Voltage:	DC 52.22 V



No.	Frequency	Reading	Correct	Result@1m	Limit@1m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	24000	46.08	-1.31	44.77	83.5	35.27	74	-38.73	peak
2	24250	47.68	-0.76	46.92	83.5	37.42	74	-36.58	peak

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

Test Mode:	FMCW	Test Channel:	1
Polarity:	Vertical	Test Voltage:	DC 52.22 V

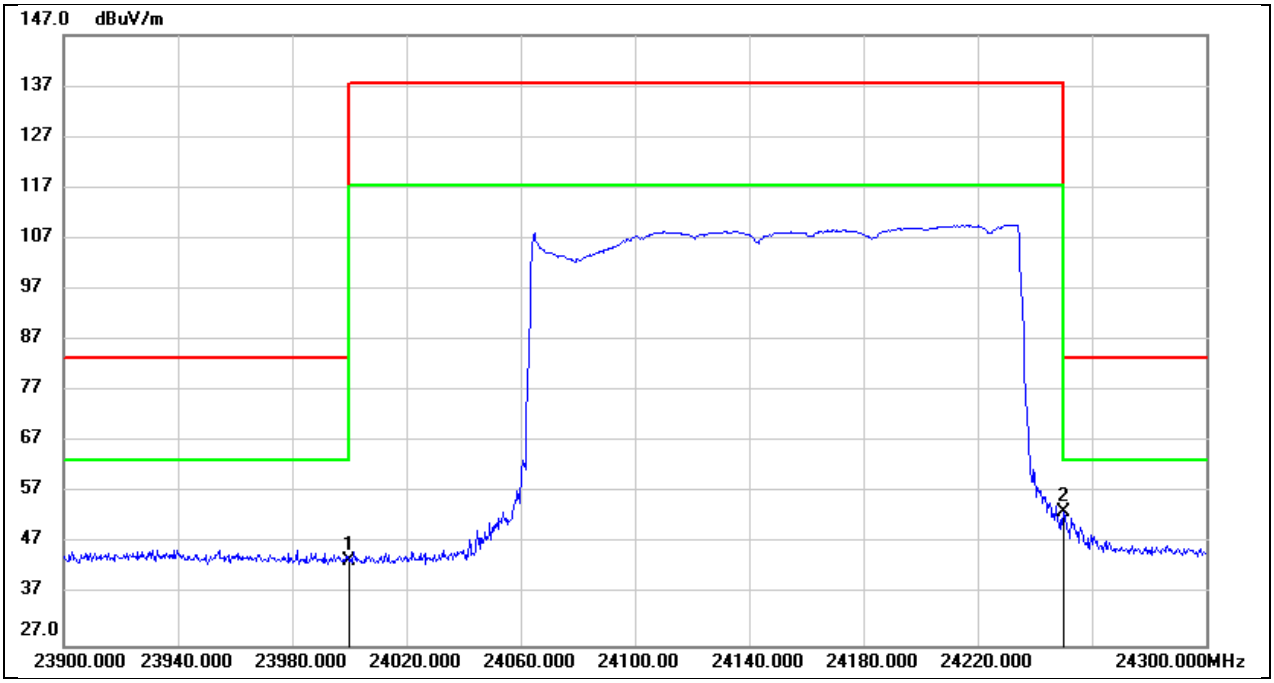


No.	Frequency	Reading	Correct	Result@1m	Limit@1m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	24000	46.72	-1.31	45.41	83.5	35.91	74	-38.09	peak
2	24250	47.39	-0.76	46.63	83.5	37.13	74	-36.87	peak

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

Test data for Upward Radar:

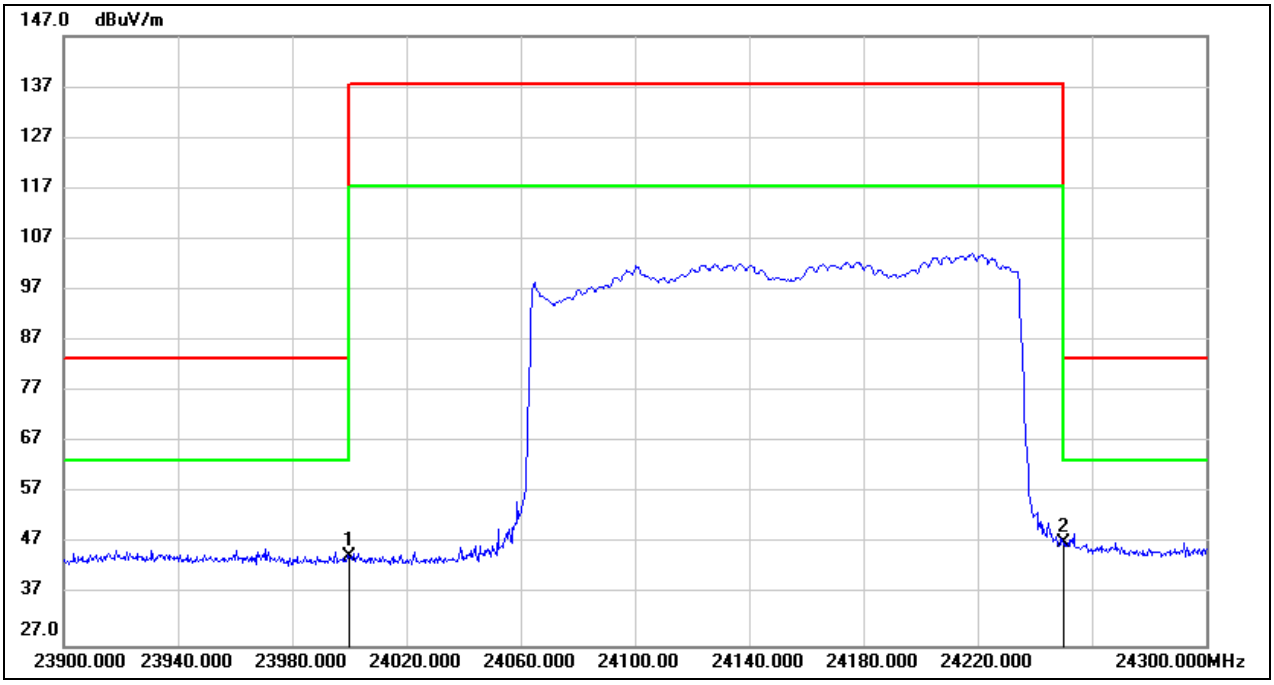
Test Mode:	FMCW	Test Channel:	1
Polarity:	Horizontal	Test Voltage:	DC 52.22 V



No.	Frequency	Reading	Correct	Result@1m	Limit@1m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	24000	44.78	-1.01	43.77	83.5	34.27	74	-39.73	peak
2	24250	53.9	-0.54	53.36	83.5	43.86	74	-30.14	peak

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

Test Mode:	FMCW	Test Channel:	1
Polarity:	Vertical	Test Voltage:	DC 52.22 V



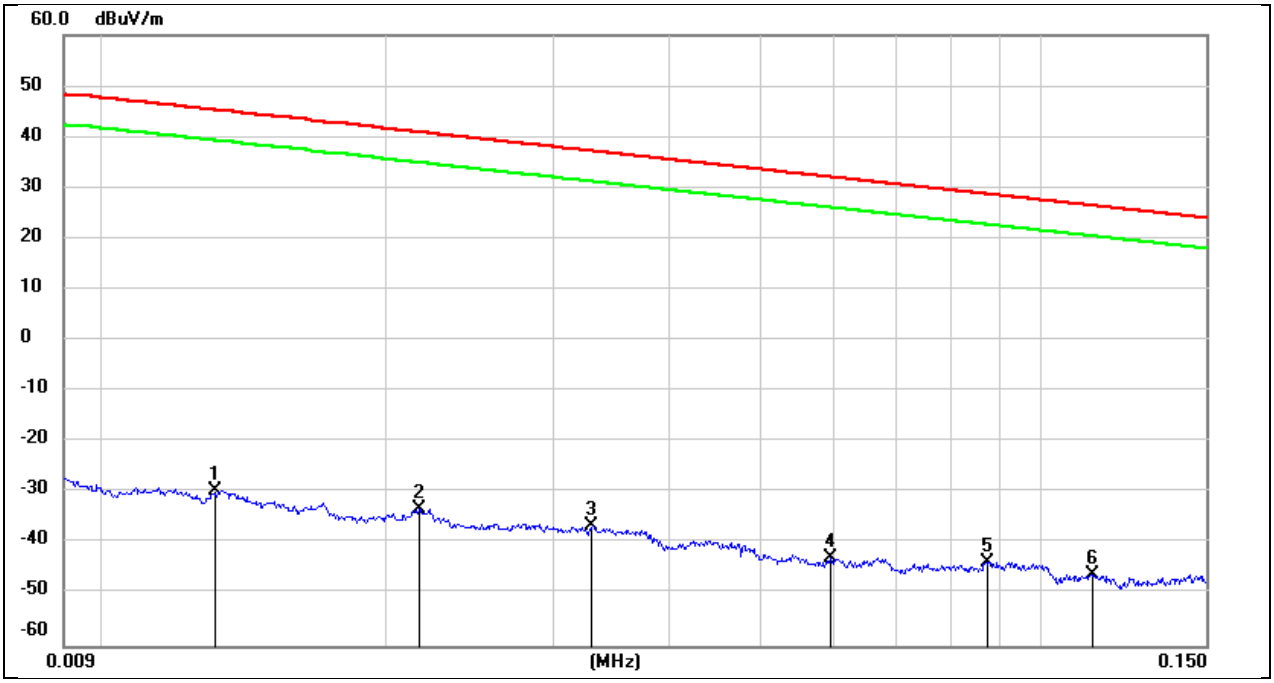
No.	Frequency	Reading	Correct	Result@1m	Limit@1m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	24000	45.62	-1.01	44.61	83.5	35.11	74	-38.89	peak
2	24250	47.68	-0.54	47.14	83.5	37.64	74	-36.36	peak

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

7.3.3. SPURIOUS EMISSIONS(9 kHz~30 MHz)

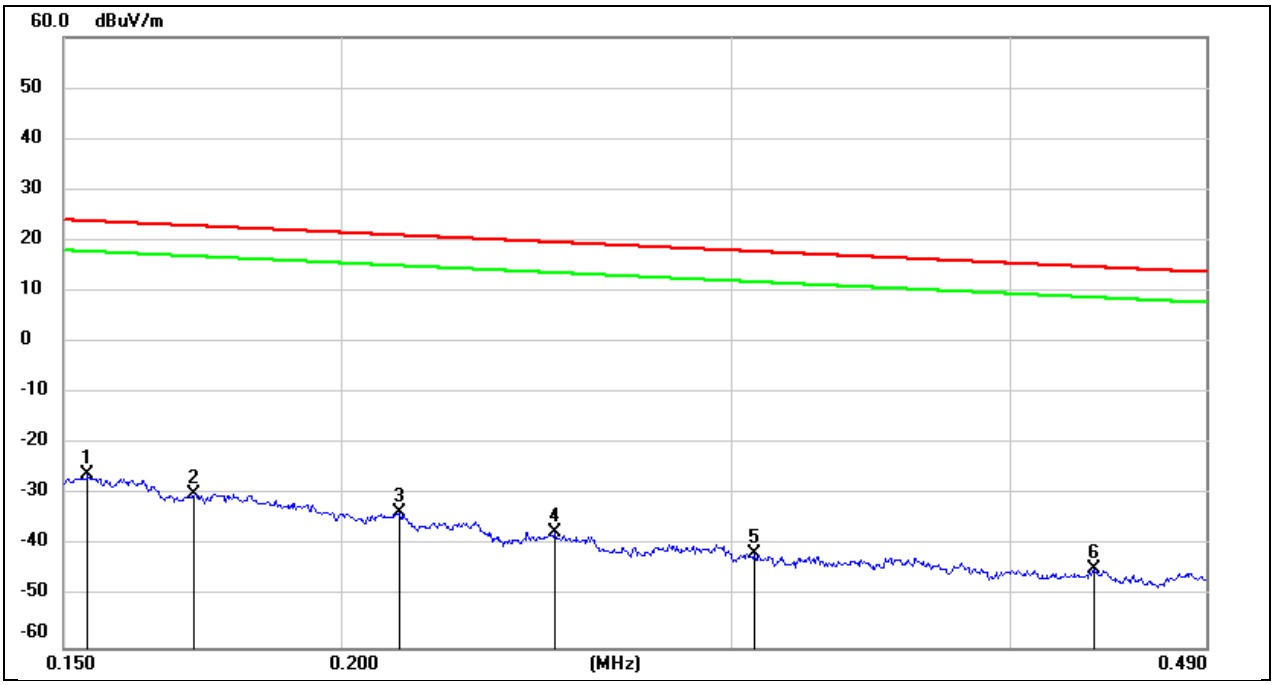
Test data for Forward Radar:

Test Mode:	FMCW	Test Channel:	1
Polarity:	Horizontal	Test Voltage:	DC 52.22 V



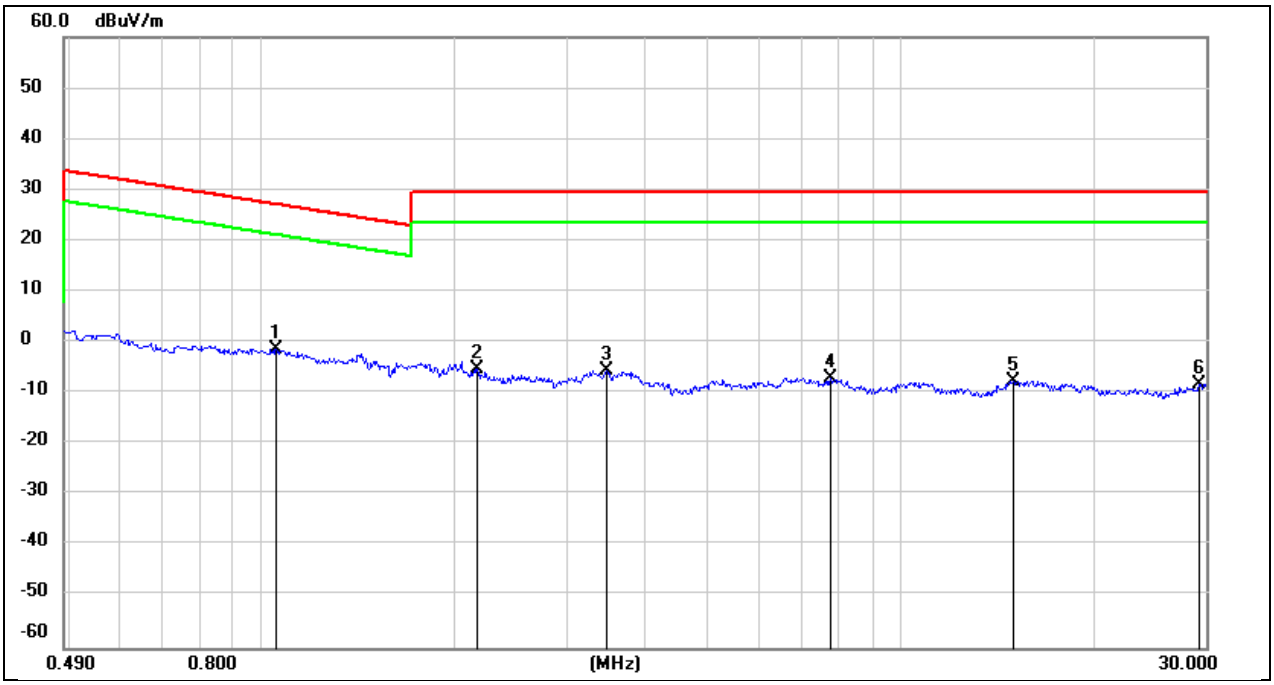
No.	Frequency	Reading	Correct	FCC Result	FCC Limit	ISED Result	ISED Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.0131	71.95	-101.38	-29.43	45.25	-80.93	-6.25	-74.68	peak
2	0.0216	68.19	-101.35	-33.16	40.91	-84.66	-10.59	-74.07	peak
3	0.0330	64.88	-101.40	-36.52	37.23	-88.02	-14.27	-73.75	peak
4	0.0594	58.81	-101.52	-42.71	32.13	-94.21	-19.37	-74.84	peak
5	0.0874	58.08	-101.69	-43.61	28.77	-95.11	-22.73	-72.38	peak
6	0.1131	55.83	-101.76	-45.93	26.54	-97.43	-24.96	-72.47	peak

Test Mode:	FMCW	Test Channel:	1
Polarity:	Horizontal	Test Voltage:	DC 52.22 V



No.	Frequency	Reading	Correct	FCC Result	FCC Limit	ISED Result	ISED Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.1537	75.73	-101.64	-25.91	23.87	-77.41	-27.63	-49.78	peak
2	0.1718	71.86	-101.67	-29.81	22.91	-81.31	-28.59	-52.72	peak
3	0.2126	68.39	-101.74	-33.35	21.05	-84.85	-30.45	-54.40	peak
4	0.2494	64.46	-101.80	-37.34	19.66	-88.84	-31.84	-57.00	peak
5	0.3069	60.43	-101.86	-41.43	17.86	-92.93	-33.64	-59.29	peak
6	0.4364	57.36	-101.99	-44.63	14.80	-96.13	-36.70	-59.43	peak

Test Mode:	FMCW	Test Channel:	1
Polarity:	Horizontal	Test Voltage:	DC 52.22 V



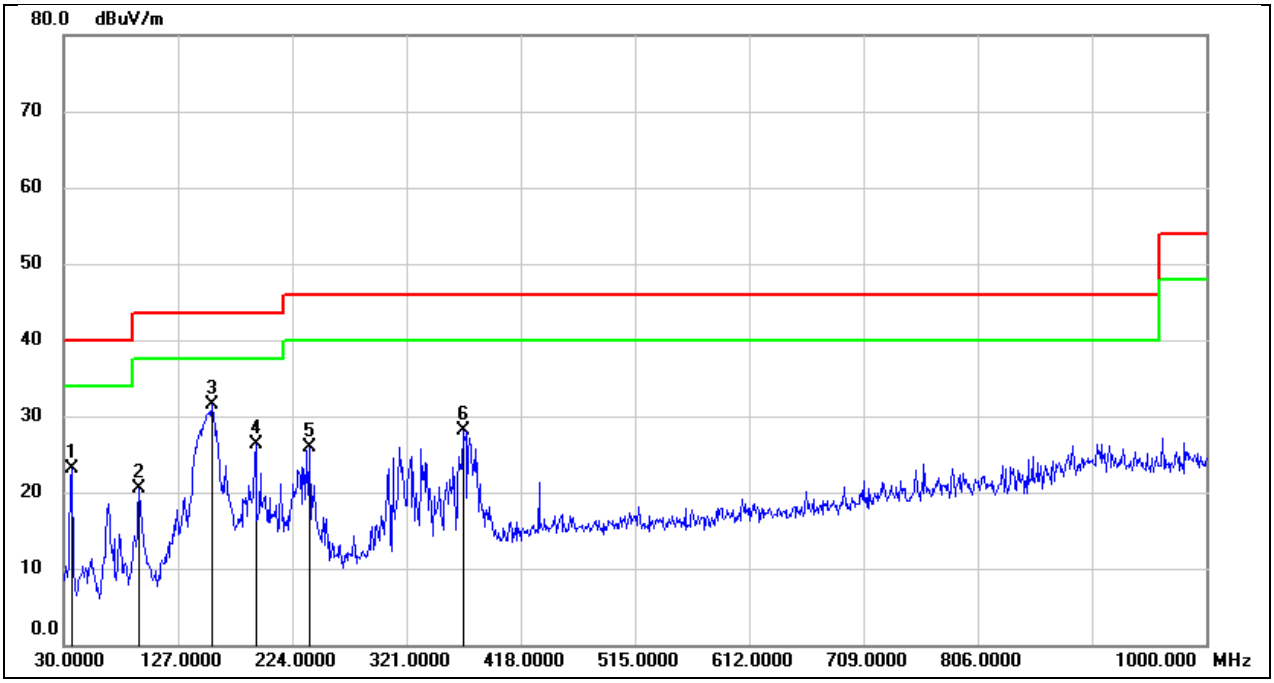
No.	Frequency	Reading	Correct	FCC Result	FCC Limit	ISED Result	ISED Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	1.0524	60.94	-62.24	-1.30	27.16	-52.80	-24.34	-28.46	peak
2	2.1730	56.48	-61.78	-5.30	29.54	-56.80	-21.96	-34.84	peak
3	3.4704	55.85	-61.46	-5.61	29.54	-57.11	-21.96	-35.15	peak
4	7.7495	53.98	-61.11	-7.13	29.54	-58.63	-21.96	-36.67	peak
5	15.0089	53.42	-61.02	-7.60	29.54	-59.10	-21.96	-37.14	peak
6	29.3213	51.80	-60.02	-8.22	29.54	-59.72	-21.96	-37.76	peak

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

7.3.4. SPURIOUS EMISSIONS(30 MHz~1 GHz)

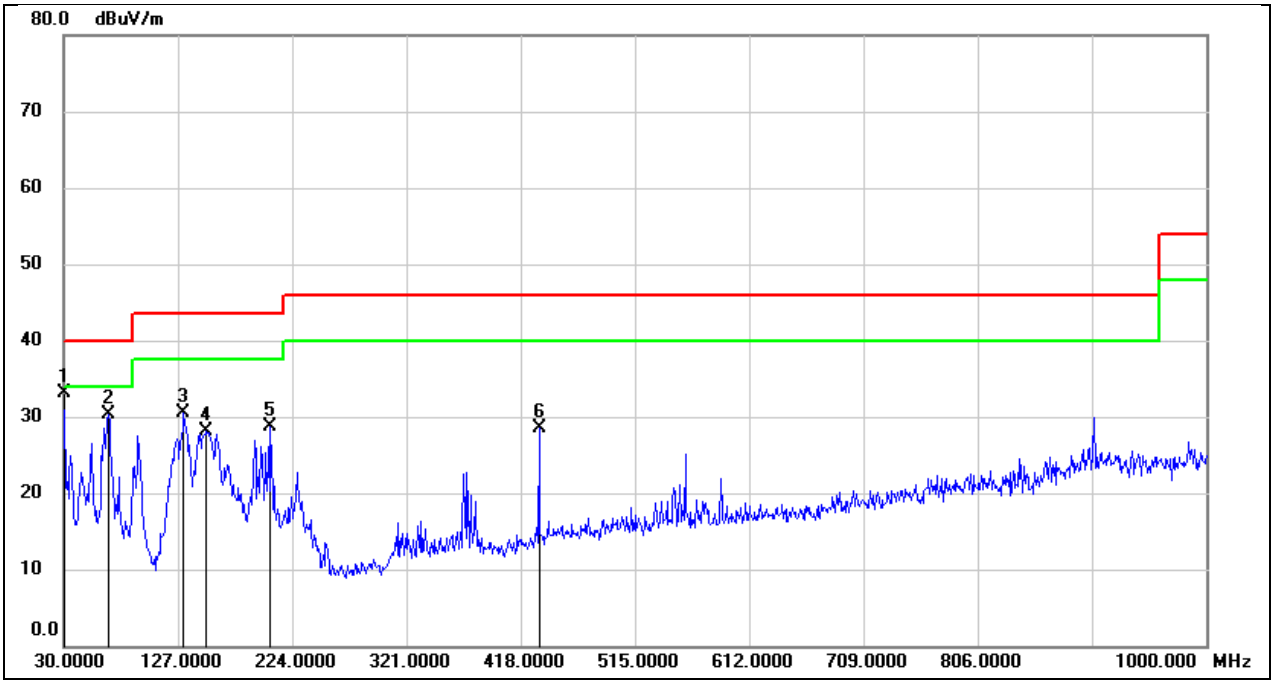
Test data for Forward Radar:

Test Mode:	FMCW	Test Channel:	1
Polarity:	Horizontal	Test Voltage:	DC 52.22 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	36.7900	38.10	-14.99	23.11	40.00	-16.89	QP
2	94.0199	37.25	-16.65	20.60	43.50	-22.90	QP
3	156.1000	44.51	-13.05	31.46	43.50	-12.04	QP
4	192.9600	38.49	-12.20	26.29	43.50	-17.21	QP
5	238.5500	39.79	-13.95	25.84	46.00	-20.16	QP
6	369.5000	37.78	-9.74	28.04	46.00	-17.96	QP

Test Mode:	FMCW	Test Channel:	1
Polarity:	Vertical	Test Voltage:	DC 52.22 V



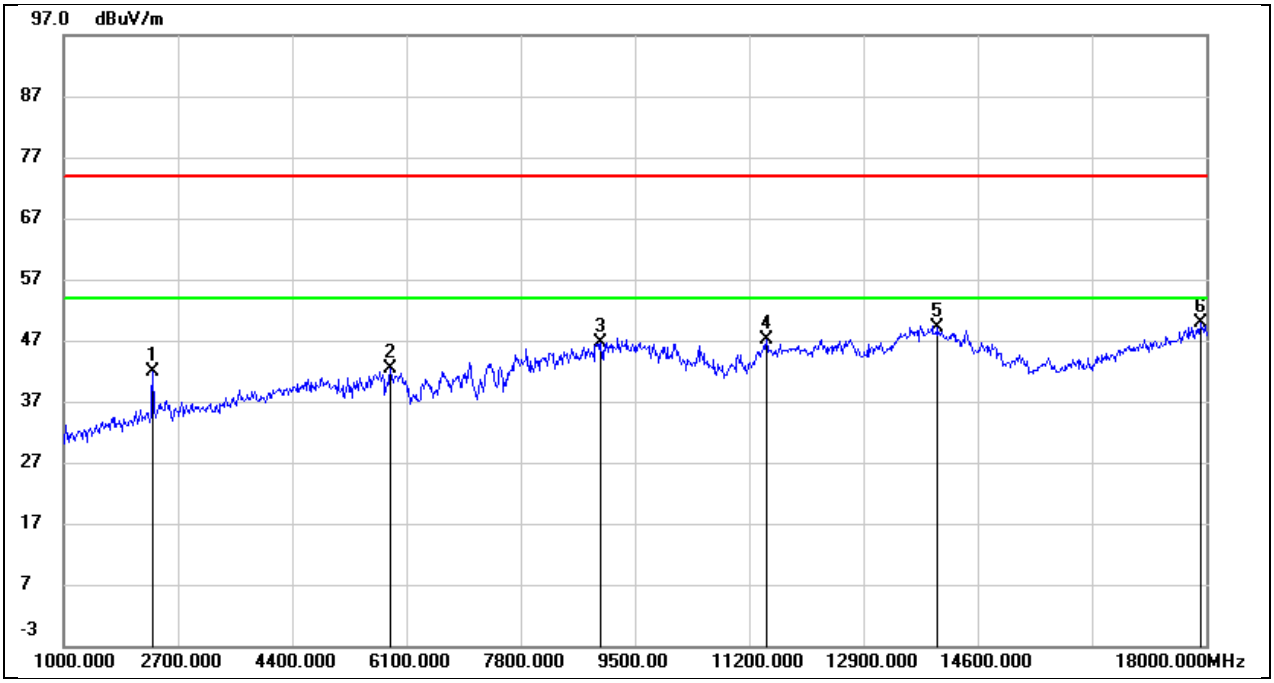
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.0000	47.09	-14.04	33.05	40.00	-6.95	QP
2	67.8300	45.68	-15.35	30.33	40.00	-9.67	QP
3	131.8500	44.83	-14.28	30.55	43.50	-12.95	QP
4	151.2500	41.57	-13.39	28.18	43.50	-15.32	QP
5	204.6000	41.19	-12.39	28.80	43.50	-14.70	QP
6	433.5200	37.55	-9.03	28.52	46.00	-17.48	QP

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

7.3.5. SPURIOUS EMISSIONS(1 GHz~18 GHz)

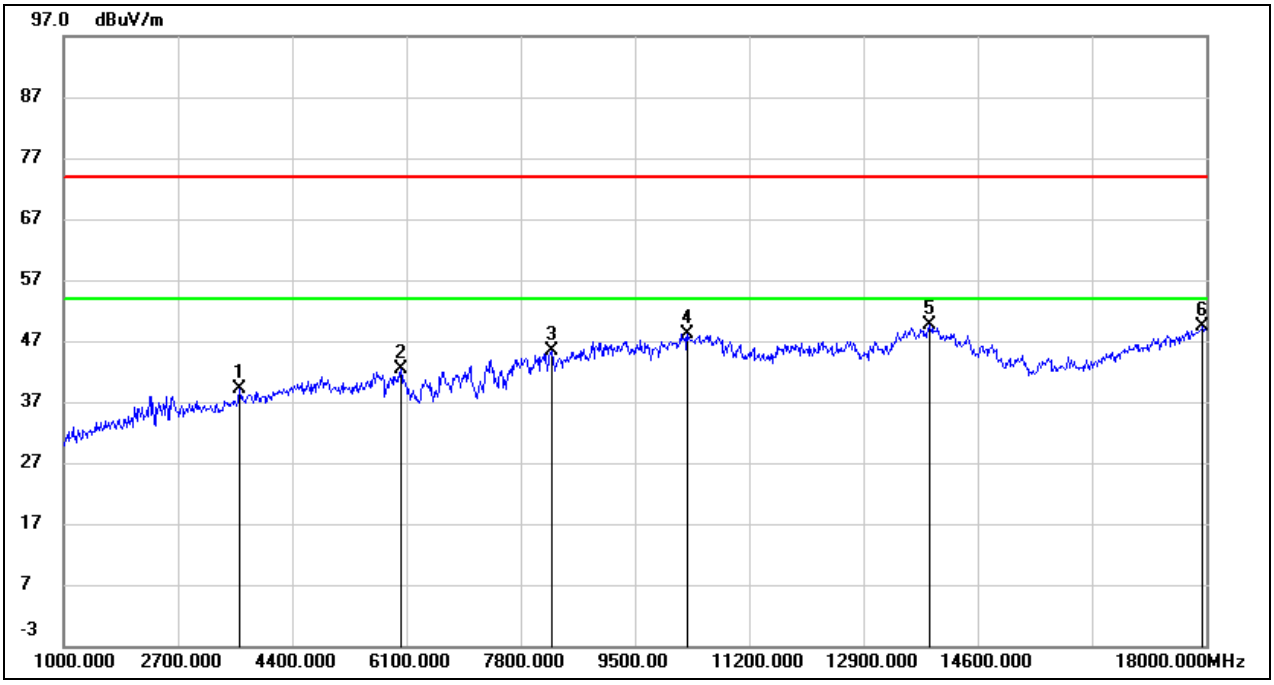
Test data for Forward Radar:

Test Mode:	FMCW	Test Channel:	1
Polarity:	Horizontal	Test Voltage:	DC 52.22 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2326.000	50.14	-8.34	41.80	74.00	-32.20	peak
2	5862.000	40.29	2.21	42.50	74.00	-31.50	peak
3	8990.000	36.32	10.26	46.58	74.00	-27.42	peak
4	11455.000	30.77	16.39	47.16	74.00	-26.84	peak
5	14005.000	26.98	22.18	49.16	74.00	-24.84	peak
6	17915.000	24.16	25.64	49.80	74.00	-24.20	peak

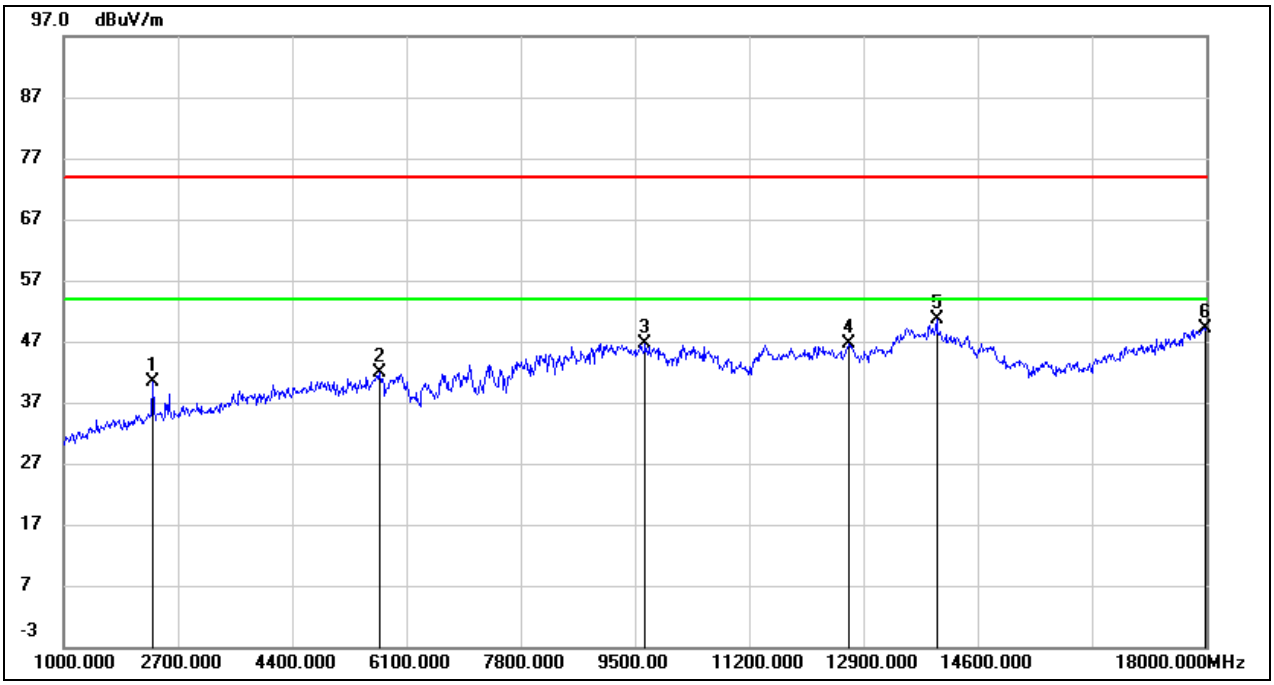
Test Mode:	FMCW	Test Channel:	1
Polarity:	Vertical	Test Voltage:	DC 52.22 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3618.000	43.33	-4.10	39.23	74.00	-34.77	peak
2	6015.000	39.61	2.79	42.40	74.00	-31.60	peak
3	8259.000	37.38	8.09	45.47	74.00	-28.53	peak
4	10282.000	35.71	12.43	48.14	74.00	-25.86	peak
5	13886.000	27.56	22.16	49.72	74.00	-24.28	peak
6	17949.000	23.64	25.78	49.42	74.00	-24.58	peak

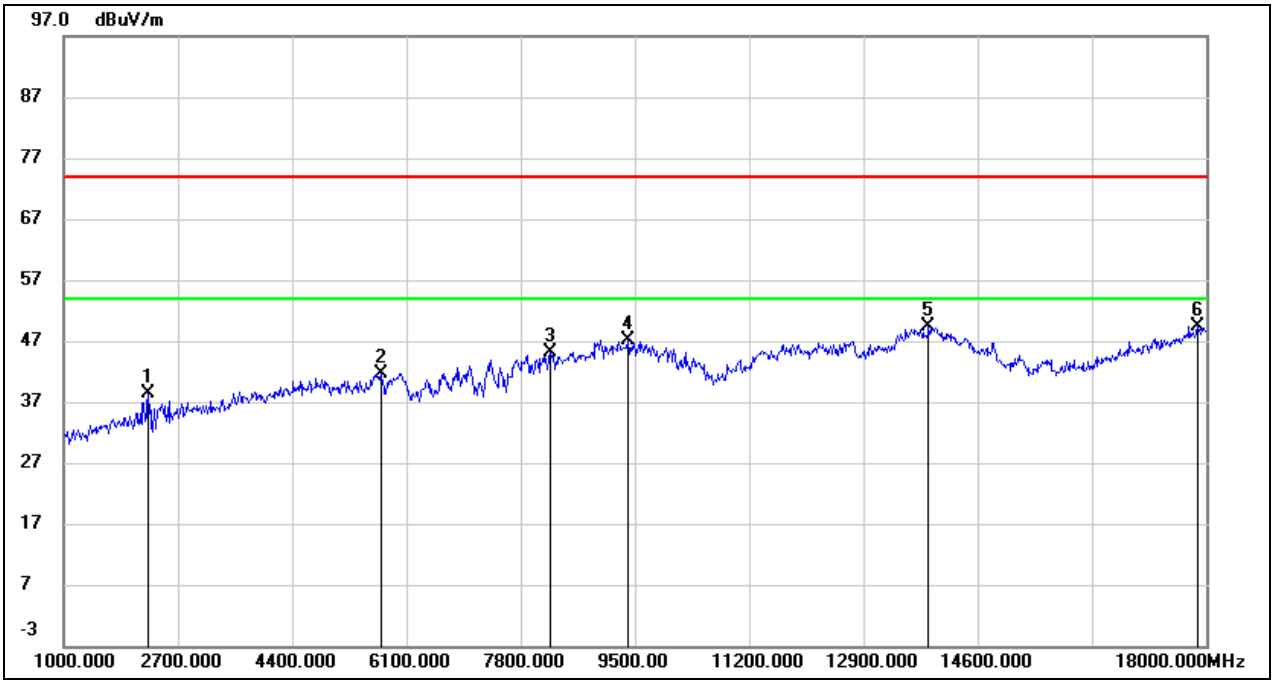
Test data for Upward Radar:

Test Mode:	FMCW	Test Channel:	1
Polarity:	Horizontal	Test Voltage:	DC 52.22 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2326.000	48.68	-8.34	40.34	74.00	-33.66	peak
2	5692.000	39.77	2.06	41.83	74.00	-32.17	peak
3	9653.000	35.94	10.72	46.66	74.00	-27.34	peak
4	12679.000	28.62	18.05	46.67	74.00	-27.33	peak
5	13988.000	28.34	22.19	50.53	74.00	-23.47	peak
6	17983.000	23.22	25.93	49.15	74.00	-24.85	peak

Test Mode:	FMCW	Test Channel:	1
Polarity:	Vertical	Test Voltage:	DC 52.22 V

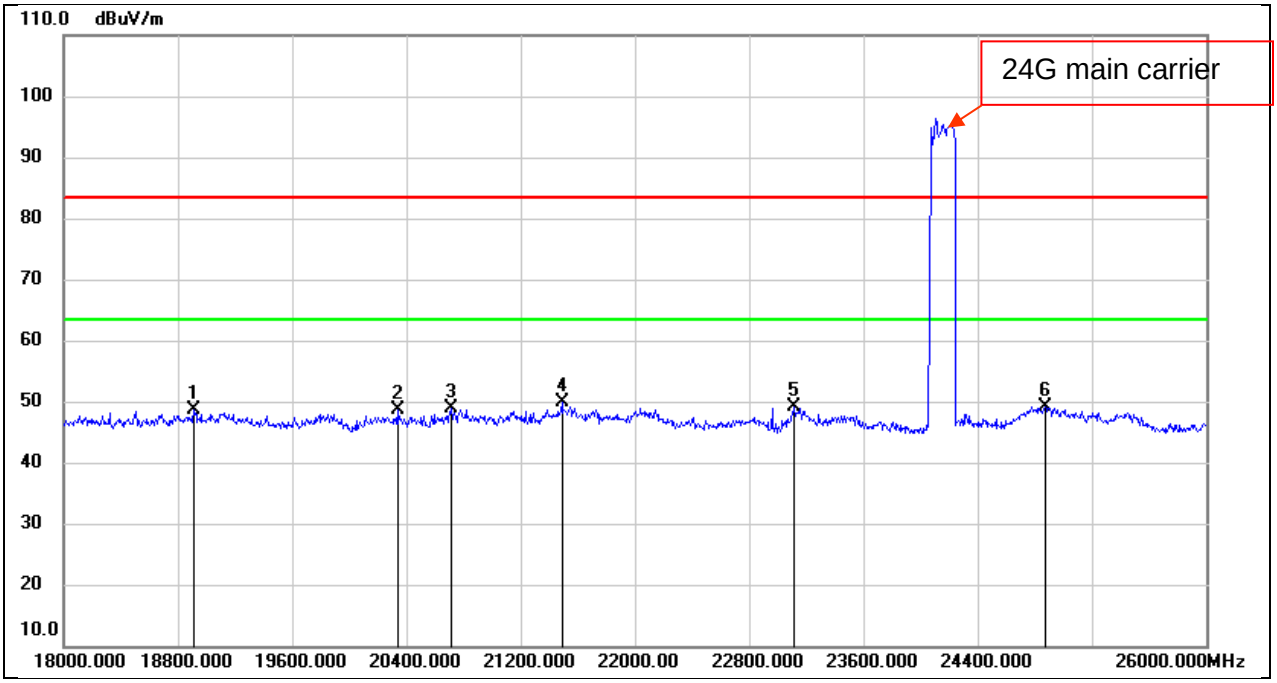


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2258.000	47.18	-8.76	38.42	74.00	-35.58	peak
2	5726.000	39.62	2.02	41.64	74.00	-32.36	peak
3	8242.000	37.08	8.15	45.23	74.00	-28.77	peak
4	9398.000	37.14	9.97	47.11	74.00	-26.89	peak
5	13869.000	27.35	22.15	49.50	74.00	-24.50	peak
6	17864.000	23.86	25.42	49.28	74.00	-24.72	peak

7.3.6. SPURIOUS EMISSIONS(18 GHz~26 GHz)

Test data for Forward Radar:

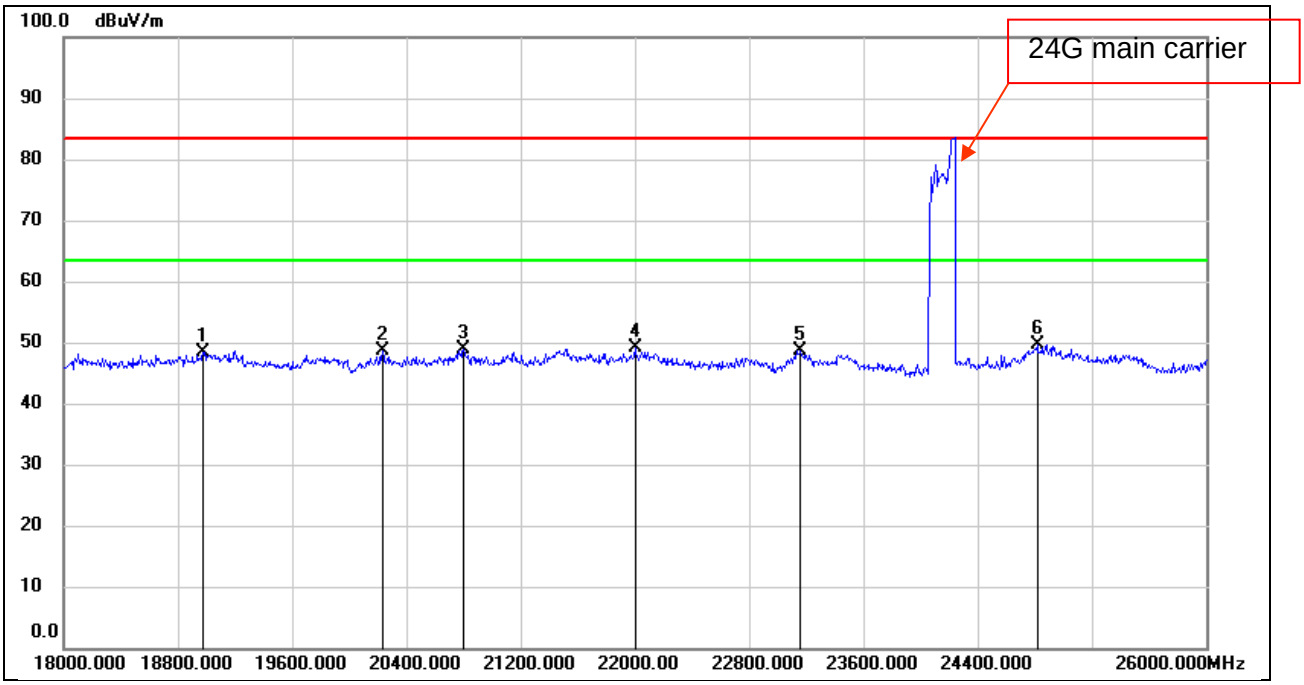
Test Mode:	FMCW	Test Channel:	1
Polarity:	Horizontal	Test Voltage:	DC 52.22 V



No.	Frequency	Reading	Correct	Result@1m	Limit@1m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	18912	50.93	-2.33	48.6	83.5	39.1	74	-34.9	peak
2	20336	51.37	-2.74	48.63	83.5	39.13	74	-34.87	peak
3	20712	51.16	-2.4	48.76	83.5	39.26	74	-34.74	peak
4	21488	51.7	-1.87	49.83	83.5	40.33	74	-33.67	peak
5	23112	50.19	-1.01	49.18	83.5	39.68	74	-34.32	peak
6	24872	48.34	0.8	49.14	83.5	39.64	74	-34.36	peak

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

Test Mode:	FMCW	Test Channel:	1
Polarity:	Vertical	Test Voltage:	DC 52.22 V

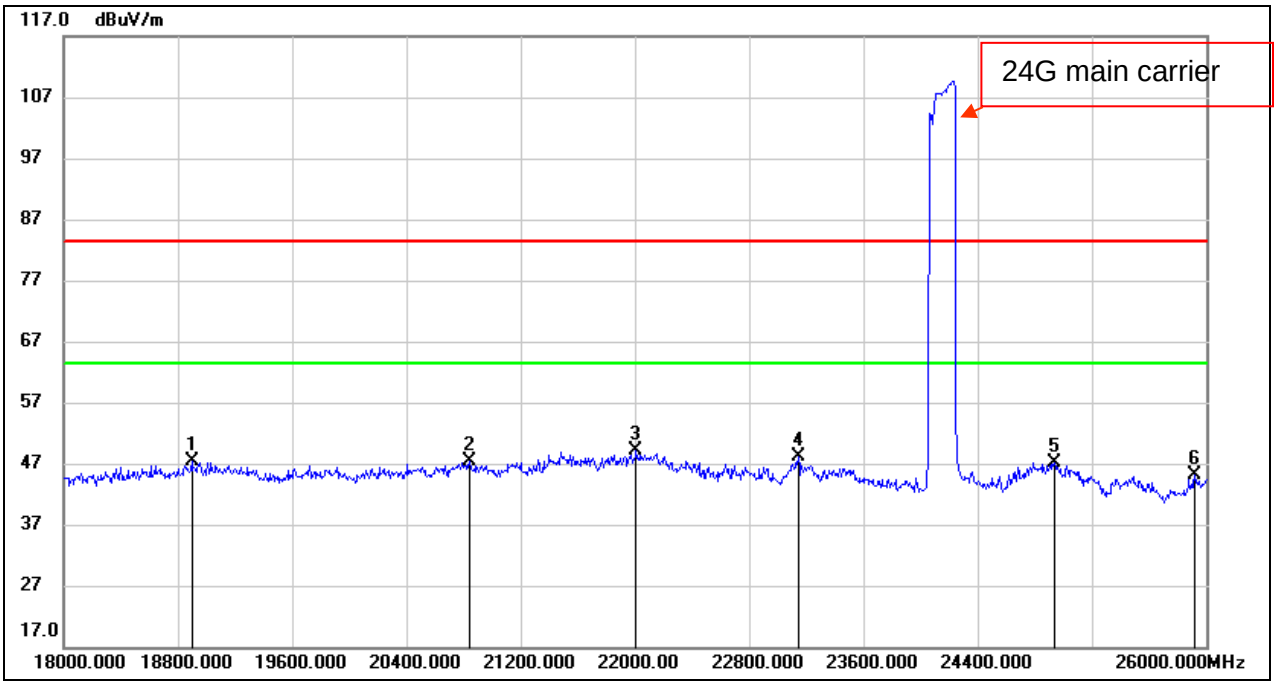


No.	Frequency	Reading	Correct	Result@1m	Limit@1m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	18976	50.49	-2.18	48.31	83.5	38.81	74	-35.19	peak
2	20232	51.21	-2.69	48.52	83.5	39.02	74	-34.98	peak
3	20800	51.23	-2.35	48.88	83.5	39.38	74	-34.62	peak
4	22000	50.71	-1.47	49.24	83.5	39.74	74	-34.26	peak
5	23160	49.5	-0.89	48.61	83.5	39.11	74	-34.89	peak
6	24816	48.82	0.73	49.55	83.5	40.05	74	-33.95	peak

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

Test data for Upward Radar:

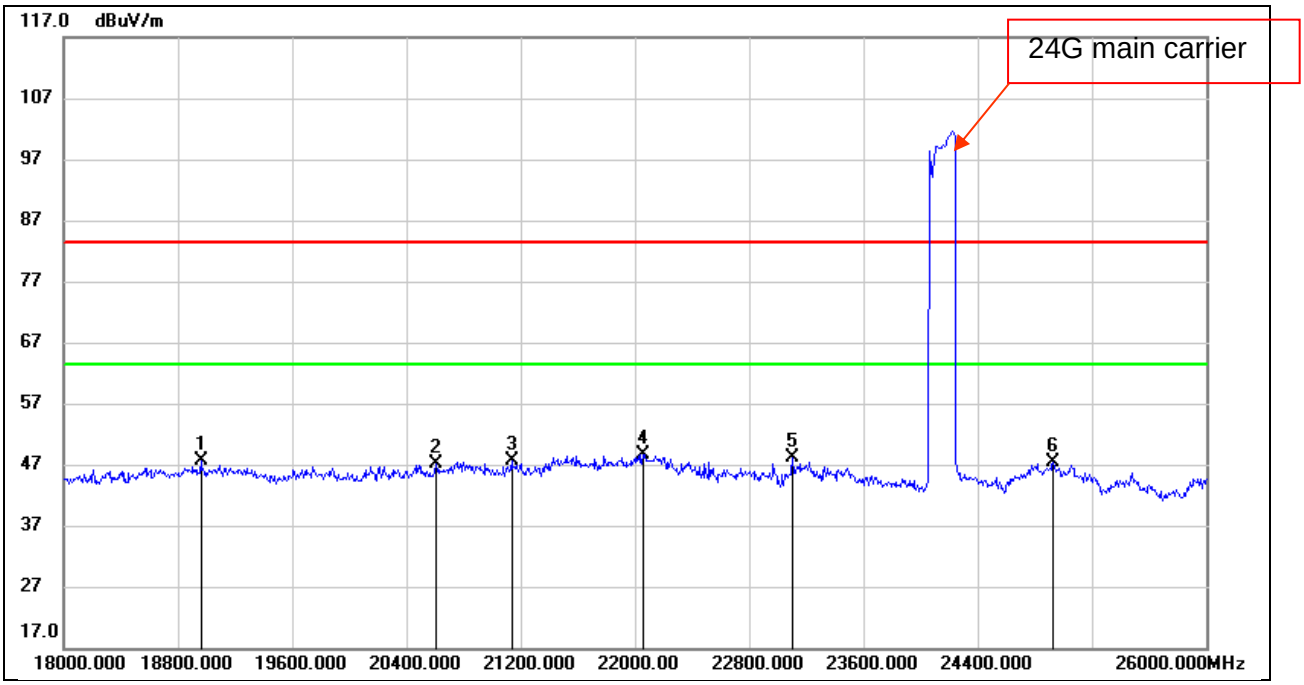
Test Mode:	FMCW	Test Channel:	1
Polarity:	Horizontal	Test Voltage:	DC 52.22 V



No.	Frequency	Reading	Correct	Result@1m	Limit@1m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	18896	49.63	-2.35	47.28	83.5	37.78	74	-36.22	peak
2	20840	49.77	-2.4	47.37	83.5	37.87	74	-36.13	peak
3	22008	50.6	-1.48	49.12	83.5	39.62	74	-34.38	peak
4	23144	48.93	-0.92	48.01	83.5	38.51	74	-35.49	peak
5	24936	46.35	0.89	47.24	83.5	37.74	74	-36.26	peak
6	25920	45.23	-0.21	45.02	83.5	35.52	74	-38.48	peak

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

Test Mode:	FMCW	Test Channel:	1
Polarity:	Vertical	Test Voltage:	DC 52.22 V



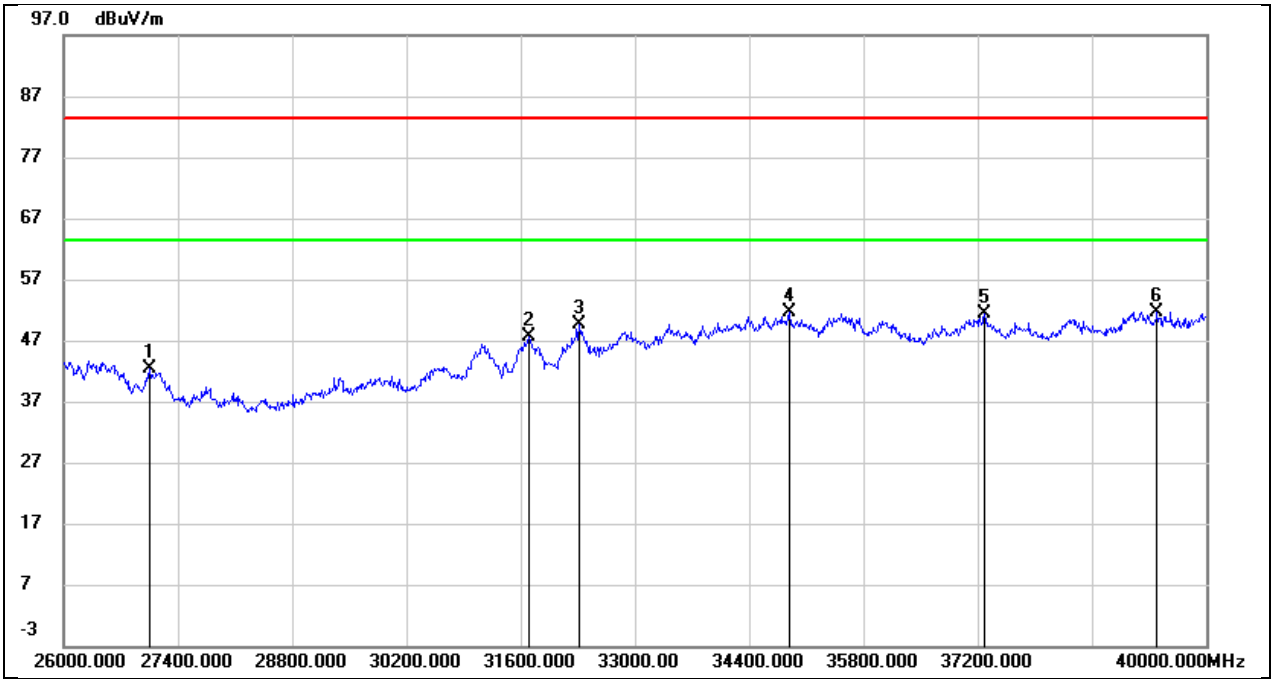
No.	Frequency	Reading	Correct	Result@1m	Limit@1m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	18960	49.85	-2.22	47.63	83.5	38.13	74	-35.87	peak
2	20608	49.76	-2.69	47.07	83.5	37.57	74	-36.43	peak
3	21136	50.19	-2.59	47.6	83.5	38.1	74	-35.9	peak
4	22056	50.24	-1.58	48.66	83.5	39.16	74	-34.84	peak
5	23104	49.16	-1.02	48.14	83.5	38.64	74	-35.36	peak
6	24928	46.49	0.86	47.35	83.5	37.85	74	-36.15	peak

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

7.3.7. SPURIOUS EMISSIONS(26 GHz~40 GHz)

Test data for Forward Radar:

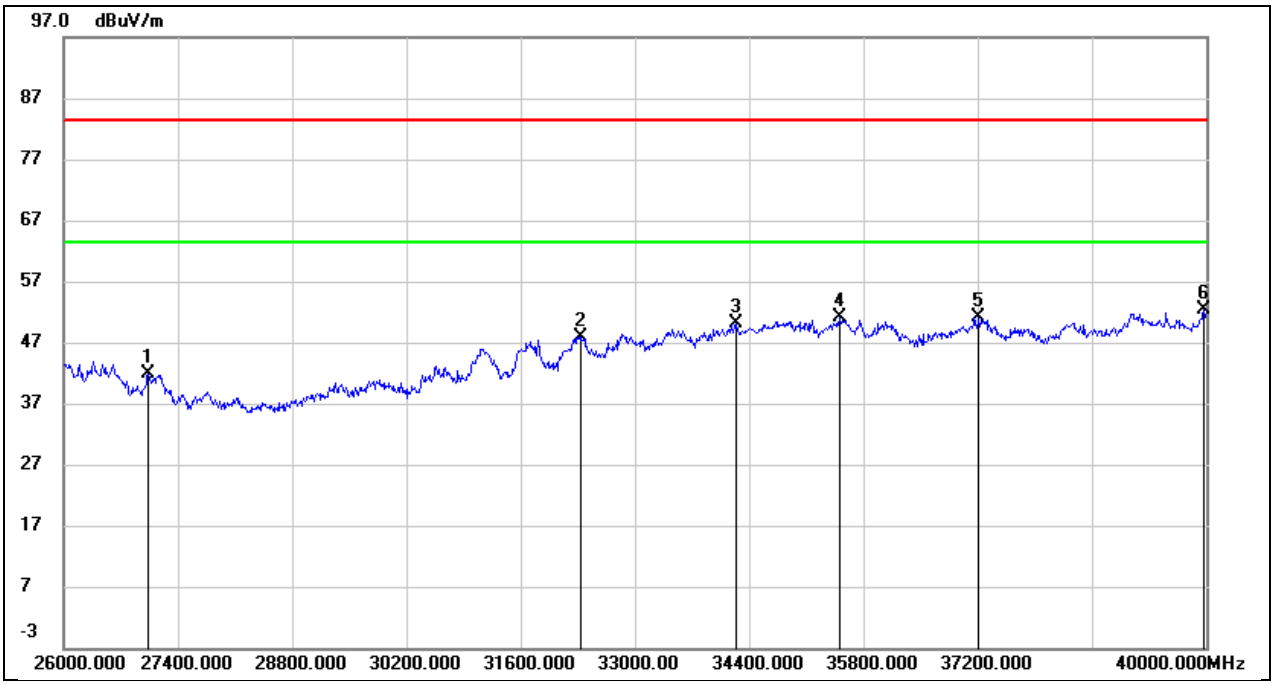
Test Mode:	FMCW	Test Channel:	1
Polarity:	Horizontal	Test Voltage:	DC 52.22 V



No.	Frequency	Reading	Correct	Result@1m	Limit@1m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	27050	43.52	-1.05	42.47	83.5	32.97	74	-41.03	peak
2	31698	46.11	1.41	47.52	83.5	38.02	74	-35.98	peak
3	32314	47.93	1.82	49.75	83.5	40.25	74	-33.75	peak
4	34890	46.43	5.14	51.57	83.5	42.07	74	-31.93	peak
5	37284	44.32	7.12	51.44	83.5	41.94	74	-32.06	peak
6	39398	43.19	8.48	51.67	83.5	42.17	74	-31.83	peak

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

Test Mode:	FMCW	Test Channel:	1
Polarity:	Vertical	Test Voltage:	DC 52.22 V

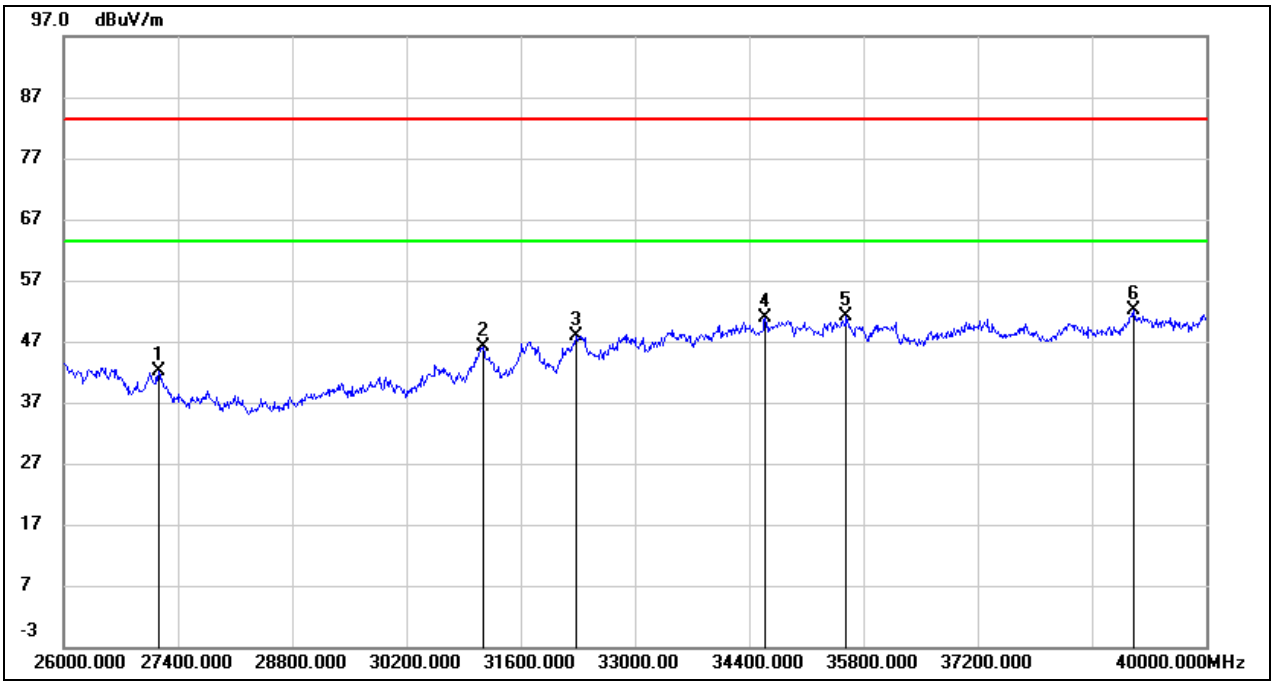


No.	Frequency	Reading	Correct	Result@1m	Limit@1m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	27036	42.96	-1.05	41.91	83.5	32.41	74	-41.59	peak
2	32342	46.06	1.84	47.9	83.5	38.4	74	-35.6	peak
3	34246	45.83	4.38	50.21	83.5	40.71	74	-33.29	peak
4	35506	44.96	6.07	51.03	83.5	41.53	74	-32.47	peak
5	37214	43.96	7.12	51.08	83.5	41.58	74	-32.42	peak
6	39972	43.89	8.39	52.28	83.5	42.78	74	-31.22	peak

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

Test data for Upward Radar:

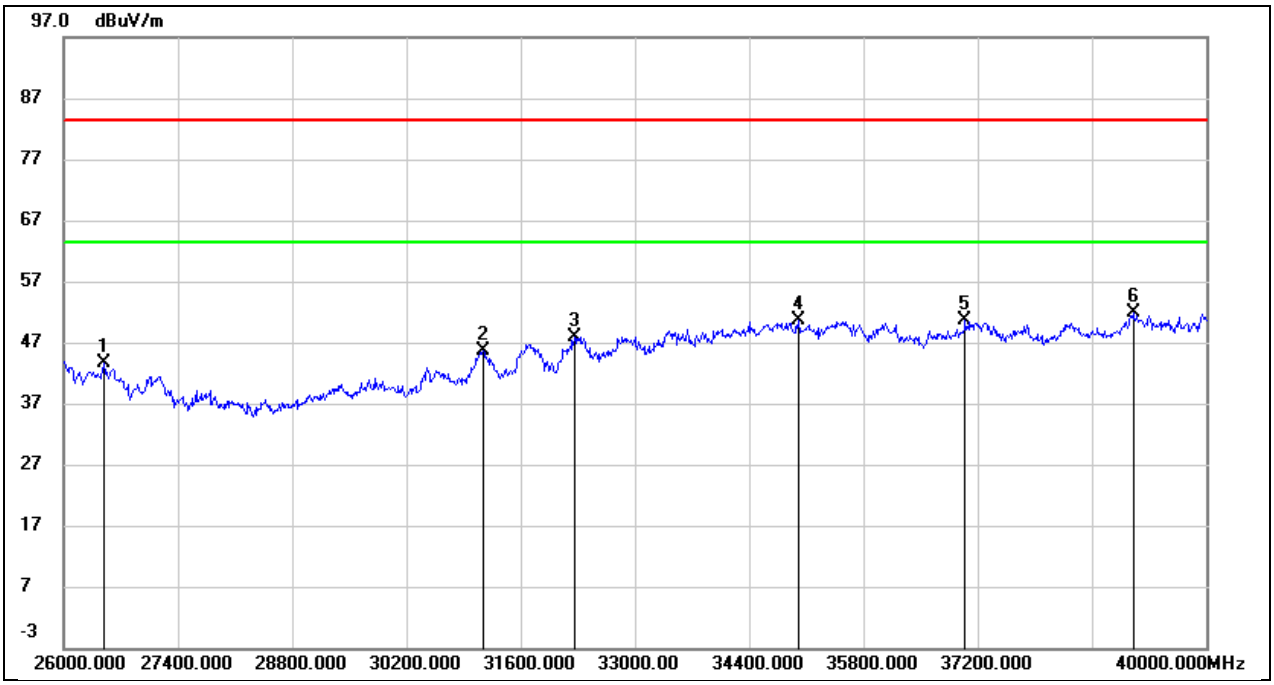
Test Mode:	FMCW	Test Channel:	1
Polarity:	Horizontal	Test Voltage:	DC 52.22 V



No.	Frequency	Reading	Correct	Result@1m	Limit@1m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	27162	43.02	-0.99	42.03	83.5	32.53	74	-41.47	peak
2	31138	44.43	1.73	46.16	83.5	36.66	74	-37.34	peak
3	32272	46.1	1.8	47.9	83.5	38.4	74	-35.6	peak
4	34596	46.07	4.78	50.85	83.5	41.35	74	-32.65	peak
5	35590	44.78	6.25	51.03	83.5	41.53	74	-32.47	peak
6	39104	43.25	8.8	52.05	83.5	42.55	74	-31.45	peak

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

Test Mode:	FMCW	Test Channel:	1
Polarity:	Vertical	Test Voltage:	DC 52.22 V



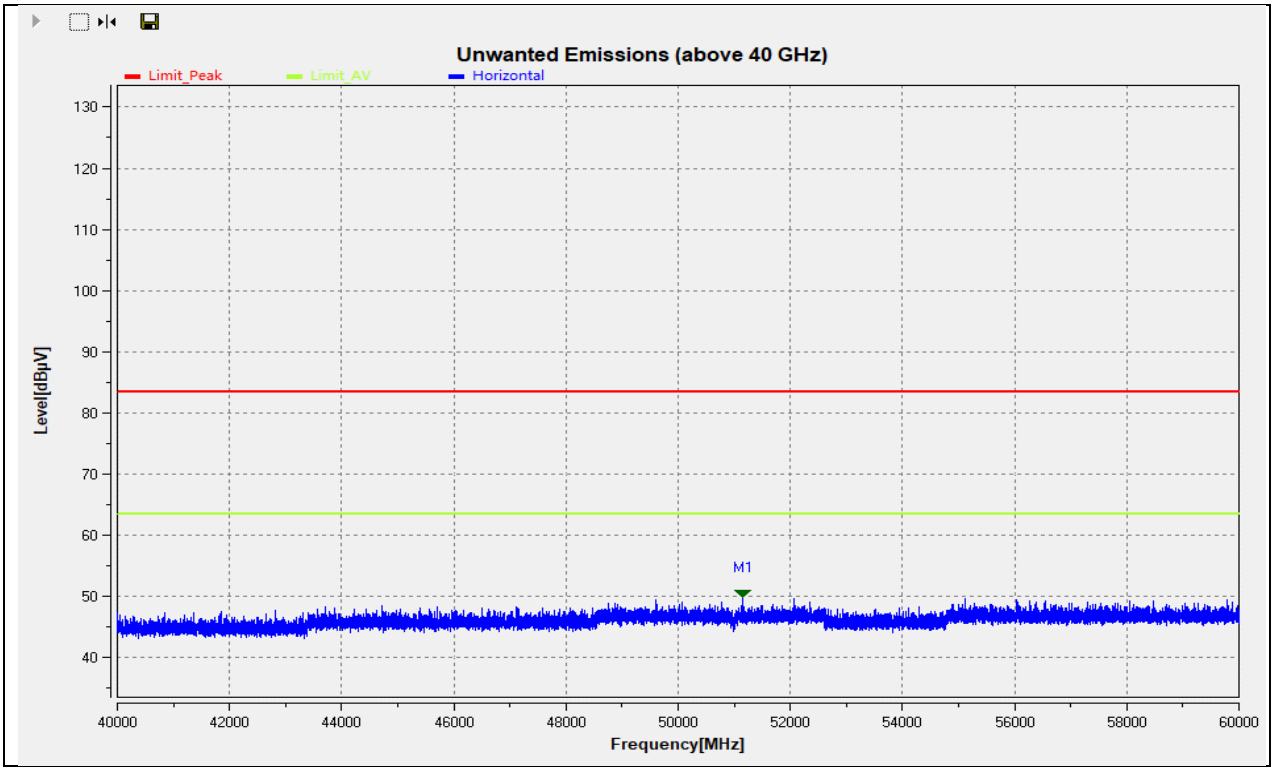
No.	Frequency	Reading	Correct	Result@1m	Limit@1m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	26490	45.58	-1.96	43.62	83.5	34.12	74	-39.88	peak
2	31138	44.01	1.73	45.74	83.5	36.24	74	-37.76	peak
3	32258	46.16	1.8	47.96	83.5	38.46	74	-35.54	peak
4	35002	45.36	5.2	50.56	83.5	41.06	74	-32.94	peak
5	37046	43.71	7.03	50.74	83.5	41.24	74	-32.76	peak
6	39104	42.97	8.8	51.77	83.5	42.27	74	-31.73	peak

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

7.3.8. SPURIOUS EMISSIONS (40 GHz ~ 60 GHz)

Test data for Forward Radar:

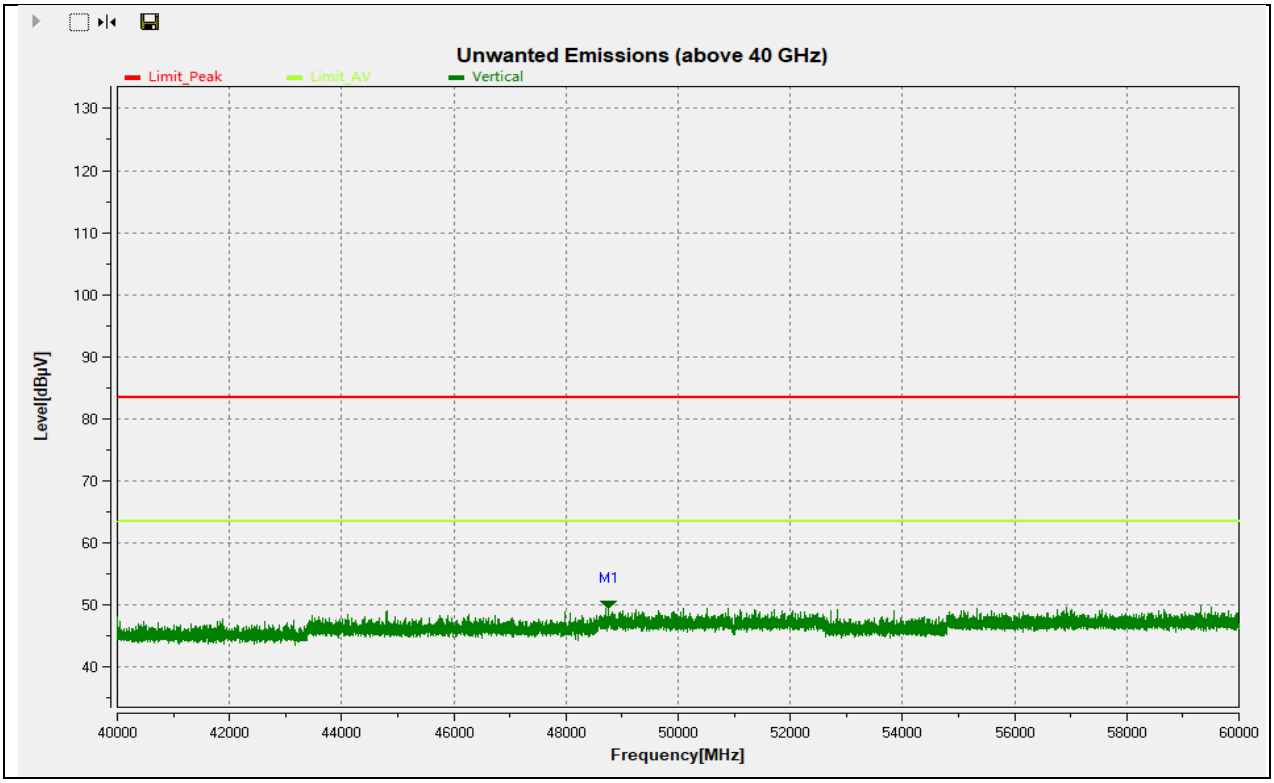
Test Mode:	FMCW	Test Channel:	1
Polarity:	Horizontal	Test Voltage:	DC 52.22 V



No.	Frequency	Reading	Correct	Result@1m	Limit@1m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	51142	13.767	36	49.767	83.5	40.267	74	-33.733	peak

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

Test Mode:	FMCW	Test Channel:	1
Polarity:	Vertical	Test Voltage:	DC 52.22 V

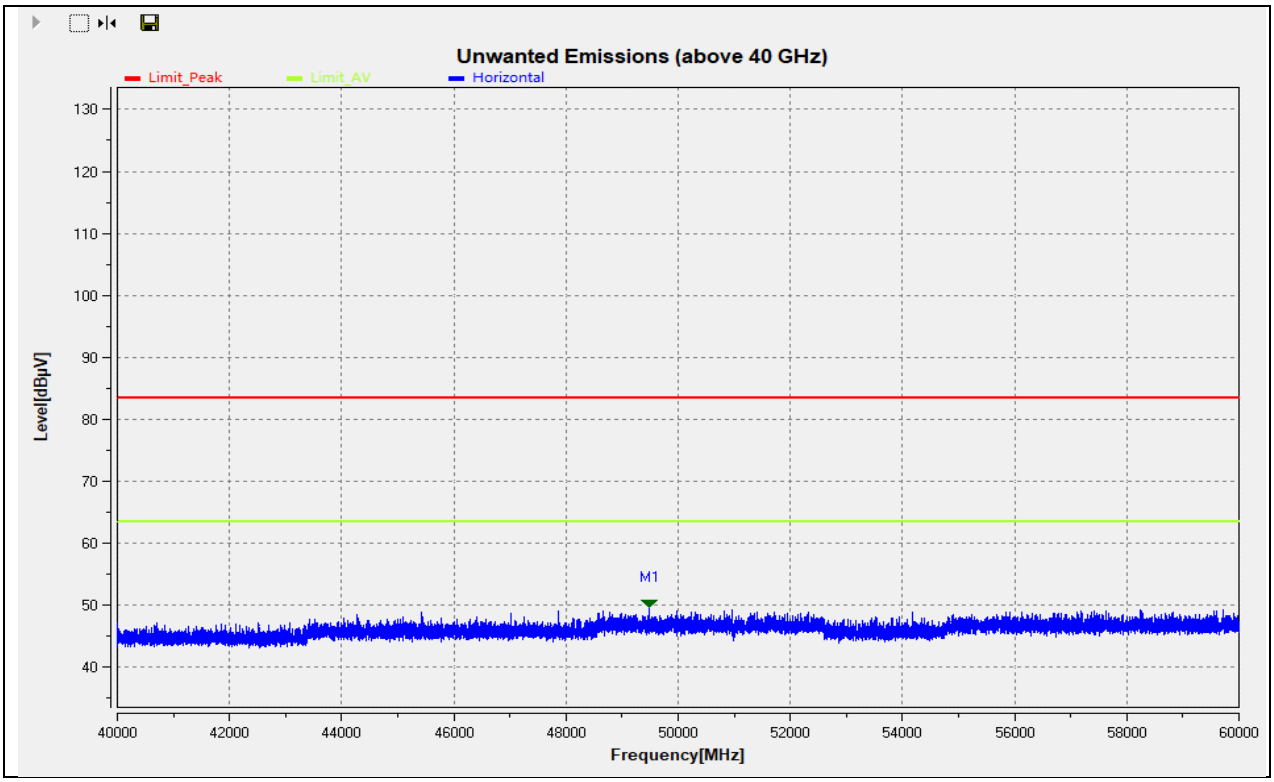


No.	Frequency	Reading	Correct	Result@1m	Limit@1m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	48758	13.48	36	49.48	83.5	39.98	74	-34.02	peak

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

Test data for Upward Radar:

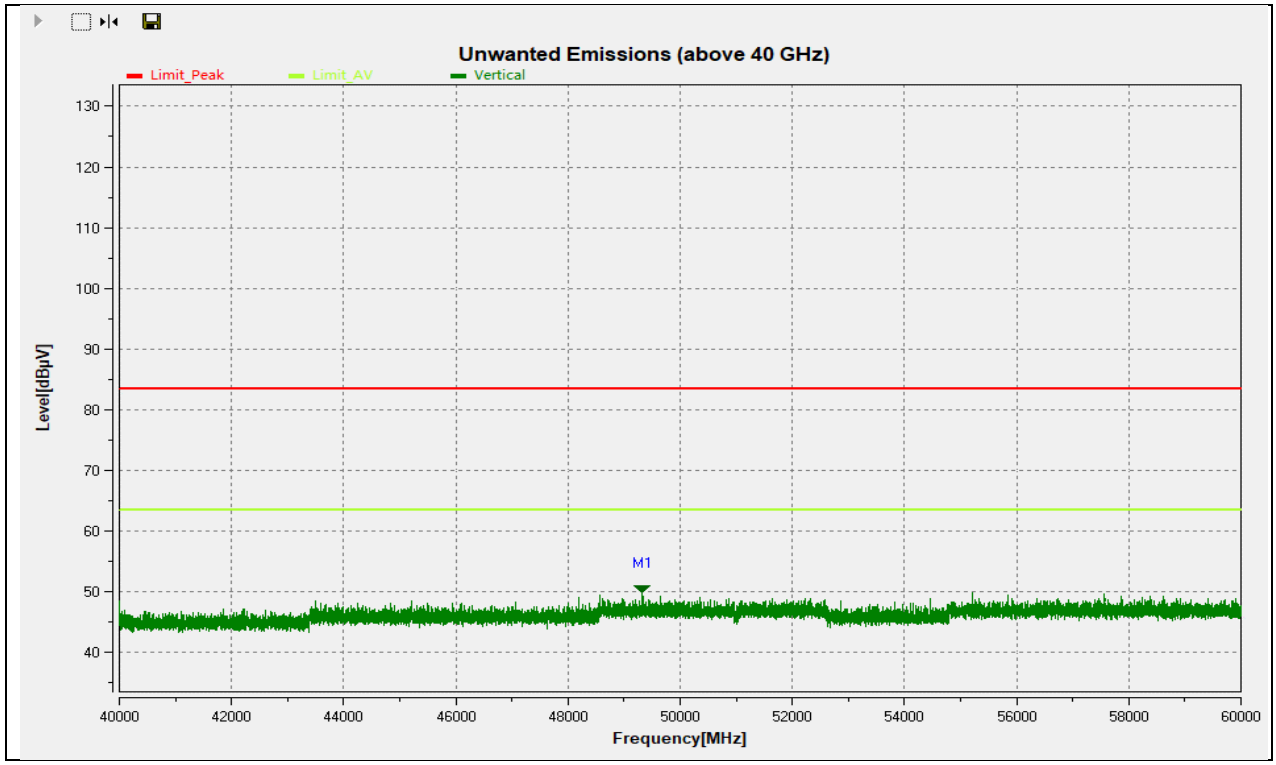
Test Mode:	FMCW	Test Channel:	1
Polarity:	Horizontal	Test Voltage:	DC 52.22 V



No.	Frequency	Reading	Correct	Result@1m	Limit@1m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	49472	13.597	36	49.597	83.5	40.097	74	-33.903	peak

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

Test Mode:	FMCW	Test Channel:	1
Polarity:	Vertical	Test Voltage:	DC 52.22 V



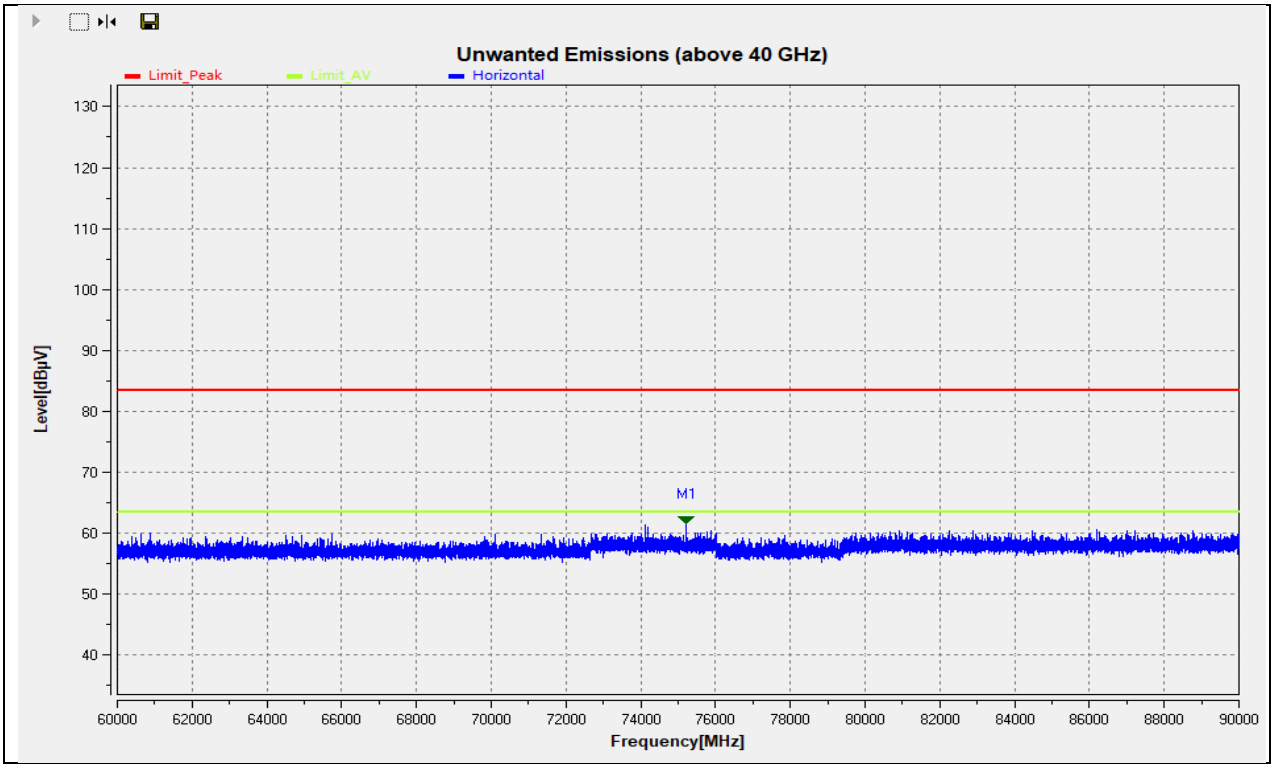
No.	Frequency	Reading	Correct	Result@1m	Limit@1m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	49315	13.789	36	49.789	83.5	40.289	74	-33.711	peak

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

7.3.9. SPURIOUS EMISSIONS (60 GHz ~ 90 GHz)

Test data for Forward Radar:

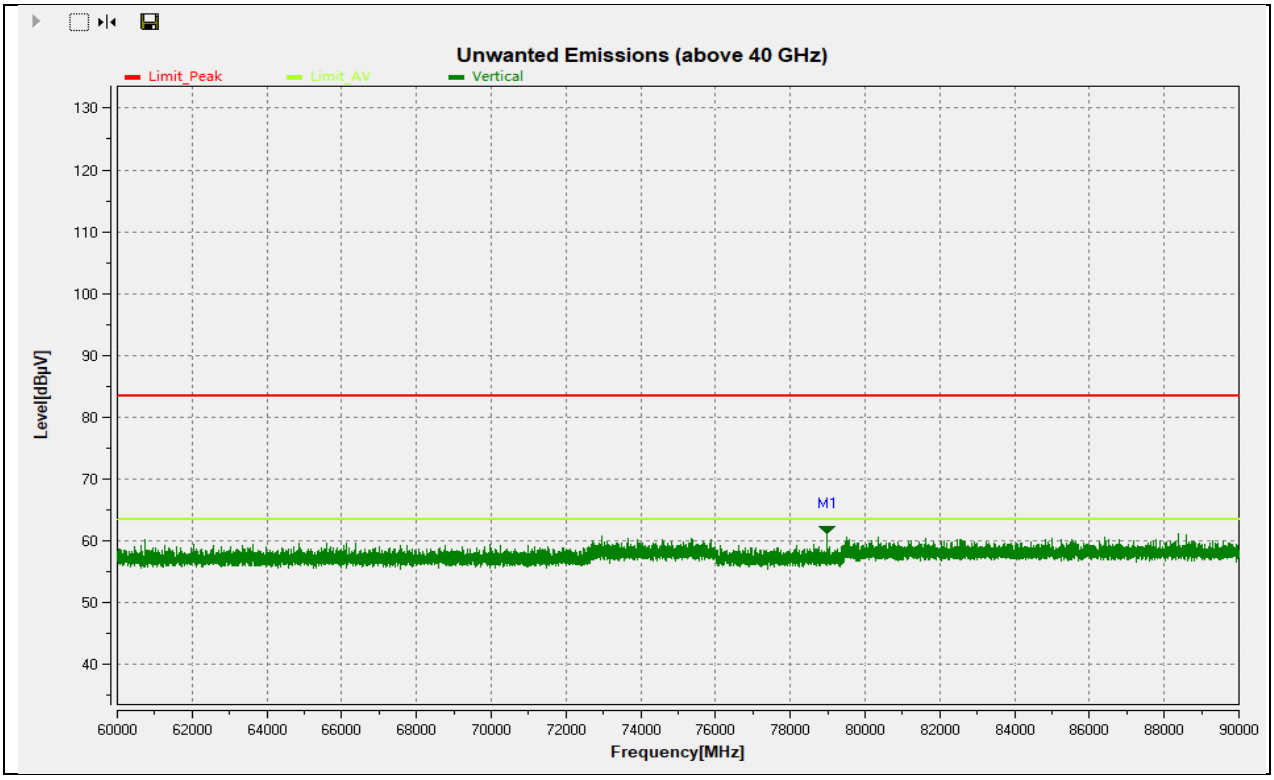
Test Mode:	FMCW	Test Channel:	1
Polarity:	Horizontal	Test Voltage:	DC 52.22 V



No.	Frequency	Reading	Correct	Result@1m	Limit@1m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	75226.5	14.581	47	61.581	83.5	52.081	74	-21.919	peak

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

Test Mode:	FMCW	Test Channel:	1
Polarity:	Vertical	Test Voltage:	DC 52.22 V

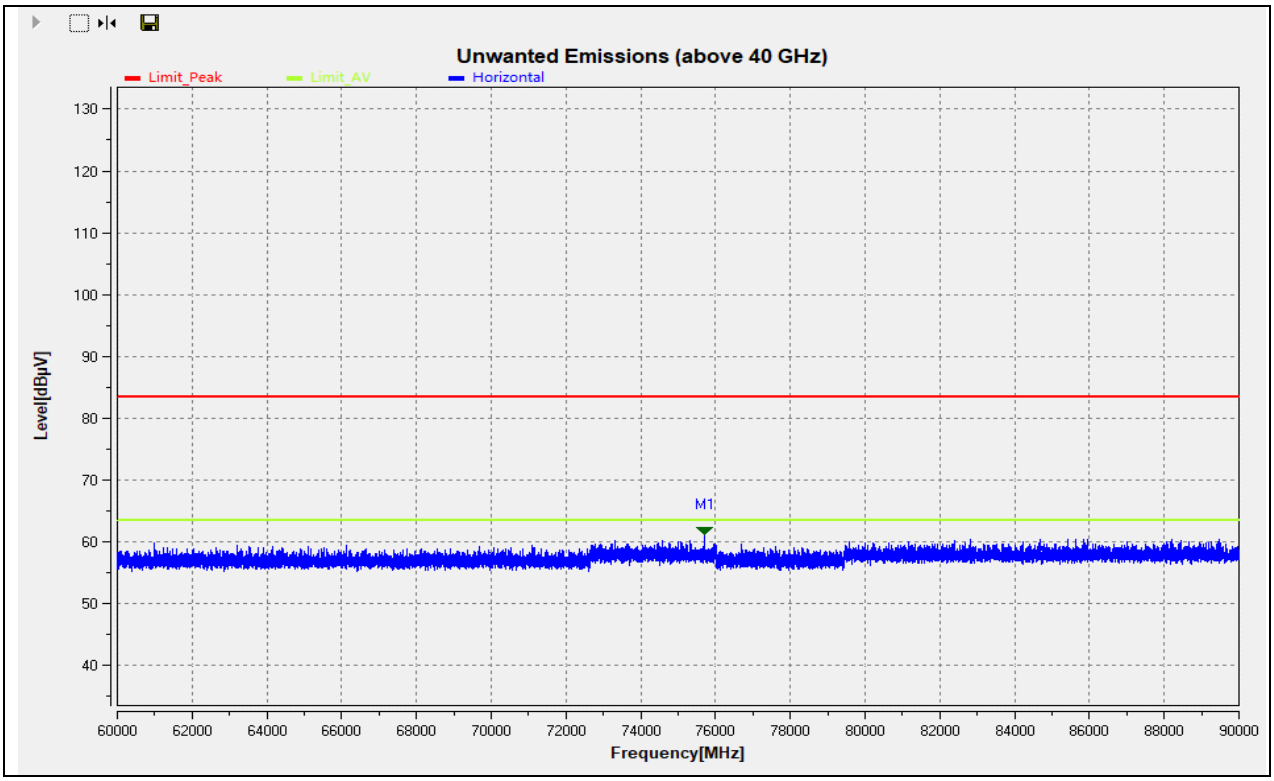


No.	Frequency	Reading	Correct	Result@1m	Limit@1m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	78988.5	15.121	46	61.121	83.5	51.621	74	-22.379	peak

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

Test data for Upward Radar:

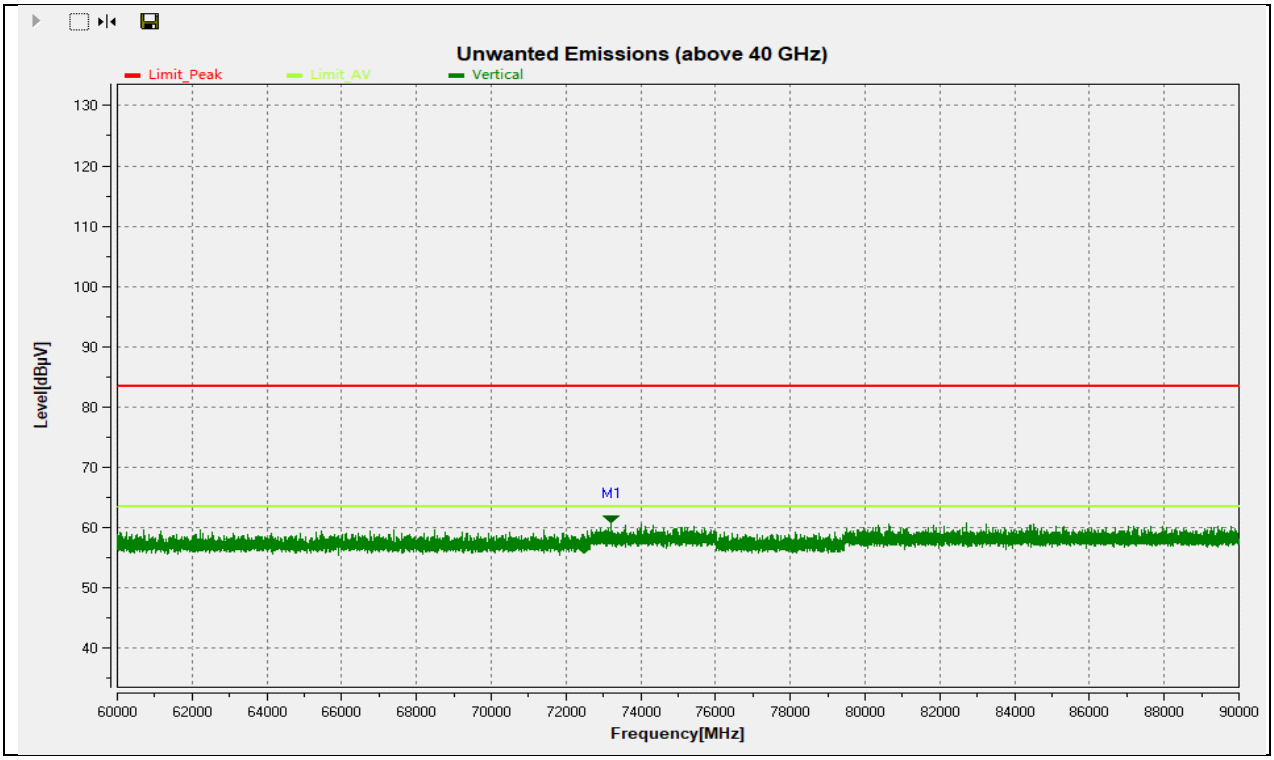
Test Mode:	FMCW	Test Channel:	1
Polarity:	Horizontal	Test Voltage:	DC 52.22 V



No.	Frequency	Reading	Correct	Result@1m	Limit@1m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	75699	14.1	47	61.1	83.5	51.6	74	-22.4	peak

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

Test Mode:	FMCW	Test Channel:	1
Polarity:	Vertical	Test Voltage:	DC 52.22 V



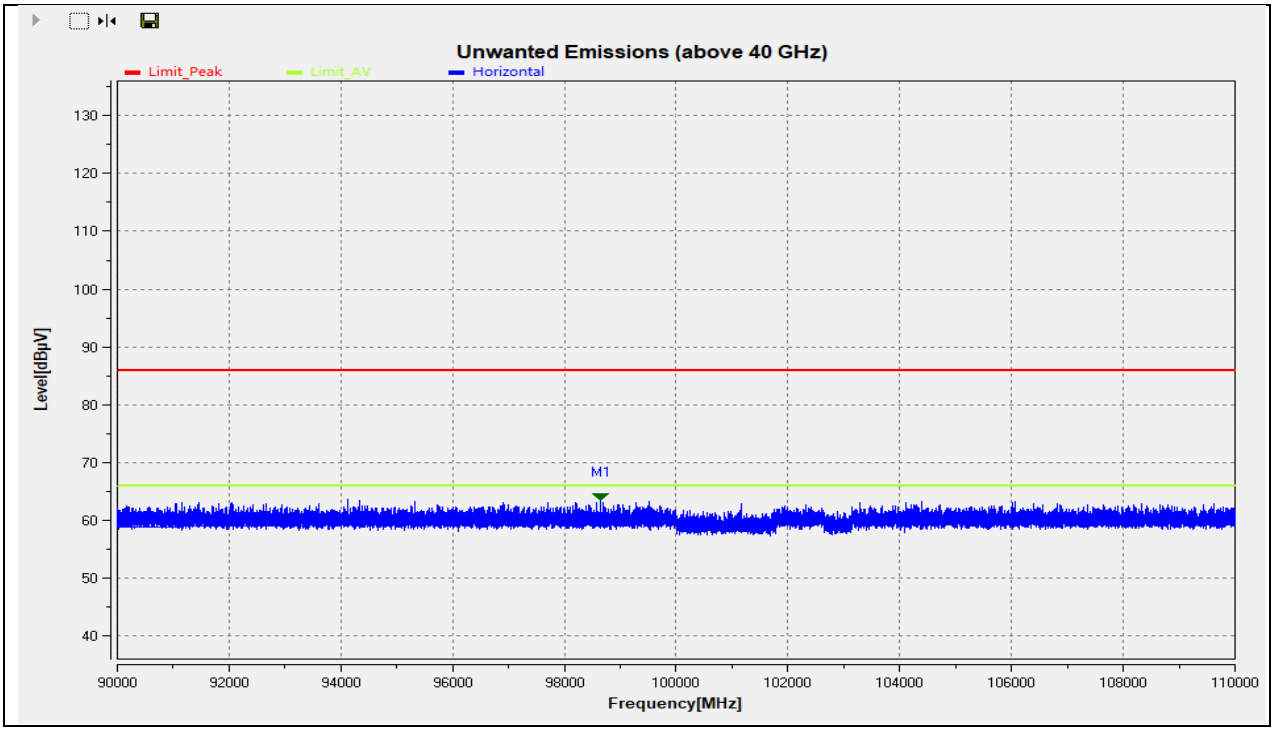
No.	Frequency	Reading	Correct	Result@1m	Limit@1m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	73201.5	13.849	47	60.849	83.5	51.349	74	-22.651	peak

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

7.3.10. SPURIOUS EMISSIONS (90 GHz ~ 110 GHz)

Test data for Forward Radar:

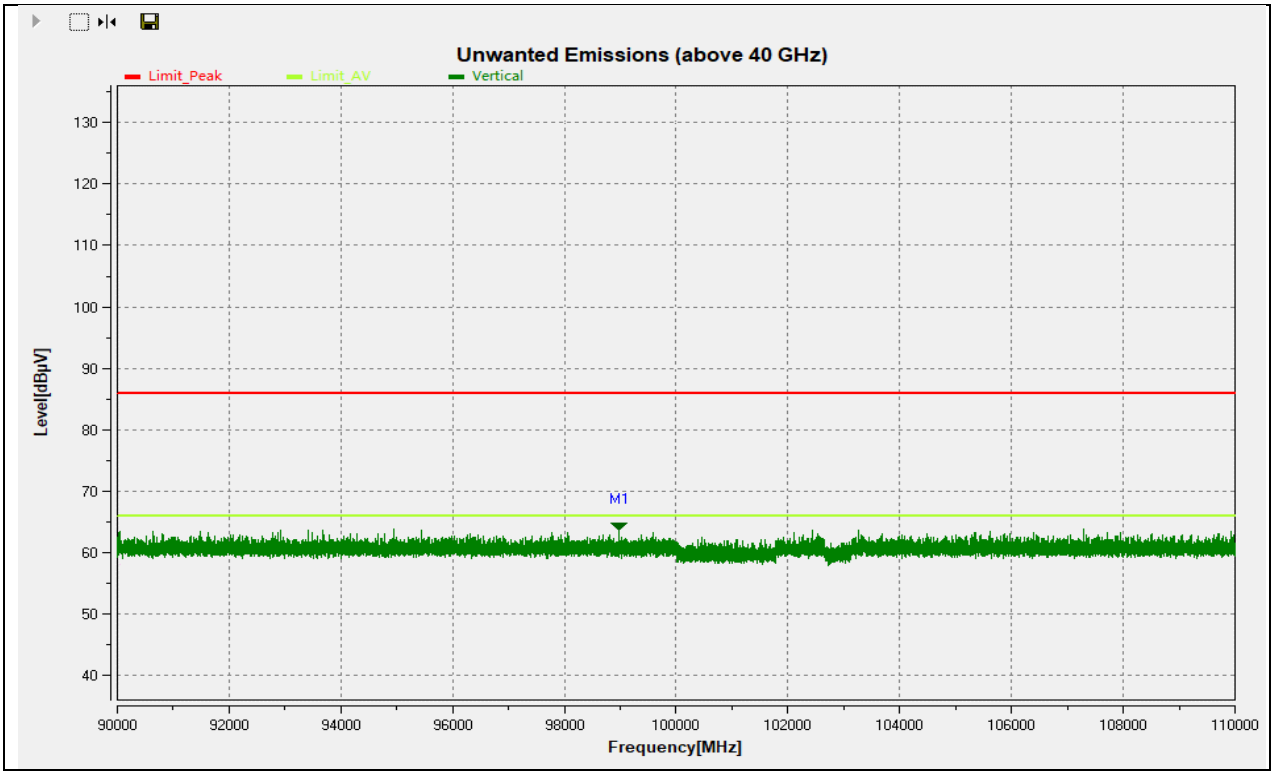
Test Mode:	FMCW	Test Channel:	1
Polarity:	Horizontal	Test Voltage:	DC 52.22 V



No.	Frequency	Reading	Correct	Result@0.75m	Limit@0.75m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	98638.286	13.437	50	63.437	86	51.437	74	-22.563	peak

Distance correct factor=20log (0.75 m/3.00 m) = -12 dB

Test Mode:	FMCW	Test Channel:	1
Polarity:	Vertical	Test Voltage:	DC 52.22 V

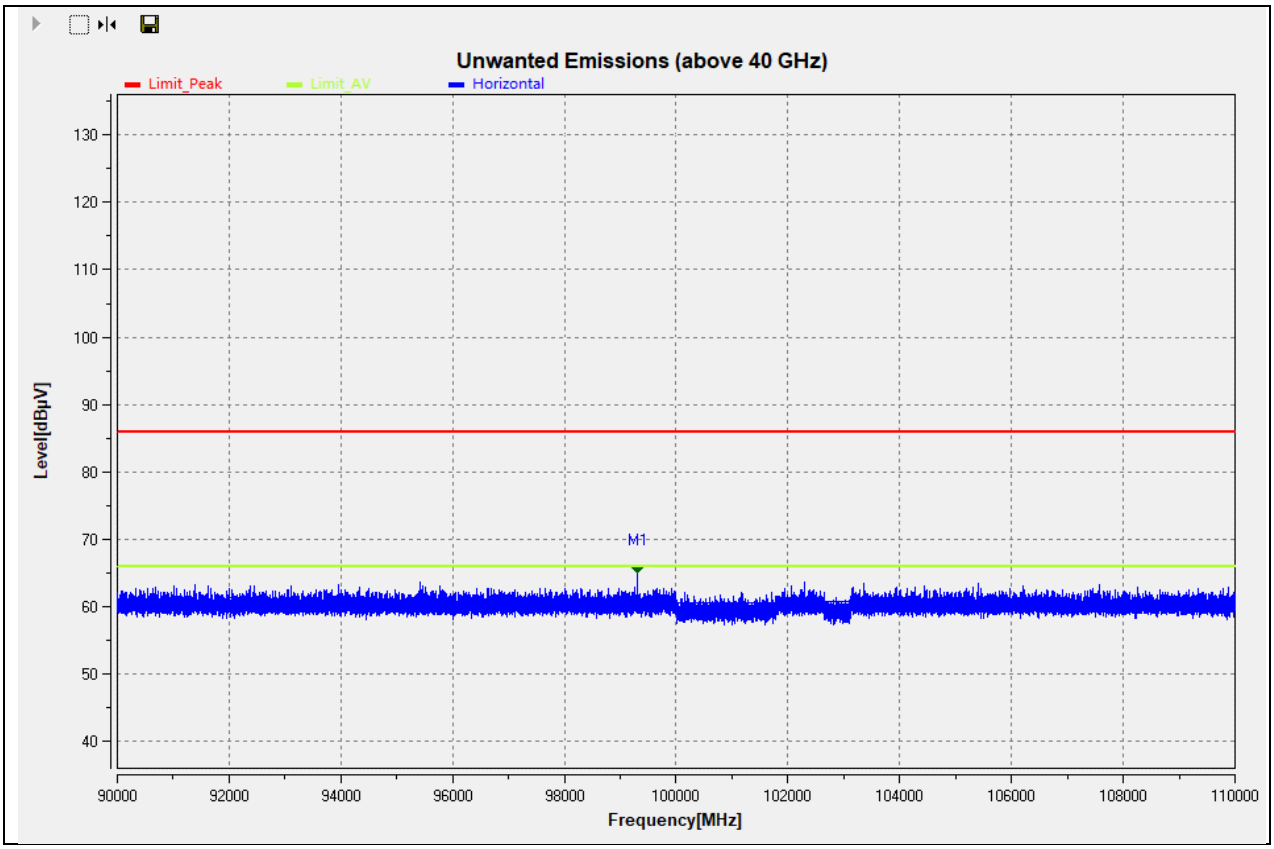


No.	Frequency	Reading	Correct	Result@0.75m	Limit@0.75m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	98972	13.73	50	63.73	86	51.73	74	-22.27	peak

Distance correct factor=20log (0.75 m/3.00 m) = -12 dB

Test data for Upward Radar:

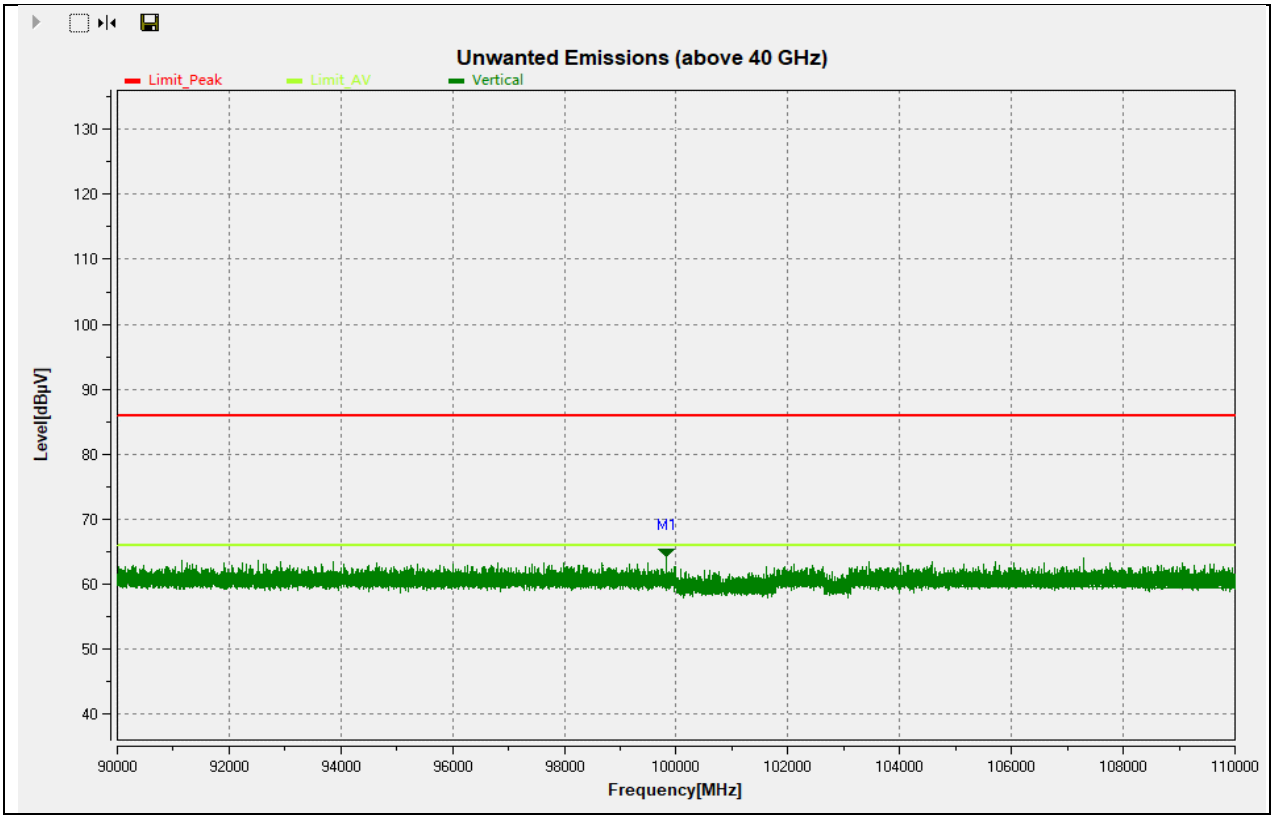
Test Mode:	FMCW	Test Channel:	1
Polarity:	Horizontal	Test Voltage:	DC 52.22 V



No.	Frequency	Reading	Correct	Result@0.75m	Limit@0.75m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	99298.286	14.929	50	64.929	86	52.929	74	-21.071	peak

Distance correct factor=20log (0.75 m/3.00 m) = -12 dB

Test Mode:	FMCW	Test Channel:	1
Polarity:	Vertical	Test Voltage:	DC 52.22 V



No.	Frequency	Reading	Correct	Result@0.75m	Limit@0.75m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	99813.143	14.21	50	64.21	86	52.21	74	-21.79	peak

Distance correct factor=20log (0.75 m/3.00 m) = -12 dB

7.3.11. SIMULTANEOUSLY TRANSMISSION SPURIOUS EMISSIONS

FIELD STRENGTH OF INTENTIONAL EMISSIONS

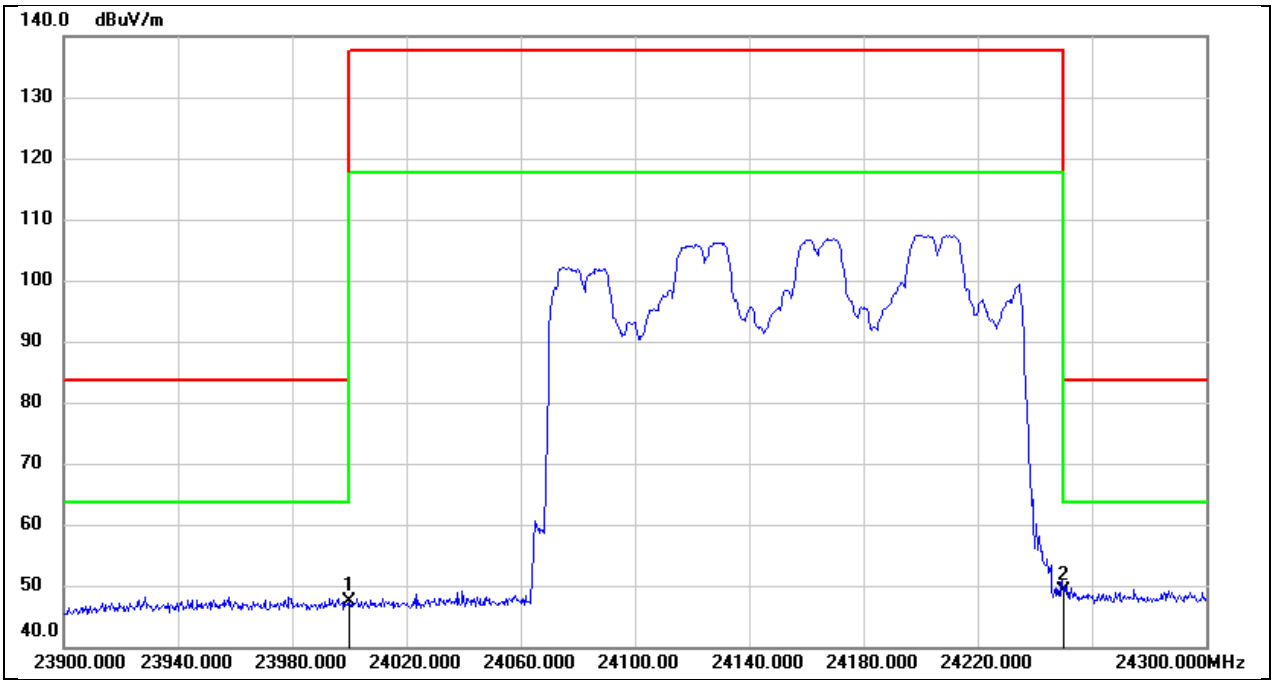
Frequency	Reading	Correct	Peak Result@1m	AVG Result@1m	Peak Limit@1m	AVG Limit@1m	Margin Peak	Margin AVG	Polarity
(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	
24150	93.19	-0.57	92.62	70.46	137.5	117.5	-44.88	-47.04	H
	108.05	-0.6	107.45	85.29	137.5	117.5	-30.05	-32.21	V

Peak Result@3m	AVG Result@3m	Peak Limit@3m	AVG Limit@3m	Margin Peak	Margin AVG	Polarity
(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	
83.12	60.96	128	108	-44.88	-47.04	H
97.95	75.79	128	108	-30.05	-32.21	V

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

RESTRICTED BANDEDGE

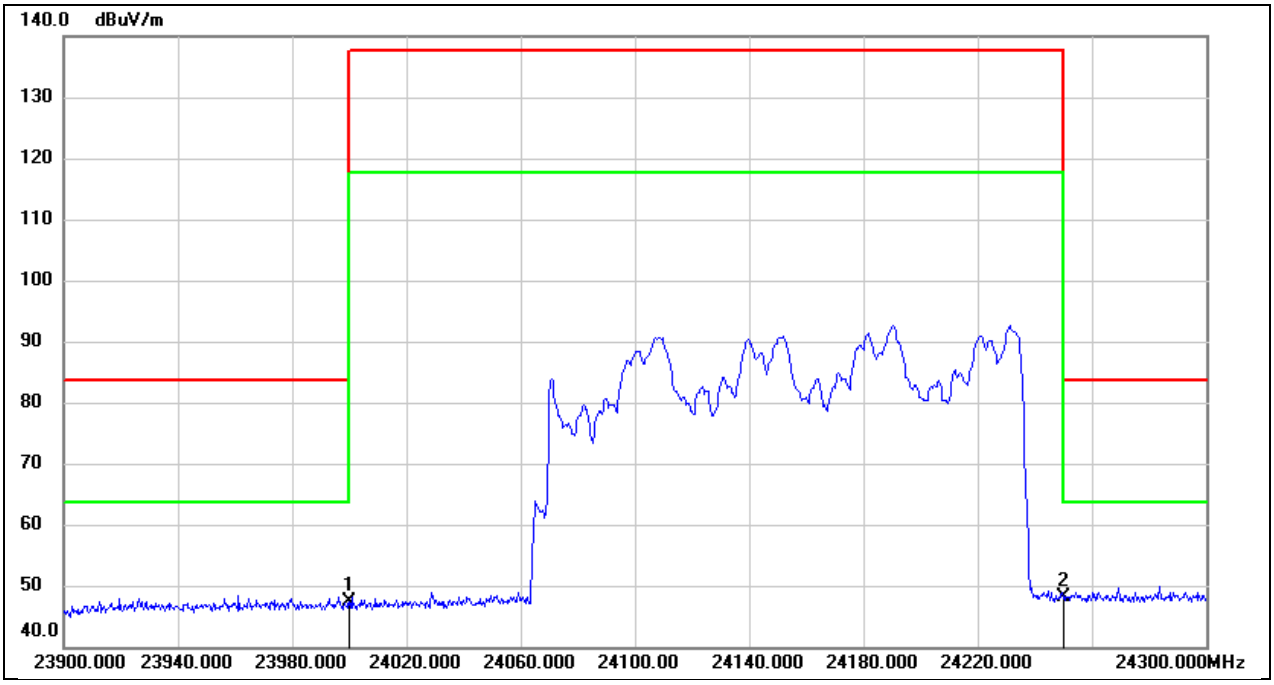
Test Mode:	Forward Radar FMCW & Upward Radar FMCW	Test Channel:	1
Polarity:	Horizontal	Test Voltage:	DC 52.22 V



No.	Frequency	Reading	Correct	Result@1m	Limit@1m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	24000	48.39	-1.01	47.38	83.54	37.88	74.04	-36.16	peak
2	24250	49.76	-0.54	49.22	83.54	39.72	74.04	-34.32	peak

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

Test Mode:	Forward Radar FMCW & Upward Radar FMCW	Test Channel:	1
Polarity:	Vertical	Test Voltage:	DC 52.22 V

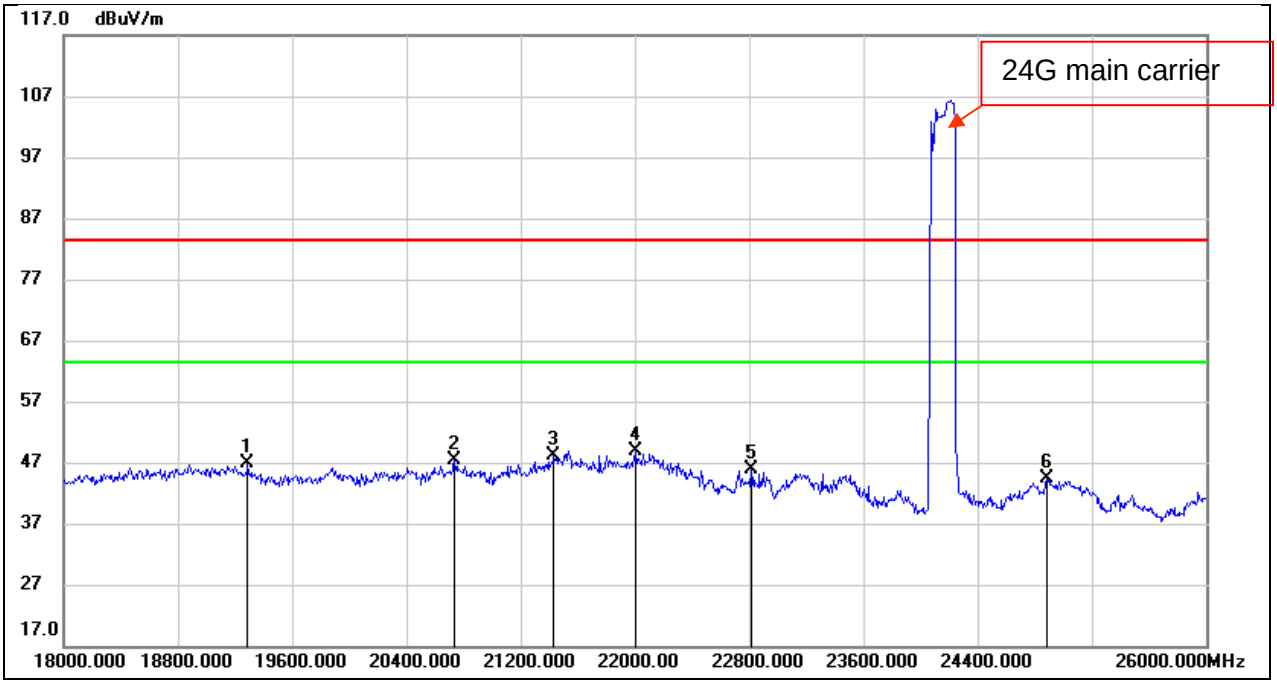


No.	Frequency	Reading	Correct	Result@1m	Limit@1m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	24000	48.45	-1.01	47.44	83.54	37.94	74.04	-36.1	peak
2	24250	48.6	-0.54	48.06	83.54	38.56	74.04	-35.48	peak

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

SPURIOUS EMISSIONS(18 GHz~26 GHz)

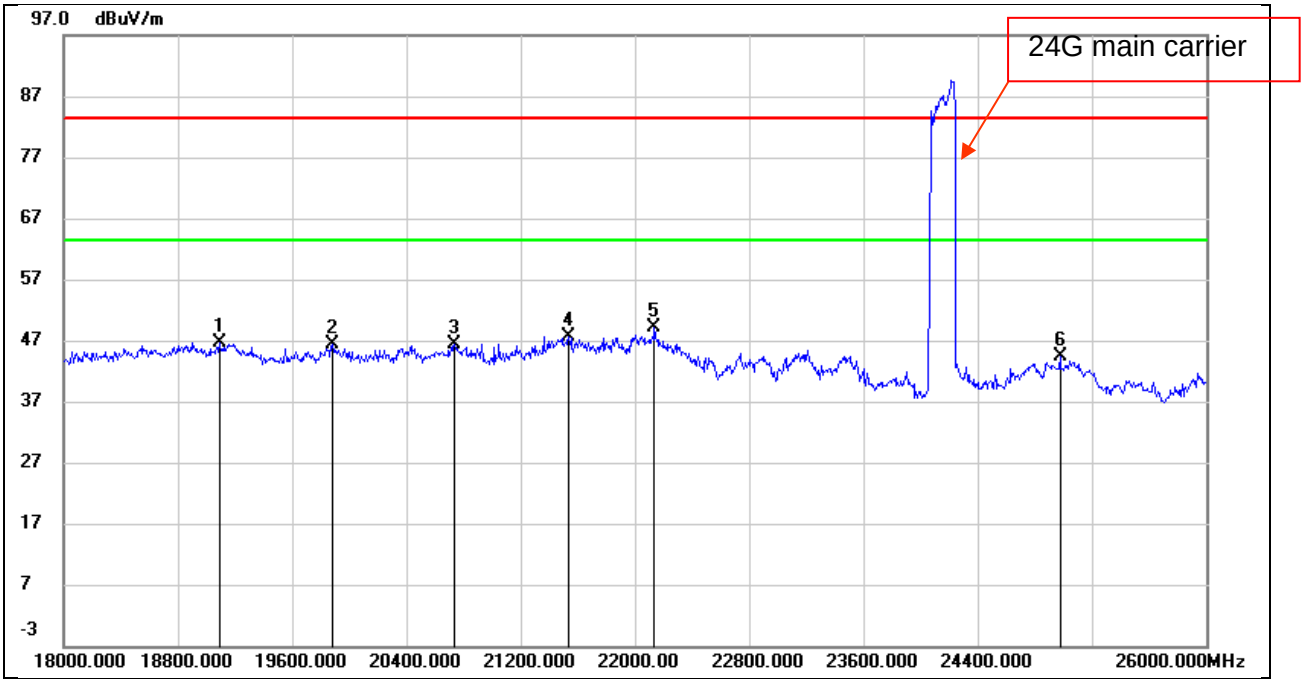
Test Mode:	Forward Radar FMCW & Upward Radar FMCW	Test Channel:	1
Polarity:	Horizontal	Test Voltage:	DC 52.22 V



No.	Frequency	Reading	Correct	Result@1m	Limit@1m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	19288	49.47	-2.69	46.78	83.5	37.28	74	-36.72	peak
2	20736	49.61	-2.33	47.28	83.5	37.78	74	-36.22	peak
3	21432	50.27	-2.04	48.23	83.5	38.73	74	-35.27	peak
4	22008	50.3	-1.48	48.82	83.5	39.32	74	-34.68	peak
5	22816	47.28	-1.44	45.84	83.5	36.34	74	-37.66	peak
6	24880	43.67	0.81	44.48	83.5	34.98	74	-39.02	peak

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

Test Mode:	Forward Radar FMCW & Upward Radar FMCW	Test Channel:	1
Polarity:	Vertical	Test Voltage:	DC 52.22 V

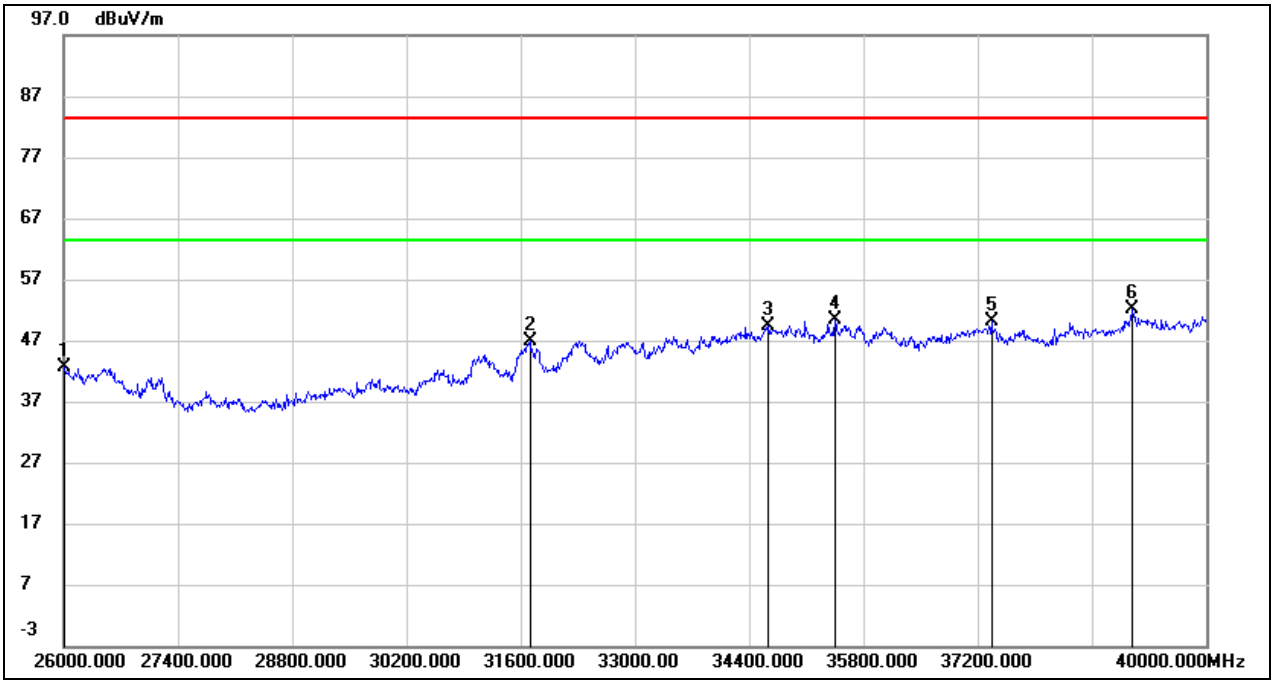


No.	Frequency	Reading	Correct	Result@1m	Limit@1m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	19088	48.98	-2.28	46.7	83.5	37.2	74	-36.8	peak
2	19880	49.93	-3.59	46.34	83.5	36.84	74	-37.16	peak
3	20736	48.81	-2.33	46.48	83.5	36.98	74	-37.02	peak
4	21536	49.48	-1.89	47.59	83.5	38.09	74	-35.91	peak
5	22136	50.82	-1.74	49.08	83.5	39.58	74	-34.42	peak
6	24976	43.38	0.92	44.3	83.5	34.8	74	-39.2	peak

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

SPURIOUS EMISSIONS(26 GHz~40 GHz)

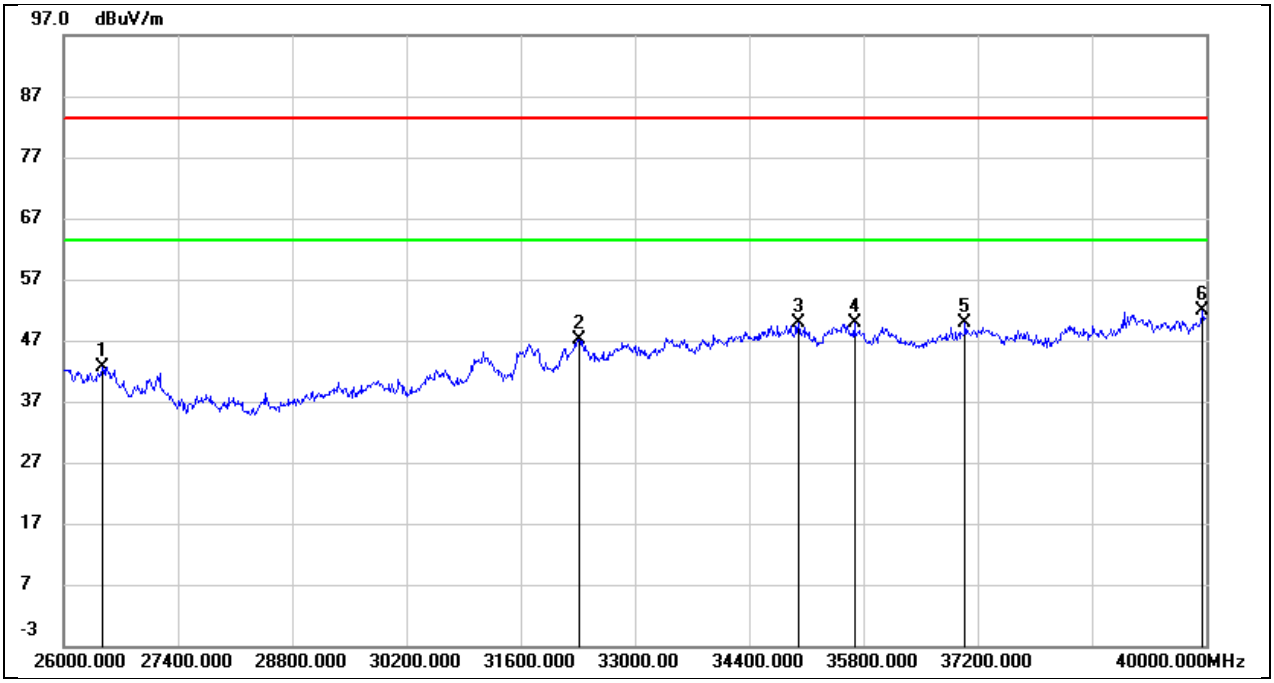
Test Mode:	Forward Radar FMCW & Upward Radar FMCW	Test Channel:	1
Polarity:	Horizontal	Test Voltage:	DC 52.22 V



No.	Frequency	Reading	Correct	Result@1m	Limit@1m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	26014	45.7	-2.95	42.75	83.5	33.25	74	-40.75	peak
2	31712	45.49	1.42	46.91	83.5	37.41	74	-36.59	peak
3	34638	44.47	4.85	49.32	83.5	39.82	74	-34.18	peak
4	35450	44.5	5.88	50.38	83.5	40.88	74	-33.12	peak
5	37368	42.92	7.11	50.03	83.5	40.53	74	-33.47	peak
6	39090	43.25	8.8	52.05	83.5	42.55	74	-31.45	peak

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

Test Mode:	Forward Radar FMCW & Upward Radar FMCW	Test Channel:	1
Polarity:	Vertical	Test Voltage:	DC 52.22 V



No.	Frequency	Reading	Correct	Result@1m	Limit@1m	Result@3m	Limit@3m	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	26476	44.7	-1.97	42.73	83.5	33.23	74	-40.77	peak
2	32314	45.34	1.82	47.16	83.5	37.66	74	-36.34	peak
3	35002	44.63	5.2	49.83	83.5	40.33	74	-33.67	peak
4	35688	43.37	6.46	49.83	83.5	40.33	74	-33.67	peak
5	37046	42.96	7.03	49.99	83.5	40.49	74	-33.51	peak
6	39958	43.42	8.39	51.81	83.5	42.31	74	-31.69	peak

Distance correct factor=20log (1.00 m/3.00 m) = -9.5 dB

Note: All the test conditions have been tested and no worst emissions were found in below 18GHz and above 40GHz, so, only the worst data for 18GHz-40GHz were recorded in the report

8. 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.

RESULTS

Complies

END OF REPORT