

TEST REPORT

Product : Radar Level Meter
Trade mark : 精波
Model/Type reference : PWRD8X, PWRD81, PWRD82, PWRD83, PWRD84, PWRD85, PWRD86, PWRD86A, PWRD81H, PWRD81HA, PWRD81HB, PWRD81HC, PWRD81HD, PWRD8X-W1, PWRD8X-W2, PWRD8X-W3, PWRD8X-W4
Serial Number : N/A
Report Number : EED32S811054
FCC ID : 2BWL3-PWRD
Date of Issue : October 9, 2026
Test Standards : 47 CFR FCC Part 15C §15.256
KDB 890966 D01 Meas level Probing Radars v01r01
TR 14-1007 Measurement of FMCW
Test result : PASS

Prepared for:

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Room 2002, 2nd floor, No.1 Building, No.7 of Fengxian Road, Haidian District, Beijing China

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October 9, 2026

Check No.:5117190526

1 Content

1 CONTENT	2
2 VERSION.....	3
3 TEST SUMMARY	4
4 GENERAL INFORMATION	5
4.1 CLIENT INFORMATION	5
4.2 GENERAL DESCRIPTION OF EUT	5
4.3 TEST ENVIRONMENT	6
4.4 DESCRIPTION OF SUPPORT UNITS	6
4.5 TEST LOCATION	6
4.6 MEASUREMENT UNCERTAINTY (95% CONFIDENCE LEVELS, K=2).....	6
5 EQUIPMENT LIST.....	7
6 TEST RESULTS AND MEASUREMENT DATA.....	9
6.1 ANTENNA REQUIREMENT	9
6.2 OPERATION RESTRICTION AND GROUP INSTALLATION	10
6.3 99% OCCUPIED BANDWIDTH	11
6.4 10DB DOWN EMISSION BANDWIDTH.....	13
6.5 EIRP(EFFECTIVE ISOTROPIC RADIATED POWER)	15
6.6 SPURIOUS EMISSIONS.....	19
<i>Radiated Spurious Emission below 30MHz:</i>	22
<i>Radiated Spurious Emission 30MHz-1GHz:</i>	22
<i>Radiated Spurious Emission 1GHz-18GHz:</i>	24
<i>Radiated Spurious Emission 18GHz-41GHz:</i>	26
<i>Radiated Spurious Emission 41GHz-200GHz:</i>	28
6.7 FREQUENCY STABILITY.....	35
7 PHOTOGRAPHS.....	37

2 Version

Version No.	Date	Description
00	October 9, 2026	Original

3 Test Summary

Test Item	Test Requirement	Test Method	Result
Antenna Requirement	47 CFR Part 15C Section §15.203 & §15.256(b),(i),(j)	N/A	PASS
Operation Restriction and Group Installation	47 CFR Part 15C Section §15.256(c),(d),(e)	N/A	PASS
AC Power Conducted Emissions	47 CFR FCC Part 15C §15.207, KDB 174176 D01 Line Conducted FAQ v01r02	ANSI C63.10-2020 Section 6.2	N/A
99% Occupied Bandwidth	47 CFR Part 15C §15.215(c) , 47 CFR Part 2, Subpart J Section §2.1049	ANSI C63.10-2020 Section 9.4	PASS
10dB down Emission Bandwidth	47 CFR Part 15C §15.256(f) & §15.215(c) , 47 CFR Part 2, Subpart J Section §2.1049, KDB 890966 D01 Meas level Probing Radars v01r01 Section D	ANSI C63.10-2020 Section 9.3	PASS
EIRP (Effective Isotropic Radiated Power)	47 CFR FCC Part 15C §15.256(g), KDB 890966 D01 Meas level Probing Radars v01r01 Section E&F	ANSI C63.10-2020 Section 9.8 & 9.9	PASS
Spurious Emissions	47 CFR Part 15C Section §15.256(h),(k) & §15.209, KDB 890966 D01 Meas level Probing Radars v01r01 Section G	ANSI C63.10-2020 Section 9.10 & 9.11, 47 CFR Part 15C Section §15.256(l)	PASS
Frequency Stability	47 CFR Part 15, Subpart C Section §15.215(c), KDB 890966 D01 Meas level Probing Radars v01r01 Section H	ANSI C63.10-2020 Section 9.5	PASS

Remark:

N/A: This product is powered by direct current. In this whole report not application

Company Name and Address shown on Report, the sample(s) and sample Information were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.

4 General Information

4.1 Client Information

Applicant:	Beijing Precision Wave Instrument Co.,Ltd.
Address of Applicant:	Room 2002, 2nd floor, No.1 Building, No.7 of Fengxian Road, Haidian District,Beijing China
Manufacturer:	Beijing Precision Wave Instrument Co.,Ltd.
Address of Manufacturer:	Room 2002, 2nd floor, No.1 Building, No.7 of Fengxian Road, Haidian District,Beijing China
Factory:	Beijing Precision Wave Instrument Co.,Ltd.
Address of Factory:	Room 2002, 2nd floor, No.1 Building, No.7 of Fengxian Road, Haidian District,Beijing China

4.2 General Description of EUT

Product Name:	Radar Level Meter
Model No.:	PWRD8X, PWRD81, PWRD82, PWRD83, PWRD84, PWRD85, PWRD86, PWRD86A, PWRD81H, PWRD81HA, PWRD81HB, PWRD81HC, PWRD81HD, PWRD8X-W1, PWRD8X-W2, PWRD8X-W3, PWRD8X-W4
Test Model No.:	PWRD8X
Trade mark:	精波
Model difference:	Their electrical circuit design, layout, components used and internal wiring are identical, Only the model and appearance color are different. The circuit schematic diagram, PCB layout diagram, structure and key components of a models are identical. It will not affect the safety and EMC performance of its products
Product Type:	Fix Location
Category of the device:	☒ LPR (Level Probing Radar) ☐ TLPR (Tank Level Probing Radar)
Type of Modulation:	☒ FMCW (Frequency Modulated Continuous Wave) ☐ FH (Frequency Hopping) ☐ SF (Stepped Frequency) ☐ SF (Swept Frequency) ☐ Pulsed ☐ Other:
Operating Frequency:	☐ 5.925-7.250GHz ☐ 24.05-29.00GHz ☒ 75.00-85.00GHz
Test Power Grade:	Default
Test Software of EUT:	RF Test
Antenna Type:	Lens Antenna
Antenna Gain:	22.4dBi
Power Supply:	DC 12-30V
Test Voltage:	DC 24V
Sample Received Date:	Jul. 23, 2026
Sample tested Date:	Jul. 23, 2026 to Aug. 27, 2026

4.3 Test Environment

Operating Environment:	
Temperature:	22~25.0 °C
Humidity:	50~55 % RH
Atmospheric Pressure:	1010mbar

4.4 Description of Support Units

The EUT has been tested independently.

4.5 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Hongwei Industrial Park, Zone 70, Bao'an District, Shenzhen, Guangdong, China

Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385

No tests were sub-contracted.

Designation Number: CN1164

Test Firm Registration Number: 260439

ISED test site number: 7408A, CAB identifier number : CN0037

4.6 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Radio Frequency	7.9×10^{-8}
2	RF power, conducted	0.46dB (30MHz-1GHz)
		0.55dB (1GHz-18GHz)
3	Radiated Spurious emission test	3.3dB (9kHz-30MHz)
		4.3dB (30MHz-1GHz)
		4.5dB (1GHz-18GHz)
		3.4dB (18GHz-40GHz)
		4.62dB (40GHz-60GHz)
		4.80dB (60GHz-90GHz)
		4.90dB (90GHz-140GHz)
		5.11dB (140GHz-220GHz)
4	Conduction emission	5.14dB (220GHz-325GHz)
		3.5dB (9kHz to 150kHz)
5	Temperature test	3.1dB (150kHz to 30MHz)
		0.64°C
6	Humidity test	3.8%
7	DC power voltages	0.026%

5 Equipment List

3M full-anechoic Chamber					
Equipment	Manufacturer	Model No.	Serial Number	Cal. Date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
Fully Anechoic Chamber	TDK	FAC-3	---	01-29-2024	01-28-2027
Receiver	Keysight	N9038A	MY57290136	12-22-2025	12-21-2026
Spectrum Analyzer	Keysight	N9020B	MY57111112	12-21-2025	12-20-2026
Spectrum Analyzer	Keysight	N9030B	MY57140871	12-21-2025	12-20-2026
TRILOG Broadband Antenna	Schwarzbeck	VULB 9163	9163-1148	03-29-2026	03-28-2027
Horn Antenna	Schwarzbeck	BBHA 9170	9170-832	04-03-2026	04-02-2027
Horn Antenna	ETS-LINDGREN	3117	57407	05-10-2026	05-09-2027
Preamplifier	EMCI	EMC001330	980563	02-06-2026	02-05-2027
Preamplifier	EMCI	EMC051845SE	980380	11-25-2025	11-24-2026
Preamplifier	Tonscend	TAP-011858	AP21B806112	07-07-2025 06-22-2026	07-06-2026 06-21-2027
Communication test set	R&S	CMW500	104466	11-25-2025	11-24-2026
Temperature/ Humidity Indicator	biaozhi	GM1360	EE1186631	03-24-2026	03-23-2027
Spectrum Analyzer	R&S	FSV3044	101509	05-14-2026	05-13-2027
TC-RSE60 receive unit	R&S	Receive unit	100729	Note 1	Note 1
TC-RSE90 receive unit	R&S	Receive unit	100721	Note 1	Note 1
TC-RSE140 receive unit	R&S	Receive unit	101254	Note 1	Note 1
TC-RSE220 receive unit	R&S	Receive unit	100716	Note 1	Note 1
TC-RSE325 receive unit	R&S	Receive unit	100638	Note 1	Note 1
RSE Automatic test software	JS Tonscend	JS36-RSE	V5.0.0.1	---	---
Cable line	Times	SFT205-NMSM-2.50M	394812-0001	---	---
Cable line	Times	SFT205-NMSM-2.50M	394812-0002	---	---
Cable line	Times	SFT205-NMSM-2.50M	394812-0003	---	---

Cable line	Times	SFT205-NMSM-2.50M	393495-0001	---	---
Cable line	Times	EMC104-NMNM-1000	SN160710	---	---
Cable line	Times	SFT205-NMSM-3.00M	394813-0001	---	---
Cable line	Times	SFT205-NMNM-1.50M	381964-0001	---	---
Cable line	Times	SFT205-NMSM-7.00M	394815-0001	---	---
Cable line	Times	HF160-KMKM-3.00M	393493-0001	---	---

Note 1:Calibrated by the equipment manufacturer

6 Test results and Measurement Data

6.1 Antenna Requirement

Standard requirement: 47 CFR Part 15C Section §15.203 & §15.256(b),(i),(j)

§15.203 requirement:

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, 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.

§15.256(b) requirement:

LPR devices operating under the provisions of this section shall utilize a dedicated or integrated transmit antenna, and the system shall be installed and maintained to ensure a vertically downward orientation of the transmit antenna's main beam.

§15.256(i) requirement:

Antenna beamwidth.

(A) LPR devices operating under the provisions of this section within the 5.925-7.250 GHz and 24.05-29.00 GHz bands must use an antenna with a -3 dB beamwidth no greater than 12 degrees.

(B) LPR devices operating under the provisions of this section within the 75-85 GHz band must use an antenna with a -3 dB beamwidth no greater than 8 degrees.

§15.256(j) requirement:

Antenna side lobe gain. LPR devices operating under the provisions of this section must limit the side lobe antenna gain relative to the main beam gain for off-axis angles from the main beam of greater than 60 degrees to the levels provided in Table 2.

Table 2: Antenna side lobe gain limits

Frequency range (GHz)	Antenna side lobe gain limit relative to main beam gain (dB)
5.925 to 7.250	-22
24.05 to 29.00	-27
75.00 to 85.00	-38

Note: The standard ETSI EN 302 729 contains measurement techniques for the LPR "boresight-axis" method.

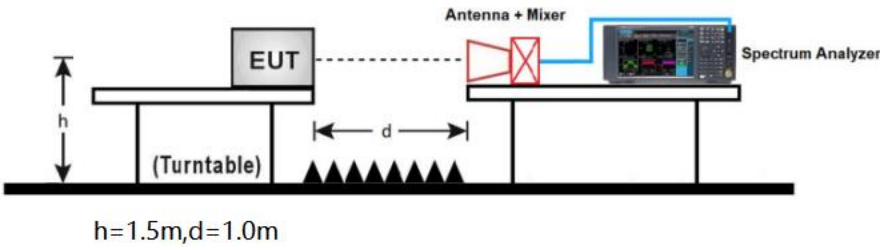
EUT Antenna: Please see Internal photos.

Result: It complies with the antenna requirement. Please refer to the report of antenna provided by manufacturer for details.

6.2 Operation Restriction and Group Installation

Standard requirement:	47 CFR Part 15C Section §15.256(c),(d),(e)
§15.256 requirement: (c) LPR devices operating under the provisions of this section shall be installed only at fixed locations. The LPR device shall not operate while being moved, or while inside a moving container. (d) Hand-held applications are prohibited. (e) Marketing to residential consumers is prohibited.	
Conclusion: Compliant.	

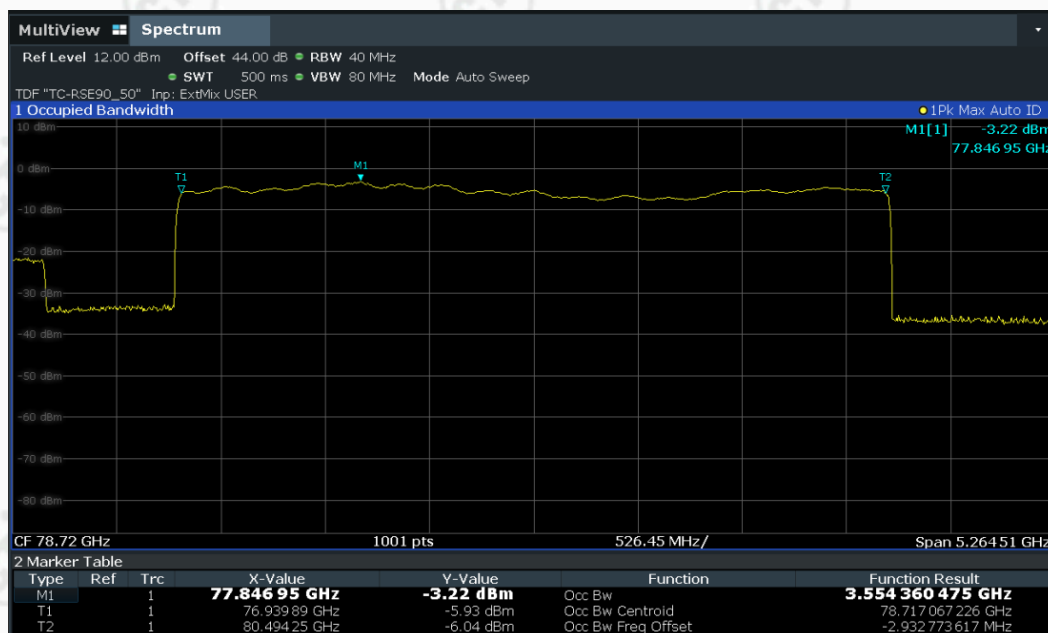
6.3 99% Occupied Bandwidth

Test Requirement:	47 CFR Part 15C §15.255(e) & §15.215(c) , 47 CFR Part 2, Subpart J Section §2.1049
Test Method:	ANSI C63.10-2020 Section 9.4
Limit:	Within the designated 5.925 to 7.250GHz frequency band or 24.05 to 29.00GHz frequency band or 75.00 to 85.00GHz frequency band.
Test Setup:	 $h=1.5m, d=1.0m$
Test Procedure:	a) The following procedure shall be used for measuring 99% Occupied Bandwidth: Use the following spectrum analyzer settings: 1) Span equal to approximately 1.5 times the OBW, centered on the carrier frequency. 2) RBW, prefer 1% to 5% of OBW, or a minimum of 1 MHz if this is not possible due to a large OBW. 3) VBW approximately $3 \times$ RBW. 4) Set the reference level of the instrument as required to reduce the chance of the signal amplitude exceeding the maximum spectrum analyzer input mixer level for linear operation. 5) Sweep = No faster than coupled (auto) time. 6) Detector function = peak. 7) Trace = max-hold. b) The EUT shall be transmitting at its maximum data rate. Allow the trace to stabilize. c) Use the 99% channel power function to measure the signal power. d) Repeat this test for each modulation scheme.
Test Mode:	TX mode_Make EUT continuously emit radar signals.

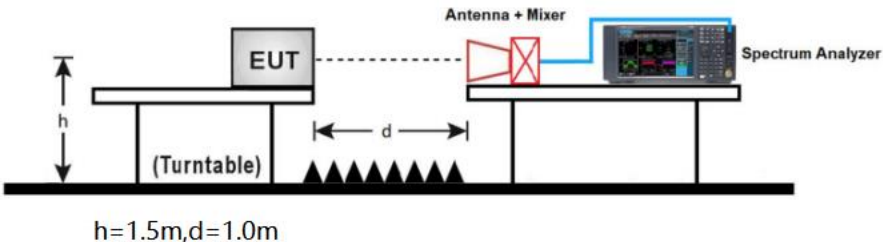
Test data:

99% Occupied Bandwidth (GHz)	Lowest Frequency (GHz)	Highest Frequency (GHz)	Limit (GHz)	Result
3.554360475	76.93989	80.49425	75 to 85	Pass

Test graph:



6.4 10dB down Emission Bandwidth

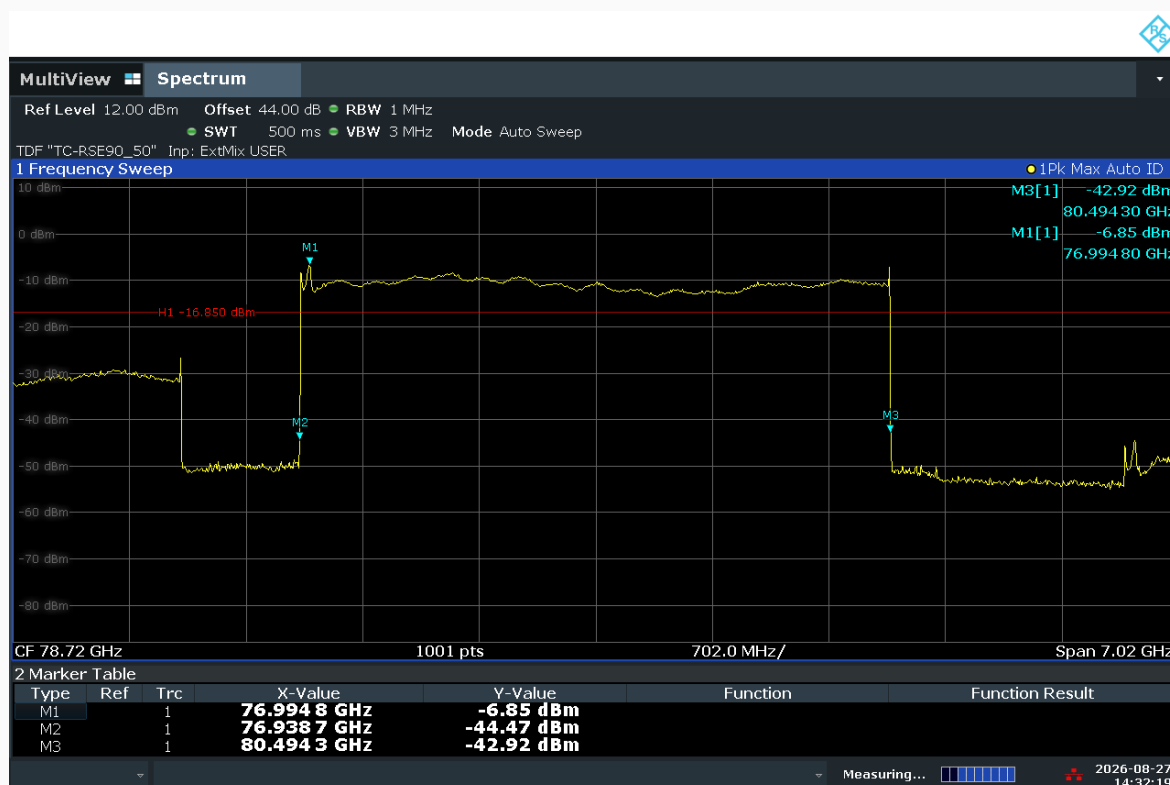
Test Requirement:	47 CFR Part 15C §15.256(f) & §15.215(c) , 47 CFR Part 2, Subpart J Section §2.1049, KDB 890966 D01 Meas level Probing Radars v01r01 Section D
Test Method:	ANSI C63.10-2020 Section 9.3
Limit:	①10dB down Emission Bandwidth $\geq$ 50MHz; ②Within the designated 5.925 to 7.250GHz frequency band or 24.05 to 29.00GHz frequency band or 75.00 to 85.00GHz frequency band.
Test Setup:	 h=1.5m,d=1.0m
Test Procedure:	The following procedure shall be used for measurement of the bandwidth for millimeter-wave devices. - Use the following spectrum analyzer settings: - Span equal to approximately 2~3 times the 10dB down Emission Bandwidth, centered on the carrier frequency. - RBW, as specified in the requirement. - VBW, as specified in the requirement, or VBW $\geq$ RBW if not specified. - Sweep = auto. - Detector function = peak. - Trace = max hold. - The EUT shall be transmitting at its maximum data rate. Allow the trace to stabilize. - Use the marker-to-peak function to set the marker to the peak of the emission. Use the marker-delta function to measure the specified 10dB down one side of the emission. - Reset the marker-delta function and move the marker to the other side of the emission until the delta marker amplitude is at the same level as the reference marker amplitude. The marker-delta frequency reading at this point is the specified emission bandwidth. - If this value varies with different modes of operation (data rate, modulation format, etc.), then repeat this test for each variation.
Test Mode:	TX mode_Make EUT continuously emit radar signals.

Test data:

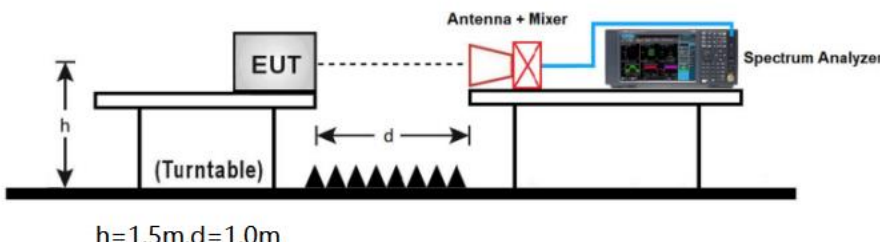
10dB down Emission Bandwidth (MHz)	Limit (MHz)	Lowest Frequency (GHz)	Highest Frequency (GHz)	Frequency Range Limit (GHz)	Result
3555.6	≥50	76.9387	80.4943	75 to 85	Pass

Note:10dB down Emission Bandwidth(MHz)=(Highest Frequency(GHz)-Lowest Frequency(GHz))*1000

Test graph:



6.5 EIRP(Effective Isotropic Radiated Power)

Test Requirement:	47 CFR FCC Part 15C §15.256(g), KDB 890966 D01 Meas level Probing Radars v01r01 Section E&F												
Test Method:	ANSI C63.10-2020 Section 9.8 & 9.9												
Limit:	The EIRP limits for LPR operations in the bands authorized by this rule section are provided in Table 1. The emission limits in Table 1 are based on boresight measurements (i.e., measurements performed within the main beam of an LPR antenna). Table 1: LPR EIRP emission limits <table><tr><th>Frequency band of operation (GHz)</th><th>Average emission limit (EIRP in dBm measured in 1MHz)</th><th>Peak emission limit (EIRP in dBm measured in 50MHz)</th></tr><tr><td>5.925 to 7.250</td><td>-33</td><td>7</td></tr><tr><td>24.05 to 29.00</td><td>-14</td><td>26</td></tr><tr><td>75.00 to 85.00</td><td>-3</td><td>34</td></tr></table> Note: ①For a RBW less than 50 MHz, the peak EIRP limit (in dBm) is reduced by $20 \log(\text{RBW}/50)$ dB where RBW is the resolution bandwidth in megahertz. ②The RBW shall not be lower than 1 MHz or greater than 50 MHz.	Frequency band of operation (GHz)	Average emission limit (EIRP in dBm measured in 1MHz)	Peak emission limit (EIRP in dBm measured in 50MHz)	5.925 to 7.250	-33	7	24.05 to 29.00	-14	26	75.00 to 85.00	-3	34
Frequency band of operation (GHz)	Average emission limit (EIRP in dBm measured in 1MHz)	Peak emission limit (EIRP in dBm measured in 50MHz)											
5.925 to 7.250	-33	7											
24.05 to 29.00	-14	26											
75.00 to 85.00	-3	34											
Test Setup:	 $h=1.5\text{m}, d=1.0\text{m}$												
Test Procedure:	(1)Maximum peak power(EIRP) – Peak detector - Set RBW = 1MHz; - Set VBW $\geq 3 \times \text{RBW}$; - Span to $2 \sim 3 \times \text{OBW}$; - Detector = Peak; - Set number of points in sweep $\geq 2 \times \text{Span}/\text{RBW}$; - Sweep time=Auto couple; - Trace = Max hold; (2)Maximum power(EIRP) – Averaging detector Note: The maximum power(averaging detector) measurements are performed using the “channel power” measurement capability and integrated over the 99% OBW to obtain the result. - Measurement capability of instrument = Channel power; - Set RBW = 1MHz; - Set VBW $\geq 3 \times \text{RBW}$; - Span to $2 \sim 3 \times \text{OBW}$; - Channel bandwidth setting of instrument $\geq \text{OBW}$; - Detector = Power averaging (RMS); - Set number of points in sweep $\geq 2 \times \text{Span}/\text{RBW}$; - Sweep time = Auto couple; - Trace = Averaging;												
Test Mode:	TX mode Make EUT continuously emit radar signals.												

Test data:

Frequency (GHz)	Distance (m)	Polarity	EIRP (dBm)	FMCW Chirps Correction Factor (dB)	Corrected EIRP (dBm/MHz)	Average EIRP Limit (dBm/MHz)	Result	Remark
78.72	1.0	H	-44.79	4.95	-39.84	≤-3	Pass	AVG
		V	-39.16	4.95	-34.21	≤-3	Pass	AVG

Frequency (GHz)	Distance (m)	Polarity	Signal level (dBm/MHz)	EIRP (dBm/50 MHz)	FMCW Chirps Correction Factor (dB)	Corrected EIRP (dBm/50 MHz)	Peak EIRP Limit (dBm/50MHz)	Result	Remark
78.72	1.0	H	-6.21	10.78	4.95	15.73	≤34	Pass	Peak
		V	-8.53	8.46	4.95	13.41	≤34	Pass	Peak

Remark:

- ① This is a radiated test, and test distance of 1.0m was used for the fundamental emissions measurement.
- ② EIRP(dBm) has added free space loss of 1.0m distance.
- ③ The FMCW Chirps Correction Factor was calculated using the formula:

$$CF_{chirp} = 5 * \log \left(1 + K * \left(\frac{Span}{t * RBW^2} \right)^2 \right)$$

With t being the length of the chirp and K a correction factor for the setting process of the gaussian shaped filter (~0.1947).

Sample calculation for FMCW chirps correction factor:

$$CF_{chirp} = 5 * \log_{10} (1 + 0.1947 * (1MHz / (530 \mu s * 3554.36MHz^2))^2) = 4.95dB$$

Note: Span is the measured maximum occupied bandwidth, refer to the section of 6.4, t claimed by the customer.

- ④ Guidance for calculating the correction factor is from Application Note 1EF107-1E Rohde & Schwarz Peak and Mean Power measurements on wideband FMCW radar signals.
- ⑤ Corrected EIRP(dBm)=EIRP(dBm)+FMCW Chirps Correction Factor(dB).
- ⑥ EIRP(dBm/50MHz)=Signal level(dBm/MHz)+10*lg(50/RBW).

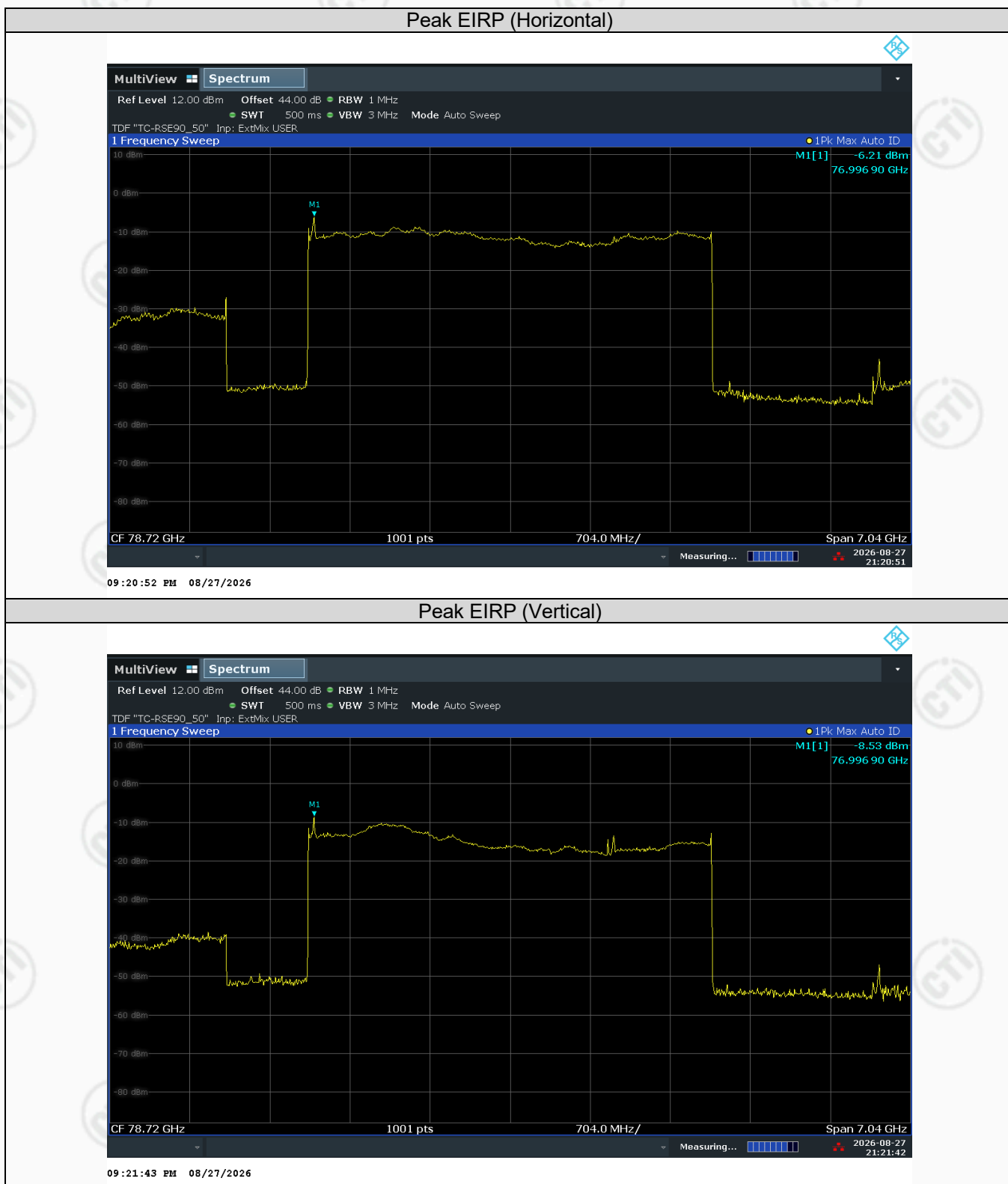
Note: For pulsed LPRs, if PRF < RBW/3, correction factor=20*lg(50/RBW) dB;

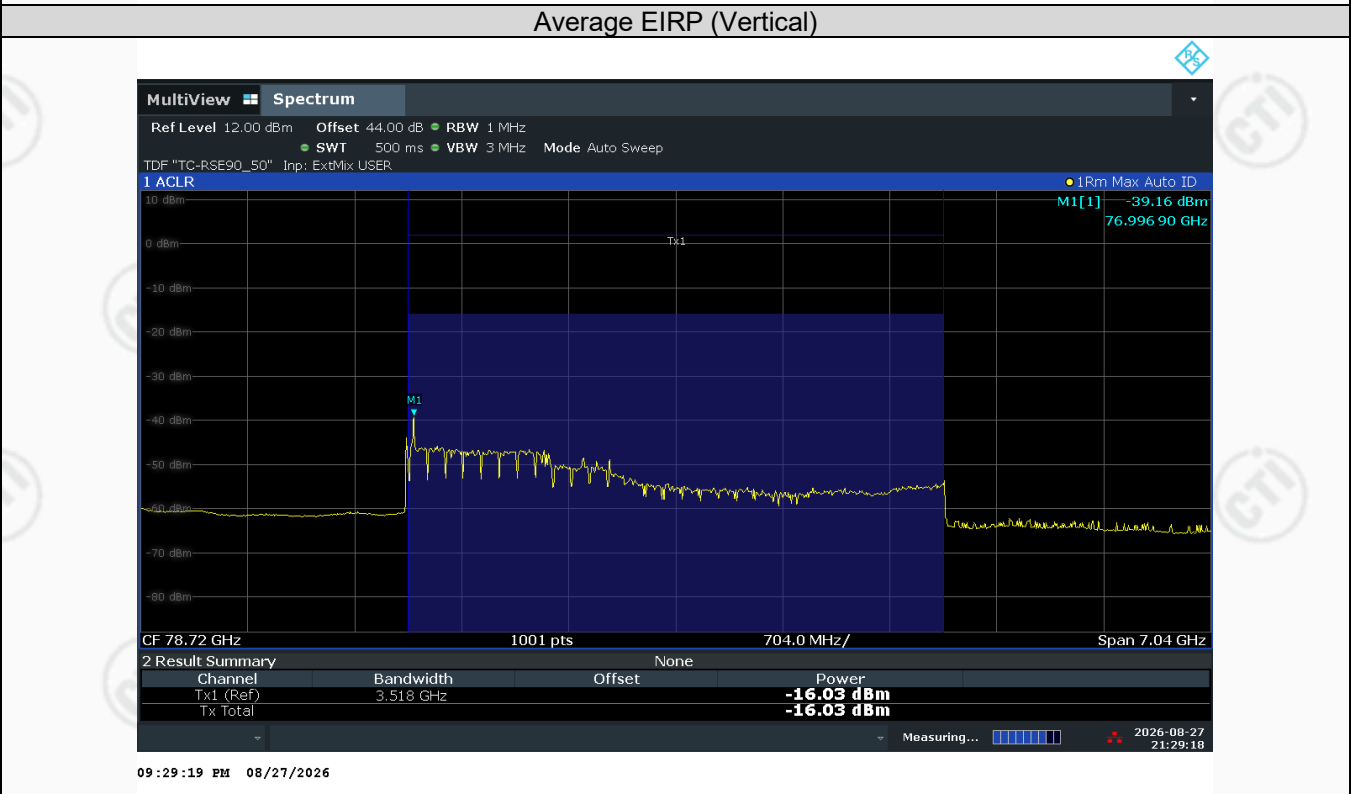
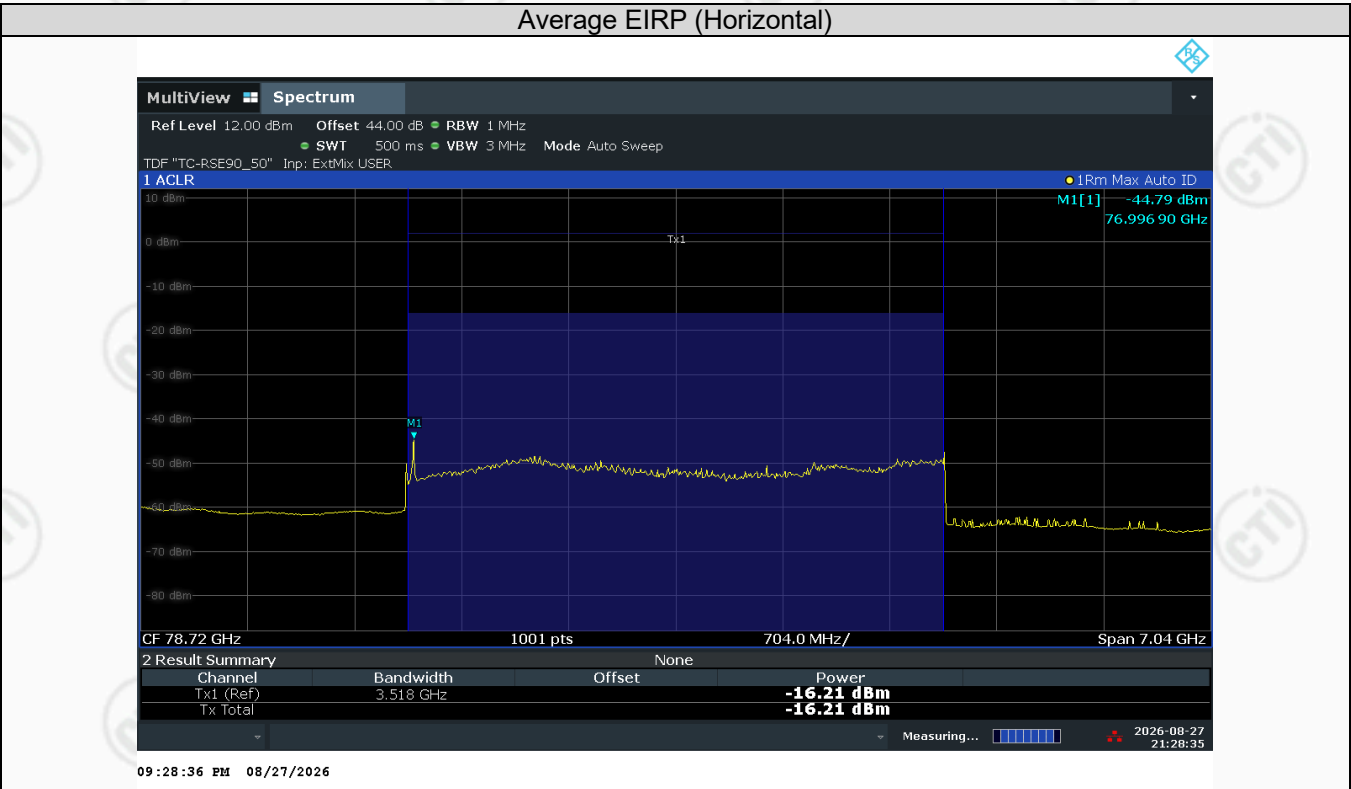
If PRF > 3*RBW, correction factor=20*lg(50/PRF) dB.

Where: RBW is the resolution bandwidth in MHz; PRF is the pulse repetition frequency in MHz.

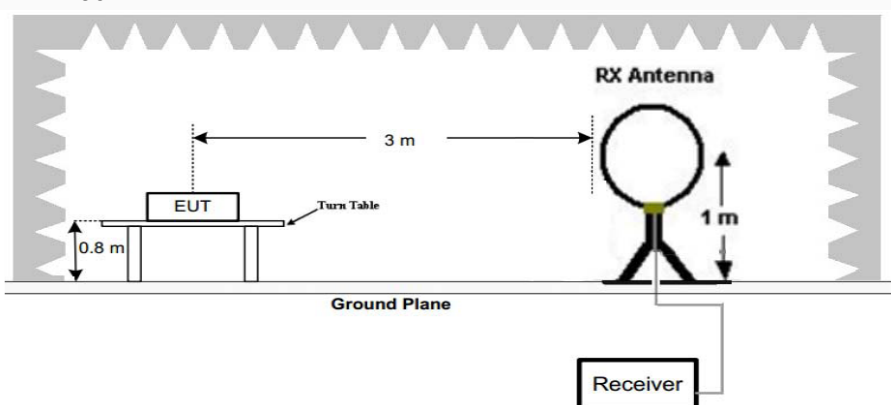
- ⑦ Only the worst case data was recorded in the report.

Test graph:

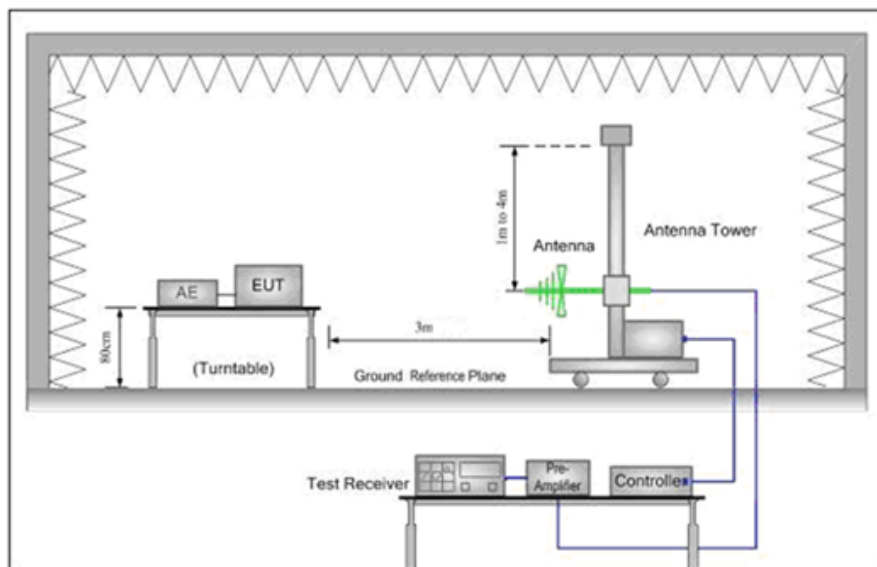




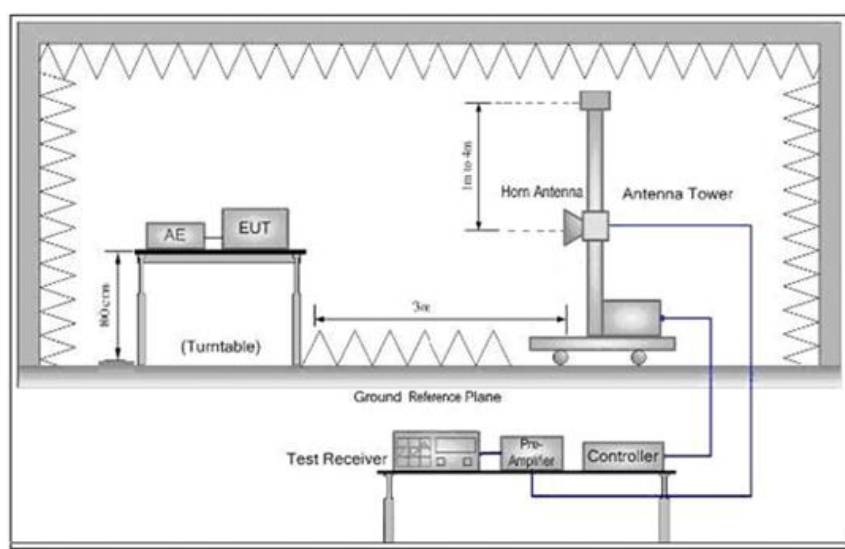
6.6 Spurious Emissions

Test Requirement:	47 CFR Part 15C Section §15.256(h),(k) & §15.209, KDB 890966 D01 Meas level Probing Radars v01r01 Section G				
Test Method:	ANSI C63.10-2020 Section 9.10 & 9.11, 47 CFR Part 15C Section §15.256(l)				
Limit:	47 CFR FCC Part 15C §15.256(h) & §15.209 Limit:				
	Frequency	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
	0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
	0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
	1.705MHz-30MHz	30	-	-	30
	30MHz-88MHz	100	40.0	Quasi-peak	3
	88MHz-216MHz	150	43.5	Quasi-peak	3
	216MHz-960MHz	200	46.0	Quasi-peak	3
	960MHz-1GHz	500	54.0	Quasi-peak	3
	Above 1GHz	500	54.0	Average	3
Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.					
	47 CFR FCC Part 15C §15.256(k) Limit: Emissions from digital circuitry used to enable the operation of the transmitter may comply with the limits in § 15.209 of this chapter provided it can be clearly demonstrated that those emissions are due solely to emissions from digital circuitry contained within the transmitter and the emissions are not intended to be radiated from the transmitter's antenna. Emissions from associated digital devices, as defined in §15.3(k) of this part, e.g., emissions from digital circuitry used to control additional functions or capabilities other than the operation of the transmitter, are subject to the limits contained in subpart B, part 15 of this chapter. Emissions from these digital circuits shall not be employed in determining the -10dB bandwidth of the fundamental emission or the frequency at which the highest emission level occurs.				
Test Setup:	Below 30MHz: 				

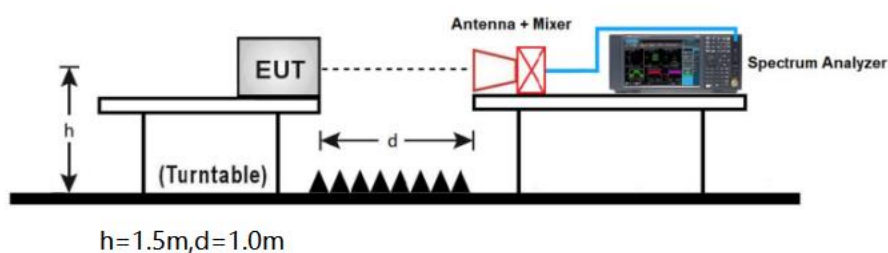
30MHz-1GHz:



1GHz-41GHz:



Above 41GHz:



Test Procedure:	Measuring the frequency range below 1GHz, the EUT is placed on a turn table which is 0.8 meter above ground, when measuring the frequency range above 1GHz, the EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters. The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10:2020 on radiated measurement. The resolution bandwidth below 30MHz setting on the field strength meter is 9kHz and 30MHz~1GHz is 120kHz and above 1GHz is 1MHz. Radiated emission measurements below 30MHz are made using Loop Antenna and 30MHz~1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas. The measurement is divided into the Preliminary Measurement and the Final Measurement. The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna. The measurement frequency range form 9kHz to 200GHz was investigated.
Test Mode:	TX mode_Make EUT continuously emit radar signals.

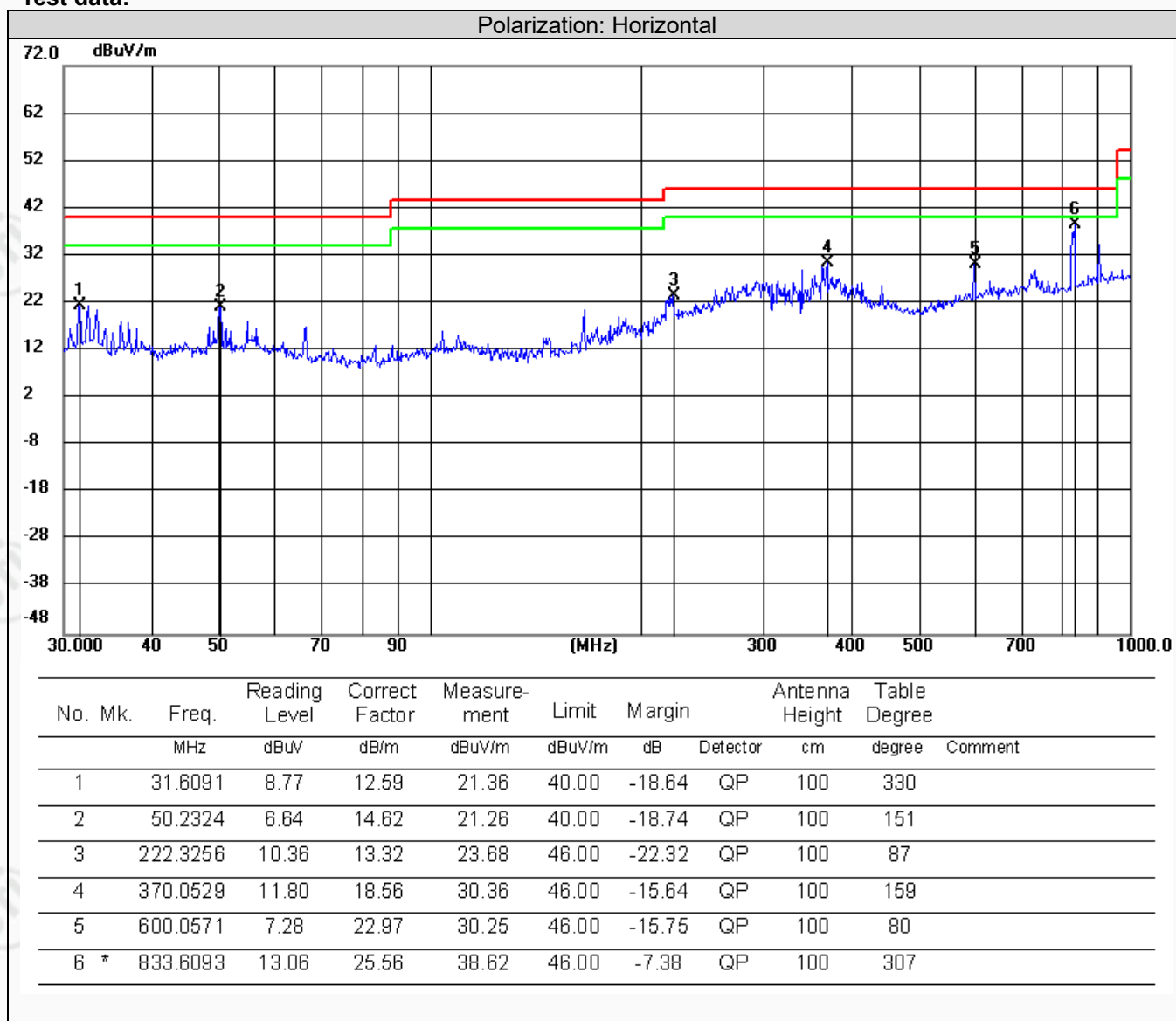
Radiated Spurious Emission below 30MHz:

9 kHz~30 MHz Field Strength of Unwanted Emissions. Quasi-Peak Measurement

The measurements with active loop antenna were greater than 20dB below the limit, so the test data were not recorded in the test report.

Radiated Spurious Emission 30MHz-1GHz:

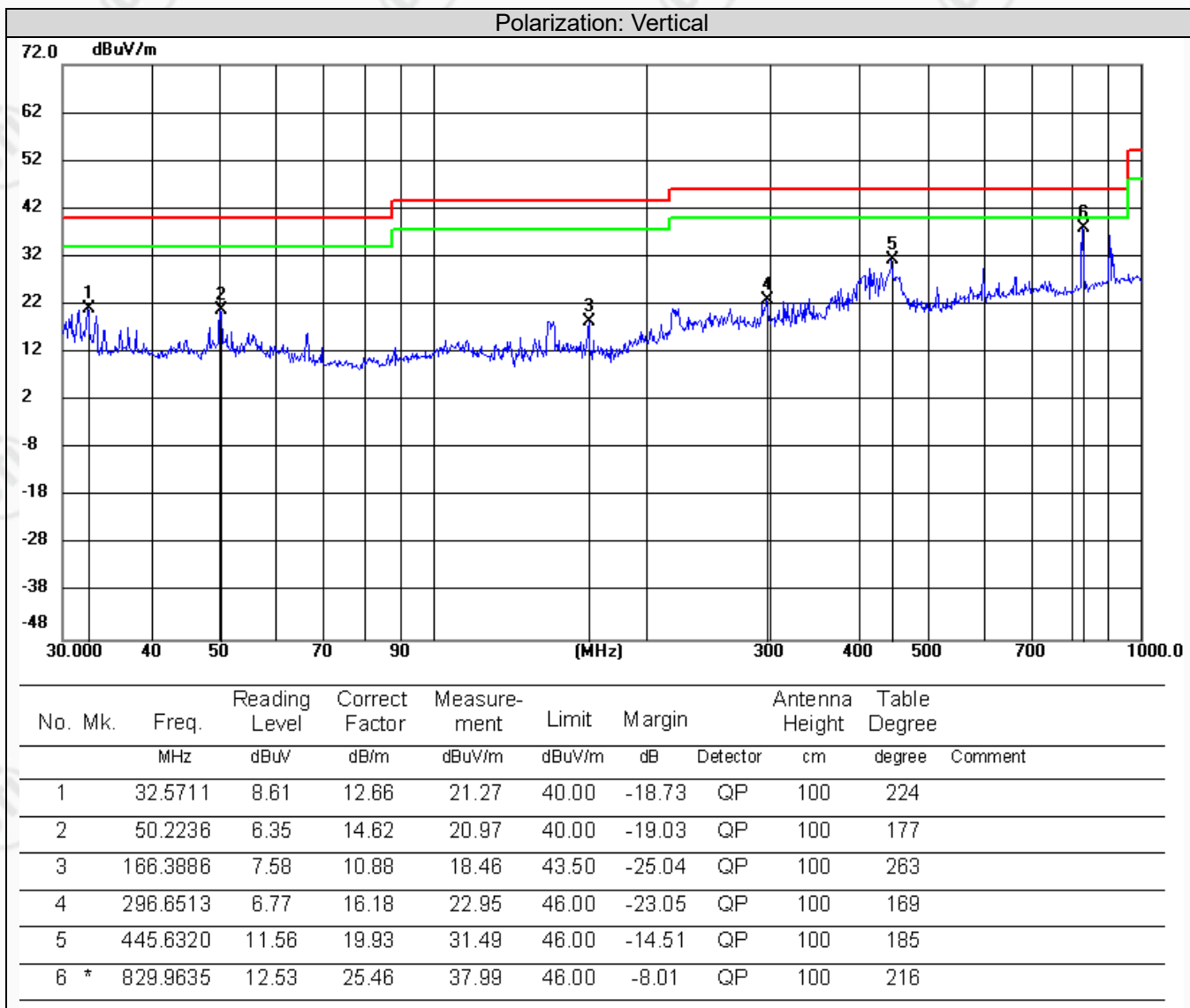
Test data:



Note:

① Measurement(dBuV/m)=Reading Level(dBuV)+Correct Factor(dB);

② Margin(dB)=Measurement(dBuV/m)-Limit(dBuV/m);



Note:

① Measurement(dBuV/m)=Reading Level(dBuV)+Correct Factor(dB);

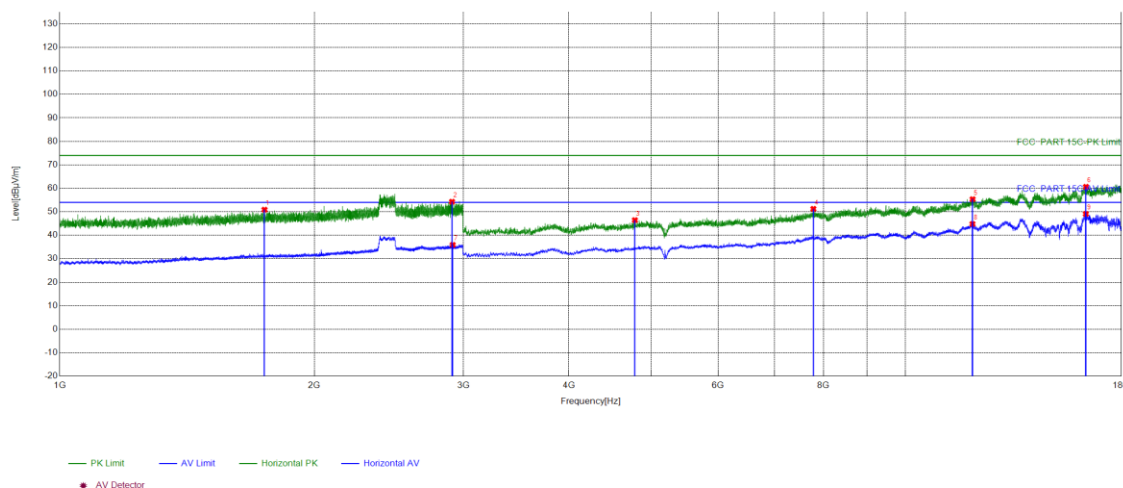
② Margin(dB)=Measurement(dBuV/m)-Limit(dBuV/m);

Radiated Spurious Emission 1GHz-18GHz:

Test data:

Test_Mode	\	Test_Frequency	78GHz
Tset_Engineer	\	Test_Date	2026/8/3

Test Graph

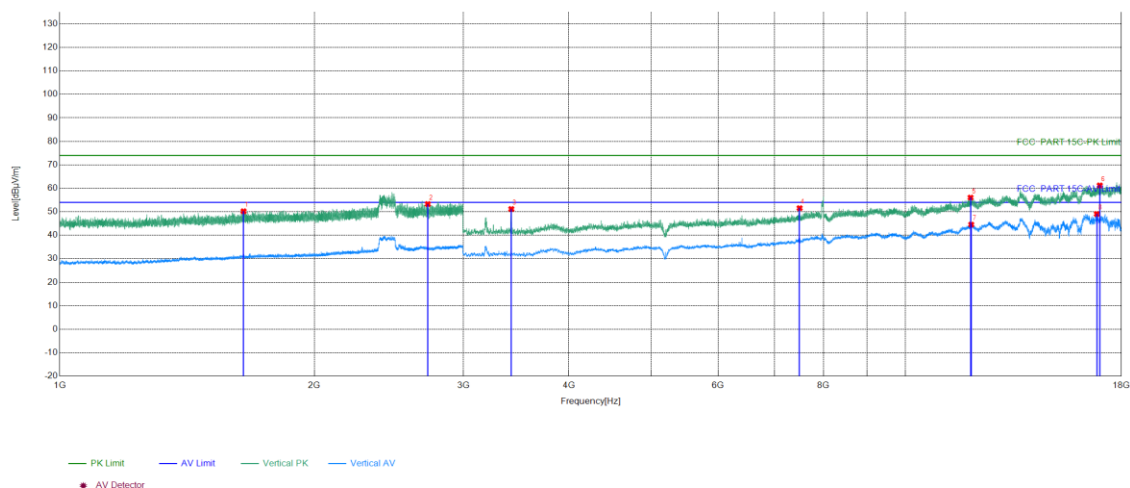


Suspected List

NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1746.0497	14.10	36.79	50.89	74.00	23.11	PASS	Horizontal	PK
2	2909.0606	17.77	36.52	54.29	74.00	19.71	PASS	Horizontal	PK
3	4786.1191	-8.61	55.06	46.45	74.00	27.55	PASS	Horizontal	PK
4	7781.3188	-1.84	53.09	51.25	74.00	22.75	PASS	Horizontal	PK
5	12003.6002	3.11	52.25	55.36	74.00	18.64	PASS	Horizontal	PK
6	16343.8896	11.51	49.13	60.64	74.00	13.36	PASS	Horizontal	PK
7	2914.661	17.67	18.23	35.90	54.00	18.10	PASS	Horizontal	AV
8	11999.6	3.13	41.68	44.81	54.00	9.19	PASS	Horizontal	AV
9	16336.8891	11.43	37.66	49.09	54.00	4.91	PASS	Horizontal	AV

Test_Mode	\	Test_Frequency	78GHz
Tset_Engineer	\	Test_Date	2026/8/3

Test Graph



Suspected List

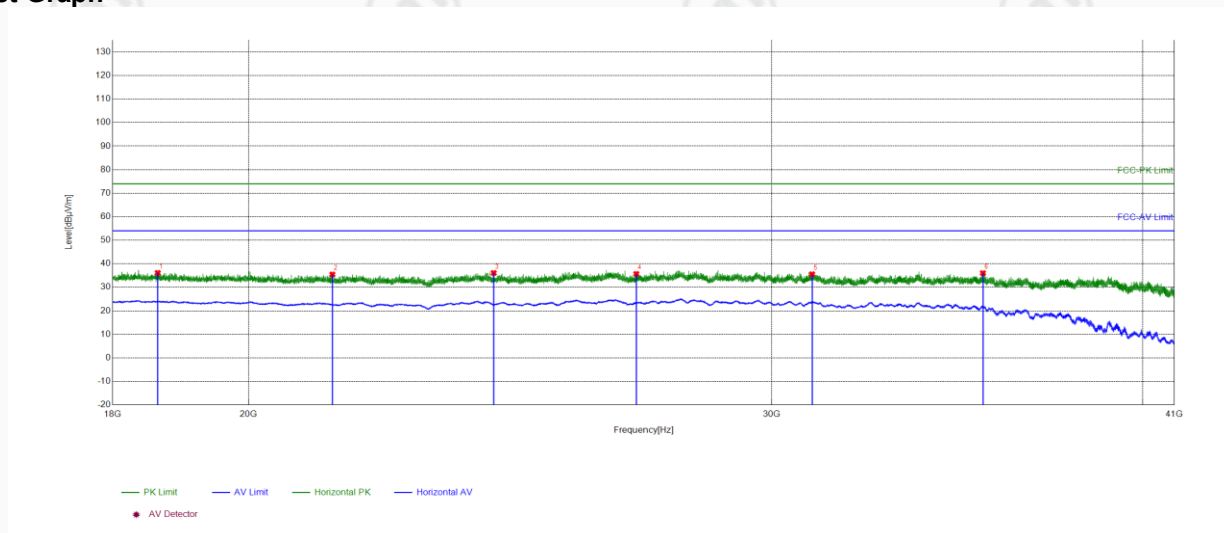
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1649.2433	14.02	36.20	50.22	74.00	23.78	PASS	Vertical	PK
2	2723.4482	17.00	36.29	53.29	74.00	20.71	PASS	Vertical	PK
3	3419.0279	-13.93	65.11	51.18	74.00	22.82	PASS	Vertical	PK
4	7494.2996	-2.31	53.86	51.55	74.00	22.45	PASS	Vertical	PK
5	11936.5958	3.00	53.04	56.04	74.00	17.96	PASS	Vertical	PK
6	16969.9313	13.04	48.20	61.24	74.00	12.76	PASS	Vertical	PK
7	11957.5972	3.10	41.44	44.54	54.00	9.46	PASS	Vertical	AV
8	16833.9223	12.61	36.46	49.07	54.00	4.93	PASS	Vertical	AV

Radiated Spurious Emission 18GHz-41GHz:

Test data:

Test_Mode	\	Test_Frequency	78GHz
Tset_Engineer	\	Test_Date	2026/8/3

Test Graph

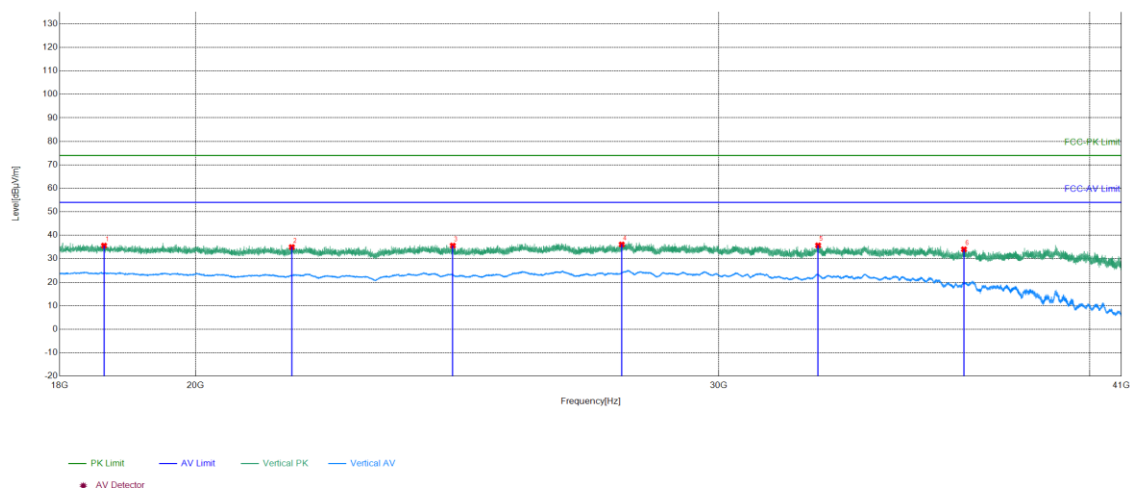


Suspected List

NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	18638.5055	-26.61	62.72	36.11	74.00	37.89	PASS	Horizontal	PK
2	21340.6536	-25.84	61.30	35.46	74.00	38.54	PASS	Horizontal	PK
3	24184.4874	-22.59	58.68	36.09	74.00	37.91	PASS	Horizontal	PK
4	27012.6805	-21.84	57.53	35.69	74.00	38.31	PASS	Horizontal	PK
5	30957.7983	-19.40	54.95	35.55	74.00	38.45	PASS	Horizontal	PK
6	35342.6937	-16.04	52.06	36.02	74.00	37.98	PASS	Horizontal	PK

Test_Mode	\	Test_Frequency	78GHz
Tset_Engineer	\	Test_Date	2026/8/3

Test Graph



Suspected List

NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	18628.3851	-26.63	62.22	35.59	74.00	38.41	PASS	Vertical	PK
2	21547.6619	-25.78	60.75	34.97	74.00	39.03	PASS	Vertical	PK
3	24412.6565	-21.69	57.28	35.59	74.00	38.41	PASS	Vertical	PK
4	27829.6732	-21.09	57.18	36.09	74.00	37.91	PASS	Vertical	PK
5	32406.8563	-18.07	53.76	35.69	74.00	38.31	PASS	Vertical	PK
6	36287.5715	-16.74	50.75	34.01	74.00	39.99	PASS	Vertical	PK

Remark:

- The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

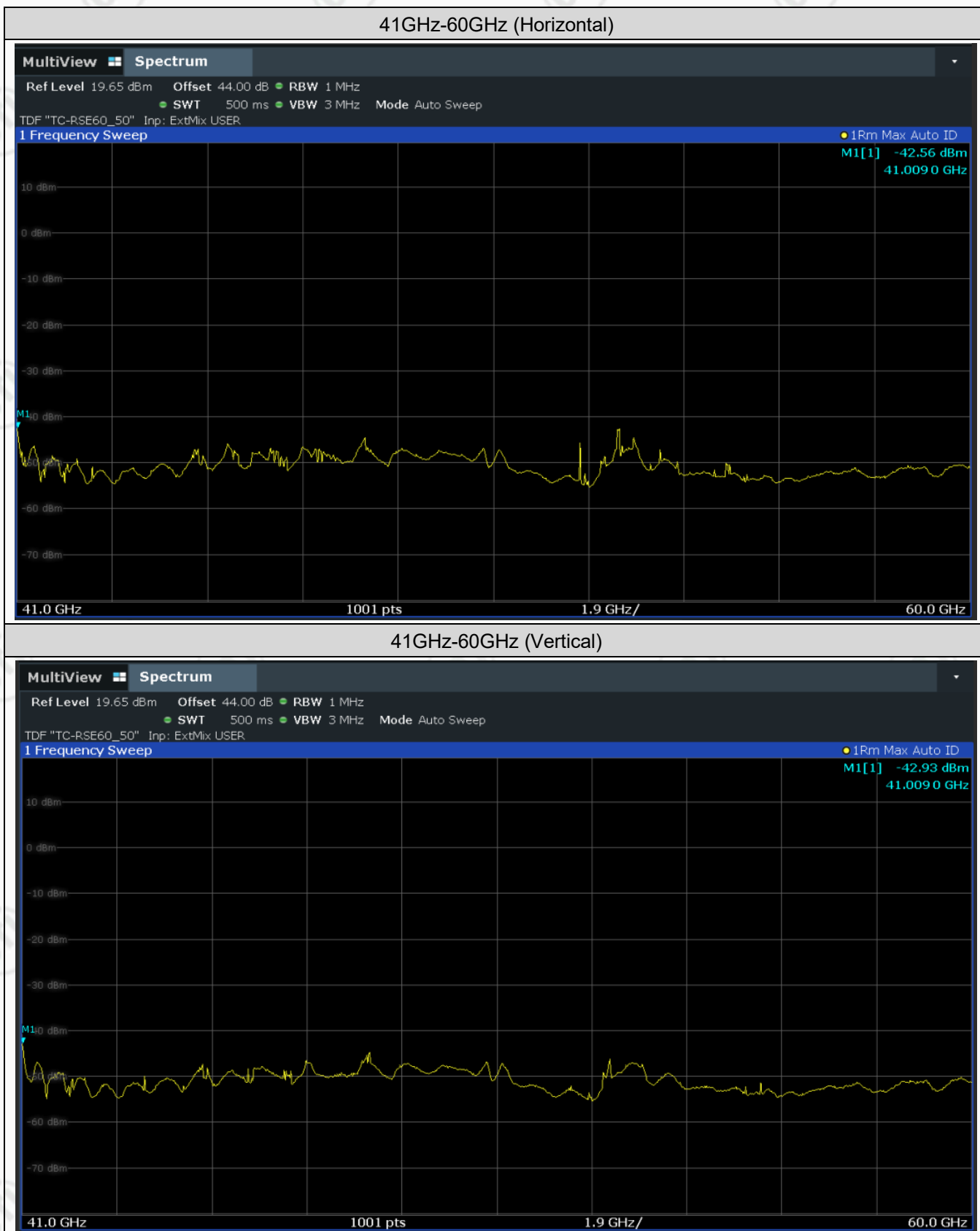
Radiated Spurious Emission 41GHz-200GHz:
Test data:

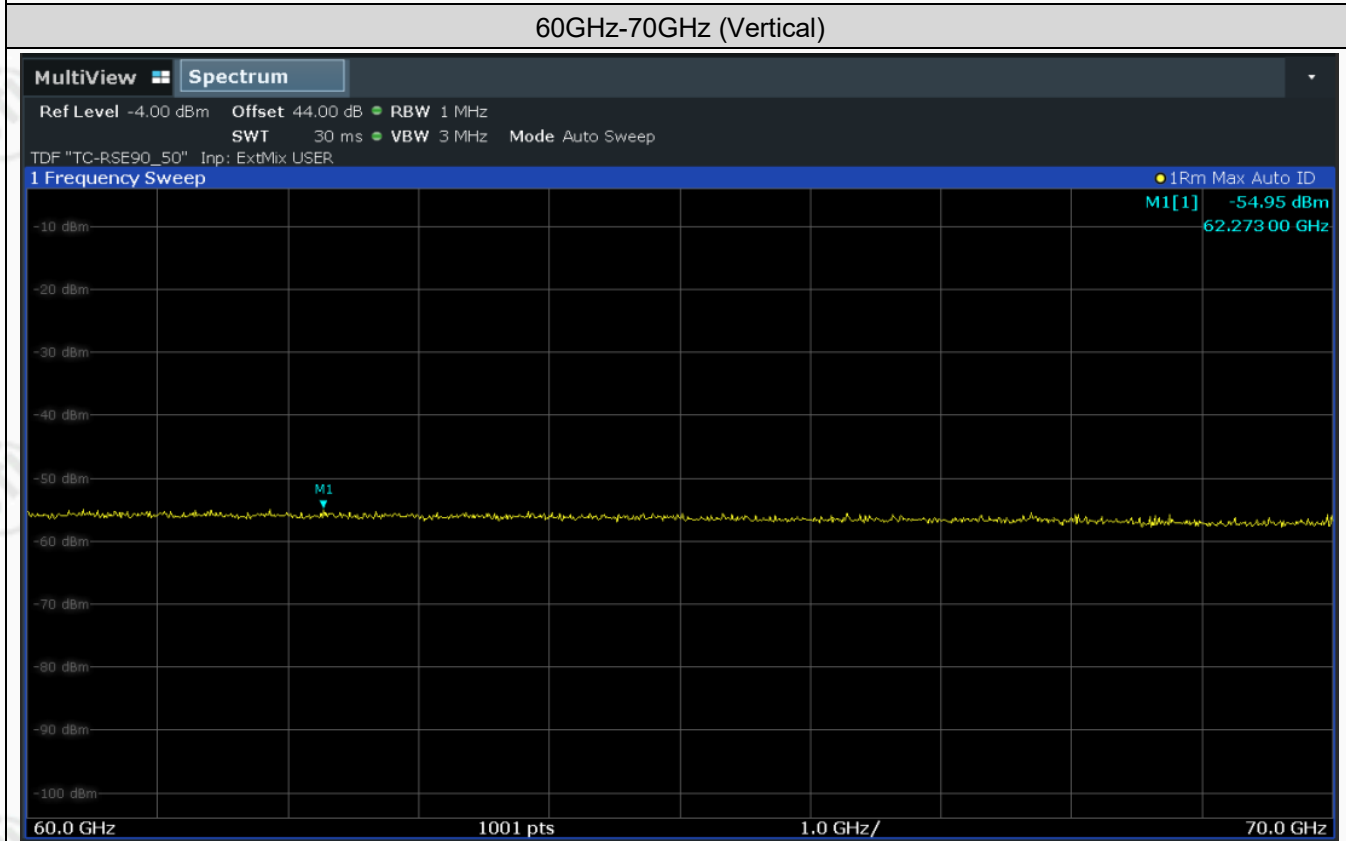
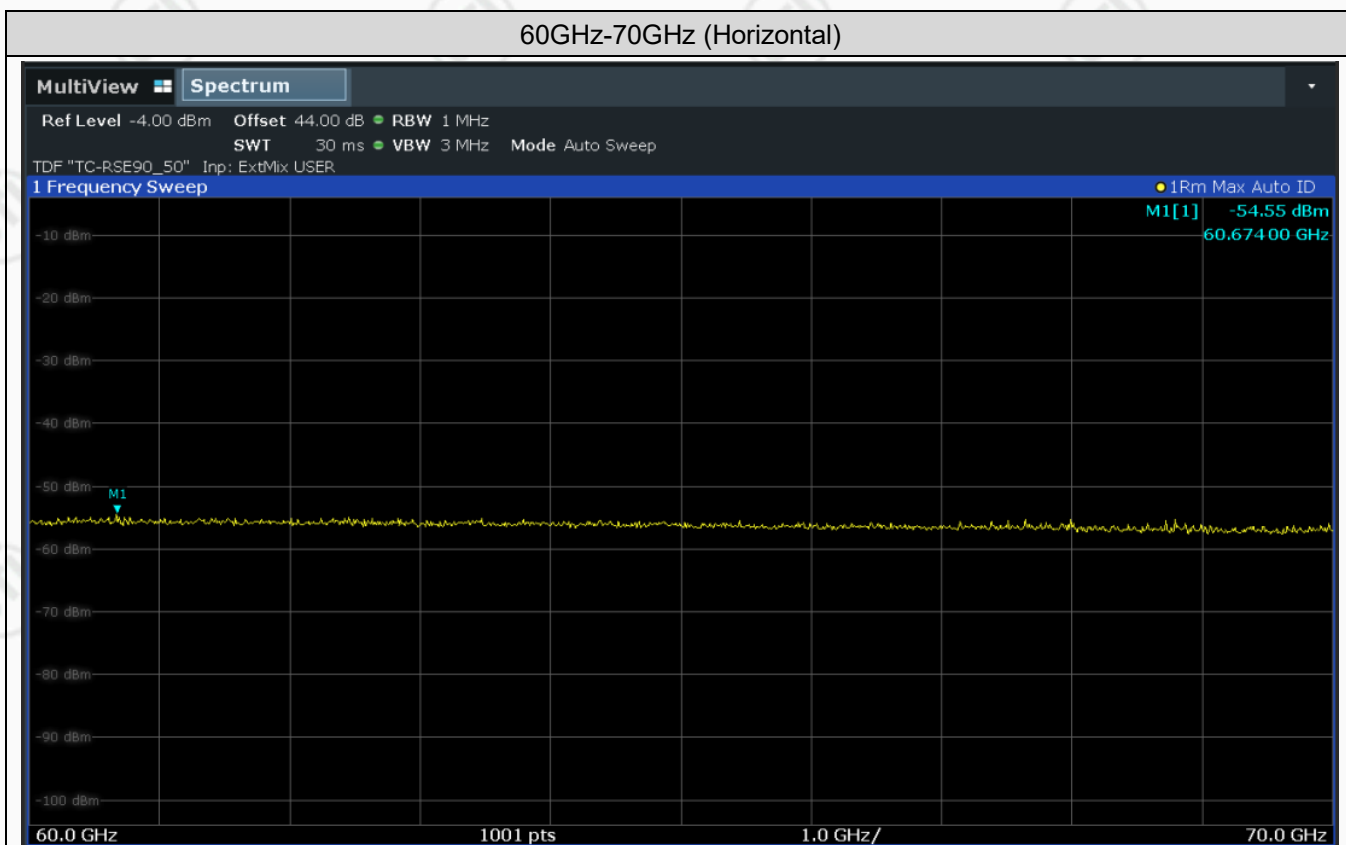
Test Frequency (GHz)	Polarity	Detector	EIRP (dBm)	Electric Field Strength@3m (dB μ V/m)	Limit@3m (dB μ V/m)	Result
41.00900	Horizontal	AV	-42.56	52.67	≤ 54.00	Pass
60.67000	Horizontal	AV	-54.55	40.68	≤ 54.00	Pass
76.22400	Horizontal	AV	-44.46	50.77	≤ 54.00	Pass
99.75500	Horizontal	AV	-50.33	44.90	≤ 54.00	Pass
139.62040	Horizontal	AV	-53.52	41.71	≤ 54.00	Pass
143.20700	Horizontal	AV	-50.15	45.08	≤ 54.00	Pass
41.00900	Vertical	AV	-42.93	52.30	≤ 54.00	Pass
62.27300	Vertical	AV	-54.95	40.28	≤ 54.00	Pass
75.96400	Vertical	AV	-45.69	49.54	≤ 54.00	Pass
99.58700	Vertical	AV	-50.28	44.95	≤ 54.00	Pass
138.97300	Vertical	AV	-53.41	41.82	≤ 54.00	Pass
143.14700	Vertical	AV	-50.07	45.16	≤ 54.00	Pass

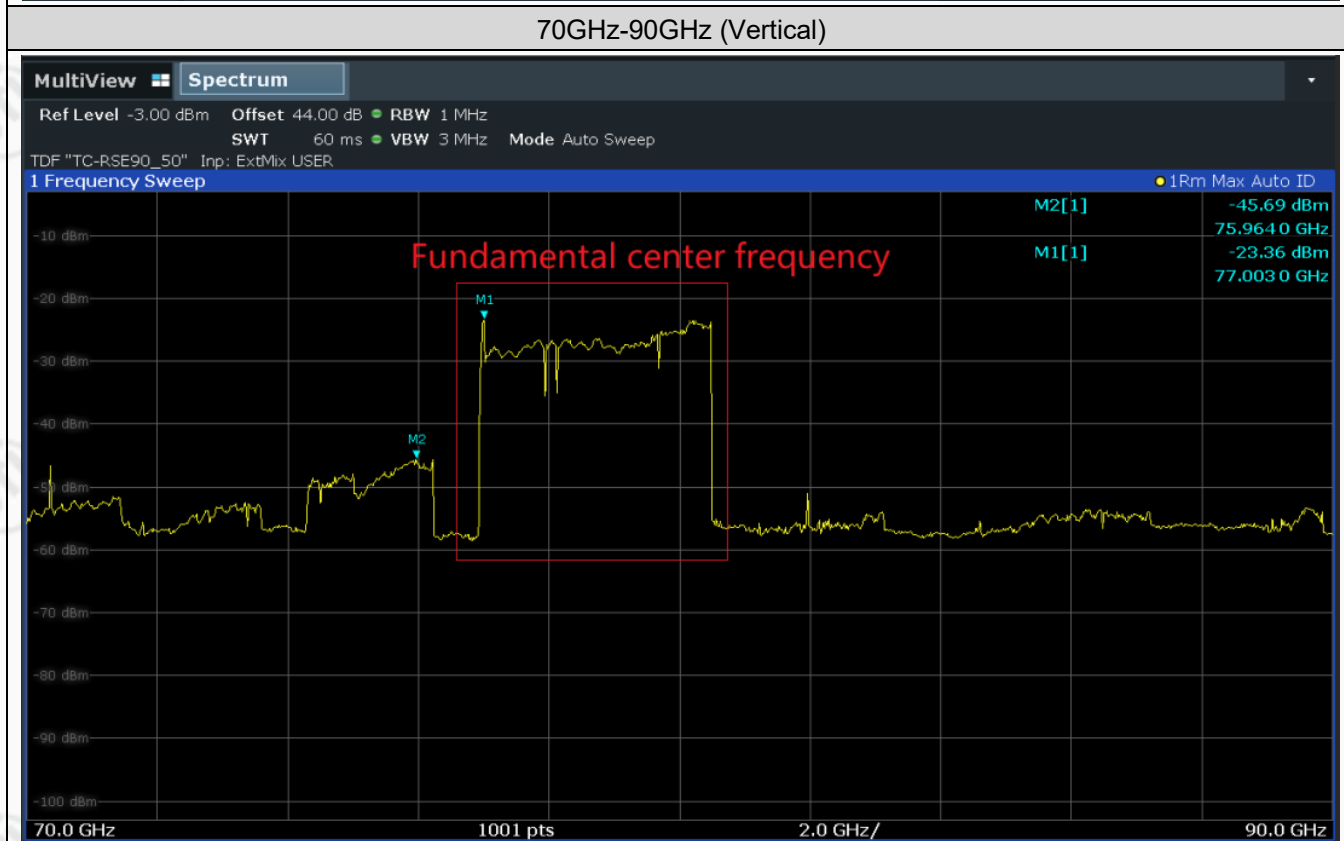
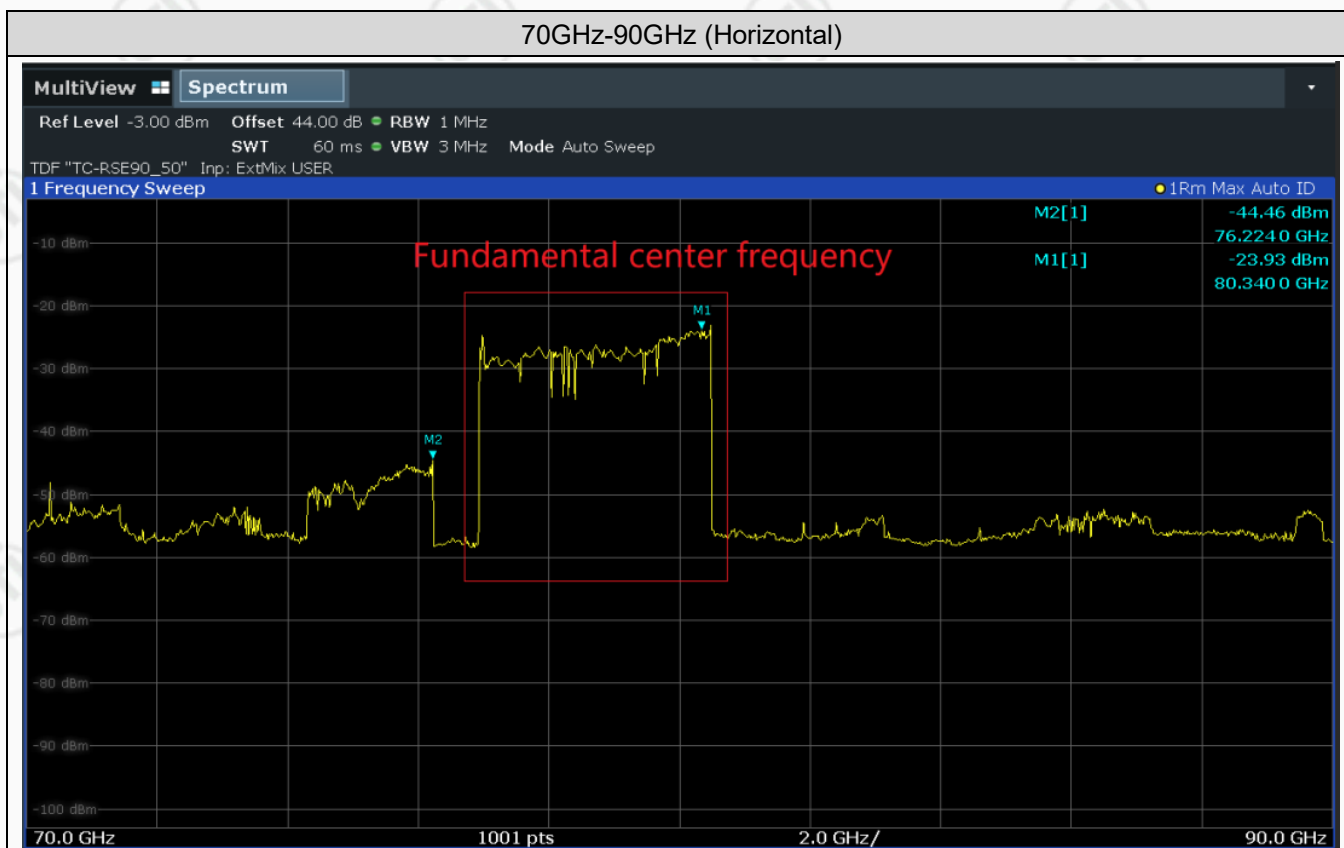
Note:

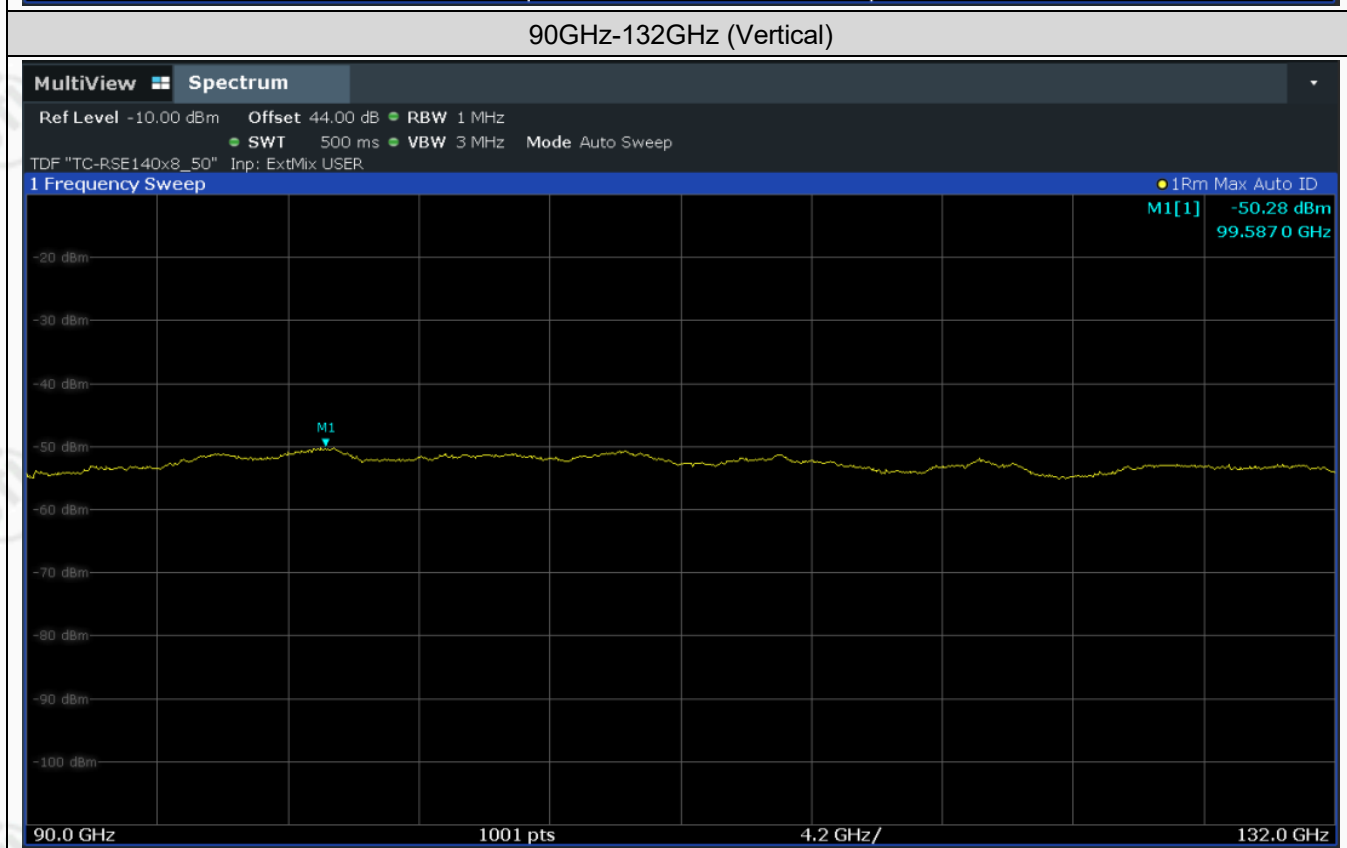
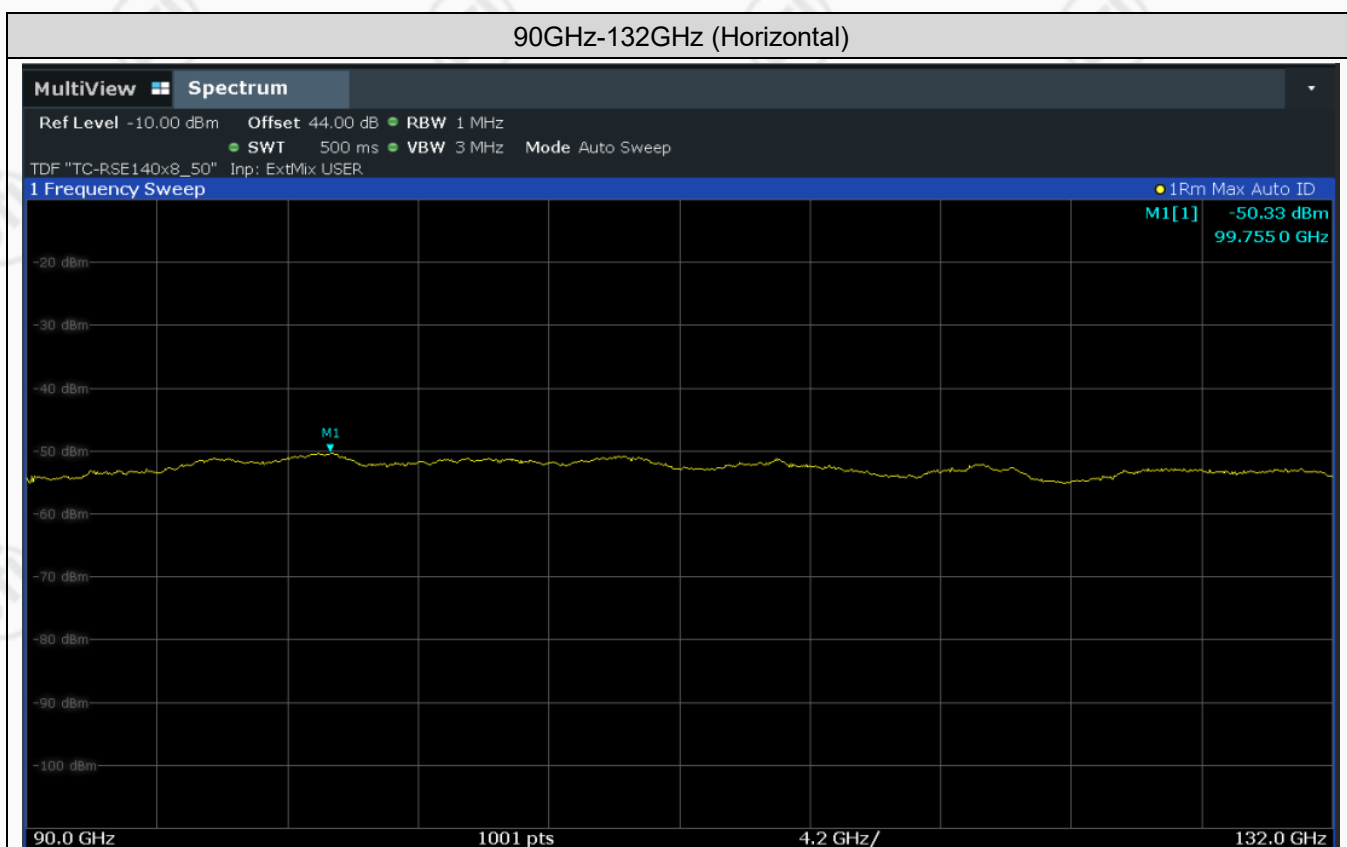
- ① EIRP(dBm) has added free space loss of 1.0m distance;
- ② Electric Field Strength@3m(dB μ V/m)=EIRP(dBm)+95.23;
- ③ Only the worst case data was recorded in the report.

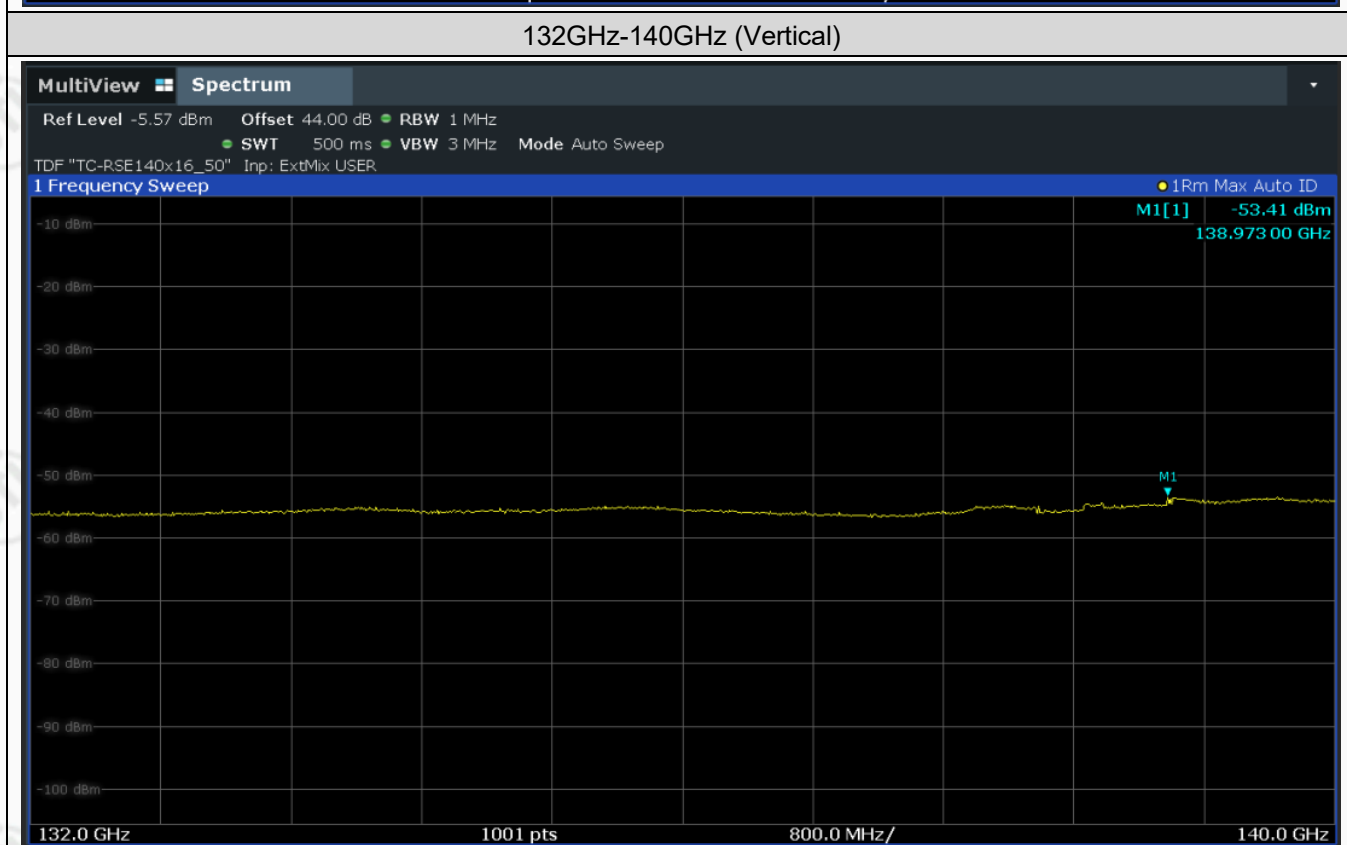
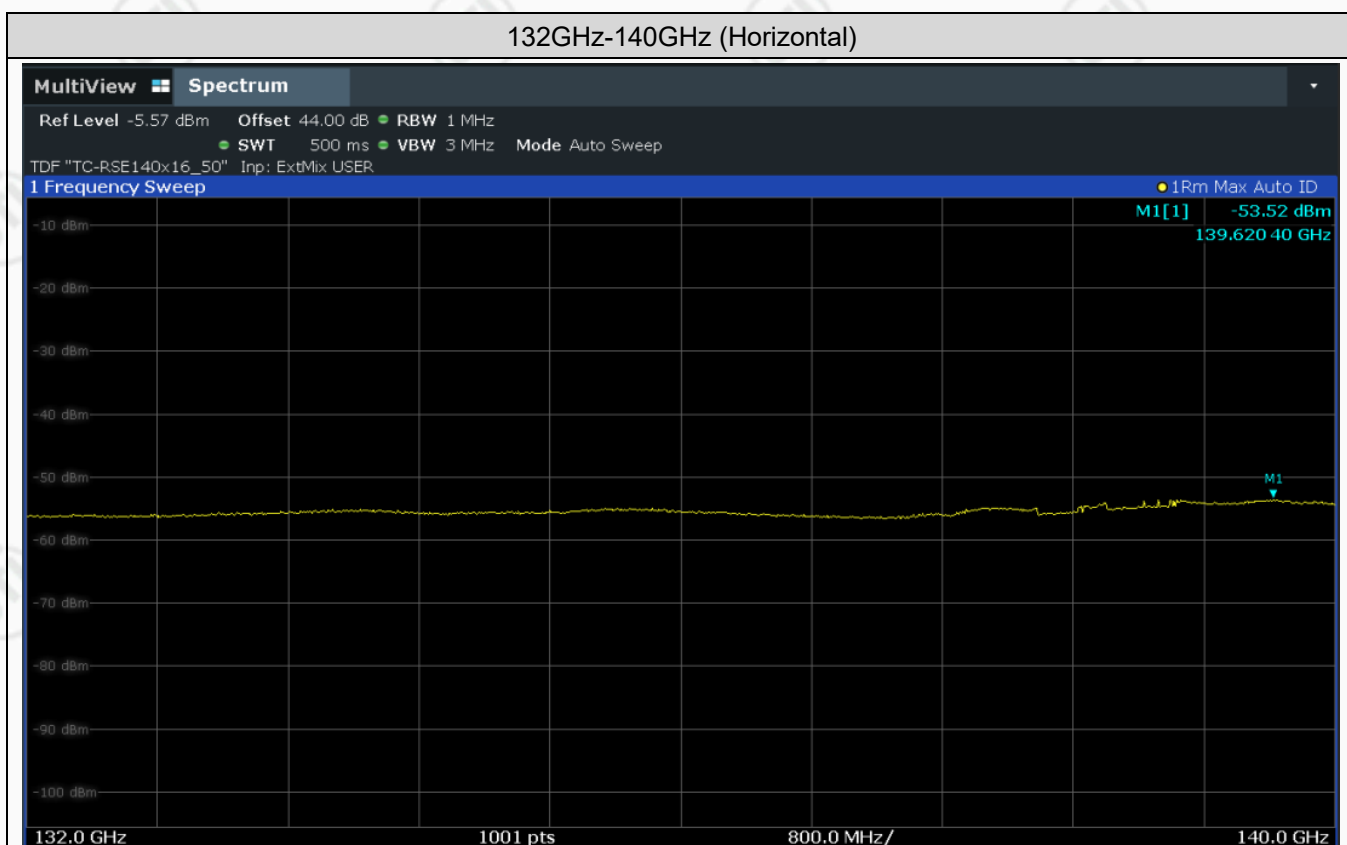
Test graph:



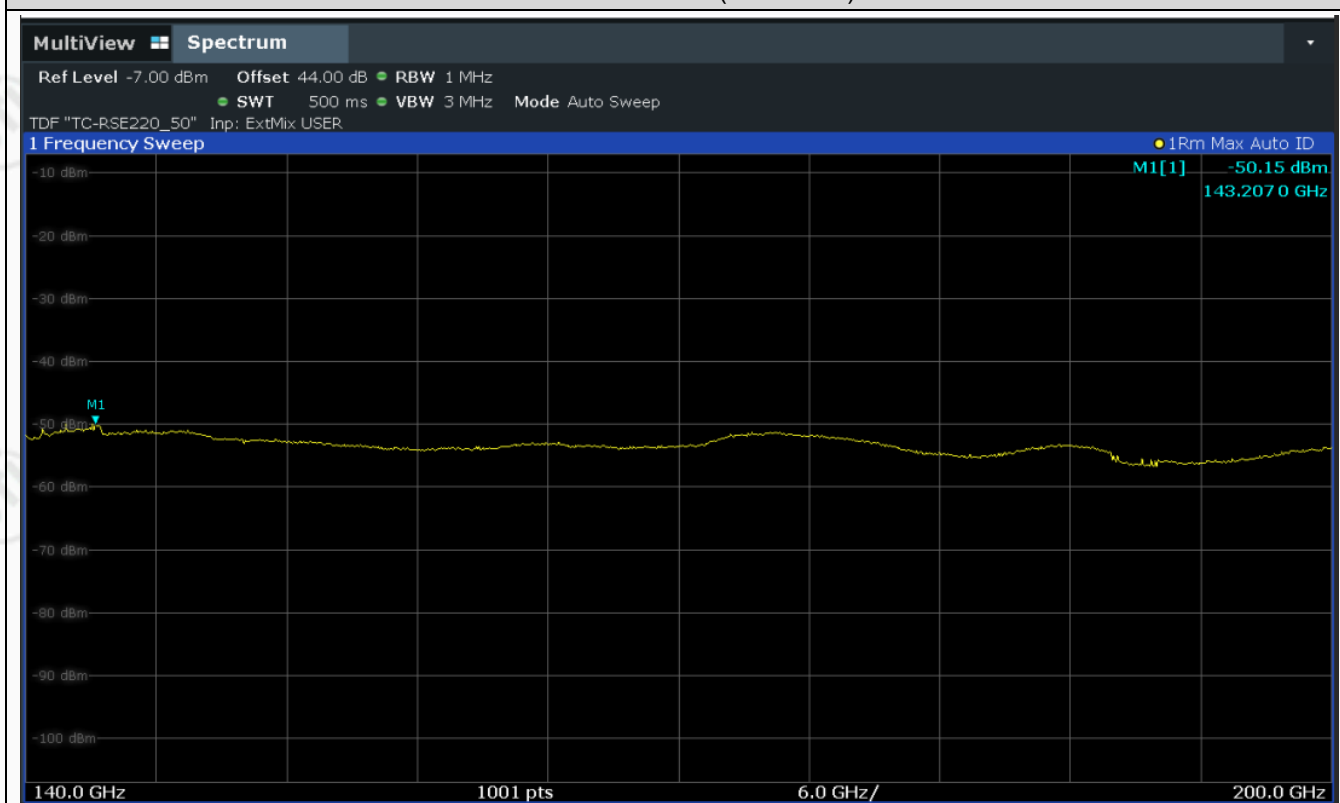




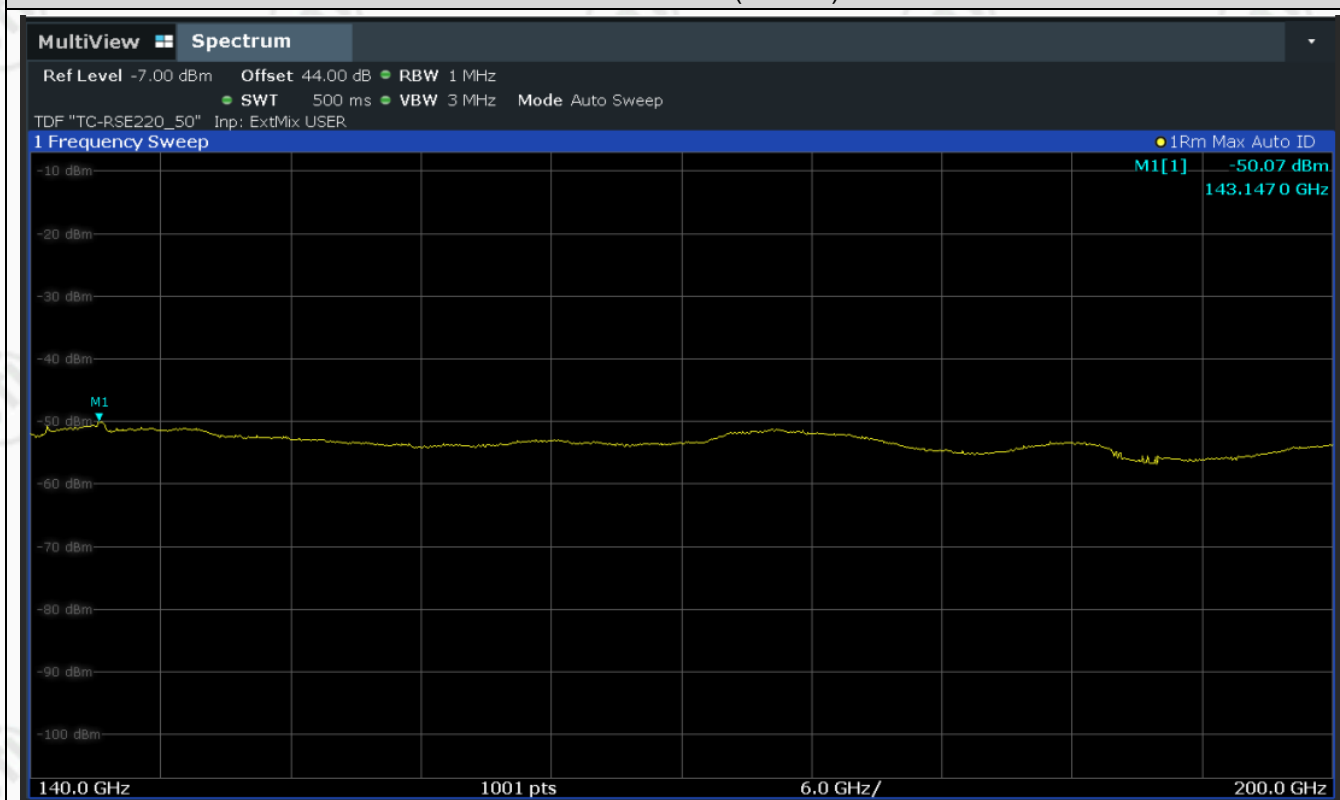




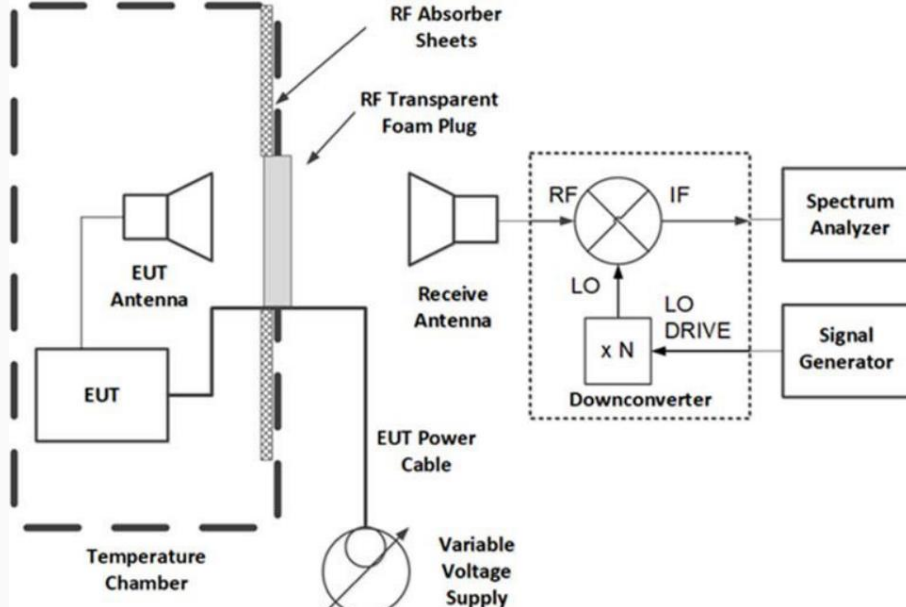
140GHz-200GHz (Horizontal)



140GHz-200GHz (Vertical)



6.7 Frequency stability

Test Requirement:	47 CFR Part 15, Subpart C Section §15.215(c), KDB 890966 D01 Meas level Probing Radars v01r01 Section H
Test Method:	ANSI C63.10-2020 Section 9.5
Limit:	Fundamental emissions must be contained within the frequency bands specified in this section during all conditions of operation.
Test Setup:	 Figure 23—Example of a frequency stability setup configuration
Test Procedure:	The carrier frequency of the transmitter is measured at room temperature. (20°C to provide a reference) At 10°C intervals of temperatures between -30°C and +50°C at the manufacturer's rated supply voltage, and At +20°C temperature and ±15% supply voltage variations. If a product is specified to operate over a range of input voltage then the -15% variation is applied to the lowermost voltage and the +15% is applied to the uppermost voltage. Measurement data showing variation in transmitter output frequency from a cold start and the elapsed time necessary for the frequency to stabilize within the applicable tolerance. Tests shall be made after temperature stabilization at each of the ambient temperature levels; the lower temperature limit, 0°C and + 30°C with no primary power applied. Beginning at each temperature level , the frequency shall be measured within one minute after application of primary power to the transmitter and at intervals of no more than one minute thereafter until ten minutes have elapsed or until sufficient measurements are obtained to indicate clearly that the frequency has stabilized within the applicable tolerance, whichever time period is greater. During each test, the ambient temperature shall not be allowed to rise more than 10°C above the respective beginning ambient temperature level.
Test Mode:	TX mode_Make EUT continuously emit radar signals.

Test data:

Voltage (%)	Power (V/DC)	Temperature (°C)	Frequency Left (GHz)	Frequency Right (GHz)	Limit (GHz)	Result
100	24.0	-30	76.96384	80.47702	75 to 85	Pass
		-20	76.96185	80.47426	75 to 85	Pass
		-10	76.96488	80.47660	75 to 85	Pass
		0	76.96380	80.47190	75 to 85	Pass
		+10	76.96145	80.47567	75 to 85	Pass
		+20	76.96284	80.47816	75 to 85	Pass
		+30	76.96200	80.47825	75 to 85	Pass
		+40	76.96471	80.47609	75 to 85	Pass
		+50	76.96288	80.47811	75 to 85	Pass
115	27.6	+20	76.96302	80.47079	75 to 85	Pass
85	20.4	+20	76.96438	80.47136	75 to 85	Pass

Note:The extreme voltage and extreme temperature is specified by the manufacturer.

7 PHOTOGRAPHS

Refer to Appendix Photographs of Report No. EED32S811053.

Statement

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The Company Name shown on Report and Address, the sample(s) and sample information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
4. Unless otherwise stated,the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule stated in ILAC-G8:09/2019/CNAS-GL015:2022;
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*** End of Report ***