

TEST REPORT

APPLICANT

Garmin International Inc

MODEL NAME

A05125

FCC ID

IPH-05125

ISED ID

1792A-05125

REPORT NUMBER

HA2511-0267-R02-01

TEST REPORT

Date of Issue

December 08, 2025

Test Site

HCT America, Inc.
840 Yosemite Way, Milpitas, CA 95035, USA

Applicant	Garmin International Inc
Applicant Address	1200 E. 151 st Street Olathe, Kansas 66062, USA
FCC ID	IPH-05125
ISED ID	1792A-05125
Model Name	A05125
EUT Type	Low-Power transmitter
Modulation Type	Non-Modulation
FCC Classification	DTS with 24 GHz Radar
FCC Rule Part(s)	47 CFR FCC PART C § 15.245/15.205/15.207/15.209
ISED Rule Part(s)	RSS-210 ISSUE 11 RSS-GEN ISSUE 5 Amd 2
Test Procedure	ANSI C63.10-2020

The device bearing the trade name and model specified above, has been shown to comply with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures required. The results of testing in this report apply only to the product which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

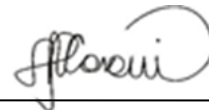
I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

HCT America, Inc. certifies that no party to application has been denied the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C 862

Tested By

Kevin Kim

Test Engineer

Reviewed By

Dan Coronía

Technical Manager

REVISION HISTORY

The revision history for this document is shown in table.

TEST REPORT NO.	REVISION	DATE	DESCRIPTION
HA2511-0267-R02	0	December 04, 2025	Initial Issue
HA2511-0267-R02-01	1	December 08, 2025	Updated Section 4: Facilities and Accreditations

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1. GENERAL INFORMATION

EUT DESCRIPTION

Model	A05125
Product Name	A05125
Serial Number	18089175
Power Supply	USB 5 VDC or Internal battery 3.4-4.2 VDC
RF Specification	Bluetooth 5.4 LE (1M/2M), 24 GHz Radar
Transmitter Chain	1

RF SPECIFICATION SUBJECT TO THE REPORT

RF Specification	24 GHz Radar
Transmitter Chain	1
Frequency Range	24 078 MHz – 24 172 MHz
Modulation Type	Non-Modulation
Antenna Specification ¹⁾	Antenna type TX: Patch Array Antenna RX: Patch Array Antenna
Firmware Version ²⁾	2.09
Hardware Version ²⁾	A05125
Sample Receipt Date	November 10 & 13, 2025
Date(s) of Tests	November 10, 2025, ~ November 20, 2025

Note(s):

1. Antenna information is based on the document provided.
2. Firmware and Hardware Versions are provided by the client.
3. This EUT transmit and receive simultaneously.

OPERATING FREQUENCY CHANNELS

24 GHz Radar	
Channel	Frequency (MHz)
Low	24 078.000
Mid	24 125.000
High	24 172.000

2. METHODOLOGY

The measurement procedure described in the “American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices” (ANSI C63.10-2020) Operating Under 47 CFR §15.245 were used in the measurement.

EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

EUT EXERCISE

The EUT was operated in the engineering mode to fix the Tx Frequency that was for the purpose of the measurements.

GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 6.2 of ANSI C63.10. (Version :2020) Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane below 1GHz. Above 1GHz with 1.5m using absorbers between the EUT and receive antenna. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3 m away from the receiving antenna, which varied from 1 m to 4 m to find out the highest emission. Also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. To find out the maximum emission, the relative positions of this hand-held transmitter (EUT) were rotated through three orthogonal axes according to the requirements in Section 8 of ANSI C63.10.

DESCRIPTION OF TEST MODES

The EUT was tested under normal operating conditions.

3. INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment's, which is traceable to recognized national standards. Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5 (Version: 2020).

4. FACILITIES AND ACCREDITATIONS

FACILITIES

HCT America, Inc. holds A2LA accreditation (certificate no. 4201.01) covering all testing included in the scope of this report. All tests were conducted at the facilities listed below.

	Address	ISED CABID	ISED Company Number	FCC Registration
☒	840 Yosemite Way, Milpitas, CA 95035 USA	US0189	11081A	898494
☐	1177 Comstock Road, Hollister, CA 95023 USA	US0189	11081A	898494



EQUIPMENT

Radiated emissions are measured with one or more of the following types of Linearly polarized antennas: tuned dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers. Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

5. ANTENNA REQUIREMENTS

According to FCC 47 CFR §15.203:

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can 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.”

- (1) The antenna of this E.U.T is permanently attached and there is no provision for connection to an external antenna.
- (2) The E.U.T Complies with the requirement of §15.203

According to RSS-Gen Issue 5 Amd 2 (Section 6.8):

The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).

When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer.

The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.

6. MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.10-2020.

All measurement uncertainty values are shown with a coverage factor of $k = 2$ to indicate a 95 % level of confidence. The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty
Output Power, Conducted	± 0.54 dB
Occupied Bandwidth	± 120.66 kHz
Unwanted Emissions, Conducted	± 0.54 dB
Radiated Emissions (below 1 GHz)	± 5.29 dB
Radiated Emissions (Above 1~40 GHz)	± 4.29 dB
Radiated Emissions (Above 40 GHz)	± 5.58 dB

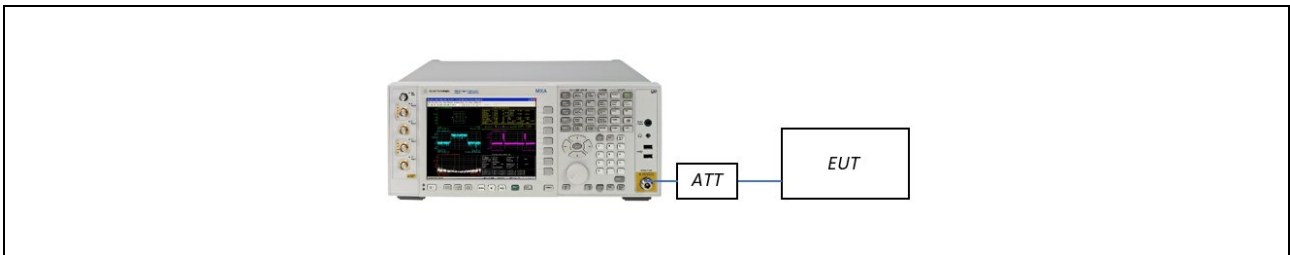
7. DESCRIPTION OF TESTS

7.1. BANDWIDTH

LIMIT

§15.215(c) Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

TEST SETUP



TEST PROCEDURE (20 dB BANDWIDTH)

ANSI C63.10:2020

The transmitter output is connected to the Spectrum Analyzer.
The Spectrum Analyzer setting:

- RBW = 100 kHz
- VBW $\geq 3 \times$ RBW
- Detector = Peak
- Trace mode = max hold
- Sweep = auto couple
- Allow the trace to stabilize
- Use X dB bandwidth measurement function from the spectrum analyzer by setting X dB to 20 dB

TEST PROCEDURE (99% Bandwidth) for ISED

The transmitter output is connected to the spectrum analyzer.

- RBW = 1% ~ 5% of the occupied bandwidth
- VBW $\geq 3 \times$ RBW
- Detector = Peak
- Trace mode = max hold
- Sweep = auto couple
- Allow the trace to stabilize

Note(s):

We tested OBW using the automatic bandwidth measurement capability of a spectrum analyzer.

7.2. FIELD STRENGTH OF FUNDAMENTAL

LIMIT

§15.245(b)

- (a) Operation under the provisions of this section is limited to intentional radiators used as field disturbance sensors, excluding perimeter protection systems.
- (b) The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

§RSS-210 Annex F

The provisions of this annex are specific to devices operating in the bands 902-928 MHz, 2435-2465 MHz, 5785-5815 MHz, 10.5-10.55 GHz, 24.075-24.175 GHz and 33.4-36 GHz.

F.1 Field disturbance sensors

This section sets out the requirements for field disturbance sensor (FDS) units operating in the frequency bands shown in table F1. An FDS is a device designed to detect changes in a radio frequency field as a result of movement of persons or objects within its range.

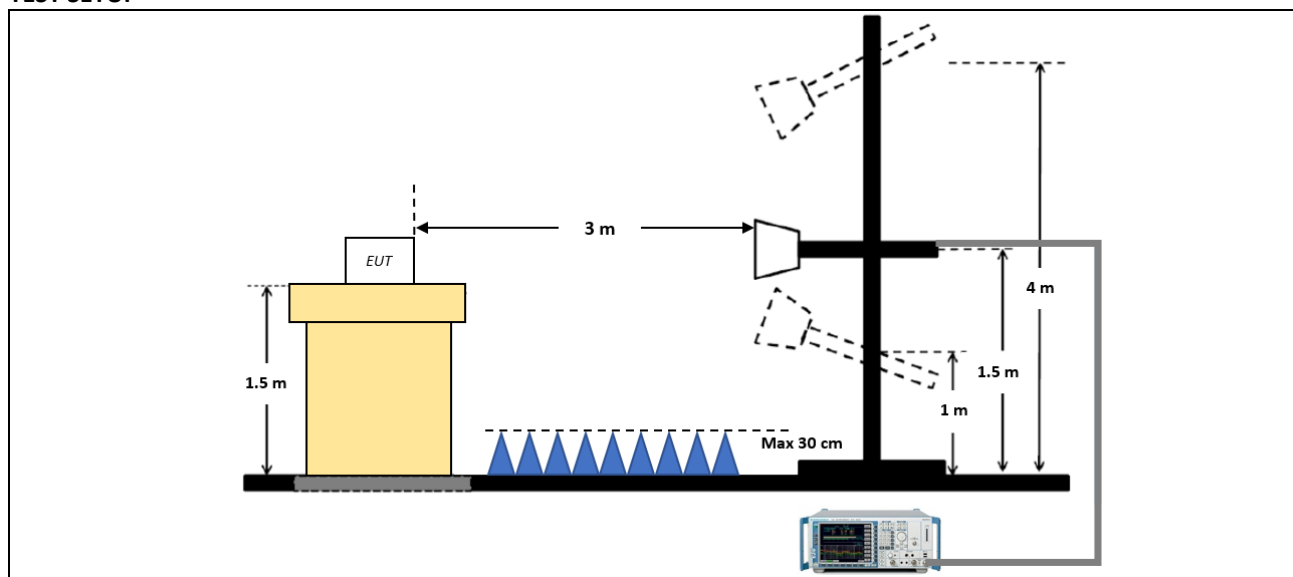
Perimeter protection systems, which employ a leaky transmission line as the radiating source, are excluded from the requirements of this section.

Devices shall comply with the following requirements:

- a. The average field strength of fundamental and harmonic emissions measured at a distance of 3 m shall not exceed the limits shown in table F1.

Fundamental frequency (MHz)	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (millivolts/meter)
902-928	500	1.6
2435-2465	500	1.6
5785-5815	500	1.6
10500-10550	2500	25.0
24075-24175	2500	25.0

TEST SETUP



7.3. RADIATED EMISSIONS

RADIATION EMISSION LIMIT

FCC: 47 CFR § 15.209		
Frequency (MHz)	Field Strength (uV/m)	Measurement Distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

ISED: RSS-GEN Section 8.9		
Frequency (MHz)	Field Strength (uV/m)	Measurement Distance (m)
0.009 – 0.490	6.37/F(kHz)	300
0.490 – 1.705	63.7/F(kHz)	30
1.705 – 30	0.08	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

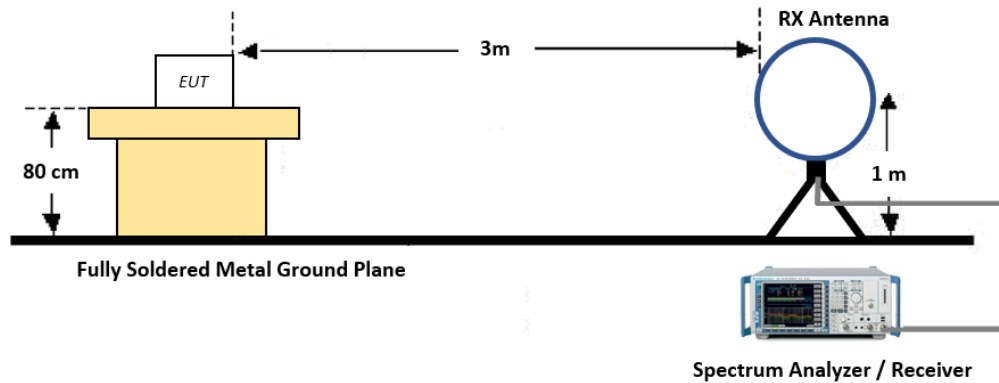
FCC: §15.245(b) ISED: RSS-210 Annex F		
Fundamental frequency (MHz)	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (millivolts/meter)
902-928	500	1.6
2435-2465	500	1.6
5785-5815	500	1.6
10500-10550	2500	25.0
24075-24175	2500	25.0

RECEIVER RADIATED EMISSION LIMIT

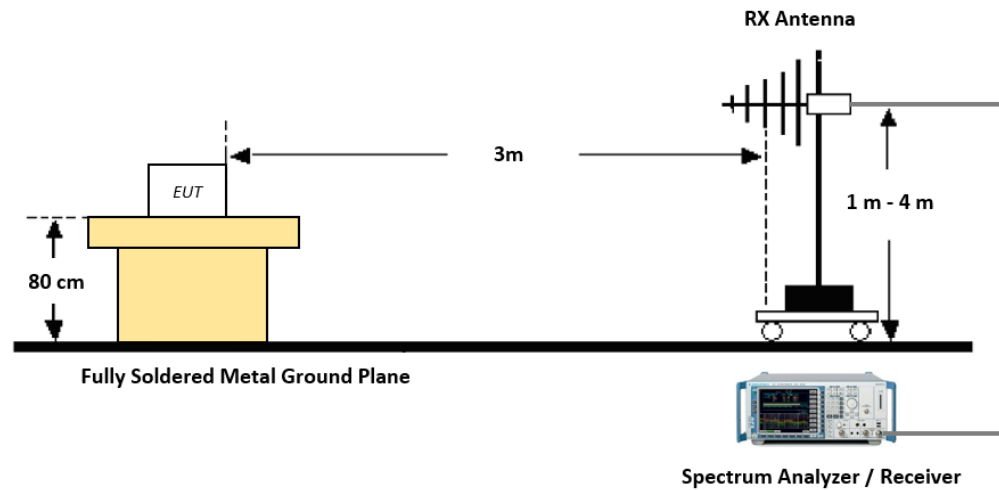
ISED: RSS-GEN Section 7.3		
Frequency (MHz)	Field Strength (uV/m)	Measurement Distance (m)
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

TEST SETUP

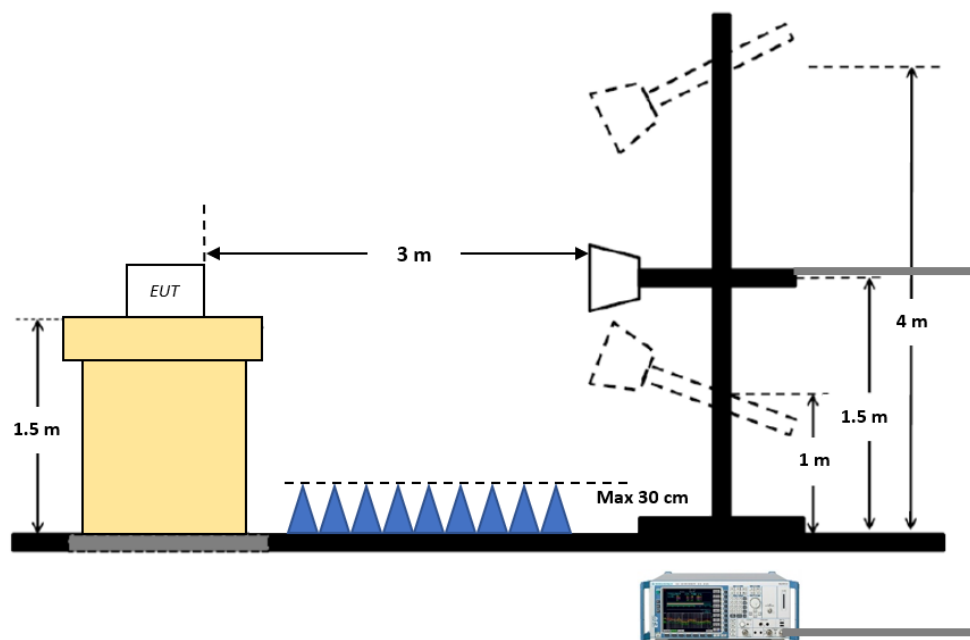
Below 30 MHz



30 MHz - 1 GHz



Above 1 GHz



TEST PROCEDURE OF RADIATED SPURIOUS EMISSION (BELOW 30 MHz)

Subclause 11.11 and 11.12 in ANSI 63.10-2020

1. The EUT was placed on a non-conductive table located on semi-anechoic chamber.
2. The loop antenna was placed at a location 3m from the EUT
3. The EUT is placed on a turntable, which is 0.8m above ground plane.
4. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
5. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
6. Distance Correction Factor (0.009 MHz – 0.490 MHz) = $40 \cdot \log(3 \text{ m}/300 \text{ m}) = -80 \text{ dB}$
Measurement Distance: 3 m
7. Distance Correction Factor (0.490 MHz – 30 MHz) = $40 \cdot \log(3 \text{ m}/30 \text{ m}) = -40 \text{ dB}$
Measurement Distance: 3 m
8. Spectrum Setting
 - Frequency Range = 9 kHz ~ 30 MHz
 - Detector = Peak
 - Trace = Max hold
 - RBW = 9 kHz
 - VBW $\geq 3 \cdot \text{RBW}$
9. Total = Reading Value + Antenna Factor (A.F) + Cable Loss (C.L)
10. There is a comparison data both open-field test site and alternative test site – semi-Anechoic chamber according to 414788 D01. And the results are properly calibrated.

TEST PROCEDURE OF RADIATED SPURIOUS EMISSION (30 MHz – 1 GHz)

1. The EUT was placed on a non-conductive table located on semi-anechoic chamber.
2. The EUT is placed on a turntable, which is 0.8 m above ground plane.
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
4. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
5. Spectrum Setting
 - (1) Measurement Type (Peak):
 - Measured Frequency Range: 30 MHz – 1 GHz
 - Detector = Peak
 - Trace = Max hold
 - RBW = 100 kHz
 - VBW $\geq 3 \cdot \text{RBW}$
 - (2) Measurement Type(Quasi-peak):
 - Measured Frequency Range: 30 MHz – 1 GHz
 - Detector = Quasi-Peak
 - RBW = 120 kHz
6. Total = Reading Value + Antenna Factor (A.F) + Cable Loss (C.L)

TEST PROCEDURE OF RADIATED SPURIOUS EMISSION (ABOVE 1 GHz)

Subclause 11.11 and 11.12 in ANSI 63.10-2020

1. The EUT is placed on a turntable, which is 1.5 m above ground plane.
2. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
3. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
4. EUT is set 3 m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
5. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
6. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
7. The unit was tested with its standard battery.
8. Spectrum Setting

(1) Measurement Type (Peak):

- Measured Frequency Range: 1 GHz – 25 GHz
- Detector = Peak
- Trace = Max hold
- RBW = 1 MHz
- VBW $\geq 3 \times$ RBW

(2) Measurement Type(Average): Duty cycle $\geq 98\%$

- Measured Frequency Range: 1 GHz – 25 GHz
- Detector = RMS
- Averaging type = power (*i.e.*, RMS)
- RBW = 1 MHz
- VBW $\geq 3 \times$ RBW
- Sweep time = auto.
- Trace mode = average (at least 100 traces).

(3) Measurement Type(Average): Duty cycle $< 98\%$, duty cycle variations are less than $\pm 2\%$

- Measured Frequency Range: 1 GHz – 25 GHz
- Detector = RMS
- Averaging type = power (*i.e.*, RMS)
- RBW = 1 MHz
- VBW $\geq 3 \times$ RBW
- Sweep time = auto.
- Trace mode = average (at least 100 traces).
- Correction factor shall be added to the measurement results prior to comparing to the emission limit to compute the emission level that would have been measured had the test been performed at 100 % duty cycle.
- Duty Cycle Factor (dB): Please refer to the please refer to section 9.1.

10. Measurement value only up to 6 maximum emissions noted or would be lesser if no specific emissions from the EUT are recorded (*i.e.*: margin > 20 dB from the applicable limit) and considered that is already beyond the background noise floor.

11. Sample Calculation

- (1) Total (Peak) = Reading Value + Antenna Factor (A.F) + Cable Loss (C.L) - Amp Gain(G)
- (2) Total (Average, Duty $\geq 98\%$) = Reading Value + Antenna Factor (A.F) + Cable Loss (C.L) - Amp Gain(G)
- (3) Total (Average, Duty $< 98\%$) = Reading Value + Antenna Factor (A.F) + Cable Loss (C.L) - Amp Gain(G) + Duty Cycle Factor
- (4) Alternative Method: Total (Average) = Total (Peak) + 20 log (Duty Cycle)

TEST PROCEDURE OF RADIATED RESTRICTED BAND EDGE

Subclause 11.11 and 11.12 in ANSI 63.10-2020

1. Radiated test is performed with hopping off (if there is any)
2. The EUT is placed on a turntable, which is 1.5 m above ground plane.
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
4. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
5. EUT is set 3 m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
6. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
7. The unit was tested with its standard battery.
8. Spectrum Setting

(1) Measurement Type (Peak):

- Detector = Peak
- Trace = Max hold
- RBW = 1 MHz
- VBW $\geq 3 \times$ RBW

(2) Measurement Type(Average): Duty cycle $\geq 98\%$,

- Measured Frequency Range: 2310 MHz – 2390 MHz / 2483.5 MHz – 2500 MHz
- Detector = RMS
- Averaging type = power (*i.e.*, RMS)
- RBW = 1 MHz
- VBW $\geq 3 \times$ RBW
- Sweep time = auto.
- Trace mode = average (at least 100 traces).

(3) Measurement Type(Average): Duty cycle $< 98\%$, duty cycle variations are less than $\pm 2\%$

- Measured Frequency Range: 2310 MHz – 2390 MHz / 2483.5 MHz – 2500 MHz
- Detector = RMS
- Averaging type = power (*i.e.*, RMS)
- RBW = 1 MHz
- VBW $\geq 3 \times$ RBW
- Sweep time = auto.
- Trace mode = average (at least 100 traces).
- Correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 % duty cycle.
- Duty Cycle Factor (dB): Please refer to the please refer to section 9.1.

9. Measurement value only up to 6 maximum emissions noted or would be lesser if no specific emissions from the EUT are recorded (*i.e.*: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.

10. Sample Calculation

- (1) Total (Peak) = Reading Value + Antenna Factor (A.F) + Cable Loss (C.L)
- (2) Total (Average, Duty $\geq 98\%$) = Reading Value + Antenna Factor (A.F) + Cable Loss (C.L) - Amp Gain(G)
- (3) Total (Average, Duty $< 98\%$) = Reading Value + Antenna Factor (A.F) + Cable Loss (C.L) - Amp Gain(G) + Duty Cycle Factor

7.4. AC POWER LINE CONDUCTED EMISSIONS

LIMIT

47 CFR § 15.207, RSS-GEN Section 8.8

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN).

Frequency Range (MHz)	Limits (dB μ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

*Decreases with the logarithm of the frequency.

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

TEST SETUP

See test photographs attached in Annex A for the actual connections between EUT and support equipment.

TEST PROCEDURE

1. The EUT is placed on a wooden table 80 cm above the reference ground plane.
2. The EUT is connected via LISN to a test power supply.
3. The measurement results are obtained as described below:
4. Detectors: Quasi Peak and Average Detector.

According to FCC KDB 174176 D01 Line Conducted FAQ v01r01:

Devices Operating Above 30 MHz

For a device with a permanent or detachable antenna operating above 30 MHz, measurements must be performed with the antenna connected as specified in clause 6.2 of ANSI C63.10-2020.

Devices Operating Below 30 MHz

For a device with a permanent or detachable antenna operating at or below 30 MHz, the FCC will accept measurements performed with a suitable dummy load in lieu of the antenna under the following conditions:

- (1) Perform the AC powerline conducted tests with the antenna connected to determine compliance with Section 15.207 limits outside the transmitter's fundamental emission band;
- (2) Retest with a dummy load in lieu of the antenna to determine compliance with Section 15.207 limits within the transmitter's fundamental emission band. For a detachable antenna, remove the antenna and connect a suitable dummy load to the antenna connector. For a permanent antenna, remove the antenna and terminate the RF output with a dummy load or network which simulates the antenna in the fundamental frequency band. All measurements must be performed as specified in clause 6.2 of ANSI C63.10-2020.

Sample Calculation

Quasi-peak (Final Result) = Reading Value + Correction Factor

8. SUMMARY OF TEST RESULTS

Test Description	FCC Part Section(s)	ISED Part Section(s)	Test Condition	Test Result
20 dB Bandwidth	§15.215(c)	-	Radiated	PASS
99 % Bandwidth	-	RSS-GEN, 6.7		PASS
Field Strength of Fundamental	§15.245(b)	RSS-210, Annex F		PASS
Radiated Spurious Emissions	§15.209 §15.245(b)(1)(i)	RSS-GEN, 8.9		PASS
Band Edge (Out of Band Emissions)	§15.245(b)	RSS-210, Annex F		PASS
Receiver Spurious Emissions	-	RSS-GEN, 7.3		PASS
AC Power line Conducted Emissions	§15.207	RSS-GEN, 8.8	Conducted	PASS

WORST CASE CONFIGURATION

RADIATED TEST

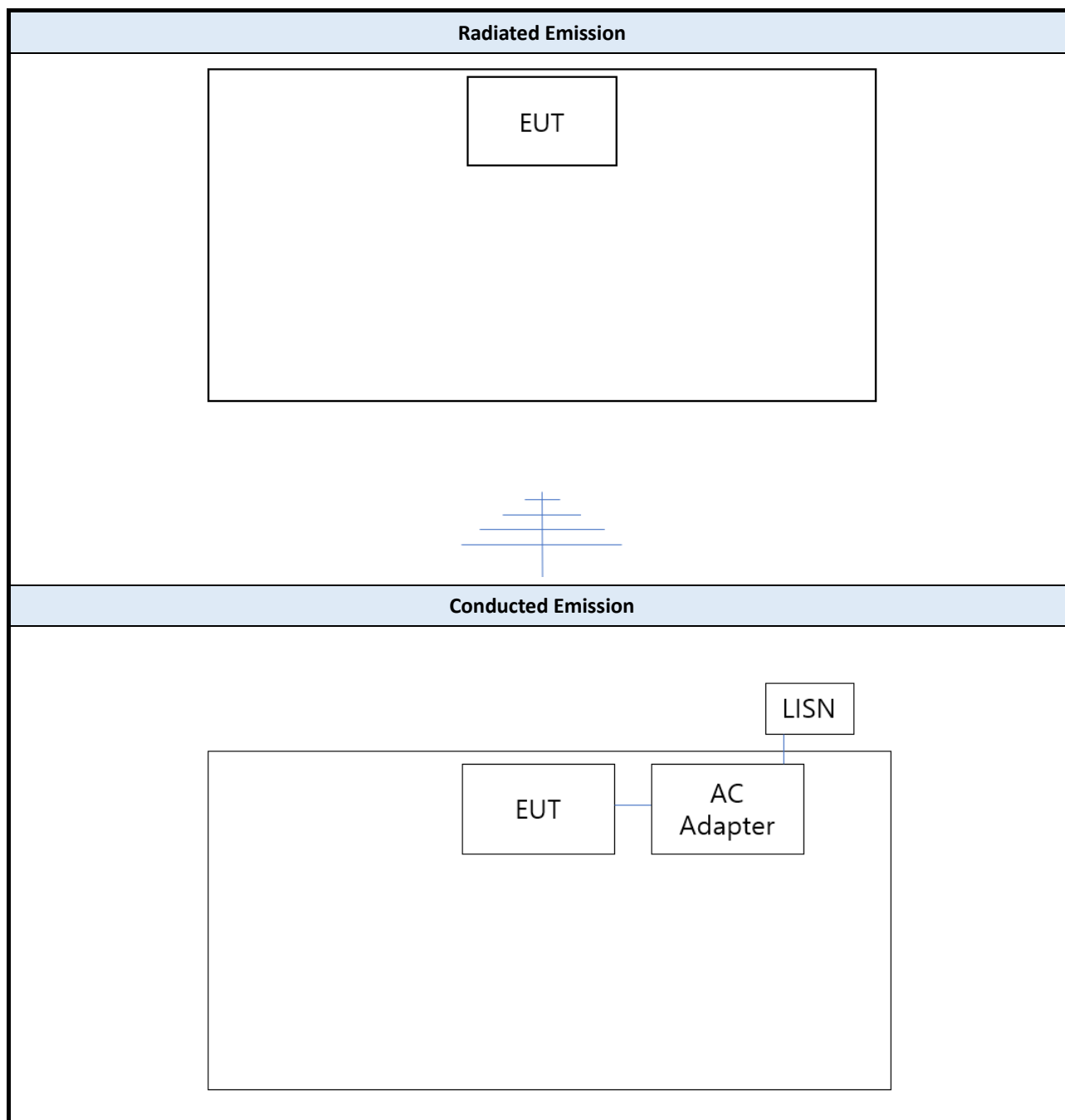
1. EUT Axis

All X, Y, and Z positions for horizontal / vertical antenna polarization were investigated to find the worst-case position. X position was selected for the final evaluation.

OUTPUT POWER SETTING

The output power setting is declared by the manufacturer.

TEST CONFIGURATION



LIST OF SUPPORT EQUIPMENT

Equipment Type	Model No.	Serial No.	Manufacturer	Qty	Note
AC adapter	AQ27A-59CFA	-	PHIHONG TECH CO LTD	1	
USB-C to USB-C cable, 0.5 meters	320-01642-00	-	CSTAR ELECTRONICS INTERNATIONAL INC.	1	

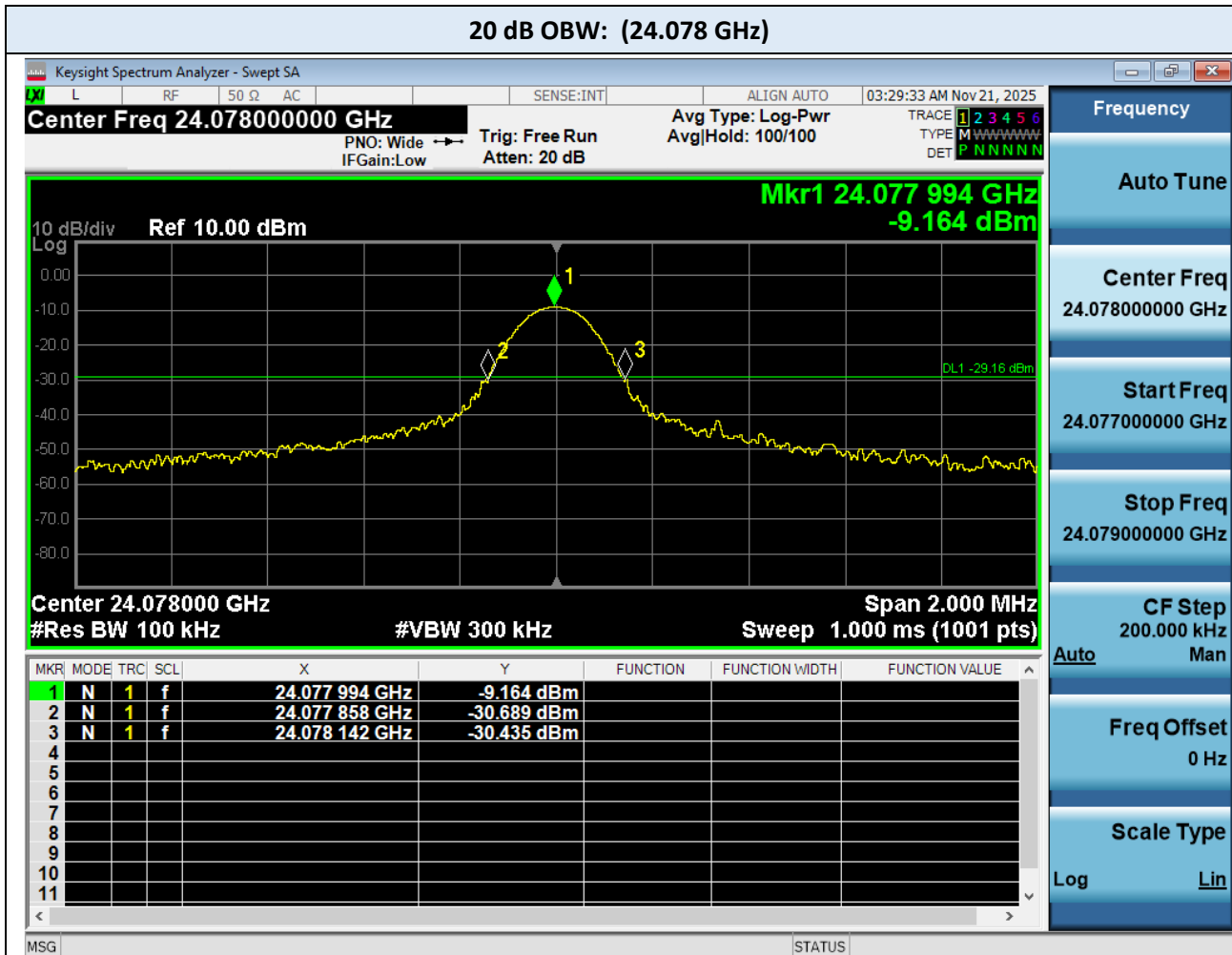
9. TEST RESULT

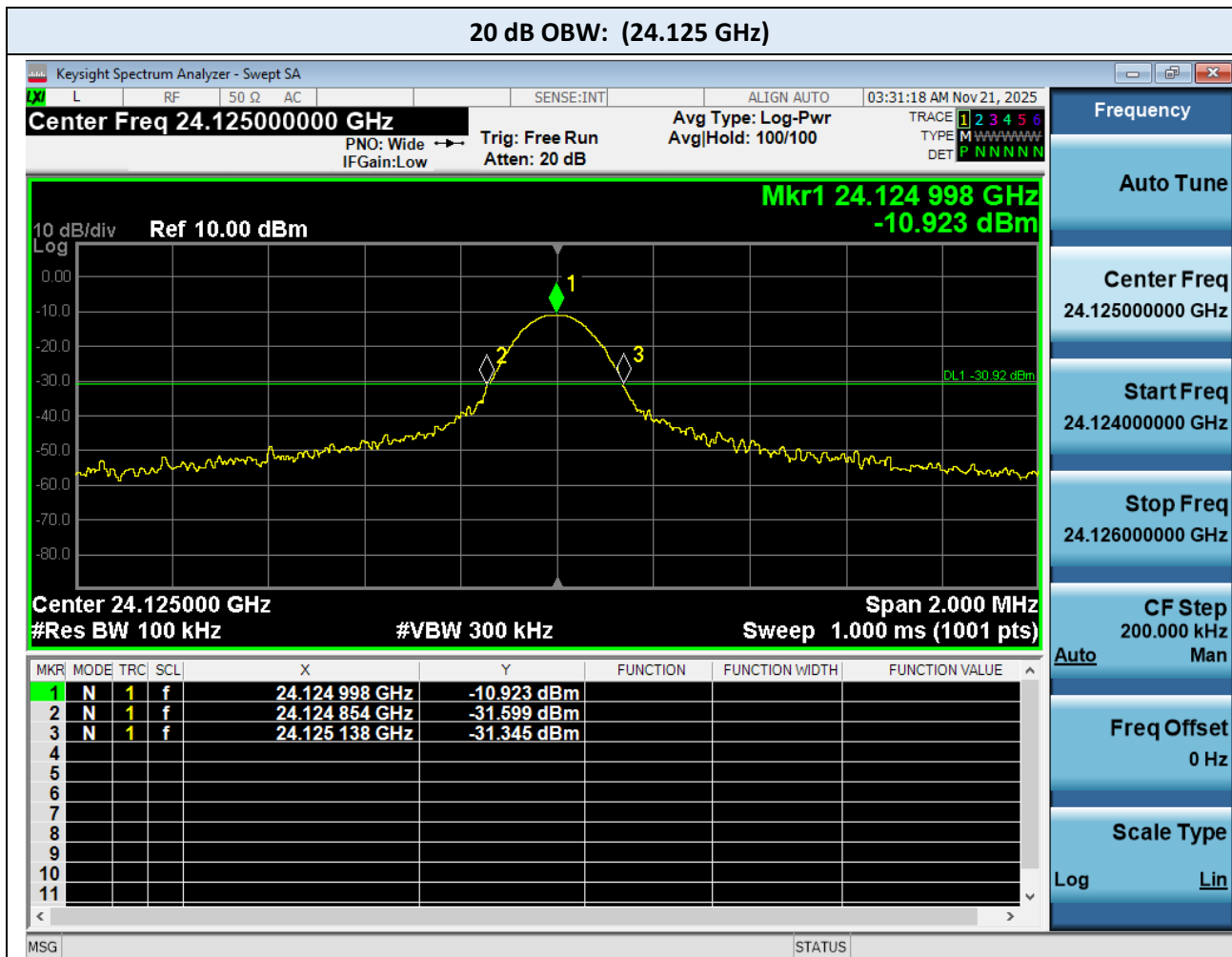
9.1. 99% BANDWIDTH / 20 dB BANDWIDTH MEASUREMENT

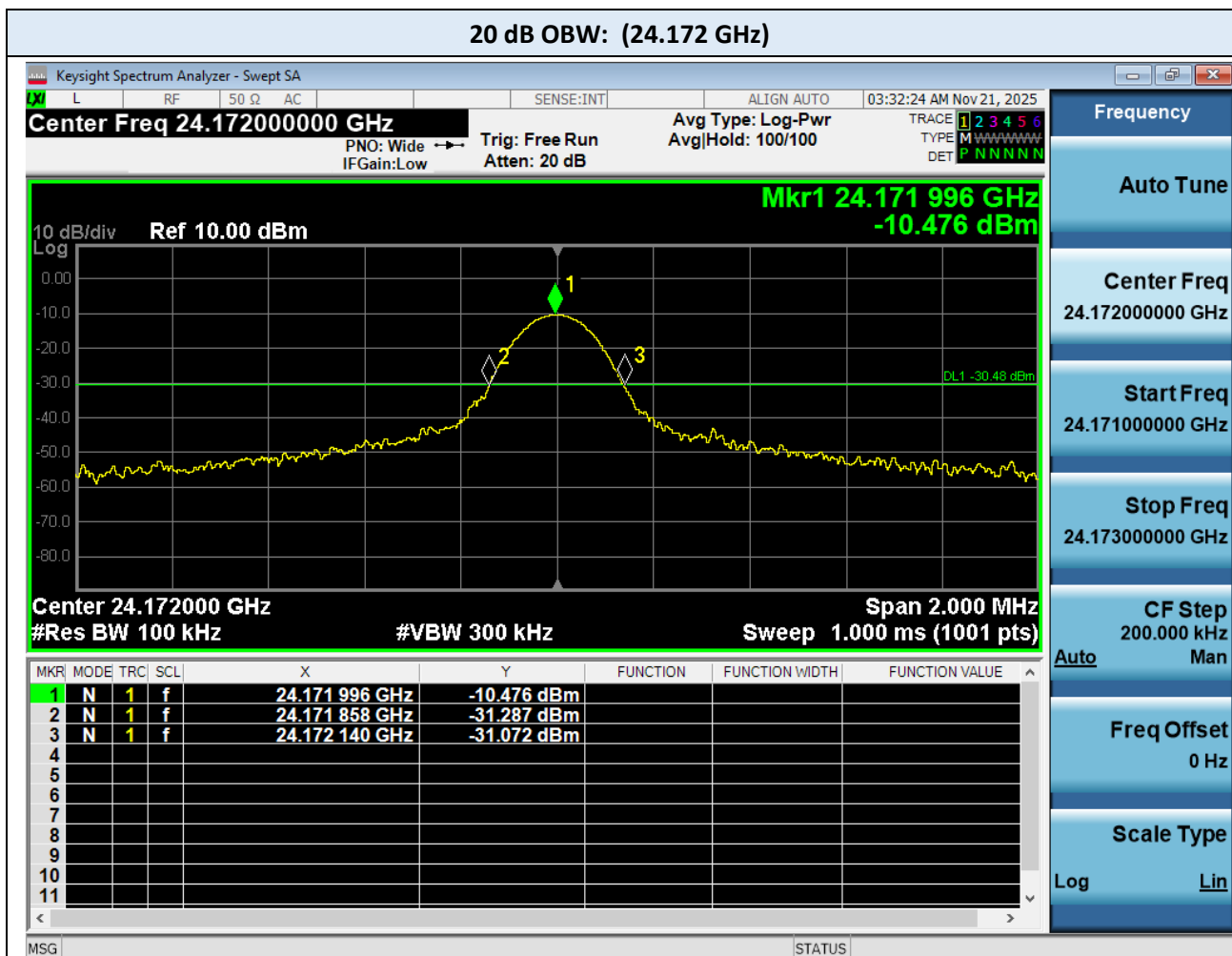
24 GHz Radar	99% Bandwidth (kHz)
Frequency (MHz)	Result
24 078	261.85
24 125	262.44
24 172	262.94

Frequency (MHz)	20 dB Bandwidth (kHz)	Meas FL (GHz)	FL Limit (GHz)	Meas FH (GHz)	FH Limit	Result
24 078	284	24.077 858	≥ 24.075	24.078 142	≤ 24.175	Pass
24 125	284	24.124 854	≥ 24.075	24.125 138	≤ 24.175	Pass
24 172	282	24.171 858	≥ 24.075	24.172 140	≤ 24.175	Pass

TEST PLOTS







9.2. FIELD STRENGTH OF FUNDAMENTAL

Test Mode 24 GHz Radar
Operating Frequency 24 078 GHz

Frequency (GHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr. ¹⁾	Duty	AV	PK	AV	PK	AV	PK
24.078	H	107.30	107.38	-13.02	-	94.28	94.36	128	148	33.72	53.64
24.078	V	114.54	114.55	-13.02	-	101.52	101.53	128	148	26.48	46.47

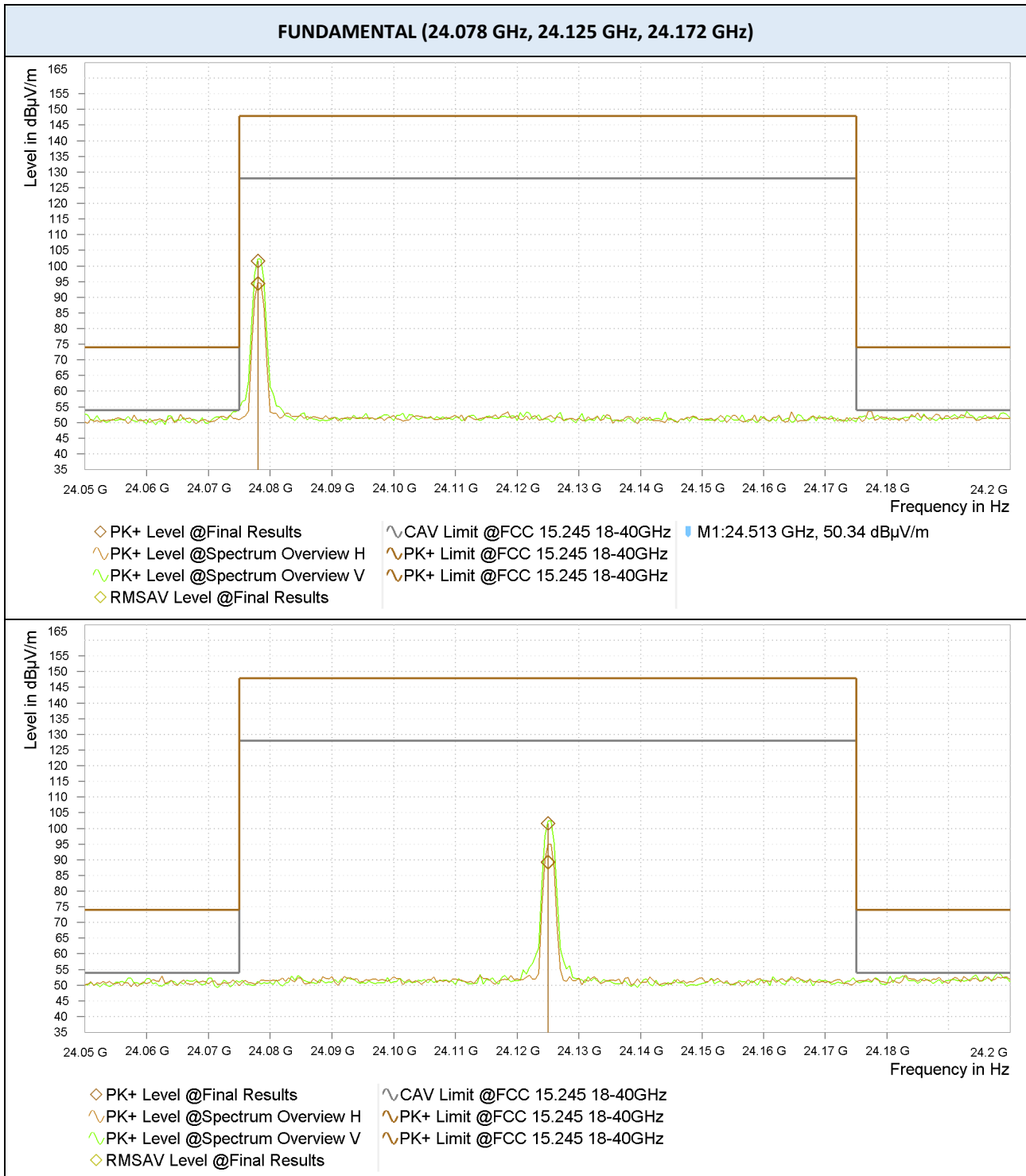
Test Mode 24 GHz Radar
Operating Frequency 24 125 GHz

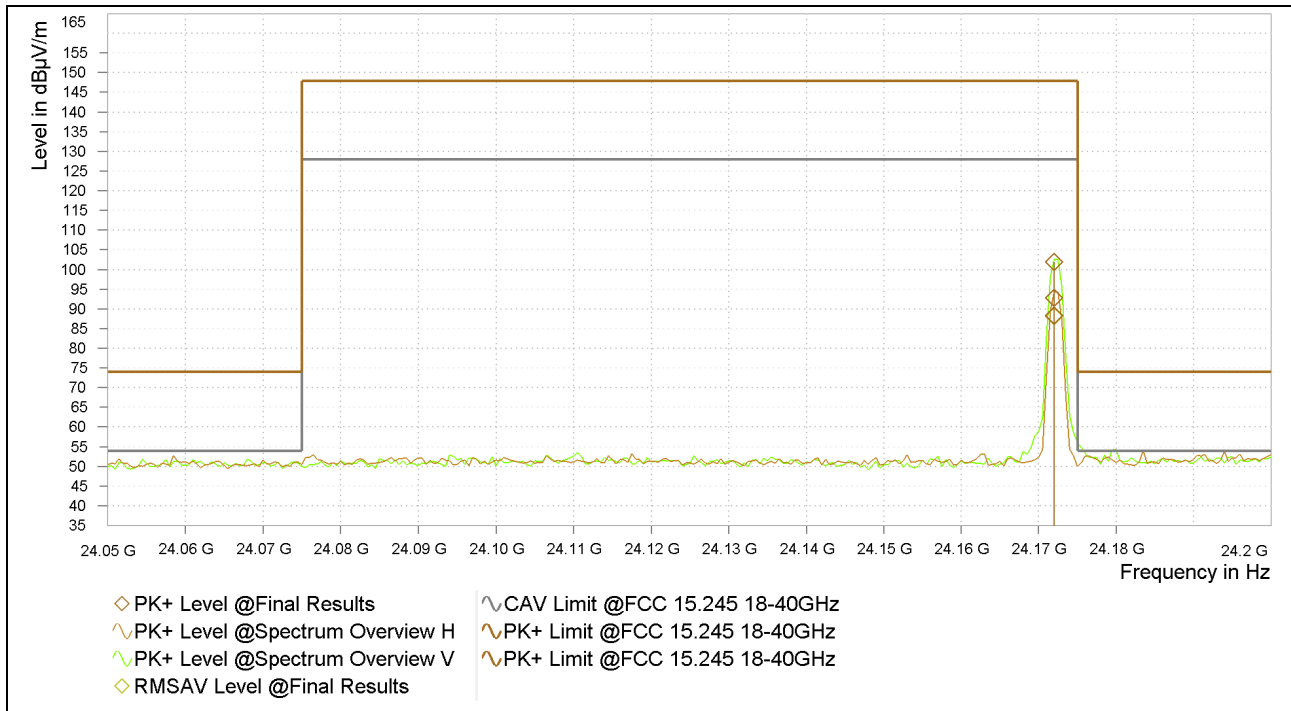
Frequency (GHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr. ¹⁾	Duty	AV	PK	AV	PK	AV	PK
24.125	H	101.98	102.12	-12.85	-	89.13	89.27	128	148	38.87	58.73
24.125	V	114.45	114.46	-12.85	-	101.60	101.61	128	148	26.40	46.39

Test Mode 24 GHz Radar
Operating Frequency 24 172 GHz

Frequency (GHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr. ¹⁾	Duty	AV	PK	AV	PK	AV	PK
24.172	H	105.39	105.49	-12.65	-	92.74	92.84	128	148	35.26	55.16
24.172	V	114.61	114.62	-12.65	-	101.96	101.97	128	148	26.04	46.03

TEST PLOTS





9.3. RADIATED SPURIOUS EMISSIONS

Frequency Range: Below 1 GHz

Test Mode 24 GHz Radar
 Operating Frequency 24 078 MHz

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. ¹⁾ (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
No peak found							

Test Mode 24 GHz Radar
 Operating Frequency 24 125 MHz

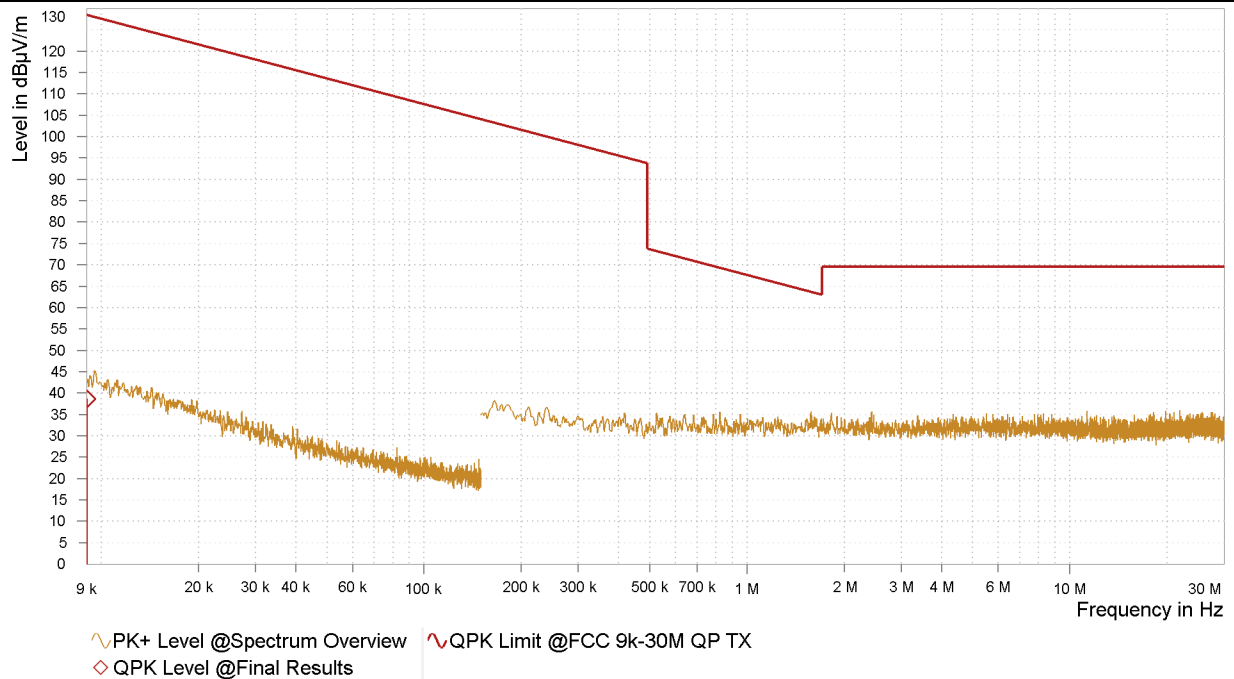
Frequency (MHz)	Polarization	Reading (dBuV)	Corr. ¹⁾ (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
No peak found							

Test Mode 24 GHz Radar
 Operating Frequency 24 172 MHz

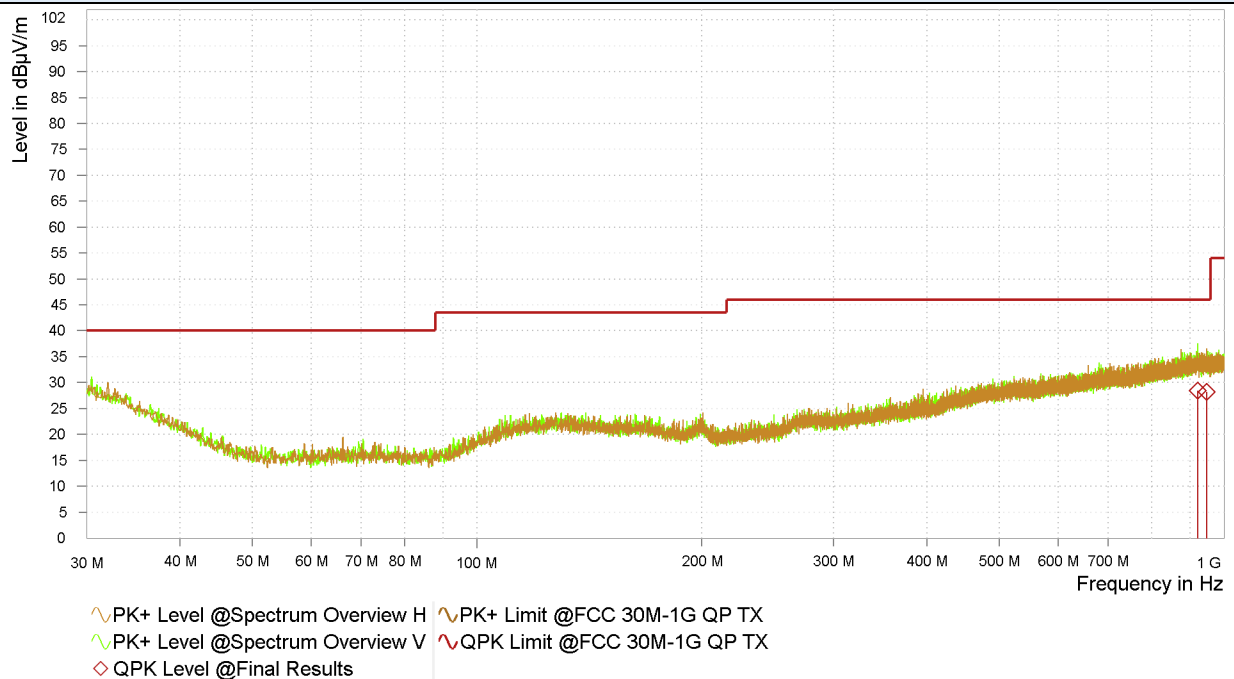
Frequency (MHz)	Polarization	Reading (dBuV)	Corr. ¹⁾ (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
No peak found							

TEST PLOTS

Radiated Spurious Emission 9 kHz – 30 MHz (Antenna Position 90°)



Radiated Spurious Emission 30 MHz – 1 GHz



Note:

1. There were no major peaks, and representative plots are included in this report.
2. The plots include all used factor values for cables, antenna, preamplifier, etc.

Frequency Range: 1 GHz – 18 GHz

Test Mode 24 GHz Radar
Operating Frequency 24.078 MHz

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr. ¹⁾	Duty	AV	PK	AV	PK	AV	PK
14 084.009	H	30.43	42.56	7.80	-	38.23	50.36	54	74	15.77	23.64
17 823.824	V	29.94	42.34	8.03	-	37.97	50.37	54	74	16.03	23.63

Test Mode 24 GHz Radar
Operating Frequency 24.125 MHz

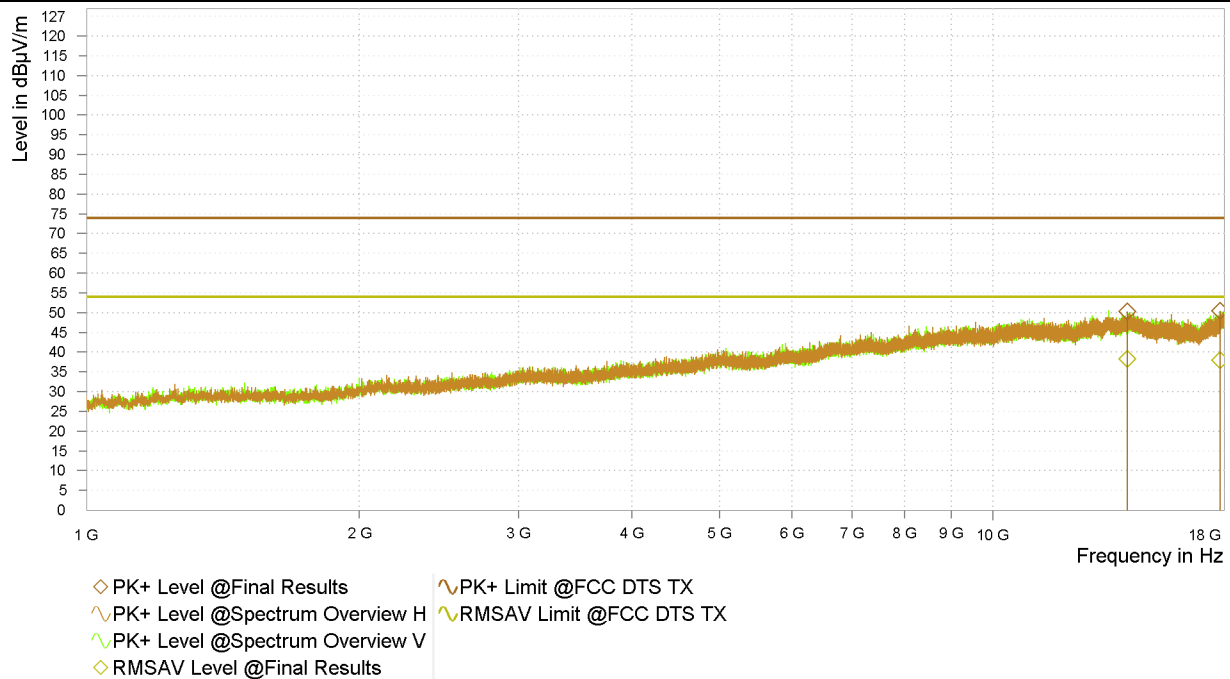
Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr. ¹⁾	Duty	AV	PK	AV	PK	AV	PK
14 128.036	H	30.59	43.02	7.82	-	38.41	50.84	54	74	15.59	23.16
17 969.805	H	29.94	42.02	8.62	-	38.56	50.64	54	74	15.44	23.36

Test Mode 24 GHz Radar
Operating Frequency 24.172 MHz

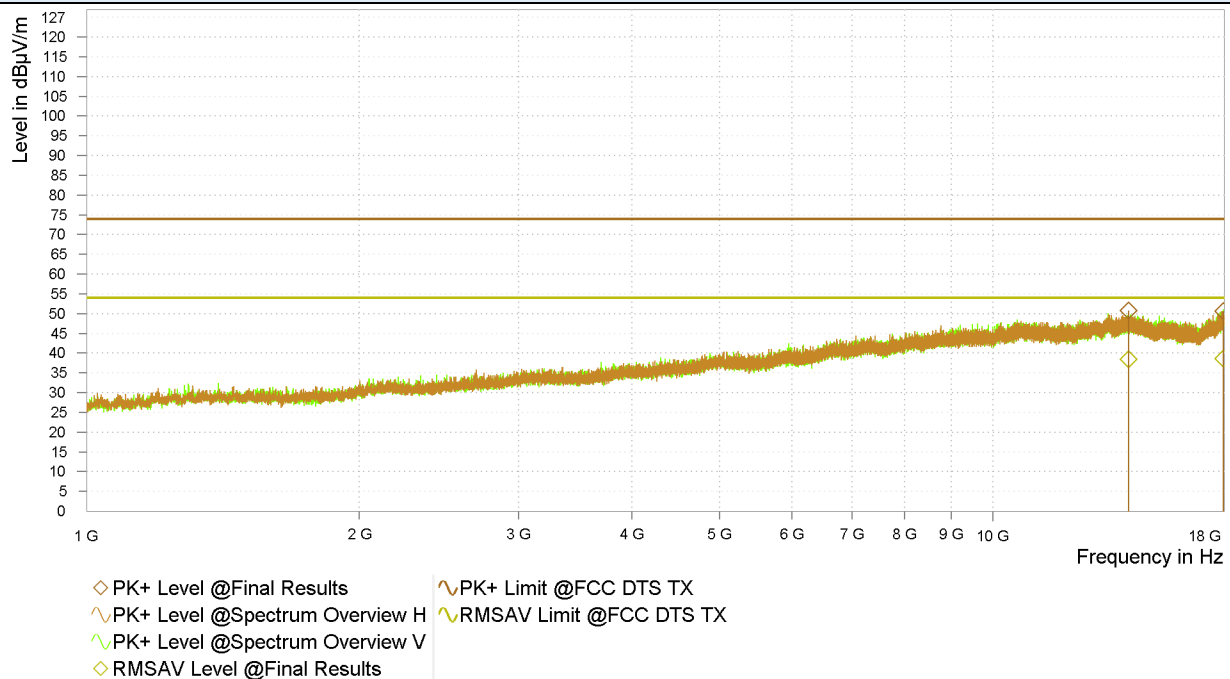
Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr. ¹⁾	Duty	AV	PK	AV	PK	AV	PK
17 923.096	H	30.25	43.20	8.41	-	38.66	51.61	54	74	15.34	22.39
17 934.544	V	29.99	42.81	8.66	-	38.65	51.47	54	74	15.35	22.53

TEST PLOTS

Radiated Spurious Emission 1 GHz – 18 GHz : 24.078 GHz



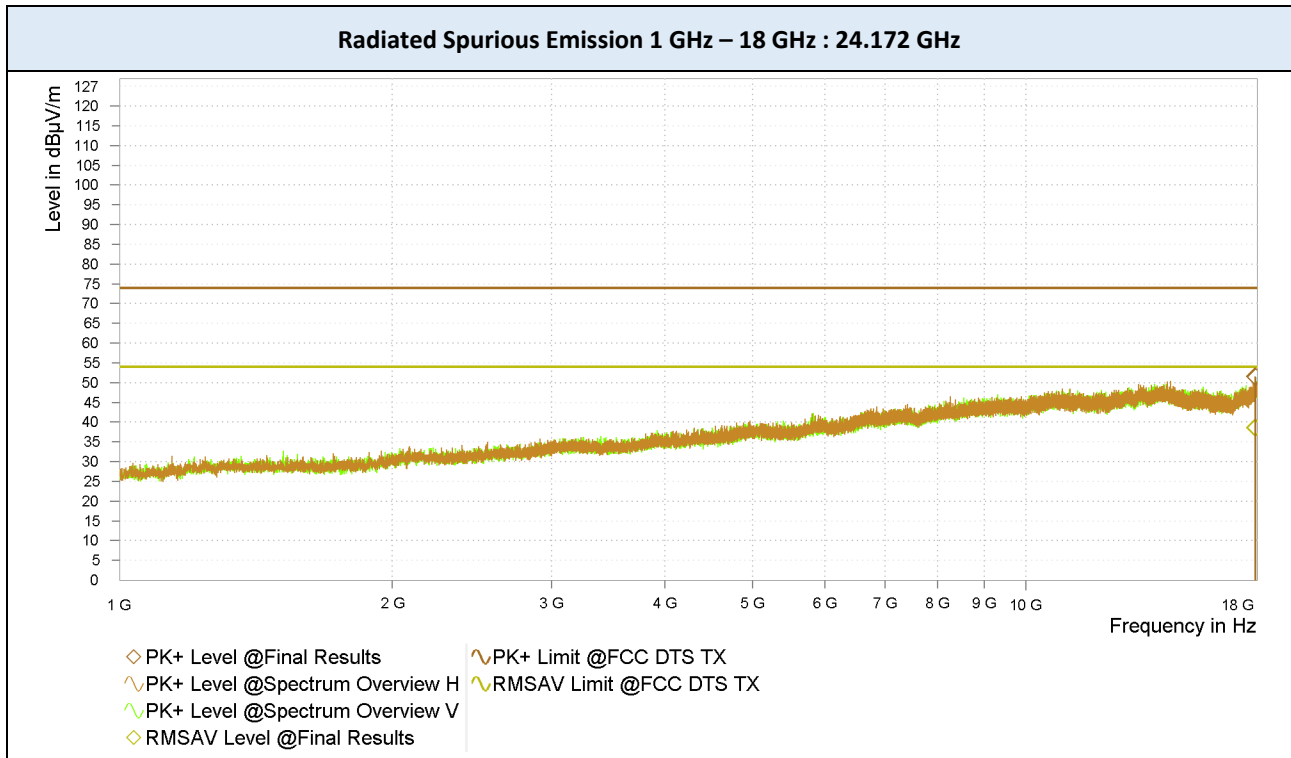
Radiated Spurious Emission 1 GHz – 18 GHz : 24.125 GHz



Note:

1. There were no major peaks, and representative plots are included in this report
2. The plots include all used factor values for cables, antenna, preamplifier, etc.

TEST PLOTS



Note:

1. There were no major peaks and representative plots are included in this report
2. The plots include all used factor values for cables, antenna, preamplifier, etc.

Frequency Range: 18 GHz – 26 GHz (Band-Edge)

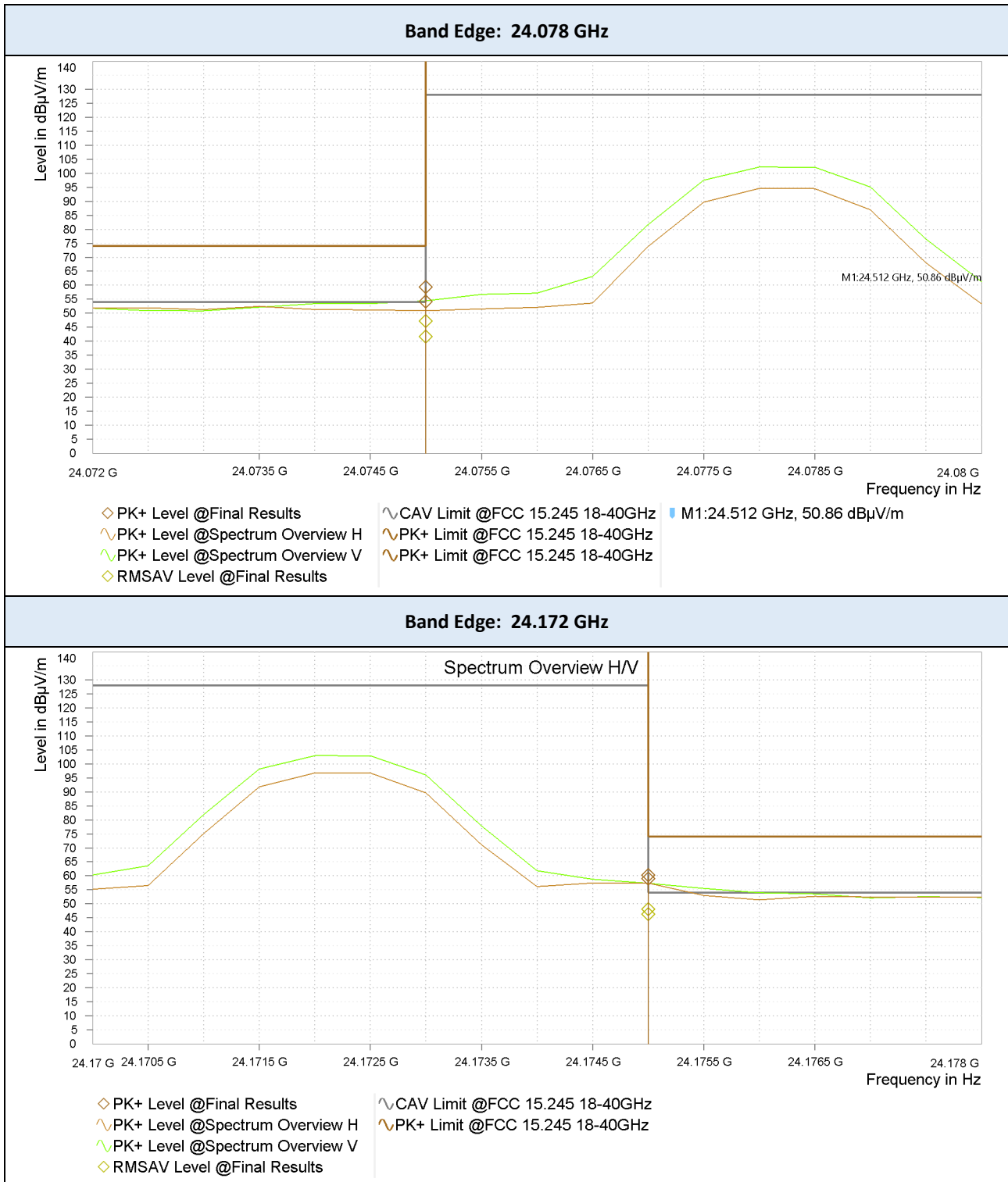
Test Mode 24 GHz Radar
 Operating Frequency 24.078 MHz

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr. ¹⁾	Duty	AV	PK	AV	PK	AV	PK
24 075.000	H	54.74	67.29	-13.03	-	41.71	54.26	54	74	12.29	19.74
24 075.000	V	60.30	72.36	-13.03	-	47.27	59.33	54	74	6.73	14.67

Test Mode 24 GHz Radar
 Operating Frequency 24.172 MHz

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr. ¹⁾	Duty	AV	PK	AV	PK	AV	PK
24 175.000	H	58.85	71.59	-12.63	-	46.22	58.96	54	74	7.78	15.04
24 175.000	V	60.75	72.92	-12.63	-	48.12	60.29	54	74	5.88	13.71

TEST PLOTS



Note:

1. There were no major peaks and representative plots are included in this report
2. The plots include all used factor values for cables, antenna, preamplifier, etc.

Frequency Range: 18 GHz – 26 GHz

Test Mode 24 GHz Radar
Operating Frequency 24.078 MHz

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr. ¹⁾	Duty	AV	PK	AV	PK	AV	PK
25 356.000	V	56.16	68.32	-12.17	-	43.99	56.15	54	74	10.01	17.85
25 747.000	H	56.02	68.27	-12.71	-	43.31	55.56	54	74	10.69	18.44

Test Mode 24 GHz Radar
Operating Frequency 24.125 MHz

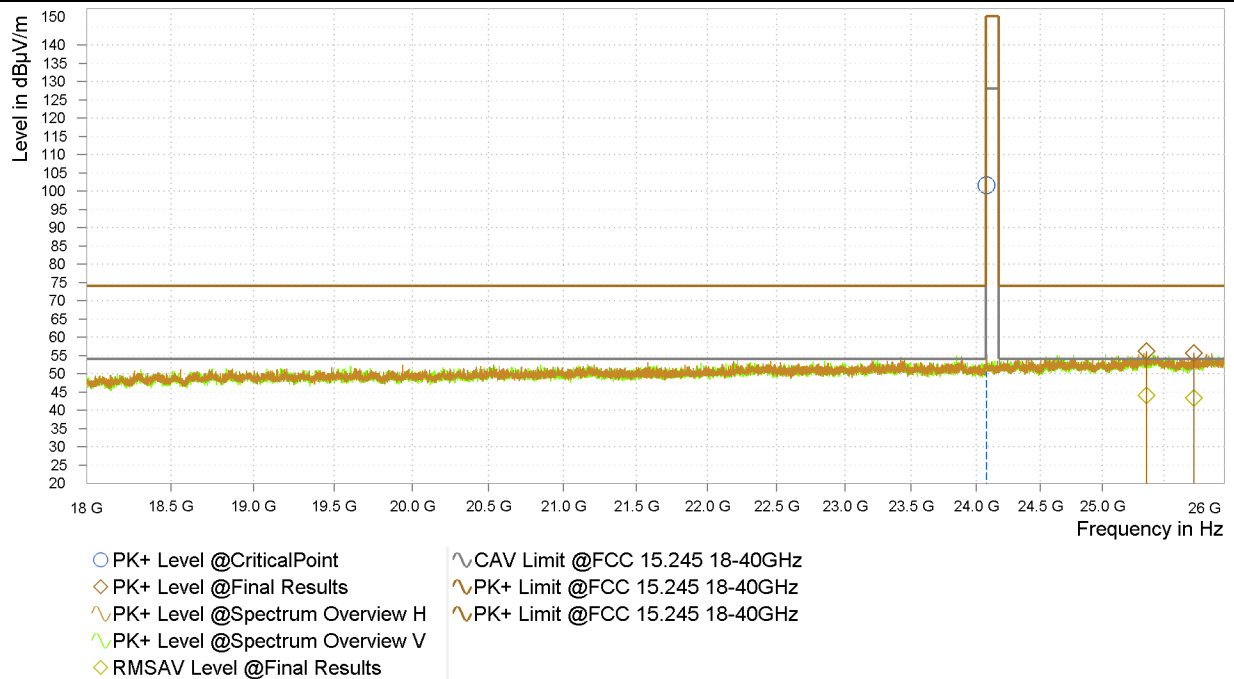
Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr. ¹⁾	Duty	AV	PK	AV	PK	AV	PK
25 467.800	V	56.42	68.99	-12.10	-	44.32	56.89	54	74	9.68	17.11
25 922.100	H	56.31	68.52	-12.06	-	44.25	56.46	54	74	9.75	17.54

Test Mode 24 GHz Radar
Operating Frequency 24.172 MHz

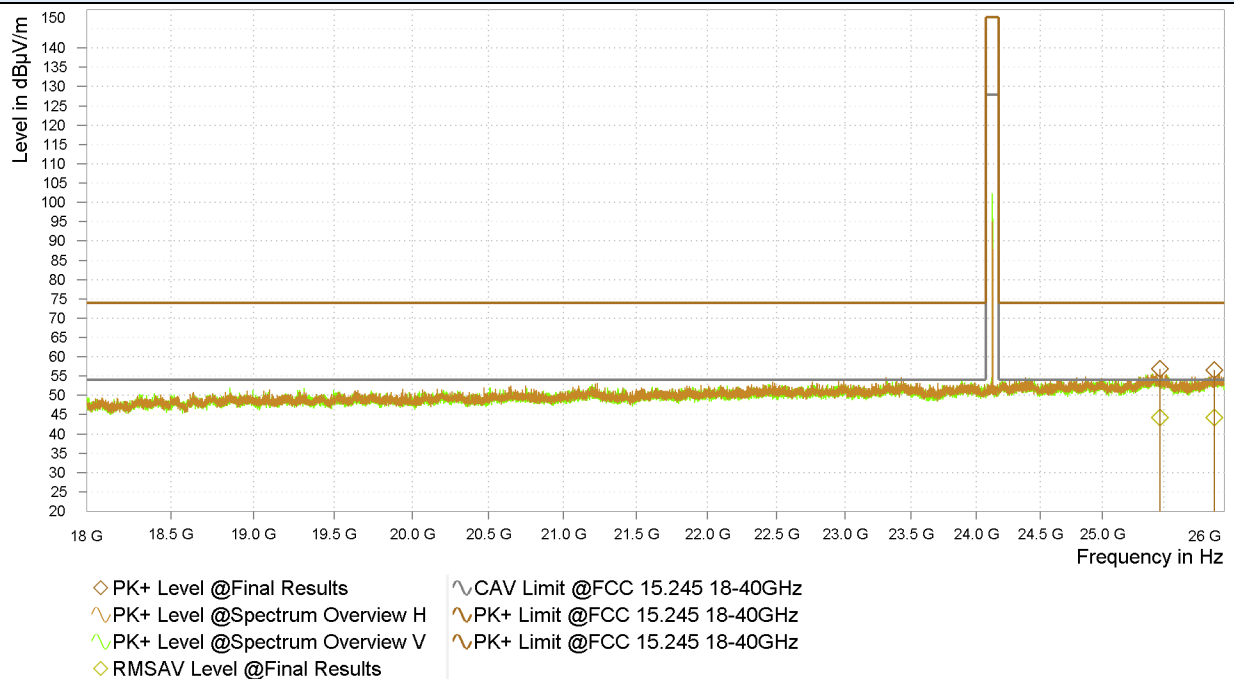
Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr. ¹⁾	Duty	AV	PK	AV	PK	AV	PK
25 413.600	V	56.87	69.09	-12.05	-	44.82	57.04	54	74	9.18	16.96
25 436.600	H	56.93	69.41	-12.04	-	44.89	57.37	54	74	9.11	16.63

TEST PLOTS

Radiated Spurious Emission 18 GHz – 26 GHz: 24.078 GHz



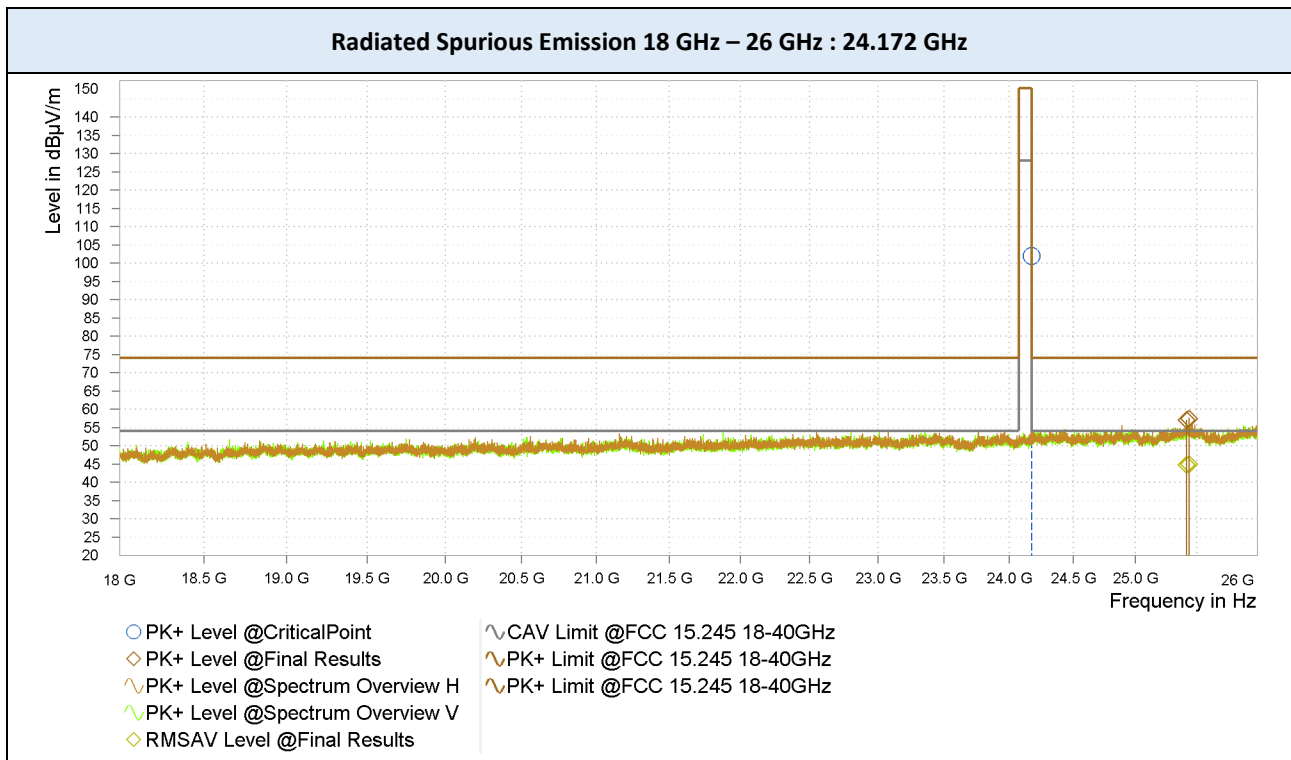
Radiated Spurious Emission 18 GHz – 26 GHz : 24.125 GHz



Note:

1. There were no major peaks, and representative plots are included in this report
2. The plots include all used factor values for cables, antenna, preamplifier, etc.

TEST PLOTS



Note:

1. There were no major peaks and representative plots are included in this report
2. The plots include all used factor values for cables, antenna, preamplifier, etc.

Frequency Range: 26 GHz – 40 GHz

Test Mode 24 GHz Radar
Operating Frequency 24.078 MHz

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr. ¹⁾	Duty	AV	PK	AV	PK	AV	PK
39 318.400	H	52.55	65.53	-3.12	-	49.43	62.41	54	74	4.57	11.59
39 819.900	V	53.71	65.84	-3.97	-	49.74	61.87	54	74	4.26	12.13

Test Mode 24 GHz Radar
Operating Frequency 24.125 MHz

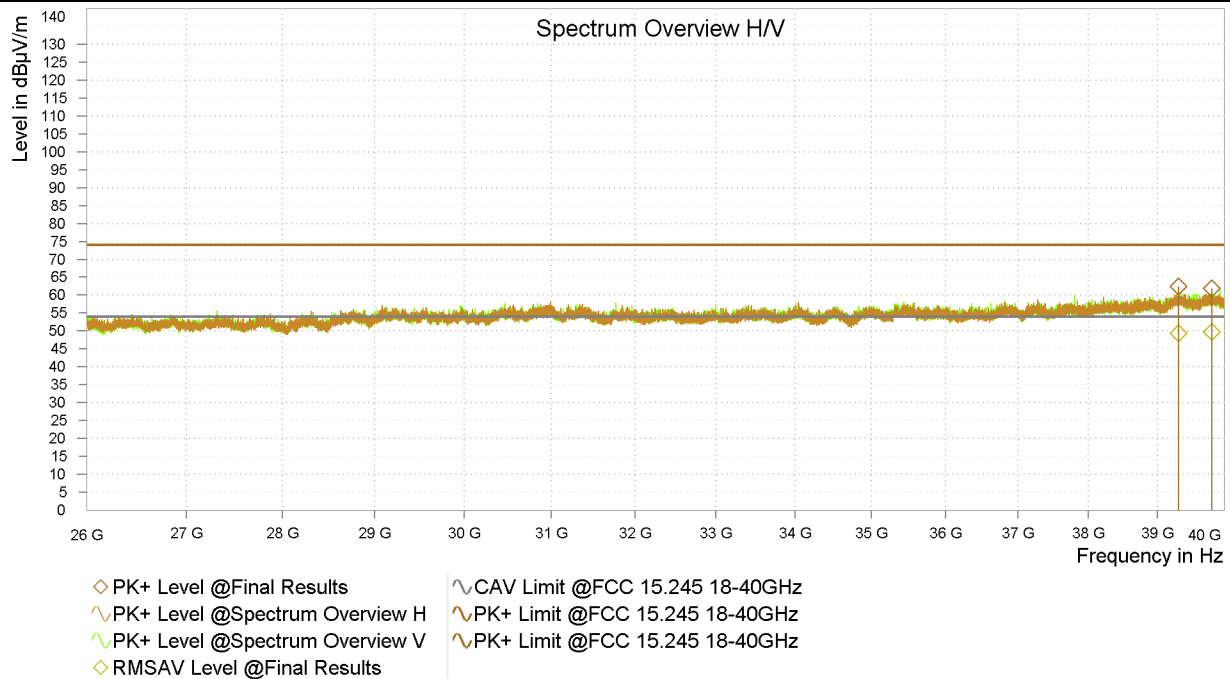
Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr. ¹⁾	Duty	AV	PK	AV	PK	AV	PK
39 255.000	V	52.74	64.96	-3.22	-	49.52	61.74	54	74	4.48	12.26
39 283.700	H	52.38	64.93	-3.13	-	49.25	61.80	54	74	4.75	12.20

Test Mode 24 GHz Radar
Operating Frequency 24.172 MHz

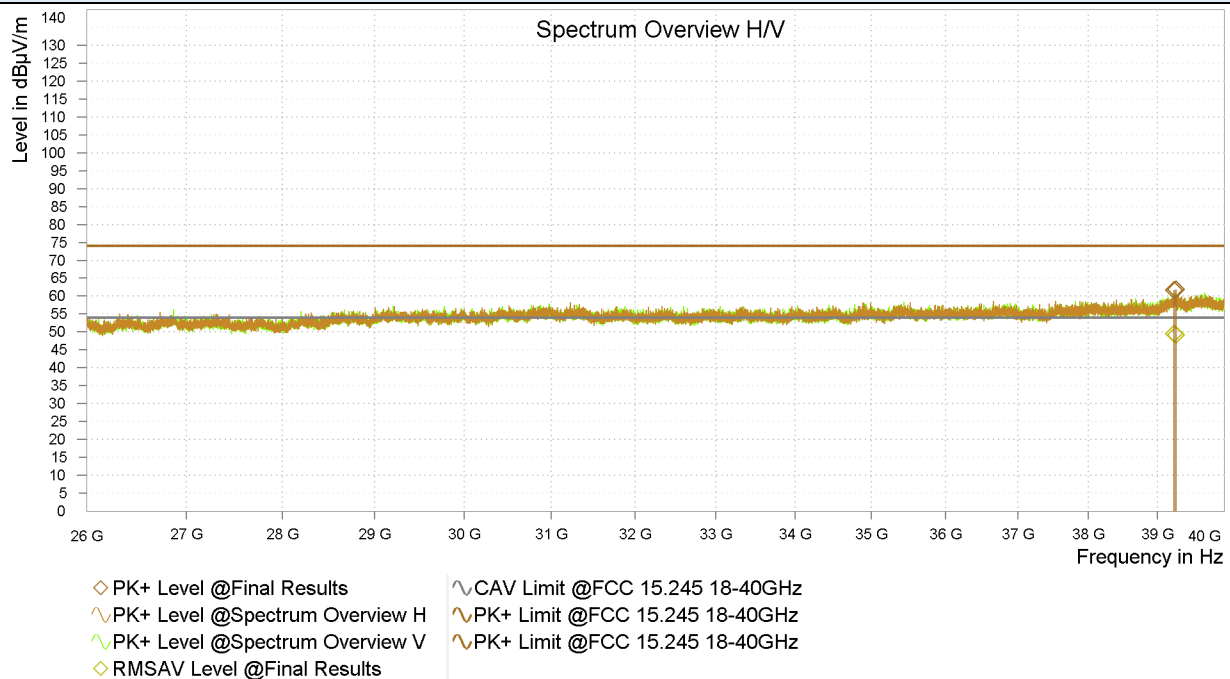
Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr. ¹⁾	Duty	AV	PK	AV	PK	AV	PK
39 597.100	V	52.62	64.99	-3.57	-	49.05	61.42	54	74	4.95	12.58
36 606.300	H	52.62	64.77	-3.58	-	49.04	61.19	54	74	4.96	12.81

TEST PLOTS

Radiated Spurious Emission 26 GHz – 40 GHz : 24.078 GHz



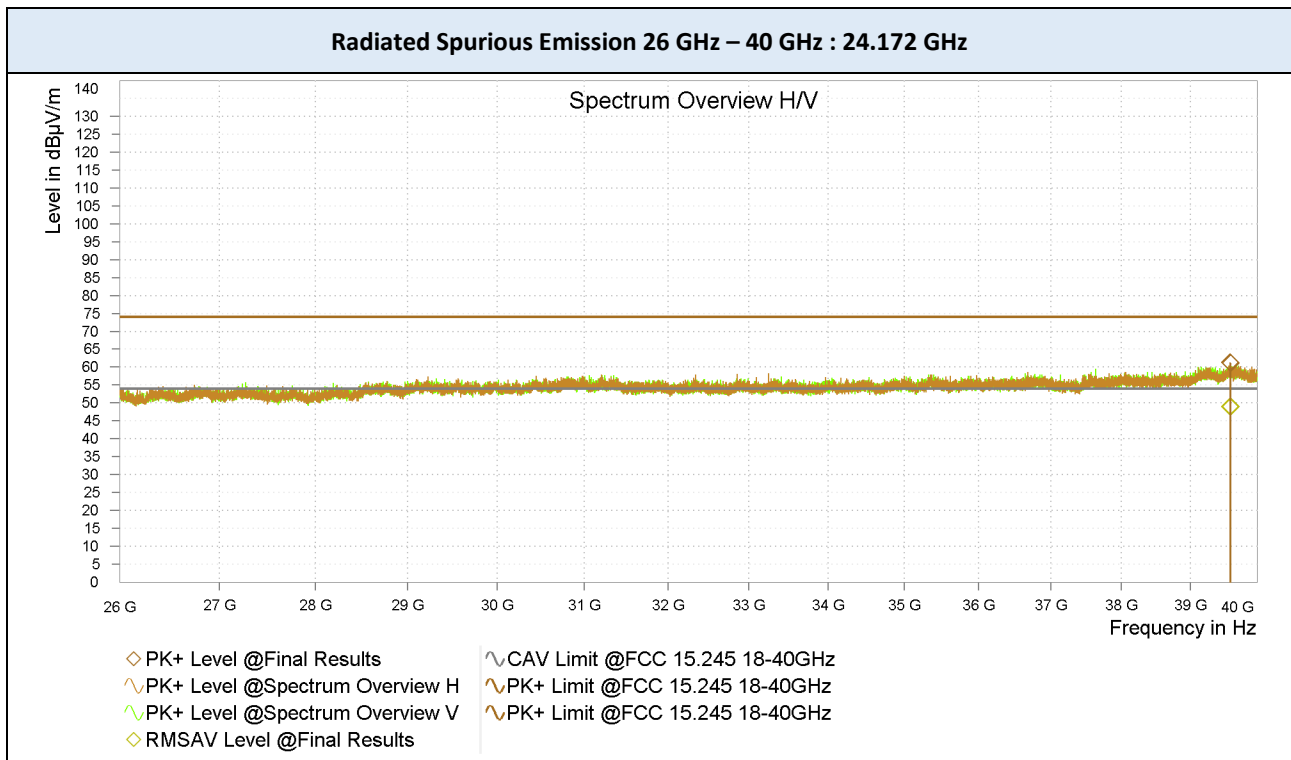
Radiated Spurious Emission 26 GHz – 40 GHz : 24.125 GHz



Note:

1. There were no major peaks, and representative plots are included in this report
2. The plots include all used factor values for cables, antenna, preamplifier, etc.

TEST PLOTS



Note:

1. There were no major peaks and representative plots are included in this report
2. The plots include all used factor values for cables, antenna, preamplifier, etc.

Frequency Range: 40 GHz – 60 GHz

1. 2nd Harmonic

Test Mode 24 GHz Radar
Operating Frequency 24.078 MHz

Frequency (MHz)	Reading (dBm)		Factor (dB)	Level (dBm)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
	AV	PK	Corr. ¹⁾	AV	PK	AV	PK	AV	PK	AV	PK
48 156.000	80.18	76.10	56.75	-23.43	-19.35	71.77	75.85	88	108	16.23	32.15

Test Mode 24 GHz Radar
Operating Frequency 24.125 MHz

Frequency (MHz)	Reading (dBm)		Factor (dB)	Level (dBm)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
	AV	PK	Corr. ¹⁾	AV	PK	AV	PK	AV	PK	AV	PK
48 250.000	79.43	75.48	56.80	-22.63	-18.68	72.57	76.52	88	108	31.48	15.43

Test Mode 24 GHz Radar
Operating Frequency 24.172 MHz

Frequency (MHz)	Reading (dBm)		Factor (dB)	Level (dBm)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
	AV	PK	Corr. ¹⁾	AV	PK	AV	PK	AV	PK	AV	PK
48 344.000	78.53	40.32	56.75	-21.78	-18.54	73.42	76.66	88	108	14.58	31.34

2. 40 – 60 GHz Spurious Emissions

Frequency (MHz)	Reading (dBm)		Factor (dB)	Level (dBm)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
	AV	PK	Corr. ¹⁾	AV	PK	AV	PK	AV	PK	AV	PK
No major peaks found											

Note(s):

- Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- Factor (Corr.¹⁾) = Antenna Gain - Cable Loss – Conversion Loss + Amplifier Gain - FSPL
- We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Frequency Range: 60 GHz – 90 GHz

1. 3rd Harmonic

Test Mode 24 GHz Radar
 Operating Frequency 24.078 MHz

Frequency (MHz)	Reading (dBm)		Factor (dB)	Level (dBm)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
	AV	PK	Corr. ¹⁾	AV	PK	AV	PK	AV	PK	AV	PK
No major peaks found											

Test Mode 24 GHz Radar
 Operating Frequency 24.125 MHz

Frequency (MHz)	Reading (dBm)		Factor (dB)	Level (dBm)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
	AV	PK	Corr. ¹⁾	AV	PK	AV	PK	AV	PK	AV	PK
No major peaks found											

Test Mode 24 GHz Radar
 Operating Frequency 24.172 MHz

Frequency (MHz)	Reading (dBm)		Factor (dB)	Level (dBm)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
	AV	PK	Corr. ¹⁾	AV	PK	AV	PK	AV	PK	AV	PK
No major peaks found											

2. 60 – 90 GHz Spurious Emissions

Frequency (MHz)	Reading (dBm)		Factor (dB)	Level (dBm)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
	AV	PK	Corr. ¹⁾	AV	PK	AV	PK	AV	PK	AV	PK
No major peaks found											

Note(s):

1. Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
2. Factor (Corr.¹⁾) = Antenna Gain - Cable Loss – Conversion Loss + Amplifier Gain - FSPL
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Frequency Range: 90 GHz – 100 GHz

3. 4th Harmonic

Test Mode 24 GHz Radar
 Operating Frequency 24.078 MHz

Frequency (MHz)	Reading (dBm)		Factor (dB)	Level (dBm)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
	AV	PK	Corr. ¹⁾	AV	PK	AV	PK	AV	PK	AV	PK
No major peaks found											

Test Mode 24 GHz Radar
 Operating Frequency 24.125 MHz

Frequency (MHz)	Reading (dBm)		Factor (dB)	Level (dBm)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
	AV	PK	Corr. ¹⁾	AV	PK	AV	PK	AV	PK	AV	PK
No major peaks found											

Test Mode 24 GHz Radar
 Operating Frequency 24.172 MHz

Frequency (MHz)	Reading (dBm)		Factor (dB)	Level (dBm)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
	AV	PK	Corr. ¹⁾	AV	PK	AV	PK	AV	PK	AV	PK
No major peaks found											

4. 90 – 100 GHz Spurious Emissions

Frequency (MHz)	Reading (dBm)		Factor (dB)	Level (dBm)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
	AV	PK	Corr. ¹⁾	AV	PK	AV	PK	AV	PK	AV	PK
No major peaks found											

Note(s):

- Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- Factor (Corr.¹⁾) = Antenna Gain - Cable Loss – Conversion Loss + Amplifier Gain - FSPL
- We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

9.4. RECEIVER SPURIOUS EMISSION

Test Mode	24 GHz Radar
Operating Frequency	24 078 MHz

Frequency Range : Below 1 GHz

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. ¹⁾ (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
No major peaks found							

Frequency Range : Above 1 GHz

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. ¹⁾ (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
No major peaks found							

Notes:

1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain

9.5. AC LINE CONDUCTED EMISSIONS

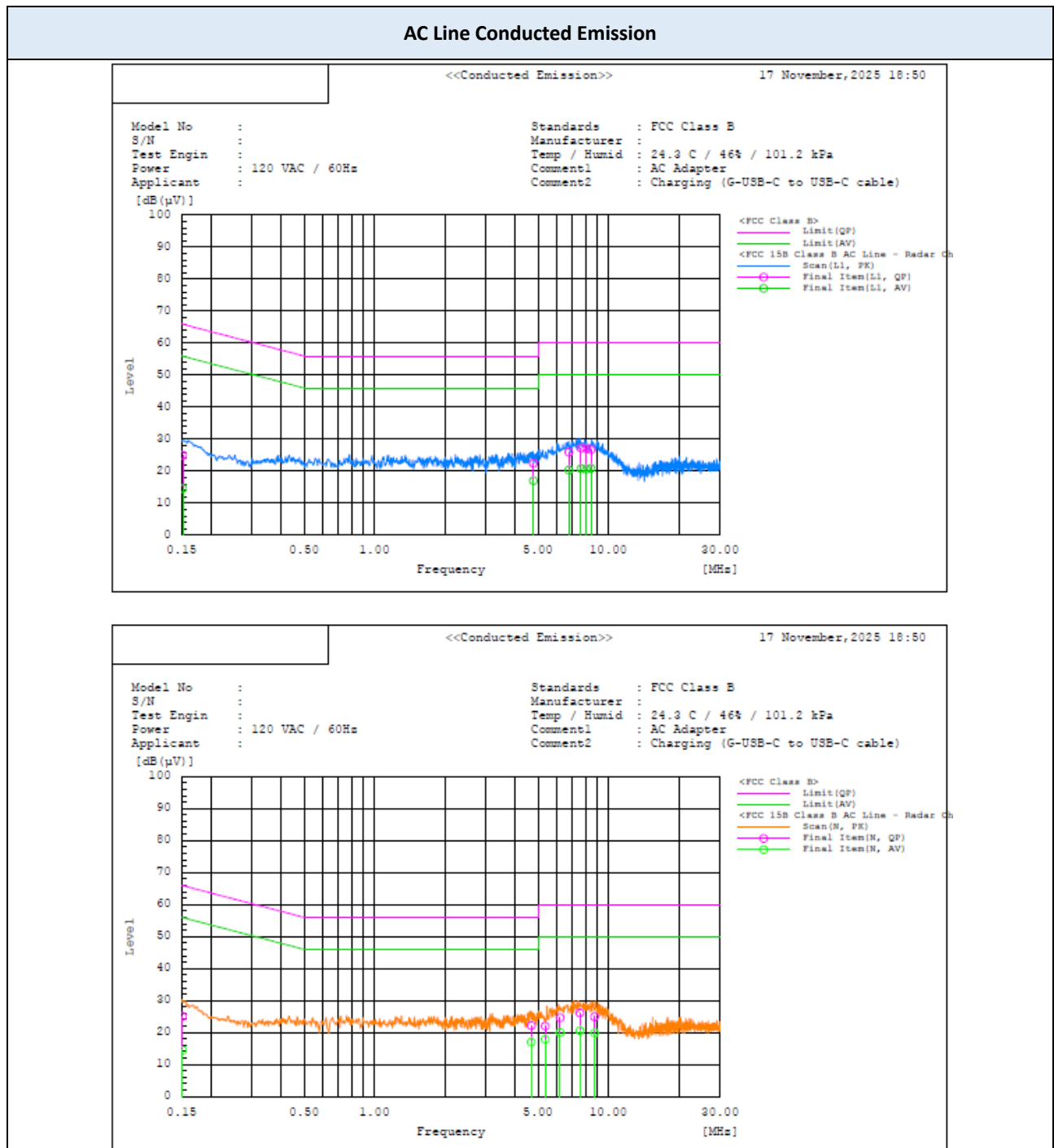
Frequency Range: Below 1 GHz

Test Mode 24 GHz Radar

Operating Frequency 24 078 MHz

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. ¹⁾ (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
No peak found							

TEST PLOTS



10. LIST OF TEST EQUIPMENT

No.	Instrument	Model No.	Calibration Due (mm/dd/yy)	Manufacture	Serial No.
☒	Signal Analyzer (1 Hz ~ 40.0 GHz)	ESW44	03/18/2026	Rohde & Schwarz	103176
☒	Signal Analyzer (10 Hz ~ 26.5 GHz)	N9020A	07/16/2026	Keysight	MY52091291
☒	Attenuator (20 dB, DC ~ 26.5 GHz)	8493C 20 dB	01/06/2026	Keysight	89401
☒	Loop Antenna (0.009 MHz ~ 30 MHz)	HLA 6121	03/03/2027	TESEQ	43964
☒	BI-LOG Antenna (30 MHz ~ 6 GHz)	JB6	10/22/2026	Sunol	A071116
☒	Horn Antenna (1 GHz ~ 18 GHz)	DRH-118	12/04/2026	Sunol	A061616
☒	LNA (1 GHz ~ 18 GHz)	PAM-118A	01/15/2026	Com-Power	18040074
☒	Horn Antenna (18 GHz ~ 40 GHz)	DRH-1840	01/16/2027	Sunol	17121
☒	LNA (18 GHz ~ 40 GHz)	CBL18405550-01	05/06/2026	CERNEX, Inc.	35317
☒	EMI Test Receiver	ESR3	12/06/2025	Rohde & Schwarz	102363
☒	LISN	ENV216	12/06/2025	Rohde & Schwarz	101349
☒	Test Software	R&S®ELEKTRA	-	Rhode & Schwarz	-
☒	Horn Antenna	AT-SGA-25-19B	07/22/2027	AT Microwave	A5MA02
☒	Horn Antenna	AT-SGA-25-12B	07/22/2027	AT Microwave	A5MA02
☒	Horn Antenna	AT-SGA-25-08B	07/22/2027	AT Microwave	A5MA02
☒	mm Wave Frequency Extension Module (WR19)	FEM4060LP	11/21/2026	C&K Technologies, Inc	19AS1
☒	mm Wave Frequency Extension Module (WR12)	FEM6090LP	11/21/2026	C&K Technologies, Inc	12AS1
☒	mm Wave Frequency Extension Module (WR08)	FEM90140LP	11/21/2026	C&K Technologies, Inc	08AS1
☒	Down-Converter Module (WR19)	DC4060-SAX	11/21/2026	C&K Technologies, Inc	1904
☒	Down-Converter Module (WR12)	DC6090-SAX	11/21/2026	C&K Technologies, Inc	1206
☒	Down-Converter Module (WR08)	DC90140-SAX	11/21/2026	C&K Technologies, Inc	812

Note(s):

1. Equipment listed above that calibrated during the testing period was set for test after the calibration.
2. Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.

APPENDIX A. TEST SETUP PHOTOS

The setup photos are provided as a separate document.

APPENDIX B. PHOTOGRAPHS OF EUT

B.1. EXTERNAL PHOTOS

The external photos are provided as a separate document.

B.2. INTERNAL PHOTOS

The internal photos are provided as a separate document.

END OF TEST REPORT