

RADIO TEST REPORT

Report ID:

REP148536

Project number:

PRJ0094088

Type of assessment:

Final product testing

Type of radio equipment:

Radar

Applicant:

Ecobee Inc.

Description of product:

Radar 24 GHz Occupancy Sensor Module

Model(s)/HVIN(s):

EB-POS24G

Product marketing name (PMN):

EB-POS24G

FCC identifier:

FCC ID: WR926POSRSAN1

ISED certification number:

IC: 7981A-26POSMRSAN1

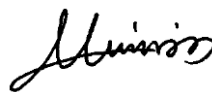
Specifications:

- ◆ FCC 47 CFR Part 15 Subpart C, §15.249
- ◆ RSS-210 Issue 11, June 2024, Annex B.10

Date of issue: March 18, 2026

Alvin Liu, EMC/RF Specialist

Tested by



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Limits of responsibility

Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.

This test report has been completed in accordance with the requirements of ISO/IEC 17025. All results contained in this report are within Nemko Canada's ISO/IEC 17025 accreditation.

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Section 1 Report summary

1.1 Test specifications

FCC 47 CFR Part 15 Subpart C, Clause 15.249	Operation within the bands 902–928 MHz, 2400–2483.5 MHz, 5725–5875 MHz, and 24.0–24.25 GHz
RSS-210, Issue 11, June 2024, Annex B.10	Devices operating in the bands 902–928 MHz, 2400–2483.5 MHz, 5725–5875 MHz, and 24.0–24.25 GHz

1.2 Test methods

RSS-Gen, Issue 5, February 2021	General Requirements for Compliance of Radio Apparatus
ANSI C63.10-2020 + Cor. 1-2023 + C63.10-2024 + Errata to C63.10a-2024	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

1.3 Exclusions

None

1.4 Statement of compliance

Statement of Conformity:

The reported results have been evaluated against the specified limits of the standard(s) listed in **Section 1.1** of this report.

Conformity with the specified requirements is determined by comparing the measured results directly to the applicable limits. Measurement uncertainty is not applied to adjust or attribute to the measured value for the purpose of compliance determination.

In the configuration tested, the **Equipment Under Test (EUT)** was found to be compliant. Unless otherwise noted in **Section 1.3**, all testing was performed against the relevant requirements of the applicable test standard(s).

The results obtained indicate that the product under test complies in full with the requirements tested, and the test results relate only to the items tested.

Refer to the **Summary of Test Results** section for full details.

1.5 Test report revision history

Table 1.5-1: Test report revision history

Revision #	Date of issue	Details of changes made to test report
REP148536	March 18, 2026	Original report issued

Section 2 Engineering considerations

2.1 Modifications incorporated in the EUT for compliance

There were no modifications performed to the EUT during this assessment.

2.2 Technical judgment

None

2.3 Model variant declaration

The module was tested in host model ECB601. Host model variant ECB501 is identical to host model ECB601 electrically and in form factor. As such the results contained in this test report pertain to both host models.

2.4 Deviations from laboratory tests procedures

No deviations were made from laboratory procedures.

Section 3 Test conditions

3.1 Atmospheric conditions

Temperature	15 °C – 35 °C
Relative humidity	20 % – 75 %
Air pressure	86 kPa (860 mbar) – 106 kPa (1060 mbar)

When it is impracticable to carry out tests under these conditions, a note to this effect stating the ambient temperature and relative humidity during the tests shall be recorded and stated.

3.2 Power supply range

The normal test voltage for equipment to be connected to the mains shall be the nominal mains voltage. For the purpose of the present document, the nominal voltage shall be the declared voltage, or any of the declared voltages $\pm 5\%$, for which the equipment was designed.

Section 4 Information provided by the applicant

4.1 Disclaimer

This section contains information provided by the applicant and has been utilized to support the test plan. Inaccurate information provided by the applicant can affect the validity of the results contained within this test report. Nemko accepts no responsibility for the information contained within this section and the impact it may have on the test plan and resulting measurements.

4.2 Applicant / Manufacturer

Applicant name	Ecobee Inc.
Applicant address	207 Queens Quay Suite 600, Toronto, Ontario, Canada M5J 1A7
Manufacturer name	Same as applicant
Manufacturer address	Same as applicant

4.3 EUT information

Product description	Radar 24 GHz Occupancy Sensor Module
Model / HVIN	EB-POS24G
Serial number	532555942501
Power supply requirements	AC: 24 V, 500 mA, 60 Hz
Product description and theory of operation	24 GHz Radar occupancy detection module used in HVAC Thermostat for commercial and residential applications

4.4 Radio technical information

Category of Wideband Data Transmission equipment	☐ Frequency Hopping Spread Spectrum (FHSS) equipment
	☒ Other types of Wideband Data Transmission equipment (e.g. DSSS, OFDM, etc.).
Frequency band	24.0–24.25 GHz
Frequency MIN	24.0 GHz
Frequency MAX	24.25 GHz
Field strength, dBμV/m @ 3 m	108.3
Measured BW (MHz), 99% OBW	186.657
Type of modulation	FMCW
Transmitter spurious, dBμV/m @ 3 m	72.0 (Peak) and 51.7 (Average) at 23.998 GHz
Antenna information	Possumic Inc. MRS261 radar module with integrated antenna, gain 3 dBi

4.5 EUT setup details

4.5.1 Radio exercise details

Operating conditions	The EUT was powered up via an AC transformer and operated in Radar Chirp mode (TX all bandwidth).
Transmitter state	Transmitter set into continuous mode.

4.5.2 EUT setup configuration

Table 4.5-1: EUT interface ports

Description	Qty.
AC power input	1

Table 4.5-2: Support equipment

Description	Brand name	Model, Part number, Serial number, Revision level
AC adapter/transformer	CUI INC	MN: 48A-24-500, PN: EPA240050-P5-SZ INPUT: AC 120V, 60 Hz, 18 W OUTPUT: AC 24V, 500 mA

Table 4.5-3: Inter-connection cables

Cable description	From	To	Length (m)
AC power input	EUT	AC adapter/transformer	2.8

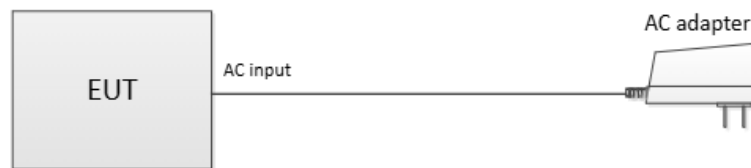


Figure 4.5-1: Block diagram

Section 5 Summary of test results

5.1 Testing period

Test start date	January 28, 2026	Test end date	January 30, 2026
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5.2 Sample information

Receipt date	January 27, 2026	Nemko sample ID number(s)	PRJ00940880001
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5.3 FCC test results

Table 5.3-1: FCC requirements results

Part	Test description	Verdict
Generic requirements		
\$15.207(a)	Conducted limits	Pass
\$15.31(e)	Variation of power source	Pass
\$15.31(m)	Number of tested frequencies	Pass
\$15.203	Antenna requirement	Pass
\$15.215(c)	20 dB bandwidth	Pass
Specific requirements		
\$15.249(a)	Field strength of emissions from intentional radiators	Pass
\$15.249(b)	Fixed Point-to-Point operation in the 24.0–24.25 GHz band	Not applicable ¹
\$15.249(d)	Spurious emissions (except harmonics)	Pass

Notes: ¹ EUT is not a Fixed, point-to-point operating system

5.4 ISSED test results

Table 5.4-1: ISSED requirements results

Part	Test description	Verdict
Generic requirements		
RSS-Gen, 6.7	Occupied bandwidth and x dB bandwidth	Pass
RSS-Gen, 6.9	Operating bands and selection of test frequencies	Pass
RSS-Gen, 7.3	Receiver radiated emission limits	Not applicable ¹
RSS-Gen, 7.4	Receiver conducted emission limits	Not applicable ¹
RSS-Gen, 8.8	AC powerline conducted emissions limits	Pass
Specific requirements		
RSS-210, B.10 (a)	Field strength of fundamental and harmonic emissions	Pass
RSS-210, B.10 (b)	Radiated Emissions except for harmonic	Pass

Notes: ¹ According to sections 5.2 and 5.3 of RSS-Gen, Issue 5 the EUT does not have a stand-alone receiver neither scanner receiver, therefore exempt from receiver requirements.

Section 6 Test equipment

6.1 Test equipment list

Table 6.1-1: Equipment list

Equipment	Manufacturer	Model no.	Asset no.	Cal./Ver. cycle	Next cal./ver.
3 m EMI test chamber	TDK	SAC-3	FA003012	1 year	March 9, 2026
Receiver/spectrum analyzer	Rohde & Schwarz	ESR26	FA002969	1 year	May 28, 2026
Bilog antenna (30–2000 MHz)	Sunol	JB3	FA002108	1 year	April 8, 2026
Horn antenna (1–18 GHz)	ETS-Lindgren	3117	FA002911	1 year	June 2, 2026
Preamp (1–18 GHz)	ETS Lindgren	124334	FA002956	1 year	April 11, 2026
Horn antenna (18–40 GHz)	EMCO	3116B	FA002948	3 year	May 3, 2027
Preamp (18–40 GHz)	None	None	FA003323	1 year	April 11, 2026
50 Ω coax cable	Huber + Suhner	None	FA003047	1 year	August 6, 2026
50 Ω coax cable	Huber + Suhner	None	FA003402	1 year	August 6, 2026
50 Ω SMA coax cable	Huber + Suhner	None	FA003056	1 year	August 6, 2026
50 Ω SMA coax cable	Huber + Suhner	None	FA003055	1 year	August 6, 2026
Spectrum analyzer	Rohde & Schwarz	FSW43	FA002971	1 year	November 24, 2026
Rectangular gain horn WR-19 (40–60 GHz)	ERAVANT	SAR-2507-19-S2	FA003617	—	NCR
Standard gain horn (50–75 GHz)	Mi-Wave	261V-25/385	FA003270	—	NCR
Standard gain horn (75–110 GHz)	Mi-Wave	261W-25/387	FA003271	—	NCR
Hamonic mixer (40–60 GHz)	Rohde & Schwarz	FS-Z60	FA003602	3years	Jul 29, 2028
Hamonic mixer (50–75 GHz)	Rohde & Schwarz	FS-Z75	FA003263	3years	Oct 26, 2026
Hamonic mixer (75–110 GHz)	Rohde & Schwarz	FS-Z110	FA003262	3years	Sep 28, 2026

Note: NCR - no calibration required

All equipment related to the contribution of measurement has been included in this list. Such items include, but are not limited to, cables, attenuators, directional couplers, and pre-amps.

Table 6.1-2: Automation software details

Test description	Manufacturer of Software	Details
EMC/Radio test software	Rohde & Schwarz	EMC32, Software for EMC Measurements, Version 10.60.00

Table 6.1-3: Measurement uncertainty calculations based on equipment list

Measurement	Measurement uncertainty, ±dB
AC power line conducted emissions	2.46
Radiated spurious emissions (30 MHz to 1 GHz)	4.14
Radiated spurious emissions (1 GHz to 6 GHz)	4.74
Radiated spurious emissions (6 GHz to 18 GHz)	5.33
Radiated spurious emissions (18 GHz to 26 GHz)	4.82
Radiated spurious emissions (26 GHz to 40 GHz)	4.82
Radiated spurious emissions (40 GHz to 220 GHz)	5.81
RF Output power measurement using Spectrum Analyzer	1.59
Occupied bandwidth	1.5%
Signal path calibration (Insertion loss)	1.52

Notes: UKAS Lab 34, TIA-603 and ETSI TR 100 028-1&2 have been used as guidance for measurement uncertainty reasonable estimations with regards to previous experience and validation of data. Nemko Canada Inc. follows these test methods in order to satisfy ISO/IEC 17025 requirements for estimation of uncertainty of measurement for wireless products. Measurement uncertainty calculations assume a coverage factor of K = 2 with 95% certainty.

Section 7 Testing data

7.1 Variation of power source

7.1.1 References, definitions and limits

FCC §15.31 (e):

For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery operated equipment, the equipment tests shall be performed using a new battery.

7.1.2 Test summary

Verdict	Pass		
Test date	January 28, 2026	Temperature	24 °C
Tested by	Alvin Liu	Air pressure	980 mbar
Test location	Cambridge	Relative humidity	44 %

7.1.3 Observations, settings and special notes

The testing was performed as per ANSI C63.10 Section 5.13.

- Where the device is intended to be powered from an external power adapter, the voltage variations shall be applied to the input of the adapter provided with the device at the time of sale. If the device is not marketed or sold with a specific adapter, then a typical power adapter shall be used.
- For devices, where operating at a supply voltage deviating $\pm 15\%$ from the nominal rated value may cause damages or loss of intended function, test to minimum and maximum allowable voltage per manufacturer's specification and document in the report.
- For devices with wide range of rated supply voltage, test at 15% below the lowest and 15% above the highest declared nominal rated supply voltage.
- For devices obtaining power from an input/output (I/O) port (USB, firewire, etc.), a test jig is necessary to apply voltage variation to the device from a support power supply, while maintaining the functionalities of the device.
- For battery-operated equipment, the equipment tests shall be performed using a variable power supply.

7.1.4 Test data

EUT Power requirements:	☒ AC	☐ DC	☐ Battery
If EUT is an AC or a DC powered, was the noticeable output power variation observed?	☐ YES	☒ NO	☐ N/A
If EUT is battery operated, was the testing performed using fresh batteries?	☐ YES	☐ NO	☒ N/A
If EUT is rechargeable battery operated, was the testing performed using fully charged batteries?	☐ YES	☐ NO	☒ N/A

7.2 Number of frequencies

7.2.1 References, definitions and limits

FCC §15.31:

- (m) Measurements on intentional radiators or receivers shall be performed and, if required, reported for each band in which the device can be operated with the device operating at the number of frequencies in each band specified in the following table.

RSS-Gen, Clause 6.9:

Except where otherwise specified, measurements shall be performed for each frequency band of operation for which the radio apparatus is to be certified, with the device operating at the frequencies in each band of operation shown in table below. The frequencies selected for measurements shall be reported in the test report.

Table 7.2-1: Frequency Range of Operation

Frequency range over which the device operates (in each band)	Number of test frequencies required	Location of measurement frequency inside the operating frequency range
1 MHz or less	1	Center (middle of the band)
1–10 MHz	2	1 near high end, 1 near low end
Greater than 10 MHz	3	1 near high end, 1 near center and 1 near low end

Notes: “near” means as close as possible to or at the centre / low end / high end of the frequency range over which the device operates.

7.2.2 Test summary

Verdict	Pass		
Test date	January 28, 2026	Temperature	24 °C
Tested by	Alvin Liu	Air pressure	980 mbar
Test location	Cambridge	Relative humidity	44 %

7.2.3 Observations, settings and special notes

ANSI C63.10, Clause 5.6.2.1:

The number of channels tested can be reduced by measuring the center channel bandwidth first and then applying the following relaxations as appropriate:

- For each operating mode, if the measured channel bandwidth on the middle channel is at least 150% of the minimum permitted bandwidth, then it is not necessary to measure the bandwidth on the high and low channels.
- For multiple-input multiple-output (MIMO) systems, if the measured channel bandwidth on testing the middle channel exceeds the minimum permitted bandwidth by more than 50% on one transmit chain, then it is not necessary to repeat testing on the other chains.
- If the measured channel bandwidth on the middle channel is less than 50% of the maximum permitted bandwidth, then it is not necessary to measure the bandwidth on the high and low channels.

7.2.4 Test data

Table 7.2-2: Test channels selection

Start of Frequency range, MHz	End of Frequency range, MHz	Frequency range bandwidth, MHz	Signal description
24000	24250	250	This EUT operates at only one channel at 24.125 GHz with 187 MHz bandwidth

7.3 Antenna requirement

7.3.1 References, definitions and limits

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. This requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

RSS-Gen, Clause 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.

7.3.2 Test summary

Verdict	Pass		
Test date	January 28, 2026	Temperature	24 °C
Tested by	Alvin Liu	Air pressure	980 mbar
Test location	Cambridge	Relative humidity	44 %

7.3.3 Observations, settings and special notes

None

7.3.4 Test data

EUT has an internal permanently attached antenna, EUT does not have detachable antenna.

7.4 AC power line conducted emissions limits

7.4.1 References, definitions and limits

FCC §15.207:

- (a) Except as shown in paragraphs (b) and (c) of this section, 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 Ω line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

ANSI C63.10, Clause 6.2:

If the EUT normally receives power from another device that in turn connects to the public utility ac power lines, measurements shall be made on that device with the EUT in operation to demonstrate that the device continues to comply with the appropriate limits while providing the EUT with power. If the EUT is operated only from internal or dedicated batteries, with no provisions for connection to the public utility ac power lines (600 VAC or less) to operate the EUT (such as an adapter), then ac power-line conducted measurements are not required.

For direct current (dc) powered devices where the ac power adapter is not supplied with the device, an “off-the-shelf” unmodified ac power adapter shall be used. If the device is supposed to be installed in a host (e.g., the device is a module or PC card), then it is tested in a typical compliant host.

RSS-Gen, Clause 8.8:

A radio apparatus that is designed to be connected to the public utility (AC) power line shall ensure that the radio frequency voltage, which 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 table below.

Unless the requirements applicable to a given device state otherwise, for any radio apparatus equipped to operate from the public utility AC power supply either directly or indirectly (such as with a battery charger), the radio frequency voltage of emissions conducted back onto the AC power lines in the frequency range of 0.15 MHz to 30 MHz shall not exceed the limits shown in table below. The more stringent limit applies at the frequency range boundaries.

Table 7.4-1: Conducted emissions limit

Frequency of emission, MHz	Conducted emissions limit, dB μ V	
	Quasi-peak	Average**
0.15–0.5	66 to 56*	56 to 46*
0.5–5	56	46
5–30	60	50

Notes: * - The level decreases linearly with the logarithm of the frequency.

 ** - A linear average detector is required.

7.4.2 Test summary

Verdict	Pass		
Test date	January 30, 2026	Temperature	24 °C
Tested by	Alvin Liu	Air pressure	985 mbar
Test location	Cambridge	Relative humidity	38 %

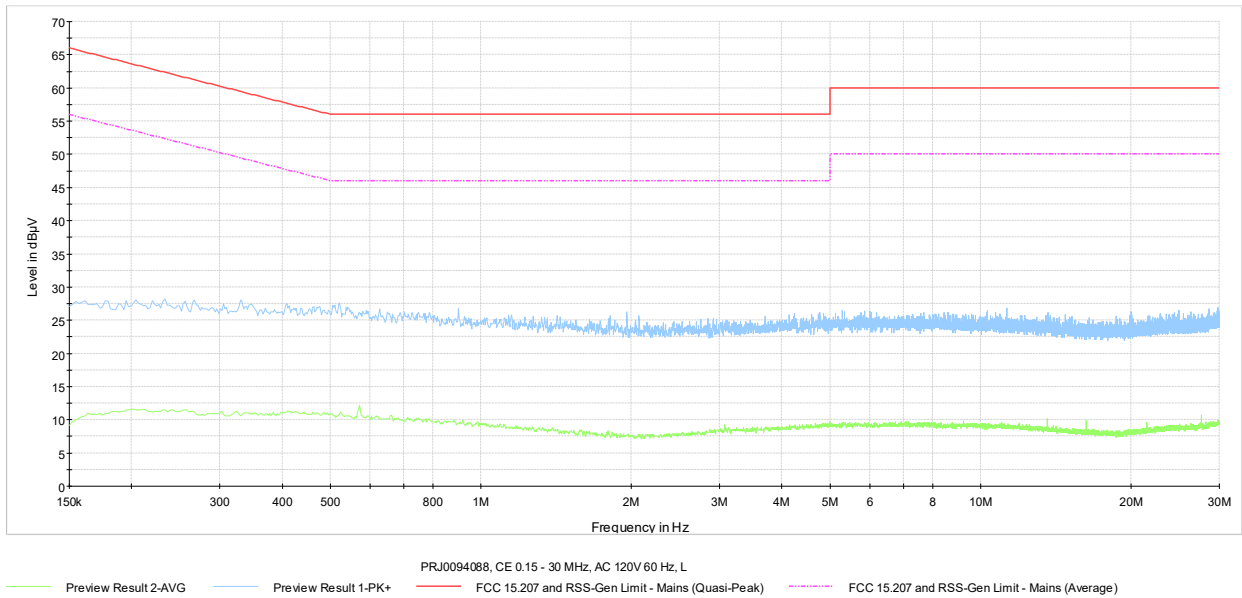
7.4.3 Observations, settings and special notes

Port under test – Coupling device	AC mains input – Artificial Mains Network (AMN)
EUT power input during test	24 V _{AC} , 60 Hz (via external 120 V _{AC} , 60 Hz AC transformer)
EUT setup configuration	Table top
Measurement details	A preview measurement was generated with the receiver in continuous scan mode. Emissions detected within 10 dB or above the limit were re-measured with the appropriate detector against the correlating limit and recorded as the final measurement.
Additional notes:	– The EUT was set up as tabletop configuration per ANSI C63.10 measurement procedure. – The spectral scan has been corrected with transducer factors (i.e. cable loss, LISN factors, and attenuators) for determination of compliance. Correction factor (dB) = LISN factor IL (dB) + cable loss (dB) + attenuator (dB) – Emissions that were continuously present for a minimum of 1 second and occurred more than once for every 15 seconds observation period were considered valid emissions. The maximum value of valid emissions has been recorded.

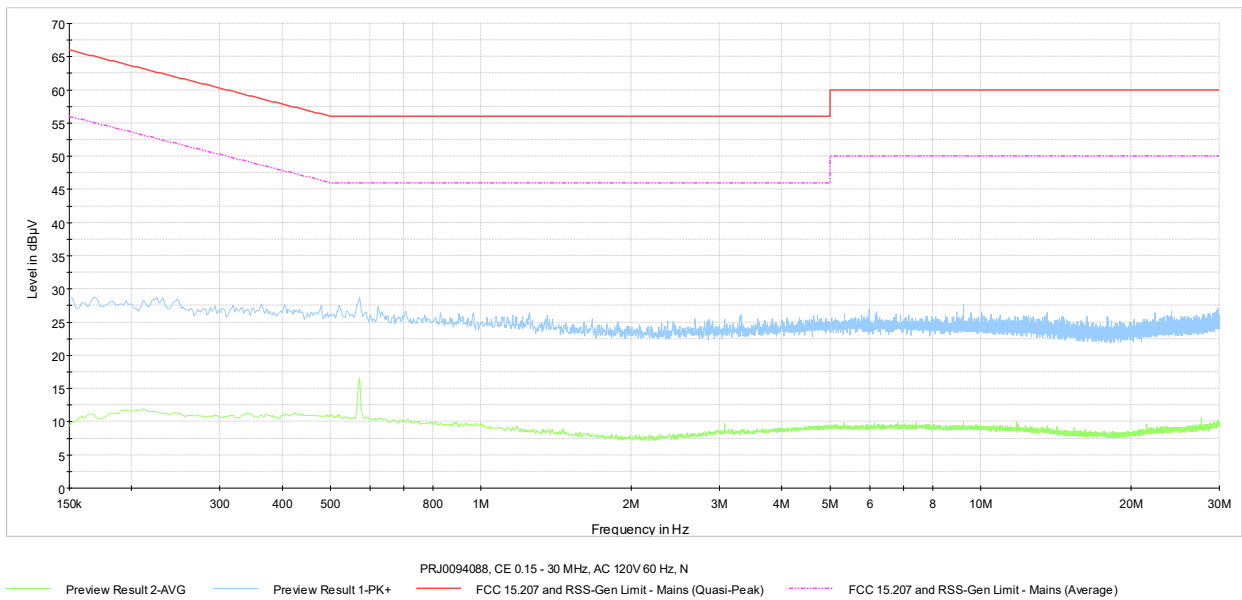
Receiver settings:

Resolution bandwidth	9 kHz
Video bandwidth	30 kHz
Detector mode	Peak and Average (Preview), Quasi-peak and CAverage (Final)
Trace mode	Max Hold
Measurement time	100 ms (Preview), 160 ms (Final)

7.4.4 Test data



Plot 7.4-1: AC power line conducted emissions on phase line



Plot 7.4-2: AC power line conducted emissions on neutral line

7.5 Occupied (Emission) bandwidth

7.5.1 References, definitions and limits

FCC §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. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage.

RSS-Gen, Clause 6.7:

Occupied bandwidth (or 99% emission bandwidth) and x dB bandwidth

The occupied bandwidth or the “99% emission bandwidth” is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.

Table 7.5-1: Frequency stability limit

Fundamental frequency band, MHz	Central 80% of permitted operating frequency band, MHz
902–928	904.6–925.4
2400–2483.5	2408.5–2475
5725–5875	5740–5860
24000–24250	24025–24225

7.5.2 Test summary

Verdict	Pass		
Test date	January 28, 2026	Temperature	24 °C
Tested by	Alvin Liu	Air pressure	980 mbar
Test location	Cambridge	Relative humidity	44 %

7.5.3 Observations, settings and special notes

The test was performed as per ANSI C63.10 subclause 6.9

Spectrum analyser settings:

Resolution bandwidth	1–5% of OBW
Video bandwidth	≥3 × RBW
Frequency span	2–5 times OBW
Detector mode	Peak
Trace mode	Max Hold

7.5.4 Test data

Table 7.5-2: Occupied (Emission) bandwidth results

Fundamental frequency band, GHz	99% occupied bandwidth, MHz	20 dB bandwidth, MHz
24000–24250	187	198

Notes: There is no occupied bandwidth limit in the standard's requirements, the measurement results provided for information purposes only.

Table 7.5-3: FCC occupied bandwidth limitations

Fundamental frequency band, MHz	Lower 20 dB BW frequency cross, MHz	Lower limit, MHz	Margin, MHz	Upper 20 dB BW frequency cross, MHz	Upper limit, MHz	Margin, MHz
24000–24250	24012	24000	12	24209	24250	41

Table 7.5-4: ISSED occupied bandwidth limitations

Fundamental frequency band, MHz	Lower 99% BW frequency cross, MHz	Lower limit, MHz	Margin, MHz	Upper 99% BW frequency cross, MHz	Upper limit, MHz	Margin, MHz
24000–24250	24017	24000	17	24204	24250	46

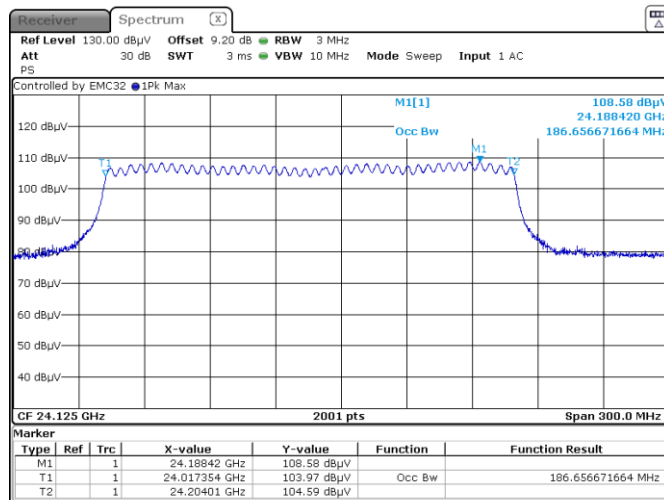


Figure 7.5-1: 99% occupied bandwidth

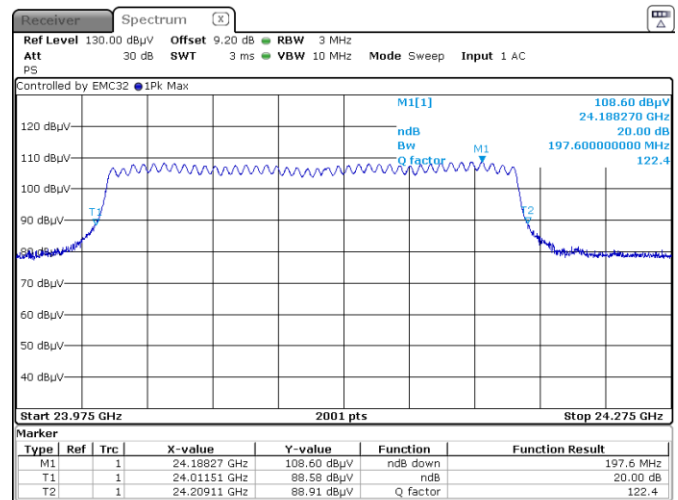


Figure 7.5-2: 20 dB bandwidth

7.6 Field strength of fundamental and harmonic emissions

7.6.1 References, definitions and limits

FCC §15.249:

- (a) Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following FCC table. Field strength limits are specified at a distance of 3 meters.

RSS-210, Annex B.10

- a. The field strength of fundamental and harmonic emissions measured at 3 m shall not exceed the limits in ISSED table.
The field strength shall be measured using an average detector, except for the fundamental emission in the frequency band 902-928 MHz, which is based on measurements using an International Special Committee on Radio Interference (CISPR) quasi-peak detector.

Table 7.6-1: FCC field strength limits

Fundamental frequencies, MHz	Field strength of fundamental		Field strength of harmonics	
	mV/m	dBμV/m	μV/m	dBμV/m
902–928	50	94	500	54
2400–2483.5	50	94	500	54
5725–5875	50	94	500	54
24000–24250	250	108	2500	68

Table 7.6-2: ISSED field strength limits

Fundamental frequencies, MHz	Field strength of fundamental		Field strength of harmonics	
	mV/m	dBμV/m	mV/m	dBμV/m
902–928	50	94	0.5	54
2400–2483.5	50	94	0.5	54
5725–5875	50	94	0.5	54
24000–24250	250	108	2.5	68

7.6.2 Test summary

Verdict	Pass		
Test date	January 28, 2026	Temperature	24 °C
Tested by	Alvin Liu	Air pressure	980 mbar
Test location	Cambridge	Relative humidity	44 %

7.6.3 Observations, settings and special notes

- The spectrum was searched from 30 MHz to 100 GHz.
- Radiated measurements were performed at a distance of 3 m below 18 GHz, at 1 m for 18–40 GHz range, at 30 cm above 40 GHz.

Spectrum analyzer settings for peak measurements above 1000 MHz:

Detector mode	Peak
Resolution bandwidth	1 MHz
Video bandwidth	3 MHz
Trace mode	Max Hold

Spectrum analyzer settings for average measurements above 1000 MHz:

Detector mode	Peak
Resolution bandwidth	1 MHz
Video bandwidth	10 Hz
Trace mode	Max Hold

7.6.4 Test data

Table 7.6-3: Radiated field strength measurement results

Frequency, GHz	Peak field strength, dBμV/m	Peak limit, dBμV/m	Margin, dB	Average field strength, dBμV/m	Average limit, dBμV/m	Margin, dB
Fundamental	108.3	128.0	19.7	88.0	108.0	20.0
2 nd harmonic	54.4	88.0	33.6	37.1	68.0	30.9
3 rd harmonic	57.1	88.0	30.9	51.9	68.0	16.1
4 th harmonic	63.2	88.0	24.8	49.9	68.0	18.1

Notes: Field strength includes correction factor of antenna, cable loss, amplifier, and attenuators where applicable.

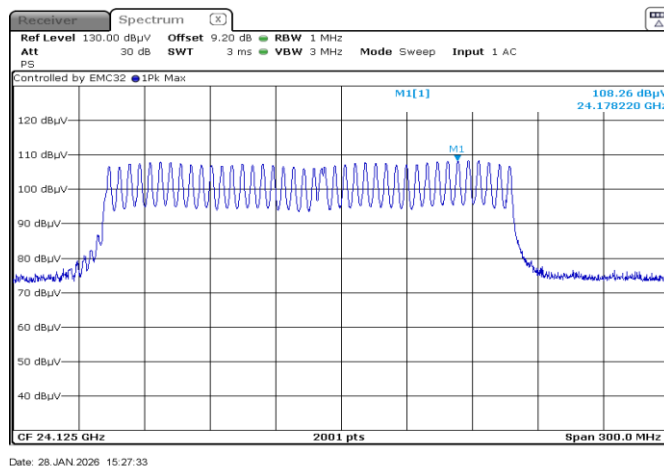


Figure 7.6-1: Field strength of fundamental emission

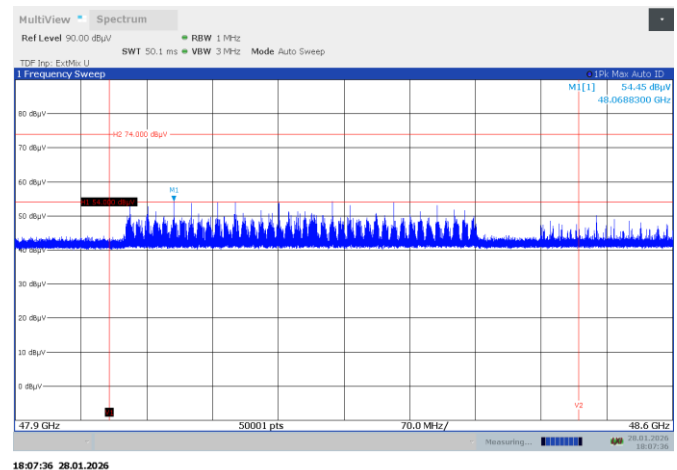


Figure 7.6-2: Field strength of harmonic emission

7.7 Spurious emissions (except for harmonics)

7.7.1 References, definitions and limits

FCC §15.249:

- (d) 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.
- (e) As shown in § 15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a) and (b) of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For point-to-point operation under paragraph (b) of this section, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.

RSS-210, Annex B.10

- b. Emissions radiated outside of the specified frequency bands, except for harmonic emissions, shall be attenuated by at least 50 dB below the level of the fundamental emissions or to the general field strength limits listed in RSS-Gen, whichever is less stringent.
- c. The provisions of RSS-Gen regarding pulsed operation do not apply to measurements performed in the 902-928 MHz frequency range.

RSS-Gen

- 8.9 Except where otherwise indicated in the applicable RSS, radiated emissions shall comply with the field strength limits shown in table below.
- 8.10 Restricted frequency bands are designated primarily for safety-of-life services (distress calling and certain aeronautical activities), certain satellite downlinks, radio astronomy and some government uses. The following conditions related to the restricted frequency bands apply:
 - (a) The transmit frequency, including fundamental components of modulation, of licence-exempt radio apparatus shall not fall within the restricted frequency bands.
 - (b) Unwanted emissions that fall into restricted frequency bands listed in table shall comply with the limits specified in table below.
 - (c) Unwanted emissions that do not fall within the restricted frequency bands shall comply either with the limits specified in the applicable RSS or with those specified in table below.

Table 7.7-1: FCC §15.209 and RSS-Gen – Radiated emission field strength limits

Frequency, MHz	Field strength of emissions		Measurement distance
	μV/m	dBμV/m	m
0.009–0.490	2400/F	$67.6 - 20 \times \log_{10}(F)$	300
0.490–1.705	24000/F	$87.6 - 20 \times \log_{10}(F)$	30
1.705–30.0	30	29.5	30
30–88	100	40.0	3
88–216	150	43.5	3
216–960	200	46.0	3
above 960	500	54.0	3

Notes: In the emission table above, the tighter limit applies at the band edges.
 For frequencies above 1 GHz the limit on peak RF emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test.

References, definitions and limits - Continued

Table 7.7-2: ISED restricted frequency bands

MHz	MHz	MHz	GHz
0.090–0.110	12.57675–12.57725	399.9–410	7.25–7.75
0.495–0.505	13.36–13.41	608–614	8.025–8.5
2.1735–2.1905	16.42–16.423	960–1427	9.0–9.2
3.020–3.026	16.69475–16.69525	1435–1626.5	9.3–9.5
4.125–4.128	16.80425–16.80475	1645.5–1646.5	10.6–12.7
4.17725–4.17775	25.5–25.67	1660–1710	13.25–13.4
4.20725–4.20775	37.5–38.25	1718.8–1722.2	14.47–14.5
5.677–5.683	73–74.6	2200–2300	15.35–16.2
6.215–6.218	74.8–75.2	2310–2390	17.7–21.4
6.26775–6.26825	108–138	2483.5–2500	22.01–23.12
6.31175–6.31225	149.9–150.05	2655–2900	23.6–24.0
8.291–8.294	156.52475–156.52525	3260–3267	31.2–31.8
8.362–8.366	156.7–156.9	3332–3339	36.43–36.5
8.37625–8.38675	162.0125–167.17	3345.8–3358	
8.41425–8.41475	167.72–173.2	3500–4400	Above 38.6
12.29–12.293	240–285	4500–5150	
12.51975–12.52025	322–335.4	5350–5460	

Notes: Certain frequency bands listed in this table and 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 RSS.

Table 7.7-3: FCC restricted frequency bands

MHz	MHz	MHz	GHz
0.090–0.110	16.42–16.423	399.9–410	4.5–5.15
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	Above 38.6
13.36–13.41			

7.7.2 Test summary

Verdict	Pass		
Test date	January 28, 2026	Temperature	24 °C
Tested by	Alvin Liu	Air pressure	980 mbar
Test location	Cambridge	Relative humidity	44 %

7.7.3 Observations, settings and special notes

- As part of the current assessment, the test range of 9 kHz to 5th harmonic has been fully considered and compared to the actual frequencies utilized within the EUT. Since the EUT contains a transmitter in the GHz range, the EUT has been deemed compliant without formal testing in the 9 kHz to 30 MHz test range, therefore formal test results (tabular data and/or plots) are not provided within this test report.
- The spectrum was searched from 30 MHz to 100 GHz.
- Radiated measurements were performed at 3 m distance below 18 GHz, at 1 m for 18–40 GHz, at 30 cm above 40 GHz, to maintain low noise floor.

Spectrum analyser settings for radiated measurements within restricted bands below 1 GHz:

Resolution bandwidth:	100 kHz
Video bandwidth:	300 kHz
Detector mode:	Peak
Trace mode:	Max Hold

Spectrum analyser settings for peak radiated measurements within restricted bands above 1 GHz:

Resolution bandwidth:	1 MHz
Video bandwidth:	3 MHz
Detector mode:	Peak
Trace mode:	Max Hold

Spectrum analyser settings for average radiated measurements within restricted bands above 1 GHz:

Resolution bandwidth:	1 MHz
Video bandwidth:	3 MHz
Detector mode:	RMS
Trace mode:	Power average

7.7.4 Test data

Table 7.7-4: Radiated field strength measurement results

Frequency, GHz	Peak Field strength, dB μ V/m		Margin, dB	Average Field strength, dB μ V/m		Margin, dB
	Measured	Limit		Measured	Limit	
23.998	72.0	74.0	2.0	51.7	54.0	2.3

Notes: Field strength includes correction factor of antenna, cable loss, amplifier, and attenuators where applicable.

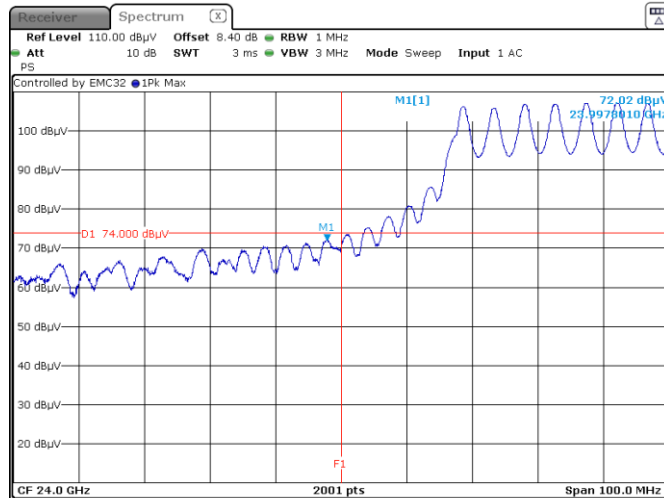


Figure 7.7-1: Radiated spurious at restricted frequency bandedge – Peak

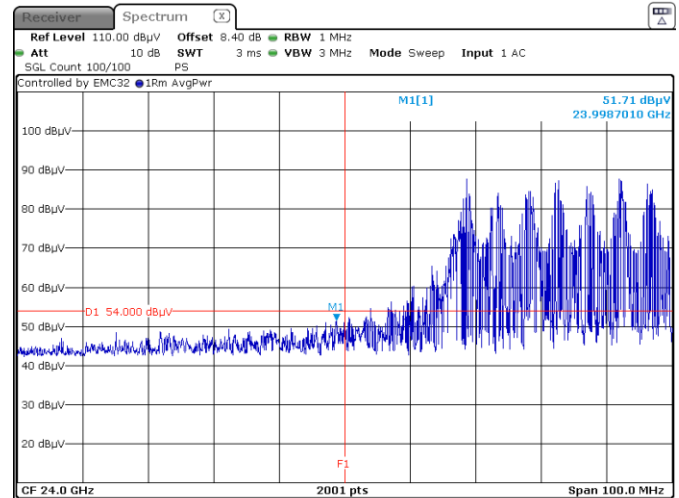


Figure 7.7-2: Radiated spurious at restricted frequency bandedge – Average

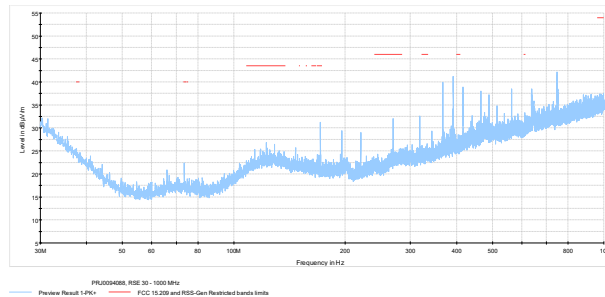


Figure 7.7-3: Radiated spurious emissions 30–1000 MHz

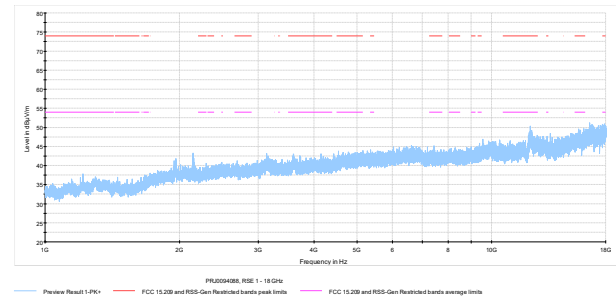


Figure 7.7-4: Radiated spurious emissions 1–18 GHz

Test data, continued

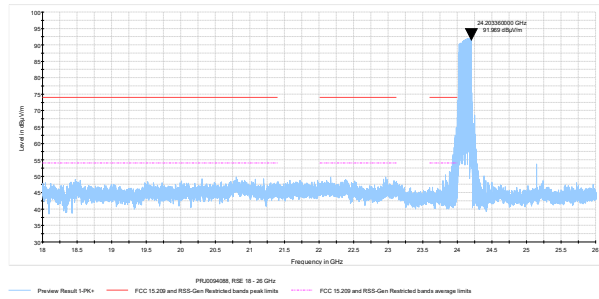


Figure 7.7-5: Radiated spurious emissions 18–26 GHz

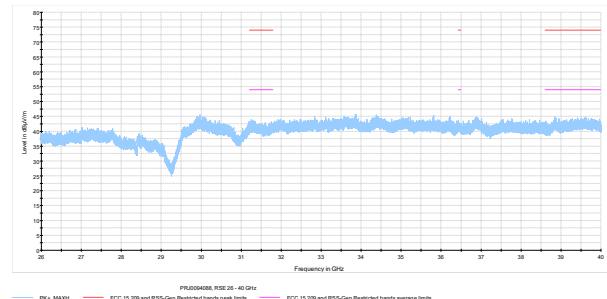


Figure 7.7-6: Radiated spurious emissions 26–40 GHz

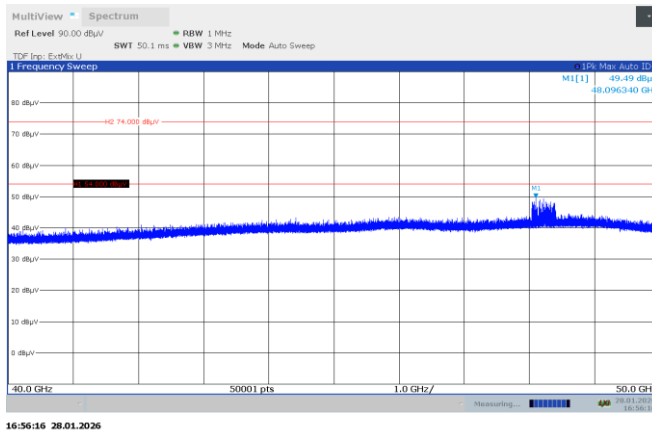


Figure 7.7-7: Radiated spurious emissions 40–50 GHz

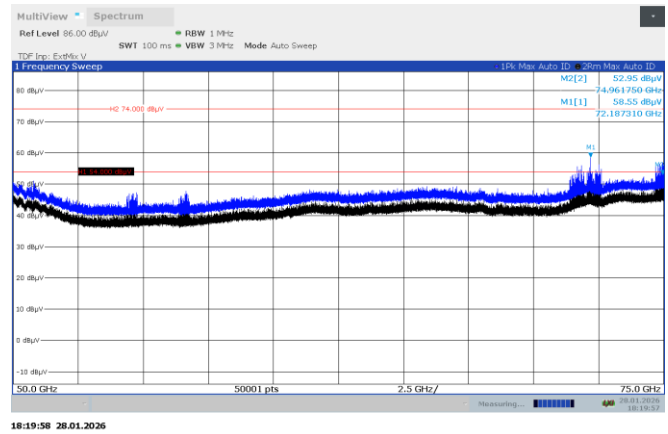


Figure 7.7-8: Radiated spurious emissions 50–75 GHz

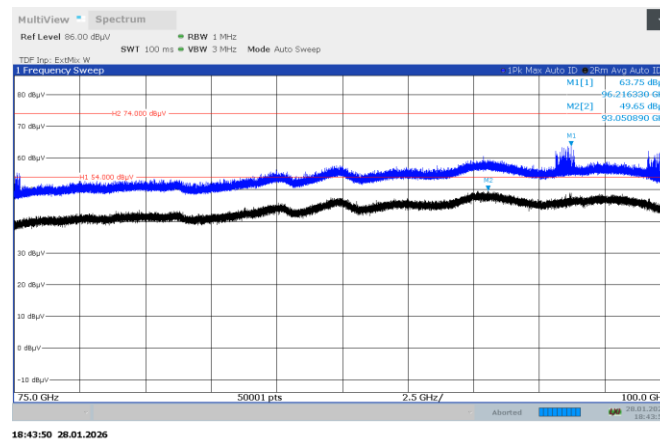
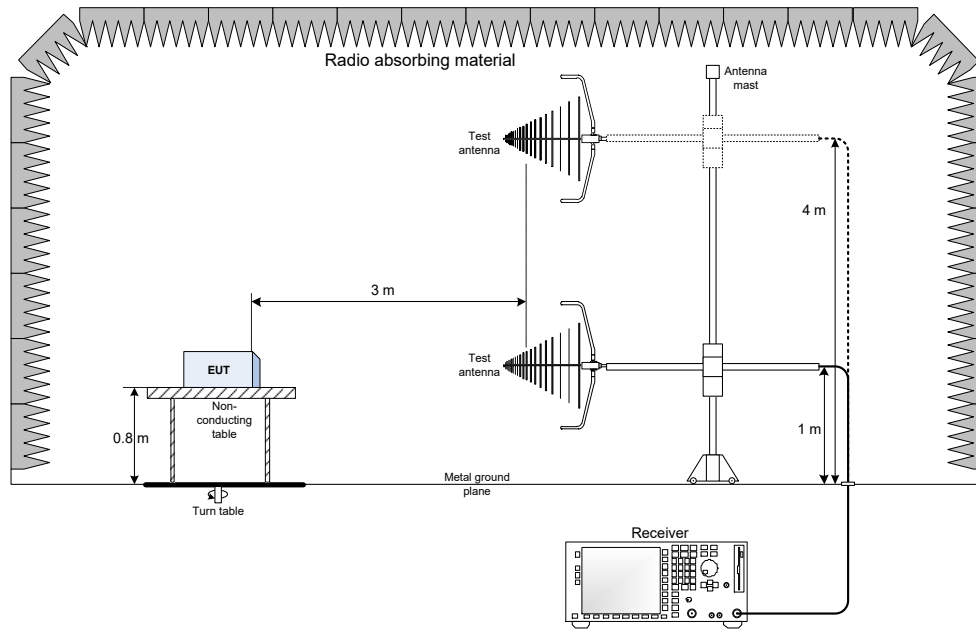


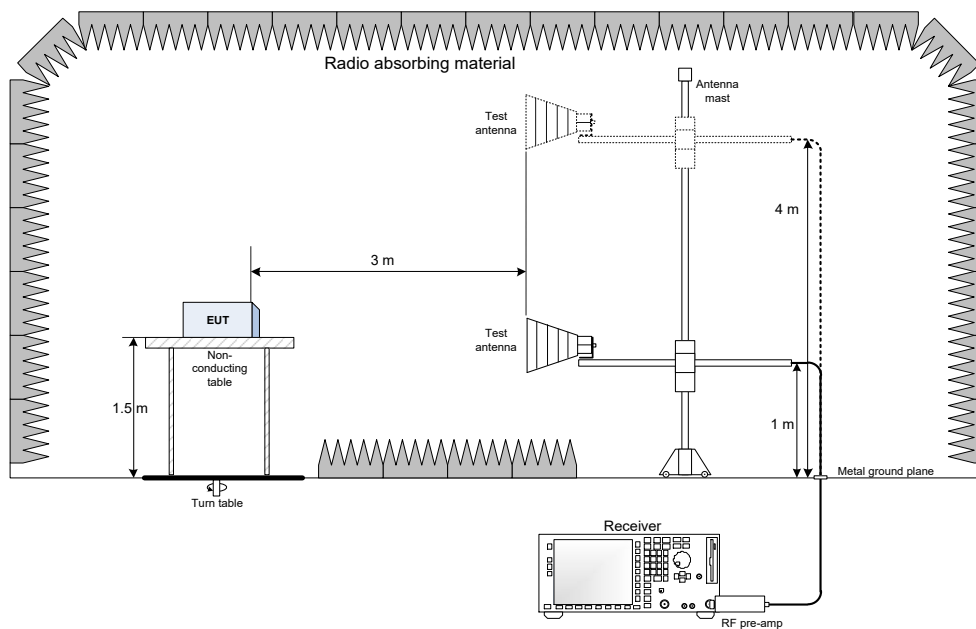
Figure 7.7-9: Radiated spurious emissions 75–100 GHz

Section 8 Test setup diagrams

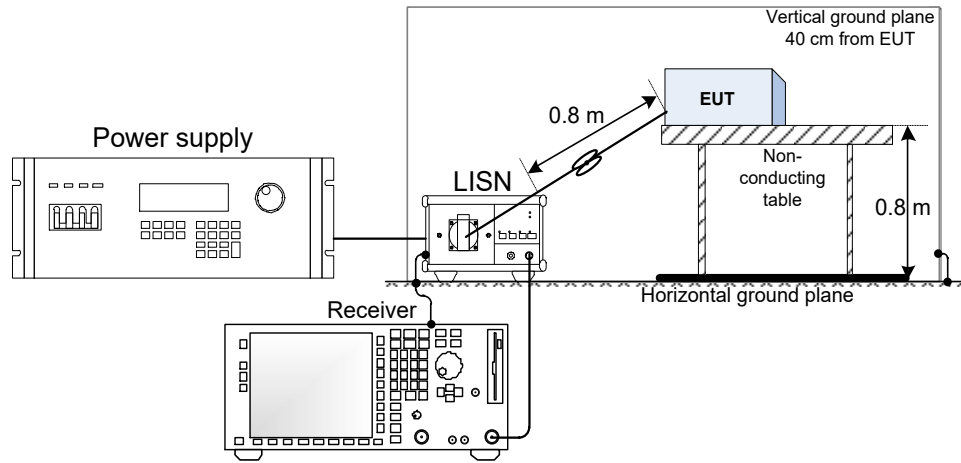
8.1 Radiated emissions set-up for frequencies below 1 GHz



8.2 Radiated emissions set-up for frequencies above 1 GHz



8.3 AC mains conducted emissions set-up



End of the test report