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RADIO TEST REPORT

Report ID:

REP148811

Project number:

PRJ0095932

Type of assessment:

Final product testing

Applicant:

INTRACOM SINGLE MEMBER S.A. TELECOM SOLUTIONS, INTRACOM TELECOM

Product:

WiBAS G5 smart-BS, WiBAS G5 Smart

Model:

WG5-SMART-BS-37-39

FCC identifier:

FCC ID: 2AHZC-G5SMARTBS3739

Specifications:

- ◆ **FCC 47 CFR Part 30**
- ◆ **RSS-191, Issue 3, April 2008**

Date of issue: **March 17, 2026**

Alvin Liu, EMC/RF Specialist

Tested by

Signature

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Reviewed by

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ANAB File Number: AT-3195 (Ottawa); AT-3193 (Pointe-Claire); AT-3194 (Cambridge)



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Limits of responsibility

Note that this report's results 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 this report.

This test report has been completed following 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 30	Upper Microwave Flexible Use Service (Subpart C)
RSS-191, Issue 3, April 2008	Local Multipoint Communication Systems in the Bands 25.35-28.35 GHz; Point-to-Point and Point-to-Multipoint Broadband Communication Systems in the Bands 24.25-24.45 GHz and 25.05-25.25 GHz; and Point-to-Multipoint Broadband Communications in the Band 38.6-40.0 GHz
SRSP-338.6, Issue 3, April 2008	Technical Requirements for Fixed Radio Systems Operating in the Band 38.6-40.0 GHz

1.2 Test methods

ANSI C63.26-2015	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services
RSS-Gen, Issue 5, March 2019	General Requirements for Compliance of Radio Apparatus
FCC 47 CFR Part 2, Subpart J	Equipment authorization procedures
KDB 971168 D01	Power Meas License Digital Systems v03r01
KDB 842590 D01	Upper Microwave Flexible Use Service v01r02
KDB 662911 D01	Multiple Transmitter Output v02r01
KDB 662911 D02	MIMO with Cross Polarized Antenna v01

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

Report ID.	Date of issue	Details of changes made to test report
REP148811	March 17, 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

EUT can operate with modulations up to 1024QAM. However, everything was tested with 4QAM operation, which was verified as the worst case in respect to the performance, power, and emissions.

EUT has 4 antenna beams and corresponding Radio/Baseband sub-Units. The output power was measured with each antenna transmitting separately and other tests were measured at the antenna with the maximum power which was verified as the worst case.

2.3 Model variant declaration

There were no model variants declared by the applicant.

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

Name	INTRACOM SINGLE MEMBER S.A. TELECOM SOLUTIONS, INTRACOM TELECOM
Address	19.7 km New Road Peania-Markopoulo, Peania, GR 19002

4.3 EUT information

Product	WiBAS G5 smart-BS, WiBAS G5 Smart
Model	WG5-SMART-BS-37-39
Serial number	322512007405
Power supply requirements	DC: 48 V, 3.6 A
Product description and theory of operation	The WiBAS™ G5 Smart base station is an all-outdoor TDD sector operating in multiple mmWave licensed band frequencies and delivering up to 5.6 Gbit/s aggregate throughput.

4.4 Radio technical information

Operating band	FCC: 37 – 40 GHz, ISD: 38.6 – 40 GHz
Frequency Min (MHz)	37050 (100 MHz BW), 37100 (200 MHz BW)
Frequency Max (MHz)	39950 (100 MHz BW), 39900 (for 200 MHz BW)
RF EIRP Max (W), Radiated	338.8 (25.3 dBW for 100 MHz BW), 354.8 (25.5 dBW for 200 MHz BW)
Measured BW (MHz), 99% OBW	94.168 (100 MHz BW), 186.327 (200 MHz BW)
Type of modulation	4QAM, 16QAM, 64QAM, 128QAM, 256QAM, 512QAM, 1024QAM
Emission classification	D7W
Antenna information	INTRACOM TELECOM, 4 x Embedded Beamforming Antenna, Gain 27.5 dBi

4.5 EUT setup details

4.5.1 Radio exercise details

Operating conditions	EUT was accessed via CLI using PuTTY, and configured in test mode to operate in continuous transmission. EUT was set to transmit continuously at low, mid and high channels with 98% duty cycle, 4QAM / EIRP = 50.1 dBm power setting, and 100 MHz or 200 MHz channel bandwidth.
Transmitter state	Continuous transmitting

4.5.2 EUT setup configuration

Table 4.5-1: EUT interface ports

Description	Qty.
DC IN	1
GbE1	1
GbE2	1
GbE3	1
SYNC1 (GPS ANTENNA)	1
SYNC2 (alt synch port)	1
GND	1

Table 4.5-2: Support equipment

Description	Brand name	Model, Part number, Serial number, Revision level
DC power source	Chroma	MN: 61605, FA003034
Laptop	DELL	MN: LATITUDE E6440, FA002914
GPS Antenna	INTRACOM TELECOM	SN: 322507915501, KZ00-65F/84.L1

Table 4.5-3: Inter-connection cables

Cable description	From	To	Length (m)
DC input cable	EUT	DC power source	> 3.0
Ethernet cable (shielded)	EUT	Laptop	> 3.0
Grounded cable	EUT	GND	2.0
RF cable	EUT	GPS Antenna	0.5

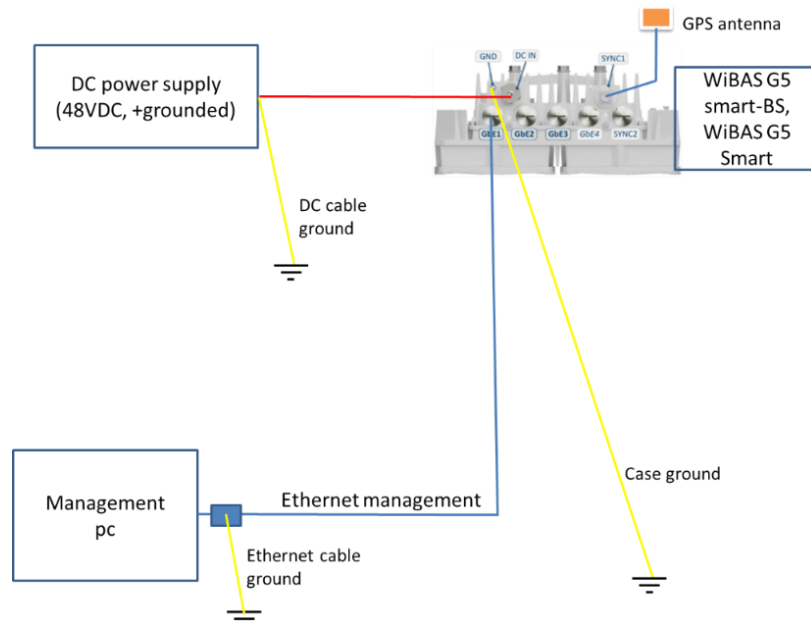


Figure 4.5-1: Radiated testing block diagram

Section 5. Summary of test results

5.1 Testing period

Test start date	February 23, 2026	Test end date	February 26, 2026
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5.2 Sample information

Receipt date	February 12, 2026	Nemko sample ID number	PRJ00959320001
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5.3 FCC test results

Table 5.3-1: FCC requirements results

Part	Test description	Verdict
§30.202	Power limits	Pass
§30.203	Emissions limits	Pass
§2.1055	Frequency stability	Pass
§2.1049	Occupied bandwidth	Pass
§2.1047(d)	Modulation characteristics	Pass

5.4 ISED test results

Table 5.4-1: ISED requirements results

Part	Test description	Verdict
RSS-191, 6.3	Frequency Stability	Pass
RSS-191, 6.4	Transmitter Output Power	Pass
RSS-191, 6.5	Transmitter Unwanted Emissions	Pass
RSS-Gen, 6.7	Occupied bandwidth	Pass

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
Spectrum analyzer	Rohde & Schwarz	FSW43	FA002971	1 year	November 24, 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
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
Standard gain horn (110–170 GHz)	Mi-Wave	261D-25/387	FA003272	—	NCR
Standard gain horn (140–220 GHz)	Mi-Wave	261G-25/387	FA003273	—	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
Hamonic mixer (110–170 GHz)	Rohde & Schwarz	FS-Z170	FA003296	3years	Sep 26, 2026
Hamonic mixer (140–220 GHz)	Rohde & Schwarz	FS-Z220	FA003269	3years	Sep 21, 2026
Temperature and Humidity Chamber	Espec	EPX-4H	FA003033	—	NCR
Temperature and Humidity Meter	VAISALA	HM70	FA003318	1 year	Jun 3, 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
Radiated spurious emissions	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
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 (18 GHz to 40 GHz)	4.82
Radiated spurious emissions (40 GHz to 220 GHz)	5.81
RF Output power measurement	1.59
Conducted spurious emissions	1.64
Signal path calibration (Insertion loss)	1.52
Occupied bandwidth	2.43 %
Frequency stability	0.03 ppm
Temperature stability	0.68 °C

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 Number of frequencies

7.1.1 References, definitions and limits

ANSI C63.26, Clause 5.1.2:

Measurements of transmitters shall be performed and, if required, reported for each frequency band in which the EUT can be operated with the device transmitting at the number of frequencies in each band specified in table below.

Table 7.1-1: 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.

7.1.2 Test summary

Verdict	Pass		
Test date	February 23, 2026	Temperature	23 °C
Tested by	Alvin Liu	Air pressure	980 mbar
Test location	Cambridge	Relative humidity	38 %

7.1.3 Observations, settings and special notes

None

7.1.4 Test data

Table 7.1-2: Test channels selection – FCC

Channel bandwidth, MHz	Start of Frequency range, MHz	End of Frequency range, MHz	Frequency range bandwidth, MHz	Low channel, MHz	Mid channel, MHz	High channel, MHz
100	37000	40000	3000	37050	38650	39950
200	37000	40000	3000	37100	38700	39900

Table 7.1-3: Test channels selection – ISSED

Channel bandwidth, MHz	Start of Frequency range, MHz	End of Frequency range, MHz	Frequency range bandwidth, MHz	Low channel, MHz	Mid channel, MHz	High channel, MHz
100	38600	40000	1400	38650	39350	39950
200	38600	40000	1400	38700	39300	39900

7.2 Power limits

7.2.1 References, definitions and limits

FCC §30.202:

- (a) For fixed and base stations operating in connection with mobile systems, the average power of the sum of all antenna elements is limited to an equivalent isotopically radiated power (EIRP) density of +75dBm/100 MHz. For channel bandwidths less than 100 megahertz the EIRP must be reduced proportionally and linearly based on the bandwidth relative to 100 megahertz.
- (b) For mobile stations, the average power of the sum of all antenna elements is limited to a maximum EIRP of +43 dBm.
- (c) For transportable stations, as defined in §30.2, the average power of the sum of all antenna elements is limited to a maximum EIRP of +55 dBm.
- (d) For fixed point-to-point and point-to-multipoint limits see §30.405.

RSS-191, Section 6.4:

Transmitter Output Power

The output power shall be within ± 1.0 dB of the manufacturer's rated power and shall not exceed the power limits given in the related SRSPs.

SRSP-338.6, Clause 9:

- 9.2 The transmitter power into the antenna must not exceed +10 dBW (40 dBm) per carrier.
- 9.3 The maximum e.i.r.p. of a transmit station must not exceed +55 dBW (85 dBm) per carrier.

7.2.2 Test summary

Verdict	Pass		
Test date	February 24, 2026	Temperature	24 °C
Tested by	Alvin Liu	Air pressure	970 mbar
Test location	Cambridge	Relative humidity	38 %

7.2.3 Observations, settings and special notes

- The testing was performed using subclauses 5.2.4.4.1 of ANSI C63.26-2015.
- According to KDB 662944 D02, where radiated measurements are used for compliance with radiated limits, measurements are performed in the usual manner, and no extra steps are required.
- The sum of EIRPs (total or spectral density) was calculated as follows: $EIRP_{combined} = 10 \times \log_{10} \left((10^{EIRP_1/10}) + (10^{EIRP_2/10}) + (10^{EIRP_3/10}) + (10^{EIRP_4/10}) \right)$

Spectrum analyser settings:

Resolution bandwidth:	1% to 5% of the OBW / PSD: 1MHz
Video bandwidth:	≥RBW
Detector mode:	RMS
Trace mode:	Power average over 100 traces
Power aggregation	Across the occupied bandwidth of the signal

7.2.4 Test data

Table 7.2-1: EIRP measurements results at Beam V1 for 100 MHz Bandwidth

Frequency, MHz	EIRP, dBm/100MHz	EIRP limit, dBm/100MHz	Margin, dB
37050	48.6	75.0	26.4
38650	47.7	75.0	27.3
39350	47.2	75.0	27.8
39950	45.8	75.0	29.2

Table 7.2-2: EIRP measurements results at Beam H1 for 100 MHz Bandwidth

Frequency, GHz	EIRP, dBm/100MHz	EIRP limit, dBm/100MHz	Margin, dB
37050	50.2	75.0	24.8
38650	47.6	75.0	27.4
39350	48.1	75.0	26.9
39950	46.1	75.0	28.9

Table 7.2-3: EIRP measurements results at Beam V2 for 100 MHz Bandwidth

Frequency, GHz	EIRP, dBm/100MHz	EIRP limit, dBm/100MHz	Margin, dB
37050	48.5	75.0	26.5
38650	46.4	75.0	28.6
39350	46.2	75.0	28.8
39950	45.2	75.0	29.8

Table 7.2-4: EIRP measurements results at Beam H2 for 100 MHz Bandwidth

Frequency, GHz	EIRP, dBm/100MHz	EIRP limit, dBm/100MHz	Margin, dB
37050	49.5	75.0	25.5
38650	48.5	75.0	26.5
39350	46.7	75.0	28.3
39950	46.1	75.0	28.9

Table 7.2-5: The sum of EIRP measurements results for 100 MHz Bandwidth

Frequency, GHz	EIRP, dBm/100 MHz					EIRP limit, dBm/100MHz	Margin, dB
	V1	V2	H1	H2	Combined		
37050	48.6	48.5	50.2	49.5	55.3	75.0	19.7
38650	47.7	46.4	47.6	48.5	53.6	75.0	21.4
39350	47.2	46.2	48.1	46.7	53.1	75.0	21.9
39950	45.8	45.2	46.1	46.1	51.8	75.0	23.2

Test data, continued

The measurement was performed across the full 200 MHz channel bandwidth. A 3 dB bandwidth correction factor was applied to the measured value in order to express the EIRP density in dBm per 100 MHz.

Table 7.2-6: EIRP measurements results at Beam V1 for 200 MHz Bandwidth

Frequency, GHz	EIRP, dBm/200MHz	EIRP, dBm/100MHz	EIRP limit, dBm/100MHz	Margin, dB
37100	48.1	45.1	75.0	29.9
38700	45.0	42.0	75.0	33.0
39300	45.5	42.5	75.0	32.5
39900	44.1	41.1	75.0	33.9

Table 7.2-7: EIRP measurements results at Beam H1 for 200 MHz Bandwidth

Frequency, GHz	EIRP, dBm/200MHz	EIRP, dBm/100MHz	EIRP limit, dBm/100MHz	Margin, dB
37100	51.0	48.0	75.0	27.0
38700	46.5	43.5	75.0	31.5
39300	48.0	45.0	75.0	30.0
39900	45.9	42.9	75.0	32.1

Table 7.2-8: EIRP measurements results at Beam V2 for 200 MHz Bandwidth

Frequency, GHz	EIRP, dBm/200MHz	EIRP, dBm/100MHz	EIRP limit, dBm/100MHz	Margin, dB
37100	48.5	45.5	75.0	29.5
38700	45.5	42.5	75.0	32.5
39300	46.1	43.1	75.0	31.9
39900	45.0	42.0	75.0	33.0

Table 7.2-9: EIRP measurements results at Beam H2 for 200 MHz Bandwidth

Frequency, GHz	EIRP, dBm/200MHz	EIRP, dBm/100MHz	EIRP limit, dBm/100MHz	Margin, dB
37100	49.8	46.8	75.0	28.2
38700	46.4	43.4	75.0	31.6
39300	46.9	43.9	75.0	31.1
39900	46.0	43.0	75.0	32.0

Table 7.2-10: The sum of EIRP measurements results for 200 MHz Bandwidth

Frequency, GHz	EIRP, dBm/200MHz					EIRP, dBm/100MHz	EIRP limit, dBm/100MHz	Margin, dB
	V1	V2	H1	H2	Combined			
37100	48.1	48.5	51.0	49.8	55.5	52.5	75.0	22.5
38700	45.0	45.5	46.5	46.4	51.9	48.9	75.0	26.1
39300	45.5	46.1	48.0	46.9	52.7	49.7	75.0	25.3
39900	44.1	45.0	45.9	46.0	51.3	48.3	75.0	26.7

Test data, continued

Table 7.2-11: EIRP density measurements results at Beam V1 for 100 MHz Bandwidth

Frequency, MHz	EIRP density, dBm/MHz	EIRP density, dBW/MHz	EIRP density limit, dBW/MHz	Margin, dB
37050	29.3	-0.7	42.0	42.7
38650	29.6	-0.4	42.0	42.4
39350	28.5	-1.5	42.0	43.5
39950	27.6	-2.4	42.0	44.4

Table 7.2-12: EIRP density measurements results at Beam H1 for 100 MHz Bandwidth

Frequency, GHz	EIRP density, dBm/MHz	EIRP density, dBW/MHz	EIRP density limit, dBW/MHz	Margin, dB
37050	31.9	1.9	42.0	40.1
38650	29.2	-0.8	42.0	42.8
39350	29.8	-0.2	42.0	42.2
39950	27.7	-2.3	42.0	44.3

Table 7.2-13: EIRP density measurements results at Beam V2 for 100 MHz Bandwidth

Frequency, GHz	EIRP density, dBm/MHz	EIRP density, dBW/MHz	EIRP density limit, dBW/MHz	Margin, dB
37050	30.2	0.2	42.0	41.8
38650	28.1	-1.9	42.0	43.9
39350	27.8	-2.2	42.0	44.2
39950	26.9	-3.1	42.0	45.1

Table 7.2-14: EIRP density measurements results at Beam H2 for 100 MHz Bandwidth

Frequency, GHz	EIRP density, dBm/MHz	EIRP density, dBW/MHz	EIRP density limit, dBW/MHz	Margin, dB
37050	31.3	1.3	42.0	40.7
38650	30.1	0.1	42.0	41.9
39350	28.2	-1.8	42.0	43.8
39950	27.8	-2.2	42.0	44.2

Table 7.2-15: The sum of EIRP density measurements results for 100 MHz Bandwidth

Frequency, GHz	EIRP density, dBm/MHz					EIRP density, dBW/MHz	EIRP density limit, dBW/MHz	Margin, dB
	V1	V2	H1	H2	Combined			
37050	29.3	30.2	31.9	31.3	36.8	6.8	42.0	35.2
38650	29.6	28.1	29.2	30.1	35.3	5.3	42.0	36.7
39350	28.5	27.8	29.8	28.2	34.7	4.7	42.0	37.3
39950	27.6	26.9	27.7	27.8	33.5	3.5	42.0	38.5

Test data, continued

Table 7.2-16: EIRP density measurements results at Beam V1 for 200 MHz Bandwidth

Frequency, GHz	EIRP density, dBm/MHz	EIRP density, dBW/MHz	EIRP density limit, dBW/MHz	Margin, dB
37100	26.9	-3.1	42.0	45.1
38700	23.8	-6.2	42.0	48.2
39300	24.4	-5.6	42.0	47.6
39900	23.0	-7.0	42.0	49.0

Table 7.2-17: EIRP density measurements results at Beam H1 for 200 MHz Bandwidth

Frequency, GHz	EIRP density, dBm/MHz	EIRP density, dBW/MHz	EIRP density limit, dBW/MHz	Margin, dB
37100	30.0	0.0	42.0	42.0
38700	25.2	-4.8	42.0	46.8
39300	27.1	-2.9	42.0	44.9
39900	25.0	-5.0	42.0	47.0

Table 7.2-18: EIRP density measurements results at Beam V2 for 200 MHz Bandwidth

Frequency, GHz	EIRP density, dBm/MHz	EIRP density, dBW/MHz	EIRP density limit, dBW/MHz	Margin, dB
37100	27.4	-2.6	42.0	44.6
38700	24.4	-5.6	42.0	47.6
39300	25.0	-5.0	42.0	47.0
39900	24.1	-5.9	42.0	47.9

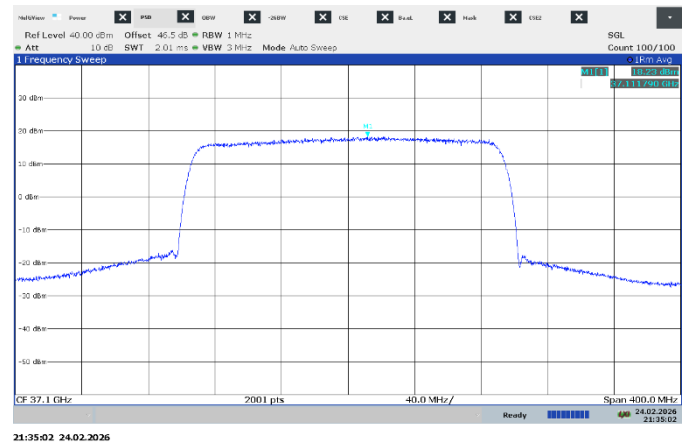
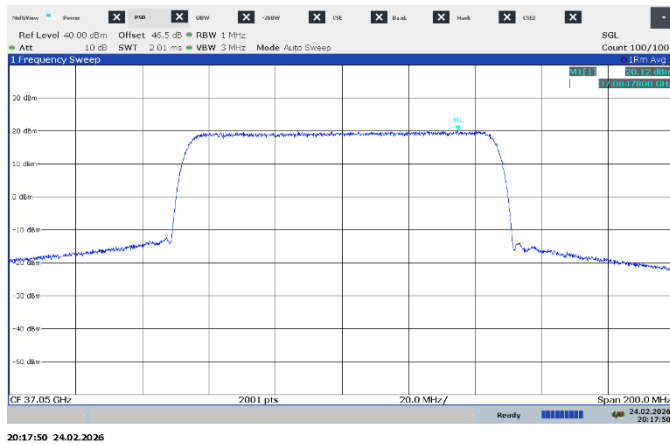
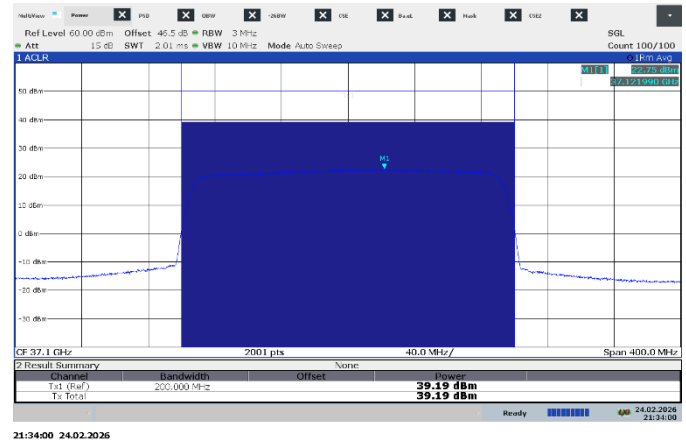
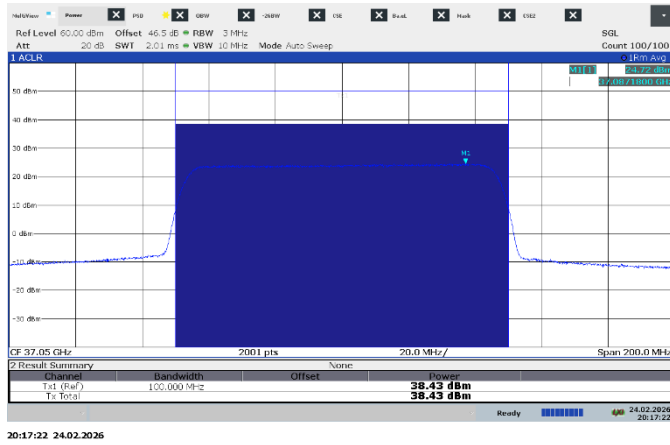
Table 7.2-19: EIRP density measurements results at Beam H2 for 200 MHz Bandwidth

Frequency, GHz	EIRP density, dBm/MHz	EIRP density, dBW/MHz	EIRP density limit, dBW/MHz	Margin, dB
37100	28.9	-1.1	42.0	43.1
38700	25.0	-5.0	42.0	47.0
39300	25.8	-4.2	42.0	46.2
39900	24.8	-5.2	42.0	47.2

Table 7.2-20: The sum of EIRP density measurements results for 200 MHz Bandwidth

Frequency, GHz	EIRP density, dBm/MHz					EIRP density, dBW/MHz	EIRP density limit, dBW/MHz	Margin, dB
	V1	V2	H1	H2	Combined			
37100	26.9	27.4	30.0	28.9	34.5	4.5	42.0	37.5
38700	23.8	24.4	25.2	25.0	30.7	0.7	42.0	41.3
39300	24.4	25.0	27.1	25.8	31.7	1.7	42.0	40.3
39900	23.0	24.1	25.0	24.8	30.3	0.3	42.0	41.7

Test data, continued



7.3 Emission limits

7.3.1 References, definitions and limits

FCC §30.203:

- (a) The conductive power or the total radiated power of any emission outside a licensee's frequency block shall be -13 dBm/MHz or lower. However, in the bands immediately outside and adjacent to the licensee's frequency block, having a bandwidth equal to 10 percent of the channel bandwidth, the conductive power or the total radiated power of any emission shall be -5 dBm/MHz or lower.
- (b)(1) Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater.
- (b)(2) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the licensee's frequency block edges as the design permits.
- (b)(3) The measurements of emission power can be expressed in peak or average values.
- (c) For fixed point-to-point and point-to-multipoint limits see §30.404.

RSS-191, Clause 6.5:

6.5.1 Single-Carrier Transmitter

Unwanted emissions shall be attenuated by at least A (dB) below the total mean output power, P_{mean} , as follows:

- a. In any 1.0 MHz band which is outside and removed from the virtual block edge frequency by up to and including $\pm 200\%$ of the occupied bandwidth:
 - i. $A = 11 + 10 \log_{10}(B_{\text{occ}}) + 40 (f_{\text{offset}}/B_{\text{occ}})$ dB, for emissions in which the occupied bandwidth is equal to or greater than 1 MHz; or
 - ii. $A = 11 + 40 (f_{\text{offset}}/B_{\text{occ}})$ dB, for emissions in which the occupied bandwidth is less than 1 MHz.
- Attenuation greater than $56 + 10 \log_{10}(B_{\text{occ}})$ dB, or to an absolute level lower than -43 dBW/MHz (-13 dBm/MHz), whichever is less stringent, is not required.

Where:

B_{occ} : occupied bandwidth in MHz

f_{offset} : frequency offset from the virtual block edge in MHz

- b. In any 1.0 MHz band which is removed from the virtual block edge frequency by more than $\pm 200\%$ of the occupied bandwidth:
 $A = 43 + 10 \log_{10}(P_{\text{mean}})$ in dB (-13 dBm), or 80 dB below P_{mean} , whichever is less stringent.

P_{mean} is the mean output power of the transmitter in watts.

6.5.2 Multi-Carrier Transmitter or Multi-Transmitters

For a multi-carrier transmitter or multi-transmitters connected into a common final stage amplifier, the emission mask is to be the same as for single-carrier transmitters, but using the occupied bandwidth that is defined for multi-carrier transmitters. The total mean power shall be the sum of the individual carrier/transmitter powers. Guard bands, if used in the equipment design, shall also be used in testing the spectrum mask.

Note: Several transmitters connected into a common non-active antenna cannot use the multi-carrier mask for the composite signal. In this case, the appropriate mask applies to the individual transmitter.

7.3.2 Test summary

Verdict	Pass		
Test date	February 23, 2026 – February 25, 2026	Temperature	23–24 °C
Tested by	Alvin Liu	Air pressure	960–980 mbar
Test location	Cambridge	Relative humidity	35–38 %

7.3.3 Observations, settings and special notes

- The testing was performed using subclause 5.5.4 of ANSI C63.26 (field strength method).
- The spectrum was searched from 30 MHz to 200 GHz. No unintentional emissions were detected.
- Measurement distances **D** used were: 1–18 GHz at 3 m, 18–40 GHz at 1 m, 40–100 GHz at 0.3 m. All distances below 3 m were addressed with distance correction factor, calculated as follows: $20 \times \log_{10} (D [m] / 3 [m])$.

Spectrum analyser settings for radiated measurements:

Resolution bandwidth:	100 kHz (below 1 GHz), 1 MHz (above 1 GHz)
Video bandwidth:	300 kHz (below 1 GHz), 3 MHz (above 1 GHz)
Detector mode:	Peak
Trace mode:	Max Hold

7.3.4 Test data

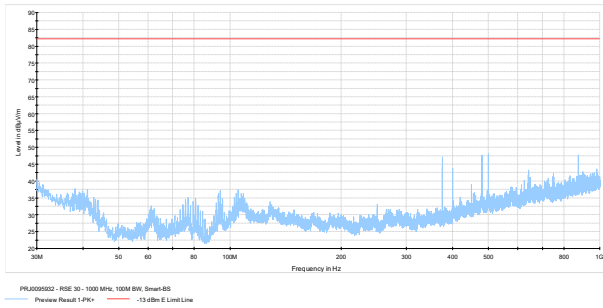


Figure 7.3-1: Radiated spurious emissions 30–1000 MHz, 100MHz BW – Worst plot

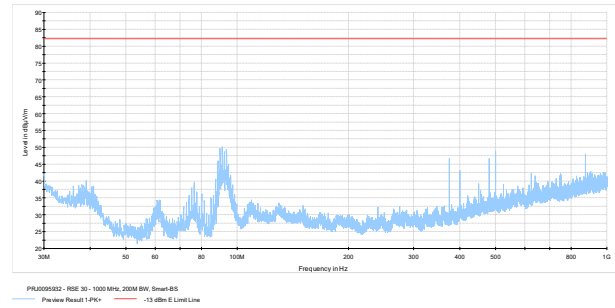


Figure 7.3-2: Radiated spurious emissions 30–1000 MHz, 200MHz BW – Worst plot

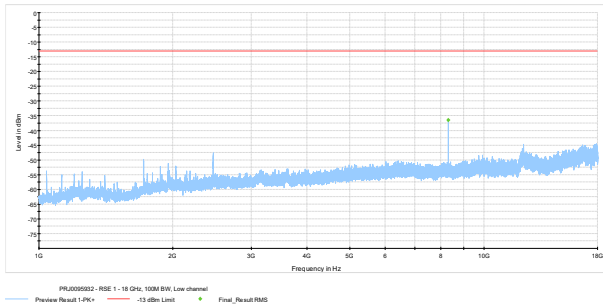


Figure 7.3-3: Radiated spurious emissions 1–18 GHz, 100MHz BW – Worst plot

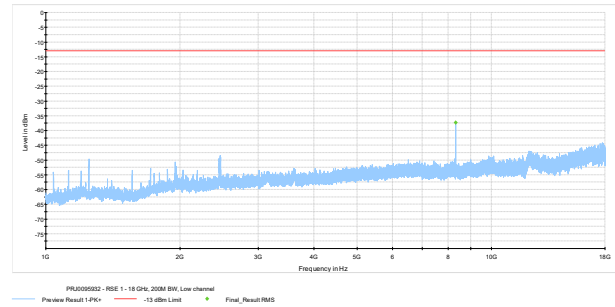


Figure 7.3-4: Radiated spurious emissions 1–18 GHz, 200MHz BW – Worst plot

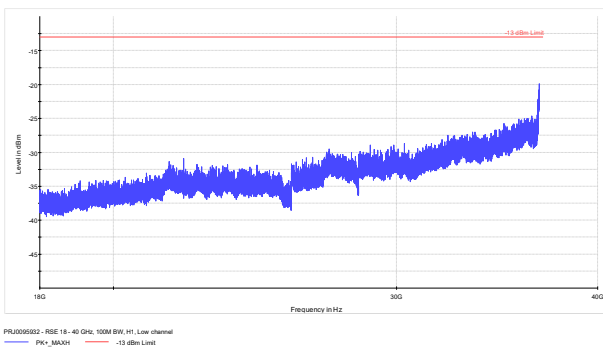


Figure 7.3-5: Radiated spurious emissions 18–40 GHz, 100MHz BW – Low channel

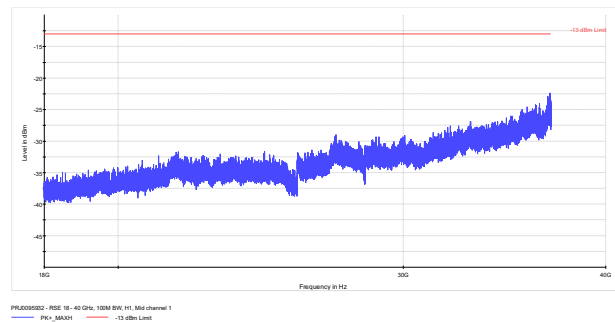


Figure 7.3-6: Radiated spurious emissions 18–40 GHz, 100MHz BW – Mid channel 1

Test data, continued

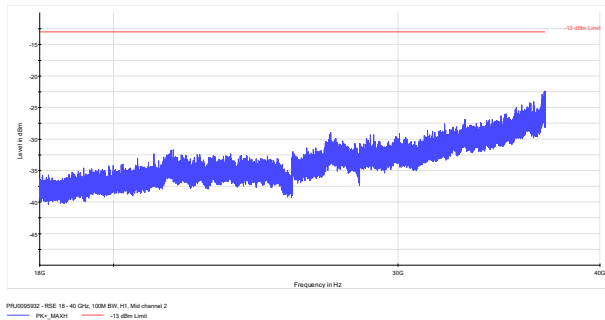


Figure 7.3-7: Radiated spurious emissions 18–40 GHz, 100MHz BW – Mid channel 2

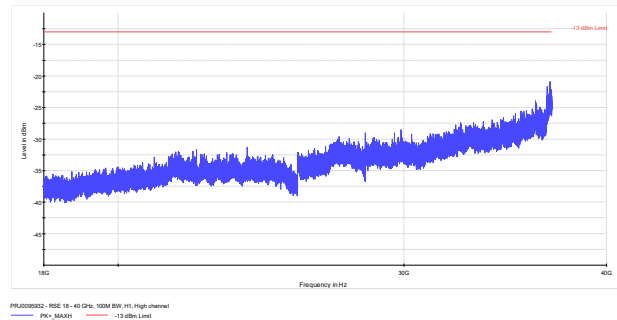


Figure 7.3-8: Radiated spurious emissions 18–40 GHz, 100MHz BW – High channel

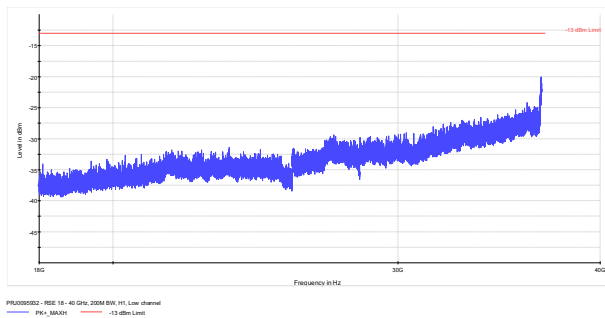


Figure 7.3-9: Radiated spurious emissions 18–40 GHz, 200MHz BW – Low channel

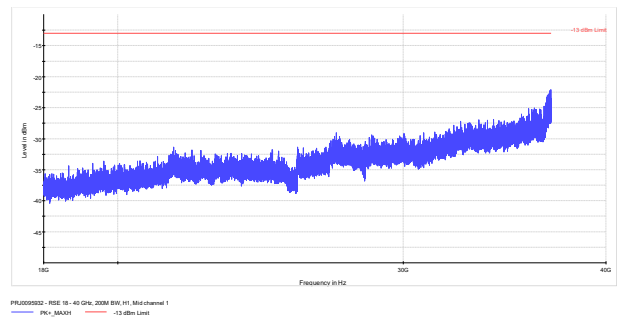


Figure 7.3-10: Radiated spurious emissions 18–40 GHz, 200MHz BW – Mid channel 1

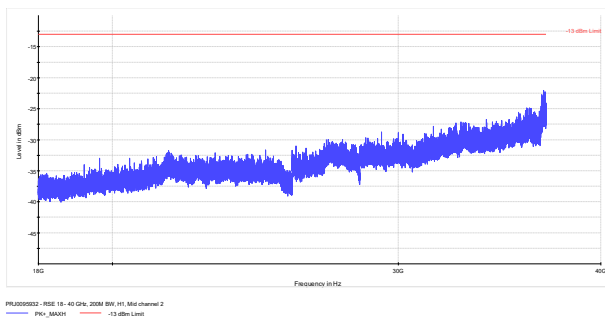


Figure 7.3-11: Radiated spurious emissions 18–40 GHz, 200MHz BW – Mid channel 2

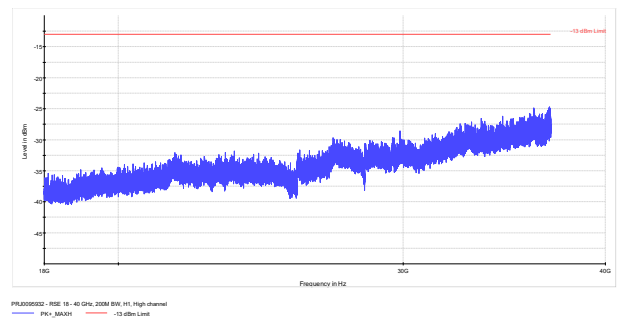


Figure 7.3-12: Radiated spurious emissions 18–40 GHz, 200MHz BW – High channel

Test data, continued

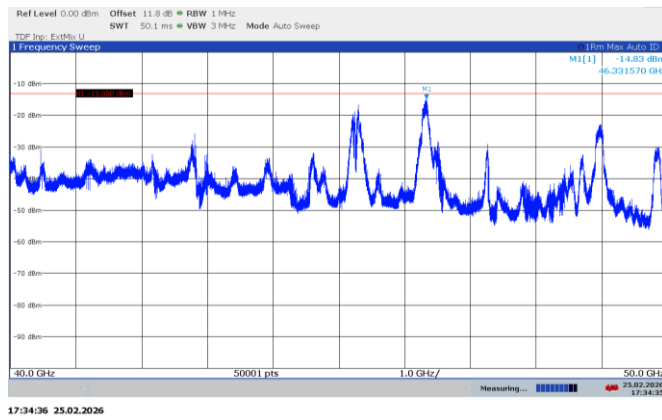


Figure 7.3-13: Radiated spurious emissions 40–50 GHz,
100MHz BW – Worst plot

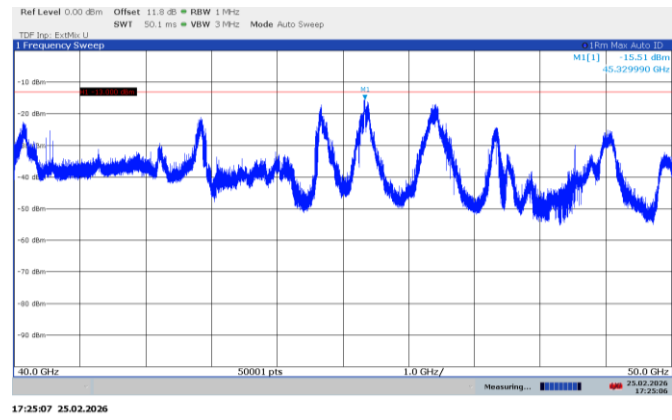


Figure 7.3-14: Radiated spurious emissions 40–50 GHz,
200MHz BW – Worst plot

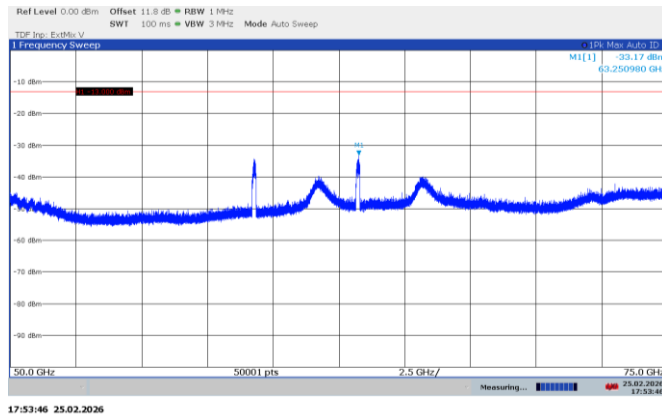


Figure 7.3-15: Radiated spurious emissions 50–75 GHz,
100MHz BW – Worst plot

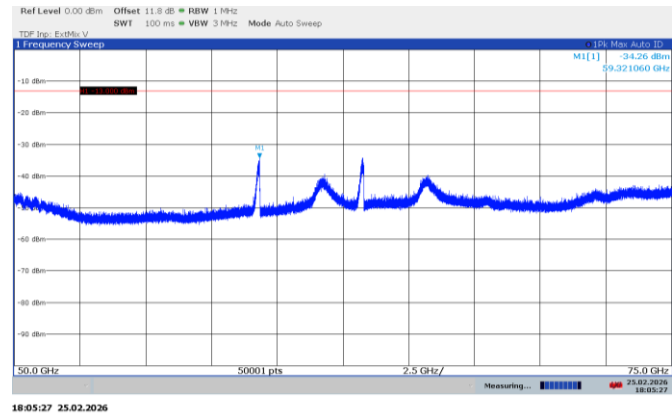


Figure 7.3-16: Radiated spurious emissions 50–75 GHz,
200MHz BW – Worst plot

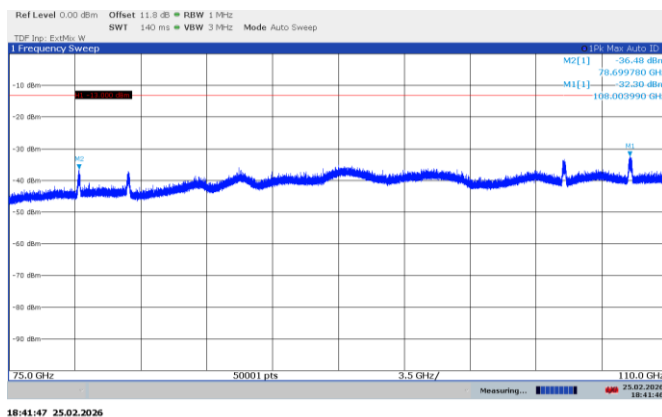


Figure 7.3-17: Radiated spurious emissions 75–110 GHz,
100MHz BW – Worst plot

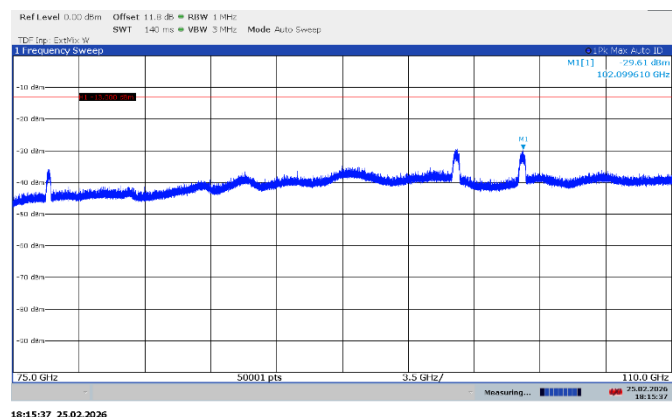


Figure 7.3-18: Radiated spurious emissions 75–110 GHz,
200MHz BW – Worst plot

Test data, continued

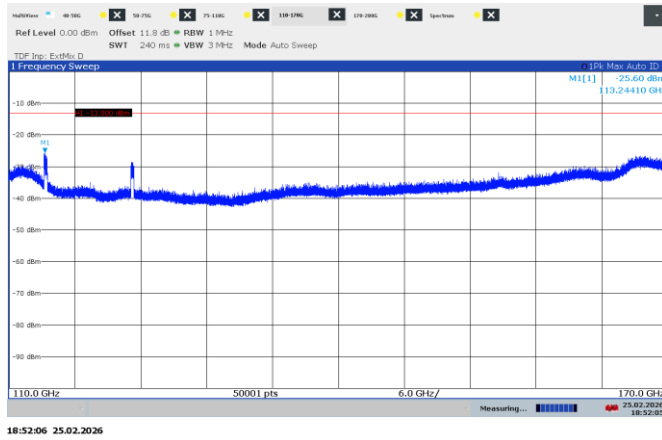


Figure 7.3-19: Radiated spurious emissions 110–170 GHz, 100MHz BW – Worst plot

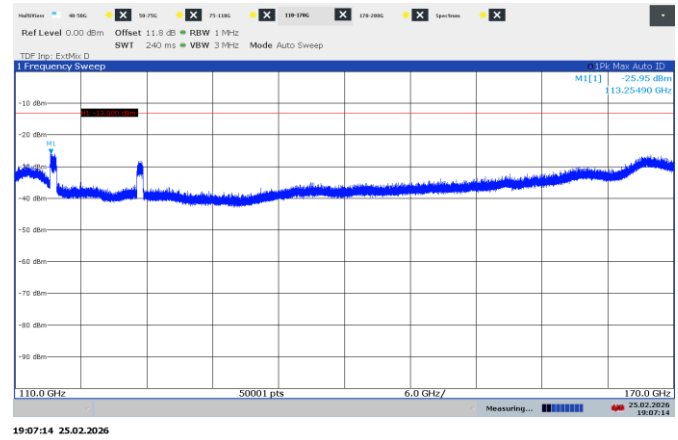


Figure 7.3-20: Radiated spurious emissions 110–170 GHz, 200MHz BW – Worst plot

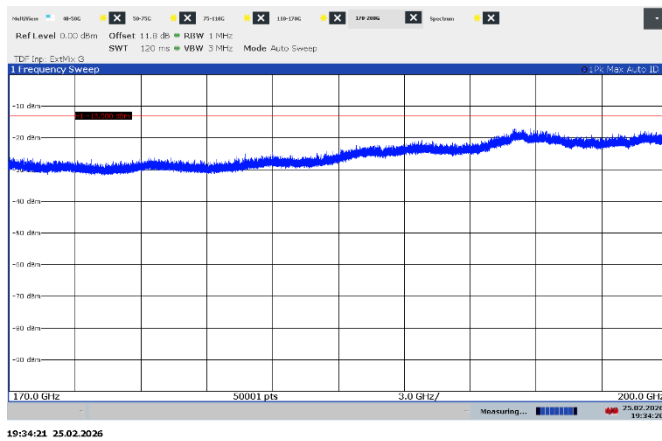


Figure 7.3-21: Radiated spurious emissions 170–200 GHz, 100MHz BW – Worst plot

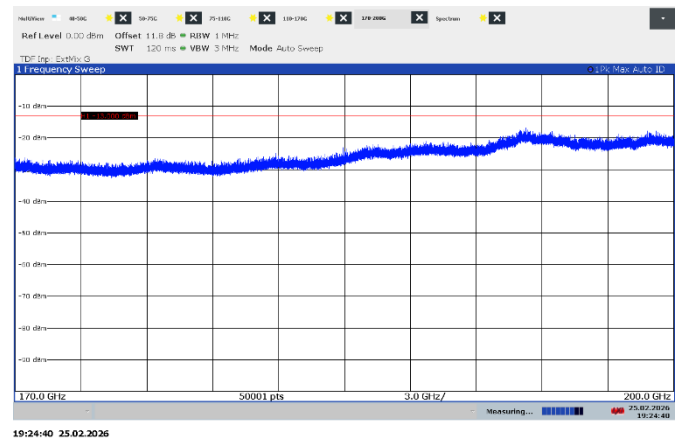


Figure 7.3-22: Radiated spurious emissions 170–200 GHz, 200MHz BW – Worst plot

Test data, continued

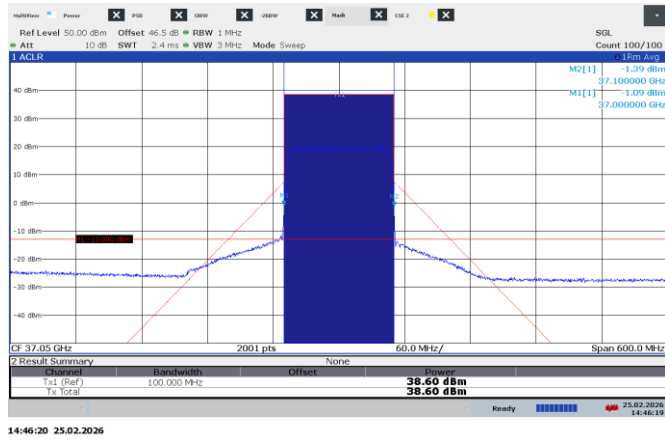


Figure 7.3-23: Emission mask, 100MHz BW – Low channel

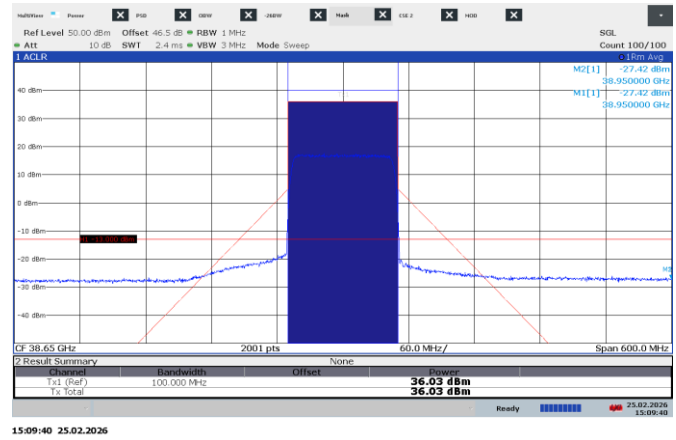


Figure 7.3-24: Emission mask, 100MHz BW – Mid channel 1

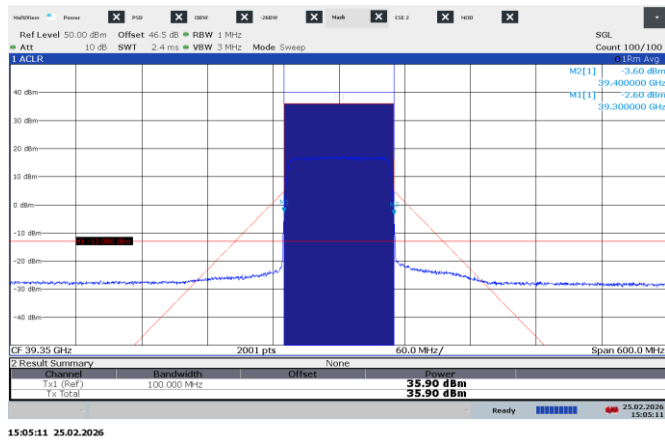


Figure 7.3-25: Emission mask, 100MHz BW – Mid channel 2

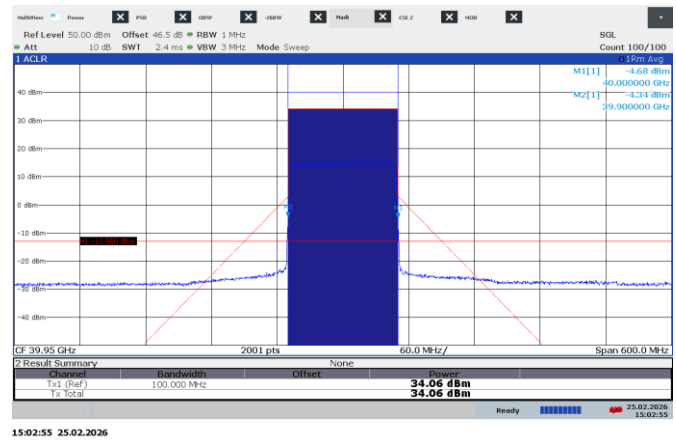


Figure 7.3-26: Emission mask, 100MHz BW – High channel

Test data, continued

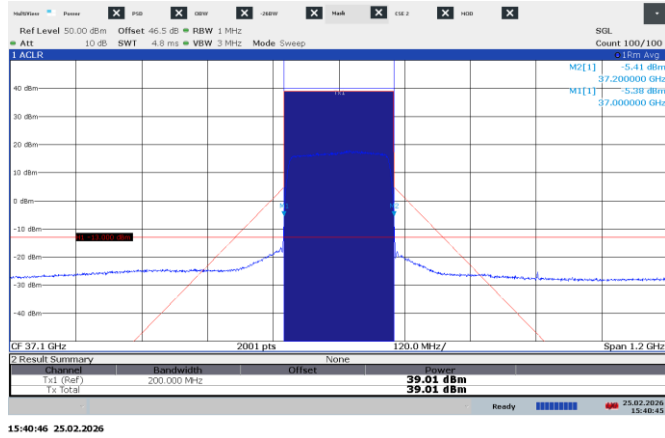


Figure 7.3-27: Emission mask, 200MHz BW – Low channel

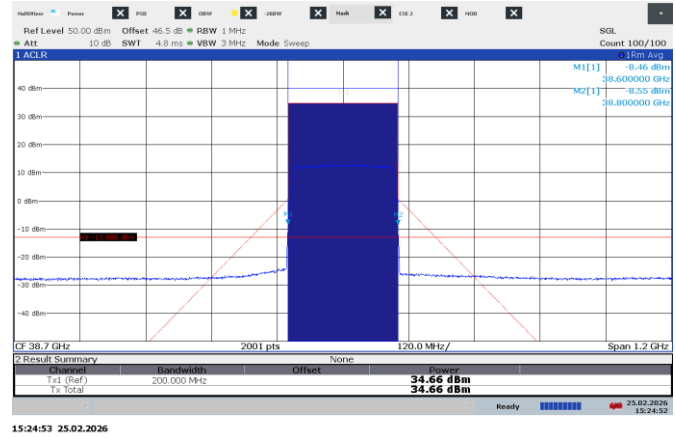


Figure 7.3-28: Emission mask, 200MHz BW – Mid channel 1

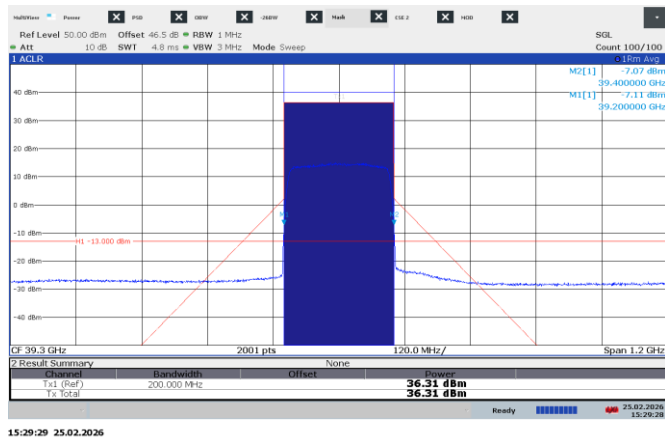


Figure 7.3-29: Emission mask, 200MHz BW – Mid channel 2

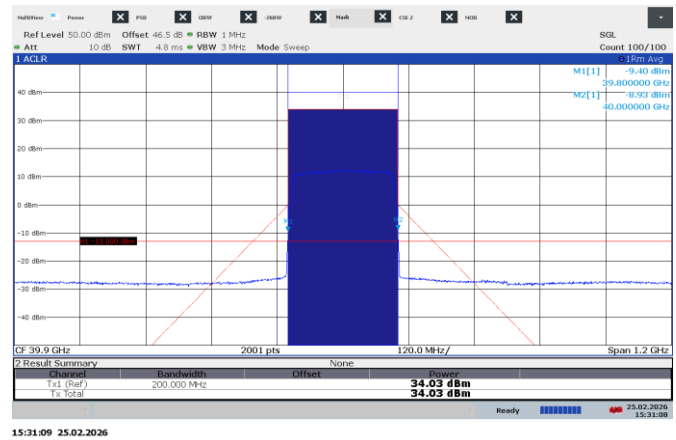


Figure 7.3-30: Emission mask, 200MHz BW – High channel

7.4 Occupied bandwidth

7.4.1 References, definitions and limits

FCC §2.1049:

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission.

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.

For the 99% emission bandwidth, the trace data points are recovered and directly summed in linear power level terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached, and that frequency recorded. The process is repeated for the highest frequency data points (starting at the highest frequency, at the right side of the span, and going down in frequency). This frequency is then recorded. The difference between the two recorded frequencies is the occupied bandwidth (or the 99% emission bandwidth).

7.4.2 Test summary

Verdict	Pass		
Test date	February 25, 2026	Temperature	24 °C
Tested by	Alvin Liu	Air pressure	960 mbar
Test location	Cambridge	Relative humidity	35 %

7.4.3 Observations, settings and special notes

Spectrum analyzer settings:

Resolution bandwidth	≥ 1% of emission bandwidth
Video bandwidth	≥ 3 × RBW
Frequency span	Wider than emission bandwidth
Detector mode	Peak
Trace mode	Max Hold

7.4.4 Test data

Table 7.4-1: Occupied bandwidth measurement results

Channel bandwidth, MHz	Fundamental frequency, MHz	99% BW, MHz
100	37050	94.168
	38650	94.018
	39350	94.125
	39950	94.165
200	37100	185.966
	38700	186.327
	39300	186.096
	39900	186.286

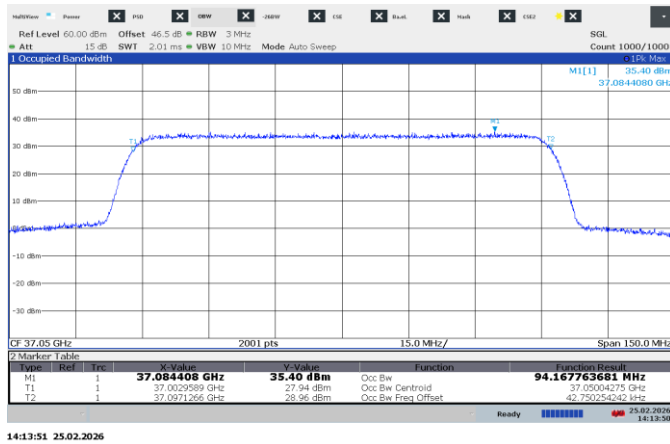


Figure 7.4-1: 99% occupied bandwidth for 100 MHz channel, sample plot

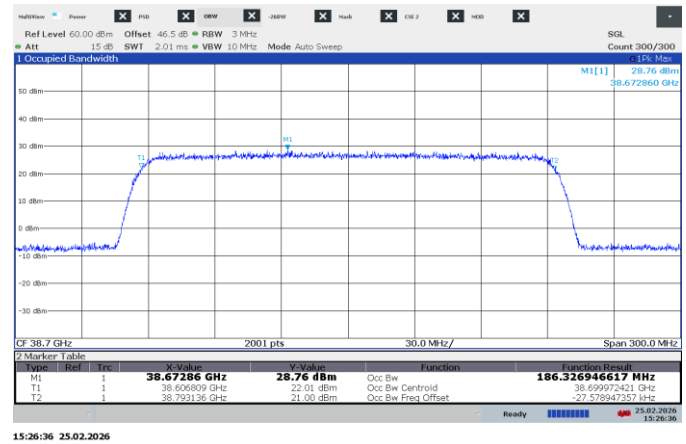


Figure 7.4-2: 99% occupied bandwidth for 200 MHz channel, sample plot

7.5 Frequency stability

7.5.1 References, definitions and limits

FCC §2.1055:

- (a) The frequency stability shall be measured with variation of ambient temperature as follows:
 - (1) From -30° to + 50° centigrade for all equipment except that specified in paragraphs (a) (2) and (3) of this section.
 - (b) Frequency measurements shall be made at the extremes of the specified temperature range and at intervals of not more than 10° centigrade through the range. A period of time sufficient to stabilize all of the components of the oscillator circuit at each temperature level shall be allowed prior to frequency measurement.
 - (d) The frequency stability shall be measured with variation of primary supply voltage as follows:
 - (1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

RSS-191, Clause 6.3:

The carrier frequency shall not depart from the reference frequency in excess of ±10 ppm.

In lieu of meeting the above stability value, the test report may show that the frequency stability is sufficient to ensure that the occupied bandwidth stays within the licensee's frequency band, when tested to the temperature and supply voltage variations specified in RSS-Gen.

7.5.2 Test summary

Verdict	Pass		
Test date	February 26, 2026	Temperature	23 °C
Tested by	Alvin Liu	Air pressure	975 mbar
Test location	Cambridge	Relative humidity	33 %

7.5.3 Observations, settings and special notes

Testing was performed using subclause 5.6 of ANSI C63.26-2015

The EUT was configured manually in a test mode to transmit a CW signal at the center frequency of transmission.

Offset (ppm) was calculated as follows: $\frac{F_{\text{Measured}} - F_{\text{Reference}}}{F_{\text{Reference}}} \times 10^6$

7.5.4 Test data

Table 7.5-1: Frequency stability results – ISED

Test conditions	Frequency, Hz	Drift, Hz	Drift, $\pm$ ppm	Limit, $\pm$ ppm	Margin, ppm
+50 °C, Nominal voltage	38699998000	2000	0.052	10.000	9.948
+40 °C, Nominal voltage	38700000000	4000	0.103	10.000	9.897
+30 °C, Nominal voltage	38700002000	6000	0.155	10.000	9.845
+20 °C, Nominal voltage +15 %	38699996000	0	0.000	10.000	10.000
+20 °C, Nominal voltage	38699996000	Reference			
+20 °C, Nominal voltage -15 %	38699996000	0	0.000	10.000	10.000
+10 °C, Nominal voltage	38699992000	-4000	0.103	10.000	9.897
0 °C, Nominal voltage	38699990000	-6000	0.155	10.000	9.845
-10 °C, Nominal voltage	38699992000	-4000	0.103	10.000	9.897
-20 °C, Nominal voltage	38699984000	-12000	0.310	10.000	9.690
-30 °C, Nominal voltage	38699976000	-20000	0.517	10.000	9.483

7.6 Modulation characteristics

7.6.1 References, definitions and limits

FCC §2.1047:

- (d) Other types of equipment. A curve or equivalent data which shows that the equipment will meet the modulation requirements of the rules under which the equipment is to be licensed.

7.6.2 Test summary

Verdict	Pass		
Test date	February 25, 2026	Temperature	24 °C
Tested by	Alvin Liu	Air pressure	960 mbar
Test location	Cambridge	Relative humidity	35 %

7.6.3 Observations, settings and special notes

Spectrum analyser settings:

Resolution bandwidth	3 MHz
Video bandwidth	> RBW
Detector	Peak, max-hold

7.6.4 Test data

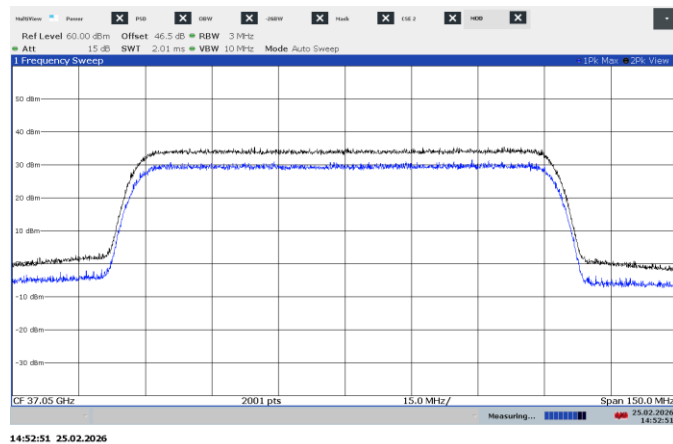


Figure 7.6-1: Plot showing envelope of a digital modulation – 100 MHz
Bandwidth (Black: 4QAM, Blue: 1024QAM)

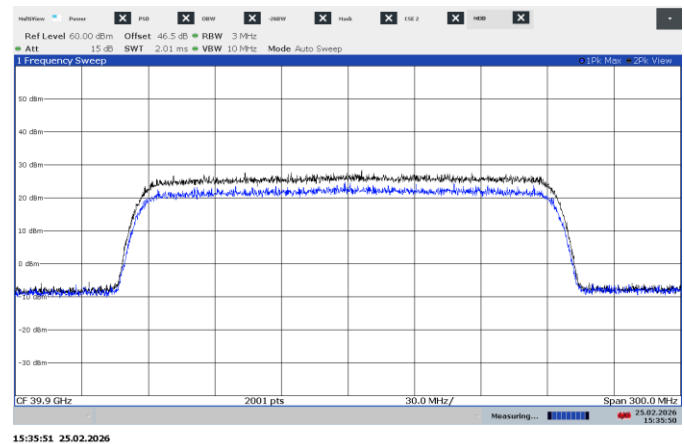
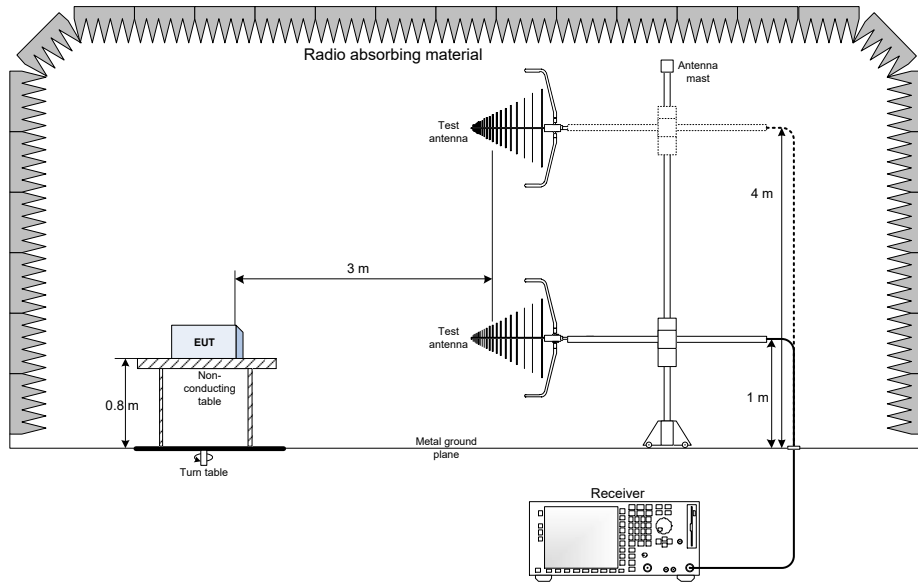


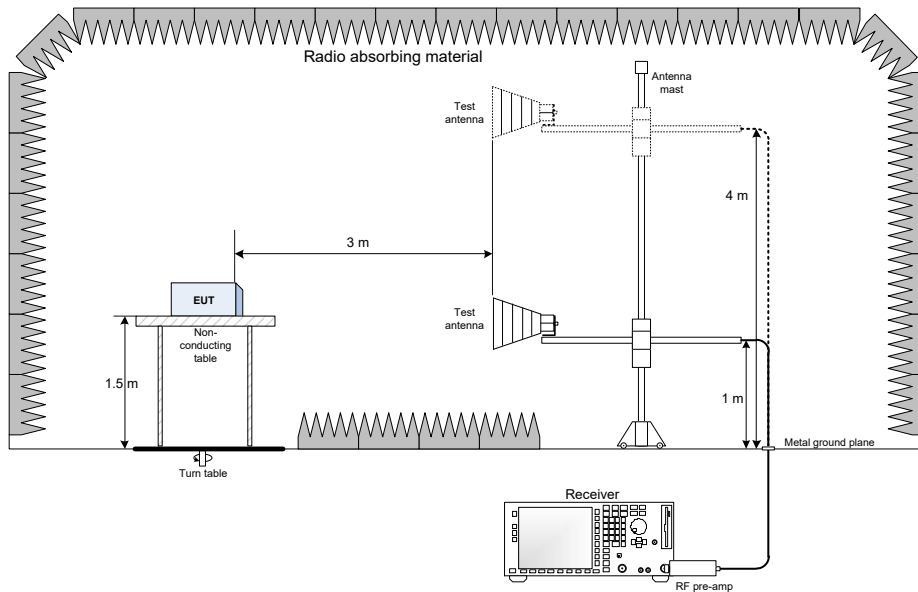
Figure 7.6-2: Plot showing envelope of a digital modulation – 200 MHz
Bandwidth (Black: 4QAM, Blue: 1024QAM)

Section 8. Block diagrams of test set-ups

8.1 Radiated emissions set-up for frequencies below 1 GHz



8.2 Radiated emissions set-up for frequencies above 1 GHz



End of the test report