



Test report

REP134049-1R4TRFWL

Date of issue: June 30, 2026

Applicant:

TrellisWare Technologies, Inc.

Product:

TSM Shadow High Power Radio (HPR) – Base Station

Model:

TW-135

Variant(s):

None

FCC ID:

2A6X2-135

Specifications:

- ◆ FCC 47 CFR Part 27, Miscellaneous Wireless Communications Services

Lab and test locations

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FCC Site Number	Test Firm Registration Number: 214630; Designation Number: US3165
ISED Test Site	2040B
Tested by	Lan Sayasane, Sr. EMC Test Engineer
Reviewed by	James Cunningham, EMC/WL Manager
Review date	June 30, 2026
Reviewer signature	

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 contain in this report are within Nemko USA's ISO/IEC 17025 accreditation.

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Table of Contents

Table of Contents	3
Section 1 Report summary	4
1.1 Test specifications	4
1.2 Exclusions	4
1.3 Statement of compliance.....	4
1.4 Test report revision history.....	4
Section 2 Summary of test results	5
2.1 Sample information	5
2.2 Testing period.....	5
2.3 Test results	5
Section 3 Equipment under test (EUT) details	6
3.1 Disclaimer	6
3.2 Applicant.....	6
3.3 Manufacturer.....	6
3.4 EUT information	6
3.5 EUT exercise and monitoring details	7
3.6 EUT setup details	7
Section 4 Engineering considerations	8
4.1 Modifications incorporated in the EUT.....	8
4.2 Technical judgement	8
4.3 Deviations from laboratory test procedures.....	8
Section 5 Test conditions	9
5.1 Atmospheric conditions.....	9
5.2 Power supply range	9
Section 6 Measurement uncertainty	10
6.1 Uncertainty of measurement	10
Section 7 Test equipment.....	11
7.1 Test equipment list	11
Section 8 Testing data	12
8.1 Modulation type	12
8.2 99% Occupied Bandwidth.....	13
8.3 26 dB Bandwidth	16
8.4 Output power	19
8.5 Spurious emissions at antenna terminals	22
8.6 Field strength of radiated spurious emissions	26
8.7 Frequency stability	45

Section 1 Report summary

1.1 Test specifications

FCC 47 CFR Part 27
ANSI C63.26: 2015

Miscellaneous Wireless Communications Services
American National Standard of Procedures for Compliance Testing of Licensed Wireless Devices

1.2 Exclusions

None.

1.3 Statement of compliance

Testing was performed against all relevant requirements of the test standard(s).

Results obtained indicate that the product under test complies in full with the tested requirements.

The test results relate only to the item(s) tested.

See "Section 2 Summary of test results" for full details.

1.4 Test report revision history

Table 1.4-1: Test report revision history

Revision #	Issue Date	Details of changes made to test report
REP134049-1TRFWL	February 17, 2026	Original report issued Section 3.2 and 3.3: Update Zip Code from "92121" to "92131"
REP134049-1R1TRFWL	February 20, 2026	Section 3.4: - Description: Delete "hand-held". Update all modulation in report from "BPSK" to "CPM".
REP134049-1R2TRFWL	February 20, 2026	Minor editorial correction
REP134049-1R3TRFWL	June 1, 2026	Per customer documentation update Section 3.4: "Antenna gain" from "4 dBi" to "5 dBi". Table 8.4-1: Output power results update "Antenna gain" from "4 dBi" to "5 dBi" and correct EIRP results.
REP134049-1R4TRFWL	June 30, 2026	Corrections due to recent changes to FCC rule part 27.54

Section 2 Summary of test results

2.1 Sample information

Receipt date	18-Nov-25
Nemko sample ID number	PRJ0091631

2.2 Testing period

Test start date	18-Nov-25
Test end date	15-Jan-26

2.3 Test results

Table 2.3-1: FCC 47 CFR Part 27 results

Part	Test description	Verdict
§2.1033(c)(4)	Modulation type	Pass
§2.1049(h)	99% Occupied bandwidth	Pass
§27.50(e)	Output power	Pass
§27.53(j)	Spurious emissions at antenna terminals	Pass
§27.53(j)	Field strength of radiated spurious emissions	Pass
§27.53(j)(2)(i)	Point-to-point systems in the fixed service	Not applicable
§2.1055	Frequency stability	Pass
§27.804	Wireless Medical Telemetry Service (WMTS) protection	Not applicable

Notes: None

Section 3 Equipment under test (EUT) details

3.1 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 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.

3.2 Applicant

Company name	TrellisWare Technologies, Inc.
Address	10641 Scripps Summit Court, Ste. 100
City	San Diego
State	CA
Postal/Zip code	92131
Country	USA

3.3 Manufacturer

Company name	TrellisWare Technologies, Inc.
Address	10641 Scripps Summit Court, Ste. 100
City	San Diego
State	CA
Postal/Zip code	92131
Country	USA

3.4 EUT information

Product name	TSM Shadow High Power Radio (HPR) – Base Station
Model	TW-135
Variant(s)	None
Serial number	308658
Part number	N/A
Power requirements	Input: 120Vac/60Hz; Output: 24 Vdc
Description/theory of operation	The TW-135 is a 20-Watt transceiver radio powered by TrellisWare's TSM Mobile Ad-hoc Networking (MANET) Technology, a proprietary waveform which operates in the UHF/L/S bands for the purpose of secure voice communication, IP data networking and position location awareness.
Operational frequencies	1390-1395 MHz and 1432-1435 MHz
Software details	TSP-1.2.0-b27
Modulation	CPM
Operational bandwidth(s)	1390-1395 MHz: 0.05, 1.2 and 3.6 MHz / 1432-1435 MHz: 0.05 and 1.2 MHz
Antenna gain	5 dBi
Number of transmit antenna	1
Operating channels:	1390-1395 MHz operation: 0.05 MHz bandwidth operation: 1391 MHz, 1392.5 MHz, and 1394 MHz 1.2 MHz bandwidth operation: 1392.5 MHz only 3.6 MHz bandwidth operation: 1392.5 MHz only 1432-1435 MHz operation: 0.05 MHz bandwidth operation: 1433 MHz, 1433.5 MHz, and 1434 MHz 1.2 MHz bandwidth operation: 1433.5 MHz only

3.5 EUT exercise and monitoring details

EUT description of the methods used to exercise the EUT and all relevant ports:

- Use TW-135 preset via front screen or use the laptop to select frequency and its desire bandwidth (0.05, 1.2 or 3.6 MHz), then enable CW for each band before starting. All Tx is monitored through the ANT HI port.

EUT setup/configuration rationale:

- The EUT setup in a configuration that was expected to produce the highest amplitude emissions relative to the limit and that satisfy normal operation/installation practice by the end user.
- The type and construction of cables used in the measurement set-up were consistent with normal or typical use. Cables with mitigation features (for example, screening, tighter/more twists per length, ferrite beads) have been noted below:
 - None
- The EUT was setup in a manner that was consistent with its typical arrangement and use. The measurement arrangement of the EUT, local ancillary equipment and associated cabling was representative of normal practice. Any deviations from typical arrangements have been noted below:
 - None

3.6 EUT setup details

Table 3.6-1: EUT sub assemblies

Description	Brand name	Model/Part number	Serial number	Rev.
None	N/A	N/A	N/A	N/A

Table 3.6-2: EUT interface ports

Description	Qty.
GPS	1
Microphone	1
USB	1
ANT HI	1
ANT LO	1

Table 3.6-3: Support equipment

Description	Brand name	Model/Part number	Serial number	Rev.
Laptop	DELL	Latitude 7480	N/A	--
Multi-Function GNSS Simulator	Spectracom	GSG-5 Series/1212-0200-0600	201718	--

Table 3.6-4: Inter-connection cables

Cable description	From	To	Length (m)
USB (Use to set frequency, bandwidth and turn on Tx, then removed)	TW-135	Laptop	0.5

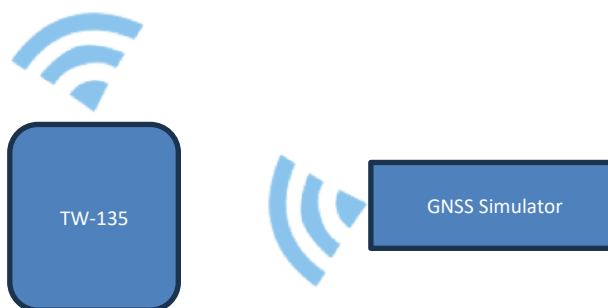


Figure 3.6-1: Test setup diagram

Section 4 Engineering considerations

4.1 Modifications incorporated in the EUT

None.

4.2 Technical judgement

None.

4.3 Deviations from laboratory test procedures

None.

Section 5 Test conditions

5.1 Atmospheric conditions

Temperature	15–30 °C
Relative humidity	20–75 %
Air pressure	86–106 kPa

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.

5.2 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 ± 5 %, for which the equipment was designed.

Section 6 Measurement uncertainty

6.1 Uncertainty of measurement

Measurement uncertainty budgets for the tests are detailed below. Measurement uncertainty calculations assume a coverage factor of $K = 2$ with 95% certainty.

Table 6.1-1: Uncertainty of measurement

Test name	Measurement uncertainty, dB
All antenna port measurements/ including OBW	0.55
Conducted spurious emissions	1.13
Radiated spurious emissions	3.78
AC power line conducted emissions	1.38
Supply Voltages	0.05%
Time	2.09%

Section 7 Test equipment

7.1 Test equipment list

Table 7.1-1: Test equipment list

Equipment	Manufacturer	Model no.	Asset no.	Cal cycle	Next cal.
EMI Test Receiver	Rohde & Schwarz	ESU40	E1121	1 year	03-Jan-2026
System Controller	Sunol Sciences	SC104V	E1191	NCR	NCR
Antenna, Bilog	Schaffner	CBL 6111D	1763	2 years	16-Jul-2026
Antenna, DRG Horn	ETS-Lindgren	3117-PA	E1160	2 years	17-May-2026
Tunable Notch Filter	K&L	3TNF-1000/2000-N-N	1059	VBU	VBU
EMI Test Receiver	Rohde & Schwarz	FSV3030	E1321	1 year	01-Jan-2026
Signal & Spectrum Analyzer	Rohde & Schwarz	FSW43	E1302	1 year	19-Mar-2026
Attenuator, 40dB	Centric RF	C18N100-40	N/A	VBU	VBU
Temperature Chamber	TestEquity	115A	E1162	1 year	25-Aug-2026

NCR: No calibration required

VBU: Verify before use

Section 8 Testing data

8.1 Modulation type

8.1.1 References and limits

FCC §2.1033(c) Applications for equipment other than that operating under parts 15, 11 and 18 of this chapter shall be accompanied by a technical report containing the following information:

(4) Type or types of emission

8.1.2 Test summary

Verdict	Pass		
Test date	November 18, 2025	Temperature	21 °C
Test engineer	Lan Sayasane, Sr. EMC Test Engineer	Air pressure	1004 mbar
Test location	☒ Wireless bench (conducted tests)	Relative humidity	56 %
	☐ 10 m semi-anechoic chamber (radiated tests)		
	☐ 3 m semi-anechoic chamber (radiated tests)		
	☐ Other:		

8.1.3 Observations, settings and special notes

None

8.1.4 Test data

Table 8.1-1: Types of emission

Frequency band	Bandwidth (MHz)	Emission type
1391	0.05	CPM
1392.5	0.05	CPM
1394	0.05	CPM
1392.5	1.2	CPM
1392.5	3.6	CPM
1433	0.05	CPM
1433.5	0.05	CPM
1434	0.05	CPM
1433.5	1.2	CPM

CPM: Continuous phase modulation

8.2 99% Occupied Bandwidth

8.2.1 References and limits

- FCC 47 CFR Part 2, §2.202 and §2.1049
- Test method: ANSI C63.26: 2015 §5.4.4

§2.202 and §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 shall be measured.

8.2.2 Test summary

Verdict	Pass		
Test date	November 19, 2025 January 6, 2026	Temperature	21 °C
Test engineer	Lan Sayasane, Sr. EMC Test Engineer	Air pressure	1008 mbar
Test location	☒ Wireless bench (conducted tests) ☐ 10 m semi-anechoic chamber (radiated tests) ☐ 3 m semi-anechoic chamber (radiated tests) ☐ Other:	Relative humidity	59 %

8.2.3 Observations, settings and special notes

None

8.2.4 Setup details

EUT power input during test	24 Vdc
EUT setup configuration	☒ Table-top ☐ Floor standing ☐ Other:

Spectrum analyzer settings:

Resolution bandwidth	1 – 5% of OBW
Video bandwidth	> 3 x Resolution bandwidth
Detector mode	Peak
Trace mode	Max hold
Measurement time	Auto
Span	> 1.5 x OBW

8.2.5 Test data

Table 8.2-1: 99% Occupied Bandwidth test results

Frequency channel (MHz)	Modulation	Occupied Bandwidth Declared (MHz)	99% OBW (MHz)
1391	CPM	0.05	0.052
1392.5	CPM	0.05	0.052
1394	CPM	0.05	0.053
1392.5	CPM	1.2	1.185
1392.5	CPM	3.6	3.607
1433	CPM	0.05	0.053
1433.5	CPM	0.05	0.054
1434	CPM	0.05	0.053
1433.5	CPM	1.2	1.202

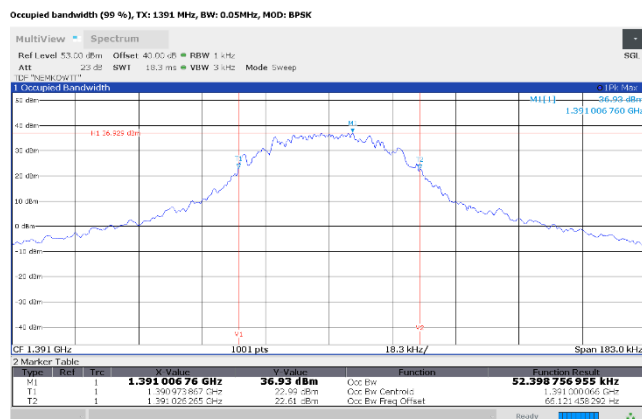


Figure 8.2-1: 99% Occupied Bandwidth, Low CH 1391 MHz, 0.05 MHz, CPM

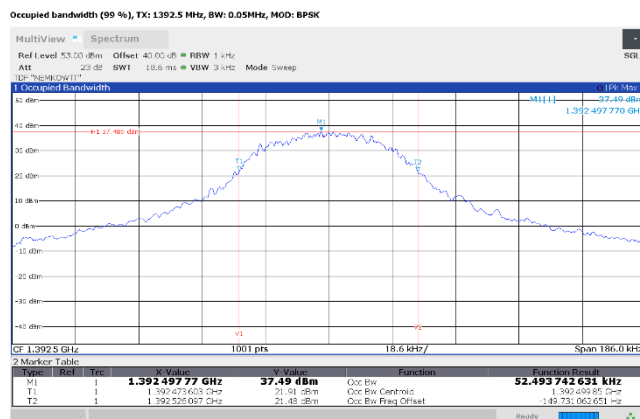


Figure 8.2-2: 99% Occupied Bandwidth, Mid CH 1392.5 MHz, 0.05 MHz, CPM

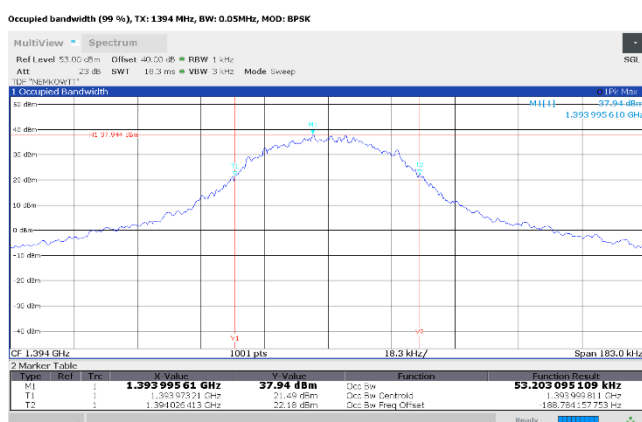


Figure 8.2-3: 99% Occupied Bandwidth, High CH 1394 MHz, 0.05 MHz, CPM

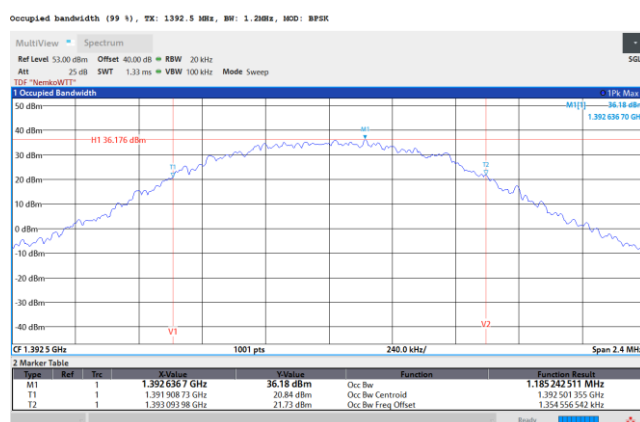


Figure 8.2-4: 99% Occupied Bandwidth, Mid CH 1392.5 MHz, 1.2 MHz, CPM

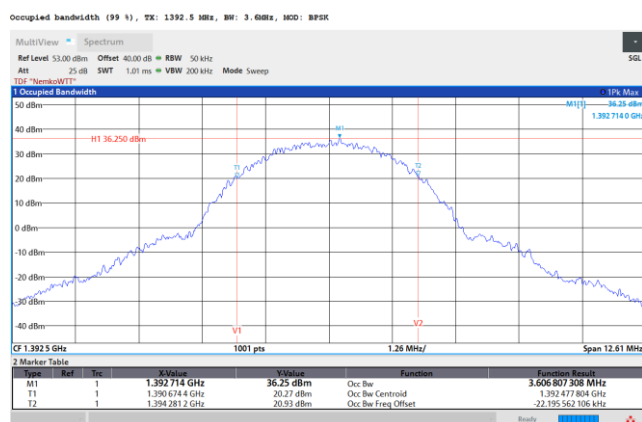


Figure 8.2-5: 99% Occupied Bandwidth, Mid CH 1392.5 MHz, 3.6 MHz, CPM

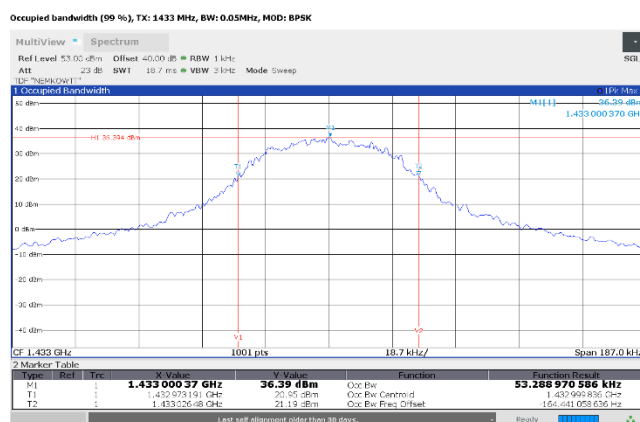


Figure 8.2-6: 99% Occupied Bandwidth, Low CH 1433 MHz, 0.05 MHz, CPM

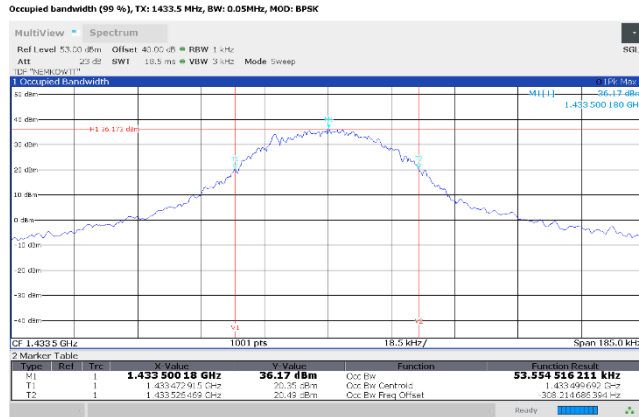


Figure 8.2-7: 99% Occupied Bandwidth, Mid CH 1433.5 MHz, 0.05 MHz, CPM

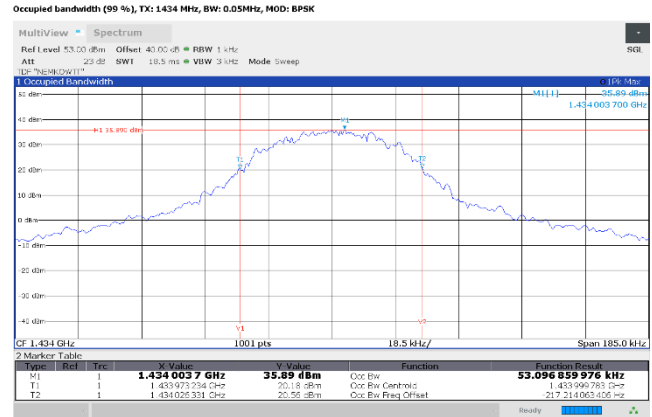


Figure 8.2-8: 99% Occupied Bandwidth, High CH 1434 MHz, 0.05 MHz, CPM

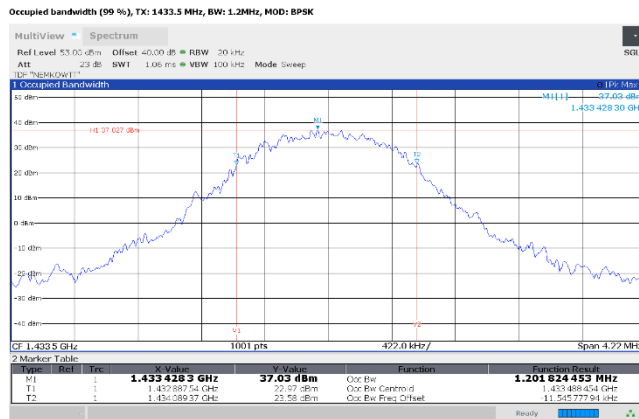


Figure 8.2-9: 99% Occupied Bandwidth, Mid CH 1433.5 MHz, 1.2 MHz, CPM

8.3 26 dB Bandwidth

8.3.1 Definitions and limits

For information only.

- Test method: ANSI C63.26: 2015 §5.4.3

8.3.2 Test summary

Verdict	Pass		
Test date	November 19, 2025 January 6, 2026	Temperature	21 °C
Test engineer	Lan Sayasane, Sr. EMC Test Engineer	Air pressure	1008 mbar
Test location	☒ Wireless bench (conducted tests) ☐ 10 m semi-anechoic chamber (radiated tests) ☐ 3 m semi-anechoic chamber (radiated tests) ☐ Other:	Relative humidity	59 %

8.3.3 Observations, settings and special notes

None

8.3.4 Test data

Table 8.3-1: 26 dB Bandwidth test results.

Frequency channel (MHz)	Modulation	Occupied Bandwidth Declared (MHz)	26 dB OBW (MHz)
1391	CPM	0.05	0.071
1392.5	CPM	0.05	0.071
1394	CPM	0.05	0.073
1392.5	CPM	1.2	1.570
1392.5	CPM	3.6	4.666
1433	CPM	0.05	0.069
1433.5	CPM	0.05	0.073
1434	CPM	0.05	0.069
1433.5	CPM	1.2	1.552

Occupied bandwidth (26 dB), TX: 1391 MHz, BW: 0.05MHz, MOD: BPSK

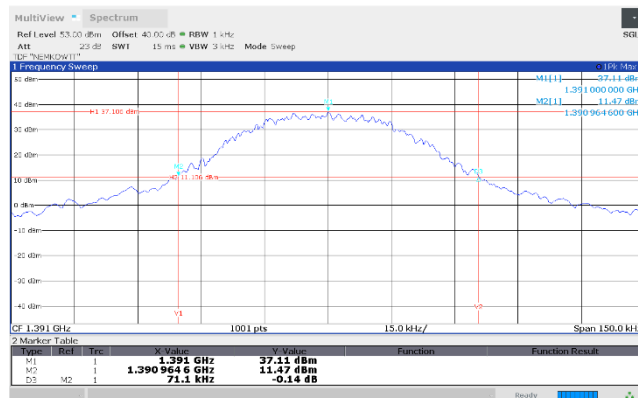


Figure 8.3-1: 26 dB Bandwidth, Low CH 1391 MHz, 0.05 MHz, CPM

Occupied bandwidth (26 dB), TX: 1392.5 MHz, BW: 0.05MHz, MOD: BPSK

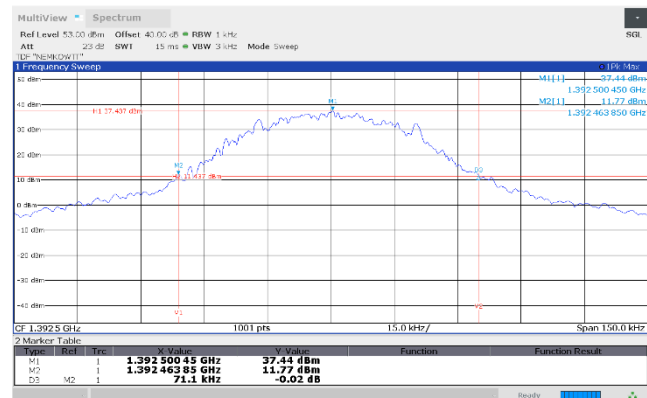


Figure 8.3-2: 26 dB Bandwidth, Mid CH 1392.5 MHz, 0.05 MHz, CPM

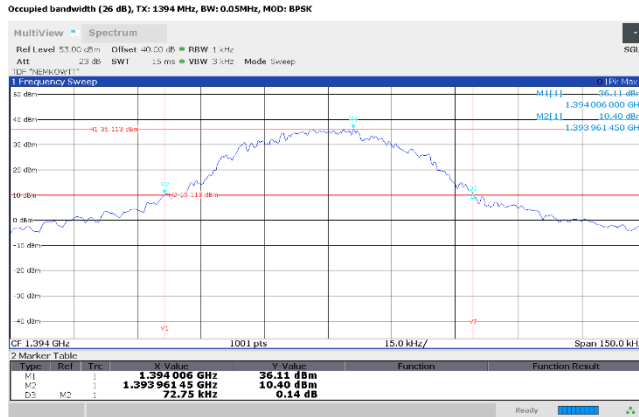


Figure 8.3-3: 26 dB Bandwidth, High CH 1394 MHz, 0.05 MHz, CPM

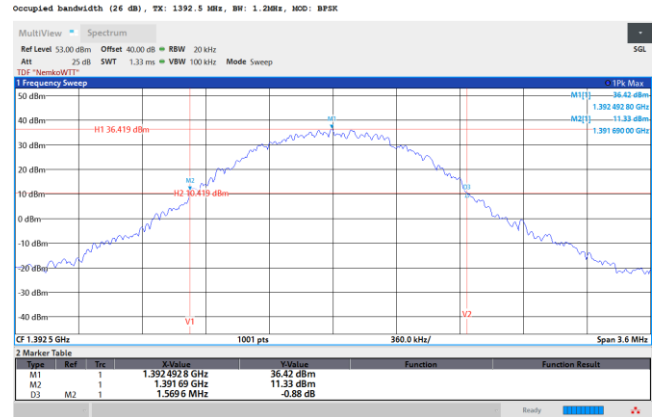


Figure 8.3-4: 26 dB Bandwidth, Mid CH 1392.5 MHz, 1.2 MHz, CPM

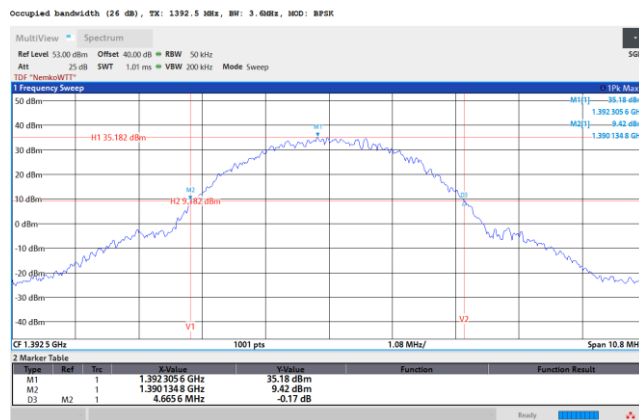


Figure 8.3-5: 26 dB Bandwidth, Mid CH 1392.5 MHz, 3.6 MHz, CPM

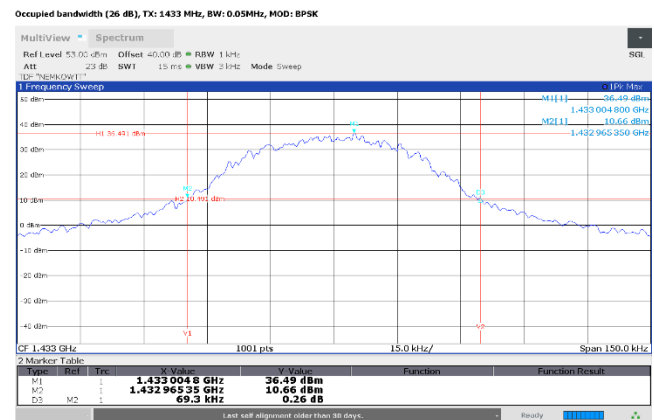


Figure 8.3-6: 26 dB Bandwidth, Low CH 1433 MHz, 0.05 MHz, CPM

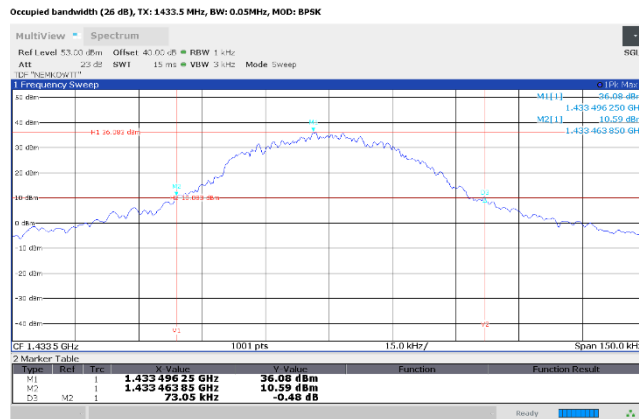


Figure 8.3-7: 26 dB Bandwidth, Mid CH 1433.5 MHz, 0.05 MHz, CPM

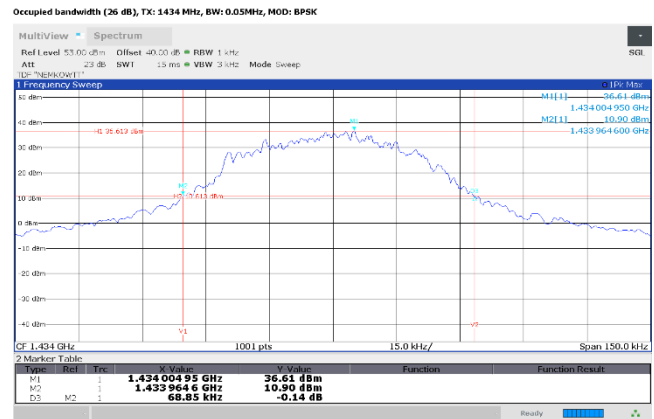


Figure 8.3-8: 26 dB Bandwidth, High CH 1434 MHz, 0.05 MHz, CPM

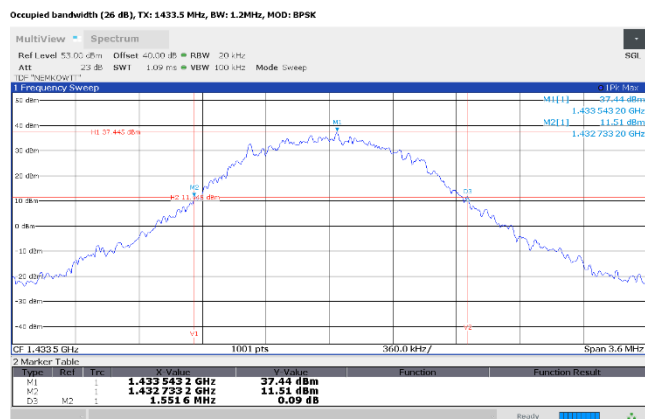


Figure 8.3-9: 26 dB Bandwidth, Mid CH 1433.5 MHz, 1.2 MHz, CPM

8.4 Output power

8.4.1 Definitions and limits

- §27.50 (e) The following power limits apply to the paired 1392-1395 MHz and 1432-1435 MHz bands as well as the unpaired 1390-1392 MHz band (1.4 GHz band):
- (1) Fixed stations transmitting in the 1390-1392 MHz and 1432-1435 MHz bands are limited to 2000 watts EIRP peak power. Fixed stations transmitting in the 1392-1395 MHz band are limited to 100 watts EIRP peak power.
 - (2) Mobile stations transmitting in the 1390-1392 MHz and 1432-1435 MHz bands are limited to 4 watts EIRP peak power. Mobile stations transmitting in the 1392-1395 MHz band are limited to 1 watt EIRP peak power.

8.4.2 Test summary

Verdict	Pass		
Test date	November 19, 2025 January 6, 2026	Temperature	21 °C
Test engineer	Lan Sayasane, Sr. EMC Test Engineer	Air pressure	1008 mbar
Test location	☒ Wireless bench (conducted tests) ☐ 10 m semi-anechoic chamber (radiated tests) ☐ 3 m semi-anechoic chamber (radiated tests) ☐ Other:	Relative humidity	59 %

8.4.3 Observations, settings and special notes

An offset was added via transducer factor to compensate for the losses from the cable and attenuator (40 dB) used.

Conducted power measurements were performed according to ANSI C63.26 Clause 5.2.4.4 as a conducted antenna port measurement. Declared antenna gain was added to yield EIRP.

8.4.4 Test data

Table 8.4-1: Output power results

Frequency (MHz)	Modulation	Channel Bandwidth (MHz)	Conducted power (dBm)	Antenna gain (dBi)	EIRP (dBm)	EIRP (Watts)	Limit (Watts)
1391	CPM	0.05	42.15	5	47.15	51.88	100
1392.5	CPM	0.05	42.09	5	47.09	51.17	100
1394	CPM	0.05	42.06	5	47.06	50.82	100
1392.5	CPM	1.2	40.58	5	45.58	36.14	100
1392.5	CPM	3.6	41.74	5	46.74	47.21	100
1433	CPM	0.05	41.19	5	46.19	41.60	2000
1433.5	CPM	0.05	41.12	5	46.12	40.93	2000
1434	CPM	0.05	41.05	5	46.05	40.27	2000
1433.5	CPM	1.2	40.90	5	45.90	38.90	2000

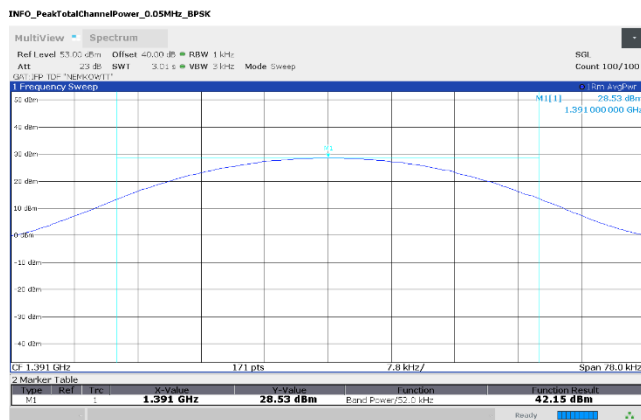


Figure 8.4-1: Output power, Low CH 1391 MHz, 0.05 MHz, CPM

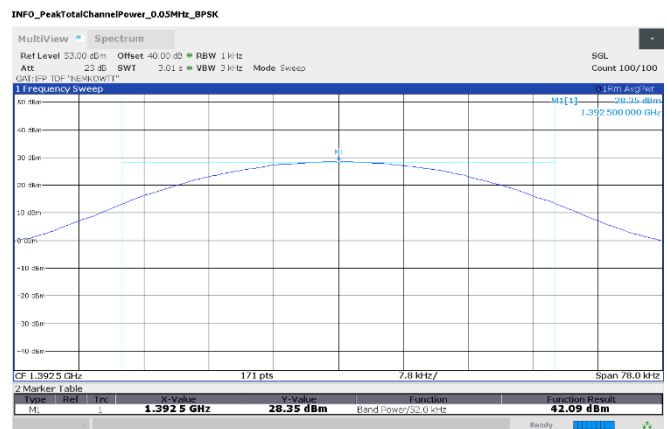


Figure 8.4-2: Output power, Mid CH 1392.5 MHz, 0.05 MHz, CPM

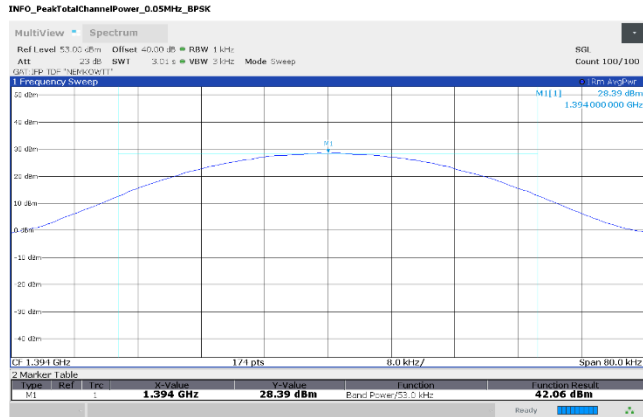


Figure 8.4-3: Output power, High CH 1394 MHz, 0.05 MHz, CPM

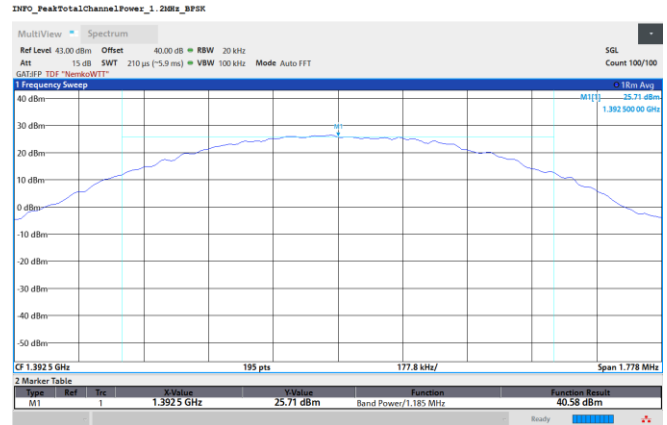


Figure 8.4-4: Output power, Mid CH 1392.5 MHz, 1.2 MHz, CPM

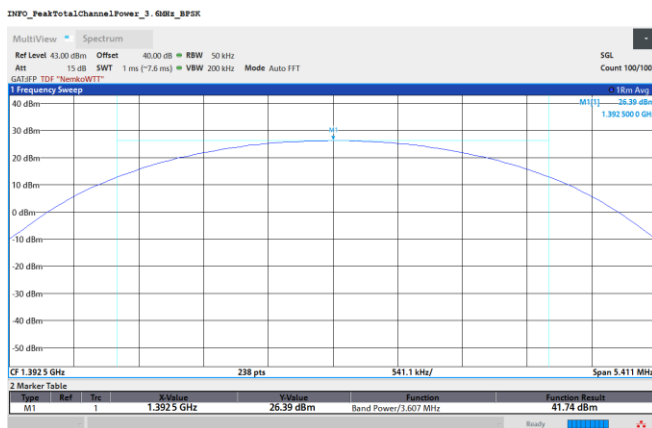


Figure 8.4-5: Output power, Mid CH 1392.5 MHz, 3.6 MHz, CPM

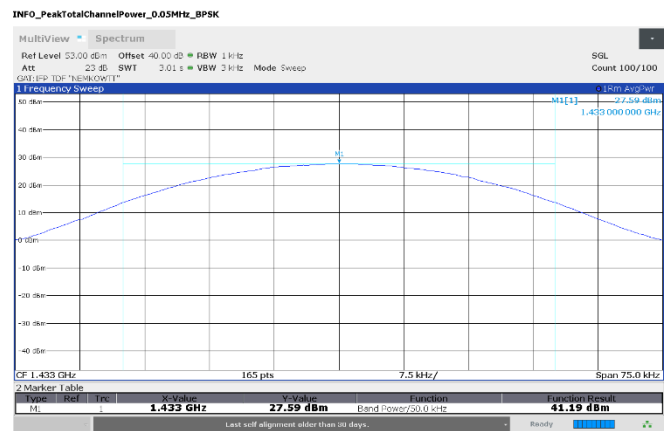


Figure 8.4-6: Output power, Low CH 1433 MHz, 0.05 MHz, CPM

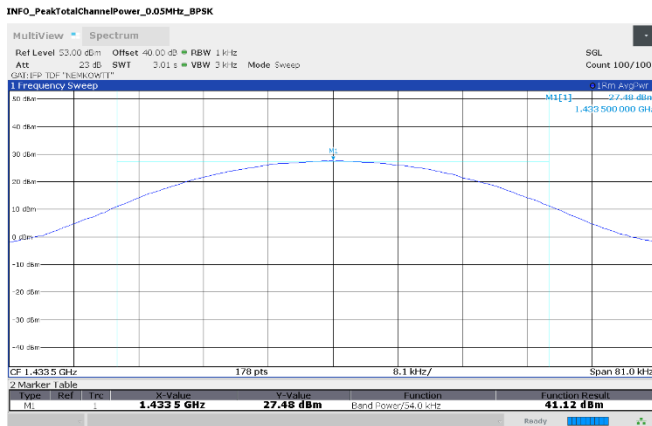


Figure 8.4-7: Output power, Mid CH 1433.5 MHz, 0.05 MHz, CPM

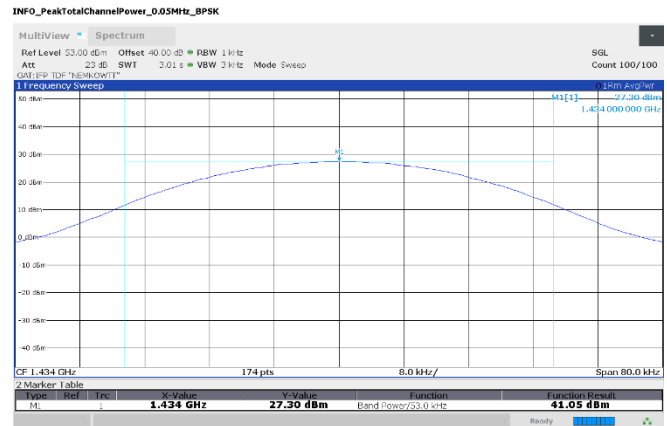


Figure 8.4-8: Output power, High CH 1434 MHz, 0.05 MHz, CPM



Figure 8.4-9: Output power, Mid CH 1433.5 MHz, 1.2 MHz, CPM

8.5 Spurious emissions at antenna terminals

8.5.1 References and limits

- FCC 47 CFR Part 27, Subpart C: §27.53(j)
- Test method: ANSI C63.26: 2015 §5.7
- (1) For operations in the unpaired 1390-1392 MHz band and the paired 1392-1395 MHz and 1432-1435 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) by at least $43 + 10 \log(P)$ dB. Compliance with these provisions is based on the procedures described in paragraph (a)(5) of this section.
- (2) In the 1390-1395 MHz and 1432-1435 MHz bands, licensees are encouraged to take all reasonable steps to ensure that unwanted emission power does not exceed the following levels in the band 1400-1427 MHz:
 - (i) For stations of point-to-point systems in the fixed service: -45 dBW/27 MHz.
 - (ii) For stations in the mobile service: -60 dBW/27 MHz.

8.5.2 Test summary

Verdict	Pass		
Test date	November 21, 2025 December 12, 2025 January 13, 2026	Temperature	21 °C
Test engineer	Lan Sayasane, Sr. EMC Test Engineer	Air pressure	1007 mbar
Test location	☒ Wireless bench (conducted tests) ☐ 10 m semi-anechoic chamber (radiated tests) ☐ 3 m semi-anechoic chamber (radiated tests) ☐ Other:	Relative humidity	58 %

8.5.3 Observations, settings and special notes

None

8.5.4 Setup details

EUT power input during test	24 Vdc
EUT setup configuration	☒ Table-top ☐ Floor standing ☐ Other:

Spectrum analyzer:

Resolution bandwidth	1 MHz
Video bandwidth	3 MHz
Detector mode	RMS
Trace mode	Average, 100 sweeps
Measurement time	Auto

8.5.5 Test data – 1390-1395 MHz

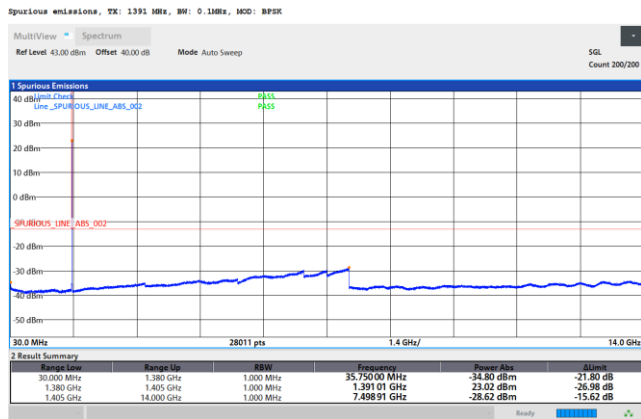


Figure 8.5-1: Spurious emissions at antenna terminals, Low CH 1391 MHz, 0.05 MHz, CPM

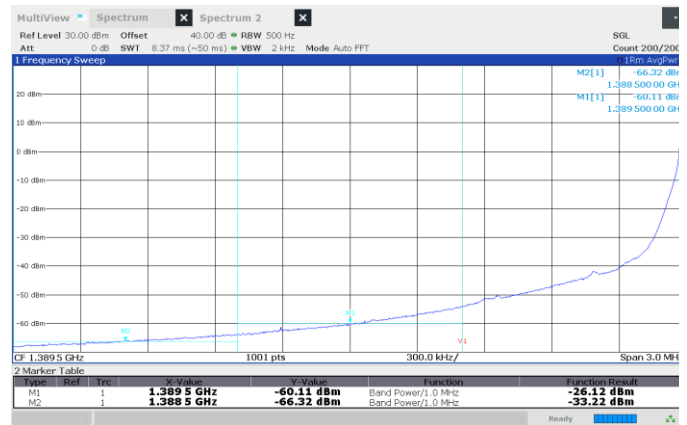


Figure 8.5-2: Spurious emissions at antenna terminals, Band Edge-1, Low CH 1391 MHz, 0.05 MHz, CPM



Figure 8.5-3: Spurious emissions at antenna terminals, Band Edge-2, Low CH 1391 MHz, 0.05 MHz, CPM

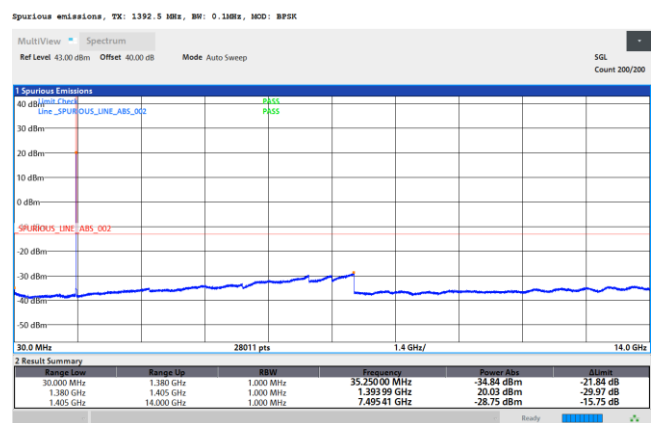


Figure 8.5-4: Spurious emissions at antenna terminals, Mid CH 1392.5 MHz, 0.05 MHz, CPM

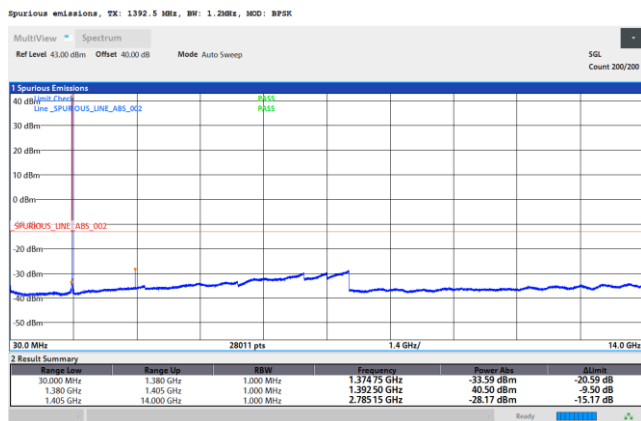


Figure 8.5-5: Spurious emissions at antenna terminals, Mid CH 1392.5 MHz, 1.2 MHz, CPM

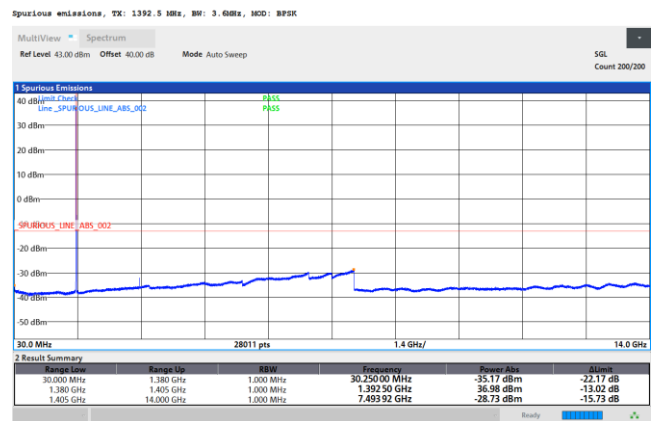


Figure 8.5-6: Spurious emissions at antenna terminals, Mid CH 1392.5 MHz, 3.6 MHz, CPM

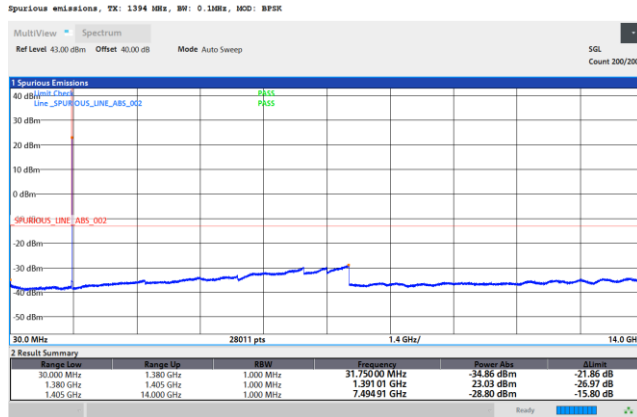


Figure 8.5-7: Spurious emissions at antenna terminals, High CH 1394 MHz, 0.05 MHz, CPM

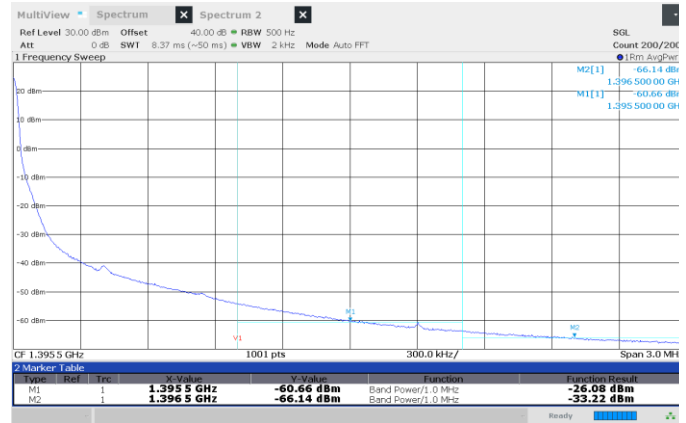


Figure 8.5-8: Spurious emissions at antenna terminals, Band Edge-1, High CH 1394 MHz, 0.05 MHz, CPM

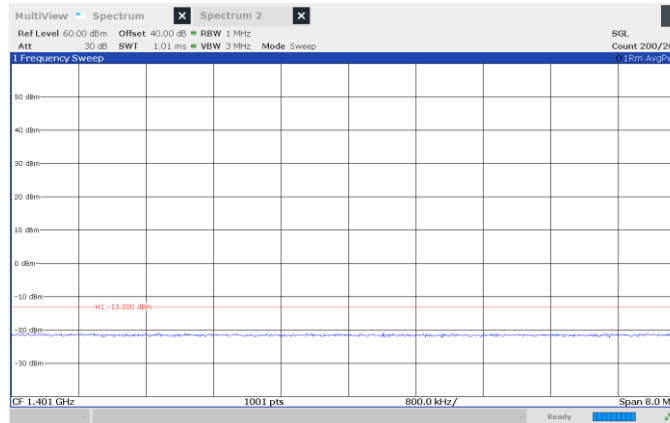


Figure 8.5-9: Spurious emissions at antenna terminals, Band Edge-2, High CH 1394 MHz, 0.05 MHz, CPM

8.5.6 Test data – 1432-1435 MHz

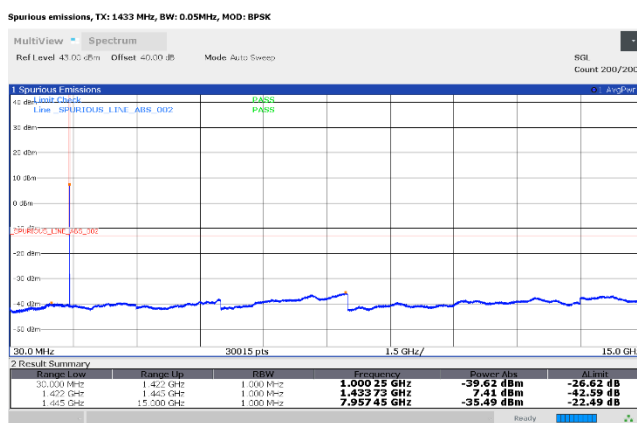


Figure 8.5-10: Spurious emissions at antenna terminals, Low CH 1433 MHz, 0.05 MHz, CPM

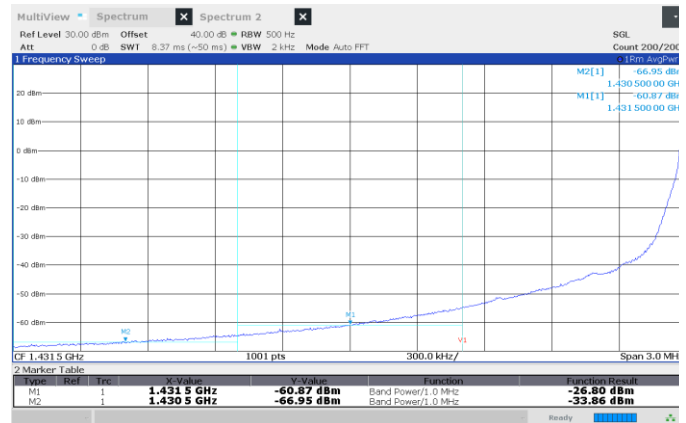


Figure 8.5-11: Spurious emissions at antenna terminals, Band Edge-1, Low CH 1433 MHz, 0.05 MHz, CPM

Section 8
Test name

Testing data
Spurious emissions at antenna terminals



Figure 8.5-12: Spurious emissions at antenna terminals, Band Edge-2, Low CH 1433 MHz, 0.05 MHz, CPM

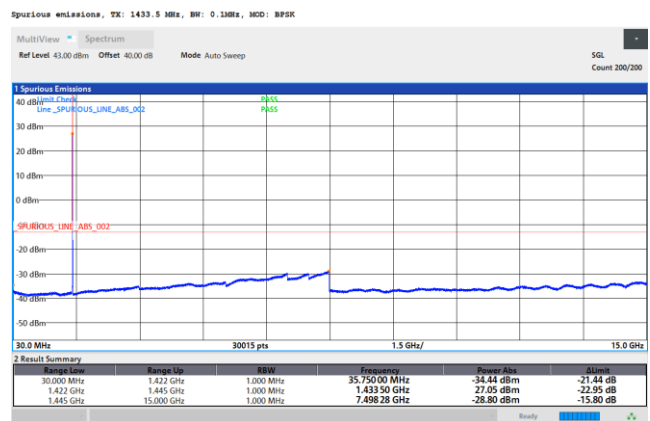


Figure 8.5-13: Spurious emissions at antenna terminals, Mid CH 1433.5 MHz, 0.05 MHz, CPM

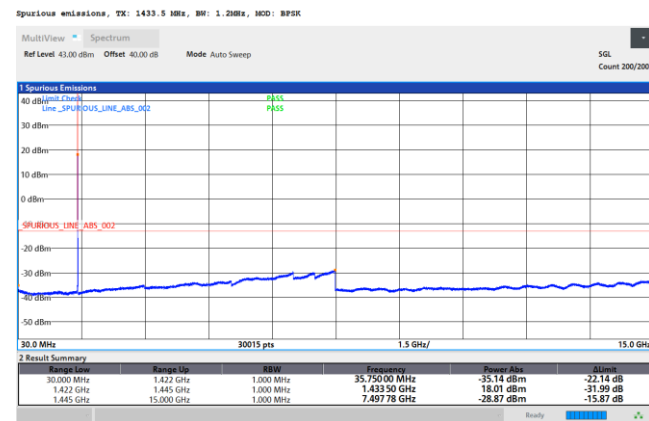


Figure 8.5-14: Spurious emissions at antenna terminals, Mid CH 1433.5 MHz, 1.2 MHz, CPM

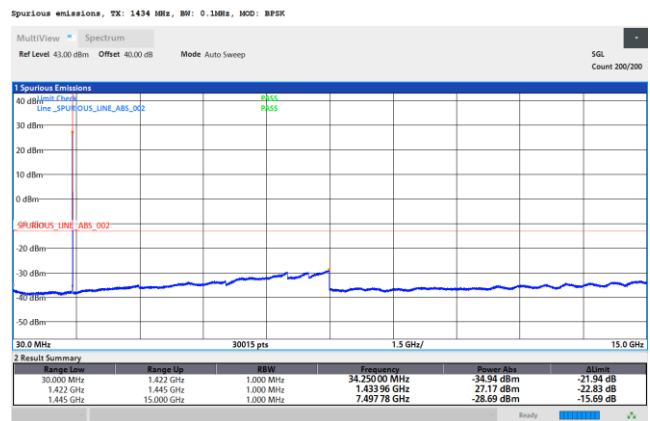


Figure 8.5-15: Spurious emissions at antenna terminals, High CH 1434 MHz, 0.05 MHz, CPM

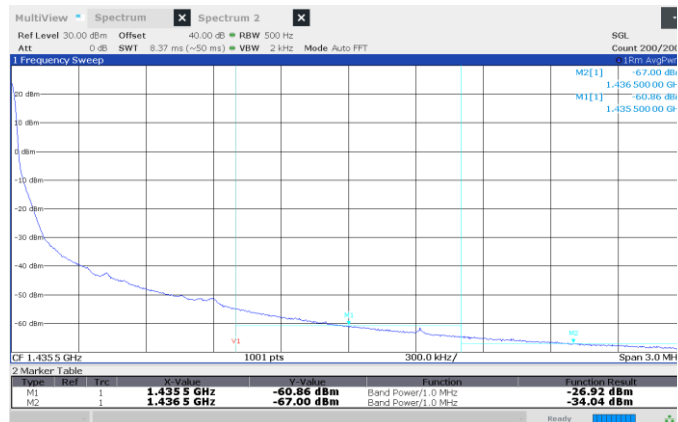


Figure 8.5-16: Spurious emissions at antenna terminals, Band Edge-1, High CH 1434 MHz, 0.05 MHz, CPM

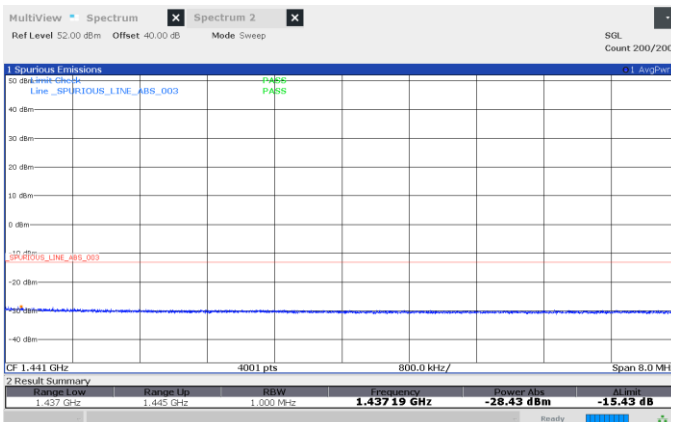


Figure 8.5-17: Spurious emissions at antenna terminals, Band Edge-2, High CH 1434 MHz, 0.05 MHz, CPM

8.6 Field strength of radiated spurious emissions

8.6.1 References and limits

- FCC 47 CFR Part 27, Subpart C: §27.53(j)
- Test method: ANSI C63.26: 2015 §5.7

FCC §27.53(j)

- (1) For operations in the unpaired 1390-1392 MHz band and the paired 1392-1395 MHz and 1432-1435 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) by at least $43 + 10 \log (P)$ dB. Compliance with these provisions is based on the procedures described in paragraph (a)(5) of this section.
- (2) In the 1390-1395 MHz and 1432-1435 MHz bands, licensees are encouraged to take all reasonable steps to ensure that unwanted emission power does not exceed the following levels in the band 1400-1427 MHz:
 - (i) For stations of point-to-point systems in the fixed service: -45 dBW/27 MHz.
 - (ii) For stations in the mobile service: -60 dBW/27 MHz.

8.6.2 Test summary

Verdict	Pass		
Test date	November 18, 2025 November 24, 2025 January 14, 2026	Temperature	21 °C
Test engineer	Lan Sayasane, Sr. EMC Test Engineer	Air pressure	1004 mbar
Test location	☐ Wireless bench (conducted tests) ☐ 10 m semi-anechoic chamber (radiated tests) ☒ 3 m semi-anechoic chamber (radiated tests) ☐ Other:	Relative humidity	56 %

8.6.3 Notes

The test data provided also demonstrates that, at a 3m measurement distance, the equipment under test complies with the 150 µV/m limit at a 3m measurement distance in the 1395-1400 MHz range as dictated by FCC rule part §27.804 ("Field strength limits at WMTS facility") for operation in the 1390-1395 MHz band.

8.6.4 Setup details

EUT power input during test	24 Vdc
EUT setup configuration	☒ Table-top ☐ Floor standing ☐ Other:

8.6.5 Test data – 1390-1395 MHz

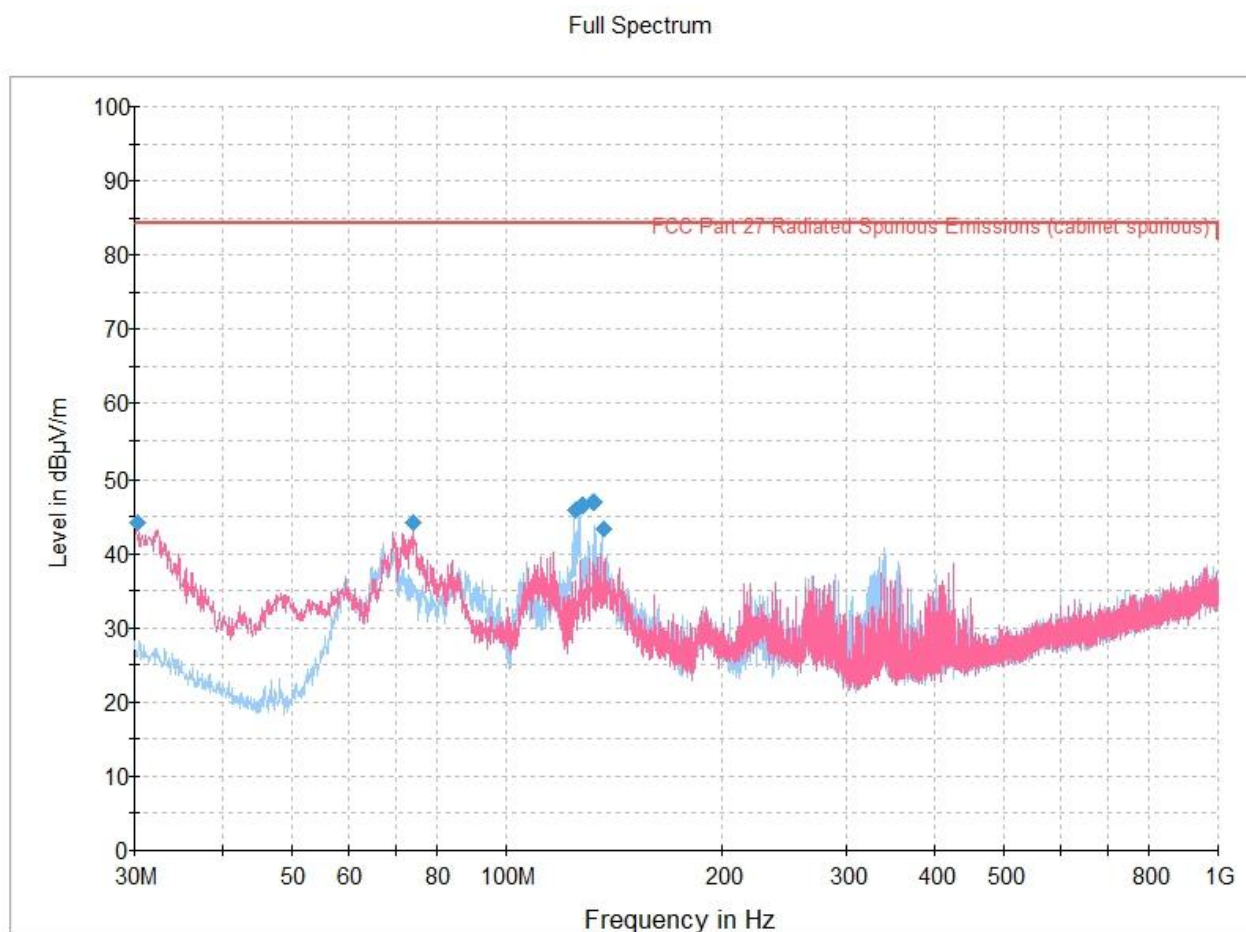


Figure 8.6-1: Radiated emissions spectral plot (30 MHz - 1 GHz) – 1391 MHz, 0.05 MHz BW

Table 8.6-1: Radiated emissions results

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.320000	44.10	84.38	40.28	5000.0	100.000	133.0	V	0.0	26.4
73.952500	44.18	84.38	40.20	5000.0	100.000	130.0	V	317.0	14.4
125.193333	45.80	84.38	38.58	5000.0	100.000	323.0	H	280.0	19.7
127.658333	46.44	84.38	37.94	5000.0	100.000	375.0	H	294.0	19.8
132.198333	46.85	84.38	37.53	5000.0	100.000	219.0	H	282.0	19.8
136.631667	43.30	84.38	41.08	5000.0	100.000	272.0	H	83.0	19.8

Notes:

¹ Field strength (dB V/m) = receiver/spectrum analyzer value (dB V) + correction factor (dB)

² Correction factors = antenna factor ACF (dB) + cable loss (dB)

³ 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.

Full Spectrum

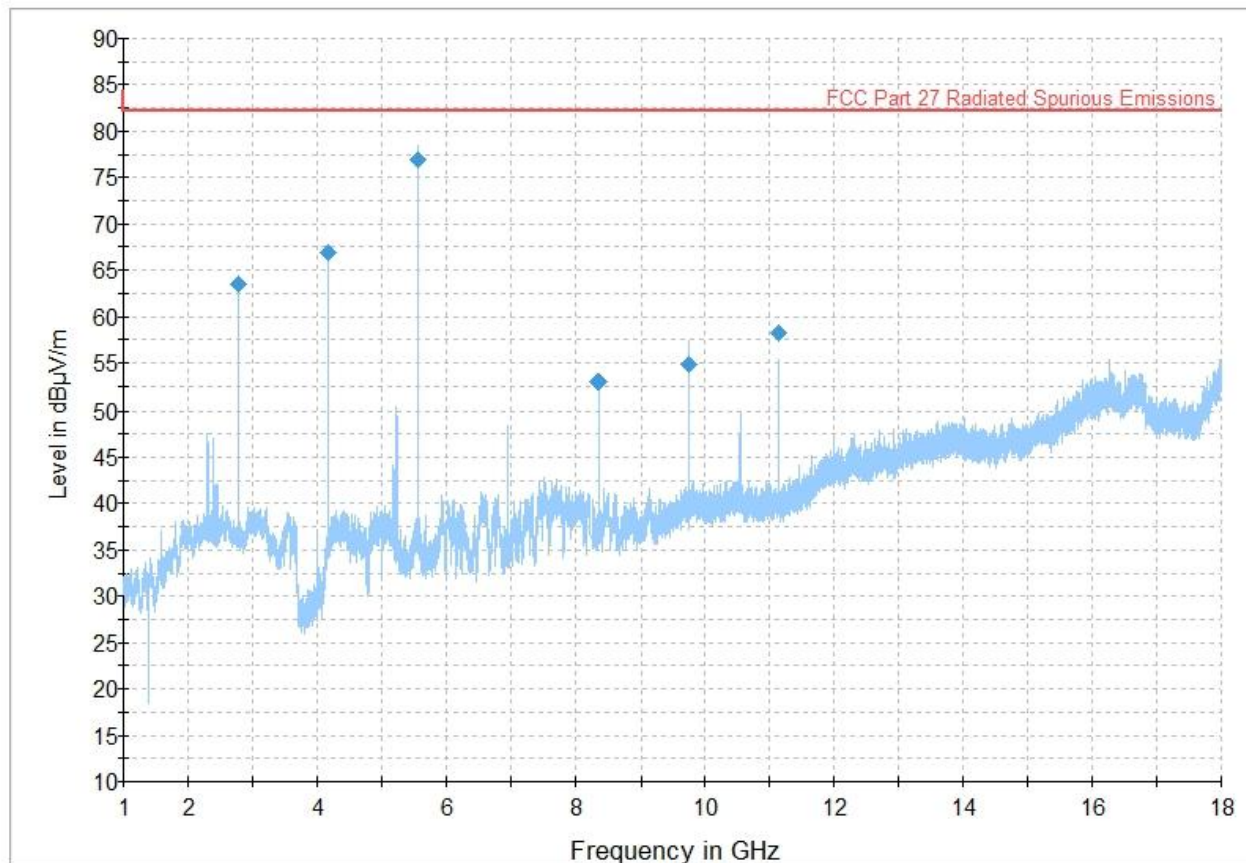


Figure 8.6-2: Radiated emissions spectral plot (1 GHz - 18 GHz) - 1391 MHz, 0.05 MHz BW

Table 8.6-2: Radiated emissions results

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2782.000000	63.52	82.23	18.71	100.0	1000.000	112.0	H	120.0	-2.8
4173.166667	66.84	82.23	15.39	100.0	1000.000	184.0	H	124.0	1.0
5563.933333	76.95	82.23	5.28	100.0	1000.000	277.0	H	160.0	3.6
8346.100000	52.90	82.23	29.33	100.0	1000.000	202.0	V	184.0	7.6
9736.866667	54.87	82.23	27.36	100.0	1000.000	211.0	H	200.0	10.7
11127.866667	58.32	82.23	23.91	100.0	1000.000	227.0	H	182.0	11.1

Notes:

¹ Field strength (dB V/m) = receiver/spectrum analyzer value (dB V) + correction factor (dB)

² Correction factors = antenna factor ACF (dB) + cable loss (dB)

³ 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.

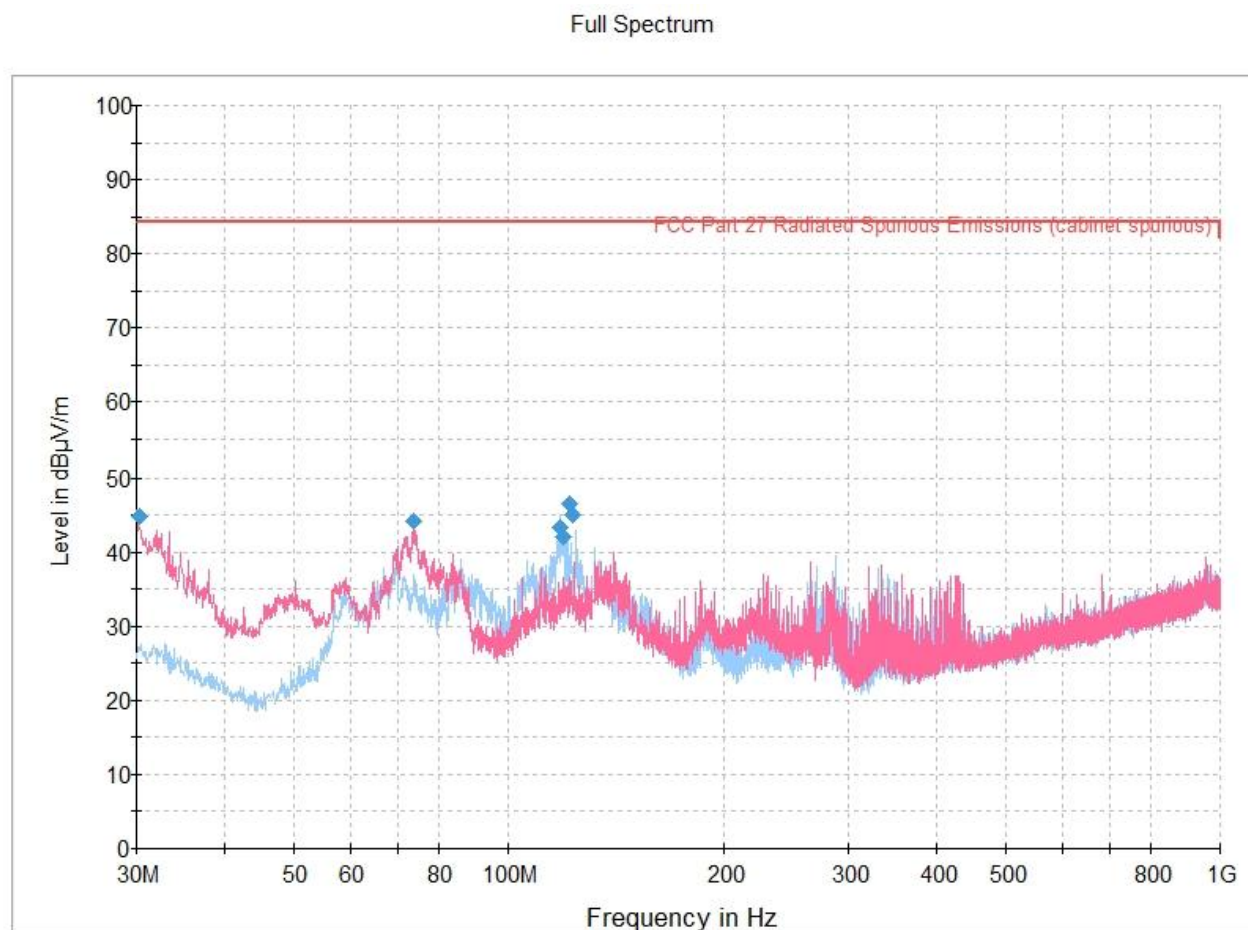


Figure 8.6-3: Radiated emissions spectral plot (30 MHz - 1 GHz) – 1392.5 MHz, 0.05 MHz BW

Table 8.6-3: Radiated emissions results

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.240000	44.83	84.38	39.55	5000.0	100.000	152.0	V	355.0	26.5
73.670833	44.27	84.38	40.11	5000.0	100.000	112.0	V	286.0	14.3
118.371667	43.25	84.38	41.13	5000.0	100.000	279.0	H	47.0	19.4
119.390000	42.08	84.38	42.30	5000.0	100.000	197.0	H	34.0	19.5
122.362500	46.44	84.38	37.94	5000.0	100.000	135.0	H	48.0	19.6
123.155000	44.91	84.38	39.48	5000.0	100.000	293.0	H	35.0	19.6

Notes:

¹ Field strength (dB V/m) = receiver/spectrum analyzer value (dB V) + correction factor (dB)

² Correction factors = antenna factor ACF (dB) + cable loss (dB)

³ 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.

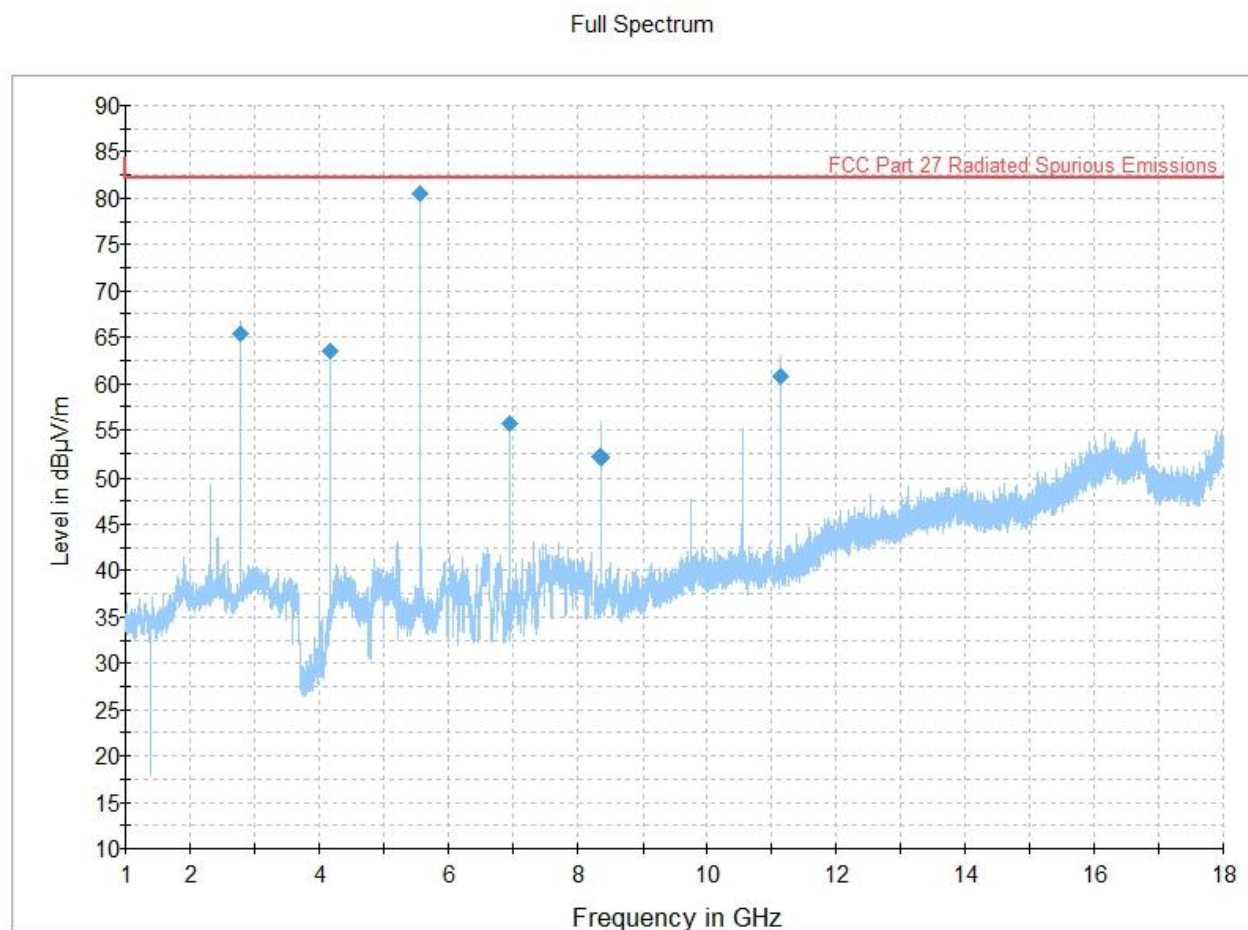


Figure 8.6-4: Radiated emissions spectral plot (1 GHz - 18 GHz) – 1392.5 MHz, 0.05 MHz BW

Table 8.6-4: Radiated emissions results

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2785.000000	65.42	82.23	16.81	100.0	1000.000	133.0	H	122.0	-2.8
4177.700000	63.57	82.23	18.66	100.0	1000.000	237.0	H	233.0	1.0
5570.000000	80.47	82.23	1.76	100.0	1000.000	207.0	H	159.0	3.6
6962.466667	55.75	82.23	26.48	100.0	1000.000	99.0	V	176.0	5.5
8355.166667	52.08	82.23	30.15	100.0	1000.000	207.0	H	172.0	7.6
11139.933333	60.83	82.23	21.40	100.0	1000.000	202.0	H	146.0	11.1

Notes:

¹ Field strength (dB V/m) = receiver/spectrum analyzer value (dB V) + correction factor (dB)

² Correction factors = antenna factor ACF (dB) + cable loss (dB)

³ 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.

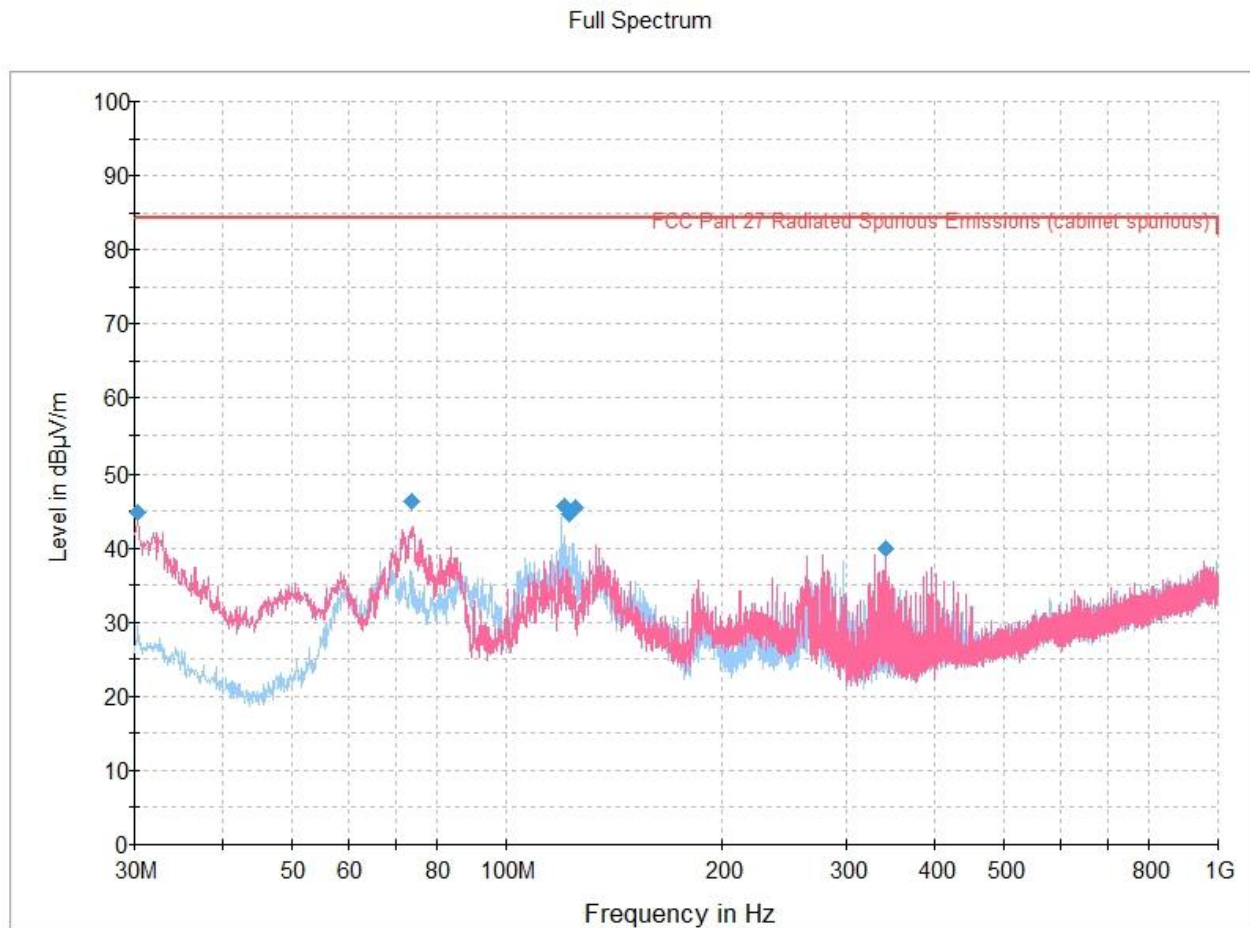


Figure 8.6-5: Radiated emissions spectral plot (30 MHz - 1 GHz) – 1394 MHz, 0.05 MHz BW

Table 8.6-5: Radiated emissions results

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.240000	44.90	84.38	39.48	5000.0	100.000	141.0	V	262.0	26.5
73.795833	46.26	84.38	38.12	5000.0	100.000	102.0	V	320.0	14.3
120.786667	45.59	84.38	38.79	5000.0	100.000	340.0	H	47.0	19.6
122.546667	44.58	84.38	39.80	5000.0	100.000	353.0	H	259.0	19.6
125.156667	45.37	84.38	39.01	5000.0	100.000	184.0	H	47.0	19.7
340.583333	39.99	84.38	44.39	5000.0	100.000	123.0	V	0.0	23.5

Notes:

¹ Field strength (dB V/m) = receiver/spectrum analyzer value (dB V) + correction factor (dB)

² Correction factors = antenna factor ACF (dB) + cable loss (dB)

³ 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.

Full Spectrum

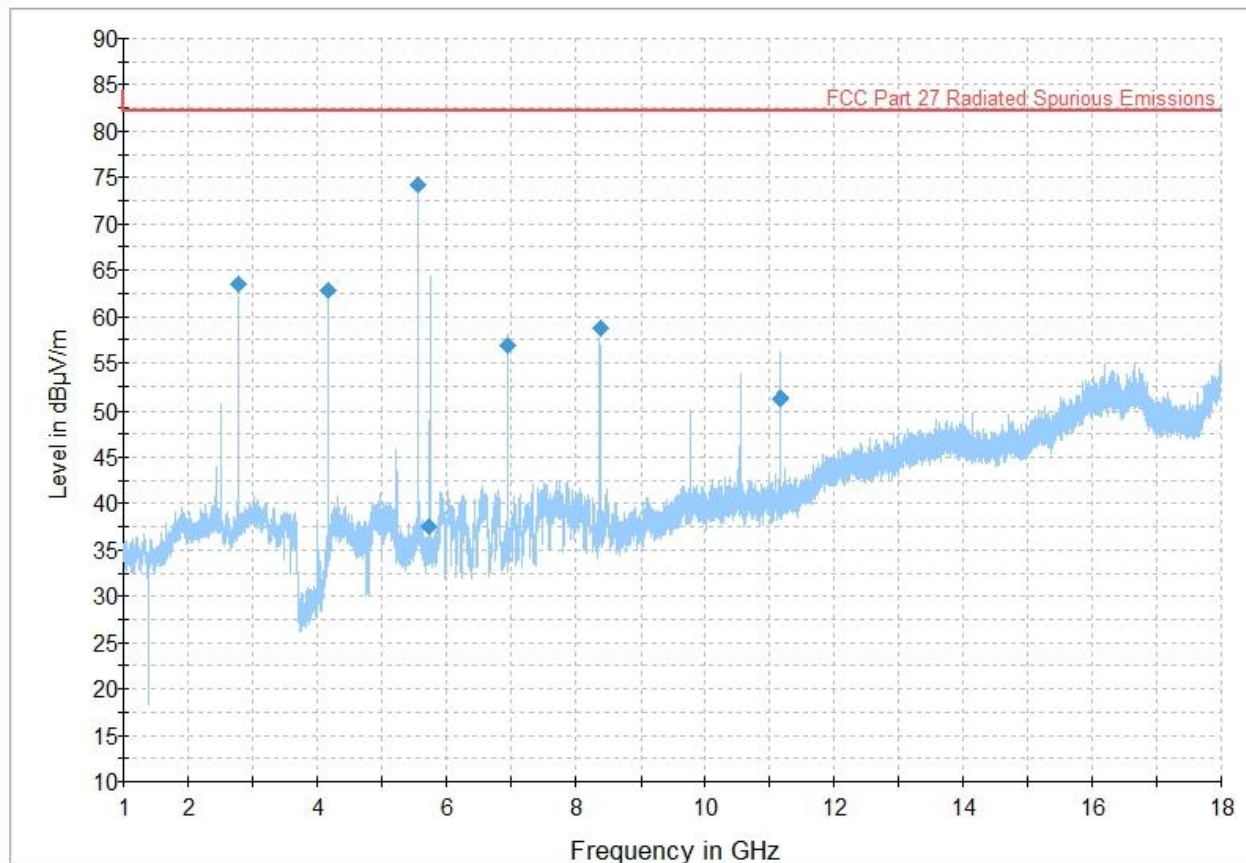


Figure 8.6-6: Radiated emissions spectral plot (1 GHz - 18 GHz) – 1394 MHz, 0.05 MHz BW

Table 8.6-6: Radiated emissions results

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2787.833333	63.42	82.23	18.81	100.0	1000.000	147.0	H	112.0	-2.8
4181.833333	62.75	82.23	19.48	100.0	1000.000	230.0	H	111.0	1.0
5576.233333	74.23	82.23	8.00	100.0	1000.000	294.0	H	136.0	3.6
5749.433333	37.54	82.23	44.69	100.0	1000.000	257.0	V	236.0	4.1
6969.833333	56.94	82.23	25.29	100.0	1000.000	99.0	V	174.0	5.5
8364.233333	58.70	82.23	23.53	100.0	1000.000	213.0	V	160.0	7.6
11151.833333	51.35	82.23	30.88	100.0	1000.000	246.0	H	186.0	11.2

Notes: ¹ Field strength (dB V/m) = receiver/spectrum analyzer value (dB V) + correction factor (dB)
² Correction factors = antenna factor ACF (dB) + cable loss (dB)
³ 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.

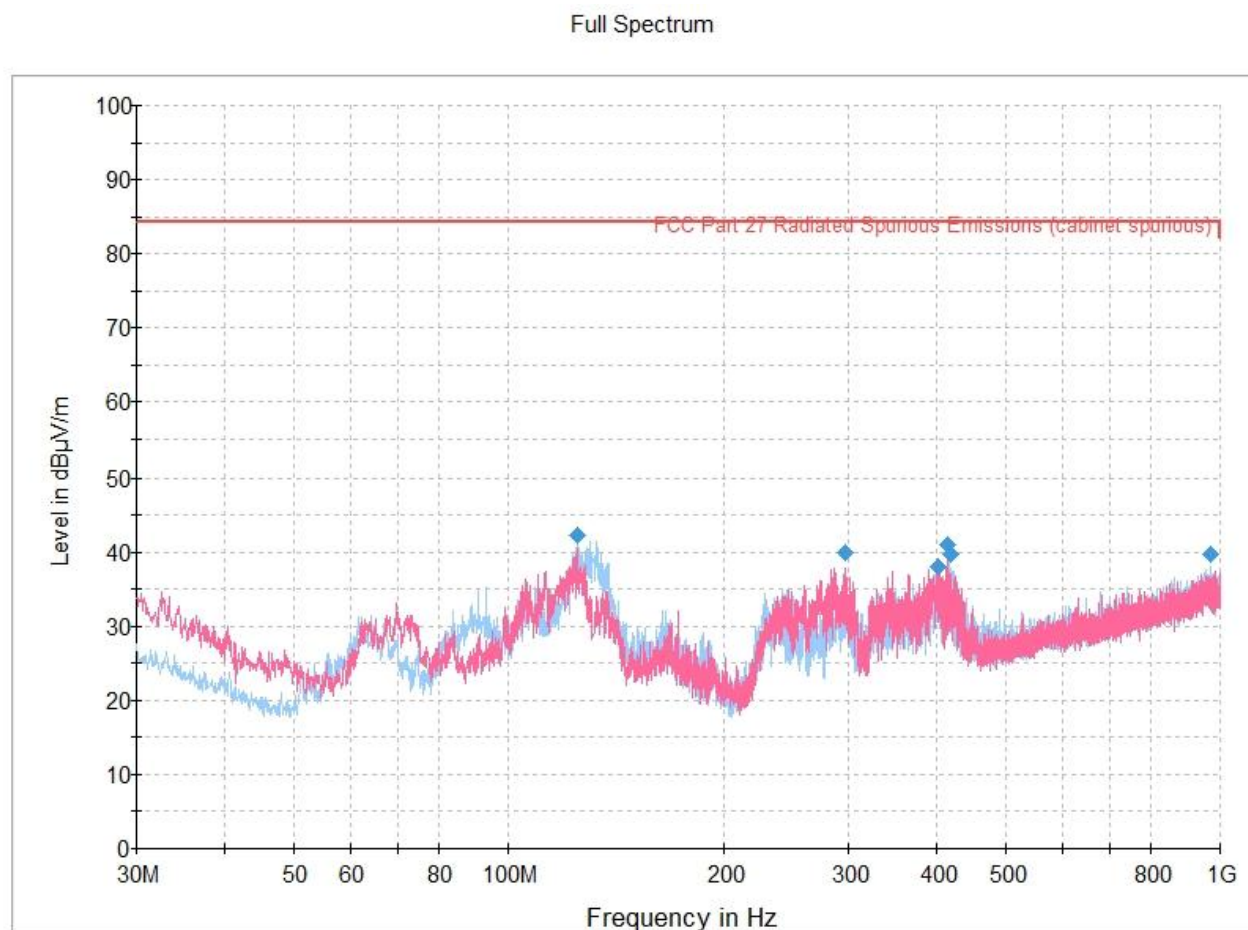


Figure 8.6-7: Radiated emissions spectral plot (30 MHz - 1 GHz) – 1392.5 MHz, 1.2 MHz BW

Table 8.6-7: Radiated emissions results

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
125.405000	42.21	84.38	42.17	5000.0	100.000	227.0	H	0.0	19.7
296.773333	39.84	84.38	44.54	5000.0	100.000	108.0	V	193.0	22.0
401.193333	38.06	84.38	46.32	5000.0	100.000	105.0	V	72.0	25.4
412.845000	41.02	84.38	43.36	5000.0	100.000	105.0	V	169.0	26.0
416.963333	39.73	84.38	44.65	5000.0	100.000	229.0	H	228.0	26.1
969.550000	39.63	84.38	44.75	5000.0	100.000	207.0	H	206.0	34.7

Notes:

¹ Field strength (dB V/m) = receiver/spectrum analyzer value (dB V) + correction factor (dB)

² Correction factors = antenna factor ACF (dB) + cable loss (dB)

³ 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.

Full Spectrum

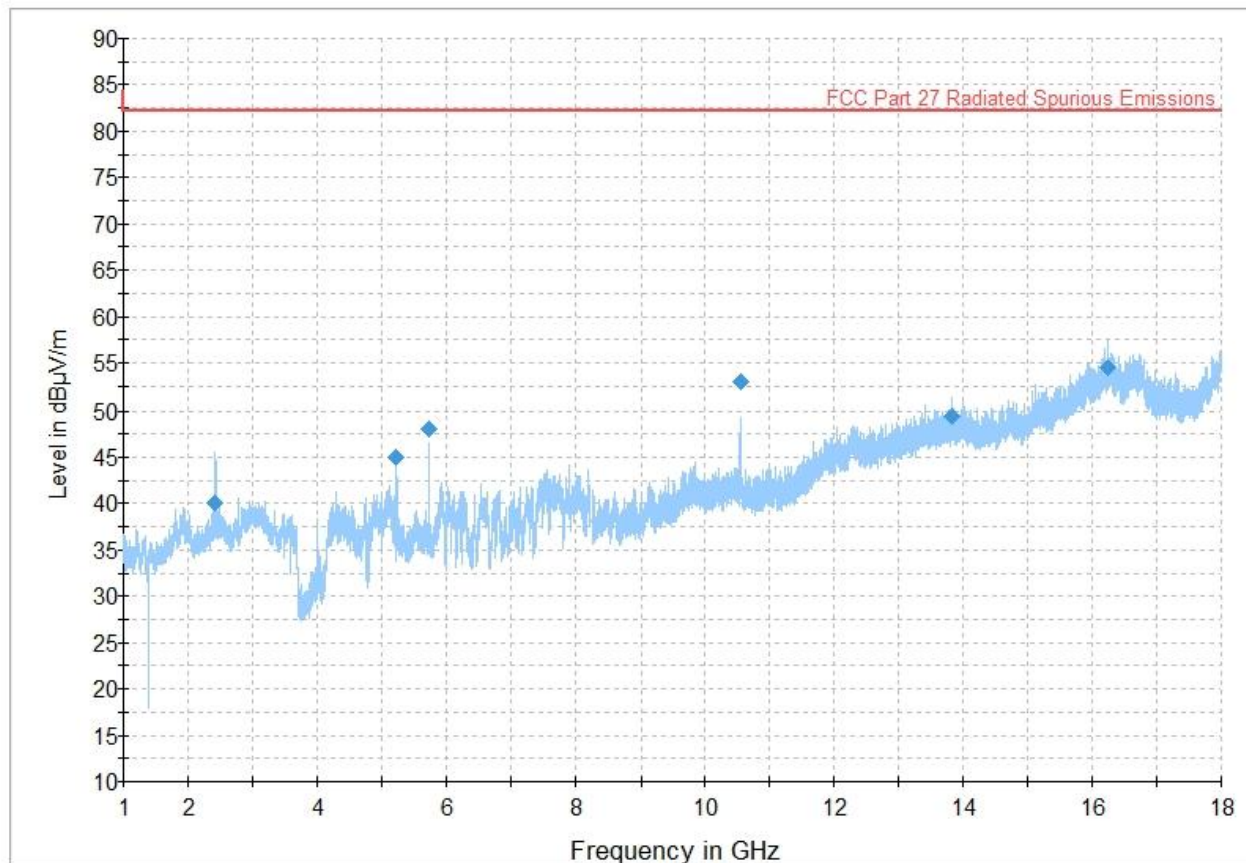


Figure 8.6-8: Radiated emissions spectral plot (1 GHz - 18 GHz) – 1392.5 MHz, 1.2 MHz BW

Table 8.6-8: Radiated emissions results

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2426.000000	40.14	82.23	42.09	100.0	1000.000	298.0	H	83.0	-3.9
5214.566667	45.04	82.23	37.19	100.0	1000.000	337.0	H	70.0	3.0
5742.366667	48.05	82.23	34.18	100.0	1000.000	171.0	H	333.0	4.1
10541.233333	53.00	82.23	29.23	100.0	1000.000	298.0	H	0.0	11.5
13827.333333	49.36	82.23	32.87	100.0	1000.000	360.0	V	330.0	18.2
16245.200000	54.49	82.23	27.74	100.0	1000.000	362.0	H	294.0	23.2

Notes:

¹ Field strength (dB V/m) = receiver/spectrum analyzer value (dB V) + correction factor (dB)

² Correction factors = antenna factor ACF (dB) + cable loss (dB)

³ 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.

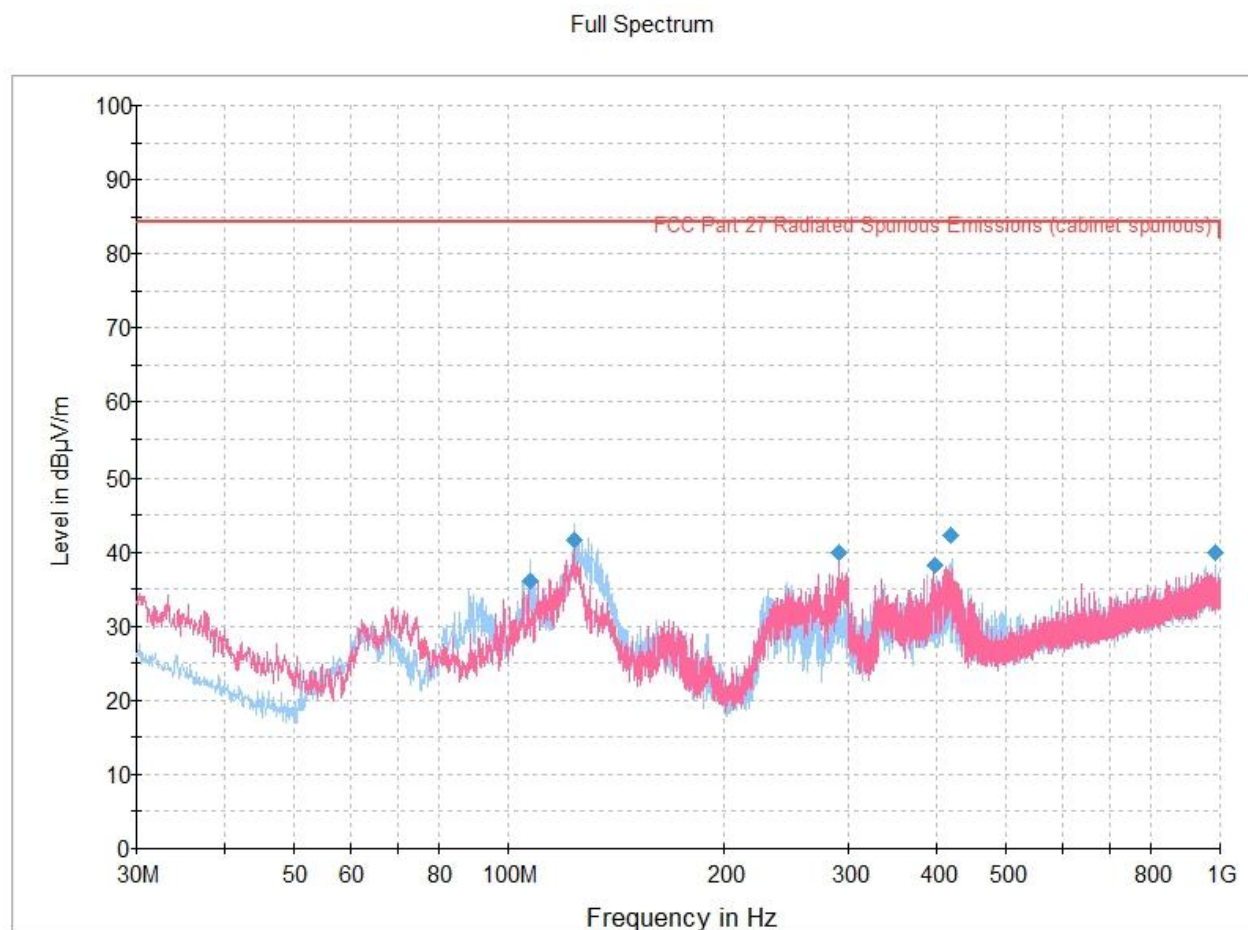


Figure 8.6-9: Radiated emissions spectral plot (30 MHz - 1 GHz) – 1392.5 MHz, 3.6 MHz BW

Table 8.6-9: Radiated emissions results

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
107.259167	36.02	84.38	48.36	5000.0	100.000	306.0	H	107.0	18.6
123.668333	41.72	84.38	42.66	5000.0	100.000	256.0	H	0.0	19.7
291.115000	39.90	84.38	44.48	5000.0	100.000	109.0	V	194.0	21.9
396.023333	38.29	84.38	46.09	5000.0	100.000	99.0	V	160.0	25.2
418.430833	42.18	84.38	42.20	5000.0	100.000	164.0	H	243.0	26.2
983.905000	39.85	84.38	44.53	5000.0	100.000	261.0	H	283.0	34.6

Notes:

¹ Field strength (dB V/m) = receiver/spectrum analyzer value (dB V) + correction factor (dB)

² Correction factors = antenna factor ACF (dB) + cable loss (dB)

³ 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.

Full Spectrum

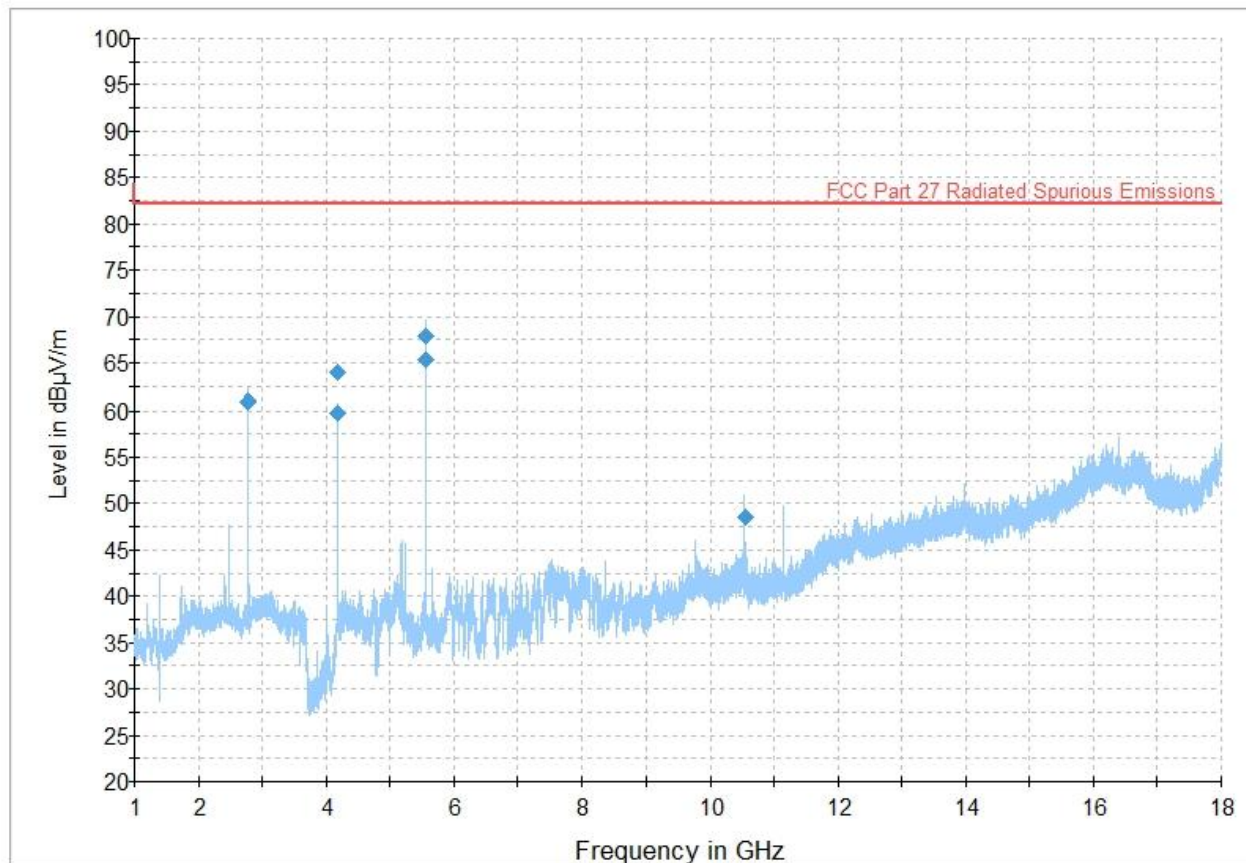


Figure 8.6-10: Radiated emissions spectral plot (1 GHz - 18 GHz) – 1392.5 MHz, 3.6 MHz BW

Table 8.6-10: Radiated emissions results

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2787.133333	60.89	82.23	21.34	100.0	1000.000	145.0	V	255.0	-2.8
4174.466667	63.96	82.23	18.27	100.0	1000.000	204.0	H	146.0	1.0
4174.533333	59.83	82.23	22.40	100.0	1000.000	105.0	V	169.0	1.0
5566.200000	67.85	82.23	14.38	100.0	1000.000	162.0	H	170.0	3.6
5573.966667	65.30	82.23	16.93	100.0	1000.000	174.0	H	171.0	3.6
10541.366667	48.51	82.23	33.72	100.0	1000.000	380.0	H	107.0	11.5

Notes:

¹ Field strength (dB V/m) = receiver/spectrum analyzer value (dB V) + correction factor (dB)

² Correction factors = antenna factor ACF (dB) + cable loss (dB)

³ 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.

8.6.5 Test data – 1432-1435 MHz

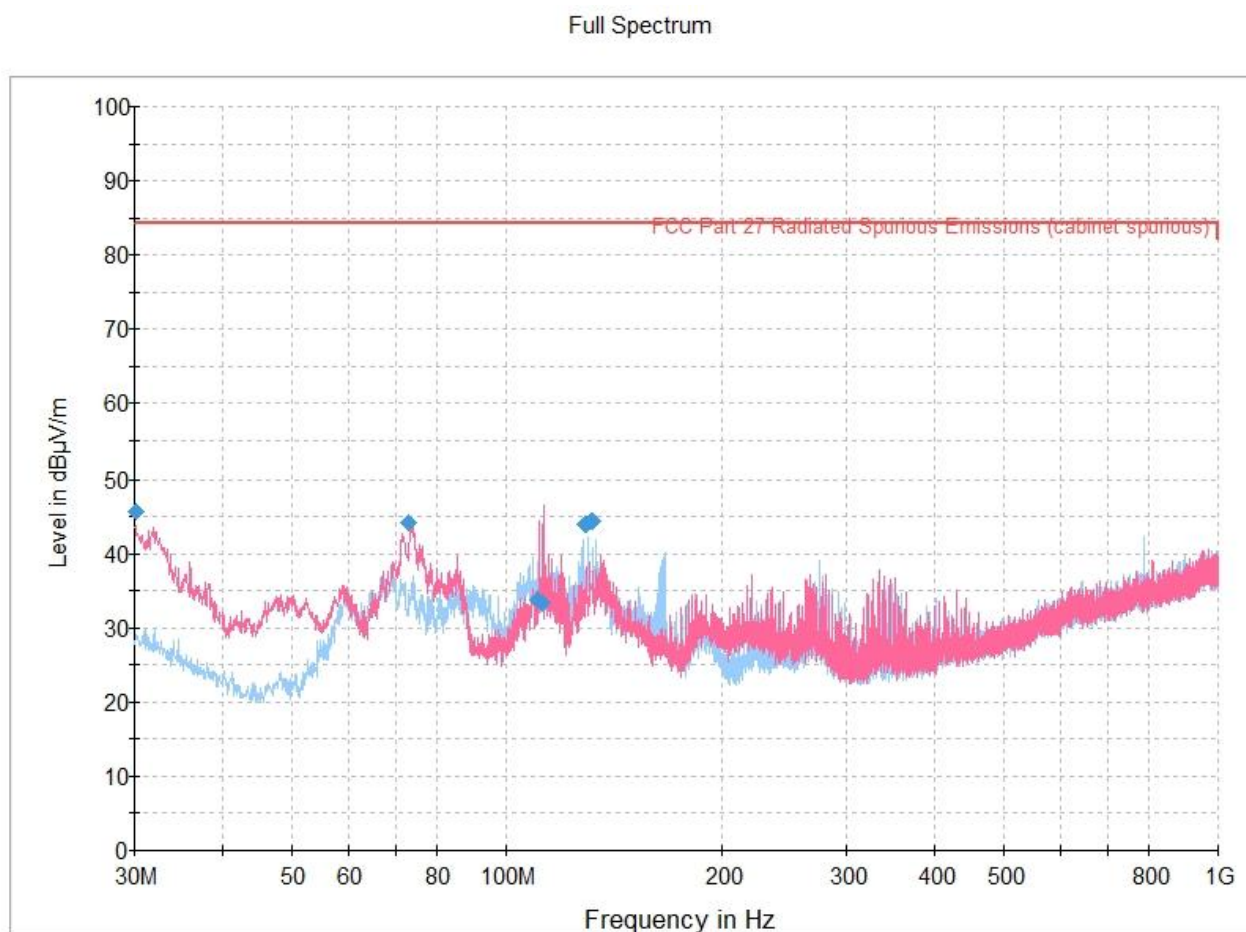


Figure 8.6-11: Radiated emissions spectral plot (30 MHz - 1 GHz) – 1433 MHz, 0.05 MHz BW

Table 8.6-11: Radiated emissions results

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.160000	45.69	84.38	38.69	5000.0	100.000	99.0	V	325.0	26.5
72.945833	44.25	84.38	40.13	5000.0	100.000	153.0	V	172.0	14.2
110.780833	33.74	84.38	50.64	5000.0	100.000	318.0	V	343.0	19.0
112.478333	33.27	84.38	51.11	5000.0	100.000	202.0	V	352.0	19.1
129.393333	43.93	84.38	40.45	5000.0	100.000	201.0	H	304.0	19.8
131.695833	44.28	84.38	40.10	5000.0	100.000	202.0	H	262.0	19.8

Notes:

¹ Field strength (dB V/m) = receiver/spectrum analyzer value (dB V) + correction factor (dB)

² Correction factors = antenna factor ACF (dB) + cable loss (dB)

³ 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.

Full Spectrum

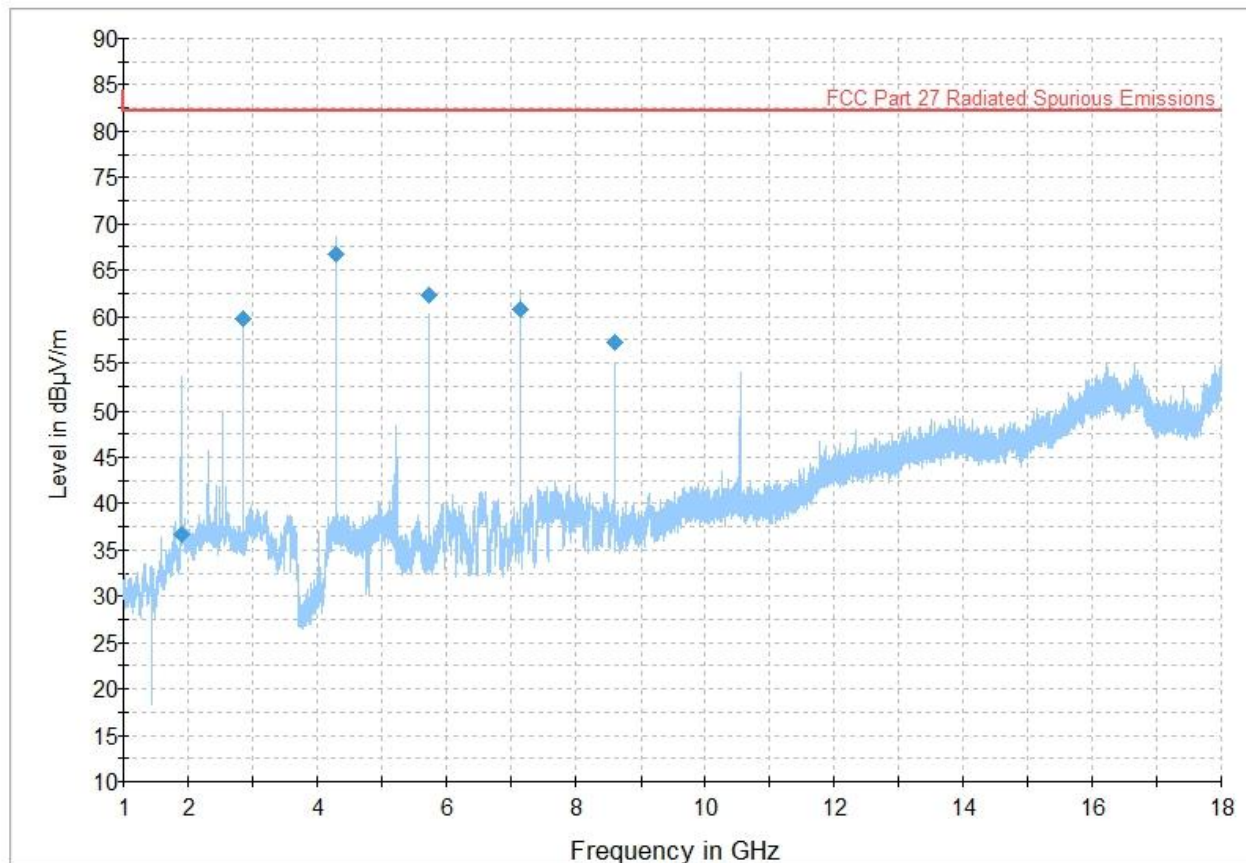


Figure 8.6-12: Radiated emissions spectral plot (1 GHz - 18 GHz) – 1433 MHz, 0.05 MHz BW

Table 8.6-12: Radiated emissions results

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1903.100000	36.70	82.23	45.53	100.0	1000.000	313.0	V	286.0	-5.5
2866.033333	59.71	82.23	22.52	100.0	1000.000	154.0	H	196.0	-2.5
4298.966667	66.70	82.23	15.53	100.0	1000.000	197.0	H	121.0	0.6
5732.066667	62.36	82.23	19.87	100.0	1000.000	232.0	H	121.0	4.2
7165.166667	60.75	82.23	21.48	100.0	1000.000	217.0	V	172.0	5.9
8597.866667	57.17	82.23	25.06	100.0	1000.000	210.0	H	184.0	7.4

Notes:

¹ Field strength (dB V/m) = receiver/spectrum analyzer value (dB V) + correction factor (dB)

² Correction factors = antenna factor ACF (dB) + cable loss (dB)

³ 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.

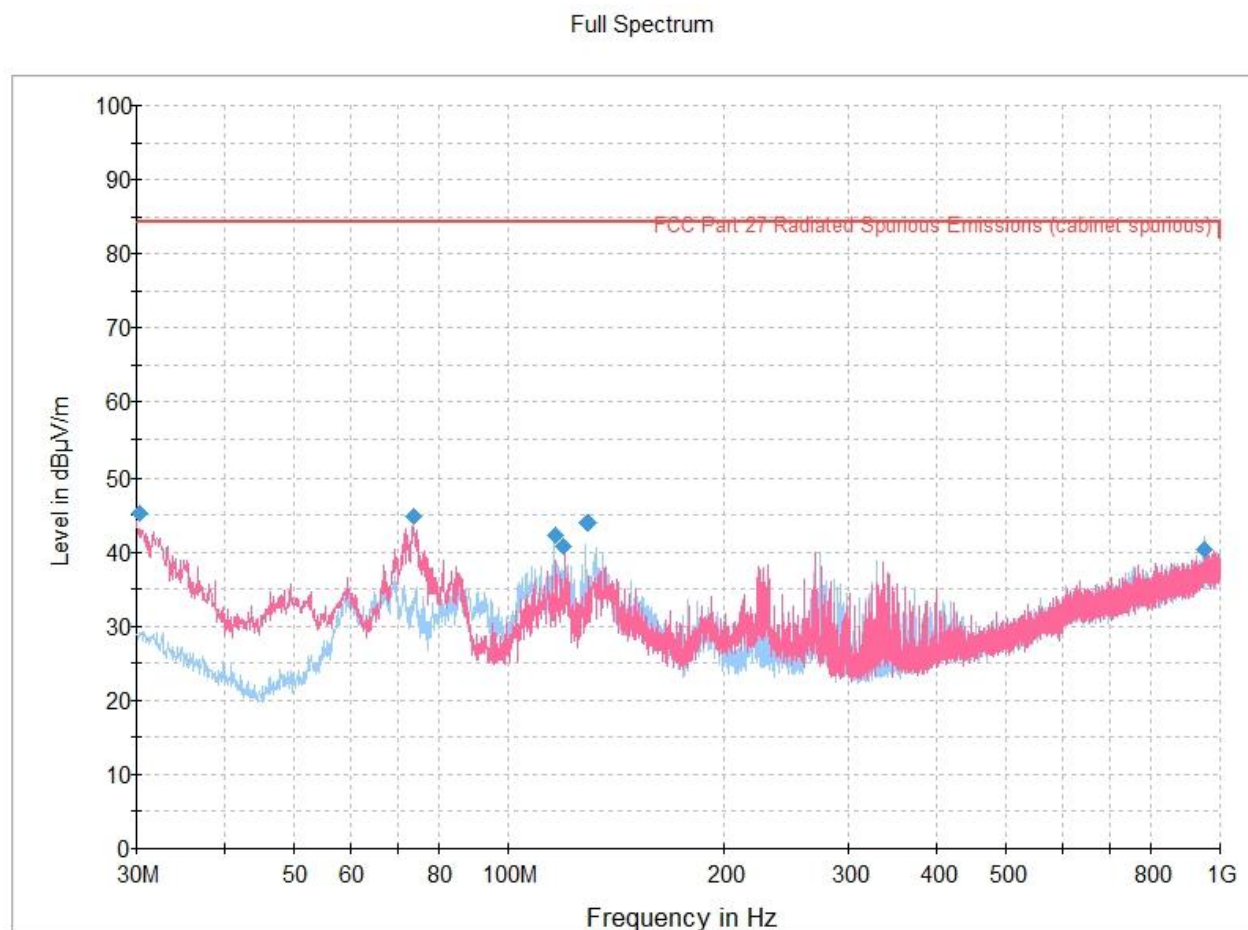


Figure 8.6-13: Radiated emissions spectral plot (30 MHz - 1 GHz) – 1433.5 MHz, 0.05 MHz BW

Table 8.6-13: Radiated emissions results

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.240000	45.28	84.38	39.10	5000.0	100.000	99.0	V	72.0	26.5
73.507500	44.89	84.38	39.49	5000.0	100.000	120.0	V	0.0	14.3
116.586667	42.22	84.38	42.16	5000.0	100.000	220.0	H	254.0	19.3
119.592500	40.71	84.38	43.67	5000.0	100.000	137.0	V	162.0	19.5
129.393333	43.88	84.38	40.50	5000.0	100.000	268.0	H	261.0	19.8
951.757500	40.26	84.38	44.12	5000.0	100.000	202.0	H	226.0	35.0

- Notes:
- ¹ Field strength (dB V/m) = receiver/spectrum analyzer value (dB V) + correction factor (dB)
 - ² Correction factors = antenna factor ACF (dB) + cable loss (dB)
 - ³ 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.

Full Spectrum

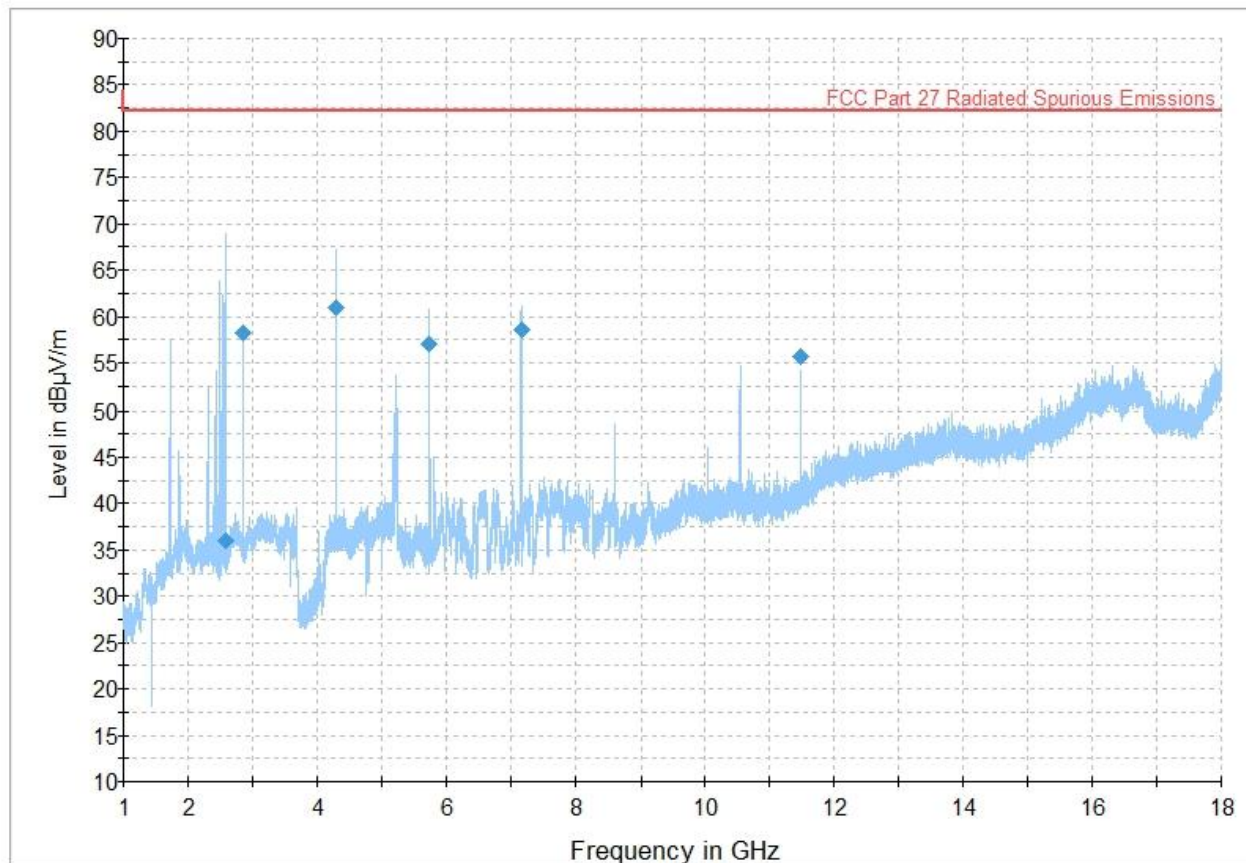


Figure 8.6-14: Radiated emissions spectral plot (1 GHz - 18 GHz) – 1433.5 MHz, 0.05 MHz BW

Table 8.6-14: Radiated emissions results

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2590.966667	36.03	82.23	46.20	100.0	1000.000	216.0	V	312.0	-3.6
2867.000000	58.24	82.23	23.99	100.0	1000.000	304.0	H	162.0	-2.5
4300.666667	60.97	82.23	21.26	100.0	1000.000	269.0	V	173.0	0.6
5733.933333	57.08	82.23	25.15	100.0	1000.000	202.0	H	176.0	4.2
7167.600000	58.61	82.23	23.62	100.0	1000.000	218.0	V	172.0	5.9
11468.033333	55.66	82.23	26.57	100.0	1000.000	209.0	H	171.0	12.4

Notes:

¹ Field strength (dB V/m) = receiver/spectrum analyzer value (dB V) + correction factor (dB)

² Correction factors = antenna factor ACF (dB) + cable loss (dB)

³ 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.

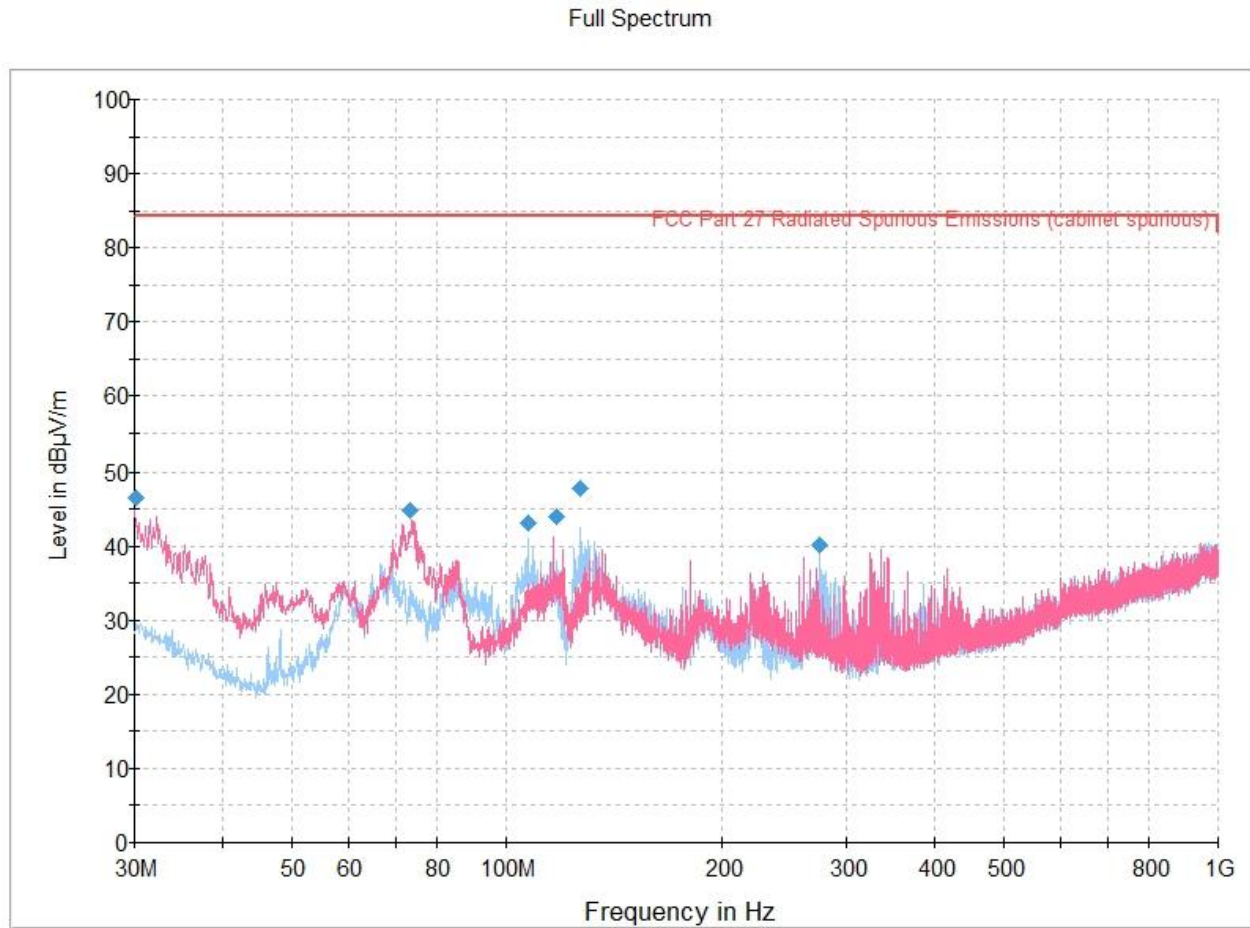


Figure 8.6-15: Radiated emissions spectral plot (30 MHz - 1 GHz) – 1434 MHz, 0.05 MHz BW

Table 8.6-15: Radiated emissions results

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.140000	46.39	84.38	37.99	5000.0	100.000	99.0	V	214.0	26.5
73.349167	44.85	84.38	39.53	5000.0	100.000	116.0	V	11.0	14.2
107.296667	43.02	84.38	41.36	5000.0	100.000	281.0	H	260.0	18.6
117.671667	43.90	84.38	40.48	5000.0	100.000	102.0	V	138.0	19.4
127.260000	47.69	84.38	36.69	5000.0	100.000	253.0	H	287.0	19.8
275.220833	40.09	84.38	44.29	5000.0	100.000	109.0	H	59.0	21.5

- Notes:
- ¹ Field strength (dB V/m) = receiver/spectrum analyzer value (dB V) + correction factor (dB)
 - ² Correction factors = antenna factor ACF (dB) + cable loss (dB)
 - ³ 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.

Full Spectrum

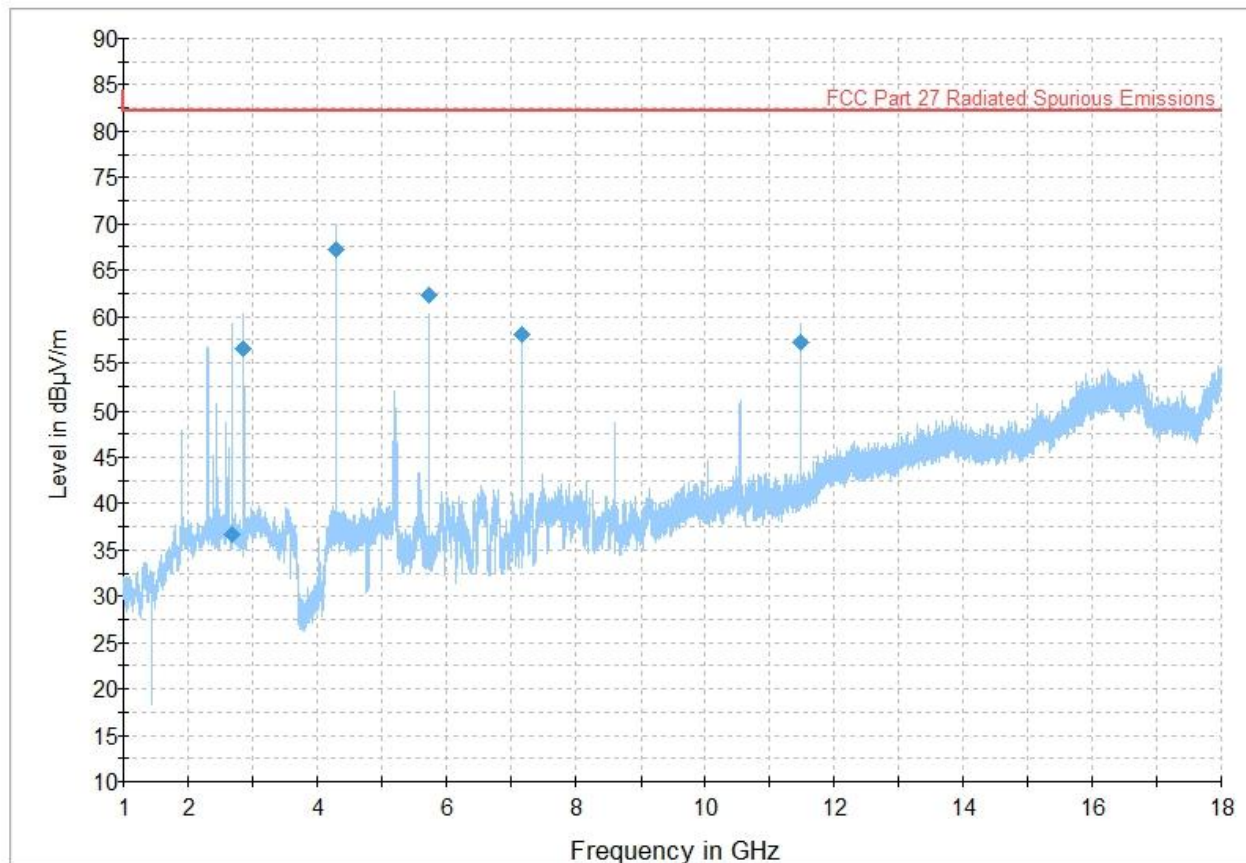


Figure 8.6-16: Radiated emissions spectral plot (1 GHz - 18 GHz) – 1434 MHz, 0.05 MHz BW

Table 8.6-16: Radiated emissions results

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2684.433333	36.72	82.23	45.51	100.0	1000.000	366.0	H	20.0	-3.2
2868.133333	56.61	82.23	25.62	100.0	1000.000	99.0	V	168.0	-2.5
4301.966667	67.25	82.23	14.98	100.0	1000.000	208.0	H	122.0	0.6
5736.033333	62.33	82.23	19.90	100.0	1000.000	241.0	H	182.0	4.1
7169.866667	58.00	82.23	24.23	100.0	1000.000	220.0	H	182.0	5.9
11472.000000	57.25	82.23	24.98	100.0	1000.000	212.0	H	170.0	12.4

Notes:

¹ Field strength (dB V/m) = receiver/spectrum analyzer value (dB V) + correction factor (dB)

² Correction factors = antenna factor ACF (dB) + cable loss (dB)

³ 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.

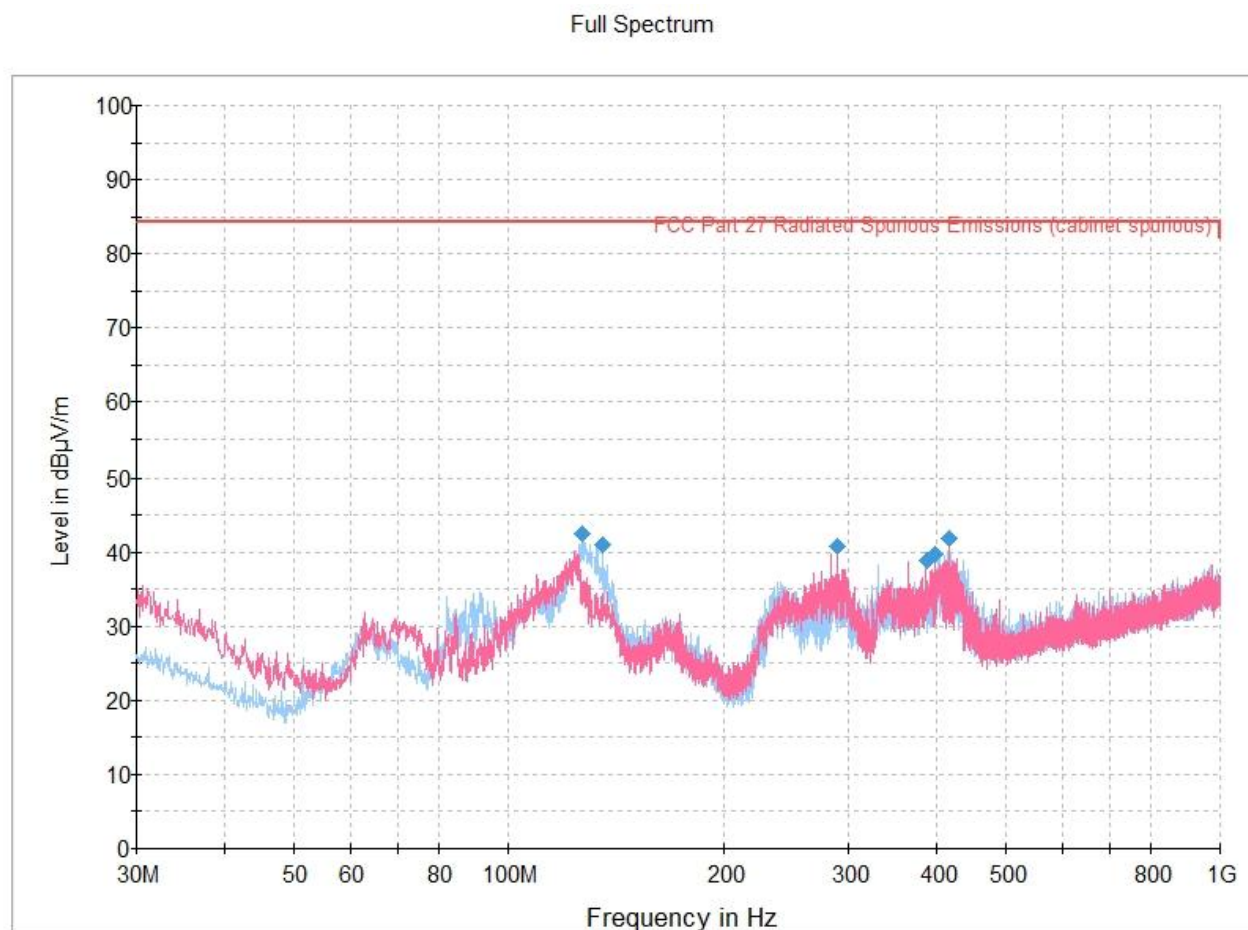


Figure 8.6-17: Radiated emissions spectral plot (30 MHz - 1 GHz) – 1433.5 MHz, 1.2 MHz BW

Table 8.6-17: Radiated emissions results

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
127.387500	42.54	84.38	41.84	5000.0	100.000	213.0	H	280.0	19.8
134.984167	40.97	84.38	43.41	5000.0	100.000	203.0	H	301.0	19.8
289.052500	40.73	84.38	43.65	5000.0	100.000	130.0	V	180.0	21.8
386.085000	38.86	84.38	45.52	5000.0	100.000	99.0	V	147.0	24.7
397.252500	39.68	84.38	44.70	5000.0	100.000	117.0	V	132.0	25.2
415.800000	41.78	84.38	42.60	5000.0	100.000	99.0	V	130.0	26.1

- Notes:
- ¹ Field strength (dB V/m) = receiver/spectrum analyzer value (dB V) + correction factor (dB)
 - ² Correction factors = antenna factor ACF (dB) + cable loss (dB)
 - ³ 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.

Full Spectrum

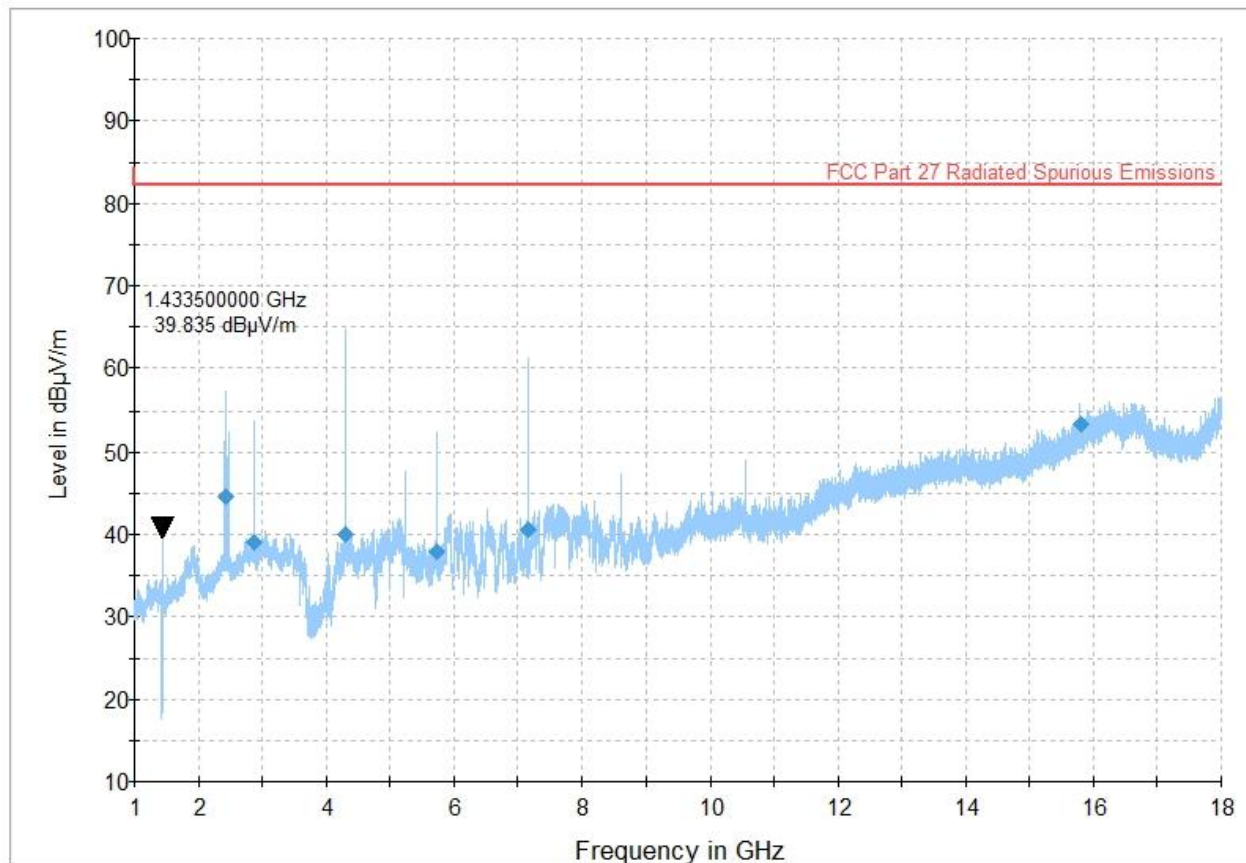


Figure 8.6-18: Radiated emissions spectral plot (1 GHz - 18 GHz) – 1433.5 MHz, 1.2 MHz BW

Table 8.6-18: Radiated emissions results

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2425.900000	44.67	82.23	37.56	100.0	1000.000	225.0	V	20.0	-3.9
2867.000000	39.07	82.23	43.16	100.0	1000.000	144.0	V	157.0	-2.5
4302.266667	39.97	82.23	42.26	100.0	1000.000	305.0	H	98.0	0.6
5734.566667	37.97	82.23	44.26	100.0	1000.000	241.0	V	219.0	4.2
7160.633333	40.56	82.23	41.67	100.0	1000.000	151.0	V	46.0	5.9
15794.400000	53.36	82.23	28.87	100.0	1000.000	320.0	V	33.0	21.6

Notes:

¹ Field strength (dB V/m) = receiver/spectrum analyzer value (dB V) + correction factor (dB)

² Correction factors = antenna factor ACF (dB) + cable loss (dB)

³ 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.

8.7 Frequency stability

8.7.1 References and limits

- FCC 47 CFR Part 2: §2.1055
- Test method: ANSI C63.26: 2015 §5.6.3

8.7.2 Test summary

Verdict	Pass		
Test date	December 8, 2025	Temperature	21 °C
Test engineer	Lan Sayasane, Sr. EMC Test Engineer	Air pressure	1009 mbar
Test location	☐ Wireless bench (conducted tests) ☐ 10 m semi-anechoic chamber (radiated tests) ☐ 3 m semi-anechoic chamber (radiated tests) ☒ Other: Temperature Chamber	Relative humidity	56 %

8.7.3 Observations, settings and special notes

The signal was exercised with a modulated carrier. The 99% occupied bandwidth was measured and the actual center frequency was calculated based on the average of the edges of the occupied bandwidth measurement. The ppm was calculated using the equation:

$$ppm = \left[\frac{(Reference\ Frequency - Tested\ Frequency)}{Reference\ Frequency} \right] * 1000000$$

Based on the measured frequency drift, the fundamental emission is confirmed to be inside the allocated band in all cases and does not result in emissions exceeding the limits defined in §27.53 including band-edge requirements. Frequency drift does not cause operation outside the authorized band.

8.7.4 Setup details

EUT power input during test	120 Vac/60Hz
EUT setup configuration	☒ Table-top ☐ Floor standing ☐ Other:

8.7.5 Test data

Table 8.7-1: Frequency stability results, 1390-1395 MHz operation

Temperature (°C)	Voltage (V)	Center Frequency (MHz)	Frequency Error			
			ppm	ppm (2 min)	ppm (5 min)	ppm (10 min)
-30	120	1392.5	3.73	-2.62	0.79	-0.72
-20	120	1392.5	0.79	-0.11	-8.87	-2.19
-10	120	1392.5	4.45	-6.18	1.97	0.11
0	120	1392.5	1.22	-1.62	1.94	-0.07
+10	120	1392.5	2.15	-7.29	-1.87	2.98
+20	138	1392.5	1.69	2.62	-0.68	-5.85
+20	120	1392.5	-0.43	-3.16	-4.88	-4.09
+20	102	1392.5	-1.04	4.60	-0.97	-0.25
+30	120	1392.5	2.30	4.24	-1.15	-0.61
+40	120	1392.5	-2.73	-3.66	3.73	3.48
+50	120	1392.5	-1.01	-7.07	-0.54	1.87

The worst-case frequency error observed is -8.87 ppm, corresponding to a frequency deviation of 12.351 kHz.

Assuming operation at the lowest operating frequency (1391 MHz) and the maximum measured occupied bandwidth of 0.053 MHz, then the lower edge of the occupied bandwidth is 1391 MHz – (0.053 MHz / 2) = 1390.9735 MHz.

Adding in the worst case frequency error gives the lower edge of the occupied bandwidth as: 1390.9735 – 0.012351 = 1390.96 MHz. This illustrates that the fundamental emission stays within the authorized operational frequency band of 1390 – 1395 MHz. Similar calculations for high channel and other nominal channel bandwidths yield the same conclusion.

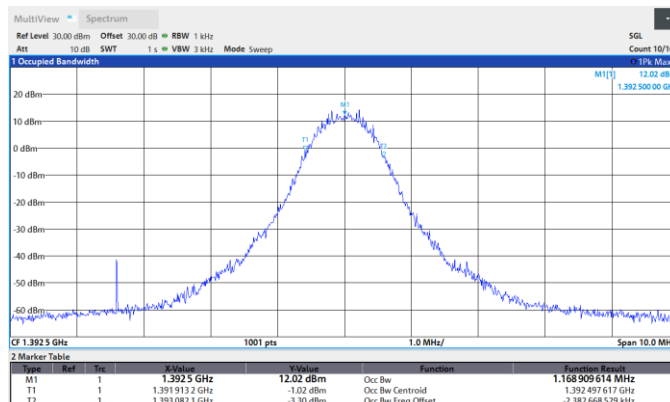


Figure 8.7-1: Frequency stability example plot – 1392.5 MHz (+20C Initial)

Table 8.7-2: Frequency stability results, 1432-1435 MHz operation

Temperature (°C)	Voltage (V)	Center Frequency (MHz)	Frequency Error			
			ppm	ppm (2 min)	ppm (5 min)	ppm (10 min)
-30	120	1433.5	2.72	5.65	2.41	2.48
-20	120	1433.5	0.21	-7.39	-2.55	2.72
-10	120	1433.5	-2.13	-0.94	1.36	6.80
0	120	1433.5	-3.35	-5.44	-1.26	4.08
+10	120	1433.5	1.74	-4.81	0.45	5.44
+20	138	1433.5	-0.28	4.74	-4.67	1.26
+20	120	1433.5	2.65	-1.92	-6.70	-2.79
+20	102	1433.5	-1.88	2.90	0.73	3.94
+30	120	1433.5	-1.29	1.74	-0.31	5.93
+40	120	1433.5	-0.31	-5.96	-1.29	-3.91
+50	120	1433.5	3.66	-9.21	-3.52	1.88

The worst-case frequency error observed is -7.39 ppm, corresponding to a frequency deviation of 10.593 kHz.

Assuming operation at the lowest operating frequency (1433 MHz) and the maximum measured occupied bandwidth of 0.054 MHz, then the lower edge of the occupied bandwidth is 1433 MHz – (0.054 MHz / 2) = 1432.9730 MHz.

Adding in the worst case frequency error gives the lower edge of the occupied bandwidth as: 1432.9730 – 0.010593= 1432.96 MHz. This illustrates that the fundamental emission stays within the authorized operational frequency band of 1432 – 1435 MHz. Similar calculations for high channel and other nominal channel bandwidths yield the same conclusion.

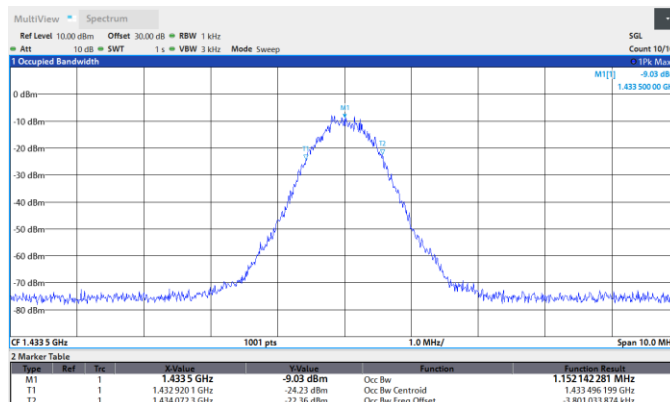


Figure 8.7-2: Frequency stability example plot – 1433.5 MHz (+20C Initial)

End of test report