

Test Report

HELEM2501000014-1 v1.0



INTENTIONAL RADIATOR TESTS ACCORDING TO FCC PART 15 C AND ISED CANADA REQUIREMENTS

Equipment Under Test: WSI Module

Trademark: GE HealthCare

Model: WSI01

Type: -

Customer / Manufacturer: GE Healthcare Finland Oy
Kuortaneenkatu 2
FI-00510, Helsinki
Finland

FCC Rule Part: §15.247

IC Rule Part: RSS-Gen Issue 5, Amendment 1, Amendment 2
RSS-247 Issue 3

KDB: 558074 D01 15.247 Meas Guidance v05r02

Date: 13 August 2025

Issued by:

A blue ink signature of Lauri Sippola, consisting of stylized, flowing letters.

Lauri Sippola
Testing Engineer

Date: 13 August 2025

Checked by:

A blue ink signature of Rauno Repo, featuring a large, bold initial 'R' followed by the surname.

Rauno Repo
Senior EMC Specialist

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GENERAL REMARKS**Disclaimer**

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

RELEASE HISTORY

Version	Changes	Issued
1.0	Initial release	13 August 2025

PRODUCT DESCRIPTION

Equipment Under Test

Trademark: GE HealthCare
Model: WSI01
Type: -
Serial number: WSI4R-24240172
Hardware version: MWS rev. 4 (mass production equivalent)
Firmware version: wsi-module-hw20-mfg_0.0.217-97.7.20ea881
Software version: N/A
FCC ID: 2AO8L-WSI01
IC: 25821-WSI01

General Description

The WSI module is a GEHC radio product that enables a host device to communicate with GEHC wireless sensors. The operation utilizes GEHC's proprietary MBAN radio technology for patient data transfer and NFC radio technology for device pairing.

Classification

Fixed device ☐
Mobile Device (Human body distance > 20cm) ☐
Portable Device (Human body distance < 20cm) ☒

Samples and Modifications

No.	Name	Description
1	WSI01	Normal sample

Specifications

Type of equipment:	Digital Transmission System
Operating frequency range:	2402.0 – 2478.8 MHz
Number of channels:	31
Channel separation:	2.5 / 2.6 / 2.7 MHz
Nominal channel bandwidth:	2 MHz
Modulation:	GFSK
Antenna type and gain:	Pulse W3494 Antenna 0: 4.60 dBi Antenna 1: 2.43 dBi
EUT dimensions:	22 x 30 x 2.4 mm (PCIe M.2 2230)
Power requirements:	3.3 VDC ± 5 %

Ports and Cables

Port / Cable	Description
USB	M.2 adapter card to Raspberry Pi

Peripherals

Peripheral	Description
WSI host device	Raspberry Pi 5, used to command the EUT
M.2 adapter	GEHC Raspberry Pi Hat for WSI M.2 Module rev. 1, used for enabling the M.2 E-key interface between Raspberry Pi and the EUT
AC/DC power supply	Dell HA130PM170, used for AC Power-Line Conducted Emissions test

The peripherals were provided by the customer.

SUMMARY OF TESTING

Test Specification	Description of Test	Result
§15.203	Antenna Requirement	PASS
§15.207(a) / RSS-Gen 8.8	AC Power-Line Conducted Emissions	PASS
§15.247(a)(2) / RSS-247 5.2 a)	6 dB Bandwidth	PASS
RSS-Gen 6.7	Occupied Bandwidth 99 %	PASS
§15.247(b)(3) / RSS-247 5.4 d)	Maximum Peak Conducted Output Power	PASS
§15.247(d) / RSS-247 5.5	Unwanted Emissions (conducted)	PASS
§15.247(d) / RSS-247 5.5	Unwanted Emissions (radiated)	PASS
§15.247(e) / RSS-247 5.2 b)	Power Spectral Density	PASS

The decision rule applied for the tests results stated in this test report is according to the requirements of section 1.4 of ANSI C63.10-2020.

EUT Test Conditions during Testing

The EUT was powered and controlled from a Raspberry Pi host device via an M.2 adapter card. The MBAN test mode SW was used to command the MBAN radio.

Conducted RF tests were performed with an automated Rohde & Schwarz TS8997 measurement system. The EUT was connected to the measurement system with a coaxial cable.

During radiated tests the EUT was connected to the antenna (Pulse W3494) provided by the customer. Antenna port 0 was used for radiated measurements. The NFC radio was transmitting at 13.56 MHz.

Table 1: Test frequencies

Channel	Frequency [MHz]
Bottom (15)	2402.0
Middle (31)	2443.0
Top (45)	2478.8

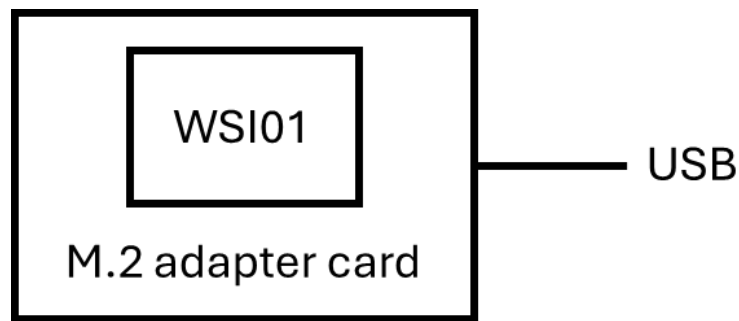


Figure 1: Test setup block diagram

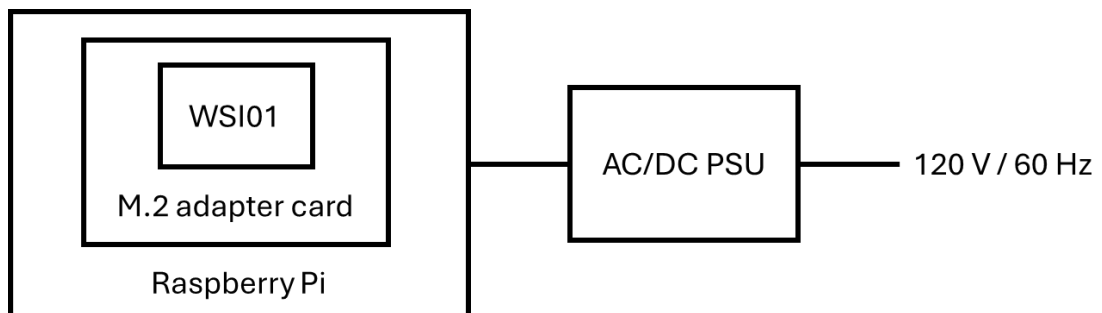


Figure 2: Test setup block diagram for AC Power-Line Conducted Emissions

Test Facility

Testing Laboratory / address: FCC designation number: FI0002 ISED CAB identifier: T004	SGS Fimko Ltd Takomotie 8 FI-00380, HELSINKI FINLAND
Test Site:	☐ K10LAB, ISED Canada registration number: 8708A-1 ☒ K5LAB, ISED Canada registration number: 8708A-2 ☐ T10LAB

TEST RESULTS

Antenna Requirement

Standard: FCC Rule §15.203

Tested by: HEM

Date: 24 January 2025

FCC Rule: §15.203

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

Specification	Requirement (at least one of the following shall be applied)	Conclusion
§15.203	1. Permanently attached antenna 2. Unique coupling to the intentional radiator 3. Professionally installed radio. The installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.	PASS
Note	Option 1 is used	

AC Power-Line Conducted Emissions

Standard: ANSI C63.10-2020 clause 6.2
Tested by: HEM
Date: 28 February 2025
Temperature: 22 °C
Humidity: 39 %RH
Measurement uncertainty: ± 2.9 dB, level of confidence 95 % (k = 2)
Test result: **PASS**

FCC Rule: §15.207(a)
RSS-Gen clause 8.8

For radio apparatus that are designed to be connected to the public utility AC power network, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the range 150 kHz to 30 MHz shall not exceed the limits in the table below, as measured using a 50 μ H / 50 Ω line impedance stabilization network. This requirement applies for the radio frequency voltage measured between each power line and the ground terminal of each AC power-line mains cable of the EUT.

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

* The level decreases linearly with the logarithm of the frequency

For an EUT that connects to the AC power lines indirectly, through another device, the requirement for compliance shall apply at the terminals of the AC power-line mains cable of a representative support device, while it provides power to the EUT. The lower limit applies at the boundary between the frequency ranges. The device used to power the EUT shall be representative of typical applications.

The correction factor (dB) in the final result table contains the sum of the transducers (cables + transient limiter + LISN). The reported QuasiPeak and CAverage values include the correction factor.

AC Power-Line Conducted Emissions

Test results

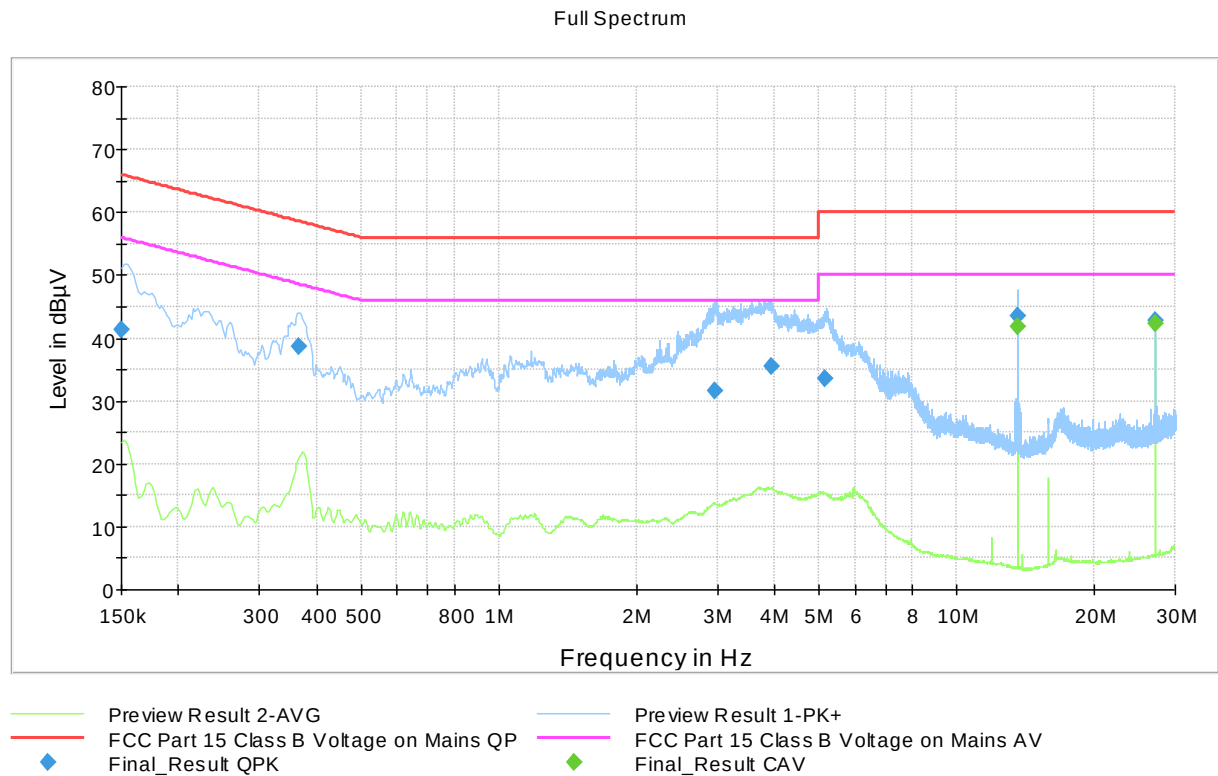


Figure 3: AC Power-Line Conducted Emissions

Table 2: Test results for AC Power-Line Conducted Emissions

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	41.23	---	66.00	24.77	15 x 1000.0	9.000	N	9.7
0.366750	38.56	---	58.57	20.01	15 x 1000.0	9.000	N	9.7
2.959500	31.71	---	56.00	24.29	15 x 1000.0	9.000	L1	9.9
3.952000	35.46	---	56.00	20.54	15 x 1000.0	9.000	L1	10.0
5.157750	33.44	---	60.00	26.56	15 x 1000.0	9.000	N	10.0
13.558500	43.60	---	60.00	16.40	15 x 1000.0	9.000	N	10.4
13.562500	---	41.77	50.00	8.23	15 x 1000.0	9.000	L1	10.4
27.119250	---	42.25	50.00	7.75	15 x 1000.0	9.000	L1	10.7
27.119250	42.70	---	60.00	17.30	15 x 1000.0	9.000	N	10.8

6 dB Bandwidth

Standard: ANSI C63.10-2020 clause 11.8
Tested by: HEM
Date: 24 January 2025
Temperature: 23 °C
Humidity: 26 %RH
Test result: **PASS**

FCC Rule: §15.247(a)(2)

RSS-247 5.2 a)

The 6 dB bandwidth is defined as the frequency range between two points, one at the lowest frequency below and one at the highest frequency above the carrier frequency, at which the maximum power level of the transmitted emission is attenuated 6 dB below the maximum in-band power level of the modulated signal, where the two points are on the outskirts of the in-band emissions.

The minimum 6 dB bandwidth shall be 500 kHz.

Test results

Table 3: 6 dB Bandwidth

Antenna Port	Channel	6 dB BW [MHz]	Limit [MHz]	Result
0	Bottom	1.980	≥ 0.500	PASS
	Middle	1.980		PASS
	Top	1.980		PASS
1	Bottom	2.020		PASS
	Middle	2.020		PASS
	Top	2.020		PASS

The conducted measurement was performed with a spectrum analyser using the following settings:

Setting	Value
Span	4 MHz
RBW	100 kHz
VBW	300 kHz
Sweep Points	101
Sweep Time (Auto)	18.938 µs
Detector	MaxPeak
Trace Mode	Max Hold
Sweep Type (Auto)	FFT

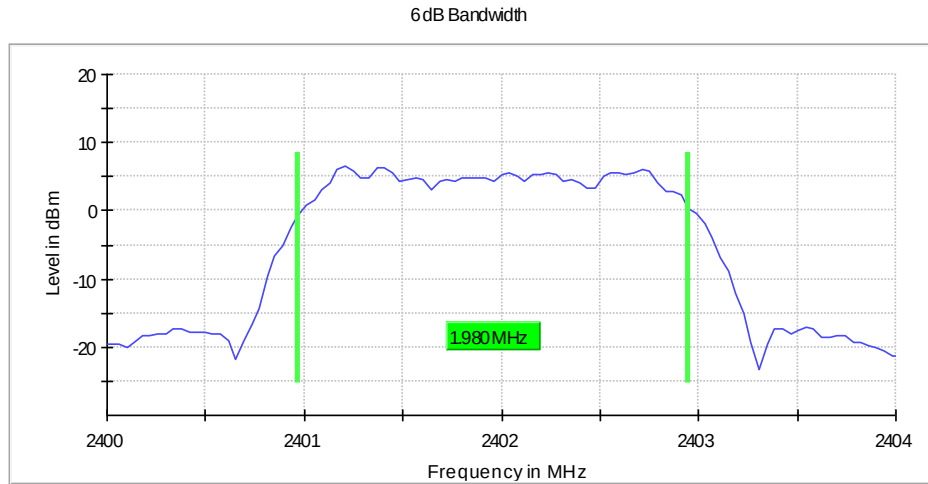


Figure 4: 6 dB Bandwidth (Antenna port 0, bottom ch.)

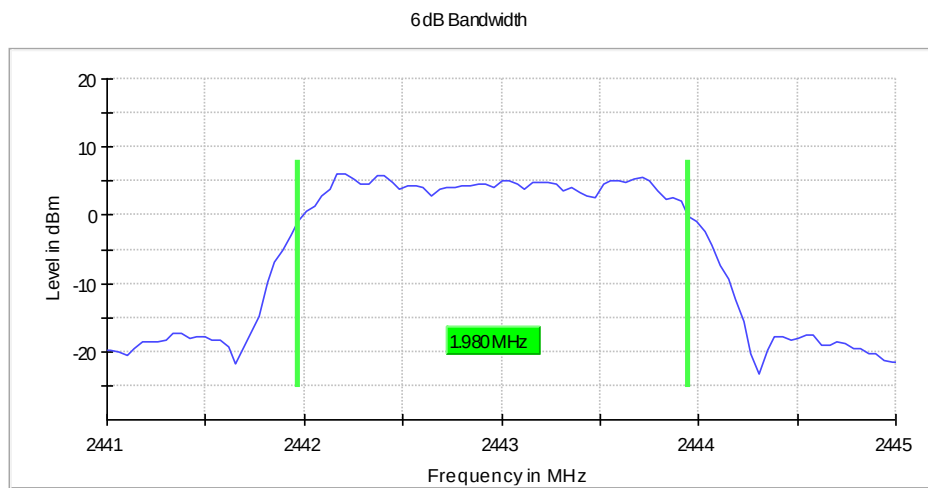


Figure 5: 6 dB Bandwidth (Antenna port 0, middle ch.)

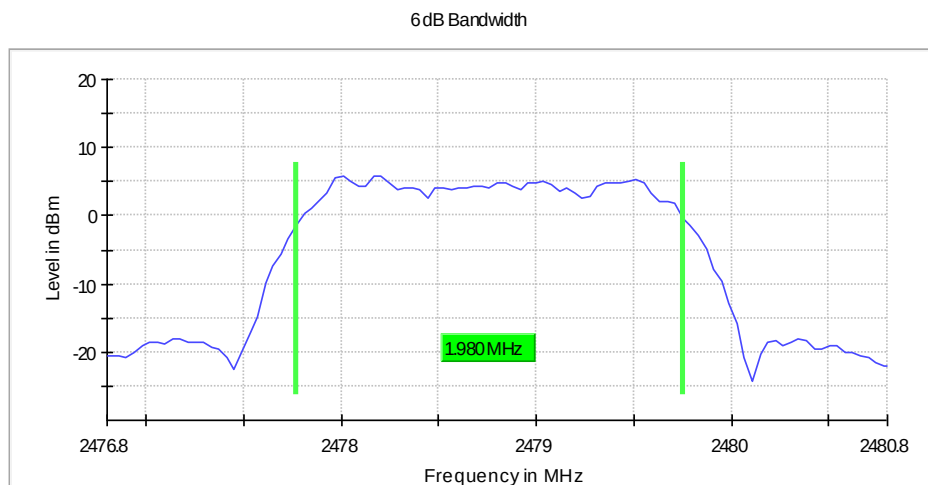


Figure 6: 6 dB Bandwidth (Antenna port 0, top ch.)

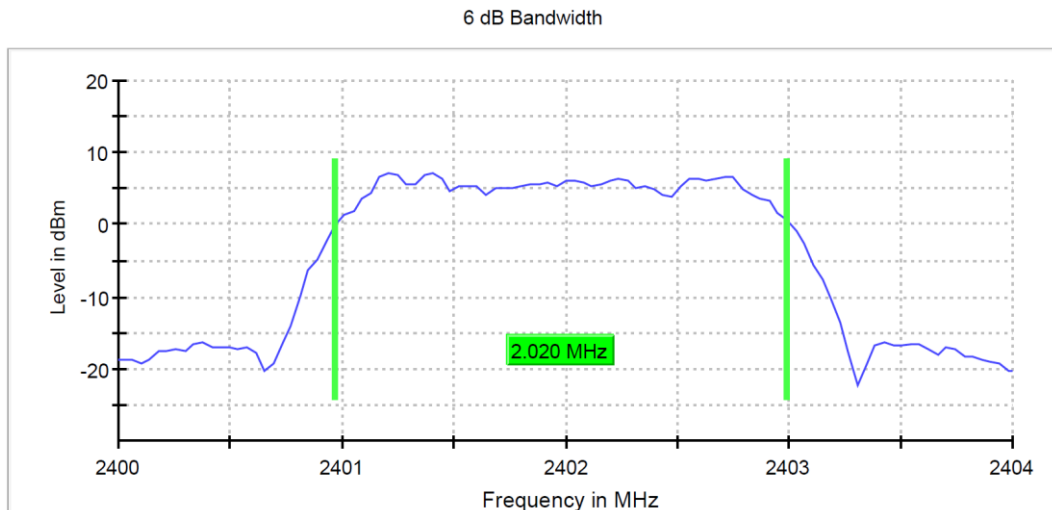


Figure 7: 6 dB Bandwidth (Antenna port 1, bottom ch.)

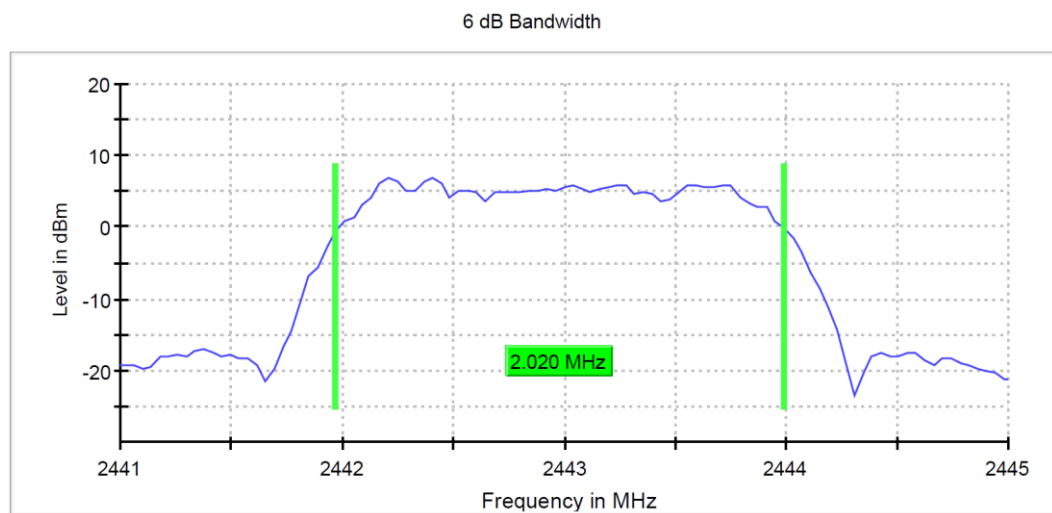


Figure 8: 6 dB Bandwidth (Antenna port 1, middle ch.)

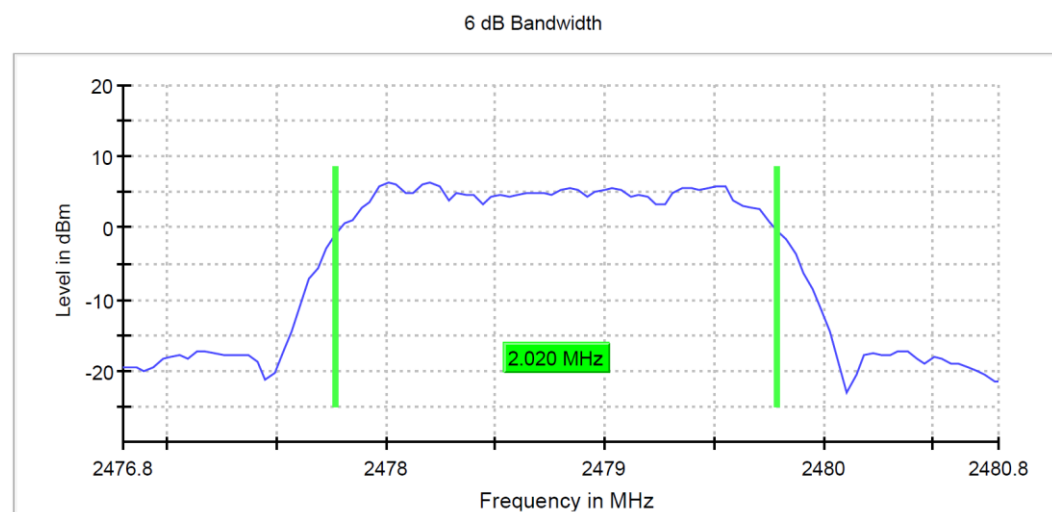


Figure 9: 6 dB Bandwidth (Antenna port 1, top ch.)

Occupied Bandwidth 99 %

Standard: RSS-Gen 6.7
Tested by: HEM
Date: 24 January 2025
Temperature: 23 °C
Humidity: 26 %RH
Test result: **PASS**

RSS-Gen 6.7

The occupied 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.

Test results

Table 4: Occupied Bandwidth 99 %

Antenna Port	Channel	OBW 99 % [MHz]	Limit [MHz]	Result
0	Bottom	2.190	-	PASS
	Middle	2.190		PASS
	Top	2.180		PASS
1	Bottom	2.190		PASS
	Middle	2.180		PASS
	Top	2.190		PASS

The conducted measurement was performed with a spectrum analyser using the following settings:

Setting	Value
Span	4 MHz
RBW	20 kHz
VBW	100 kHz
Sweep Points	400
Sweep Time (Auto)	94.824 µs
Detector	MaxPeak
Trace Mode	Max Hold
Sweep Type (Auto)	FFT

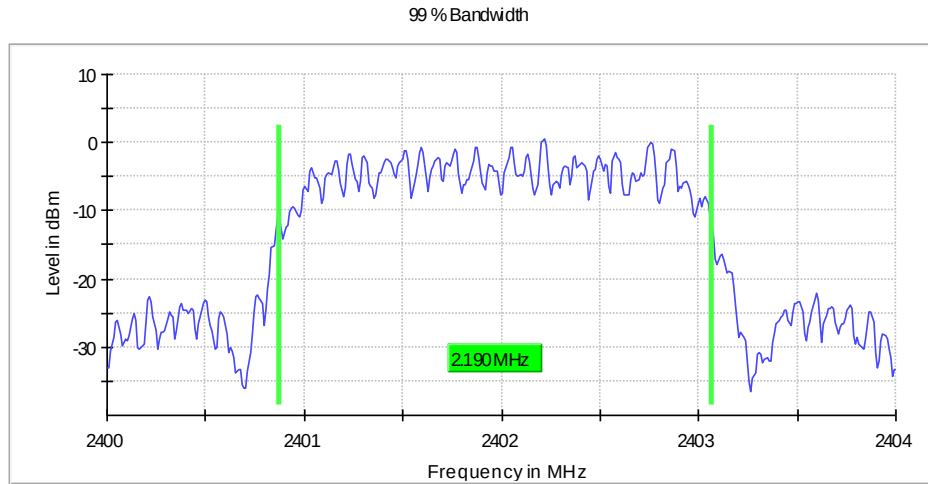


Figure 10: Occupied Bandwidth 99 % (Antenna port 0, bottom ch.)

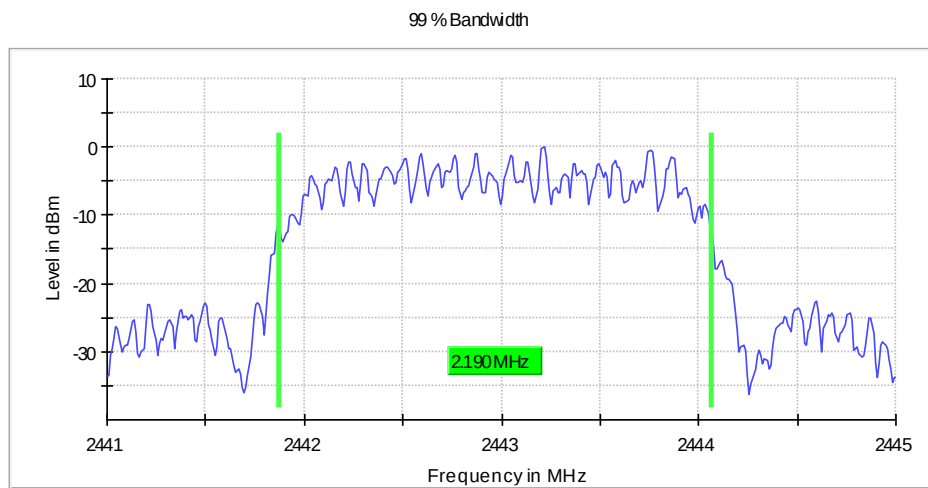


Figure 11: Occupied Bandwidth 99 % (Antenna port 0, middle ch.)

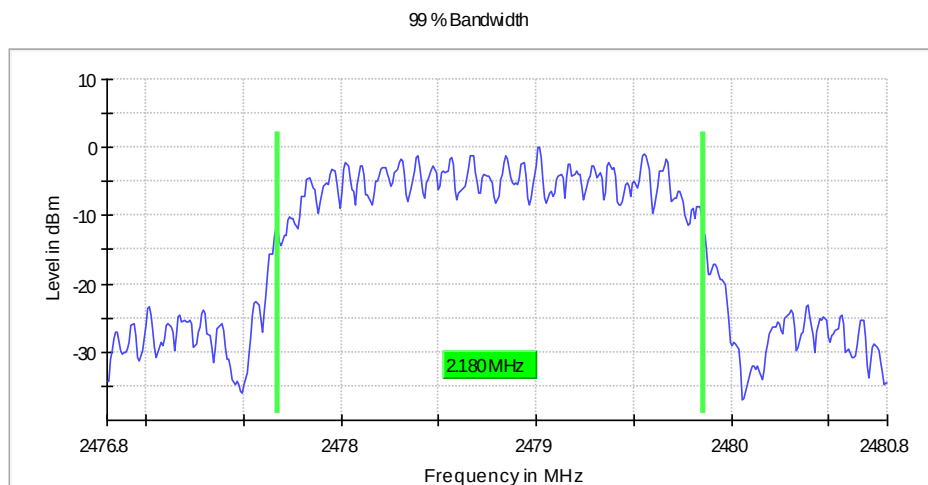


Figure 12: Occupied Bandwidth 99 % (Antenna port 0, top ch.)

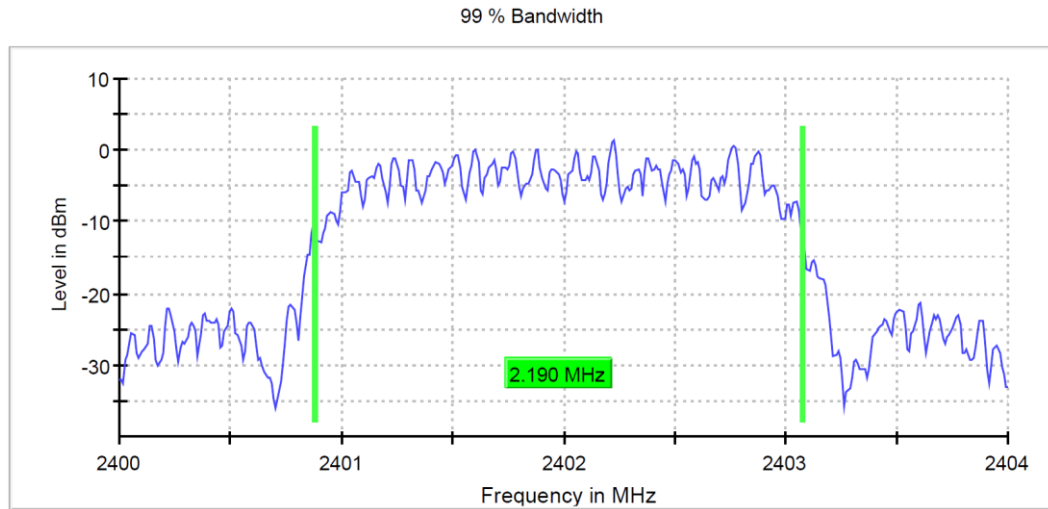


Figure 13: Occupied Bandwidth 99 % (Antenna port 1, bottom ch.)

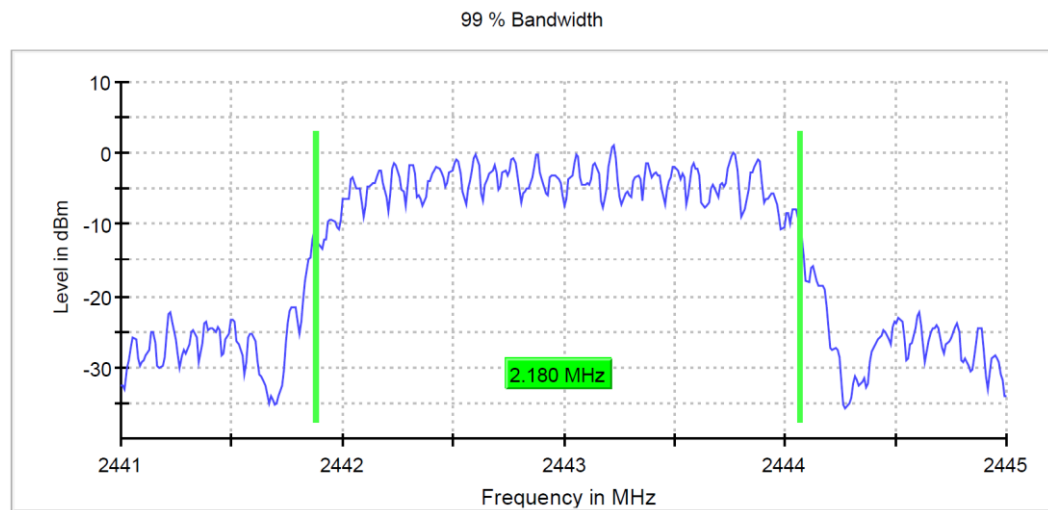


Figure 14: Occupied Bandwidth 99 % (Antenna port 1, middle ch.)

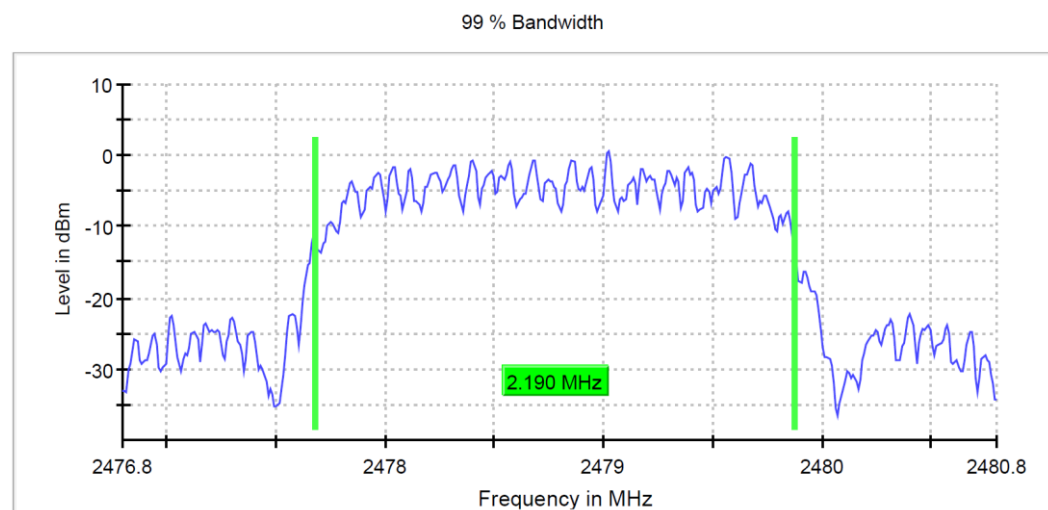


Figure 15: Occupied Bandwidth 99 % (Antenna port 1, top ch.)

Maximum Peak Conducted Output Power

Standard: ANSI C63.10-2020 clause 11.9.1.1
Tested by: HEM
Date: 24 January 2025
Temperature: 23 °C
Humidity: 26 %RH
Measurement uncertainty: ± 2.87 dB, level of confidence 95 % (k = 2)
Test result: **PASS**

FCC Rule: §15.247(b)(3)

RSS-247 5.4 d)

For systems using digital modulation in the 2400.0-2483.5 MHz band the maximum peak conducted output power of the intentional radiator shall not exceed 1 W (30 dBm). The conducted output power limit is based on the use of antennas with directional gains that do not exceed 6 dBi.

Test results

Table 5: Maximum Peak Conducted Output Power

Antenna Port	Channel	Output Power [dBm]	Limit [dBm]	Result
0	Bottom	10.6	30	PASS
	Middle	10.0		PASS
	Top	9.9		PASS
1	Bottom	11.2		PASS
	Middle	10.8		PASS
	Top	10.5		PASS

The conducted measurement was performed with a spectrum analyser using the following settings:

Setting	Value
Span	6 or 9 MHz (antenna port 0 and 1)
RBW	2 or 3 MHz (antenna port 0 and 1)
VBW	10 MHz
Sweep Points	101
Sweep Time (Auto)	0.953 or 1.271 μ s (antenna port 0 and 1)
Detector	MaxPeak
Trace Mode	Max Hold
Sweep Type (Auto)	FFT

Maximum Peak Conducted Output Power

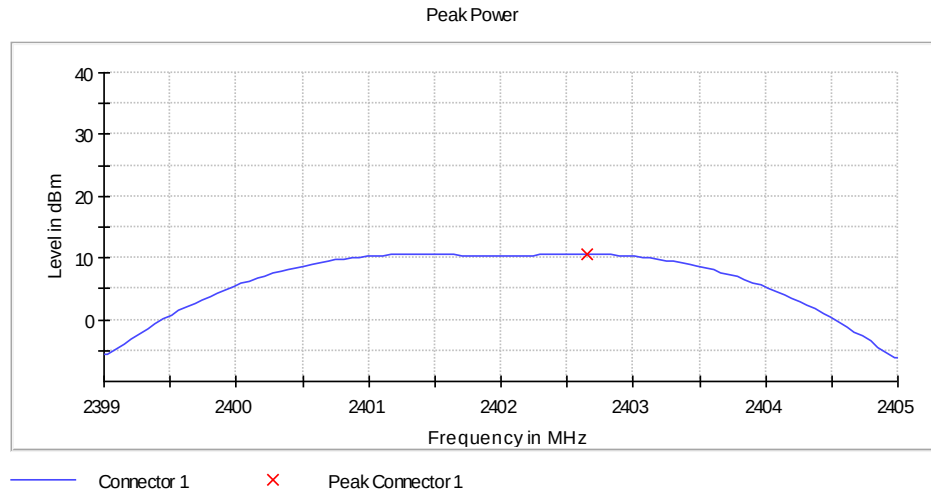


Figure 16: Maximum Peak Conducted Output Power (Antenna port 0, bottom ch.)

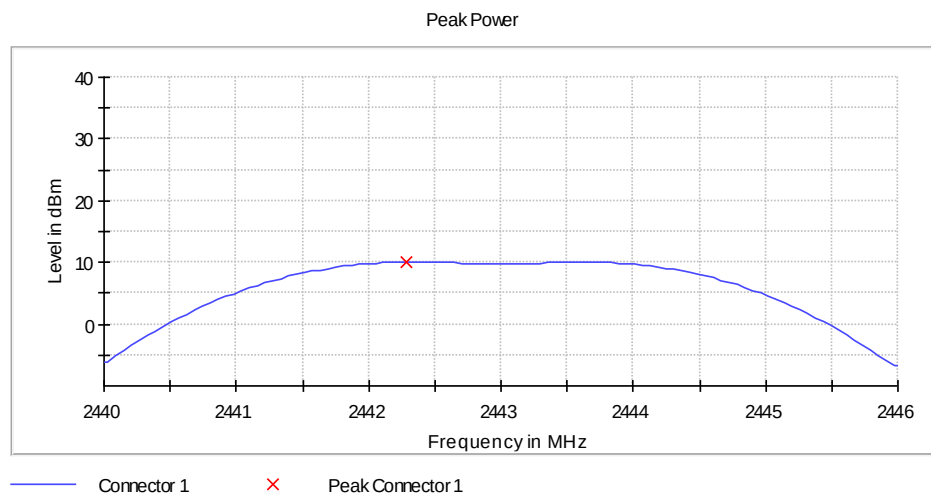


Figure 17: Maximum Peak Conducted Output Power (Antenna port 0, middle ch.)

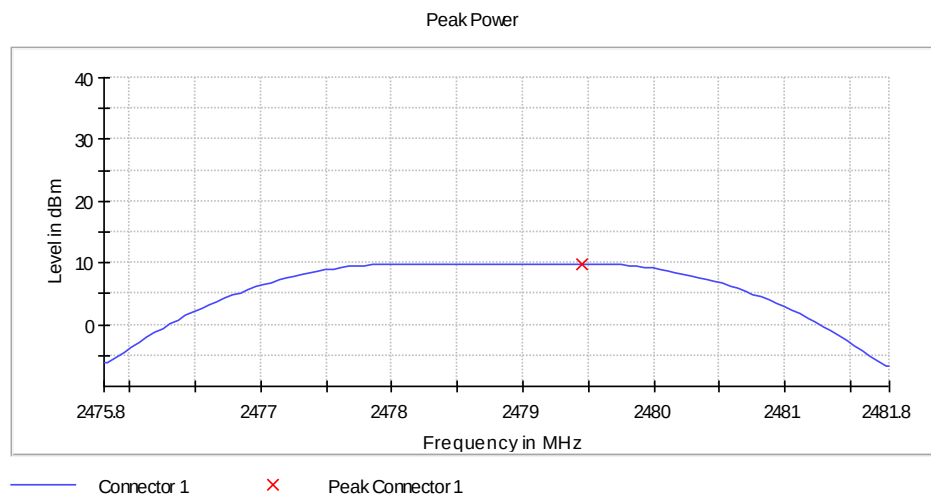


Figure 18: Maximum Peak Conducted Output Power (Antenna port 0, top ch.)

Maximum Peak Conducted Output Power

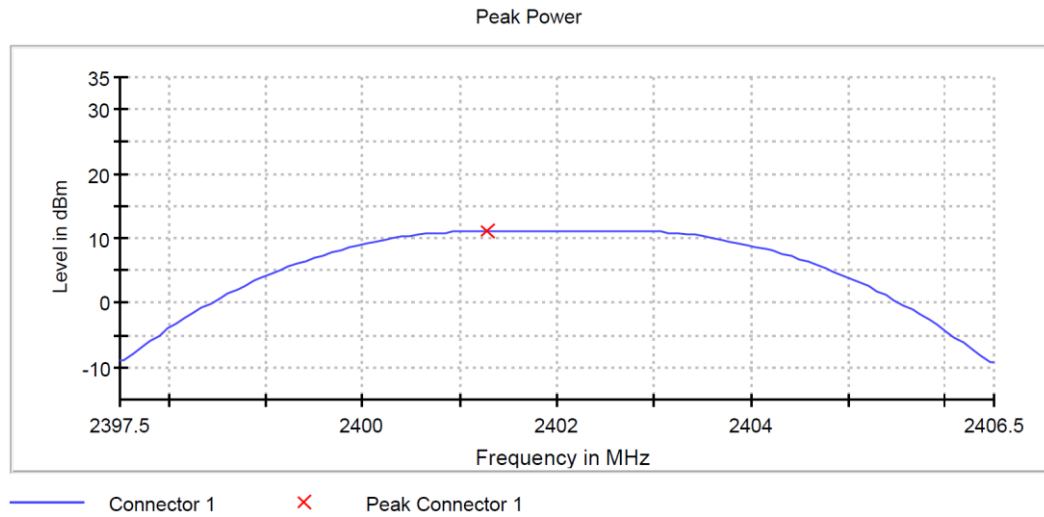


Figure 19: Maximum Peak Conducted Output Power (Antenna port 1, bottom ch.)

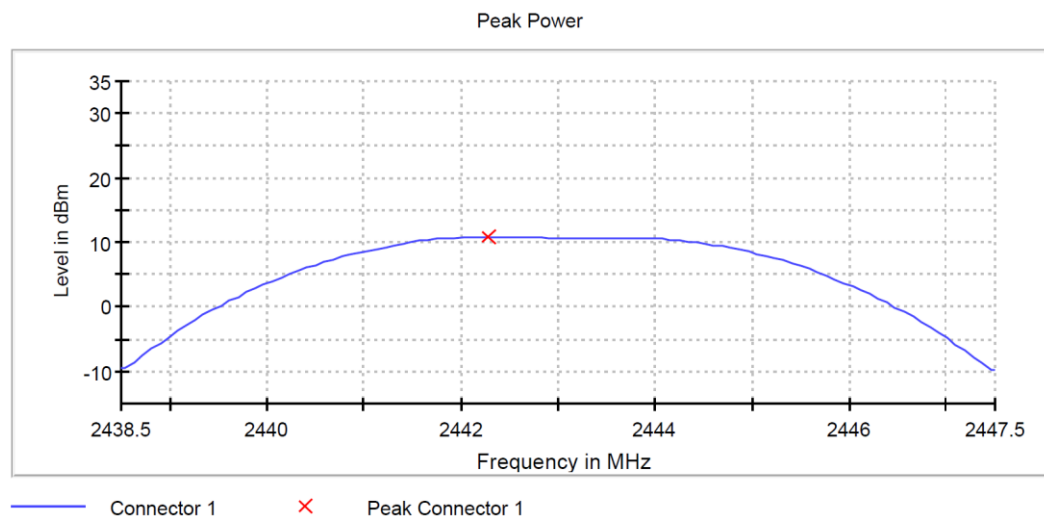


Figure 20: Maximum Peak Conducted Output Power (Antenna port 1, middle ch.)

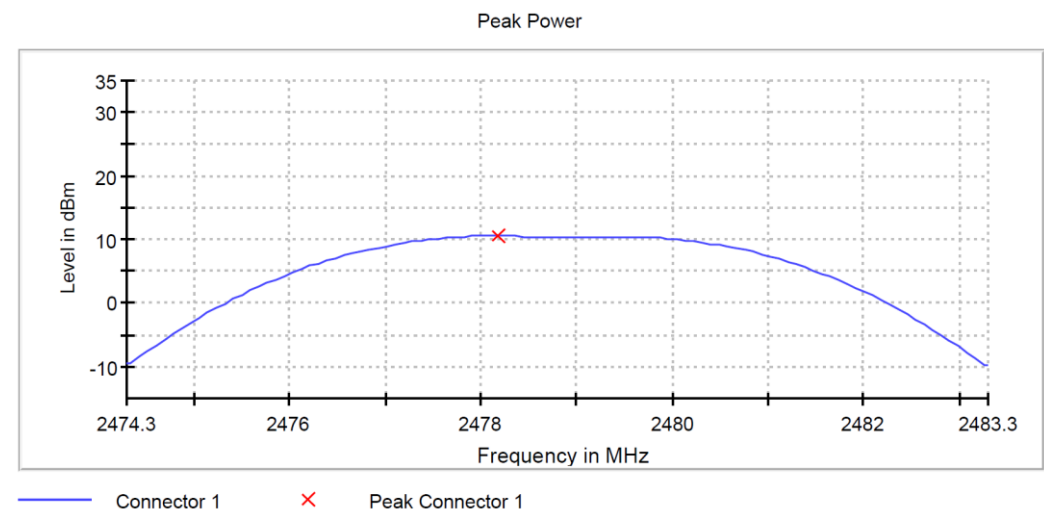


Figure 21: Maximum Peak Conducted Output Power (Antenna port 1, top ch.)

Unwanted Emissions (conducted)

Unwanted Emissions (conducted)

Standard:	ANSI C63.10-2020 clause 11.11
Tested by:	HEM
Date:	24 January 2025
Temperature:	23 °C
Humidity:	26 %RH
Measurement uncertainty:	± 2.87 dB, level of confidence 95 % (k = 2)
Test result:	PASS

FCC Rule: §15.247(d)**RSS-247 5.5**

In any 100 kHz bandwidth outside the frequency band in which the digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

Unwanted Emissions (conducted)

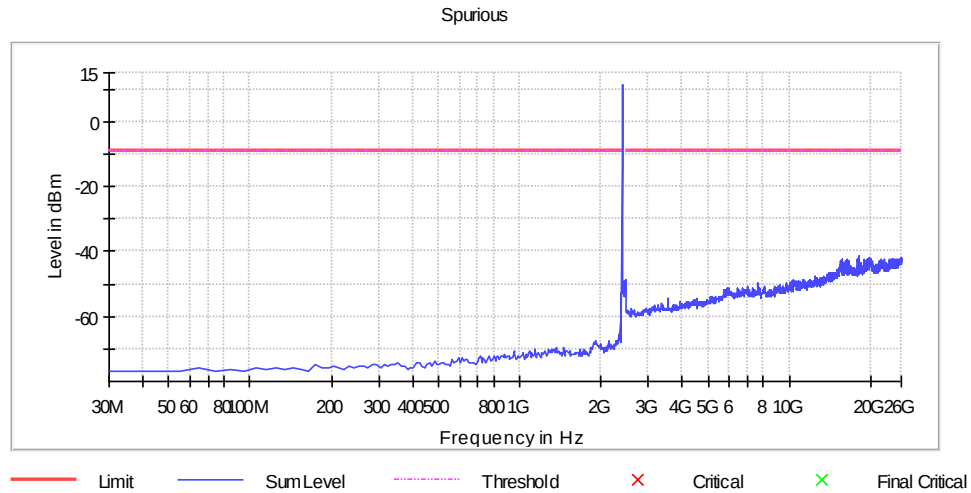


Figure 22: Unwanted emissions, conducted (Antenna port 0, bottom ch.)

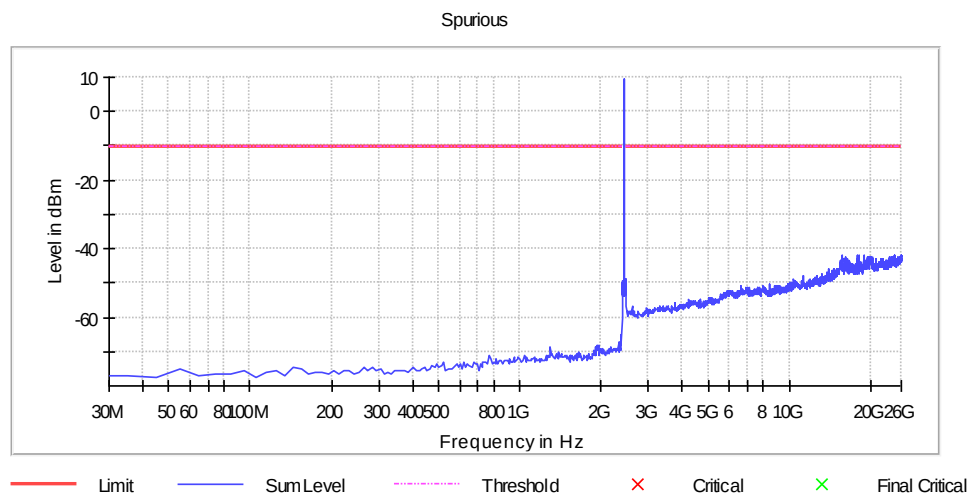


Figure 23: Unwanted emissions, conducted (Antenna port 0, middle ch.)

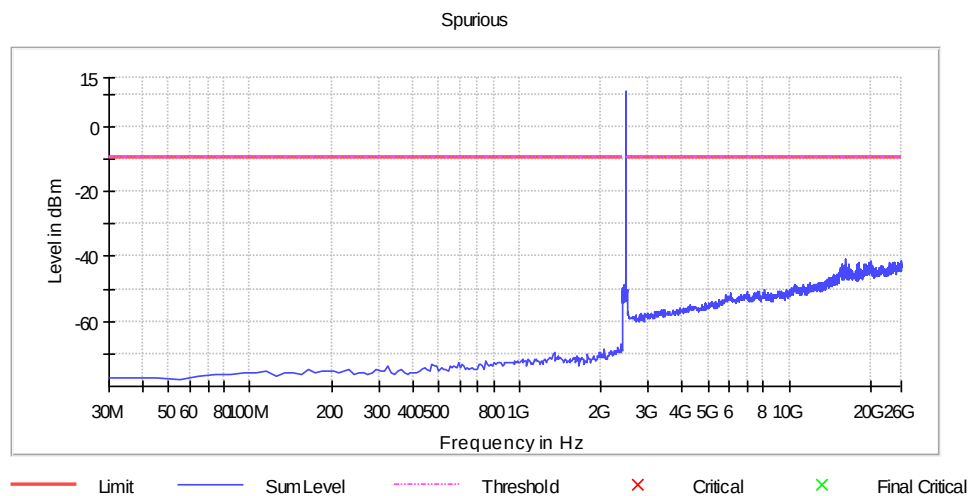


Figure 24: Unwanted emissions, conducted (Antenna port 0, top ch.)

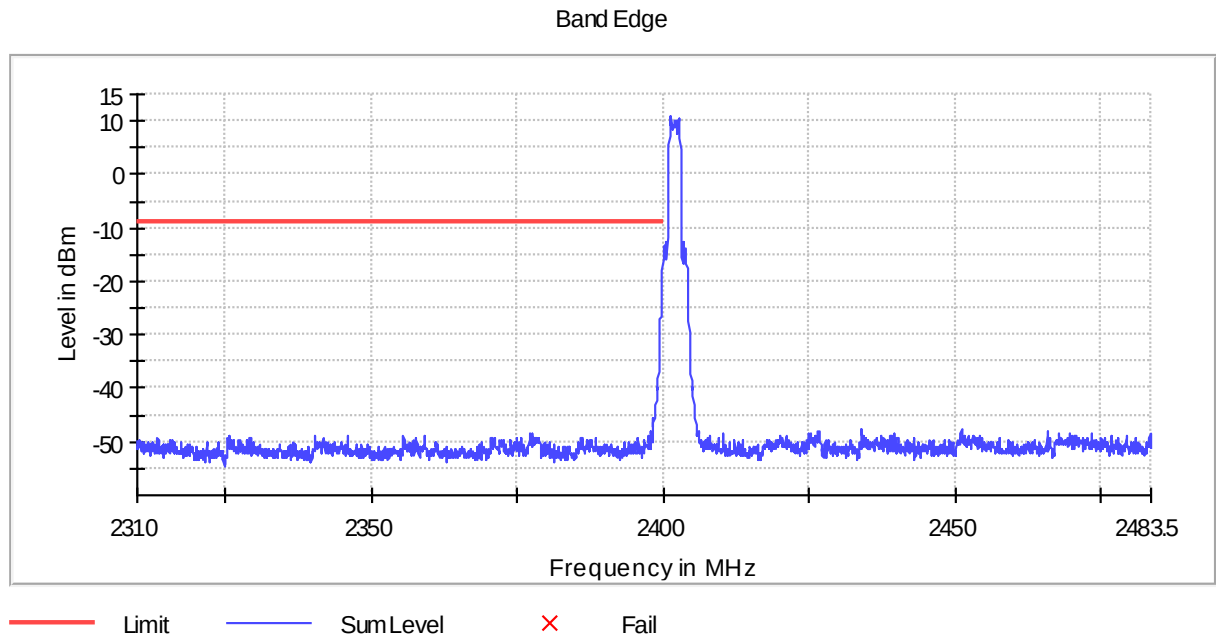


Figure 25: Lower band-edge (Antenna port 0, bottom ch.)

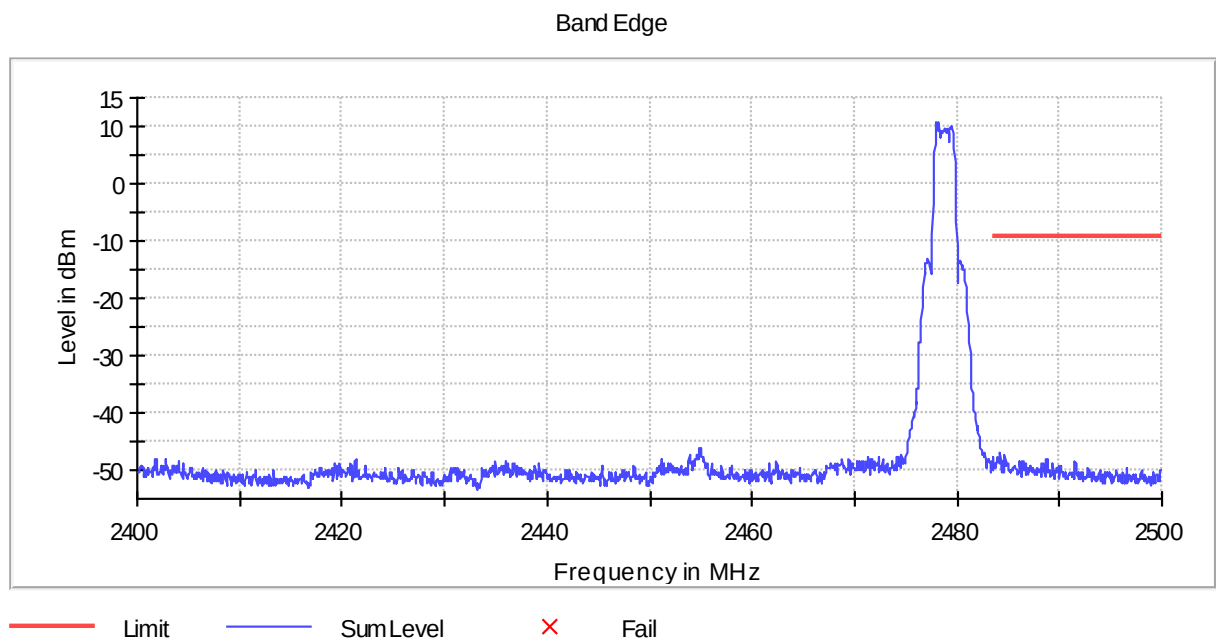


Figure 26: Upper band-edge (Antenna port 0, top ch.)

Unwanted Emissions (conducted)

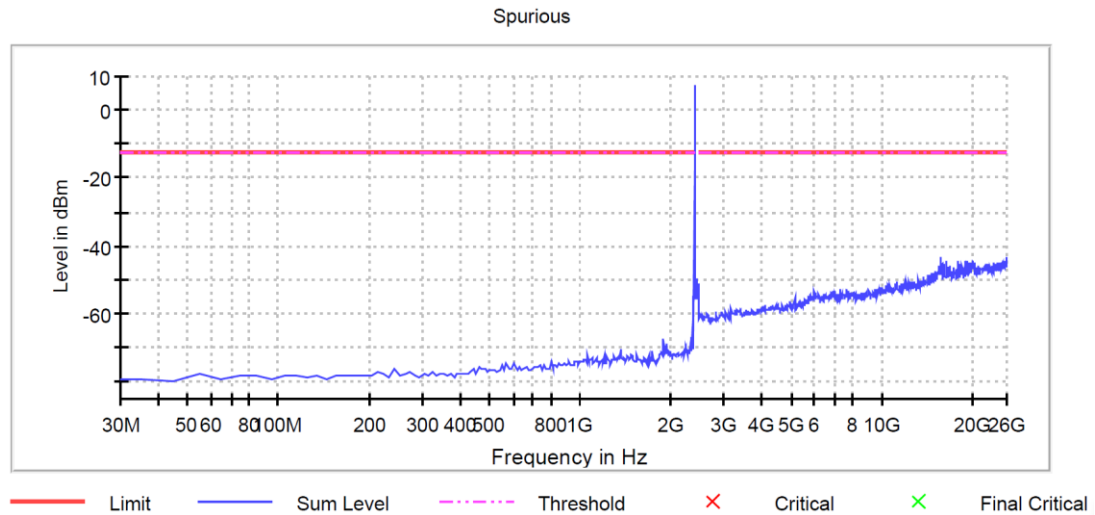


Figure 27: Unwanted emissions, conducted (Antenna port 1, bottom ch.)

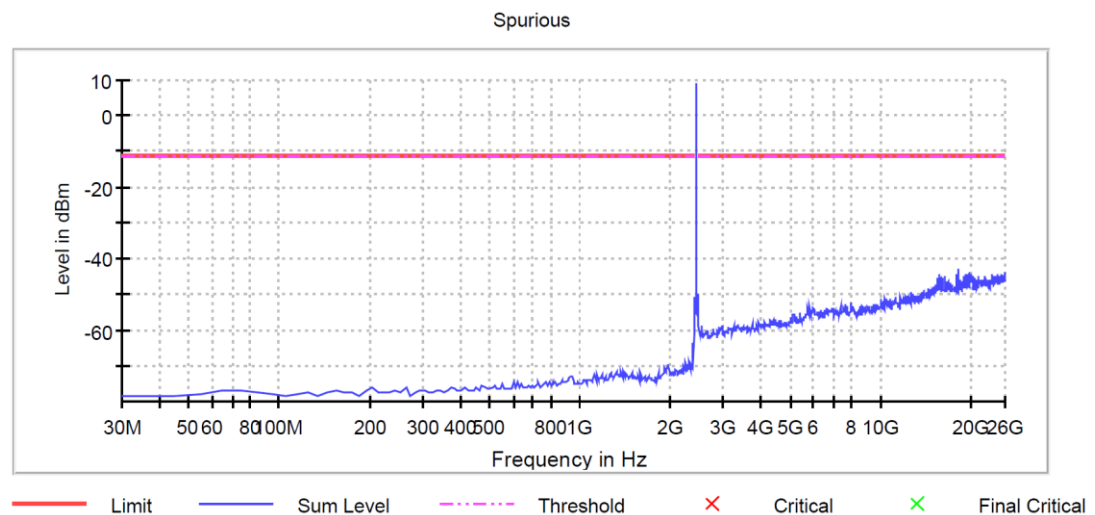


Figure 28: Unwanted emissions, conducted (Antenna port 1, middle ch.)

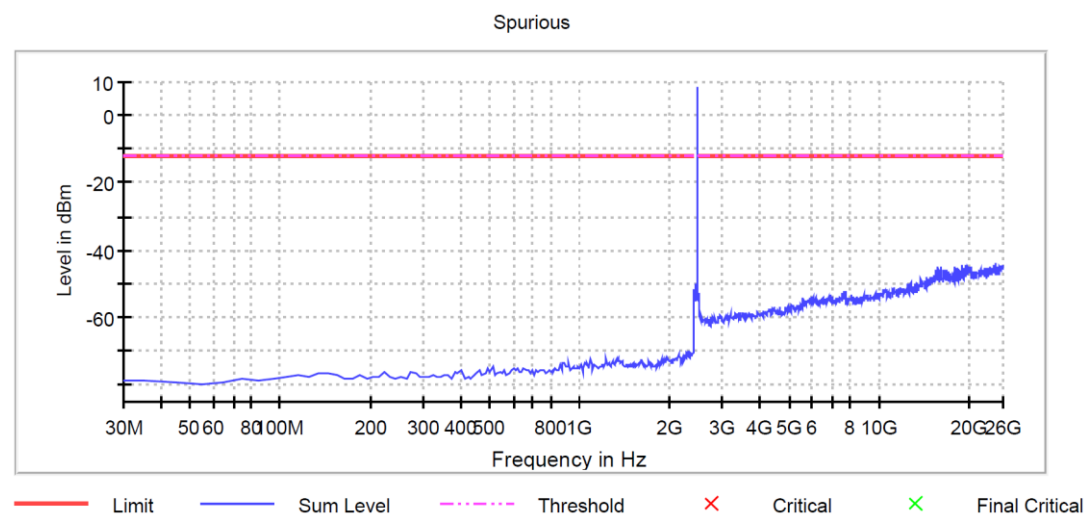


Figure 29: Unwanted emissions, conducted (Antenna port 1, top ch.)

Unwanted Emissions (conducted)

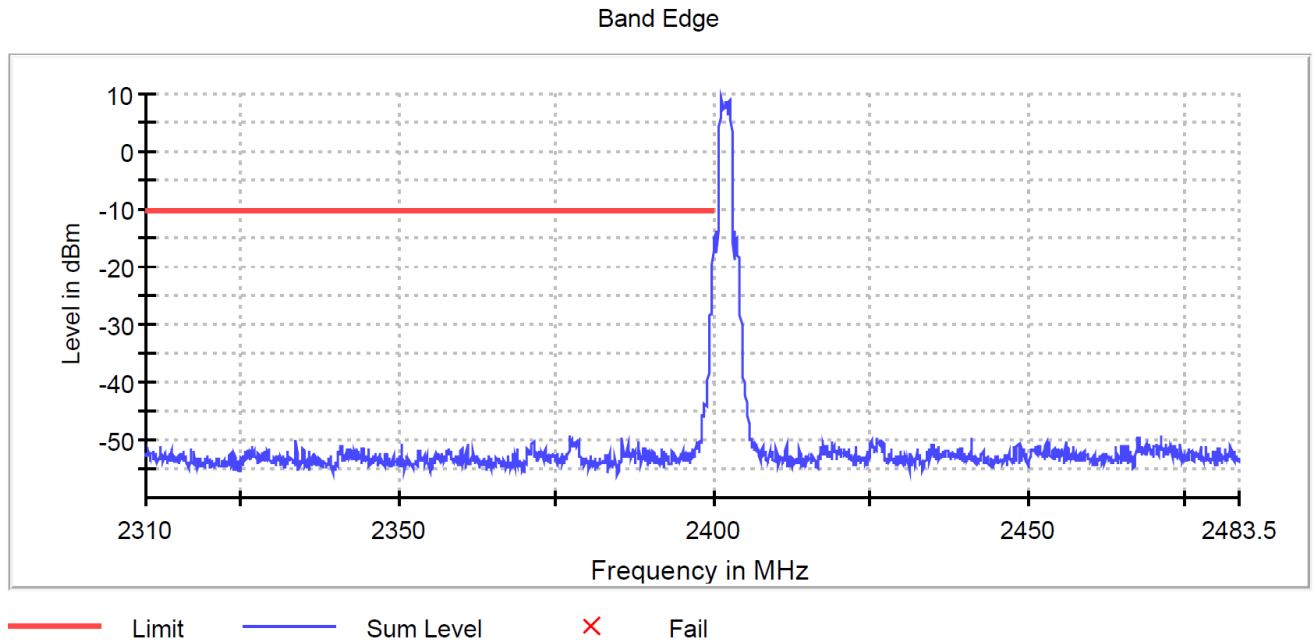


Figure 30: Lower band-edge (Antenna port 1, bottom ch.)

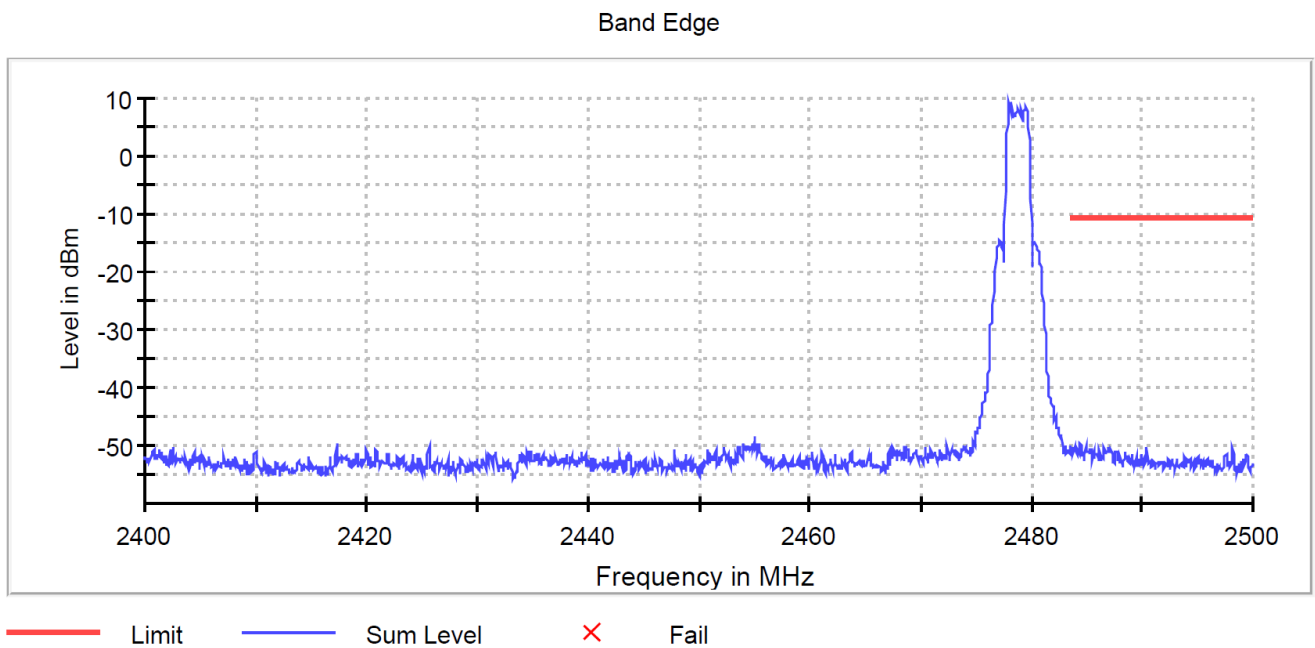


Figure 31: Upper band-edge (Antenna port 1, top ch.)

Unwanted Emissions (radiated)

Unwanted Emissions (radiated)

Standard:	ANSI C63.10-2020 clause 11.11, 11.12		
Tested by:	HEM, PKA	HEM	LAS
Date:	6 February 2025	10 February 2025	25 February 2025
Temperature:	23 °C	23 °C	24 °C
Humidity:	25 %RH	23 %RH	35 %RH
Measurement uncertainty:	± 4.51 dB, level of confidence 95 % (k = 2)		
Test result:	PASS		

FCC Rule: §15.247(d)

RSS-247 5.5

In any 100 kHz bandwidth outside the frequency band in which the digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. Attenuation below the general limits specified in §15.209(a) and RSS-Gen clause 8.9 is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a) and RSS-Gen clause 8.10, must also comply with the radiated emission limits specified in §15.209(a) and RSS-Gen clause 8.9.

The radiated tests are performed in a semi-anechoic chamber with a measurement distance of 3 meters. During measurements above 1 GHz absorbers are placed on the floor. The results below 30 MHz are extrapolated to 30 m or 300 m distance by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

The correction factor (dB/m) in the final result table contains the sum of the transducers (antenna + amplifier + cables). The reported values include the correction factor.

Unwanted Emissions (radiated)

Test results

Table 6: Unwanted radiated emissions (quasi-peak detector)

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Channel
13.559000	4.29	-	-	15 x 1000.0	9.000	coax. *	V	134.0	-20.3	Bottom
13.559000	3.92	-	-	15 x 1000.0	9.000	coax. *	V	106.0	-20.3	Middle
13.559000	3.92	-	-	15 x 1000.0	9.000	copl. *	V	315.0	-20.3	Top
27.119750	-10.47	29.50	39.97	15 x 1000.0	9.000	copl. *	V	185.0	-19.9	Bottom
27.119750	-10.52	29.50	40.02	15 x 1000.0	9.000	copl. *	V	33.0	-19.9	Middle
27.121500	-10.16	29.50	39.66	15 x 1000.0	9.000	copl. *	V	311.0	-19.9	Top
40.705000	26.46	40.00	13.54	15 x 1000.0	120.000	100.0	V	46.0	17.2	Middle
40.705000	25.71	40.00	14.29	15 x 1000.0	120.000	105.0	V	102.0	17.2	Top
40.745000	25.08	40.00	14.92	15 x 1000.0	120.000	105.0	V	326.0	17.2	Bottom
44.685000	18.09	40.00	21.91	15 x 1000.0	120.000	120.0	V	62.0	17.7	Middle
46.045000	24.83	40.00	15.17	15 x 1000.0	120.000	100.0	V	27.0	17.8	Top
46.195000	18.88	40.00	21.12	15 x 1000.0	120.000	105.0	V	257.0	17.8	Bottom
51.545000	17.19	40.00	22.81	15 x 1000.0	120.000	135.0	V	263.0	17.8	Bottom
57.345000	14.75	40.00	25.25	15 x 1000.0	120.000	181.0	V	292.0	17.8	Bottom
213.955000	28.12	43.50	15.38	15 x 1000.0	120.000	100.0	V	192.0	15.5	Top
214.035000	28.44	43.50	15.06	15 x 1000.0	120.000	100.0	V	211.0	15.5	Middle
432.665000	15.18	46.00	30.82	15 x 1000.0	120.000	121.0	V	137.0	23.2	Middle
624.975000	35.23	46.00	10.77	15 x 1000.0	120.000	100.0	V	217.0	27.5	Bottom
624.975000	34.40	46.00	11.60	15 x 1000.0	120.000	120.0	V	218.0	27.5	Middle
624.975000	36.11	46.00	9.89	15 x 1000.0	120.000	100.0	V	215.0	27.5	Top
749.945000	32.09	46.00	13.91	15 x 1000.0	120.000	100.0	V	73.0	29.2	Top
749.965000	33.51	46.00	12.49	15 x 1000.0	120.000	100.0	V	76.0	29.2	Bottom
749.965000	31.44	46.00	14.56	15 x 1000.0	120.000	100.0	V	74.0	29.2	Middle
847.875000	21.27	46.00	24.73	15 x 1000.0	120.000	331.0	V	267.0	30.2	Top

* coax/copl = measurement loop antenna in coaxial/coplanar orientation

Note: The emissions at 13.56 MHz are the NFC transmitter fundamental.

Table 7: Unwanted radiated emissions (average detector)

Frequency (MHz)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Channel
17988.500000	38.10	54.00	15.90	15 x 1000.0	1000.000	100.0	H	4.0	25.9	Middle

Table 8: Unwanted radiated emissions (peak detector)

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Channel
2400.000000	76.30	81.87	5.57	15 x 1000.0	1000.000	178.0	H	213.0	14.3	Bottom
2401.400000	101.87	---	---	15 x 1000.0	1000.000	178.0	H	211.0	14.2	Bottom
2443.750000	102.22	---	---	15 x 1000.0	1000.000	164.0	H	51.0	14.4	Middle
2479.500000	105.08	---	---	15 x 1000.0	1000.000	120.0	H	60.0	14.3	Top
2483.500000	51.39	74.00	22.61	15 x 1000.0	1000.000	224.0	H	54.0	14.5	Top
17995.500000	51.90	74.00	22.10	15 x 1000.0	1000.000	178.0	H	134.0	26.0	Bottom

Unwanted Emissions (radiated)

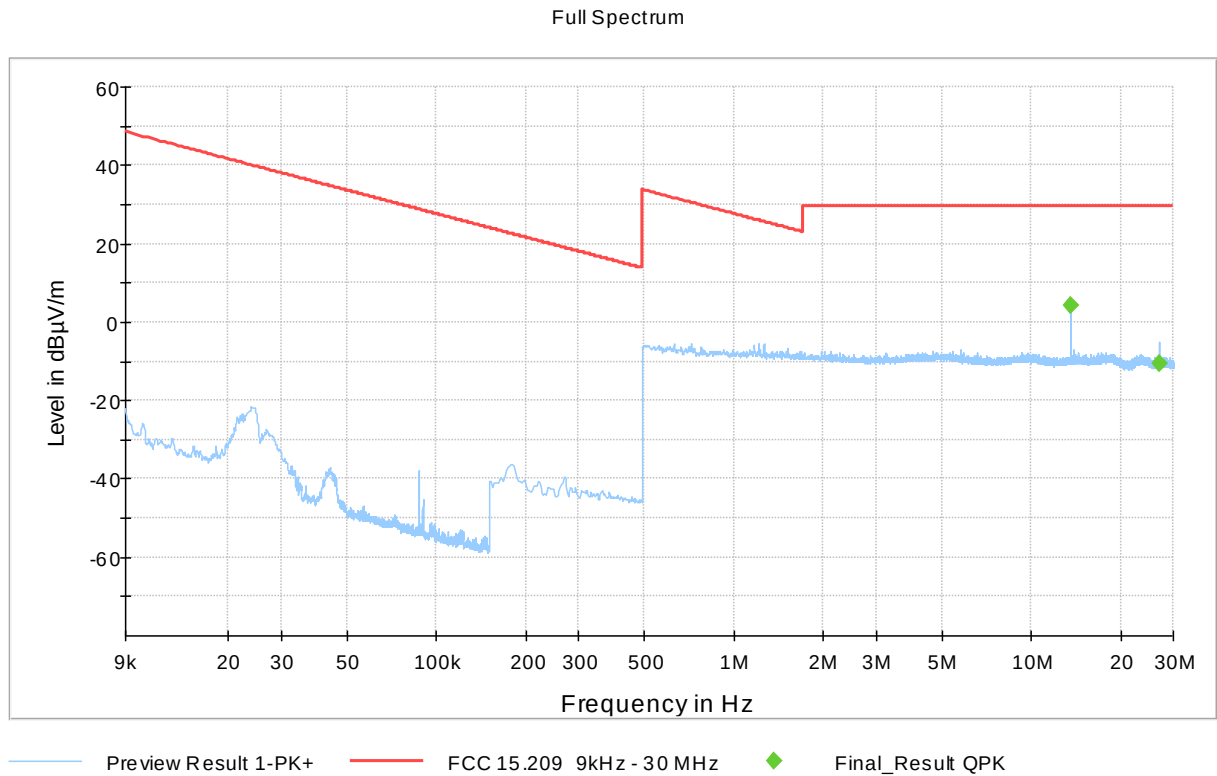


Figure 32: Unwanted radiated emissions 9 kHz – 30 MHz (Antenna port 0, bottom ch.)

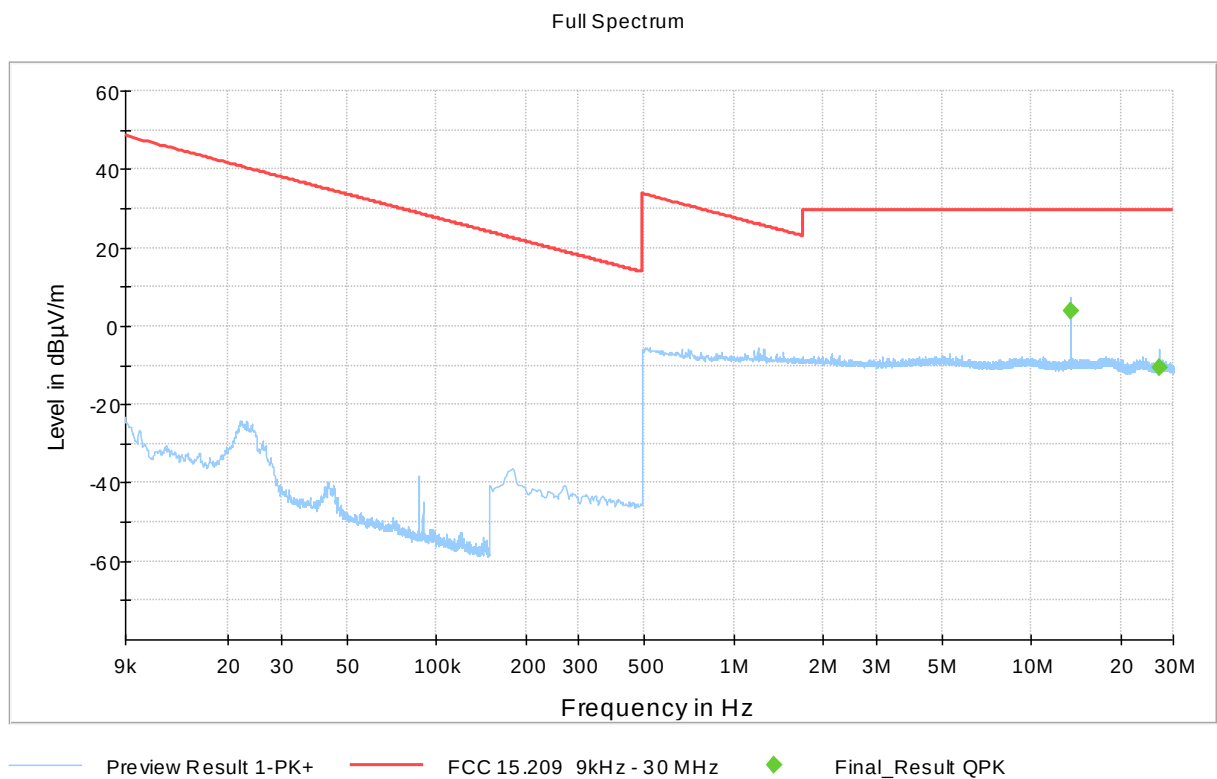


Figure 33: Unwanted radiated emissions 9 kHz – 30 MHz (Antenna port 0, middle ch.)

Unwanted Emissions (radiated)

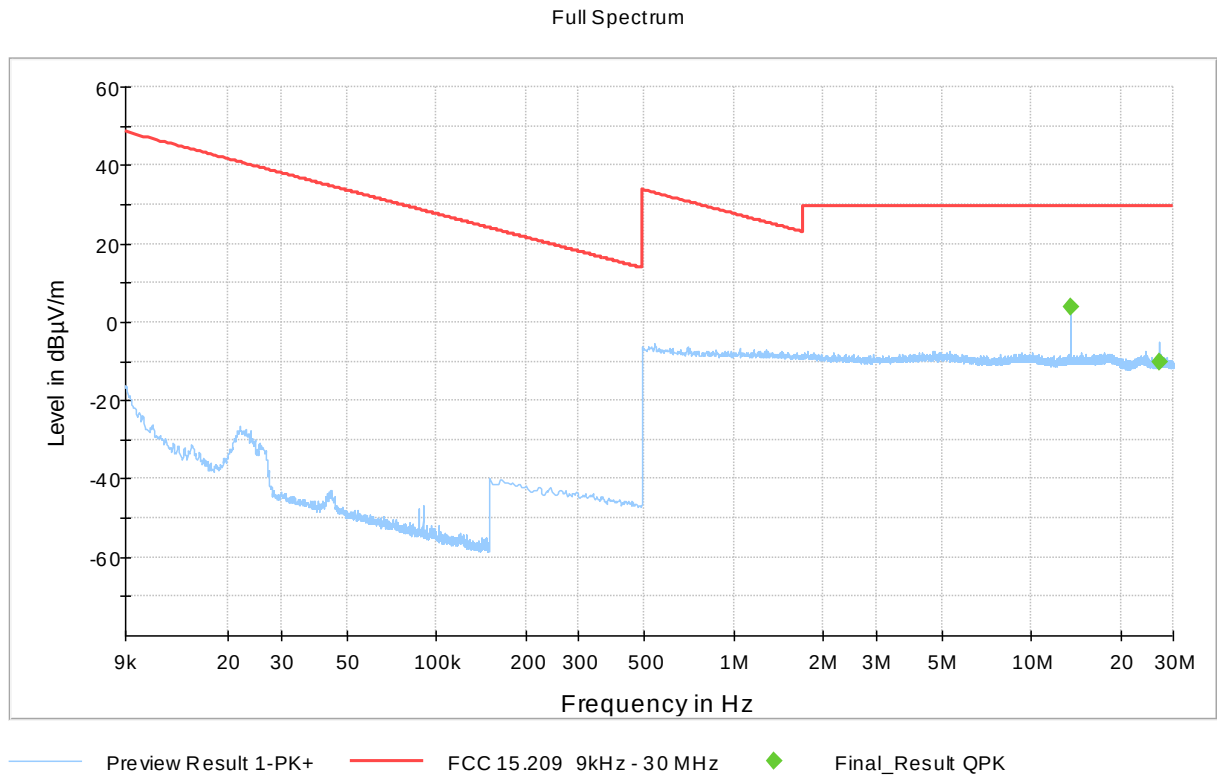


Figure 34: Unwanted radiated emissions 9 kHz – 30 MHz (Antenna port 0, top ch.)

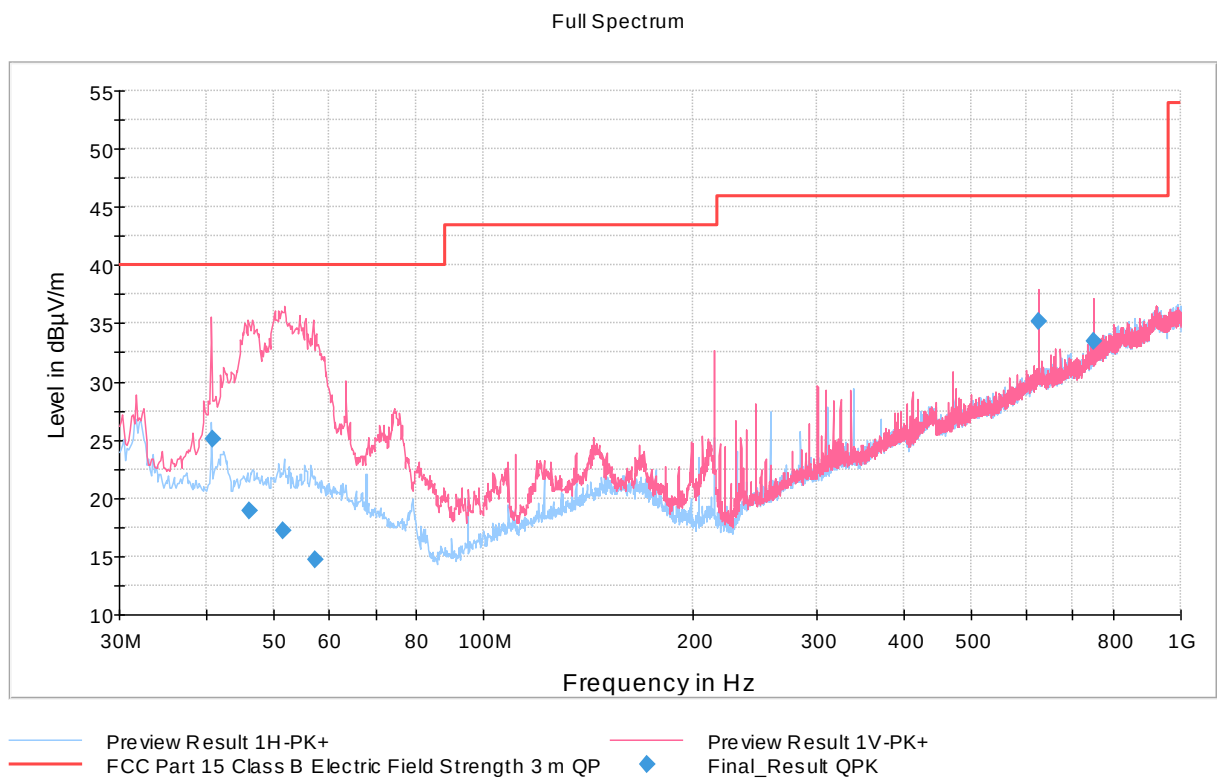


Figure 35: Unwanted radiated emissions 30 – 1000 MHz (Antenna port 0, bottom ch.)

Unwanted Emissions (radiated)

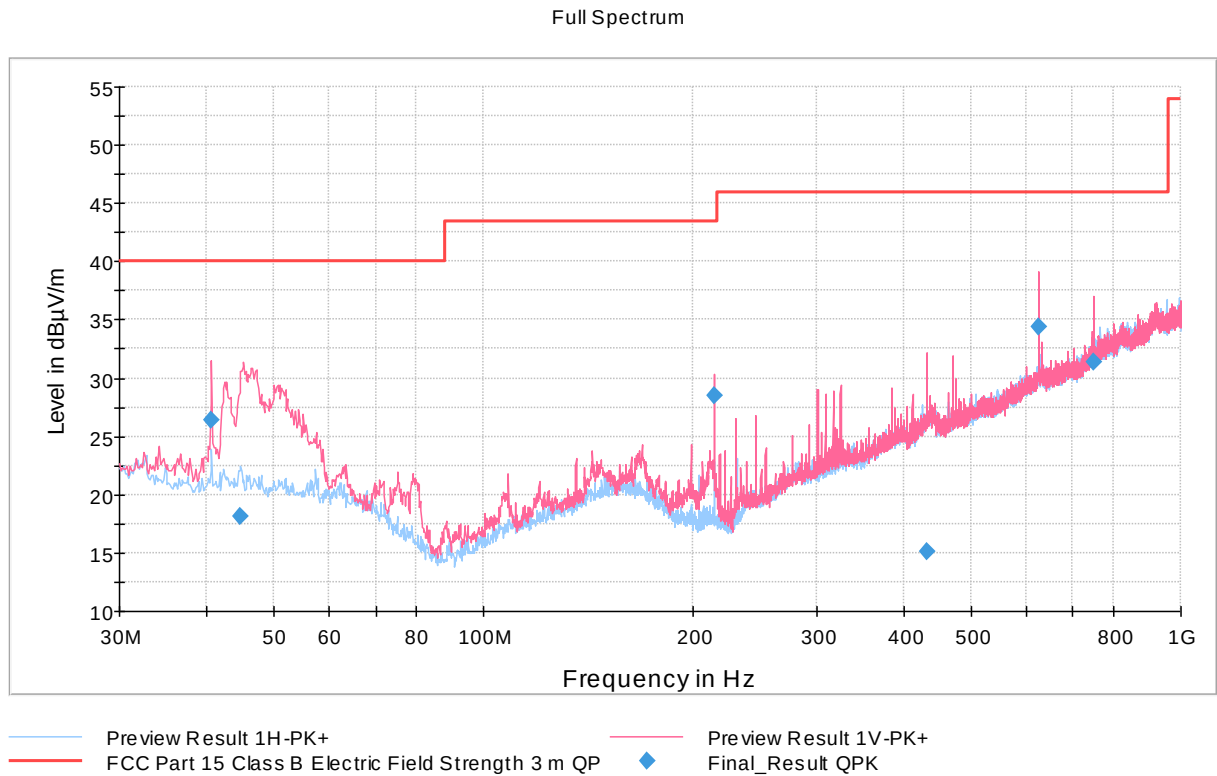


Figure 36: Unwanted radiated emissions 30 – 1000 MHz (Antenna port 0, middle ch.)

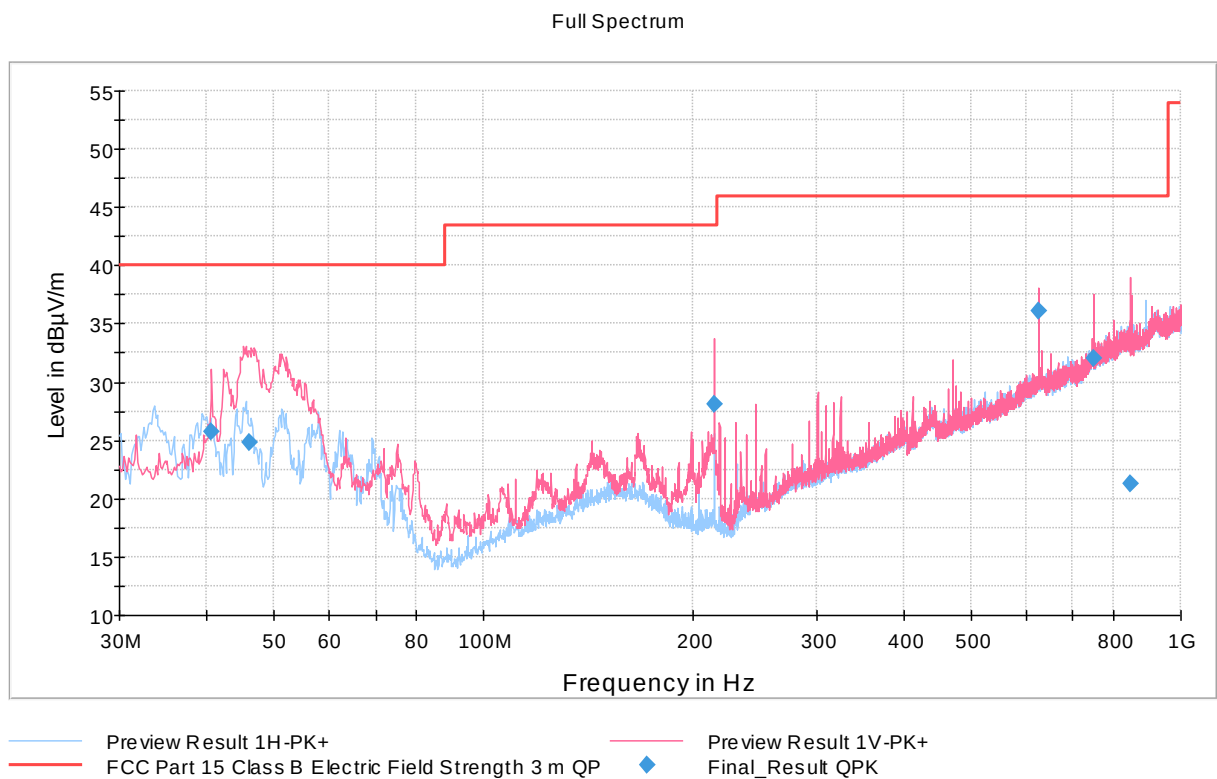


Figure 37: Unwanted radiated emissions 30 – 1000 MHz (Antenna port 0, top ch.)

Unwanted Emissions (radiated)

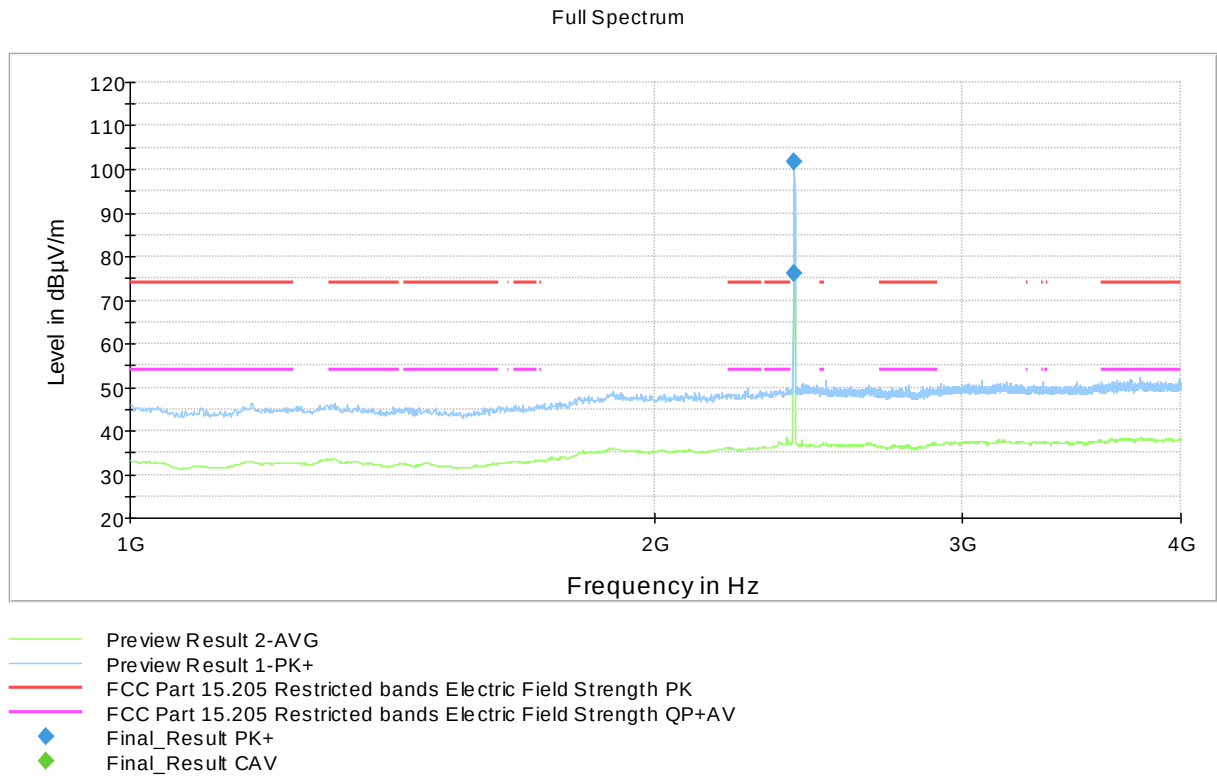


Figure 38: Unwanted radiated emissions 1 – 4 GHz (Antenna port 0, bottom ch.)

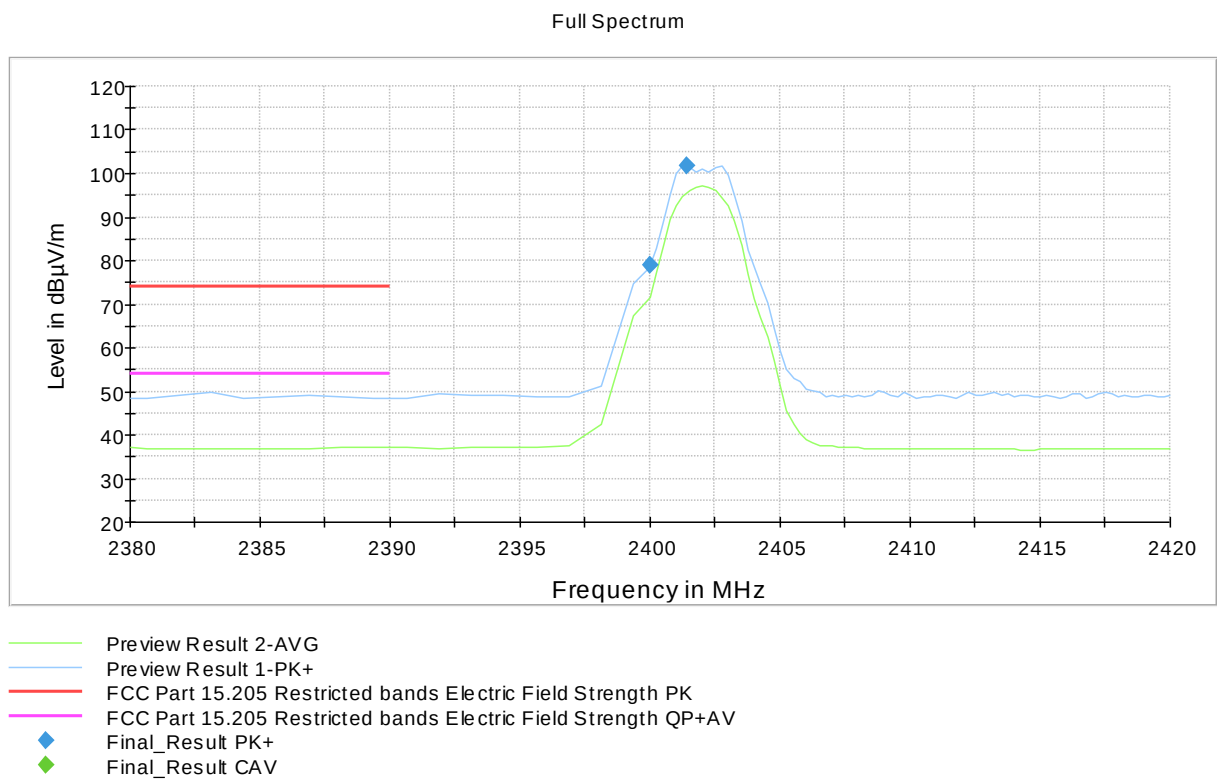


Figure 39: Lower band-edge (Antenna port 0, bottom ch.)

Unwanted Emissions (radiated)

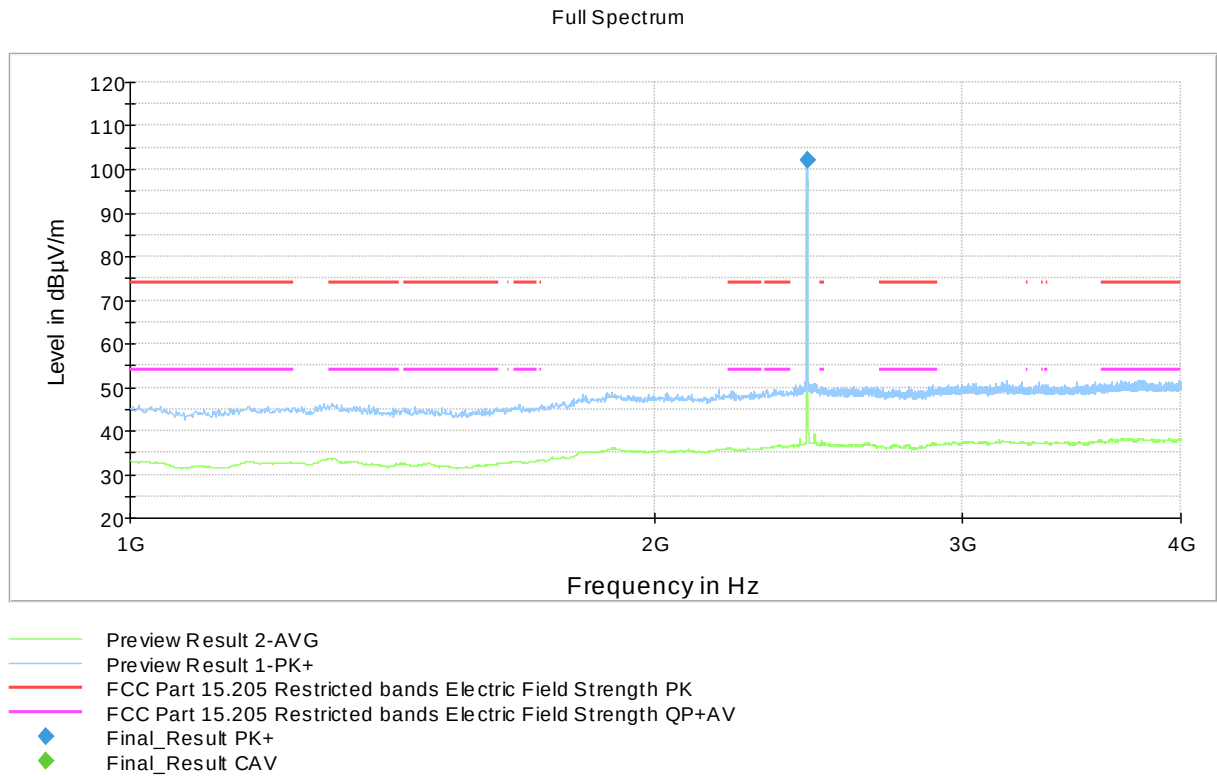


Figure 40: Unwanted radiated emissions 1 – 4 GHz (Antenna port 0, middle ch.)

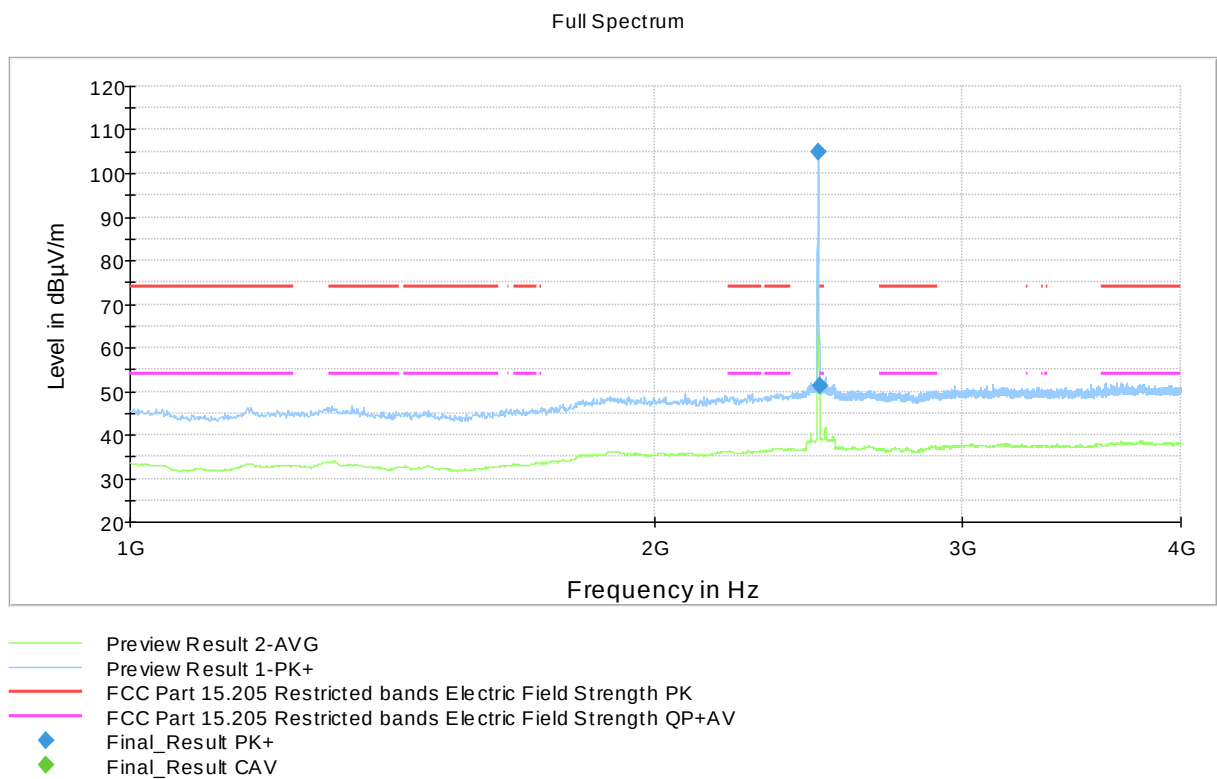


Figure 41: Unwanted radiated emissions 1 – 4 GHz (Antenna port 0, top ch.)

Unwanted Emissions (radiated)

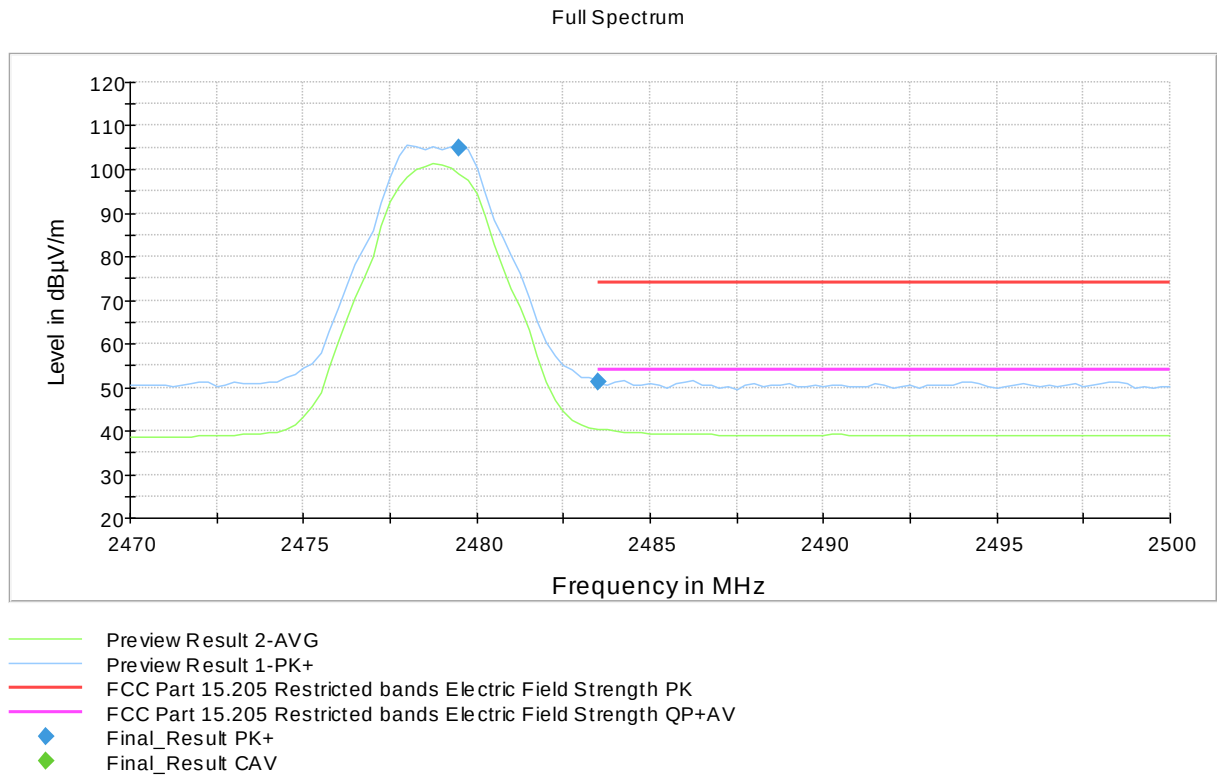


Figure 42: Upper band-edge (Antenna port 0, top ch.)

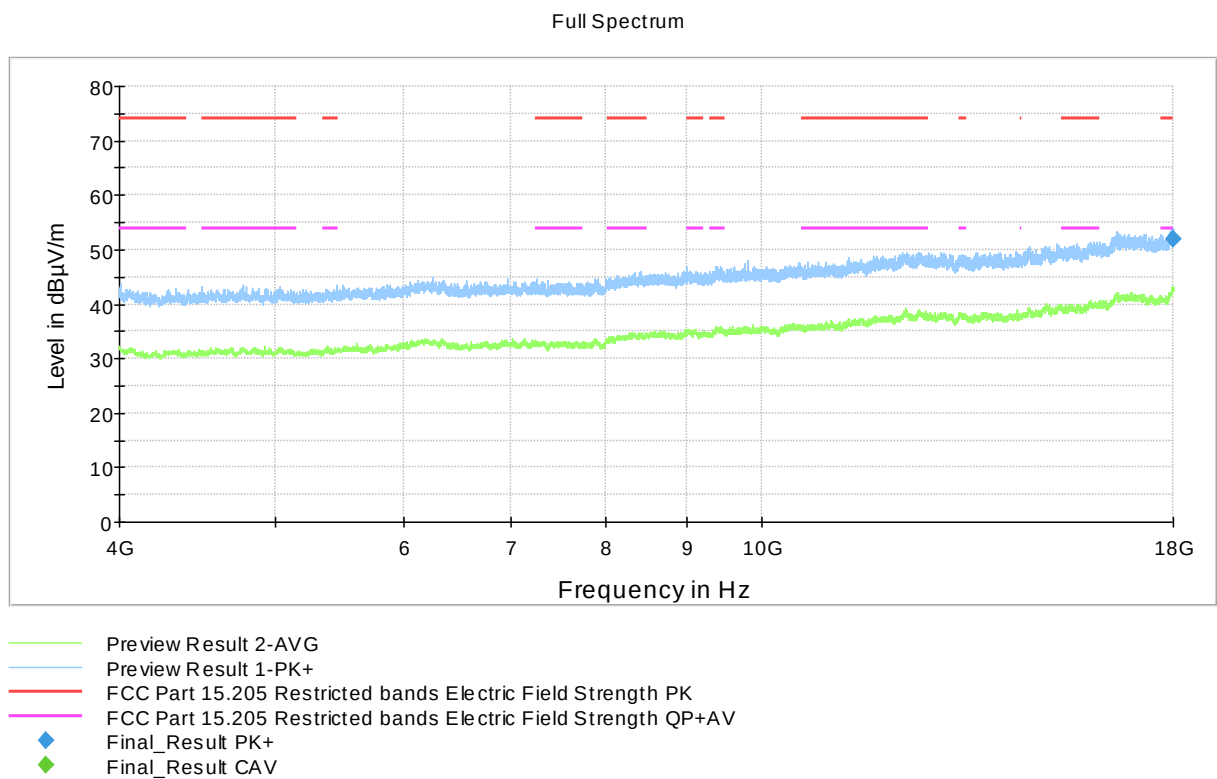


Figure 43: Unwanted radiated emissions 4 – 18 GHz (Antenna port 0, bottom ch.)

Unwanted Emissions (radiated)

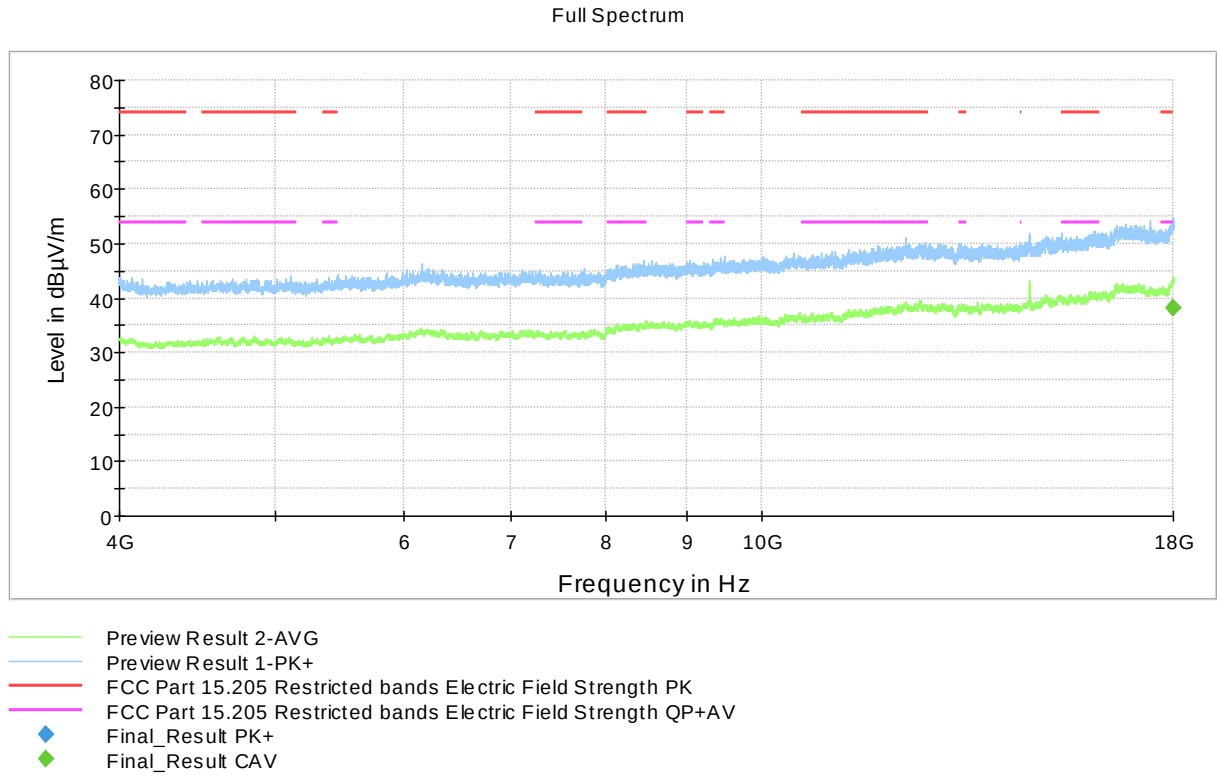


Figure 44: Unwanted radiated emissions 4 – 18 GHz (Antenna port 0, middle ch.)

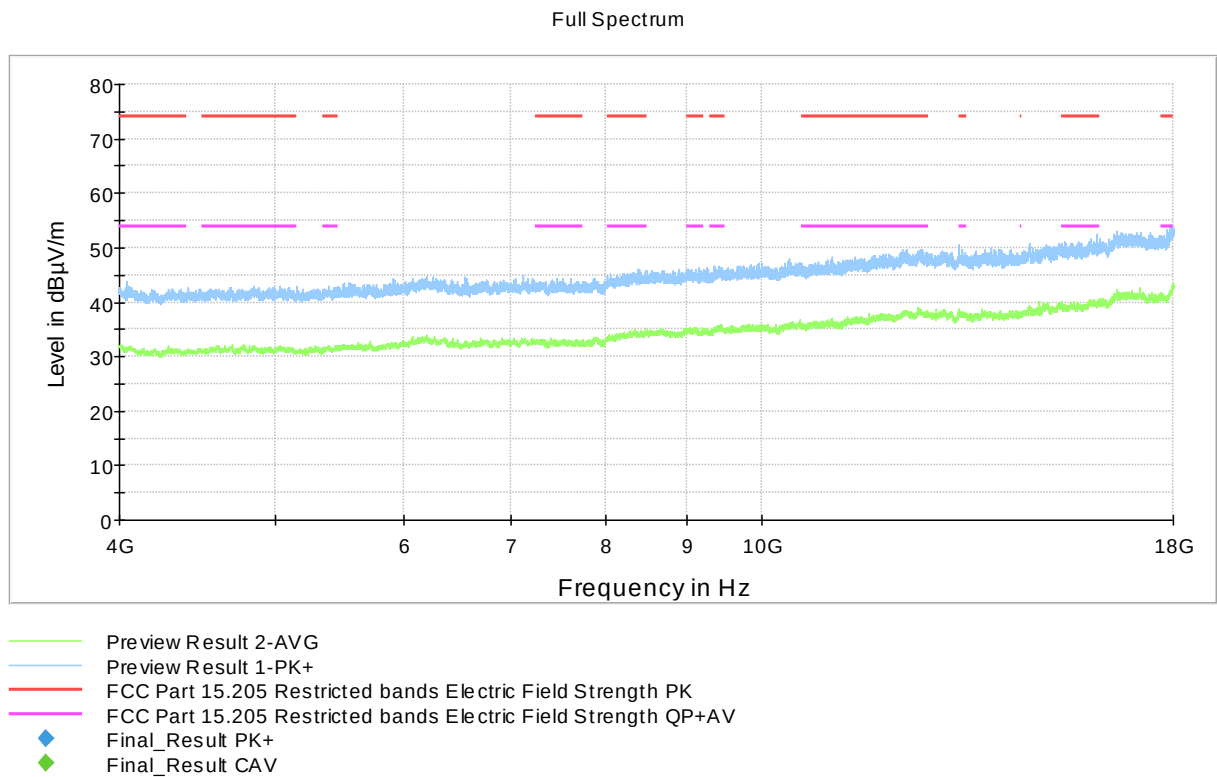


Figure 45: Unwanted radiated emissions 4 – 18 GHz (Antenna port 0, top ch.)

Unwanted Emissions (radiated)

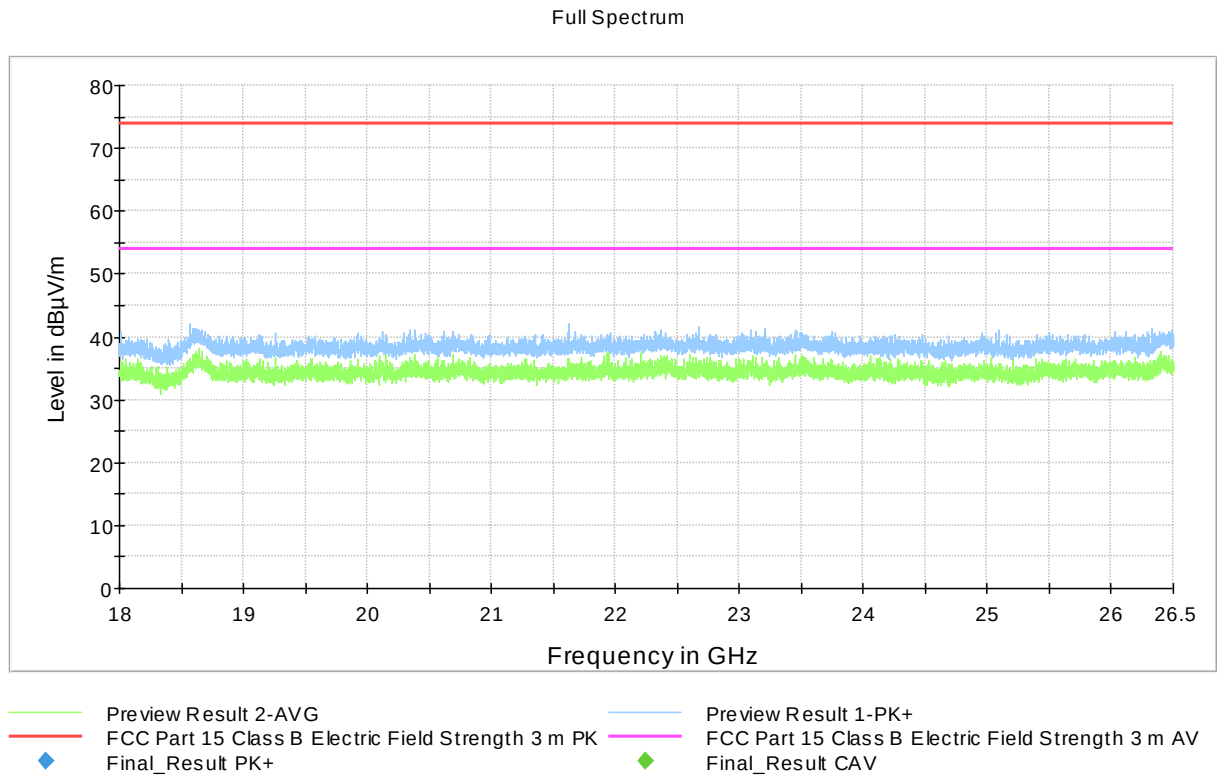


Figure 46: Unwanted radiated emissions 18 – 26.5 GHz (Antenna port 0, bottom ch.)

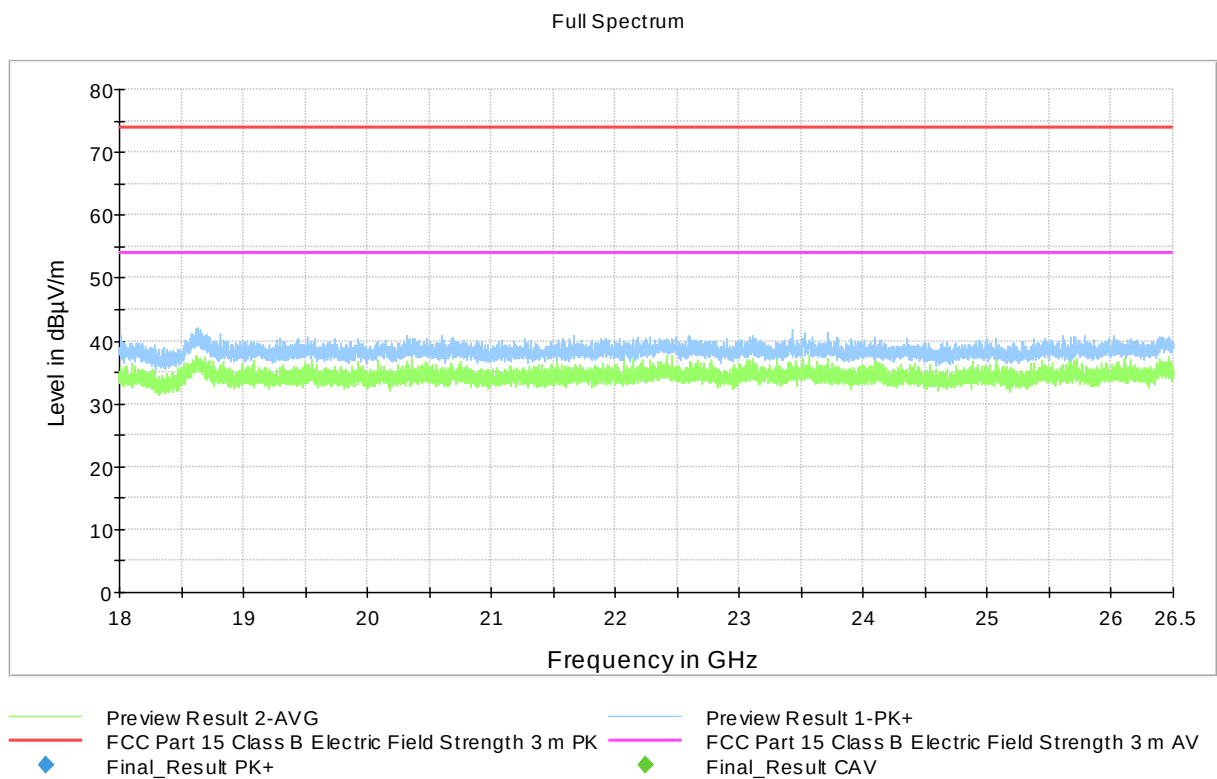


Figure 47: Unwanted radiated emissions 18 – 26.5 GHz (Antenna port 0, middle ch.)

Unwanted Emissions (radiated)

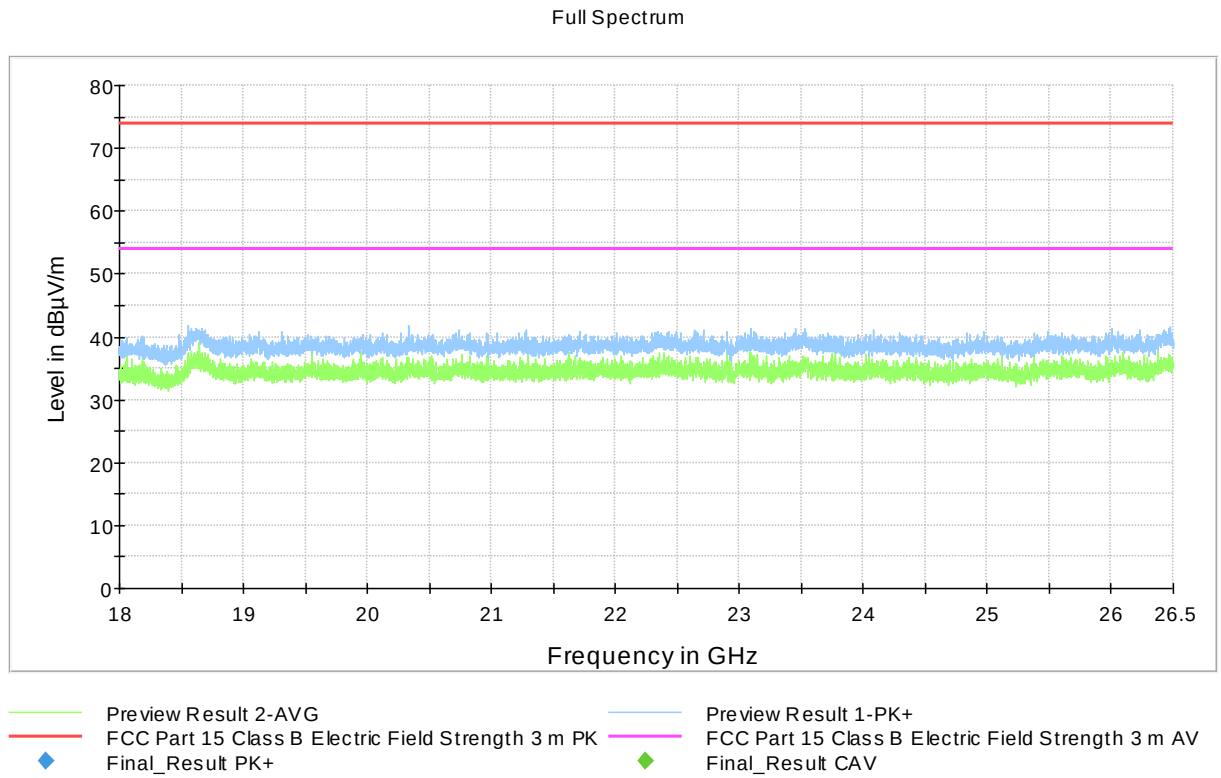


Figure 48: Unwanted radiated emissions 18 – 26.5 GHz (Antenna port 0, top ch.)

Power Spectral Density

Standard: ANSI C63.10-2020 clause 11.10.2
Tested by: HEM
Date: 24 January 2025
Temperature: 23 °C
Humidity: 26 %RH
Test result: **PASS**

FCC Rule: §15.247(e)

RSS-247 5.2 b)

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. The same method of determining the conducted output power shall be used to determine the power spectral density.

Test results

Table 9: Power Spectral Density

Antenna Port	Channel	PSD [dBm/10 kHz]	Limit [dBm/3 kHz]	Result
0	Bottom	-1.226	8	PASS
	Middle	-1.791		PASS
	Top	-1.759		PASS
1	Bottom	-0.642		PASS
	Middle	-0.749		PASS
	Top	-1.392		PASS

Note: The compliance was determined in a 10 kHz band.

The conducted measurement was performed with a spectrum analyser using the following settings:

Setting	Value
Span	3 MHz
RBW	10 kHz
VBW	30 kHz
Sweep Points	600
Sweep Time (Auto)	3 ms
Detector	MaxPeak
Trace Mode	Max Hold
Sweep Type	Sweep

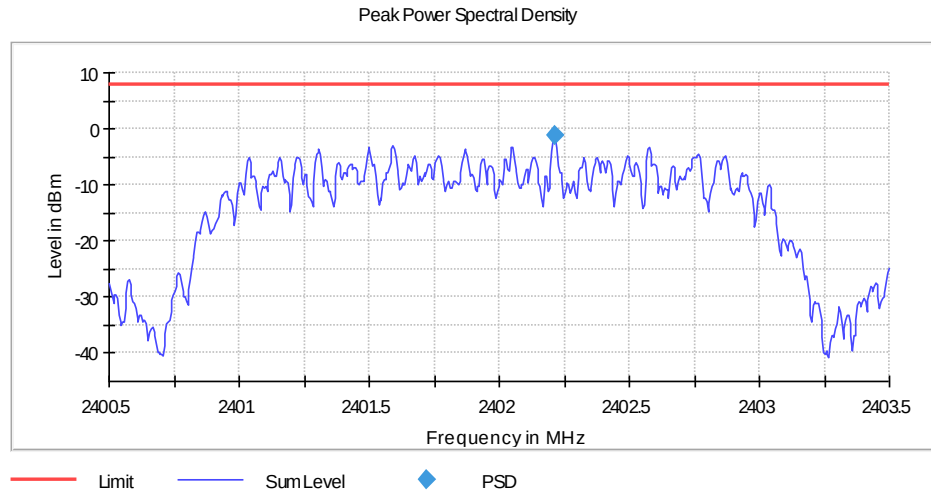


Figure 49: Power Spectral Density (Antenna port 0, bottom ch.)

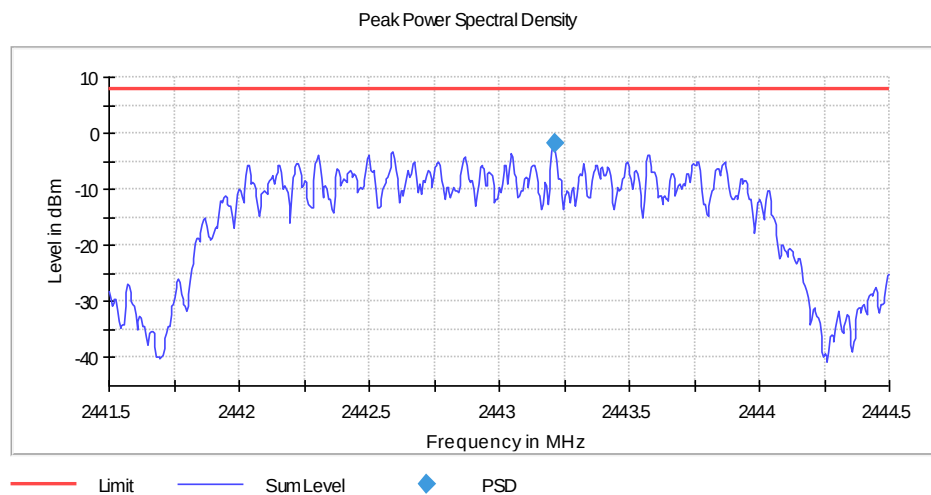


Figure 50: Power Spectral Density (Antenna port 0, middle ch.)

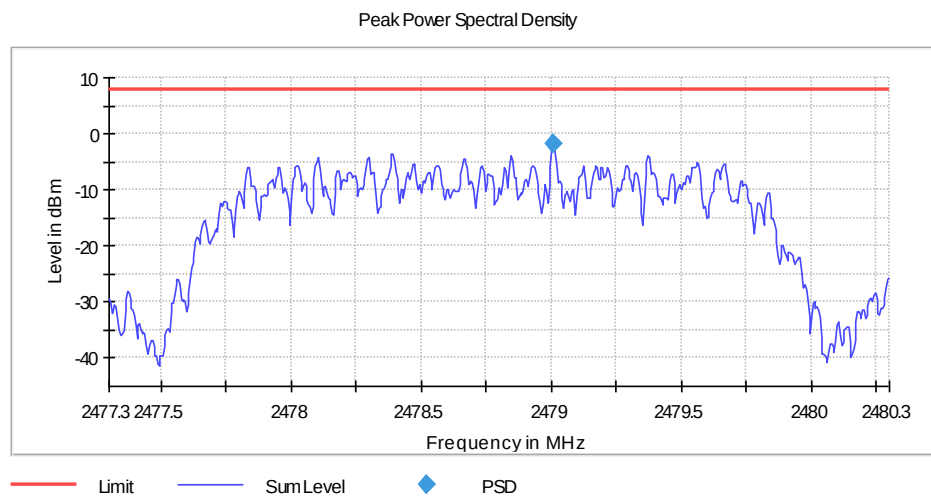


Figure 51: Power Spectral Density (Antenna port 0, top ch.)

Power Spectral Density

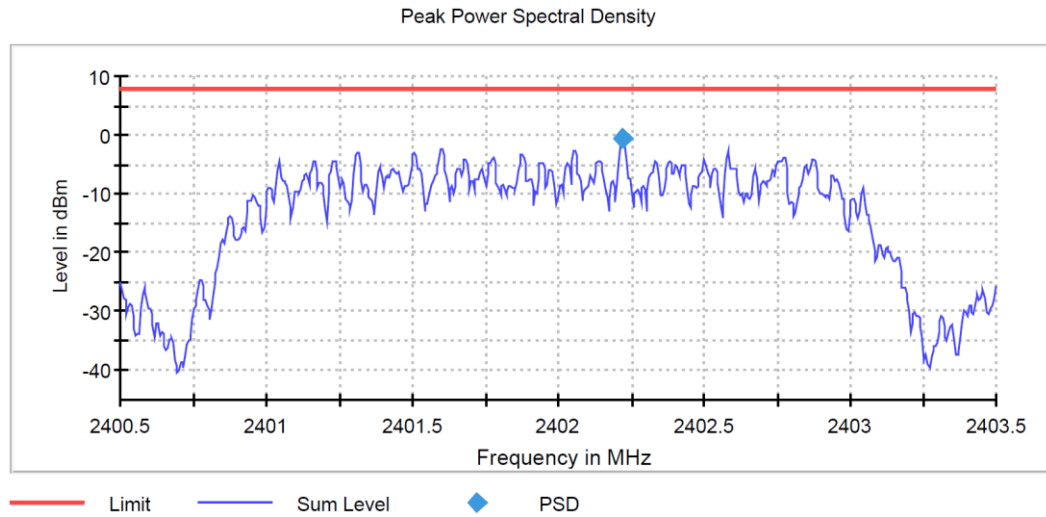


Figure 52: Power Spectral Density (Antenna port 1, bottom ch.)

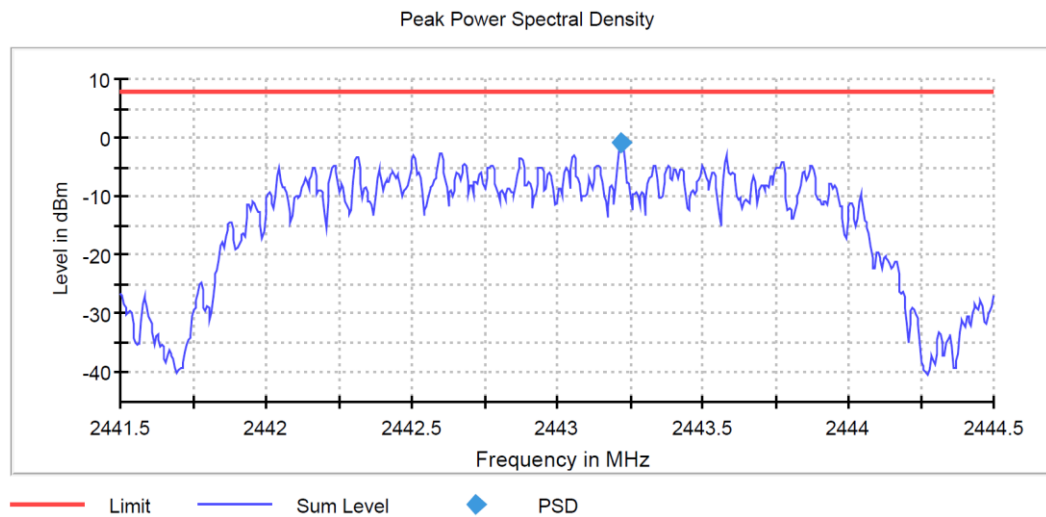


Figure 53: Power Spectral Density (Antenna port 1, middle ch.)

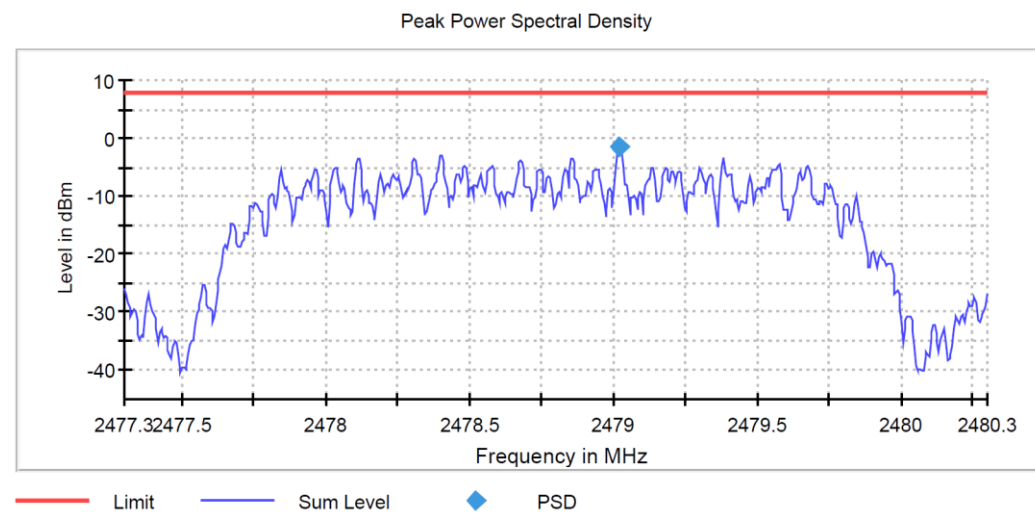


Figure 54: Power Spectral Density (Antenna port 1, top ch.)

TEST EQUIPMENT

AC Power-Line Conducted Emissions

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
COAX CHAIN K5 EMI CE 9kHz-30MHz	-	C054+FP15F+C153	-	2024-03-28	2025-03-28
EMI TEST RECEIVER	ROHDE & SCHWARZ	ESW26	inv. 10679	2024-06-12	2025-06-11
LISN	ROHDE & SCHWARZ	ENV216	inv. 9611	2025-02-18	2026-02-18
POWER SUPPLY	CALIFORNIA INSTR.	5001 iX Series II	inv. 7826	NCR	NCR
TEMPERATURE/ HUMIDITY SENSOR	EDS	OW-ENV-TH, K5 SAC	inv. 10517	2024-11-02	2025-11-02
TEST SOFTWARE	ROHDE & SCHWARZ	EMC-32	-	-	-

Conducted RF Tests

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
BASE MODULE	ROHDE & SCHWARZ	OSP-B157W8	inv. 10883	2024-07-23	2025-07-23
CABLE	SUHNER	SUCOFLEX 104P	inv. C119	2024-07-16	2025-07-16
EXTENSION MODULE	ROHDE & SCHWARZ	OSP-B157WX	inv. 10884	2024-07-09	2025-07-09
SPECTRUM ANALYZER	ROHDE & SCHWARZ	FSV40	inv. 10881	2024-06-13	2025-06-13
SWITCH UNIT FOR BASE MODULE	ROHDE & SCHWARZ	OSP120	inv. 10882	2024-07-19	2025-07-19
SWITCH UNIT FOR EXTENSION MODULE	ROHDE & SCHWARZ	OSP120	inv. 9289	2024-07-23	2025-07-23
TEST SOFTWARE	ROHDE & SCHWARZ	WMS32	v.11.70.01	-	-

Unwanted Emissions (radiated)

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
ANTENNA	ROHDE & SCHWARZ	HFH2-Z2 , 335.4711.52	inv. 8013	2024-11-18	2025-11-18
ANTENNA	EMCO	3160-09, emi 18-26.5GHz	inv. 7294	2025-01-07	2026-01-07
ANTENNA	EMCO	3117, emi 1-18GHz	inv. 7293	2024-06-28	2026-06-28
ANTENNA	SCHWARZBECK	VULB 9168	inv. 8911	2024-12-11	2026-12-11
ANTENNA MAST	MATURO	TAM 4.0E	inv. 10181	NCR	NCR
ATTENUATOR	HUBER & SUHNER	6610.19.AA (10 dB)	inv. A3	2024-12-11-	2026-12-11
ATTENUATOR	PASTERNAK	PE 7004-4 (4dB)	inv. 10126	2024-12-11	2026-12-11
CABLE	SUHNER	SUCOFLEX 126E 18-26.5GHz	inv. C134	2024-04-05	2025-04-05
CABLE	SUHNER	SUCOFLEX 126E 1-18GHz	inv. C137	2024-04-05	2025-04-05
COAX CHAIN K5 EMI < 1GHz	-	C053+FP3AirC+C138	-	2024-03-28	2025-03-28
COAX CHAIN K5 EMI 1GHz-26.5GHz	-	C135+C149	-	2024-03-28	2025-03-28
EMI TEST RECEIVER	ROHDE & SCHWARZ	ESW26	inv. 10679	2024-06-12	2025-06-11
FILTER	WAINWRIGHT	HP, WHKX4.0/18G-10SS	inv. 10403	2024-12-10	2026-12-10
MAST & TURNTABLE CONTROLLER	MATURO	NCD	inv. 10183	NCR	NCR
POWER SUPPLY	CALIFORNIA INSTR.	5001 iX Series II	inv. 7826	NCR	NCR
RF PREAMPLIFIER	CIAO	CA1840-5019	inv. 10593	2024-09-10	2025-09-10
RF PREAMPLIFIER	CIAO	CA118-3123	inv. 10278	2024-09-10	2025-09-10
TEMPERATURE/ HUMIDITY SENSOR	EDS	OW-ENV-TH, K5 SAC	inv. 10517	2024-11-02	2025-11-02
TEST SOFTWARE	ROHDE & SCHWARZ	EMC-32	-	-	-
TURNTABLE	MATURO	DS430 UPGRADED	inv. 10182	NCR	NCR

NCR = No Calibration Required

END OF REPORT