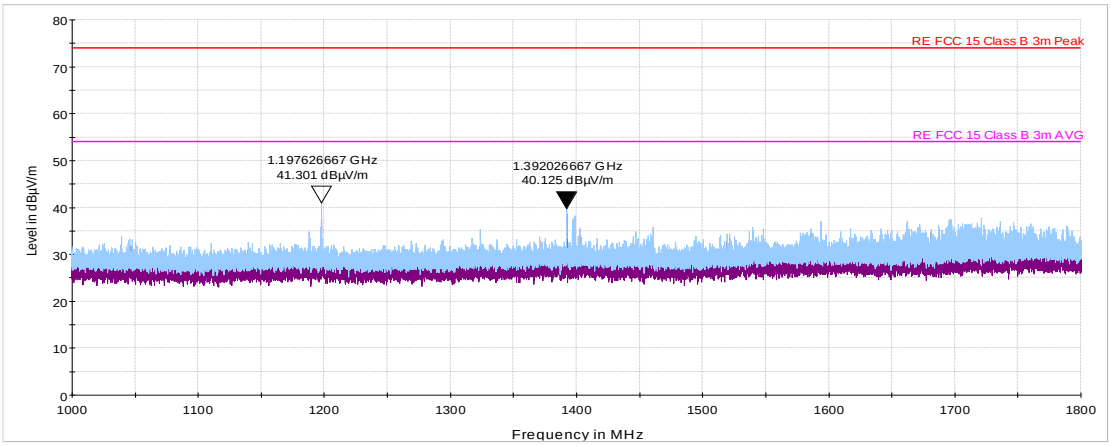
Test specification:	Section 15.247(d) / RSS-247 section 5.5, Radiated spurious emissions		
Test procedure:	ANSI C63.10 section 11.12.1		
Test mode:	Compliance	Verdict:	PASS
Date(s):	13-Jun-22 - 15-Jun-22		
Temperature: 24 ºC	Relative Humidity: 44 %	Air Pressure: 1010 hPa	Power: 5 VDC
Remarks: at Wi-Fi mode			

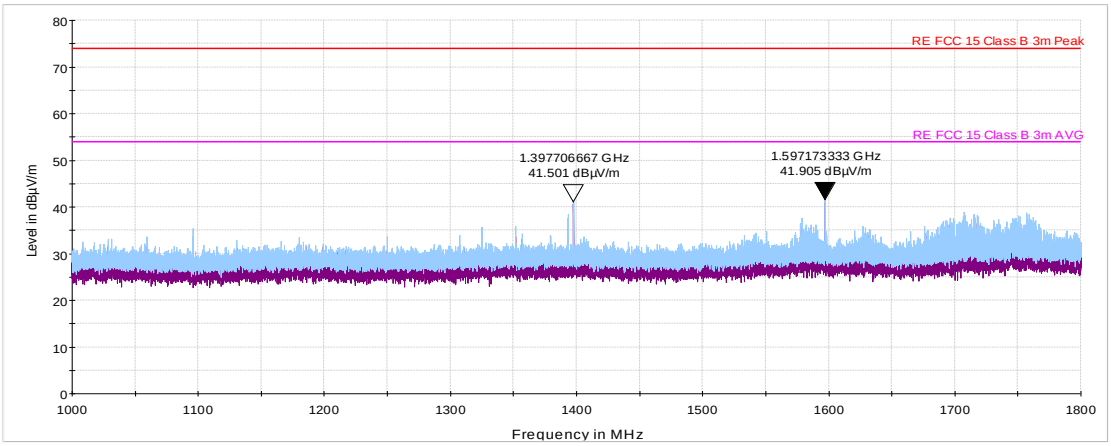
Plot 7.2.10 Radiated emission measurements from 1000 to 1800 MHz at the low carrier frequency

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Plot 7.2.11 Radiated emission measurements from 1000 to 1800 MHz at the mid carrier frequency

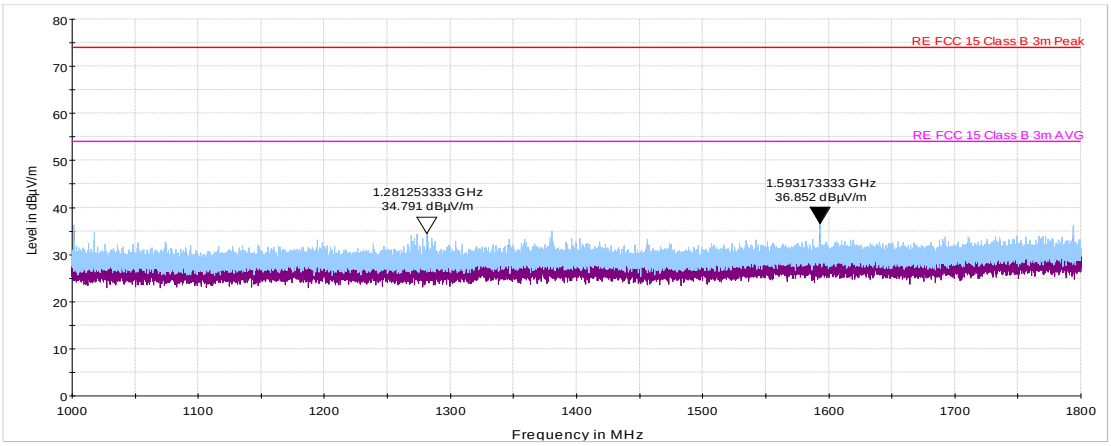
TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	Section 15.247(d) / RSS-247 section 5.5, Radiated spurious emissions		
Test procedure:	ANSI C63.10 section 11.12.1		
Test mode:	Compliance	Verdict:	PASS
Date(s):	13-Jun-22 - 15-Jun-22		
Temperature: 24 ºC	Relative Humidity: 44 %	Air Pressure: 1010 hPa	Power: 5 VDC
Remarks: at Wi-Fi mode			

Plot 7.2.12 Radiated emission measurements from 1000 to 1800 MHz at the high carrier frequency

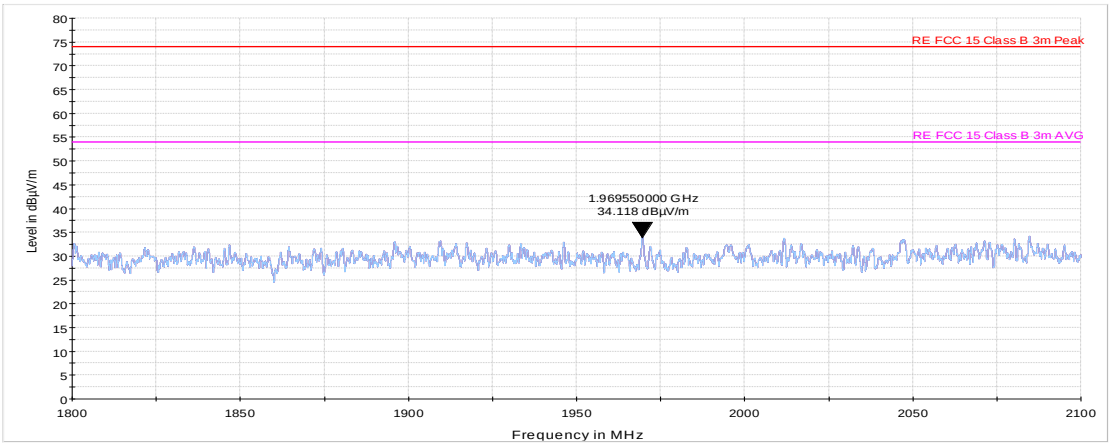
TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	Section 15.247(d) / RSS-247 section 5.5, Radiated spurious emissions		
Test procedure:	ANSI C63.10 section 11.12.1		
Test mode:	Compliance	Verdict:	PASS
Date(s):	13-Jun-22 - 15-Jun-22		
Temperature: 24 ºC	Relative Humidity: 44 %	Air Pressure: 1010 hPa	Power: 5 VDC
Remarks: at Wi-Fi mode			

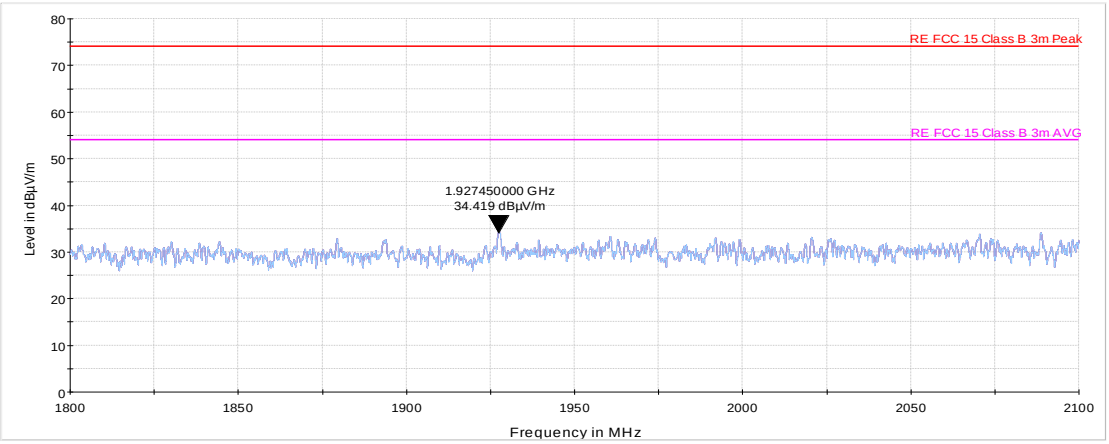
Plot 7.2.13 Radiated emission measurements from 1800 to 2100 MHz at the low carrier frequency

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Plot 7.2.14 Radiated emission measurements from 1800 to 2100 MHz at the mid carrier frequency

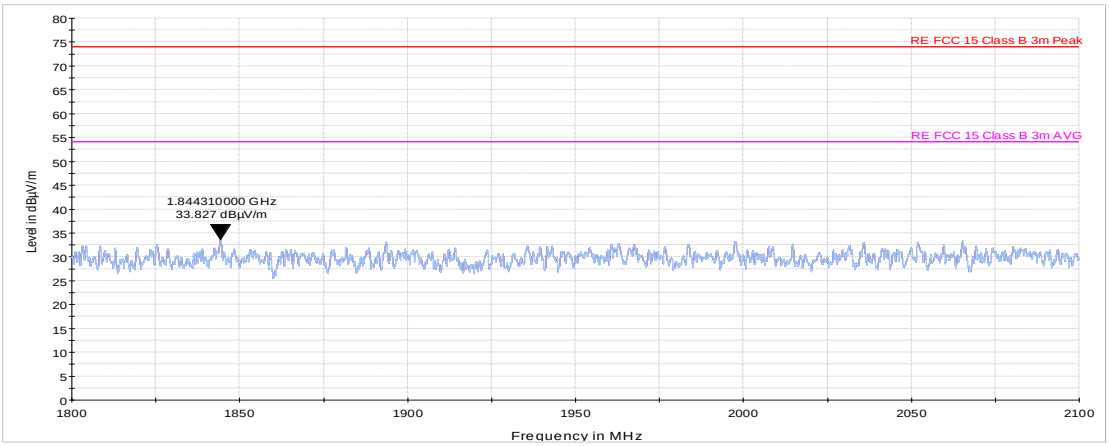
TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	Section 15.247(d) / RSS-247 section 5.5, Radiated spurious emissions		
Test procedure:	ANSI C63.10 section 11.12.1		
Test mode:	Compliance	Verdict:	PASS
Date(s):	13-Jun-22 - 15-Jun-22		
Temperature: 24 ºC	Relative Humidity: 44 %	Air Pressure: 1010 hPa	Power: 5 VDC
Remarks: at Wi-Fi mode			

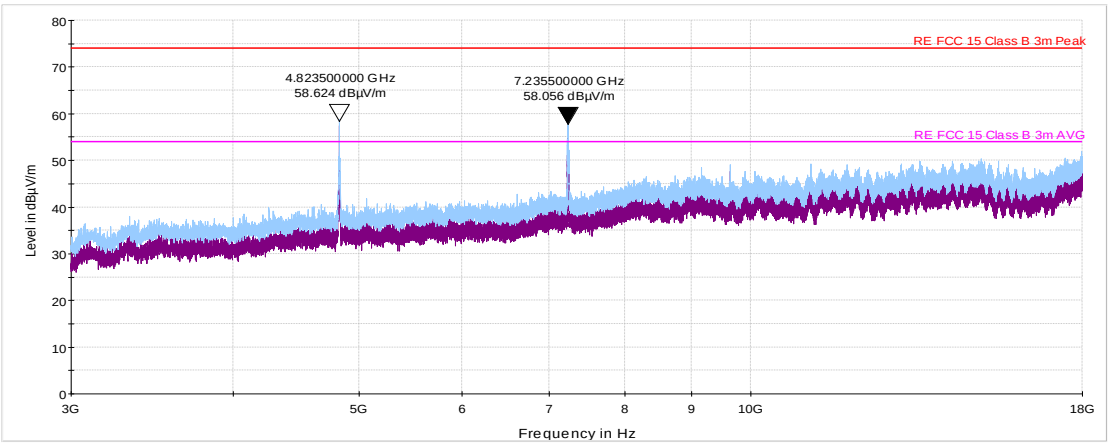
Plot 7.2.15 Radiated emission measurements from 1800 to 2100 MHz at the high carrier frequency

TEST SITE: Anechoic chamber / OATS / Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Plot 7.2.16 Radiated emission measurements from 3000 to 18000 MHz at the low carrier frequency

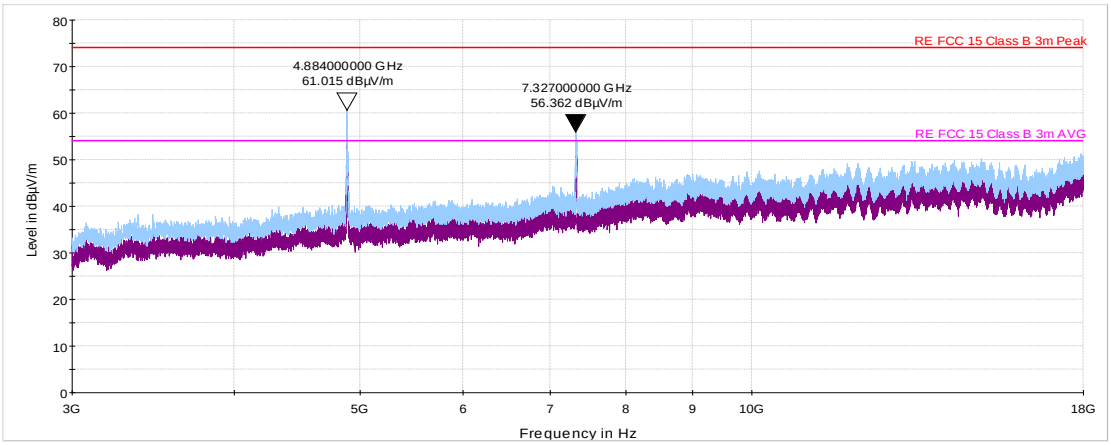
TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	Section 15.247(d) / RSS-247 section 5.5, Radiated spurious emissions		
Test procedure:	ANSI C63.10 section 11.12.1		
Test mode:	Compliance	Verdict:	PASS
Date(s):	13-Jun-22 - 15-Jun-22		
Temperature: 24 ºC	Relative Humidity: 44 %	Air Pressure: 1010 hPa	Power: 5 VDC
Remarks: at Wi-Fi mode			

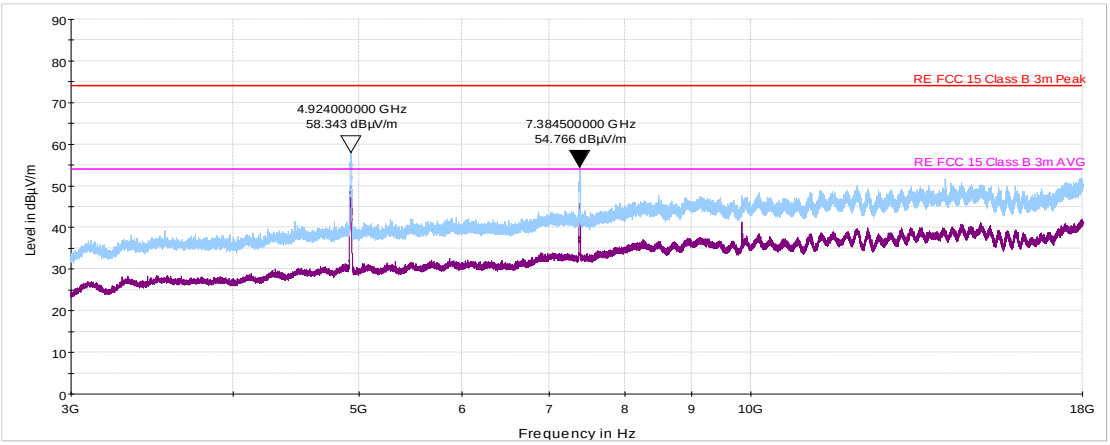
Plot 7.2.17 Radiated emission measurements from 3000 to 18000 MHz at the mid carrier frequency

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Plot 7.2.18 Radiated emission measurements from 3000 to 18000 MHz at the high carrier frequency

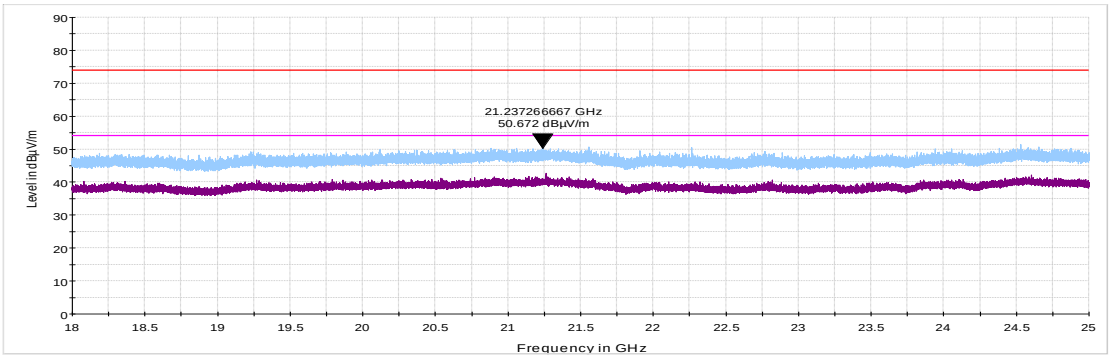
TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	**Section 15.247(d) / RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10 section 11.12.1		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	13-Jun-22 - 15-Jun-22		
Temperature: 24 ºC	**Relative Humidity:** 44 %	**Air Pressure:** 1010 hPa	**Power:** 5 VDC
Remarks: at Wi-Fi mode			

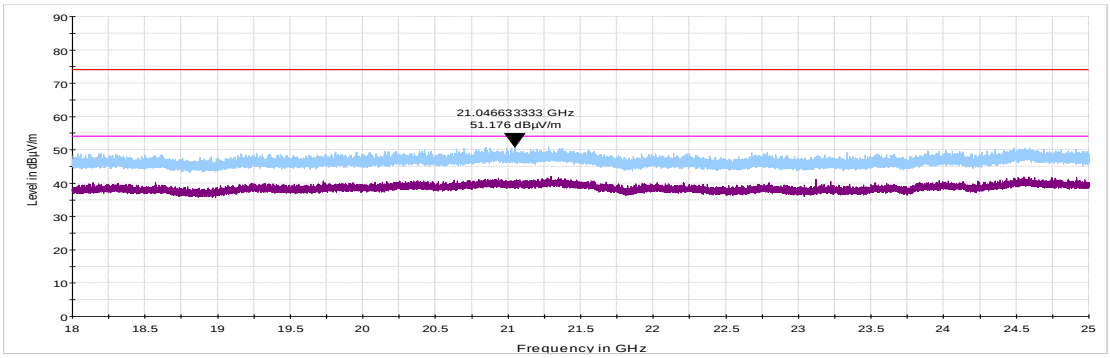
Plot 7.2.19 Radiated emission measurements from 18 GHz to 25 GHz at the low carrier frequency

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Plot 7.2.20 Radiated emission measurements from 18 GHz to 25 GHz at the mid carrier frequency

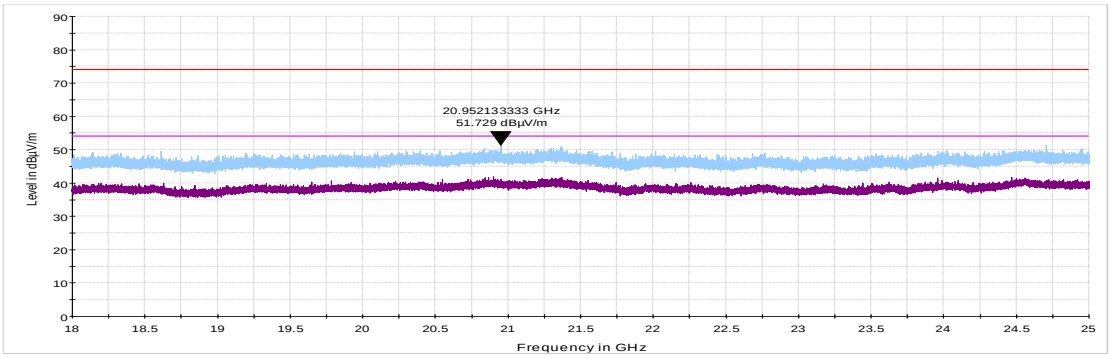
TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	**Section 15.247(d) / RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10 section 11.12.1		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	13-Jun-22 - 15-Jun-22		
Temperature: 24 ºC	**Relative Humidity:** 44 %	**Air Pressure:** 1010 hPa	**Power:** 5 VDC
Remarks: at Wi-Fi mode			

Plot 7.2.21 Radiated emission measurements from 18 GHz to 25 GHz at the high carrier frequency

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	**Section 15.247(d) / RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10 section 11.12.1		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	28-Nov-23		
Temperature: 24 ºC	**Relative Humidity:** 44 %	**Air Pressure:** 1010 hPa	**Power:** 5 VDC
Remarks: at UWB and Wi-Fi mode			

7.3 Field strength of spurious emissions at UWB and Wi-Fi mode

7.3.1 General

This test was performed to measure field strength of spurious emissions from the EUT. Specification test limits are given in Table 7.2.1.

Table 7.3.1 Radiated spurious emissions limits

Frequency, MHz	Field strength at 3 m within restricted bands, dB(μV/m)*			Attenuation of field strength of spurious versus carrier outside restricted bands, dBc***
	Peak	Quasi Peak	Average	
0.009 – 0.090	148.5 – 128.5	NA	128.5 – 108.5**	30.0
0.090 – 0.110	NA	108.5 – 106.8**	NA	
0.110 – 0.490	126.8 – 113.8	NA	106.8 – 93.8**	
0.490 – 1.705	NA	73.8 – 63.0**	NA	
1.705 – 30.0*		69.5		
30 – 88		40.0		
88 – 216		43.5		
216 – 960		46.0		
960 - 1000		54.0		
1000 – 10thharmonic	74.0	NA	54.0	

*- The limit for 3 m test distance was calculated using the inverse square distance extrapolation factor as follows:

$$Lim_{S2} = Lim_{S1} + 40 \log (S_1/S_2),$$

where S_1 and S_2 – standard defined and test distance respectively in meters.

**- The limit decreases linearly with the logarithm of frequency.

*** - The field strength limits applied from the lowest radio frequency generated in the device, without going below 9 kHz up to the tenth harmonic of the highest fundamental frequency.

7.3.2 Test procedure for spurious emission field strength measurements in 9 kHz to 30 MHz band

7.3.2.1 The EUT was set up as shown in Figure 7.2.1, energized and the performance check was conducted.

7.3.2.2 The specified frequency range was investigated with antenna connected to spectrum analyzer/ EMI receiver. To find maximum radiation the turntable was rotated 360^0 and the measuring antenna was rotated around its vertical axis.

7.3.2.3 The worst test results (the lowest margins) were recorded and shown in the associated plots.

7.3.3 Test procedure for spurious emission field strength measurements above 30 MHz

7.3.3.1 The EUT was set up as shown in Figure 7.2.2, Figure 1.1.3, energized and the performance check was conducted.

7.3.3.2 The specified frequency range was investigated with antenna connected to spectrum analyzer/ EMI receiver. To find maximum radiation the turntable was rotated 360^0, the measuring antenna height was changed from 1 to 4 m, its polarization was switched from vertical to horizontal.

7.3.3.3 The worst test results (the lowest margins) were recorded and shown in the associated plots.

Test specification:	Section 15.247(d) / RSS-247 section 5.5, Radiated spurious emissions		
Test procedure:	ANSI C63.10 section 11.12.1		
Test mode:	Compliance	Verdict:	PASS
Date(s):	28-Nov-23		
Temperature: 24 ºC	Relative Humidity: 44 %	Air Pressure: 1010 hPa	Power: 5 VDC
Remarks: at UWB and Wi-Fi mode			

Figure 7.3.1 Setup for spurious emission field strength measurements below 30 MHz

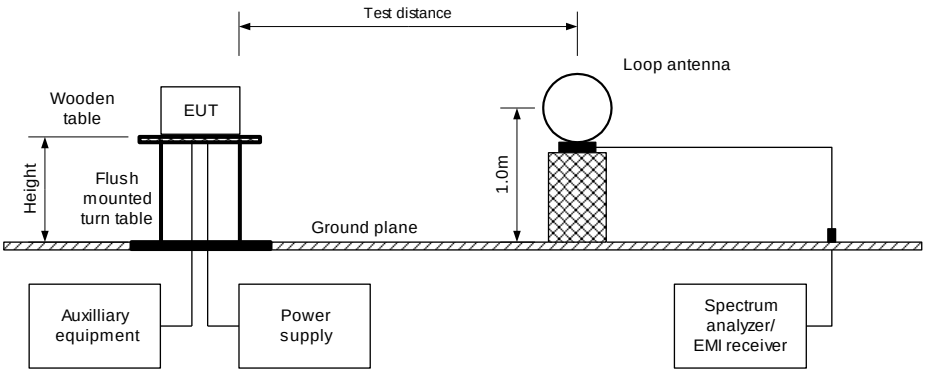
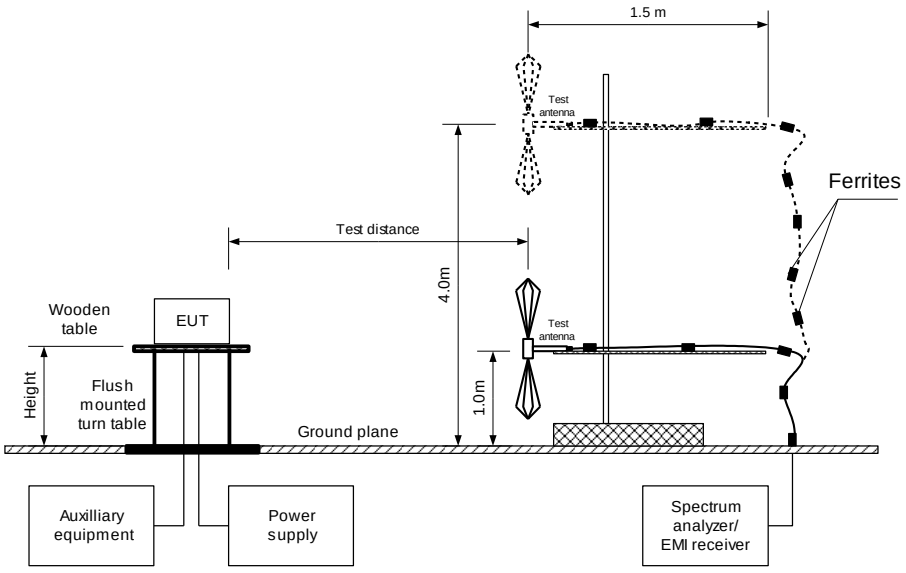
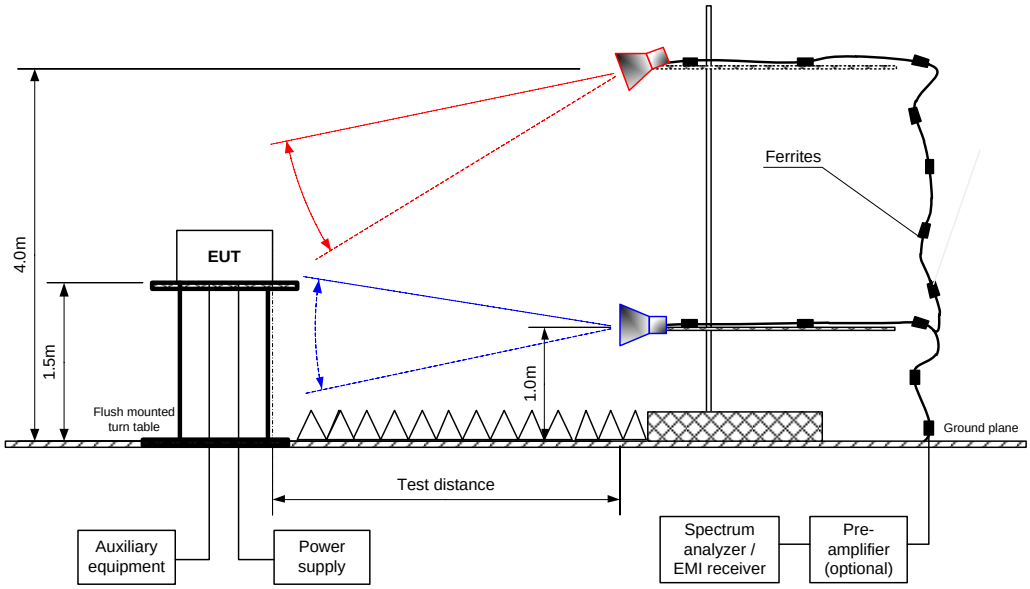


Figure 7.3.2 Setup for spurious emission field strength measurements in 30 – 1000 MHz



Test specification:	**Section 15.247(d) / RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10 section 11.12.1		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	28-Nov-23		
Temperature: 24 ºC	**Relative Humidity:** 44 %	**Air Pressure:** 1010 hPa	**Power:** 5 VDC
Remarks: at UWB and Wi-Fi mode			

Figure 7.3.3 Setup for spurious emission field strength measurements above1000 MHz



Test specification:	**Section 15.247(d) / RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10 section 11.12.1		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	28-Nov-23		
Temperature: 24 ºC	**Relative Humidity:** 44 %	**Air Pressure:** 1010 hPa	**Power:** 5 VDC
Remarks: at UWB and Wi-Fi mode			

Table 7.3.2 Field strength of emissions outside restricted bands

ASSIGNED FREQUENCY:	2400.0 – 2483.5 MHz
INVESTIGATED FREQUENCY RANGE:	0.009 - 40000 MHz
TEST DISTANCE:	3 m
MODULATION:	CCK***
MODULATING SIGNAL:	PRBS***
BIT RATE:	11 Mbps
DUTY CYCLE:	100 %
TRANSMITTER OUTPUT POWER SETTINGS:	Maximum
DETECTOR USED:	Peak
RESOLUTION BANDWIDTH:	100 kHz
VIDEO BANDWIDTH:	300 kHz
TEST ANTENNA TYPE:	Active loop (9 kHz – 30 MHz) Biconilog (30 MHz – 1000 MHz) Double ridged guide (above 1000 MHz)

Frequency, MHz	Field strength of spurious, dB(μV/m)	Antenna polarization	Antenna height, m	Azimuth, degrees*	Field strength of carrier, dB(μV/m)	Attenuation below carrier, dBc	Limit, dBc	Margin, dB**	Verdict
34.439	27.24	Vertical	1.00	143	98.26	-71.02	20.0	-51.02	Pass
41.695	29.24	Vertical	1.00	9		-69.02		-49.02	
81.396	26.87	Vertical	1.00	-88		-71.39		-51.39	
141.540	27.23	Vertical	1.00	26		-71.03		-51.03	
6284.83	41.35	Vertical	2.32	109		-56.91		-36.91	
7040.08	42.88	Vertical	1.45	180		-55.38		-35.38	
7849.98	43.68	Vertical	1.45	-169		-54.58		-34.58	
8000.01	43.92	Vertical	1.02	-170		-54.34		-34.34	

*****- EUT front panel refers to 0 degrees position of turntable.
******- Margin = Attenuation below carrier – specification limit.
***-Depends of the region where the device is used

Test specification:	**Section 15.247(d) / RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10 section 11.12.1		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	28-Nov-23		
Temperature: 24 ºC	**Relative Humidity:** 44 %	**Air Pressure:** 1010 hPa	**Power:** 5 VDC
Remarks: at UWB and Wi-Fi mode			

Table 7.3.3 Field strength of spurious emissions above 1 GHz within restricted bands

ASSIGNED FREQUENCY:	2400.0 – 2483.5 MHz
INVESTIGATED FREQUENCY RANGE:	1000 - 25000 MHz
TEST DISTANCE:	3 m
MODULATION:	CCK***
MODULATING SIGNAL:	PRBS***
BIT RATE:	11 Mbps
DUTY CYCLE:	100 %
TRANSMITTER OUTPUT POWER SETTINGS:	Maximum
DETECTOR USED:	Peak
RESOLUTION BANDWIDTH:	1000 kHz
TEST ANTENNA TYPE:	Double ridged guide

Frequency, MHz	Antenna		Azimuth, degrees*	Peak field strength(VBW=3 MHz)			Average field strength(VBW=10 Hz)				Verdict
	Polarization	Height, m		Measured, dB(μV/m)	Limit, dB(μV/m)	Margin, dB**	Measured, dB(μV/m)	Calculated, dB(μV/m)	Limit, dB(μV/m)	Margin, dB***	
Low carrier frequency											
1030.00	Vertical	1.45	110	37.56	74.00	-36.44	21.30	N/A	54.00	-32.70	Pass
2510.00	Vertical	2.95	40	35.43	74.00	-38.57	23.69	N/A	54.00	-30.31	
3269.26	Horizontal	3.64	-135	44.01	74.00	-29.99	32.03	N/A	54.00	-21.97	
4899.98	Horizontal	1.67	-35	57.56	74.00	-16.44	29.02	N/A	54.00	-24.98	
7357.20	Vertical	1.23	180	56.86	74.00	-17.14	37.50	N/A	54.00	-16.50	
8100.07	Vertical	2.20	176	45.32	74.00	-28.68	33.73	N/A	54.00	-20.27	
8149.81	Horizontal	1.24	17	45.03	74.00	-28.98	33.77	N/A	54.00	-20.23	

*****- EUT front panel refers to 0 degrees position of turntable.
******- Margin = Measured field strength - specification limit.
***-Depends of the region where the device is used

Test specification:	**Section 15.247(d) / RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10 section 11.12.1		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	28-Nov-23		
Temperature: 24 ºC	**Relative Humidity:** 44 %	**Air Pressure:** 1010 hPa	**Power:** 5 VDC
Remarks: at UWB and Wi-Fi mode			

Table 7.3.4 Field strength of spurious emissions below 1 GHz within restricted bands

ASSIGNED FREQUENCY:	2400.0 – 2483.5 MHz
INVESTIGATED FREQUENCY RANGE:	0.009 – 1000 MHz
TEST DISTANCE:	3 m
MODULATION:	CCK***
MODULATING SIGNAL:	PRBS***
BIT RATE:	11 Mbps
DUTY CYCLE:	100 %
TRANSMITTER OUTPUT POWER SETTINGS:	Maximum
RESOLUTION BANDWIDTH:	0.2 kHz (9 kHz – 150 kHz) 9.0 kHz (150 kHz – 30 MHz) 120 kHz (30 MHz – 1000 MHz)
VIDEO BANDWIDTH:	> Resolution bandwidth
TEST ANTENNA TYPE:	Active loop (9 kHz – 30 MHz) Biconilog (30 MHz – 1000 MHz)

Frequency, MHz	**Peak emission, dB(μV/m)**	**Quasi-peak**			**Antenna polarization**	**Antenna height, m**	**Turn-table position**, degrees**	**Verdict**
		Measured emission, dB(μV/m)	**Limit, dB(μV/m)**	**Margin, dB***				
120.002	28.11	20.66	40.00	-19.34	Vertical	1.00	143	Pass
409.873	26.89	17.10	46.00	-28.90	Vertical	1.00	74	

*****- Margin = Measured emission - specification limit.
******- EUT front panel refer to 0 degrees position of turntable.
***-Depends of the region where the device is used

Table 7.3.5 Average factor calculation

Transmission pulse		**Transmission burst**		**Transmission train duration, ms**	**Average factor, dB**
Duration, ms	**Period, ms**	**Duration, ms**	**Period, ms**		
NA					

*- Average factor was calculated as follows

for pulse train shorter than 100 ms: $$Average\ factor = 20 \times \log_{10}\left(\frac{Pulse\ duration}{Pulse\ period} \times \frac{Burst\ duration}{Train\ duration} \times Number\ of\ bursts\ within\ pulse\ train\right)$$

for pulse train longer than 100 ms: $$Average\ factor = 20 \times \log_{10}\left(\frac{Pulse\ duration}{Pulse\ period} \times \frac{Burst\ duration}{100\ ms} \times Number\ of\ bursts\ within\ 100\ ms\right)$$

Test specification:	**Section 15.247(d) / RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10 section 11.12.1		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	28-Nov-23		
Temperature: 24 ºC	**Relative Humidity:** 44 %	**Air Pressure:** 1010 hPa	**Power:** 5 VDC
Remarks: at UWB and Wi-Fi mode			

Table 7.3.6 Restricted bands according to FCC section 15.205

MHz	MHz	MHz	MHz	MHz	GHz
0.09 - 0.11	8.37625 - 8.38675	73 - 74.6	399.9 - 410	2690 - 2900	10.6 - 12.7
0.495 - 0.505	8.41425 - 8.41475	74.8 - 75.2	608 - 614	3260 - 3267	13.25 - 13.4
2.1735 - 2.1905	12.29 - 12.293	108 - 121.94	960 - 1240	3332 - 3339	14.47 - 14.5
4.125 - 4.128	12.51975 - 12.52025	123 - 138	1300 - 1427	3345.8 - 3358	15.35 - 16.2
4.17725 - 4.17775	12.57675 - 12.57725	149.9 - 150.05	1435 - 1626.5	3600 - 4400	17.7 - 21.4
4.20725 - 4.20775	13.36 - 13.41	156.52475 - 156.52525	1645.5 - 1646.5	4500 - 5150	22.01 - 23.12
6.215 - 6.218	16.42 - 16.423	156.7 - 156.9	1660 - 1710	5350 – 5460	23.6 - 24
6.26775 - 6.26825	16.69475 - 16.69525	162.0125 - 167.17	1718.8 - 1722.2	7250 - 7750	31.2 - 31.8
6.31175 - 6.31225	16.80425 - 16.80475	167.72 - 173.2	2200 - 2300	8025 – 8500	36.43 - 36.5
8.291 - 8.294	25.5 - 25.67	240 - 285	2310 - 2390	9000 - 9200	Above 38.6
8.362 - 8.366	37.5 - 38.25	322 - 335.4	2483.5 - 2500	9300 - 9500	

Table 7.3.7 Restricted bands according to RSS-Gen

MHz	MHz	MHz	MHz	MHz	GHz
0.09 - 0.11	8.291 - 8.294	16.80425 - 16.80475	399.9 - 410	3260 - 3267	10.6 - 12.7
2.1735 - 2.1905	8.362 - 8.366	25.5 - 25.67	608 - 614	3332 – 3339	13.25 - 13.4
3.020 – 3.026	8.37625 - 8.38675	37.5 - 38.25	960 – 1427	3345.8 – 3358	14.47 – 14.5
4.125 – 4.128	8.41425 - 8.41475	73 - 74.6	1435 – 1626.5	3500 – 4400	15.35 – 16.2
4.17725 – 4.17775	12.29 – 12.293	74.8 - 75.2	1645.5 – 1646.5	4500 – 5150	17.7 – 21.4
4.20725 – 4.20775	12.51975 – 12.52025	108 – 138	1660 - 1710	5350 – 5460	22.01 – 23.12
5.677 – 5.683	12.57675 – 12.57725	156.52475 – 156.52525	1718.8 - 1722.2	7250 - 7750	23.6 - 24
6.215 - 6.218	13.36 – 13.41	156.7 - 156.9	2200 - 2300	8025 – 8500	31.2 - 31.8
6.26775 - 6.26825	16.42 - 16.423	240 - 285	2310 - 2390	9000 - 9200	36.43 - 36.5
6.31175 - 6.31225	16.69475 - 16.69525	322 - 335.4	2655 - 2900	9300 - 9500	Above 38.6

Reference numbers of test equipment used

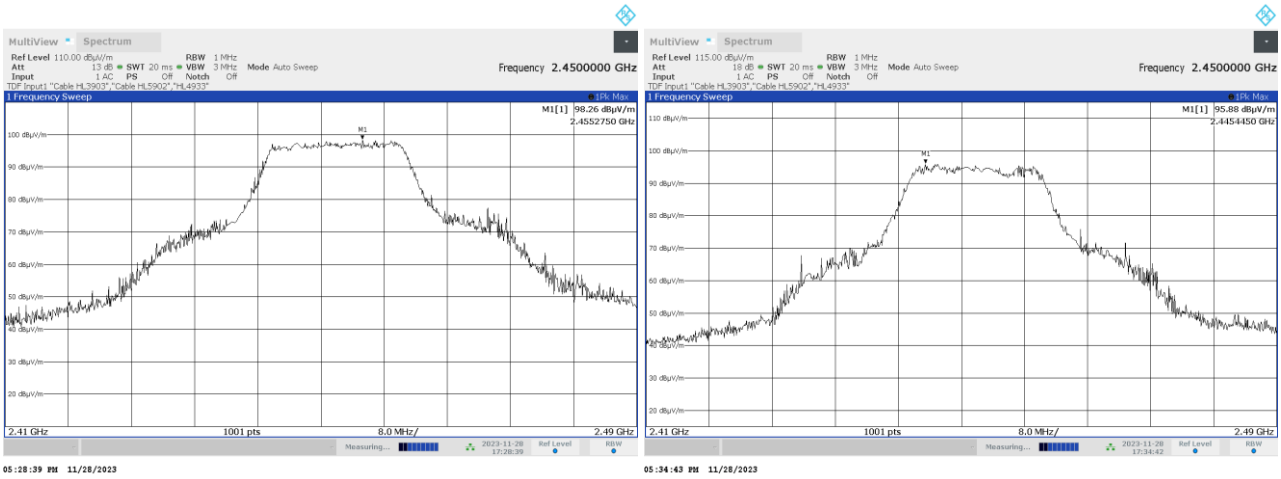
HL 0446	HL 3356	HL 3903	HL 4015	HL 4433	HL 4909	HL 4919	HL 4933
HL 4956	HL 5112	HL 5288	HL 5902	HL 7585			

Full description is given in Appendix A.

Test specification:	Section 15.247(d) / RSS-247 section 5.5, Radiated spurious emissions		
Test procedure:	ANSI C63.10 section 11.12.1		
Test mode:	Compliance	Verdict:	PASS
Date(s):	28-Nov-23		
Temperature: 24 ºC	Relative Humidity: 44 %	Air Pressure: 1010 hPa	Power: 5 VDC
Remarks: at UWB and Wi-Fi mode			

Plot 7.3.1 Radiated emission measurements

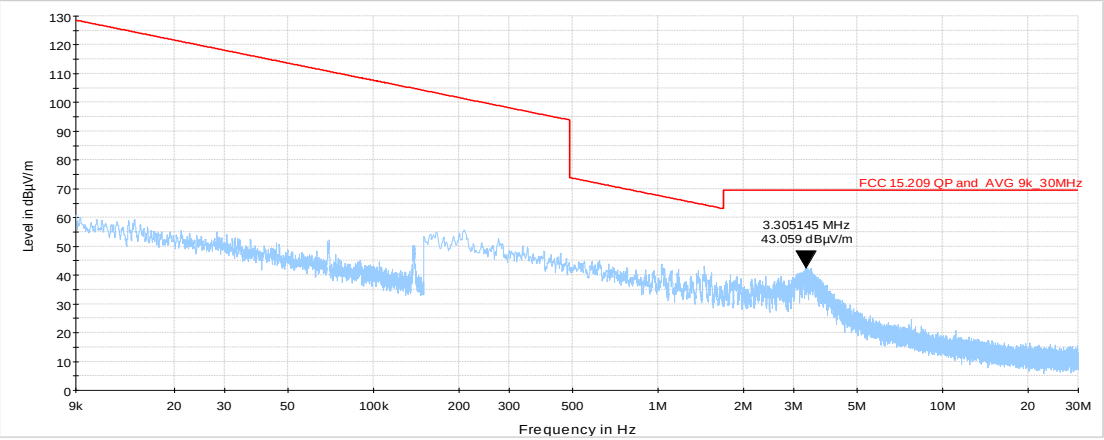
TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m



Test specification:	Section 15.247(d) / RSS-247 section 5.5, Radiated spurious emissions		
Test procedure:	ANSI C63.10 section 11.12.1		
Test mode:	Compliance	Verdict:	PASS
Date(s):	28-Nov-23		
Temperature: 24 ºC	Relative Humidity: 44 %	Air Pressure: 1010 hPa	Power: 5 VDC
Remarks: at UWB and Wi-Fi mode			

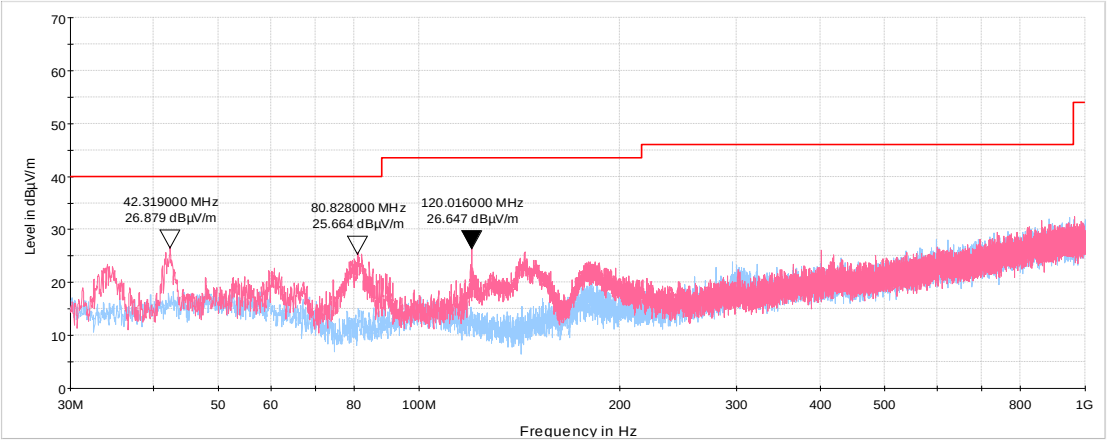
Plot 7.3.2 Radiated emission measurements from 9 to 30000 kHz

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and horizontal



Plot 7.3.3 Radiated emission measurements from 30 to 1000 MHz

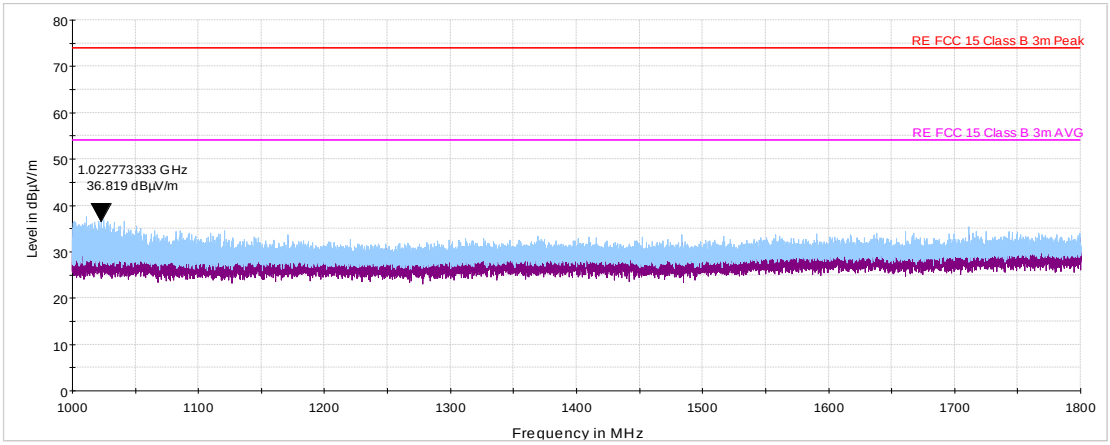
TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	Section 15.247(d) / RSS-247 section 5.5, Radiated spurious emissions		
Test procedure:	ANSI C63.10 section 11.12.1		
Test mode:	Compliance	Verdict:	PASS
Date(s):	28-Nov-23		
Temperature: 24 ºC	Relative Humidity: 44 %	Air Pressure: 1010 hPa	Power: 5 VDC
Remarks: at UWB and Wi-Fi mode			

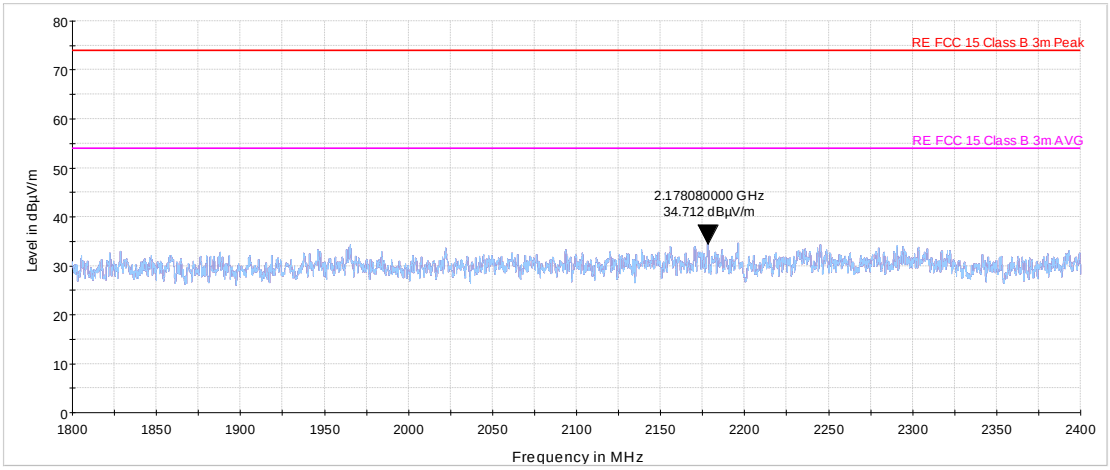
Plot 7.3.4 Radiated emission measurements from 1000 to 1800 MHz

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Plot 7.3.5 Radiated emission measurements from 1800 to 2400 MHz

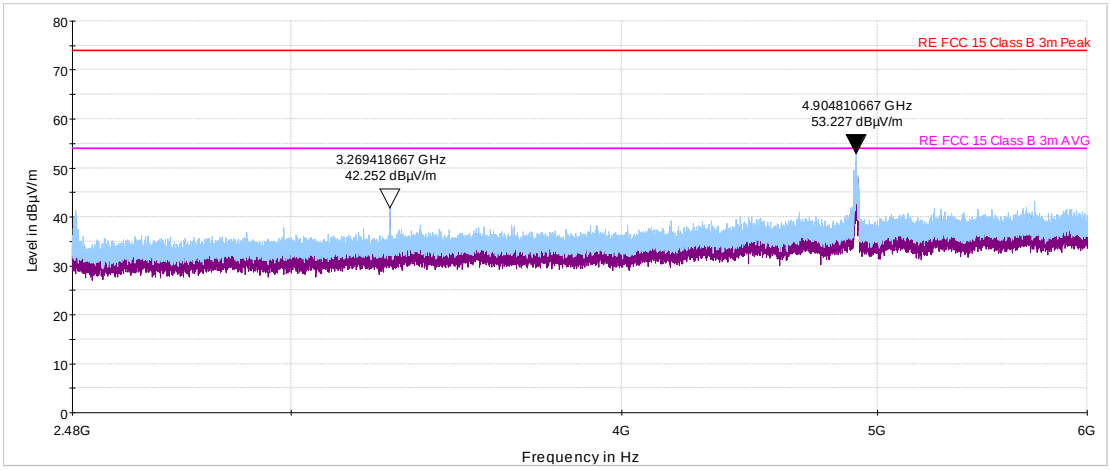
TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	Section 15.247(d) / RSS-247 section 5.5, Radiated spurious emissions		
Test procedure:	ANSI C63.10 section 11.12.1		
Test mode:	Compliance	Verdict:	PASS
Date(s):	28-Nov-23		
Temperature: 24 ºC	Relative Humidity: 44 %	Air Pressure: 1010 hPa	Power: 5 VDC
Remarks: at UWB and Wi-Fi mode			

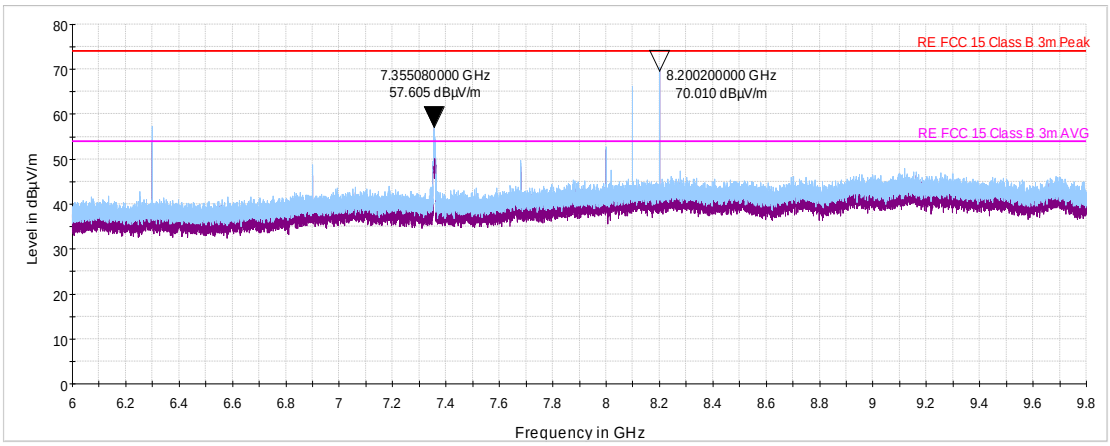
Plot 7.3.6 Radiated emission measurements from 2483.5 to 6000 MHz

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Plot 7.3.7 Radiated emission measurements from 6000 to 9800 MHz

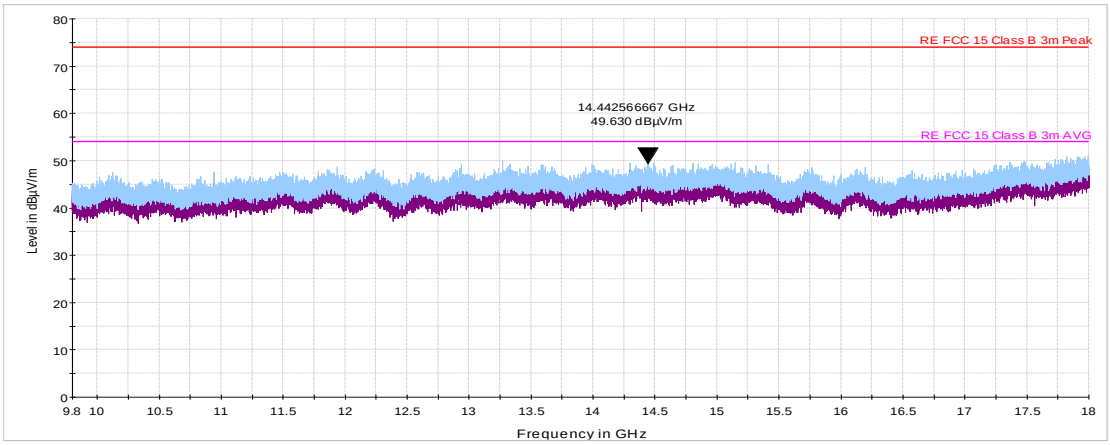
TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	**Section 15.247(d) / RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10 section 11.12.1		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	28-Nov-23		
Temperature: 24 ºC	**Relative Humidity:** 44 %	**Air Pressure:** 1010 hPa	**Power:** 5 VDC
Remarks: at UWB and Wi-Fi mode			

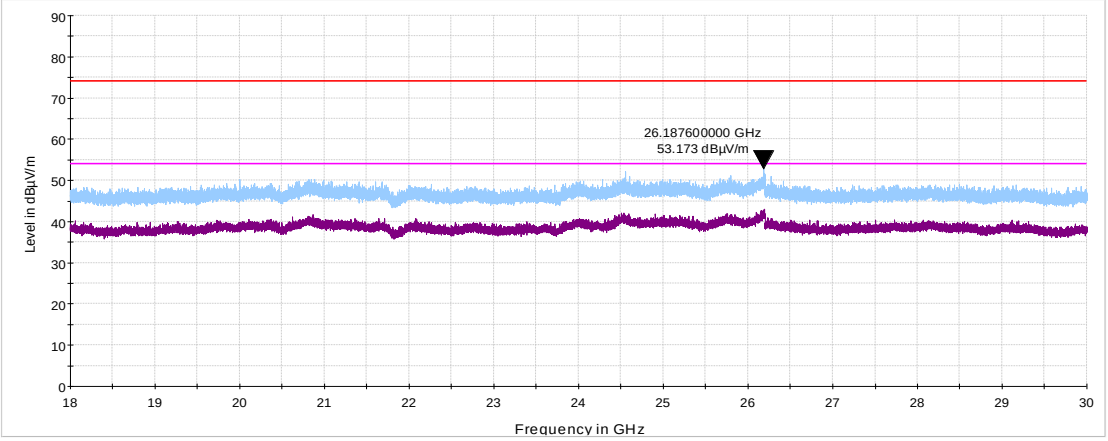
Plot 7.3.8 Radiated emission measurements from 9800 to 18000 MHz

TEST SITE: Anechoic chamber / OATS / Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Plot 7.3.9 Radiated emission measurements from 18000 to 30000 MHz

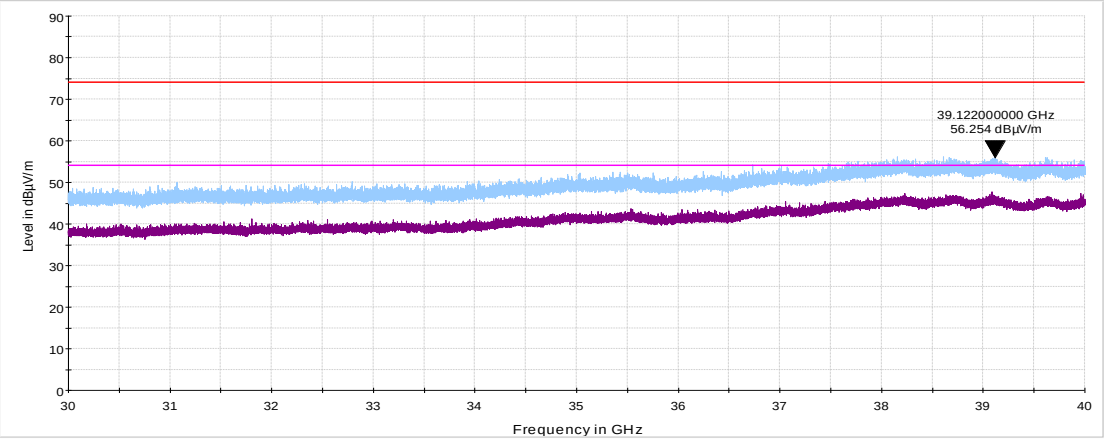
TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	**Section 15.247(d) / RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10 section 11.12.1		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	28-Nov-23		
Temperature: 24 ºC	**Relative Humidity:** 44 %	**Air Pressure:** 1010 hPa	**Power:** 5 VDC
Remarks: at UWB and Wi-Fi mode			

Plot 7.3.10 Radiated emission measurements from 30000 to 40000 MHz

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	Section 15.247(b)3 / RSS-247 section 5.4(4), Maximum output power		
Test procedure:	ANSI C63.10 sections 11.9.2.2.4		
Test mode:	Compliance	Verdict:	PASS
Date(s):	12-Sep-23 - 13-Sep-23		
Temperature: 24 ºC	Relative Humidity: 45 %	Air Pressure: 1005 hPa	Power: 5 VDC
Remarks:			

7.4 Peak output power

7.4.1 General

This test was performed to measure the maximum peak output power radiated by transmitter. Specification test limits are given in Table 7.4.1.

Table 7.4.1 Peak output power limits

Assigned frequency range, MHz	Maximum antenna gain, dBi	Peak output power*		Equivalent field strength limit @ 3m, dB(μV/m)**
		W	dBm	
2400.0 – 2483.5	6.0	1.0	30.0	131.2

*- The limit is provided in terms of conducted RF power at the antenna connector. If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power limit shall be reduced below the stated value as follows:

by 1 dB for every 3 dB that the directional gain of antenna exceeds 6 dBi for fixed point-to-point transmitters operate in 2400-2483.5 MHz band;
without any corresponding reduction for fixed point-to-point transmitters operate in 5725-5850 MHz band;
by the amount in dB that the directional gain of antenna exceeds 6 dBi for the rest of transmitters.

**- Equivalent field strength limit was calculated from the peak output power as follows: E=sqrt(30×P×G)/r, where P is peak output power in Watts, r is antenna to EUT distance in meters and G is transmitter antenna gain in dBi.

7.4.2 Test procedure

7.4.2.1 The EUT was set up as shown in Figure 7.4.1, energized and its proper operation was checked.

7.4.2.2 The EUT was adjusted to produce maximum available to end user RF output power.

7.4.2.3 The resolution bandwidth of spectrum analyzer was set to 1 MHz with the integration BW applied to be wider than 6 dB bandwidth of the EUT and the field strength of the EUT carrier frequency was measured with antenna connected to spectrum analyzer/ EMI receiver. To find maximum radiation the turntable was rotated 360° and the measuring antenna height was swept in both vertical and horizontal polarizations.

7.4.2.4 The maximum field strength of the EUT carrier frequency was measured as provided in Table 7.4.2 and associated plots.

7.4.2.5 The maximum peak output power was calculated from the field strength of carrier as follows:

$$P = (E \times d)^2 / (30 \times G),$$

where P is the peak output power in W, E is the field strength in V/m, d is the test distance and G is the transmitter numeric antenna gain over an isotropic radiator.
The above equation was converted in logarithmic units for 3 m test distance:

Peak output power in dBm = Field strength in dB(μV/m) - Transmitter antenna gain in dBi – 95.2 dB

7.4.2.6 The worst test results (the lowest margins) were recorded in Table 7.4.2.

Test specification:	Section 15.247(b)3 / RSS-247 section 5.4(4), Maximum output power		
Test procedure:	ANSI C63.10 sections 11.9.2.2.4		
Test mode:	Compliance	Verdict:	PASS
Date(s):	12-Sep-23 - 13-Sep-23		
Temperature: 24 ºC	Relative Humidity: 45 %	Air Pressure: 1005 hPa	Power: 5 VDC
Remarks:			

Figure 7.4.1 Setup for carrier field strength measurements