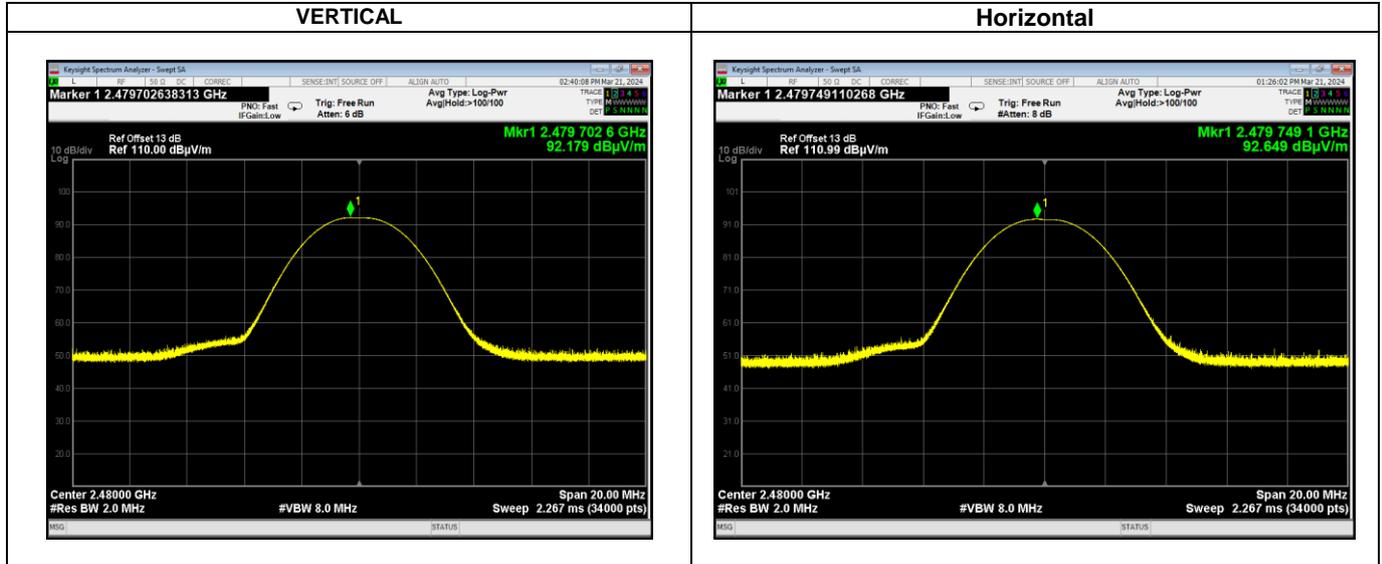
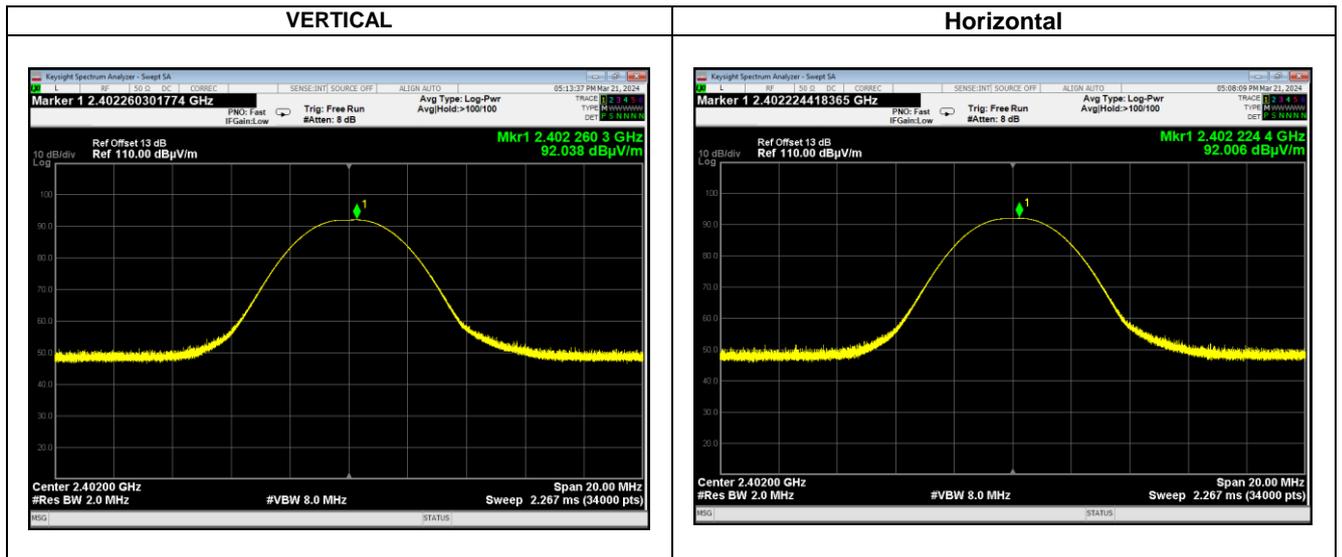


<b>Test specification:</b>	<b>Section 15.247(b)3, Peak output power</b>		
<b>Test procedure:</b>	Section 15.247(d)		
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Date &amp; Time:</b>	21-Mar-24 - 24-Mar-24		
<b>Temperature: 22.8 °C</b>	<b>Air Pressure: 1008 hPa</b>	<b>Relative Humidity: 34 %</b>	<b>Power Supply: 3.7 VDC</b>
<b>Remarks:</b>			

Plot 7.3.3 Field strength of carrier at high frequency and Unom

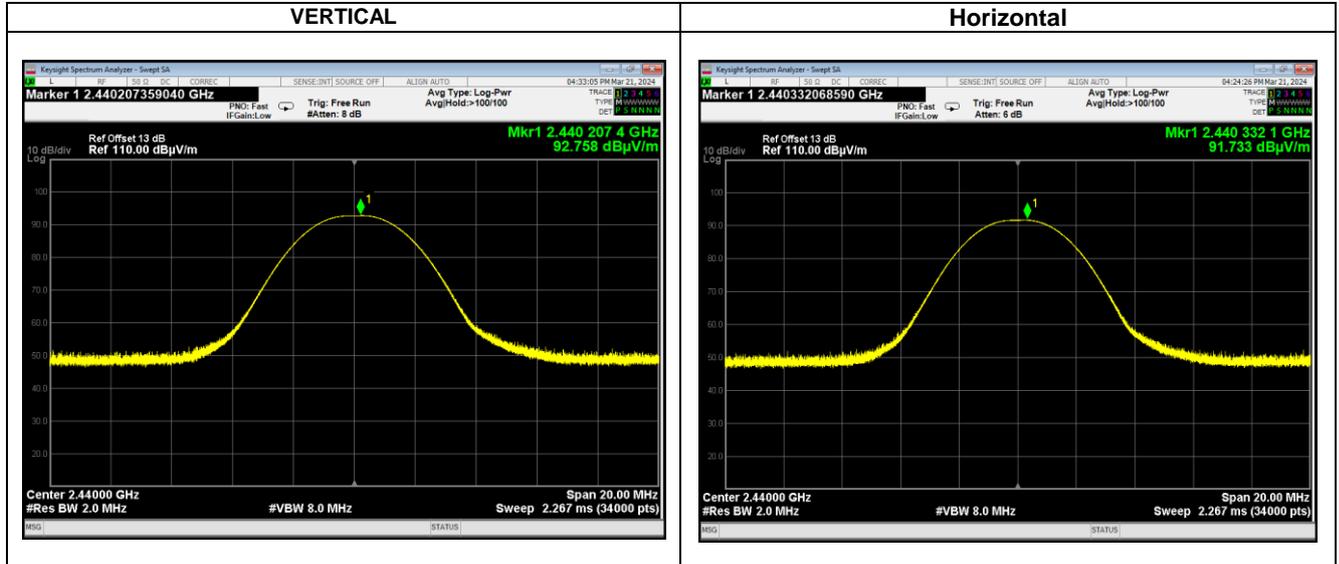


Plot 7.3.4 Peak output power at low frequency and 115%Unom

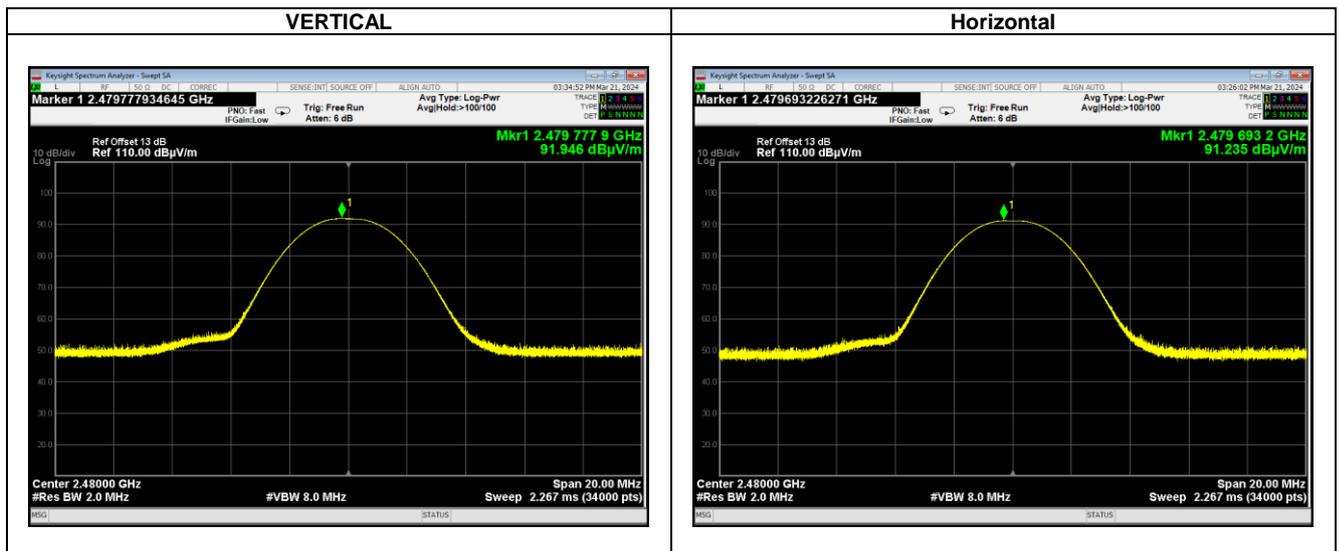


<b>Test specification:</b>	<b>Section 15.247(b)3, Peak output power</b>		
<b>Test procedure:</b>	Section 15.247(d)		
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Date &amp; Time:</b>	21-Mar-24 - 24-Mar-24		
<b>Temperature: 22.8 °C</b>	<b>Air Pressure: 1008 hPa</b>	<b>Relative Humidity: 34 %</b>	<b>Power Supply: 3.7 VDC</b>
<b>Remarks:</b>			

Plot 7.3.5 Peak output power at mid frequency and 115%Unom

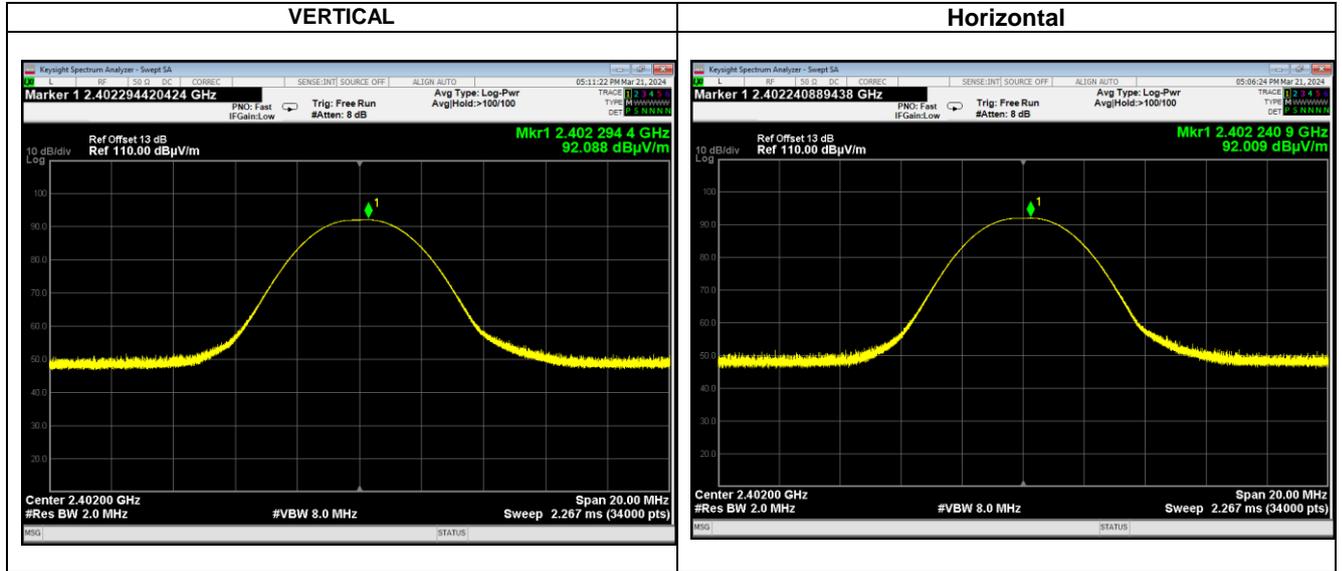


Plot 7.3.6 Peak output power at high frequency and 115%Unom

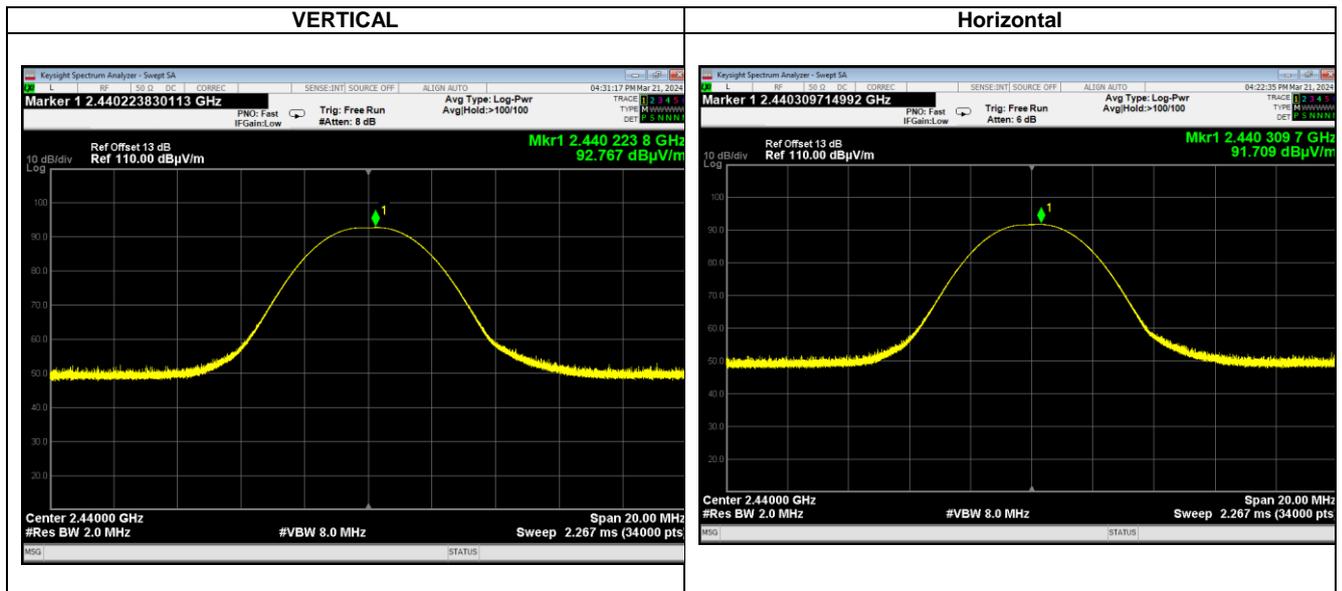


<b>Test specification:</b>	<b>Section 15.247(b)3, Peak output power</b>		
<b>Test procedure:</b>	Section 15.247(d)		
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Date &amp; Time:</b>	21-Mar-24 - 24-Mar-24		
<b>Temperature: 22.8 °C</b>	<b>Air Pressure: 1008 hPa</b>	<b>Relative Humidity: 34 %</b>	<b>Power Supply: 3.7 VDC</b>
<b>Remarks:</b>			

Plot 7.3.7 Peak output power at low frequency and 85%Unom

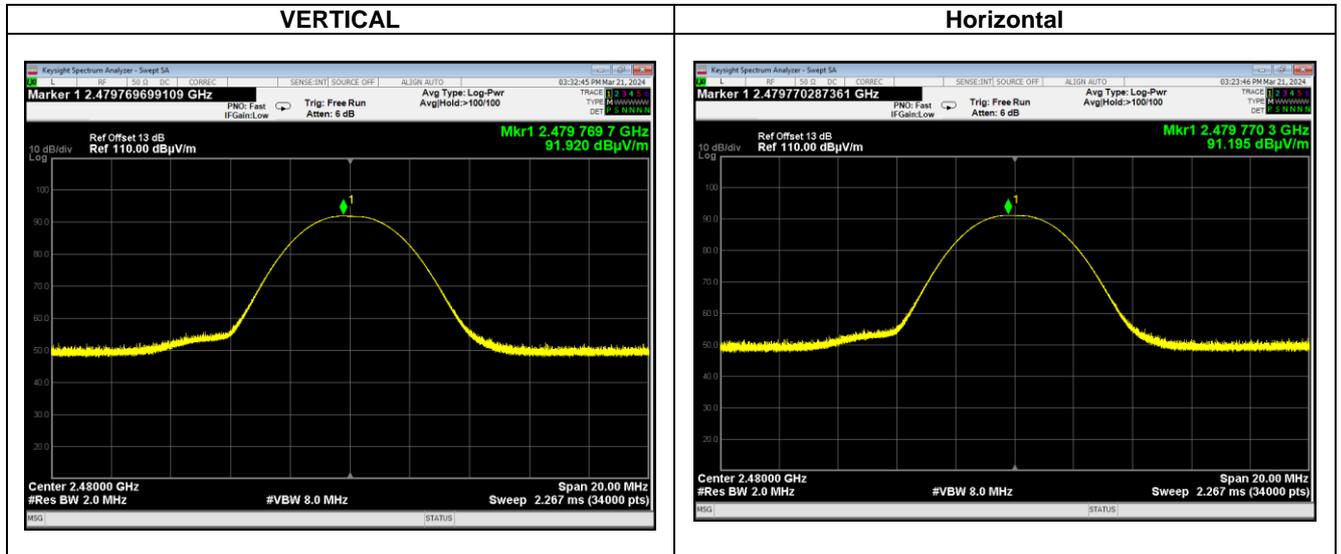


Plot 7.3.8 Peak output power at mid frequency and 85%Unom



<b>Test specification:</b>	<b>Section 15.247(b)3, Peak output power</b>		
<b>Test procedure:</b>	Section 15.247(d)		
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Date &amp; Time:</b>	21-Mar-24 - 24-Mar-24		
<b>Temperature:</b> 22.8 °C	<b>Air Pressure:</b> 1008 hPa	<b>Relative Humidity:</b> 34 %	<b>Power Supply:</b> 3.7 VDC
<b>Remarks:</b>			

Plot 7.3.9 Peak output power at high frequency and 85%Unom



<b>Test specification:</b>	<b>Section 15.247(d), Band edge emissions</b>		
<b>Test procedure:</b>	Section 15.247(d)		
<b>Test mode:</b>	Compliance	<b>Verdict:</b> <b>PASS</b>	
<b>Date &amp; Time:</b>	21-Mar-24 - 24-Mar-24		
<b>Temperature:</b> 22.8 °C	<b>Air Pressure:</b> 1008 hPa	<b>Relative Humidity:</b> 34 %	<b>Power Supply:</b> 3.7 VDC
<b>Remarks:</b>			

## 7.4 Band edge radiated emissions

### 7.4.1 General

This test was performed to measure emissions, radiated from the EUT at the assigned frequency band edges. Specification test limits are given in Table 7.4.1.

**Table 7.4.1 Band edge emission limits**

Output power	Assigned frequency, MHz	Attenuation below carrier*, dBc	Field strength at 3 m within restricted bands, dB(μV/m)	
			Peak	Average
Peak	902.0 – 928.0	20.0	74.0	54.0
	2400.0 – 2483.5			
	5725.0 – 5850.0			
Averaged over a time interval	902.0 – 928.0	30.0	74.0	54.0
	2400.0 – 2483.5			
	5725.0 – 5850.0			

\* - Band edge emission limit is provided in terms of attenuation below the peak of modulated carrier measured with the same resolution bandwidth.

### 7.4.2 Test procedure

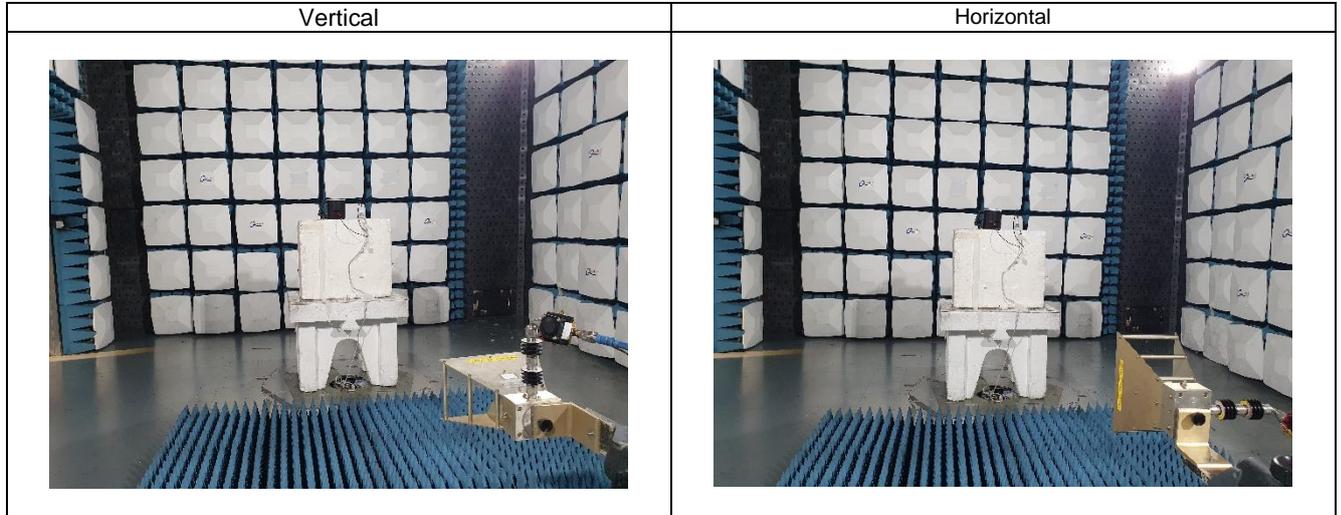
- 7.4.2.1 The EUT was set up as shown in Figure 7.4.1, energized normally modulated at the maximum data rate and its proper operation was checked.
- 7.4.2.2 The EUT was adjusted to produce maximum available to end user RF output power at the lowest carrier frequency.
- 7.4.2.3 The spectrum analyzer span was set to capture the carrier frequency and associated modulation products. The resolution bandwidth was set wider than 1 % of the frequency span.
- 7.4.2.4 The spectrum analyzer was set in max hold mode and allowed trace to stabilize. The highest emission level within the authorized band was measured.
- 7.4.2.5 The maximum band edge emission and modulation product outside of the band were measured as provided and associated plots and referenced to the highest emission level measured within the authorized band.
- 7.4.2.6 The above procedure was repeated with the EUT adjusted to produce maximum RF output power at the highest carrier frequency.
- 7.4.2.7 The above procedure was repeated with the frequency hopping function enabled.

**Figure 7.4.1 Band edge emission test setup**



<b>Test specification:</b>	<b>Section 15.247(d), Band edge emissions</b>		
<b>Test procedure:</b>	Section 15.247(d)		
<b>Test mode:</b>	Compliance	<b>Verdict: PASS</b>	
<b>Date &amp; Time:</b>	21-Mar-24 - 24-Mar-24		
<b>Temperature:</b> 22.8 °C	<b>Air Pressure:</b> 1008 hPa	<b>Relative Humidity:</b> 34 %	<b>Power Supply:</b> 3.7 VDC
<b>Remarks:</b>			

**Photograph 7.4.1 Band edge emission test setup**



**Table 7.4.2 Band edge emission outside restricted bands test results**

ASSIGNED FREQUENCY RANGE: 2400.0 – 2483.5 MHz  
 DETECTOR USED: Peak  
 TRANSMITTER OUTPUT POWER SETTINGS: Maximum  
 RESOLUTION BANDWIDTH: 100 kHz  
 VIDEO BANDWIDTH: ≥ RBW

MODULATION/BITRATE: GFSK / 1 Mbps

Frequency, MHz	Band edge emission, dB(μV/m)	Emission at carrier, dB(μV/m)	Attenuation below carrier, dBc	Limit, dBc	Margin, dB*	Verdict
2399.243	55.692	91.335	35.643	20.0	16.643	Pass
2400.000	51.434	91.335	39.901	20.0	19.901	Pass

\*- Margin = Attenuation below carrier – specification limit.

**Table 7.4.3 Band edge emission inside restricted bands test results**

ASSIGNED FREQUENCY RANGE: 2400.0 – 2483.5 MHz  
 DETECTOR USED: Peak  
 TRANSMITTER OUTPUT POWER SETTINGS: Maximum  
 VIDEO BANDWIDTH: ≥ RBW

MODULATION/BITRATE: GFSK / 1 Mbps

Frequency, MHz	Peak field strength(VBW=3 MHz)			Average field strength(VBW=1 kHz)			Verdict
	Measured, dB(μV/m)	Limit, dB(μV/m)	Margin, dB**	Measured, dB(μV/m)	Limit, dB(μV/m)	Margin, dB**	
2934.72	50.659	74.0	-23.341	NA	54.0	NA	Pass

**Reference numbers of test equipment used**

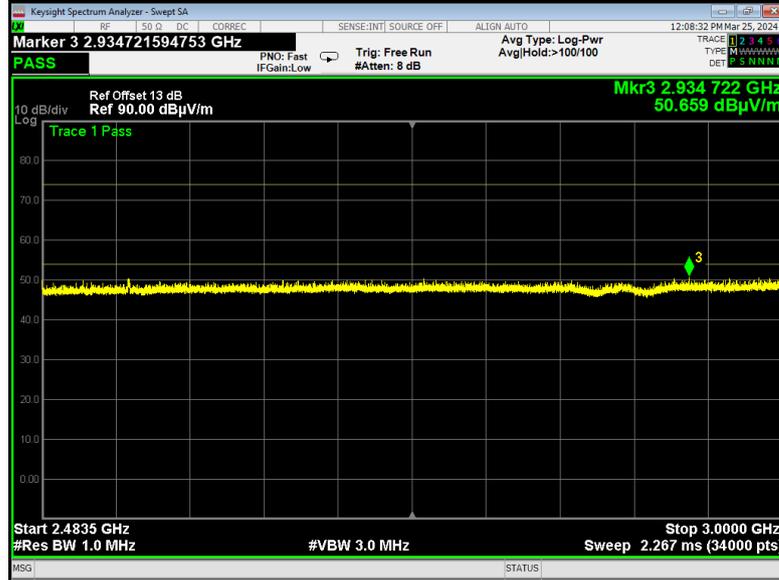
HL 6574	HL 6576	HL 6678	HL 6892	HL 8092		
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Full description is given in Appendix A.



<b>Test specification:</b>	<b>Section 15.247(d), Band edge emissions</b>		
<b>Test procedure:</b>	Section 15.247(d)		
<b>Test mode:</b>	Compliance	<b>Verdict: PASS</b>	
<b>Date &amp; Time:</b>	21-Mar-24 - 24-Mar-24		
<b>Temperature: 22.8 °C</b>	<b>Air Pressure: 1008 hPa</b>	<b>Relative Humidity: 34 %</b>	<b>Power Supply: 3.7 VDC</b>
<b>Remarks:</b>			

Plot 7.4.3 The highest emission level within restricted band at high carrier frequency



<b>Test specification:</b>	<b>Section 15.247(d), Peak spectral power density</b>		
<b>Test procedure:</b>	Section 15.247(d)		
<b>Test mode:</b>	Compliance	<b>Verdict: PASS</b>	
<b>Date &amp; Time:</b>	21-Mar-24 - 24-Mar-24		
<b>Temperature: 22.8 °C</b>	<b>Air Pressure: 1008 hPa</b>	<b>Relative Humidity: 34 %</b>	<b>Power Supply: 3.7 VDC</b>
<b>Remarks:</b>			

## 7.5 Peak spectral power density

### 7.5.1 General

This test was performed to measure the peak spectral power density radiated by the transmitter RF antenna. Specification test limits are given in Table 7.5.1.

Table 7.5.1 Peak spectral power density limits

Assigned frequency range, MHz	Measurement bandwidth, kHz	Peak spectral power density, dBm	Equivalent field strength limit @ 3m, dB( $\mu$ V/m)*
902.0 – 928.0	3.0	8.0	103.2
2400.0 – 2483.5			
5725.0 – 5850.0			

\* - Equivalent field strength limit was calculated from the peak spectral power density as follows:  $E = \sqrt{30 \times P} / r$ , where P is peak spectral power density and r is antenna to EUT distance in meters.

### 7.5.2 Test procedure for field strength measurements

7.5.2.1 The EUT was set up as shown in Figure 7.5.1, energized and its proper operation was checked.

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

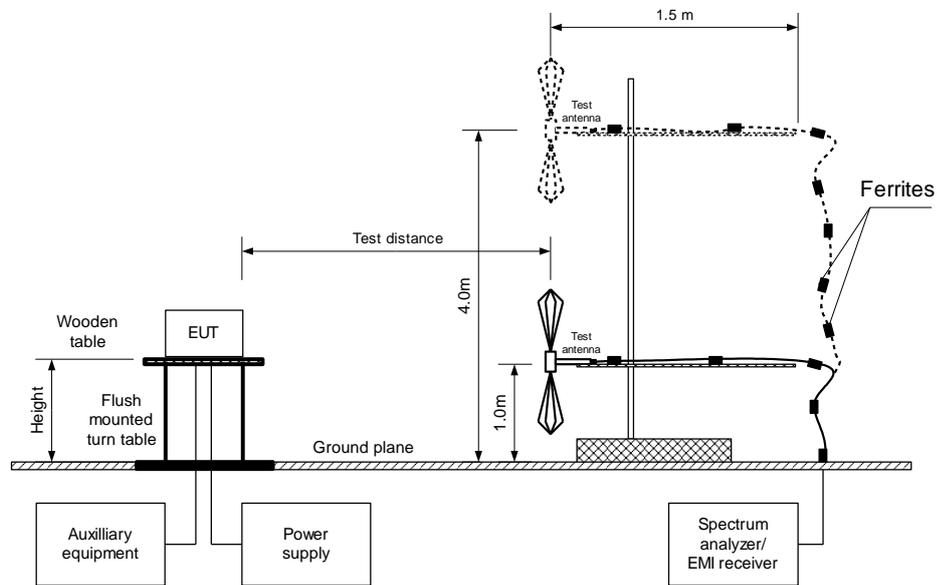
7.5.2.3 The field strength of the EUT carrier frequency was measured with antenna connected to spectrum analyzer/ EMI receiver. To find maximum radiation the turntable was rotated 360° and the measuring antenna height was swept in both vertical and horizontal polarizations.

7.5.2.4 The frequency span of spectrum analyzer was set to capture the entire 6 dB band of the transmitter, in peak hold mode with resolution bandwidth set to 3.0 kHz, video bandwidth wider than resolution bandwidth, auto sweep time and sufficient number of sweeps was allowed for trace stabilization. The spectrum lines spacing was verified to be wider than 3 kHz. Otherwise the resolution bandwidth was reduced until individual spectrum lines were resolved and the power of individual spectrum lines was integrated over 3 kHz band.

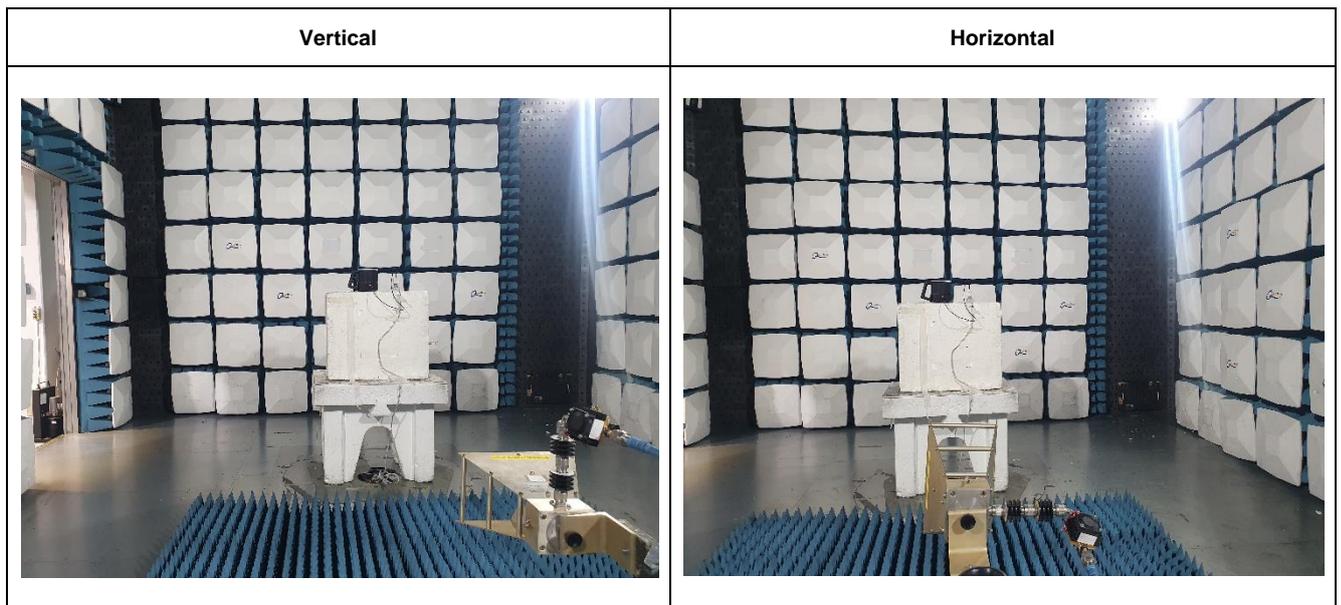
7.5.2.5 The peak of emission was zoomed with span set just wide enough to capture the emission peak area and sweep time was set equal to span width divided by resolution bandwidth. Spectrum analyzer was set in peak hold mode, sufficient number of sweeps was allowed for trace stabilization and peak spectral power density was measured as provided in Table 7.5.2 and associated plots.

<b>Test specification:</b>	<b>Section 15.247(d), Peak spectral power density</b>		
<b>Test procedure:</b>	Section 15.247(d)		
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Date &amp; Time:</b>	21-Mar-24 - 24-Mar-24		
<b>Temperature:</b> 22.8 °C	<b>Air Pressure:</b> 1008 hPa	<b>Relative Humidity:</b> 34 %	<b>Power Supply:</b> 3.7 VDC
<b>Remarks:</b>			

**Figure 7.5.1 Setup for carrier field strength measurements**



**Photograph 7.5.1 Setup for carrier field strength measurements**



<b>Test specification:</b>	<b>Section 15.247(d), Peak spectral power density</b>		
<b>Test procedure:</b>	Section 15.247(d)		
<b>Test mode:</b>	Compliance	<b>Verdict: PASS</b>	
<b>Date &amp; Time:</b>	21-Mar-24 - 24-Mar-24		
<b>Temperature:</b> 22.8 °C	<b>Air Pressure:</b> 1008 hPa	<b>Relative Humidity:</b> 34 %	<b>Power Supply:</b> 3.7 VDC
<b>Remarks:</b>			

**Table 7.5.2 Field strength measurement of peak spectral power density**

ASSIGNED FREQUENCY: 2400- 2483.5MHz  
TEST DISTANCE: 3 m  
TEST SITE: Semi anechoic chamber  
EUT HEIGHT: 1.5 m  
DETECTOR USED: Peak  
RESOLUTION BANDWIDTH: 3 kHz  
VIDEO BANDWIDTH: 10 kHz  
TEST ANTENNA TYPE: Double ridged guide (above 1000 MHz)  
MODULATION: GFSK  
BIT RATE: 1 Mbps  
TRANSMITTER OUTPUT POWER SETTINGS: Maximum

Frequency, MHz	Field strength, dB(μV/m)	EUT antenna gain, dBi	Limit, dB(μV/m)	Margin, dB*	Antenna polarization	Antenna height, m	Turn-table position**, degrees
2402	80.802	0.9	103.2	-23.30	Vertical	3.70	335
2402	80.810	0.9	103.2	-23.29	Horizontal	2.88	301
2440	80.109	0.9	103.2	-23.991	Vertical	2.20	294
2440	80.807	0.9	103.2	-23.293	Horizontal	2.79	306
2480	81.251	1.3	103.2	-23.249	Vertical	2.00	294
2480	80.940	1.3	103.2	-23.56	Horizontal	3.92	306

\*- Margin = Field strength - EUT antenna gain - calculated field strength limit.

\*\* - EUT front panel refer to 0 degrees position of turntable.

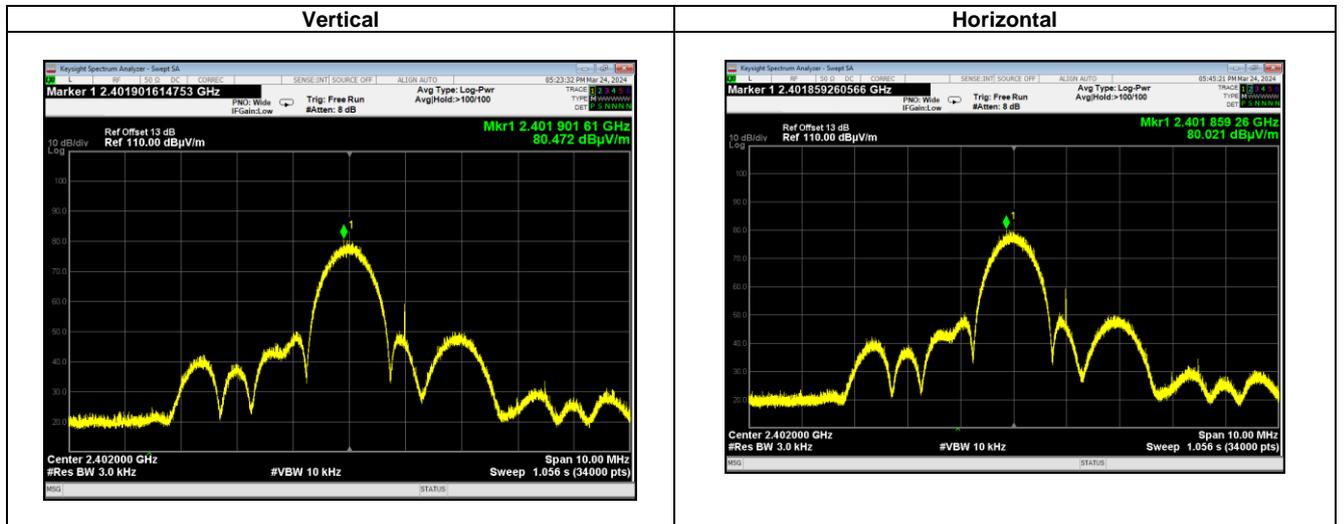
**Reference numbers of test equipment used**

HL 4603	HL 5420	HL 6576	HL 6892	HL 7540	HL 8092		
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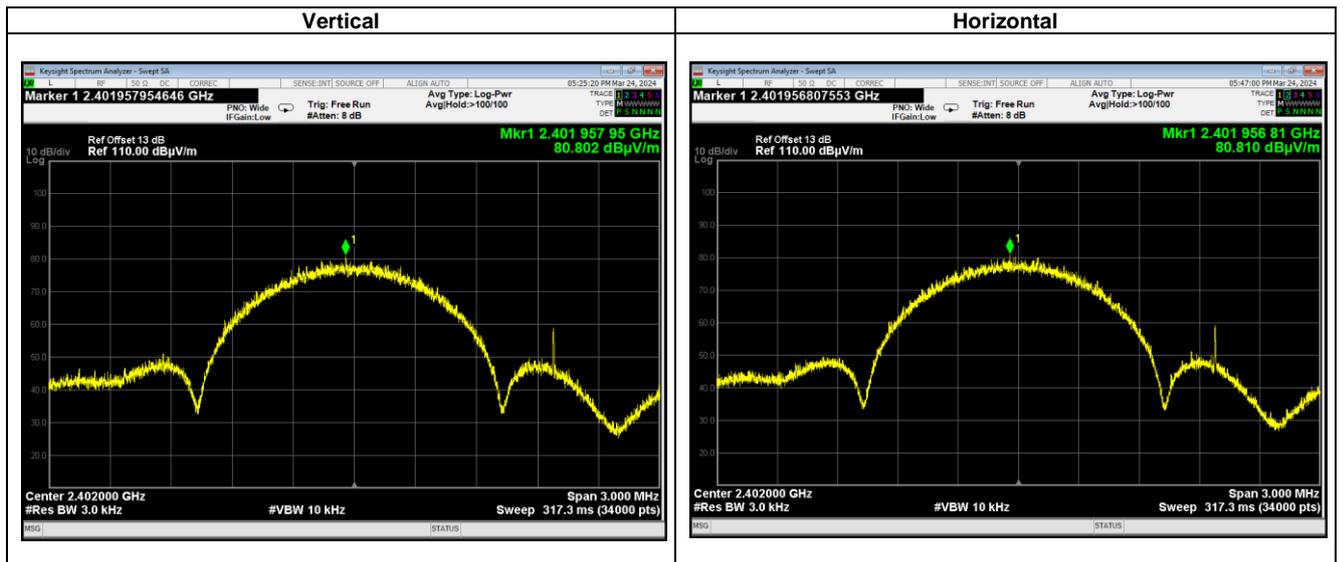
Full description is given in Appendix A.

<b>Test specification:</b>	<b>Section 15.247(d), Peak spectral power density</b>		
<b>Test procedure:</b>	Section 15.247(d)		
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Date &amp; Time:</b>	21-Mar-24 - 24-Mar-24		
<b>Temperature: 22.8 °C</b>	<b>Air Pressure: 1008 hPa</b>	<b>Relative Humidity: 34 %</b>	<b>Power Supply: 3.7 VDC</b>
<b>Remarks:</b>			

Plot 7.5.1 Peak spectral power density at low frequency within 6 dB band

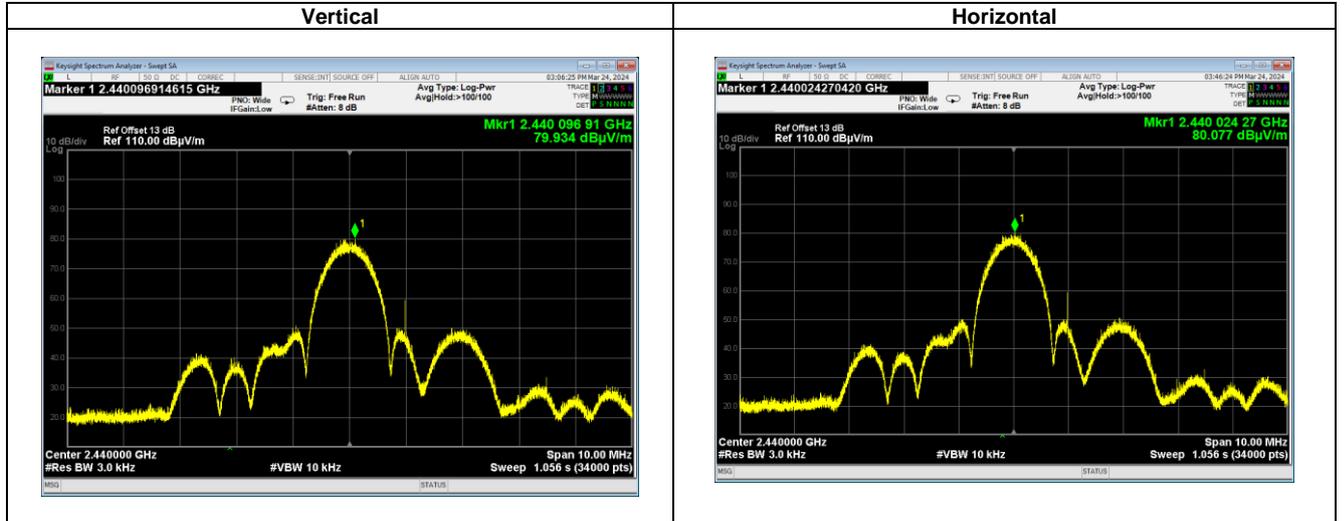


Plot 7.5.2 Peak spectral power density at low frequency zoomed at the peak

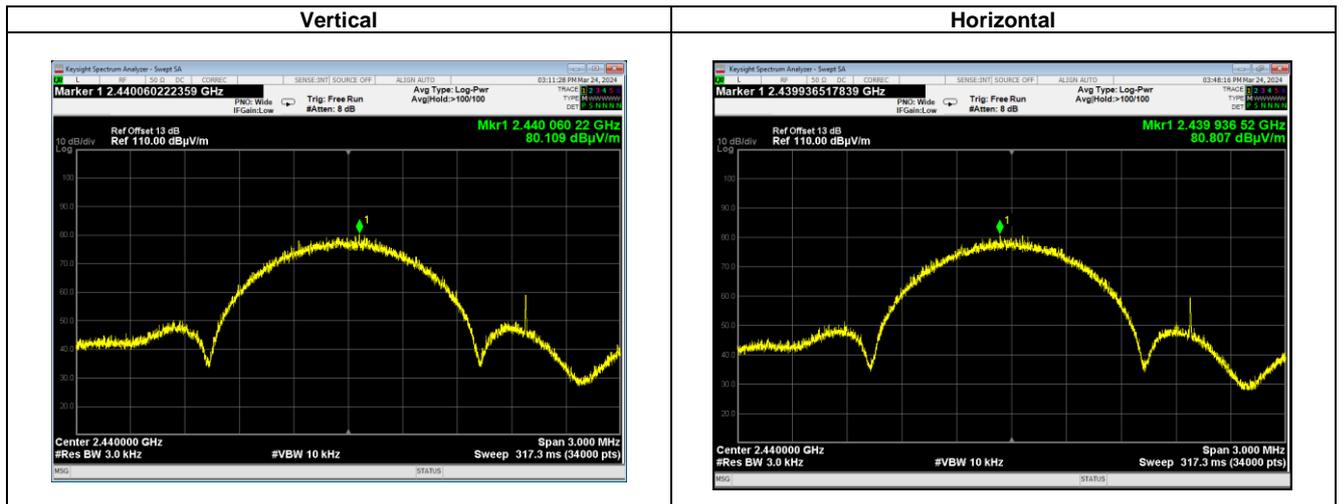


<b>Test specification:</b>	<b>Section 15.247(d), Peak spectral power density</b>		
<b>Test procedure:</b>	Section 15.247(d)		
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Date &amp; Time:</b>	21-Mar-24 - 24-Mar-24		
<b>Temperature: 22.8 °C</b>	<b>Air Pressure: 1008 hPa</b>	<b>Relative Humidity: 34 %</b>	<b>Power Supply: 3.7 VDC</b>
<b>Remarks:</b>			

Plot 7.5.3 Peak spectral power density at mid frequency within 6 dB band

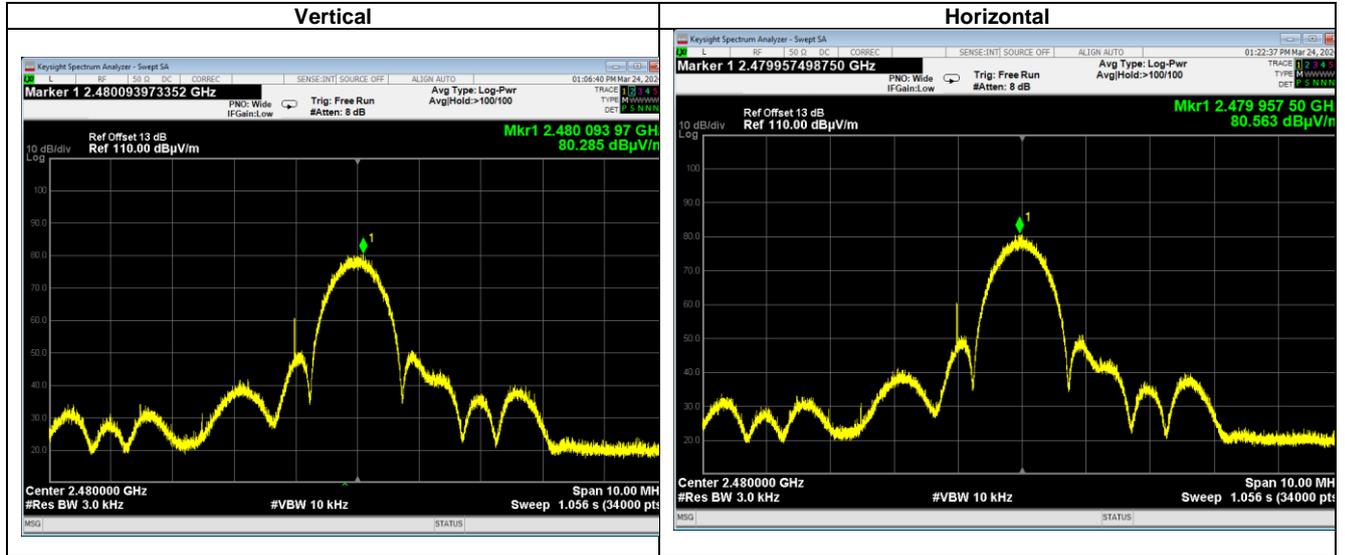


Plot 7.5.4 Peak spectral power density at mid frequency zoomed at the peak

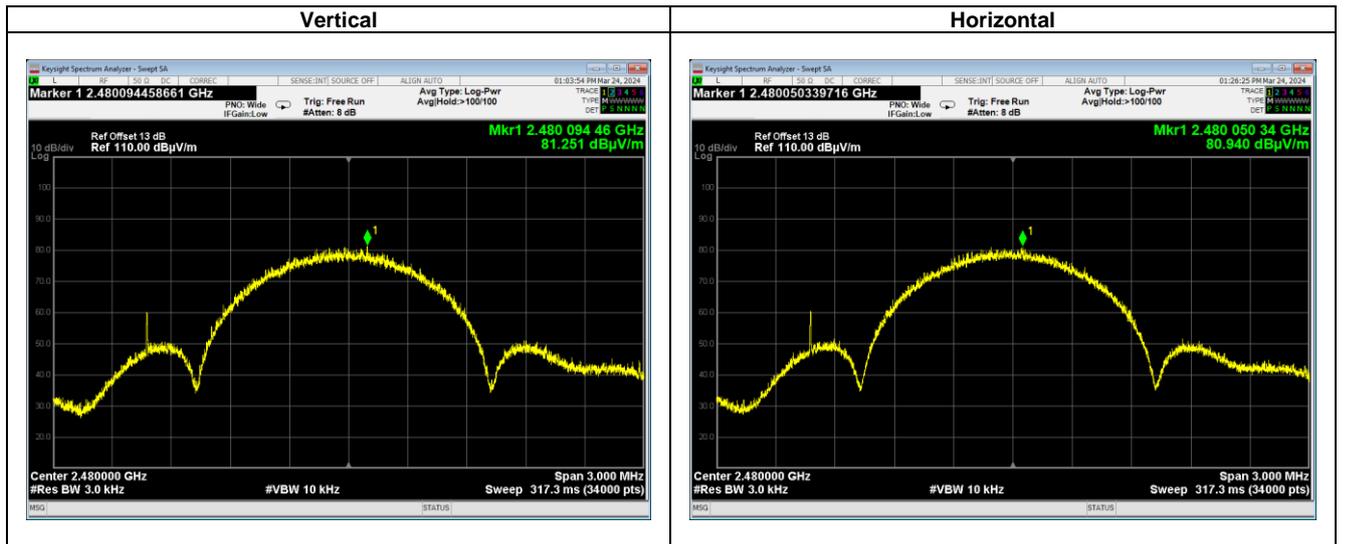


<b>Test specification:</b>	<b>Section 15.247(d), Peak spectral power density</b>		
<b>Test procedure:</b>	Section 15.247(d)		
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Date &amp; Time:</b>	21-Mar-24 - 24-Mar-24		
<b>Temperature: 22.8 °C</b>	<b>Air Pressure: 1008 hPa</b>	<b>Relative Humidity: 34 %</b>	<b>Power Supply: 3.7 VDC</b>
<b>Remarks:</b>			

Plot 7.5.5 Peak spectral power density at high frequency within 6 dB band



Plot 7.5.6 Peak spectral power density at high frequency zoomed at the peak



<b>Test specification:</b>	<b>Section 15.207(a), Conducted emission</b>		
<b>Test procedure:</b>	ANSI C63.4, Section 13.1.3		
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Date &amp; Time:</b>	03-Jun-24		
<b>Temperature:</b> 23.9 °C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 50 %	<b>Power Supply:</b> 3.7 VDC
<b>Remarks:</b> The adapter is not part of a system but is required to be tested according to the standard requirement "If the DC power cable of the radio and/or the ancillary equipment is less than or equal to 3 m i			

## 7.6 Conducted emissions

### 7.6.1 General

This test was performed to measure common mode conducted emissions at the power port. Specification test limits are given in Table 7.6.1. The worst test results (the lowest margins) were recorded in Table 7.6.2 and shown in the associated plots.

**Table 7.6.1 Limits for conducted emissions**

Frequency, MHz	Class B limit, dB(μV)	
	QP	AVRG
0.15 - 0.5	66 - 56*	56 - 46*
0.5 - 5.0	56	46
5.0 - 30	60	50

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

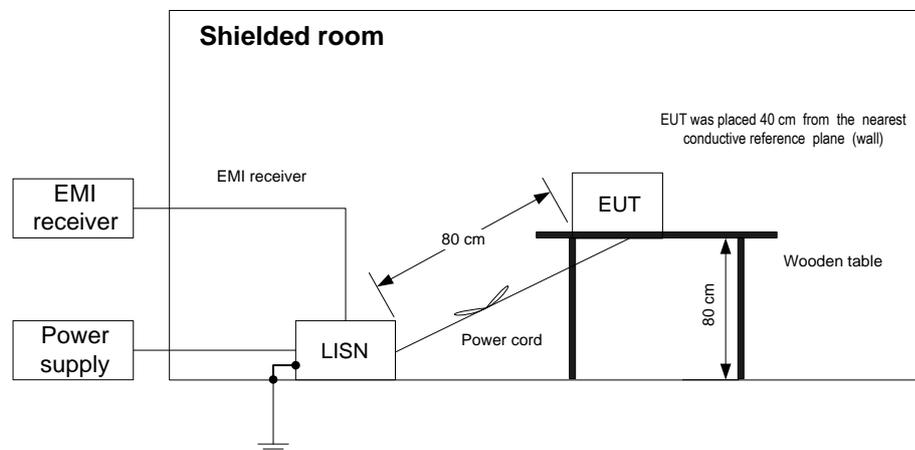
### 7.6.2 Test procedure

**7.6.2.1** The EUT was set up as shown in Figure 7.6.1 and associated photographs, energized and the performance check was conducted.

**7.6.2.2** The measurements were performed at power terminals with the LISN, connected to a spectrum analyzer in the frequency range referred to in Table 7.6.2. Unused coaxial connector of the LISN was terminated with 50 Ohm. Quasi-peak and average detectors were used throughout the testing.

**7.6.2.3** The position of the device cables was varied to determine maximum emission level.

**Figure 7.6.1 Setup for conducted emission measurements, table-top equipment**



<b>Test specification:</b>	<b>Section 15.207(a), Conducted emission</b>		
<b>Test procedure:</b>	ANSI C63.4, Section 13.1.3		
<b>Test mode:</b>	Compliance	<b>Verdict:</b> <b>PASS</b>	
<b>Date &amp; Time:</b>	03-Jun-24		
<b>Temperature:</b> 23.9 °C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 50 %	<b>Power Supply:</b> 3.7 VDC
<b>Remarks:</b> The adapter is not part of a system but is required to be tested according to the standard requirement "If the DC power cable of the radio and/or the ancillary equipment is less than or equal to 3 m i			

Photograph 7.6.1 Setup for conducted emission measurements



Table 7.6.2 Conducted emission test results

LINE: AC mains  
EUT OPERATING MODE: Transmit  
EUT SET UP: TABLE-TOP  
TEST SITE: SHIELDED ROOM  
DETECTORS USED: PEAK / QUASI-PEAK / AVERAGE  
FREQUENCY RANGE: 150 kHz - 30 MHz  
RESOLUTION BANDWIDTH: 9 kHz

Frequency, MHz	Peak emission, dB(μV)	Quasi-peak			Average			Line ID	Verdict
		Measured emission, dB(μV)	Limit, dB(μV)	Margin, dB*	Measured emission, dB(μV)	Limit, dB(μV)	Margin, dB*		
0.535	40.6	34.1	56.0	-21.9	22.7	46.0	-23.3	N	Pass
0.538	40.8	34.7	56.0	-21.3	23.3	46.0	-22.7		
0.539	40.4	34.9	56.0	-21.1	23.5	46.0	-22.5		
0.544	40.6	34.8	56.0	-21.2	24.2	46.0	-21.8		
0.545	40.6	34.9	56.0	-21.1	24.3	46.0	-21.7		
0.548	40.8	35.1	56.0	-20.9	24.2	46.0	-21.8		
0.152	60.7	51.3	65.9	-14.7	32.0	55.9	-24.0	L	Pass
0.154	61.6	50.6	65.9	-15.3	31.3	55.9	-24.6		
0.158	57.7	49.8	65.8	-15.9	31.0	55.8	-24.7		
0.171	55.0	44.6	65.4	-20.8	30.7	55.4	-24.7		
0.180	57.4	48.0	65.1	-17.1	29.8	55.1	-25.4		
0.549	44.3	39.3	56.0	-16.7	29.6	46.0	-16.4		

\*- Margin = Measured emission - specification limit.

Reference numbers of test equipment used

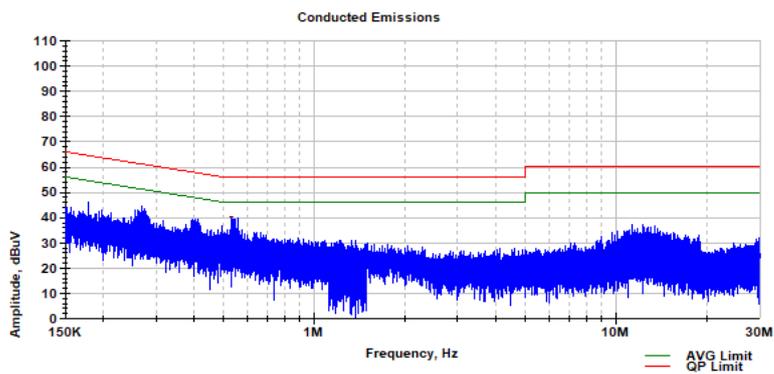
HL 4576	HL 6208	HL 6210	HL 8079			
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Full description is given in Appendix A.

<b>Test specification:</b>	<b>Section 15.207(a), Conducted emission</b>		
<b>Test procedure:</b>	ANSI C63.4, Section 13.1.3		
<b>Test mode:</b>	Compliance	<b>Verdict:</b> <b>PASS</b>	
<b>Date &amp; Time:</b>	03-Jun-24		
<b>Temperature:</b> 23.9 °C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 50 %	<b>Power Supply:</b> 3.7 VDC
<b>Remarks:</b> The adapter is not part of a system but is required to be tested according to the standard requirement "If the DC power cable of the radio and/or the ancillary equipment is less than or equal to 3 m i			

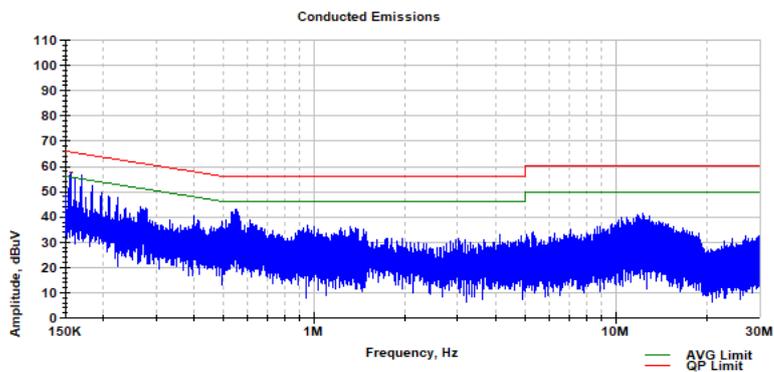
**Plot 7.6.1 Conducted emission measurements**

LINE: N  
EUT OPERATING MODE: Transmit  
LIMIT: QUASI-PEAK, AVERAGE  
DETECTOR: PEAK



**Plot 7.6.2 Conducted emission measurements**

LINE: L  
EUT OPERATING MODE: Transmit  
LIMIT: QUASI-PEAK, AVERAGE  
DETECTOR: PEAK



<b>Test specification:</b>	<b>Section 15.107, Conducted emission at AC power port</b>		
<b>Test procedure:</b>	ANSI C63.4, Sections 11.5 and 12.1.3		
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Date &amp; Time:</b>	10-Jun-24		
<b>Temperature:</b> 24.5 °C	<b>Air Pressure:</b> 1008 hPa	<b>Relative Humidity:</b> 40 %	<b>Power Supply:</b> 3.7 VDC
<b>Remarks:</b> The adapter is not part of a system but is required to be tested in accordance with the requirement of the standard . In addition the following changes were made to the device under test: 1)An intern			

## 8 Emission tests according to 47CFR part 15 subpart B requirements

### 8.1 Conducted emissions

#### 8.1.1 General

This test was performed to measure common mode conducted emissions at the mains power port. Specification test limits are given in Table 8.1.1. The worst test results (the lowest margins) were recorded in Table 8.1.2 and shown in the associated plots.

**Table 8.1.1 Limits for conducted emissions**

Frequency, MHz	Class B limit, dB(μV)		Class A limit, dB(μV)	
	QP	AVRG	QP	AVRG
0.15 - 0.5	66 - 56*	56 - 46*	79	66
0.5 - 5.0	56	46	73	60
5.0 - 30	60	50	73	60

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

#### 8.1.2 Test procedure

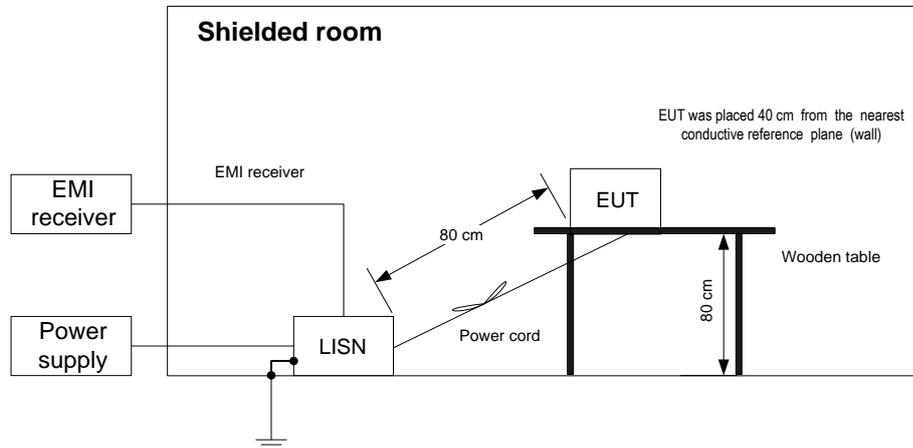
**8.1.2.1** The EUT was set up as shown in Figure 8.1.1 and associated photographs, energized and the performance check was conducted.

**8.1.2.2** The measurements were performed at power terminals with the LISN, connected to a spectrum analyzer in the frequency range referred to in Table 8.1.2. Unused coaxial connector of the LISN was terminated with 50 Ohm. Quasi-peak and average detectors were used throughout the testing.

**8.1.2.3** The position of the device cables was varied to determine maximum emission level.

<b>Test specification:</b>	<b>Section 15.107, Conducted emission at AC power port</b>		
<b>Test procedure:</b>	ANSI C63.4, Sections 11.5 and 12.1.3		
<b>Test mode:</b>	Compliance	<b>Verdict: PASS</b>	
<b>Date &amp; Time:</b>	10-Jun-24		
<b>Temperature:</b> 24.5 °C	<b>Air Pressure:</b> 1008 hPa	<b>Relative Humidity:</b> 40 %	<b>Power Supply:</b> 3.7 VDC
<b>Remarks:</b> The adapter is not part of a system but is required to be tested in accordance with the requirement of the standard . In addition the following changes were made to the device under test: 1)An intern			

**Figure 8.1.1 Setup for conducted emission measurements, table-top equipment**



**Photograph 8.1.1 Setup for conducted emission measurements**



<b>Test specification:</b>	<b>Section 15.107, Conducted emission at AC power port</b>		
<b>Test procedure:</b>	ANSI C63.4, Sections 11.5 and 12.1.3		
<b>Test mode:</b>	Compliance	<b>Verdict:</b> <b>PASS</b>	
<b>Date &amp; Time:</b>	10-Jun-24		
<b>Temperature:</b> 24.5 °C	<b>Air Pressure:</b> 1008 hPa	<b>Relative Humidity:</b> 40 %	<b>Power Supply:</b> 3.7 VDC
<b>Remarks:</b> The adapter is not part of a system but is required to be tested in accordance with the requirement of the standard . In addition the following changes were made to the device under test: 1)An intern			

**Table 8.1.2 Conducted emission test results**

LINE: AC mains  
LIMIT: Class A  
EUT OPERATING MODE: Stand-by  
EUT SET UP: TABLE-TOP  
TEST SITE: SHIELDED ROOM  
DETECTORS USED: PEAK / QUASI-PEAK / AVERAGE  
FREQUENCY RANGE: 150 kHz - 30 MHz  
RESOLUTION BANDWIDTH: 9 kHz

Frequency, MHz	Peak emission, dB(μV)	Quasi-peak			Average			Line ID	Verdict
		Measured emission, dB(μV)	Limit, dB(μV)	Margin, dB*	Measured emission, dB(μV)	Limit, dB(μV)	Margin, dB*		
0.151	43.5	36.6	79.0	-42.4	28.1	66.0	-37.9	N	Pass
0.161	42.4	35.1	79.0	-43.9	27.3	66.0	-38.7		
0.167	42.2	34.9	79.0	-44.1	27.0	66.0	-39.0		
0.539	40.3	34.0	73.0	-39.0	23.4	60.0	-36.6		
0.548	40.3	34.8	73.0	-38.2	24.1	60.0	-35.9		
0.553	40.7	33.9	73.0	-39.1	23.1	60.0	-36.9		
0.543	44.4	39.5	73.0	-33.5	29.7	60.0	-30.3	L	Pass
0.548	44.3	39.7	73.0	-33.3	29.7	60.0	-30.3		
0.549	44.0	39.8	73.0	-33.2	29.6	60.0	-30.4		
0.551	44.2	39.5	73.0	-33.5	29.0	60.0	-31.0		
0.553	44.2	39.4	73.0	-33.6	28.7	60.0	-31.3		
0.553	44.0	39.3	73.0	-33.7	28.7	60.0	-31.3		

\*- Margin = Measured emission - specification limit.

**Reference numbers of test equipment used**

HL 4576	HL 6208	HL 6210	HL 8079				
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Full description is given in Appendix A.

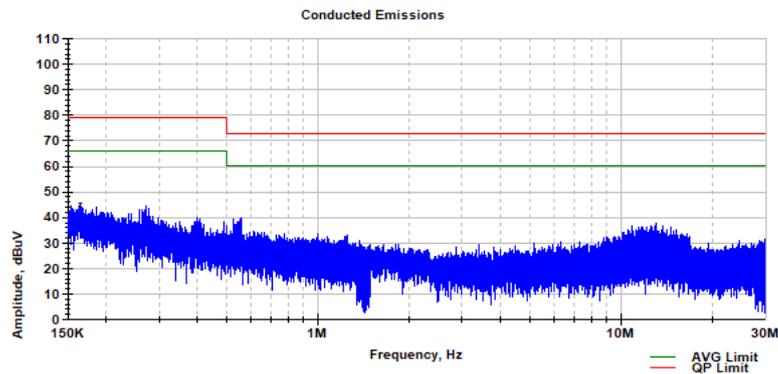
**Note:**

The adapter is not part of a system but is required to be tested in accordance with the requirement of the standard. In addition, the following changes were made to the device under test:  
1)An internal USB cable was replaced by a similar cable with ferrites at both ends.  
2) An 300mm long internal 5-wires cable connecting the main board with the external On/Off button was replaced by a 150mm long cable of the same type

<b>Test specification:</b>	<b>Section 15.107, Conducted emission at AC power port</b>		
<b>Test procedure:</b>	ANSI C63.4, Sections 11.5 and 12.1.3		
<b>Test mode:</b>	Compliance	<b>Verdict:</b> <b>PASS</b>	
<b>Date &amp; Time:</b>	10-Jun-24		
<b>Temperature:</b> 24.5 °C	<b>Air Pressure:</b> 1008 hPa	<b>Relative Humidity:</b> 40 %	<b>Power Supply:</b> 3.7 VDC
<b>Remarks:</b> The adapter is not part of a system but is required to be tested in accordance with the requirement of the standard . In addition the following changes were made to the device under test: 1)An intern			

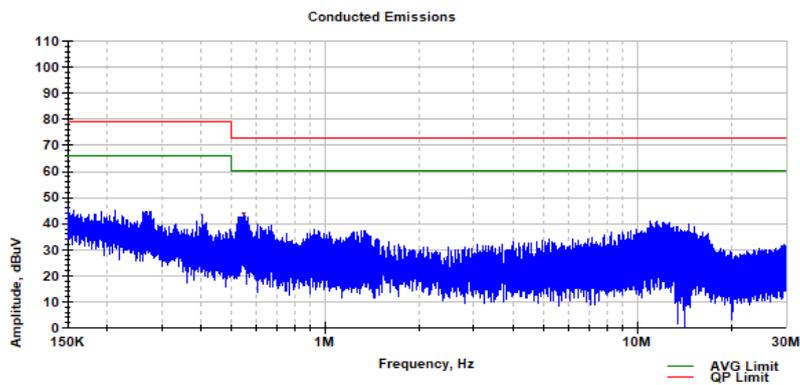
**Plot 8.1.1 Conducted emission measurements**

LINE: N  
LIMIT: Class A  
EUT OPERATING MODE: Stand-by  
LIMIT: QUASI-PEAK, AVERAGE  
DETECTOR: PEAK



**Plot 8.1.2 Conducted emission measurements**

LINE: L  
LIMIT: Class A  
EUT OPERATING MODE: Stand-by  
LIMIT: QUASI-PEAK, AVERAGE  
DETECTOR: PEAK



<b>Test specification:</b>	<b>Section 15.109, Radiated emission</b>		
<b>Test procedure:</b>	ANSI C63.4, Sections 11.6 and 12.1.4		
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Date &amp; Time:</b>	21-Apr-24 - 23-May-24		
<b>Temperature:</b> 22.5 °C	<b>Air Pressure:</b> 1010 hPa	<b>Relative Humidity:</b> 44 %	<b>Power Supply:</b> 3.7 VDC
<b>Remarks:</b> The adapter is not part of a system but is required to be tested according to the standard requirement "If the DC power cable of the radio and/or the ancillary equipment is less than or equal to 3 m i			

## 8.2 Radiated emission measurements

### 8.2.1 General

This test was performed to measure radiated emissions from the EUT enclosure. Specification test limits are given in Table 8.2.1.

**Table 8.2.1 Radiated emission test limits**

Frequency, MHz	Class B limit, dB(μV/m)		Class A limit, dB(μV/m)	
	10 m distance	3 m distance	10 m distance	3 m distance
30 - 88	29.5*	40.0	39.0	49.5*
88 - 216	33.0*	43.5	43.5	54.0*
216 - 960	35.5*	46.0	46.4	56.9*
Above 960	43.5*	54.0	49.5	60.0*

\* The limit for test distance other than specified was calculated using the inverse linear distance extrapolation factor as follows:  $Lims_2 = Lims_1 + 20 \log(S_1/S_2)$ , where  $S_1$  and  $S_2$  – standard defined and test distance respectively in meters.

### 8.2.2 Test procedure for measurements in semi-anechoic chamber

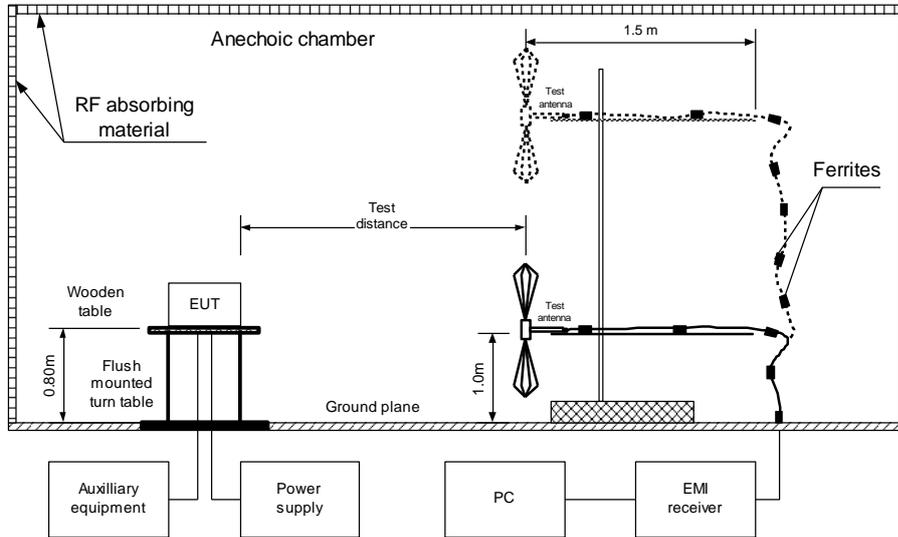
**8.2.2.1** The EUT was set up as shown in Figure 8.2.1 and associated photograph/s, energized and the performance check was conducted.

**8.2.2.2** The specified frequency range was investigated with biconilog antenna connected to EMI receiver. To find maximum radiation the turntable was rotated 360°, the measuring antenna height was changed from 1 to 4 m, its polarization was switched from vertical to horizontal and the EUT cables position was varied.

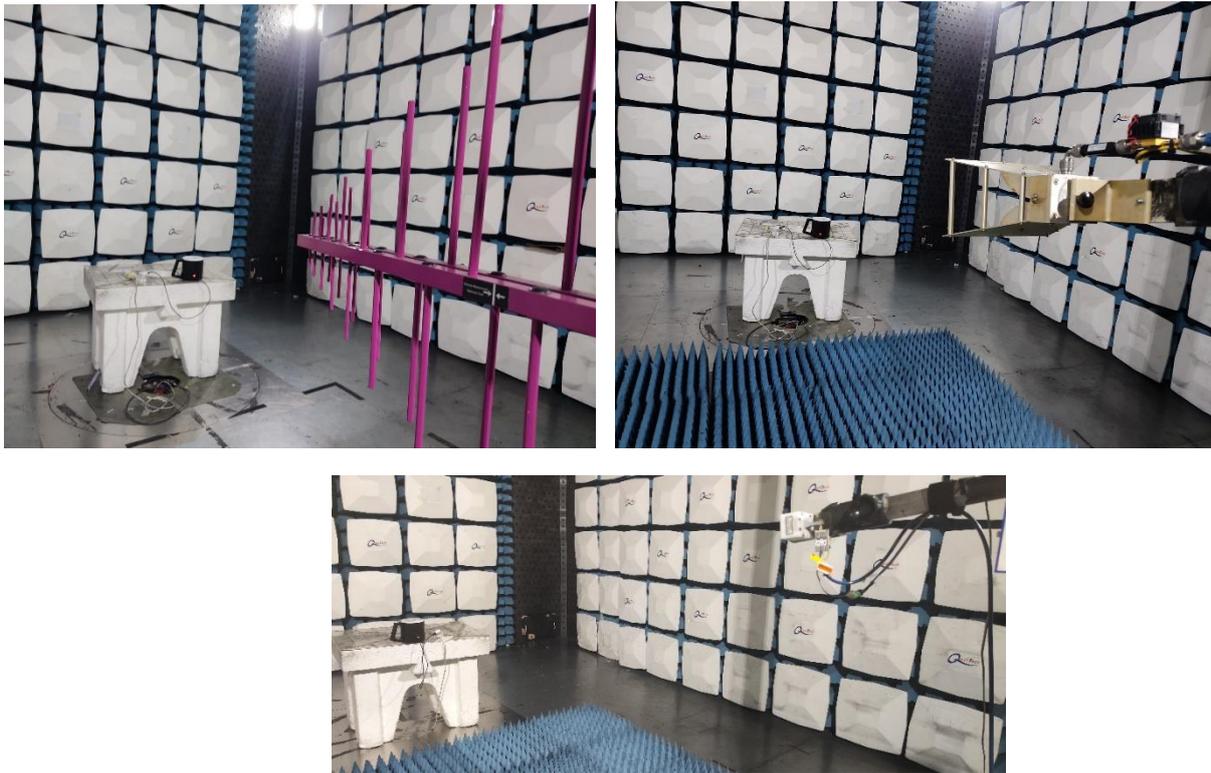
**8.2.2.3** The worst test results (the lowest margins) were recorded in Table 8.2.2 and shown in the associated plots.

<b>Test specification:</b>	<b>Section 15.109, Radiated emission</b>		
<b>Test procedure:</b>	ANSI C63.4, Sections 11.6 and 12.1.4		
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Date &amp; Time:</b>	21-Apr-24 - 23-May-24		
<b>Temperature:</b> 22.5 °C	<b>Air Pressure:</b> 1010 hPa	<b>Relative Humidity:</b> 44 %	<b>Power Supply:</b> 3.7 VDC
<b>Remarks:</b> The adapter is not part of a system but is required to be tested according to the standard requirement "If the DC power cable of the radio and/or the ancillary equipment is less than or equal to 3 m i			

**Figure 8.2.1 Setup for radiated emission measurements in anechoic chamber, table-top equipment**



**Photograph 8.2.1 Setup for final radiated emission measurements, general view**



**Table 8.2.2 Radiated emission test results**

<b>Test specification:</b>	<b>Section 15.109, Radiated emission</b>		
<b>Test procedure:</b>	ANSI C63.4, Sections 11.6 and 12.1.4		
<b>Test mode:</b>	Compliance	<b>Verdict: PASS</b>	
<b>Date &amp; Time:</b>	21-Apr-24 - 23-May-24		
<b>Temperature:</b> 22.5 °C	<b>Air Pressure:</b> 1010 hPa	<b>Relative Humidity:</b> 44 %	<b>Power Supply:</b> 3.7 VDC
<b>Remarks:</b> The adapter is not part of a system but is required to be tested according to the standard requirement "If the DC power cable of the radio and/or the ancillary equipment is less than or equal to 3 m i			

EUT SET UP: TABLE-TOP  
LIMIT: Class A  
EUT OPERATING MODE: Stand-by  
TEST SITE: SEMI ANECHOIC CHAMBER  
TEST DISTANCE: 3 m  
DETECTORS USED: PEAK / QUASI-PEAK  
FREQUENCY RANGE: 30 MHz – 1000 MHz  
RESOLUTION BANDWIDTH: 120 kHz

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*				
33.610	36.15	31.18	49.5	-18.32	H	3.59	33	Pass
199.998	45.41	45.19	54	-8.81	H	1.47	303	
299.992	50.25	50.39	56.9	-6.51	H	1.00	132	
779.965	43.53	41.94	56.9	-14.96	H	2.49	0	
798.650	37.62	32.29	56.9	-24.61	H	3.84	360	
819.980	45.00	43.87	56.9	-13.03	H	1.91	132	
35.440	37.947	31.307	49.5	-18.19	V	2.77	59	
100.055	32.993	41.218	54	-12.78	V	1.01	8	
200.002	43.969	43.511	54	-10.49	V	1.00	121	
300.003	42.469	42.204	56.9	-14.70	V	2.53	168	
779.973	45.050	43.889	56.9	-13.01	V	1.67	262	
819.961	42.762	40.953	56.9	-15.95	V	1.47	360	

TEST SITE: SEMI ANECHOIC CHAMBER  
TEST DISTANCE: 3 m  
DETECTORS USED: PEAK / AVERAGE  
FREQUENCY RANGE: 1000 MHz – 26500MHz  
RESOLUTION BANDWIDTH: 1000 kHz

Frequency, MHz	Peak			Average			Antenna polarization	Antenna height, m	Turn-table position**, degrees	Verdict
	Measured emission, dB(μV/m)	Limit, dB(μV/m)	Margin, dB*	Measured emission, dB(μV/m)	Limit, dB(μV/m)	Margin, dB*				
No significant emissions										

\*- Margin = Measured emission - specification limit.  
\*\*- EUT front panel refer to 0 degrees position of turntable.

**Reference numbers of test equipment used**

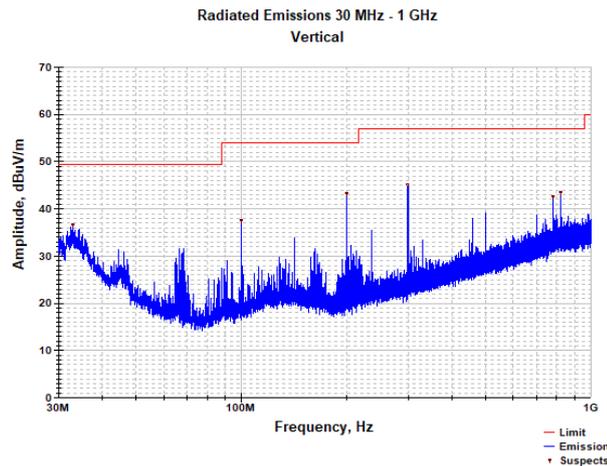
HL 4295	HL 5111	HL 6238	HL 6573	HL 6574	HL 6678	HL 6892	HL 6934
HL 7737							

Full description is given in Appendix A.

<b>Test specification:</b>	<b>Section 15.109, Radiated emission</b>		
<b>Test procedure:</b>	ANSI C63.4, Sections 11.6 and 12.1.4		
<b>Test mode:</b>	Compliance	<b>Verdict:</b> <b>PASS</b>	
<b>Date &amp; Time:</b>	21-Apr-24 - 23-May-24		
<b>Temperature:</b> 22.5 °C	<b>Air Pressure:</b> 1010 hPa	<b>Relative Humidity:</b> 44 %	<b>Power Supply:</b> 3.7 VDC
<b>Remarks:</b> The adapter is not part of a system but is required to be tested according to the standard requirement "If the DC power cable of the radio and/or the ancillary equipment is less than or equal to 3 m i			

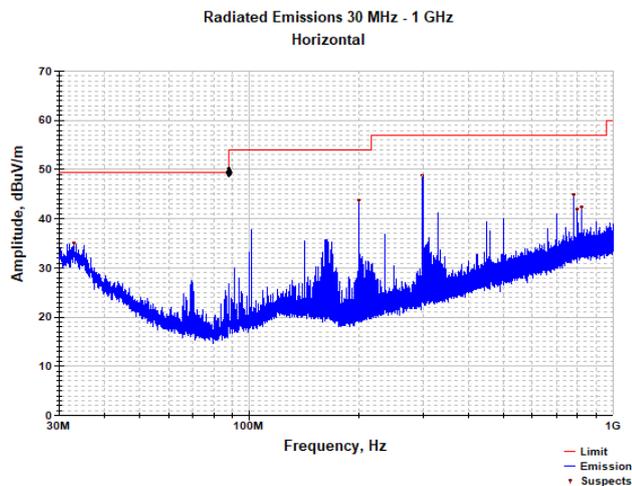
**Plot 8.2.1 Radiated emission measurements in 30 - 1000 MHz range, vertical antenna polarization**

TEST SITE: Semi anechoic chamber  
LIMIT: Class A  
TEST DISTANCE: 3 m  
EUT OPERATING MODE: Stand-by



**Plot 8.2.2 Radiated emission measurements in 30 - 1000 MHz range, horizontal antenna polarization**

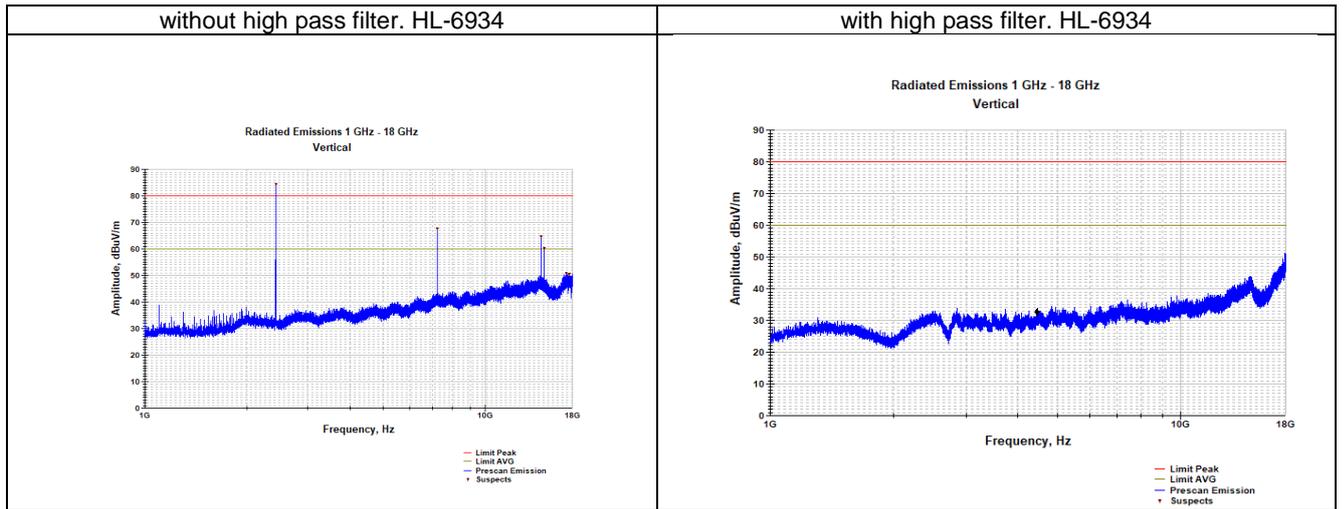
TEST SITE: Semi anechoic chamber  
LIMIT: Class A  
TEST DISTANCE: 3 m  
EUT OPERATING MODE: Stand-by



<b>Test specification:</b>	<b>Section 15.109, Radiated emission</b>		
<b>Test procedure:</b>	ANSI C63.4, Sections 11.6 and 12.1.4		
<b>Test mode:</b>	Compliance	<b>Verdict: PASS</b>	
<b>Date &amp; Time:</b>	21-Apr-24 - 23-May-24		
<b>Temperature:</b> 22.5 °C	<b>Air Pressure:</b> 1010 hPa	<b>Relative Humidity:</b> 44 %	<b>Power Supply:</b> 3.7 VDC
<b>Remarks:</b> The adapter is not part of a system but is required to be tested according to the standard requirement "If the DC power cable of the radio and/or the ancillary equipment is less than or equal to 3 m i			

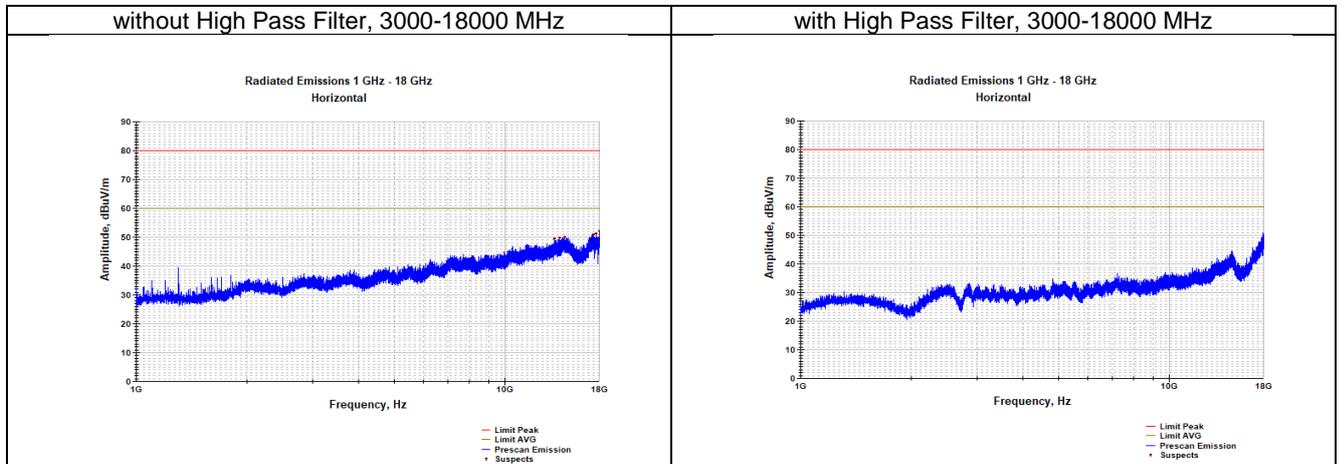
**Plot 8.2.3 Radiated emission measurements above 1000 MHz, vertical antenna polarization**

TEST SITE: Semi anechoic chamber  
LIMIT: Class A  
TEST DISTANCE: 3 m  
EUT OPERATING MODE: Stand-by



**Plot 8.2.4 Radiated emission measurements above 1000 MHz, horizontal antenna polarization**

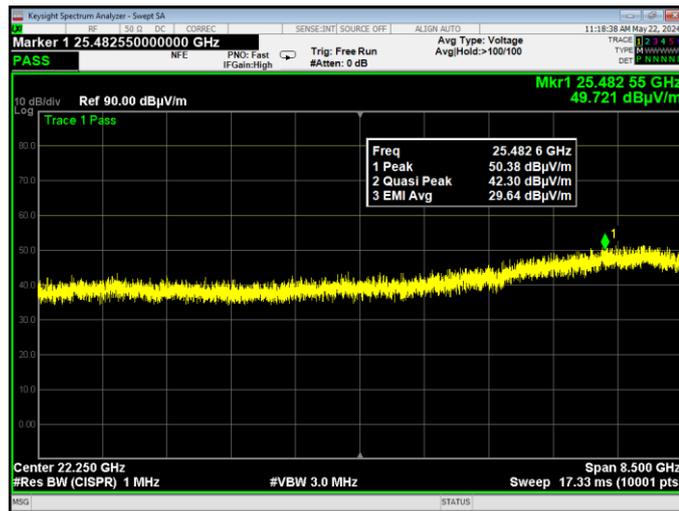
TEST SITE: Semi anechoic chamber  
LIMIT: Class A  
TEST DISTANCE: 3 m  
EUT OPERATING MODE: Stand-by



<b>Test specification:</b>	<b>Section 15.109, Radiated emission</b>		
<b>Test procedure:</b>	ANSI C63.4, Sections 11.6 and 12.1.4		
<b>Test mode:</b>	Compliance	<b>Verdict: PASS</b>	
<b>Date &amp; Time:</b>	21-Apr-24 - 23-May-24		
<b>Temperature:</b> 22.5 °C	<b>Air Pressure:</b> 1010 hPa	<b>Relative Humidity:</b> 44 %	<b>Power Supply:</b> 3.7 VDC
<b>Remarks:</b> The adapter is not part of a system but is required to be tested according to the standard requirement "If the DC power cable of the radio and/or the ancillary equipment is less than or equal to 3 m i			

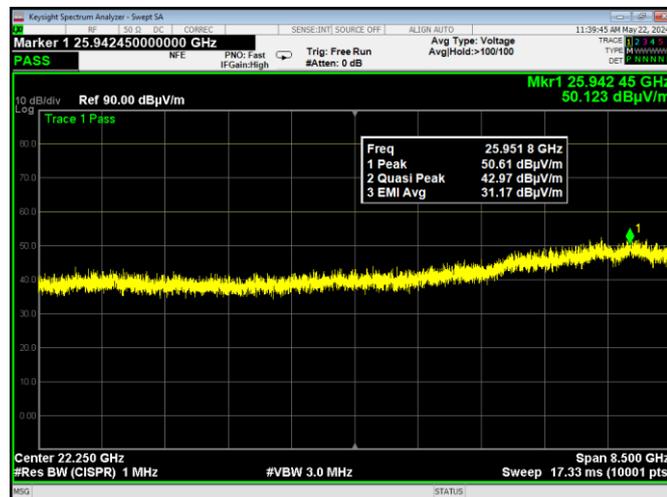
**Plot 8.2.5 Radiated emission measurements 18000-26500 MHz, vertical antenna polarization**

TEST SITE: Semi anechoic chamber  
LIMIT: Class A  
TEST DISTANCE: 3 m  
EUT OPERATING MODE: Stand-by



**Plot 8.2.6 Radiated emission measurements 18000-26500 MHz, horizontal antenna polarization**

TEST SITE: Semi anechoic chamber  
LIMIT: Class A  
TEST DISTANCE: 3 m  
EUT OPERATING MODE: Stand-by



<b>Test specification:</b>	<b>EUT photographs</b>		
<b>Test procedure:</b>	To delete		
<b>Test mode:</b>	Compliance	<b>Verdict: PASS</b>	
<b>Date &amp; Time:</b>	16-Jun-24		
<b>Temperature: 24.3 °C</b>	<b>Air Pressure: 1008 hPa</b>	<b>Relative Humidity: 43 %</b>	<b>Power Supply: 3.7 VDC</b>
<b>Remarks:</b>			

## 9 Transmitter photographs

### 9.1 External

Photograph 9.1.1 Front view



Photograph 9.1.2 Rear view



Photograph 9.1.3 Antenna assembly

