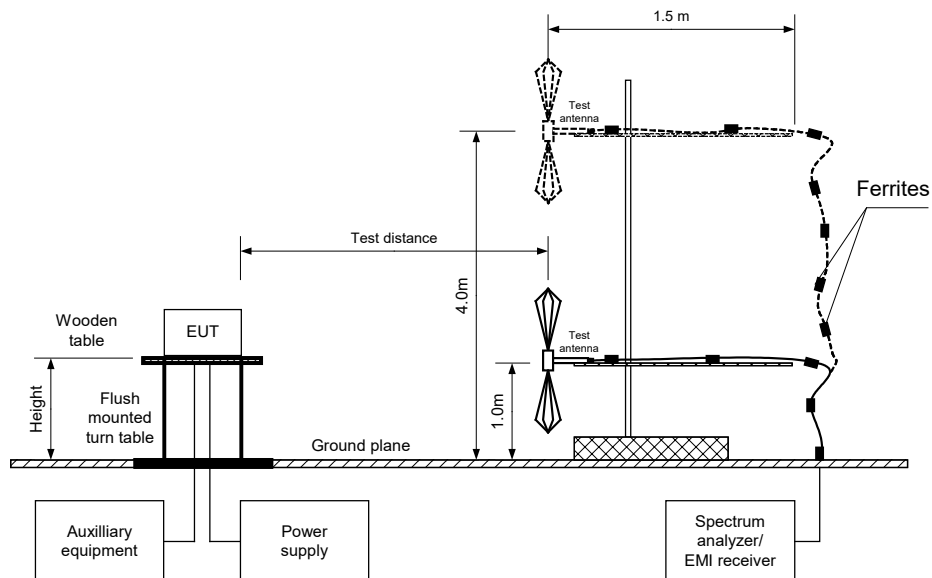


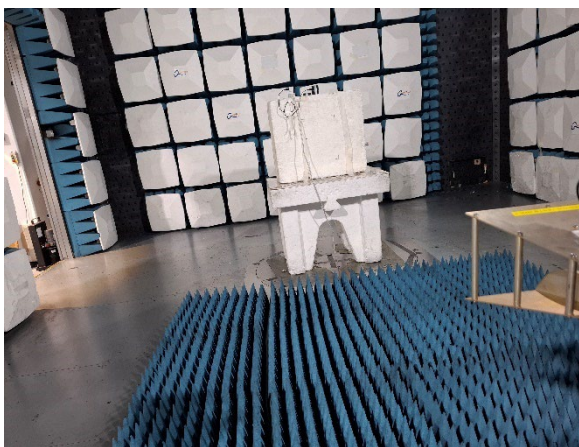
Test specification:	Section 15.247(b)3, Peak output power		
Test procedure:	Section 15.247(b)		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	15-Sep-24 - 16-Sep-24		
Temperature: 24.6 °C	Air Pressure: 1010 hPa	Relative Humidity: 46 %	Power Supply: 5 VDC
Remarks:			

Figure 8.3.1 Setup for carrier field strength measurements

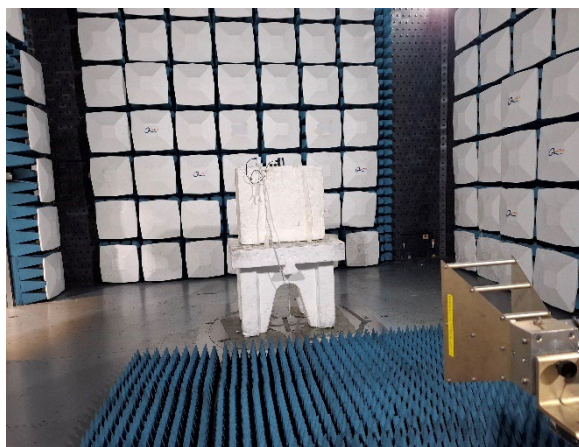


Photograph 8.3.1 Setup for carrier field strength measurements

Vertical



Horizontal



Test specification:	Section 15.247(b)3, Peak output power		
Test procedure:	Section 15.247(b)		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	15-Sep-24 - 16-Sep-24		
Temperature: 24.6 °C	Air Pressure: 1010 hPa	Relative Humidity: 46 %	Power Supply: 5 VDC
Remarks:			

Table 8.3.2 Peak output power test results

ASSIGNED FREQUENCY: 2400-2483.5 MHz
 TEST DISTANCE: 3 m
 TEST SITE: Semi anechoic chamber
 EUT HEIGHT: 1.5 m
 DETECTOR USED: Peak
 TEST ANTENNA TYPE: Double ridged guide (above 1000 MHz)
 MODULATION: GFSK
 BIT RATE: 1 Mbps
 TRANSMITTER OUTPUT POWER SETTINGS: Maximum
 DETECTOR USED: Peak
 RESOLUTION BANDWIDTH: 2 MHz
 VIDEO BANDWIDTH: 8 MHz

Frequency, MHz	Field strength, dB(μV/m)	Antenna polarization	Antenna height, m	Azimuth, degrees*	EUT antenna gain, dBi	Peak output power, dBm**	Limit, dBm	Margin, dB***	Verdict
2402	87.944	V	1.53	212	3.77	-11.026	30	-41.026	Pass
2402	82.231	H	1.87	210	3.77	-16.769	30	-46.769	Pass
2440	89.051	V	1.66	213	3.77	-9.949	30	-39.949	Pass
2440	82.522	H	1.88	212	3.77	-16.478	30	-46.478	Pass
2480	91.459	V	1.28	214	3.77	-7.349	30	-37.349	Pass
2480	85.421	H	1.84	211	3.77	-13.778	30	-43.778	Pass

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

** - 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 in meters 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*

*** - Margin = Peak output power – specification limit.

Note: Maximum peak output power was obtained at Unom (115%Unom, 85%Unom) input power voltage.

Reference numbers of test equipment used

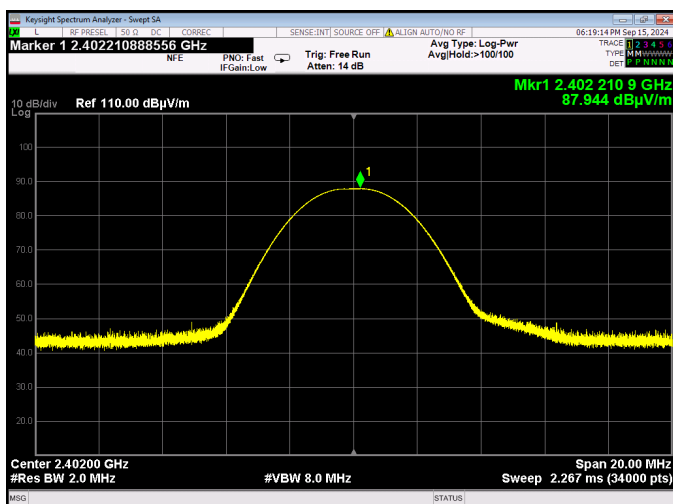
HL 5102	HL 6208	HL 6240	HL 6574	HL 8120			
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Full description is given in Appendix A.

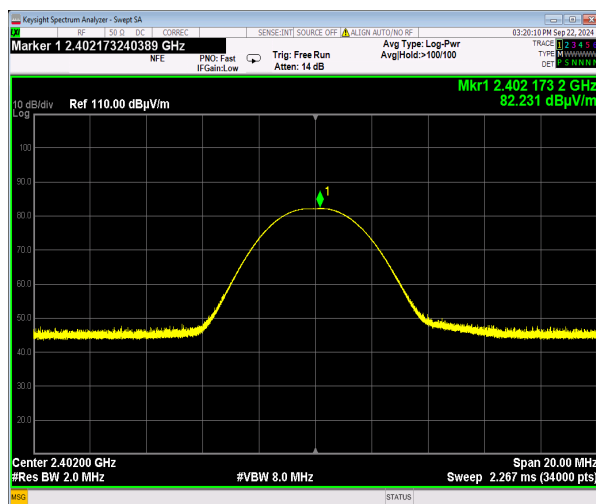
Test specification:	Section 15.247(b)3, Peak output power		
Test procedure:	Section 15.247(b)		
Test mode:	Compliance	Verdict: PASS	
Date & Time:	15-Sep-24 - 16-Sep-24		
Temperature: 24.6 °C	Air Pressure: 1010 hPa	Relative Humidity: 46 %	Power Supply: 5 VDC
Remarks:			

Plot 8.3.1 Field strength of carrier at low frequency and Unom

Vertical

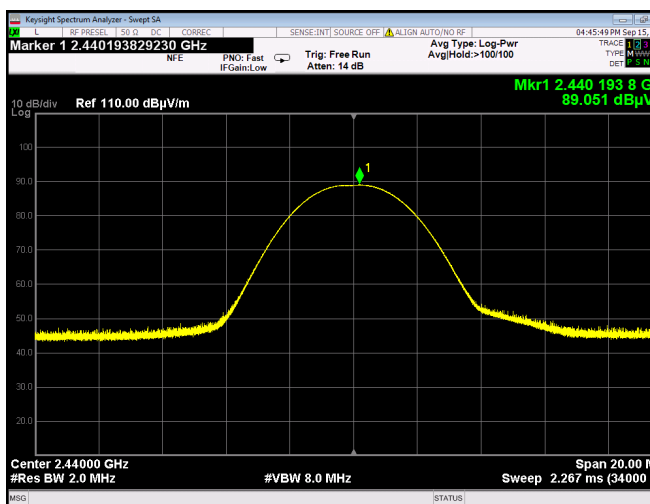


Horizontal

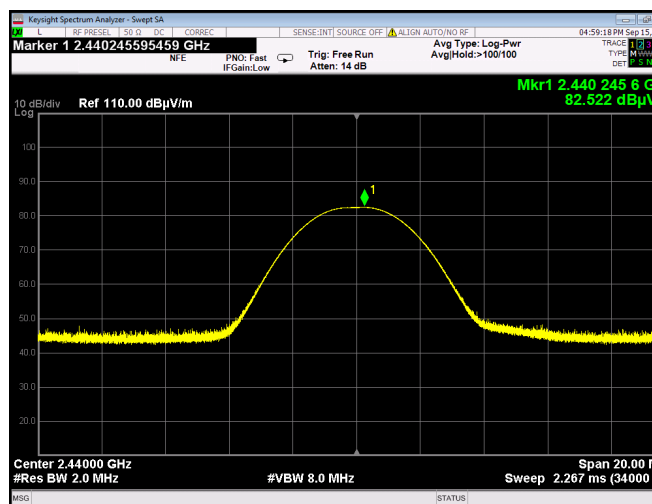


Plot 8.3.2 Field strength of carrier at mid frequency and Unom

Vertical



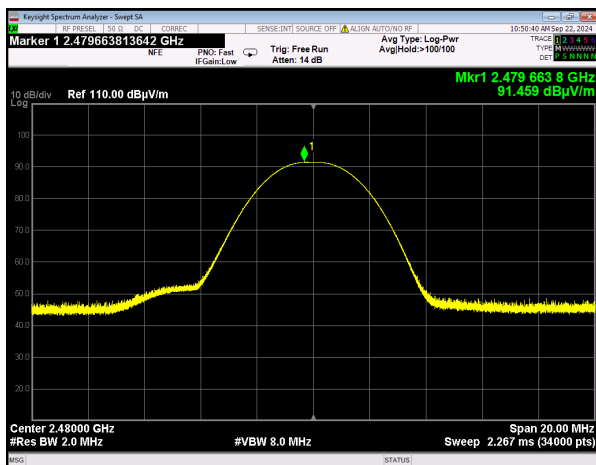
Horizontal



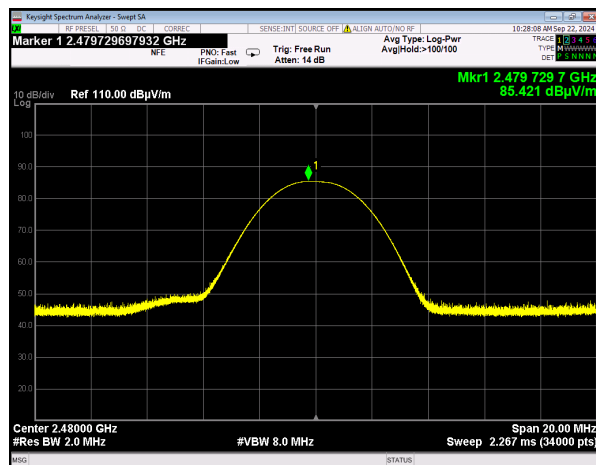
Test specification:	Section 15.247(b)3, Peak output power		
Test procedure:	Section 15.247(b)		
Test mode:	Compliance	Verdict: PASS	
Date & Time:	15-Sep-24 - 16-Sep-24		
Temperature: 24.6 °C	Air Pressure: 1010 hPa	Relative Humidity: 46 %	Power Supply: 5 VDC
Remarks:			

Plot 8.3.3 Field strength of carrier at high frequency and Unom

Vertical

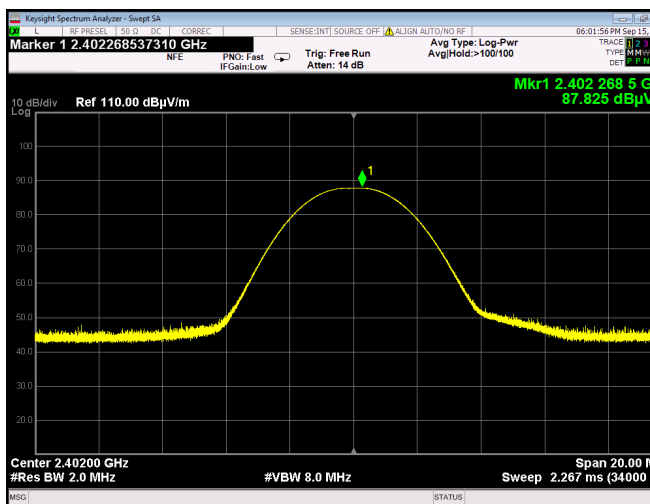


Horizontal

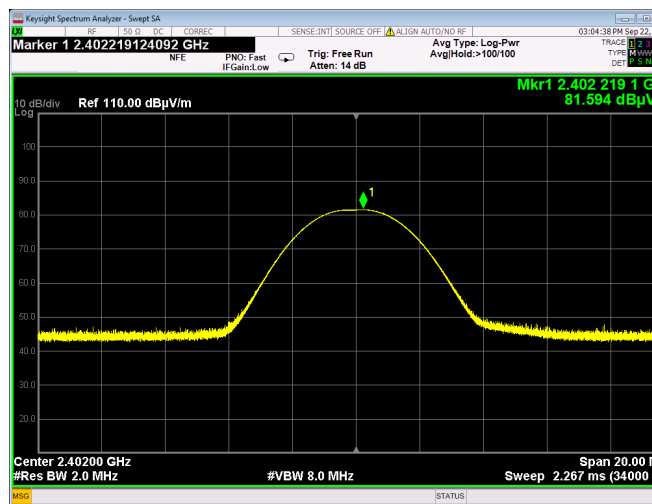


Plot 8.3.4 Peak output power at low frequency and 115%Unom

Vertical



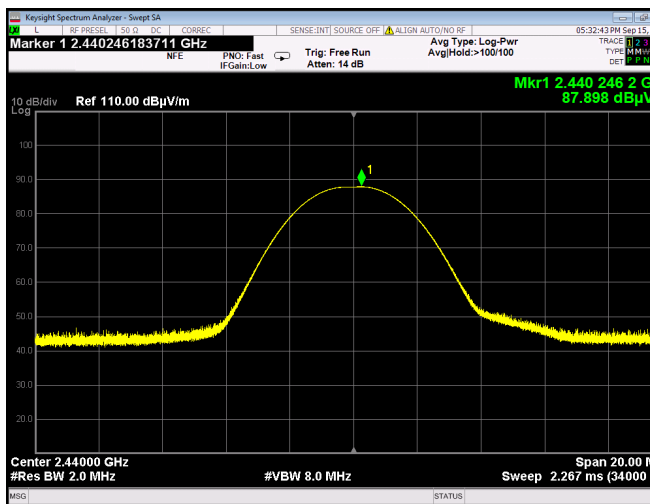
Horizontal



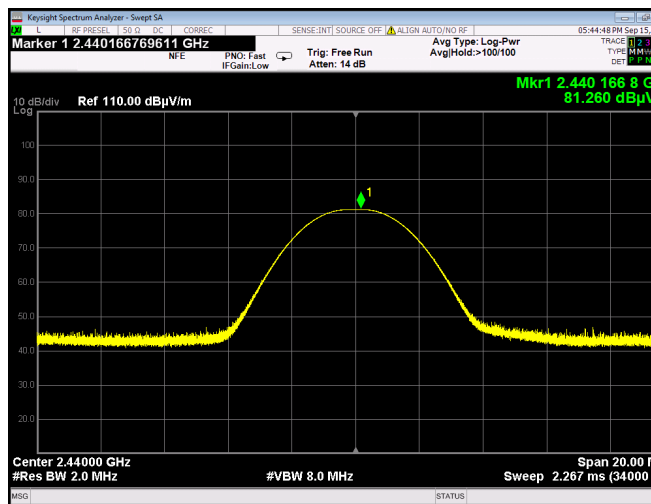
Test specification:	Section 15.247(b)3, Peak output power		
Test procedure:	Section 15.247(b)		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	15-Sep-24 - 16-Sep-24		
Temperature: 24.6 °C	Air Pressure: 1010 hPa	Relative Humidity: 46 %	Power Supply: 5 VDC
Remarks:			

Plot 8.3.5 Peak output power at mid frequency and 115%Unom

Vertical

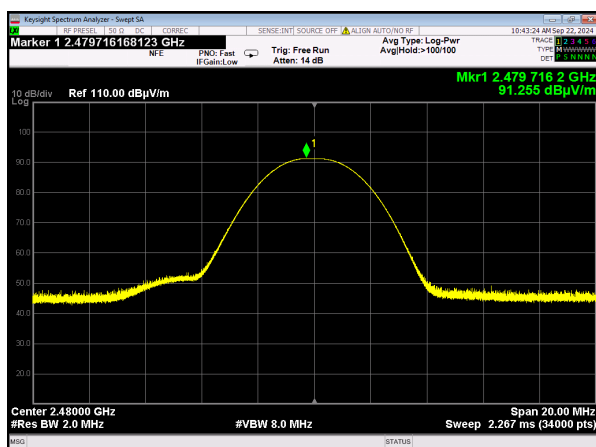


Horizontal

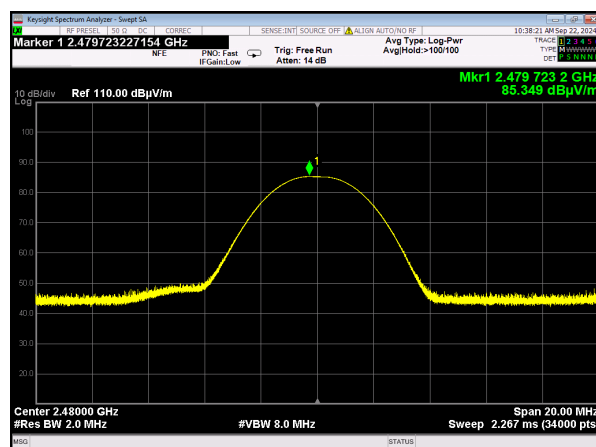


Plot 8.3.6 Peak output power at high frequency and 115%Unom

Vertical



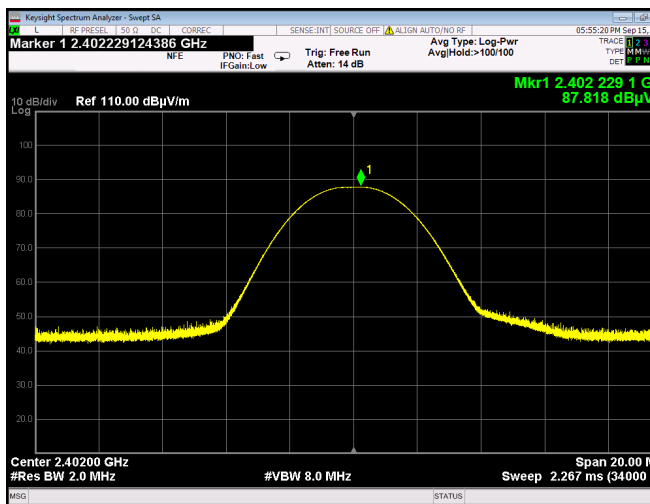
Horizontal



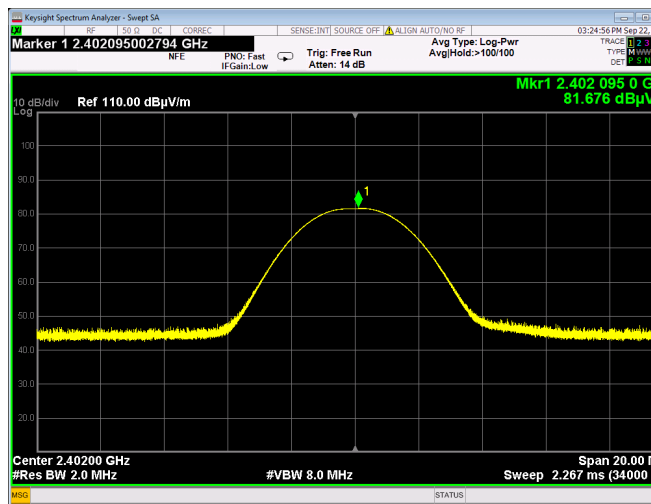
Test specification:	Section 15.247(b)3, Peak output power		
Test procedure:	Section 15.247(b)		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	15-Sep-24 - 16-Sep-24		
Temperature: 24.6 °C	Air Pressure: 1010 hPa	Relative Humidity: 46 %	Power Supply: 5 VDC
Remarks:			

Plot 8.3.7 Peak output power at low frequency and 85%Unom

Vertical

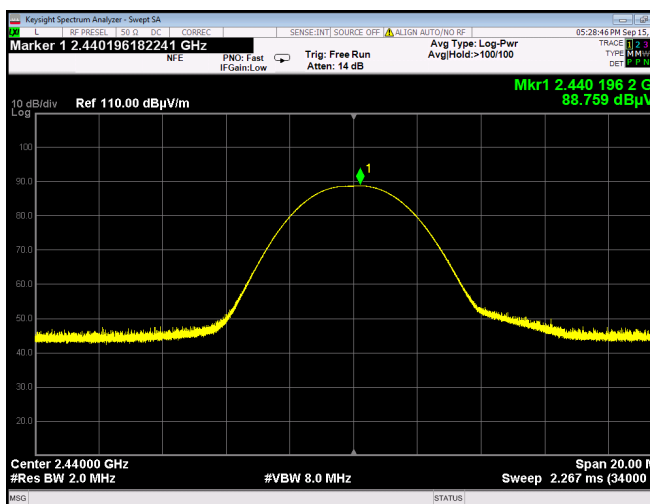


Horizontal

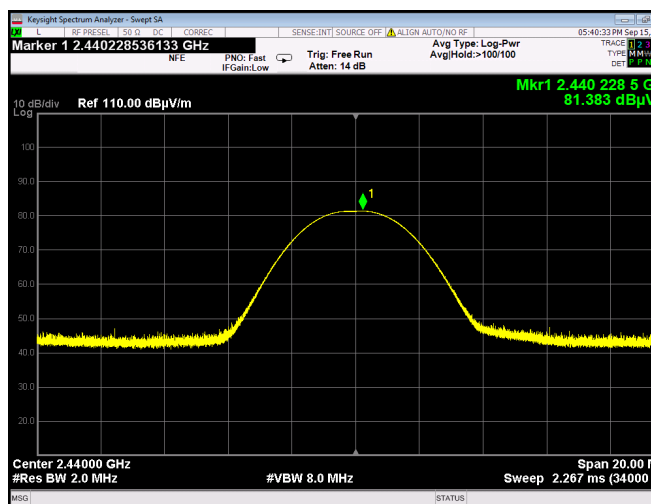


Plot 8.3.8 Peak output power at mid frequency and 85%Unom

Vertical



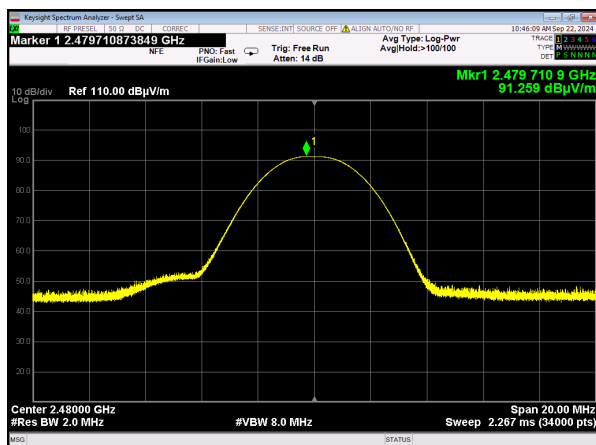
Horizontal



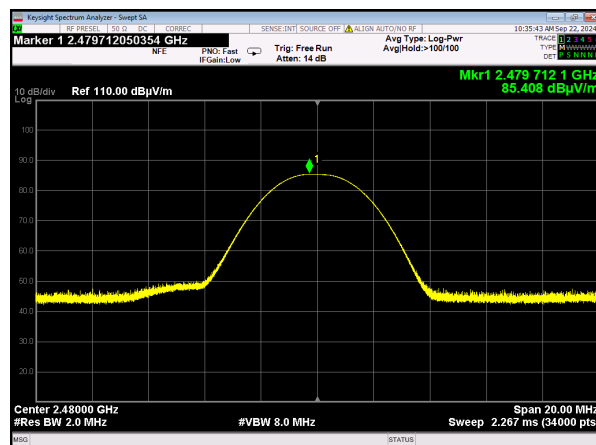
Test specification:	Section 15.247(b)3, Peak output power		
Test procedure:	Section 15.247(b)		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	15-Sep-24 - 16-Sep-24		
Temperature: 24.6 °C	Air Pressure: 1010 hPa	Relative Humidity: 46 %	Power Supply: 5 VDC
Remarks:			

Plot 8.3.9 Peak output power at high frequency and 85%Unom

Vertical



Horizontal



Test specification:	Section 15.247(d), Band edge emissions		
Test procedure:	Public notice DA 00-705		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	22-Sep-24 - 14-Nov-24		
Temperature: 22.9 °C	Air Pressure: 1011 hPa	Relative Humidity: 41 %	Power Supply: 5 VDC
Remarks:			

8.4 Band edge radiated emissions

8.4.1 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 8.4.1.

Table 8.4.1 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.

8.4.2 Test procedure

- 8.4.2.1** The EUT was set up as shown in Figure 8.4.1, energized normally modulated at the maximum data rate and its proper operation was checked.
- 8.4.2.2** The EUT was adjusted to produce maximum available to end user RF output power at the lowest carrier frequency.
- 8.4.2.3** 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.
- 8.4.2.4** The spectrum analyzer was set in max hold mode and allowed trace to stabilize. The highest emission level within the authorized band was measured.
- 8.4.2.5** The maximum band edge emission and modulation product outside of the band were measured as provided in Table 8.4.2 and associated plots and referenced to the highest emission level measured within the authorized band.
- 8.4.2.6** The above procedure was repeated with the EUT adjusted to produce maximum RF output power at the highest carrier frequency.
- 8.4.2.7** The above procedure was repeated with the frequency hopping function enabled.

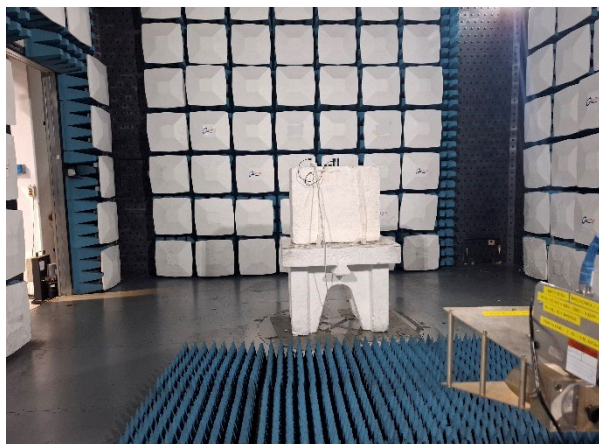
Figure 8.4.1 Band edge emission test setup



Test specification:	Section 15.247(d), Band edge emissions		
Test procedure:	Public notice DA 00-705		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	22-Sep-24 - 14-Nov-24		
Temperature: 22.9 °C	Air Pressure: 1011 hPa	Relative Humidity: 41 %	Power Supply: 5 VDC
Remarks:			

Photograph 8.4.1 Band edge emission test setup

Vertical



Horizontal

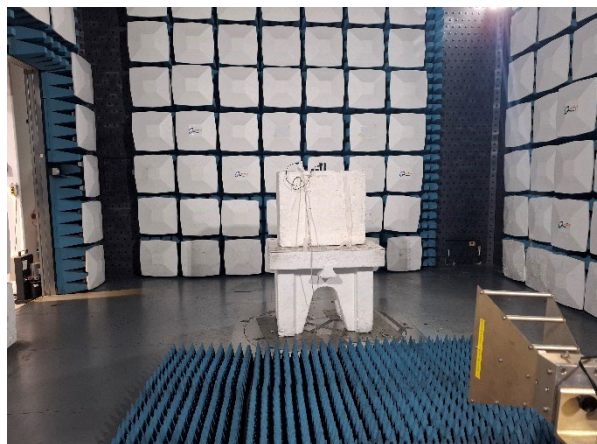


Table 8.4.2 Band edge emission outside restricted bands test results

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
Tested with the hopping disabled

Frequency, MHz	Band edge emission, dB(μV/m)	Emission at carrier, dB(μV/m)	Attenuation below carrier, dBc	Limit, dBc	Margin, dB*	Verdict
2399.264	42.888	87.036	44.148	20.0	24.148	Pass
2400.000	40.348	87.036	46.688	20.0	26.688	Pass

Operation in normal mode (tested with the hopping enabled)

Frequency, MHz	Band edge emission, dB(μV/m)	Emission at carrier, dB(μV/m)	Attenuation below carrier, dBc	Limit, dBc	Margin, dB*	Verdict
2397.000	46.924	73.931	27.007	20.0	7.007	Pass
2400.000	33.853	73.931	40.078	20.0	20.078	Pass

*- Margin = Attenuation below carrier – specification limit.

Test specification:	Section 15.247(d), Band edge emissions		
Test procedure:	Public notice DA 00-705		
Test mode:	Compliance	Verdict: PASS	
Date & Time:	22-Sep-24 - 14-Nov-24		
Temperature: 22.9 °C	Air Pressure: 1011 hPa	Relative Humidity: 41 %	Power Supply: 5 VDC
Remarks:			

Table 8.4.3 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
Tested with the hopping disabled

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**	
2129.53	44.665	74.0	-29.335	31.186	54.0	-22.81	Pass
2543.95	48.247	74.0	-25.753	43.508	54.0	-10.49	Pass

Operation in normal mode (tested with the hopping enabled)

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**	
2359.67	46.442	74.0	-27.558	34.896	54.0	-19.104	Pass
2720.06	47.941	74.0	-26.059	34.212	54.0	-19.788	Pass

Reference numbers of test equipment used

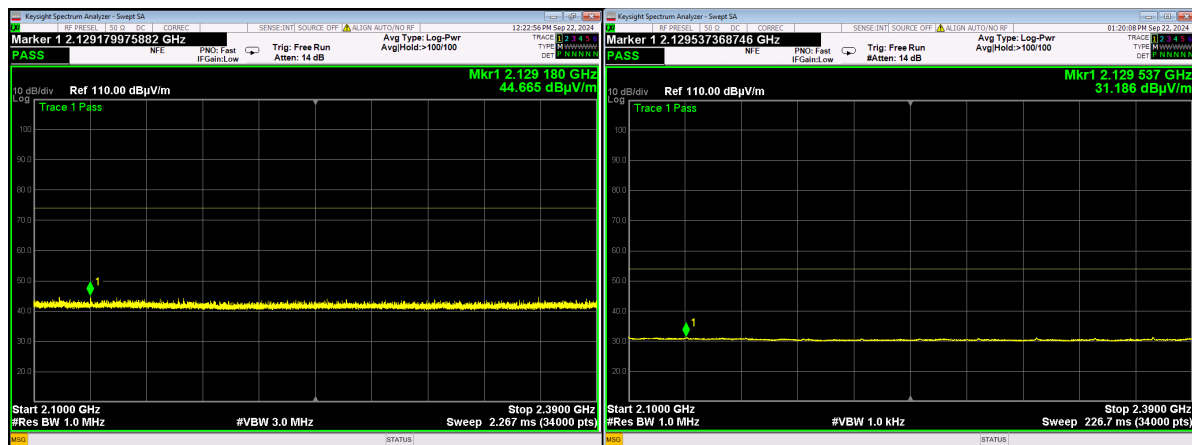
HL 5102	HL 6208	HL 6240	HL 6574	HL 8120			
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Full description is given in Appendix A.

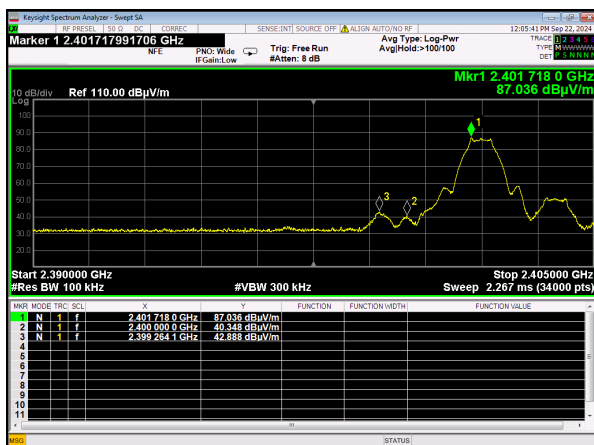
Test specification:	Section 15.247(d), Band edge emissions		
Test procedure:	Public notice DA 00-705		
Test mode:	Compliance	Verdict: PASS	
Date & Time:	22-Sep-24 - 14-Nov-24		
Temperature: 22.9 °C	Air Pressure: 1011 hPa	Relative Humidity: 41 %	Power Supply: 5 VDC
Remarks:			

Tested with the hopping disabled

Plot 8.4.1 The highest emission level within restricted band at low carrier frequency

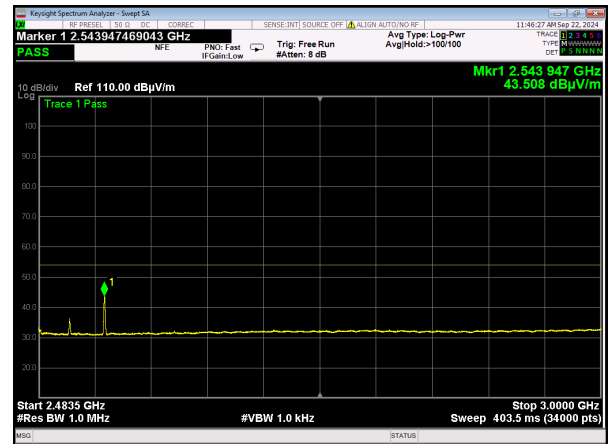
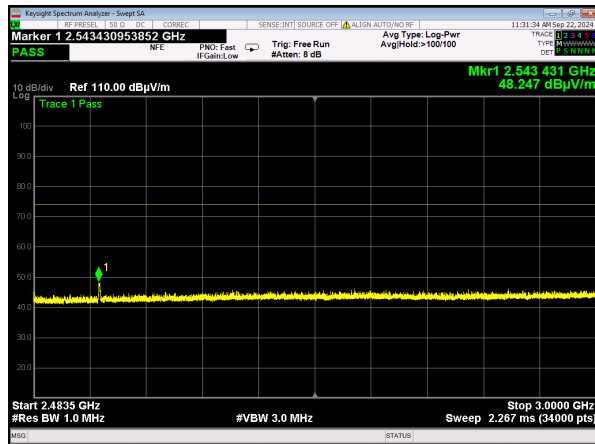


Plot 8.4.2 The highest emission level outside restricted band at low carrier frequency



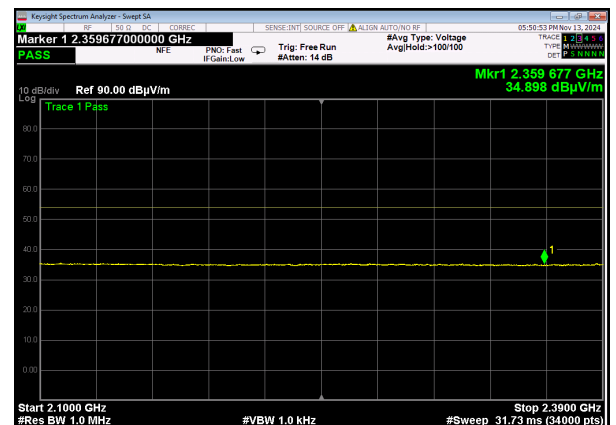
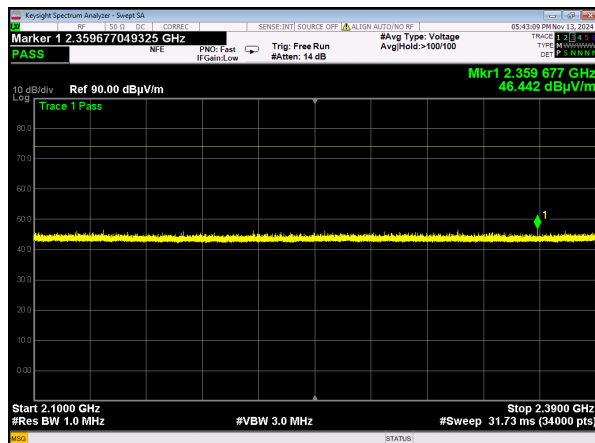
Test specification:	Section 15.247(d), Band edge emissions		
Test procedure:	Public notice DA 00-705		
Test mode:	Compliance	Verdict: PASS	
Date & Time:	22-Sep-24 - 14-Nov-24		
Temperature: 22.9 °C	Air Pressure: 1011 hPa	Relative Humidity: 41 %	Power Supply: 5 VDC
Remarks:			

Plot 8.4.3 The highest emission level within restricted band at high carrier frequency



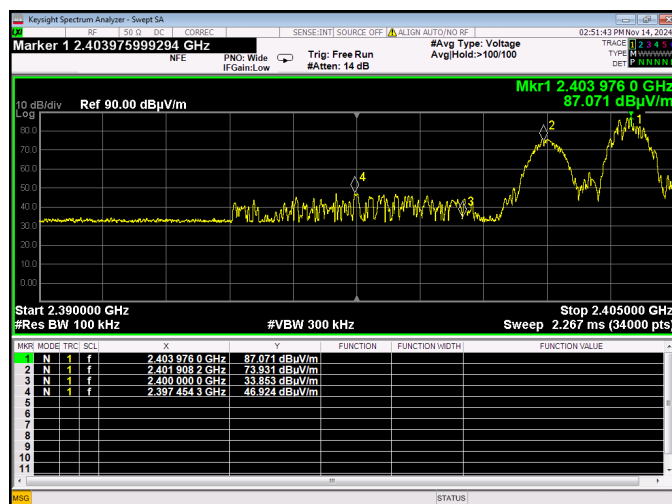
Operation in normal mode (tested with the hopping enabled)

Plot 8.4.4 The highest emission level within restricted band at low carrier frequency

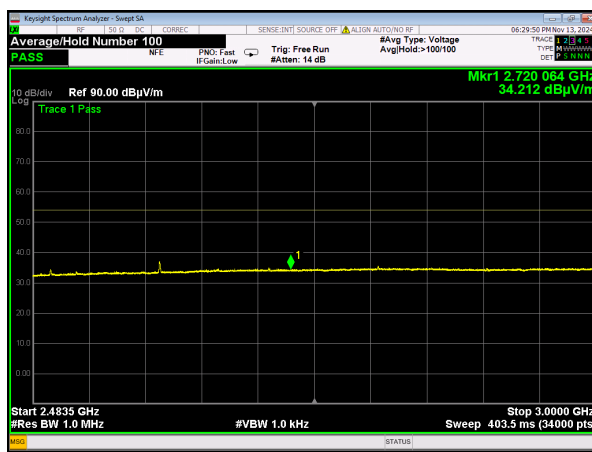
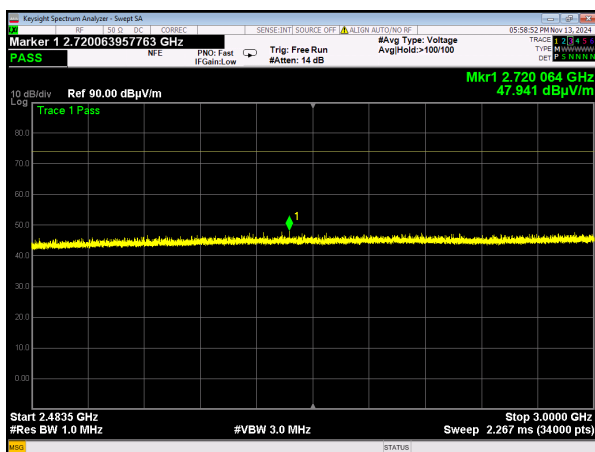


Test specification:	Section 15.247(d), Band edge emissions		
Test procedure:	Public notice DA 00-705		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	22-Sep-24 - 14-Nov-24		
Temperature: 22.9 °C	Air Pressure: 1011 hPa	Relative Humidity: 41 %	Power Supply: 5 VDC
Remarks:			

Plot 8.4.5 The highest emission level outside restricted band at low carrier frequency



Plot 8.4.6 The highest emission level within restricted band at high carrier frequency



Test specification:	Section 15.247(d), Peak power density		
Test procedure:	Section 15.247(d)		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	16-Sep-24 - 22-Sep-24		
Temperature: 23.9 °C	Air Pressure: 1010 hPa	Relative Humidity: 41 %	Power Supply: 5 VDC
Remarks:			

8.5 Peak spectral power density

8.5.1 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 8.5.1.

Table 8.5.1 Peak spectral power density limits

Assigned frequency range, MHz	Measurement bandwidth, kHz	Peak spectral power density, dBm	Equivalent field strength limit @ 3m, dB(μV/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.

8.5.2 Test procedure for field strength measurements

8.5.2.1 The EUT was set up as shown in Figure 8.5.1, energized and its proper operation was checked.

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

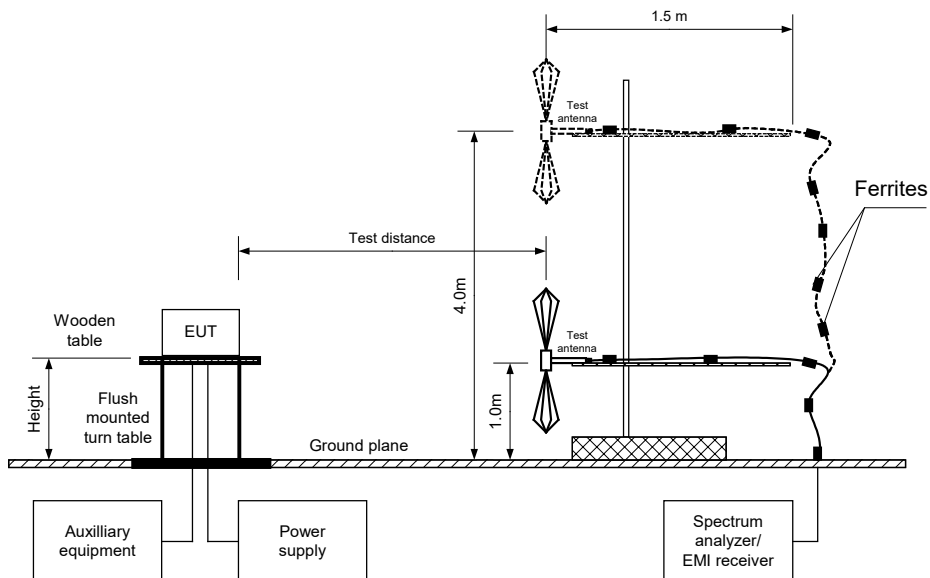
8.5.2.3 The field strength of the EUT carrier frequency was measured with antenna connected to spectrum analyzer/ EMI receiver. To find maximum radiation the turntable was rotated 360° and the measuring antenna height was swept in both vertical and horizontal polarizations.

8.5.2.4 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.

8.5.2.5 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 8.5.2 and associated plots.

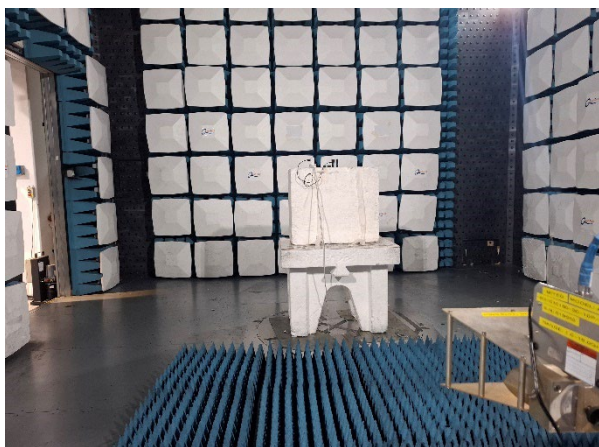
Test specification:	Section 15.247(d), Peak power density		
Test procedure:	Section 15.247(d)		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	16-Sep-24 - 22-Sep-24		
Temperature: 23.9 °C	Air Pressure: 1010 hPa	Relative Humidity: 41 %	Power Supply: 5 VDC
Remarks:			

Figure 8.5.1 Setup for carrier field strength measurements

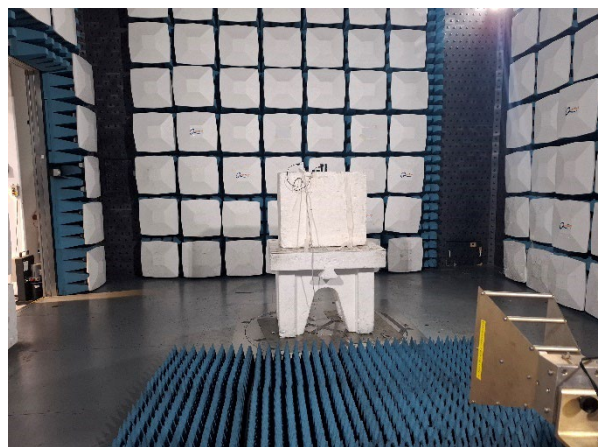


Photograph 8.5.1 Setup for carrier field strength measurements

Vertical



Horizontal



Test specification:	Section 15.247(d), Peak power density		
Test procedure:	Section 15.247(d)		
Test mode:	Compliance	Verdict: PASS	
Date & Time:	16-Sep-24 - 22-Sep-24		
Temperature: 23.9 °C	Air Pressure: 1010 hPa	Relative Humidity: 41 %	Power Supply: 5 VDC
Remarks:			

Table 8.5.2 Field strength measurement of peak spectral power density

ASSIGNED FREQUENCY: 2400 -2483.5 MHz
 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	76.703	3.77	103.2	-30.267	V	1.30	212
2402	70.544	3.77	103.2	-36.426	H	1.72	212
2440	77.520	3.77	103.2	-29.45	V	1.51	212
2440	71.762	3.77	103.2	-35.208	H	1.50	188
2480	78.806	3.77	103.2	-28.164	V	1.44	212
2480	71.970	3.77	103.2	-35.000	H	1.44	212

*- 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

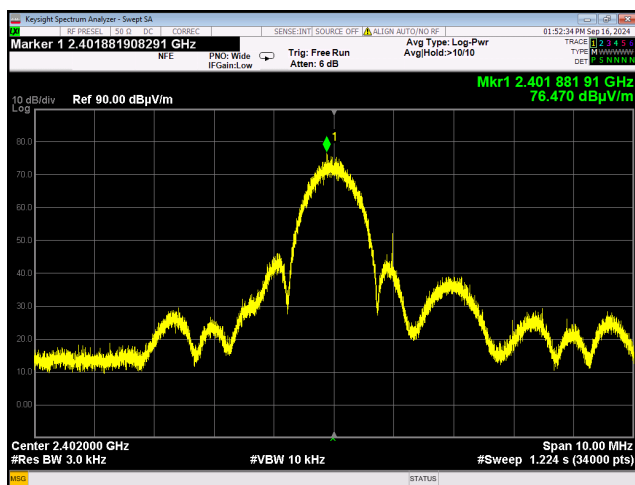
HL 5102	HL 6208	HL 6240	HL 6574	HL 8120			
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Full description is given in Appendix A.

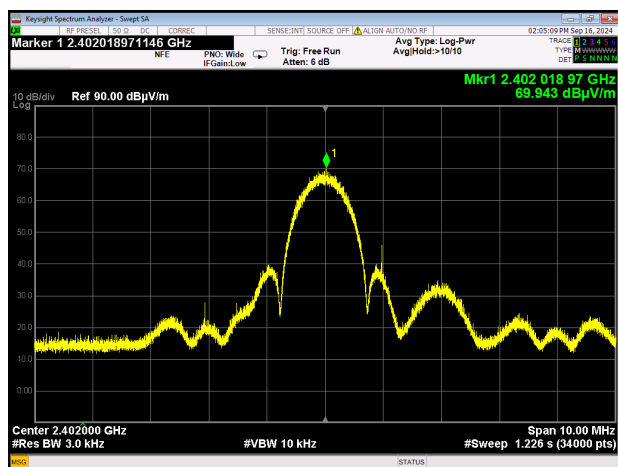
Test specification:	Section 15.247(d), Peak power density		
Test procedure:	Section 15.247(d)		
Test mode:	Compliance	Verdict: PASS	
Date & Time:	16-Sep-24 - 22-Sep-24		
Temperature: 23.9 °C	Air Pressure: 1010 hPa	Relative Humidity: 41 %	Power Supply: 5 VDC
Remarks:			

Plot 8.5.1 Peak spectral power density at low frequency within 6 dB band

Vertical

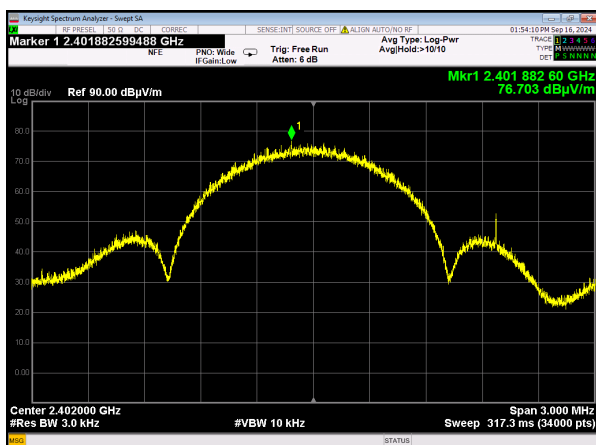


Horizontal

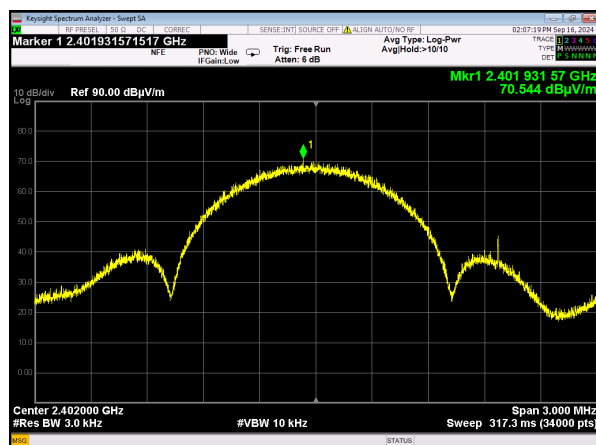


Plot 8.5.2 Peak spectral power density at low frequency zoomed at the peak

Vertical

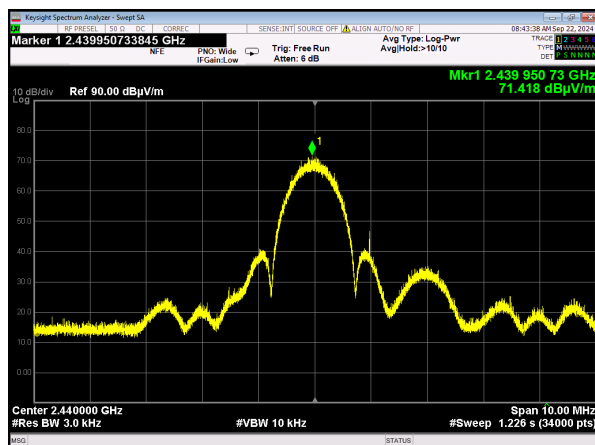
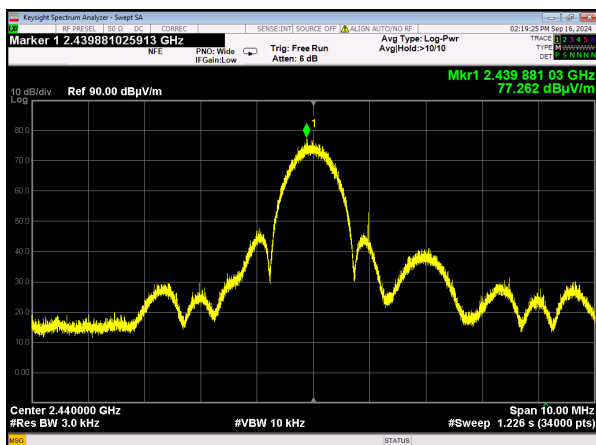


Horizontal



Test specification:	Section 15.247(d), Peak power density		
Test procedure:	Section 15.247(d)		
Test mode:	Compliance	Verdict: PASS	
Date & Time:	16-Sep-24 - 22-Sep-24		
Temperature: 23.9 °C	Air Pressure: 1010 hPa	Relative Humidity: 41 %	Power Supply: 5 VDC
Remarks:			

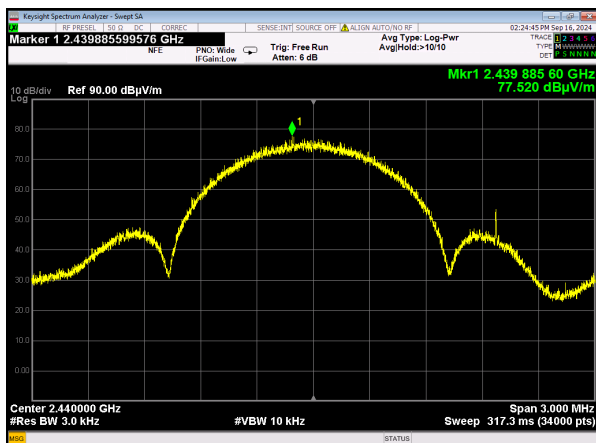
Plot 8.5.3 Peak spectral power density at mid frequency within 6 dB band



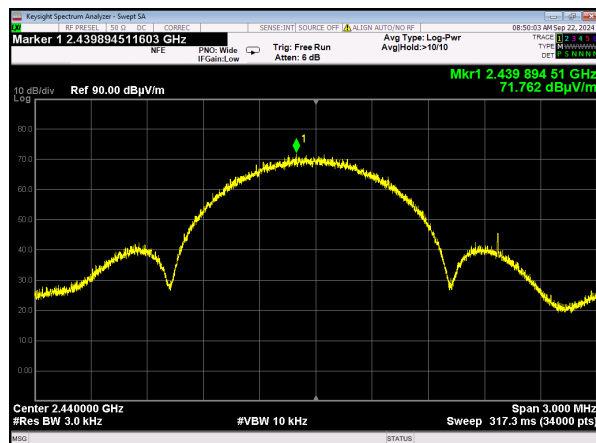
Test specification:	Section 15.247(d), Peak power density		
Test procedure:	Section 15.247(d)		
Test mode:	Compliance	Verdict: PASS	
Date & Time:	16-Sep-24 - 22-Sep-24		
Temperature: 23.9 °C	Air Pressure: 1010 hPa	Relative Humidity: 41 %	Power Supply: 5 VDC
Remarks:			

Plot 8.5.4 Peak spectral power density at mid frequency zoomed at the peak

Vertical

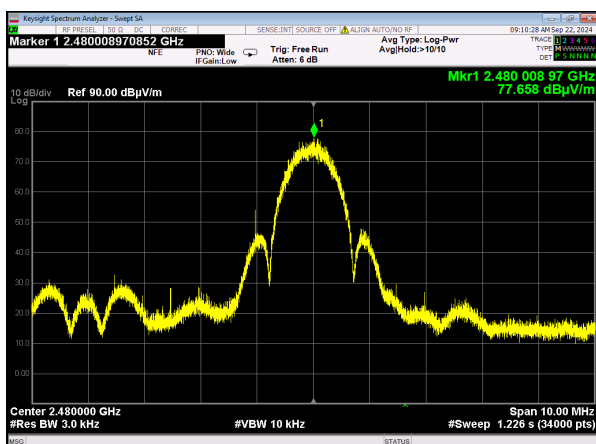


Horizontal

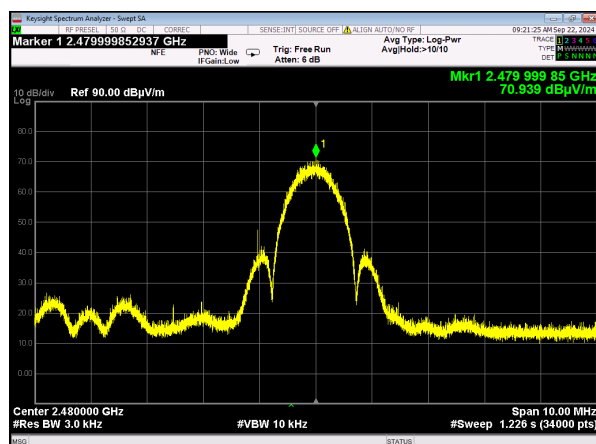


Plot 8.5.5 Peak spectral power density at high frequency within 6 dB band

Vertical



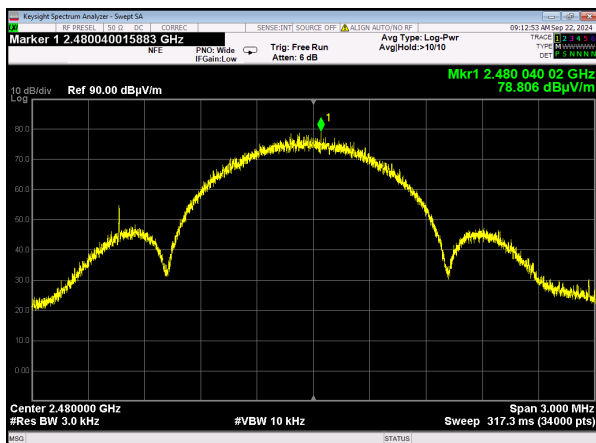
Horizontal



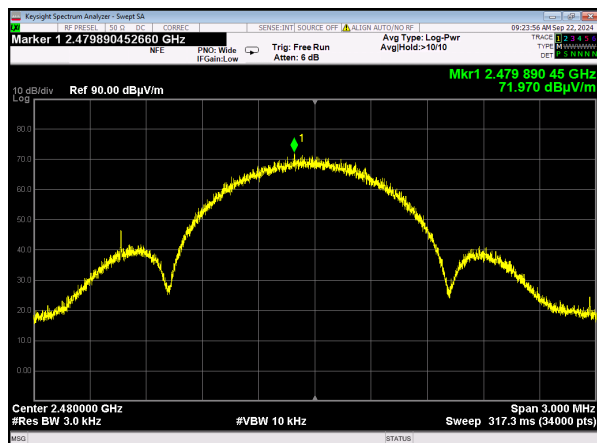
Test specification:	Section 15.247(d), Peak power density		
Test procedure:	Section 15.247(d)		
Test mode:	Compliance	Verdict: PASS	
Date & Time:	16-Sep-24 - 22-Sep-24		
Temperature: 23.9 °C	Air Pressure: 1010 hPa	Relative Humidity: 41 %	Power Supply: 5 VDC
Remarks:			

Plot 8.5.6 Peak spectral power density at high frequency zoomed at the peak

Vertical



Horizontal



Test specification:	Section 15.207(a), Conducted emission		
Test procedure:	ANSI C63.4, Section 13.1.3		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	30-Sep-24		
Temperature: 23.2 °C	Air Pressure: 1008 hPa	Relative Humidity: 42 %	Power Supply: 110 VAC, 50 Hz
Remarks:			

8.6 Conducted emissions

8.6.1 General

This test was performed to measure common mode conducted emissions at the power port. Specification test limits are given in Table 8.6.1. The worst test results (the lowest margins) were recorded in Table 8.6.2 and shown in the associated plots.

Table 8.6.1 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.

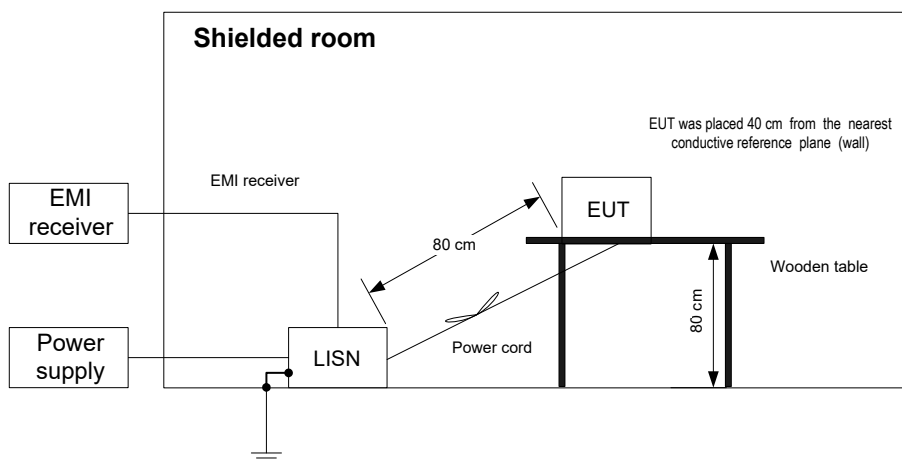
8.6.2 Test procedure

8.6.2.1 The EUT was set up as shown in Figure 8.6.1 and associated photographs, energized and the performance check was conducted.

8.6.2.2 The measurements were performed at power terminals with the LISN, connected to a spectrum analyzer in the frequency range referred to in Table 8.6.2. Unused coaxial connector of the LISN was terminated with 50 Ohm. Quasi-peak and average detectors were used throughout the testing.

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

Figure 8.6.1 Setup for conducted emission measurements, table-top equipment



Test specification:	Section 15.207(a), Conducted emission		
Test procedure:	ANSI C63.4, Section 13.1.3		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	30-Sep-24		
Temperature: 23.2 °C	Air Pressure: 1008 hPa	Relative Humidity: 42 %	Power Supply: 110 VAC, 50 Hz
Remarks:			

Photograph 8.6.1 Setup for conducted emission measurements



Test specification:	Section 15.207(a), Conducted emission		
Test procedure:	ANSI C63.4, Section 13.1.3		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	30-Sep-24		
Temperature: 23.2 °C	Air Pressure: 1008 hPa	Relative Humidity: 42 %	Power Supply: 110 VAC, 50 Hz
Remarks:			

Table 8.6.2 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*		
0.527	40.5	32.3	56.0	-23.7	20.2	46.0	-25.8	N	Pass
0.537	40.5	34.7	56.0	-21.3	23.6	46.0	-22.4		
0.544	41.3	34.9	56.0	-21.1	24.1	46.0	-21.9		
0.545	40.6	35.2	56.0	-20.8	24.7	46.0	-21.3		
0.547	41.2	35.1	56.0	-20.9	24.6	46.0	-21.4		
0.552	40.7	34.5	56.0	-21.5	23.6	46.0	-22.4	L	Pass
0.529	44.4	37.5	56.0	-18.5	25.4	46.0	-20.6		
0.537	44.6	39.2	56.0	-16.8	29.0	46.0	-17.0		
0.547	44.2	39.3	56.0	-16.7	29.4	46.0	-16.6		
0.548	44.4	39.3	56.0	-16.7	29.5	46.0	-16.5		
0.549	44.4	39.2	56.0	-16.8	29.3	46.0	-16.7		
0.564	43.6	37.0	56.0	-19.0	25.6	46.0	-20.4		

*- Margin = Measured emission - specification limit.

Reference numbers of test equipment used

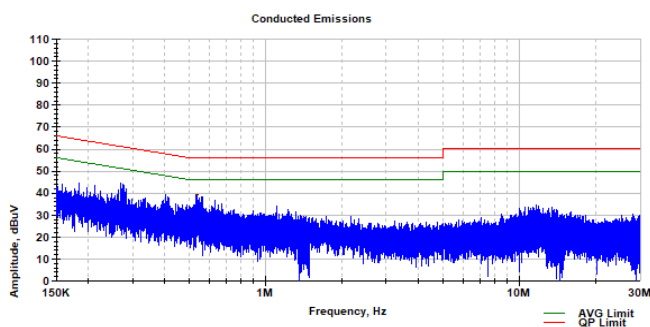
HL 4576	HL 6210	HL 6892	HL 8079				
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Full description is given in Appendix A.

Test specification:	Section 15.207(a), Conducted emission		
Test procedure:	ANSI C63.4, Section 13.1.3		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	30-Sep-24		
Temperature: 23.2 °C	Air Pressure: 1008 hPa	Relative Humidity: 42 %	Power Supply: 110 VAC, 50 Hz
Remarks:			

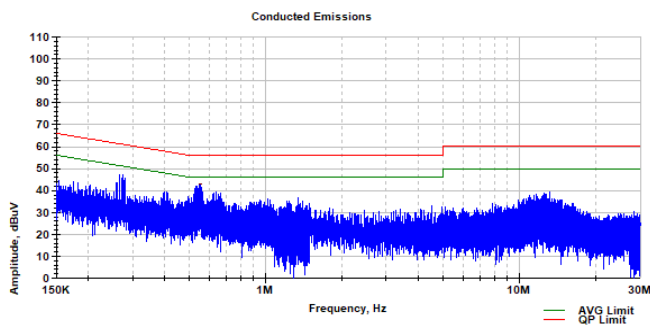
Plot 8.6.1 Conducted emission measurements

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



Plot 8.6.2 Conducted emission measurements

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



Test specification:	Section 15.107, Conducted emission at AC power port		
Test procedure:	ANSI C63.4, Sections 11.5 and 12.1.3		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	24-Sep-24		
Temperature: 22.7 °C	Air Pressure: 1008 hPa	Relative Humidity: 43 %	Power Supply: 110 VAC, 50 Hz
Remarks:			

9 Emission tests according to 47CFR part 15 subpart B requirements

9.1 Conducted emissions

9.1.1 General

This test was performed to measure common mode conducted emissions at the mains power port. Specification test limits are given in Table 9.1.1. The worst test results (the lowest margins) were recorded in Table 9.1.2 and shown in the associated plots.

Table 9.1.1 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.

9.1.2 Test procedure

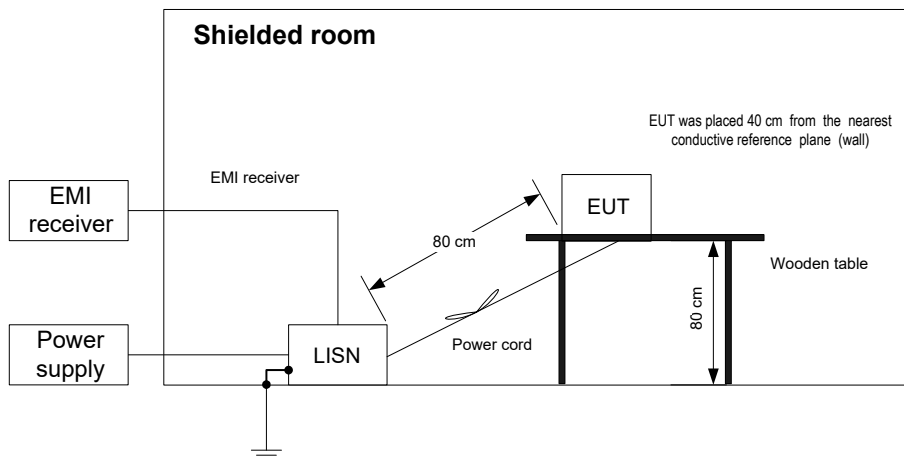
9.1.2.1 The EUT was set up as shown in Figure 9.1.1 and associated photographs, energized and the performance check was conducted.

9.1.2.2 The measurements were performed at power terminals with the LISN, connected to a spectrum analyzer in the frequency range referred to in Table 9.1.2. Unused coaxial connector of the LISN was terminated with 50 Ohm. Quasi-peak and average detectors were used throughout the testing.

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

Test specification:	Section 15.107, Conducted emission at AC power port		
Test procedure:	ANSI C63.4, Sections 11.5 and 12.1.3		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	24-Sep-24		
Temperature: 22.7 °C	Air Pressure: 1008 hPa	Relative Humidity: 43 %	Power Supply: 110 VAC, 50 Hz
Remarks:			

Figure 9.1.1 Setup for conducted emission measurements, table-top equipment



Photograph 9.1.1 Setup for conducted emission measurements

