HERMON LABORATORIES

ELECTRICAL TESTING
0839.01

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TEST REPORT

ACCORDING TO: FCC 47CFR part 15 subpart C §15.247 (FHSS), subpart B, RSS-247 Issue 3:2023, RSS-Gen Issue 5, ICES-003 Issue 7:2020

FOR:

Visonic Ltd.

Smoke and heat detector

Models: SMD-976 PGP, SMD-979 PGP

FCC ID: WP3SMD976PGP

This report is in conformity with ISO/ IEC 17025. The "A2LA Accredited" symbol endorsement applies only to the tests and calibrations that are listed in the scope of Hermon Laboratories accreditation. The test results relate only to the items tested. This test report shall not be reproduced in any form except in full with the written approval of Hermon Laboratories Ltd.

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1 Applicant information

Client name:	Visonic Ltd.
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Telephone:	+972 3645 6832
Fax:	+972 3645 6788
E-mail:	zuri.rubin@jci.com
Contact name:	Mr. Zuri Rubin

2 Equipment under test attributes

Product name:	Smoke and heat detector
Product type:	Transceiver
Model(s):	SMD-976 PGP *
Serial number:	NA
Hardware version:	90-210683
Software release:	JS-704242
Receipt date	04-Aug-24

*According to manufacturer's declaration provided in Appendix G the SMD-976 PGP is fully identical to SMD-979 PGP. Any changes are limited to non-substantive modifications layout changes to the same size physical circuit board and the RF module location is the same (pin to pin). Therefore, only the model SMD-976 PGP was tested.

3 Manufacturer information

Manufacturer name:	Visonic Ltd.
Address:	13 Zarhin Street, Raanana 4366241, Israel
Telephone:	+972 3645 6832
Fax:	+972 3645 6788
E-Mail:	zuri.rubin@jci.com
Contact name:	Mr. Zuri Rubin

4 Test details

Project ID:	54928
Location:	Hermon Laboratories Ltd. 66 HaTachana str., P.O. Box 23, Binyamina 3055001, Israel
Test started:	06-Oct-24
Test completed:	09-Oct-24
Test specification(s):	FCC 47CFR part 15 subpart C §15.247 (FHSS) and subpart B, RSS-247 Issue 3:2023, RSS-Gen Issue 5, ICES-003 Issue 7:2020

5 Tests summary

Test	
Transmitter characteristics	
Section 15.247(a)1 / RSS-247 section 5.1(c), 20 dB bandwidth	Pass
Section 15.247(b) / RSS-247 section 5.4(a), Peak output power	Pass
Section 15.247(d) / RSS-247 section 5.5, Radiated spurious emissions	Pass
Section 15.247(a)1 / RSS-247 section 5.1(b), Frequency separation	Pass
Section 15.247(a)1 / RSS-247 section 5.1(c), Number of hopping frequencies	Pass
Section 15.247(a)1 / RSS-247 section 5.1(c), Average time of occupancy	Pass
Section 15.247(i)5 / RSS-102 section 2.5, RF exposure	Pass, the exhibit to the application of certification is provided
Section 15.247(d) / RSS-247 section 5.5, Emissions at band edges	Pass
Section 15.203 / RSS-Gen section 8.3, Antenna requirements	Pass
Section 15.207(a) / RSS-Gen section 8.8, Conducted emission	Not required
Unintentional emissions	
Section 15.107/ICES-003, Section 6.1, Class B, Conducted emission at AC power port	Not required
Section 15.109/ RSS-Gen section 7.1.2 /ICES-003, Section 6.2, Class B, Radiated emission	Pass

Testing was completed against all relevant requirements of the test standard. The results obtained indicate that the product under test complies in full with the requirements tested.
The test results relate only to the items tested. Pass/ fail decision was based on nominal values.

	Name and Title	Date	Signature
Tested by:	Mrs. N. Lenkina, test engineer, EMC & Radio	06-Oct-24 – 09-Oct-24	
Reviewed by:	Mrs. S. Peysahov Sheynin, certification specialist, EMC & Radio	13-Jan-25	
Approved by:	Mr. M. Nikishin, group leader, EMC & Radio	26-Mar-25	

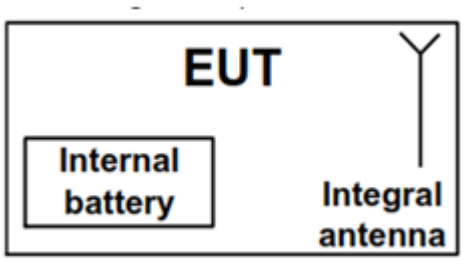
6 EUT description

Note: The following data in this clause is provided by the customer and represents his sole responsibility

6.1 General information

The EUT is a Wireless PowerG Two-Way Smoke and heat detector The EUT is equipped with an integral antenna and is powered from 3 VDC obtained from two internal lithium batteries. The EUT operates at 912.750 – 919.106 MHz.

6.2 Test configuration



6.3 Changes made in the EUT

No changes were implemented in the EUT during the testing.

Transmitter characteristics

Type of equipment	
X	Stand-alone (Equipment with or without its own control provisions)
	Combined equipment (Equipment where the radio part is fully integrated within another type of equipment)
	Plug-in card (Equipment intended for a variety of host systems)

Intended use		Condition of use
	fixed	Always at a distance more than 2 m from all people
X	mobile	Always at a distance more than 20 cm from all people
	portable	May operate at a distance closer than 20 cm to human body

Assigned frequency ranges	902 – 928 MHz	
Operating frequencies	912.750 – 919.106 MHz	
Maximum rated output power	At transmitter 50 Ω RF output connector	dBm
	Peak output power	20.30 dBm

Is transmitter output power variable?	X	No		
		Yes		continuous variable
				stepped variable with stepsize dB
			minimum RF power	dBm
			maximum RF power	dBm

Antenna connection				
unique coupling	standard connector	X	integral	with temporary RF connector
				X without temporary RF connector

Antenna/s technical characteristics			
Type	Manufacturer	Model number	Gain
Internal	Ocean	H-303989	-5 dBi

Transmitter aggregate data rate/s	50 kbps			
Type of modulation	GFSK			
Modulating test signal (baseband)	PRBS			
Maximum transmitter duty cycle in normal use	0.1%			

Transmitter power source					
X	Battery	**Nominal rated voltage**	3.0 VDC	Battery type	Lithium
	DC	**Nominal rated voltage**	VDC		
	AC mains	**Nominal rated voltage**	VAC	Frequency	

Common power source for transmitter and receiver	X	yes	no

Spread spectrum technique used	X	Frequency hopping (FHSS)
		Digital transmission system (DTS)
		Hybrid

Spread spectrum parameters for transmitters tested per FCC 15.247 only		
FHSS	Total number of hops	50
	Bandwidth per hop	103.4 kHz
	Max. separation of hops	129.61 kHz

Test specification:	**Section 15.247(a)1, RSS-247 section 5.1(3), 20 dB bandwidth**		
Test procedure:	ANSI C63.10, section 7.8.7		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	06-Oct-24		
Temperature: 23 ºC	**Relative Humidity:** 45 %	**Air Pressure:** 1009 hPa	**Power:** 3 VDC
Remarks:			

7 Transmitter tests according to 47CFR part 15 subpart C and RSS-247 requirements

7.1 20 dB bandwidth

7.1.1 General

This test was performed to measure the 20 dB bandwidth of the transmitter hopping channel. Specification test limits are given in Table 7.1.1.

Table 7.1.1 The 20 dB bandwidth limits

Assigned frequency, MHz	Maximum bandwidth, kHz	Modulation envelope reference points*, dBc
902.0 – 928.0	**250**	20
2400.0 – 2483.5	NA	
5725.0 – 5850.0	1000	

* - Modulation envelope reference points provided in terms of attenuation below the peak of modulated carrier.

7.1.2 Test procedure

7.1.2.1 The EUT was set up as shown in Figure 7.1.1, energized and its proper operation was checked.

7.1.2.2 The EUT was set to transmit modulated carrier at maximum data rate.

7.1.2.3 The transmitter bandwidth was measured with spectrum analyzer as frequency delta between reference points on modulation envelope and provided in Table 7.1.2 and associated plot.

7.1.2.4 The test was repeated for each data rate and each modulation format.

Figure 7.1.1 The 20 dB bandwidth test setup

Test specification:	**Section 15.247(a)1, RSS-247 section 5.1(3), 20 dB bandwidth**		
Test procedure:	ANSI C63.10, section 7.8.7		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	06-Oct-24		
Temperature: 23 ºC	**Relative Humidity:** 45 %	**Air Pressure:** 1009 hPa	**Power:** 3 VDC
Remarks:			

Table 7.1.2 The 20 dB bandwidth test results

ASSIGNED FREQUENCY BAND: 902.0 – 928.0 MHz
DETECTOR USED: Peak
SWEEP TIME: Auto
VIDEO BANDWIDTH: ≥ RBW
MODULATION ENVELOPE REFERENCE POINTS: 20.0 dBc
FREQUENCY HOPPING: Disabled

Carrier frequency, MHz	Type of modulation	Data rate, kbps	99% bandwidth kHz	20 dB bandwidth, kHz	Limit, kHz	Margin, kHz	Verdict
Low frequency							
912.750	GFSK	50	95.514	103.04	250	-146.96	Pass
Mid frequency							
915.863	GFSK	50	97.250	103.04	250	-146.96	Pass
High frequency							
919.106	GFSK	50	97.250	103.62	250	-146.38	Pass

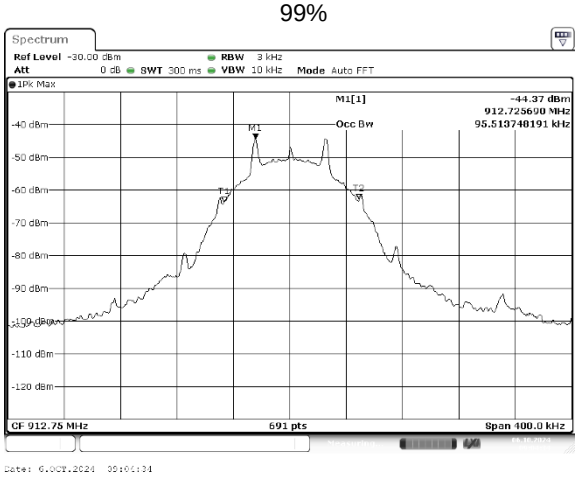
Reference numbers of test equipment used

HL 4135	HL 4275	HL 4355	HL 5838					

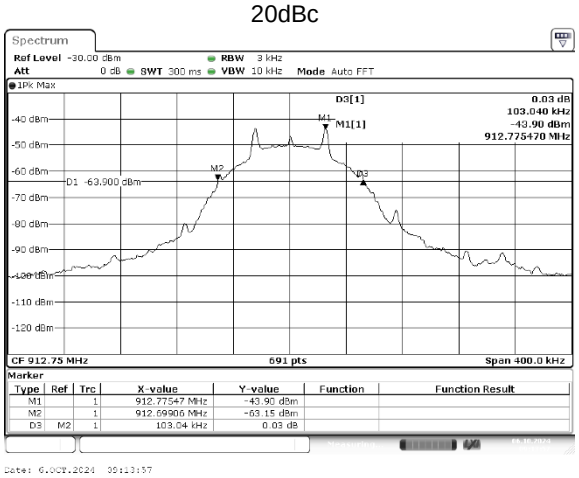
Full description is given in Appendix A.

Plot 7.1.1 The 20dB and 99% bandwidth test result at low frequency

99%



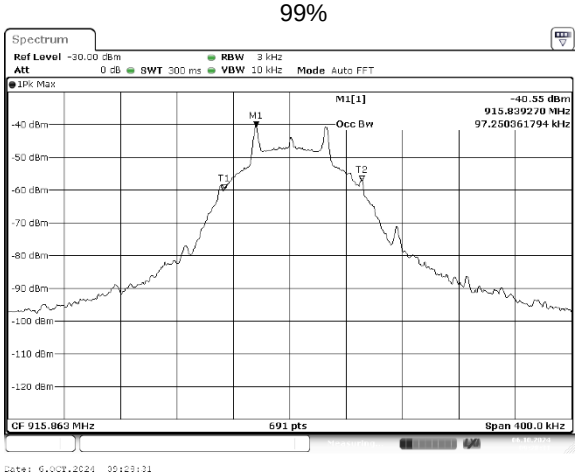
20dBc



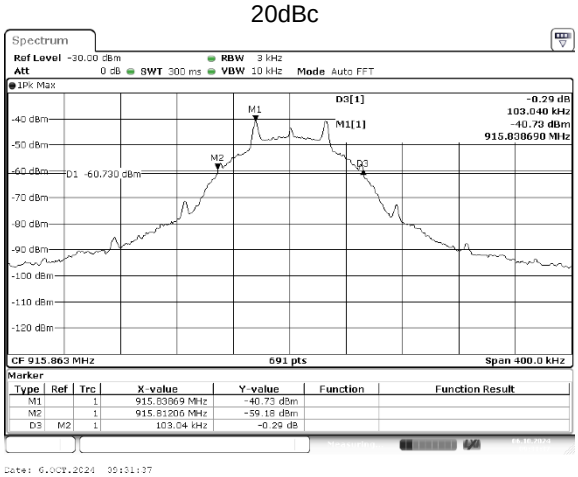
Test specification:	**Section 15.247(a)1, RSS-247 section 5.1(3), 20 dB bandwidth**		
Test procedure:	ANSI C63.10, section 7.8.7		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	06-Oct-24		
Temperature: 23 ºC	**Relative Humidity:** 45 %	**Air Pressure:** 1009 hPa	**Power:** 3 VDC
Remarks:			

Plot 7.1.2 The 20dB and 99% bandwidth test result at mid frequency

99%

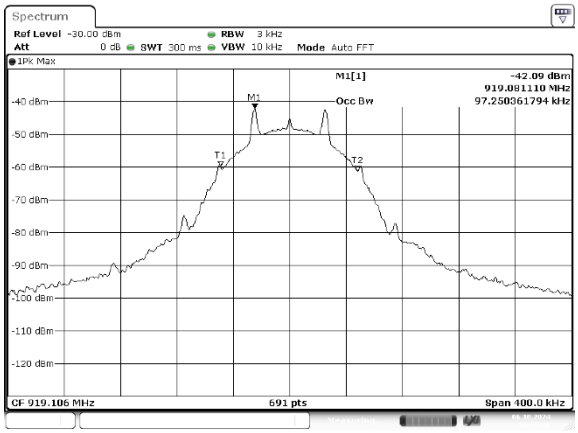


20dBc

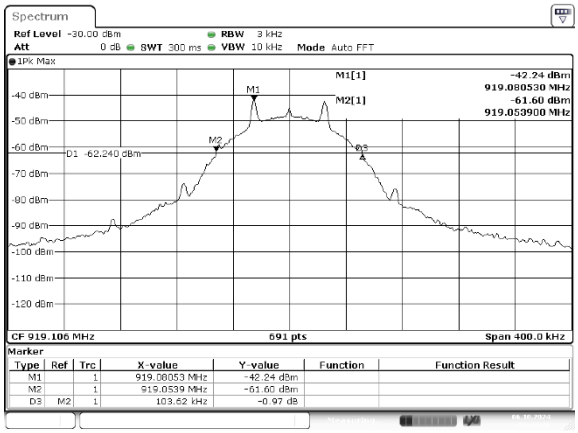


Plot 7.1.3 The 20dB and 99% bandwidth test result at high frequency

99%



20dBc



Test specification:	**Section 15.247(a)1, RSS-247 section 5.1(2), Frequency separation**		
Test procedure:	ANSI C63.10, section 7.8.2		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	06-Oct-24		
Temperature: 23 ºC	**Relative Humidity:** 45 %	**Air Pressure:** 1008 hPa	**Power:** 3.0 VDC
Remarks:			

7.2 Carrier frequency separation

7.2.1 General

This test was performed to measure frequency separation between the peaks of adjacent channels. Specification test limits are given in Table 7.2.1.

Table 7.2.1 Carrier frequency separation limits

Assigned frequency range, MHz	Carrier frequency separation	
	Output power 30 dBm	Output power 21 dBm
902.0 – 928.0	**25 kHz or 20 dB bandwidth of the hopping channel, whichever is greater**	25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater
2400.0 – 2483.5		
5725.0 – 5850.0		

7.2.2 Test procedure

7.2.2.1 , energized with frequency hopping function enabled and its proper operation was checked.

7.2.2.2 The spectrum analyzer span was set to capture the carrier frequency and both of adjacent channels, the lower and the higher. The resolution bandwidth was set wider than 1 % of the frequency span.

7.2.2.3 The spectrum analyzer was set in max hold mode and allowed trace to stabilize.

7.2.2.4 The frequency separation between the peaks of adjacent channels was measured as provided in Table 7.2.2 and associated plots.

Figure 7.2.1 Carrier frequency separation test setup

Test specification:	**Section 15.247(a)1, RSS-247 section 5.1(2), Frequency separation**		
Test procedure:	ANSI C63.10, section 7.8.2		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	06-Oct-24		
Temperature: 23 ºC	**Relative Humidity:** 45 %	**Air Pressure:** 1008 hPa	**Power:** 3.0 VDC
Remarks:			

Table 7.2.2 Carrier frequency separation test results

ASSIGNED FREQUENCY: 902.0 – 928.0 MHz
DETECTOR USED: Peak
RESOLUTION BANDWIDTH: ≥ 1% of the span
VIDEO BANDWIDTH: ≥ RBW
FREQUENCY HOPPING: Enabled
20 dB BANDWIDTH: 103.62 kHz

Carrier frequency separation, kHz	Limit, kHz	Margin*	Verdict
127.720	103.62	-24.1	Pass

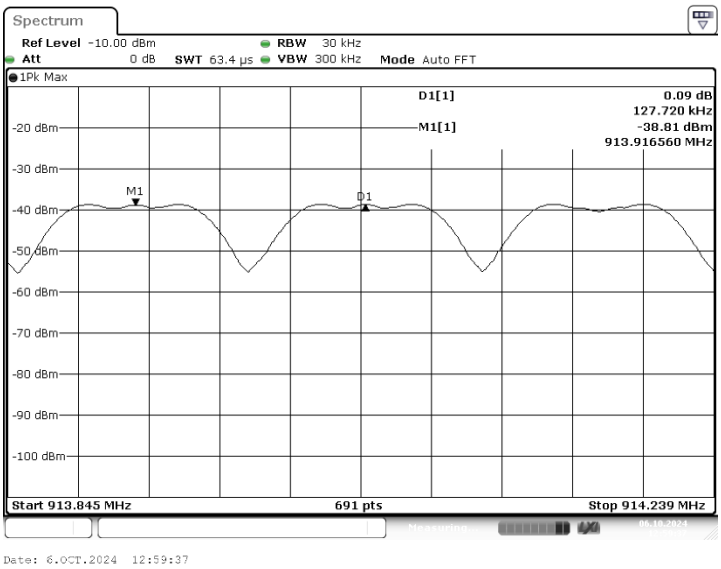
* - Margin = Carrier frequency separation – specification limit.

Reference numbers of test equipment used

HL 4135	HL 4275	HL 4355	HL 5838					

Full description is given in Appendix A.

Plot 7.2.1 Carrier frequency separation



Test specification:	**Section 15.247(a)1, RSS-247 section 5.1(3), Number of hopping frequencies**		
Test procedure:	ANSI C63.10, section 7.8.3		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	06-Oct-24		
Temperature: 23 ºC	**Relative Humidity:** 45 %	**Air Pressure:** 1008 hPa	**Power:** 3.0 VDC
Remarks:			

7.3 Number of hopping frequencies

7.3.1 General

This test was performed to calculate the number of hopping frequencies used by the EUT. Specification test limits are given in Table 7.3.1.

Table 7.3.1 Minimum number of hopping frequencies

Assigned frequency range, MHz	Number of hopping frequencies
902.0 – 928.0	**50 (if the 20 dB bandwidth is less than 250 kHz)** 25 (if the 20 dB bandwidth is 250 kHz or greater)
2400.0 – 2483.5	15
5725.0 – 5850.0	75

7.3.2 Test procedure

7.3.2.1 The EUT was set up as shown in Figure 7.3.1, energized with frequency hopping function enabled and its proper operation was checked.

7.3.2.2 Initially the spectrum analyzer span was set equal to frequency band of operation and the resolution bandwidth was set wider than 1 % of the frequency span. If the separate hopping channels were not clearly resolved the frequency band of operation was broken to sections and the resolution bandwidth was set wider than 1 % of the frequency span of each section.

7.3.2.3 The spectrum analyzer was set in max hold mode and allowed trace to stabilize.

7.3.2.4 The number of frequency hopping channels was calculated as provided in Table 7.3.2 and associated plots.

Figure 7.3.1 Hopping frequencies test setup

Test specification:	**Section 15.247(a)1, RSS-247 section 5.1(3), Number of hopping frequencies**		
Test procedure:	ANSI C63.10, section 7.8.3		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	06-Oct-24		
Temperature: 23 ºC	**Relative Humidity:** 45 %	**Air Pressure:** 1008 hPa	**Power:** 3.0 VDC
Remarks:			

Table 7.3.2 Hopping frequencies test results

ASSIGNED FREQUENCY: 902.0 – 928.0 MHz
DETECTOR USED: Peak
RESOLUTION BANDWIDTH: ≥ 1% of the span
VIDEO BANDWIDTH: ≥ RBW
FREQUENCY HOPPING: Enabled

Number of hopping frequencies	Minimum number of hopping frequencies	Margin*	Verdict
50	50	0	Pass

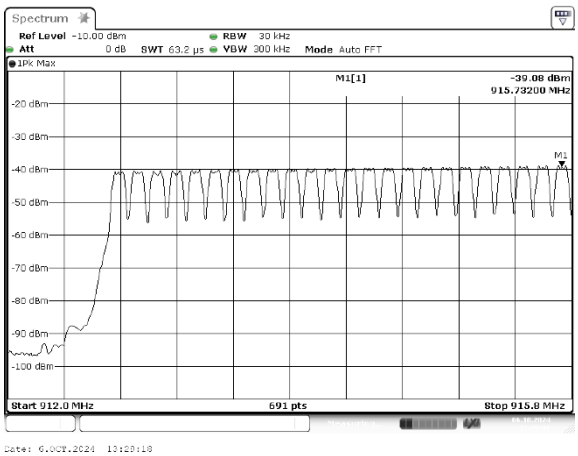
* - Margin = Number of hopping frequencies – Minimum number of hopping frequencies.

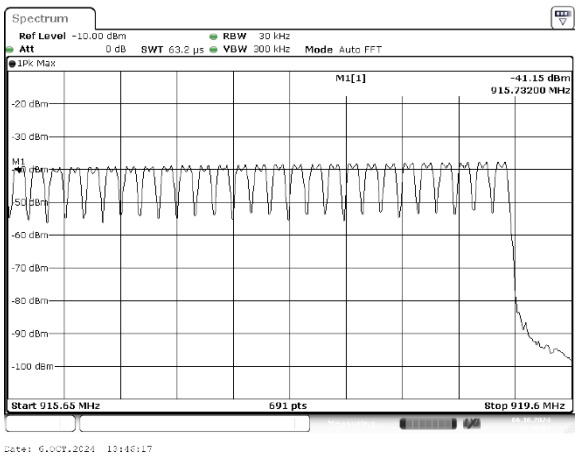
Reference numbers of test equipment used

HL 4135	HL 4275	HL 4355	HL 5838					

Full description is given in Appendix A.

Plot 7.3.1 Number of hopping frequencies





Test specification:	**Section 15.247(a)1, RSS-247 section 5.1(3), Average time of occupancy**		
Test procedure:	ANSI C63.10, section 7.8.4		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	06-Oct-24		
Temperature: 23 ºC	**Relative Humidity:** 42 %	**Air Pressure:** 1008 hPa	**Power:** 3.0 VDC
Remarks:			

7.4 Average time of occupancy

7.4.1 General

This test was performed to calculate the average time of occupancy (dwell time) on any frequency channel of the EUT. Specification test limits are given in Table 7.4.1.

Table 7.4.1 Average time of occupancy limits

Assigned frequency range, MHz	Maximum average time of occupancy, s	Investigated period, s	Number of hopping frequencies
902.0 – 928.0	**0.4**	**20.0**	**≥ 50**
902.0 – 928.0	0.4	10.0	< 50
2400.0 – 2483.5	0.4	0.4 × N	N (≥ 15)
5725.0 – 5850.0	0.4	30.0	≥ 75

7.4.2 Test procedure

7.4.2.1 The EUT was set up as shown in Figure 7.4.1, energized with frequency hopping function enabled and its proper operation was checked.

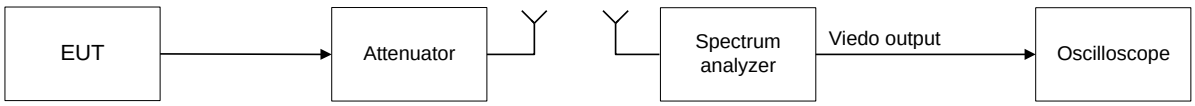
7.4.2.2 The spectrum analyzer span was set to zero centered on a hopping channel.

7.4.2.3 The single transmission duration and period were measured with oscilloscope.

7.4.2.4 The average time of occupancy was calculated as the single transmission time multiplied by the investigated period and divided by the single transmission period.

7.4.2.5 The test was repeated at each data rate and modulation type as provided in Table 7.4.2 and associated plots.

Figure 7.4.1 Average time of occupancy test setup



Test specification:	**Section 15.247(a)1, RSS-247 section 5.1(3), Average time of occupancy**		
Test procedure:	ANSI C63.10, section 7.8.4		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	06-Oct-24		
Temperature: 23 ºC	**Relative Humidity:** 42 %	**Air Pressure:** 1008 hPa	**Power:** 3.0 VDC
Remarks:			

Table 7.4.2 Average time of occupancy test results

ASSIGNED FREQUENCY: 902.0 – 928.0 MHz
DETECTOR USED: Peak
NUMBER OF HOPPING FREQUENCIES: 50
INVESTIGATED PERIOD: 20 s
FREQUENCY HOPPING: Enabled

Carrier frequency, MHz	Single transmission duration, ms	Single transmission period, s	Average time of occupancy*, ms	Bit rate, kbps	Symbol rate, Msymbol/s	Limit, s	Margin, s**	Verdict
915.0	5.0	256	5.0	50	NA	0.4	-0.394	Pass

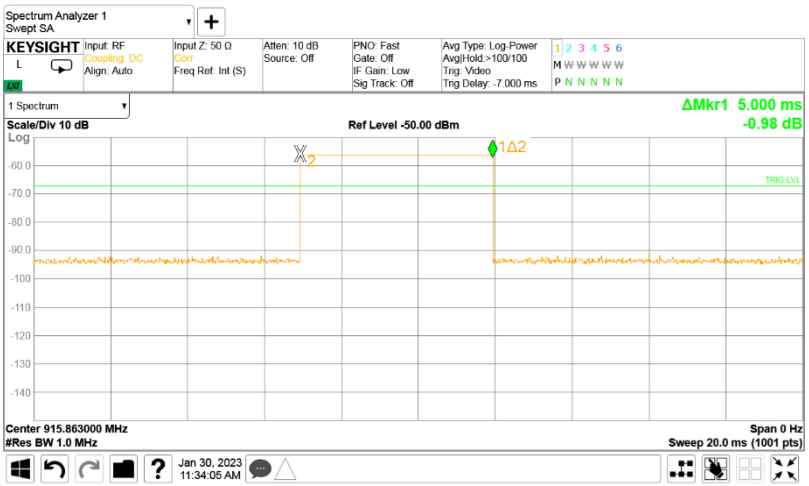
* - Average time of occupancy = (Single transmission duration × Investigated period) / (Single transmission period × number of hopping channels).
** - Margin = Average time of occupancy – specification limit.

Reference numbers of test equipment used

HL 4135	HL 4275	HL 4355	HL 5838					

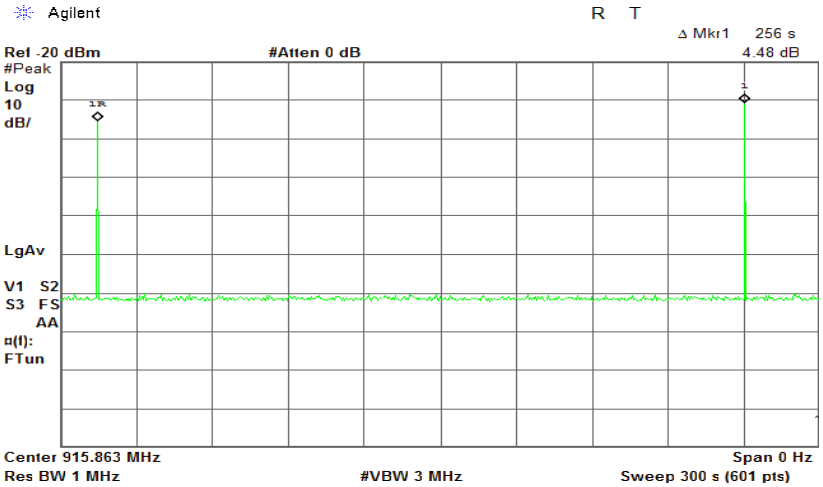
Full description is given in Appendix A.

Plot 7.4.1 Single transmission duration



Test specification:	**Section 15.247(a)1, RSS-247 section 5.1(3), Average time of occupancy**		
Test procedure:	ANSI C63.10, section 7.8.4		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	06-Oct-24		
Temperature: 23 ºC	**Relative Humidity:** 42 %	**Air Pressure:** 1008 hPa	**Power:** 3.0 VDC
Remarks:			

Plot 7.4.2 Single transmission period



Test specification:	Section 15.247(d), RSS-247 section 5.5, Radiated spurious emissions		
Test procedure:	ANSI C63.10, sections 6.5, 6.6		
Test mode:	Compliance	Verdict:	PASS
Date(s):	08-Oct-24 - 09-Oct-24		
Temperature: 24 ºC	Relative Humidity: 42 %	Air Pressure: 1005 hPa	Power: 3 VDC
Remarks:			

7.5 Peak output power

7.5.1 General

This test was performed to measure the maximum peak output power radiated by transmitter. Specification test limits are given in Table 7.5.1.

Table 7.5.1 Peak output power limits

Assigned frequency range, MHz	Peak output power*		Equivalent field strength limit @ 3m, dB(μV/m)*	Maximum antenna gain, dBi
	W	dBm		
902.0 – 928.0	0.25 (<50 hopping channels) **1.0 (≥50 hopping channels)**	24.0(<50 hopping channels) **30.0 (≥50 hopping channels)**	125.2 (<50 hopping channels) **131.2 (≥50 hopping channels)**	6.0*
2400.0 – 2483.5	0.125 (<75 hopping channels) 1.0 (≥75 hopping channels)	21.0(<75 hopping channels) 30.0 (≥75 hopping channels)	122.2 (<75 hopping channels) 131.2 (≥75 hopping channels)	
5725.0 – 5850.0	1.0	30.0	131.2	

*- 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.
**- 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.

7.5.2 Test procedure

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 frequency span of spectrum analyzer was set approximately 5 times wider than 20 dB bandwidth of the EUT and the resolution bandwidth was set wider than 20 dB bandwidth of the EUT. To find maximum radiation the turntable was rotated 360^0 and the measuring antenna height was swept in both vertical and horizontal polarizations.

7.5.2.4 The maximum field strength of the EUT carrier frequency was measured as provided in Table 7.5.2 and associated plots.

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

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

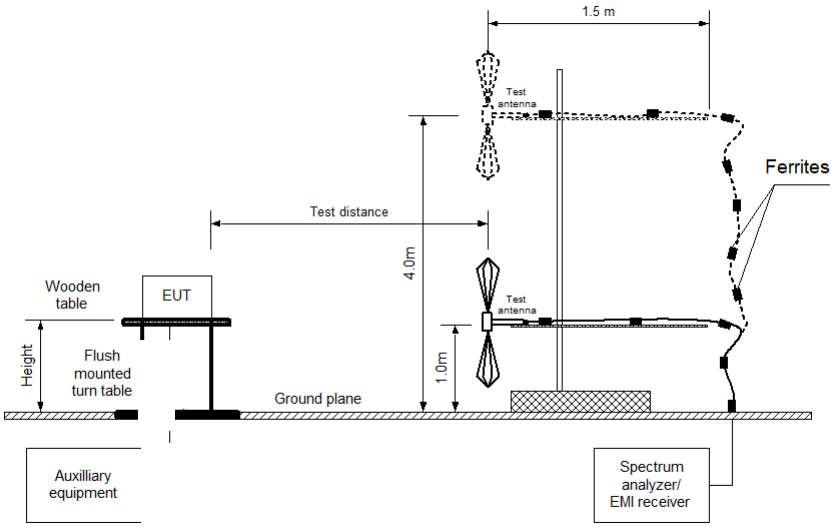
where P is the peak output power in W, E is the field strength in V/m, d is the test distance and G is the transmitter numeric antenna gain over an isotropic radiator.
The above equation was converted in logarithmic units for 3 m test distance:

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

7.5.2.6 The worst test results (the lowest margins) were recorded in Table 7.5.2.

Test specification:	**Section 15.247(d), RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10, sections 6.5, 6.6		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	08-Oct-24 - 09-Oct-24		
Temperature: 24 ºC	**Relative Humidity:** 42 %	**Air Pressure:** 1005 hPa	**Power:** 3 VDC
Remarks:			

Figure 7.5.1 Setup for carrier field strength measurements



Test specification:	**Section 15.247(d), RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10, sections 6.5, 6.6		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	08-Oct-24 - 09-Oct-24		
Temperature: 24 ºC	**Relative Humidity:** 42 %	**Air Pressure:** 1005 hPa	**Power:** 3 VDC
Remarks:			

Table 7.5.2 Peak output power test results

ASSIGNED FREQUENCY:	902 - 928 MHz
TEST DISTANCE:	3 m
TEST SITE:	Semi anechoic chamber
EUT HEIGHT:	0.8 m
DETECTOR USED:	Peak
TEST ANTENNA TYPE:	Biconilog (30 MHz – 1000 MHz)
MODULATION:	GFSK
MODULATING SIGNAL:	PRBS
BIT RATE:	50 kbps
TRANSMITTER OUTPUT POWER SETTINGS:	Maximum
DETECTOR USED:	Peak
EUT 20 dB BANDWIDTH:	103 kHz
RESOLUTION BANDWIDTH:	300 kHz
VIDEO BANDWIDTH:	1 MHz
FREQUENCY HOPPING:	Disabled
NUMBER OF FREQUENCY HOPPING CHANNELS:	50

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
912.750	109.96	Horizontal	1.55	70	-5.0	19.76	30	-10.24	Pass
915.853	109.74	Horizontal	1.53	35	-5.0	19.54	30	-10.46	Pass
919.106	110.50	Horizontal	1.54	52	-5.0	20.30	30	-9.70	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

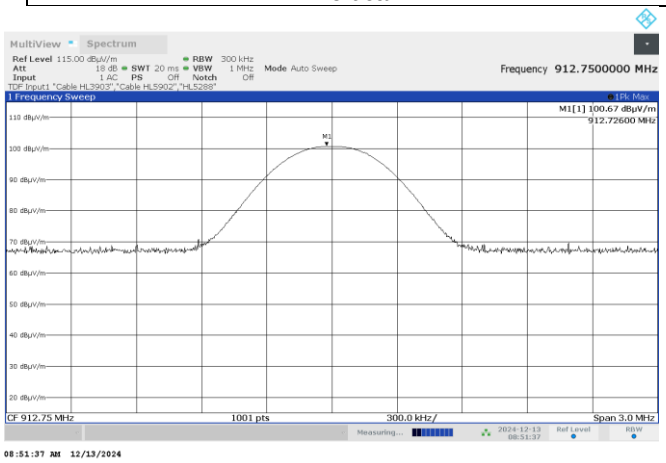
HL 3903	HL 5288	HL 5902	HL 7585				

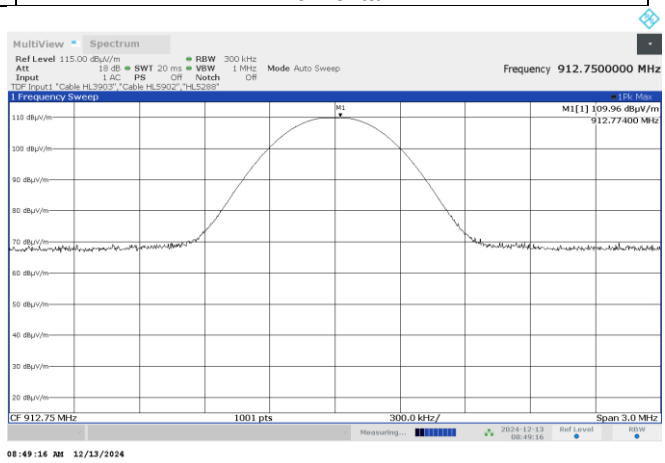
Full description is given in Appendix A.

Test specification:	**Section 15.247(d), RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10, sections 6.5, 6.6		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	08-Oct-24 - 09-Oct-24		
Temperature: 24 ºC	**Relative Humidity:** 42 %	**Air Pressure:** 1005 hPa	**Power:** 3 VDC
Remarks:			

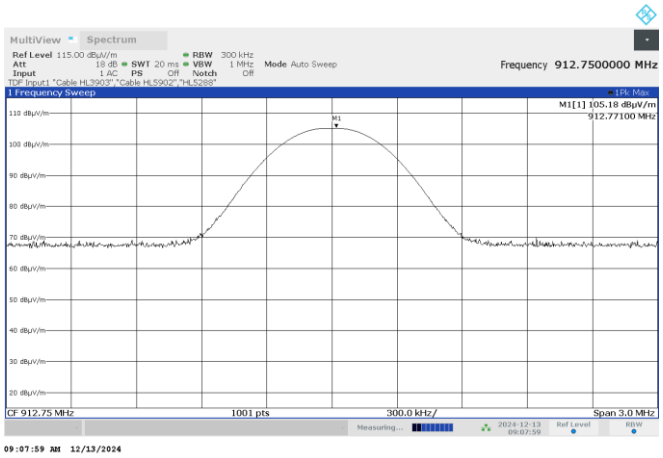
Plot 7.5.1 Field strength of carrier at low frequency

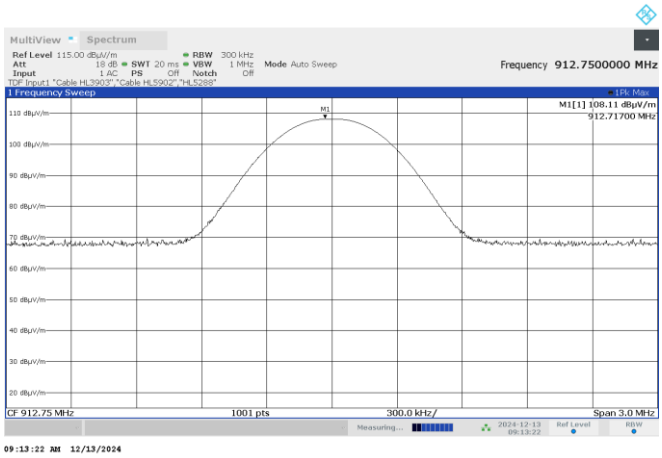
EUT orientation X	
Vertical	Horizontal





EUT orientation Y	
Vertical	Horizontal

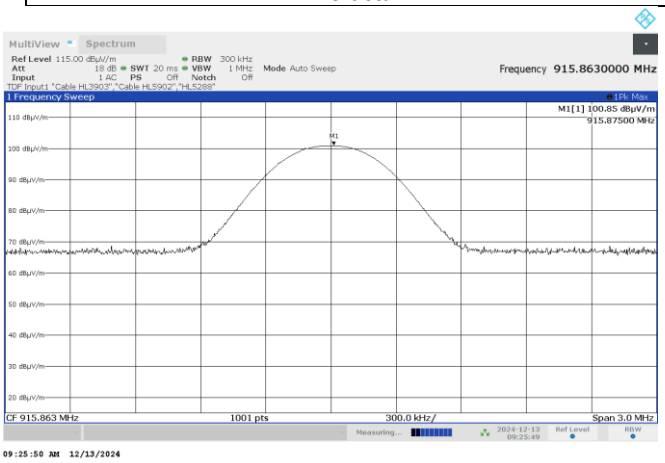


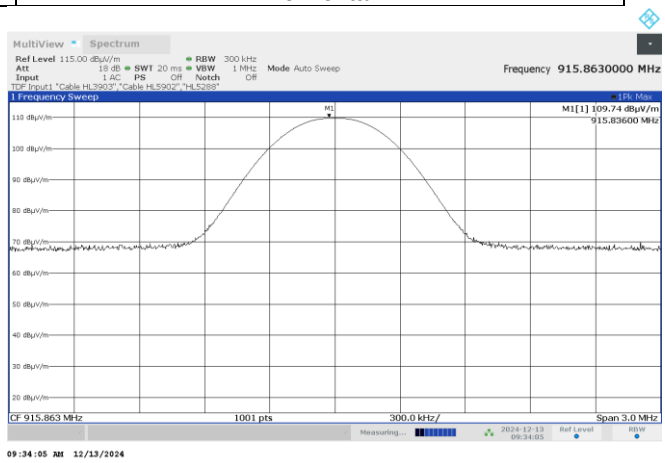


Test specification:	**Section 15.247(d), RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10, sections 6.5, 6.6		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	08-Oct-24 - 09-Oct-24		
Temperature: 24 ºC	**Relative Humidity:** 42 %	**Air Pressure:** 1005 hPa	**Power:** 3 VDC
Remarks:			

Plot 7.5.2 Field strength of carrier at mid frequency

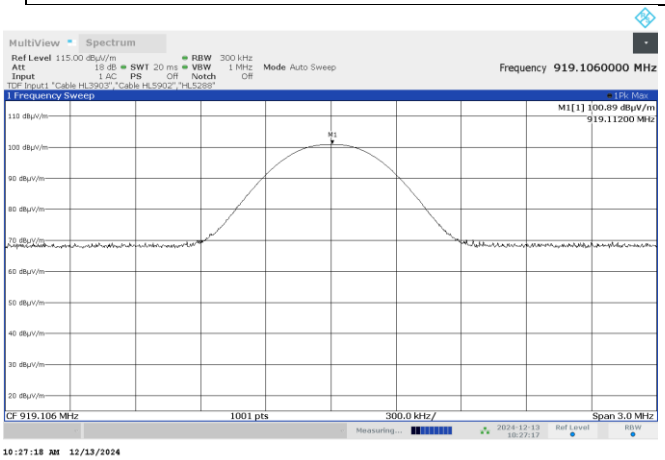
EUT orientation X	
Vertical	Horizontal

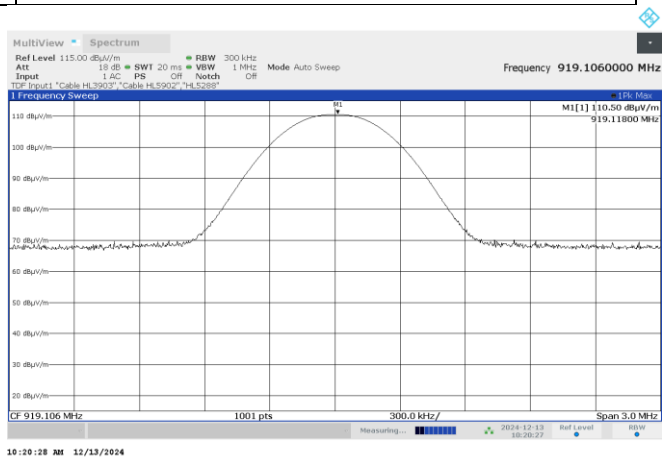




Plot 7.5.3 Field strength of carrier at high frequency

EUT orientation X	
Vertical	Horizontal





Test specification:	**Section 15.247(d), RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10, sections 6.5, 6.6		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	08-Oct-24 - 09-Oct-24		
Temperature: 24 ºC	**Relative Humidity:** 42 %	**Air Pressure:** 1005 hPa	**Power:** 3 VDC
Remarks:			

7.6 Field strength of spurious emissions

7.6.1 General

This test was performed to measure field strength of spurious emissions from the EUT. Specification test limits are given in Table 7.6.1.

Table 7.6.1 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**	20.0
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 – 10th harmonic	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.

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

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

7.6.2.2 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.

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

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

7.6.3.1 The EUT was set up as shown in Figure 7.6.2, Figure 7.6.3, energized and the performance check was conducted.

7.6.3.2 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.

7.6.3.3 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, sections 6.5, 6.6		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	08-Oct-24 - 09-Oct-24		
Temperature: 24 ºC	**Relative Humidity:** 42 %	**Air Pressure:** 1005 hPa	**Power:** 3 VDC
Remarks:			

Figure 7.6.1 Setup for spurious emission field strength measurements below 30 MHz

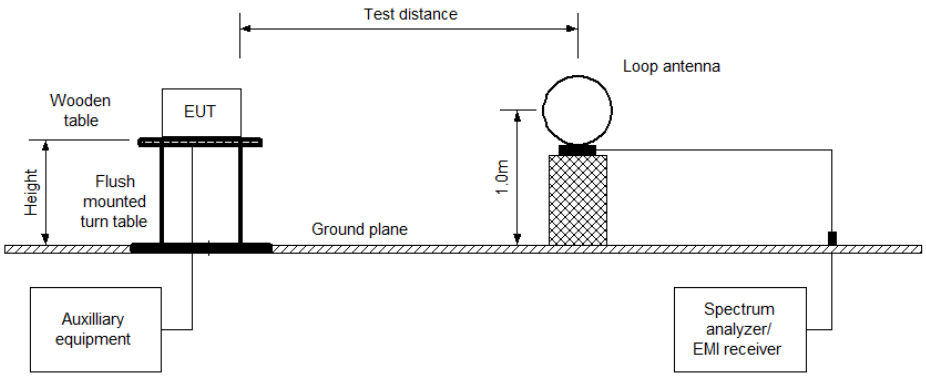
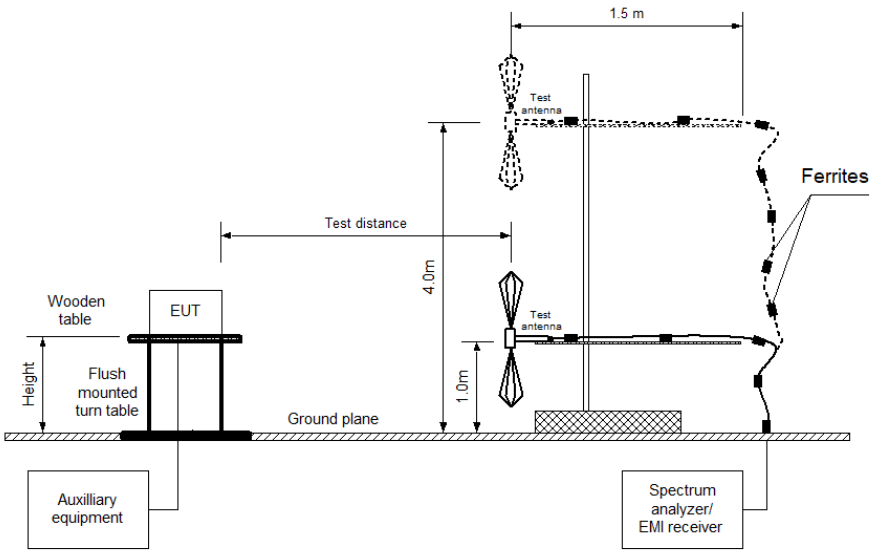
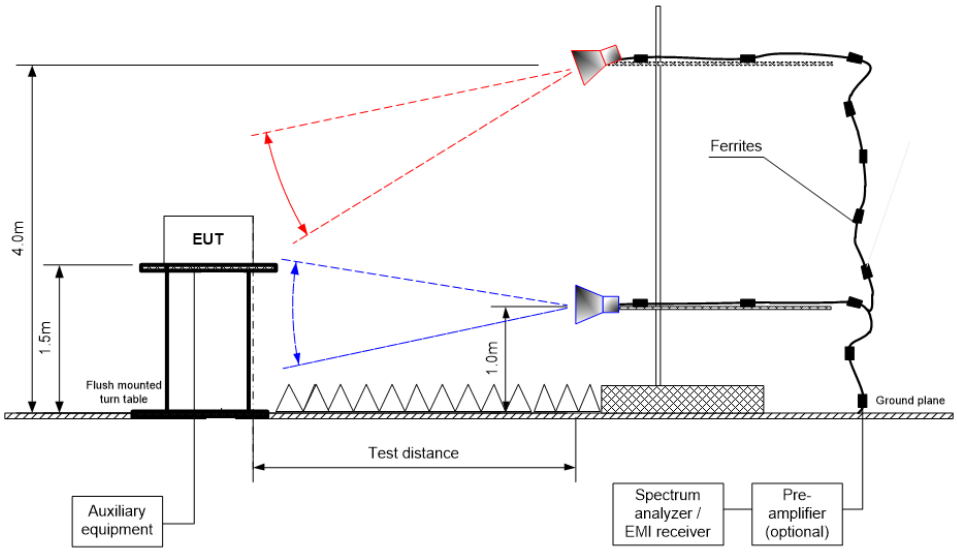


Figure 7.6.2 Setup for spurious emission field strength measurements from 30 to 1000 MHz



Test specification:	**Section 15.247(d), RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10, sections 6.5, 6.6		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	08-Oct-24 - 09-Oct-24		
Temperature: 24 ºC	**Relative Humidity:** 42 %	**Air Pressure:** 1005 hPa	**Power:** 3 VDC
Remarks:			

Figure 7.6.3 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, sections 6.5, 6.6		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	08-Oct-24 - 09-Oct-24		
Temperature: 24 ºC	**Relative Humidity:** 42 %	**Air Pressure:** 1005 hPa	**Power:** 3 VDC
Remarks:			

Table 7.6.2 Field strength of emissions outside restricted bands

ASSIGNED FREQUENCY:	902 - 928 MHz
INVESTIGATED FREQUENCY RANGE:	0.009 - 9500 MHz
TEST DISTANCE:	3 m
MODULATION:	GFSK
BIT RATE:	50 kbps
DUTY CYCLE:	100 %
TRANSMITTER OUTPUT POWER SETTINGS:	Maximum
TRANSMITTER OUTPUT POWER:	13.47 dBm at low carrier frequency 13.73 dBm at mid carrier frequency 14.05 dBm at high carrier frequency
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 HOPPING:	Disabled

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
Low carrier frequency									
1825.445	47.12	Horizontal	1.00	-30	109.96	62.84	20	42.84	Pass
6389.035	42.38	Vertical	1.10	74		67.58		47.58	
Mid carrier frequency									
867.817	41.37	Horizontal	1.00	70	109.74	68.38	20	48.38	Pass
1831.757	47.69	Horizontal	1.66	-169		62.05		42.05	
High carrier frequency									
1838.156	48.31	Horizontal	1.65	-26	110.50	62.19	20	42.19	Pass
6433.883	44.87	Vertical	1.25	67		65.63		45.63	

*****- EUT front panel refers to 0 degrees position of turntable.
******- Margin = Attenuation below carrier – specification limit.

Test specification:	**Section 15.247(d), RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10, sections 6.5, 6.6		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	08-Oct-24 - 09-Oct-24		
Temperature: 24 ºC	**Relative Humidity:** 42 %	**Air Pressure:** 1005 hPa	**Power:** 3 VDC
Remarks:			

Table 7.6.3 Field strength of spurious emissions above 1 GHz within restricted bands

ASSIGNED FREQUENCY:	902-928 MHz
INVESTIGATED FREQUENCY RANGE:	1000 – 9500 MHz
TEST DISTANCE:	3 m
MODULATION:	GFSK
BIT RATE:	50 kbps
DUTY CYCLE:	100 %
TRANSMITTER OUTPUT POWER SETTINGS:	Maximum
TRANSMITTER OUTPUT POWER:	13.47 dBm at low carrier frequency 13.73 dBm at mid carrier frequency 14.05 dBm at high carrier frequency
DETECTOR USED:	Peak
RESOLUTION BANDWIDTH:	1000 kHz
TEST ANTENNA TYPE:	Double ridged guide
FREQUENCY HOPPING:	Disabled

Frequency, MHz	Antenna		Azimuth, degrees*	Peak field strength			Average field strength				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											
3650.845	Horizontal	1.37	-47	51.88	74.00	-22.12	50.44	N/A	54.00	-3.56	Pass
4563.670	Vertical	1.00	149	46.43	74.00	-27.57	42.23	N/A	54.00	-11.77	
Mid carrier frequency											
3663.384	Horizontal	1.30	15	50.00	74.00	-24.00	47.44	N/A	54.00	-6.56	Pass
4579.530	Vertical	1.00	123	45.61	74.00	-28.39	40.45	N/A	54.00	-13.55	
High carrier frequency											
3676.349	Horizontal	1.35	-54	51.29	74.00	-22.71	47.82	N/A	54.00	-6.18	Pass
4595.530	Vertical	1.00	115	45.98	74.00	-28.02	40.59	N/A	54.00	-13.41	

*****- EUT front panel refers to 0 degrees position of turntable.
******- Margin = Measured field strength - specification limit.
***- Margin = Calculated field strength - specification limit,
where Calculated field strength = Measured field strength + average factor.

Table 7.6.4 Average factor calculation

Transmission pulse		Transmission burst		Transmission train duration, ms	Average factor, dB
Duration, ms	Period, ms	Duration, ms	Period, ms		
NA	NA	NA	NA	NA	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, sections 6.5, 6.6		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	08-Oct-24 - 09-Oct-24		
Temperature: 24 ºC	**Relative Humidity:** 42 %	**Air Pressure:** 1005 hPa	**Power:** 3 VDC
Remarks:			

Table 7.6.5 Field strength of spurious emissions below 1 GHz within restricted bands

ASSIGNED FREQUENCY:	902 - 928 MHz
INVESTIGATED FREQUENCY RANGE:	0.009 – 1000 MHz
TEST DISTANCE:	3 m
MODULATION:	GFSK
BIT RATE:	50 kbps
DUTY CYCLE:	100 %
TRANSMITTER OUTPUT POWER SETTINGS:	Maximum
TRANSMITTER OUTPUT POWER:	13.47 dBm at low carrier frequency 13.73 dBm at mid carrier frequency 14.05 dBm at high carrier frequency
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 HOPPING:	Disabled

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*				
Low carrier frequency								
960.728	44.14	38.22	54.00	-15.78	Horizontal	1.41	53	Pass
Mid carrier frequency								
963.846	44.18	38.40	54.00	-15.60	Horizontal	1.41	44	Pass
High carrier frequency								
967.059	43.38	36.92	54.00	-17.08	Horizontal	1.41	34	Pass

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

Test specification:	**Section 15.247(d), RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10, sections 6.5, 6.6		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	08-Oct-24 - 09-Oct-24		
Temperature: 24 ºC	**Relative Humidity:** 42 %	**Air Pressure:** 1005 hPa	**Power:** 3 VDC
Remarks:			

Table 7.6.6 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 7.6.7 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 3903	HL 5288	HL 5902	HL 7585	HL 4933	HL 4339	

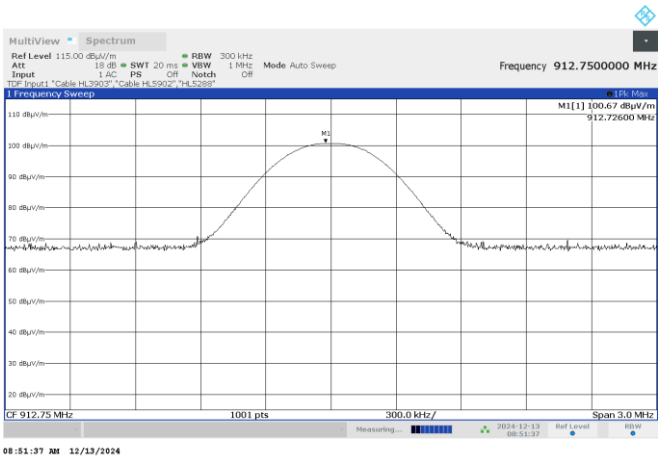
Full description is given in Appendix A.

Test specification:	**Section 15.247(d), RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10, sections 6.5, 6.6		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	08-Oct-24 - 09-Oct-24		
Temperature: 24 ºC	**Relative Humidity:** 42 %	**Air Pressure:** 1005 hPa	**Power:** 3 VDC
Remarks:			

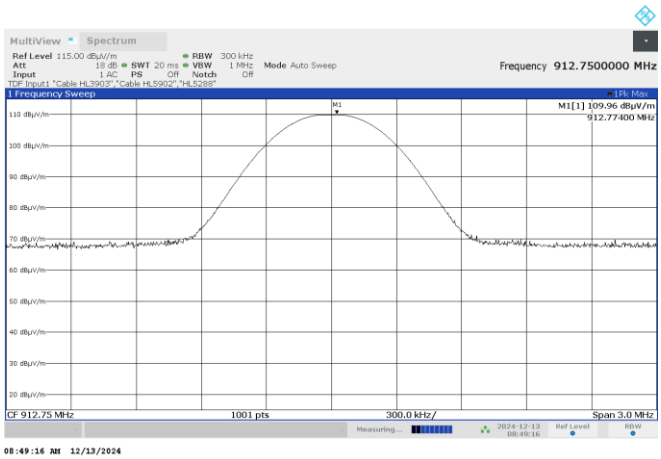
Plot 7.6.1 Radiated emission measurements at the low carrier frequency

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

Vertical



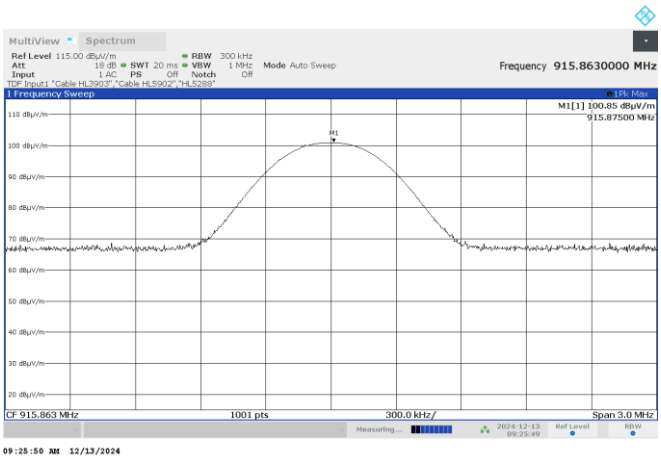
Horizontal



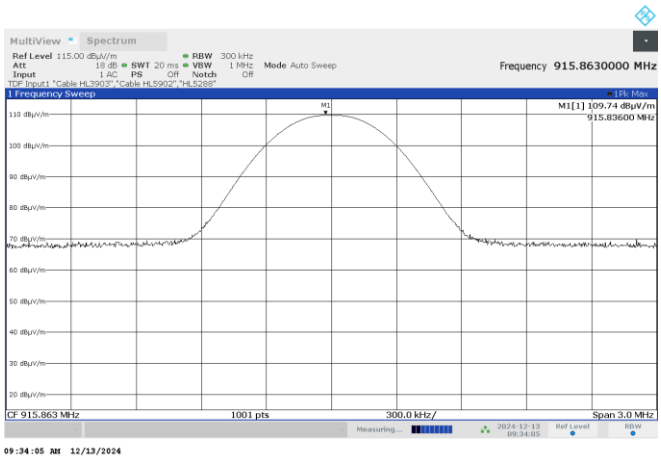
Plot 7.6.2 Radiated emission measurements at the mid carrier frequency

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

Vertical



Horizontal

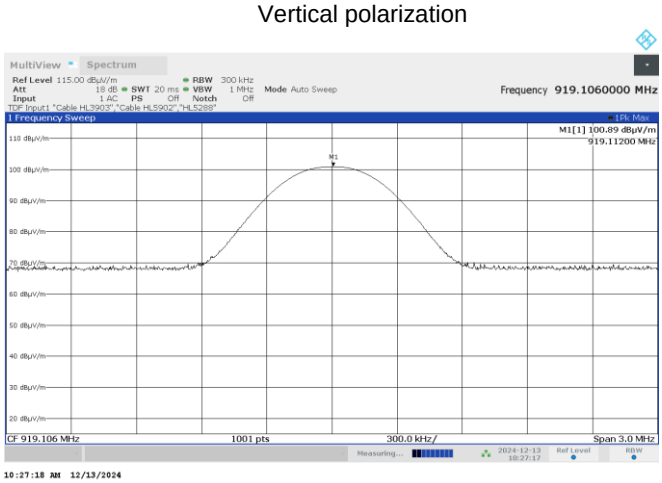


Test specification:	**Section 15.247(d), RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10, sections 6.5, 6.6		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	08-Oct-24 - 09-Oct-24		
Temperature: 24 ºC	**Relative Humidity:** 42 %	**Air Pressure:** 1005 hPa	**Power:** 3 VDC
Remarks:			

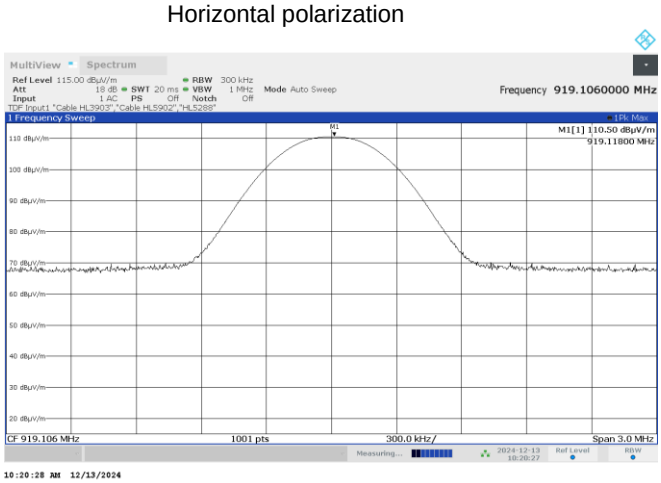
Plot 7.6.3 Radiated emission measurements at the high carrier frequency

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

Vertical polarization



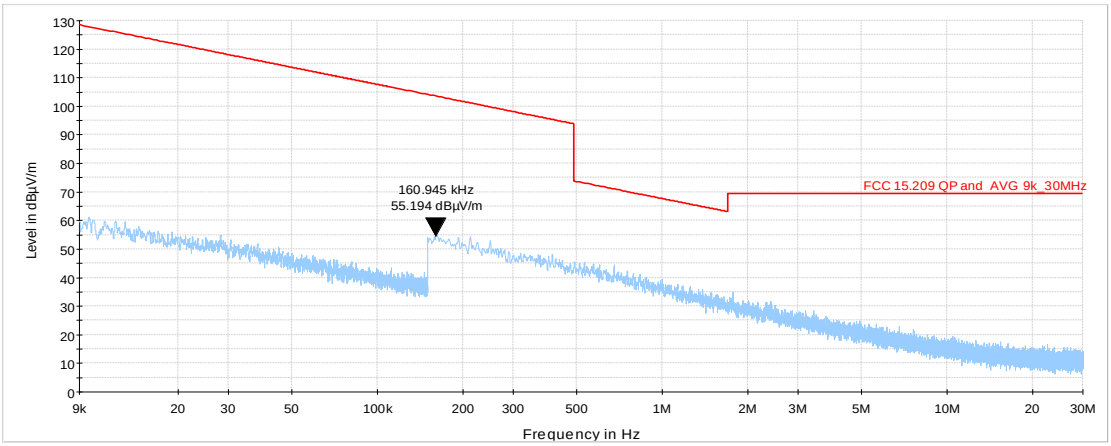
Horizontal polarization



Test specification:	**Section 15.247(d), RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10, sections 6.5, 6.6		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	08-Oct-24 - 09-Oct-24		
Temperature: 24 ºC	**Relative Humidity:** 42 %	**Air Pressure:** 1005 hPa	**Power:** 3 VDC
Remarks:			

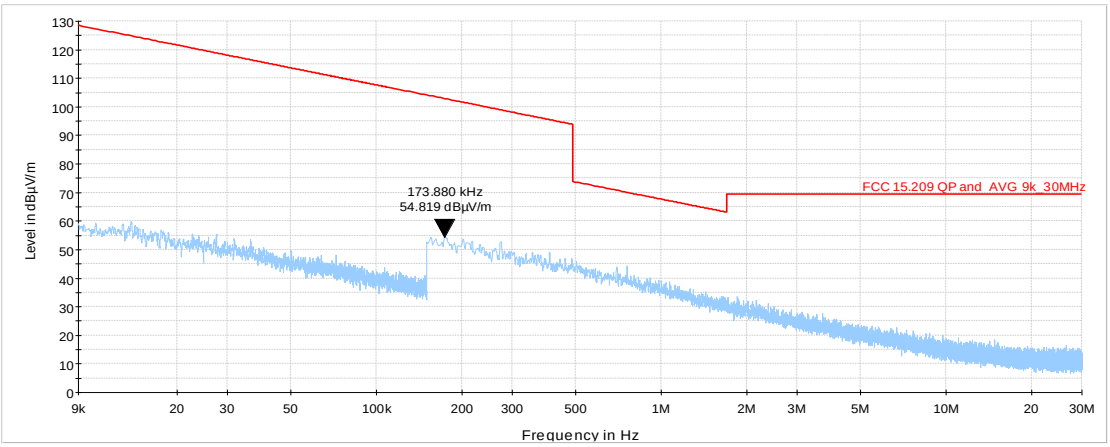
Plot 7.6.4 Radiated emission measurements from 9 kHz to 30 MHz at the low carrier frequency

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



Plot 7.6.5 Radiated emission measurements from 9 kHz to 30 MHz at the mid carrier frequency

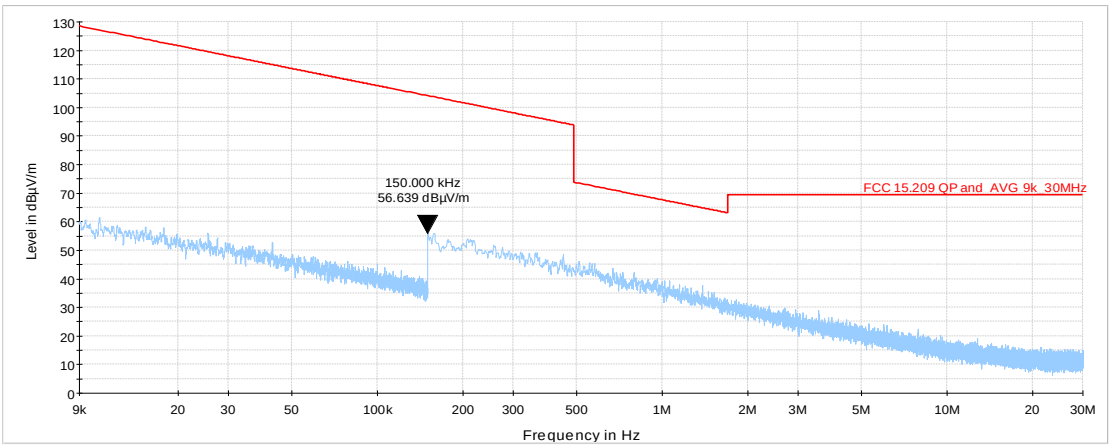
TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical



Test specification:	**Section 15.247(d), RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10, sections 6.5, 6.6		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	08-Oct-24 - 09-Oct-24		
Temperature: 24 ºC	**Relative Humidity:** 42 %	**Air Pressure:** 1005 hPa	**Power:** 3 VDC
Remarks:			

Plot 7.6.6 Radiated emission measurements from 9 kHz to 30 MHz at the high carrier frequency

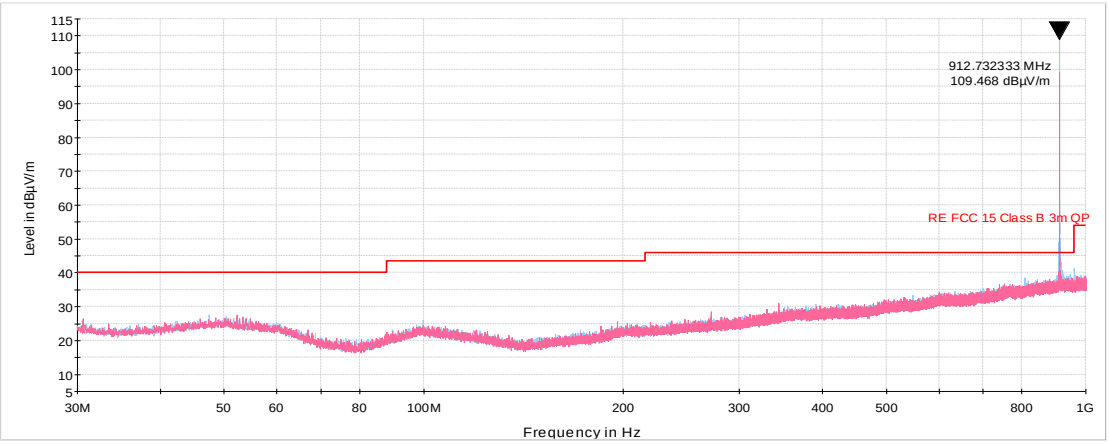
TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical



Test specification:	**Section 15.247(d), RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10, sections 6.5, 6.6		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	08-Oct-24 - 09-Oct-24		
Temperature: 24 ºC	**Relative Humidity:** 42 %	**Air Pressure:** 1005 hPa	**Power:** 3 VDC
Remarks:			

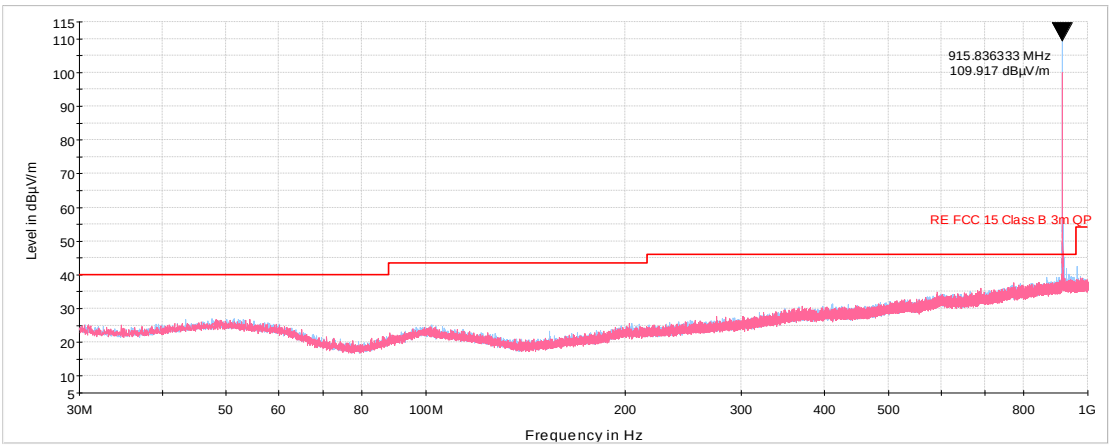
Plot 7.6.7 Radiated emission measurements from 30 to 1000 MHz at the low carrier frequency

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



Plot 7.6.8 Radiated emission measurements from 30 to 1000 MHz at the mid carrier frequency

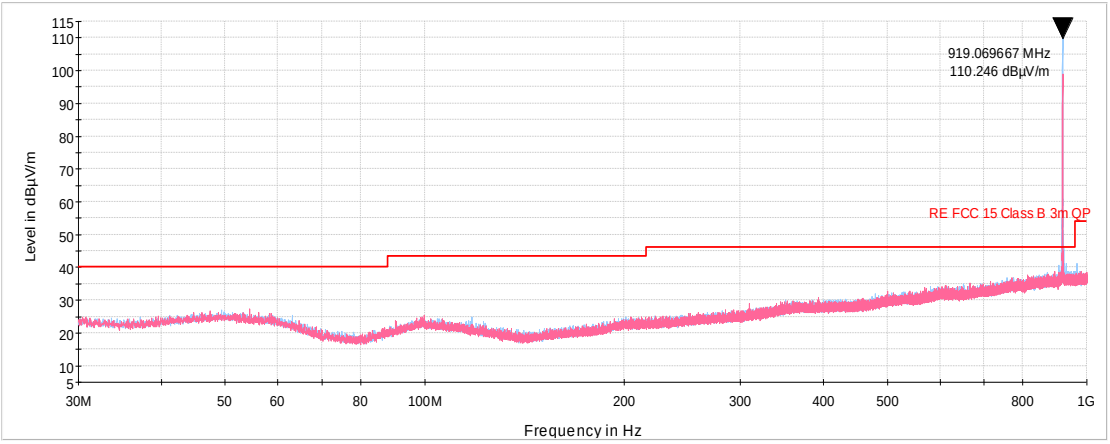
TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	**Section 15.247(d), RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10, sections 6.5, 6.6		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	08-Oct-24 - 09-Oct-24		
Temperature: 24 ºC	**Relative Humidity:** 42 %	**Air Pressure:** 1005 hPa	**Power:** 3 VDC
Remarks:			

Plot 7.6.9 Radiated emission measurements from 30 to 1000 MHz at the high carrier frequency

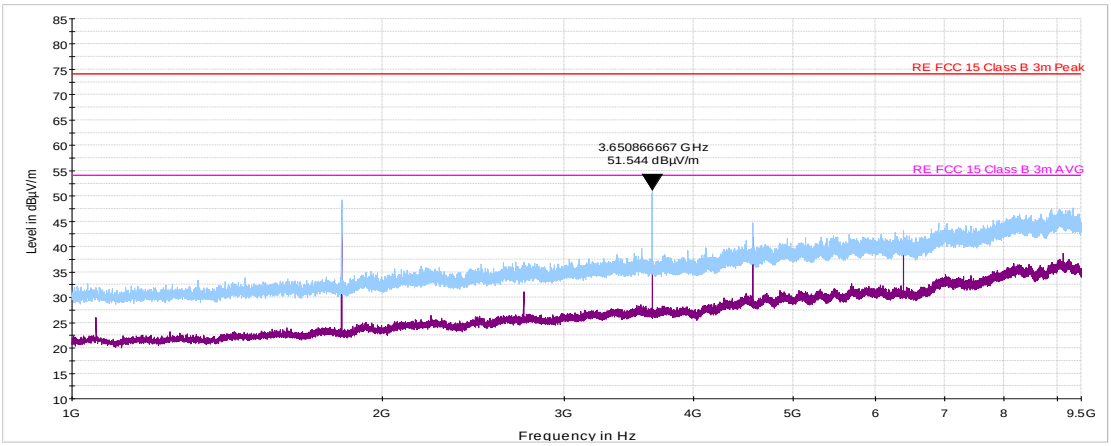
TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	**Section 15.247(d), RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10, sections 6.5, 6.6		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	08-Oct-24 - 09-Oct-24		
Temperature: 24 ºC	**Relative Humidity:** 42 %	**Air Pressure:** 1005 hPa	**Power:** 3 VDC
Remarks:			

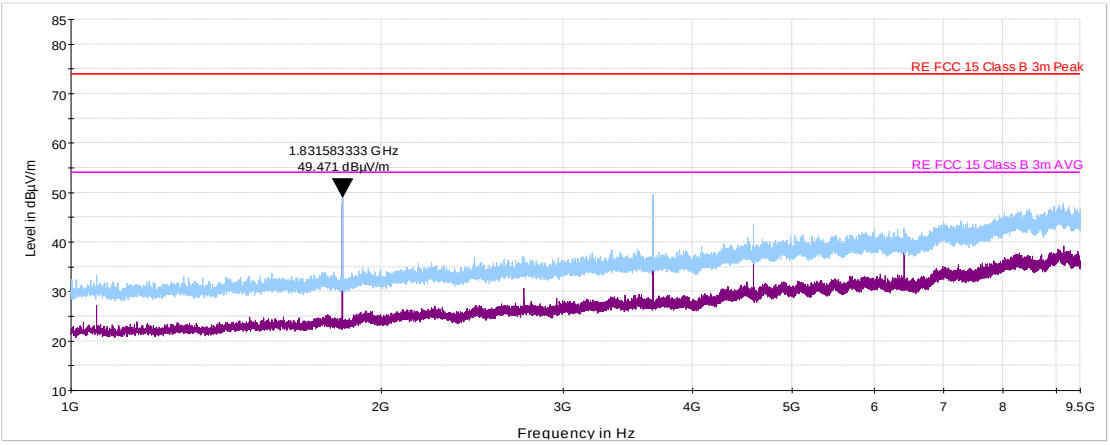
Plot 7.6.10 Radiated emission measurements from 1000 to 9500 MHz at the low carrier frequency

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



Plot 7.6.11 Radiated emission measurements from 1000 to 9500 MHz at the mid carrier frequency

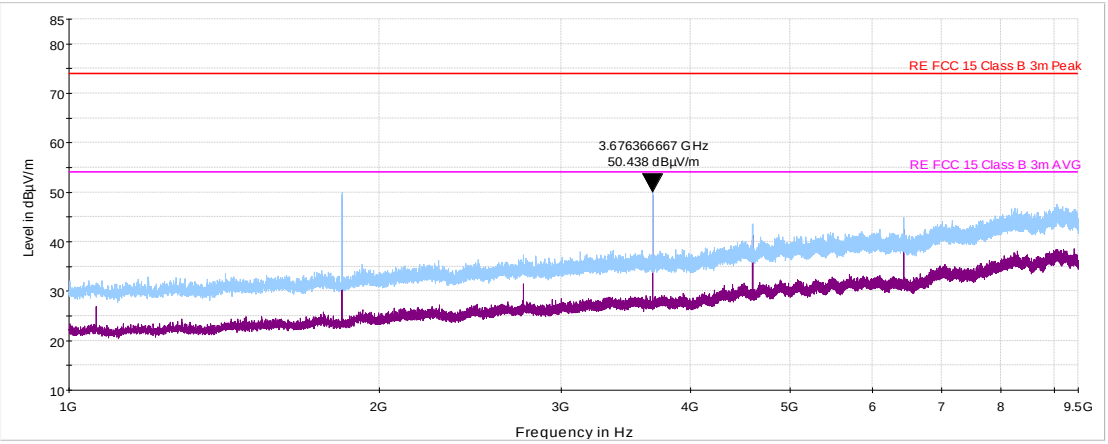
TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	**Section 15.247(d), RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10, sections 6.5, 6.6		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	08-Oct-24 - 09-Oct-24		
Temperature: 24 ºC	**Relative Humidity:** 42 %	**Air Pressure:** 1005 hPa	**Power:** 3 VDC
Remarks:			

Plot 7.6.12 Radiated emission measurements from 1000 to 9500 MHz at the high carrier frequency

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

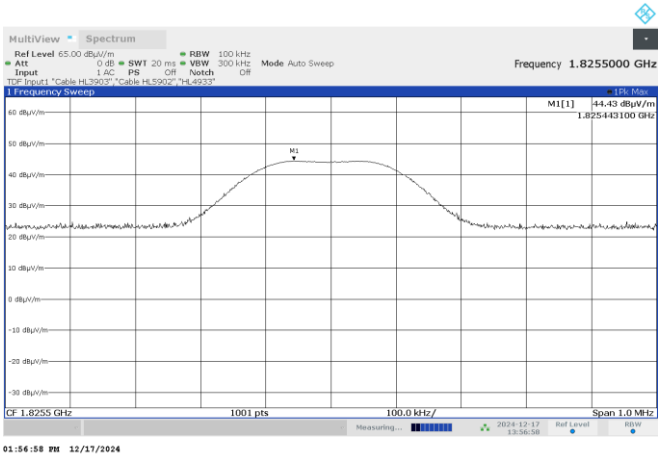


Test specification:	**Section 15.247(d), RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10, sections 6.5, 6.6		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	08-Oct-24 - 09-Oct-24		
Temperature: 24 ºC	**Relative Humidity:** 42 %	**Air Pressure:** 1005 hPa	**Power:** 3 VDC
Remarks:			

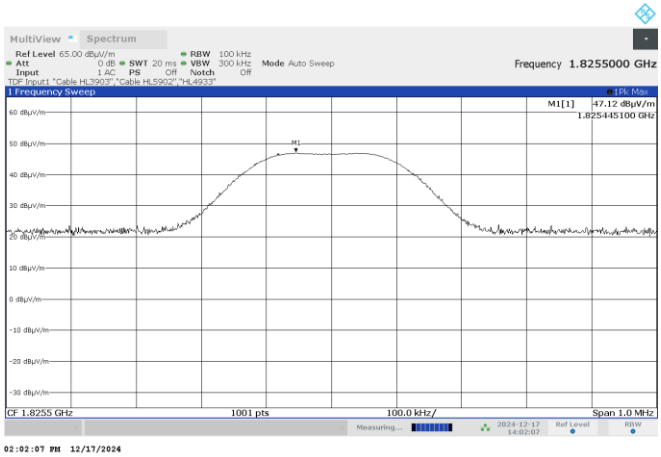
Plot 7.6.13 Radiated emission measurements at the second harmonic of low carrier frequency

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m

Vertical



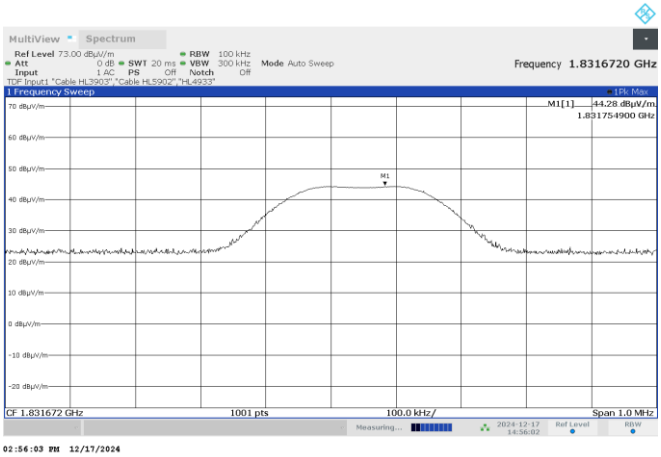
Horizontal



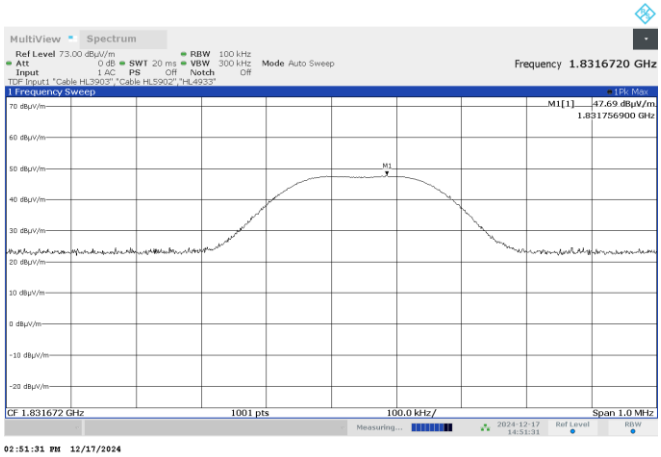
Plot 7.6.14 Radiated emission measurements at the second harmonic of mid carrier frequency

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m

Vertical



Horizontal

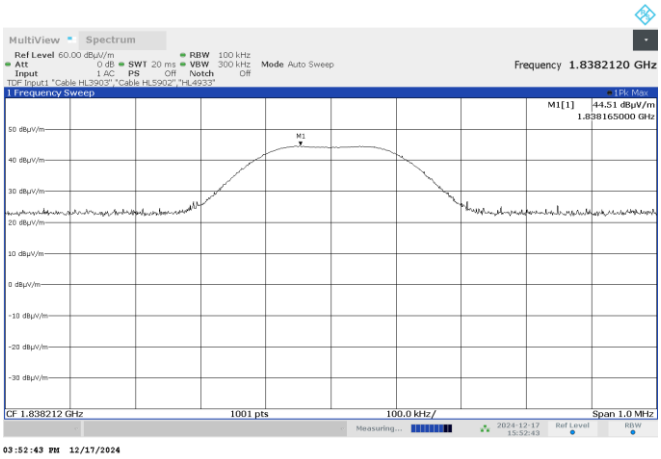


Test specification:	**Section 15.247(d), RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10, sections 6.5, 6.6		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	08-Oct-24 - 09-Oct-24		
Temperature: 24 ºC	**Relative Humidity:** 42 %	**Air Pressure:** 1005 hPa	**Power:** 3 VDC
Remarks:			

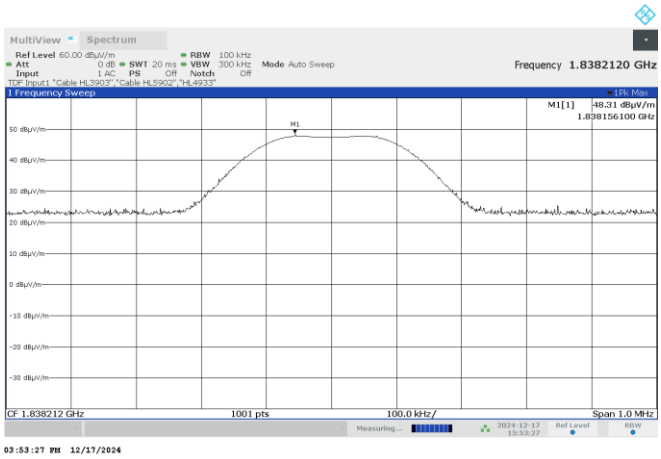
Plot 7.6.15 Radiated emission measurements at the second harmonic of high carrier frequency

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m

Vertical



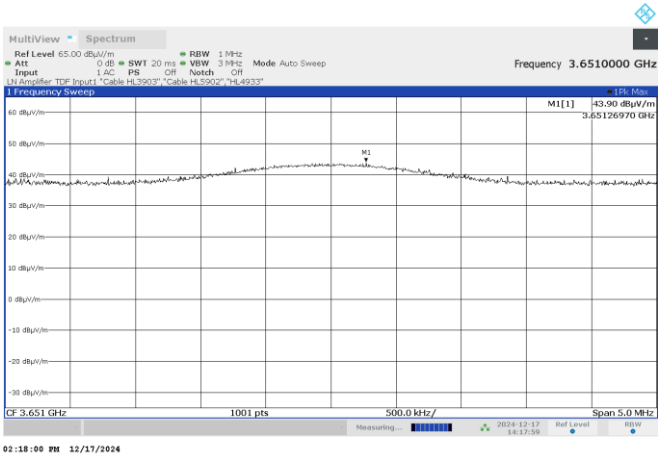
Horizontal



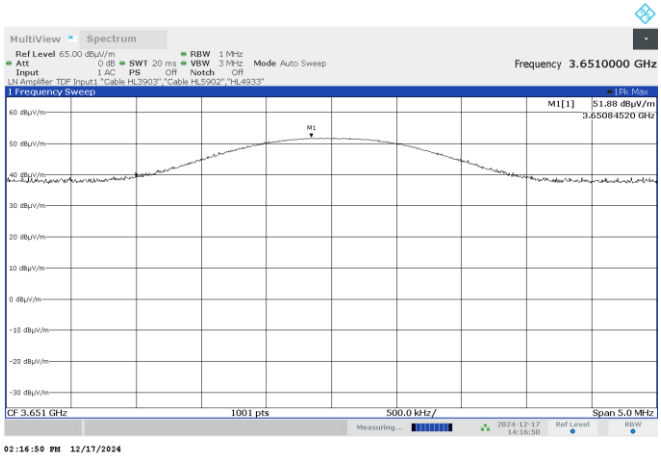
Plot 7.6.16 Radiated emission measurements at the fourth harmonic of low carrier frequency

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m

Vertical



Horizontal

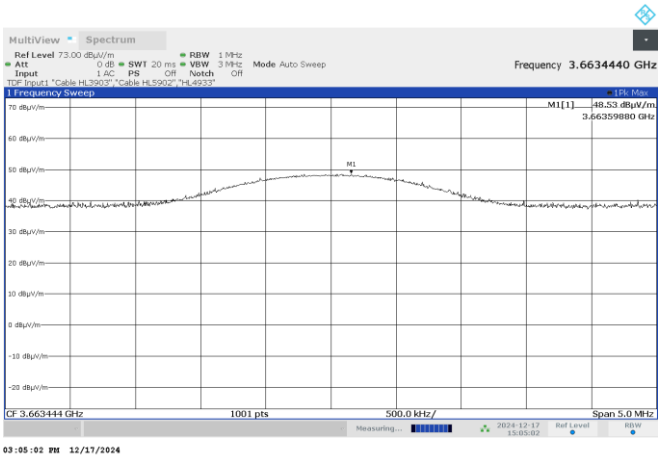


Test specification:	**Section 15.247(d), RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10, sections 6.5, 6.6		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	08-Oct-24 - 09-Oct-24		
Temperature: 24 ºC	**Relative Humidity:** 42 %	**Air Pressure:** 1005 hPa	**Power:** 3 VDC
Remarks:			

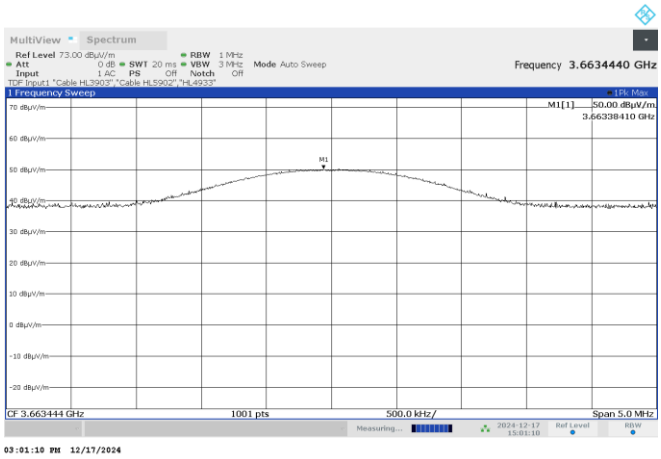
Plot 7.6.17 Radiated emission measurements at the fourth harmonic of mid carrier frequency

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m

Vertical



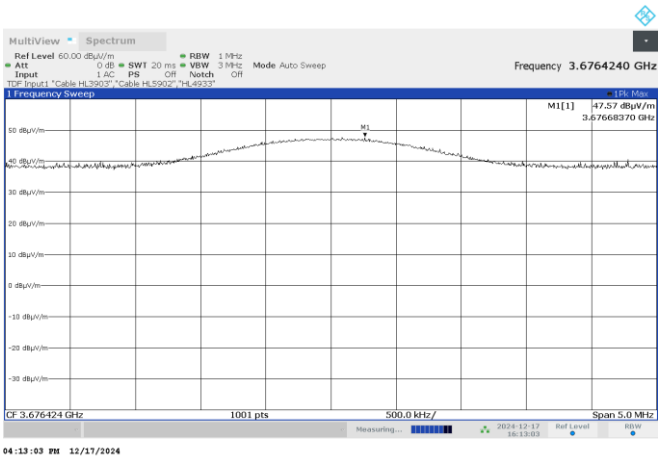
Horizontal



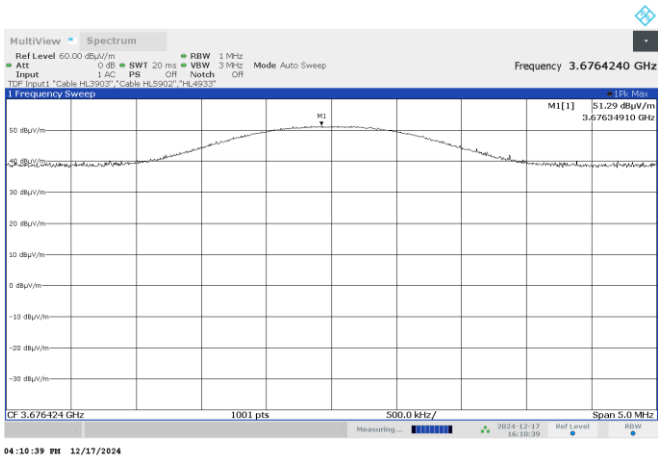
Plot 7.6.18 Radiated emission measurements at the fourth harmonic of high carrier frequency

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m

Vertical



Horizontal

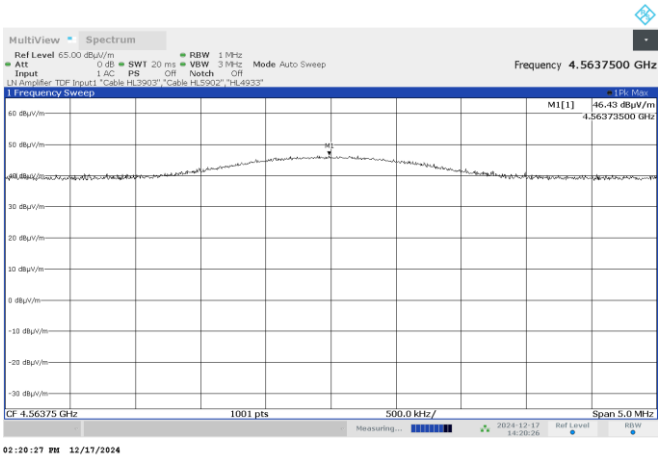


Test specification:	**Section 15.247(d), RSS-247 section 5.5, Radiated spurious emissions**		
Test procedure:	ANSI C63.10, sections 6.5, 6.6		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	08-Oct-24 - 09-Oct-24		
Temperature: 24 ºC	**Relative Humidity:** 42 %	**Air Pressure:** 1005 hPa	**Power:** 3 VDC
Remarks:			

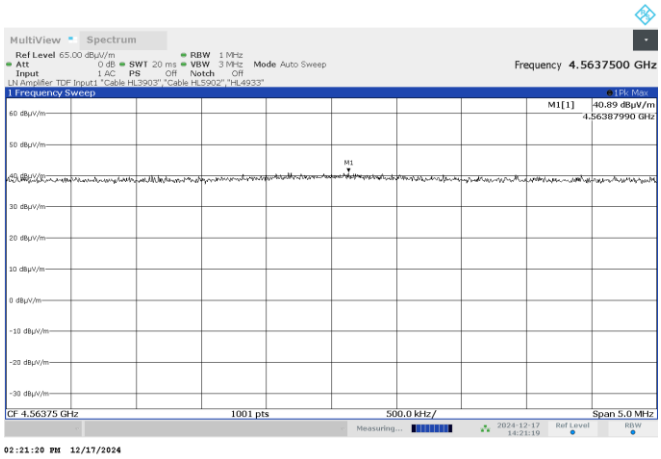
Plot 7.6.19 Radiated emission measurements at the fifth harmonic of low carrier frequency

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m

Vertical



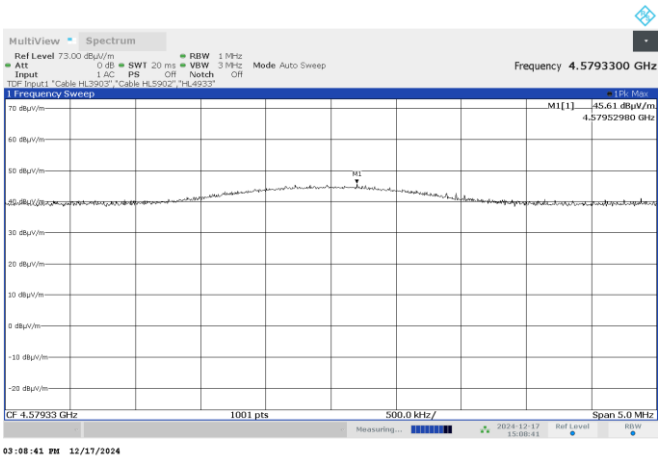
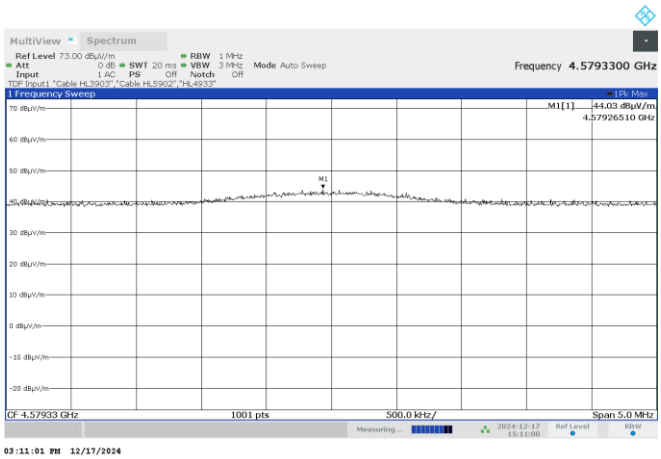
Horizontal



Plot 7.6.20 Radiated emission measurements at the fifth harmonic of mid carrier frequency

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m

Vertical



Horizontal