Test report

PRJ0094001-EMC

Date of issue: January 27, 2026

Applicant:

Hetronic International Inc.

Product description:

Frequency Hopping Spread Spectrum (FHSS) Transceiver Module

Model:	Product marketing name(s):
CSM800FH-PA	None

FCC ID:	ISED certification number:
LW9-CSM800PA	2119B-CSM800PA

Specifications:

- FCC 47 CFR Part 15, Subpart C – §15.247
- RSS-247, Issue 4, July 2025, Section 6

Lab and test locations

Company name	Nemko USA, Inc.
Address	1601 North A.W. Grimes Blvd., Suite B
City	Round Rock
State	Texas
Postal code	78665
Country	USA
Telephone	+1(512) 286-2175
Website	www.nemko.com
FCC Site Number	US3166
ISED Test Site	3036B

Tested by	Ricardo Nakane, EMC Test Engineer
Reviewed by	Larry Finn, Laboratory Manager
Review date	
Reviewer signature	

Limits of responsibility

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Section 1 Report summary

1.1 Test specifications

FCC 47 CFR Part 15, Subpart C – §15.247	Operation within the bands 902 – 928 MHz,
RSS-247, Issue 4, July 2025, Section 6	Digital Transmission Systems, Frequency Hopping Systems and Licence-Exempt Local Area Network Devices in 902-928 MHz bands

1.2 Exclusions

None.

1.3 Statement of compliance

In the configuration tested, the EUT was found compliant.

Testing was performed against all relevant requirements of the test standard except as noted in section 1.2 above. 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.

Measurement Uncertainty values were not used to determine results against limits specified in the standards used.

1.4 *See "Summary of test results" for full details.* Test report revision history

Table 1.4-1: *Test report revision history*

Revision #	Issue Date	Details of changes made to test report
PRJ0094001-EMC	1/22/2026	Original report issued

Section 2 Summary of test results

2.1 Sample information

Receipt date	17-Jun-25
Nemko sample ID number	NEx

2.2 Testing period

Test start date	17-Jun-25
Test end date	17-Jun-256

2.3 Test results

Table 2.3-1: *FCC 47 CFR Part 15, Subpart B & C, general requirements*

Part	Test description	Verdict
§15.207(a)	Conducted limits	Not applicable [1]
§15.31(e)	Variation of power source	Pass
§15.203	Antenna requirement	Pass
§15.215(c)	20 dB bandwidth	Pass

Notes: [1] EUT is DC powered from dedicated DC source or battery powered

Table 2.3-2: *FCC 47 CFR Part 15, Subpart C, §15.247 requirements*

Part	Test description	Verdict
§15.247(a)(1)(i)	Frequency hopping systems operating in the 902–928 MHz band	Pass
§15.247(a)(1)(ii)	Frequency hopping systems operating in the 5725–5850 MHz band	Not applicable
§15.247(a)(1)(iii)	Frequency hopping systems operating in the 2400–2483.5 MHz band	Not applicable
§15.247(a)(2)	Minimum 6 dB bandwidth for systems using digital modulation techniques	Not applicable
§15.247(b)(1)	Maximum peak output power of frequency hopping systems operating in the 2400–2483.5 MHz band and 5725–5850 MHz band	Not applicable
§15.247(b)(2)	Maximum peak output power of Frequency hopping systems operating in the 902–928 MHz band	Pass
§15.247(b)(3)	Maximum peak output power of systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands	Not applicable
§15.247(b)(4)	Transmitting antennas of directional gain greater than 6 dBi	Not applicable
§15.247(c)(1)	Fixed point-to-point operation with directional antenna gains greater than 6 dBi	Not applicable
§15.247(c)(2)	Transmitters operating in the 2400–2483.5 MHz band that emit multiple directional beams	Not applicable
§15.247(d)	Spurious emissions	Pass
§15.247(e)	Power spectral density for digitally modulated devices	Not applicable
§15.247(f)	Time of occupancy for hybrid systems	Not applicable

Table 2.3-3: *ISED RSS-247 requirements*

Part	Test description	Verdict
Generic requirements		
RSS-Gen, 7.3	Receiver radiated emission limits	Not applicable
RSS-Gen, 7.4	Receiver conducted emission limits	Not applicable
RSS-Gen, 6.9	Operating bands and selection of test frequencies	Pass
RSS-Gen, 8.8	AC powerline conducted emissions limits	Not applicable
RSS-247, 6.6	Unwanted emissions	Pass
RSS-247, 6.4	**Hybrid Systems**	Not applicable
RSS-247, 6.4 (a)	Digital modulation turned off	Not applicable
RSS-247, 6.4 (b)	Frequency hopping turned off	Not applicable
FHSS specific requirements		
RSS-247, 6.2.1 (a)	Minimum channel spacing	Pass
RSS-247, 6.2.2.1	Number of hopping channels, dwell time and occupied channel bandwidth in the 902–928 MHz band	Pass
RSS-247, 6.2.2.2	Transmitter output power and e.i.r.p. requirements in the 902–928 MHz band	Pass

RSS-247, 6.5 (a)(b)	Transmitter e.i.r.p. requirements for point-to-point systems in 2400–2483.5 MHz and 5725–5850 MHz band	Not applicable
RSS-247, 6.5 (c)	Transmitter requirements for operation in the 2400–2483.5 MHz band with multiple directional beams	Not applicable
DTS specific requirements		
RSS-247, 6.3.1 (a)	Minimum 6 dB bandwidth	Not applicable
RSS-247, 6.3.1 (b)	Maximum power spectral density	Not applicable
RSS-247, 6.3.2	Transmitter output power and e.i.r.p. requirements for systems employing digital modulation techniques	Not applicable
RSS-247, 6.5 (a)(b)	Transmitter e.i.r.p. requirements for point-to-point systems in 2400–2483.5 MHz and 5725–5850 MHz band	Not applicable
RSS-247, 6.5 (c)	Transmitter requirements for operation in the 2400–2483.5 MHz band with multiple directional beams	Not applicable

Notes: [1]According to sections 5.2 and 5.3 of RSS-Gen, Issue 5 the EUT does not have a stand-alone receiver neither scanner receiver, therefore exempt from receiver requirements.

Section 3 Equipment under test (EUT) details

3.1 Disclaimer

This section contains information provided by the applicant and has been utilized to support the test plan. Inaccurate information provided by the applicant can affect the validity of the results within this test report. Nemko accepts no responsibility for the information contained within this section and the impact it may have on the test plan and resulting measurements.

3.2 Applicant

Company name	Hetronic International Inc.
Address	3905 NW 36th Street
City	Oklahoma City
State	OK
Postal/Zip code	73112
Country	USA

3.3 Manufacturer

Company name	Hetronic International Inc.
Address	Triq I-Awdituri, Zone 4, Central Business Dist...
City	Birkirkara, CBD 4070
State	Malta
Postal/Zip code	4070
Country	MALTA

3.4 EUT information

Product name	Module Board
Model	CSM800FH-PA
Variant(s)	None
Serial number	HI0060R02
Part number	N/A
Power requirements	3.3 VDC
Description/theory of operation	Operates as a Frequency Hopping Spread Spectrum radio within the 902 to 928 MHz band. A guard band of 175 kHz is applied at each side of the band to limit out-of-band emissions. The first possible operating channel is centered at 902.175 MHz. The last used operating channel is 927.7224 MHz.
Operational frequencies	902.175 MHz – 927.7224 MHz
Software details	RF Tool – r572

3.5 Transmitter Information

Frequency band	☒ 902 – 928 MHz ☐ 2400 – 2483.5MHz ☐ 5727 – 5850 MHz
Minimum frequency (MHz)	902.175
Maximum frequency (MHz)	927.7224
Type(s) of modulation	2-GFSK
Data(s) rate	FHSS
Tested frequencies (MHz)	902.175, 914.5, 927.722

3.6 EUT setup details

Table 3.6-1: *EUT sub assemblies*

Description	Brand name	Model/Part number	Serial number	Rev.
CSM Test Board	Hetronic	N/A	HI2003R5	--
CSM_IFACE	Hetronic	N/A	HI2008R03	--
CSM_Conducted module(W6)	Hetronic	N/A	HI0060R03	--
CSM_Conducted Wireless Module(W5)	Hetronic	N/A	HI0060R03	--

Table 3.6-2: *EUT interface ports*

Description	Qty.
Antenna Port	1
USB – C Port	2

Table 3.6-3: *Support equipment*

Description	Brand name	Model/Part number	Serial number	Rev.
Laptop	DELL	Vostro P117F	N/A	--

Table 3.6-4: *Inter-connection cables*

Cable description	From	To	Length (m)
USB cable	CSM Test Board	Laptop	0.9

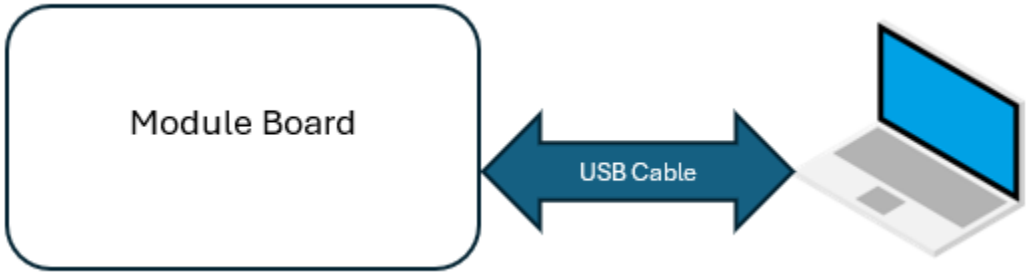


Figure 3.6-1: Test setup diagram

Section 4 Engineering considerations

4.1 Modifications incorporated in the EUT

None.

4.2 Technical judgement

None.

4.3 Deviations from laboratory test procedures

None.

Section 5 Test conditions

5.1 Atmospheric conditions

Temperature	22 °C
Relative humidity	56 %
Air pressure	989 mbar

When it is impracticable to carry out tests under these conditions, a note to this effect stating the ambient temperature and relative humidity during the tests shall be recorded and stated.

5.2 Power supply range

The normal test voltage for equipment to be connected to the mains shall be the nominal mains voltage. For the purpose of the present document, the nominal voltage shall be the declared voltage, or any of the declared voltages ±5 %, for which the equipment was designed.

Section 6 Measurement uncertainty

6.1 Uncertainty of measurement

Measurement uncertainty budgets for the tests are detailed below. Measurement uncertainty calculations assume a coverage factor of K = 2 with 95% certainty.

Test name	Measurement uncertainty, dB
Radiated spurious emissions	3.62
Powerline conducted emissions	2.74
All antenna port measurements	0.41
Conducted spurious emissions	2.88

Section 7 Test equipment

7.1 Test equipment list

Table 7.1-1: *Test Equipment List*

Equipment	Manufacturer	Model no.	Asset no.	Next cal.
Radiated Setup:				
Receiver, Test, EMI, 1 Hz to 44 GHz	Rohde & Schwarz	ESW44	2541	6/3/2026
Switch Driver	Agilent	11713A	1939	N/A
Antenna, Hybrid, Bilogical, 25 MHz - 4 GHz	A.H. Systems	SAS-521-4	2613	4/22/2027
Preamp, 0.1-1300MHz, 26dB	HP	8447D	586	3/13/2026
Amplifier, 40dB, 100MHz-18GHz	Miteq	AFS44-00101800-2S-10P-44	2004	1/27/2026
Antenna, Double Ridged Guide Horn, 1 - 18 GHz	ETS-Lindgren	3117	2438	2/24/2027
Cable, RF, N-N, 36', DC-18GHz	evissaP	eP7123R-432	C395	2/15/2026
Cable, RF, N-N, 32', DC-18GHz	evissaP	eP7123R-384	C394	2/14/2026
Cable, RF, N-N, 22', DC-18GHz	evissaP	eP7031R-22FT	C404	3/1/2026
Cable, RF, N-N, 30', DC-18GHz	evissaP	eP7031R-30FT	C405	3/1/2026
Cable, RF, SMA-SMA, 12", 2.92mm, DC-40GHz	evissaP	eP7101R-12	C398	3/1/2026
Enclosure, Shielded, RFI/EMI, NSA, 3m & 10m, 30MHz - 1 GHz	TDK	254	2555	2/3/2026
Cable, RF, SMA-N, 6', DC-18GHz	evissaP	eP7033R-6FT	C406	3/1/2026
Cable, RF, SMA-SMA, 12", 2.92mm, DC-40GHz	evissaP	eP7101R-12	C399	3/1/2026
Cable, RF, SMA-N, 6', DC-18GHz	evissaP	eP7033R-6FT	C407	3/1/2026
Cable, RF, N-N, 30", DC-18GHz	evissaP	eP3010R-30	C400	3/1/2026
Conducted Setup:				
Analyzer, Signal, 44 GHz	Rohde & Schwarz	FSV3044	2551	6/5/2026
Cable, RF, SMA-SMA, 1m, DC-40GHz	N/A	N/A		N/A

Notes: NCR – no calibration required

7.2 Test software list

Table 7.2-1: *Test Software*

Manufacturer	Details
ETS Lindgren	Tile V7.9.1.1 - Radiated emissions
Rohde & Schwarz	RS Commander V 2.4.2 (2023) - Conducted plots
Nemko USA	Nemko Wireless Tool V 1.0 - Conducted plots

Section 8 Testing data

8.1 Variation of power source

8.1.1 References and limits

- FCC 47 CFR Part 15, Subpart A: §15.31(e)
- Test method: ANSI C63.10-2020+COR. 1-2023+C63.10A-2024 + ERRATA TO C63.10A-2024 §5.13

§15.31(e):
For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery operated equipment, the equipment tests shall be performed using a new battery.

8.1.2 Test summary

Verdict	Pass		
Test date	December 29, 2025	Temperature	22°C
Test engineer	Ricardo Nakane, EMC Test Engineer	Air pressure	989mbar
Test location	☒ 10m semi anechoic chamber ☐ 3m semi anechoic chamber ☐ Other:	Relative humidity	56%

8.1.3 Notes

Testing was performed with the transmitter operating on a fixed channel (middle) at maximum output power.

8.1.4 Setup details

EUT power input during test	3.3 VDC

8.1.5 Test data

☐	EUT is battery operated. Therefore, all tests performed with a new fully charged battery
☒	EUT power supply voltage varied across supported range. No variation in transmitter output power observed therefore all tests performed at nominal power supply voltage.
☐	EUT power supply voltage varied across supported range. Transmitter output power variation was observed. All tests performed with the EUT operated at the worst case operating voltage with respect to transmitter output power: V.

8.2 Antenna requirement

8.2.1 References and limits

FCC §15.203:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

FCC §15.247:

(b) The maximum peak conducted output power of the intentional radiator shall not exceed the following:

(4) The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

RSS-Gen, Clause 6.8:

The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.
For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report.

8.2.2 Test summary

Verdict	Pass		
Test date	January 5, 2026	Temperature	22°C
Test engineer	Ricardo Nakane, EMC Test Engineer	Air pressure	989 mbar
Test location	☒ Wireless bench ☐ Other:	Relative humidity	56%

8.2.3 Test data

Antenna part number:	PLH-443TC
Technical description:	Frequency Range: 868-915 MHz, Monopole, Polarization: Linear (Vertical), Input Power Range: 10W Max, Input Connector: TNC-P
Peak gain (dBi):	2.3
Source of gain data:	☐ Declared by client ☒ Antenna data sheet or specification. Document name: 56504100 PLH-443TC ☐ Antenna gain test report. Document name:

8.2.4 Test data

Antenna part number:	2195835-1~-8
Technical description:	Frequency Range: 863-928 MHz, Monopole, Polarization: Linear, Power Handling:10W cw,
Peak gain (dBi):	1.4
Source of gain data:	☐ Declared by client ☒ Antenna data sheet or specification. Document name: ENG_DS_2195835_A-3199373 ☐ Antenna gain test report. Document name:

8.2.5 Test data

Antenna part number:	66501900
Technical description:	Frequency Range: 860-930 MHz, Monopole, Input Connector: SMB
Peak gain (dBi):	-1.71
Source of gain data:	☐ Declared by client ☒ Antenna data sheet or specification. Document name: 66501900 Antenna Datasheet ☐ Antenna gain test report. Document name:

8.3 20 dB bandwidth (902 – 928 MHz band)

8.3.1 References and limits

- FCC 47 CFR Part 15, Subpart C: §15.247(a)(1)(i)
- RSS-247 §6.2.2.1(a)
- Test method: ANSI C63.10-2020+COR. 1-2023+C63.10A-2024 + ERRATA TO C63.10A-2024 §5.13

§15.247(a)(1)(i) and RSS-247 §6.2.2.1(a):
The maximum 20 dB bandwidth of the hopping channel shall be 500 kHz.

8.3.2 Test summary

Verdict	Pass		
Test date	January 5, 2026	Temperature	22°C
Test engineer	Ricardo Nakane, EMC Test Engineer	Air pressure	989 mbar
Test location	☒ Wireless bench ☐ Other:	Relative humidity	56%

8.3.3 Notes

Testing was performed with the transmitter operating on a fixed channel (lowest, middle, and highest; frequency hopping disabled) at maximum output power.

The spectral plots within this section have been corrected with all relevant transducer factors.

8.3.4 Setup details

EUT power input during test	3.3 VDC
EUT setup configuration	☒ Table-top ☐ Floor standing ☐ Other:

Receiver/spectrum analyzer settings:

Resolution bandwidth	2 kHz
Video bandwidth	100 kHz
Detector mode	Peak
Trace mode	Max Hold
Measurement time	Long enough for trace to stabilize

8.3.5 Test data

Table 8.3-1: *20 dB bandwidth (902 – 928 MHz band) test data*

Test frequency (MHz)	Modulation	Bandwidth (MHz)	Limit	Verdict
902.175	2-GFSK	0.096	≤ 0.5 MHz	PASS
914.5	2-GFSK	0.099	≤ 0.5 MHz	PASS
927.722	2-GFSK	0.101	≤ 0.5 MHz	PASS

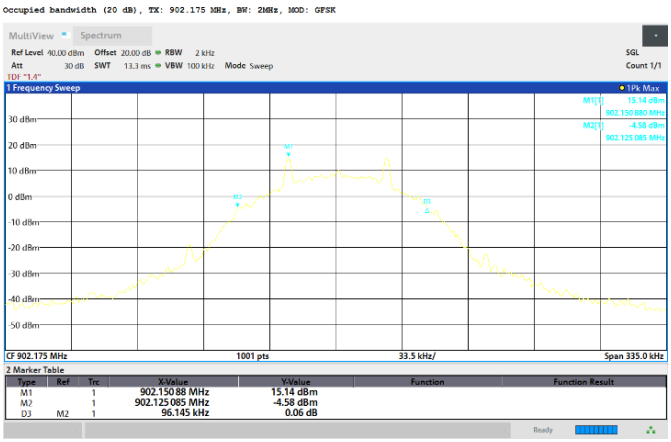


Figure 8.33-1: *20 dB bandwidth (902 – 928 MHz band)*

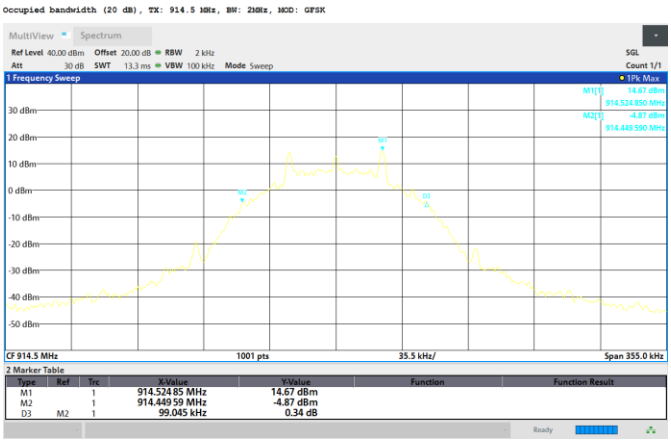


Figure 8.33-2: *20 dB bandwidth (902 – 928 MHz band)*

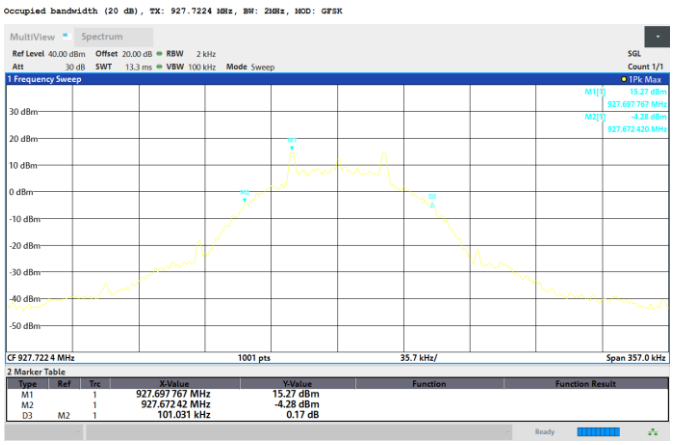


Figure 8.33-3: *20 dB bandwidth (902 – 928 MHz band)*

8.4 Channel separation

8.4.1 References and limits

- FCC 47 CFR Part 15, Subpart C: §15.247(a)(1)
- ISED: RSS-247 §6.2.1(b)
- Test method: ANSI C63.4-2020: §6.9.2

§15.247(a)(1), RSS-247 §6.2.1(b):
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

8.4.2 Test summary

Verdict	Pass		
Test date	January 5, 2026	Temperature	22°C
Test engineer	Ricardo Nakane, EMC Test Engineer	Air pressure	989 mbar
Test location	☒ Wireless bench ☐ Other:	Relative humidity	56%

8.4.3 Notes

Testing was performed with the frequency hopping operation.

The spectral plots within this section have been corrected with all relevant transducer factors.

8.4.4 Setup details

EUT power input during test	3.3 VDC
EUT setup configuration	☒ Table-top ☐ Floor standing ☐ Other:

Receiver/spectrum analyzer settings:

Resolution bandwidth	30 kHz
Video bandwidth	100 kHz
Detector mode	Peak
Trace mode	Max Hold
Measurement time	Long enough for trace to stabilize

8.4.5 Test data

Table 8.44-1: *Channel separation results*

Channel Separation (kHz)	Limit	Verdict
0.510	≥ 25 kHz or 20 dB bandwidth (whichever is greater)	PASS

Carrier frequency sepraration, TX: 914.5 MHz, BW: 0.3MHz, MOD: GFSK

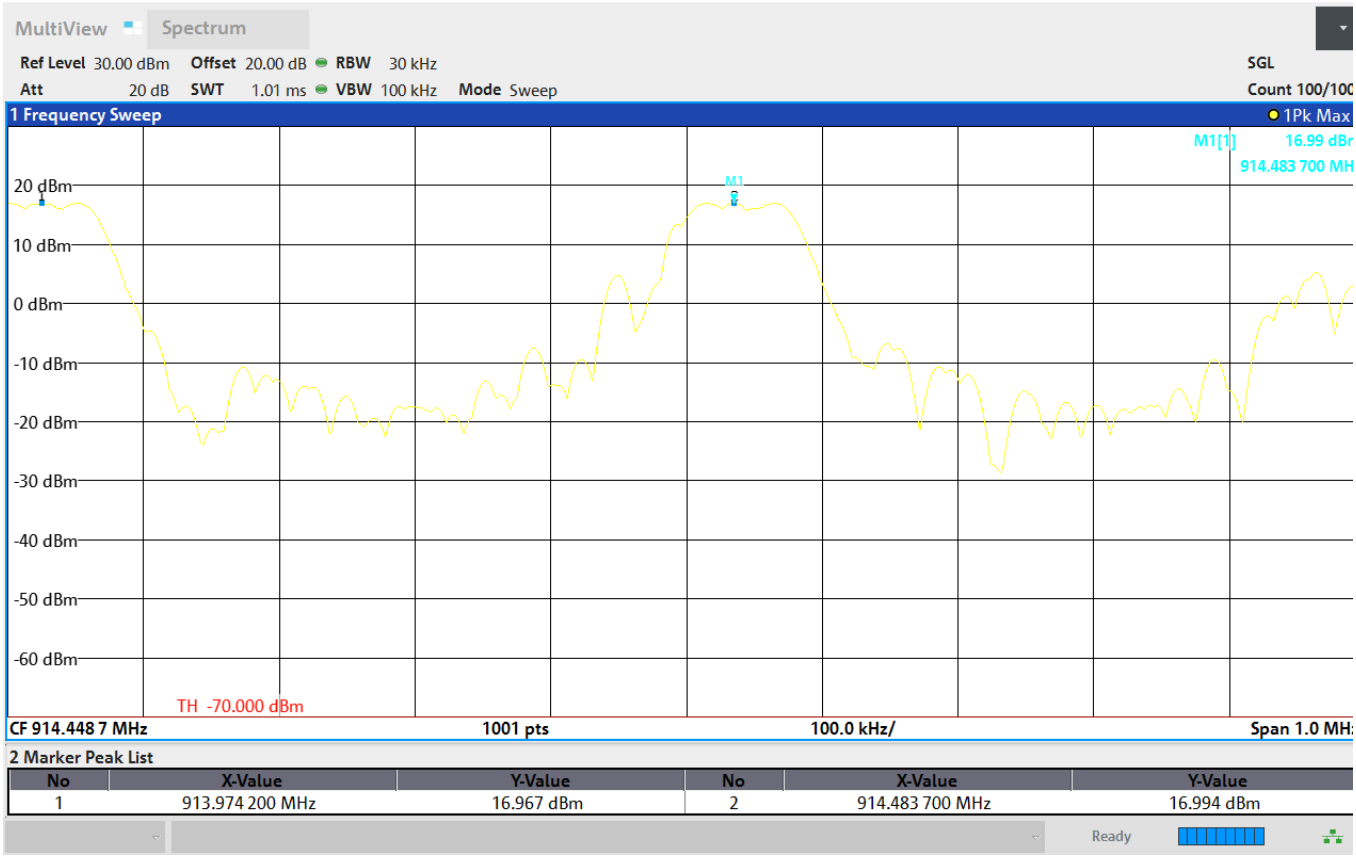


Figure 8.44-1: *Channel separation*

8.5 Number of hopping channels (902 – 928 MHz band)

8.5.1 References and limits

- FCC 47 CFR Part 15, Subpart C: §15.247(a)(1)(i)
- ISED: RSS-247 6.2.2.1(b)
- Test method: ANSI C63.4-2020: §6.9.2

§15.247(a)(1)(i) and RSS-247 6.2.2.1(b):
For frequency hopping systems operating in the 902–928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

8.5.2 Test summary

Verdict	Pass		
Test date	January 5, 2026	Temperature	22°C
Test engineer	Ricardo Nakane, EMC Test Engineer	Air pressure	989 mbar
Test location	☒ Wireless bench ☐ Other:	Relative humidity	56%

8.5.3 Notes

Testing was performed with the frequency hopping mode enabled.

The spectral plots within this section have been corrected with all relevant transducer factors.

8.5.4 Setup details

EUT power input during test	3.3 VDC
EUT setup configuration	☒ Table-top ☐ Floor standing ☐ Other:

Receiver settings:

Resolution bandwidth	30 kHz
Video bandwidth	100 kHz
Detector mode	Peak
Trace mode	Max Hold
Measurement time	Long enough for trace to stabilize

8.5.5 Test Data

Table 8.55-1: *Number of hopping channels (902 – 928 MHz band) results*

Number of hopping channels (902 – 928 MHz band)	Limit	Verdict
50	≥ 50	PASS

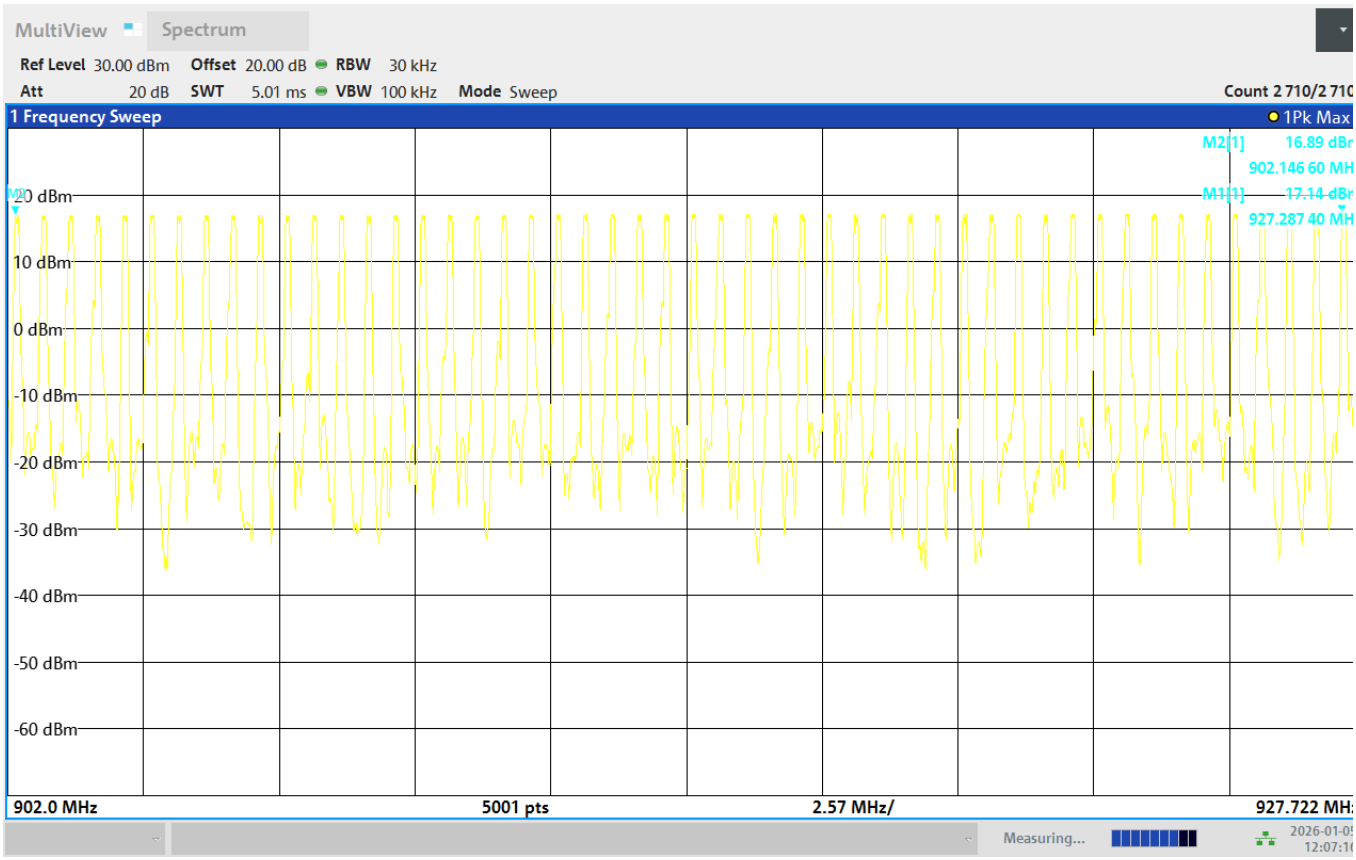


Figure 8.55-1: *Number of hopping channels (902 – 928 MHz band),*

8.6 Dwell time (902 – 928 MHz band)

8.6.1 References and limits

- FCC 47 CFR Part 15, Subpart C: §15.247(a)(1)(i)
- ISED: RSS-247 6.2.2.1(b)
- Test method: ANSI C63.4-2020: §6.9.2

§15.247(a)(1)(i) and RSS-247 6.2.2.1(b):
For frequency hopping systems operating in the 902–928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

8.6.2 Test summary

Verdict	Pass		
Test date	January 5, 2026	Temperature	22°C
Test engineer	Ricardo Nakane, EMC Test Engineer	Air pressure	989 mbar
Test location	☒ Wireless bench ☐ Other:	Relative humidity	56%

8.6.3 Notes

Testing was performed with the frequency hopping mode enabled.

The spectral plots within this section have been corrected with all relevant transducer factors.

8.6.4 Setup details

EUT power input during test	3.3 VDC
EUT setup configuration	☒ Table-top ☐ Floor standing ☐ Other:

Receiver settings:

Resolution bandwidth	30 kHz
Video bandwidth	100 kHz
Detector mode	Peak

8.6.5 Test Data

Table 8.66-1: *Dwell time (902 – 928 MHz band) results*

Measurement period	20 seconds
Pulse width	4.56 ms
Number of pulses in measurement period	20
Total time of occupancy in measurement period	0.091 seconds
Limit	<0.4 seconds

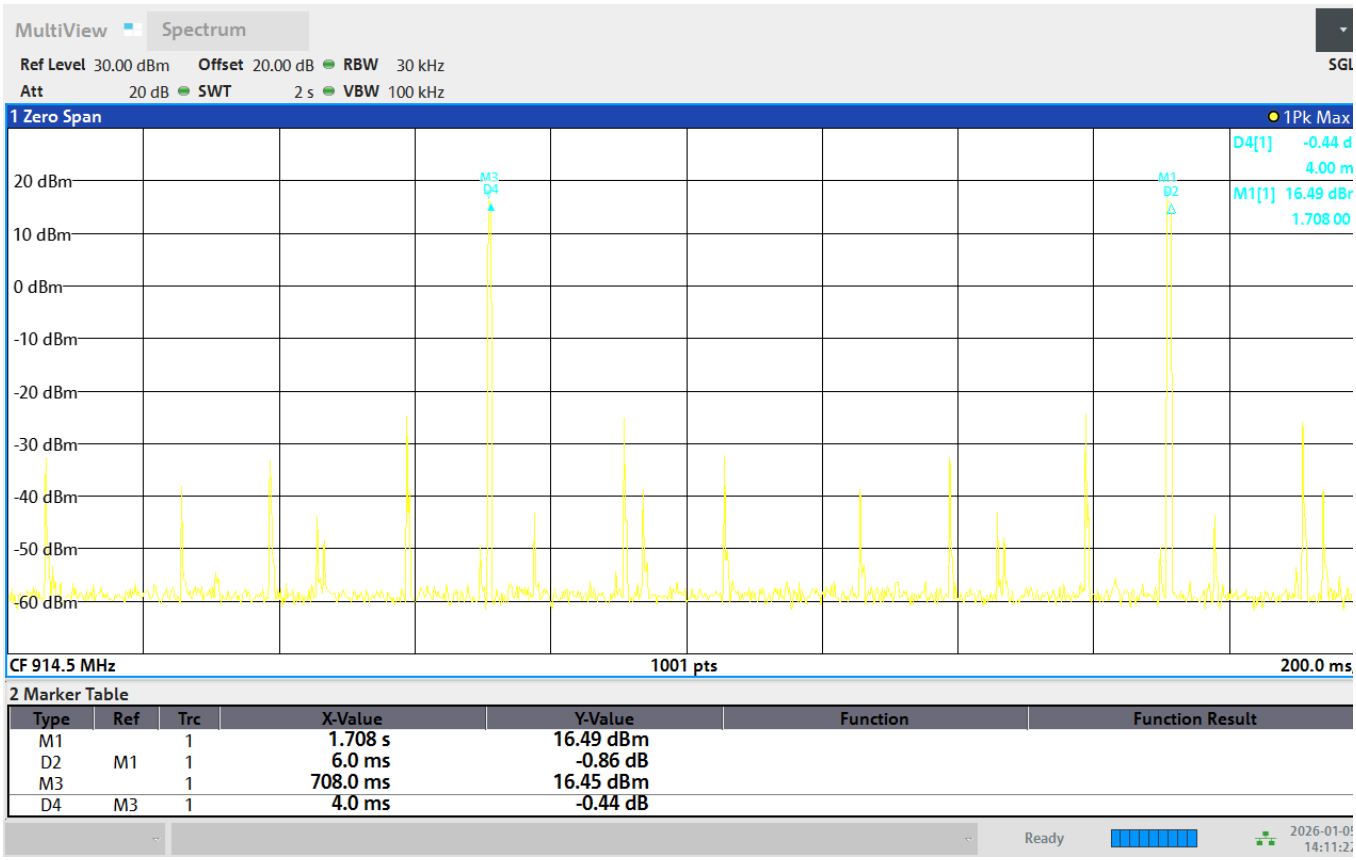


Figure 8.66-1: *Dwell time (902 – 928 MHz band)*

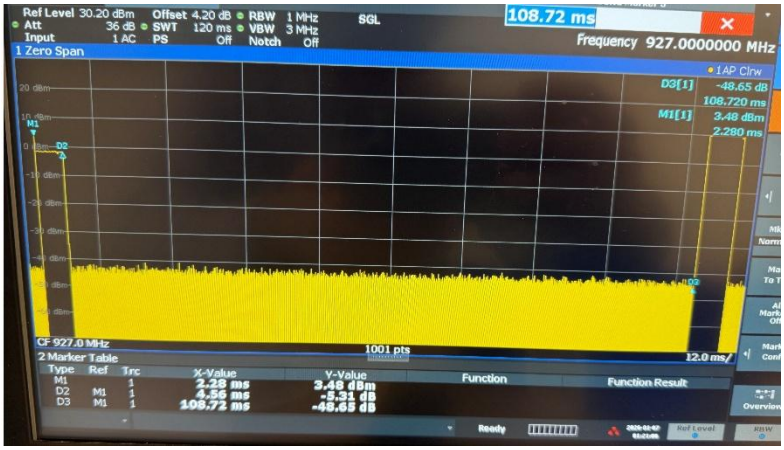


Figure 8.66-2: Dwell time (902 – 928 MHz band)

Notes: In a 2 second observation period, 2 hops were found.
To find the time of occupancy in a 20 second period, the dwell time per hop (s) was multiplied by the number of hops in a 2 second period and by 10 seconds.

$$Time\ of\ occupancy(20\ seconds\ period) = dwell\ time\ per\ hop(s) * number\ of\ hops\ in\ a\ 2\ s\ period * 10 = 0.00456 * 2 * 10 = 0.0912\ s < 0.4\ s$$

8.7 Maximum peak output power (902 – 928 MHz band)

8.7.1 References and limits

- FCC 47 CFR Part 15, Subpart C: §15.247(b)(2)
- ISED: RSS-247 6.2.2.2(a)
- Test method: ANSI C63.10-2020+COR. 1-2023+C63.10A-2024 + ERRATA TO C63.10A-2024 §7.8.5

§15.247:

(b) Operation under the provisions of this Section is limited to frequency hopping and digitally modulated intentional radiators that comply with the following provisions:

(2) For frequency hopping systems operating in the 902–928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under paragraph (a)(1)(i) of this section.

RSS-247:

6.2.2.2 Devices shall comply with the following requirements, where applicable:

(a) if the hopset uses 50 or more hopping channels, the maximum peak conducted output power shall not exceed 1.0 W, and the e.i.r.p. shall not exceed 4 W.

8.7.2 Test summary

Test date	January 5, 2026	Temperature	22°C
Test engineer	Ricardo Nakane, EMC Test Engineer	Air pressure	989 mbar
Test location	☒ Wireless bench ☐ Other:	Relative humidity	56%

8.7.3 Notes

Testing was performed with the transmitter operating on a fixed channel (lowest, middle, and highest; frequency hopping disabled) at maximum output power.

The spectral plots within this section have been corrected with all relevant transducer factors. The cable loss of 1.4 dB needs to be added to the final measurement results.

8.7.4 Setup details

EUT power input during test	3.3 VDC
EUT setup configuration	☒ Table-top ☐ Floor standing ☐ Other:

Receiver/spectrum analyzer settings:

Resolution bandwidth	100 kHz
Video bandwidth	500 kHz
Detector mode	Peak
Trace mode	Max Hold
Measurement time	Long enough for trace to stabilize

8.7.5 Test data

Table 8.7-1: *Maximum peak output power (902 – 928 MHz band) test data*

Frequency, MHz	Output power, dBm	Output power limit, dBm	Margin, dB	Antenna gain, dBi	EIRP, dBm	EIRP limit, dBm	EIRP margin, dB
902.17	18.16	30.00	-11.84	2.30	20.46	36.00	-15.54
914.50	18.34	30.00	-11.66	2.30	20.64	36.00	-15.36
927.72	18.52	30.00	-11.48	2.30	20.82	36.00	-15.18

Notes: The output power contains 1.4 dB of cable loss
EIRP = Output power + Antenna gain

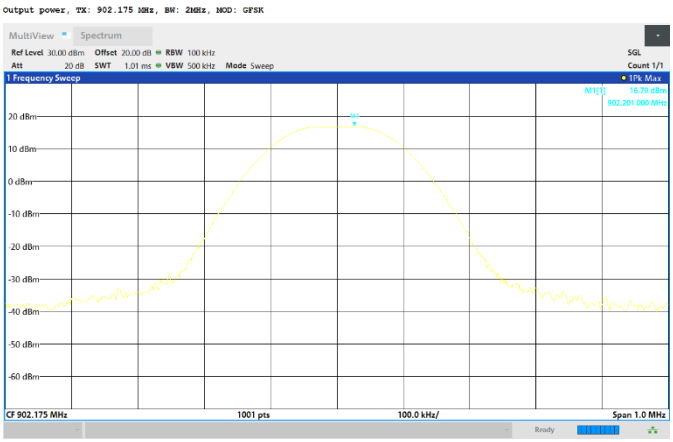


Figure 8.77-1: *Maximum peak output power (902 – 928 MHz band)*

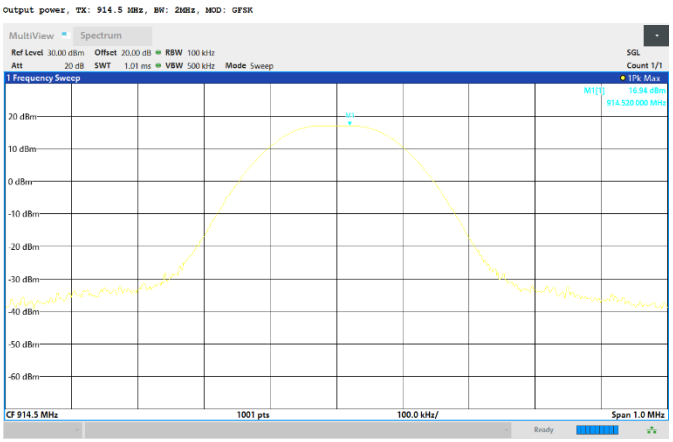


Figure 8.77-2: *Maximum peak output power (902 – 928 MHz band)*

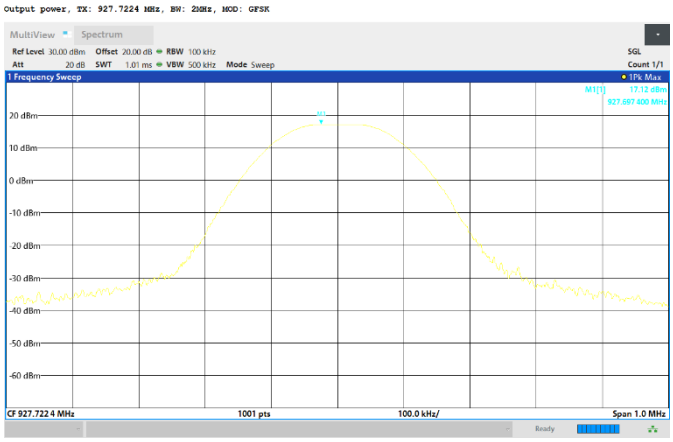


Figure 8.7-3: *Maximum peak output power (902 – 928 MHz band)*

8.8 Spurious emissions

8.8.1 References and limits

- FCC 47 CFR Part 15, Subpart C: §15.247(d)
- RSS-247: §6.6
- Test method: ANSI C63.10-2020+COR. 1-2023+C63.10A-2024 + ERRATA TO C63.10A-2024 §6.10.4 (authorized band edge)
- Test method: ANSI C63.10-2020+COR. 1-2023+C63.10A-2024 + ERRATA TO C63.10A-2024 §11.11 (antenna port conducted spurious emissions)
- Test method: ANSI C63.10-2020+COR. 1-2023+C63.10A-2024 + ERRATA TO C63.10A-2024 §11.12.3 (radiated restricted band edge)
- Test method: ANSI C63.10-2020+COR. 1-2023+C63.10A-2024 + ERRATA TO C63.10A-2024 §6.5, 6.6 (radiated emissions in restricted bands)

§15.247:

(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

RSS-247, Clause 6.6:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum device, digitally modulated device, or hybrid system is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power – based on either an RF conducted or a radiated measurement – provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 6.3.2, the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

RSS-Gen:

8.9 Except where otherwise indicated in the applicable RSS, radiated emissions shall comply with the field strength limits shown in table below.

8.10 Restricted frequency bands are designated primarily for safety-of-life services (distress calling and certain aeronautical activities), certain satellite downlinks, radio astronomy and some government uses. The following conditions related to the restricted frequency bands apply:

a The transmit frequency, including fundamental components of modulation, of licence-exempt radio apparatus shall not fall within the restricted frequency bands.

b Unwanted emissions that fall into restricted frequency bands listed in table 7 shall comply with the limits specified in table below.

c Unwanted emissions that do not fall within the restricted frequency bands shall comply either with the limits specified in the applicable RSS or with those specified in table below.

Table 8.8-1: *FCC §15.209 / RSS-GEN §8.9– Radiated emission limits*

Frequency, MHz	Field strength of emissions		Measurement distance, m
	µV/m	dBµV/m	
0.009–0.490	2400/F	$67.6 - 20 \times \log_{10}(F)$	300
0.490–1.705	24000/F	$87.6 - 20 \times \log_{10}(F)$	30
1.705–30.0	30	29.5	30
30–88	100	40.0	3
88–216	150	43.5	3
216–960	200	46.0	3
above 960	500	54.0	3

Notes: In the emission table above, the tighter limit applies at the band edges.
For frequencies above 1 GHz the limit on peak RF emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test.

Table 8.8-2: *FCC restricted frequency bands*

MHz	MHz	MHz	GHz
0.090–0.110	16.42–16.423	399.9–410	4.5–5.15
0.495–0.505	16.69475–16.69525	608–614	5.35–5.46
2.1735–2.1905	16.80425–16.80475	960–1240	7.25–7.75
4.125–4.128	25.5–25.67	1300–1427	8.025–8.5
4.17725–4.17775	37.5–38.25	1435–1626.5	9.0–9.2
4.20725–4.20775	73–74.6	1645.5–1646.5	9.3–9.5
6.215–6.218	74.8–75.2	1660–1710	10.6–12.7
6.26775–6.26825	108–121.94	1718.8–1722.2	13.25–13.4
6.31175–6.31225	123–138	2200–2300	14.47–14.5
8.291–8.294	149.9–150.05	2310–2390	15.35–16.2
8.362–8.366	156.52475–156.52525	2483.5–2500	17.7–21.4
8.37625–8.38675	156.7–156.9	2690–2900	22.01–23.12
8.41425–8.41475	162.0125–167.17	3260–3267	23.6–24.0
12.29–12.293	167.72–173.2	3332–3339	31.2–31.8
12.51975–12.52025	240–285	3345.8–3358	36.43–36.5
12.57675–12.57725	322–335.4	3600–4400	Above 38.6
13.36–13.41			

Table 8.8-3: *ISED RSS-GEN restricted frequency bands*

MHz	MHz	GHz
090 - 0.110	149.9 - 150.05	9.0 - 9.2
0.495 - 0.505	156.52475 - 156.52525	9.3 - 9.5
2.1735 - 2.1905	156.7 - 156.9	10.6 - 12.7
3.020 - 3.026	162.0125 - 167.17	13.25 - 13.4
4.125 - 4.128	167.72 - 173.2	14.47 - 14.5
4.17725 - 4.17775	240 – 285	15.35 - 16.2
4.20725 - 4.20775	322 - 335.4	17.7 - 21.4
5.677 - 5.683	399.9 - 410	22.01 - 23.12
6.215 - 6.218	608 - 614	23.6 - 24.0
6.26775 - 6.26825	960 - 1427	31.2 - 31.8
6.31175 - 6.31225	1435 - 1626.5	36.43 - 36.5
8.291 - 8.294	1645.5 - 1646.5	Above 38.6
8.362 - 8.366	1660 - 1710	
8.37625 - 8.38675	1718.8 - 1722.2	
8.41425 - 8.41475	2200 - 2300	
12.29 - 12.293	2310 - 2390	
12.51975 - 12.52025	2483.5 - 2500	
12.57675 - 12.57725	2655 - 2900	
13.36 - 13.41	3260 – 3267	
16.42 - 16.423	3332 - 3339	
16.69475 - 16.69525	3345.8 - 3358	
16.80425 - 16.80475	3500 - 4400	
25.5 - 25.67	4500 - 5150	
37.5 - 38.25	5350 - 5460	
73 - 74.6	7250 - 7750	
74.8 - 75.2	8025 – 8500	
108 – 138		

8.8.2 Test summary

Verdict	Pass		
Test date	January 5, 2026	Temperature	22°C
Test engineer	Ricardo Nakane, EMC Test Engineer	Air pressure	989 mbar
Test location	☐ Wireless bench (conducted tests) ☒ 10 m semi-anechoic chamber (radiated tests) ☐ 3 m semi-anechoic chamber (radiated tests) ☐ Other:	Relative humidity	56%

8.8.3 Notes

Testing was performed with the transmitter operating on a fixed channel at full power. Low, middle, and high channels were tested. The spectrum was searched from 30 MHz to above the 10th harmonic of the highest transmit frequency.

For radiated measurements, the EUT was investigated to identify the worst case orientation with respect to the fundamental transmitter power. All measurements were performed with the EUT in that worst-case orientation.

The spectral plots within this section have been corrected with all relevant transducer factors.

Radiated emissions are reported for the modulation / data rate settings that produced the highest transmitter output power as a worst-case. For this EUT, the worst case modulation/data rate setting used was 2-GFSK.

8.8.4 Setup details

EUT power input during test	3.3 VDC
EUT setup configuration	☒ Table-top ☐ Floor standing ☐ Other:

Spectrum analyzer settings (conducted emissions):

Resolution bandwidth	100 kHz
Video bandwidth	300 kHz
Detector mode	Peak
Trace mode	Max Hold
Measurement time	Long enough for trace to stabilize

Receiver settings for radiated measurements within restricted bands below 1 GHz:

Resolution bandwidth	120 kHz
Video bandwidth	300 kHz
Detector mode	Peak (preview measurements) Quasi-Peak (final measurements)

Receiver settings for radiated measurements within restricted bands above 1 GHz:

Resolution bandwidth	1 MHz
Video bandwidth	3 MHz
Detector mode	Peak (preview measurements) Peak and average (final measurements)

8.8.5 Test data

8.8.5.1 Antenna Port Conducted Authorized Band Edge

Table 8.8-4: *Authorized band edge conducted emissions (antenna port)*

Test Frequency (MHz)	Modulation	Frequency of highest emission (MHz)	Amplitude (dBc)	Limit (dBc)	Margin (dB)
902.175	2-GFSK	901.999	-23.78	≤ -20	-3.78
927.7224	2-GFSK	928.005	-44.82	≤ -20	-24.82

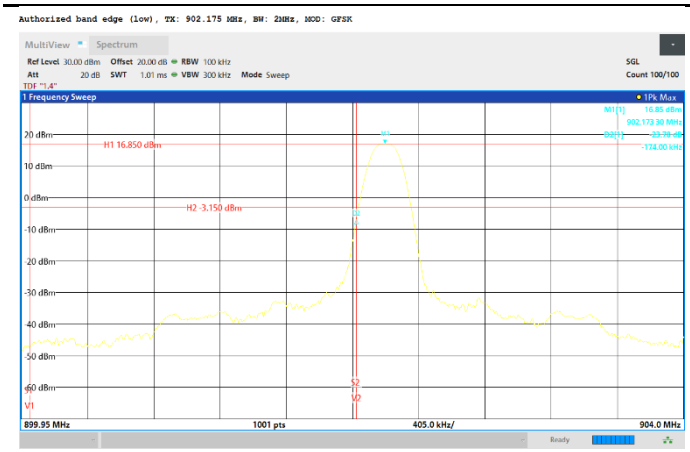


Figure 8.8-1: *Authorized band-edge emissions, low channel 902.175 MHz*

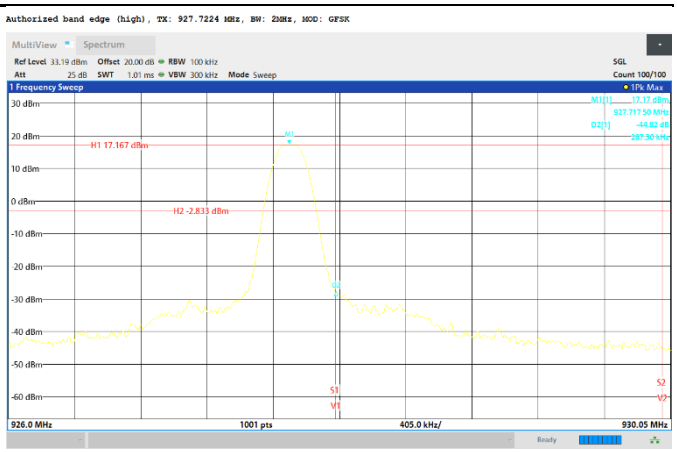


Figure 8.8-2: *Authorized band-edge emissions, high channel 927.722 MHz*

8.8.5.2 Antenna Port Conducted Spurious Emissions

Table 8.8-5: *Antenna port conducted spurious emissions*

Test Frequency (MHz)	Modulation	Frequency of highest emission (MHz)	Amplitude (dBc)	Limit (dBc)	Margin (dB)
902.175	2-GFSK	898.160	-61.37	≤ -20	PASS
902.175	2-GFSK	1804.373	-60.93	≤ -20	PASS
914.5	2-GFSK	818.481	-63.61	≤ -20	PASS
914.5	2-GFSK	1828.927	-61.67	≤ -20	PASS
927.7224	2-GFSK	831.659	-64.50	≤ -20	PASS
927.7224	2-GFSK	1855.460	-61.79	≤ -20	PASS

Figure 8.8-3: *Antenna port conducted spurious emissions Channel 902.175 MHz, 30 MHz – 932 MHz*

Figure 8.8-4: *Antenna port conducted spurious emissions Channel 902.175 MHz, 900 MHz – 10 GHz*

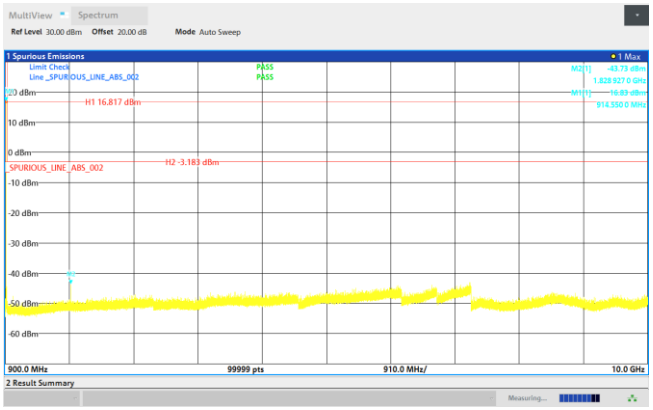


Figure 8.8-5: *Antenna port conducted spurious emissions Channel 914.5 MHz, 30 MHz – 932 MHz*

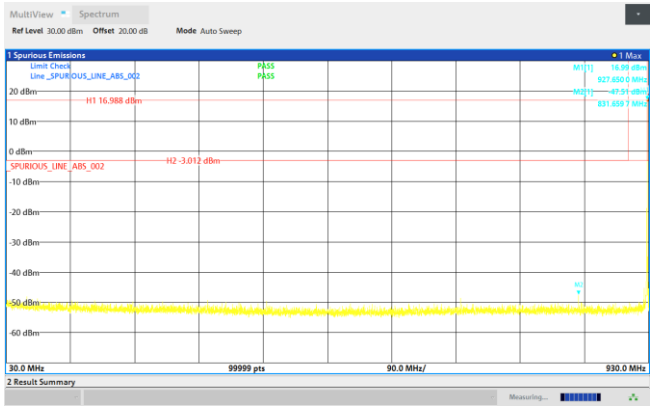


Figure 8.8-6: *Antenna port conducted spurious emissions Channel 914.5 MHz, 900 MHz – 10 GHz*

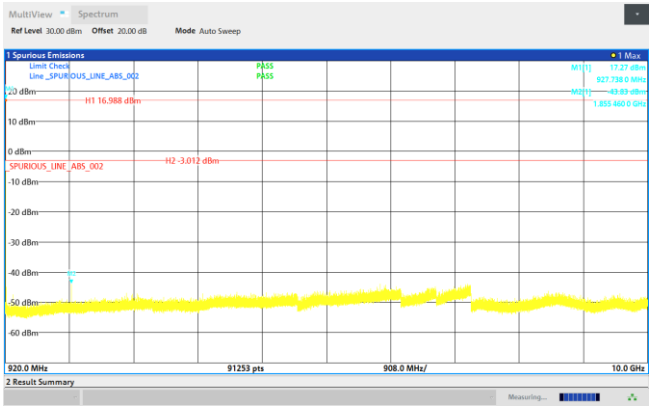


Figure 8.8-7: *Antenna port conducted spurious emissions Channel 927.722 MHz, 30 MHz – 932 MHz*

Figure 8.8-8: *Antenna port conducted spurious emissions Channel 914.5 MHz, 927.722 MHz – 10 GHz*

8.8.5.3 Radiated Spurious Emissions

Table 8.8-6: Radiated spurious emissions worst case orientation maximization for low, middle, and high channel

902.175 MHz			
	X (dBuV/m)	Y (dBuV/m)	Z (dBuV/m)
Vertical	91.54	91.84	104.05
Horizontal	108.82	**109.32**	93.97

914.987 MHz			
	X (dBuV/m)	Y (dBuV/m)	Z (dBuV/m)
Vertical	91.54	91.84	104.05
Horizontal	108.82	**109.46**	93.97

927.722 MHz			
	X (dBuV/m)	Y (dBuV/m)	Z (dBuV/m)
Vertical	91.54	91.84	104.05
Horizontal	108.82	**109.68**	93.97

Table 8.8-7: Antenna port radiated spurious emissions duty cycle correction factor in hopping mode

Time on (ms)	Total time (ms)	Duty Cycle	Duty Cycle Correction Factor
4.56	108.72	4.19%	-13.77

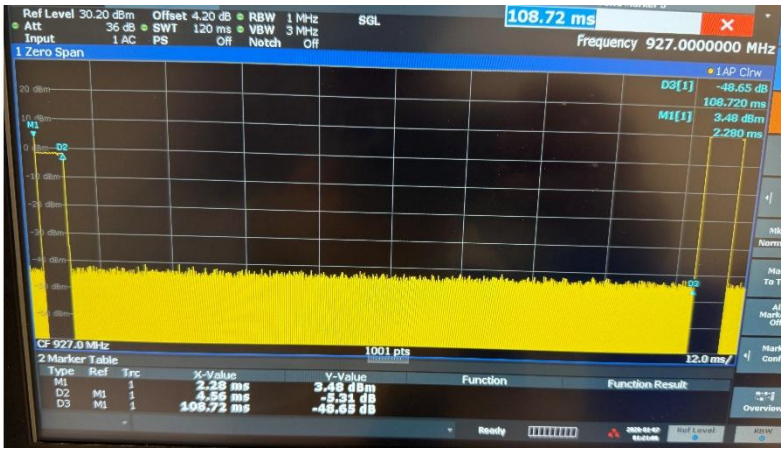
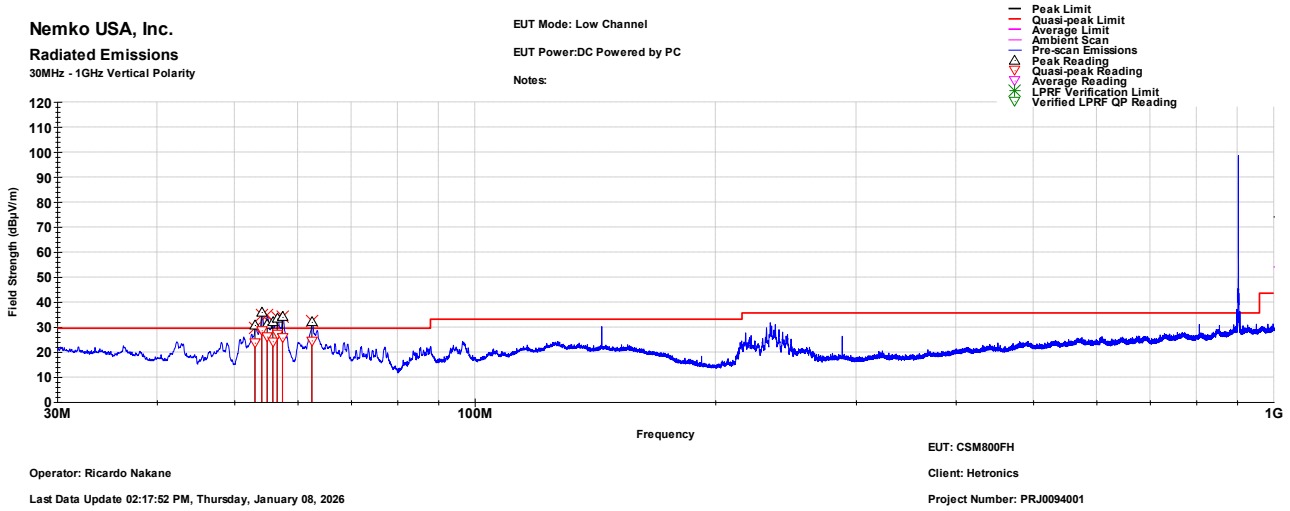


Figure 8.8-9: Radiated spurious emissions duty cycle measurement hopping mode**.**

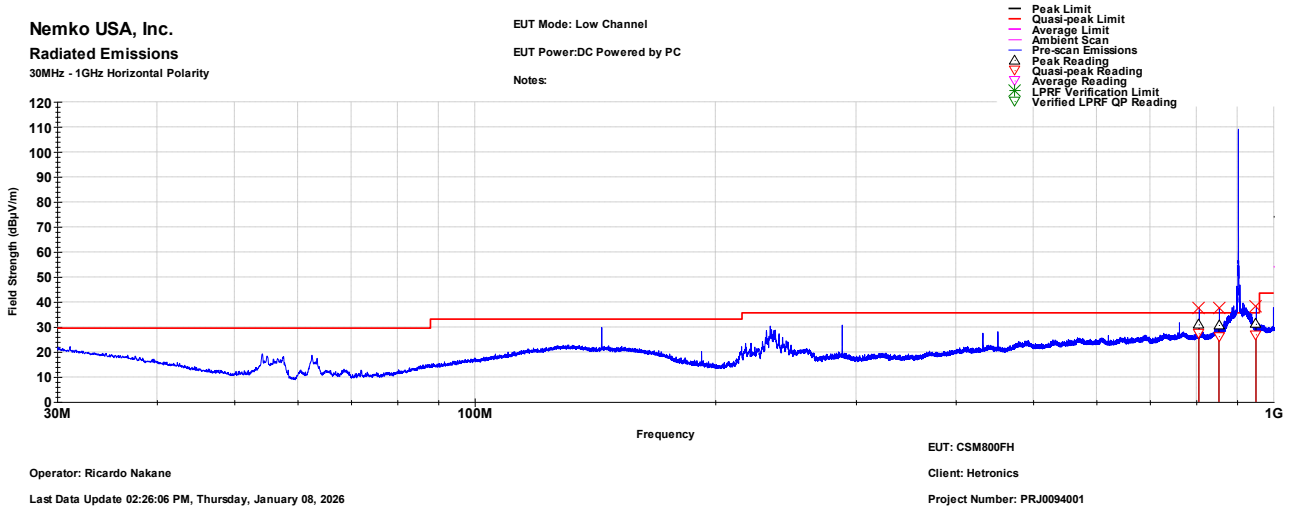
PLH-443TC Antenna

Low Channel 902.175 MHz



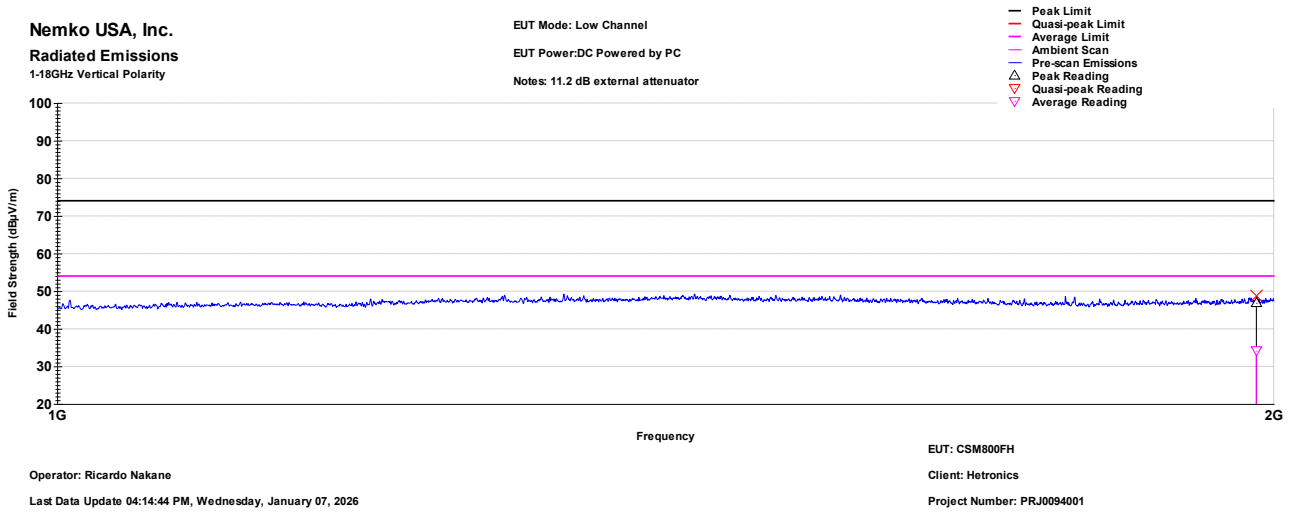
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Quasi-peak Reading (dBµV)	Quasi-peak Limit (dBµV)	Quasi-peak Margin (dB)	Quasi-peak Results	Peak Reading (dBµV)
53.070	168.000	191.000	23.654	29.500	-5.846	PASS	30.746
54.120	157.000	205.000	28.650	29.500	-0.850	PASS	35.920
54.960	77.000	229.000	26.132	29.500	-3.368	PASS	31.013
55.860	202.000	211.000	24.267	29.500	-5.233	PASS	31.917
56.580	237.000	178.000	27.210	29.500	-2.290	PASS	33.303
57.450	293.000	205.000	25.710	29.500	-3.790	PASS	33.994
62.520	258.000	229.000	24.607	29.500	-4.893	PASS	31.985

Figure 8.8-10: Radiated spurious emissions channel 902.175 MHz, from 30 MHz – 1GHz, vertical polarity



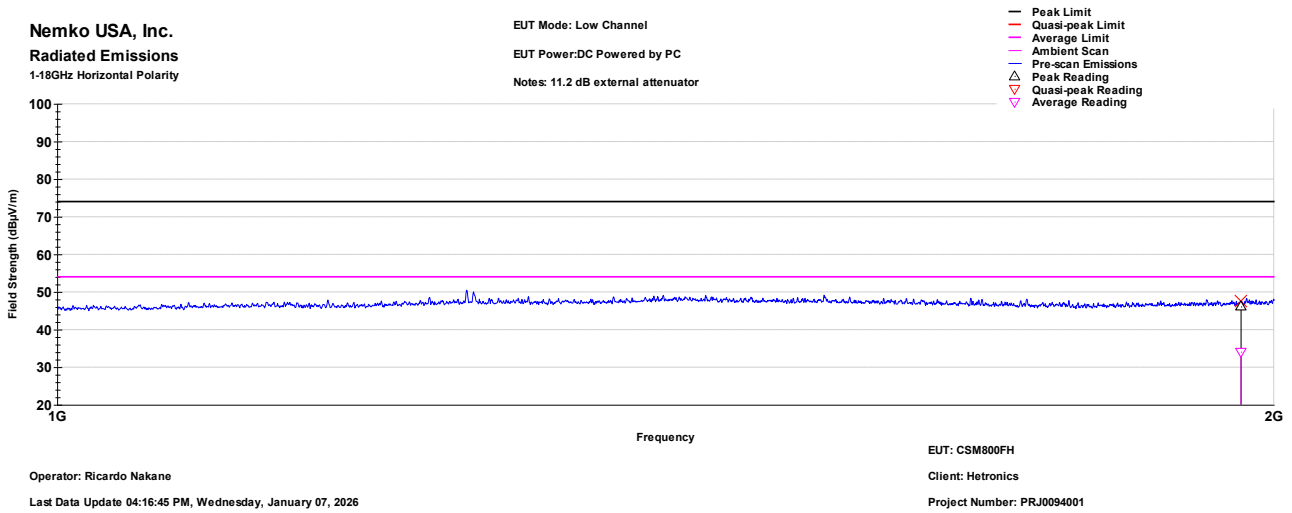
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Quasi-peak Reading (dBµV)	Quasi-peak Limit (dBµV)	Quasi-peak Margin (dB)	Quasi-peak Results	Peak Reading (dBµV)
806.147	157.000	118.000	27.403	35.600	-8.197	PASS	30.976
854.147	174.000	121.000	26.257	35.600	-9.343	PASS	30.731
950.147	192.000	291.000	26.986	35.600	-8.614	PASS	31.183

Figure 8.8-11: Radiated spurious emissions channel 902.175 MHz, from 30 MHz – 1GHz, horizontal polarity



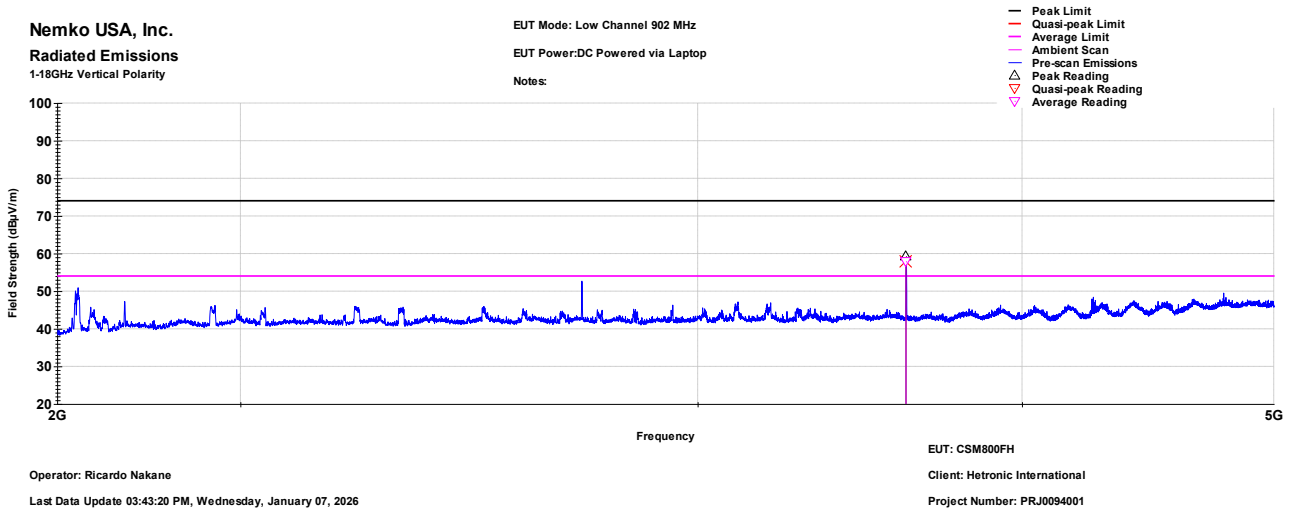
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
1687.25	130	163	46.877	74.000	-27.123	PASS	34.154	54.000	-19.846	PASS

Figure 8.8-12: Radiated spurious emissions channel 902.175 MHz, from 1 – 1.7 GHz, vertical polarity



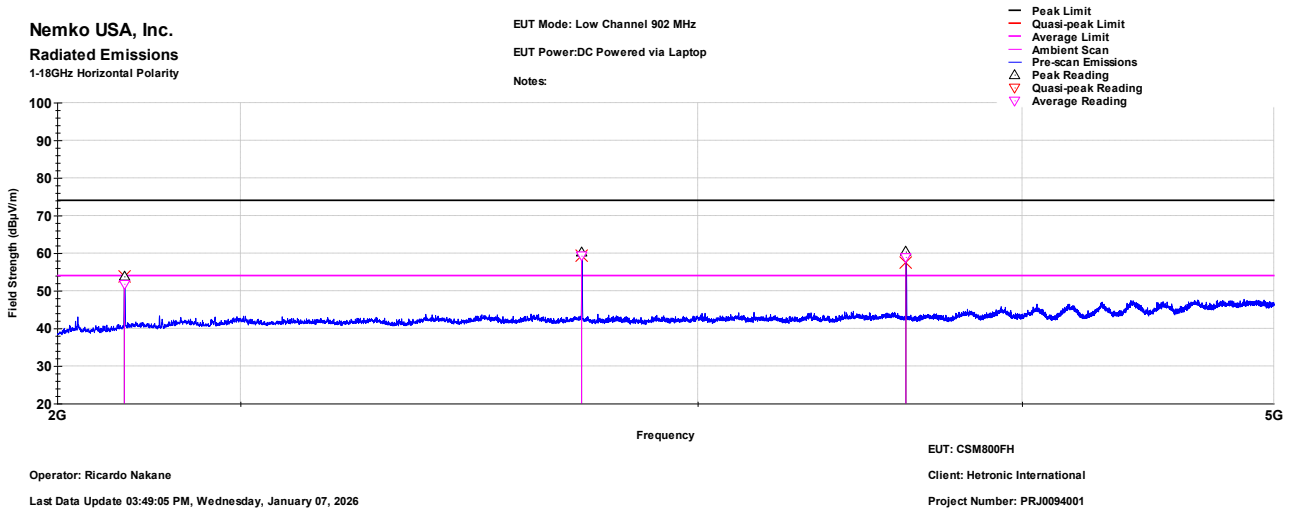
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
1676.00	90	239	46.112	74.000	-27.888	PASS	34.072	54.000	-19.928	PASS

Figure 8.8-13: Radiated spurious emissions channel 902.175 MHz, from 1 – 1.7 GHz, horizontal polarity



Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Duty Cycle Correction (dB)	Average Reading (dBµV)	Corrected Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
3608.75	150	126	59.212	74.000	-14.78	PASS	-13.773	57.874	44.101	54.000	-9.899	PASS

Figure 8.8-14: Radiated spurious emissions channel 902.175 MHz, from 1.7 – 5 GHz, vertical polarity



Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Duty Cycle Correction (dB)	Average Reading (dBµV)	Corrected Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
1804.50	59	100	53.775	74.000	-20.22	PASS	-13.773	51.781	38.008	54.000	-15.992	PASS
2706.50	201	126	60.289	74.000	-13.71	PASS	-13.773	59.261	45.491	54.000	-8.509	PASS
3608.50	209	100	60.329	74.000	-13.67	PASS	-13.773	58.917	45.144	54.000	-8.856	PASS

Figure 8.8-15: Radiated spurious emissions channel 902.175 MHz, from 1.7 – 5 GHz, Horizontal polarity

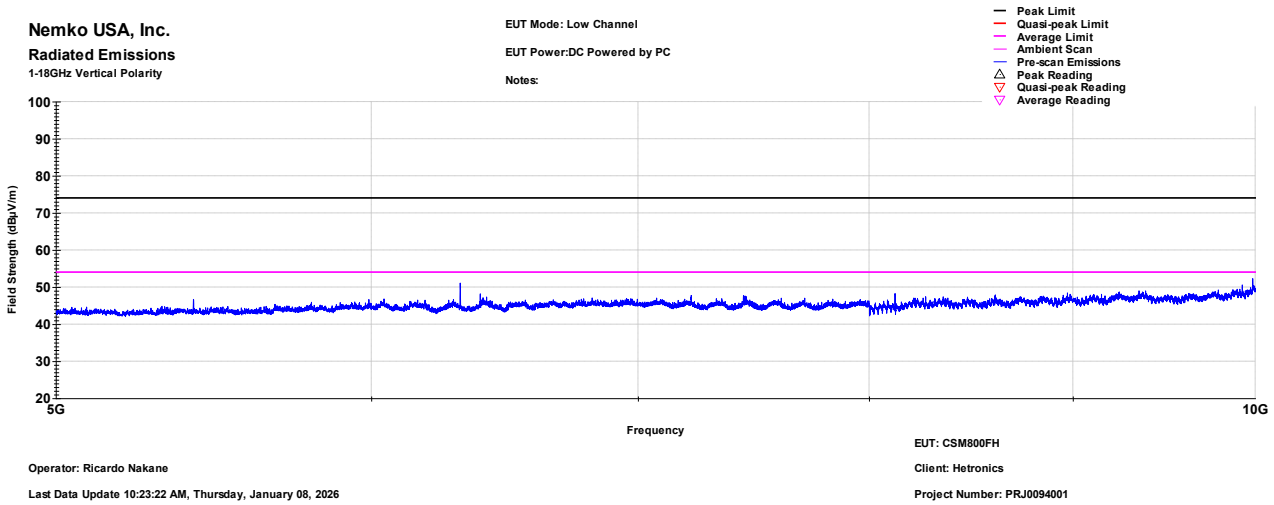


Figure 8.8-16: Radiated spurious emissions channel 902.175 MHz, from 5 – 10 GHz, vertical polarity

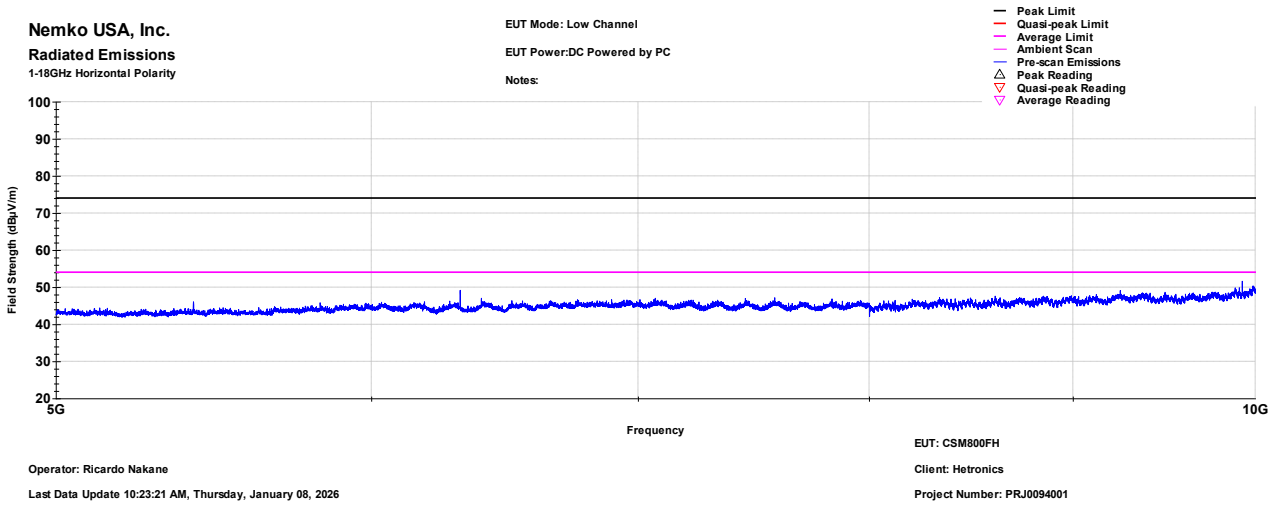
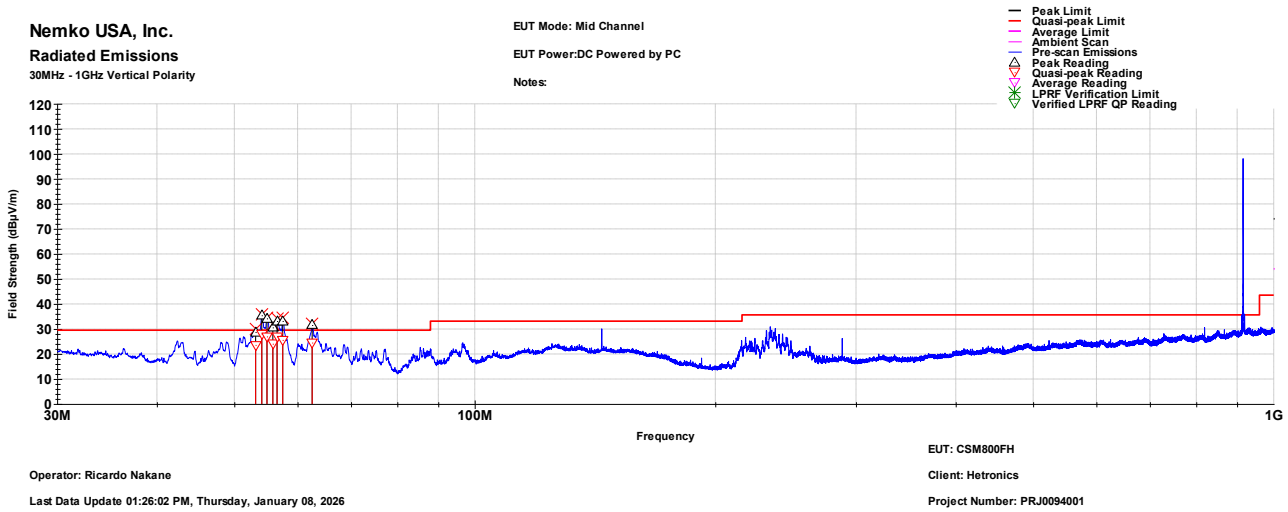


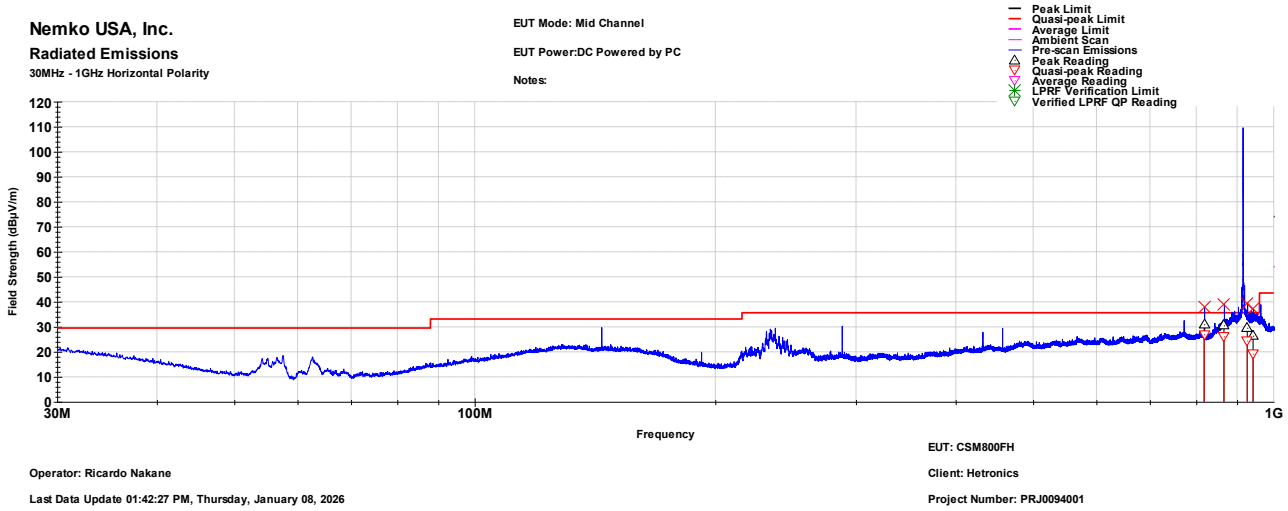
Figure 8.8-17: Radiated spurious emissions channel 902.175 MHz, from 5 – 10 GHz, Horizontal polarity

Middle channel 914.5 MHz



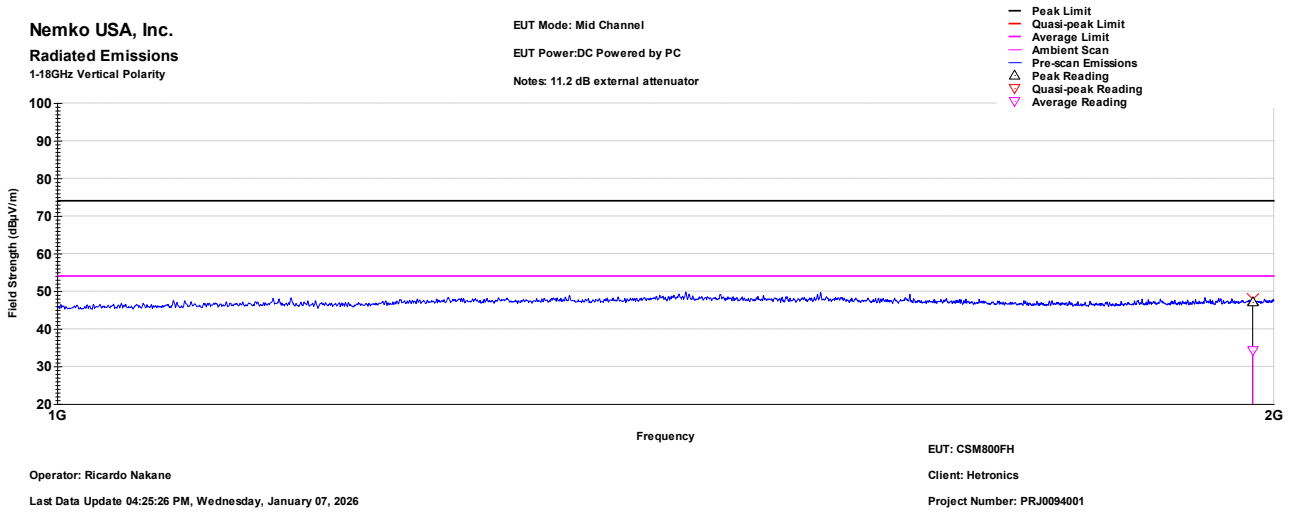
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Quasi-peak Reading (dBµV)	Quasi-peak Limit (dBµV)	Quasi-peak Margin (dB)	Quasi-peak Results	Peak Reading (dBµV)
53.160	112.000	205.000	23.586	29.500	-5.914	PASS	28.727
54.120	139.000	205.000	27.978	29.500	-1.522	PASS	35.415
54.930	157.000	205.000	26.959	29.500	-2.541	PASS	34.194
55.860	184.000	191.000	24.051	29.500	-5.449	PASS	30.600
56.550	184.000	229.000	26.996	29.500	-2.504	PASS	33.149
57.480	248.000	229.000	25.595	29.500	-3.905	PASS	33.148
62.580	292.000	218.000	24.534	29.500	-4.966	PASS	31.526

Figure 8.8-18: Radiated spurious emissions channel 914.5 MHz, from 30 MHz – 1GHz, vertical polarity



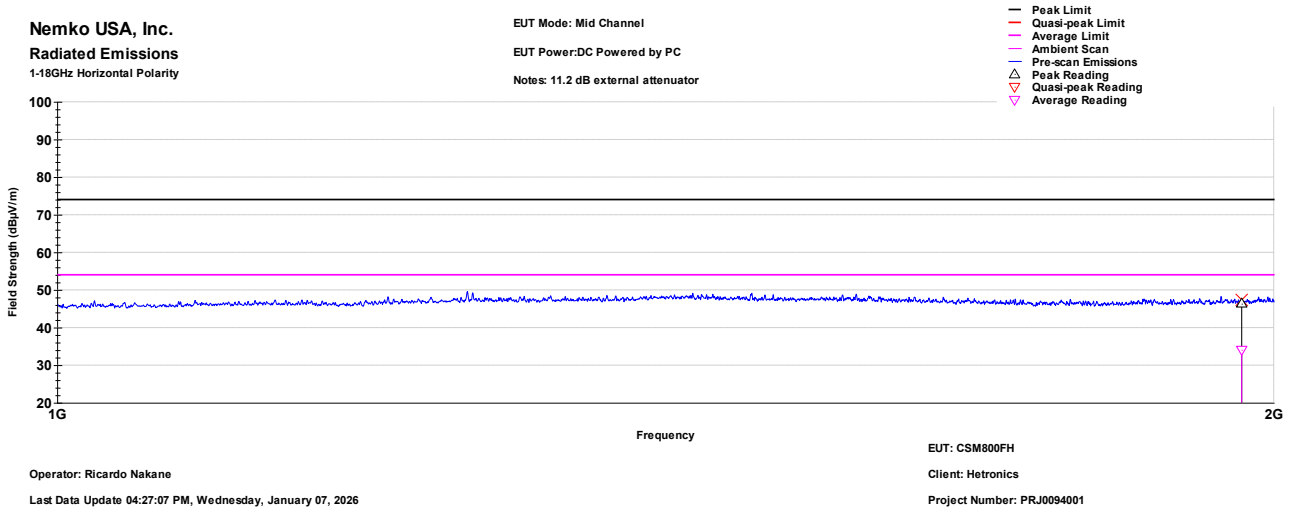
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Quasi-peak Reading (dBµV)	Quasi-peak Limit (dBµV)	Quasi-peak Margin (dB)	Quasi-peak Results	Peak Reading (dBµV)
818.477	174.000	100.000	27.037	35.600	-8.563	PASS	30.964
866.537	167.000	100.000	26.139	35.600	-9.461	PASS	30.538
926.537	157.000	100.000	24.444	35.600	-11.156	PASS	29.580
942.347	16.000	318.000	19.178	35.600	-16.422	PASS	26.366

Figure 8.8-19: Radiated spurious emissions channel 914.5 MHz, from 30 MHz – 1GHz, horizontal polarity



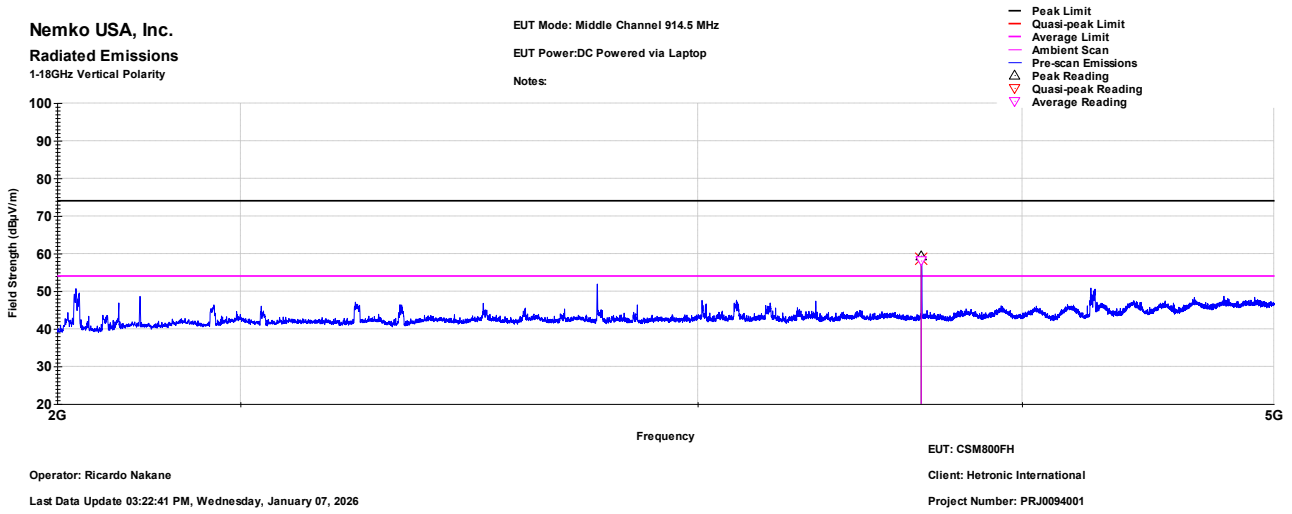
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
1684.50	291	116	47.112	74.000	-26.888	PASS	34.166	54.000	-19.834	PASS

Figure 8.8-20: Radiated spurious emissions channel 914.5 MHz, from 1 – 1.7 GHz, vertical polarity



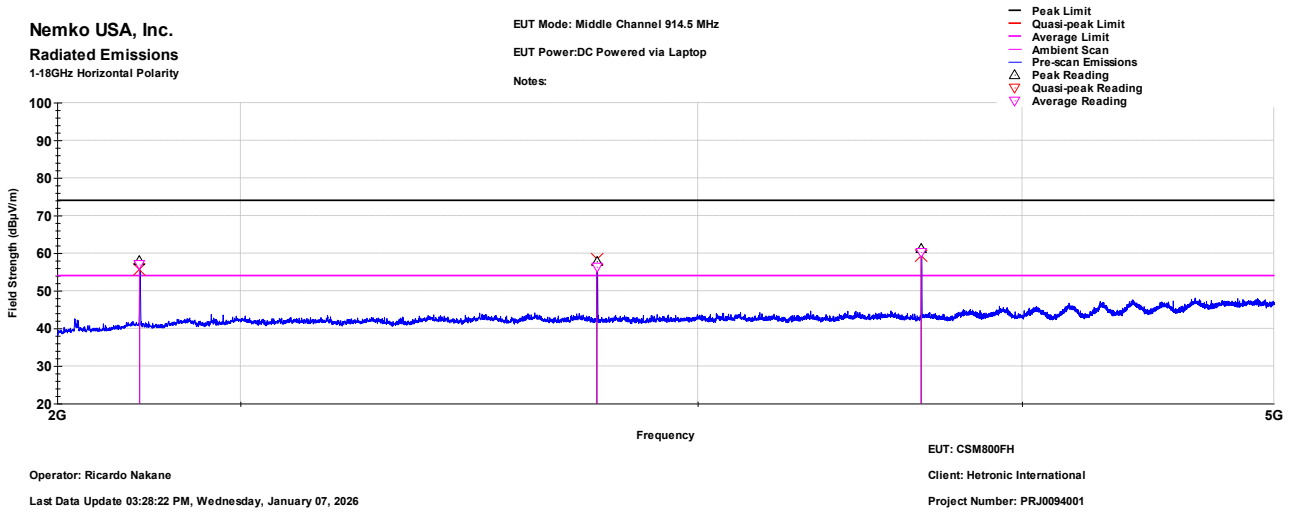
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
1676.50	88	225	46.308	74.000	-27.692	PASS	34.052	54.000	-19.948	PASS

Figure 8.8-21: Radiated spurious emissions channel 914.5 MHz, from 1 – 1.7 GHz, horizontal polarity



Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Duty Cycle Correction (dB)	Average Reading (dBµV)	Corrected Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
3658.00	**150**	**100**	**59.383**	**74.000**	**-14.61**	**PASS**	**-13.773**	**58.116**	**44.343**	**54.000**	**-9.657**	**PASS**

Figure 8.8-22: Radiated spurious emissions channel 914.5 MHz, from 1.7 – 5 GHz, vertical polarity



Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Duty Cycle Correction (dB)	Average Reading (dBµV)	Corrected Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
1829.00	**160**	**349**	**57.916**	**74.000**	**-16.08**	**PASS**	**-13.773**	**56.904**	**43.131**	**54.000**	**-10.869**	**PASS**
2743.50	**130**	**100**	**57.803**	**74.000**	**-16.19**	**PASS**	**-13.773**	**56.326**	**42.553**	**54.000**	**-11.447**	**PASS**
3658.00	**199**	**100**	**61.185**	**74.000**	**-12.81**	**PASS**	**-13.773**	**60.235**	**46.462**	**54.000**	**-7.538**	**PASS**

Figure 8.8-23: Radiated spurious emissions channel 914.5 MHz, from 1.7 – 5 GHz, Horizontal polarity

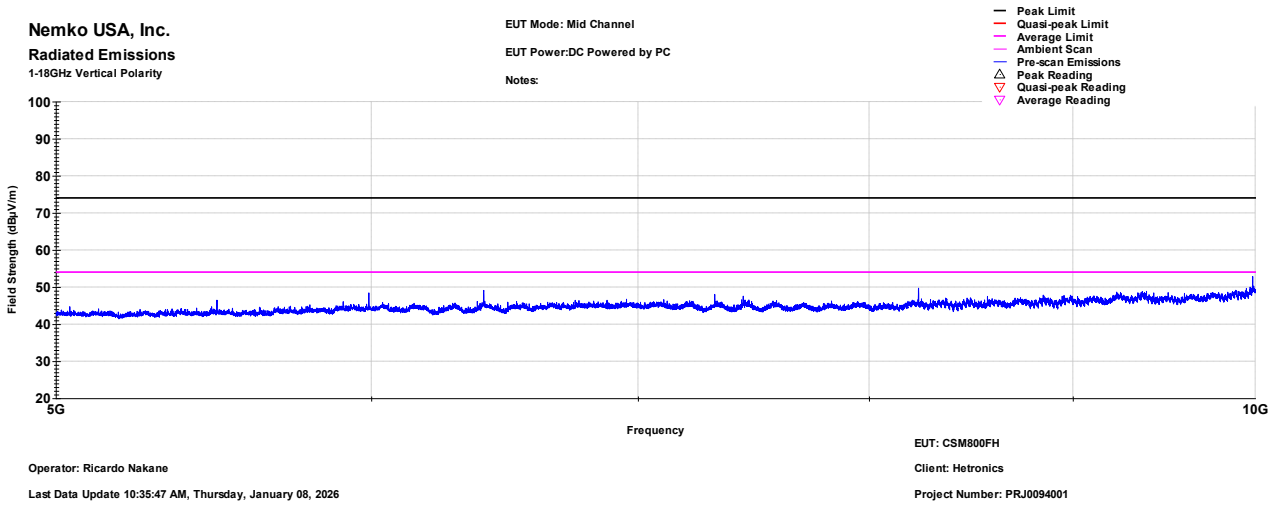


Figure 8.8-24: Radiated spurious emissions channel 914.5 MHz, from 5 – 10 GHz, vertical polarity

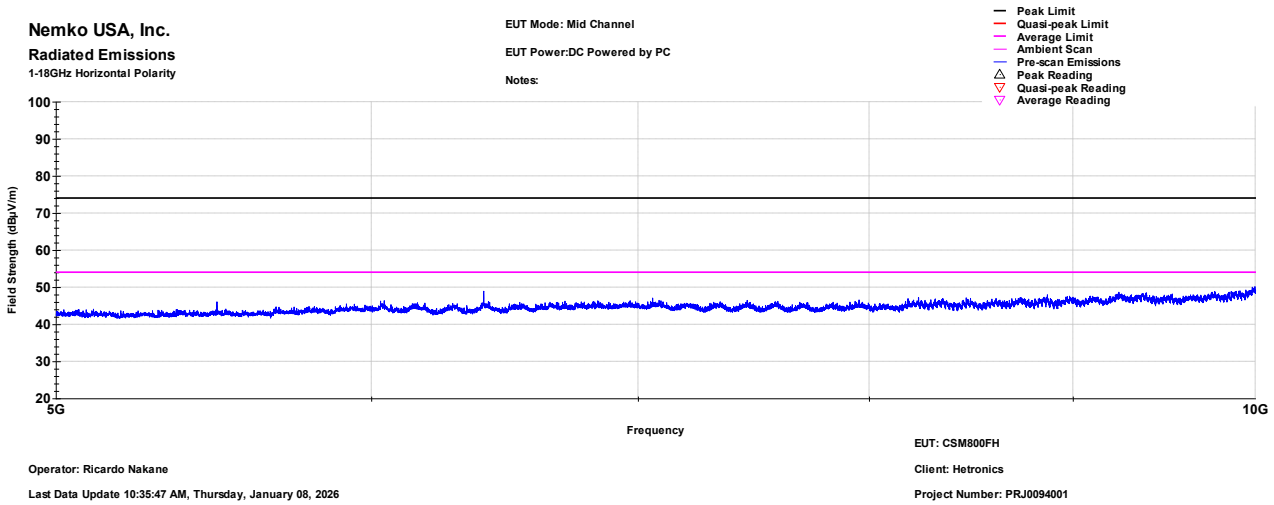
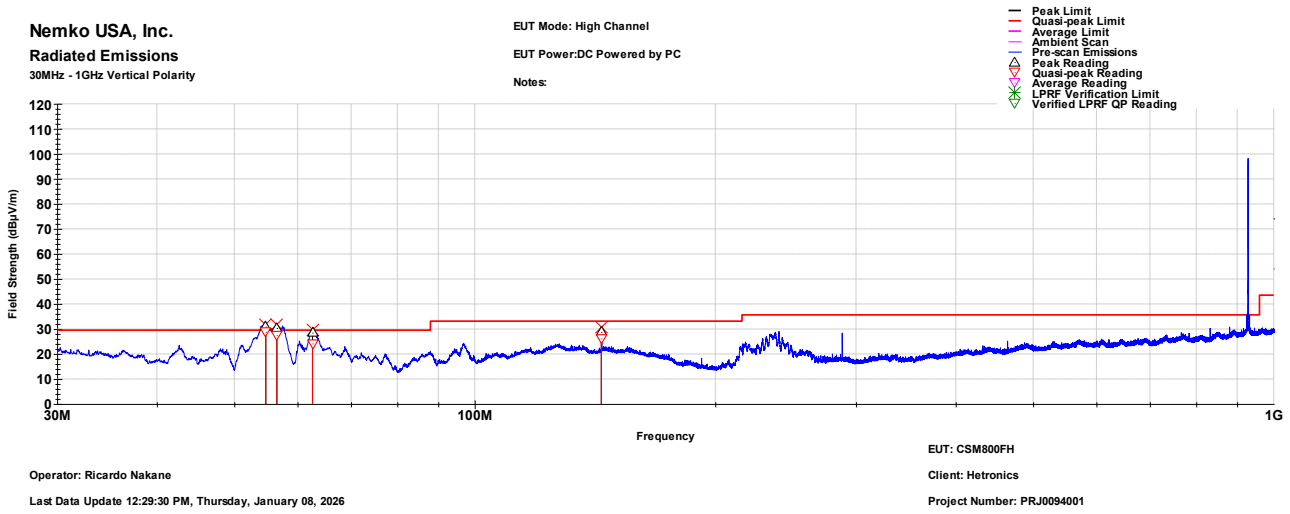


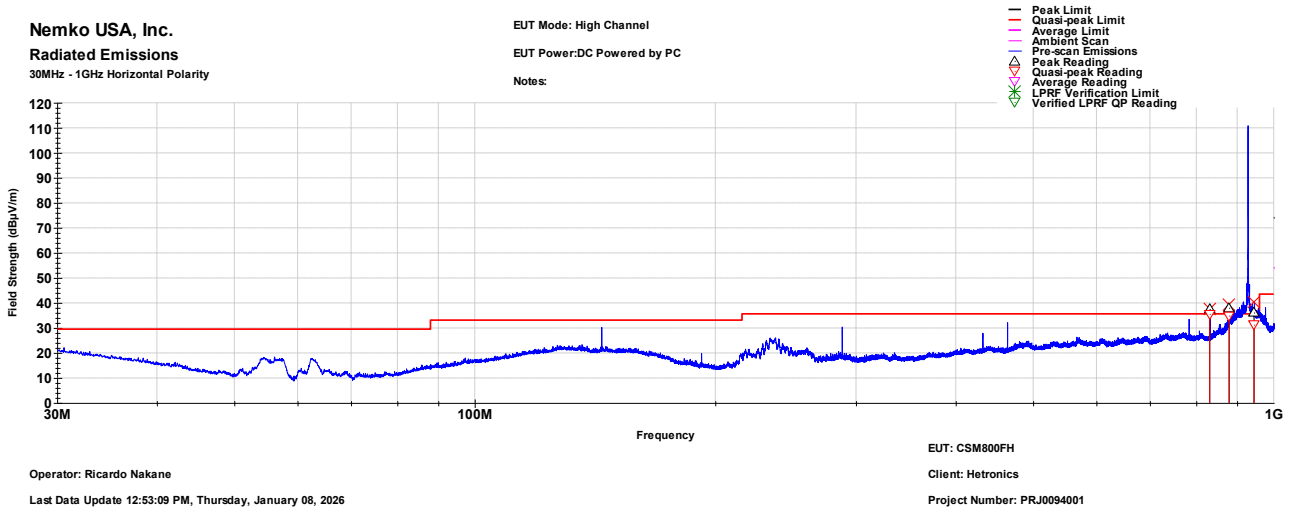
Figure 8.8-25: Radiated spurious emissions channel 914.5 MHz, from 5 – 10 GHz, Horizontal polarity

High channel 927.722 MHz



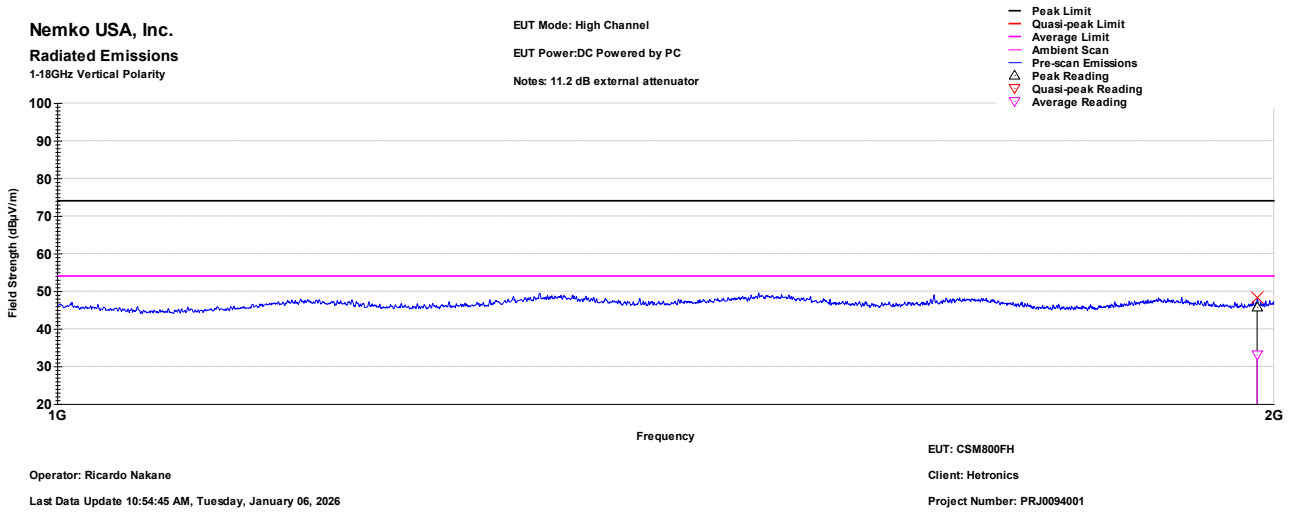
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Quasi-peak Reading (dBµV)	Quasi-peak Limit (dBµV)	Quasi-peak Margin (dB)	Quasi-peak Results	Peak Reading (dBµV)
54.750	219.000	229.000	28.790	29.500	-0.710	PASS	30.828
56.520	248.000	100.000	27.504	29.500	-1.996	PASS	30.347
62.640	129.000	191.000	24.160	29.500	-5.340	PASS	28.517
144.000	0.000	118.000	26.197	33.100	-6.903	PASS	28.778

Figure 8.8-26: Radiated spurious emissions channel 927.722 MHz, from 30 MHz – 1GHz, vertical polarity



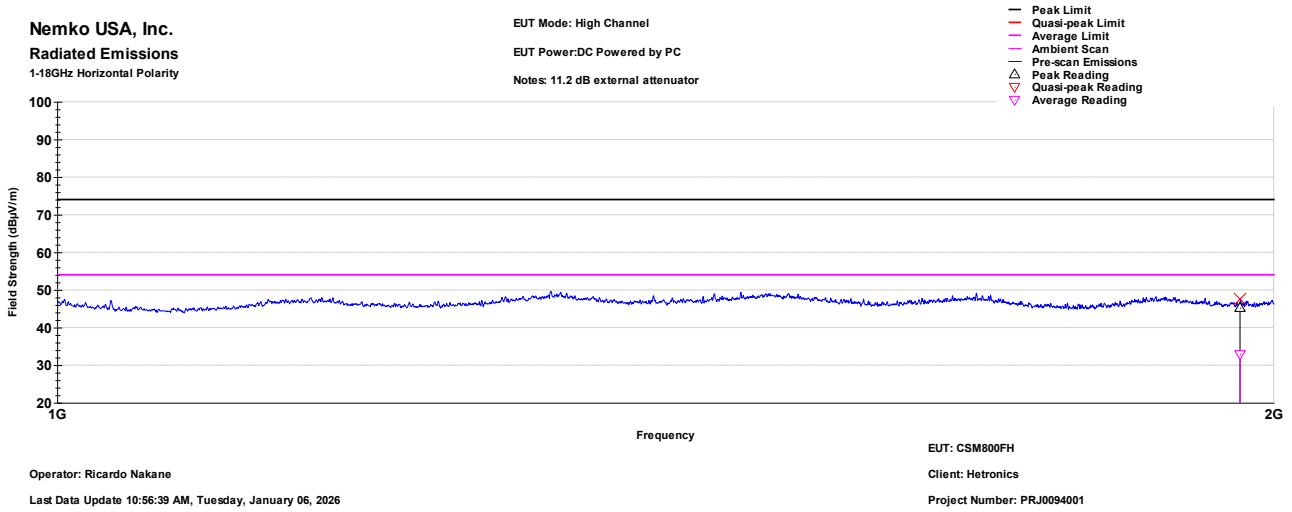
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Quasi-peak Reading (dBµV)	Quasi-peak Limit (dBµV)	Quasi-peak Margin (dB)	Quasi-peak Results	Peak Reading (dBµV)
831.707	157.000	100.000	35.543	35.600	-0.057	PASS	37.466
879.677	167.000	118.000	34.851	35.600	-0.749	PASS	38.010
945.047	192.000	291.000	31.244	35.600	-4.356	PASS	36.094

Figure 8.8-27: Radiated spurious emissions channel 927.722 MHz, from 30 MHz – 1GHz, horizontal polarity



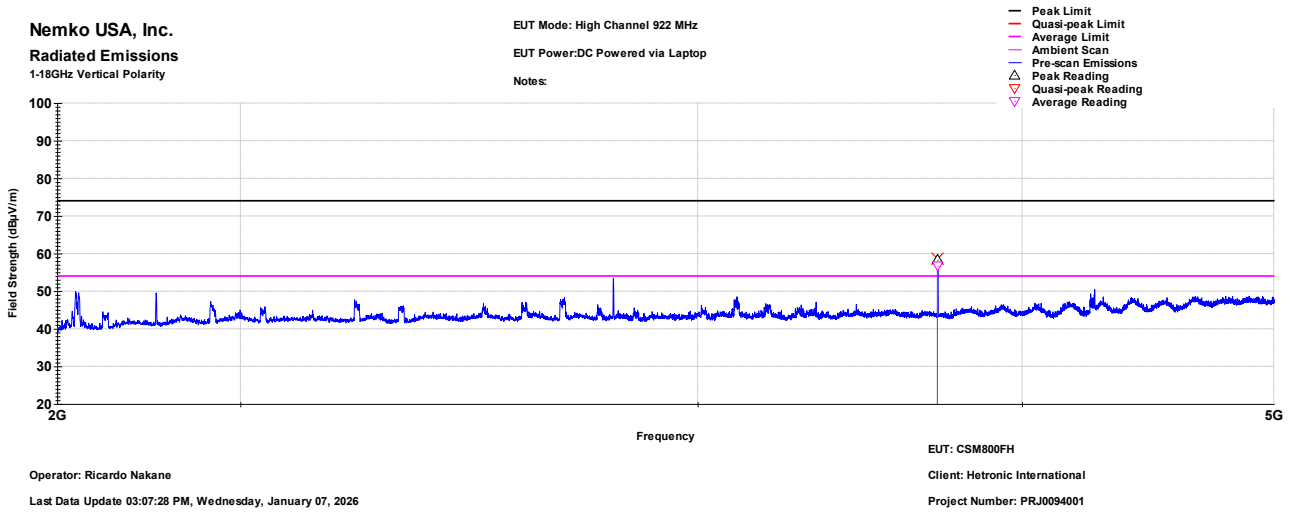
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
1687.75	209	312	45.830	74.000	-28.170	PASS	33.130	54.000	-20.870	PASS

Figure 8.8-28: Radiated spurious emissions channel 927.722 MHz, from 1 – 1.7 GHz, vertical polarity



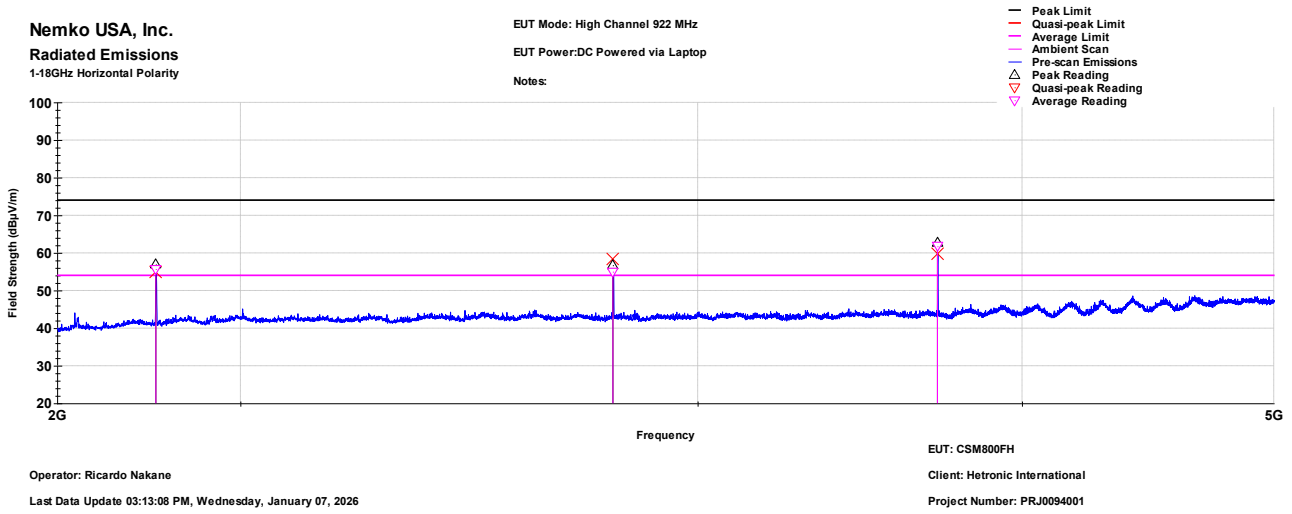
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
1675.25	78	274	45.260	74.000	-28.740	PASS	32.949	54.000	-21.051	PASS

Figure 8.8-29: Radiated spurious emissions channel 927.722 MHz, from 1 – 1.7 GHz, horizontal polarity



Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Duty Cycle Correction (dB)	Average Reading (dBµV)	Corrected Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
3711.00	150	100	58.289	74.000	-15.71	PASS	-13.773	56.654	42.881	54.000	-11.119	PASS

Figure 8.8-30: Radiated spurious emissions channel 927.722 MHz, from 1.7 – 5 GHz, vertical polarity



Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Duty Cycle Correction (dB)	Average Reading (dBµV)	Corrected Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
1855.50	157	336	56.901	74.000	-17.09	PASS	-13.773	55.657	42.257	54.000	-12.116	PASS
2783.00	128	100	56.690	74.000	-17.31	PASS	-13.773	54.952	41.179	54.000	-12.821	PASS
3711.00	201	100	62.711	74.000	-11.28	PASS	-13.773	61.721	47.948	54.000	-6.052	PASS

Figure 8.8-31: Radiated spurious emissions channel 927.722 MHz, from 1.7 – 5 GHz, Horizontal polarity

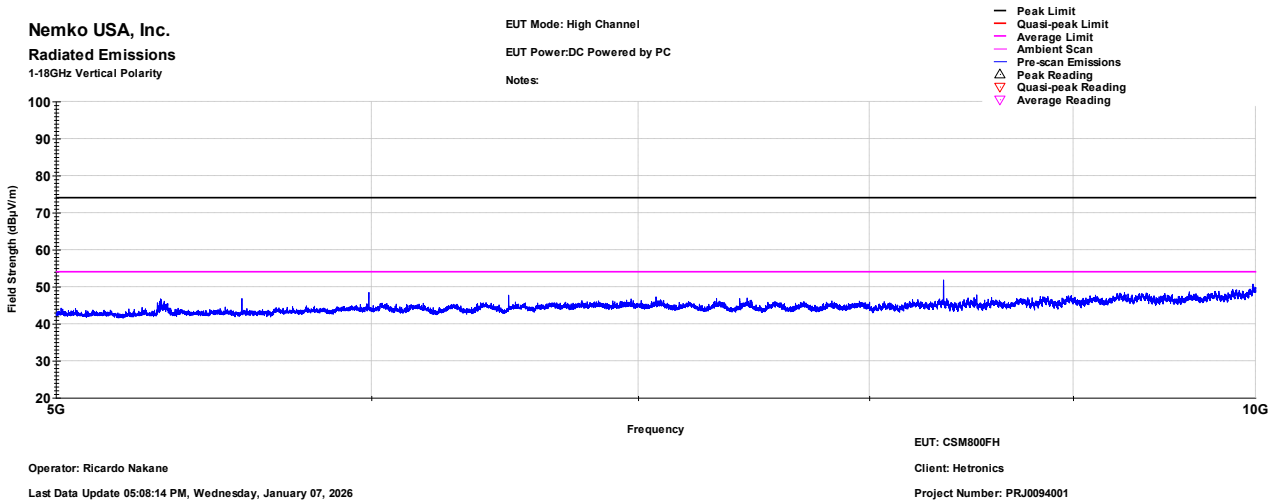


Figure 8.8-32: Radiated spurious emissions channel 927.722 MHz, from 5 – 10 GHz, vertical polarity

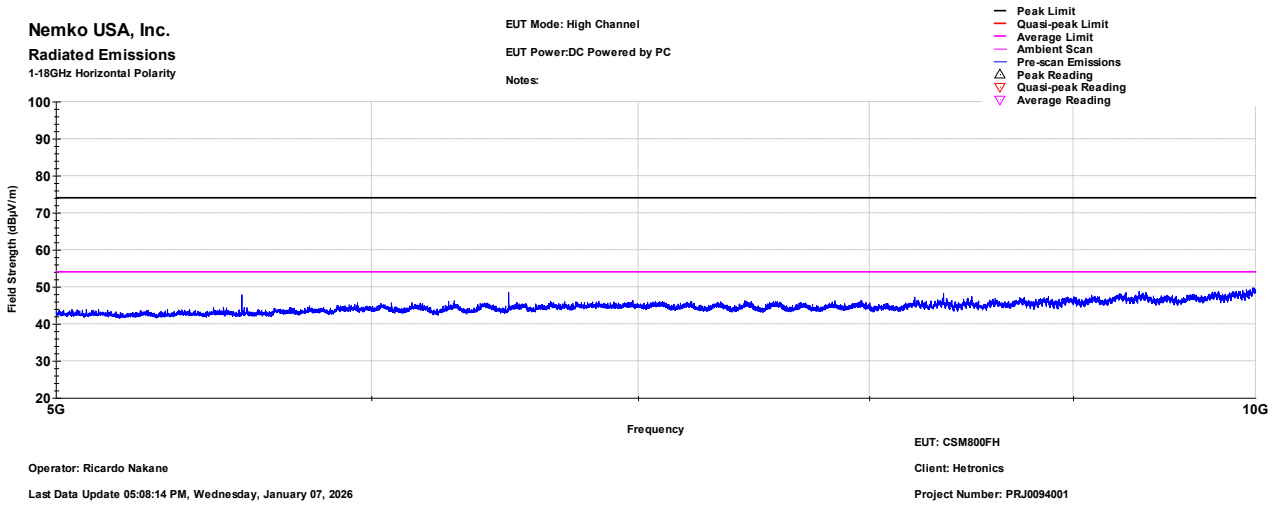
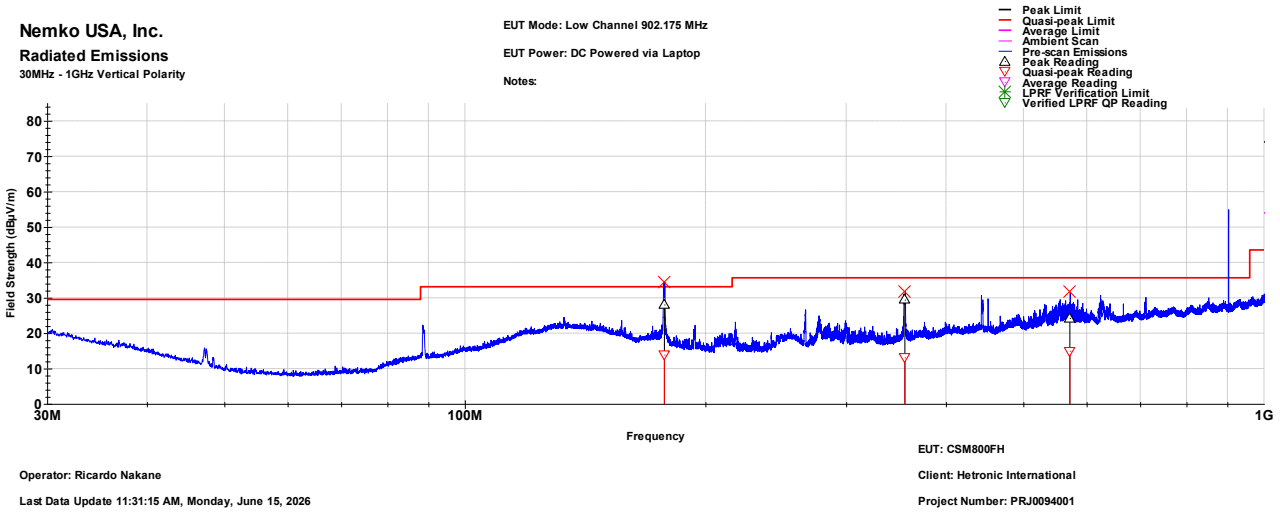


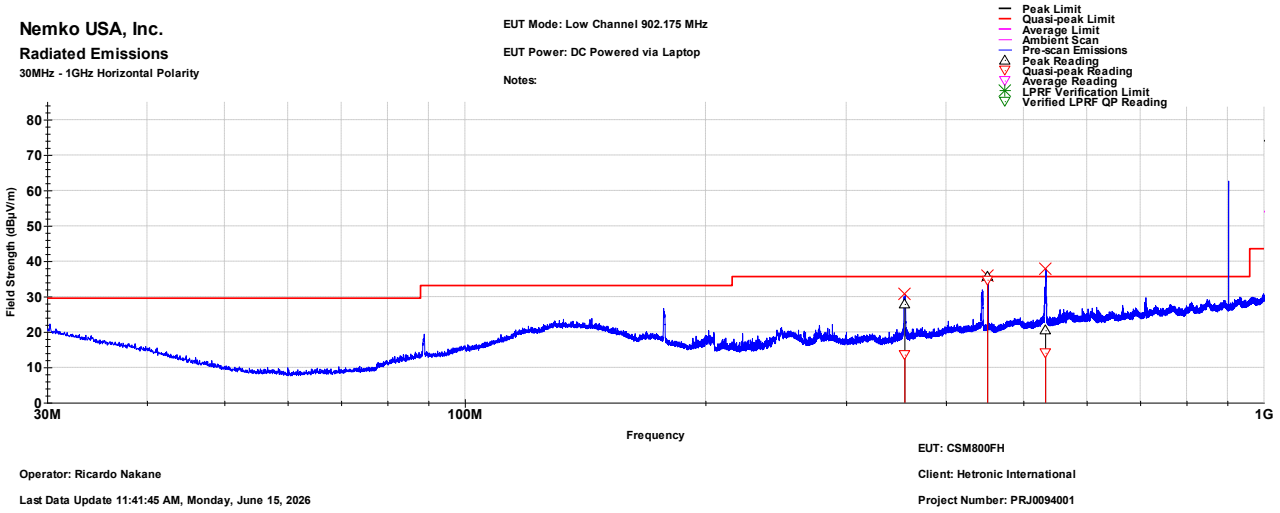
Figure 8.8-33: Radiated spurious emissions channel 927.722 MHz, from 5 – 10 GHz, Horizontal polarity

2195835-1~-8 Antenna
Low Channel 902.175 MHz



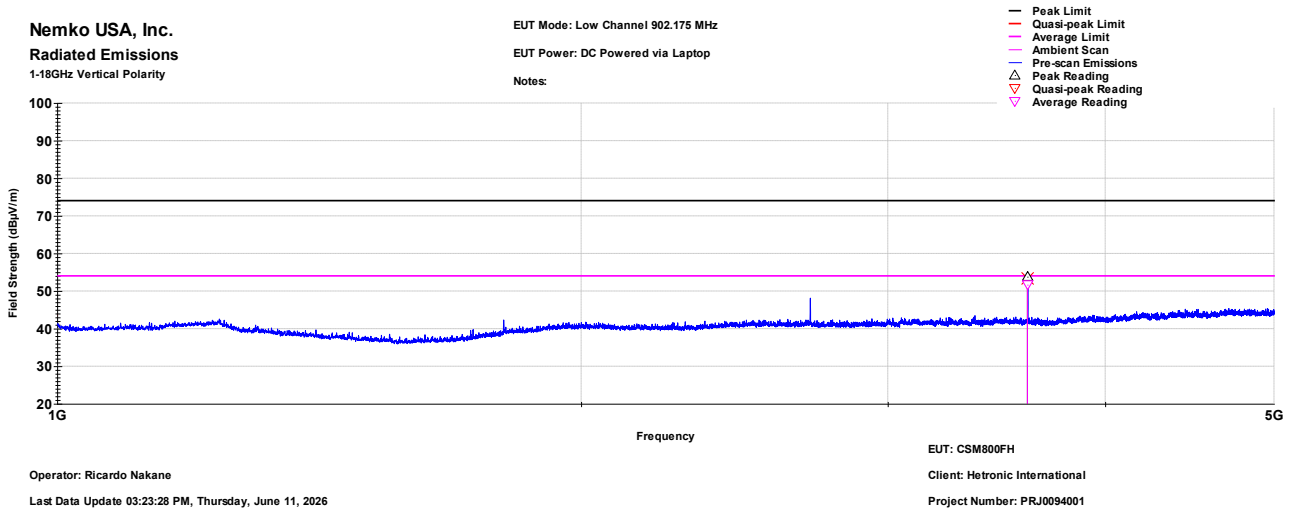
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Quasi-peak Reading (dBµV)	Quasi-peak Limit (dBµV)	Quasi-peak Margin (dB)	Quasi-peak Results	Peak Reading (dBµV)
177.690	57.000	150.000	13.919	33.100	-19.181	PASS	28.061
355.403	282.000	100.000	13.120	35.600	-22.480	PASS	29.433
571.583	147.000	278.000	14.997	35.600	-20.603	PASS	24.260

Figure 8.8-34: Radiated spurious emissions channel 902.175 MHz, from 30 MHz – 1GHz, vertical polarity



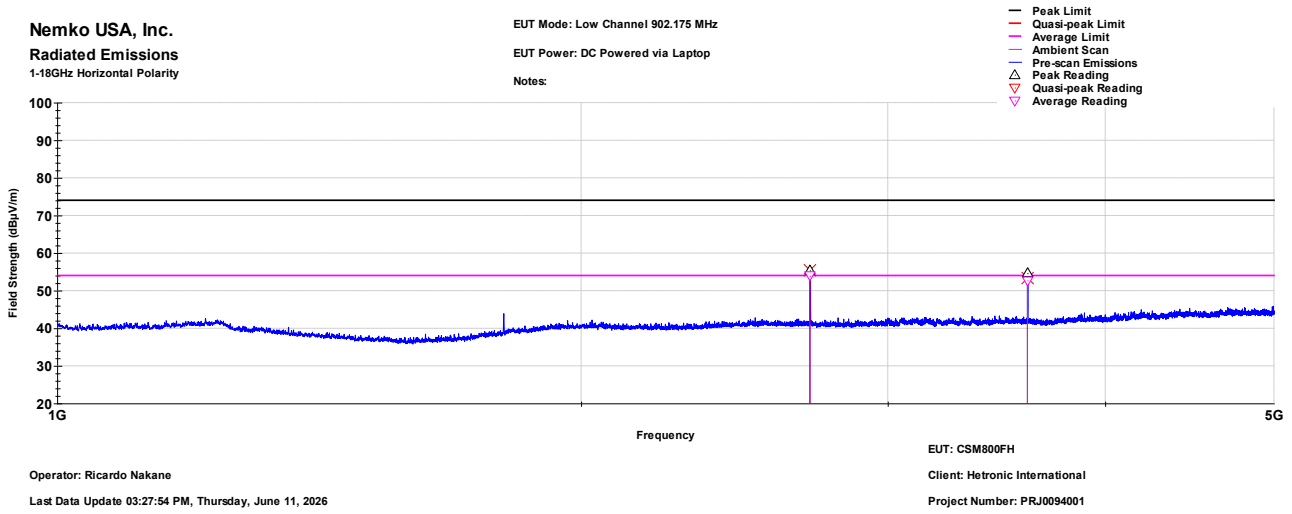
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Quasi-peak Reading (dBµV)	Quasi-peak Limit (dBµV)	Quasi-peak Margin (dB)	Quasi-peak Results	Peak Reading (dBµV)
355.373	102.000	132.000	13.550	35.600	-22.050	PASS	27.846
451.073	327.000	132.000	34.698	35.600	-0.902	PASS	35.724
533.063	67.000	156.000	14.050	35.600	-21.550	PASS	20.439

Figure 8.8-35: Radiated spurious emissions channel 902.175 MHz, from 30 MHz – 1GHz, horizontal polarity



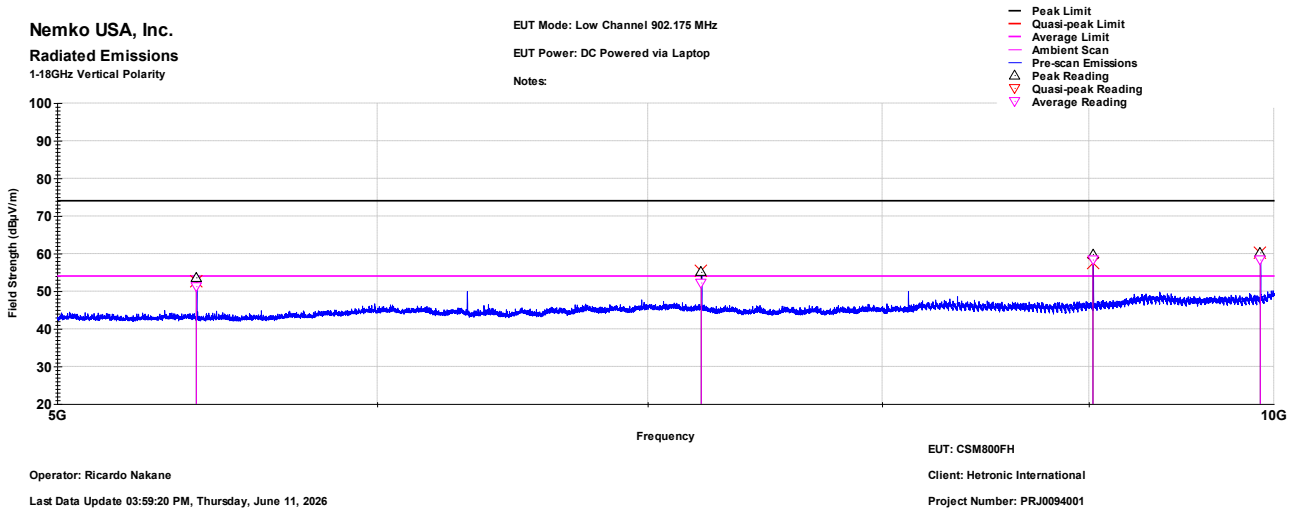
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Duty Cycle Correction (dBµV)	Average Reading (dBµV)	Corrected Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
3608.75	170	100	53.784	74.000	-20.216	PASS	-13.410	51.645	38.235	54.000	-15.765	PASS

Figure 8.8-36: Radiated spurious emissions channel 902.175 MHz, from 1GHz – 5GHz, vertical polarity



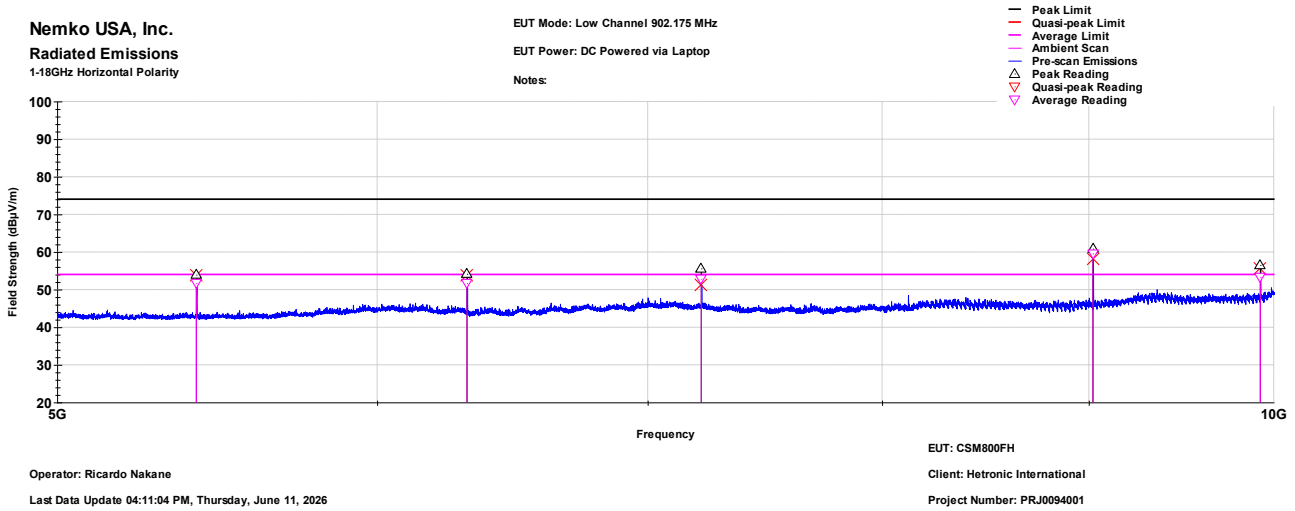
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Duty Cycle Correction (dBµV)	Average Reading (dBµV)	Corrected Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
2706.50	219	340	55.347	74.000	-18.653	PASS	-13.410	53.873	40.463	54.000	-13.537	PASS
3608.75	279	353	54.611	74.000	-19.389	PASS	-13.410	52.704	39.294	54.000	-14.706	PASS

Figure 8.8-37: Radiated spurious emissions channel 902.175 MHz, from 1GHz – 5GHz, horizontal polarity



Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Duty Cycle Correction (dBµV)	Average Reading (dBµV)	Corrected Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
2706.50	219	340	55.347	74.000	-18.653	PASS	-13.410	51.284	37.874	54.000	-16.126	PASS
3608.75	279	353	54.611	74.000	-19.389	PASS	-13.410	52.236	38.826	54.000	-15.174	PASS
9021.75	310	222	59.845	74.000	-14.155	PASS	-13.410	58.359	44.949	54.000	-9.051	PASS
9924.00	279	100	60.246	74.000	-13.754	PASS	-13.410	58.354	44.944	54.000	-9.056	PASS

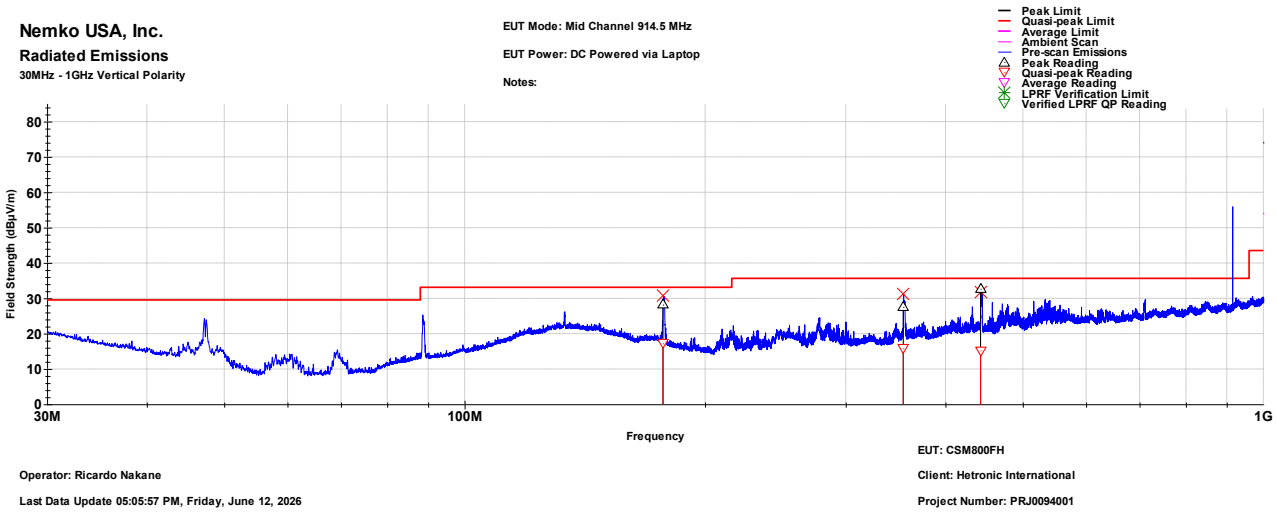
Figure 8.8-38: Radiated spurious emissions channel 902.175 MHz, from 5GHz – 10GHz, vertical polarity



Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Duty Cycle Correction (dBµV)	Average Reading (dBµV)	Corrected Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
5413.00	179	100	53.936	74.000	-20.064	PASS	-13.410	51.719	38.309	54.000	-15.691	PASS
6315.25	249	222	54.178	74.000	-19.822	PASS	-13.410	51.677	38.267	54.000	-15.733	PASS
7217.25	259	384	55.619	74.000	-18.381	PASS	-13.410	52.841	39.431	54.000	-14.569	PASS
9021.75	199	240	60.853	74.000	-13.147	PASS	-13.410	59.583	46.173	54.000	-7.827	PASS
9924.00	170	100	56.531	74.000	-17.469	PASS	-13.410	53.319	39.909	54.000	-14.091	PASS

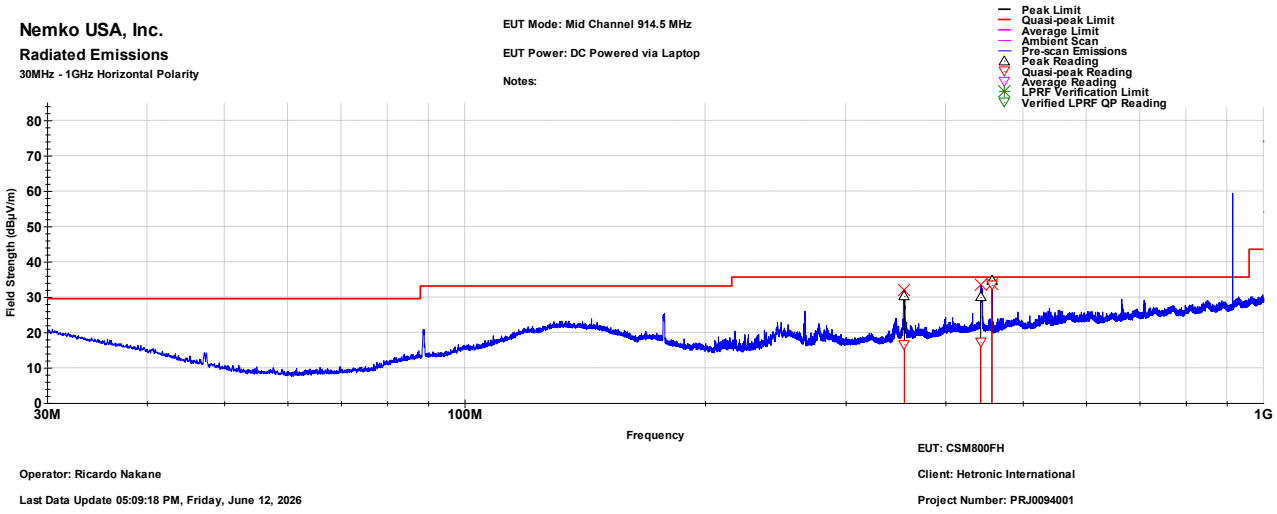
Figure 8.8-39: Radiated spurious emissions channel 902.175 MHz, from 5GHz – 10GHz, horizontal polarity

Middle channel 914.5 MHz



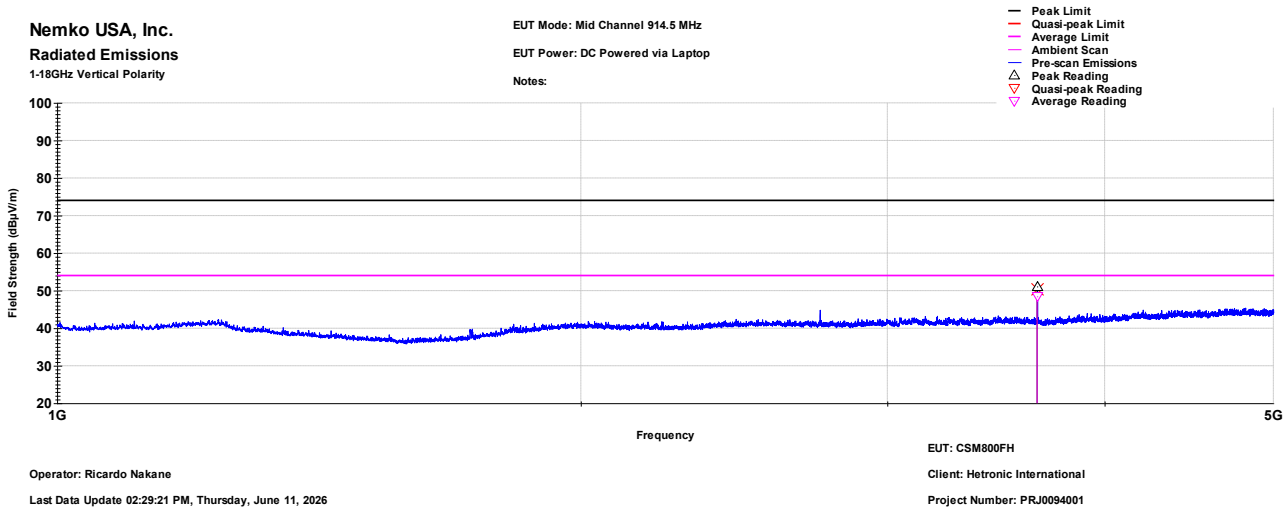
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Quasi-peak Reading (dBµV)	Quasi-peak Limit (dBµV)	Quasi-peak Margin (dB)	Quasi-peak Results	Peak Reading (dBµV)
177.150	293.000	100.000	17.217	33.100	-15.883	PASS	28.182
354.113	274.000	100.000	15.836	35.600	-19.764	PASS	27.512
442.523	237.000	100.000	15.203	35.600	-20.397	PASS	32.658

Figure 8.8-40: Radiated spurious emissions channel 914.5 MHz, from 30 MHz – 1GHz, vertical polarity



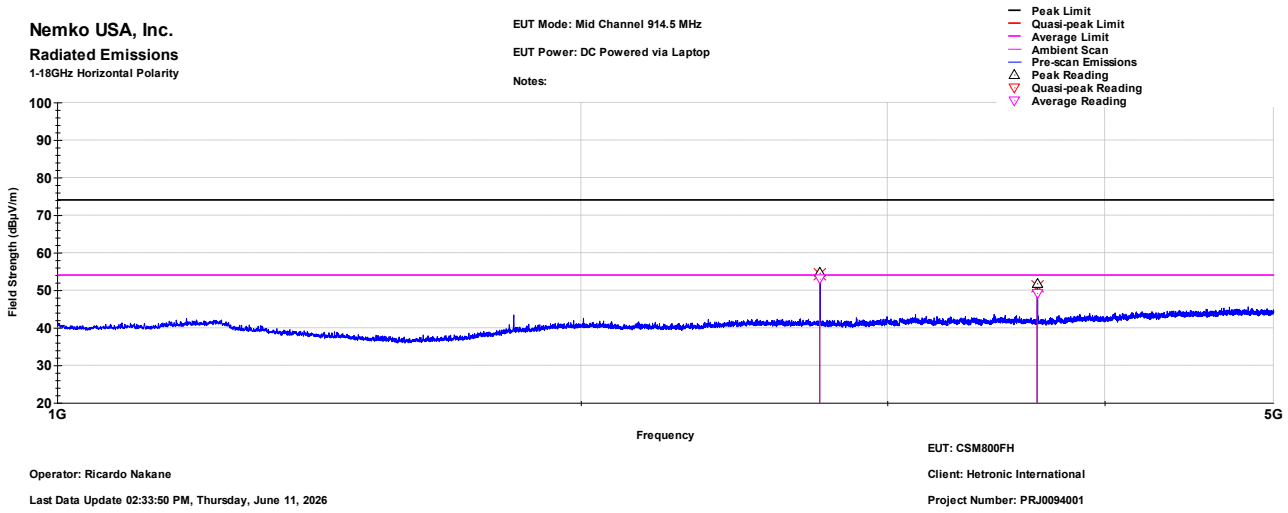
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Quasi-peak Reading (dBµV)	Quasi-peak Limit (dBµV)	Quasi-peak Margin (dB)	Quasi-peak Results	Peak Reading (dBµV)
355.343	67.000	278.000	16.649	35.600	-18.951	PASS	30.237
442.673	157.000	205.000	17.240	35.600	-18.360	PASS	29.947
457.253	10.000	100.000	33.402	35.600	-2.198	PASS	34.687

Figure 8.8-41: Radiated spurious emissions channel 914.5 MHz, from 30 MHz – 1GHz, horizontal polarity



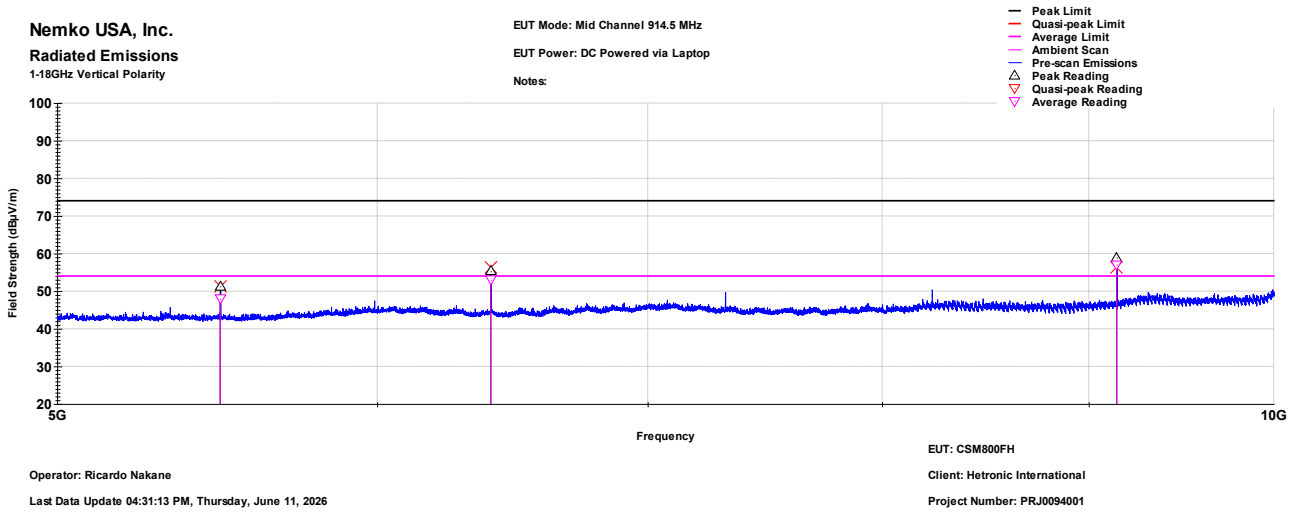
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Duty Cycle Correction (dBµV)	Average Reading (dBµV)	Corrected Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
3658.00	160	100	51.089	74.000	-22.911	PASS	-13.410	48.464	35.054	54.000	-18.946	PASS

Figure 8.8-42: Radiated spurious emissions channel 914.5 MHz, from 1GHz – 5GHz, vertical polarity



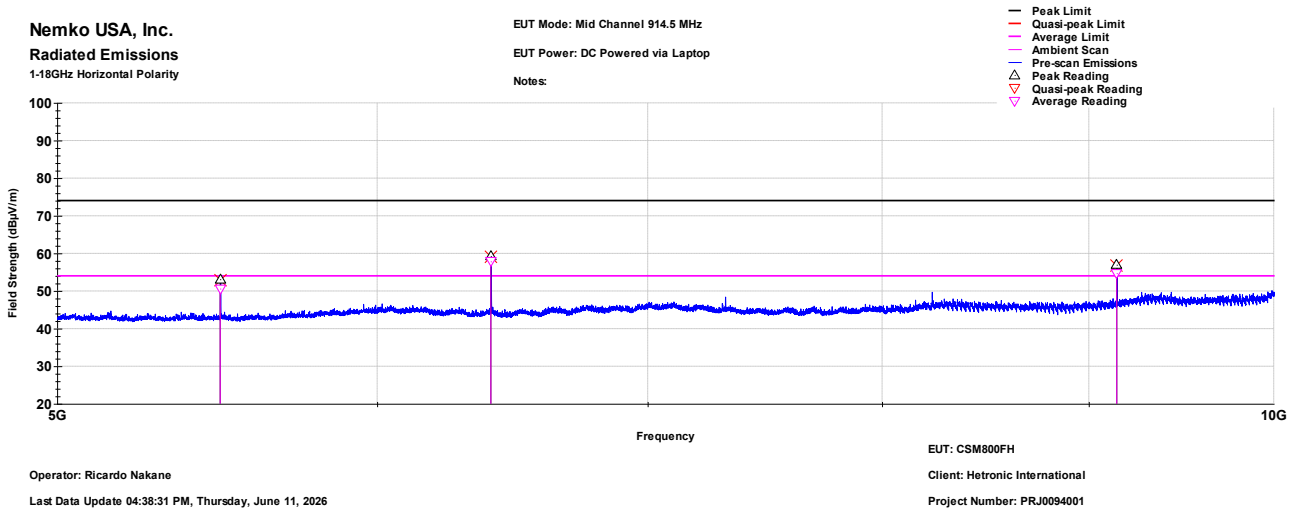
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Duty Cycle Correction (dBµV)	Average Reading (dBµV)	Corrected Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
2743.50	221	303	54.602	74.000	-19.398	PASS	-13.410	53.034	39.624	54.000	-14.376	PASS
3658.00	279	315	51.805	74.000	-22.195	PASS	-13.410	49.193	35.783	54.000	-18.217	PASS

Figure 8.8-43: Radiated spurious emissions channel 914.5 MHz, from 1GHz – 5GHz, horizontal polarity



Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Duty Cycle Correction (dBµV)	Average Reading (dBµV)	Corrected Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
5487.00	140	148	51.254	74.000	-22.746	PASS	-13.410	47.911	34.501	54.000	-19.499	PASS
6401.50	159	100	55.262	74.000	-18.738	PASS	-13.410	52.970	39.560	54.000	-14.440	PASS
9145.00	302	234	58.892	74.000	-15.108	PASS	-13.410	56.995	43.585	54.000	-10.415	PASS

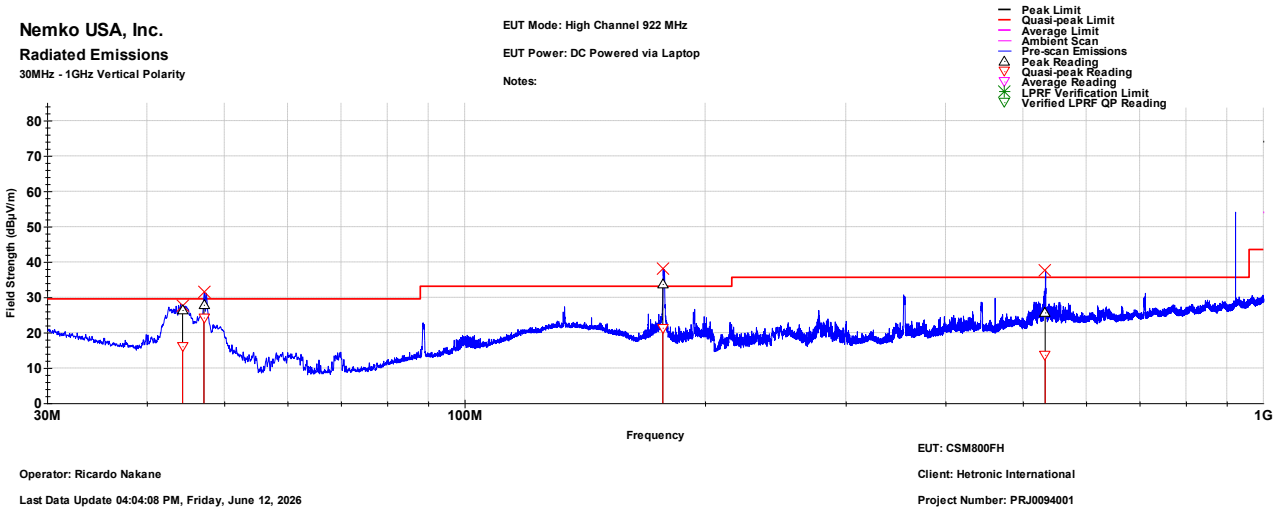
Figure 8.8-44: Radiated spurious emissions channel 914.5 MHz, from 5GHz – 10GHz, vertical polarity



Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Duty Cycle Correction (dBµV)	Average Reading (dBµV)	Corrected Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
5487.00	200	100	53.104	74.000	-20.896	PASS	-13.410	50.592	37.182	54.000	-16.818	PASS
6401.50	259	222	59.246	74.000	-14.754	PASS	-13.410	57.846	44.436	54.000	-9.564	PASS
9145.00	279	197	56.937	74.000	-17.063	PASS	-13.410	54.722	41.312	54.000	-12.688	PASS

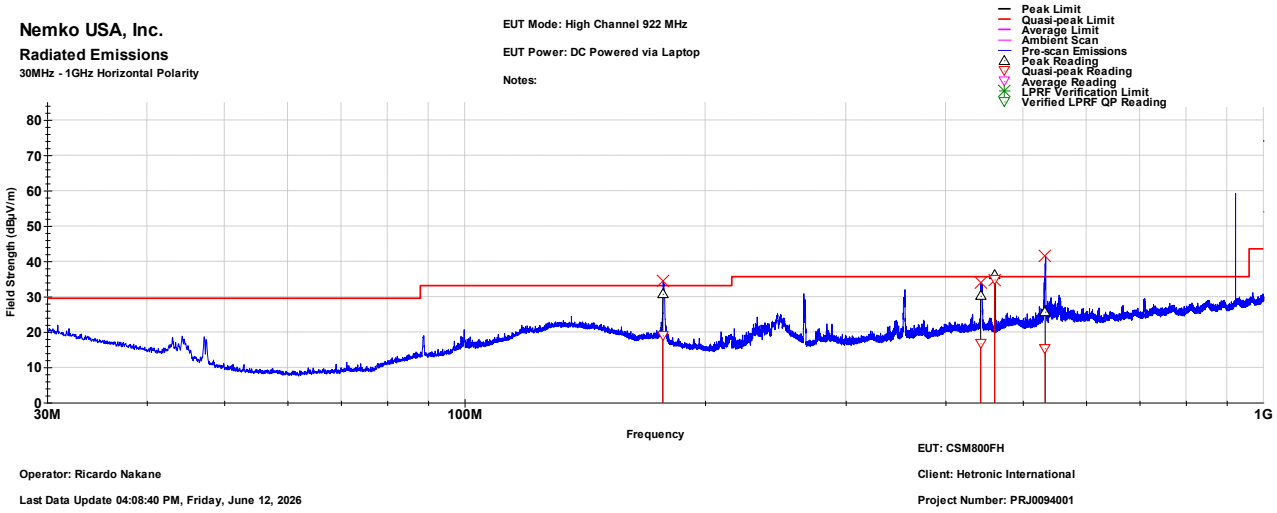
Figure 8.8-45: Radiated spurious emissions channel 914.5 MHz, from 5GHz – 10GHz, horizontal polarity

High channel 927.722 MHz



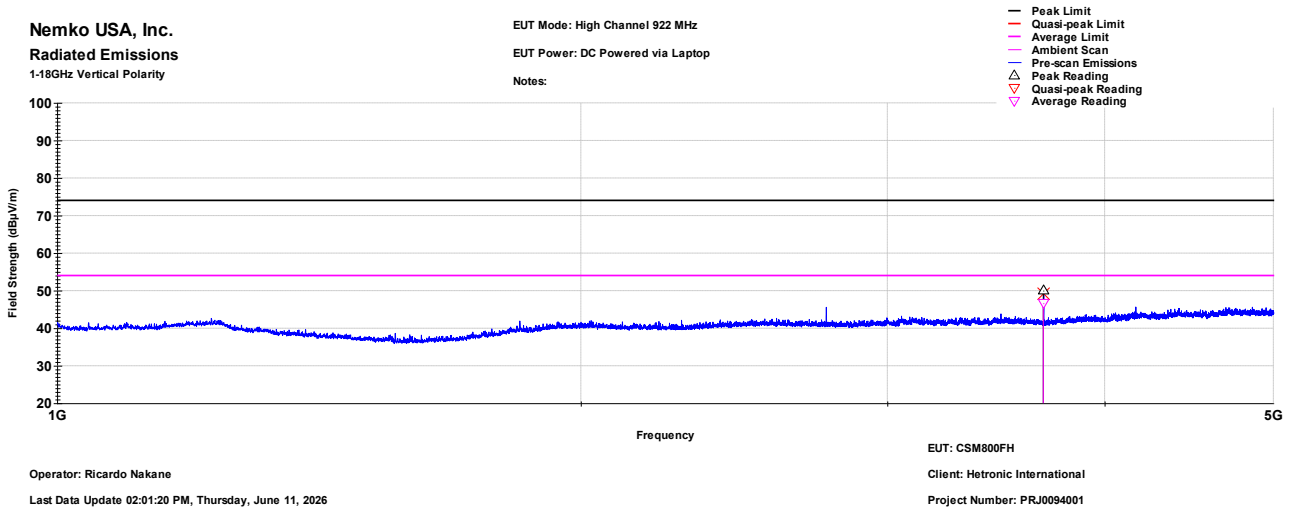
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Quasi-peak Reading (dBµV)	Quasi-peak Limit (dBµV)	Quasi-peak Margin (dB)	Quasi-peak Results	Peak Reading (dBµV)
44.340	57.000	273.000	16.114	29.500	-13.386	PASS	26.361
47.160	57.000	256.000	24.215	29.500	-5.285	PASS	27.824
177.060	264.000	150.000	21.333	33.100	-11.767	PASS	33.728
533.243	302.000	350.000	13.677	35.600	-21.923	PASS	25.670

Figure 8.8-46: Radiated spurious emissions channel 927.722 MHz, from 30 MHz – 1GHz, vertical polarity



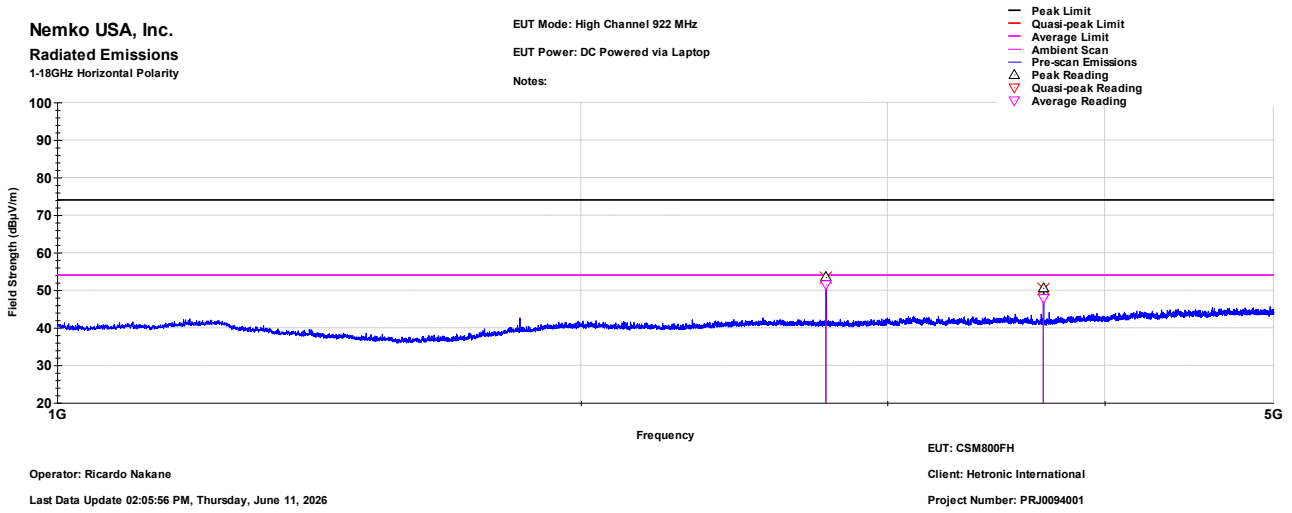
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Quasi-peak Reading (dBµV)	Quasi-peak Limit (dBµV)	Quasi-peak Margin (dB)	Quasi-peak Results	Peak Reading (dBµV)
177.030	49.000	305.000	18.999	33.100	-14.101	PASS	30.742
442.643	157.000	218.000	16.727	35.600	-18.873	PASS	30.162
461.003	147.000	100.000	34.846	35.600	-0.754	PASS	36.125
533.243	174.000	178.000	15.364	35.600	-20.236	PASS	25.706

Figure 8.8-47: Radiated spurious emissions channel 927.722 MHz, from 30 MHz – 1GHz, horizontal polarity



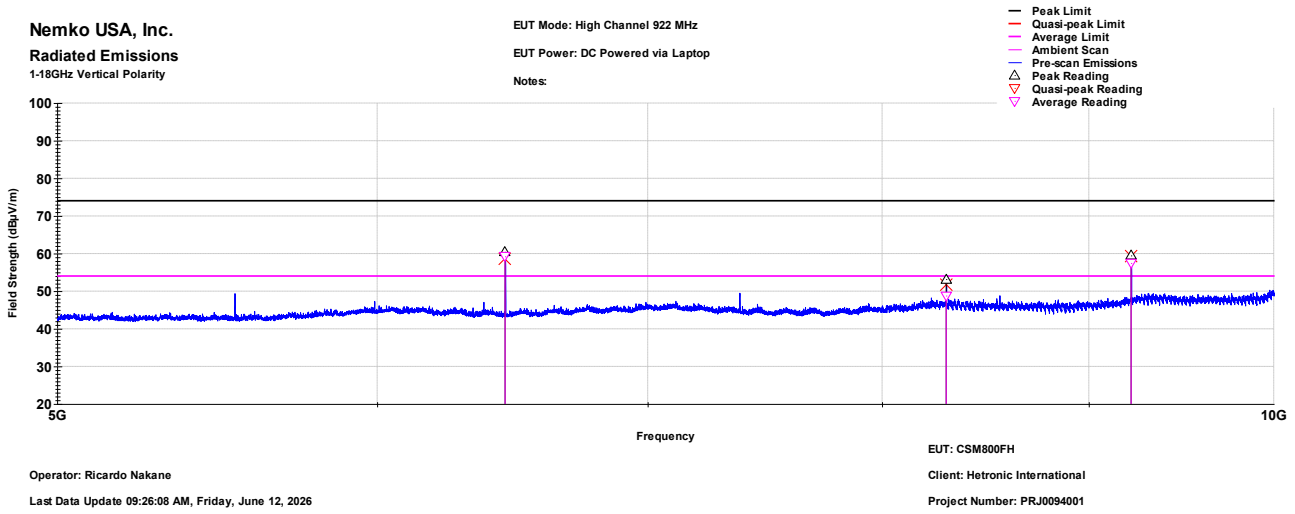
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Duty Cycle Correction (dBµV)	Average Reading (dBµV)	Corrected Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
3688.00	**169**	**113**	**49.993**	**74.000**	**-24.007**	**PASS**	**-13.410**	**46.627**	**33.217**	**54.000**	**-20.783**	**PASS**

Figure 8.8-48: Radiated spurious emissions channel 927.722 MHz, from 1GHz – 5GHz, vertical polarity



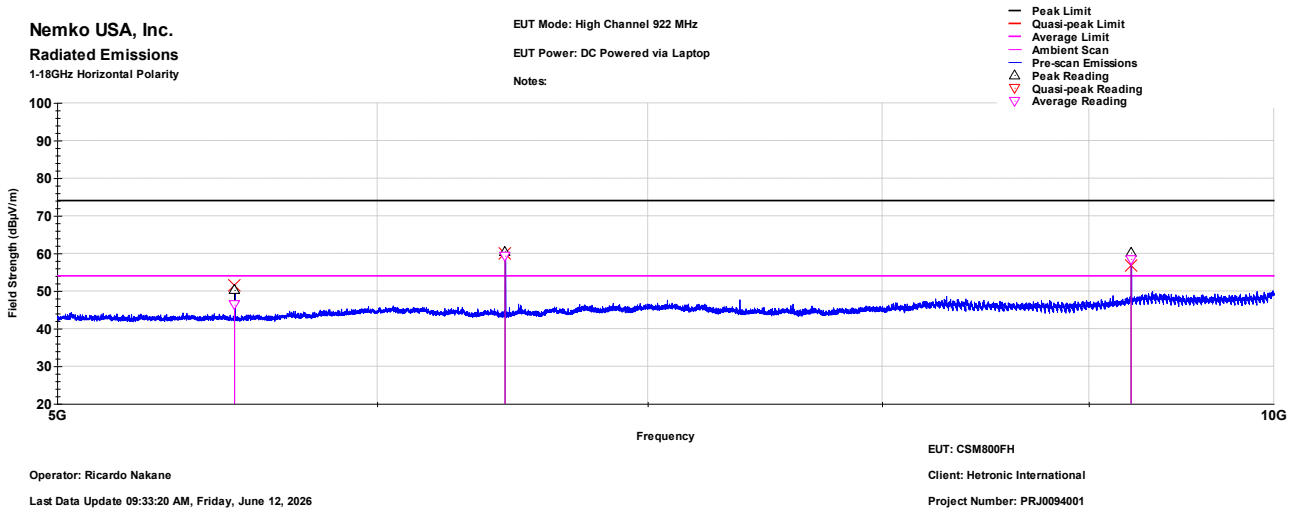
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Duty Cycle Correction (dBµV)	Average Reading (dBµV)	Corrected Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
2766.00	**221**	**328**	**53.472**	**74.000**	**-20.528**	**PASS**	**-13.410**	**51.527**	**38.117**	**54.000**	**-15.883**	**PASS**
3688.00	**281**	**279**	**50.605**	**74.000**	**-23.395**	**PASS**	**-13.410**	**47.835**	**34.425**	**54.000**	**-19.575**	**PASS**

Figure 8.8-49: Radiated spurious emissions channel 927.722 MHz, from 1GHz – 5GHz, horizontal polarity



Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Duty Cycle Correction (dBµV)	Average Reading (dBµV)	Corrected Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
6454.00	170	100	60.404	74.000	-13.596	PASS	-13.410	59.240	45.830	54.000	-8.170	PASS
8298.00	281	247	53.166	74.000	-20.834	PASS	-13.410	48.792	35.382	54.000	-18.618	PASS
9220.00	169	191	59.470	74.000	-14.530	PASS	-13.410	57.456	44.046	54.000	-9.954	PASS

Figure 8.8-50: Radiated spurious emissions channel 927.722 MHz, from 5GHz – 10GHz, vertical polarity

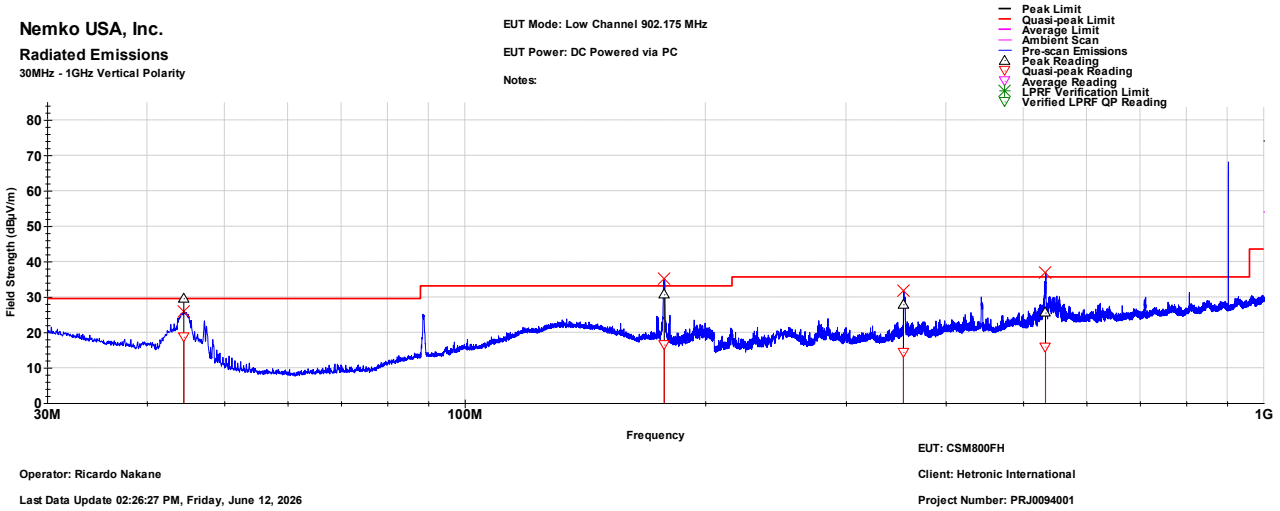


Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Duty Cycle Correction (dBµV)	Average Reading (dBµV)	Corrected Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
5532.00	160	100	50.208	74.000	-23.792	PASS	-13.410	46.304	32.894	54.000	-21.106	PASS
6454.00	251	222	60.472	74.000	-13.528	PASS	-13.410	59.344	45.934	54.000	-8.066	PASS
9220.00	300	210	60.154	74.000	-13.846	PASS	-13.410	58.482	45.072	54.000	-8.928	PASS

Figure 8.8-51: Radiated spurious emissions channel 927.722 MHz, from 5GHz – 10GHz, horizontal polarity

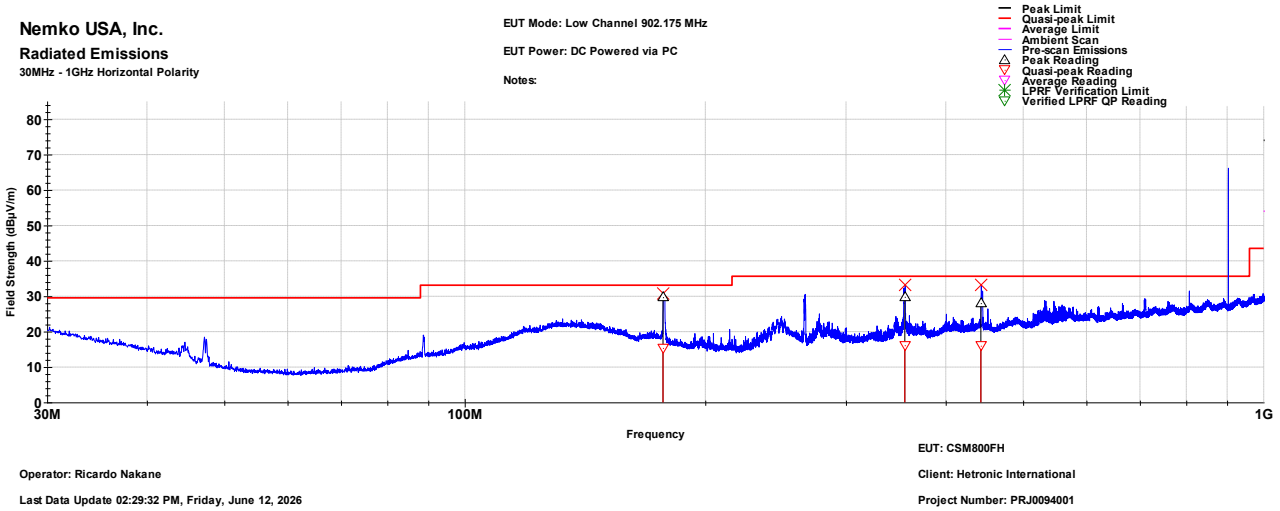
66501900 Antenna

Low Channel 902.175 MHz



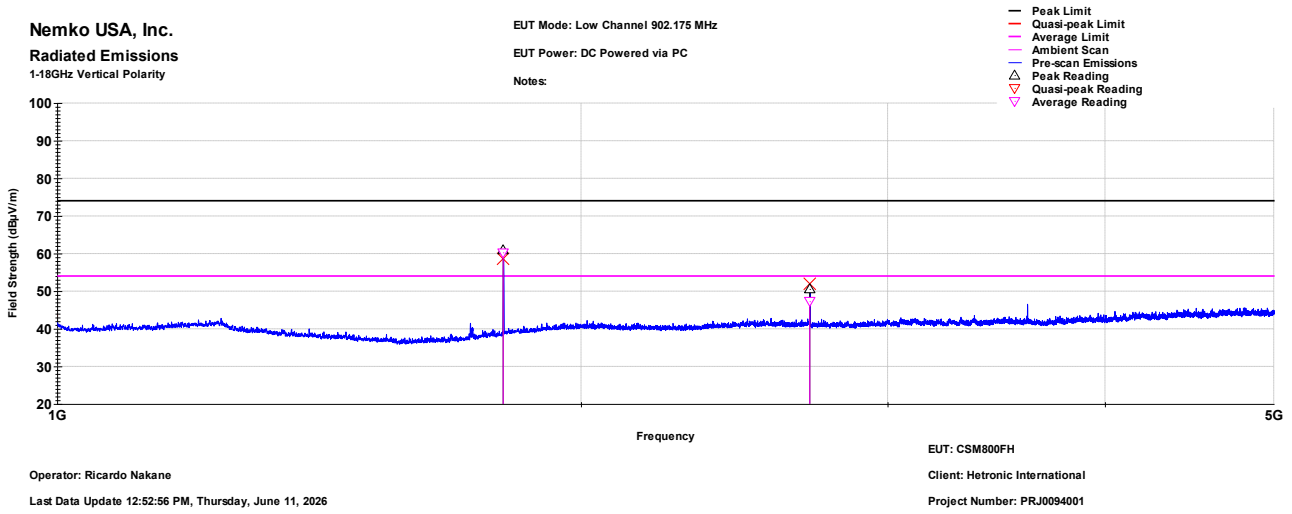
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Quasi-peak Reading (dBµV)	Quasi-peak Limit (dBµV)	Quasi-peak Margin (dB)	Quasi-peak Results	Peak Reading (dBµV)
44.490	112.000	263.000	18.684	29.500	-10.816	PASS	29.584
177.690	293.000	150.000	16.479	33.100	-16.621	PASS	30.671
354.083	248.000	132.000	14.425	35.600	-21.175	PASS	27.875
533.153	327.000	329.000	15.918	35.600	-19.682	PASS	25.511

Figure 8.8-52: Radiated spurious emissions channel 902.175 MHz, from 30 MHz – 1GHz, vertical polarity



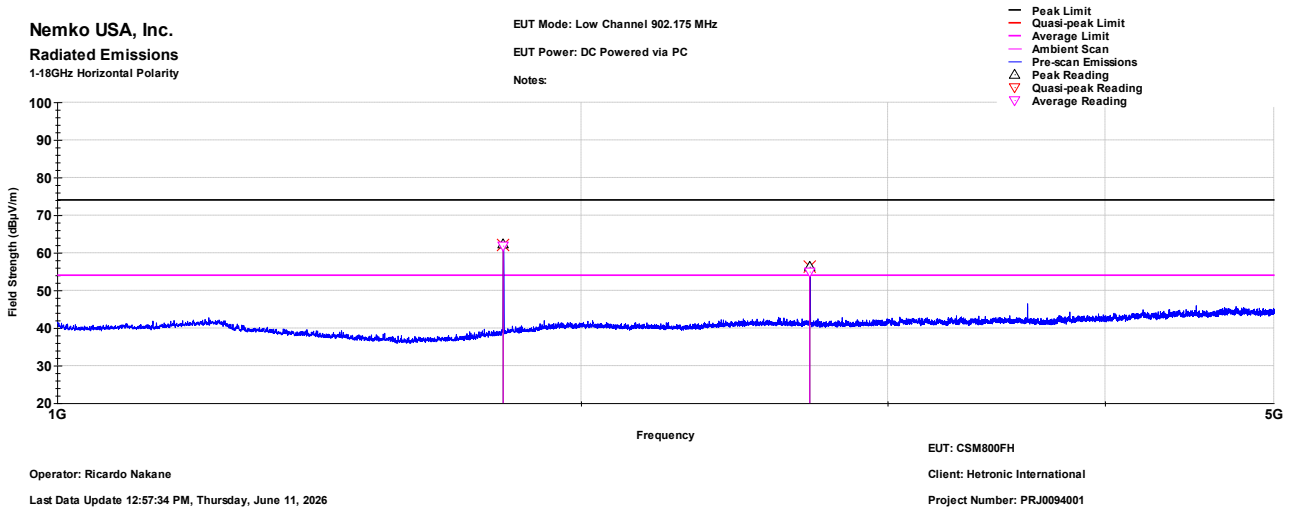
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Quasi-peak Reading (dBµV)	Quasi-peak Limit (dBµV)	Quasi-peak Margin (dB)	Quasi-peak Results	Peak Reading (dBµV)
177.060	49.000	350.000	15.363	33.100	-17.737	PASS	29.694
355.433	86.000	165.000	16.120	35.600	-19.480	PASS	29.815
442.553	86.000	150.000	15.973	35.600	-19.627	PASS	28.002

Figure 8.8-53: Radiated spurious emissions channel 902.175 MHz, from 30 MHz – 1GHz, horizontal polarity



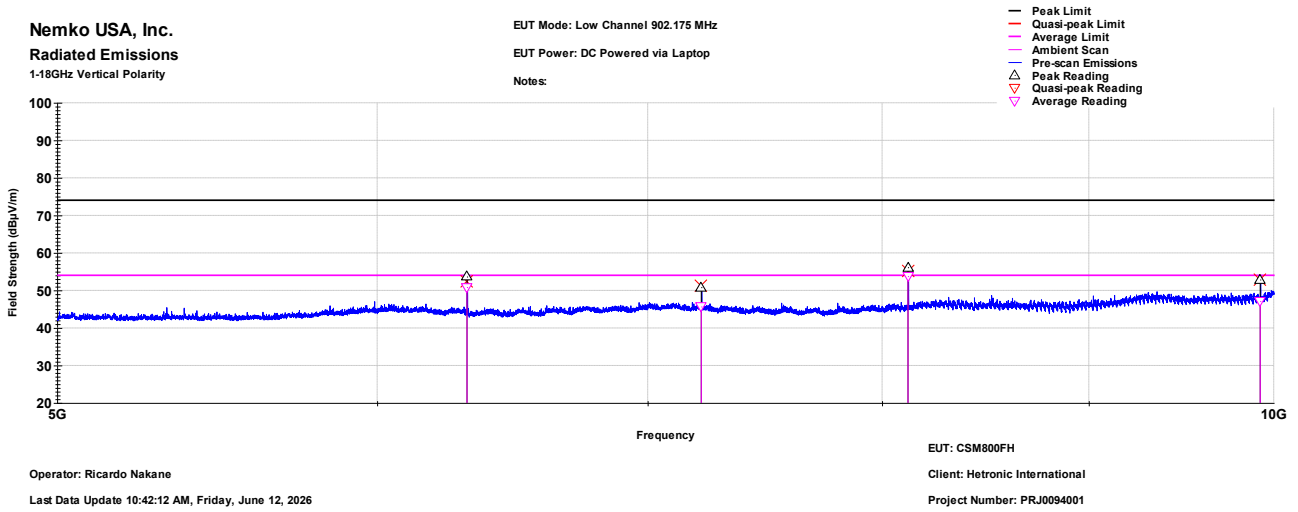
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Duty Cycle Correction (dBµV)	Average Reading (dBµV)	Corrected Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
1804.25	229	197	60.885	74.000	-13.115	PASS	-13.410	60.285	46.875	54.000	-7.125	PASS
2706.50	219	100	50.550	74.000	-23.450	PASS	-13.410	47.300	33.890	54.000	-20.110	PASS

Figure 8.8-54: Radiated spurious emissions channel 902.175 MHz, from 1GHz – 5GHz, vertical polarity



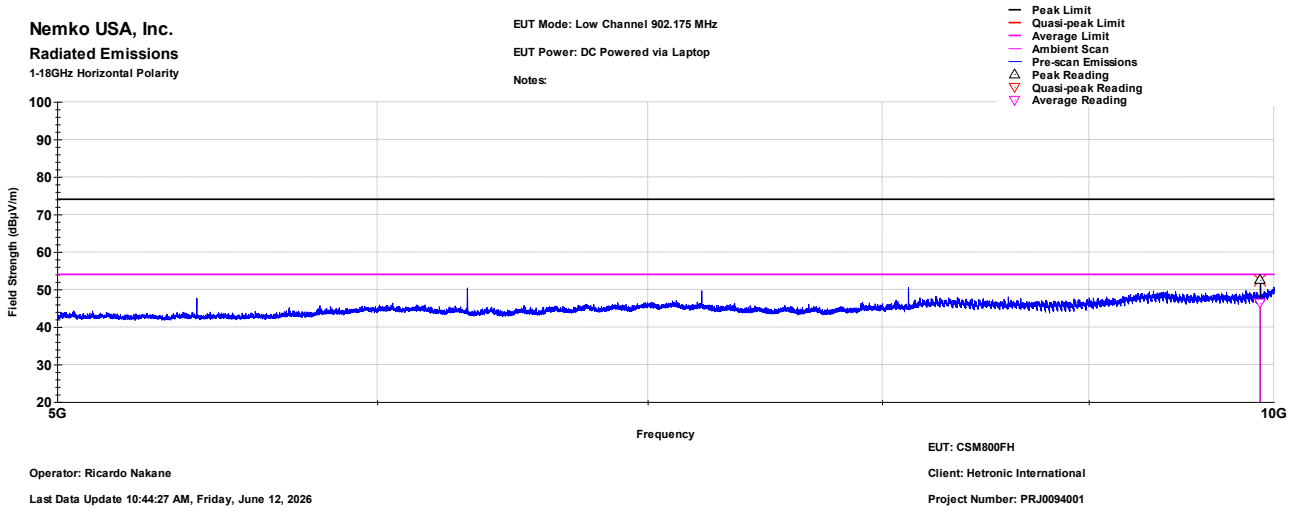
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Duty Cycle Correction (dBµV)	Average Reading (dBµV)	Corrected Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
1804.25	279	148	62.371	74.000	-11.629	PASS	-13.410	61.834	48.424	54.000	-5.576	PASS
2706.50	249	253	56.248	74.000	-17.752	PASS	-13.410	54.933	41.523	54.000	-12.477	PASS

Figure 8.8-55: Radiated spurious emissions channel 902.175 MHz, from 1GHz – 5GHz, horizontal polarity



Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Duty Cycle Correction (dBµV)	Average Reading (dBµV)	Corrected Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
6315.25	160	328	53.655	74.000	-20.345	PASS	-13.410	50.872	37.462	54.000	-16.538	PASS
7217.25	221	100	50.821	74.000	-23.179	PASS	-13.410	45.673	32.263	54.000	-21.737	PASS
8119.50	239	303	56.154	74.000	-17.846	PASS	-13.410	53.782	40.372	54.000	-13.628	PASS
9923.75	269	100	52.859	74.000	-21.141	PASS	-13.410	47.112	33.702	54.000	-20.298	PASS

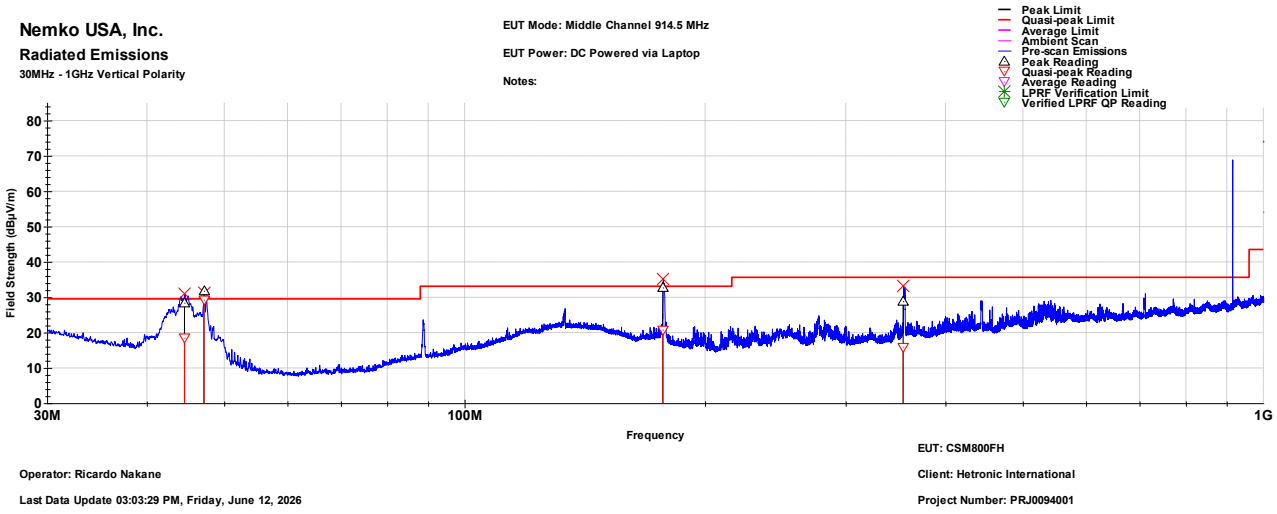
Figure 8.8-56: Radiated spurious emissions channel 902.175 MHz, from 5GHz – 10GHz, vertical polarity



Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Duty Cycle Correction (dBµV)	Average Reading (dBµV)	Corrected Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
9923.75	189	198	52.542	74.000	-21.458	PASS	-13.410	46.416	33.006	54.000	-20.994	PASS

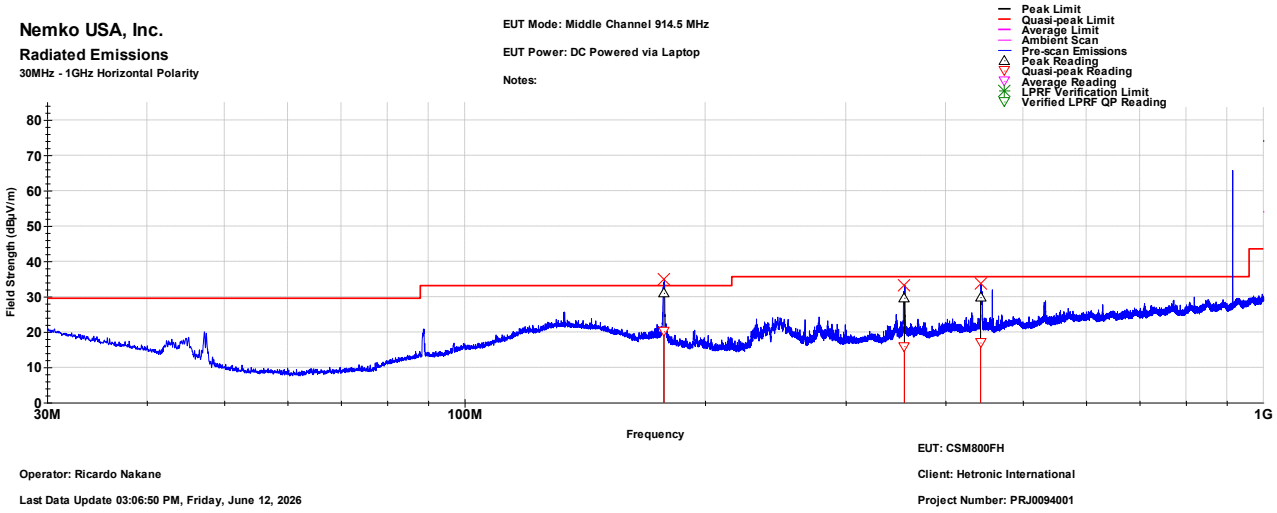
Figure 8.8-57: Radiated spurious emissions channel 902.175 MHz, from 5GHz – 10GHz, horizontal polarity

Middle channel 914.5 MHz



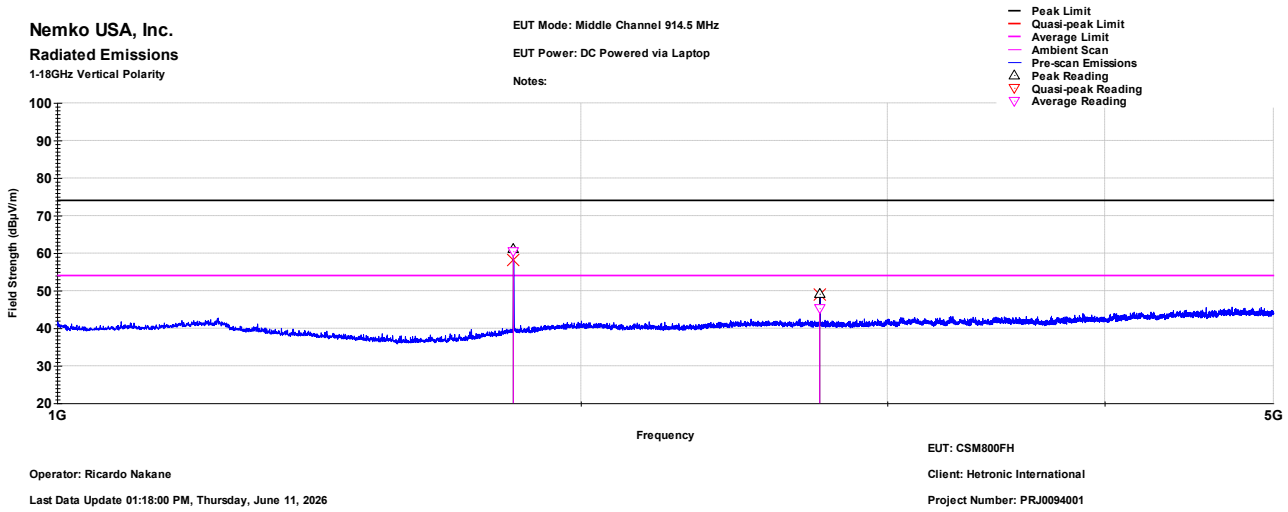
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Quasi-peak Reading (dBµV)	Quasi-peak Limit (dBµV)	Quasi-peak Margin (dB)	Quasi-peak Results	Peak Reading (dBµV)
44.580	112.000	100.000	18.493	29.500	-11.007	PASS	28.400
47.160	102.000	250.000	29.334	29.500	-0.166	PASS	31.793
177.120	57.000	100.000	20.785	33.100	-12.315	PASS	32.733
354.053	248.000	118.000	15.945	35.600	-19.655	PASS	28.856

Figure 8.8-58: Radiated spurious emissions channel 914.5 MHz, from 30 MHz – 1GHz, vertical polarity



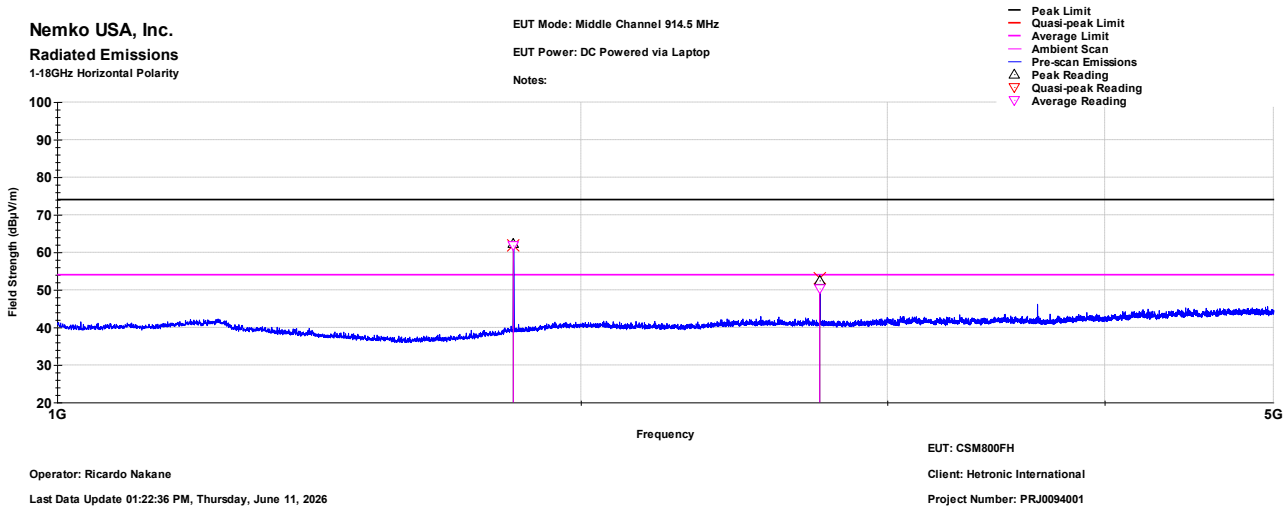
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Quasi-peak Reading (dBµV)	Quasi-peak Limit (dBµV)	Quasi-peak Margin (dB)	Quasi-peak Results	Peak Reading (dBµV)
177.630	77.000	379.000	20.145	33.100	-12.955	PASS	31.002
355.403	33.000	218.000	15.963	35.600	-19.637	PASS	29.629
442.583	67.000	165.000	16.975	35.600	-18.625	PASS	29.803

Figure 8.8-59: Radiated spurious emissions channel 914.5 MHz, from 30 MHz – 1GHz, horizontal polarity



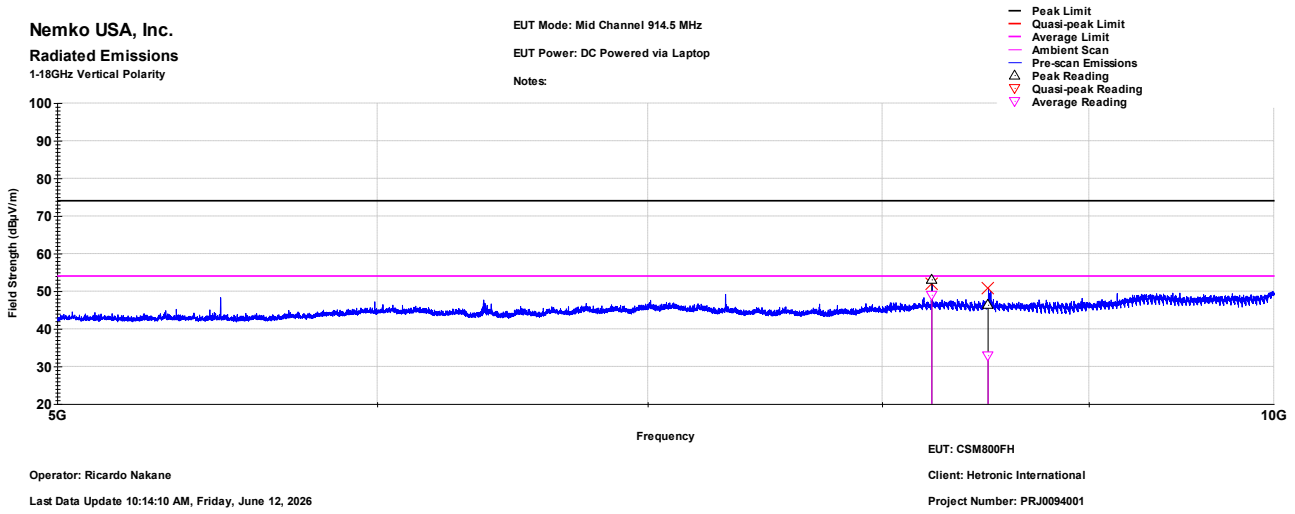
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Duty Cycle Correction (dBµV)	Average Reading (dBµV)	Corrected Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
1829.00	231	197	61.062	74.000	-12.938	PASS	-13.410	60.452	47.042	54.000	-6.958	PASS
2743.50	332	113	49.143	74.000	-24.857	PASS	-13.410	45.276	31.866	54.000	-22.134	PASS

Figure 8.8-60: Radiated spurious emissions channel 914.5 MHz, from 1GHz – 5GHz, vertical polarity



Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Duty Cycle Correction (dBµV)	Average Reading (dBµV)	Corrected Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
1829.00	279	136	62.329	74.000	-11.671	PASS	-13.410	61.778	48.368	54.000	-5.632	PASS
2743.50	249	223	52.484	74.000	-21.516	PASS	-13.410	50.299	36.889	54.000	-17.111	PASS

Figure 8.8-61: Radiated spurious emissions channel 914.5 MHz, from 1GHz – 5GHz, horizontal polarity



Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Duty Cycle Correction (dBµV)	Average Reading (dBµV)	Corrected Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
8230.50	189	284	53.098	74.000	-20.902	PASS	-13.410	48.995	35.585	54.000	-18.415	PASS
8498.50	348	100	46.336	74.000	-27.664	PASS	-13.410	32.956	19.546	54.000	-34.454	PASS

Figure 8.8-62: Radiated spurious emissions channel 914.5 MHz, from 5GHz – 10GHz, vertical polarity

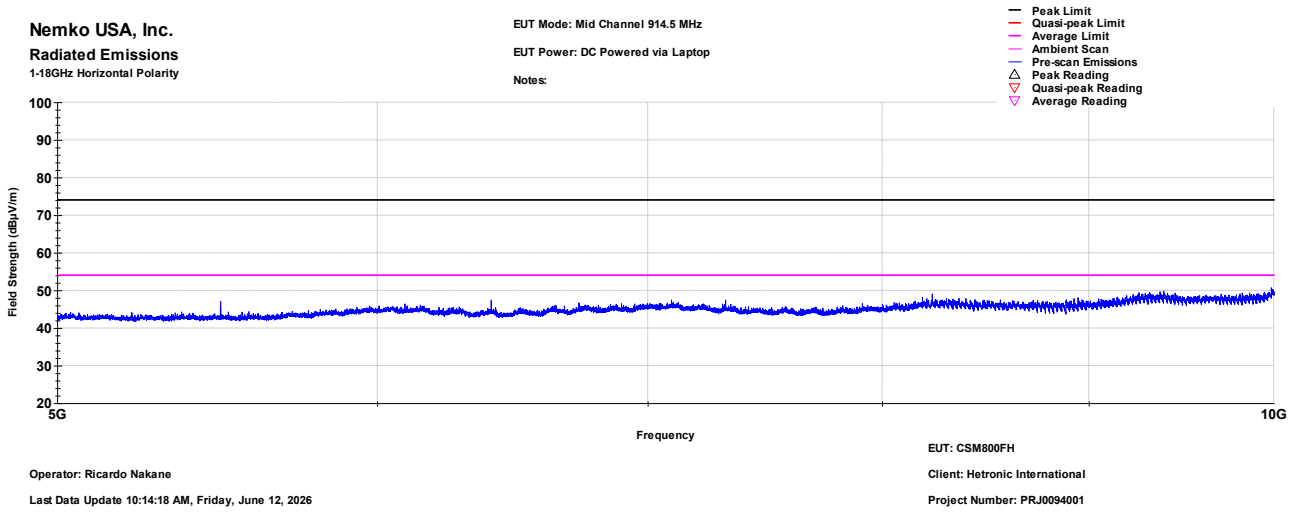
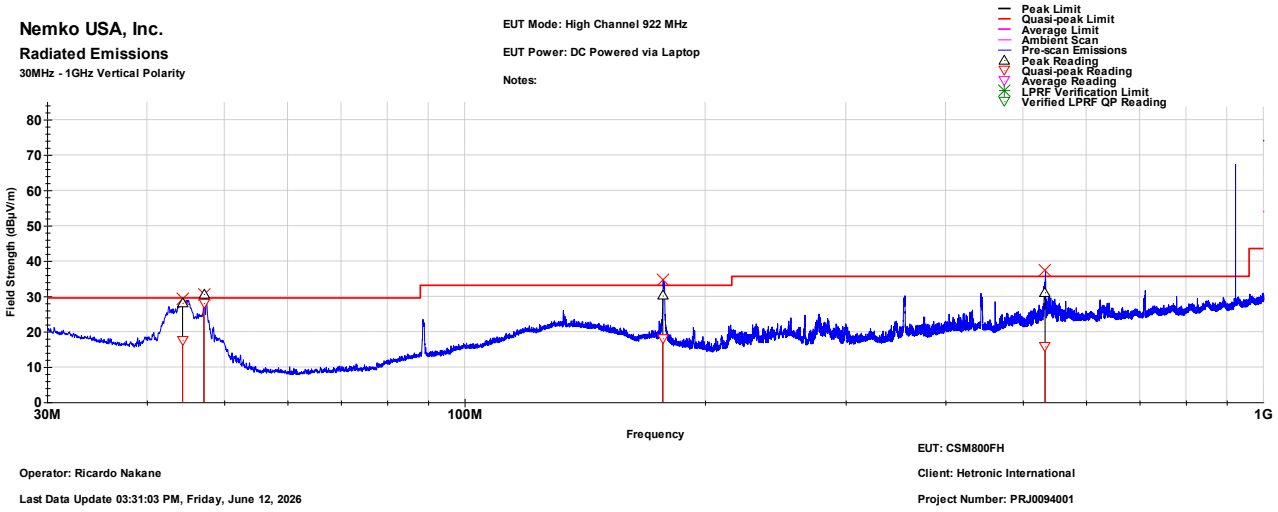


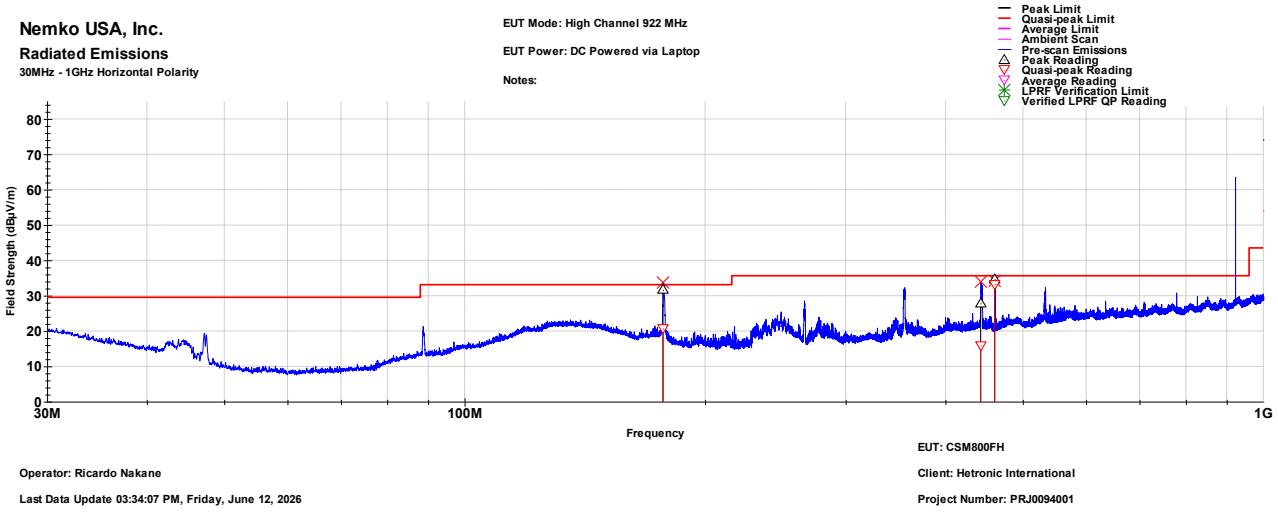
Figure 8.8-63: Radiated spurious emissions channel 914.5 MHz, from 5GHz – 10GHz, horizontal polarity

High channel 927.722 MHz



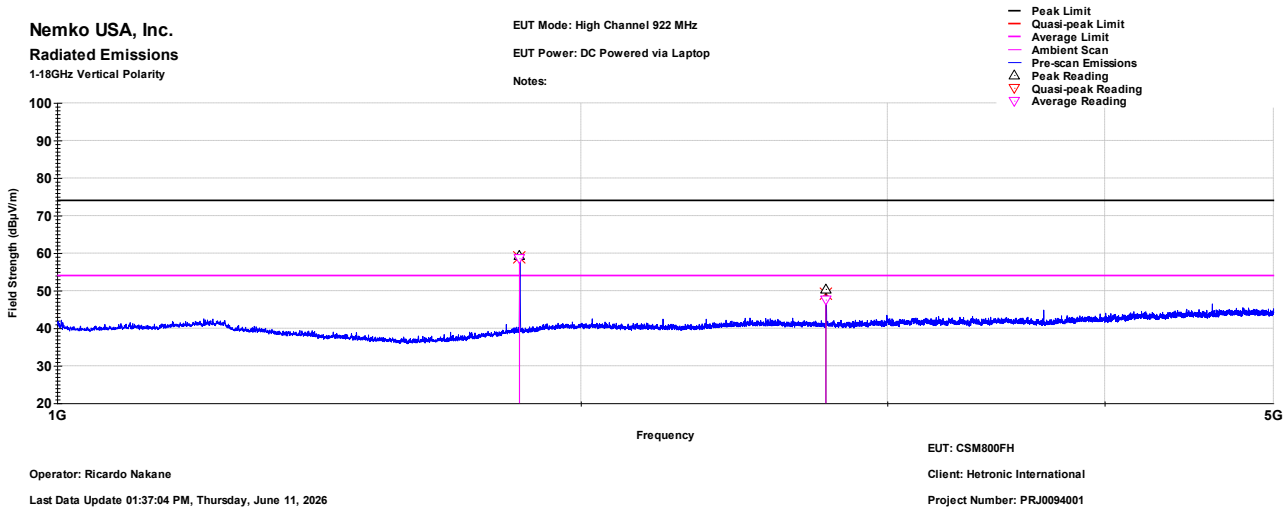
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Quasi-peak Reading (dBµV)	Quasi-peak Limit (dBµV)	Quasi-peak Margin (dB)	Quasi-peak Results	Peak Reading (dBµV)
44.340	102.000	100.000	17.546	29.500	-11.954	PASS	28.123
47.160	113.000	329.000	28.068	29.500	-1.432	PASS	30.623
177.030	49.000	150.000	18.091	33.100	-15.009	PASS	30.172
533.123	32.000	278.000	15.774	35.600	-19.826	PASS	31.118

Figure 8.8-64: Radiated spurious emissions channel 927.722 MHz, from 30 MHz – 1GHz, vertical polarity



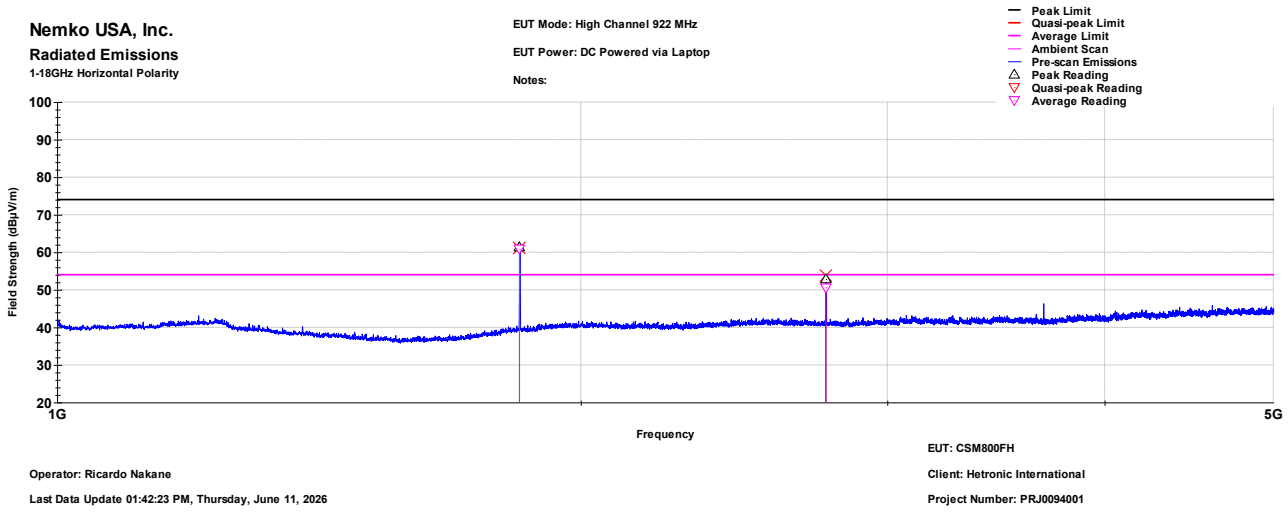
Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Quasi-peak Reading (dBµV)	Quasi-peak Limit (dBµV)	Quasi-peak Margin (dB)	Quasi-peak Results	Peak Reading (dBµV)
177.150	77.000	350.000	20.631	33.100	-12.469	PASS	31.606
442.673	174.000	165.000	15.894	35.600	-19.706	PASS	27.797
461.003	129.000	100.000	33.204	35.600	-2.396	PASS	34.623

Figure 8.8-65: Radiated spurious emissions channel 927.722 MHz, from 30 MHz – 1GHz, horizontal polarity



Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Duty Cycle Correction (dBµV)	Average Reading (dBµV)	Corrected Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
1844.00	68	191	59.345	74.000	-14.655	PASS	-13.410	58.596	45.186	54.000	-8.814	PASS
2766.00	291	400	50.413	74.000	-23.587	PASS	-13.410	47.580	34.170	54.000	-19.830	PASS

Figure 8.8-66: Radiated spurious emissions channel 927.722 MHz, from 1GHz – 5GHz, vertical polarity



Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Peak Reading (dBµV)	Peak Limit (dBµV)	Peak Margin (dB)	Peak Results	Duty Cycle Correction (dBµV)	Average Reading (dBµV)	Corrected Average Reading (dBµV)	Average Limit (dBµV)	Average Margin (dB)	Average Results
1844.00	271	100	61.395	74.000	-12.605	PASS	-13.410	60.792	47.382	54.000	-6.618	PASS
2766.00	249	136	52.832	74.000	-21.168	PASS	-13.410	50.641	37.231	54.000	-16.769	PASS

Figure 8.8-67: Radiated spurious emissions channel 927.722 MHz, from 1GHz – 5GHz, horizontal polarity

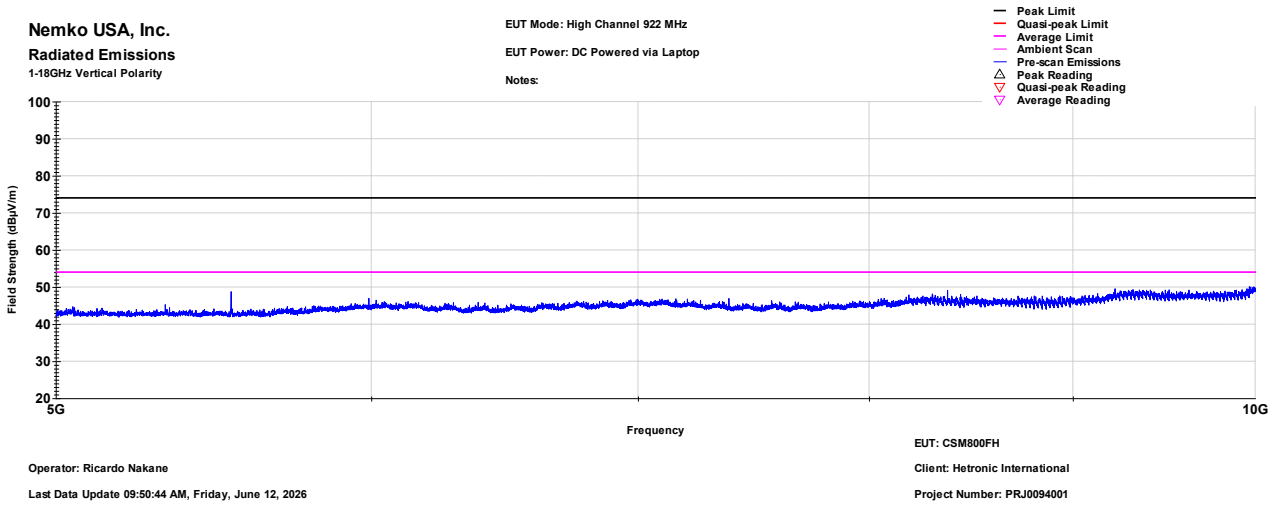


Figure 8.8-68: Radiated spurious emissions channel 927.722 MHz, from 5GHz – 10GHz, vertical polarity

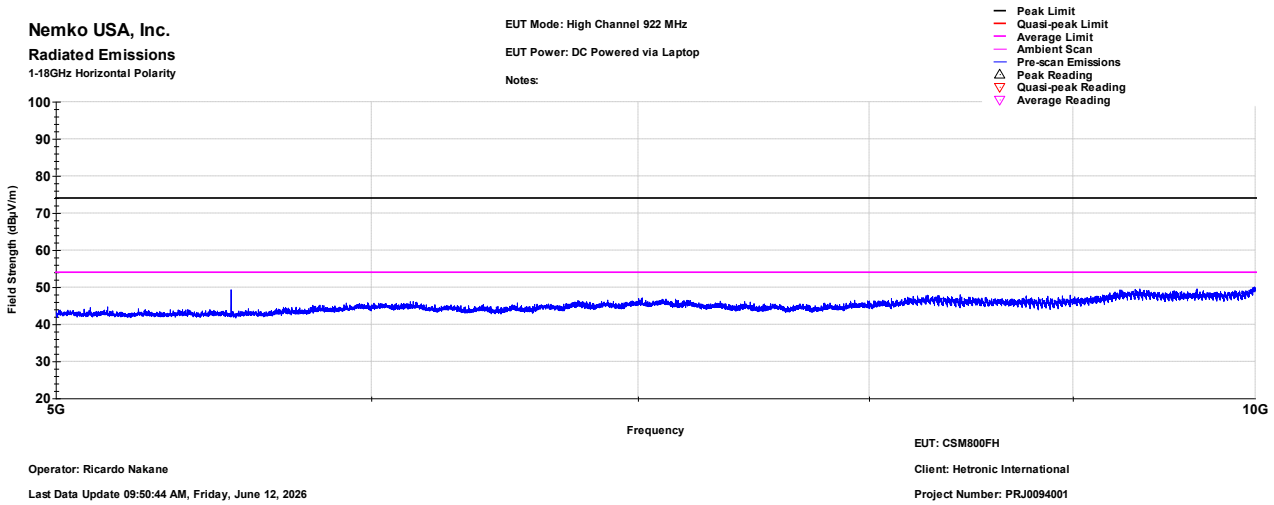


Figure 8.8-69: Radiated spurious emissions channel 927.722 MHz, from 5GHz – 10GHz, horizontal polarity

8.9 99% occupied bandwidth

8.9.1 References and limits

- ISED: RSS-Gen: §6.7
- Test method: ANSI C63.4-2020: §6.9.2

RSS-GEN:

6.7 The occupied bandwidth or the "99% emission bandwidth" is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.

8.9.2 Test summary

Verdict	Pass		
Test date	January 5, 2026	Temperature	22°C
Test engineer	Ricardo Nakane, EMC Test Engineer	Air pressure	989 mbar
Test location	☒ Wireless bench ☐ Other:	Relative humidity	56%

8.9.3 Notes

Testing was performed with the transmitter operating on a fixed channel (lowest, middle, and highest) at maximum output power.

The spectral plots within this section have been corrected with all relevant transducer factors.

8.9.4 Setup details

EUT power input during test	3.3 VDC
EUT setup configuration	☒ Table-top ☐ Floor standing ☐ Other:

Receiver settings:

Resolution bandwidth	2 kHz
Video bandwidth	10 kHz
Detector mode	Peak
Trace mode	Max Hold
Measurement time	Long enough for trace to stabilize

8.9.5 Test data

Table 8.9-1: *99% occupied bandwidth test data*

Test Frequency (MHz)	Modulation	99% BW (MHz)	f_l (MHz)	f_h (MHz)	Limit	Verdict
902.175	2-GFSK	0.096	902.129	902.225	f_H and f_L within	PASS
914.5	2-GFSK	0.094	914.453	914.547	f_H and f_L within	PASS
927.7224	2-GFSK	0.095	927.676	927.771	f_H and f_L within	PASS

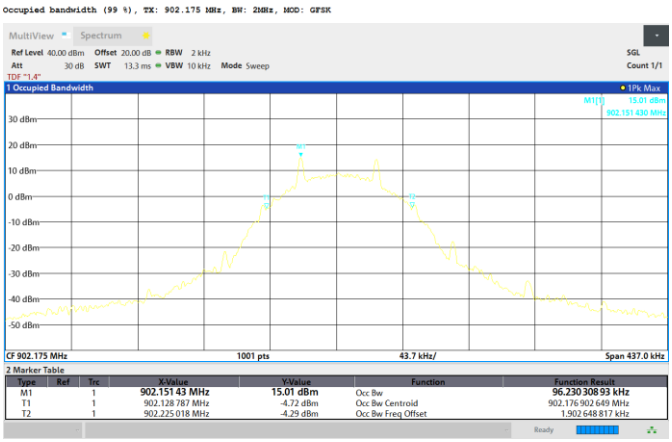


Figure 8.9-1: *99% occupied bandwidth, low channel 902.175 MHz*

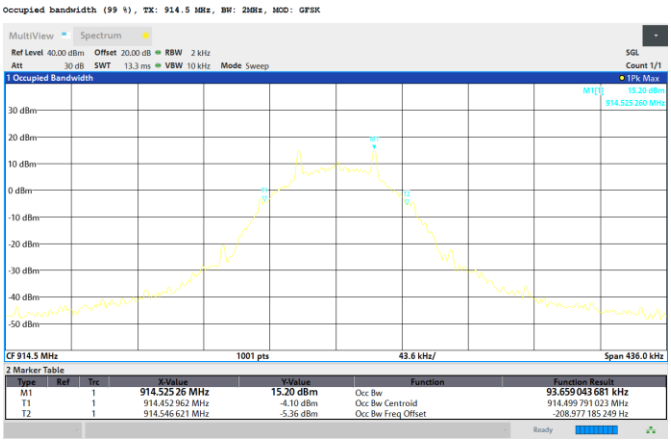


Figure 8.9-2: *99% occupied bandwidth, middle channel 914.5 MHz*

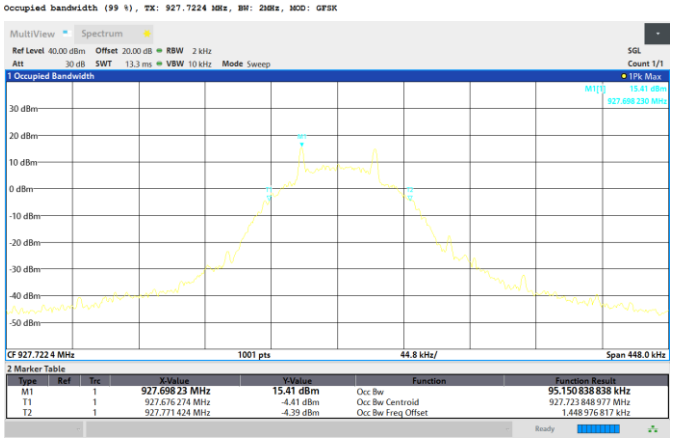


Figure 8.9-3: *99% occupied bandwidth, high channel 927.722 MHz*

End of test report