Test report

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PRJ0091821-2EMC

Date of issue: June 12, 2026

Applicant:

HLI Solutions, Inc.

Product:

Daylight sensor

Model:

NXSMP2-DDSO

ISED Certification number:

IC: 9044A-NXSMP2

FCC Identifier

FCC ID: YH9NXSMP2

Specifications:

- FCC 47 CFR Part 15, Subpart C
- FCC 15.247
- RSS-247 Issue 4

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)
Website	www.nemko.com
FCC Lab Designation	US3166
ISED Test Site	3036B

Tested by	Ricardo Nakane, Wireless Engineer
Authored by	Ricardo Nakane, Wireless Engineer
Reviewed by	Larry Finn, Laboratory Manager
Review date	June 12, 2026
Reviewer signature	
Authorized by	Larry Finn, Laboratory Manager
Authorization date	June 12, 2026
Authorizer signature	

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Table of Contents

Section 1 Report summary

1.1 Test specifications

FCC 47 CFR Part 15.247, Subpart C RSS-247 Issue 4 July 2025	Title 47: Telecommunication; Part 15—Radio Frequency Devices (Intentional Radiators) Digital Transmission Systems, Frequency Hopping Systems and Licence-Exempt Local Area Network Devices in 902-928 MHz, 2400-2483.5 MHz, 5150-5350 MHz, and 5470-5895 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.

See "Summary of test results" for full details.

1.4 Test report revision history

Table 1.4-1: Test report revision history

Revision #	Details of changes made to test report
REP162360-1EMC	Original report issued
REP162360-2EMC	TCB comments addressed

Notes: None

Section 2 Summary of test results

2.1 Emissions Test results

Table 2.1-1: FCC 15.247 and ISED RSS-247 Issue 4

Scope	Standard	Test description	Verdict
FCC	§15.247	Radiated spurious emissions and transmit power	Pass
ISED	RSS-247	Radiated spurious emissions and transmit power	Pass

Notes: The EUT is DC powered

Section 3 Equipment under test (EUT) details

3.1 Applicant

Company name	HLI Solutions, Inc
Address	701 Millennium Boulevard
City	Greenville
State	SC
Postal/Zip code	29607
Country	USA

3.2 Manufacturer

Company name	HLI Solutions, Inc
Address	701 Millennium Boulevard
City	Greenville
State	SC
Postal/Zip code	29607
Country	USA

3.3 Sample information

Test Start date	April 13, 2026
Test End date	June 10, 2026
Nemko sample ID number	PRJ0091821

3.4 EUT information

Product name	Daylight sensor
Model	NXSMP2-DDSO
Variant(s)	Not applicable
Serial number	NXSMP2-LMI
Part number	920545CA
Power requirements	12V DC
Description/theory of operation	The EUT is a sensor that provides occupancy sensing and daylight harvesting in one sensor
Operational frequencies	2400 – 2483.5 MHz
Software details	N/A

3.5 EUT exercise details

The EUT was connected to a 12V DC power supply. The channels were changed by power cycling the test unit and switching between the low, middle, and high channels.

3.6 EUT setup details

Table 3.6-1: EUT sub assemblies

Description	Brand name	Model/Part number	Serial number	Rev.
RJ 45 to 4 pin	Hubbell Control Solutions	NXCBL-O-10	92000282	N/A
RJ45 Adapter	N/A	N/A	N/A	N/A

Table 3.6-2: EUT interface ports

Description	Qty.
4-Pin port	2

Table 3.6-3: Support equipment

Description	Brand name	Model/Part number	Serial number	Rev.
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Table 3.6-4: Inter-connection cables

Cable description	From	To	Length (m)
RJ45 to 4-pin	EUT	RJ45 Adapter	0.25
DC Supply cable	RJ45 Adapter	DC Power Supply	1

Section 4 Engineering considerations

4.1 Modifications incorporated in the EUT

There were no modifications performed to the EUT during this assessment.

4.2 Technical judgment

None

4.3 Deviations from laboratory tests procedures

No deviations were made from laboratory procedures.

Section 5 Test conditions

5.1 Atmospheric conditions

Temperature	15–30 °C
Relative humidity	20–75 %
Air pressure	86–106 kPa

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

All uncertainty calculations, estimates and expressions thereof shall be in accordance with ANAB policy. Since Nemko USA, Inc. – Austin operates in accordance with ANAB Document Number AR 2250: 2021/06/16, all instrumentation having an effect on the accuracy or validity of tests shall be periodically calibrated or verified traceable to national standards by a competent calibration laboratory. The certificates of calibration or verification on this instrumentation shall include estimates of uncertainty as required by ANAB Document Number AR 2250.

Rationale and Summary of Expanded Uncertainty

Each piece of instrumentation at Nemko USA, Inc. – Austin that is used in making measurements for determining conformance to a standard (or limit), shall be assessed to evaluate its contribution to the overall uncertainty of the measurement in which it is used. The assessment of each item will be based on either a type A evaluation or a type B evaluation. Most of the evaluations will be type B, since they will be based on the manufacturer's statements or specifications of the calibration tolerances, or uncertainty will be stated along with a brief rationale for the type of evaluation and the resulting stated uncertainties.

The individual uncertainties included in the combined standard uncertainty for a specific test result will depend on the configuration in which the item of instrumentation is used. The combination will always be based on the law of propagation of uncertainty. Any systematic effects will be accommodated by including their uncertainties, in the calculation of the combined standard uncertainty; except that if the direction and amount of the systematic effect cannot be determined and separated from its uncertainty, the whole effect will be treated as uncertainty and combined along with the other elements of the test setup.

Type A evaluations of standard uncertainty will usually be based on calculating the standard deviation of the mean of a series of independent observations but may be based on a least-squares curve fit or the analysis of variance for unusual situations. Type B evaluations of standard uncertainty will usually be based on manufacturer's specifications, data provided in calibration reports, and experience. The type of probability distribution used (normal, rectangular, a priori, or u-shaped) will be stated for each Type B evaluation.

In the evaluation of the uncertainty of each type of measurement, the uncertainty caused by the operator will be estimated. One notable operator contribution to measurement uncertainty is the manipulation of cables to maximize the measured values of radiated emissions. The operator contribution to measurement uncertainty is evaluated by having several operators independently repeat the same test. This results in a Type A evaluation of operator-contributed measurement uncertainty.

A summary of the expanded uncertainties of Nemko USA, Inc. – Austin measurements is shown in the following table. These are the worst-case uncertainties considering all operative influence factors.

Summary of Measurement Uncertainties for Nemko USA, Inc. – Austin

Type of Measurement	Frequency Range	Meas. Dist.	Expanded Uncertainty U, dB (k=2)
Mains Conducted Emissions	150 kHz to 30 MHz	N/A	2.93
Telecom Conducted Emissions	150 kHz to 30 MHz	N/A	2.93
Radiated Emissions	30 to 1,000 MHz	10 m	4.04
	1 to 6 GHz	3 m	3.30
	6 to 18 GHz	3 m	4.09
	18 to 26 GHz	1 m	4.65
	26 to 40 GHz	1 m	3.44

Section 7 Terms and definitions

7.1 Product classifications definitions

7.1.1 Title 47: Telecommunication – Part 15 – Radio Frequency devices, Subpart A – General

Class A digital device	A digital device that is marketed for use in a commercial, industrial, or business environment, exclusive of a device which is marketed for use by the general public or is intended to be used in the home.
Class B digital device	A digital device that is marketed for use in a residential environment notwithstanding use in commercial, business, and industrial environments. Examples of such devices include, but are not limited to, personal computers, calculators, and similar electronic devices that are marketed for use by the general public. Note: The responsible party may also qualify a device intended to be marketed in a commercial, business, or industrial environment as a Class B device, and in fact is encouraged to do so, provided the device complies with the technical specifications for a Class B digital device. In the event that a particular type of device has been found to repeatedly cause harmful interference to radio communications, the Commission may classify such a digital device as a Class B digital device, regardless of its intended use.

7.2 General definitions

7.2.1 Title 47: Telecommunication – Part 15-Radio Frequency devices, Subpart A – General

Digital device (Previously defined as a computing device)	An unintentional radiator (device or system) that generates and uses timing signals or pulses at a rate in excess of 9,000 pulses (cycles) per second and uses digital techniques; inclusive of telephone equipment that uses digital techniques or any device or system that generates and uses radio frequency energy for the purpose of performing data processing functions, such as electronic computations, operations, transformations, recording, filing, sorting, storage, retrieval, or transfer. A radio frequency device that is specifically subject to an emanation requirement in any other FCC Rule part or an intentional radiator subject to subpart C of this part that contains a digital device is not subject to the standards for digital devices, provided the digital device is used only to enable operation of the radio frequency device and the digital device does not control additional functions or capabilities. Note: Computer terminals and peripherals that are intended to be connected to a computer are digital devices.

Section 8 Testing data

8.1 Radiated Spurious Emissions

8.1.1 References

ANSI C63.4-2014 - Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment
ANSI C63.10-2020+Cor.1-2023 or ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 - American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
47 CFR §15.247 - FCC Rules for Operation within 2400–2483.5 MHz
47 CFR §15.209 - General radiated emission limits (spurious reference)
FCC KDB 558074 D01 - Guidance for §15.247 DTS output power and radiated measurement methods
ISED RSS-247 Issue 4 - Digital Transmission Systems (Canada)
ISED RSS-Gen Issue 5 - General radiated spurious requirements

8.1.2 Test summary

Verdict	Pass		
Test date	April 15, 2026	Temperature	23-24°C
Test engineer	Ricardo Nakane	Air pressure	988-991 mbar
Test location	10m semi anechoic chamber	Relative humidity	24-53%

8.1.3 Notes

None

8.1.4 Setup details

EUT setup configuration	Table top
EUT powered	Battery (12 VDC)
Test facility	10 m Semi anechoic chamber
Measuring distance	3 and 10 m
Antenna height variation	1–4 m
Turn table position	0–360°
Measurement details	A preview measurement was generated with receiver in continuous scan or sweep mode while the EUT was rotated and antenna adjusted to maximize radiated emission. Emissions detected within 6 dB or above limit were re-measured with the appropriate detector against the correlating limit and recorded as the final measurement.

8.1.4 Setup details, continued

Table 8.1-1: Radiated emissions equipment list

Equipment	Manufacturer	Model no.	Asset no.	Next cal.
Receiver, Test, EMI, 1 Hz to 44 GHz	Rohde & Schwarz	ESW44	2541	6/3/2026
Switch Driver	Agilent	11713A	1939	N/A
Antenna, Biconilog, 26-3000 MHz	ETS-Lindgren	3140B	1850	N/A
Preamp, 0.1-1300MHz, 26dB	HP	8447D	586	3/30/2028
Amplifier, 40dB, 100MHz-18GHz	Miteq	AFS44-00101800-2S-10P-44	2004	2/20/2028
Antenna, Double Ridged Guide Horn, 1 - 18 GHz	ETS-Lindgren	3117	1780	1/18/2027
Cable, RF, N-N, 36', DC-18GHz	evissaP	eP7123R-432	C395	6/1/2026
Cable, RF, N-N, 32', DC-18GHz	evissaP	eP7123R-384	C394	6/1/2026
Cable, RF, N-N, 22', DC-18GHz	evissaP	eP7031R-22FT	C404	6/1/2026
Cable, RF, N-N, 30', DC-18GHz	evissaP	eP7031R-30FT	C405	6/1/2026
Cable, RF, SMA-SMA, 12", 2.92mm, DC-40GHz	evissaP	eP7101R-12	C398	6/1/2026
Enclosure, Shielded, RFI/EMI, NSA, 3m & 10m, 30MHz - 1 GHz	TDK	254	2555	9/26/2027
Cable, RF, SMA-N, 6', DC-18GHz	evissaP	eP7033R-6FT	C406	6/1/2026
Cable, RF, SMA-SMA, 12", 2.92mm, DC-40GHz	evissaP	eP7101R-12	C399	6/1/2026
Cable, RF, SMA-N, 6', DC-18GHz	evissaP	eP7033R-6FT	C407	6/1/2026
Cable, RF, N-N, 30", DC-18GHz	evissaP	eP3010R-30	C400	6/1/2026

Notes: N/A - not applicable

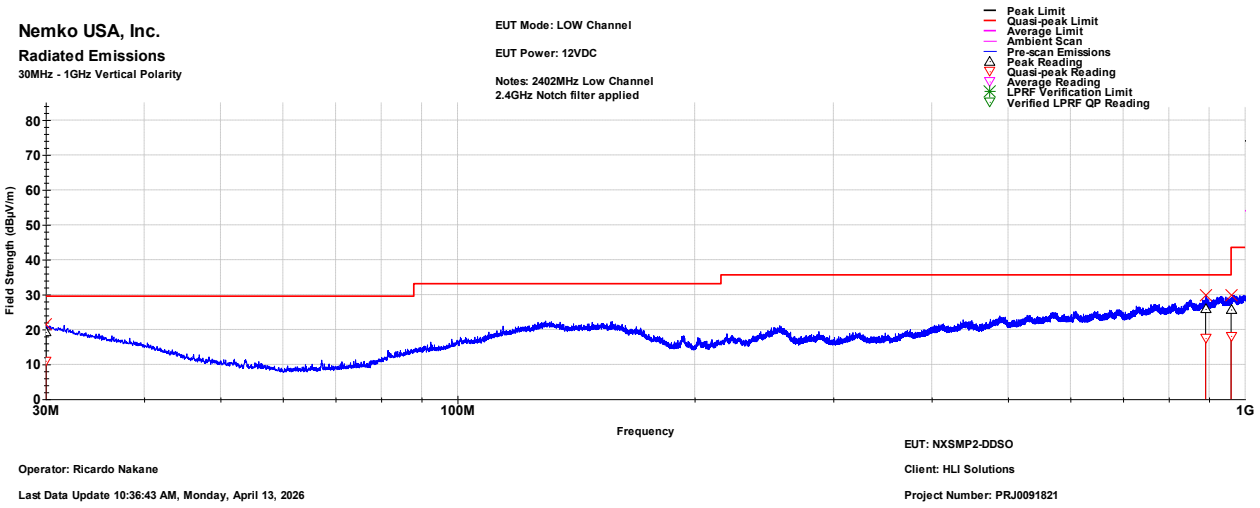
Table 8.1-2: Radiated emissions test software details

Manufacturer of Software	Details
ETS-LINDGREN	TILE 7 V: 7.9.1.1

Notes: None

8.1.5 Test data

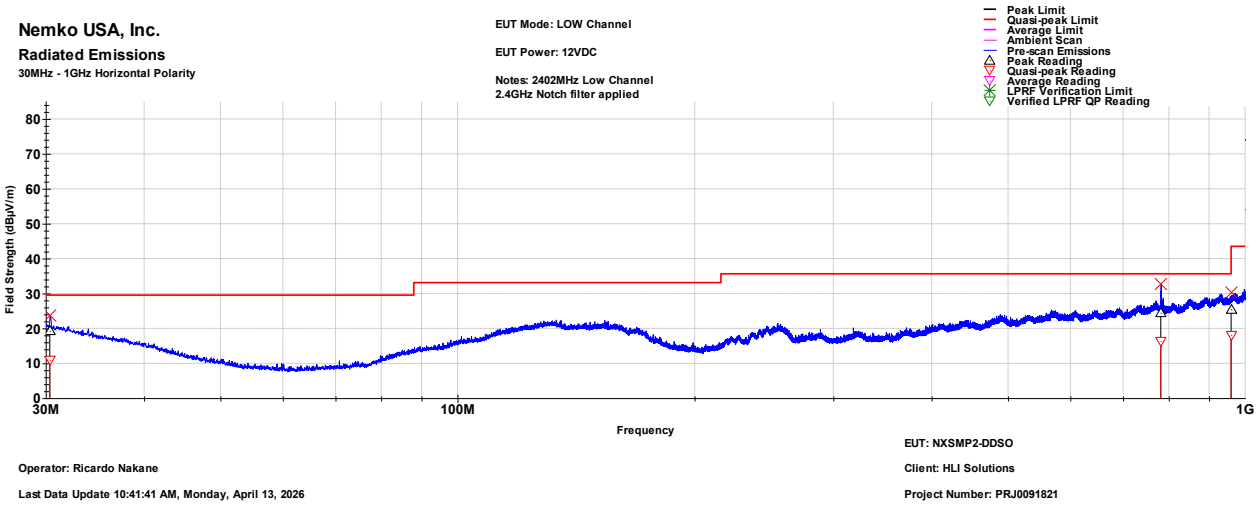
30MHz - 1GHz Vertical Polarity Measured Emissions Data – Low Channel 2402 MHz



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)
30.000	57.000	335.000	10.991	29.500	-18.509	PASS	19.252
891.077	49.000	150.000	17.475	35.600	-18.125	PASS	25.855
960.000	11.000	202.000	18.125	35.600	-17.475	PASS	25.672

Figure 8.1-1: Radiated disturbance spectral plot (30 to 1000 MHz) and radiated disturbance (Quasi-Peak) results of Vertical polarization

30MHz - 1GHz Horizontal Polarity Measured Emissions Data – Low Channel 2402 MHz

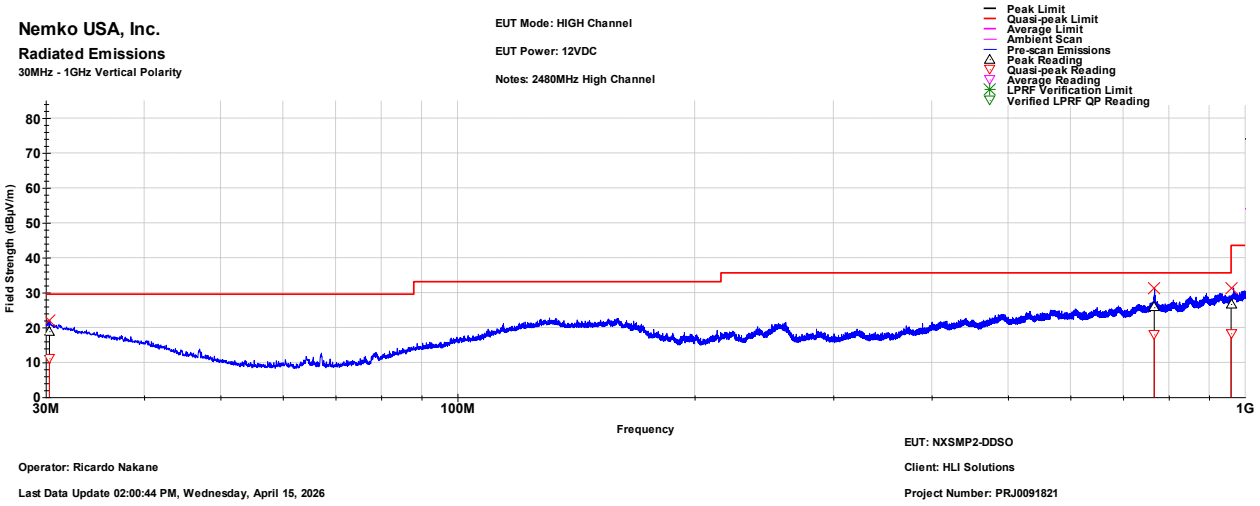


Frequency (MHz)	EUT Direction (Degrees)	Antenna Height (cm)	Quasi-peak Reading (dBµV)	Quasi-peak Limit (dBµV)	Quasi-peak Margin (dB)	Quasi-peak Results	Peak Reading (dBµV)
30.360	49.000	366.000	10.881	29.500	-18.619	PASS	19.270
781.427	264.000	309.000	16.374	35.600	-19.226	PASS	24.466
960.000	259.000	272.000	18.134	35.600	-17.466	PASS	25.455

Figure 8.1-2: Radiated disturbance spectral plot (30 to 1000 MHz) and radiated disturbance (Quasi-Peak) results of Horizontal

8.1.6 Test data, continued

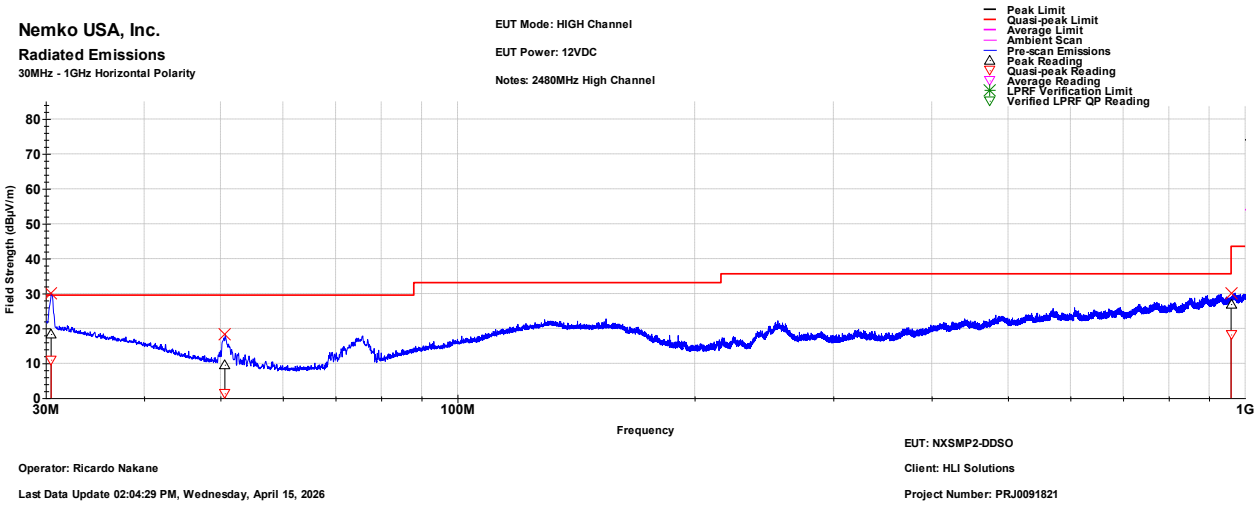
30MHz - 1GHz Vertical Polarity Measured Emissions Data – High Channel 2480 MHz



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)
30.330	264.000	150.000	11.131	29.500	-18.369	PASS	18.887
766.697	247.000	118.000	17.956	35.600	-17.644	PASS	25.740
960.000	10.000	322.000	18.281	35.600	-17.319	PASS	26.684

Figure 8.1-3: Radiated disturbance spectral plot (30 to 1000 MHz) and radiated disturbance (Quasi-Peak) results of Vertical polarization

30MHz - 1GHz Horizontal Polarity Measured Emissions Data – High Channel 2480 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)
30.480	16.000	382.000	10.998	29.500	-18.502	PASS	18.363
50.640	202.000	132.000	1.357	29.500	-28.143	PASS	9.542
960.000	77.000	159.000	18.205	35.600	-17.395	PASS	26.915

Figure 8.1-4: Radiated disturbance spectral plot (30 to 1000 MHz) and radiated disturbance (Quasi-Peak) results of Horizontal

1GHz - 18GHz Vertical Polarity Measured Emissions Data – Low Channel 2402 MHz

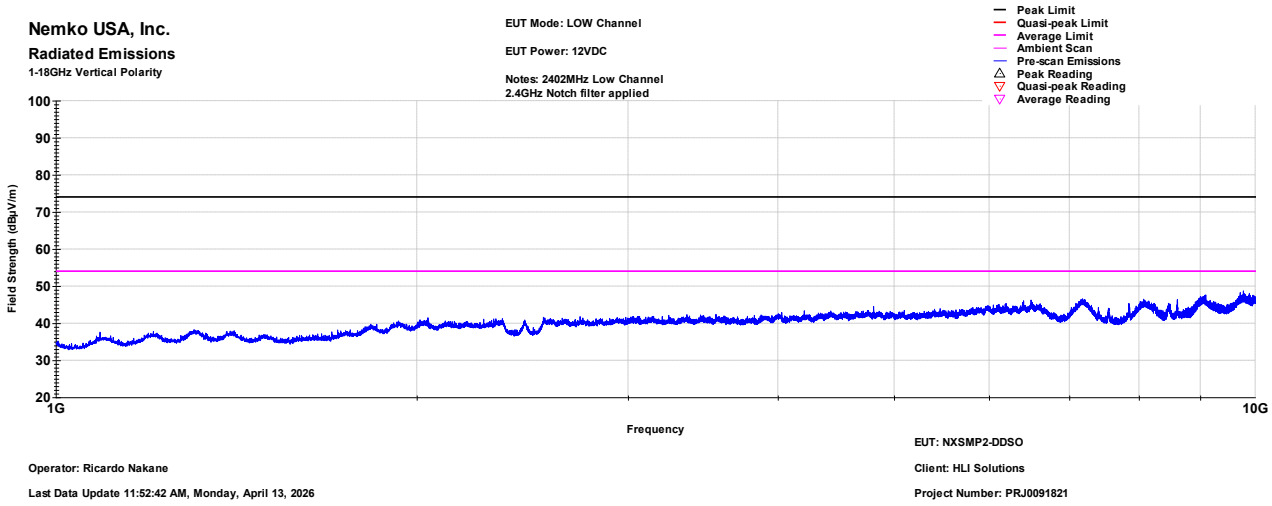
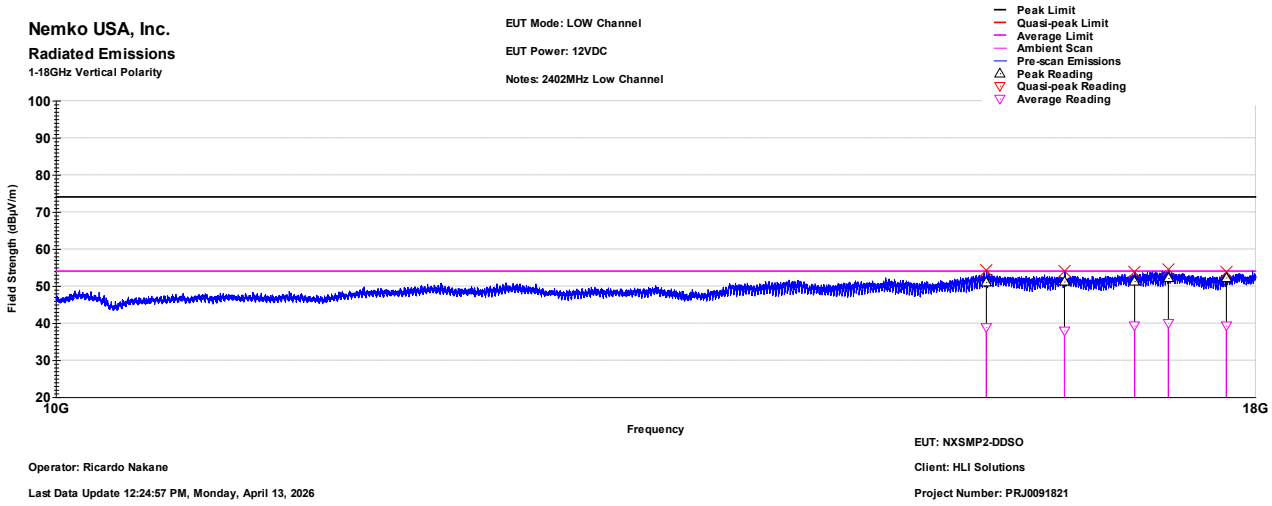


Figure 8.1-5: Radiated disturbance spectral plot (1 to 10 GHz) and radiated disturbance (Peak and Average) results of Vertical polarization



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
15777.25	259	284	51.035	74.000	-22.965	PASS	38.897	54.000	-15.103	PASS
16393.00	249	309	51.157	74.000	-22.843	PASS	37.944	54.000	-16.056	PASS
16966.00	0	328	51.306	74.000	-22.694	PASS	39.215	54.000	-14.785	PASS
17249.25	221	112	52.091	74.000	-21.909	PASS	40.009	54.000	-13.991	PASS
17746.50	130	124	52.233	74.000	-21.767	PASS	39.221	54.000	-14.779	PASS

Figure 8.1-6: Radiated disturbance spectral plot (10 to 18 GHz) and radiated disturbance (Peak and Average) results of Vertical polarization

1GHz - 18GHz Horizontal Polarity Measured Emissions Data – Low Channel 2402 MHz

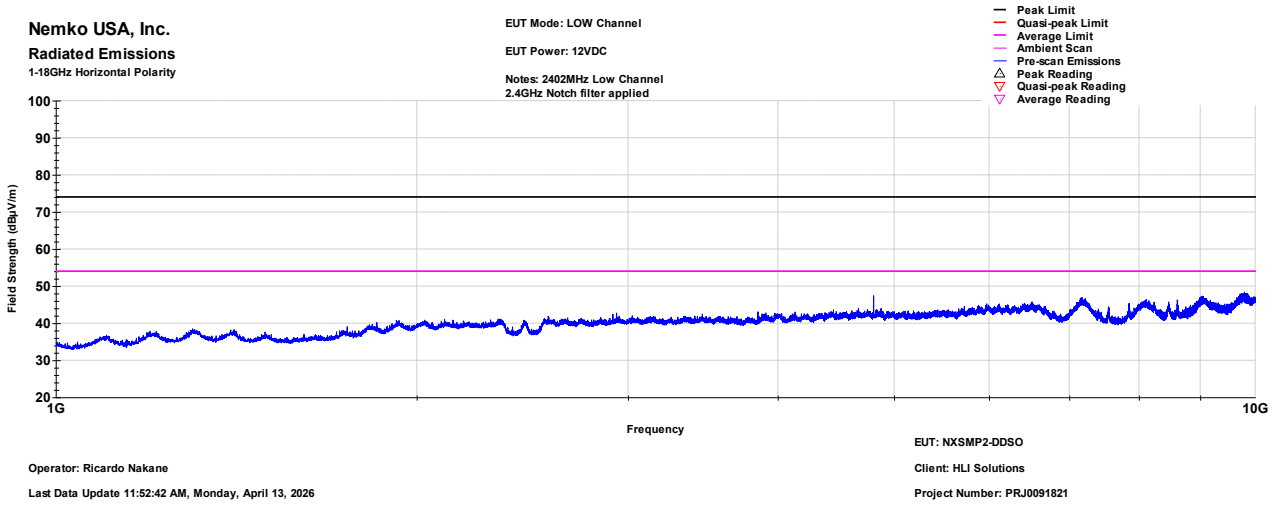
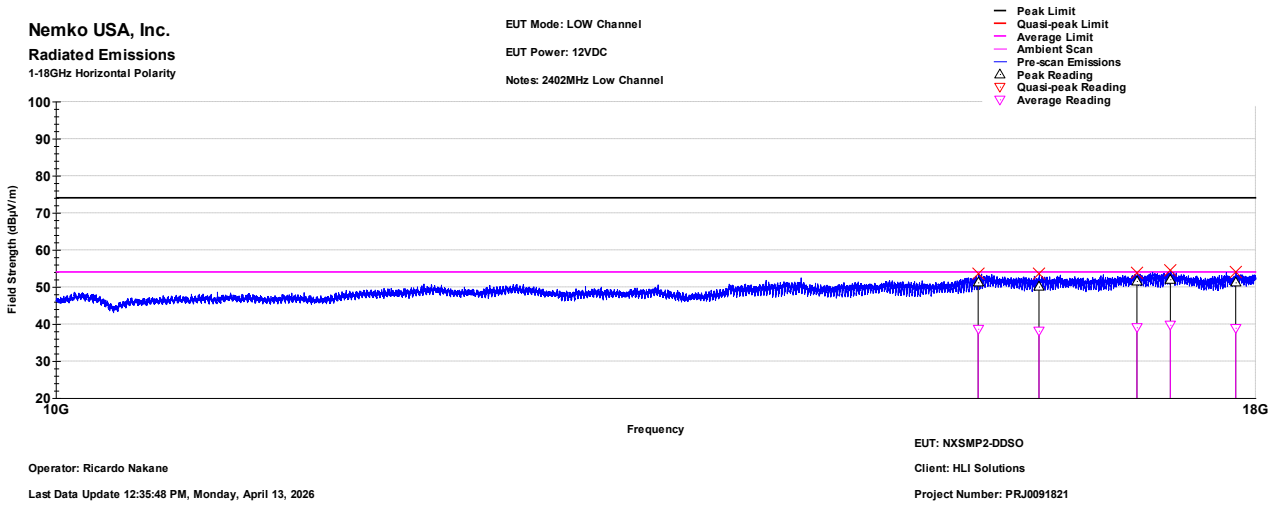


Figure 8.1-7: Radiated disturbance spectral plot (1 to 10 GHz) and radiated disturbance (Peak and Average) results of Horizontal



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
15713.75	349	198	51.164	74.000	-22.836	PASS	38.654	54.000	-15.346	PASS
16189.00	300	400	50.049	74.000	-23.951	PASS	38.119	54.000	-15.881	PASS
16985.00	291	118	51.578	74.000	-22.422	PASS	39.048	54.000	-14.952	PASS
17265.50	10	284	52.018	74.000	-21.982	PASS	39.749	54.000	-14.251	PASS
17827.00	251	303	51.174	74.000	-22.826	PASS	38.930	54.000	-15.070	PASS

Figure 8.1-8: Radiated disturbance spectral plot (1 to 10 GHz) and radiated disturbance (Peak and Average) results of Horizontal

8.1.7 Test data, continued

1GHz - 18GHz Vertical Polarity Measured Emissions Data – Middle Channel 2440 MHz

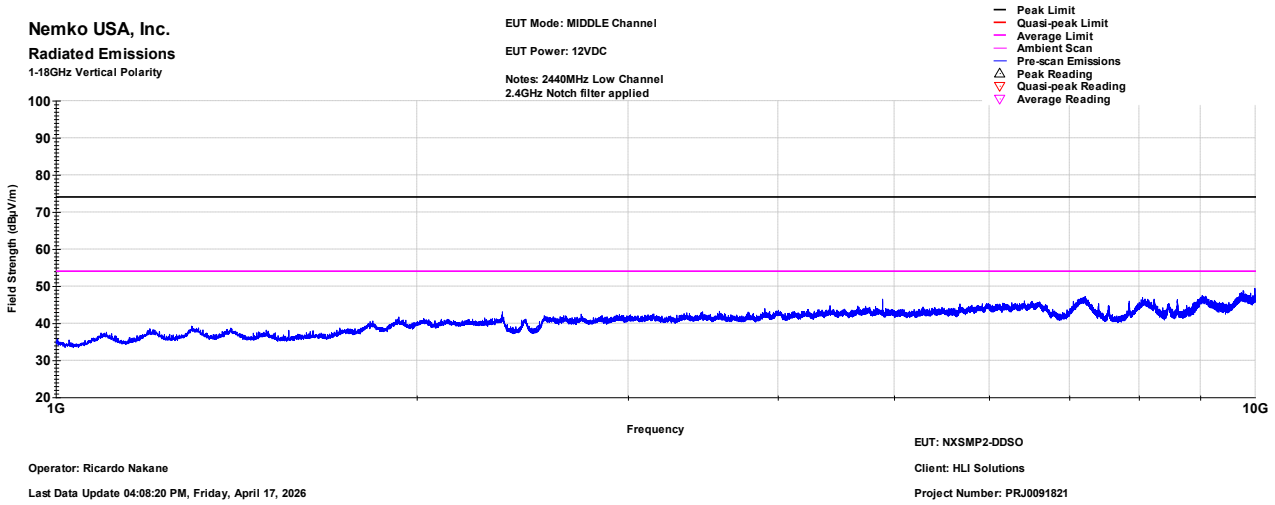
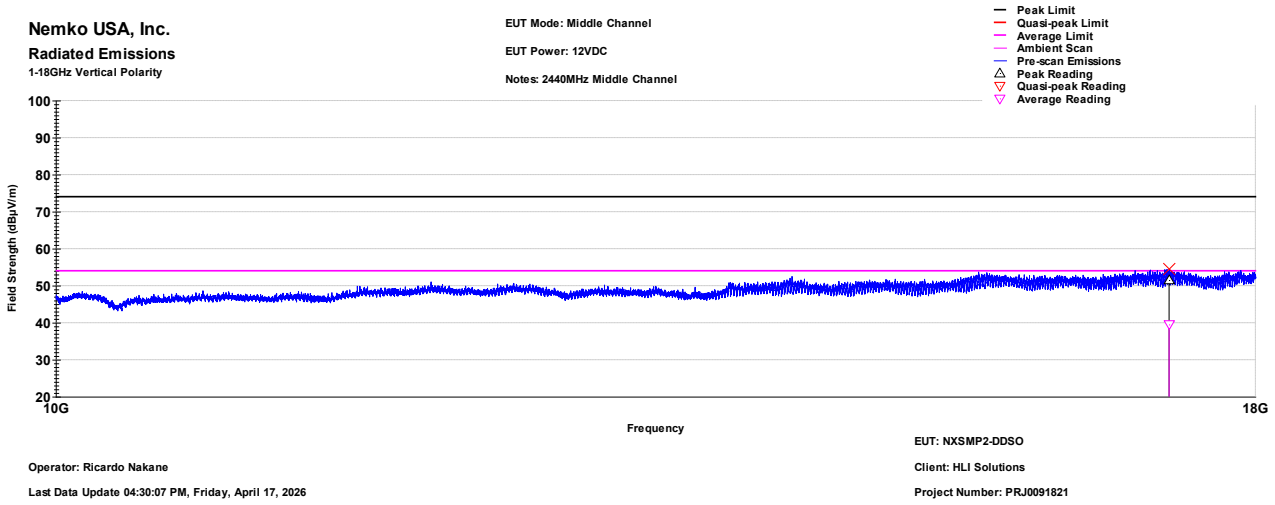


Figure 8.1-9: Radiated disturbance spectral plot (1 to 10 GHz) and radiated disturbance (Peak and Average) results of Vertical polarization



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
17255.00	0	347	51.471	74.000	-22.529	PASS	39.478	54.000	-14.522	PASS

Figure 8.1-10: Radiated disturbance spectral plot (10 to 18 GHz) and radiated disturbance (Peak and Average) results of Vertical polarization

1GHz - 18GHz Horizontal Polarity Measured Emissions Data – Middle Channel 2440 MHz

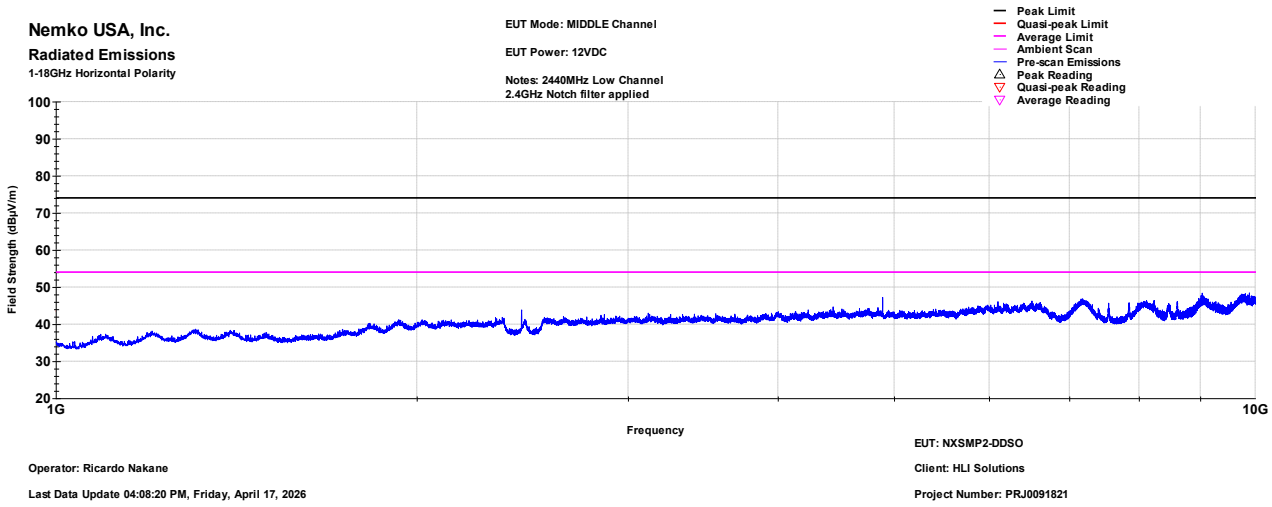
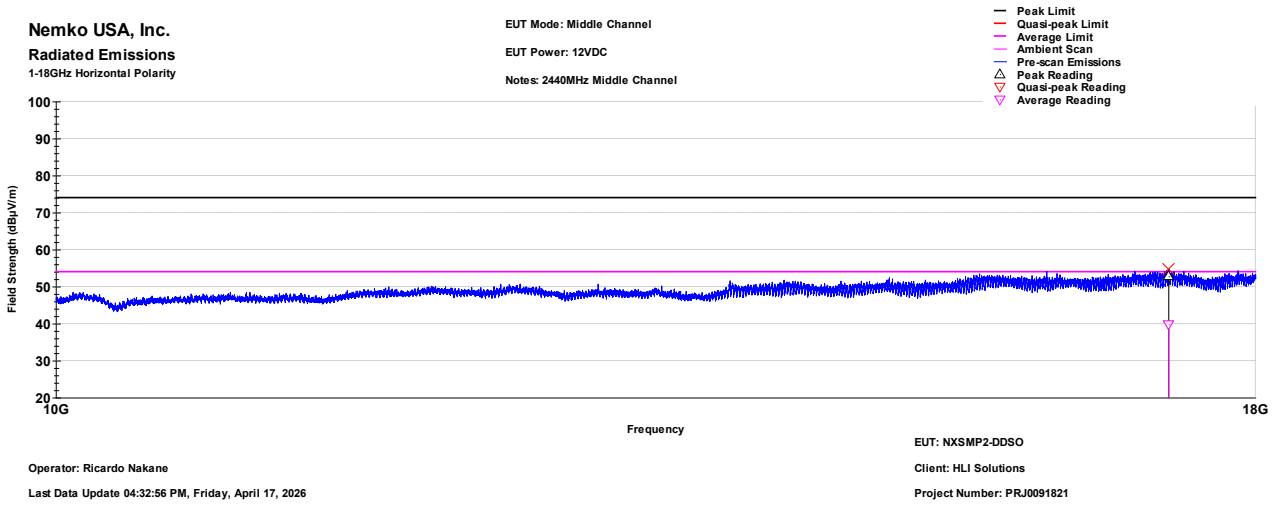


Figure 8.1-11: Radiated disturbance spectral plot (1 to 10 GHz) and radiated disturbance (Peak and Average) results of Horizontal



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
17252.50	98	100	52.755	74.000	-21.245	PASS	39.773	54.000	-14.227	PASS

Figure 8.1-12: Radiated disturbance spectral plot (10 to 18 GHz) and radiated disturbance (Peak and Average) results of Horizontal

1GHz - 18GHz Vertical Polarity Measured Emissions Data – High Channel 2480 MHz

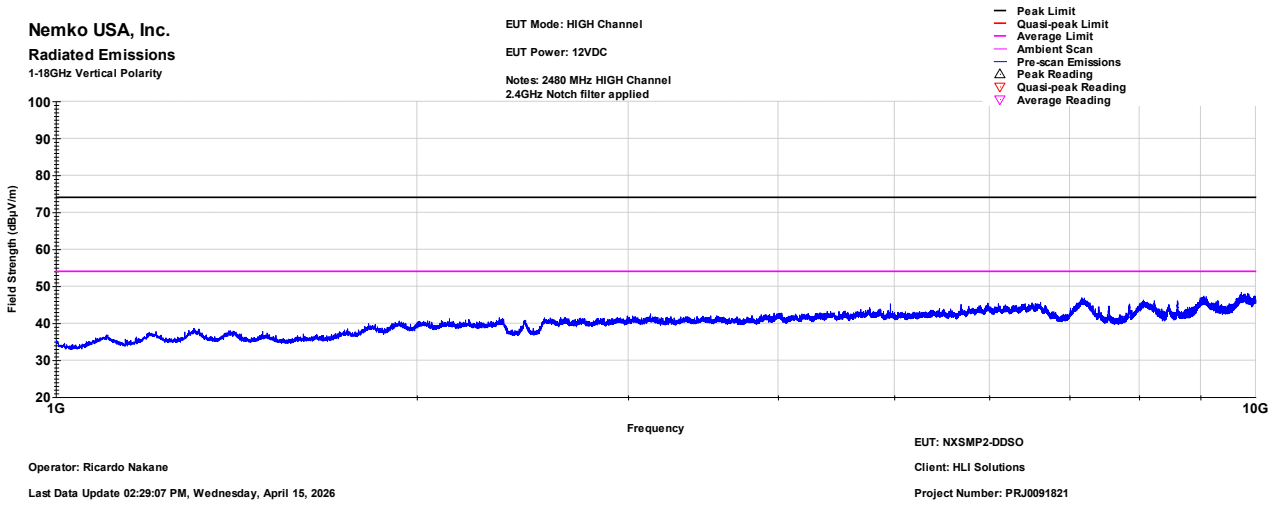
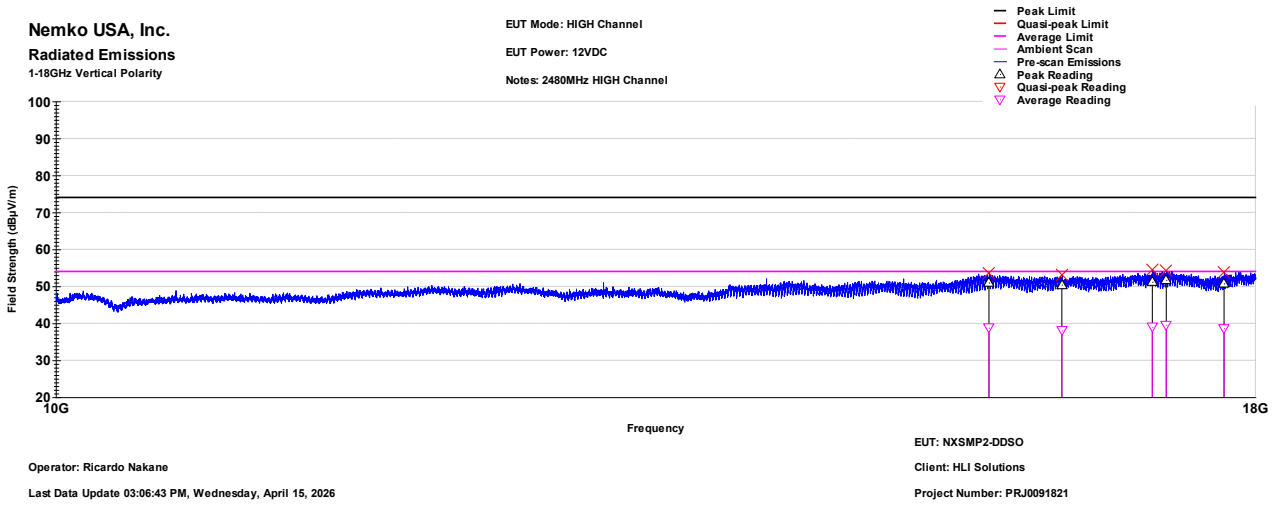


Figure 8.1-13: Radiated disturbance spectral plot (1 to 10 GHz) and radiated disturbance (Peak and Average) results of Vertical polarization



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
15797.25	221	241	50.961	74.000	-23.039	PASS	38.743	54.000	-15.257	PASS
16371.75	320	348	50.426	74.000	-23.574	PASS	38.052	54.000	-15.948	PASS
17114.25	49	228	51.188	74.000	-22.812	PASS	39.000	54.000	-15.000	PASS
17231.50	0	400	51.702	74.000	-22.298	PASS	39.511	54.000	-14.489	PASS
17725.75	11	328	50.734	74.000	-23.266	PASS	38.609	54.000	-15.391	PASS

Figure 8.1-14: Radiated disturbance spectral plot (10 to 18 GHz) and radiated disturbance (Peak and Average) results of Vertical polarization

1GHz - 18GHz Horizontal Polarity Measured Emissions Data – High Channel 2480 MHz

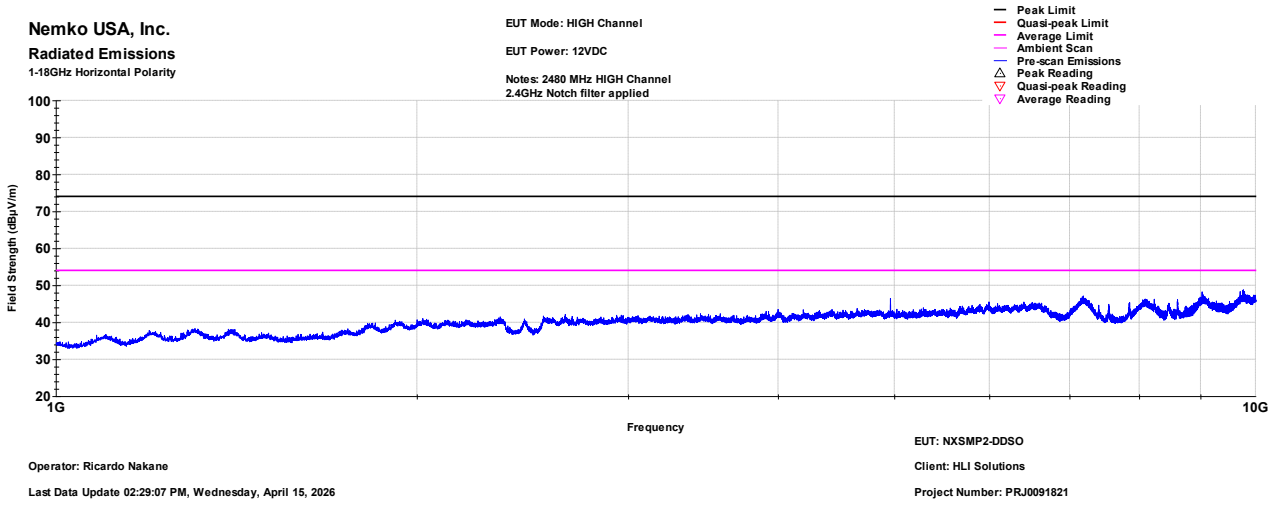
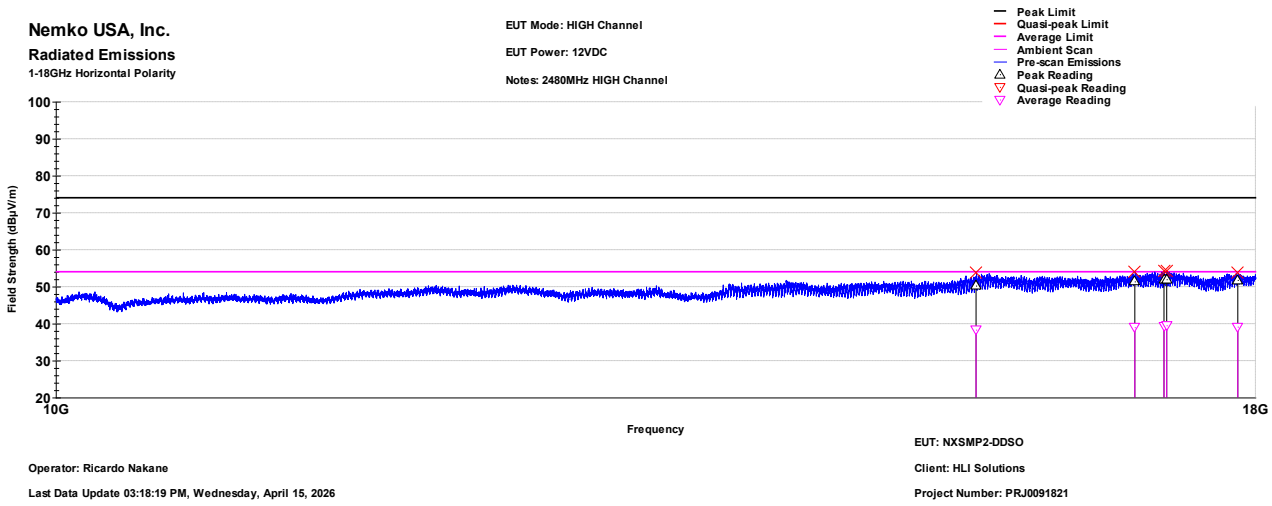


Figure 8.1-15: Radiated disturbance spectral plot (1 to 10 GHz) and radiated disturbance (Peak and Average) results of Horizontal



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
15698.00	279	136	50.242	74.000	-23.758	PASS	38.330	54.000	-15.670	PASS
16967.75	48	391	51.364	74.000	-22.636	PASS	38.964	54.000	-15.036	PASS
17211.75	130	216	51.943	74.000	-22.057	PASS	39.382	54.000	-14.618	PASS
17235.00	271	400	51.960	74.000	-22.040	PASS	39.508	54.000	-14.492	PASS
17845.75	359	210	51.773	74.000	-22.227	PASS	39.142	54.000	-14.858	PASS

Figure 8.1-16: Radiated disturbance spectral plot (10 to 18 GHz) and radiated disturbance (Peak and Average) results of Horizontal

18GHz – 26.5GHz Vertical Polarity Measured Emissions Data – Low Channel 2402 MHz

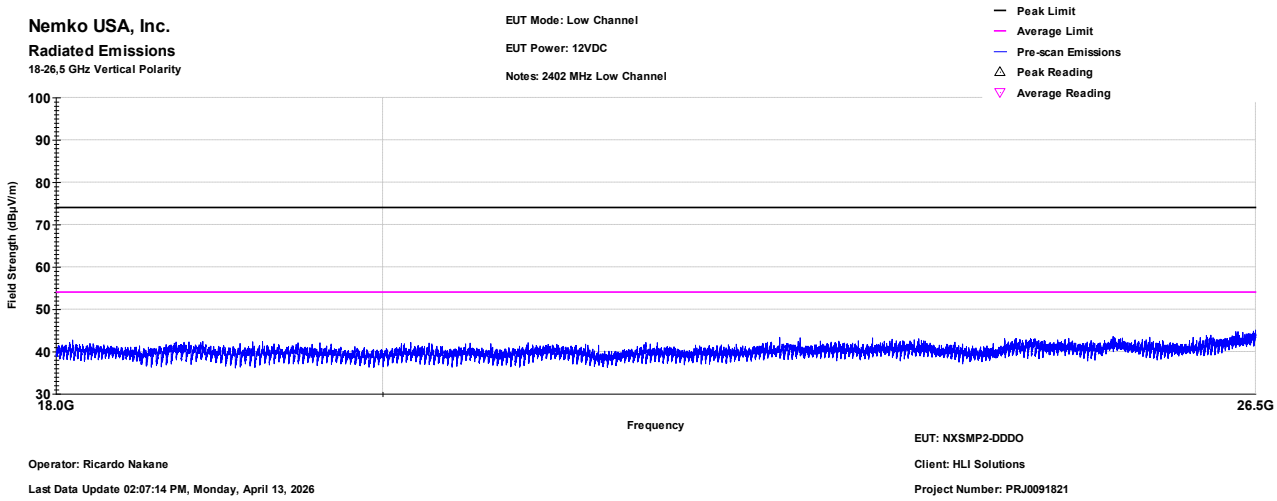


Figure 8.1-17: Radiated disturbance spectral plot (18 to 26.5 GHz) and radiated disturbance (Peak and Average) results of Vertical polarization

18GHz - 26.5GHz Horizontal Polarity Measured Emissions Data – Low Channel 2402 MHz

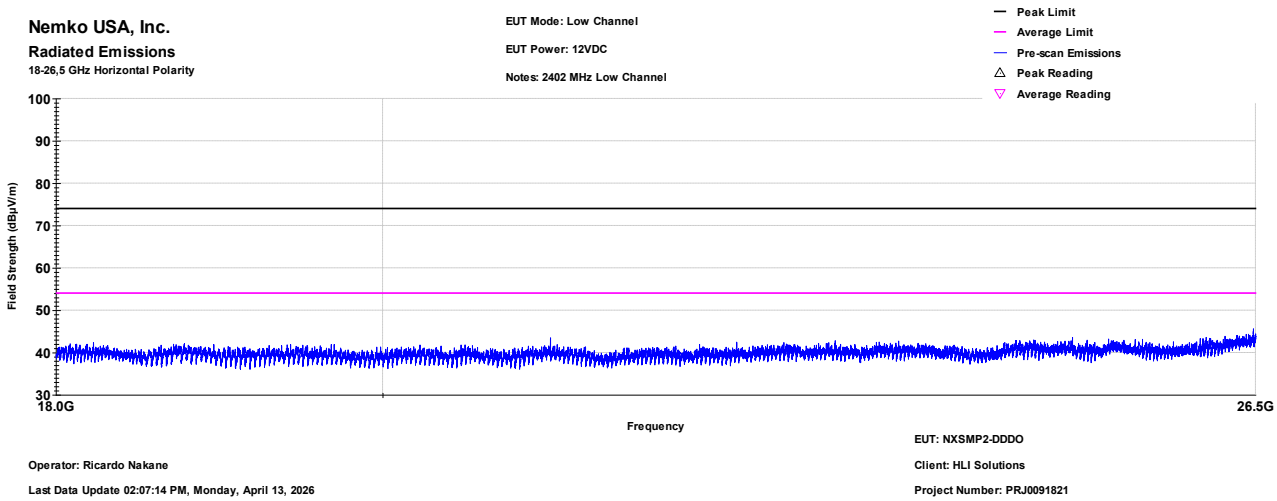


Figure 8.1-18: Radiated disturbance spectral plot (18 to 26.5 GHz) and radiated disturbance (Peak and Average) results of Horizontal

8.1.8 Test data, continued

18GHz – 26.5GHz Vertical Polarity Measured Emissions Data – Middle Channel 2440 MHz

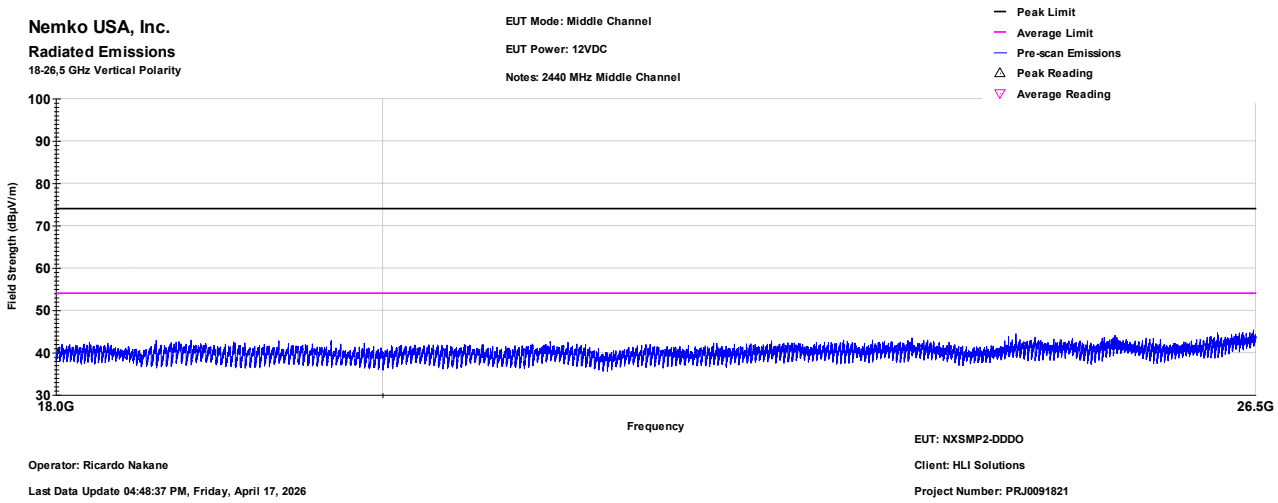


Figure 8.1-19: Radiated disturbance spectral plot (18 to 26.5 GHz) and radiated disturbance (Peak and Average) results of Vertical polarization

18GHz - 26.5GHz Horizontal Polarity Measured Emissions Data – Middle Channel 2440 MHz

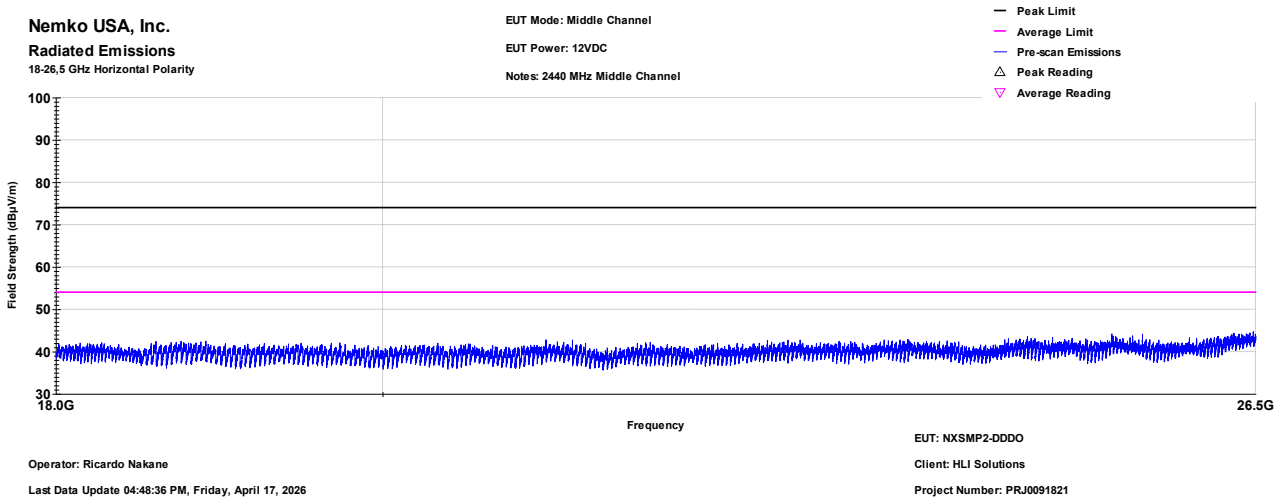


Figure 8.1-20: Radiated disturbance spectral plot (18 to 26.5 GHz) and radiated disturbance (Peak and Average) results of Horizontal

18GHz – 26.5GHz Vertical Polarity Measured Emissions Data – High Channel 2480 MHz

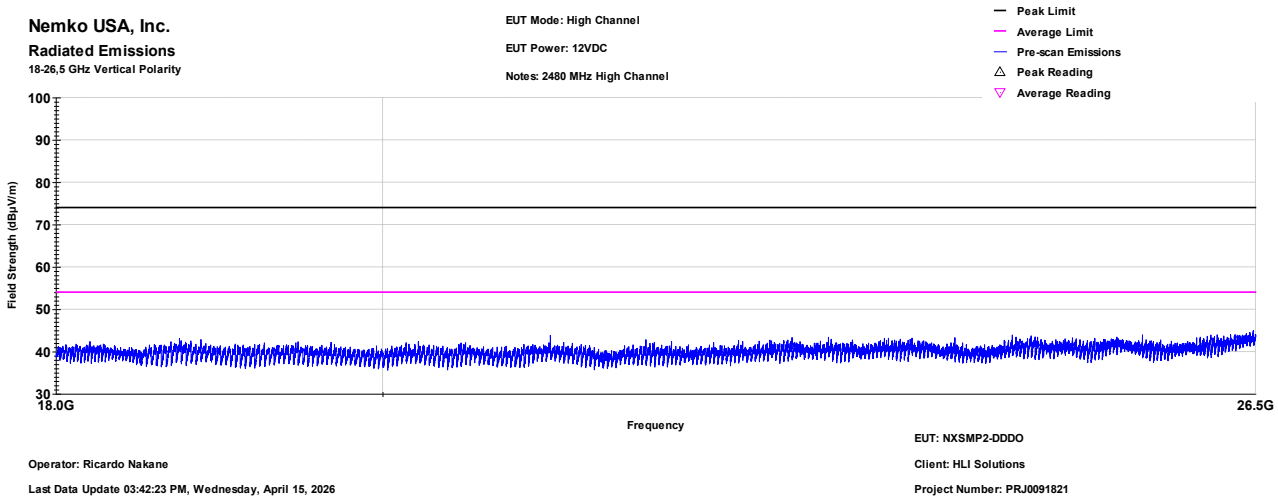


Figure 8.1-21: Radiated disturbance spectral plot (18 to 26.5 GHz) and radiated disturbance (Peak and Average) results of Vertical polarization

18GHz - 26.5GHz Horizontal Polarity Measured Emissions Data – High Channel 2480 MHz

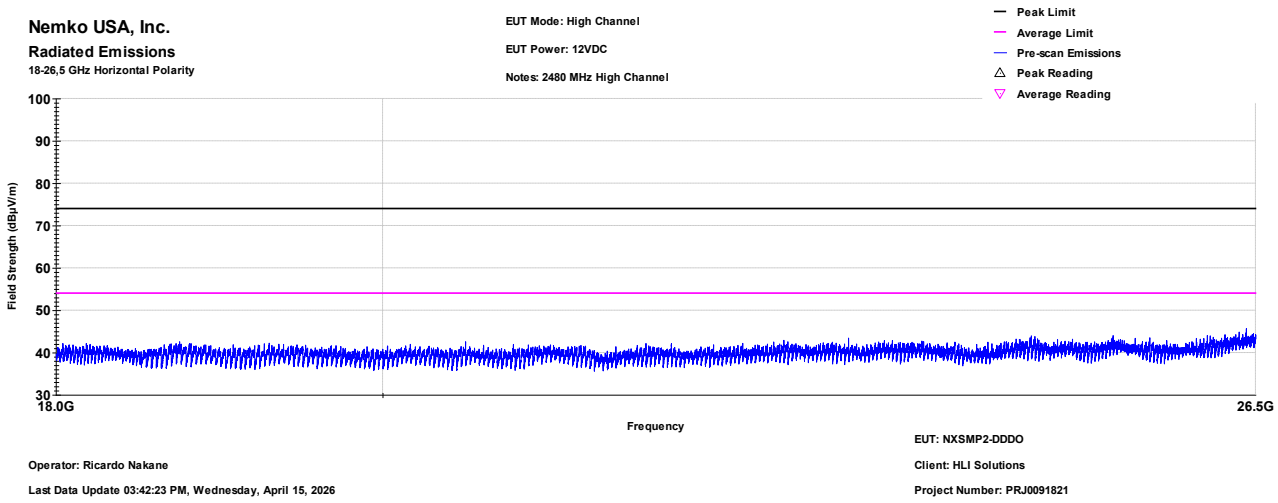


Figure 8.1-22: Radiated disturbance spectral plot (18 to 26.5 GHz) and radiated disturbance (Peak and Average) results of Horizontal

8.2 Maximum Output Power — Conducted

8.2.1 References

ANSI C63.4-2014 - Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment
ANSI C63.10-2020+Cor.1-2023 or ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 - American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
47 CFR §15.247 - FCC Rules for Operation within 2400–2483.5 MHz
47 CFR §15.209 - General radiated emission limits (spurious reference)
FCC KDB 558074 D01 - Guidance for §15.247 DTS output power and radiated measurement methods
ISED RSS-247 Issue 4 - Digital Transmission Systems (Canada)
ISED RSS-Gen Issue 5 - General radiated spurious requirements

8.2.2 Test summary

Verdict	Pass		
Test date	June 10, 2026	Temperature	23-24°C
Test engineer	Ricardo Nakane	Air pressure	988-991 mbar
Test location	Conducted Bench	Relative humidity	24-53%

8.2.3 Notes

The EUT maximum power was measured via its conducted port.

8.2.4 Test Summary

Table 8.2-1: Maximum Output Power verification, Conducted Method, Test Summary

Channel (MHz)	Measured Power (dBm)	Limit (dBm)	Margin (dBm)	Pass/Fail
2402	2.10	30	-27.90	PASS
2444	3.08	30	-26.92	PASS
2480	3.64	30	-26.36	PASS

Table 8.2-2: Maximum output power equipment list

Equipment	Manufacturer	Model no.	Asset no.	Next cal.
Receiver, Test, EMI, 1 Hz to 44 GHz	Rohde & Schwarz	ESW44	2541	6/3/2026
Cable, RF, N-N, 36', DC-18GHz	evissaP	eP7123R-432	C395	6/1/2026
Cable, RF, N-N, 32', DC-18GHz	evissaP	eP7123R-384	C394	6/1/2026
Cable, RF, N-N, 22', DC-18GHz	evissaP	eP7031R-22FT	C404	6/1/2026
Cable, RF, N-N, 30', DC-18GHz	evissaP	eP7031R-30FT	C405	6/1/2026
Cable, RF, SMA-SMA, 12", 2.92mm, DC-40GHz	evissaP	eP7101R-12	C398	6/1/2026
Cable, RF, SMA-N, 6', DC-18GHz	evissaP	eP7033R-6FT	C406	6/1/2026
Cable, RF, SMA-SMA, 12", 2.92mm, DC-40GHz	evissaP	eP7101R-12	C399	6/1/2026
Cable, RF, SMA-N, 6', DC-18GHz	evissaP	eP7033R-6FT	C407	6/1/2026
Cable, RF, N-N, 30", DC-18GHz	evissaP	eP3010R-30	C400	6/1/2026
Test Receiver, ESU / EMI Test Receiver 20 Hz - 26.5 GHz	Rohde & Schwarz	ESU-26	2431	6/1/2027

Notes: N/A - not applicable

8.2.6 Test data

Maximum Output Power – Conducted Method

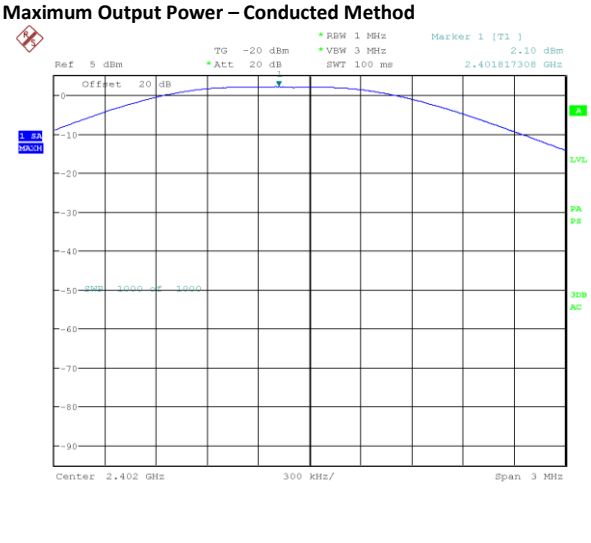


Figure 8.2-1: Output power (Conducted method) Low Channel

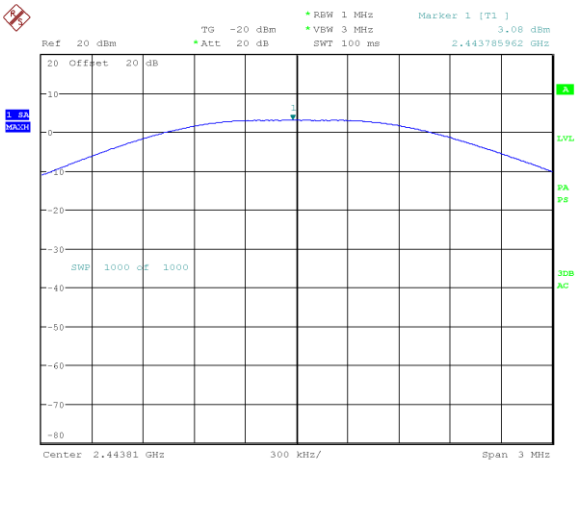


Figure 8.2-2: Output power (Conducted method) Middle Channel

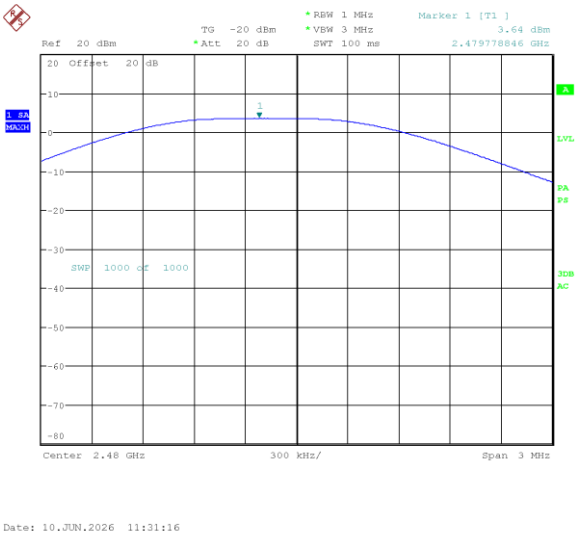


Figure 8.2-3: Output power (Conducted method) High Channel

8.3 Band Edge — Radiated Method

8.3.1 References

ANSI C63.4-2014 - Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment
ANSI C63.10-2013 - American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
47 CFR §15.247 - FCC Rules for Operation within 2400–2483.5 MHz
47 CFR §15.209 - General radiated emission limits (spurious reference)
FCC KDB 558074 D01 - Guidance for §15.247 DTS output power and radiated measurement methods
ISED RSS-247 Issue 4 - Digital Transmission Systems (Canada)
ISED RSS-Gen Issue 5 - General radiated spurious requirements

8.3.2 Test summary

Verdict	Pass		
Test date	April 15, 2026	Temperature	23-24 °C
Test engineer	Ricardo Nakane	Air pressure	988-991 mbar
Test location	10m semi anechoic chamber	Relative humidity	24-53%

8.3.3 Notes

The EUT incorporates an integral antenna with no accessible RF conducted port. Therefore, in accordance with FCC §15.247 and RSS-247 requirements, the band edge was determined using radiated field strength measurements at 10 m.

8.3.4 Setup details

EUT setup configuration	Table top
EUT powered	Battery (12 VDC)
Test facility	10 m Semi anechoic chamber
Measuring distance	3 and 10 m
Antenna height variation	1–4 m
Turn table position	0–360°
Measurement details	A preliminary scan was performed with the spectrum analyzer in sweep mode to identify the band edge region while the EUT was rotated and the measurement antenna height and polarization were adjusted to maximize the emission level. Final measurements were then performed with the analyzer configured for peak and average detection using the appropriate resolution bandwidth. The analyzer span was set to capture both the fundamental emission and the restricted band edge simultaneously to demonstrate compliance with the band edge attenuation requirements.

8.3.5 Setup details, continued

Table 8.3-1: Band edge equipment list

Equipment	Manufacturer	Model no.	Asset no.	Next cal.
Receiver, Test, EMI, 1 Hz to 44 GHz	Rohde & Schwarz	ESW44	2541	6/3/2026
Switch Driver	Agilent	11713A	1939	N/A
Antenna, Biconilog, 26-3000 MHz	ETS-Lindgren	3140B	1850	N/A
Preamp, 0.1-1300MHz, 26dB	HP	8447D	586	3/30/2028
Amplifier, 40dB, 100MHz-18GHz	Miteq	AFS44-00101800-2S-10P-44	2004	2/20/2028
Antenna, Double Ridged Guide Horn, 1 - 18 GHz	ETS-Lindgren	3117	1780	1/18/2027
Cable, RF, N-N, 36', DC-18GHz	evissaP	eP7123R-432	C395	6/1/2026
Cable, RF, N-N, 32', DC-18GHz	evissaP	eP7123R-384	C394	6/1/2026
Cable, RF, N-N, 22', DC-18GHz	evissaP	eP7031R-22FT	C404	6/1/2026
Cable, RF, N-N, 30', DC-18GHz	evissaP	eP7031R-30FT	C405	6/1/2026
Cable, RF, SMA-SMA, 12", 2.92mm, DC-40GHz	evissaP	eP7101R-12	C398	6/1/2026
Enclosure, Shielded, RFI/EMI, NSA, 3m & 10m, 30MHz - 1 GHz	TDK	254	2555	9/26/2027
Cable, RF, SMA-N, 6', DC-18GHz	evissaP	eP7033R-6FT	C406	6/1/2026
Cable, RF, SMA-SMA, 12", 2.92mm, DC-40GHz	evissaP	eP7101R-12	C399	6/1/2026
Cable, RF, SMA-N, 6', DC-18GHz	evissaP	eP7033R-6FT	C407	6/1/2026
Cable, RF, N-N, 30", DC-18GHz	evissaP	eP3010R-30	C400	6/1/2026

Notes: N/A - not applicable

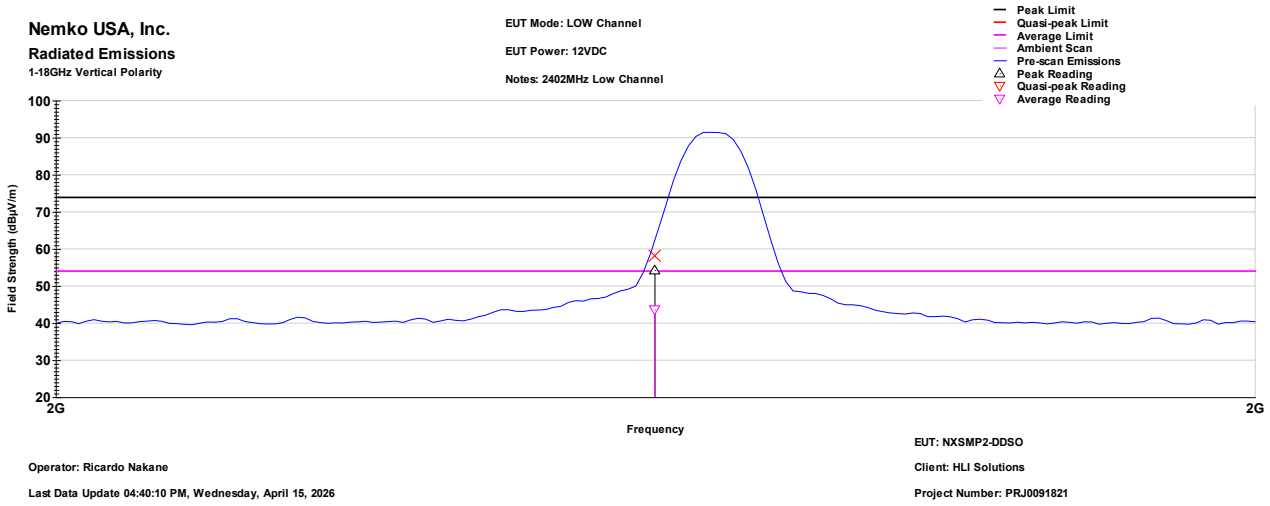
Table 8.3-2: Radiated disturbance test software details

Manufacturer of Software	Details
ETS-LINDGREN	TILE 7 V: 7.9.1.1

Notes: None

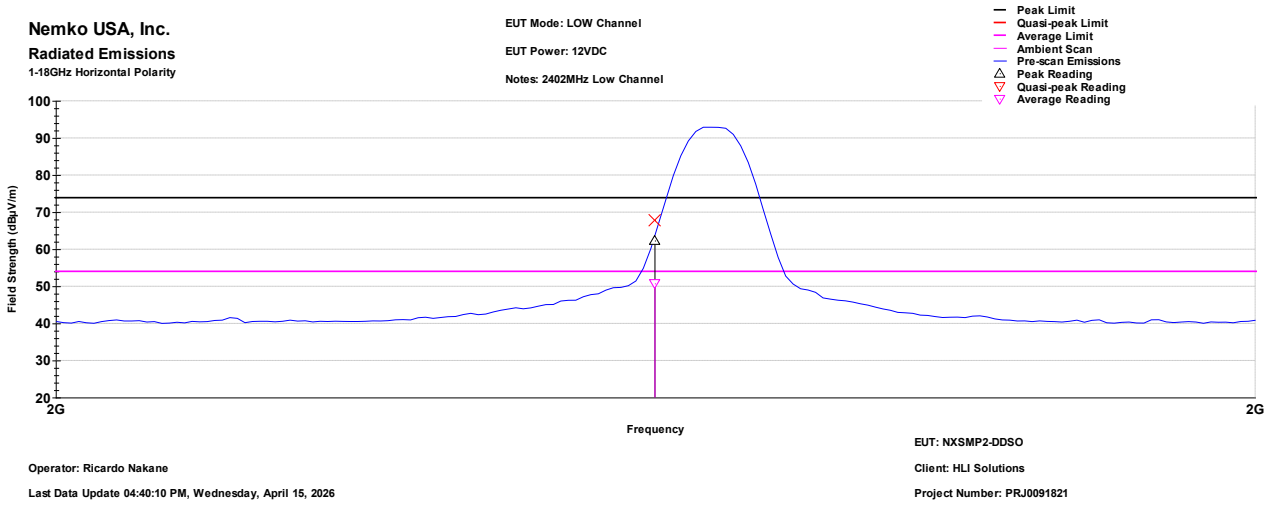
8.3.6 Test data

Band Edge – Radiated Method Data – Low Channel 2402 MHZ



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
2399.90	342	100	54.280	74	-19.72	PASS	43.568	54.000	-10.432	PASS

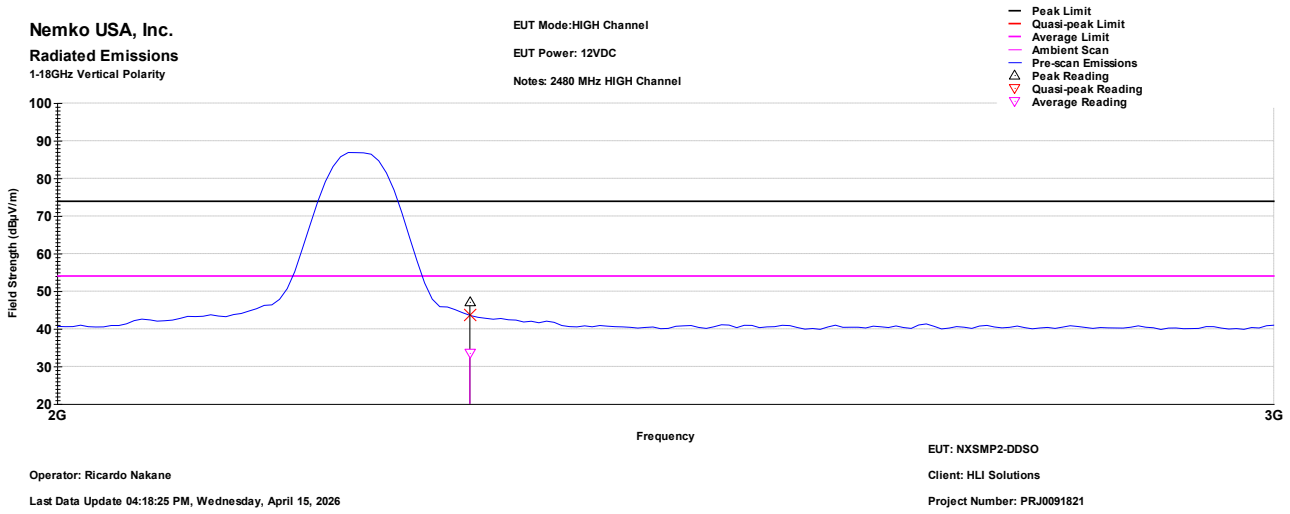
Figure 8.3-1: Low channel band edge vertical polarity plot



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
2399.90	239	100	62.286	74	-11.714	PASS	50.748	54.000	-3.252	PASS

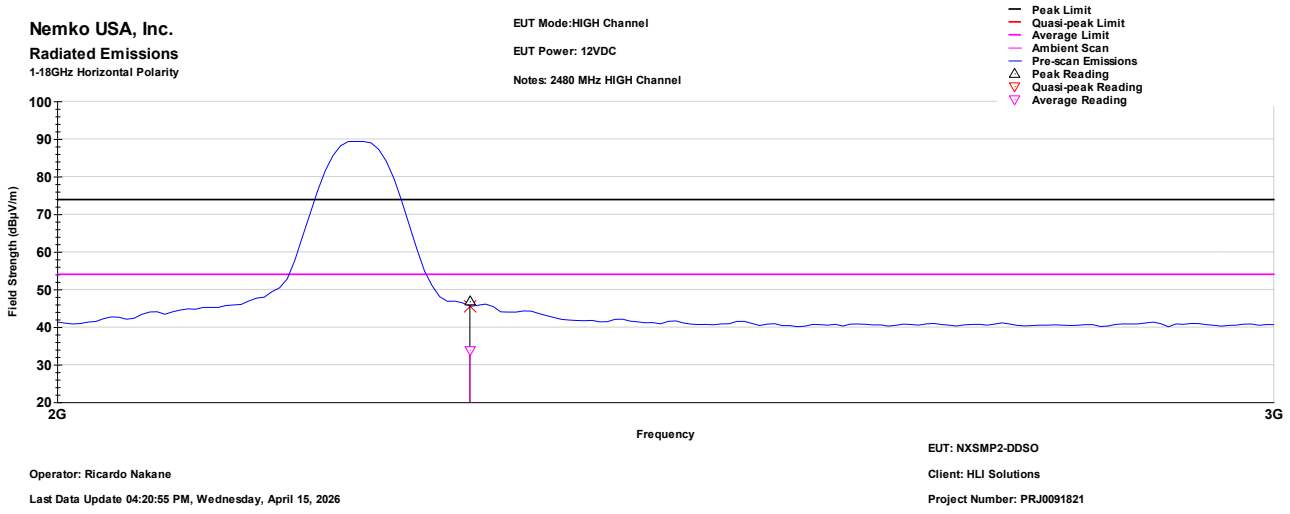
Figure 8.3-2: Low channel band edge horizontal polarity plot

Band Edge – Radiated Method Data – High Channel 2480 MHZ



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
2483.50	179	290	47.112	73.870	-26.758	PASS	33.531	54.000	-20.469	PASS

Figure 8.3-3: High channel band edge vertical polarity plot



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
2483.50	78	365	46.786	73.870	-27.084	PASS	33.798	54.000	-20.202	PASS

Figure 8.3-4: High channel band edge horizontal polarity plot

**** End of Report ****