

EMC TEST REPORT

Report ID

REP140219

Project ID

PRJ0092130

Type of assessment:

Complete Assessment

Applicant:

Solace Power

Product:

Wireless Power Transfer Module

Model:

Nova 30

FCC ID:

2BT37-N30A001

Specifications:

FCC 47 CFR Part 18, Subpart CDate of issue **January 21, 2026****Dhara Patel, EMC/RF Specialist**

Tested by



Signature

David Duchesne, EMC/RF Lab Manager

Reviewed by



Signature

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Limits of responsibility

Note that this report's results relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of this report.

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Section 1 Report summary

1.1 Test specifications

FCC 47 CFR Part 18, Subpart C

Title 47: Telecommunication; PART 18— Industrial, scientific and medical equipment

1.2 Exclusions

Per laboratory guidance an alternative sample was prepared for conducted emissions testing. This was done to eliminate the coupling of radiated energy from the transmitter coil into the input power leads so that the measurement shows only the actual conducted emissions from the system. The modification involves replacing transmitter coil with a termination circuit. This termination circuit includes tuning components and a resistive RF load. The presence of the termination circuit loads the transmitter inverter such that it emulates normal operation and power output. The circuit was shielded with a copper tape enclosure to ensure any radiated coupling was eliminated.

1.3 Statement of compliance

Statement of Conformity:

The reported results have been evaluated against the specified limits of the standard(s) listed in **Section 1.1** of this report.

Conformity with the specified requirements is determined by comparing the measured results directly to the applicable limits. Measurement uncertainty is not applied to adjust or attribute to the measured value for the purpose of compliance determination.

In the configuration tested, the **Equipment Under Test (EUT)** was found to be compliant. Unless otherwise noted in **Section 1.2**, all testing was performed against the relevant requirements of the applicable test standard(s).

The results obtained indicate that the product under test complies in full with the requirements tested, and the test results relate only to the items tested.

Refer to the **Summary of Test Results** section for full details.

1.4 Test report revision history

Table 1.4-1: Test report revision history

Report ID.	Date of issue	Details of changes made to test report
REP140219	January 21, 2026	Original report issued

Section 2 Engineering considerations

2.1 Modifications incorporated in the EUT for compliance

For the purpose of conducted emissions testing, the transmitter coil assembly was replaced with an equivalent termination circuit consisting of tuning components and a resistive RF load. This termination was implemented to correctly load the inverter and emulate normal operating conditions. The termination circuit was enclosed in a copper-tape shield to prevent radiated coupling into the power leads. No other changes were made to the EUT.



2.2 Technical judgment

None

2.3 Model variant declaration

There were no model variants declared by the applicant.

2.4 Deviations from laboratory tests procedures

No deviations were made from laboratory procedures.

Section 3 Test conditions

3.1 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 $\pm 5\%$, for which the equipment was designed.

Section 4 Information provided by the applicant

4.1 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 contained 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.

4.2 Applicant/Manufacturer

Name	Solace Power Inc.
Address	1118 Topsail Rd, Suite 201, Mount Pearl, NL A1N 5E7 Canada

4.3 EUT information

Product	Wireless Power Transfer Module		
Model	Nova 30		
Serial number	670-0034-1-00001		
Power requirements	36 V _{DC} (via external 100–240 V _{AC} , 50/60 Hz power adapter)		
Description/theory of operation	The Nova 30 module set is designed to provide continuous wireless power through most windows worldwide, using a single SKU. This functionality is achieved through: - Wireless Power System Architecture and Hardware – A design that enables power transmission through glass without physical penetration. The Nova 30 system includes two components: - Transmitter (TX): Installed indoors, connected to a power source, and wirelessly transmits power. - Receiver (RX): Mounted on the exterior side of the window to receive wireless power from the TX and supply it to outdoor devices. This configuration delivers up to 20 W of wireless power through approximately 98% of residential and commercial windows.		
Operational frequencies	WPT generated by Microcontroller	1.825 MHz	
	Microcontroller	76.8 MHz	
	TX DCDC Converter	0.570 MHz	
	RX DCDC Converter	0.125 MHz	
Software details	Tx: 610-0028-0, Rx: 610-0027-0		

4.4 EUT setup details

4.4.1 EUT Exercise and monitoring

Methods used to exercise the EUT and all relevant ports:

- EUT will be installed on the provided window test fixture with Transmitter Unit (TX) and Receiver Unit (RX) on opposing faces. DC power is provided to the TX Input power port through the AC-DC power adapter provided. The output power port of the RX is loaded by connecting the power resistor provided with the sample. This configuration represents normal operation of the EUT.

Configuration details:

- The EUT was set up in a configuration that was expected to produce the highest amplitude emissions relative to the limit and that satisfy normal operation/installation practice by the end-user.
- The type and construction of cables used in the measurement setup were consistent with normal or typical use.
- The EUT was set up in a manner that was consistent with its typical arrangement and use. The measurement arrangement of the EUT, local AE and associated cabling was representative of normal practice.

Section 5 Summary of test results

5.1 Testing period

Test start date	November 26, 2025	Test end date	November 26, 2025
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5.2 Sample information

Receipt date	November 26, 2025	Nemko sample ID number	PRJ00921300001, PRJ00921300002
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5.3 Test results

Table 5.3-1: FCC 47 CFR Part 18, Subpart C result summary

Clause	Test description	Verdict
18.305	Field strength limits ¹	Pass
18.307	Conduction limits ¹	Pass
Notes:	¹ Equipment type: Any type unless otherwise specified (miscellaneous)	

Section 6 Terms and definitions

6.1 Product classifications definitions

6.1.1 Title 47: Telecommunication – Part 18- Industrial, Scientific, and Medical Equipment, Subpart A – General Information

Industrial, scientific, and medical (ISM) equipment:

Equipment or appliances designed to generate and use locally RF energy for industrial, scientific, medical, domestic or similar purposes, excluding applications in the field of telecommunication. Typical ISM applications are the production of physical, biological, or chemical effects such as heating, ionization of gases, mechanical vibrations, hair removal and acceleration of charged particles.

Section 7 Testing data

7.1 Radiated disturbance

7.1.1 References and limits

- FCC 47 CFR Part 18, Subpart C (Test method ANSI C63.4:2014)

Table 7.1-1: FCC §18.305 – Field strength limits

Equipment	Operating frequency	RF Power generated by equipment (watts)	Field strength limit $\mu\text{V/m}$	Measurement distance m
Any type unless otherwise specified (miscellaneous)	Any non-ISM frequency	Below 500 500 or more	15 $15 \times \text{SQRT}(\text{power}/500)$	300

7.1.2 Test summary

Verdict	Pass			
Test date	November 26, 2025	Temperature	24 °C	
Tested by	Dhara Patel	Air pressure	985 mbar	
Test location	Ottawa	Relative humidity	46 %	

7.1.3 Notes

- The spectrum was scanned from 9 kHz up to 30 MHz.
- Preliminary measurements were made at four sides of EUT to identify the final test frequency by comparing the amplitude vs the disturbance field strengths amongst the ambient signals.
- EUT was measured at frequencies where the emission exceeded the limit line but the ambient signal field strength is lower the limit line.
- The maximum horizontally- and vertically-polarized disturbance field strengths were measured at four sides of EUT, the worst case data were provided.
- No emissions above 1 GHz were observed within 10 dB of the specified limit when measured with the appropriate detector.
- The height of the measuring antenna was 1 m during the test.
- From 9 kHz to 30 MHz, the specified radiated emissions limit is 15 $\mu\text{V/m}$ at 300 m. This corresponds to an electric field strength of:

$$E_{300\text{m}} = 20 \log_{10}(15) = 23.52 \text{ dB}\mu\text{V/m}$$

- Distance extrapolation to 3 m: For this frequency range, a 40 dB/decade extrapolation factor applies:

$$\Delta = 40 \log_{10}\left(\frac{300}{3}\right) = 80 \text{ dB}$$

$$E_{3\text{m}} = 23.52 + 80 = 103.52 \text{ dB}\mu\text{V/m}$$

- E-field to H-field (free space):

$$E = H + 51.5 \text{ dB}$$

$$H_{3\text{m}} = 103.52 - 51.5 = 52.02 \text{ dB}\mu\text{A/m}$$

7.1.4 Setup details

Port under test	Enclosure Port
EUT power input during test	36 V _{DC} (via external 100–240 V _{AC} , 50/60 Hz power adapter)
EUT setup configuration	Table top
Test facility	Semi anechoic chamber
Measuring distance	3 m
Antenna height variation	1–4 m
Turntable position	0–360°
Measurement details	A preview measurement was generated with the receiver in continuous scan or sweep mode while the EUT was rotated and the antenna adjusted to maximize radiated emission. Selected emissions detected were re-measured with the appropriate detector against the correlating limit and recorded as the final measurement.

Receiver/spectrum analyzer settings.

Resolution bandwidth	Measurements below 1 GHz: 120 kHz
Video bandwidth	Measurements below 1 GHz: 300 kHz
Detector mode	Measurements below 1 GHz: Peak (Preview), Quasi-peak (Final)
Trace mode	Max Hold
Measurement time	100 ms

Table 7.1-2: Radiated emissions equipment list

Equipment	Manufacturer	Model no.	Asset no.	Cal cycle	Next cal.
3 m EMI test chamber	TDK	SAC-3	FA002047	1 year	March 14, 2026
Flush mount turntable	Sunol	FM2022	FA002082	—	NCR
Controller	Sunol	SC104V	FA002060	—	NCR
Antenna mast	Sunol	TLT2	FA002061	—	NCR
Receiver/spectrum analyzer	Rohde & Schwarz	ESU 40	FA002071	1 year	February 7, 2026
Bilog antenna (20–3000 MHz)	Sunol	JB3	FA002108	1 year	April 8, 2026
Active loop antenna (0.01–30 MHz)	Com-Power	AL-130	FA002674	1 year	November 12, 2026
50 Ω coax cable	Carlisle	WHU18-1818-072	FA002391	1 year	October 7, 2026
50 Ω coax cable	Huber+Suhner	104B11NX2/11000	FA003441	1 year	October 7, 2026

Notes: NCR - no calibration required

All equipment related to the contribution of measurement has been included in this list. Such items include, but are not limited to, cables, attenuators, directional couplers, and pre-amps.

Setup details, continued

Table 7.1-3: Measurement uncertainty calculations based on equipment list

Measurement	$U_{\text{cisp}} \text{ dB}$	$U_{\text{lab}} \text{ dB}$
Radiated disturbance (9 kHz to 30 MHz)	N/A	3.8
Radiated disturbance (30 MHz to 1 GHz)	6.3	5.8

Notes: Nemko Canada Inc. has calculated measurement uncertainty and is documented in EMC/MUC/001 "Uncertainty in EMC measurements." Measurement uncertainty was calculated using the methods described in CISPR 16-4-2 Specification for radio disturbance and immunity measuring apparatus and methods – Part 4-2: Uncertainties, statistics and limit modelling – Measurement instrumentation uncertainty. The expression of Uncertainty in EMC Testing. Measurement uncertainty calculations assume a coverage factor of K=2 with 95% certainty.

Compliance assessment:

If U_{lab} is less than or equal to U_{cisp} then:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit

If U_{lab} is greater than U_{cisp} then:

- compliance is deemed to occur if no measured disturbance level, increased by $(U_{\text{lab}} - U_{\text{cisp}})$, exceeds the disturbance limit
- non-compliance is deemed to occur if any measured disturbance level, increased by $(U_{\text{lab}} - U_{\text{cisp}})$, exceeds the disturbance limit

Table 7.1-4: Radiated emissions test software details

Manufacturer of Software	Details
Rohde & Schwarz	EMC32, Software for EMC Measurements, Version 11.20.00

7.1.5 Test data

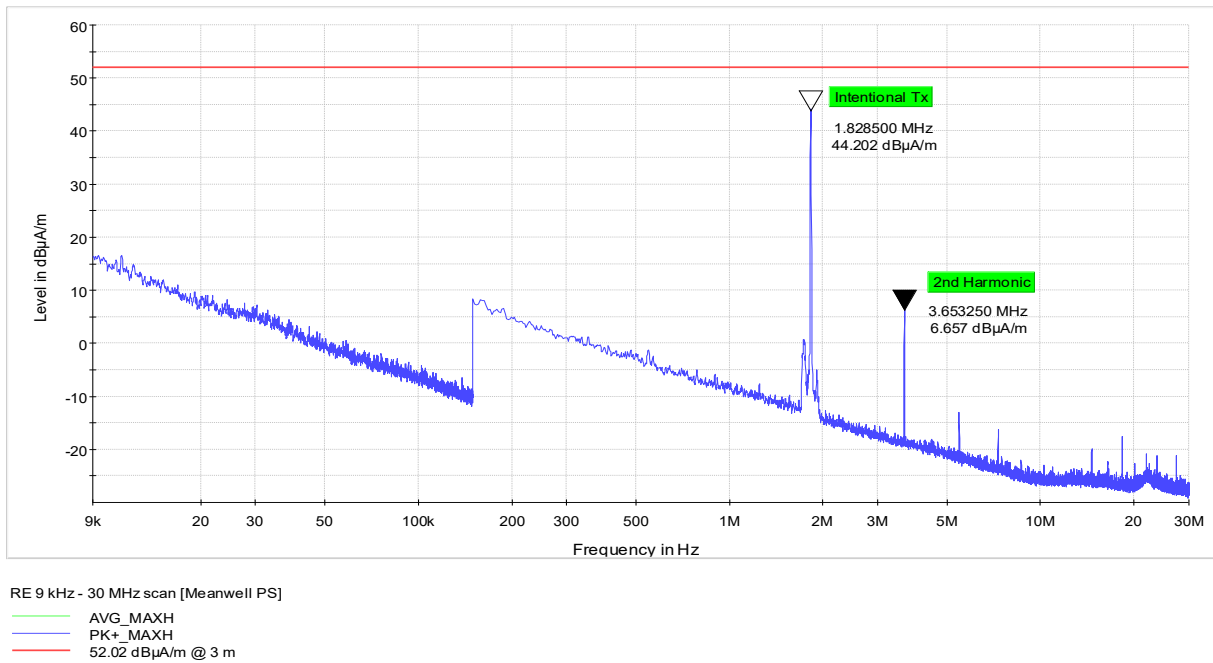


Figure 7.1-1: Radiated emissions spectral plot (9 kHz to 30 MHz)

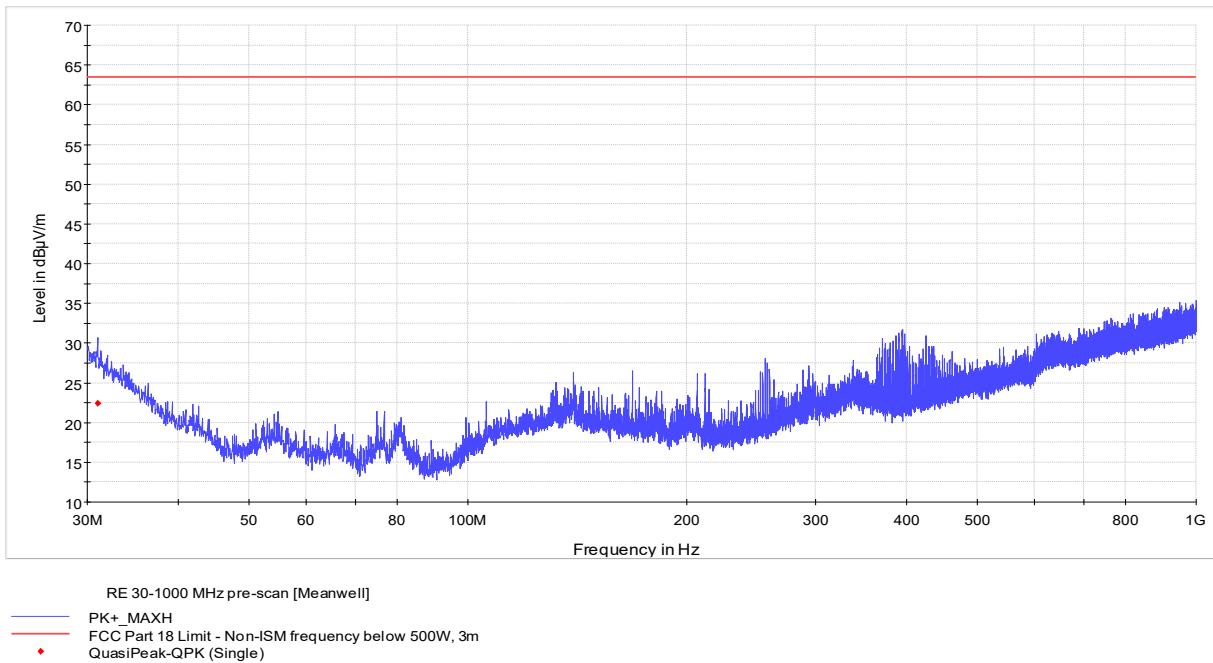


Figure 7.1-2: Radiated emissions spectral plot (30 to 1000 MHz)

Setup photos

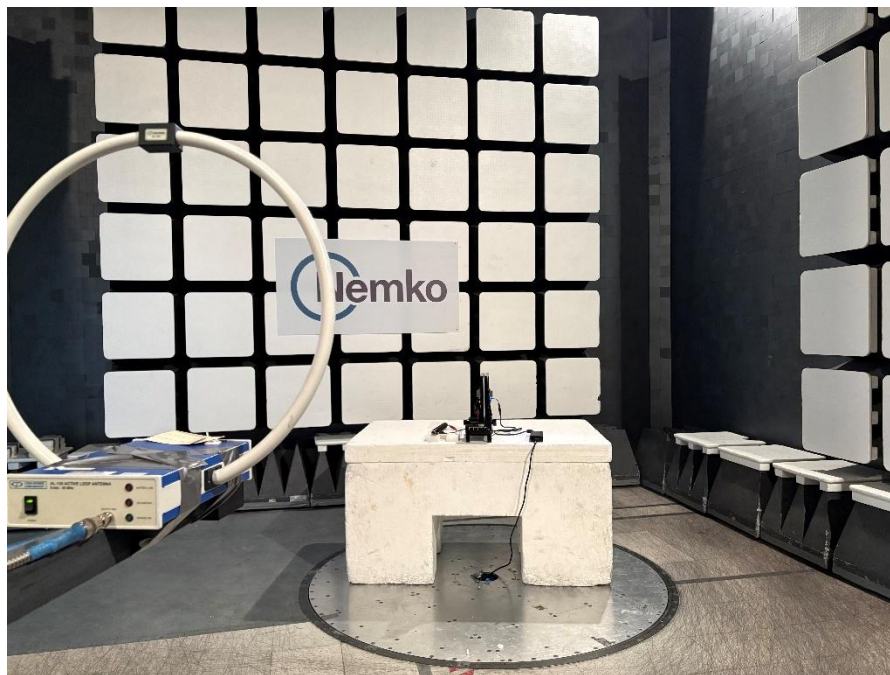


Figure 7.1-3: Radiated emissions setup photo – 150 kHz to 30 MHz

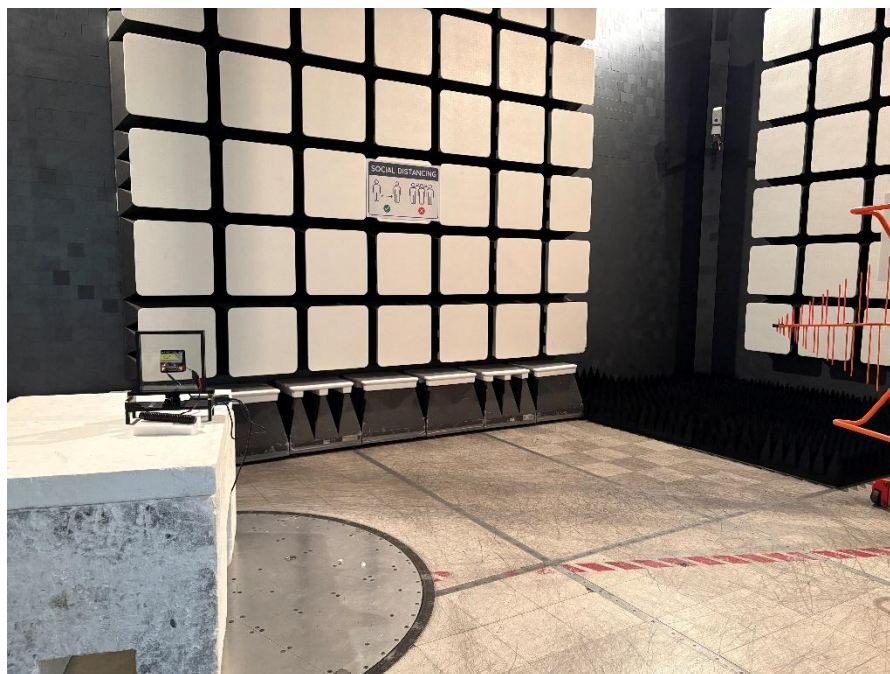


Figure 7.1-4: Radiated emissions setup photo – 30 MHz to 1 GHz

7.2 Conducted disturbance at mains port

7.2.1 References

FCC 47 CFR Part 18, Subpart C (Test method ANSI C63.4:2014)

Table 7.2-1: Requirements for conducted emissions at mains port for Class B

Frequency range [MHz]	Measurement		Limits [dBμV]
	Coupling device	Detector type/ bandwidth	
0.15–0.5	AMN	Quasi Peak/9 kHz	66.0–56.0
0.5–5			56.0
5–30			60.0
0.15–0.5	AMN	CAverage/9 kHz	56.0–46.0
0.5–5			46.0
5–30			50.0

Notes: The lower limit shall apply at the transition frequency.

7.2.2 Test summary

Verdict	Pass		
Test date	November 26, 2025	Temperature	24 °C
Tested by	Dhara Patel	Air pressure	985 mbar
Test location	Ottawa	Relative humidity	46 %

7.2.3 Notes

- The spectral plots within this section have been corrected with all relevant transducer factors.
- Where tabular data has not been provided, no emissions were observed within 10 dB of the specified limit when measured with the appropriate detector. Additionally, where less than 6 measurements per detector have been provided, fewer than 6 emissions were observed within 10 dB of the specified limit when measured with the appropriate detector.
- Equipment with a DC power port powered by a dedicated AC/DC power converter is considered to be AC mains powered equipment and tested with a power converter. Where the manufacturer provided the power converter, the supplied converter was used.
- An alternative sample was prepared for conducted emissions testing. This was done to eliminate the coupling of radiated energy from the transmitter coil into the input power leads so that the measurement shows only the actual conducted emissions from the system. The modification involves replacing transmitter coil with a termination circuit. This termination circuit includes tuning components and a resistive RF load. The presence of the termination circuit loads the transmitter inverter such that it emulates normal operation and power output. The circuit was shielded with a copper tape enclosure to ensure any radiated coupling was eliminated.

7.2.4 Setup details

Port under test – Coupling device	AC power – Artificial Mains Network (AMN)
EUT power input during test	36 V _{DC} (via external 100–240 V _{AC} , 50/60 Hz power adapter)
EUT setup configuration	Table top
Measurement details	A preview measurement was generated with the receiver in continuous scan mode. Selected emissions detected were re-measured with the appropriate detector against the correlating limit and recorded as the final measurement.

Receiver settings:

Resolution bandwidth	9 kHz
Video bandwidth	30 kHz
Detector mode	Peak and Average (Preview), Quasi-peak and CAverage (Final)
Trace mode	Max Hold
Measurement time	100 ms (Preview), 160 ms (Final)

Table 7.2-2: *Conducted emissions – from AC mains power ports equipment list*

Equipment	Manufacturer	Model no.	Asset no.	Cal./Ver. cycle	Next cal./ver.
Receiver/spectrum analyzer	Rohde & Schwarz	ESU 40	FA002071	1 year	February 7, 2026
61505 AC/DC programmable source	Chroma	61509	FA003036	—	NCR
DC Power source	Ametek	SGA80X125C-0AAA	FA002737	—	NCR
LISN	Rohde & Schwarz	ENV216	FA002515	1 year	February 6, 2026
50 Ω coax cable	Huber + Suhner	None	FA001652	1 year	April 15, 2026

Notes: NCR - no calibration required

All equipment related to the contribution of measurement has been included in this list. Such items include, but are not limited to, cables, attenuators, directional couplers, and pre-amps.

Table 7.2-3: *Measurement uncertainty calculations based on equipment list*

Measurement	U_{CISPR} dB	U_{lab} dB
Conducted disturbance at AC mains and other port power using a V-AMN (150 kHz to 30 MHz)	3.4	3.4

Notes: Nemko Canada Inc. has calculated measurement uncertainty and is documented in EMC/MUC/001 “Uncertainty in EMC measurements.” Measurement uncertainty was calculated using the methods described in CISPR 16-4-2 Specification for radio disturbance and immunity measuring apparatus and methods – Part 4-2: Uncertainties, statistics and limit modelling – Measurement instrumentation uncertainty. The expression of Uncertainty in EMC Testing. Measurement uncertainty calculations assume a coverage factor of K=2 with 95% certainty.

Compliance assessment:

If U_{lab} is less than or equal to U_{CISPR} then:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit

If U_{lab} is greater than U_{CISPR} then:

- compliance is deemed to occur if no measured disturbance level, increased by $(U_{\text{lab}} - U_{\text{CISPR}})$, exceeds the disturbance limit
- non-compliance is deemed to occur if any measured disturbance level, increased by $(U_{\text{lab}} - U_{\text{CISPR}})$, exceeds the disturbance limit

Table 7.2-4: *Conducted emissions – from AC mains power ports test software details*

Manufacturer of Software	Details
Rohde & Schwarz	EMC32, Software for EMC Measurements, Version 11.20.00

7.2.5 Test data

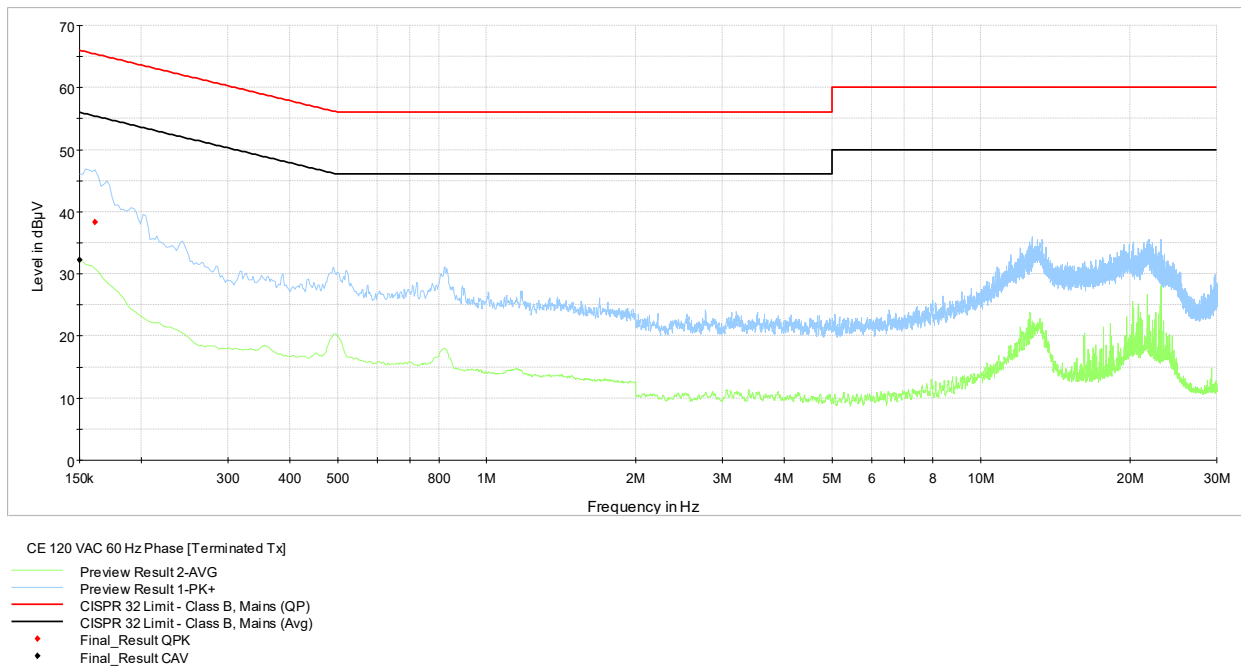


Figure 7.2-1: Conducted disturbance at mains port spectral plot on phase line

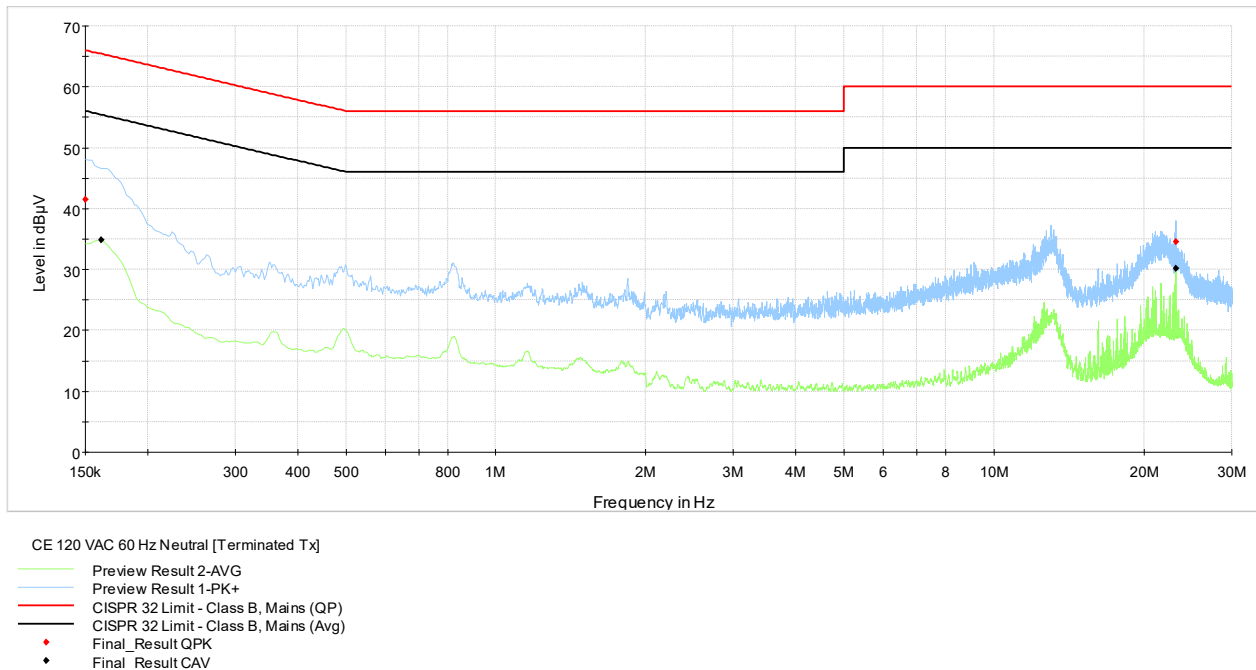


Figure 7.2-2: Conducted disturbance at mains port spectral plot on neutral line

7.2.6 Setup photos



Figure 7.2-3: *Conducted emissions – from AC mains power ports setup photo*

Section 8 EUT photos

8.1 External photos



Figure 8.1-1: Front view photo



Figure 8.1-2: Front view photo [Terminated Tx model for conducted emissions]



Figure 8.1-3: Rear view photo



Figure 8.1-4: Rear view photo [Terminated Tx model for conducted emissions]

External photos continued

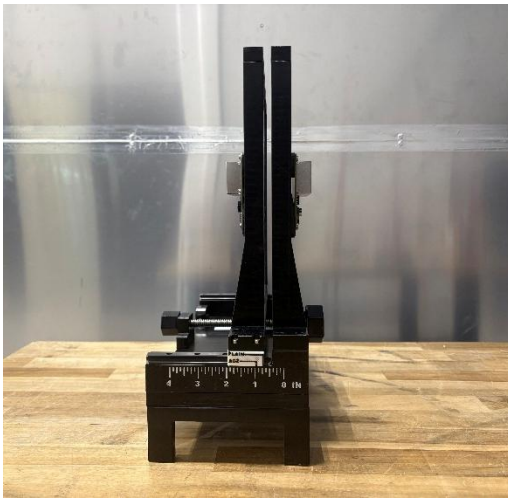


Figure 8.1-5: Side view photo



Figure 8.1-6: Side view photo [Terminated Tx model for conducted emissions]

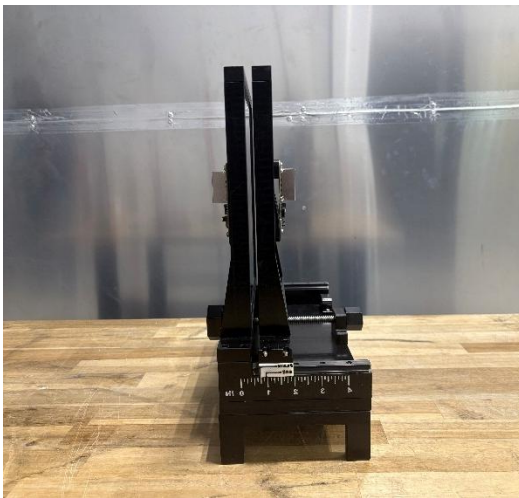


Figure 8.1-7: Side view photo

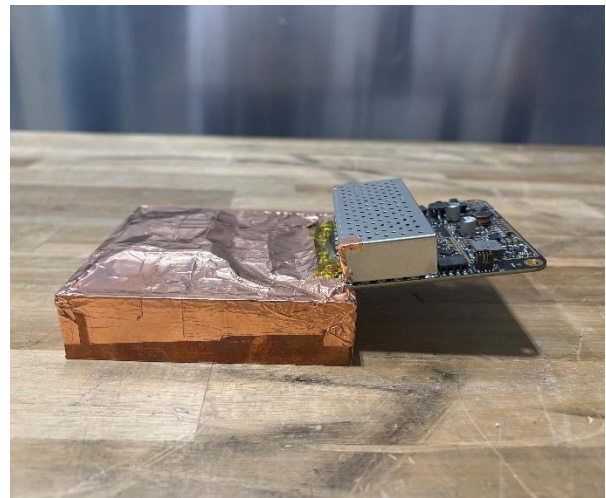


Figure 8.1-8: Side view photo [Terminated Tx model for conducted emissions]

End of the test report