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Dates of Tests: October 18,2024 ~ January 06,2025
 Test Report S/N: LR500112501B
 Test Site : LTA CO., LTD.

CERTIFICATION OF COMPLIANCE

FCC ID.

2BLL7AIDENCONTROLER

APPLICANT

NearthLab

| | | |
|----------------------------------|---|---|
| Equipment Class | : | Digital Transmission System (DTS) |
| Manufacturing Description | : | Remote Controller |
| Manufacturer | : | NearthLab |
| Model name | : | AiDEN Controller |
| Contains Modules FCC ID | : | NS918PMDDL2450 |
| Test Device Serial No.: | : | Identical prototype |
| Rule Part(s) | : | FCC Part 15.247 Subpart C ; ANSI C63.10 - 2013 |
| Frequency Range | : | 2402 ~ 2477 MHz 2407 ~ 2477 MHz |
| Max. Output Power | : | 1.0 W |
| Data of issue | : | January 07,2025 |

This test report is issued under the authority of:

The test was supervised by:

Ja-Beom Koo, Manager

Eun-Hwan Jung, Test Engineer

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1. General information

1-1 Test Performed

Company name : LTA Co., Ltd.
 Address : 243, Jubug-ri, Yangji-Myeon, Youngin-Si, Kyunggi-Do, Korea. 17159
 Web site : <http://www.ltalab.com>
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Quality control in the testing laboratory is implemented as per ISO/IEC 17025 which is the “General requirements for the competents of calibration and testing laboratory”.

1-2 Accredited agencies

LTA Co., Ltd. is approved to perform EMC testing by the following agencies:

| Agency | Country | Accreditation No. | Validity | Reference |
|--------|---------|-------------------|------------|---------------------|
| RRA | KOREA | KR0049 | - | EMC accredited Lab. |
| FCC | U.S.A | 649054 | 2025-03-29 | FCC CAB |
| VCCI | JAPAN | C-4948, | 2026-09-10 | VCCI registration |
| VCCI | JAPAN | T-2416, | 2026-09-10 | VCCI registration |
| VCCI | JAPAN | R-4483(10 m), | 2026-10-15 | VCCI registration |
| VCCI | JAPAN | G-847 | 2025-12-13 | VCCI registration |
| IC | CANADA | 5799A-1 | 2025-08-15 | IC filing |

2. Information about test item

2-1 Client & Manufacturer

Client Company name : NearthLab
 Address : 3F, BLDG AJ, 9, Jeongui-ro 8-gil, Songpa-gu, Seoul, Republic of Korea
 Tel / Fax : TEL No : +82-2-6935-1574 / FAX No : -
 Manufacturer : NearthLab
 Address : 3F, BLDG AJ, 9, Jeongui-ro 8-gil, Songpa-gu, Seoul, Republic of Korea
 Tel / Fax : TEL No : +82-2-6935-1574 / FAX No : -

2-2 Equipment Under Test (EUT)

Model name : AiDEN Controller
 Serial number : Identical prototype
 Date of receipt : October 18,2024
 EUT condition : Pre-production, not damaged
 Antenna type : Dipole Antenna (Max Gain : 5.296 dBi)
 Frequency Range : 2402 ~ 2477 MHz
 Frequency Range : 2407 ~ 2477 MHz
 Type of Modulation : COFDM
 Power Source : DC 7.4 V

2-3 Ancillary Equipment

| Equipment | Model No. | Serial No. | Manufacturer |
|-----------|-----------|------------|--------------|
| - | - | - | - |

3. Test Report

3.1 Summary of tests

| FCC Part Section(s) | Parameter | Test Condition | Status (note 1) |
|------------------------|--|----------------|--------------------|
| 15.247(a) | 6 dB Bandwidth | Conducted | N/A ¹⁾ |
| 15.247(b) | Transmitter Peak Output Power | | N/A ¹⁾ |
| 15.247(e) | Transmitter Power Spectral Density | | N/A ¹⁾ |
| 15.247(d) | Band Edge & Conducted Spurious emission | | N/A ¹⁾ |
| 15.209 | Transmitter emission | Radiated | C |
| 15.207 | AC Conducted Emissions | Conducted | N/A ¹⁾ |
| 15.203 | Antenna requirement | - | C |

N/A¹⁾ : The product replaces this test with a certificate using an authenticated module.

The above equipment was tested by LTA Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10-2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 2 and Part 15.247. The test results of this report relate only to the tested sample identified in this report.

The tests were performed according to the method of measurements prescribed in KDB No.558074.

→ Antenna Requirement

dot incorporation. FCC ID: 2BLL7AIDENCONTROLER unit complies with the requirement of §15.203.
The antenna type is PCB Antenna

3.2 Technical Characteristics Test

3.2.1 Radiated Spurious Emissions

Procedure:

Radiated emissions from 30 MHz to 25 GHz were measured according to the methods defined in ANSI C63.10-2013.

The EUT is placed on a turn table. For emissions testing at or below 1 GHz, the table height shall be 0.8 m above the reference ground plane. For emission measurements above 1 GHz, the table height shall be 1.5 m. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made “while keeping the antenna in the ‘cone of radiation’ from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response.” is still within the 3dB illumination BW of the measurement antenna.

The spectrum analyzer is set to:

Center frequency = the worst channel

Frequency Range = 9 kHz ~ 10th harmonic.

$$\text{RBW} = 120 \text{ kHz} \text{ (} 30 \text{ MHz } \sim 1 \text{ GHz) } \quad \text{VBW} \geq \text{RBW}$$

$$\equiv 1 \text{ MHz } \text{ (} 1 \text{ GHz } \sim 10^{\text{th}} \text{ harmonic) }$$

Trace = max hold

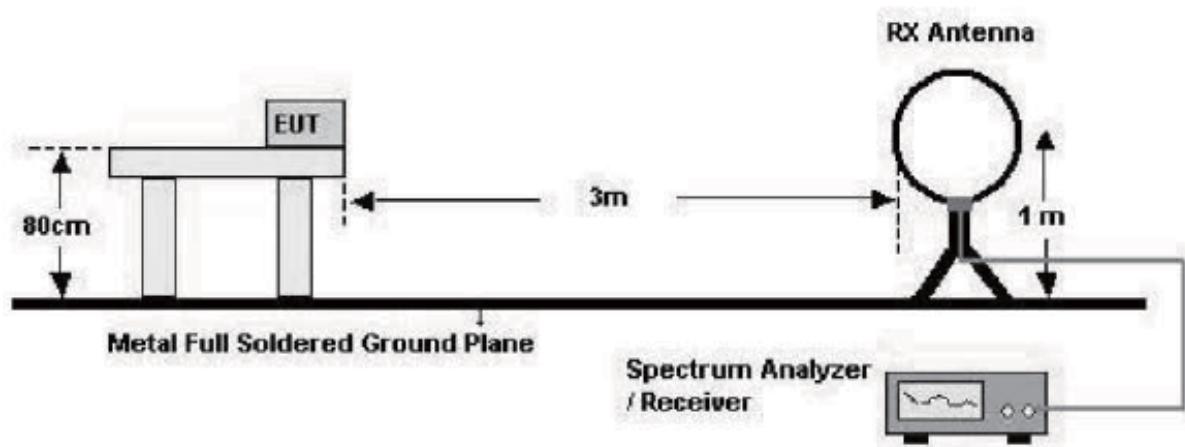
Detector function = peak

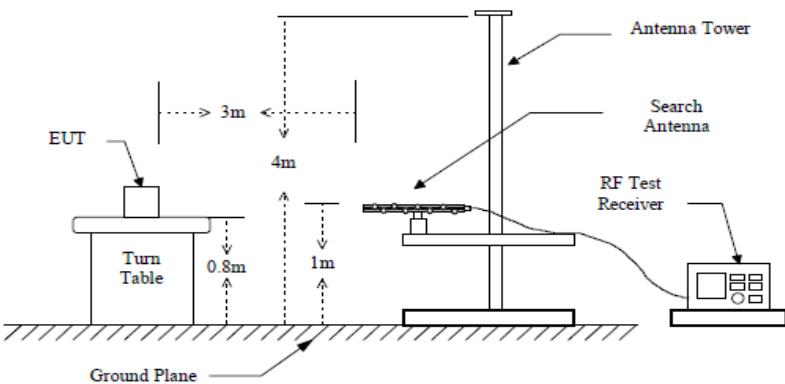
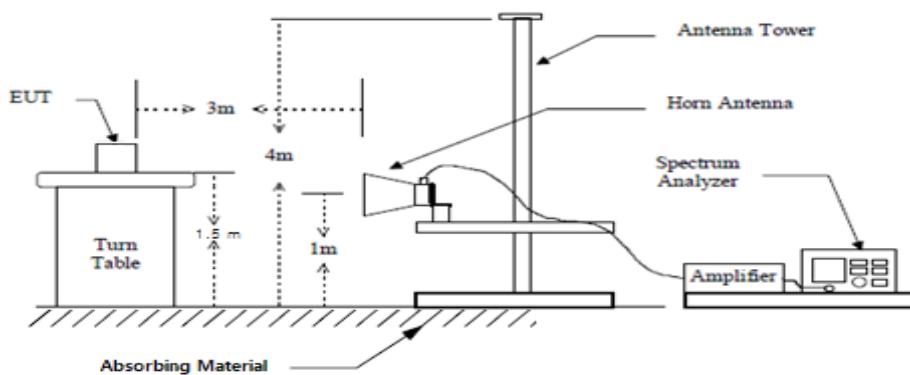
Sweep = auto

Duty cycle : 98.89 %

The EUT configured to transmit continuously ($D \geq 98\%$)/ Duty Factor = 0

below 30 MHz.



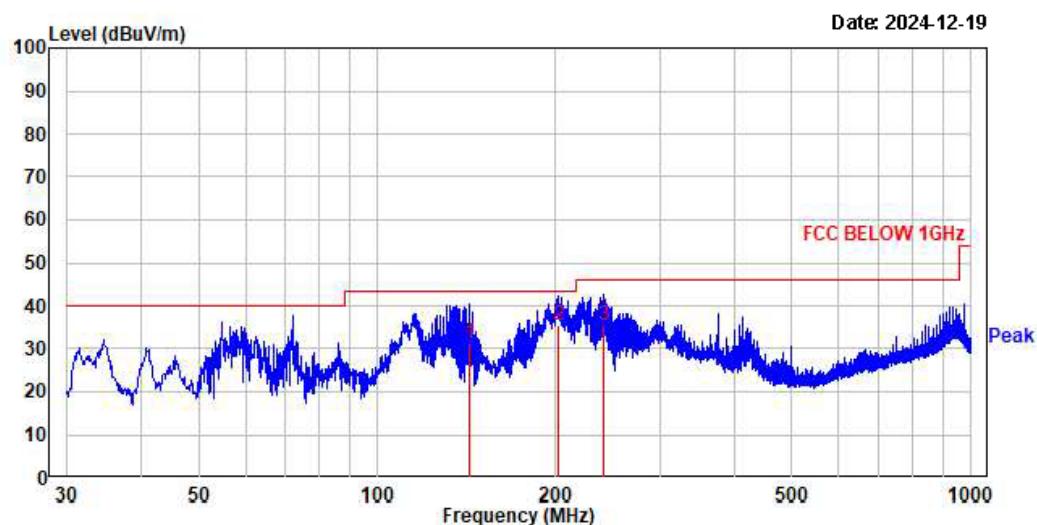
below 1 GHz (30 MHz to 1 GHz)**above 1 GHz****Measurement Data: Complies**

- See next pages for actual measured data.
- No other emissions were detected at a level greater than 20 dB below limit include from 9 kHz to 30MHz.
- The test results for the worst of the various operating modes are presented in accordance with 6.3.4 of ANSI C63.10.
- Checked with a red circle is the fundamental frequency.
- At the request of the applicant, measurements of derived model products are also attached.

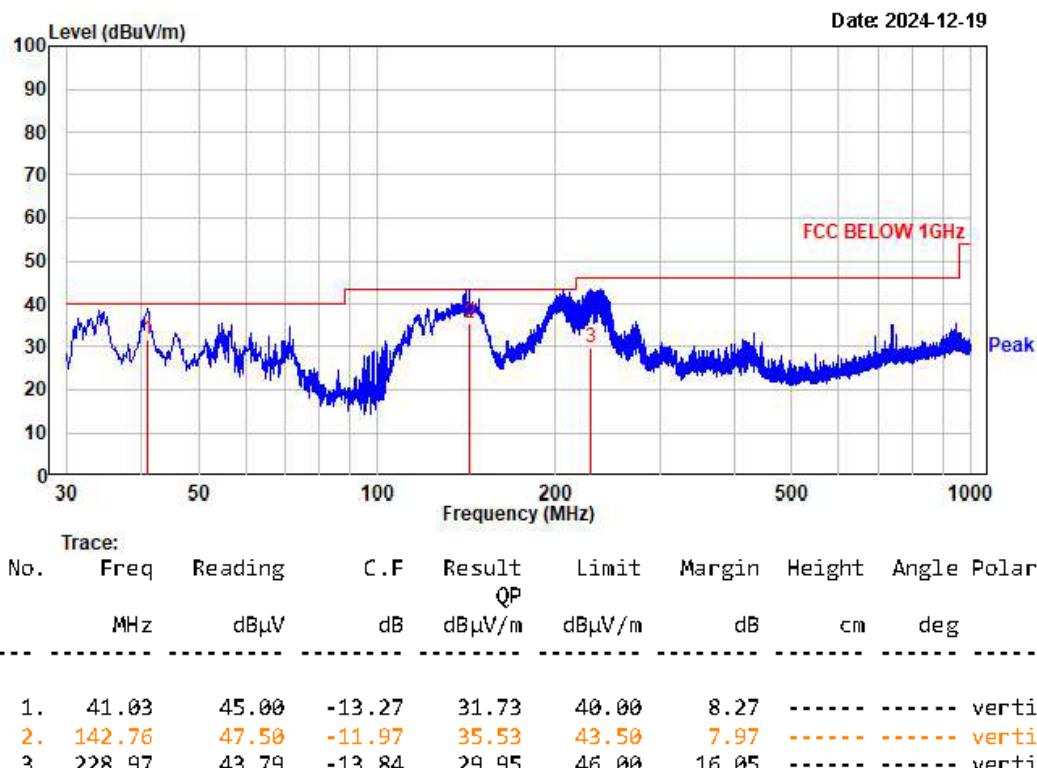
Minimum Standard: FCC Part 15.209(a)

| Frequency (MHz) | Limit (uV/m) @ 3 m |
|------------------------|---------------------------|
| 0.009 ~ 0.490 | 2400/F(kHz) (@ 300 m) |
| 0.490 ~ 1.705 | 24000/F(kHz) (@ 30 m) |
| 1.705 ~ 30 | 30(@ 30 m) |
| 30 ~ 88 | 100 ** |
| 88 ~ 216 | 150 ** |
| 216 ~ 960 | 200 ** |
| Above 960 | 500 |

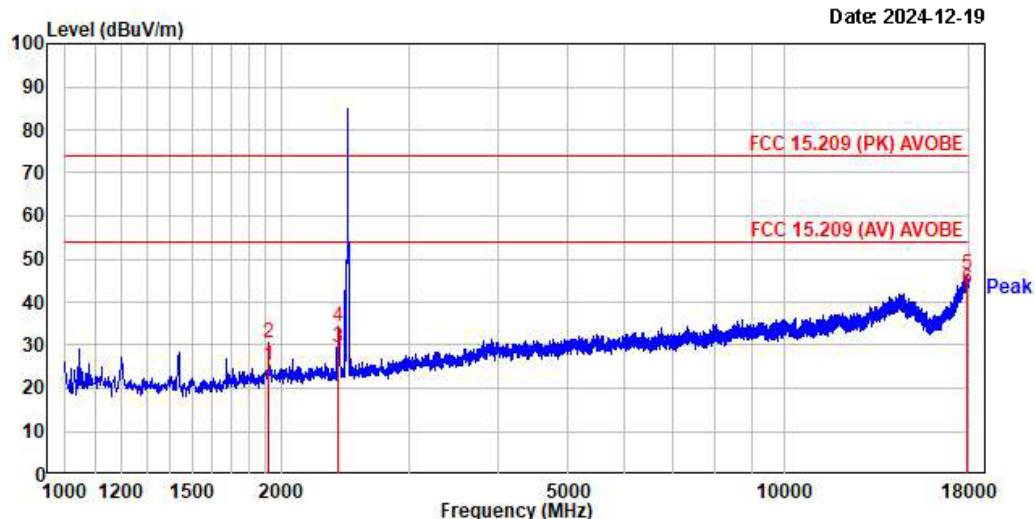
** Except as provided in 15.209(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g. 15.231 and 15.241.

Radiated Emissions

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

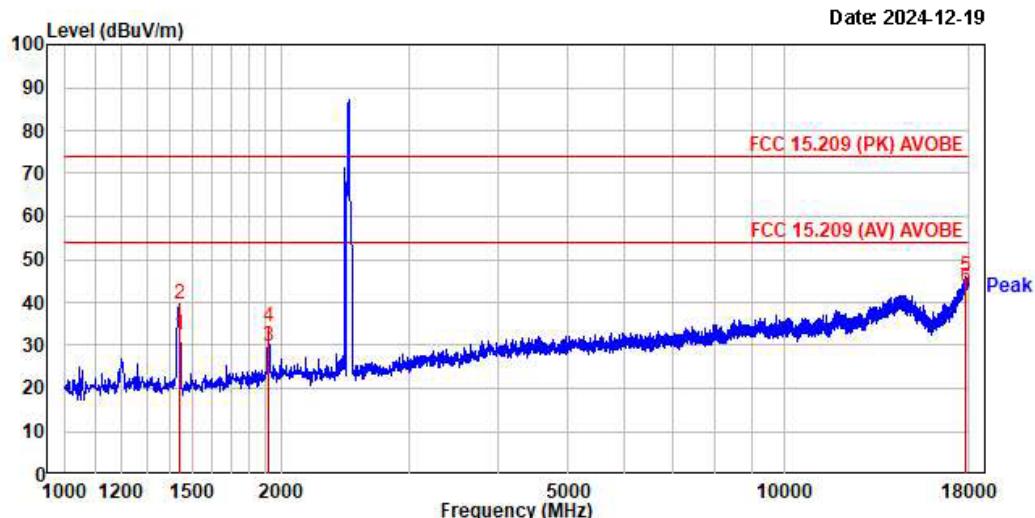


Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain



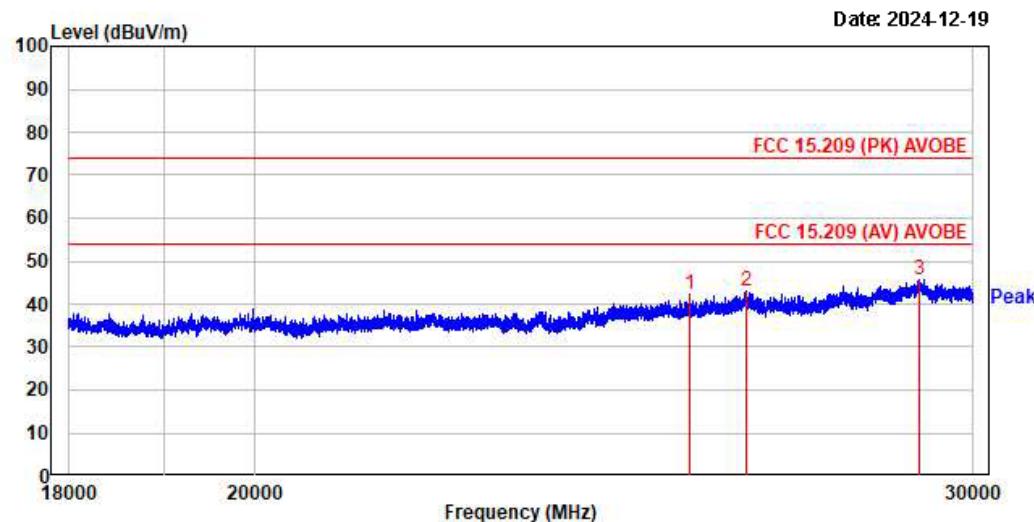
| No. | Freq | RD | RD | C.F | Result | | Result | | Limit | | Margin | | Height | Angle | Polarity |
|-----|------------|------------|-------|------------|------------|-------|------------|------------|-------|-------|--------|----|------------|-------|----------|
| | | | | | PK | AV | PK | AV | PK | AV | PK | AV | | | |
| MHz | dB μ V | dB μ V | dB | dB μ V | dB μ V | dB | dB μ V | dB μ V | dB | dB | dB | dB | cm | deg | |
| 2. | 1918.80 | 35.66 | 30.40 | -5.16 | 38.50 | 25.24 | 74.00 | 54.00 | 43.50 | 28.76 | 100 | 75 | horizontal | | |
| 4. | 2400.38 | 37.67 | 32.78 | -3.24 | 34.43 | 29.46 | 74.00 | 54.00 | 39.57 | 24.54 | 100 | 75 | horizontal | | |
| 5. | 17891.63 | 21.83 | ----- | 24.71 | 46.54 | ----- | 74.00 | ----- | 27.46 | ----- | 100 | 75 | horizontal | | |
| 6. | 17891.63 | ----- | 18.40 | 24.71 | ----- | 43.11 | ----- | 54.00 | ----- | 10.89 | 100 | 75 | horizontal | | |

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain



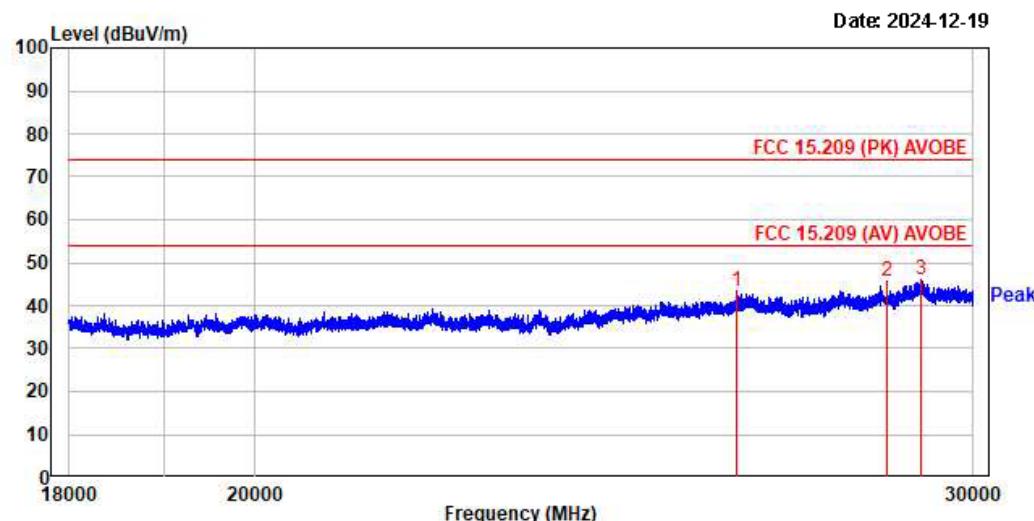
| No. | Freq | RD | RD | C.F | Result | | Result | | Limit | | Margin | | Height | Angle | Polarity |
|-----|------------|------------|-------|------------|------------|-------|------------|------------|-------|-------|--------|-----|----------|-------|----------|
| | | | | | PK | AV | PK | AV | PK | AV | PK | AV | | | |
| MHz | dB μ V | dB μ V | dB | dB μ V | dB μ V | dB | dB μ V | dB μ V | dB | dB | dB | dB | cm | deg | |
| 2. | 1439.88 | 48.42 | 41.31 | -8.89 | 39.53 | 32.42 | 74.00 | 54.00 | 34.47 | 21.58 | 100 | 356 | vertical | | |
| 4. | 1918.80 | 39.48 | 35.00 | -5.16 | 34.32 | 29.84 | 74.00 | 54.00 | 39.68 | 24.16 | 100 | 29 | vertical | | |
| 5. | 17798.13 | 21.64 | ----- | 24.47 | 46.11 | ----- | 74.00 | ----- | 27.89 | ----- | 100 | 13 | vertical | | |
| 6. | 17798.13 | ----- | 19.10 | 24.47 | ----- | 43.57 | ----- | 54.00 | ----- | 10.43 | 100 | 13 | vertical | | |

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain



| No. | Freq | RD | | RD | | C.F | Result | Result | | Limit | | Limit | | Margin | Margin | Height | Angle | Polarity |
|-----|----------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-----|-------|-------|--------|--------|------------|-------|----------|
| | | PK | AV | PK | AV | | | PK | AV | PK | AV | PK | AV | | | cm | deg | |
| 1. | 25563.00 | 23.48 | ----- | 18.91 | 42.31 | ----- | 74.00 | ----- | 31.69 | ----- | 100 | 356 | ----- | 100 | 356 | horizontal | | |
| 2. | 26401.50 | 23.55 | ----- | 19.46 | 43.01 | ----- | 74.00 | ----- | 30.99 | ----- | 100 | 345 | ----- | 100 | 345 | horizontal | | |
| 3. | 29104.50 | 22.14 | ----- | 23.57 | 45.71 | ----- | 74.00 | ----- | 28.29 | ----- | 100 | 71 | ----- | 100 | 71 | horizontal | | |

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain



| No. | Freq | RD | | RD | | C.F | Result | Result | | Limit | | Limit | | Margin | Margin | Height | Angle | Polarity |
|-----|----------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-----|-------|-------|--------|--------|----------|-------|----------|
| | | PK | AV | PK | AV | | | PK | AV | PK | AV | PK | AV | | | cm | deg | |
| 1. | 26260.50 | 23.87 | ----- | 19.34 | 43.21 | ----- | 74.00 | ----- | 30.79 | ----- | 100 | 360 | ----- | 100 | 360 | vertical | | |
| 2. | 28576.50 | 23.82 | ----- | 22.61 | 45.63 | ----- | 74.00 | ----- | 28.37 | ----- | 100 | 173 | ----- | 100 | 173 | vertical | | |
| 3. | 29131.50 | 22.82 | ----- | 23.17 | 45.99 | ----- | 74.00 | ----- | 28.81 | ----- | 100 | 268 | ----- | 100 | 268 | vertical | | |

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

3.2.7 AC Conducted Emissions

Procedure:

The conducted emissions are measured in the shielded room with a spectrum analyzer in peak hold. While the measurement, EUT had its hopping function disabled at the middle channels in line with Section 15.31(m). Emissions closest to the limit are measured in the quasi-peak mode (QP) with the tuned receiver using a bandwidth of 9 kHz. The emissions are maximized further by cable manipulation and Exerciser operation. The highest emissions relative to the limit are listed.

Measurement Data: N/A

Minimum Standard: FCC Part 15.207(a) / EN 55022

Class B

| Frequency Range | quasi-peak | Average |
|-----------------|------------|------------|
| 0.15 ~ 0.5 | 66 to 56 * | 56 to 46 * |
| 0.5 ~ 5 | 56 | 46 |
| 5 ~ 30 | 60 | 50 |

* Decreases with the logarithm of the frequency

APPENDIX
TEST EQUIPMENT USED FOR TESTS

| | Use | Description | Model No. | Serial No. | Manufacturer | Interval | Next Cal. Date |
|----|------------|--------------------------------------|------------------|-------------------|------------------------|-----------------|-----------------------|
| 1 | ■ | Signal Analyzer (9 kHz ~ 30 GHz) | FSV30 | 100757 | R&S | 1 year | 2025-08-19 |
| 2 | ■ | Signal Generator (~3.2 GHz) | 8648C | 3623A02597 | HP | 1 year | 2025-03-08 |
| 3 | | SYNTHESIZED CW GENERATOR | 83711B | US34490456 | HP | 1 year | 2025-03-08 |
| 4 | | Attenuator (3 dB) | 8491A | 37822 | HP | 1 year | 2025-08-19 |
| 5 | | Attenuator (10 dB) | 8491A | 63196 | HP | 1 year | 2025-08-19 |
| 6 | ■ | EMI Test Receiver (~7 GHz) | ESCI7 | 100722 | R&S | 1 year | 2025-08-19 |
| 7 | | RF Amplifier (~1.3 GHz) | 8447D OPT 010 | 2944A07684 | HP | 1 year | 2025-08-19 |
| 8 | | RF Amplifier (1~26.5 GHz) | 8449B | 3008A02126 | HP | 1 year | 2025-03-08 |
| 9 | ■ | Horn Antenna (1~18 GHz) | 3115 | 00114105 | ETS | 2 year | 2026-03-18 |
| 10 | | DRG Horn (Small) | 3116B | 81109 | ETS-Lindgren | 2 year | 2026-03-18 |
| 11 | | DRG Horn (Small) | 3116B | 133350 | ETS-Lindgren | 2 year | 2026-03-18 |
| 12 | ■ | TRILOG Antenna | VULB 9160 | 9160-3237 | SCHWARZBECK | 2 year | 2025-03-20 |
| 13 | | Temp.Humidity Data Logger | SK-L200TH II A | 00801 | SATO | 1 year | 2025-03-08 |
| 14 | | Splitter (SMA) | ZFSC-2-2500 | SF617800326 | Mini-Circuits | - | - |
| 15 | ■ | DC Power Supply | 6674A | 3637A01657 | Agilent | - | - |
| 17 | ■ | Power Meter | EPM-441A | GB32481702 | HP | 1 year | 2025-03-08 |
| 18 | ■ | Power Sensor | 8481A | 3318A94972 | HP | 1 year | 2025-08-19 |
| 19 | | Audio Analyzer | 8903B | 3729A18901 | HP | 1 year | 2025-08-19 |
| 20 | | Moduleation Analyzer | 8901B | 3749A05878 | HP | 1 year | 2025-08-19 |
| 21 | | TEMP & HUMIDITY Chamber | YJ-500 | LTAS06041 | JinYoung Tech | 1 year | 2025-08-19 |
| 22 | | Stop Watch | HS-3 | 812Q08R | CASIO | 2 year | 2025-03-16 |
| 23 | | LISN | KNW-407 | 8-1430-1 | Kyoritsu | 1 year | 2025-03-08 |
| 24 | | Two-Lime V-Network | ESH3-Z5 | 893045/017 | R&S | 1 year | 2025-03-08 |
| 25 | | UNIVERSAL RADIO COMMUNICATION TESTER | CMU200 | 106243 | R&S | 1 year | 2025-03-08 |
| 26 | | Highpass Filter | WHKX1.5/15G-10SS | 74 | Wainwright Instruments | 1 year | 2025-03-08 |
| 27 | | Highpass Filter | WHKX3.0/18G-10SS | 118 | Wainwright Instruments | 1 year | 2025-03-08 |
| 28 | | OSP120 BASE UNIT | OSP120 | 101230 | R&S | 1 year | 2025-03-08 |
| 29 | | Signal Generator(100 kHz ~ 40 GHz) | SMB100A03 | 177621 | R&S | 1 year | 2025-03-08 |
| 30 | | Signal Analyzer (10 Hz ~ 40 GHz) | FSV40 | 101367 | R&S | 1 year | 2025-03-08 |
| 31 | ■ | Active Loop Antenna | FMZB 1519 | 1519-031 | SCHWARZBECK | 2 year | 2025-08-30 |