

Test report

392944-5R1TRFWL

Date of issue: March 20, 2025

Applicant:

Perimetrics, Inc

Product:

Dental Diagnostic Device

Model:

INV-1000

FCC ID: 2AXNK-INV1000 ISED Certification Number: 33686-INV1000

Specifications:

- FCC 47 CFR Part 15, Subpart C §15.249
 Operation within the bands 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHZ, and 24.0-24.25
 GHz
- RSS-210, Issue 11, June 2024
 Licence-Exempt Radio Apparatus: Category I Equipment





Lab and test locations

| Company name | Nemko USA Inc. |
|-----------------|--|
| Address | 2210 Faraday Ave, Suite 150 |
| City | Carlsbad |
| State | California |
| Postal code | 92008 |
| Country | USA |
| Telephone | +1 760 444 3500 |
| Website | www.nemko.com |
| FCC Site Number | Test Firm Registration Number: 392943 Designation Number: US5058 |
| ISED Test Site | 2040B-3 |

| Tested by | James Cunningham, Wireless Supervisor |
|--------------------|--|
| Reviewed by | Juan M Gonzalez, EMC & Wireless Divisions Manager |
| Review date | March 20, 2025 |
| Reviewer signature | A Marie Control of the Control of th |

Limits of responsibility

Note that the results contained in this report 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 the report.

This test report has been completed in accordance with the requirements of ISO/IEC 17025. All results contain in this report are within Nemko USA's ISO/IEC 17025 accreditation.

This report must not be used by the client to claim product certification, approval, or endorsement by ANAB, NIST, or any agency of the U.S. Government.

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Section 1 Report summary

1.1 Applicant

| Company name | Perimetrics, Inc. |
|-----------------|---|
| Address | 8441 154 th Ave NE, Bldg H-210 |
| City | Redmond |
| Province/State | WA |
| Postal/Zip code | 98052 |
| Country | United States |

1.2 Manufacturer

| Company name | Perimetrics, Inc. |
|-----------------|---|
| Address | 8441 154 th Ave NE, Bldg H-210 |
| City | Redmond |
| Province/State | WA |
| Postal/Zip code | 98052 |
| Country | United States |

1.3 Test specifications

| FCC 47 CFR Part 15, Subpart C – §15.249 | Operation within the bands 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHZ, and 24.0-24.25 GHz |
|---|--|
| IC RSS-210 Issue 11, June 2024 | Licence-Exempt Radio Apparatus: Category I Equipment |

1.4 Test methods

| ANSI C63.10-2013 | American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices |
|------------------|--|
| | |

1.5 Exclusions

None

1.6 Statement of compliance

In the configuration tested, the EUT was found compliant.

Testing was performed against all relevant requirements of the test standard. Results obtained indicate that the product under test complies in full with the requirements tested. The test results relate only to the items tested.

See "Summary of test results" for full details.

1.7 Test report revision history

Table 1.7-1: Test report revision history

| Revision # | Details of changes made to test report |
|-----------------|---|
| 392944-5TRFWL | Original report issued |
| 392944-5R1TRFWL | Updated company name and address, added FCC ID and ISED certification number, updated RSS-210 version |



Section 2 Summary of test results

2.1 FCC Part 15 Subpart C, general requirements

| Part | Test description | Verdict |
|------------|---------------------------|----------------|
| §15.207(a) | Conducted limits | Not applicable |
| §15.31(e) | Variation of power source | Pass |
| §15.203 | Antenna requirement | Pass |

Notes: EUT is DC powered via internal battery. Transmitter is not operational while charging. The antenna is an integrated PCB trace antenna.

2.2 FCC Part 15.249

| Part | Test description | Verdict |
|------------|-----------------------------|---------|
| §15.249(a) | Field strength of emissions | Pass |
| §15.249(d) | Spurious emissions | Pass |

2.3 ISED RSS-211, Issue 11

| Part | Test description | Verdict |
|---------|--|---------|
| B.10(a) | Field strength of fundamental and harmonic emissions | Pass |
| B.10(b) | Emissions outside of the specified frequency bands | Pass |

2.4 ISED RSS-GEN, Issue 5 + Amendment 1 + Amendment 2

| Part | Test description | Verdict |
|------|--|----------------|
| 6.7 | Transmitter occupied bandwidth | Pass |
| 7.3 | Receiver radiated emission limits | Not applicable |
| 7.4 | Receiver conducted emission limits | Not applicable |
| 8.8 | Power Line Conducted Emissions Limits for License-Exempt Radio Apparatus | Not applicable |

Note: Per RSS-GEN Section 7, receiver radiated and conducted emissions are not applicable as the EUT is neither a scanning receiver nor operates as a standalone receiver. The EUT is powered by internal battery. Transmission is not possible during battery charging.



Section 3 Equipment under test (EUT) details

3.1 Sample information

| Receipt date | July 27, 2020 |
|------------------------|---------------|
| Nemko sample ID number | NEx: 392944 |

3.2 EUT information

| Product name | Dental Diagnostic Device |
|---------------|--------------------------|
| Model | INV-1000 |
| Serial number | AE11 |

3.3 Technical information

| Used IC test site(s) reg. number | 2040A |
|----------------------------------|--|
| RSS number and issue | RSS-211 Issue 11 (June 2024) |
| Frequency band | 2400 – 2483.5 MHz |
| Operating frequency (MHz) | 2473.13 MHz (single channel operation) |
| Maximum output (dBμV/m | 75.44 dBμV/m @ 3 m |
| @3m) | |
| Power requirements | Internal 5 V battery |
| Antenna information | Integrated PCB trace antenna |



3.4 EUT exercise and monitoring details

The EUT was configured to continuously transmit a modulated signal at full power.

Table 3.4-1: EUT sub assemblies

| Description | Brand name | Model/Part number | Serial number | Rev. |
|-------------|-------------|-------------------|---------------|------|
| Test sample | Perimetrics | INV-1000 | AE11 | N/A |

Table 3.4-2: EUT interface ports

| Description | Qty. |
|-------------------------|------|
| DC power ⁽¹⁾ | 1 |

Note: (1) DC power interface was a temporary interface for testing only. Interface is not present in the normal device.

Table 3.4-3: Support equipment

| Description | Brand name | Model/Part number | Serial number | Rev. |
|-----------------|--------------|-------------------|---------------|------|
| DC power supply | BK Precision | 1697 | 260G13306 | N/A |

Table 3.4-4: Inter-connection cables

| Cable description | From | То | Length (ft) |
|-------------------|------|-----------------|-------------|
| DC power | EUT | DC power supply | 3 |



Figure 3.4-1: Test setup



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

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 | 3.78 |
| Powerline conducted emissions | 1.38 |
| All antenna port measurements | 0.55 |
| Conducted spurious emissions | 1.13 |



Section 7 Test Equipment

Table 6.1-1: Test Equipment List

| Equipment | Manufacturer | Model no. | Asset no. | Cal cycle | Next cal. |
|-------------------|-----------------|----------------|-----------|-----------|-------------|
| EMI Test Receiver | Rohde & Schwarz | ESU40 | E1121 | 1 year | 25 Nov 2020 |
| System Controller | Sunol Sciences | SC104V | E1129 | NCR | NCR |
| Bilog Antenna | Schaffner | CBL6111C | 1480 | 1 year | 18 Oct 2020 |
| DRG Horn | ETS-Lindgren | 3117-PA | E1160 | 1 year | 30 Oct 2020 |
| Horn /Antenna | Sage | SAR-2309-42-S2 | E1143 | 2 years | 5 Sept 2020 |

Notes: NCR – no calibration required

Table 6.1-2: Test Software

| Manufacturer of Software | Details |
|--------------------------|------------------|
| Rohde & Schwarz | EMC 32 V10.60.15 |



Section 8 Testing data

8.1 §15.249(a) & RSS-210 B.10(a) Field strength of emissions

8.1.1 Definition and limits

Title 47 \rightarrow Chapter I \rightarrow Subchapter A \rightarrow Part 15 \rightarrow Subpart C \rightarrow §15.247(a)(2) RSS-210 \rightarrow §B.10(a)

(a) Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

| Fundamental frequency | Field strength of fundamental (millivolts / meter) | Field strength of harmonics (millivolts / meter) |
|-----------------------|--|--|
| 902 – 928 MHz | 50 | 500 |
| 2400 – 2483.5 MHz | 50 | 500 |
| 5275 – 5875 MHz | 50 | 500 |
| 24.0 - 24.25 GHZ | 250 | 2500 |

- (c) Field strength limits are specified at a distance of 3 meters.
- (e) As shown in §15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a) ad (b) of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For point-to-point operation under paragraph (b) of this section, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth,

8.1.2 Test summary

| Verdict | Pass | | |
|---------------|--------------------------|-------------------|-----------|
| Test date | September 2, 2020 | Temperature | 25 °C |
| Test engineer | James Cunningham | Air pressure | 1005 mbar |
| Test location | 3m semi-anechoic chamber | Relative humidity | 56 % |

8.1.3 Notes

Testing was performed with the EUT transmitting on a fixed channel at full power.

8.1.4 Setup details

| EUT setup configuration | Tabletop |
|-------------------------|--------------------------|
| Test facility | 3m semi anechoic chamber |
| Measurement method | ANSI C63.10 §6.6 |

Receiver/spectrum analyzer settings:

| , , , , | |
|----------------------|------------------|
| Resolution bandwidth | 1 MHz |
| Video bandwidth | 3 MHZ |
| Detector mode | Peak and Average |
| Measurement time | 5 s |



8.1.5 Test data

Full Spectrum

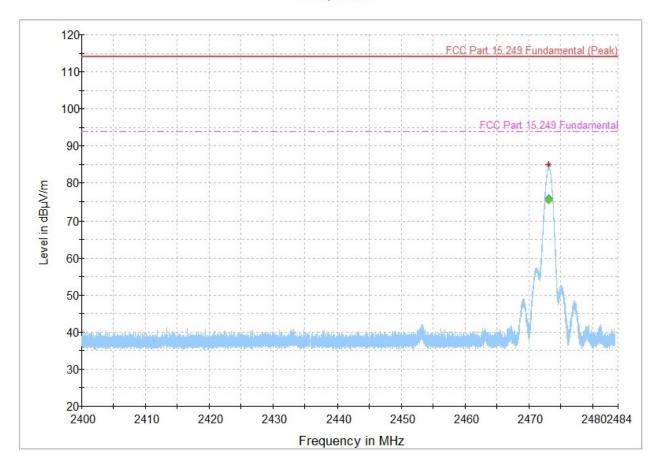


Figure 8.1-1: Field strength of fundamental emission

Table 8.1-1: Field strength of fundamental emission

| Frequency (MHz) | MaxPeak (dBμV/m) | CAverage (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|--------------------|---------------------|----------------------|-------------------|----------------|-----------------------|--------------------|----------------|-----|------------------|---------------|
| 2473.127784 | | 75.44 | 93.97 | 18.53 | 5000.0 | 1000.000 | 177.0 | Н | 311.0 | -8.7 |
| 2473.127784 | 75.74 | | 113.97 | 38.23 | 5000.0 | 1000.000 | 177.0 | Н | 311.0 | -8.7 |

Notes:

Field strength (dB μ V/m) = receiver/spectrum analyzer value (dB μ V) + correction factor (dB) Correction factors = antenna factor ACF (dB) + cable loss (dB)

Limits converted to dBµV/m.



8.2 FCC 15.249(d) and RSS-210 B.10(b) Radiated spurious emissions

8.2.1 Definition and limits

Title 47 \rightarrow Chapter I \rightarrow Subchapter A \rightarrow Part 15 \rightarrow Subpart C \rightarrow §15.249(d) RSS-210 \rightarrow §B.10(b)

(d) Emissions radiated outside the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the less attenuation.

Table 8.2-1: FCC §15.209- Radiated emission limits

| Frequency, | Field stren | gth of emissions | Measurement distance, m |
|-------------|-------------|---------------------------------|-------------------------|
| MHz | 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.

8.2.2 Test summary

| Verdict | Pass | | |
|---------------|--------------------------|-------------------|---------------------|
| Test date | September 2, 2020 | | 22 °C (Sept 2) |
| | September 10, 2020 | Temperature | 24 °C (Sept 10) |
| | September 16, 2020 | | 22 °C (Sept 16) |
| Test engineer | James Cunningham | | 1007 mbar (Sept 2) |
| | | Air pressure | 1005 mbar (Sept 10) |
| | | | 1005 mbar (Sept 16) |
| | 3m semi anechoic chamber | | 62 % (Sept 2) |
| Test location | | Relative humidity | 56 % (Sept 10) |
| | | | 58 % (Sept 16) |

8.2.3 Notes

Testing was performed with the EUT transmitting on a fixed channel at full power.

8.2.4 Setup details

| EUT setup configuration | Tabletop |
|-------------------------|--|
| Test facility | 3m semi anechoic chamber at 3 m measurement distance |
| Measurement details | Radiated spurious emissions measurement performed as per C63.10 §11.12 |

Receiver settings for radiated measurements below 1 GHz:

| Resolution bandwidth | 120 kHz |
|----------------------|---------------------------------|
| Video bandwidth | 300 kHz |
| Detector mode | Peak (preview measurements) |
| | Quasi-Peak (final measurements) |
| Trace mode | Max Hold |
| Measurement time | 5 s (final measurements) |

Receiver settings for radiated measurements above 1 GHz:

| Resolution bandwidth | 1 MHz |
|----------------------|---------------------------------------|
| Video bandwidth | 3 MHz |
| Detector mode | Average and peak (final measurements) |
| Trace mode | Max Hold |
| Measurement time | 5 s (final measurements) |

8.2.5 Test data

Full Spectrum

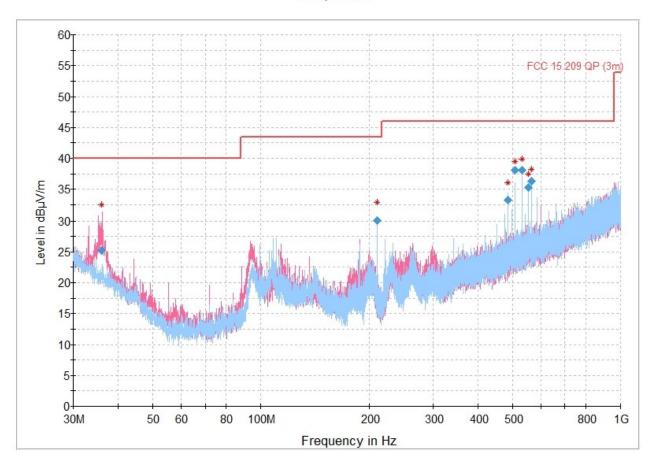


Figure 8.2-1: Radiated emissions, 30 – 1000 MHz

Table 8.2-2: Radiated emissions, 30 – 1000 MHz

| Frequency (MHz) | QuasiPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|--------------------|-----------------------|-------------------|----------------|-----------------------|--------------------|----------------|-----|------------------|---------------|
| 36.043333 | 25.26 | 40.00 | 14.74 | 5000.0 | 120.000 | 148.0 | V | 274.0 | 23.1 |
| 210.116667 | 30.08 | 43.50 | 13.42 | 5000.0 | 120.000 | 156.0 | Н | 246.0 | 17.9 |
| 486.631333 | 33.24 | 46.00 | 12.76 | 5000.0 | 120.000 | 154.0 | Н | 154.0 | 26.4 |
| 508.747333 | 38.03 | 46.00 | 7.97 | 5000.0 | 120.000 | 147.0 | Н | 167.0 | 26.8 |
| 530.855667 | 38.12 | 46.00 | 7.88 | 5000.0 | 120.000 | 163.0 | Н | 158.0 | 27.2 |
| 552.979333 | 35.23 | 46.00 | 10.77 | 5000.0 | 120.000 | 200.0 | Н | 152.0 | 27.9 |
| 564.029667 | 36.37 | 46.00 | 9.63 | 5000.0 | 120.000 | 278.0 | Н | 152.0 | 28.0 |

Field strength (dB μ V/m) = receiver/spectrum analyzer value (dB μ V) + correction factor (dB)

Correction factors = antenna factor ACF (dB) + cable loss (dB)

Limits converted to $dB\mu V/m$ and an inverse proportionality factor of 20 dB per decade has been used to normalize the specification limit to a measurement distance of 3 meters to determine compliance.



Full Spectrum

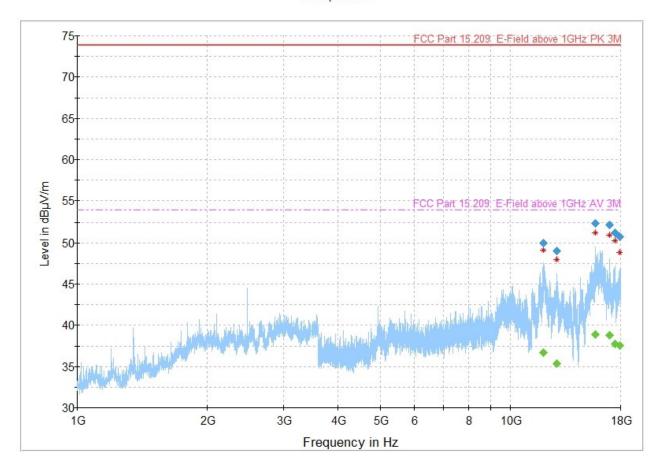


Figure 8.2-2: Radiated emissions, 1 – 18 GHz

Table 8.2-3: Radiated emissions, 1 – 18 GHz

| Frequency (MHz) | MaxPeak (dBμV/m) | CAverage (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimut h (deg) | Corr. (dB) |
|--------------------|---------------------|----------------------|-------------------|----------------|-----------------------|--------------------|----------------|-----|-------------------|---------------|
| 11937.523350 | | 36.65 | 53.90 | 17.25 | 5000.0 | 1000.000 | 402.0 | V | 232.0 | 7.1 |
| 11937.523350 | 49.92 | | 73.90 | 23.98 | 5000.0 | 1000.000 | 402.0 | V | 232.0 | 7.1 |
| 12824.513600 | | 35.39 | 53.90 | 18.51 | 5000.0 | 1000.000 | 368.0 | V | 99.0 | 7.4 |
| 12824.513600 | 48.97 | | 73.90 | 24.93 | 5000.0 | 1000.000 | 368.0 | V | 99.0 | 7.4 |
| 15747.235450 | 52.39 | | 73.90 | 21.51 | 5000.0 | 1000.000 | 229.0 | Н | 357.0 | 11.9 |
| 15747.235450 | | 38.92 | 53.90 | 14.98 | 5000.0 | 1000.000 | 229.0 | Н | 357.0 | 11.9 |
| 17006.675300 | 52.19 | | 73.90 | 21.71 | 5000.0 | 1000.000 | 401.0 | Н | 216.0 | 11.2 |
| 17006.675300 | | 38.78 | 53.90 | 15.12 | 5000.0 | 1000.000 | 401.0 | Н | 216.0 | 11.2 |
| 17448.585300 | | 37.77 | 53.90 | 16.13 | 5000.0 | 1000.000 | 100.0 | Н | 22.0 | 11.4 |
| 17448.585300 | 51.21 | | 73.90 | 22.69 | 5000.0 | 1000.000 | 100.0 | Н | 22.0 | 11.4 |
| 17936.446550 | | 37.53 | 53.90 | 16.37 | 5000.0 | 1000.000 | 227.0 | Н | 112.0 | 14.0 |
| 17936.446550 | 50.73 | | 73.90 | 23.17 | 5000.0 | 1000.000 | 227.0 | Н | 112.0 | 14.0 |

Field strength (dB μ V/m) = receiver/spectrum analyzer value (dB μ V) + correction factor (dB)

Correction factors = antenna factor ACF (dB) + cable loss (dB)

Limits converted to $dB\mu V/m$ and an inverse proportionality factor of 20 dB per decade has been used to normalize the specification limit to a measurement distance of 3 meters to determine compliance.

A notch filter was used to reduce the level of the transmitter fundamental emission.



Full Spectrum

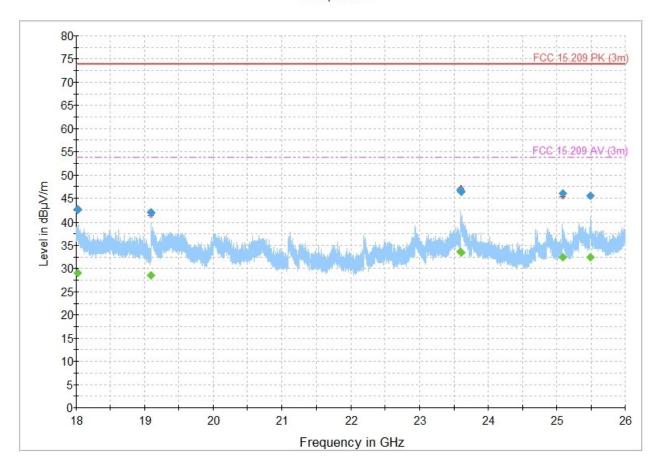


Figure 8.2-3: Radiated emissions, 18 – 26 GHz

Table 8.2-4: Radiated emissions, 18 – 26 GHz

| Frequency (MHz) | MaxPeak (dBμV/m) | CAverage (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimut h (deg) | Corr. (dB) |
|--------------------|---------------------|----------------------|-------------------|----------------|-----------------------|--------------------|----------------|-----|-------------------|---------------|
| 18018.633333 | | 29.02 | 53.90 | 24.88 | 5000.0 | 1000.000 | 355.0 | V | 84.0 | 13.4 |
| 18018.633333 | 42.65 | | 73.90 | 31.25 | 5000.0 | 1000.000 | 355.0 | V | 84.0 | 13.4 |
| 19093.700000 | 41.88 | | 73.90 | 32.02 | 5000.0 | 1000.000 | 385.0 | V | 113.0 | 13.2 |
| 19093.700000 | | 28.49 | 53.90 | 25.41 | 5000.0 | 1000.000 | 385.0 | V | 113.0 | 13.2 |
| 23598.033333 | 46.69 | | 73.90 | 27.21 | 5000.0 | 1000.000 | 240.0 | Н | 34.0 | 20.5 |
| 23598.033333 | | 33.65 | 53.90 | 20.25 | 5000.0 | 1000.000 | 240.0 | Н | 34.0 | 20.5 |
| 23606.033333 | 46.44 | | 73.90 | 27.46 | 5000.0 | 1000.000 | 317.0 | Н | 155.0 | 20.4 |
| 23606.033333 | | 33.38 | 53.90 | 20.52 | 5000.0 | 1000.000 | 317.0 | Н | 155.0 | 20.4 |
| 25087.100000 | | 32.40 | 53.90 | 21.50 | 5000.0 | 1000.000 | 250.0 | Н | 150.0 | 19.0 |
| 25087.100000 | 45.95 | | 73.90 | 27.95 | 5000.0 | 1000.000 | 250.0 | Н | 150.0 | 19.0 |
| 25489.966667 | 45.51 | | 73.90 | 28.39 | 5000.0 | 1000.000 | 268.0 | V | 35.0 | 19.0 |
| 25489.966667 | | 32.41 | 53.90 | 21.49 | 5000.0 | 1000.000 | 268.0 | V | 35.0 | 19.0 |

Field strength (dB μ V/m) = receiver/spectrum analyzer value (dB μ V) + correction factor (dB)

Correction factors = antenna factor ACF (dB) + cable loss (dB)

Limits converted to $dB\mu V/m$ and an inverse proportionality factor of 20 dB per decade has been used to normalize the specification limit to a measurement distance of 3 meters to determine compliance.



8.3 FCC 15.249(d) and RSS-210 B.10(b) Radiated restricted band-edges

8.3.1 Definition and limits

Title 47 \rightarrow Chapter I \rightarrow Subchapter A \rightarrow Part 15 \rightarrow Subpart C \rightarrow §15.249(d) RSS-210 \rightarrow §B.10(b)

(d) Emissions radiated outside the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the less attenuation.

Table 8.3-1: FCC §15.209- Radiated emission limits

| Frequency, | Field strength of emissions | | Measurement distance, m |
|-------------|-----------------------------|-----------------------------------|-------------------------|
| MHz | μV/m | dBμV/m | |
| 0.009-0.490 | 2400/F | 67.6 - 20 × log ₁₀ (F) | 300 |
| 0.490-1.705 | 24000/F | 87.6 – 20 × 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 8.3-2: 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 | | | |

Section 8

Testing data

Nemko

FCC 15.249(d) and RSS-210 B.10(b) Radiated restricted band-edges

8.3.2 Test summary

| Verdict | Pass | | |
|---------------|--------------------------|-------------------|-----------|
| Test date | September 2, 2020 | Temperature | 25 °C |
| Test engineer | James Cunningham | Air pressure | 1005 mbar |
| Test location | 3m semi-anechoic chamber | Relative humidity | 56 % |

8.3.3 Notes

Testing was performed with the EUT transmitting on a fixed channel at full power.

8.3.4 Setup details

| EUT setup configuration | Tabletop |
|-------------------------|--------------------------|
| Test facility | 3m semi anechoic chamber |
| Measurement method | ANSI C63.10 §6.6 |

Receiver/spectrum analyzer settings:

| Resolution bandwidth | 1 MHz |
|----------------------|------------------|
| Video bandwidth | 3 MHz |
| Detector mode | Peak and Average |
| Measurement time | 5 s |

8.3.5 Test data

Full Spectrum

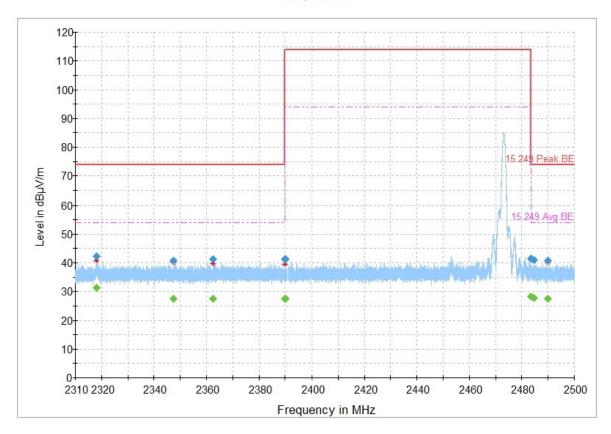


Figure 8.3-1: Radiated emissions, restricted band edges

Table 8.3-2: Radiated emissions, restricted band edges

| Frequency (MHz) | MaxPeak (dBμV/m) | CAverage (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|--------------------|---------------------|----------------------|-------------------|----------------|-----------------------|--------------------|----------------|-----|------------------|---------------|
| 2318.182667 | | 31.36 | 53.90 | 22.54 | 5000.0 | 1000.000 | 255.0 | V | 0.0 | -9.3 |
| 2318.182667 | 42.38 | | 73.90 | 31.52 | 5000.0 | 1000.000 | 255.0 | V | 0.0 | -9.3 |
| 2347.449000 | | 27.58 | 53.90 | 26.32 | 5000.0 | 1000.000 | 165.0 | V | 204.0 | -9.1 |
| 2347.449000 | 40.67 | | 73.90 | 33.23 | 5000.0 | 1000.000 | 165.0 | V | 204.0 | -9.1 |
| 2362.452667 | 41.28 | | 73.90 | 32.62 | 5000.0 | 1000.000 | 366.0 | V | 143.0 | -9.1 |
| 2362.452667 | | 27.58 | 53.90 | 26.32 | 5000.0 | 1000.000 | 366.0 | V | 143.0 | -9.1 |
| 2390.000000 | 41.15 | | 73.90 | 32.75 | 5000.0 | 1000.000 | 369.0 | Н | 167.0 | -9.0 |
| 2390.000000 | | 27.55 | 53.90 | 26.35 | 5000.0 | 1000.000 | 369.0 | Н | 167.0 | -9.0 |
| 2483.500000 | | 28.22 | 53.90 | 25.68 | 5000.0 | 1000.000 | 359.0 | Н | 288.0 | -8.6 |
| 2483.500000 | 41.44 | | 73.90 | 32.46 | 5000.0 | 1000.000 | 359.0 | Н | 288.0 | -8.6 |
| 2484.762000 | | 27.65 | 53.90 | 26.25 | 5000.0 | 1000.000 | 137.0 | V | 92.0 | -8.6 |
| 2484.762000 | 40.90 | | 73.90 | 33.00 | 5000.0 | 1000.000 | 137.0 | V | 92.0 | -8.6 |
| 2490.044000 | | 27.63 | 53.90 | 26.27 | 5000.0 | 1000.000 | 325.0 | V | 93.0 | -8.6 |
| 2490.044000 | 40.71 | | 73.90 | 33.19 | 5000.0 | 1000.000 | 325.0 | V | 93.0 | -8.6 |

Field strength (dB μ V/m) = receiver/spectrum analyzer value (dB μ V) + correction factor (dB)

Correction factors = antenna factor ACF (dB) + cable loss (dB)

Limits converted to dBµV/m and an inverse proportionality factor of 20 dB per decade has been used to normalize the specification limit to a measurement distance of 3 meters to determine compliance.

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RSS-GEN 6.7 Occupied bandwidth (or 99% emission bandwidth)

8.4 RSS-GEN 6.7 Occupied bandwidth (or 99% emission bandwidth)

8.4.1 References

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.

8.4.2 Test summary

| Verdict | Pass | | |
|---------------|-------------------|-------------------|-----------|
| Test date | September 2, 2020 | Temperature | 25 °C |
| Test engineer | James Cunningham | Air pressure | 1005 mbar |
| Test location | Wireless bench | Relative humidity | 56 % |

8.4.3 Notes

Testing was performed with the EUT transmitting on a fixed channel at full power.

8.4.4 Setup details

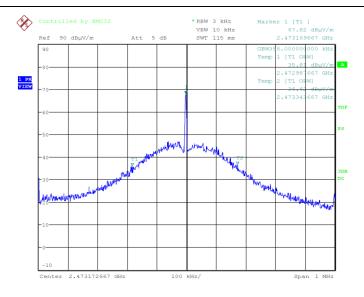
| EUT setup configuration | Tabletop |
|-------------------------|---|
| Test facility | 3m semi anechoic chamber |
| Measurement details | Measurement performed as per C63.10 §6.9.3 using the built-in function of the spectrum analyzer |

Receiver/spectrum analyzer settings:

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



8.4.5 Test data



Date: 3.SEP.2020 01:30:06

Figure 8.4-1: 99 % bandwidth

Table 8.4-1: 99 % bandwidth

| Test Frequency (MHz) | 99%Bandwidth (MHz) | | |
|----------------------|--------------------|--|--|
| 2473.17 | 0.356 | | |



Section 9 Block diagrams of test set-ups

9.1 Radiated emissions set-up

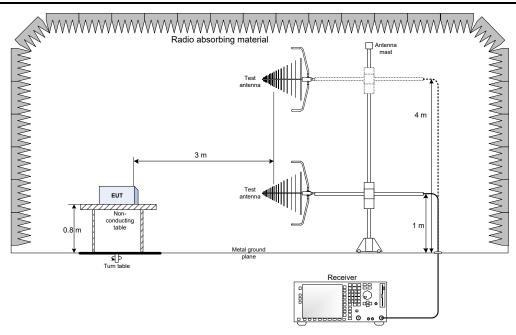


Figure 9.1-1 30 MHz - 1000 MHz Setup

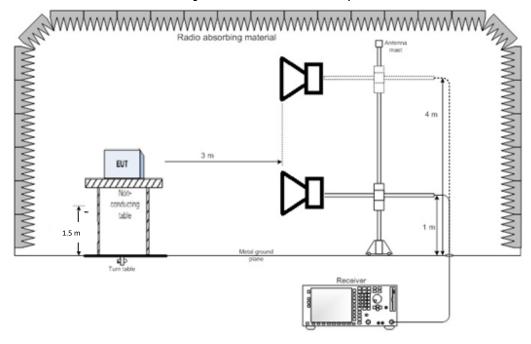


Figure 9.1-2 1 GHz - 26 GHz Setup

Thank you for choosing

