# Test Report
# Electromagnetic Compatibility

| | |
|---|---|
| **Product** | FIDO2 Security Key |
| **Name and address of the applicant** | Pone Biometrics AS<br>Universitetsgata 2,<br>0164 Oslo,<br>Norway |
| **Name and address of the manufacturer** | Pone Biometrics AS<br>Universitetsgata 2,<br>0164 Oslo,<br>Norway |
| **Model** | OFFPAD+ |
| **Rating** | 3.6V (Internal battery and USB-C charging) |
| **Trademark** | PONE |
| **Additional information** | FCC ID: 2BLGV-0202 |
| **Tested according to** | FCC CFR 47 Subpart 15B<br>ISED Canada ICES-003, Issue 7 |
| **Project number** | PRJ0058629 |
| **Tested in period** | 2024-11-18 – 2025-02-11 |
| **Issue date** | 2025-03-04 |
| **Name and address of the testing laboratory** | Nemko Scandinavia AS<br>☐ Location 1:<br>Philip Pedersens vei 11,<br>1366 Lysaker,<br>Norway<br><br>☒ Location 2:<br>Instituttveien 6,<br>2007 Kjeller,<br>Norway |

An accredited technical test executed under the Norwegian accreditation scheme

Prepared by [Jan Gunnar Eriksen]

Approved by [Roger Berget]

# REPORT REVISIONS

| Report Edition | Date | Project | Description |
|---|---|---|---|
| A | 2025-03-05 | PRJ0058629 | First issued |
| | | | |
| | | | |

**THIS REPORT APPLIES ONLY TO THE ITEM(S) AND CONFIGURATION(S) TESTED.**

It is the manufacturer's responsibility to assure the additional production units of this product are manufactured with identical electrical and mechanical components. The manufacturer is responsible to the authorities for any modifications made to the product, which result in non-compliance to the relevant regulations.

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Opinions expressed within this report regarding general assessments and qualifications for PASS or FAIL to the standards limits and requirements, are not part of the current accreditation. Neither is opinions expressed regarding model variants covered by the testing performed in this report.

Deviations from, additions to, or exclusions from the test specifications are described in “Test Report Summary”.

This report was originally distributed electronically with digital signatures. For more information contact Nemko.

# DESCRIPTION OF TESTED ITEM(S)

| | |
|---|---|
| Product description ..... : | The tested item is a personal authentication device with FIDO2 security key. It contains a Bluetooth low energy transceiver for wireless communication. |

| | |
|---|---|
| Device FCC-ID | 2BLGV-0202 |

| | |
|---|---|
| Model/type ..... : | OFFPAD+ |
| Serial number ..... : | 9130580128 |
| Operating voltage..... : | 3.2-4.3V |
| Maximum power/current..... : | 50mW |
| Insulation class ..... : | III |
| Highest clock frequency ..... : | 32 MHz |
| Hardware version ..... : | MP2 |
| Software version ..... : | 5.0 |

## RF CHARACTERISTICS OF THE TRANSMITTER

| | |
|---|---|
| **Type.....** | **BLE** |
| Frequency range..... : | 2402 – 2480 MHz |
| Number of channels ..... : | 40 |
| Channel BW..... : | 1 MHz |
| Rated output power ..... : | < 10 dBm |
| Receiver category..... : | II |
| Classification ..... : | / |
| Operating modes..... : | TX/RX |
| Types of modulation ..... : | GMSK / Q-DPSK |
| Tunable bands ..... : | None |
| User frequency adjustment..... : | None |
| Antenna type..... : | None |
| Antenna gain ..... : | < 0 dBi |
| Antenna connection ..... : | PCB |
| Number of antennas ..... : | 1 |
| Antenna diversity/MIMO ..... : | None |

| | |
|---|---|
| Mounting position..... : | ☒ Tabletop equipment<br>☐ Wall/ceiling mounted equipment<br>☐ Floor standing equipment<br>☐ Handheld equipment<br>☐ Rack mounted equipment<br>☐ Console equipment<br>☐ Other: |

## ACCESSORIES USED DURING TEST

| Description | Manufacturer | Type |
|---|---|---|
| USB charger | Apple | A1400 |

## INPUT/OUTPUT PORTS

| Port name and description | Cable | | |
|---|---|---|---|
| | Longer than 3m | Attached during test | Shielded |
| USB-C port | ☐ | ☒ | ☐ |

This equipment has been tested with certain cable types and cable configurations. Any changes to these parameters when installed may influence the EMC properties of this equipment.

## OPERATING MODES

| OP no. | Description | Applied for testing | |
|---|---|---|---|
| | | Emissions | Immunity |
| OP1 | Charging | ☒ | ☐ |

## POWER SUPPLY CONDITIONS

The following nominal power supply conditions have been tested:

| PC no. | Voltage | Frequency | Type | Ground terminal |
|---|---|---|---|---|
| PC1 | 120 V | ☐ AC 50Hz / ☒ AC 60Hz / ☐ DC | ☐ 3AC / ☐ 3ACN / ☐ PoE | ☐ PE / ☐ GND / ☐ None |

☐ Additional chassis grounding was applied.

## PHOTOS AND DRAWINGS

| | |
|---|---|
| Photo of the test item ..... : | Please refer to Test Setup Photos |

## OTHER INFORMATION

| | |
|---|---|
| Modifications ..... : | None |
| Additional information ..... : | None |

# TEST ENVIRONMENT

| | |
|---|---|
| Test laboratory ..... : | ☒ KJELLER (Instituttveien 6, N-2007 Kjeller, Norway)<br>☐ LYSAKER (Philip Pedersens vei 11, N-1366 Lysaker, Norway) |
| Laboratory accreditation ..... : | NORWEGIAN ACCREDITATION TEST 033<br>**Norsk Akkreditering – TEST 033**<br>P06 – Electromagnetic Compatibility |
| Environmental conditions ..... : | The climatic conditions during the tests are within limits specified by the manufacturer for the operation of the product and the test equipment.<br>The climatic conditions during tests are within the following limits:<br><br>**Ambient temperature:** 15 – 35 °C<br>**Relative humidity:** 25 – 75 %RH<br>**Atmospheric pressure:** 86 – 106 kPa<br><br>If explicitly required by the test standard, or the requirements are tighter than the above; the climatic conditions are recorded and documented separately in this test report. |
| Calibration ..... : | All instruments used in the tests of this test report are calibrated and traceable to national or international standards. Between calibrations test set-ups are controlled and verified on a regular basis by intermediate checks to ensure, with 95% confidence that the instruments remain within their calibrated levels.<br>The instrumentation accuracy is within limits agreed by the IECEE/CTL and defined by Nemko. |
| Measurement uncertainties ..... : | Uncertainty in EMC emission measurements stated in this report are calculated from the standard measurement uncertainties multiplied by the coverage factor k=2. It was determined in accordance with CISPR 16-4-2. The true value is in the corresponding interval with a probability of 95%.<br>**If some emission measurements have a margin to the required limit which is less than the instrumentation measurement uncertainty provided by the laboratory, occurrences are marked with an asterisk (*) in the "Margin" columns.**<br>Uncertainties for continuous immunity tests are calculated based on the same principles as for EMC emission uncertainties.<br>For Harmonics and Flicker measurements the measurement uncertainty is calculated based on the same principles as for EMC emission uncertainties.<br>Uncertainties for transient immunity are kept within the requirements of the relevant basic standard.<br>*Further information about measurement uncertainties is provided on request.* |
| Decision rules ..... : | As specified by CISPR 16-4-2; if our measurement uncertainty $U_{LAB}$ is less than or equal to $U_{CISPR}$ , compliance is deemed to occur if no measured disturbance level exceeds the limit hence "PASS" is indicated, and non-compliance is deemed to occur if any measured disturbance level exceeds the limits hence "FAIL" is indicated.<br>For continuous immunity tests, uncertainties are not considered when applying the calibrated test levels. Tests are performed at the test levels specified by the test standard. PASS and FAIL decisions are based on behaviour observations of the specimen.<br>For transient immunity tests, uncertainties are not considered if the test equipment is kept within the requirements of the relevant basic standard. Tests are performed at the test levels specified by the test standard. PASS and FAIL decisions are based on behaviour observations of the specimen.<br>For Harmonics and Flicker measurements the measurement uncertainty is considered, and measurements are marked if necessary. In doing so, the associated uncertainty of measurement has been considered.<br>*Further information about decision rules is provided on request.* |

# EVALUATION OF PERFORMANCE

## PERFORMANCE TESTS

| | |
|---|---|
| Performance checks ..... : | Observe that device is on and charging during test |
| Performance tests ..... : | N/A |
| Monitoring during tests ..... : | N/A |

Information:
Performance check is a short functional test carried out during or after a technical test to confirm that the equipment operates.
Performance test is a measurement, or a group of measurements carried out during and/or after a technical test to confirm that the equipment complies with selected parameters as defined in the equipment standard.
Monitoring during tests describes which functions were monitored and how.

☐ This test report contains functional evaluation data provided by the customer. Some pass/fail statements are based on such evaluations and data provided by customer auxiliary equipment. Data originating from the customer are not obtained under the accreditation conditions of the laboratory.

## GENERAL PERFORMANCE CRITERIA

For the specimen to pass each test, it shall meet the following general criteria:

| During test | After test |
|---|---|
| **Performance criterion A:**<br>Operate as intended.<br>No loss of function.<br>No unintentional responses. | **Performance criterion A:**<br>Operate as intended.<br>No loss of function.<br>No degradation of performance.<br>No loss of stored data or user programmable functions. |
| **Performance criterion B:**<br>May be loss of function (one or more).<br>No unintentional responses. | **Performance criterion B:**<br>Operate as intended.<br>Lost function(s) shall be self-recoverable.<br>No degradation of performance.<br>No loss of stored data or user programmable functions. |
| **Performance criterion C:**<br>May be loss of function (one or more). | **Performance criterion C:**<br>Lost function(s) shall be recoverable by the operator.<br>Operate as intended after recovering.<br>No degradation of performance. |

Information:
In the subsequent test sections of this report, the required and actual specimen performance during immunity testing is indicated by the nomenclatures as given by the table above (A, B or C).

# TEST REPORT SUMMARY

## APPLIED STANDARDS

| Standards | Titles |
|---|---|
| **FCC CFR 47 Subpart 15B** | *Digital devices - Unintentinal radiators, Class B Digital Device* |

* : An asterisk (*) placed after the standard name indicates standards that are not within the laboratory scope of accreditation.

## TEST SUMMARY

| Requirements – Tests | Reference standards | Verdict |
|---|---|---|
| **Conducted Emissions** (Method: FCC Part 12.107 per ANSI C63.4-2014) | FCC CFR 47 Subpart 15B | **PASS** |
| **Radiated Emissions (Below 1GHz)** (Method: FCC Part 12.109 per ANSI C63.4-2014) | FCC CFR 47 Subpart 15B | **PASS** |
| **Radiated Emissions (Above 1GHz)** (Method: FCC Part 12.109 per ANSI C63.4-2014) | FCC CFR 47 Subpart 15B | **N/A** |

PASS : Tested and complied with the requirements
FAIL : Tested and failed the requirements
N/A : Test not relevant to this specimen (evaluated by the test laboratory)
– : Test not performed (instructed by the applicant)
* : An asterisk (*) placed after the verdict in the Result column indicates a test item that are not within Nemko's scope of accreditation
# : A grid (#) placed after the verdict in the Result column indicates a test item that are only partly covered by Nemko's scope of accreditation. Further information or details may be provided within the test chapter

## ABOUT REFERENCE STANDARDS AND TEST LEVELS

Product standards with dated references to basic standards may have been performed according to the newest edition of the basic standard. This may impact the compliance criteria or technical performance of the test, still this is adequate if the test is expected to confirm compliance to the intention of the product standard. The table above lists the actual editions of the basic standards which have been used during testing.

The choice of immunity test levels could be higher than those specified by the reference standards when we consider the nature of the specimen and its intended use or based on customer requests.

## NOTES

None

# Test Results

# CONDUCTED EMISSIONS

## TEST DESCRIPTION

**Method**
These measurements have been performed according to ANSI C63.4-2014.

**Set-up**
The measurement was performed at the power supply terminal of the specimen. Nominal supply voltage was provided.
The specimen was energized and in normal operating mode during the measurement.

☐ The specimen and its cables were elevated 10 cm above a ground plane.
☐ The specimen and its cables were elevated 40 cm above a ground plane.
☒ The specimen and its cables were placed 40 cm from a vertical ground plane, 80 cm over ground plane.
☐ The specimen was mounted directly on, and bonded to a ground plane. Cables and auxiliary equipment were elevated by 1 cm

☐ The specimen was connected to an Artificial Mains Network (AMN) by its power supply cable, which was adjusted to 100cm length by folding.
☒ The specimen was connected to an Artificial Mains Network (AMN) by a 0.8 m shielded power supply cable directly connected to the AMN.

☐ Artificial Hand was applied to the specimen during test (for location see photos)

**Conditions**
☒ Frequency range was 150kHz – 30MHz.

The measuring bandwidth is 9 kHz in the frequency range 150 kHz – 30 MHz. Measurement was made with a 4.5 kHz step size and 20 ms dwell time.

Measurement uncertainty: ± 3.3 dB

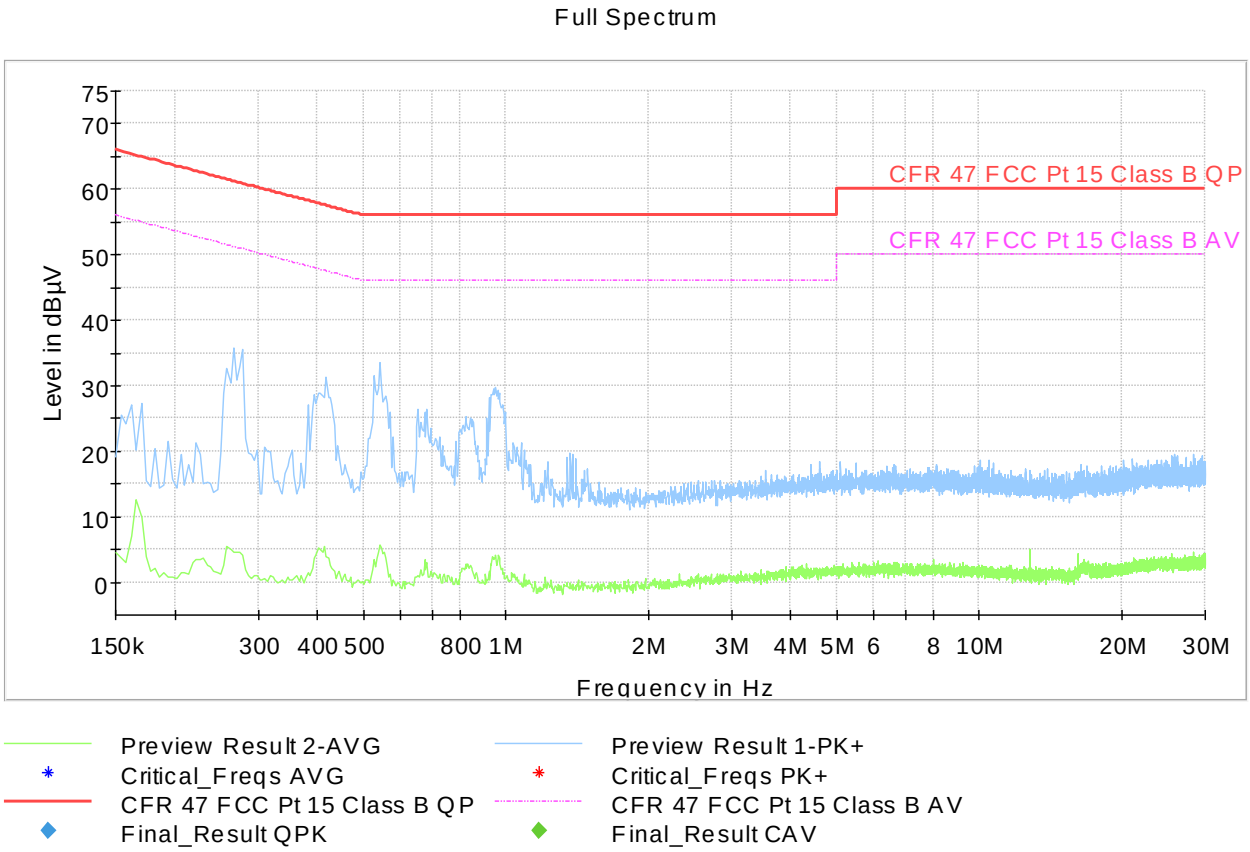
**Instruments used during measurement**

Instrument list:
AMN: R&S / ENV216 (LR-1665) (11/2026)
EMI Receiver: R&S / ESR 7 (LR-1675) (01/2025)
AC Power Source: Agilent / 6812B (LR-1515) (12/2024)

**Conformity**

| | |
|---|---|
| Verdict: | PASS |
| Test engineer: | Jan G Eriksen |

## EMISSION SPECTRUM




## MEASUREMENT DATA

| Frequency (MHz) | QuasiPeak (dBµV) | CAverage (dBµV) | Limit (dBµV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Filter | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| --- | --- | --- | --- | --- | --- | --- | | | --- | |

# RADIATED EMISSIONS (BELOW 1GHZ)

## TEST DESCRIPTION

**Method**
These measurements have been performed according to ANSI C63.4-2014.

**Set-up**
The measurements were performed in a semi-anechoic chamber (SAC). Nominal supply voltage was provided.
The specimen was energized and in normal operating mode during the measurement.

☐ The specimen and its cables were elevated 10 cm above the site ground plane and placed in the centre of the turntable.
☒ The specimen and its cables were placed on a table 80 cm above the site ground plane and placed in the centre of the turntable.

Antenna type = Hybrid bilog antenna
Antenna elevation = 100-400 cm above the ground reference plane with bore-sight movement.
Specimen rotation = 0-360º.

☒ Band-stop filter(s) was used to suppress the wanted RF transmission band to protect the measurement equipment.

| Frequency range: | Measurement distance: |
|---|---|
| ☒ 30-1000MHz | ☒ 3m |

**Conditions**
The measuring bandwidth is 120 kHz in the frequency range 30 MHz – 960 MHz. Frequency sweeps with RBW = 120 kHz and VBW = 1 MHz was applied with a sweep time of 20 ms (step size resolution < 60 kHz ).

Measurement uncertainty: ± 5.2 dB (3m distance in SAC10); ± 5.1 dB (3m distance in SAC3)

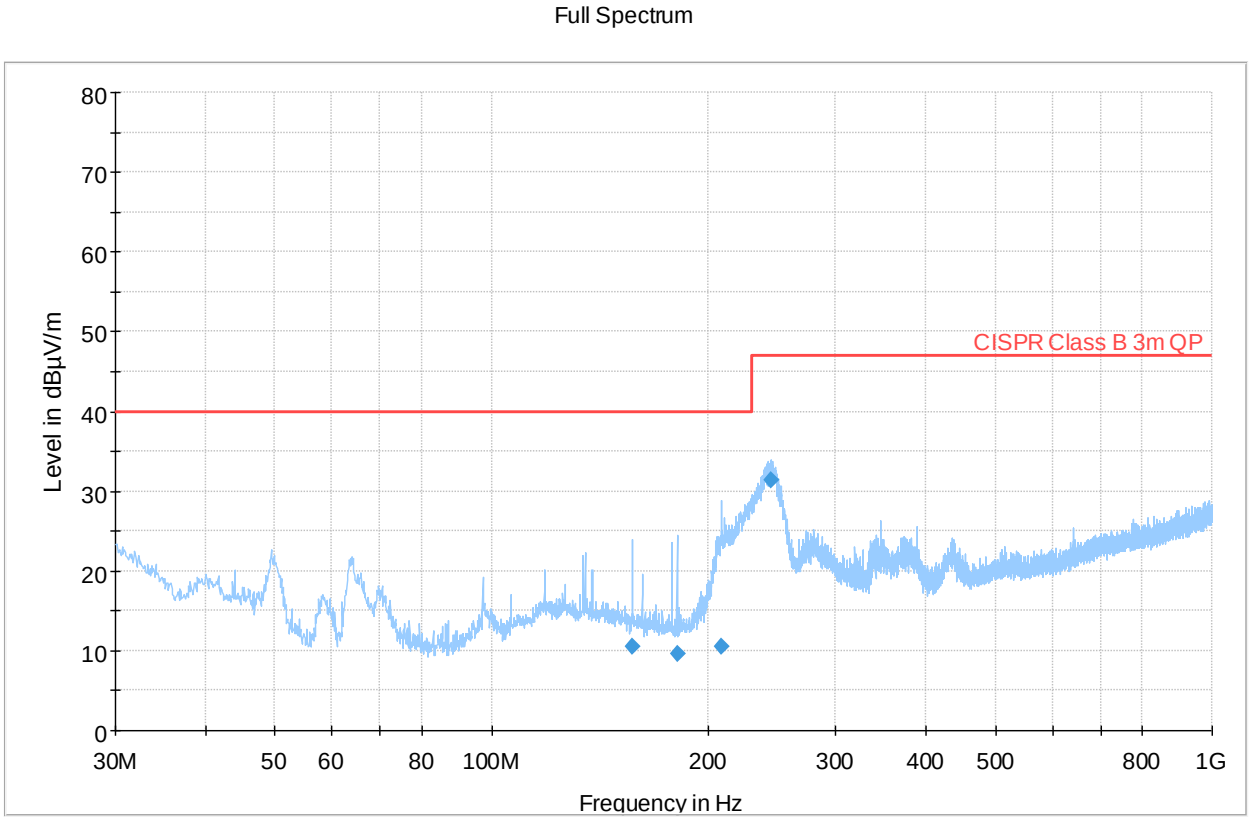
**Instruments used during measurement**

Instrument list:
EMI Receiver: R&S / ESU40 (LR-1639) (01/2026)
Preamplifier: Sonoma / 310N (LR-1686) (08/2025)
Antenna: Sunol / JB3 (N-4525) (04/2025)
AC Power Source: Agilent / 6812B (LR-1515) (11/2025)

**Conformity**

| | |
|---|---|
| Verdict: | PASS |
| Test engineer: | Jan G Eriksen |

## EMISSION SPECTRUM




## MEASUREMENTS DATA

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|---|
| 156.718376 | 10.54 | 40.00 | 29.46 | 15000.0 | 120.000 | 150.0 | V | 23.0 | -12.1 |
| 180.684524 | 9.54 | 40.00 | 30.46 | 15000.0 | 120.000 | 271.0 | H | 0.0 | -13.0 |
| 208.075802 | 10.44 | 40.00 | 29.56 | 15000.0 | 120.000 | 246.0 | H | 12.0 | -12.1 |
| 243.711232 | 31.35 | 47.00 | 15.65 | 15000.0 | 120.000 | 120.0 | H | 249.0 | -12.5 |