

**TEST REPORT**  
**Nr. R21023501****Federal Communication Commission (FCC)**

|                                                                                                                                                                                                            |                                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Report Reference No.</b> .....                                                                                                                                                                          | R21023501                                       |
| Date of issue: .....                                                                                                                                                                                       | 02.04.2021                                      |
| Total number pages: .....                                                                                                                                                                                  | 14                                              |
| <b>Applicant's name</b> .....                                                                                                                                                                              | Imet S.r.l.                                     |
| Address .....                                                                                                                                                                                              | Via Ronche, 93 – 33077 Sacile (PN) – Italy      |
| <b>Test specification:</b>                                                                                                                                                                                 |                                                 |
| Standards .....                                                                                                                                                                                            | KDB 447498 D01 General RF Exposure Guidance v06 |
| Non-standard test method .....                                                                                                                                                                             | N/A                                             |
| <b>Test Report Form No.</b> .....                                                                                                                                                                          | 15-247_HoppingCMC                               |
| Test Report Form(s) Originator ..                                                                                                                                                                          | CMC Centro Misure Compatibilità S.r.l.          |
| Master TRF .....                                                                                                                                                                                           | 2021-02                                         |
| <b>General disclaimer:</b>                                                                                                                                                                                 |                                                 |
| The test results presented in this report relate only to the object tested.<br>This report shall not be reproduced, except in full, without the written approval of CMC Centro Misure Compatibilità S.r.l. |                                                 |
| <b>Test item description</b> .....                                                                                                                                                                         | 2,4 GHz RF Transceiver module                   |
| Trademark .....                                                                                                                                                                                            | Imet                                            |
| Manufacturer .....                                                                                                                                                                                         | Imet S.r.l.                                     |
| Model / Type reference .....                                                                                                                                                                               | B034                                            |
| FCC ID .....                                                                                                                                                                                               | 2AYRTB034                                       |
| Rating(s) .....                                                                                                                                                                                            | 3,7 Vdc from battery                            |
| <b>Report</b>                                                                                                                                                                                              |                                                 |
| Tested by (name + signature) .....                                                                                                                                                                         | G. Gandini                                      |
| Approved by (name + signature) .....                                                                                                                                                                       | R. Beghetto                                     |



|          |                                                                   |    |
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|                                                                                                                                                    |                                                                                             |
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| <b>2 Reference standard</b>                                                                                                                        |                                                                                             |
| KDB 447498 D01 General RF Exposure Guidance v06                                                                                                    | RF exposure procedures and equipment authorization policies for mobile and portable devices |
| <b>3 List of attachments</b>                                                                                                                       |                                                                                             |
| Attachment 1: Instruments list, measurement uncertainty, judgement of compliance and quality manual references                                     |                                                                                             |
| <b>4 Deviation(s) from test specification</b>                                                                                                      |                                                                                             |
| None                                                                                                                                               |                                                                                             |
| <b>5 Testing location</b>                                                                                                                          |                                                                                             |
| CMC Centro Misure Compatibilità S.r.l.<br>Via della Fisica, 20 – 36016 Thiene (VI) – Italy<br>Test site facility's FCC registration number: 182474 |                                                                                             |

| <b>Revision index</b> | <b>Date</b> | <b>Change history</b> |
|-----------------------|-------------|-----------------------|
| 1.0                   | 02.04.2021  | --                    |



| Testing and sampling:                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date of receipt of test item.....                                                                                                                                                                                                                                                                                                    | 02.02.2021                                                                                                                                                                             |
| Testing start date .....                                                                                                                                                                                                                                                                                                             | 02.04.2021                                                                                                                                                                             |
| Testing end date .....                                                                                                                                                                                                                                                                                                               | 02.04.2021                                                                                                                                                                             |
| Sampling procedure.....                                                                                                                                                                                                                                                                                                              | Equipment used for testing was picked up by the manufacturer, at the end of the production process with random criterion.<br>The results relate to the sample as it has been received. |
| Internal identification.....                                                                                                                                                                                                                                                                                                         | Adhesive label with the product number P210119                                                                                                                                         |
| General remarks:                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                        |
| <p>This report shall not be reproduced, except in full, without the written approval of CMC.</p> <p>The test results presented in this report relate only to the object tested.</p> <p>“(see appended table)”: refers to a table appended to the report.</p> <p>Throughout this report a comma is used as the decimal separator.</p> |                                                                                                                                                                                        |
| Possible test case verdicts:                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                        |
| Test case does not apply to the test object:                                                                                                                                                                                                                                                                                         | N/A (Not Applicable)                                                                                                                                                                   |
| Test object does meet the requirement:                                                                                                                                                                                                                                                                                               | P (Pass)                                                                                                                                                                               |
| Test object does not meet the requirement:                                                                                                                                                                                                                                                                                           | F (Fail)                                                                                                                                                                               |
| Test object does not performed:                                                                                                                                                                                                                                                                                                      | N/E (Not Executed)                                                                                                                                                                     |
| Definition of symbols used in this test report:                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                        |
| <input checked="" type="checkbox"/> Indicates that the listed condition, standard or equipment is applicable for this report.                                                                                                                                                                                                        |                                                                                                                                                                                        |
| <input type="checkbox"/> Indicates that the listed condition, standard or equipment is not applicable for this report.                                                                                                                                                                                                               |                                                                                                                                                                                        |

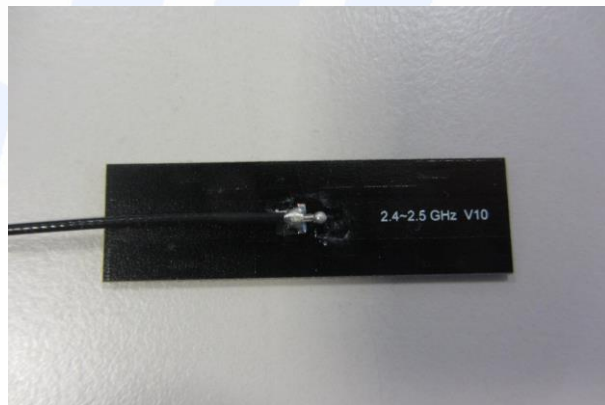
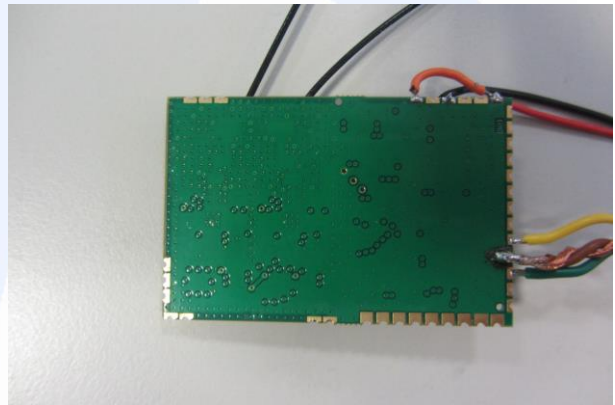
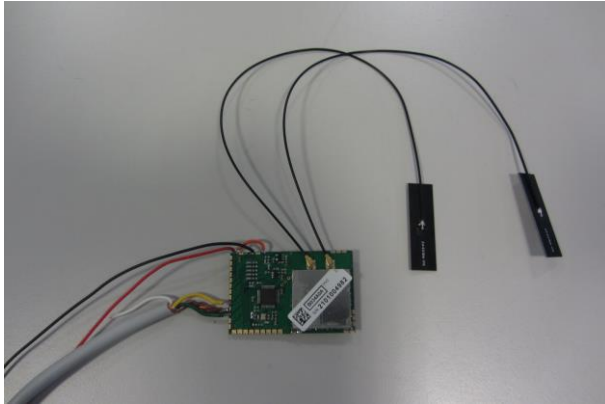


## 6 General description of tested item and testing condition(s)

|                           |                                     |                                                            |                           |                          |                           |                          |                          |
|---------------------------|-------------------------------------|------------------------------------------------------------|---------------------------|--------------------------|---------------------------|--------------------------|--------------------------|
| Description .....         | 2,4 GHz RF Transceiver module       |                                                            |                           |                          |                           |                          |                          |
| Model Number .....        | B034                                |                                                            |                           |                          |                           |                          |                          |
| FCC ID .....              | 2AYRTB034                           |                                                            |                           |                          |                           |                          |                          |
| Serial Number .....       | --                                  |                                                            |                           |                          |                           |                          |                          |
| Brand name .....          | Imet                                |                                                            |                           |                          |                           |                          |                          |
| Frequency band .....      | 2400 – 2483,5 MHz                   |                                                            |                           |                          |                           |                          |                          |
| Nominal frequencies ..... | F <sub>L</sub> : 2404 MHz           |                                                            | F <sub>M</sub> : 2440 MHz |                          | F <sub>H</sub> : 2479 MHz |                          |                          |
| Test power supply .....   |                                     | Voltage and Frequency                                      | Reference poles           |                          |                           |                          |                          |
|                           |                                     |                                                            | N                         | L1                       | L2                        | L3                       | PE                       |
|                           |                                     | <input type="checkbox"/> AC:                               | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> |
|                           |                                     | <input type="checkbox"/> AC:                               | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> |
|                           |                                     | <input checked="" type="checkbox"/> DC: 3,7 V from battery |                           |                          |                           |                          | <input type="checkbox"/> |
| Test configuration .....  | <input type="checkbox"/>            | Table top equipment                                        |                           |                          |                           |                          |                          |
|                           | <input type="checkbox"/>            | Floor standing equipment                                   |                           |                          |                           |                          |                          |
|                           | <input type="checkbox"/>            | Hand-held equipment                                        |                           |                          |                           |                          |                          |
|                           | <input checked="" type="checkbox"/> | Module                                                     |                           |                          |                           |                          |                          |
| Type of equipment .....   | <input checked="" type="checkbox"/> | Transmitter unit                                           |                           |                          |                           |                          |                          |
|                           | <input checked="" type="checkbox"/> | Receiver unit                                              |                           |                          |                           |                          |                          |
| Type of station .....     | <input type="checkbox"/>            | Portable station                                           |                           |                          |                           |                          |                          |
|                           | <input checked="" type="checkbox"/> | Mobile station                                             |                           |                          |                           |                          |                          |
| Operating modes .....     | No.                                 | Operating mode of test item                                |                           |                          |                           |                          |                          |
|                           | 1                                   | EUT in continuous transmission at maximum power            |                           |                          |                           |                          |                          |



## 6.1 Photos of the test item





## 7 Verdict summary section

| KDB 447498 D01 General RF Exposure Guidance v06 |                         |                |          |
|-------------------------------------------------|-------------------------|----------------|----------|
| Clause                                          | Requirement – Test case | Basic standard | Verdict  |
| cl. 4                                           | RF Exposure analysis    | KDB 447498 D01 | <b>P</b> |





CMC  
Centro Misure Compatibilità S.r.l.  
Via della Fisica, 20  
36016 Thiene (VI)

| Normative references                            |                                                                                             |
|-------------------------------------------------|---------------------------------------------------------------------------------------------|
| Reference no.                                   | Description                                                                                 |
| KDB 447498 D01 General RF Exposure Guidance v06 | RF exposure procedures and equipment authorization policies for mobile and portable devices |



CMC Centro Misure Compatibilità S.r.l.



## 8 Test conditions

### 8.1 General

|                                          |                                                                                                                                                                                                                                 |                 |                             |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------------------|
| Environmental reference conditions.....: | The climatic conditions during the tests are within the limits specified by the manufacturer for the operation of the EUT and the test equipment.<br>The climatic conditions during the tests were within the following limits: |                 |                             |
|                                          | <b>Temperature</b>                                                                                                                                                                                                              | <b>Humidity</b> | <b>Atmospheric pressure</b> |
|                                          | 15 °C – 35 °C                                                                                                                                                                                                                   | 30 % - 60 %     | 800 hPa – 1060 hPa          |
|                                          | If explicitly required in the basic standard or applied product standard the climatic values are recorded and documented separately in this test report.                                                                        |                 |                             |
| Measurement uncertainties .....          | Attachment 1                                                                                                                                                                                                                    |                 |                             |



## 9 Test results

### 9.1 RF Exposure Analysis

|                             |                                     |
|-----------------------------|-------------------------------------|
| Tested by .....             | G. Gandini                          |
| Test date .....             | 02.04.2021                          |
| Test location (stand) ..... | Laboratory                          |
| Reference standards .....   | KDB 447498 D01 cl. 4<br>ANSI C63.10 |
| Test specification .....    | --                                  |

#### Result

##### Chip A

| Transmission channel (MHz) | Peak Output Power (dBm) | Peak Output Power (mW) | Power Density at 20 cm (mW/cm <sup>2</sup> ) | Power Density Limit (mW/cm <sup>2</sup> ) |
|----------------------------|-------------------------|------------------------|----------------------------------------------|-------------------------------------------|
| 2404                       | 8,42                    | 6,95                   | 2,19E-03                                     | 1,00                                      |
| 2440                       | 8,13                    | 6,50                   | 2,05E-03                                     | 1,00                                      |
| 2479                       | 7,90                    | 6,17                   | 1,94E-03                                     | 1,00                                      |

Remarks: Power Density =  $(P \times G) / (4\pi R^2)$

##### Chip B

| Transmission channel (MHz) | Peak Output Power (dBm) | Peak Output Power (mW) | Power Density at 20 cm (mW/cm <sup>2</sup> ) | Power Density Limit (mW/cm <sup>2</sup> ) |
|----------------------------|-------------------------|------------------------|----------------------------------------------|-------------------------------------------|
| 2404                       | 8,53                    | 7,13                   | 2,25E-03                                     | 1,00                                      |
| 2440                       | 8,33                    | 6,81                   | 2,15E-03                                     | 1,00                                      |
| 2479                       | 8,15                    | 6,53                   | 2,06E-03                                     | 1,00                                      |

Remarks: Power Density =  $(P \times G) / (4\pi R^2)$



## Attachment 1

### Instruments list

| <i><b>Id. number</b></i> | <i><b>Manufacturer</b></i> | <i><b>Model</b></i> | <i><b>Description</b></i> | <i><b>Serial number</b></i> | <i><b>Last calibration</b></i> | <i><b>Due date calibration</b></i> |
|--------------------------|----------------------------|---------------------|---------------------------|-----------------------------|--------------------------------|------------------------------------|
| CMC S260                 | CMC                        | Wfr_N               | Shielded Cable            | Wfr_ant10-1                 | November '20                   | November '21                       |
| CMC S261                 | CMC                        | Wfr_N               | Shielded Cable            | Wfr_ant20-1                 | November '20                   | November '21                       |
| CMC S262                 | CMC                        | Wfr_N_fix           | Shielded Cable            | Wfr_fix32-1                 | November '20                   | November '21                       |
| CMC S263                 | CMC                        | Wfr_N_fix           | Shielded Cable            | Wfr_fix31-1                 | November '20                   | November '21                       |
| CMC S264                 | CMC                        | Wfr_N               | Shielded Cable            | Wfr_ext03-1                 | November '20                   | November '21                       |
| CMC S295                 | Rohde & Schwarz            | FSW43               | Spectrum Analyzer 43GHz   | 104059                      | November '19                   | November '22                       |



## Attachment 1

### Measurement uncertainty

| Test                                                      | Test Setup | Expanded uncertainty     | Note |
|-----------------------------------------------------------|------------|--------------------------|------|
| Conducted emission CISPR 16<br>LISN 50uH 0,009-0,0150 MHz | PE001_01   | 3,4 dB                   | 1    |
| Conducted emission CISPR 16<br>LISN 50uH 0,150-30,0 MHz   | PE001_01   | 3,0 dB                   | 1    |
| Conducted emission CISPR 16<br>Voltage Probe 0,15-30 MHz  | PE001_02   | 2,3 dB                   | 1    |
| Conducted emission CISPR 16<br>Current Probe 0,15-30 MHz  | PE001_03   | 2,6 dB                   | 1    |
| Conducted emission CISPR 16<br>ISN 0,15-30 MHz            | PE001_04   | 4,7 dB                   | 1    |
| Clic CISPR 16<br>LISN 50uH 0,150-30,0 MHz                 | PE001_05   | 2,9 dB                   | 1    |
| Radiated Emission CDNE<br>30-300 MHz                      | PE001_06   | 3,3 dB                   | 1    |
| Disturbance Power<br>30-300 MHz                           | PE002_01   | 3,8 dB                   | 1    |
| Radiated Emission LAS<br>0,15-30 MHz                      | PE003_01   | 2,0 dB                   | 1    |
| Radiated Emission CISPR 16<br>Loop Ant. 0,15-30 MHz       | PE004_01   | 4,2 dB                   | 1    |
| Radiated Emission CISPR 16<br>Bicon. Ant. 30-300 MHz      | PE004_02   | 4,1 dB                   | 1    |
| Radiated Emission CISPR 16<br>LogP. Ant. 300-1000 MHz     | PE004_03   | 3,9 dB                   | 1    |
| Radiated Emission CISPR 16<br>Horn Ant. 1-18 GHz          | PE004_04   | 4,1 dB                   | 1    |
| Human Exposure to electromagnetic fields                  | PE005_01   | 16,7 %                   | 1    |
| Harmonics                                                 | PE006_01   | 10 mA + 2,9 %            | 1    |
| Flicker                                                   | PE007_01   | 4,36 %                   | 1    |
| Radiated Immunity<br>80 MHz - 6 GHz                       | PE102_XX   | 2,20 dB 0,87 V/m a 3V/m  | 1    |
| Conducted Immunity<br>0,15 - 230 MHz                      | PE105_XX   | 1,20 dB 0,44 V a 3V      | 1    |
| AC Magnetic field                                         | PE106_01   | 1,55 % 0,15 A/m a 10A/m  | 1    |
| Pulse Magnetic field                                      | PE107_01   | 6,23 % 18,7 A/m a 300A/m | 1    |
| Dumped Magnetic field                                     | PE108_01   | 6,23 % 1,87 A/m a 30A/m  | 1    |
| Common mode conducted immunity                            | PE112_01   | 2,16 % 0,22 V a 10V      | 1    |



## Attachment 1

| Test                                       | Test Setup  | Expanded uncertainty | Note |
|--------------------------------------------|-------------|----------------------|------|
| Power/Spurious<br>9kHz-30MHz               | PR001_01    | 4,2 dB               | 1    |
| Power/Spurious ERP<br>30-1000MHz d=10m     | PR001_02+03 | 4,7 dB               | 1    |
| Misura della potenza EIRP<br>1-18GHz d=3m  | PR001_04+05 | 4,7 dB               | 1    |
| Misura della potenza EIRP<br>18-40GHz d=3m | PR001_06    | 5,4 dB               | 1    |
| Frequency error                            | PR002_01+02 | $< 1 \times 10^{-7}$ | 1    |
| Timing zero span (1001pts.)                | PR002_01+02 | 0,2 % SWT            | 1    |
| Modulation bandwidth                       | PR002_01+02 | $< 1 \times 10^{-7}$ | 1    |
| Conducted RF power and spurious emission   | PR002_01+02 | 1,1 dB               | 1    |
| Adjacent channel power                     | PR002_01+02 | 1,1 dB               | 1    |
| Blocking                                   | PR002_01+02 | 1,1 dB               | 1    |

| Test                                             | Test Setup | Expanded uncertainty | Note |
|--------------------------------------------------|------------|----------------------|------|
| Electrostatic discharge immunity test            | PE101_0X   |                      | 2    |
| Electrical fast transients / burst immunity test | PE103_0X   |                      | 2    |
| Surge immunity test                              | PE104_0X   |                      | 2    |
| Short interruption immunity test                 | PE109_01   |                      | 2    |
| Ring Wave immunity test                          | PE110_01   |                      | 2    |
| Low frequency immunity test                      | PE111_01   |                      | 2    |
| Dumped Oscillatory immunity test                 | PE113_01   |                      | 2    |
| Rev. 21_01 date 23/02/2021                       |            |                      |      |

### Note 1:

The expanded uncertainty reported according to the document EA-4-02 is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of  $p = 95\%$

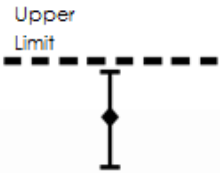
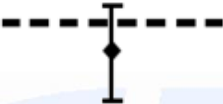
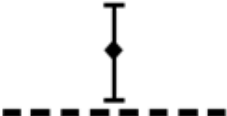
### Note 2:

It has been demonstrated that the used test equipment meets the specified requirements in the standard with at least a 95% confidence, covering factor  $k=2$



## Attachment 1

### Judgement of compliance

| Case 1                                                                                                                                                              | Case 2                                                                                                                                                                                                     | Case 3                                                                                                                                                                                                        | Case 4                                                                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                    |                                                                                                                           |                                                                                                                             |                                                                                          |
| The sample complies with the requirements.<br><br>The measurement results is within the specification limit when the measurement uncertainty is taken into account. | The sample complies with the requirements.<br><br>It is not possible to state compliance using a 95% coverage probability for the expanded uncertainty although the measurement result is below the limit. | The sample does not comply with the requirements.<br><br>It is not possible to state compliance using a 95% coverage probability for the expanded uncertainty also the measurement result is upper the limit. | The sample does not comply with the requirements.<br><br>The measurement results is outside the specification limit when the measurement uncertainty is taken into account. |

In agreement with ILAC-G8:09/2019 cl.4.2.1 Guidelines on Decision Rules and Statements of Conformity

### Quality manual references – Internal procedure

|                                                          |                                     |
|----------------------------------------------------------|-------------------------------------|
| Internal Procedure PM001 rev. 3.1 (Quality Manual) ..... | Measure procedure                   |
| Internal Procedure INC_M rev. 9.5 (Quality Manual) ..... | Measurement uncertainty calculation |