



# FCC REPORT

**Applicant:** Attenti

**Address of Applicant:** 2 Habarzel St. PO Box 13236. Tel Aviv 69710 , Israel

**Manufacturer/Factory:** PM - PARTNER MANUFACTURING

**Address of Manufacturer/Factory:** 6 Efal St.Kiriat Arie,Petach Tikva - 4951106, ISRAEL

**Equipment Under Test (EUT)**

Product description: RF transceiver

Model No.: TRXS-840-2

Trade Mark: Attenti

**FCC ID:** LSQ-TRXS-840-2

**Applicable standards:** FCC CFR Title 47 Part 15 Subpart C Section 15.231:2017

**Date of sample receipt:** January 09, 2018

**Date of Test:** January 10-16, 2018

**Date of report issued:** January 17, 2018

**Test Result :** PASS \*

\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

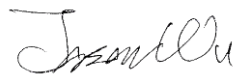
**Robinson Lo**  
**Laboratory Manager**

This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

## 2 Version

| Version No. | Date             | Description |
|-------------|------------------|-------------|
| 00          | January 17, 2018 | Original    |
|             |                  |             |
|             |                  |             |
|             |                  |             |
|             |                  |             |

Prepared By:

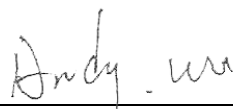


Date:

January 17, 2018

Project Engineer

Check By:



Date:

January 17, 2018

Reviewer

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## 4 Test Summary

| Test Item          | Section in CFR 47 | Result |
|--------------------|-------------------|--------|
| Spurious emissions | 15.231(e) &15.209 | Pass   |

*Pass: The EUT complies with the essential requirements in the standard.*

### 4.1 Measurement Uncertainty

| Test Item                                                                                             | Frequency Range | Measurement Uncertainty | Notes |
|-------------------------------------------------------------------------------------------------------|-----------------|-------------------------|-------|
| Radiated Emission                                                                                     | 9kHz ~ 30MHz    | $\pm 4.34\text{dB}$     | (1)   |
| Radiated Emission                                                                                     | 30MHz ~ 1000MHz | $\pm 4.24\text{dB}$     | (1)   |
| Radiated Emission                                                                                     | 1GHz ~ 26.5GHz  | $\pm 4.68\text{dB}$     | (1)   |
| AC Power Line Conducted Emission                                                                      | 0.15MHz ~ 30MHz | $\pm 3.45\text{dB}$     | (1)   |
| Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%. |                 |                         |       |

## 5 General Information

### 5.1 General Description of EUT

|                        |                  |
|------------------------|------------------|
| Product description:   | RF transceiver   |
| Model No.:             | TRXS-840-2       |
| Operation Frequency:   | 433.92MHz        |
| Modulation technology: | FSK              |
| Antenna Type:          | Integral Antenna |
| Power supply:          | DC 3.6V battery  |

## 5.2 Test mode

|                   |                                    |
|-------------------|------------------------------------|
| Transmitting mode | Keep the EUT in transmitting mode. |
|-------------------|------------------------------------|

### Per-test mode.

We have verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:

|           | Axis                   | X     | Y     | Z     |
|-----------|------------------------|-------|-------|-------|
| 433.92MHz | Field Strength(dBuV/m) | 60.76 | 64.72 | 62.11 |

### Final Test Mode:

According to ANSI C63.10 standards, the test results are both the “worst case” and “worst setup”:

Y axis (see the test setup photo)

## 5.3 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC —Registration No.: 381383**

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 381383, Jan. 08, 2018.

- **Industry Canada (IC) —Registration No.: 9079A-2**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2, August 15, 2016.

## 5.4 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.  
No. 301-309, 3/F., Jinyuan Business Building, No.2, Laodong Industrial Zone,  
Xixiang Road, Baoan District, Shenzhen, Guangdong, China  
Tel: 0755-27798480  
Fax: 0755-27798960

## 5.5 Other Information Requested by the Customer

None.

## 5.6 Description of Support Units

| Manufacturer       | Description         | Model    | Serial Number |
|--------------------|---------------------|----------|---------------|
| Supplied by client | Key                 | MRD 1.4  | N/A           |
| Supplied by client | Officer Mobile Unit | 2PV4 OMU | N/A           |

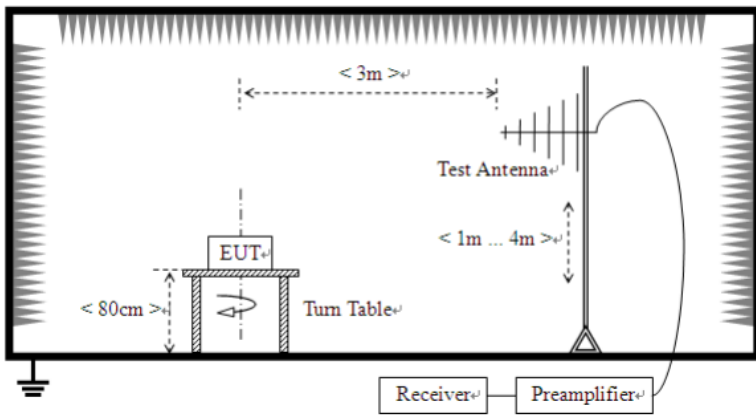
## 6 Test Instruments list

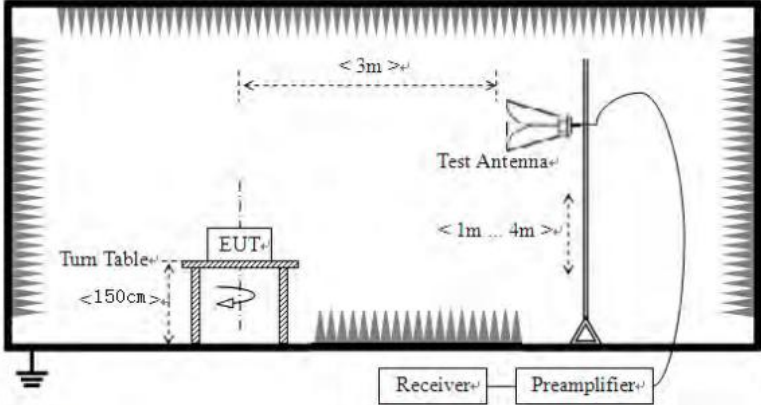
| Radiated Emission: |                               |                                |                             |               |                     |                         |
|--------------------|-------------------------------|--------------------------------|-----------------------------|---------------|---------------------|-------------------------|
| Item               | Test Equipment                | Manufacturer                   | Model No.                   | Inventory No. | Cal.Date (mm-dd-yy) | Cal.Due date (mm-dd-yy) |
| 1                  | 3m Semi- Anechoic Chamber     | ZhongYu Electron               | 9.2(L)*6.2(W)* 6.4(H)       | GTS250        | July 03 2015        | July 02 2020            |
| 2                  | Control Room                  | ZhongYu Electron               | 6.2(L)*2.5(W)* 2.4(H)       | GTS251        | N/A                 | N/A                     |
| 3                  | Spectrum Analyzer             | Agilent                        | E4440A                      | GTS533        | June 28 2017        | June 27 2018            |
| 4                  | EMI Test Receiver             | Rohde & Schwarz                | ESU26                       | GTS203        | June 28 2017        | June 27 2018            |
| 5                  | BiConiLog Antenna             | SCHWARZBECK<br>MESS-ELEKTRONIK | VULB9163                    | GTS214        | June 28 2017        | June 27 2018            |
| 6                  | Double -ridged waveguide horn | SCHWARZBECK<br>MESS-ELEKTRONIK | 9120D-829                   | GTS208        | June 28 2017        | June 27 2018            |
| 7                  | Horn Antenna                  | ETS-LINDGREN                   | 3160                        | GTS217        | June 28 2017        | June 27 2018            |
| 8                  | EMI Test Software             | AUDIX                          | E3                          | N/A           | N/A                 | N/A                     |
| 9                  | Coaxial Cable                 | GTS                            | N/A                         | GTS213        | June 28 2017        | June 27 2018            |
| 10                 | Coaxial Cable                 | GTS                            | N/A                         | GTS211        | June 28 2017        | June 27 2018            |
| 11                 | Coaxial cable                 | GTS                            | N/A                         | GTS210        | June 28 2017        | June 27 2018            |
| 12                 | Coaxial Cable                 | GTS                            | N/A                         | GTS212        | June 28 2017        | June 27 2018            |
| 13                 | Amplifier(100kHz-3GHz)        | HP                             | 8347A                       | GTS204        | June 28 2017        | June 27 2018            |
| 14                 | Amplifier(2GHz-20GHz)         | HP                             | 8349B                       | GTS206        | June 28 2017        | June 27 2018            |
| 15                 | Amplifier (18-26GHz)          | Rohde & Schwarz                | AFS33-18002<br>650-30-8P-44 | GTS218        | June 28 2017        | June 27 2018            |
| 16                 | Band filter                   | Amindeon                       | 82346                       | GTS219        | June 28 2017        | June 27 2018            |
| 17                 | Power Meter                   | Anritsu                        | ML2495A                     | GTS540        | June 28 2017        | June 27 2018            |
| 18                 | Power Sensor                  | Anritsu                        | MA2411B                     | GTS541        | June 28 2017        | June 27 2018            |

| General used equipment: |                |              |           |               |                     |                         |
|-------------------------|----------------|--------------|-----------|---------------|---------------------|-------------------------|
| Item                    | Test Equipment | Manufacturer | Model No. | Inventory No. | Cal.Date (mm-dd-yy) | Cal.Due date (mm-dd-yy) |
| 1                       | Barometer      | ChangChun    | DYM3      | GTS257        | June 28 2017        | June 27 2018            |

## 7 Test results and Measurement Data

### 7.1 Radiated Emission Method

|                                                                                                                                                          |                                                                                      |            |                    |        |                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|------------|--------------------|--------|------------------|
| Test Requirement:                                                                                                                                        | FCC Part15 C Section 15.209                                                          |            |                    |        |                  |
| Test Method:                                                                                                                                             | ANSI C63.10:2013                                                                     |            |                    |        |                  |
| Test Frequency Range:                                                                                                                                    | 30MHz to 5000MHz                                                                     |            |                    |        |                  |
| Test site:                                                                                                                                               | Measurement Distance: 3m                                                             |            |                    |        |                  |
| Receiver setup:                                                                                                                                          | Frequency                                                                            | Detector   | RBW                | VBW    | Remark           |
|                                                                                                                                                          | 30MHz-1GHz                                                                           | Quasi-peak | 120KHz             | 300KHz | Quasi-peak Value |
|                                                                                                                                                          | Above 1GHz                                                                           | Peak       | 1MHz               | 3MHz   | Peak Value       |
| Limit:<br>(Spurious Emissions)                                                                                                                           | Frequency                                                                            |            | Limit (dBuV/m @3m) |        | Remark           |
|                                                                                                                                                          | 30MHz-88MHz                                                                          |            | 40.00              |        | Quasi-peak Value |
|                                                                                                                                                          | 88MHz-216MHz                                                                         |            | 43.50              |        | Quasi-peak Value |
|                                                                                                                                                          | 216MHz-960MHz                                                                        |            | 46.00              |        | Quasi-peak Value |
|                                                                                                                                                          | 960MHz-1GHz                                                                          |            | 54.00              |        | Quasi-peak Value |
|                                                                                                                                                          | Above 1GHz                                                                           |            | 54.00              |        | Average Value    |
|                                                                                                                                                          |                                                                                      |            | 74.00              |        | Peak Value       |
| Or The maximum permitted unwanted emission level is 20 dB below the maximum permitted fundamental level whichever limit permits a higher field strength. |                                                                                      |            |                    |        |                  |
| Test setup:                                                                                                                                              | Below 1GHz                                                                           |            |                    |        |                  |
|                                                                                                                                                          |  |            |                    |        |                  |
|                                                                                                                                                          | Above 1GHz                                                                           |            |                    |        |                  |

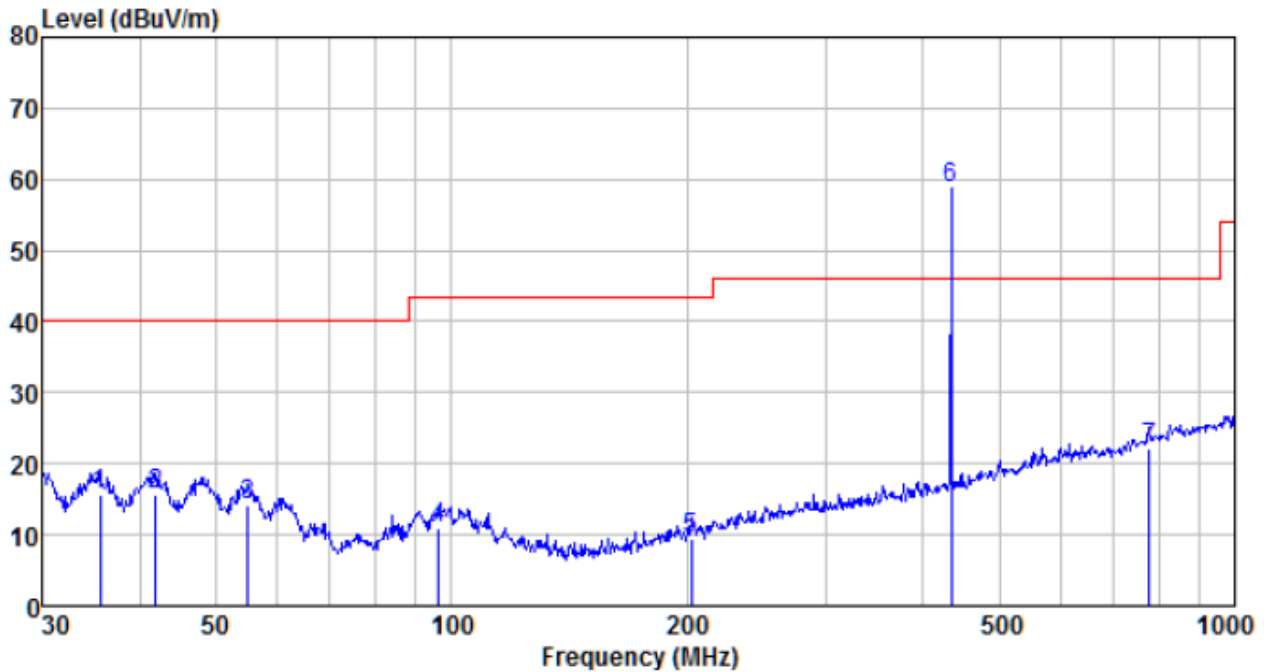
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <p>Test Procedure:</p>   | <ol style="list-style-type: none"> <li>1. During the test, the New Battery was used.</li> <li>2. The EUT was placed on the top of a rotating table (0.8 meters for below 1GHz and 1.5 meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.</li> <li>3. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</li> <li>4. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.</li> <li>5. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.</li> <li>6. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li> <li>7. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</li> </ol> |
| <p>Test Instruments:</p> | <p>Refer to section 6.0 for details</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <p>Test mode:</p>        | <p>Refer to section 5.2 for details</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <p>Test results:</p>     | <p>Pass</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

Measurement data:

## 7.1.1 Spurious emissions

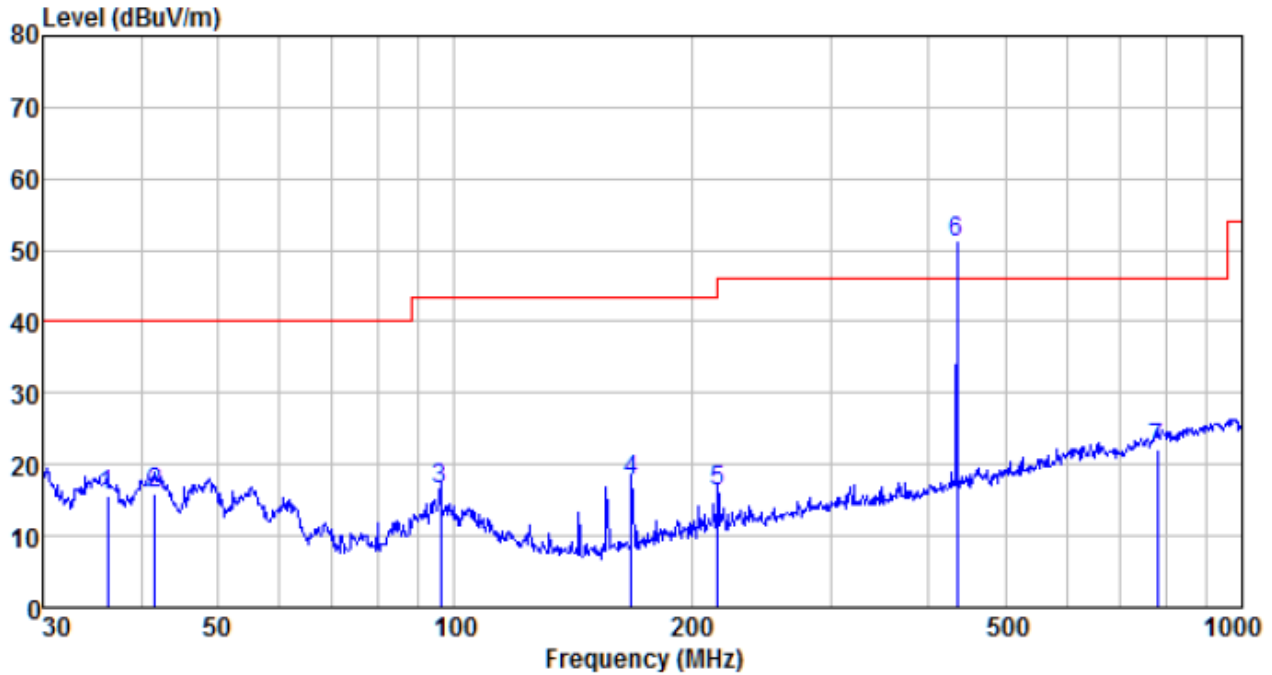
Below 1G

Horizontal:



| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark |
|-------------|--------------------------|---------------------------|---------------------|------------------------|---------------|--------------------------|---------------------|--------|
| 35.624      | 38.96                    | 11.42                     | 0.62                | 35.40                  | 15.60         | 40.00                    | -24.40              | QP     |
| 41.860      | 38.42                    | 12.22                     | 0.68                | 35.77                  | 15.55         | 40.00                    | -24.45              | QP     |
| 55.027      | 37.89                    | 11.78                     | 0.82                | 36.25                  | 14.24         | 40.00                    | -25.76              | QP     |
| 96.436      | 34.69                    | 11.72                     | 1.16                | 36.69                  | 10.88         | 43.50                    | -32.62              | QP     |
| 202.100     | 34.52                    | 10.47                     | 1.85                | 37.33                  | 9.51          | 43.50                    | -33.99              | QP     |
| 433.920     | 77.34                    | 16.03                     | 3.02                | 37.52                  | 58.87         | 46.00                    | 12.87               | Peak   |
| 776.878     | 34.44                    | 21.03                     | 4.37                | 37.62                  | 22.22         | 46.00                    | -23.78              | QP     |

Vertical:



| Freq<br>MHz | Reading<br>level<br>dBuV | Antenna<br>factor<br>dB/m | Cable<br>loss<br>dB | Preamp<br>factor<br>dB | level<br>dBuV | Limit<br>level<br>dBuV/m | Over<br>limit<br>dB | Remark |
|-------------|--------------------------|---------------------------|---------------------|------------------------|---------------|--------------------------|---------------------|--------|
| 36.254      | 38.94                    | 11.55                     | 0.62                | 35.44                  | 15.67         | 40.00                    | -24.33              | QP     |
| 41.713      | 38.68                    | 12.22                     | 0.68                | 35.76                  | 15.82         | 40.00                    | -24.18              | QP     |
| 96.099      | 40.45                    | 11.65                     | 1.16                | 36.69                  | 16.57         | 43.50                    | -26.93              | QP     |
| 167.824     | 44.67                    | 8.46                      | 1.67                | 37.18                  | 17.62         | 43.50                    | -25.88              | QP     |
| 216.024     | 40.56                    | 11.02                     | 1.93                | 37.35                  | 16.16         | 46.00                    | -29.84              | QP     |
| 433.920     | 69.59                    | 16.03                     | 3.02                | 37.52                  | 51.12         | 46.00                    | 5.12                | Peak   |
| 779.607     | 34.28                    | 21.03                     | 4.38                | 37.62                  | 22.07         | 46.00                    | -23.93              | QP     |

## Above 1G

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | PK Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|-------------------|---------------------|-----------------|--------------|
| 1250.00         | 39.99             | 25.52                 | 4.50            | 33.18                    | 36.83             | 74.00               | -37.17          | Vertical     |
| 2250.00         | 37.14             | 28.02                 | 5.24            | 34.17                    | 36.23             | 74.00               | -37.77          | Vertical     |
| 3560.00         | 33.22             | 29.09                 | 7.07            | 32.67                    | 36.71             | 74.00               | -37.29          | Vertical     |
| 4360.00         | 27.53             | 30.97                 | 8.21            | 31.87                    | 34.84             | 74.00               | -39.16          | Vertical     |
| 4780.00         | 27.98             | 31.75                 | 8.58            | 32.07                    | 36.24             | 74.00               | -37.76          | Vertical     |
| 5865.00         | 26.68             | 32.72                 | 10.02           | 32.21                    | 37.21             | 74.00               | -36.79          | Vertical     |
| 1300.00         | 37.16             | 25.63                 | 4.54            | 33.27                    | 34.06             | 74.00               | -39.94          | Horizontal   |
| 2085.00         | 38.19             | 26.85                 | 5.06            | 34.36                    | 35.74             | 74.00               | -38.26          | Horizontal   |
| 2950.00         | 38.23             | 28.43                 | 5.88            | 33.37                    | 39.17             | 74.00               | -34.83          | Horizontal   |
| 3755.00         | 31.70             | 29.30                 | 7.44            | 32.46                    | 35.98             | 74.00               | -38.02          | Horizontal   |
| 4400.00         | 28.42             | 31.09                 | 8.25            | 31.89                    | 35.87             | 74.00               | -38.13          | Horizontal   |
| 5540.00         | 27.27             | 32.09                 | 9.56            | 32.41                    | 36.51             | 74.00               | -37.49          | Horizontal   |

## 8 Test Setup Photo

Radiated Emission

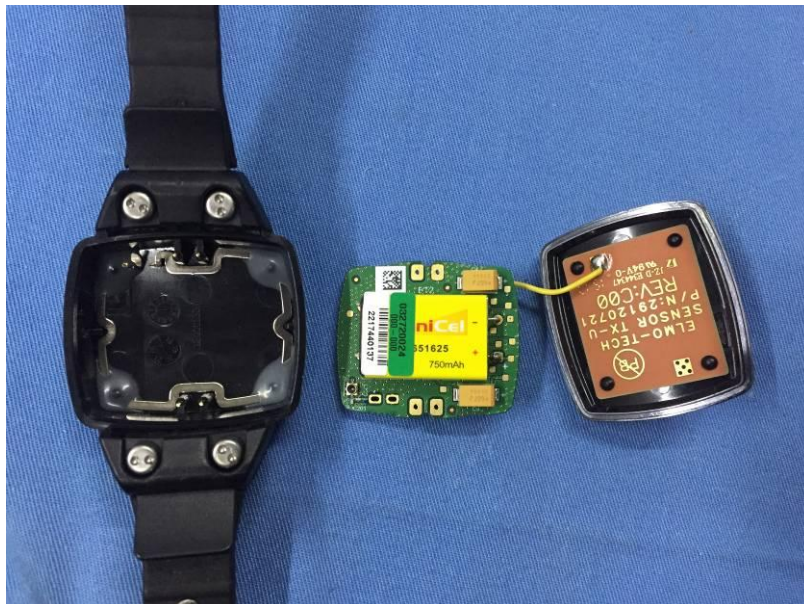


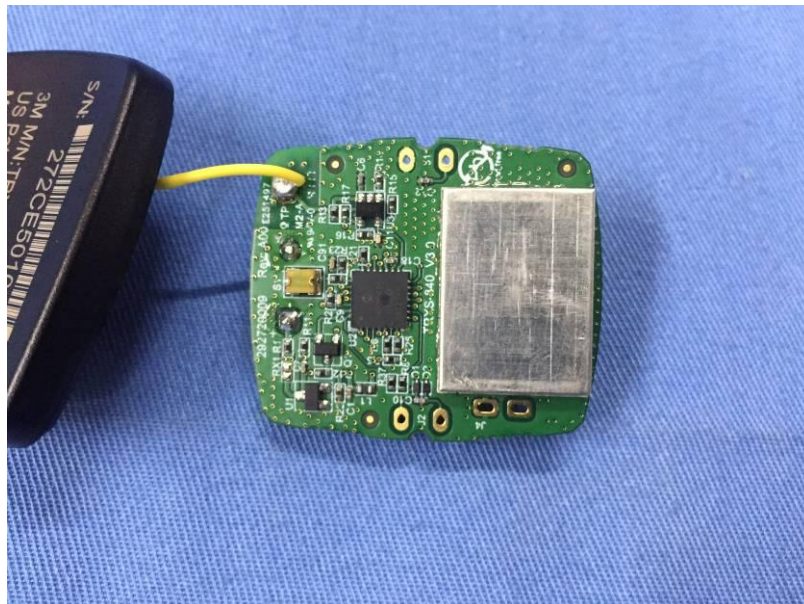
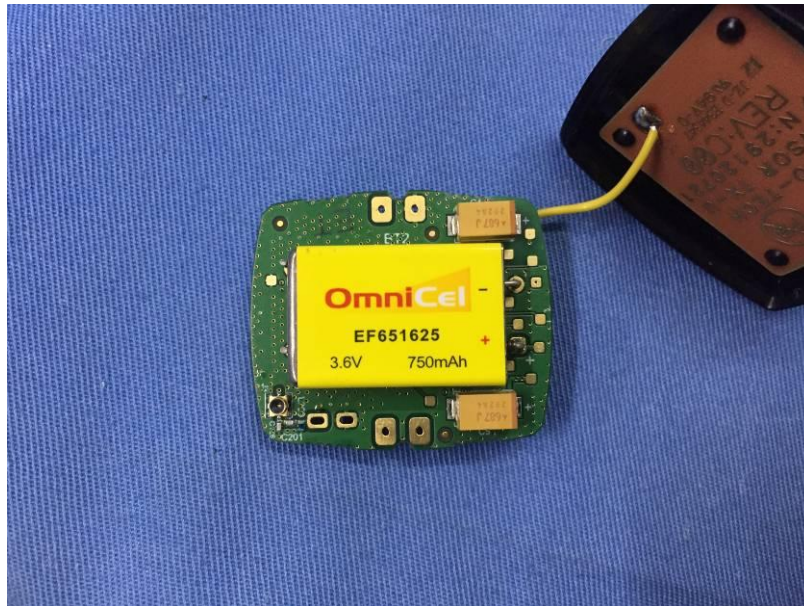
## 9 EUT Constructional Details

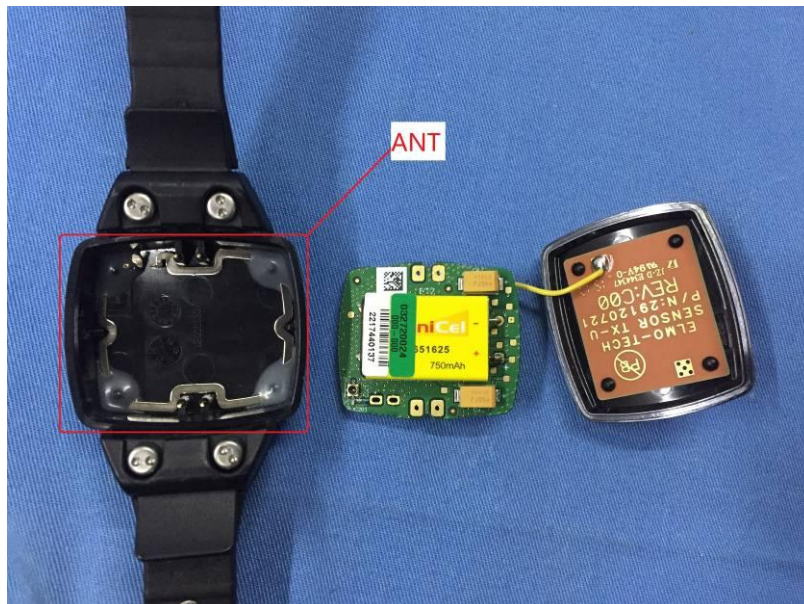












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