

**FCC - TEST REPORT**

Report Number : **60.790.19.013.01R01** Date of Issue : October 28, 2019

Model : **OTbeat Core2**

Product Type : **Heart Rate Monitor Chest strap and pod combo**

Applicant : **OTF Distribution, LLC**

Address : **6000 Broken Sound Parkway NW, Suite 201, Boca Raton,  
Florida 33487**

Production Facility : **KENDY ELECTRONICS (DONGGUAN) CO., LTD**

Address : **XIN SI HUANG TANG VILLAGE HENG LI TOWN,  
DONGGUANG CITY, GUANGDONG, CHINA**

Test Result : ☒ **Positive** ☐ **Negative**

Total pages including Appendices : 36

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## 2 Description of Equipment Under Test

### Description of the Equipment Under Test

Product: Heart Rate Monitor Chest strap and pod combo

Model no.: OTbeat Core2

FCC ID: 2APQGCORE2

Rating: 3V DC (CR2032 battery)

Frequency: 2402MHz-2480MHz (Tx and Rx)

Antenna gain: 0 dBi

Number of operated channel: 40

Modulation: GFSK

#### Auxiliary Equipment and Software Used during Test:

| DESCRIPTION | MANUFACTURER | MODEL NO. | S/N     |
|-------------|--------------|-----------|---------|
| Computer    | Lenovo       | X220      | 0A72168 |

#### Auxiliary Software Used during Test:

| DESCRIPTION           | SOFTWARE NAME | VERSION | REMARK                |
|-----------------------|---------------|---------|-----------------------|
| RF Test Mode Software | nRFgo         | 1.16    | Provided by applicant |

### 3 Summary of Test Standards

| Test Standards |
|----------------|
|----------------|

|                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| FCC Part 15 Subpart C 10-1-18 Edition<br>Federal Communications Commission, PART 15 — Radio Frequency Devices,<br>Subpart C — Unintentional Radiators |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|

All the tests were performed using the procedures from ANSI C63.4(2014) and ANSI C63.10 (2013).

## 4 Details about the Test Laboratory

### Site 1

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch  
 Building 12&13 Zhiheng Wisdomland Business Park,  
 Nantou Checkpoint Road 2,  
 Shenzhen 518052, P.R.China  
 FCC Registration Number: 502708

| Emission Tests                                                               |           |
|------------------------------------------------------------------------------|-----------|
| Test Item                                                                    | Test Site |
| <b>FCC Part 15 Subpart C</b>                                                 |           |
| FCC Title 47 Part 15.205, 15.209 & 15.247(d) Spurious Radiated Emission      | Site 1    |
| FCC Title 47 Part 15.207 Conduct Emission                                    | NIL       |
| FCC Title 47 Part 15.247(a)(1) 6dB & 99% Bandwidth                           | Site 1    |
| FCC Title 47 Part 15.247(b) Peak Output Power                                | Site 1    |
| FCC Title 47 Part 2.1051 & 15.247(d) Spurious Emissions at Antenna Terminals | Site 1    |
| FCC Title 47 Part 15.247(d) 100kHz Bandwidth of band edges                   | Site 1    |
| FCC Title 47 Part 15.247(e) Power Spectral Density                           | Site 1    |
| FCC Title 47 Part 15.203 & 15.247(b) Antenna Requirement                     | Site 1    |

## 4.1 Test Equipment Site List

### Radiated emission Test – Site 1

| DESCRIPTION                         | MANUFACTURER    | MODEL NO.         | SERIAL NO.      | CAL. DUE DATE |
|-------------------------------------|-----------------|-------------------|-----------------|---------------|
| EMI Test Receiver                   | Rohde & Schwarz | ESR 26            | 101269          | 2020-6-28     |
| Signal Analyzer                     | Rohde & Schwarz | FSV40             | 101031          | 2020-6-28     |
| Loop Antenna                        | Rohde & Schwarz | HFH2-Z2           | 100398          | 2020-7-7      |
| Trilog Super Broadband Test Antenna | Schwarzbeck     | VULB 9163         | 707             | 2020-7-5      |
| Horn Antenna                        | Rohde & Schwarz | HF907             | 102294          | 2020-6-22     |
| Wideband Horn Antenna               | Q-PAR           | QWH-SL-18-40-K-SG | 12827           | 2020-7-5      |
| Pre-amplifier                       | Rohde & Schwarz | SCU 18            | 102230          | 2020-6-28     |
| Pre-amplifier                       | Rohde & Schwarz | SCU 40A           | 100432          | 2020-6-28     |
| Attenuator                          | Agilent         | 8491A             | MY39264334      | 2020-6-28     |
| 3m Semi-anechoic chamber            | TDK             | 9X6X6             | ----            | 2020-7-7      |
| Test software                       | Rohde & Schwarz | EMC32             | Version 9.15.00 | N/A           |

### Conducted Emission Test – Site 1

| DESCRIPTION        | MANUFACTURER      | MODEL NO.      | SERIAL NO.     | CAL. DUE DATE |
|--------------------|-------------------|----------------|----------------|---------------|
| EMI Test Receiver  | Rohde & Schwarz   | ESR 3          | 101782         | 2020-6-28     |
| LISN               | Rohde & Schwarz   | ENV4200        | 100249         | 2020-6-28     |
| LISN               | Rohde & Schwarz   | ENV432         | 101318         | 2020-7-19     |
| LISN               | Rohde & Schwarz   | ENV216         | 100326         | 2020-6-28     |
| ISN                | Rohde & Schwarz   | ENY81          | 100177         | 2020-6-28     |
| ISN                | Rohde & Schwarz   | ENY81-CA6      | 101664         | 2020-6-28     |
| High Voltage Probe | Rohde & Schwarz   | TK9420(VT9420) | 9420-584       | 2020-6-24     |
| RF Current Probe   | Rohde & Schwarz   | EZ-17          | 100816         | 2020-7-2      |
| Attenuator         | Shanghai Huaxiang | TS2-26-3       | 080928189      | 2020-6-28     |
| Test software      | Rohde & Schwarz   | EMC32          | Version9.15.00 | N/A           |

### 20dB & 99% Bandwidth, Peak Output Power, Spurious Emissions at Antenna Terminals, 100kHz Bandwidth of band edges, Power Spectral Density – Site 1

| DESCRIPTION      | MANUFACTURER    | MODEL NO.       | SERIAL NO.    | CAL. DUE DATE |
|------------------|-----------------|-----------------|---------------|---------------|
| Signal Analyzer  | Rohde & Schwarz | FSV40           | 101030        | 2020-6-28     |
| RF Switch Module | Rohde & Schwarz | OSP120/OSP-B157 | 101226/100851 | 2020-6-28     |

## 4.2 Measurement System Uncertainty

### Measurement System Uncertainty Emissions

| System Measurement Uncertainty                                      |                                          |
|---------------------------------------------------------------------|------------------------------------------|
| Items                                                               | Extended Uncertainty                     |
| Uncertainty for Radiated Emission in 3m chamber<br>9kHz-30MHz       | 4.46dB                                   |
| Uncertainty for Radiated Emission in 3m chamber<br>30MHz-1000MHz    | Horizontal: 4.91dB;<br>Vertical: 4.89dB; |
| Uncertainty for Radiated Emission in 3m chamber<br>1000MHz-25000MHz | Horizontal: 4.80dB;<br>Vertical: 4.79dB; |
| Uncertainty for Conducted Emission at AC Power Line<br>150kHz-30MHz | 3.21dB                                   |
| Uncertainty for frequency test                                      | $0.6 \times 10^{-7}$                     |

## 5 Summary of Test Results

| Emission Tests                                                               |       |                                     |                          |                                     |
|------------------------------------------------------------------------------|-------|-------------------------------------|--------------------------|-------------------------------------|
| FCC Part 15 Subpart C                                                        |       |                                     |                          |                                     |
| Test Condition                                                               | Pages | Test Result                         |                          |                                     |
|                                                                              |       | Pass                                | Fail                     | N/A                                 |
| FCC Title 47 Part 15.205, 15.209 & 15.247(d) Spurious Radiated Emission      | 12-15 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| FCC Title 47 Part 15.207 Conduct Emission (1)                                | 16    | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| FCC Title 47 Part 15.247(a)(2) 6dB & 99% Bandwidth                           | 17-19 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| FCC Title 47 Part 15.247(b) Peak Output Power                                | 20-22 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| FCC Title 47 Part 2.1051 & 15.247(d) Spurious Emissions at Antenna Terminals | 23-28 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| FCC Title 47 Part 15.247(d) 100kHz Bandwidth of band edges                   | 29-31 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| FCC Title 47 Part 15.247(e) Power Spectral Density                           | 32-34 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| FCC Title 47 Part 15.203 & 15.247(b) Antenna Requirement                     | 35    | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |

Remark:

(1) Conducted Emission testing is not applicable for battery operating device.

## 6 General Remarks

### Remarks

This submittal(s) (test report) is intended for **FCC ID: 2APQGCORE2**, complies with Section 15.203, 15.205, 15.207, 15.209, 15.247 of the FCC Part 15, Subpart C rules for the DTS grant

The TX and RX range is 2402MHz-2480MHz.

### SUMMARY:

- All tests according to the regulations cited on page 8 were

☒ - Performed

☐ - **Not** Performed

- The Equipment Under Test

☒ - **Fulfills** the general approval requirements.

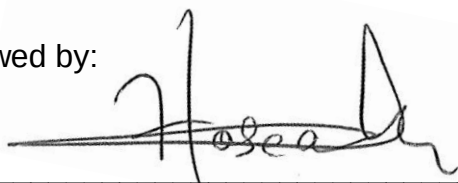
☐ - **Does not** fulfill the general approval requirements.

Sample Received Date: June 21, 2019

Testing Start Date: July 3, 2019

Testing End Date: July 23, 2019

Reviewed by:



Hosea CHAN  
EMC Project Engineer

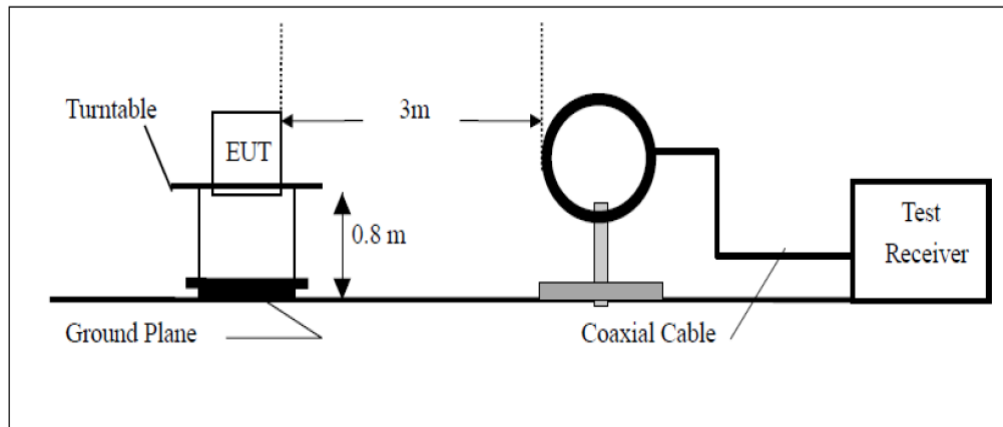
Prepared by:



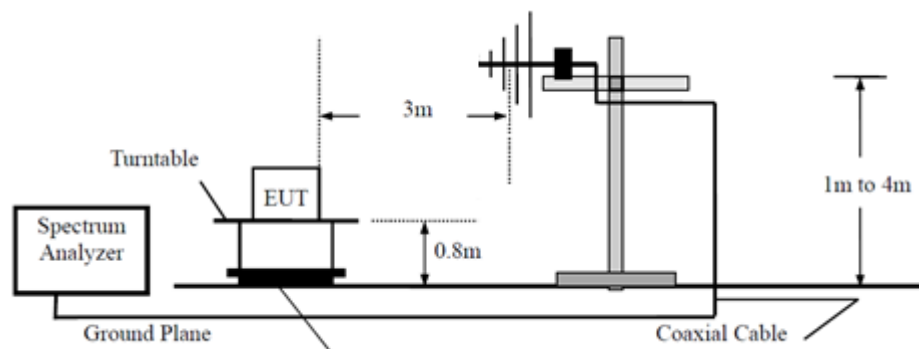
Eric LI  
EMC Senior Project Engineer

## 7 Test Setups

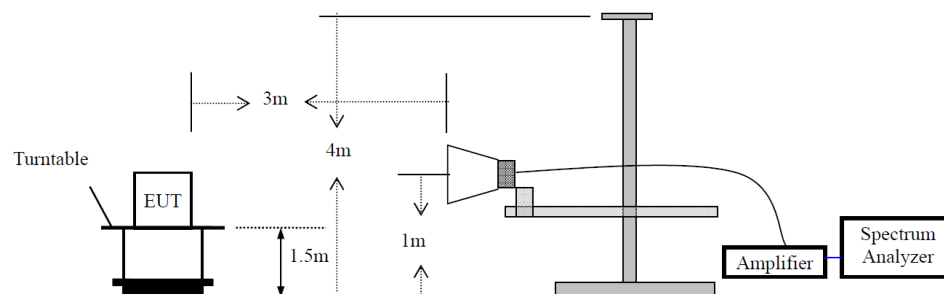
### 7.1 Radiated test setups 9kHz-30MHz



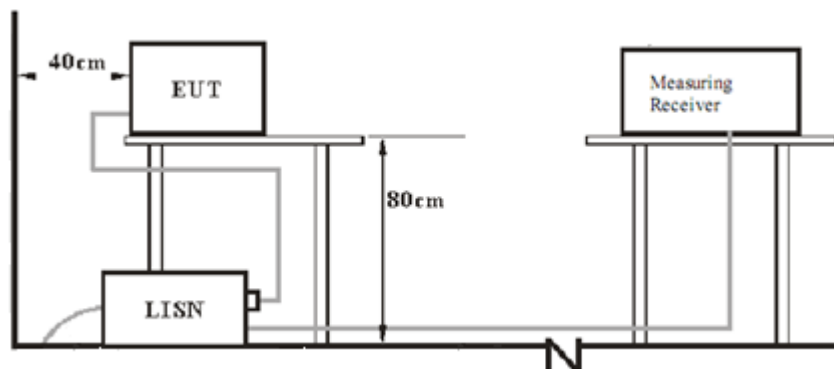
### 7.2 Radiated test setups Below 1GHz



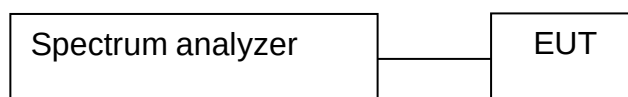
### 7.3 Radiated test setups Above 1GHz



## 7.4 AC Power Line Conducted Emission test setups



## 7.5 Conducted RF test setups



## 8 Emission Test Results

### 8.1 Spurious Radiated Emission

EUT: OTbeat Core2  
 Op Condition: Operated, TX Mode  
 (Low channel is the worst case)  
 Test Specification: FCC15.205, 15.209 & 15.247(d)  
 Comment: 3V DC  
 Remark: 9kHz to 1GHz

Test Result

☒ Passed☐ Not Passed

| Frequency<br>MHz | Result<br>dBμV/m | Limit<br>dBμV/m | Margin<br>dB | Detector<br>PK/QP/AV | Ant. Polarity<br>H/V | Corr.<br>(dB) |
|------------------|------------------|-----------------|--------------|----------------------|----------------------|---------------|
| 49.992778        | 20.34            | 40.00           | -19.66       | Peak                 | H                    | -24.6         |
| 104.151111       | 17.42            | 43.50           | -26.08       | Peak                 | H                    | -27.6         |
| 228.526667       | 21.83            | 46.00           | -24.17       | Peak                 | H                    | -23.6         |
| 453.458889       | 24.11            | 46.00           | -21.89       | Peak                 | H                    | -22.6         |
| 645.518889       | 29.08            | 46.00           | -16.92       | Peak                 | H                    | -19.2         |
| 848.787778       | 33.35            | 46.00           | -12.65       | Peak                 | H                    | -16.4         |
| 50.100556        | 20.27            | 40.00           | -19.73       | Peak                 | V                    | -24.6         |
| 107.115000       | 18.95            | 43.50           | -24.55       | Peak                 | V                    | -27.6         |
| 235.370556       | 22.91            | 46.00           | -23.09       | Peak                 | V                    | -23.9         |
| 552.075556       | 25.93            | 46.00           | -20.07       | Peak                 | V                    | -20.5         |
| 740.525000       | 29.09            | 46.00           | -16.91       | Peak                 | V                    | -17.8         |
| 933.123889       | 32.28            | 46.00           | -13.72       | Peak                 | V                    | -15.4         |

Remark:

- As the measured peak value not exceeded the Quasi-peak limit, Quasi-peak value no need to be measured.

## Spurious Radiated Emission

EUT: OTbeat Core2  
 Op Condition: Operated, TX Mode (2402MHz)  
 Test Specification: FCC15.205, 15.209 & 15.247(d)  
 Comment: 3V DC  
 Remark: 1GHz to 25GHz

| Test Result                         |            |
|-------------------------------------|------------|
| <input checked="" type="checkbox"/> | Passed     |
| <input type="checkbox"/>            | Not Passed |

| Frequency    | Result | Limit  | Margin | Detector | Ant. Polarity | Corr. |
|--------------|--------|--------|--------|----------|---------------|-------|
| MHz          | dBμV/m | dBμV/m | dB     | PK/QP/AV | H/V           | (dB)  |
| 1255.156250  | 30.85  | 54.00  | -23.15 | Peak     | H             | -12.0 |
| 4804.218750  | 44.32  | 54.00  | -9.68  | Peak     | H             | 2.7   |
| 7205.531250  | 38.20  | 54.00  | -15.80 | Peak     | H             | 5.0   |
| 10023.812500 | 39.74  | 54.00  | -14.26 | Peak     | H             | 8.5   |
| 15342.156250 | 48.01  | 54.00  | -5.99  | Peak     | H             | 18.6  |
| 1227.031250  | 30.25  | 54.00  | -23.75 | Peak     | V             | -12.1 |
| 4804.218750  | 41.07  | 54.00  | -12.93 | Peak     | V             | 2.7   |
| 7070.062500  | 37.75  | 54.00  | -16.25 | Peak     | V             | 5.8   |
| 12666.250000 | 42.21  | 54.00  | -11.79 | Peak     | V             | 12.8  |
| 17106.968750 | 48.62  | 54.00  | -5.38  | Peak     | V             | 20.4  |

Remark:

1.As the measured peak value not exceeded the average limit, average value no need to be measured.

## Spurious Radiated Emission

EUT: OTbeat Core2  
 Op Condition: Operated, TX Mode (2440MHz)  
 Test Specification: FCC15.205, 15.209 & 15.247(d)  
 Comment: 3V DC  
 Remark: 1GHz to 25GHz

| Test Result                         |            |
|-------------------------------------|------------|
| <input checked="" type="checkbox"/> | Passed     |
| <input type="checkbox"/>            | Not Passed |

| Frequency<br>MHz | Result<br>dBμV/m | Limit<br>dBμV/m | Margin<br>dB | Detector<br>PK/QP/AV | Ant.<br>Polarity<br>H/V | Corr.<br>(dB) |
|------------------|------------------|-----------------|--------------|----------------------|-------------------------|---------------|
| 1251.718750      | 30.15            | 54.00           | -23.85       | Peak                 | H                       | -12.1         |
| 4880.156250      | 45.31            | 54.00           | -8.69        | Peak                 | H                       | 2.9           |
| 7319.218750      | 39.91            | 54.00           | -14.09       | Peak                 | H                       | 5.2           |
| 10027.000000     | 40.82            | 54.00           | -13.18       | Peak                 | H                       | 8.5           |
| 15383.593750     | 46.89            | 54.00           | -7.11        | Peak                 | H                       | 18.4          |
| 1230.468750      | 30.79            | 54.00           | -23.21       | Peak                 | V                       | -12.1         |
| 4880.156250      | 45.24            | 54.00           | -8.76        | Peak                 | V                       | 5.9           |
| 7050.406250      | 37.97            | 54.00           | -16.03       | Peak                 | V                       | 9.0           |
| 9459.093750      | 40.79            | 54.00           | -13.21       | Peak                 | V                       | 18.0          |
| 15633.281250     | 46.15            | 54.00           | -7.85        | Peak                 | V                       | 5.9           |

Remark:

1.As the measured peak value not exceeded the average limit, average value no need to be measured.

## Spurious Radiated Emission

EUT: OTbeat Core2  
 Op Condition: Operated, TX Mode (2480MHz)  
 Test Specification: FCC15.205, 15.209 & 15.247(d)  
 Comment: 3V DC  
 Remark: 1GHz to 25GHz

| Test Result                         |            |
|-------------------------------------|------------|
| <input checked="" type="checkbox"/> | Passed     |
| <input type="checkbox"/>            | Not Passed |

| Frequency<br>MHz | Result<br>dBμV/m | Limit<br>dBμV/m | Margin<br>dB | Detector<br>PK/QP/AV | Ant.<br>Polarity<br>H/V | Corr.<br>(dB) |
|------------------|------------------|-----------------|--------------|----------------------|-------------------------|---------------|
| 1253.906250      | 30.79            | 54.00           | -23.21       | Peak                 | H                       | -12.0         |
| 4960.156250      | 45.80            | 54.00           | -8.20        | Peak                 | H                       | 3.3           |
| 7440.343750      | 42.51            | 54.00           | -11.49       | Peak                 | H                       | 6.0           |
| 10168.312500     | 39.58            | 54.00           | -14.42       | Peak                 | H                       | 8.7           |
| 15860.125000     | 47.60            | 54.00           | -6.40        | Peak                 | H                       | 18.2          |
| 1230.937500      | 29.64            | 54.00           | -24.36       | Peak                 | V                       | -12.1         |
| 4960.156250      | 42.79            | 54.00           | -11.21       | Peak                 | V                       | 3.3           |
| 7023.843750      | 37.63            | 54.00           | -16.37       | Peak                 | V                       | 5.6           |
| 9439.437500      | 39.94            | 54.00           | -14.06       | Peak                 | V                       | 8.9           |
| 15388.375000     | 46.12            | 54.00           | -7.88        | Peak                 | V                       | 18.4          |

Remark:

- 1.As the measured peak value not exceeded the average limit, average value no need to be measured.

## 8.2 Conducted Emission at AC Power line

Conducted Emission testing is not applicable for this device as it is a battery operating device.

### 8.3 6dB & 99% Bandwidth

EUT:

Op Condition:

Test Specification:

Comment:

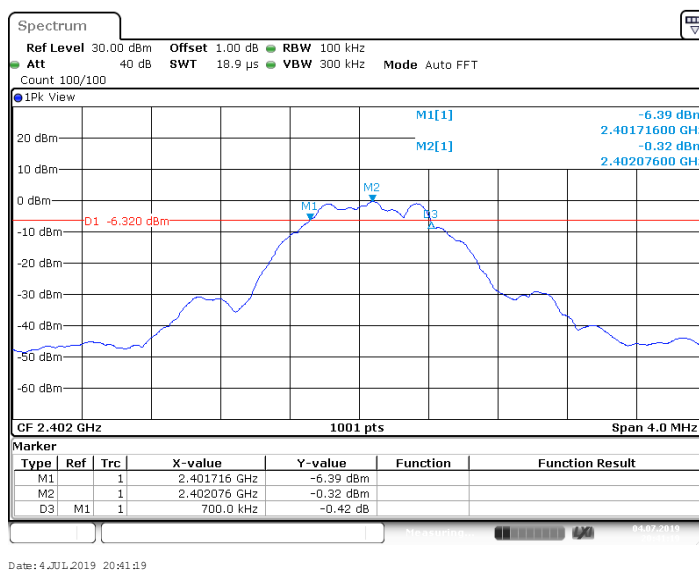
OTbeat Core2

Operated, TX Mode (2402MHz)

FCC15.247(a)(2), 6dB Bandwidth &amp; 99% Bandwidth

3V DC

Test Result

☒ Passed☐ Not Passed

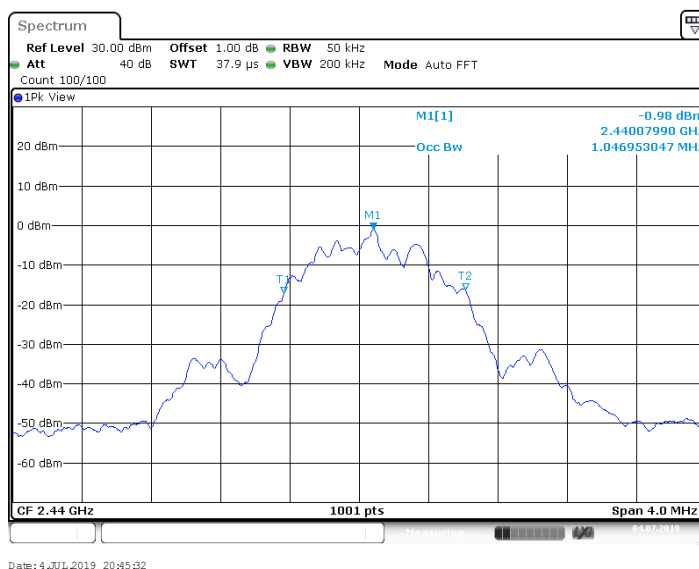
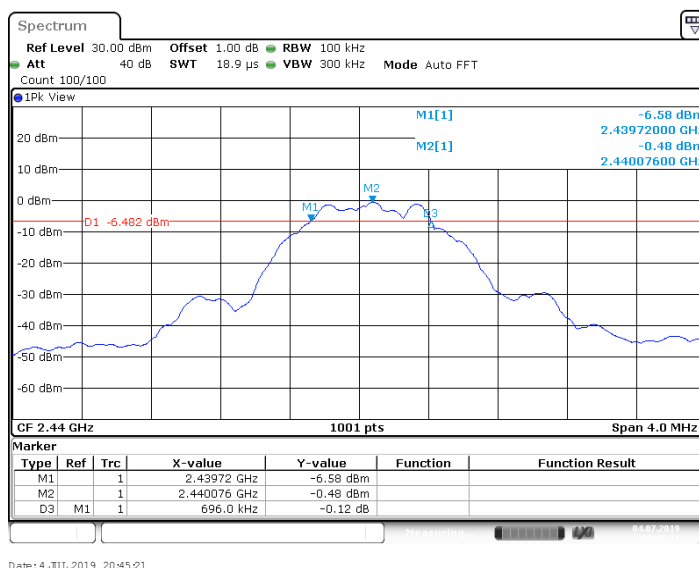
| Bandwidth     | Measured Value | Limit    |
|---------------|----------------|----------|
| 6dB bandwidth | 0.700 MHz      | > 0.5MHz |
| 99% OCB       | 1.043 MHz      | NA       |

## 6dB & 99% Bandwidth

EUT: OTbeat Core2  
 Op Condition: Operated, TX Mode (2440MHz)  
 Test Specification: FCC15.247(a)(2), 6dB Bandwidth & 99% Bandwidth  
 Comment: 3V DC

### Test Result

☒ Passed  
☐ Not Passed



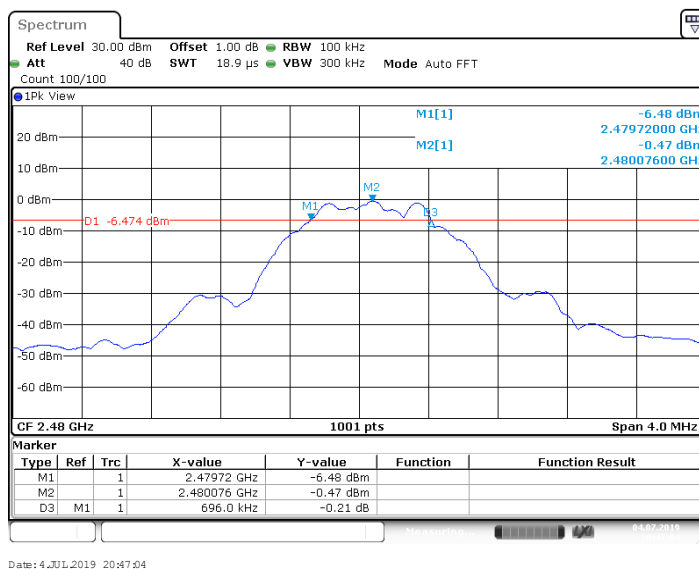
| Bandwidth     | Measured Value | Limit     |
|---------------|----------------|-----------|
| 6dB bandwidth | 0.696 MHz      | > 0.5 MHz |
| 99% OCB       | 1.047 MHz      | NA        |

## 6dB & 99% Bandwidth

EUT: OTbeat Core2  
 Op Condition: Operated, TX Mode (2480MHz)  
 Test Specification: FCC15.247(a)(2), 6dB Bandwidth & 99% Bandwidth  
 Comment: 3V DC

### Test Result

☒ Passed  
☐ Not Passed



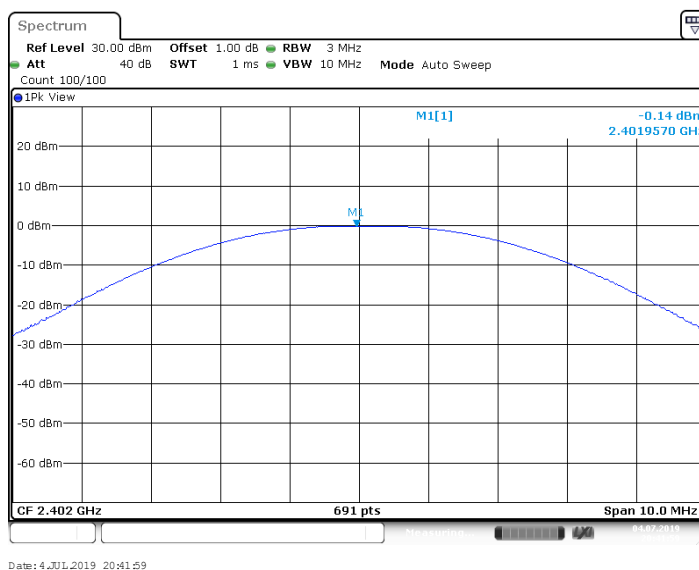
| Bandwidth     | Measured Value | Limit     |
|---------------|----------------|-----------|
| 6dB bandwidth | 0.696 MHz      | > 0.5 MHz |
| 99% OCB       | 1.055 MHz      | NA        |

## 8.4 Peak Output Power

EUT: OTbeat Core2  
 Op Condition: Operated, TX Mode (2402MHz)  
 Test Specification: FCC15.247(b)  
 Comment: 3V DC

### Test Result

☒ Passed  
☐ Not Passed

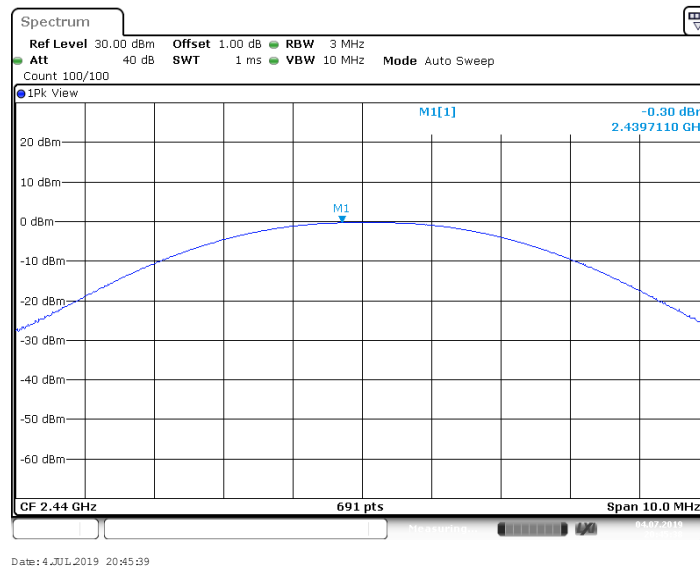


| Conducted Output Power | Limit   |
|------------------------|---------|
| -0.14 dBm              | < 30dBm |

**Peak Output Power**

EUT: OTbeat Core2  
Op Condition: Operated, TX Mode (2440MHz)  
Test Specification: FCC15.247(b)  
Comment: 3V DC

| Test Result                         |            |
|-------------------------------------|------------|
| <input checked="" type="checkbox"/> | Passed     |
| <input type="checkbox"/>            | Not Passed |



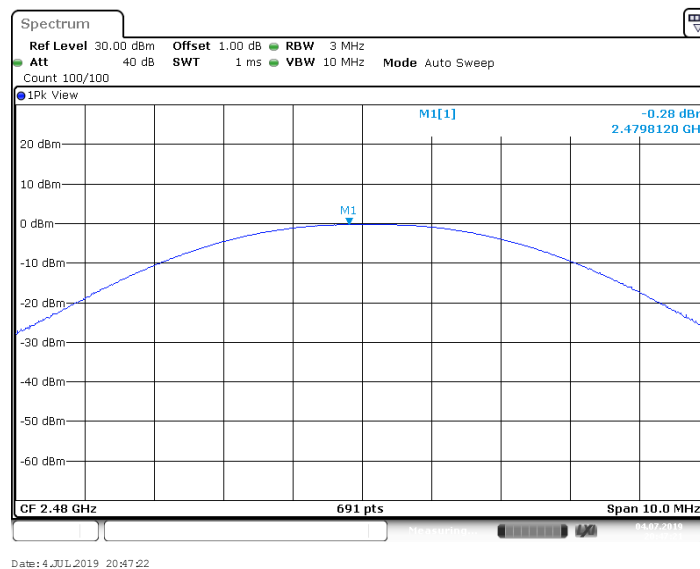
| Conducted Output Power | Limit   |
|------------------------|---------|
| -0.30 dBm              | < 30dBm |

**Peak Output Power**

EUT: OTbeat Core2  
Op Condition: Operated, TX Mode (2480MHz)  
Test Specification: FCC15.247(b)  
Comment: 3V DC

**Test Result**

☒ Passed  
☐ Not Passed



| Conducted Output Power | Limit   |
|------------------------|---------|
| -0.28 dBm              | < 30dBm |

## 8.5 Spurious Emissions at Antenna Terminals

EUT: OTbeat Core2  
 Op Condition: Operated, TX Mode (2402MHz)  
 Test Specification: FCC2.1051 & 15.247(d)  
 Comment: 3V DC

### Test Result

☒ Passed

☐ Not Passed

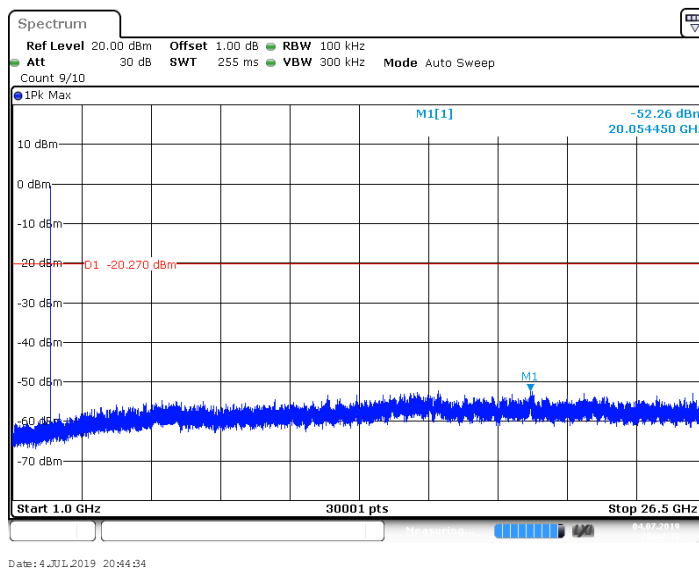
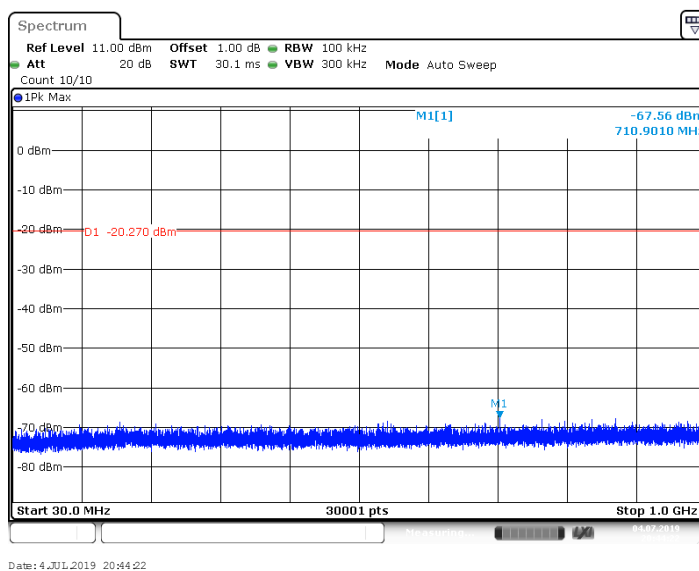
| Channel | FreqRange  | RefLevel | Result | Limit    | Verdict |
|---------|------------|----------|--------|----------|---------|
| 2402    | Reference  | -0.27    | -0.27  | ---      | PASS    |
| 2402    | 30~1000    | -0.27    | -67.56 | <=-20.27 | PASS    |
| 2402    | 1000~26500 | -0.27    | -52.26 | <=-20.27 | PASS    |



## Spurious Emissions at Antenna Terminals

EUT: OTbeat Core2  
Op Condition: Operated, TX Mode (2402MHz)  
Test Specification: FCC2.1051 & 15.247(d)  
Comment: 3V DC

Test Result

☒ Passed☐ Not Passed

## Spurious Emissions at Antenna Terminals

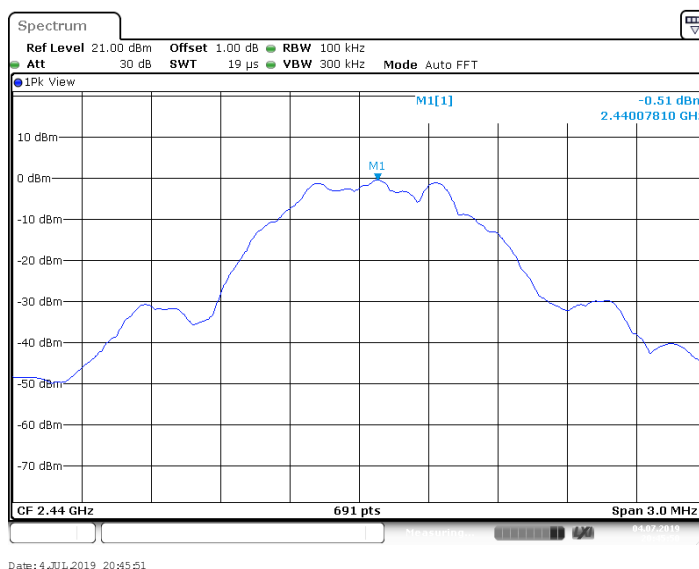
EUT: OTbeat Core2  
 Op Condition: Operated, TX Mode (2440MHz)  
 Test Specification: FCC2.1051 & 15.247(d)  
 Comment: 3V DC

### Test Result

☒ Passed

☐ Not Passed

| Channel | FreqRange  | RefLevel | Result | Limit    | Verdict |
|---------|------------|----------|--------|----------|---------|
| 2440    | Reference  | -0.51    | -0.51  | ---      | PASS    |
| 2440    | 30~1000    | -0.51    | -68.27 | <=-20.51 | PASS    |
| 2440    | 1000~26500 | -0.51    | -52.73 | <=-20.51 | PASS    |



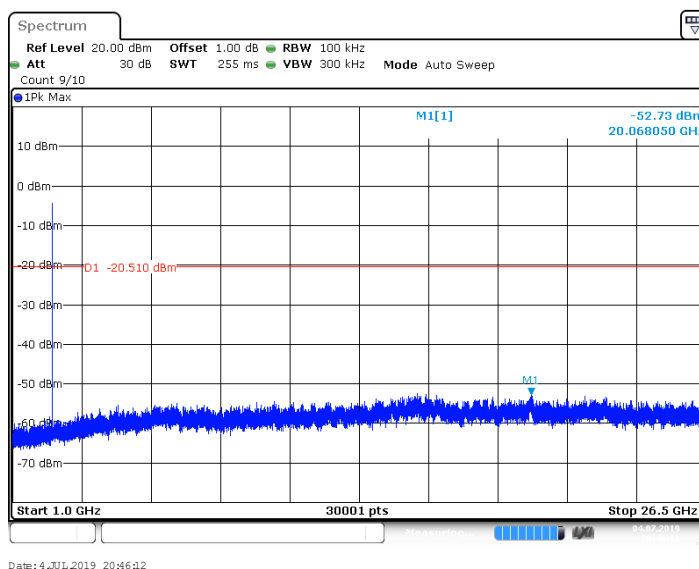
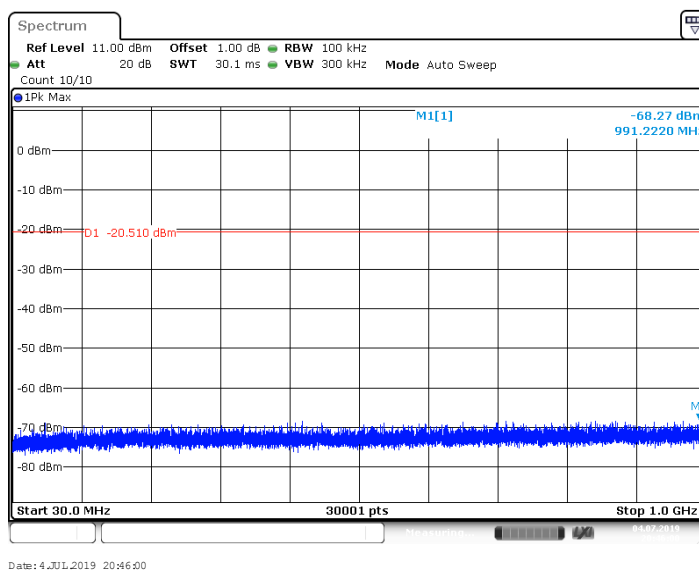
## Spurious Emissions at Antenna Terminals

EUT: OTbeat Core2  
Op Condition: Operated, TX Mode (2440MHz)  
Test Specification: FCC2.1051 & 15.247(d)  
Comment: 3V DC

Test Result

☒ Passed

☐ Not Passed



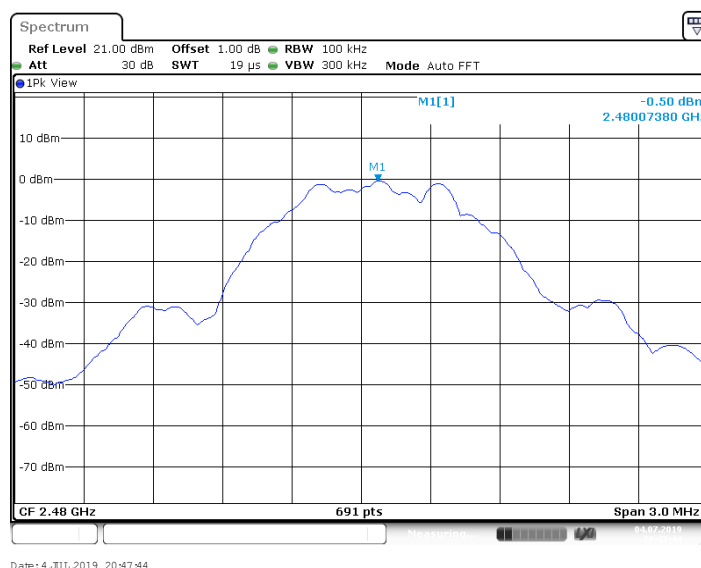
## Spurious Emissions at Antenna Terminals

EUT: OTbeat Core2  
 Op Condition: Operated, TX Mode (2480MHz)  
 Test Specification: FCC2.1051 & 15.247(d)  
 Comment: 3V DC

### Test Result

☒ Passed  
☐ Not Passed

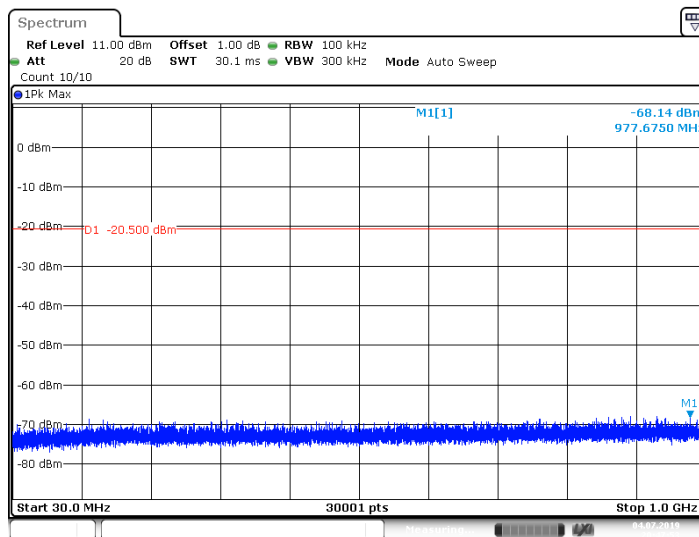
| Channel | FreqRange  | RefLevel | Result | Limit        | Verdict |
|---------|------------|----------|--------|--------------|---------|
| 2480    | Reference  | -0.50    | -0.50  | ---          | PASS    |
| 2480    | 30~1000    | -0.50    | -68.14 | $\leq -20.5$ | PASS    |
| 2480    | 1000~26500 | -0.50    | -52.31 | $\leq -20.5$ | PASS    |



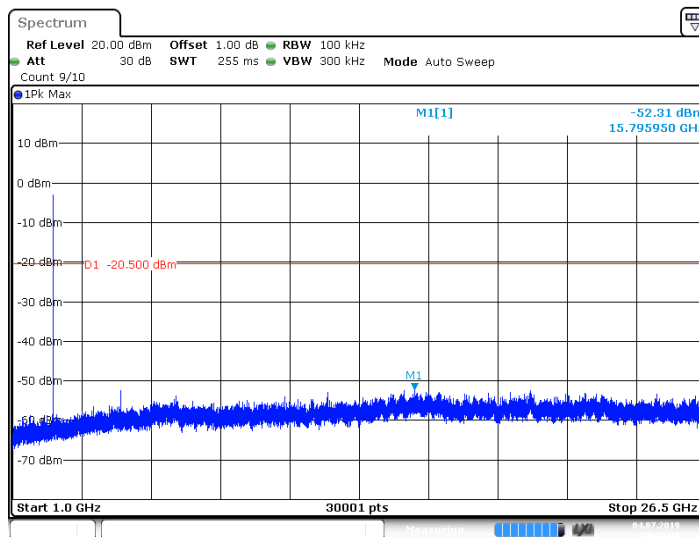
## Spurious Emissions at Antenna Terminals

EUT: OTbeat Core2  
Op Condition: Operated, TX Mode (2480MHz)  
Test Specification: FCC2.1051 & 15.247(d)  
Comment: 3V DC

Test Result

☒ Passed☐ Not Passed

Date: 4 JUL 2019 20:47:53



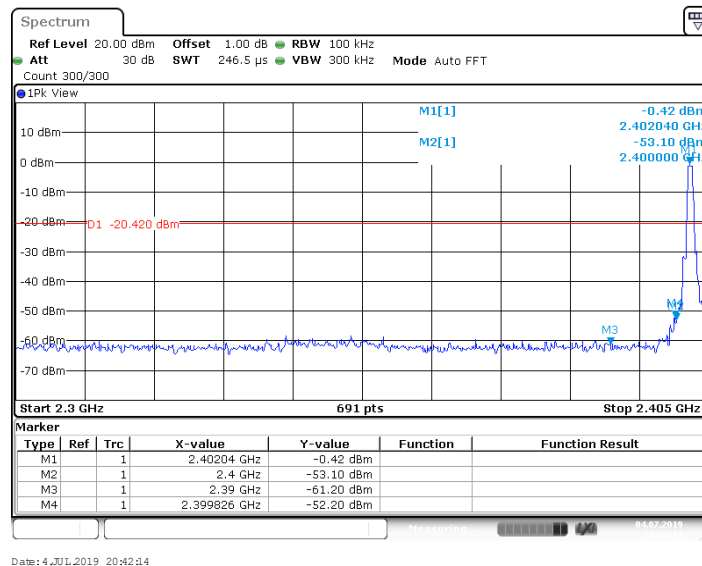
Date: 4 JUL 2019 20:48:05

## 8.6 100kHz Bandwidth of band edges

EUT: OTbeat Core2  
 Op Condition: Operated, TX Mode (2402MHz)  
 Test Specification: FCC15.247(d), Conducted  
 Comment: 3V DC

### Test Result

☒ Passed  
☐ Not Passed



| Band edges | Limit  |
|------------|--------|
| 52.66 dB   | > 20dB |

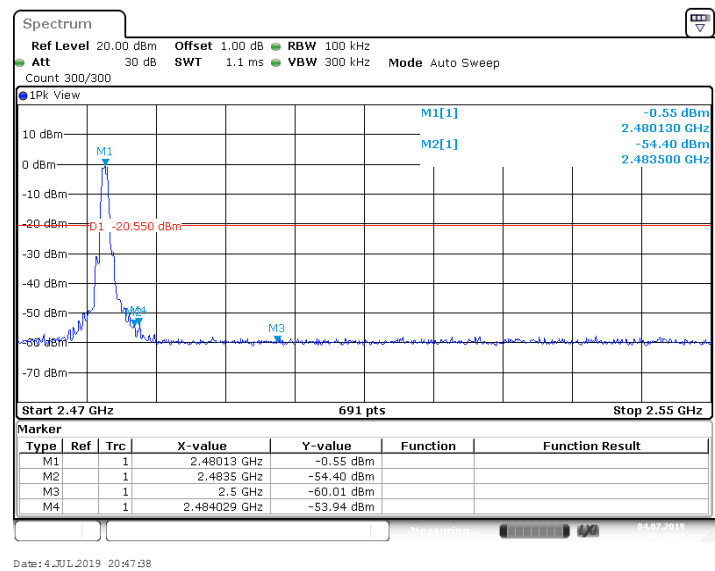
100kHz Bandwidth of band edges

EUT: OTbeat Core2  
Op Condition: Operated, TX Mode (2480MHz)  
Test Specification: FCC15.247(d), Conducted  
Comment: 3V DC

Test Result

☒ Passed

☐ Not Passed



|            |        |
|------------|--------|
| Band edges | Limit  |
| 53.85 dB   | > 20dB |

### 100kHz Bandwidth of band edges

EUT: OTbeat Core2  
 Op Condition: Operated, TX Mode (2402MHz & 2480MHz)  
 Test Specification: FCC15.247(d), Radiated method  
 Comment: 3V DC

| Test Result                         |            |
|-------------------------------------|------------|
| <input checked="" type="checkbox"/> | Passed     |
| <input type="checkbox"/>            | Not Passed |

| Channel | Frequency<br>MHz | Result<br>dBμV/m | Limit<br>dBμV/m | Margin<br>dB | Detector<br>PK /AV | Ant. Polarity<br>H/V | Corr.<br>(dB) |
|---------|------------------|------------------|-----------------|--------------|--------------------|----------------------|---------------|
| 2402    | 2400.00          | 44.52            | 74.00           | -29.48       | Peak               | H                    | -5.5          |
| 2402    | 2400.00          | 36.18            | 54.00           | -17.82       | Average            | H                    | -5.5          |
| 2402    | 2400.00          | 41.77            | 74.00           | -32.23       | Peak               | V                    | -5.5          |
| 2402    | 2400.00          | 33.65            | 54.00           | -20.35       | Average            | V                    | -5.5          |
| 2480    | 2483.50          | 42.51            | 74.00           | -31.49       | Peak               | H                    | -4.8          |
| 2480    | 2483.50          | 33.83            | 54.00           | -20.17       | Average            | H                    | -4.8          |
| 2480    | 2483.50          | 43.66            | 74.00           | -30.34       | Peak               | V                    | -4.8          |
| 2480    | 2483.50          | 34.15            | 54.00           | -19.85       | Average            | V                    | -4.8          |

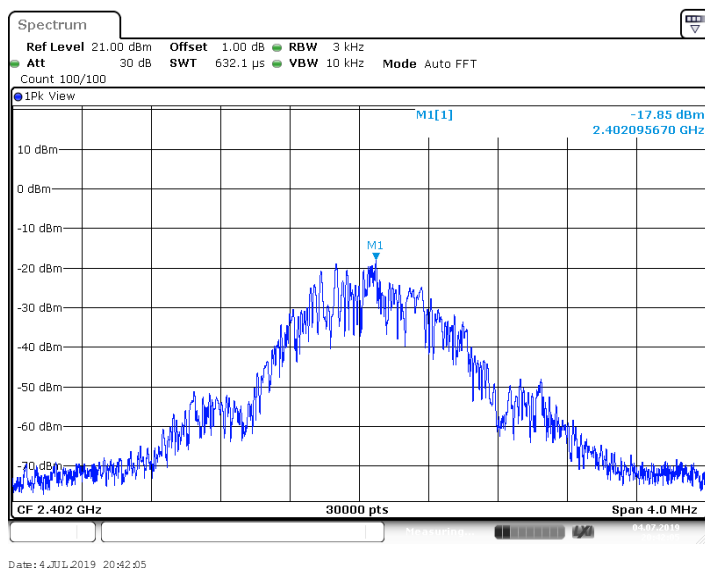
## 8.7 Power Spectral Density

EUT: OTbeat Core2  
 Op Condition: Operated, TX Mode (2402MHz)  
 Test Specification: FCC15.247(e)  
 Comment: 3V DC

Test Result

☒ Passed

☐ Not Passed

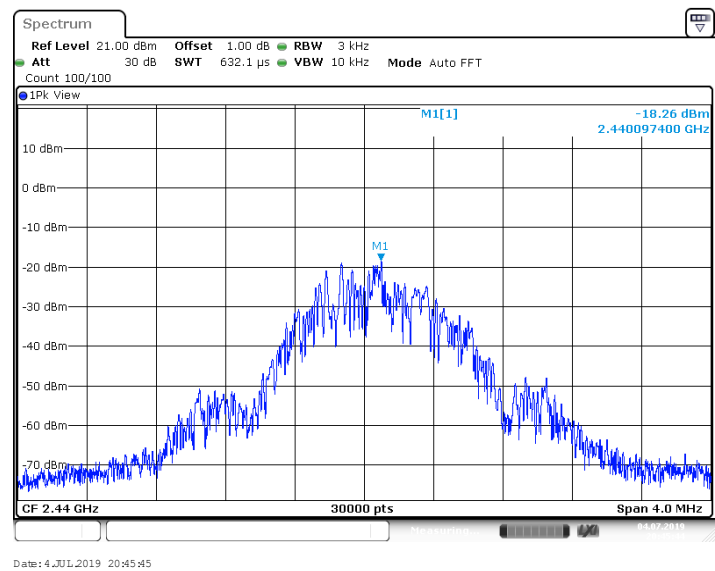


| PSD        | Limit   |
|------------|---------|
| -17.85 dBm | < 8 dBm |

Power Spectral Density

EUT: OTbeat Core2  
Op Condition: Operated, TX Mode (2440MHz)  
Test Specification: FCC15.247(e)  
Comment: 3V DC

|                                     |            |
|-------------------------------------|------------|
| Test Result                         |            |
| <input checked="" type="checkbox"/> | Passed     |
| <input type="checkbox"/>            | Not Passed |

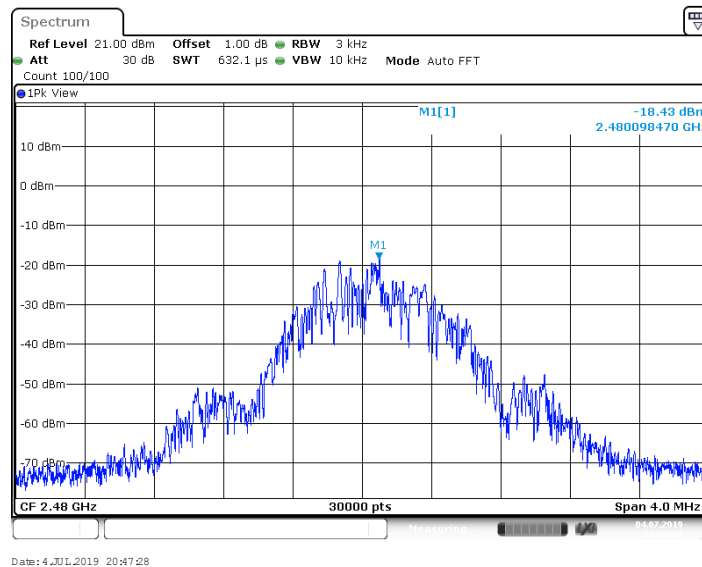


| PSD        | Limit   |
|------------|---------|
| -18.26 dBm | < 8 dBm |

**Power Spectral Density**

EUT: OTbeat Core2  
Op Condition: Operated, TX Mode (2480MHz)  
Test Specification: FCC15.247(e)  
Comment: 3V DC

Test Result

☒ Passed☐ Not Passed

| PSD        | Limit   |
|------------|---------|
| -18.43 dBm | < 8 dBm |

## 8.8 Antenna Requirement

EUT: OTbeat Core2  
Op Condition: Operated, TX Mode  
Test Specification: FCC15.203 & 15.247(b)  
Comment: 3V DC

| Test Result                                |            |
|--------------------------------------------|------------|
| <input checked="checked" type="checkbox"/> | Passed     |
| <input type="checkbox"/>                   | Not Passed |

### Limit

For intentional device, according to FCC Title 47 Part 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC Title 47 Part 15.247(b), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### Antenna Connector Construction

The antenna used in this product is integrated antenna on PCB, and the maximum gain of this antenna is 0.0 dBi.

## 9 Appendix A - General Product Information

### Radiofrequency radiation exposure evaluation

According to KDB 447498 D01v06 section 4.3.1, For frequencies between 100 MHz to 6GHz and test separation distances  $\leq 50$  mm, the Numeric threshold is determined as:

Step a)

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$  for 1-g SAR

>> The fundamental frequency of the EUT is 2402-2480MHz,  
the test separation distance is  $\leq 50$ mm.  
(Manufacturer specified the separation distance is: 5mm)

Step a)

>> Numeric threshold (2402MHz),  $\text{mW} / 5\text{mm} \cdot \sqrt{2.402\text{GHz}} \leq 3.0$   
Numeric threshold (2402MHz)  $\leq 9.678\text{mW}$

>> Numeric threshold (2440MHz),  $\text{mW} / 5\text{mm} \cdot \sqrt{2.440\text{GHz}} \leq 3.0$   
Numeric threshold (2440MHz)  $\leq 9.602\text{mW}$

>> Numeric threshold (2480MHz),  $\text{mW} / 5\text{mm} \cdot \sqrt{2.480\text{GHz}} \leq 3.0$   
Numeric threshold (2480MHz)  $\leq 9.525\text{mW}$

>> The power of EUT measured (2402MHz) is:  $-0.14\text{dBm} = 0.968\text{mW}$   
The power of EUT measured (2440MHz) is:  $-0.30\text{dBm} = 0.933\text{mW}$   
The power of EUT measured (2480MHz) is:  $-0.28\text{dBm} = 0.938\text{mW}$

Which is smaller than the Numeric threshold.

Therefore, the device is exempt from stand-alone SAR test requirements.