

**FCC - TEST REPORT**

Report Number : **60.790.18.050.01R02** Date of Issue : February 20, 2019

Model : **75003PP01**

Product Type : **BLE Smart Watch**

Applicant : TITAN COMPANY LTD

Address : Integrity, #193, Veerasandra, Electronics City P.O., Off Hosur Main Road, Bangalore, India

Production Facility : Kendy Electronics (Dongguan) Co. Ltd

Address : Xingsi Huangtang Village, Hengli Town, Dongguan City, Guangdong Province, P.R.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:                    | BLE Smart watch   |
| Model no.:                  | 75003PP01   |
| FCC ID:                     | 2AK9F-7500  |
| Rating:                     | 3.8V DC form internal rechargeable battery<br>5V DC form USB charging cable |
| 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 |
|-------------|--------------|-----------|-----|
| Adapter     | Apple        | A1357     | /   |

Note: 1. Adapter is used as a supporting device for Conducted Emission test.  
2. Manufacture pre-installed the test mode firmware, to keep continuous transmitting at wanted channel for RF testing.

### 3 Summary of Test Standards

| Test Standards  |
|---|
| FCC Part 15 Subpart C 10-1-17 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 Hong Kong Ltd.  
3/F, West Wing, Lakeside 2,  
10 Science Park West Avenue,  
Science Park, Shatin, Hong Kong

### Site 2

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 2    |
| FCC Title 47 Part 15.207 Conduct Emission                                    | Site 2    |
| FCC Title 47 Part 15.247 Bandedge Emission                                   | Site 2    |
| FCC Title 47 Part 15.247(a)(1) 6dB & 99% Bandwidth                           | Site 2    |
| FCC Title 47 Part 15.247(b) Peak Output Power                                | Site 2    |
| FCC Title 47 Part 2.1051 & 15.247(d) Spurious Emissions at Antenna Terminals | Site 2    |
| FCC Title 47 Part 15.247(d) 100kHz Bandwidth of band edges                   | Site 2    |
| FCC Title 47 Part 15.247(e) Power Spectral Density                           | Site 2    |
| FCC Title 47 Part 15.203 & 15.247(b) Antenna Requirement                     | Site 2    |

## 4.1 Test Equipment Site List

### Radiated emission Test – Site 2

| DESCRIPTION                         | MANUFACTURER    | MODEL NO.         | SERIAL NO.      | CAL. DUE DATE |
|-------------------------------------|-----------------|-------------------|-----------------|---------------|
| EMI Test Receiver                   | Rohde & Schwarz | ESR 26            | 101269          | 2019-7-6      |
| Signal Analyzer                     | Rohde & Schwarz | FSV40             | 101031          | 2019-7-6      |
| Loop Antenna                        | Rohde & Schwarz | HFH2-Z2           | 100398          | 2019-7-6      |
| Trilog Super Broadband Test Antenna | Schwarzbeck     | VULB 9163         | 707             | 2019-6-28     |
| Horn Antenna                        | Rohde & Schwarz | HF907             | 102294          | 2019-6-28     |
| Wideband Horn Antenna               | Q-PAR           | QWH-SL-18-40-K-SG | 12827           | 2019-7-12     |
| Pre-amplifier                       | Rohde & Schwarz | SCU 18            | 102230          | 2019-7-6      |
| Pre-amplifier                       | Rohde & Schwarz | SCU 40A           | 100432          | 2019-7-6      |
| Signal Generator                    | Rohde & Schwarz | SMY01             | 839369/005      | 2019-7-6      |
| Attenuator                          | Agilent         | 8491A             | MY39264334      | 2019-7-6      |
| 3m Semi-anechoic chamber            | TDK             | 9X6X6             | ----            | 2020-7-7      |
| Test software                       | Rohde & Schwarz | EMC32             | Version 9.15.00 | N/A           |

### Conducted Emission Test – Site 2

| DESCRIPTION        | MANUFACTURER      | MODEL NO.      | SERIAL NO.     | CAL. DUE DATE |
|--------------------|-------------------|----------------|----------------|---------------|
| EMI Test Receiver  | Rohde & Schwarz   | ESR 3          | 101782         | 2019-7-6      |
| LISN               | Rohde & Schwarz   | ENV4200        | 100249         | 2019-7-6      |
| LISN               | Rohde & Schwarz   | ENV432         | 101318         | 2019-7-6      |
| LISN               | Rohde & Schwarz   | ENV216         | 100326         | 2019-7-6      |
| ISN                | Rohde & Schwarz   | ENY81          | 100177         | 2019-7-6      |
| ISN                | Rohde & Schwarz   | ENY81-CA6      | 101664         | 2019-7-6      |
| High Voltage Probe | Rohde & Schwarz   | TK9420(VT9420) | 9420-584       | 2019-6-30     |
| RF Current Probe   | Rohde & Schwarz   | EZ-17          | 100816         | 2019-6-30     |
| Attenuator         | Shanghai Huaxiang | TS2-26-3       | 080928189      | 2019-7-6      |
| 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 2

| DESCRIPTION             | MANUFACTURER    | MODEL NO.       | SERIAL NO.    | CAL. DUE DATE |
|-------------------------|-----------------|-----------------|---------------|---------------|
| Signal Generator        | Rohde & Schwarz | SMB100A         | 108272        | 2019-7-6      |
| Signal Analyzer         | Rohde & Schwarz | FSV40           | 101030        | 2019-7-6      |
| Vector Signal Generator | Rohde & Schwarz | SMU 200A        | 105324        | 2019-7-6      |
| RF Switch Module        | Rohde & Schwarz | OSP120/OSP-B157 | 101226/100851 | 2019-7-6      |

## 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      | 10-13 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| FCC Title 47 Part 15.207 Conduct Emission (1)                                | 14-15 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| FCC Title 47 Part 15.247Bandedge Emission                                    | 16    | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input 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                   | 29-30 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| FCC Title 47 Part 15.247(e) Power Spectral Density                           | 31-33 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| FCC Title 47 Part 15.203 & 15.247(b) Antenna Requirement                     | 34    | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

### Remark:

1. This test is performed on the AC power port of the assist adaptor which supply the 5V DC power to charge EUT.



## 6 General Remarks

### Remarks

Client informs that the **75501PP01, 75001PP02, 75001PP03, 75002PP01, 75002PP02, 75002PP03, 75002PP04, 75003PP02, 75004PP01, 75004PP02, 75004PP03** has the same technical construction including circuit diagram, PCB Layout, components and component layout, all electrical construction and mechanical construction, with **75003PP01**. The difference lies only with removal of barometer and compass sensor in **75001PPxxx & T75004PPxx** (xx represent variant of color). (Client's conformation letter shown at appendix B)

EMC Tests were performed on model: **75003PP01**.

This submittal(s) (test report) is intended for **2AK9F-7500**, 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.

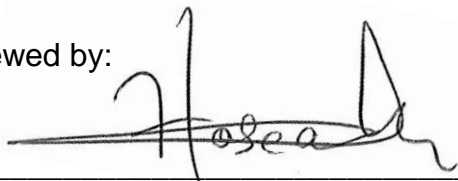
□ - **Does not** fulfill the general approval requirements.

Sample Received Date: October 10, 2018

Testing Start Date: October 12, 2018

Testing End Date: November 12, 2018

Reviewed by:



Hosea CHAN  
EMC Project Engineer

Prepared by:



Eric LI  
EMC Senior Project Engineer

## 7 Emission Test Results

### 7.1 Spurious Radiated Emission

EUT: 75003PP01  
 Op Condition: Operated, TX Mode  
 (Low channel is the worst case)  
 Test Specification: FCC15.205, 15.209 & 15.247(d)  
 Comment: 3.8 VDC  
 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) |
|------------------|------------------|-----------------|--------------|----------------------|----------------------|---------------|
| 55.058333        | 13.46            | 40.00           | -26.54       | Peak                 | H                    | -26.0         |
| 175.015000       | 17.89            | 43.50           | -25.61       | Peak                 | H                    | -29.7         |
| 438.855000       | 19.41            | 46.00           | -26.59       | Peak                 | H                    | -23.0         |
| 871.906111       | 27.44            | 46.00           | -18.56       | Peak                 | H                    | -15.8         |
| 63.680556        | 16.14            | 40.00           | -23.86       | Peak                 | V                    | -29.1         |
| 175.015000       | 13.31            | 43.50           | -30.19       | Peak                 | V                    | -29.7         |
| 436.322222       | 17.31            | 46.00           | -28.69       | Peak                 | V                    | -23.1         |
| 870.343333       | 28.89            | 46.00           | -17.11       | Peak                 | V                    | -15.8         |

Remark:

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

## Spurious Radiated Emission

EUT: 75003PP01  
 Op Condition: Operated, TX Mode (2402MHz)  
 Test Specification: FCC15.205, 15.209 & 15.247(d)  
 Comment: 3.8 VDC  
 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) |
|------------------|------------------|-----------------|--------------|----------------------|-------------------------|---------------|
| 3508.031250      | 33.15            | 54.00           | -20.85       | Peak                 | H                       | -0.3          |
| 7599.187500      | 40.86            | 54.00           | -13.14       | Peak                 | H                       | 9.9           |
| 10715.500000     | 41.36            | 54.00           | -12.64       | Peak                 | H                       | 10.4          |
| 4733.093750      | 35.33            | 54.00           | -18.67       | Peak                 | V                       | 3.5           |
| 7545.531250      | 40.03            | 54.00           | -13.97       | Peak                 | V                       | 10.0          |
| 12537.687500     | 44.69            | 54.00           | -9.31        | Peak                 | V                       | 14.5          |

Remark:

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

## Spurious Radiated Emission

EUT: 75003PP01  
 Op Condition: Operated, TX Mode (2440MHz)  
 Test Specification: FCC15.205, 15.209 & 15.247(d)  
 Comment: 3.8 VDC  
 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) |
|------------------|------------------|-----------------|--------------|----------------------|-------------------------|---------------|
| 5060.343750      | 38.26            | 54.00           | -15.74       | Peak                 | H                       | 4.5           |
| 7559.343750      | 40.80            | 54.00           | -13.20       | Peak                 | H                       | 10.1          |
| 13064.687500     | 44.11            | 54.00           | -9.89        | Peak                 | H                       | 15.0          |
| 4877.062500      | 35.84            | 54.00           | -18.16       | Peak                 | V                       | 3.8           |
| 7605.562500      | 40.64            | 54.00           | -13.36       | Peak                 | V                       | 9.9           |
| 12433.562500     | 44.66            | 54.00           | -9.34        | Peak                 | V                       | 14.3          |

### Remark:

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

## Spurious Radiated Emission

EUT: 75003PP01  
 Op Condition: Operated, TX Mode (2480MHz)  
 Test Specification: FCC15.205, 15.209 & 15.247(d)  
 Comment: 3.8 VDC  
 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) |
|------------------|------------------|-----------------|--------------|----------------------|-------------------------|---------------|
| 5989.500000      | 37.68            | 54.00           | -16.32       | Peak                 | H                       | 4.4           |
| 7525.343750      | 41.13            | 54.00           | -12.87       | Peak                 | H                       | 9.7           |
| 10527.437500     | 40.27            | 54.00           | -13.73       | Peak                 | H                       | 9.6           |
| 4067.437500      | 31.45            | 54.00           | -22.55       | Peak                 | V                       | -1.2          |
| 7525.343750      | 40.40            | 54.00           | -13.60       | Peak                 | V                       | 9.7           |
| 12750.718750     | 43.32            | 54.00           | -10.68       | Peak                 | V                       | 14.6          |

Remark:

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

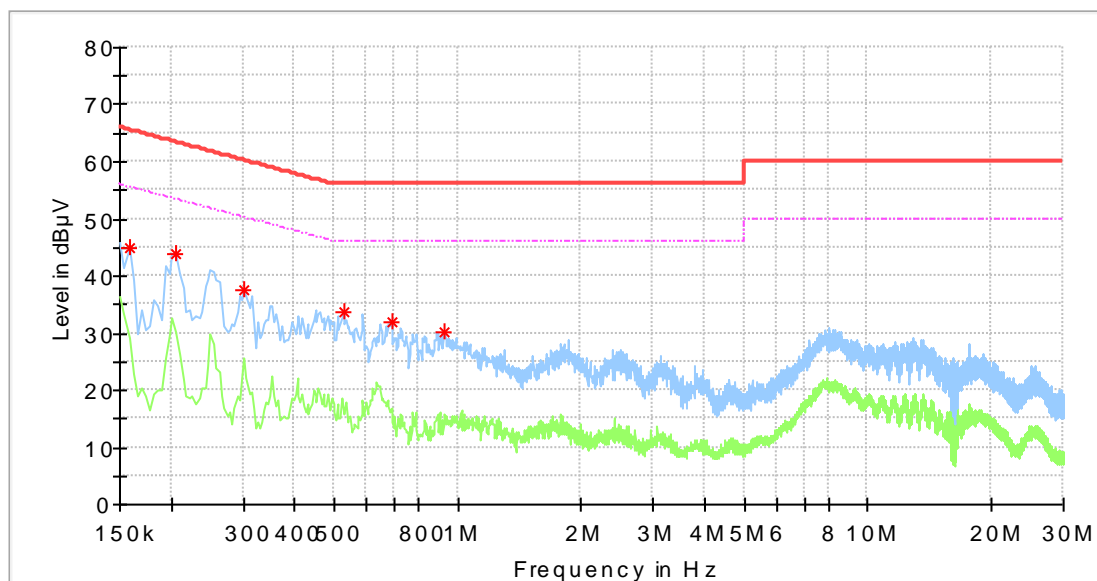
## 7.2 Conducted Emission at AC Power line

EUT: 75003PP01  
 Op Condition: Operated, TX Mode  
 Test Specification: FCC15.207  
 Comment: 120V AC  
 Remark: L Line

Test Result

☒ Passed

☐ Not Passed

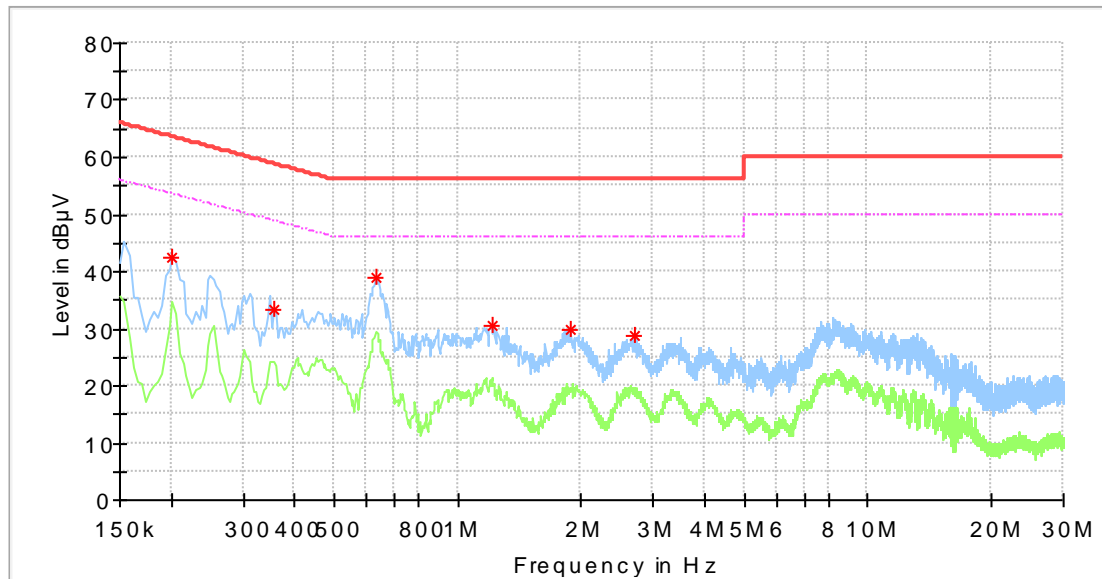


| Frequency (MHz) | MaxPeak (dBµV) | Average (dBµV) | Limit (dBµV) | Margin (dB) |
|-----------------|----------------|----------------|--------------|-------------|
| 0.158000        | 44.81          | ---            | 65.57        | -20.76      |
| 0.206000        | 43.84          | ---            | 63.37        | -19.52      |
| 0.302000        | 37.63          | ---            | 60.19        | -22.55      |
| 0.526000        | 33.59          | ---            | 56.00        | -22.41      |
| 0.690000        | 31.89          | ---            | 56.00        | -24.11      |
| 0.930000        | 30.13          | ---            | 56.00        | -25.87      |

## Conducted Emission at AC Power line

EUT: 75003PP01  
 Op Condition: Operated, TX Mode  
 Test Specification: FCC15.207  
 Comment: 120V AC  
 Remark: N Line

Test Result  
☒ Passed  
☐ Not Passed



| Frequency (MHz) | MaxPeak (dBμV) | Average (dBμV) | Limit (dBμV) | Margin (dB) |
|-----------------|----------------|----------------|--------------|-------------|
| 0.202000        | 42.62          | ---            | 63.53        | -20.91      |
| 0.358000        | 33.49          | ---            | 58.77        | -25.28      |
| 0.634000        | 38.84          | ---            | 56.00        | -17.16      |
| 1.214000        | 30.62          | ---            | 56.00        | -25.38      |
| 1.882000        | 29.70          | ---            | 56.00        | -26.30      |
| 2.710000        | 28.90          | ---            | 56.00        | -27.10      |

### 7.3 Bandedge Emission

EUT: 75003PP01  
 Op Condition: Operated, TX Mode (2402 and 2480)  
 Test Specification: FCC15.247  
 Comment: 3.8 VDC

#### Test Result

☒ Passed

☐ Not Passed

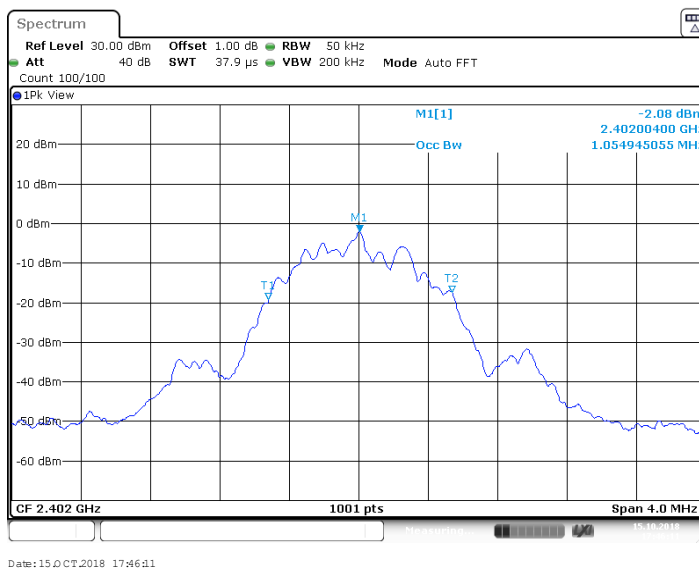
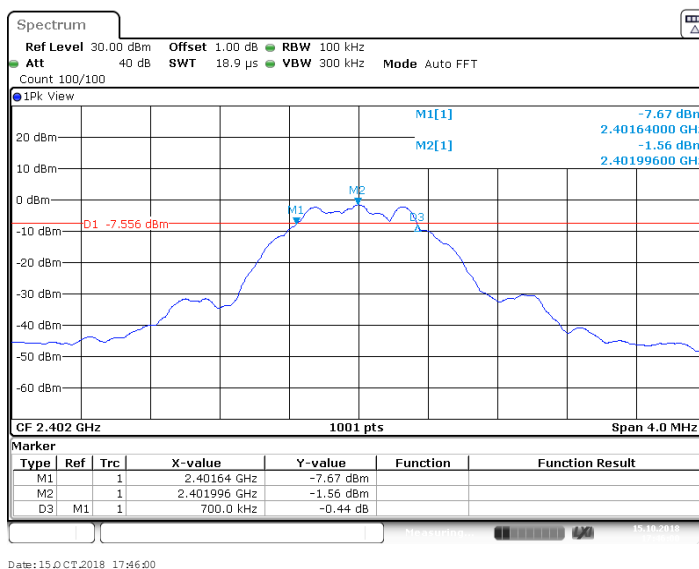
| Channel | Frequency<br>MHz | Result<br>dBμV/m | Limit<br>dBμV/m | Margin<br>dB | Detector<br>PK /AV | Ant. Polarity<br>H/V |
|---------|------------------|------------------|-----------------|--------------|--------------------|----------------------|
| 2402    | 2400.00          | 47.15            | 74.00           | -26.85       | Peak               | H                    |
| 2402    | 2400.00          | 35.43            | 54.00           | -18.57       | Average            | H                    |
| 2402    | 2400.00          | 45.89            | 74.00           | -28.11       | Peak               | V                    |
| 2402    | 2400.00          | 36.11            | 54.00           | -17.89       | Average            | V                    |
| 2480    | 2483.50          | 43.22            | 74.00           | -30.78       | Peak               | H                    |
| 2480    | 2483.50          | 31.68            | 54.00           | -22.32       | Average            | H                    |
| 2480    | 2483.50          | 44.77            | 74.00           | -29.23       | Peak               | V                    |
| 2480    | 2483.50          | 31.28            | 54.00           | -22.72       | Average            | V                    |



## 7.4 6dB & 99% Bandwidth

EUT: 75003PP01  
 Op Condition: Operated, TX Mode (2402MHz)  
 Test Specification: FCC15.247(a)(2), 6dB Bandwidth & 99% Bandwidth  
 Comment: 3.8 VDC

Test Result

☒ Passed☐ Not Passed

| Bandwidth     | Measured Value | Limit    |
|---------------|----------------|----------|
| 6dB bandwidth | 0.700 MHz      | > 0.5MHz |
| 99% OCB       | 1.055 MHz      | NA       |

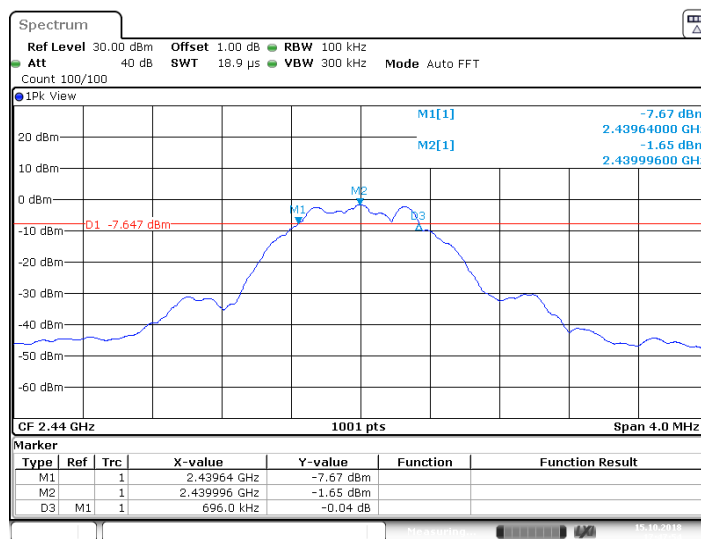
## 6dB & 99% Bandwidth

EUT: 75003PP01  
 Op Condition: Operated, TX Mode (2440MHz)  
 Test Specification: FCC15.247(a)(2), 6dB Bandwidth & 99% Bandwidth  
 Comment: 3.8 VDC

Test Result

☒ Passed

☐ Not Passed



Date: 15 OCT 2018 17:47:54



Date: 15 OCT 2018 17:48:05

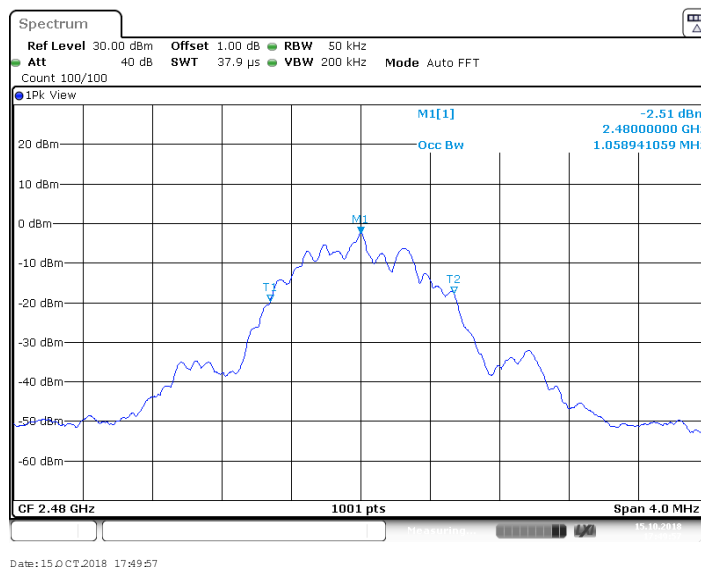
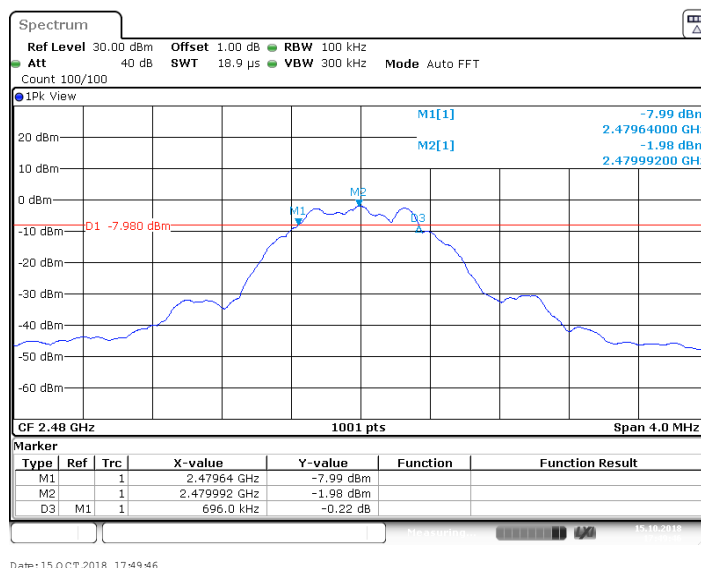
| Bandwidth     | Measured Value | Limit     |
|---------------|----------------|-----------|
| 6dB bandwidth | 0.696 MHz      | > 0.5 MHz |
| 99% OCB       | 1.055 MHz      | NA        |

## 6dB & 99% Bandwidth

EUT: 75003PP01  
 Op Condition: Operated, TX Mode (2480MHz)  
 Test Specification: FCC15.247(a)(2), 6dB Bandwidth & 99% Bandwidth  
 Comment: 3.8 VDC

### Test Result

☒ Passed  
☐ Not Passed



| Bandwidth     | Measured Value | Limit     |
|---------------|----------------|-----------|
| 6dB bandwidth | 0.696 MHz      | > 0.5 MHz |
| 99% OCB       | 1.059 MHz      | NA        |

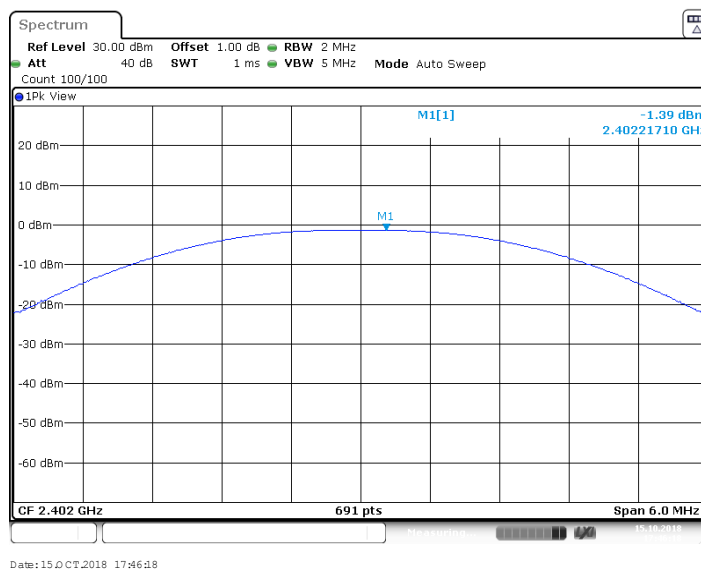
## 7.5 Peak Output Power

EUT: 75003PP01  
 Op Condition: Operated, TX Mode (2402MHz)  
 Test Specification: FCC15.247(b)  
 Comment: 3.8 VDC

Test Result

☒ Passed

☐ Not Passed



| Conducted Output Power | Limit    |
|------------------------|----------|
| -1.39 dBm              | < 30 dBm |

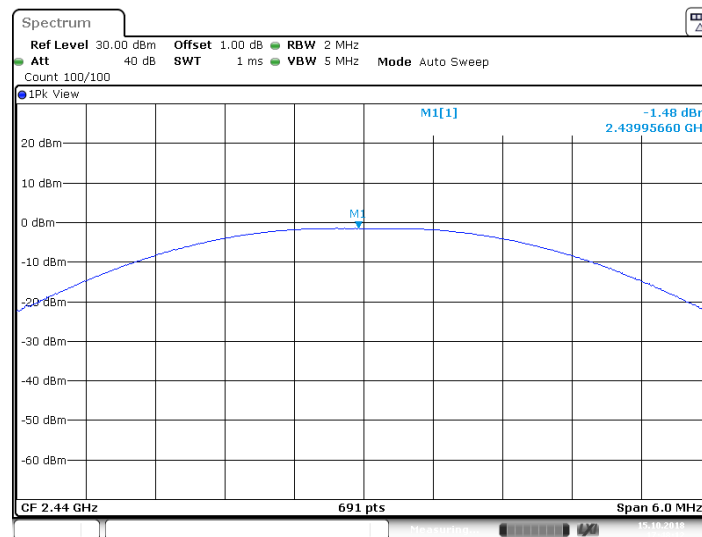
## Peak Output Power

EUT: 75003PP01  
 Op Condition: Operated, TX Mode (2440MHz)  
 Test Specification: FCC15.247(b)  
 Comment: 3.8 VDC

Test Result

☒ Passed

☐ Not Passed



Date: 15 OCT 2018 17:48:12

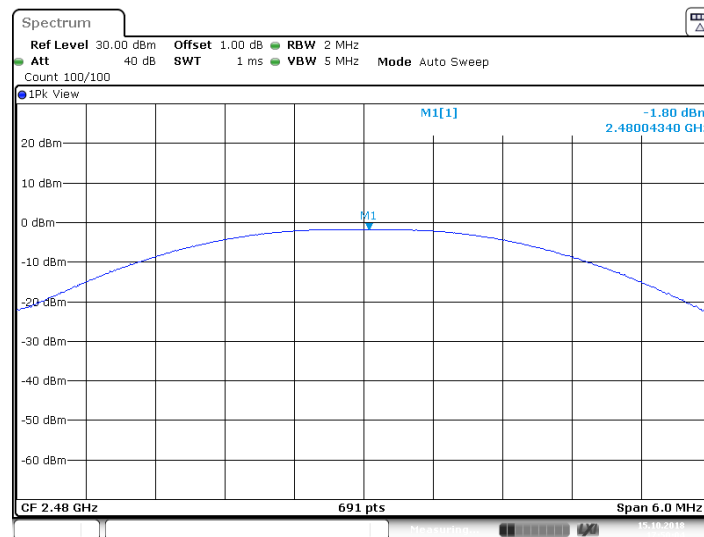
| Conducted Output Power | Limit   |
|------------------------|---------|
| -1.48 dBm              | < 30dBm |

## Peak Output Power

EUT: 75003PP01  
 Op Condition: Operated, TX Mode (2480MHz)  
 Test Specification: FCC15.247(b)  
 Comment: 3.8 VDC

Test Result

☒ Passed  
☐ Not Passed



Date: 15 OCT 2018 17:50:04

| Conducted Output Power | Limit   |
|------------------------|---------|
| -1.80 dBm              | < 30dBm |

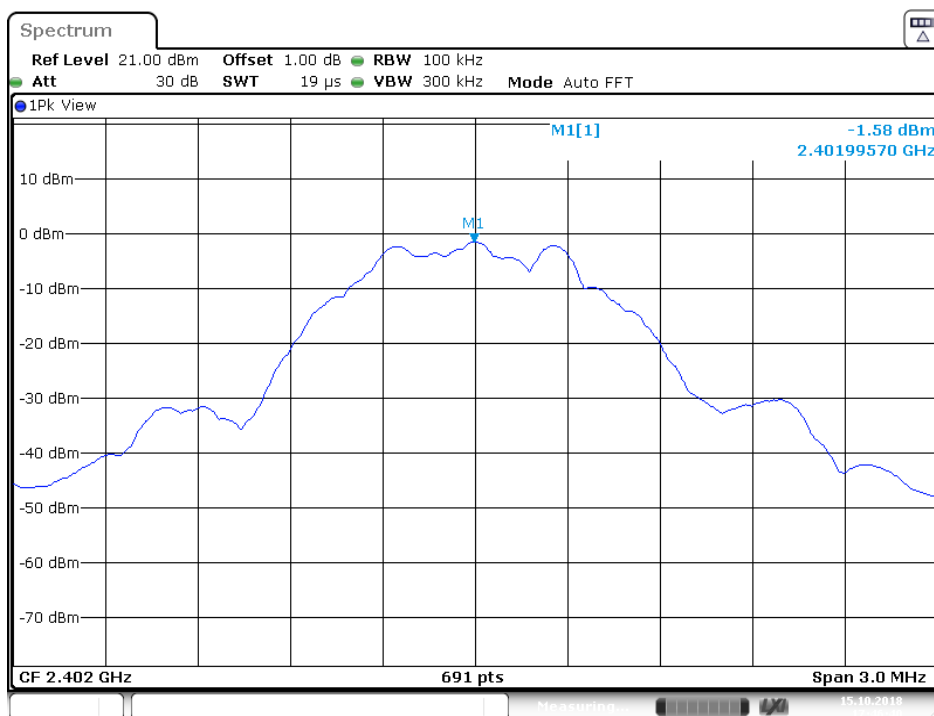
## 7.6 Spurious Emissions at Antenna Terminals

EUT: 75003PP01  
 Op Condition: Operated, TX Mode (2402MHz)  
 Test Specification: FCC2.1051 & 15.247(d)  
 Comment: 3.8 VDC

### Test Result

☒ Passed  
☐ Not Passed

| Channel | FreqRange  | RefLevel | Result | Limit  | Verdict |
|---------|------------|----------|--------|--------|---------|
| 2402    | Reference  | -1.58    | ---    | ---    | PASS    |
| 2402    | 30~1000    | -1.58    | -68.68 | -21.58 | PASS    |
| 2402    | 1000~26500 | -1.58    | -53.31 | -21.58 | PASS    |



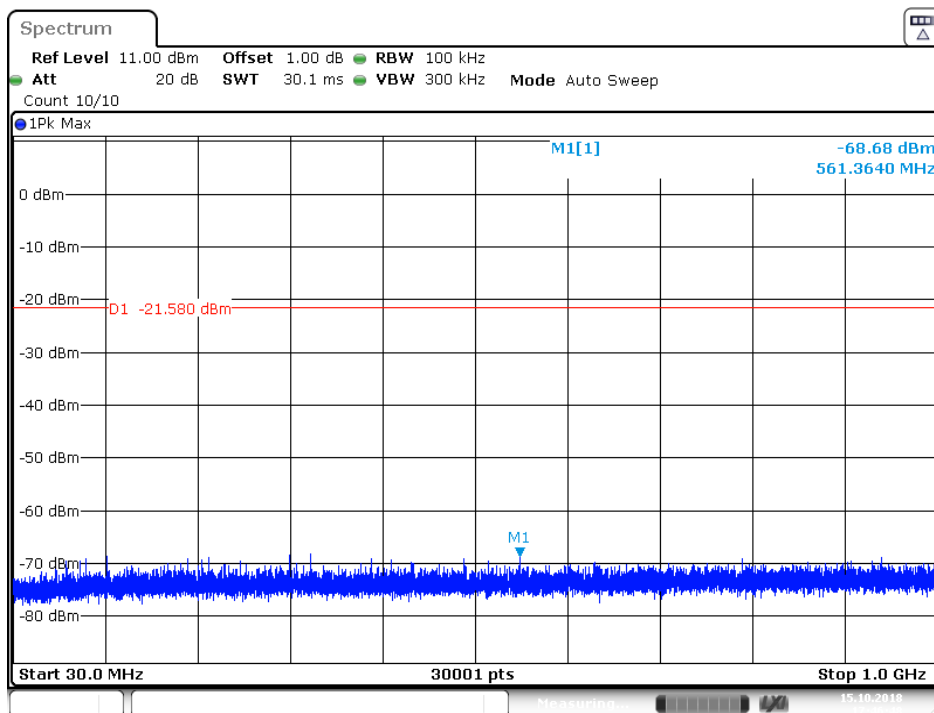
Date: 15.OCT.2018 17:46:40

## Spurious Emissions at Antenna Terminals

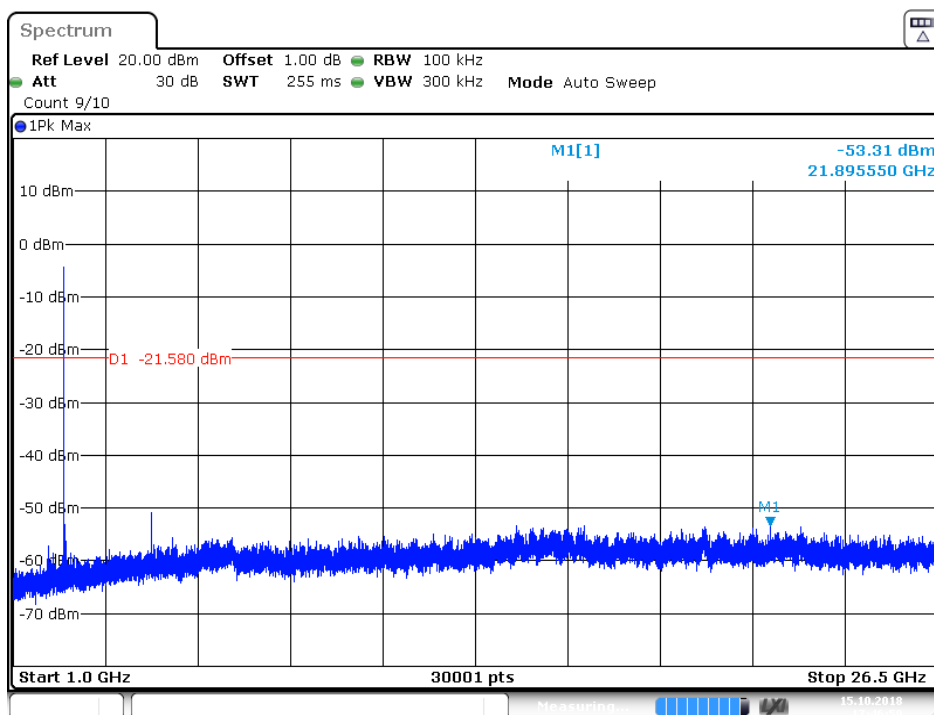
EUT: 75003PP01  
Op Condition: Operated, TX Mode (2402MHz)  
Test Specification: FCC2.1051 & 15.247(d)  
Comment: 3.8 VDC

### Test Result

☒ Passed  
☐ Not Passed



Date: 15 OCT 2018 17:46:49



Date: 15 OCT 2018 17:47:00



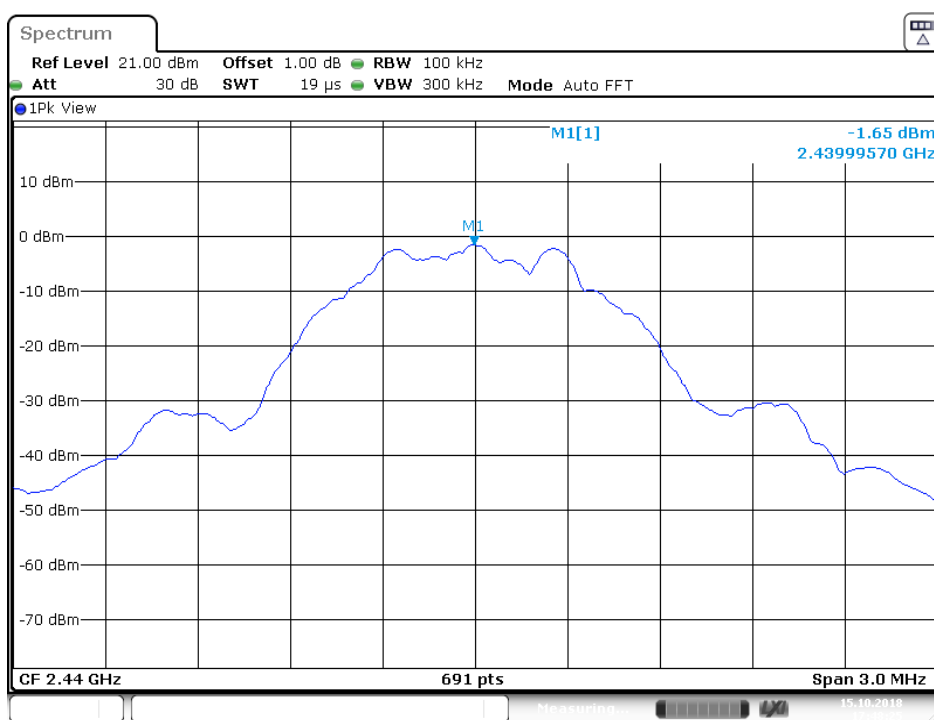
## Spurious Emissions at Antenna Terminals

EUT: 75003PP01  
 Op Condition: Operated, TX Mode (2440MHz)  
 Test Specification: FCC2.1051 & 15.247(d)  
 Comment: 3.8 VDC

### Test Result

☒ Passed  
☐ Not Passed

| Channel | FreqRange  | RefLevel | Result | Limit  | Verdict |
|---------|------------|----------|--------|--------|---------|
| 2440    | Reference  | -1.65    | ---    | ---    | PASS    |
| 2440    | 30~1000    | -1.65    | -68.48 | -21.65 | PASS    |
| 2440    | 1000~26500 | -1.65    | -49.95 | -21.65 | PASS    |

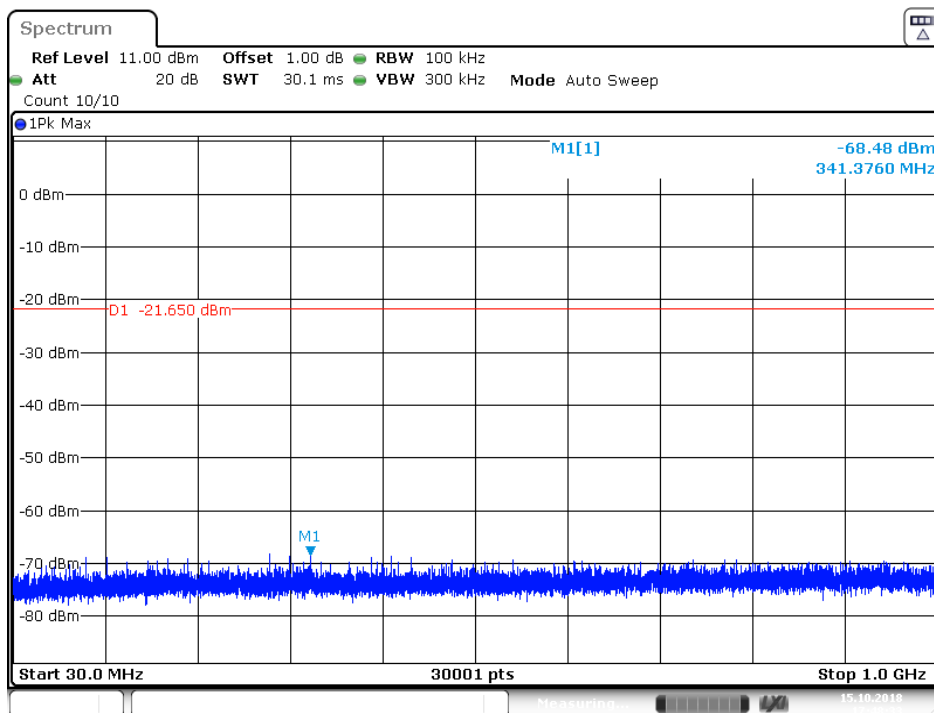


Date: 15 OCT 2018 17:48:25

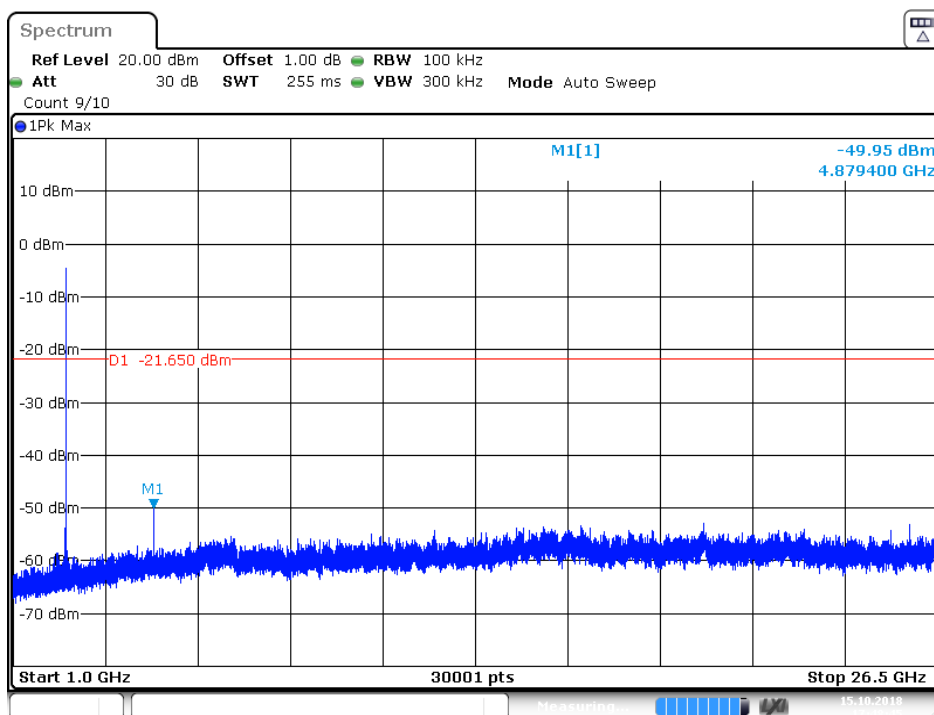
## Spurious Emissions at Antenna Terminals

EUT: 75003PP01  
Op Condition: Operated, TX Mode (2440MHz)  
Test Specification: FCC2.1051 & 15.247(d)  
Comment: 3.8 VDC

Test Result

☒ Passed☐ Not Passed

Date: 15.OCT.2018 17:48:33



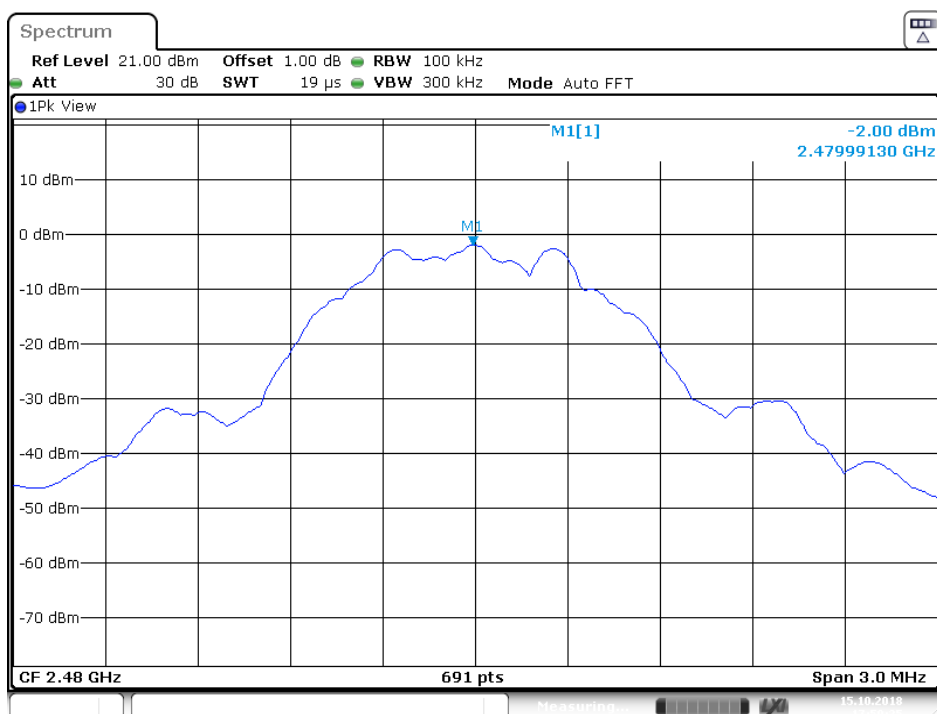
Date: 15.OCT.2018 17:48:45

## Spurious Emissions at Antenna Terminals

EUT: 75003PP01  
 Op Condition: Operated, TX Mode (2480MHz)  
 Test Specification: FCC2.1051 & 15.247(d)  
 Comment: 3.8 VDC

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

| Channel | FreqRange  | RefLevel | Result | Limit  | Verdict |
|---------|------------|----------|--------|--------|---------|
| 2480    | Reference  | -2.00    | ---    | ---    | PASS    |
| 2480    | 30~1000    | -2.00    | -68.00 | -22.00 | PASS    |
| 2480    | 1000~26500 | -2.00    | -53.18 | -22.00 | PASS    |

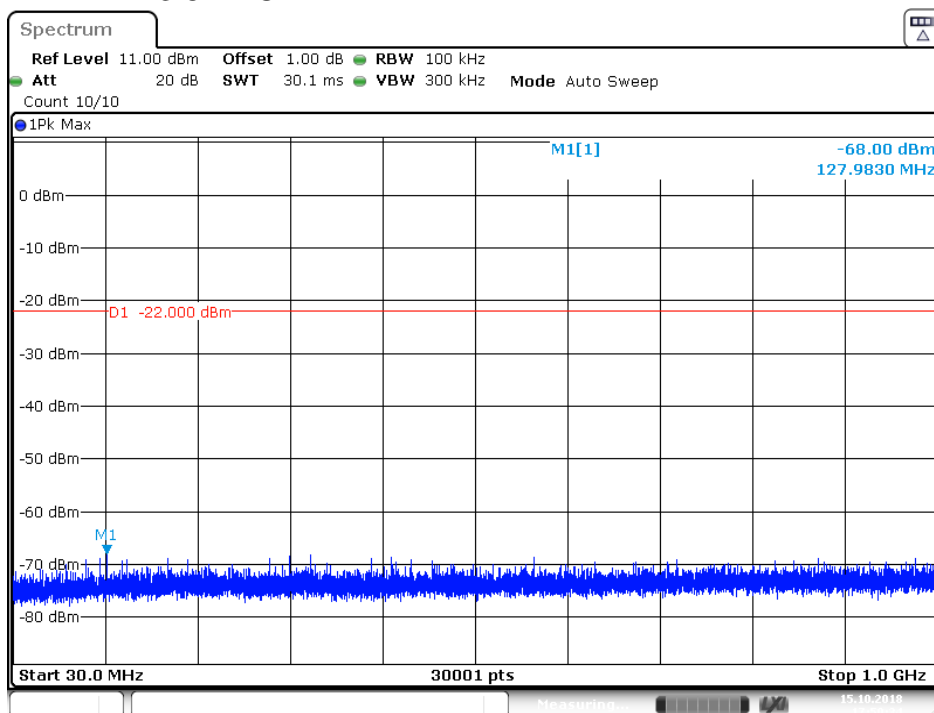


Date: 15.OCT.2018 17:50:26

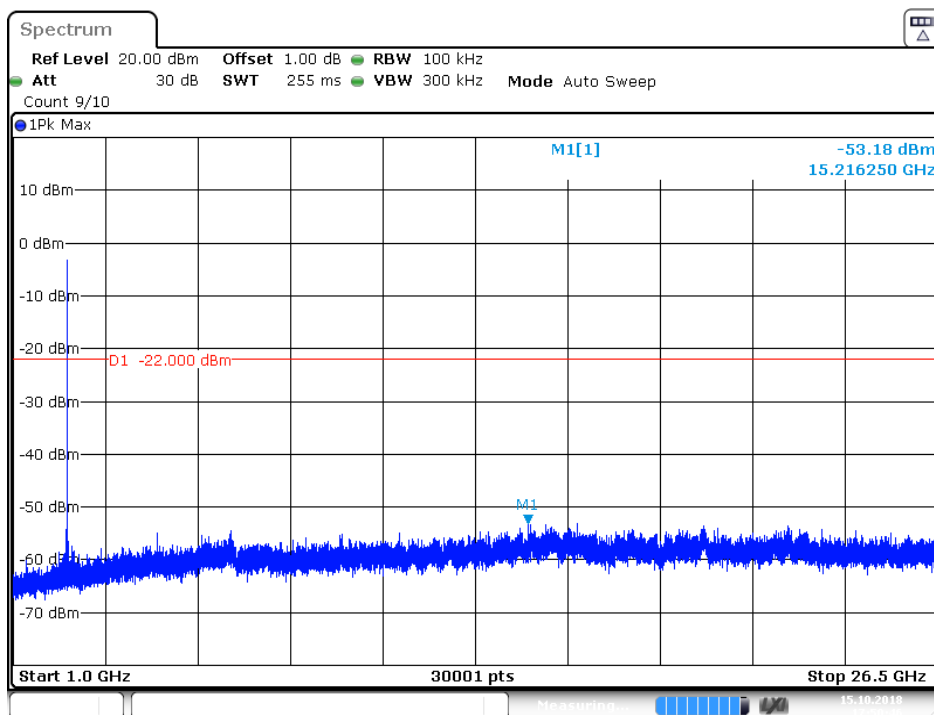
**Spurious Emissions at Antenna Terminals**

EUT: 75003PP01  
Op Condition: Operated, TX Mode (2480MHz)  
Test Specification: FCC2.1051 & 15.247(d)  
Comment: 3.8 VDC

Test Result

☒ Passed☐ Not Passed

Date: 15 OCT 2018 17:50:35



Date: 15 OCT 2018 17:50:46

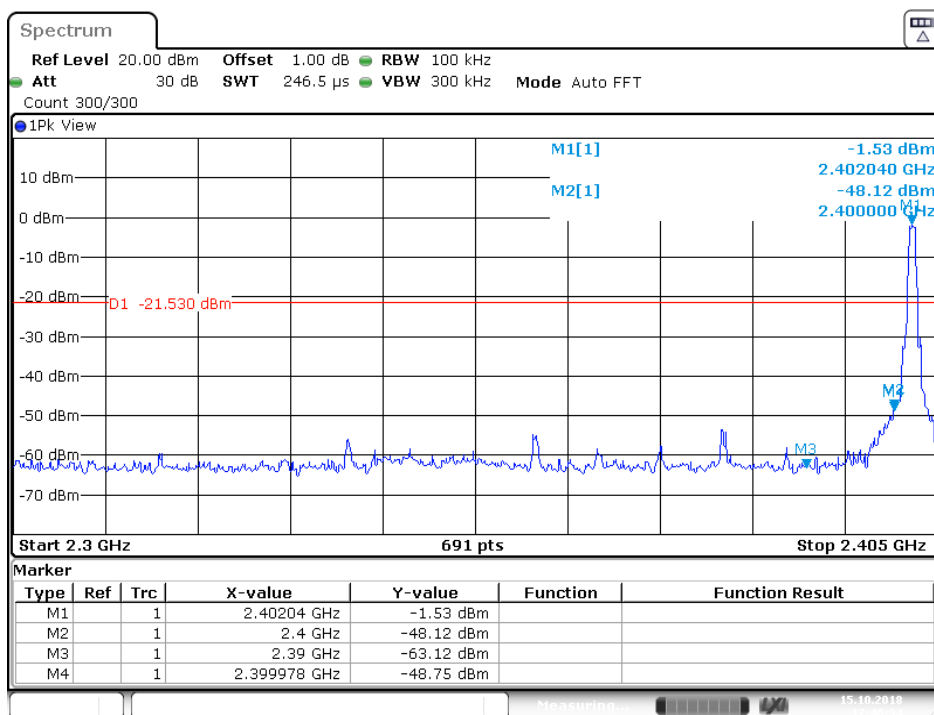
## 7.7 100kHz Bandwidth of band edges

EUT: 75003PP01  
 Op Condition: Operated, TX Mode (2402MHz)  
 Test Specification: FCC15.247(d), Conducted  
 Comment: 3.8 VDC

Test Result

☒ Passed

☐ Not Passed



Date: 15 OCT 2018 17:46:34

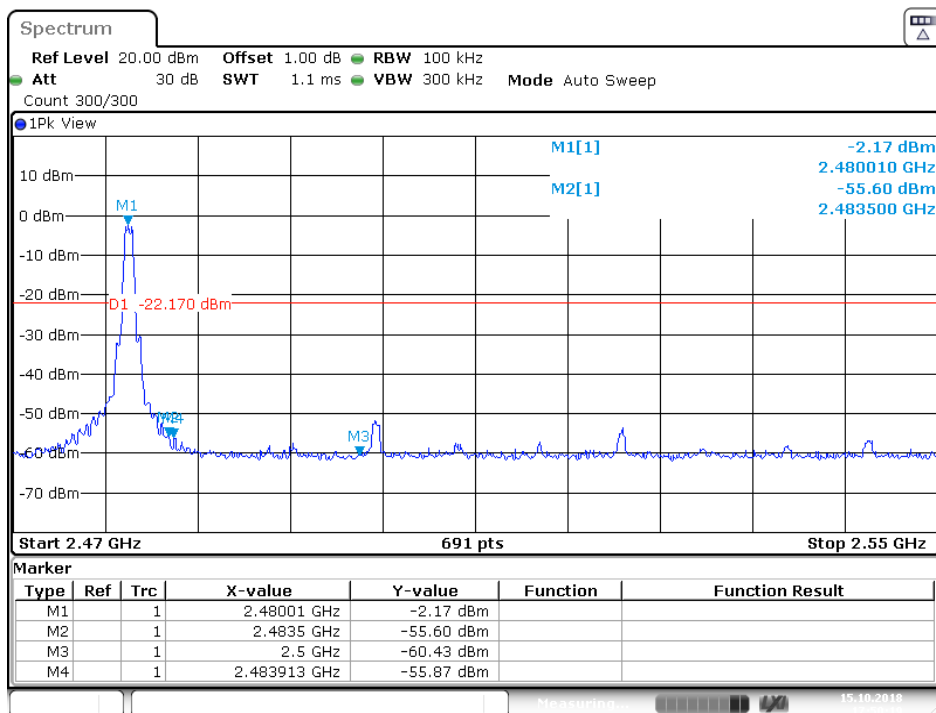
| Band edges | Limit  |
|------------|--------|
| 46.59 dB   | > 20dB |

## 100kHz Bandwidth of band edges

EUT: 75003PP01  
 Op Condition: Operated, TX Mode (2480MHz)  
 Test Specification: FCC15.247(d), Conducted  
 Comment: 3.8 VDC

### Test Result

☒ Passed  
☐ Not Passed



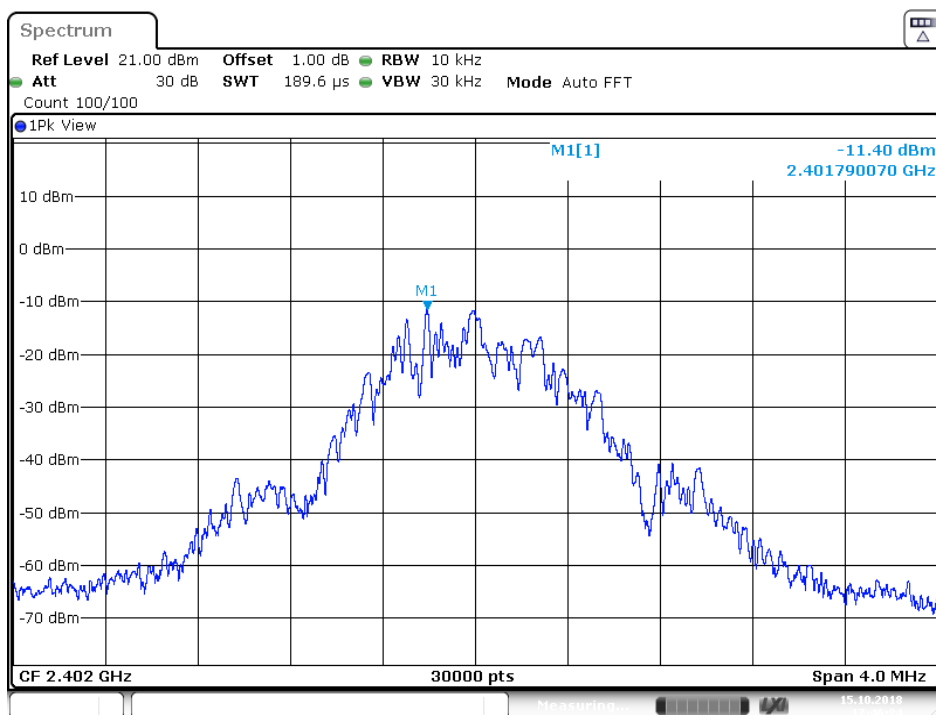
Date: 15.OCT.2018 17:50:20

| Band edges | Limit  |
|------------|--------|
| 53.43 dB   | > 20dB |

## 7.8 Power Spectral Density

EUT: 75003PP01  
 Op Condition: Operated, TX Mode (2402MHz)  
 Test Specification: FCC15.247(e)  
 Comment: 3.8 VDC

Test Result

☒ Passed☐ Not Passed

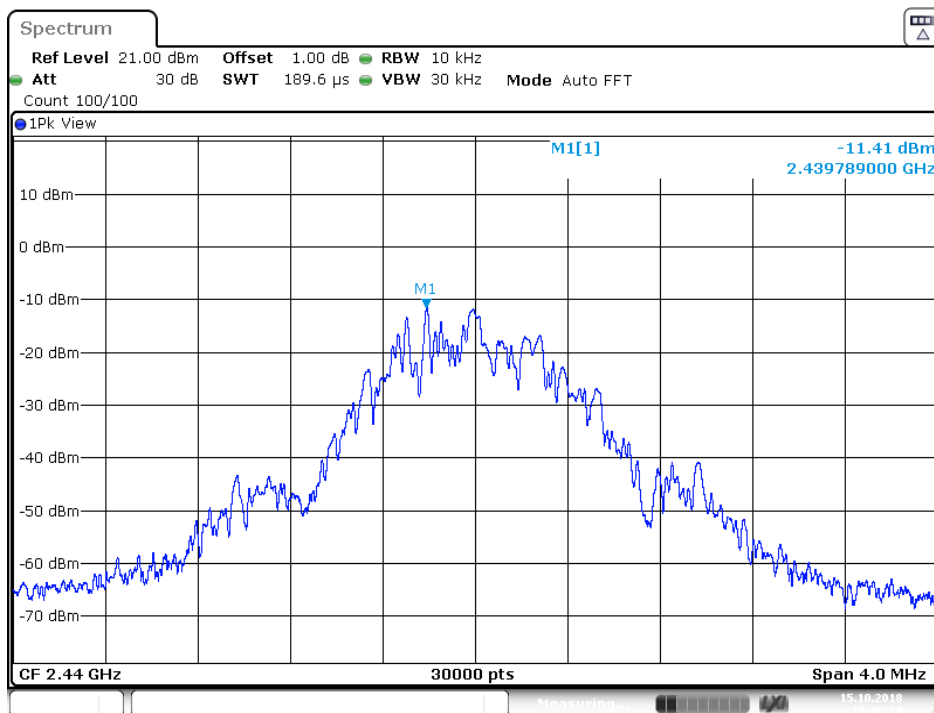
Date: 15 OCT 2018 17:46:24

| PSD        | Limit   |
|------------|---------|
| -11.40 dBm | < 8 dBm |

## Power Spectral Density

EUT: 75003PP01  
 Op Condition: Operated, TX Mode (2440MHz)  
 Test Specification: FCC15.247(e)  
 Comment: 3.8 VDC

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



Date: 15.OCT.2018 17:48:18

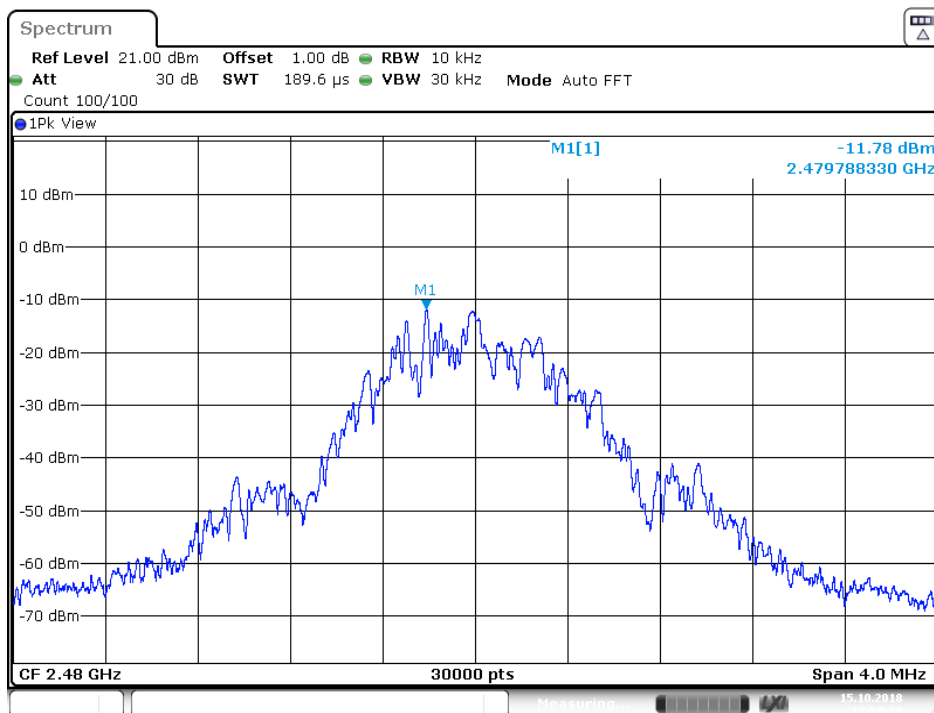
| PSD        | Limit   |
|------------|---------|
| -11.41 dBm | < 8 dBm |



## Power Spectral Density

EUT: 75003PP01  
 Op Condition: Operated, TX Mode (2480MHz)  
 Test Specification: FCC15.247(e)  
 Comment: 3.8 VDC

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



Date: 15.OCT.2018 17:50:10

| PSD        | Limit   |
|------------|---------|
| -11.78 dBm | < 8 dBm |

## 7.9 Antenna Requirement

EUT: 75003PP01  
Op Condition: Operated, TX Mode  
Test Specification: FCC15.203 & 15.247(b)  
Comment: 3.8 VDC

| 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.

## 8 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),  $\text{mW} / 5\text{mm} \cdot \sqrt{2.441\text{GHz}} \leq 3.0$   
Numeric threshold (2440MHz)  $\leq 9.601\text{mW}$

>> 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:  $-1.39\text{dBm} = 0.726\text{mW}$   
The power of EUT measured (2440MHz) is:  $-1.48\text{dBm} = 0.711\text{mW}$   
The power of EUT measured (2480MHz) is:  $-1.80\text{dBm} = 0.661\text{mW}$

Which is smaller than the Numeric threshold.

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

## 9 Appendix B - General Product Information



To: TÜV SÜD HKG Ltd.

Attention: Mr. Edmond Fung

From: L.F. Wong

Fax No:

Date: February 14, 2019

Total Page (Cover Included): 1

### Declaration Letter

Subject: Declaration Letter for Model Number

We:

Officially notify TÜV SÜD HKG Ltd. that the  
 <<75001PP01>>, <<75001PP02>>, <<75001PP03>>,  
 <<75002PP01>>, <<75002PP02>>, <<75002PP03>>, <<75002PP04>>,  
 <<75003PP02>>,  
 <<75004PP01>>, <<75004PP02>>, <<75004PP03>>,  
 have the same technical construction including circuit diagram, PCB Layout, and component layout,  
 all electrical construction and mechanical construction, with <<75003PP01>>,  
 The difference lies only with removal of barometer and compass sensor in 75001PPxx &  
 75004PPxx (xx represent variant of color).

<<Additional Model >>: 75001PP01, 75001PP02, 75001PP03;  
 75002PP01, 75002PP02, 75002PP03; 75002PP04  
 75003PP02;  
 75004PP01, 75004PP02, 75004PP03

<<Main Test Model >>: 75003PP01

<<Product>>: BLE Smart Watch

Applicant: Titan Company Ltd.

14/2/19  
 (Date)

(Applicant's authorized signature and company Chop)



Titan Company Limited

'INTEGRITY' No.193, Veerasandra, Electronics City P.O Off Hosur Main Road, Bengaluru - 560 100 India, Tel : 91 80 - 67047000, Fax : 91 80 - 67046262  
 Registered Office No. 3, SiPCOT Industrial Complex Hosur 635 126 TN India, Tel 91 4344 664 199, Fax 91 4344 276037, CIN: L74999T21984PLC001456

www.titan.co.in  
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