China

# FCC - TEST REPORT

| | | | | |
|---|---|---|---|---|
| Report Number | : | 60.790.18.050.01R01 | 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 | : | 17 | | |

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# 1 Table of Contents

# 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 rechargable battery<br>5V DC form USB charging cable |
| Frequency: | 2457MHz |
| Antenna gain: | 0 dBi |
| Number of operated channel: | 1 |
| 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 |
| **FCC Part 15 Subpart C** | |
| FCC Title 47 Part 15.205, 15.209 & 15.249 & Radiated Emission | Site 2 |
| FCC Title 47 Part 15.207 Conduct Emission | Site 2 |
| FCC Title 47 Part 15.215 20dB & 99% Bandwidth | Site 2 |
| FCC Title 47 Part 15.203 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 – 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 9kHz-30MHz | 4.46dB |
| Uncertainty for Radiated Emission in 3m chamber 30MHz-1000MHz | Horizontal: 4.91dB; Vertical: 4.89dB; |
| Uncertainty for Radiated Emission in 3m chamber 1000MHz-25000MHz | Horizontal: 4.80dB; Vertical: 4.79dB; |
| Uncertainty for Conducted Emission at AC Power Line 150kHz-30MHz | 3.21dB |
| Uncertainty for frequency test | 0.6×10-7 |

# 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 & 15.249 Radiated Emission | 10-11 | ☒ | ☐ | ☐ |
| FCC Title 47 Part 15.207 Conduct Emission (1) | 12-13 | ☒ | ☐ | ☐ |
| FCC Title 47 Part 15.215 20dB & 99% Bandwidth | 14 | ☒ | ☐ | ☐ |
| FCC Title 47 Part 15.203 Antenna Requirement | 15 | ☒ | ☐ | ☐ |

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 FCC ID: **2AK9F-7500**, complies with Section 15.203, 15.205, 15.207, 15.209, 15.249 of the FCC Part 15, Subpart C rules.

The TX and RX range is 2457MHz.

**SUMMARY:**

- All tests according to the regulations cited on page 5 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: December 17, 2018

Reviewed by: Hosea CHAN
EMC Project Engineer

Prepared by: Eric LI
EMC Senior Project Engineer

# 7 Emission Test Results

## 7.1 Radiated Emission

| | |
|---|---|
| EUT: | 75003PP01 |
| Op Condition: | Operated, TX Mode (2457MHz) |
| Test Specification: | FCC15.249 & 15.209, Antenna: Horizontal |
| Comment: | 3.8 VDC |
| Remark: | 9kHz to 25GHz |

Test Result
☒ Passed
☐ Not Passed

| Frequency MHz | Result dBµV/m | Limit dBµV/m | Margin dB | Detector |
|---|---|---|---|---|
| 47.650 | 15.55 | 40.00 | -24.45 | Quasi Peak |
| 175.015 | 17.83 | 43.50 | -25.67 | Quasi Peak |
| 438.855 | 18.69 | 46.00 | -27.31 | Quasi Peak |
| 871.956 | 27.32 | 46.00 | -18.68 | Quasi Peak |
| 1123.78 | 27.87 | 54.00 | -26.13 | Peak |
| 2457.000 | 76.92 | 114.00 | -37.08 | Peak |
| 2457.000 | 63.78 | 94.00 | -30.22 | Average |
| 3493.687 | 34.89 | 54.00 | -19.11 | Peak |
| 7602.375 | 40.06 | 54.00 | -13.94 | Peak |
| 12764.531 | 43.42 | 54.00 | -10.58 | Peak |

Remark: As the peak value were below the average limit, so average value no need to be measured.

## Radiated Emission

| | |
|---|---|
| EUT: | 75003PP01 |
| Op Condition: | Operated, TX Mode (2457MHz) |
| Test Specification: | FCC15.249 & 15.209, Antenna: Vertical |
| Comment: | 3.8 VDC |
| Remark: | 9kHz to 25GHz |

Test Result
☒ Passed
☐ Not Passed

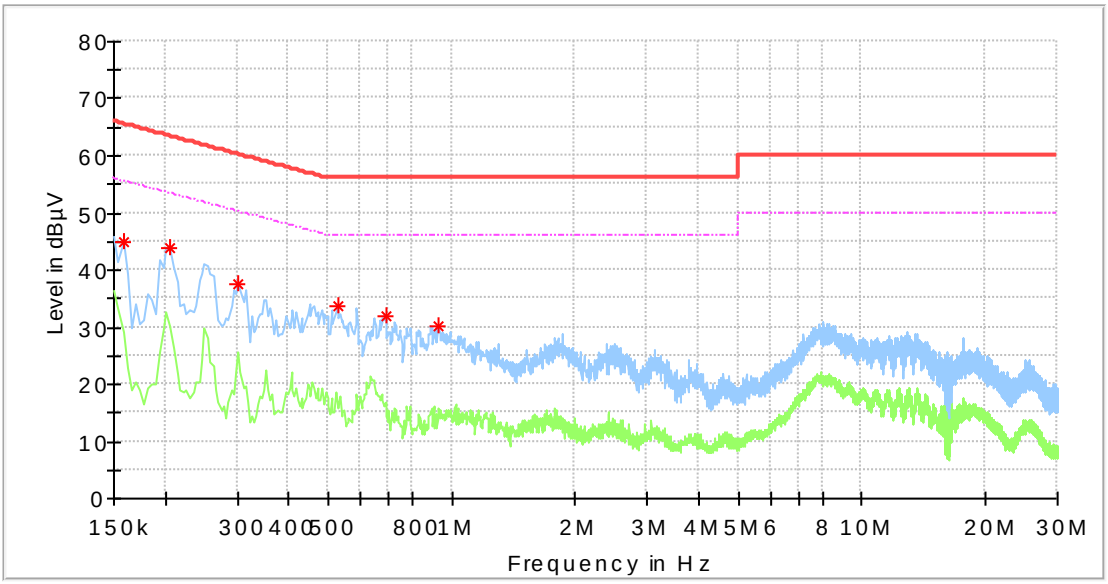
| Frequency MHz | Result dBµV/m | Limit dBµV/m | Margin dB | Detector |
|---|---|---|---|---|
| 63.681 | 16.45 | 40.00 | -23.55 | Quasi Peak |
| 175.015 | 14.07 | 43.50 | -29.43 | Quasi Peak |
| 436.322 | 16.88 | 46.00 | -29.12 | Quasi Peak |
| 870.343 | 29.12 | 46.00 | -16.88 | Quasi Peak |
| 1124.656 | 31.02 | 54.00 | -22.98 | Peak |
| 2457.000 | 71.89 | 114.00 | -42.11 | Peak |
| 2457.000 | 58.98 | 94.00 | -35.02 | Average |
| 6053.250 | 36.12 | 54.00 | -17.88 | Peak |
| 9651.937 | 40.07 | 54.00 | -13.93 | Peak |
| 12894.687 | 43.89 | 54.00 | -10.11 | Peak |

Remark*: As the peak value were below the average limit, so 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

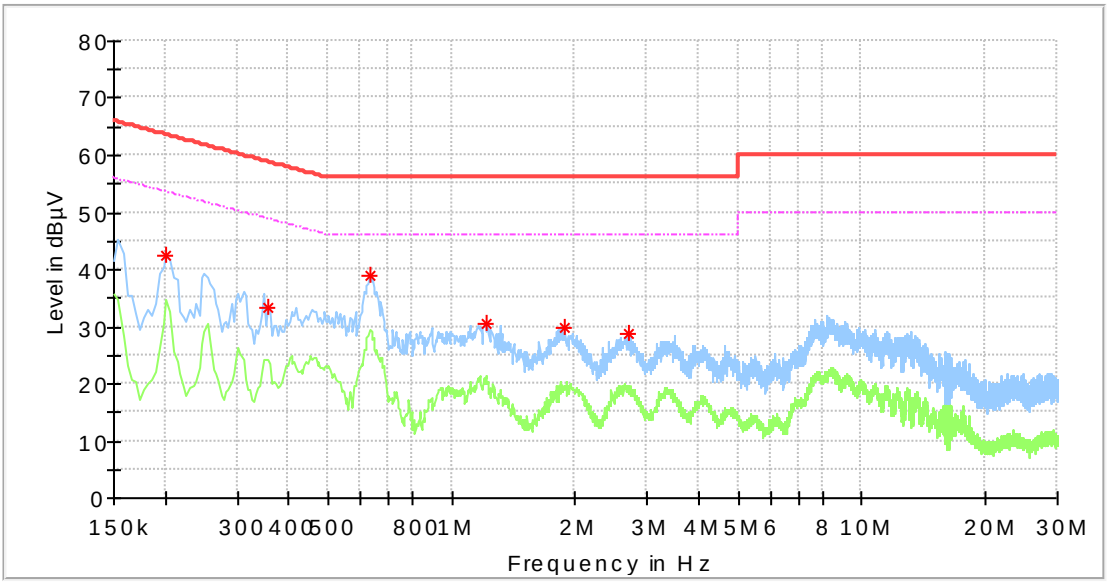



| Frequency (MHz) | MaxPeak (dBµV) | Average (dBµV) | Limit (dBµV) | Margin (dB) |
|---|---|---|---|---|
| 0.158000 | 44.81 | --- | 65.57 | -20.76 |
| 0.206000 | 43.84 | --- | 63.37 | -19.52 |
| 0.302000 | 37.63 | --- | 60.19 | -22.55 |
| 0.526000 | 33.59 | --- | 56.00 | -22.41 |
| 0.690000 | 31.89 |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

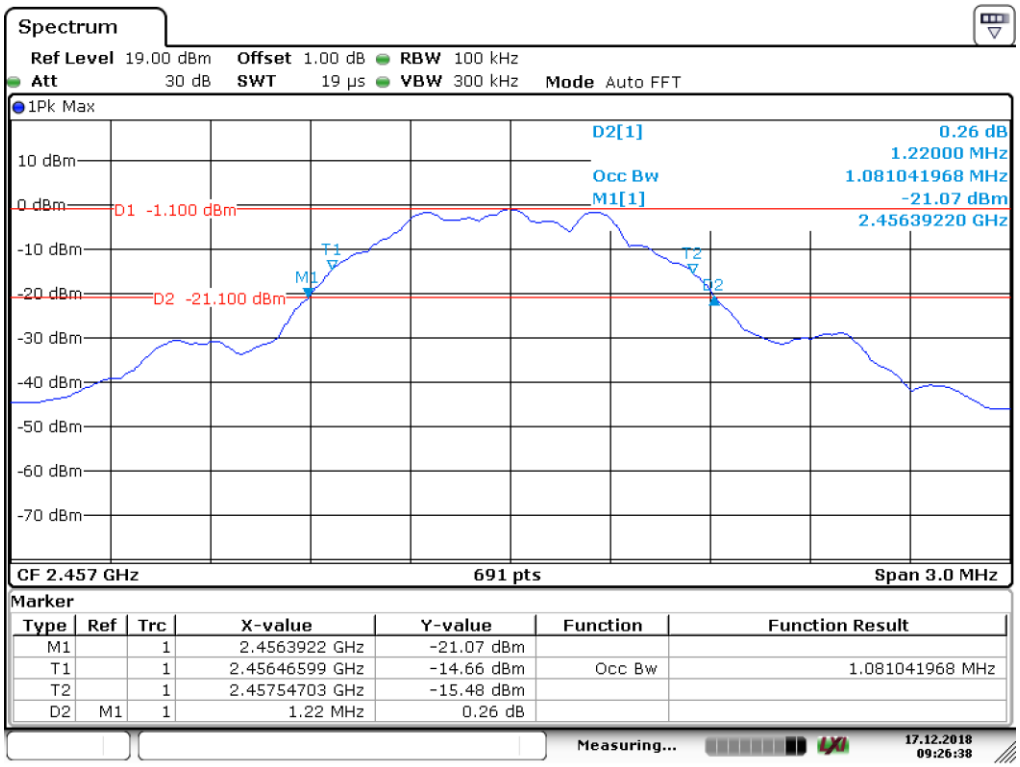



| Frequency (MHz) | MaxPeak (dBµV) | Average (dBµV) | Limit (dBµV) | Margin (dB) |
|---|---|---|---|---|
| 0.202000 | 42.62 | --- | 63.53 | -20.91 |
| 0.358000 | 33.49 | --- | 58.77 | -25.28 |
| 0.634000 | 38.84 | --- | 56.00 | -17.16 |
| 1.214000 | 30.62 | --- | 56.00 | -25.38 |
| 1.882000 | 29.70 |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

## 7.3 20dB & 99% Bandwidth

EUT: 75003PP01
Op Condition: Operated, TX Mode (2457MHz)
Test Specification: FCC15.215
Comment: 3.8 VDC

Test Result
☒ Passed
☐ Not Passed




| 20dB bandwidth |
|---|
| 1220.000 kHz |

| 99% bandwidth |
|---|
| 1081.042kHz |

## 7.4 Antenna Requirement

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

Test Result
☒ Passed
☐ 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.

**Antenna Connector Construction**

The antenna used in this product is integrated antenna on PCB, which in accordance to section 15.203, is considered sufficient to comply with the antenna requirement.

# 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 ≤ 50 mm, the Numeric threshold is determined as:

Step a)
[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR

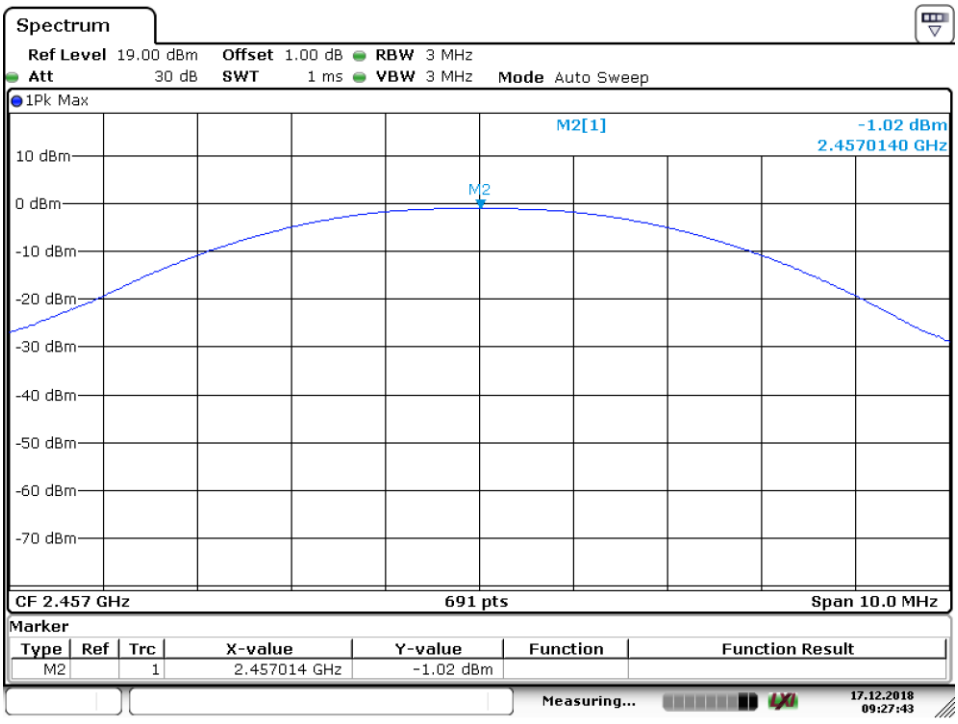
>> The fundamental frequency of the EUT is 2402-2480MHz,
the test separation distance is ≤ 50mm.
(Manufacturer specified the separation distance is: 5mm)

Step b)
>> Numeric threshold (2457MHz), mW / 5mm * √2.457GHz ≤ 3.0
Numeric threshold (2457MHz) ≤ 9.906mW

>>The power of EUT measured (2457MHz) is: -1.02dBm = 0.791mW

Which is smaller than the Numeric threshold.
Therefore, the device is exempt from stand-alone SAR test requirements.

Power Plot



China

# 9 Appendix B - General Product Information

TITAN COMPANY

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>>: DLC 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: L74999TZ1984PLC001456
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