

# **FCC Test Report**

Report No.: AGC00550220602FE02

**FCC ID** : 2A7BAW10

**APPLICATION PURPOSE**: Original Equipment

**PRODUCT DESIGNATION**: smartwatch

BRAND NAME : Blackview, IOWODO, FeipuQu

W10, W10Pro, W20, W20Pro, W30, W30Pro, W40,

**MODEL NAME** : W40Pro, W50, W50Pro, W60, W60Pro, W70, W70Pro,

W80, W80Pro, W90, W90Pro, R8Pro

**APPLICANT**: Shenzhen Hairuichuang Technology Co., Ltd.

**DATE OF ISSUE** : Oct. 13, 2022

**STANDARD(S)** : FCC Part 15.247

**REPORT VERSION**: V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

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# REPORT REVISE RECORD

| Report Version | Revise Time | Issued Date   | Valid Version | Notes           |
|----------------|-------------|---------------|---------------|-----------------|
| V1.0           | /           | Oct. 13, 2022 | Valid         | Initial Release |



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#### 1. VERIFICATION OF COMPLIANCE

|                              | lo  |  |  |  |
|------------------------------|---|--|--|--|
| Applicant                    | Shenzhen Hairuichuang Technology Co., Ltd.  |  |  |  |
| Address                      | Room 2001, Building A, Weidonglong Business Building, No. 2125, Meilong Avenue, Longhua District, Shenzhen, China     |  |  |  |
| Manufacturer                 | Shenzhen Hairuichuang Technology Co., Ltd.  |  |  |  |
| Address                      | Room 2001, Building A, Weidonglong Business Building, No. 2125, Meilong Avenue, Longhua District, Shenzhen, China     |  |  |  |
| Factory                      | Shenzhen Hairuichuang Technology Co., Ltd.  |  |  |  |
| Address                      | Room 2001, Building A, Weidonglong Business Building, No. 2125, Meilong Avenue, Longhua District, Shenzhen, China     |  |  |  |
| Product Designation          | smartwatch  |  |  |  |
| Brand Name                   | Blackview, IOWODO, FeipuQu  |  |  |  |
| Test Model                   | W10   |  |  |  |
| Series Model                 | W10Pro, W20, W20Pro, W30, W30Pro, W40, W40Pro, W50, W50Pro, W60, W60Pro, W70, W70Pro, W80, W80Pro, W90, W90Pro, R8Pro |  |  |  |
| Declaration of Difference    | All the same except for the model name.   |  |  |  |
| Date of receipt of test item | Sep. 15, 2022   |  |  |  |
| Date of test                 | Sep. 15, 2022 to Oct. 13, 2022  |  |  |  |
| Deviation                    | No any deviation from the test method   |  |  |  |
| Condition of Test Sample     | Normal  |  |  |  |
| Test Result                  | Pass  |  |  |  |
| Report Template              | AGCRT-US-BLE/RF   |  |  |  |
|                              | ·   |  |  |  |

We hereby certify that:

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC part 15.247.

| Prepared By | Thea Huang                        |               |
|-------------|-----------------------------------|---------------|
|             | Thea Huang<br>(Project Engineer)  | Oct. 13, 2022 |
| Reviewed By | Calin Lin                         |               |
|             | Calvin Liu<br>(Reviewer)          | Oct. 13, 2022 |
| Approved By | Max Zhang                         |               |
|             | Max Zhang<br>(Authorized Officer) | Oct. 13, 2022 |



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#### 2. GENERAL INFORMATION

# 2.1. PRODUCT DESCRIPTION

The EUT is designed as a "smartwatch". It is designed by way of utilizing the GFSK technology to achieve the system operation.

A major technical description of EUT is described as following

| Operation Frequency | 2.402 GHz to 2.480GHz   |  |  |
|---------------------|---|--|--|
| RF Output Power     | 6.596dBm (Max)  |  |  |
| Bluetooth Version   | V5.2  |  |  |
| Modulation          | BR □GFSK, EDR □π /4-DQPSK, □8DPSK BLE □GFSK 1Mbps □GFSK 2Mbps |  |  |
| Number of channels  | 40 Channels   |  |  |
| Antenna Designation | FPC Antenna (Comply with requirements of the FCC part 15.203) |  |  |
| Antenna Gain        | 0.05dBi   |  |  |
| Hardware Version    | V03   |  |  |
| Software Version    | V1.0  |  |  |
| Power Supply        | DC 3.8V by battery or DC 5V by adapter                        |  |  |

# 2.2. TABLE OF CARRIER FREQUENCYS

| Frequency Band | Channel Number | Frequency |  |  |
|----------------|----------------|-----------|--|--|
|                | 0              | 2402 MHz  |  |  |
|                | 1              | 2404 MHz  |  |  |
| 2400~2483.5MHz | :              | ·         |  |  |
|                | 38             | 2478 MHz  |  |  |
|                | 39             | 2480 MHz  |  |  |



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# 2.3. RELATED SUBMITTAL(S)/GRANT(S)

This submittal(s) (test report) is intended for **FCC ID: 2A7BAW10** filling to comply with the FCC Part 15.247 requirements.

#### 2.4. TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10 (2013). Radiated testing was performed at an antenna to EUT distance 3 meters.

#### 2.5. SPECIAL ACCESSORIES

Refer to section 5.2.

# 2.6. EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

#### 2.7. ANTENNA REQUIREMENT

This intentional radiator is designed with a permanently attached antenna of an antenna to ensure that no antenna other than that furnished by the responsible party shall be used with the device. For more information of the antenna, please refer to the APPENDIX B: PHOTOGRAPHS OF EUT.

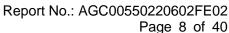


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#### 3. MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement y ±U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

| Item  | Measurement Uncertainty    |  |  |
|---|----------------------------|--|--|
| Uncertainty of Conducted Emission for AC Port | $U_c = \pm 3.1 \text{ dB}$ |  |  |
| Uncertainty of Radiated Emission below 1GHz   | $U_c = \pm 4.0 \text{ dB}$ |  |  |
| Uncertainty of Radiated Emission above 1GHz   | $U_c = \pm 4.8 \text{ dB}$ |  |  |
| Uncertainty of total RF power, conducted      | $U_c = \pm 0.8 \text{ dB}$ |  |  |
| Uncertainty of RF power density, conducted    | $U_c = \pm 2.6 \text{ dB}$ |  |  |
| Uncertainty of spurious emissions, conducted  | $U_c = \pm 2 \%$           |  |  |
| Uncertainty of Occupied Channel Bandwidth     | $U_c = \pm 2 \%$           |  |  |



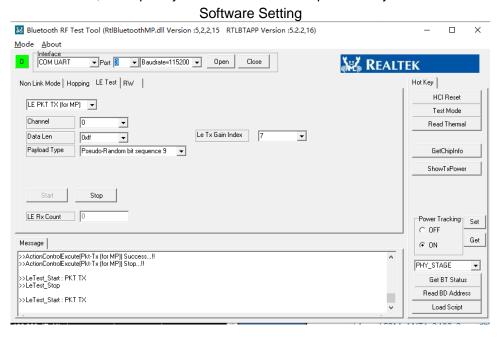


4. DESCRIPTION OF TEST MODES

| NO. | TEST MODE DESCRIPTION |
|-----|-----------------------|
| 1   | Low channel TX        |
| 2   | Middle channel TX     |
| 3   | High channel TX       |

#### Note:

- 1. Only the result of the worst case was recorded in the report, if no other cases.
- 2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.
- 3. For Conducted Test method, a temporary antenna connector is provided by the manufacture.



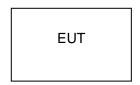


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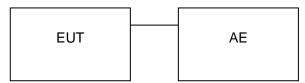
#### 5. SYSTEM TEST CONFIGURATION

#### **5.1. CONFIGURATION OF TESTED SYSTEM**

Radiated Emission Configure:



Conducted Emission Configure:



# **5.2. EQUIPMENT USED IN TESTED SYSTEM**

| Item         | Equipment   | Model No. | ID or Specification | Remark |
|--------------|-------------|-----------|---------------------|--------|
| 1 smartwatch |             | W10       | 2A7BAW10            | EUT    |
| 2            | Control Box | USB-TTL   | N/A                 | AE     |

#### 5.3. SUMMARY OF TEST RESULTS

| FCC RULES     | DESCRIPTION OF TEST                    | RESULT         |
|---------------|--|----------------|
| 15.247 (b)(3) | Peak Output Power                      | Compliant      |
| 15.247 (a)(2) | 6 dB Bandwidth                         | Compliant      |
| 15.247 (d)    | Conducted Spurious Emission            | Compliant      |
| 15.247 (e)    | Maximum Conducted Output Power Density | Compliant      |
| 15.209        | Radiated Emission                      | Compliant      |
| 15.207        | Conducted Emission                     | Not applicable |

Note: The BT function cannot transmit when charging.



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#### **6. TEST FACILITY**

| Test Site  | Attestation of Global Compliance (Shenzhen) Co., Ltd                       |  |  |
|--|--|--|--|
| Location  1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Com<br>Fuhai Street, Bao'an District, Shenzhen, Guangdong, China |  |  |  |
| Designation Number CN1259  |  |  |  |
| FCC Test Firm Registration Number  | 975832   |  |  |
| A2LA Cert. No.   | 5054.02  |  |  |
| Description  | Attestation of Global Compliance (Shenzhen) Co., Ltd is accredited by A2LA |  |  |

#### **TEST EQUIPMENT OF CONDUCTED EMISSION TEST**

| 1201 2301 111211 01 0011200122 21111001011 1201 |              |                  |        |               |               |  |
|---|--------------|------------------|--------|---------------|---------------|--|
| Equipment                                       | Manufacturer | Model            | S/N    | Cal. Date     | Cal. Due      |  |
| TEST RECEIVER                                   | R&S          | ESPI             | 101206 | Mar. 28, 2022 | Mar. 27, 2023 |  |
| LISN  | R&S          | ESH2-Z5          | 100086 | Jun. 08, 2022 | Jun. 07, 2023 |  |
| Test software                                   | R&S          | ES-K1(Ver.V1.71) | N/A    | N/A           | N/A           |  |

# **TEST EQUIPMENT OF RADIATED EMISSION TEST**

| Equipment                            | Manufacturer   | Model                | S/N        | Cal. Date     | Cal. Due      |
|--------------------------------------|----------------|----------------------|------------|---------------|---------------|
| TEST RECEIVER                        | R&S            | ESCI                 | 10096      | Mar. 28, 2022 | Mar. 27, 2023 |
| EXA Signal<br>Analyzer               | Aglient        | N9010A               | MY53470504 | Nov. 17, 2021 | Nov. 16, 2022 |
| 2.4GHz Filter                        | EM Electronics | 2400-2500            | N/A        | Mar. 22, 2022 | Mar. 21, 2024 |
| Attenuator                           | ZHINAN         | E-002                | N/A        | Aug. 04, 2022 | Aug. 03, 2024 |
| Horn antenna                         | SCHWARZBECK    | BBHA 9170            | #768       | Oct. 31, 2021 | Oct. 30, 2023 |
| Active loop<br>antenna<br>(9K-30MHz) | ZHINAN         | ZN30900C             | 18051      | Mar. 12, 2022 | Mar. 11, 2024 |
| Double-Ridged<br>Waveguide Horn      | ETS LINDGREN   | 3117                 | 00034609   | Apr. 23, 2021 | Apr. 22, 2023 |
| Broadband<br>Preamplifier            | ETS LINDGREN   | 3117PA               | 00225134   | Sep. 02, 2022 | Sep. 01, 2024 |
| ANTENNA                              | SCHWARZBECK    | VULB9168             | 494        | Jan. 08, 2021 | Jan. 07, 2023 |
| Test software                        | Tonscend       | JS32-RE<br>(Ver.2.5) | N/A        | N/A           | N/A           |



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#### 7. PEAK OUTPUT POWER

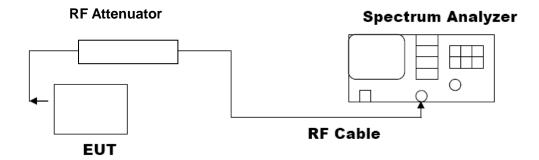
#### 7.1. MEASUREMENT PROCEDURE

For peak power test:

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2. RBW ≥ DTS bandwidth
- 3. VBW≥3\*RBW.
- 4. SPAN≥VBW.
- 5. Sweep: Auto.
- 6. Detector function: Peak.
- 7. Trace: Max hold.

Allow trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power, after any corrections for external attenuators and cables.

# 7.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) PEAK POWER TEST SETUP





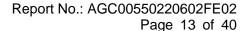
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#### 7.3. LIMITS AND MEASUREMENT RESULT

| Test Data of Conducted Output Power |                       |                     |                 |              |  |  |  |
|-------------------------------------|-----------------------|---------------------|-----------------|--------------|--|--|--|
| Test Mode                           | Test Channel<br>(MHz) | Peak Power<br>(dBm) | Limits<br>(dBm) | Pass or Fail |  |  |  |
|                                     | 2402                  | 6.596               | ≤30             | Pass         |  |  |  |
| GFSK 1M                             | 2440                  | 6.199               | ≤30             | Pass         |  |  |  |
|                                     | 2480                  | 5.495               | ≤30             | Pass         |  |  |  |

**Test Graphs of Conducted Output Power** 













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#### 8. BANDWIDTH

#### 8.1. MEASUREMENT PROCEDURE

#### 6dB bandwidth:

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 3. Set SPA Centre Frequency = Operation Frequency, RBW= 100 kHz, VBW ≥ 3×RBW.
- 4. Set SPA Trace 1 Max hold, then View.

#### Occupied bandwidth:

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2, Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 3. Set Span = approximately 2 to 5 times the 20 dB bandwidth, centered on a hoping channel
  The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW and video
  bandwidth (VBW) shall be approximately three times RBW; Sweep = auto; Detector function = peak
- 4. Set SPA Trace 1 Max hold, then View.

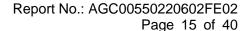
**Note:** The EUT was tested according to ANSI C63.10 for compliance to FCC PART 15.247 requirements.

#### 8.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

The same as described in section 7.2.

#### 8.3. LIMITS AND MEASUREMENT RESULTS

| Test Data of Occupied Bandwidth and DTS Bandwidth |      |                                 |                         |                 |              |  |  |
|---|------|---------------------------------|-------------------------|-----------------|--------------|--|--|
| Test Mode Test Channel (MHz)                      |      | 99% Occupied<br>Bandwidth (MHz) | -6dB<br>Bandwidth (MHz) | Limits<br>(MHz) | Pass or Fail |  |  |
|   | 2402 | 1.029                           | 0.668                   | ≥0.5            | Pass         |  |  |
| GFSK 1M   | 2440 | 1.041                           | 0.669                   | ≥0.5            | Pass         |  |  |
|   | 2480 | 1.034                           | 0.668                   | ≥0.5            | Pass         |  |  |

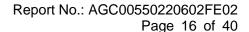




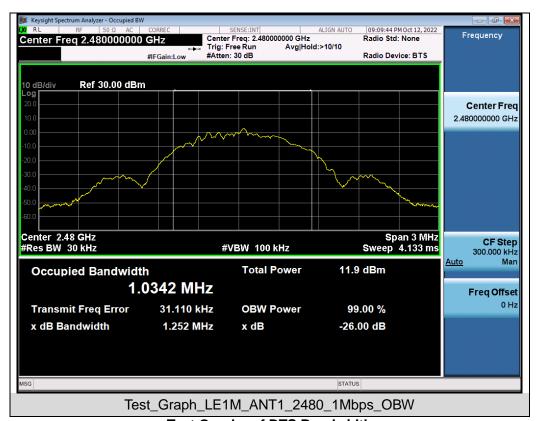
**Test Graphs of Occupied Bandwidth** 09:00:44 PM Oct 12, 2022 Radio Std: None SENSE:INT Center Freq: 2.402000000 GHz
Trig: Free Run Avg|Hol
#Atten: 30 dB Frequency Center Freq 2.402000000 GHz Avg|Hold:>10/10 Ref 30.00 dBm Center Freq 2.402000000 GHz Span 3 MHz Sweep 4.133 ms Center 2.402 GHz #Res BW 30 kHz **CF Step** #VBW 100 kHz 300,000 kHz Man Auto **Total Power** 13.2 dBm **Occupied Bandwidth** 1.0290 MHz Frea Offset 0 Hz 31.006 kHz **OBW Power** 99.00 % **Transmit Freq Error** x dB Bandwidth 1.250 MHz x dB -26.00 dB Test\_Graph\_LE1M\_ANT1\_2402\_1Mbps\_OBW 09:06:37 PM Oct 12, 2022 Radio Std: None Center Freq: 2.440000000 GHz
Trig: Free Run Avg|Hol Frequency Center Freq 2.440000000 GHz Avg|Hold: 10/10 Radio Device: BTS Ref 30.00 dBm Center Freq 2.440000000 GHz Span 3 MHz Sweep 4.133 ms Center 2.44 GHz #Res BW 30 kHz CF Step 300.000 kHz **#VBW 100 kHz** <u>Auto</u> **Total Power** 12.7 dBm **Occupied Bandwidth** 1.0405 MHz Freq Offset 0 Hz **Transmit Freq Error** 26.477 kHz **OBW Power** 99.00 % x dB Bandwidth -26.00 dB 1.251 MHz x dB

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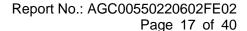
Test\_Graph\_LE1M\_ANT1\_2440\_1Mbps\_OBW



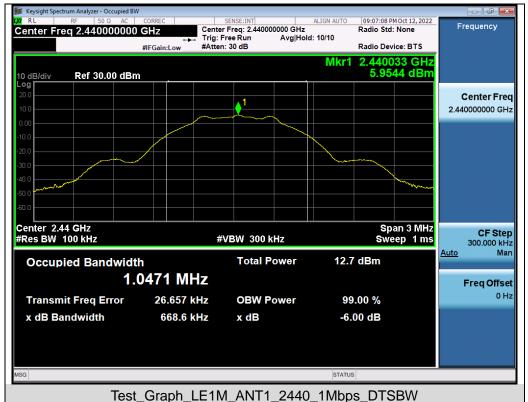
















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#### 9. CONDUCTED SPURIOUS EMISSION

#### 9.1. MEASUREMENT PROCEDURE

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2, Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 3. Set SPA Trace 1 Max hold, then View.

Note: The EUT was tested according to ANSI C63.10 for compliance to FCC PART 15.247 requirements.

# 9.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

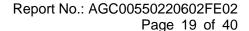
The same as described in section 7.2.

#### 9.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6.

#### 9.4. LIMITS AND MEASUREMENT RESULT

| 3.4. LIMITO AND MEAGOREMENT REGULT   |  |          |  |  |  |
|--|--|----------|--|--|--|
| LIMITS AND MEASUREMENT RESULT  |  |          |  |  |  |
| Applicable Limite  | Measurement Result                       |          |  |  |  |
| Applicable Limits  | Test Data                                | Criteria |  |  |  |
| In any 100 kHz Bandwidth Outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produce by the intentional radiator shall be at least 20 dB below that in 100KHz bandwidth within the band that contains the highest level of the desired power. | At least -20dBc than the reference level | PASS     |  |  |  |



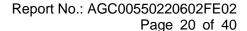


Test Graphs of Spurious Emissions in Non-Restricted Frequency Bands



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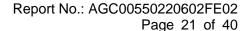
Web: http://www.agccert.com/



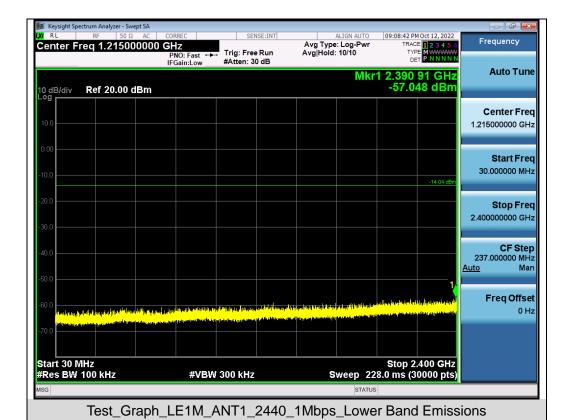








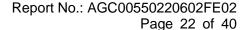






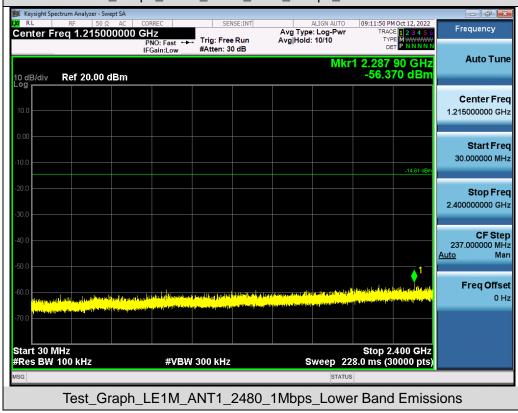
Test\_Graph\_LE1M\_ANT1\_2440\_1Mbps\_Higher Band Emissions

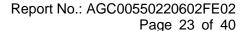
Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.



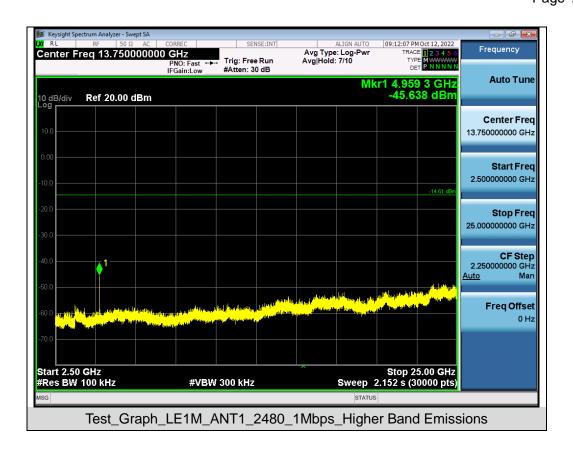


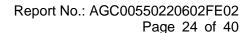




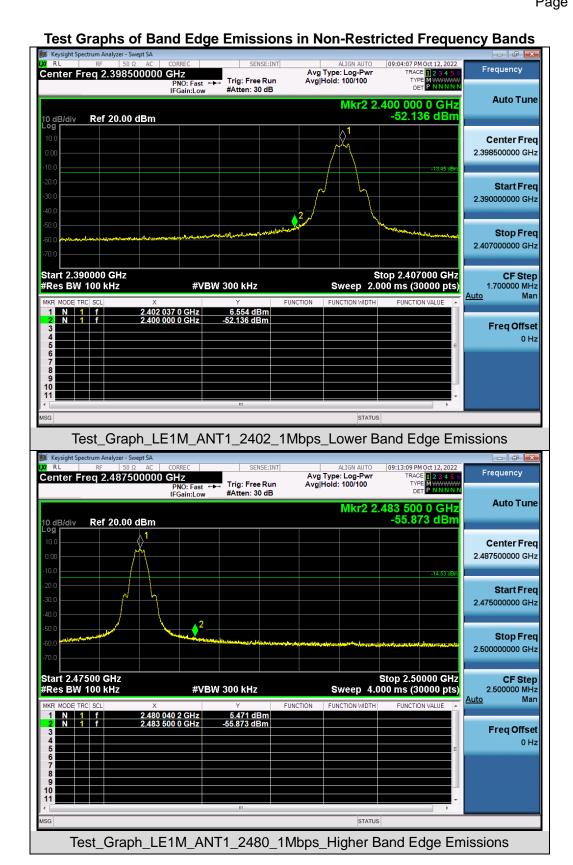














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#### 10. MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY

#### 10.1. MEASUREMENT PROCEDURE

- (1). Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- (2). Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- (3). Set the SPA Trace 1 Max hold, then View.

Note: The method of PKPSD in the KDB 558074 item 8.4 was used in this testing.

# 10.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

Refer to Section 7.2.

#### 10.3. MEASUREMENT EQUIPMENT USED

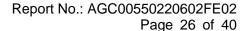
Refer to Section 6.

#### 10.4. LIMITS AND MEASUREMENT RESULT

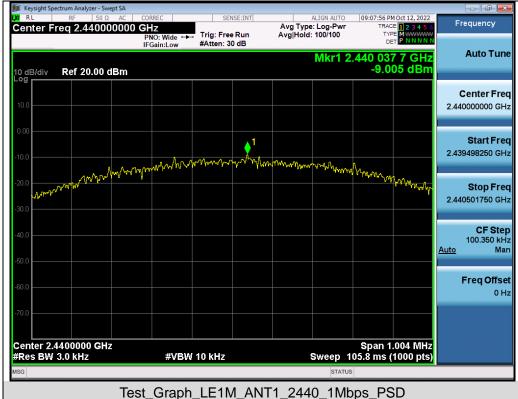
| Test Data of Conducted Output Power Spectral Density |                       |                             |                     |              |  |  |
|--|-----------------------|-----------------------------|---------------------|--------------|--|--|
| Test Mode  | Test Channel<br>(MHz) | Power density<br>(dBm/3kHz) | Limit<br>(dBm/3kHz) | Pass or Fail |  |  |
|  | 2402                  | -8.982                      | <b>≤8</b>           | Pass         |  |  |
| GFSK 1M  | 2440                  | -9.005                      | <b>≤8</b>           | Pass         |  |  |
|  | 2480                  | -10.431                     | ≤8                  | Pass         |  |  |

**Test Graphs of Conducted Output Power Spectral Density** 











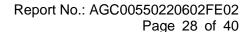


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#### 11. RADIATED EMISSION

#### 11.1. MEASUREMENT PROCEDURE

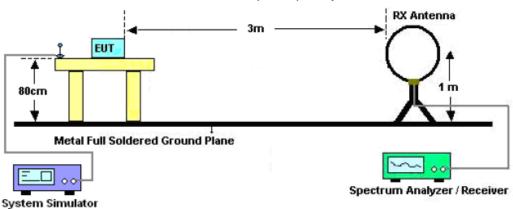
- 1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
- 2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
- 3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
- 4. For each suspected emission, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
- 5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
- 6. For emissions above 1GHz, use 1MHz RBW and 3MHz VBW for peak reading. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- 7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
- 8.If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
- 9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
- 10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High Low scan is not required in this case.



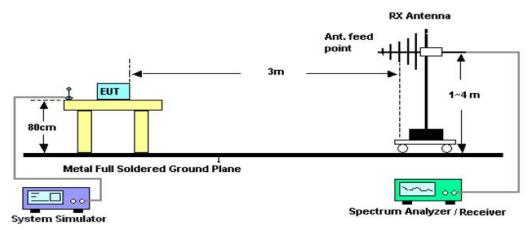


#### 11.2. TEST SETUP

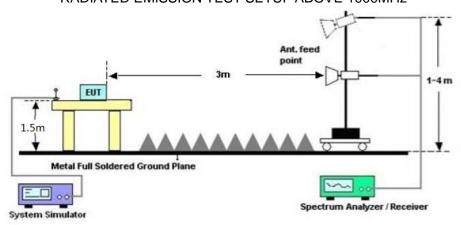
# Radiated Emission Test-Setup Frequency Below 30MHz



#### RADIATED EMISSION TEST SETUP 30MHz-1000MHz



#### RADIATED EMISSION TEST SETUP ABOVE 1000MHz





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# 11.3. LIMITS AND MEASUREMENT RESULT

15.209 Limit in the below table has to be followed

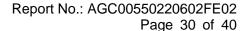
| Frequencies<br>(MHz) | Field Strength (microvolts/meter) | Measurement Distance (meters) |
|----------------------|-----------------------------------|-------------------------------|
| 0.009~0.490          | 2400/F(kHz)                       | 300                           |
| 0.490~1.705          | 24000/F(kHz)                      | 30                            |
| 1.705~30.0           | 30                                | 30                            |
| 30~88                | 100                               | 3                             |
| 88~216               | 150                               | 3                             |
| 216~960              | 200                               | 3                             |
| Above 960            | 500                               | 3                             |

Note: All modes were tested for restricted band radiated emission, the test records reported below are the worst result compared to other modes.

#### 11.4. TEST RESULT

#### Radiated emission below 30MHz

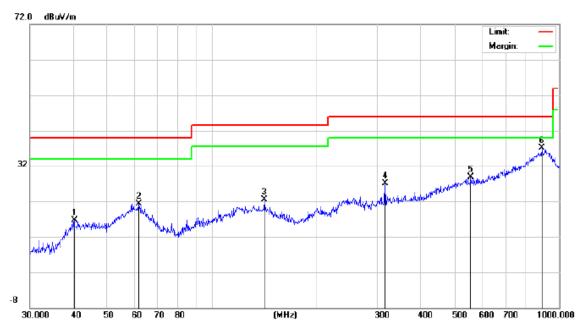
The amplitude of spurious emissions from 9kHz to 30MHz which are attenuated more than 20 dB below the permissible value need not be reported.





Radiated emission from 30MHz to 1000MHz

| EUT         | smartwatch | Model Name        | W10            |
|-------------|------------|-------------------|----------------|
| Temperature | 25° C      | Relative Humidity | 55.4%          |
| Pressure    | 960hPa     | Test Voltage      | Normal Voltage |
| Test Mode   | Mode 1     | Antenna           | Horizontal     |



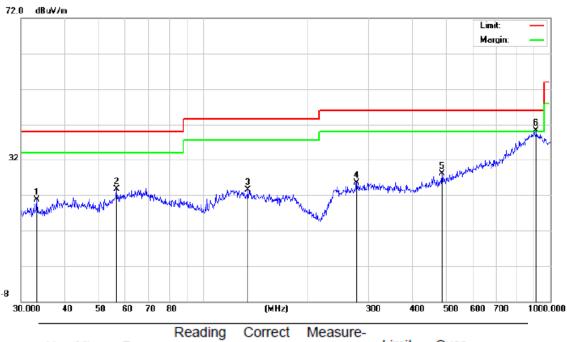
| No. | Mk. | Freq.    | Reading<br>Level | Correct<br>Factor | Measure-<br>ment | Limit  | Over   |          |
|-----|-----|----------|------------------|-------------------|------------------|--------|--------|----------|
|     |     | MHz      | dBu∀             | dB                | dBuV/m           | dBuV/m | dB     | Detector |
| 1   |     | 40.2757  | 5.61             | 11.08             | 16.69            | 40.00  | -23.31 | peak     |
| 2   |     | 61.7781  | 5.83             | 15.53             | 21.36            | 40.00  | -18.64 | peak     |
| 3   | 1   | 141.8262 | 6.97             | 15.51             | 22.48            | 43.50  | -21.02 | peak     |
| 4   | 3   | 315.4808 | 9.49             | 17.63             | 27.12            | 46.00  | -18.88 | peak     |
| 5   | 5   | 556.7744 | 6.43             | 22.54             | 28.97            | 46.00  | -17.03 | peak     |
| 6   | * 8 | 390.7278 | 5.67             | 31.46             | 37.13            | 46.00  | -8.87  | peak     |

**RESULT: PASS** 



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| EUT         | smartwatch | Model Name        | W10            |
|-------------|------------|-------------------|----------------|
| Temperature | 25° C      | Relative Humidity | 55.4%          |
| Pressure    | 960hPa     | Test Voltage      | Normal Voltage |
| Test Mode   | Mode 1     | Antenna           | Vertical       |



| No. | Mk | . Freq.  | Reading<br>Level | Correct<br>Factor | Measure-<br>ment | Limit  | Over   |          |
|-----|----|----------|------------------|-------------------|------------------|--------|--------|----------|
|     |    | MHz      | dBu∀             | dB                | dBuV/m           | dBuV/m | dB     | Detector |
| 1   |    | 33.3279  | 7.52             | 13.21             | 20.73            | 40.00  | -19.27 | peak     |
| 2   |    | 56.5929  | 6.99             | 16.68             | 23.67            | 40.00  | -16.33 | peak     |
| 3   |    | 134.5592 | 5.79             | 17.70             | 23.49            | 43.50  | -20.01 | peak     |
| 4   |    | 277.0935 | 4.88             | 20.70             | 25.58            | 46.00  | -20.42 | peak     |
| 5   |    | 487.3151 | 6.53             | 21.61             | 28.14            | 46.00  | -17.86 | peak     |
| 6   | *  | 909.6667 | 6.00             | 34.34             | 40.34            | 46.00  | -5.66  | peak     |

# RESULT: PASS Note:

- 1. Factor=Antenna Factor + Cable loss, Over=Measurement-Limit.
- 2. All test modes had been tested. The mode 1 is the worst case and recorded in the report.



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# Radiated emission above 1GHz

| EUT         | smartwatch | Model Name        | W10            |
|-------------|------------|-------------------|----------------|
| Temperature | 25° C      | Relative Humidity | 55.4%          |
| Pressure    | 960hPa     | Test Voltage      | Normal Voltage |
| Test Mode   | Mode 1     | Antenna           | Horizontal     |

| Frequency | Meter Reading | Factor        | Emission Level | Limits   | Margin | Value Type |
|-----------|---------------|---------------|----------------|----------|--------|------------|
| (MHz)     | (dBµV)        | (dB)          | (dBµV/m)       | (dBµV/m) | (dB)   | value Type |
| 4804.000  | 43.63         | 0.08 43.71 74 |                | -30.29   | peak   |            |
| 4804.000  | 35.58         | 0.08          | 35.66          | 54       | -18.34 | AVG        |
| 7206.000  | 38.14         | 2.21          | 40.35          | 74       | -33.65 | peak       |
| 7206.000  | 31.39         | 2.21          | 33.6           | 54       | -20.4  | AVG        |
|           |               |               |                |          |        |            |
|           |               |               |                |          |        |            |

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

| EUT         | smartwatch | Model Name        | W10            |
|-------------|------------|-------------------|----------------|
| Temperature | 25° C      | Relative Humidity | 55.4%          |
| Pressure    | 960hPa     | Test Voltage      | Normal Voltage |
| Test Mode   | Mode 1     | Antenna           | Vertical       |

| Frequency | Meter Reading | Factor | Emission Level | Limits   | Margin | Value Type |
|-----------|---------------|--------|----------------|----------|--------|------------|
| (MHz)     | (dBµV)        | (dB)   | (dBµV/m)       | (dBµV/m) | (dB)   | value Type |
| 4804.000  | 44.85         | 0.08   | 44.93          | 74       | -29.07 | peak       |
| 4804.000  | 34.69         | 0.08   | 34.77          | 54       | -19.23 | AVG        |
| 7206.000  | 38.41         | 2.21   | 40.62          | 74       | -33.38 | peak       |
| 7206.000  | 30.33         | 2.21   | 32.54          | 54       | -21.46 | AVG        |
|           |               |        |                |          |        |            |
|           |               |        |                |          |        |            |

Remark:

Factor = Antenna Factor + Cable Loss - Pre-amplifier.



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| EUT         | smartwatch | Model Name        | W10            |
|-------------|------------|-------------------|----------------|
| Temperature | 25° C      | Relative Humidity | 55.4%          |
| Pressure    | 960hPa     | Test Voltage      | Normal Voltage |
| Test Mode   | Mode 2     | Antenna           | Horizontal     |

| Frequency | Meter Reading | Factor | Emission Level | Limits   | Margin | - Value Type |
|-----------|---------------|--------|----------------|----------|--------|--------------|
| (MHz)     | (dBµV)        | (dB)   | (dBµV/m)       | (dBµV/m) | (dB)   | value Type   |
| 4880.000  | 44.89         | 0.14   | 45.03          | 74       | -28.97 | peak         |
| 4880.000  | 35.56         | 0.14   | 35.7           | 54       | -18.3  | AVG          |
| 7320.000  | 39.54         | 2.36   | 41.9           | 74       | -32.1  | peak         |
| 7320.000  | 31.41         | 2.36   | 33.77          | 54       | -20.23 | AVG          |
|           |               |        |                |          |        |              |
|           |               |        |                |          |        |              |
| Remark:   |               |        |                |          |        |              |

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

| EUT         | smartwatch | Model Name        | W10            |
|-------------|------------|-------------------|----------------|
| Temperature | 25° C      | Relative Humidity | 55.4%          |
| Pressure    | 960hPa     | Test Voltage      | Normal Voltage |
| Test Mode   | Mode 2     | Antenna           | Vertical       |

| Frequency | Meter Reading | Factor | Emission Level | Limits   | Margin | Value Type |
|-----------|---------------|--------|----------------|----------|--------|------------|
| (MHz)     | (dBµV)        | (dB)   | (dBµV/m)       | (dBµV/m) | (dB)   | value Type |
| 4880.000  | 45.63         | 0.14   | 45.77          | 74       | -28.23 | peak       |
| 4880.000  | 38.52         | 0.14   | 38.66          | 54       | -15.34 | AVG        |
| 7320.000  | 40.78         | 2.36   | 43.14          | 74       | -30.86 | peak       |
| 7320.000  | 32.59         | 2.36   | 34.95          | 54       | -19.05 | AVG        |
|           |               |        |                |          |        |            |
|           |               |        |                |          |        |            |

#### Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.



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| EUT         | smartwatch | Model Name        | W10            |
|-------------|------------|-------------------|----------------|
| Temperature | 25° C      | Relative Humidity | 55.4%          |
| Pressure    | 960hPa     | Test Voltage      | Normal Voltage |
| Test Mode   | Mode 3     | Antenna           | Horizontal     |

| Frequency | Meter Reading | Factor | Emission Level | Limits   | Margin | - Value Type |
|-----------|---------------|--------|----------------|----------|--------|--------------|
| (MHz)     | (dBµV)        | (dB)   | (dBµV/m)       | (dBµV/m) | (dB)   | value Type   |
| 4960.000  | 44.95         | 0.22   | 45.17          | 74       | -28.83 | peak         |
| 4960.000  | 35.74         | 0.22   | 35.96          | 54       | -18.04 | AVG          |
| 7440.000  | 38.28         | 2.64   | 40.92          | 74       | -33.08 | peak         |
| 7440.000  | 29.36         | 2.64   | 32             | 54       | -22    | AVG          |
|           |               |        |                |          |        |              |
|           |               |        |                |          |        |              |
| Remark:   |               |        |                |          |        |              |

Verriari.

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

| EUT         | smartwatch | Model Name        | W10            |
|-------------|------------|-------------------|----------------|
| Temperature | 25° C      | Relative Humidity | 55.4%          |
| Pressure    | 960hPa     | Test Voltage      | Normal Voltage |
| Test Mode   | Mode 3     | Antenna           | Vertical       |

| Frequency | Meter Reading | Factor | Emission Level | Limits   | Margin | Value Type |
|-----------|---------------|--------|----------------|----------|--------|------------|
| (MHz)     | (dBµV)        | (dB)   | (dBµV/m)       | (dBµV/m) | (dB)   | value Type |
| 4960.000  | 42.29         | 0.22   | 42.51          | 74       | -31.49 | peak       |
| 4960.000  | 34.62         | 0.22   | 34.84          | 54       | -19.16 | AVG        |
| 7440.000  | 38.41         | 2.64   | 41.05          | 74       | -32.95 | peak       |
| 7440.000  | 29.33         | 2.64   | 31.97          | 54       | -22.03 | AVG        |
|           |               |        |                |          |        |            |
|           |               |        |                |          |        |            |
| Remark:   |               |        |                |          |        |            |

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

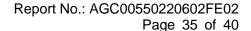
#### **RESULT: PASS**

#### Note:

The amplitude of other spurious emissions from 1G to 25 GHz which are attenuated more than 20 dB below the permissible value need not be reported.

Factor = Antenna Factor + Cable loss - Amplifier gain, Margin=Level-Limit.

The "Factor" value can be calculated automatically by software of measurement system.

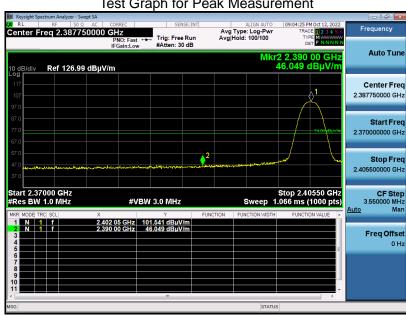


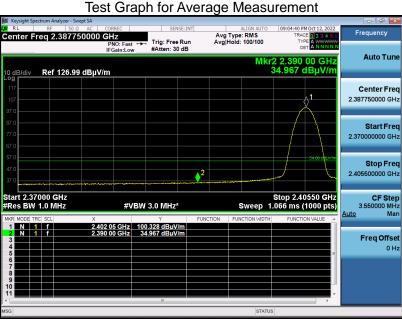


Test result for band edge emission at restricted bands

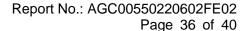
| EUT         | smartwatch | Model Name        | W10            |
|-------------|------------|-------------------|----------------|
| Temperature | 25° C      | Relative Humidity | 55.4%          |
| Pressure    | 960hPa     | Test Voltage      | Normal Voltage |
| Test Mode   | Mode 1     | Antenna           | Horizontal     |

Test Graph for Peak Measurement





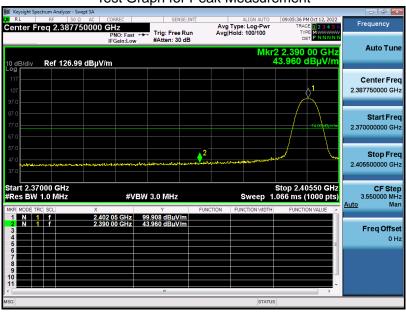
**RESULT: PASS** 

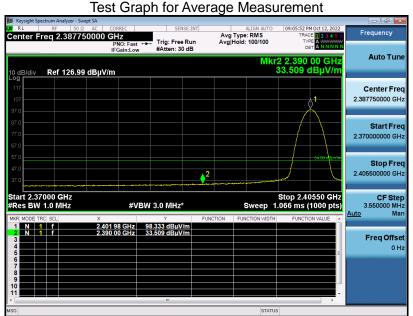




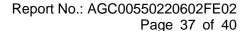
**EUT Model Name** W10 smartwatch 25° C **Temperature Relative Humidity** 55.4% 960hPa **Test Voltage** Normal Voltage **Pressure Test Mode** Mode 1 **Antenna** Vertical

Test Graph for Peak Measurement





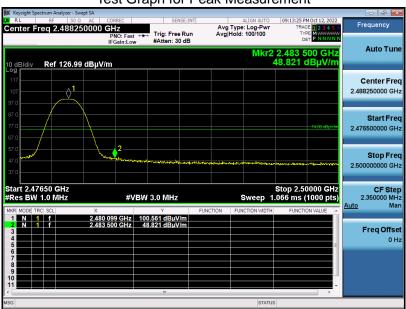
**RESULT: PASS** 

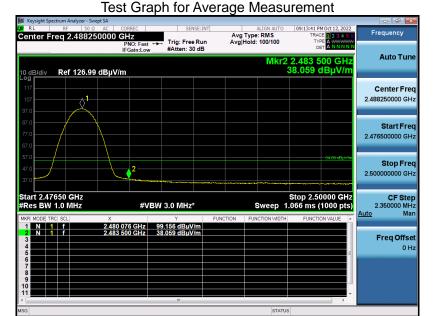




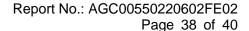
**EUT Model Name** W10 smartwatch 25° C **Temperature Relative Humidity** 55.4% 960hPa **Test Voltage** Normal Voltage **Pressure Test Mode** Mode 3 **Antenna** Horizontal

Test Graph for Peak Measurement





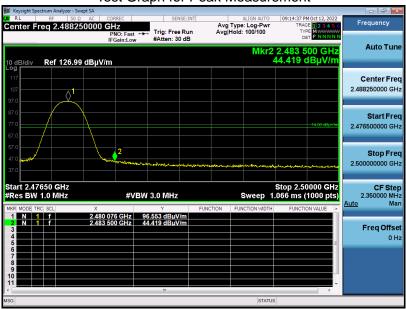
**RESULT: PASS** 

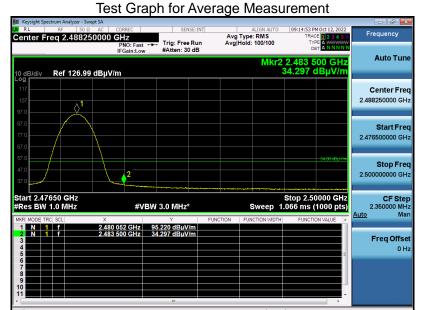




**EUT** W10 smartwatch **Model Name** 25° C **Temperature Relative Humidity** 55.4% 960hPa Normal Voltage **Pressure Test Voltage Test Mode** Mode 3 **Antenna** Vertical

Test Graph for Peak Measurement





#### **RESULT: PASS**

Note: The factor had been edited in the "Input Correction" of the Spectrum Analyzer.



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# APPENDIX A: PHOTOGRAPHS OF TEST SETUP

Refer to the Report No.: AGC00550220602AP02

APPENDIX B: PHOTOGRAPHS OF EUT Refer to the Report No.: AGC00550220602AP03

----END OF REPORT----



# Conditions of Issuance of Test Reports

- 1. All samples and goods are accepted by the Attestation of Global Compliance (Shenzhen) Co., Ltd. (the "Company") solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the company and any person, firm or company requesting its services (the "Clients").
- 2. Any report issued by Company as a result of this application for testing services (the "Report") shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to its customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.
- 3. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.
- 4. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.
- 5. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.
- 6. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.
- 7. Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.
- 8. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.
- 9. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.