

# **FCC Test Report**

Report No.: AGC05877210406FE02

FCC ID	8	2APA9-IMISW11L
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	Smart Watch W11L
BRAND NAME		N/A
MODEL NAME	i	IMISW11L
APPLICANT		Shanghai Imilab Technology Co., Ltd.
DATE OF ISSUE	8	May 13, 2021
STANDARD(S)	:	FCC Part 15.247
REPORT VERSION	:	V1.0



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### **REPORT REVISE RECORD**

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0		May 13, 2021	Valid	Initial Release

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# **1. VERIFICATION OF COMPLIANCE**

Applicant	Shanghai Imilab Technology Co., Ltd.			
Address	Room 001A, Floor 11, Block 1, No. 588 Zixing Road, Minhang District, Shanghai, China			
Manufacturer	Shanghai Imilab Technology Co., Ltd.			
Address	Room 001A, Floor 11, Block 1, No. 588 Zixing Road, Minhang District, Shanghai, China			
Product Designation	Smart Watch W11L			
Brand Name	N/A			
Test Model	IMISW11L			
Date of test	Apr. 29, 2021 to May 13, 2021			
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

Then Hurry

Thea Huang Project Engineer

May 13, 2021

Reviewed By

Max Zhan

Max Zhang Reviewer

May 13, 2021

Approved By

Forrest Lei Authorized Officer

May 13, 2021

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# 2. GENERAL INFORMATION

## 2.1. PRODUCT DESCRIPTION

The EUT is designed as a "Smart Watch W11L". 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

<b>Operation Frequency</b>	2.402 GHz to 2.480GHz
RF Output Power	0.025dBm (Max)
Bluetooth Version	V5.0
Modulation	BR GFSK, EDR π /4-DQPSK, 8DPSK BLE GFSK 1Mbps GFSK 2Mbps
Number of channels	40 Channel
Antenna Designation	Fixed Antenna (Comply with requirements of the FCC part 15.203)
Antenna Gain	0dBi
Hardware Version	RH268_V01
Software Version	V002848
Power Supply	DC 3.7V by battery or DC 5V by adapter
Note: The EUT doesn't supr	

I doesn't support BR&EDR.

## **2.2. TABLE OF CARRIER FREQUENCYS**

Frequency Band	Channel Number	Frequency
	0	2402 MHz
		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: 2APA9-IMISW11L filing 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  $\pm U$ , 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	$U_{c} = \pm 2 \%$	

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## 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.

	SOUMS	are Setting		
festTool_v1.0.1.2				- 🗆
	ODown	nload		
LE Enhance TX $\sim$	Channel	19 ~	Detect	Open
PRBS 9 V	Data Length	37	COM1	FAIL
	Stop Chappel	20	☐ COM11	CK
u ~	s cop tende incl	39 🗸	COM12	FAIL
LE 1M $\sim$	Modulation Index	Stable Modulation	✓ COM13	FAIL
Set Freq Value			COM14	FAIL
Stop		Result	COM15	FAIL
		Download	COM16	FAIL
Handle: Port(3) status(0) [HCI] Handle: Port(7) status(0) [HCI]		^	COM17	FAIL
Handle: Port(1) Status(1) [HC[] Handle: Port(6) status(0) [HCI] Handle: Port(4) status(0) [HCI] Handle: Port(2) status(0) [HCI] Handle: Port(0) status(0) [HCI] entHandle: Port(1) LE Enhance 1	tus(1) [HCI]			
	LE Enhance TX  PRBS 9  UE IM  EL IM  Set Freq Value  Stop  Handle: Port(3) status(0) (HCI Handle: Port(7) status(0) (HCI Handle: Port(7) status(0) (HCI Handle: Port(7) status(0) (HCI Handle: Port(3) status(0) (HCI Handle: Port(1) status(0) (HCI Handle: Port(1) ILE TertEnd data		estTool_v1.0.1.2         O Download         ILE Enhance TX         Channel         19         PRES 9         Data Length         37         0         Stop Channel         39         ILE IM         Modulation Index         Stable Modulation         Stop         Result         Download	restTool_v1.0.1.2

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# **5. SYSTEM TEST CONFIGURATION**

## 5.1. CONFIGURATION OF TESTED SYSTEM

Radiated Emission Configure:

EUT

## Conducted Emission Configure:

EUT	AE

## 5.2. EQUIPMENT USED IN TESTED SYSTEM

Item	Equipment	Model No.	ID or Specification	Remark
1	Smart Watch W11L	IMISW11L	2APA9-IMISW11L	EUT
2	Control Box	N/A	USB-TTL	AE

## **5.3. SUMMARY OF TEST RESULTS**

DESCRIPTION OF TEST	RESULT
Peak Output Power	Compliant
6 dB Bandwidth	Compliant
Conducted Spurious Emission	Compliant
Maximum Conducted Output Power Density	Compliant
Radiated Emission	Compliant
Conducted Emission	Not applicable
	Peak Output Power 6 dB Bandwidth Conducted Spurious Emission Maximum Conducted Output Power Density Radiated Emission

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 Community, 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 RADIATED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	May 15, 2020	May 14, 2021
EXA Signal Analyzer	Aglient	N9010A	MY53470504	Dec. 07, 2020	Dec. 06, 2021
2.4GHz Filter	EM Electronics	2400-2500MHz	N/A	Mar. 23, 2020	Mar. 22, 2022
Attenuator	ZHINAN	E-002	N/A	Sep. 03, 2020	Sep. 02, 2022
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Sep. 21, 2019	Sep. 20, 2021
Active loop antenna (9K-30MHz)	ZHINAN	ZN30900C	18051	May 22, 2020	May 21, 2022
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	May 17, 2019	May 16, 2021
Broadband Preamplifier	ETS LINDGREN	3117PA	00225134	Sep. 03, 2020	Sep. 02, 2022
ANTENNA	SCHWARZBECK	VULB9168	494	Jan. 08, 2021	Jan. 07, 2023
Test software	Tonscend	JS32-RE (Ver.2.5)	N/A	N/A	N/A

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# 7. PEAK OUTPUT POWER

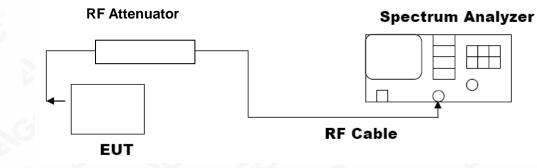
## 7.1. MEASUREMENT PROCEDURE

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

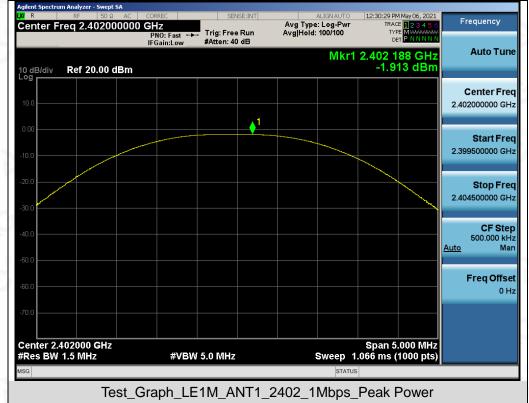


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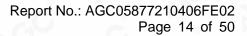
#### 7.3. LIMITS AND MEASUREMENT RESULT

Test Data of Conducted Output Power							
Test ModeTest Channel (MHz)Peak Power (dBm)Limits (dBm)Pass or Fail							
N	2402	-1.913	≤30	Pass			
GFSK 1M	2440	-0.866	≤30	Pass			
0	2480	0.025	≤30	Pass			

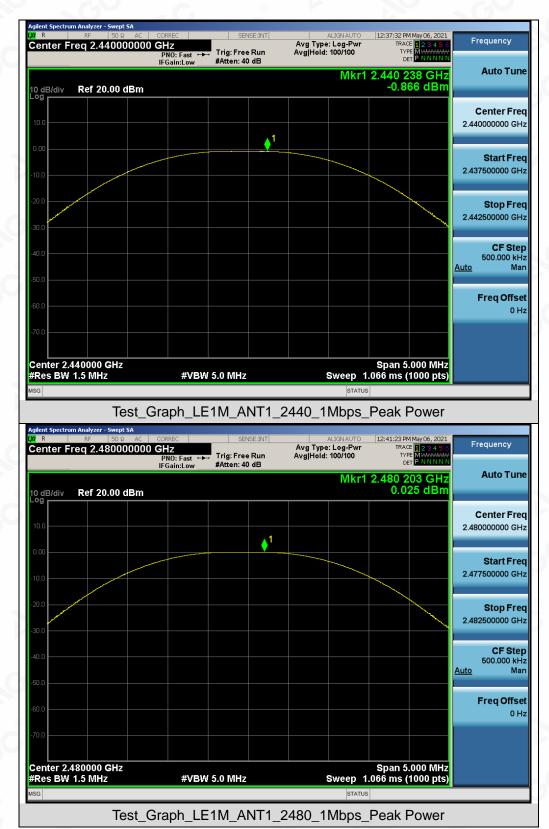


#### **Test Graphs of Conducted Output Power**

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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 $\ge$ 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)

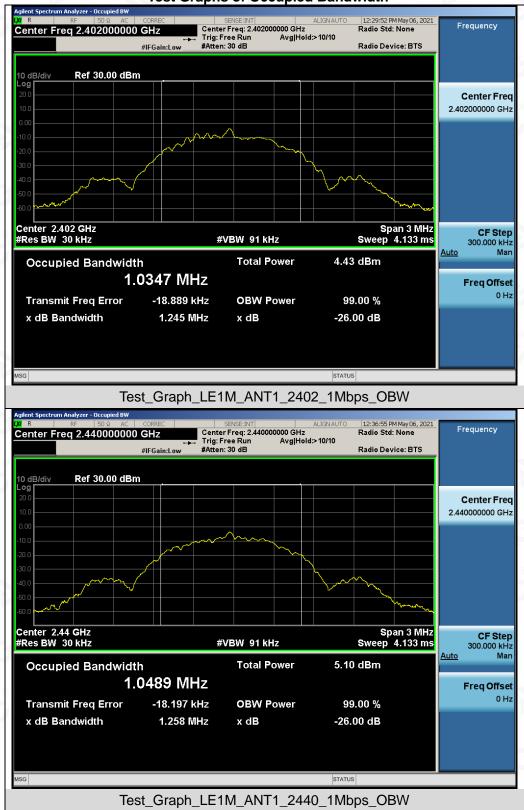
The same as described in section 7.2.

## 8.3. LIMITS AND MEASUREMENT RESULTS

Test Data of Occupied Bandwidth and DTS Bandwidth								
Test ModeTest Channel (MHz)99% Occupied Bandwidth (MHz)-6dB Bandwidth (MHz)Limits (MHz)Pass or Fail								
- 60	2402	1.035	0.676	≥0.5	Pass			
GFSK 1M	2440	1.049	0.682	≥0.5	Pass			
0	2480	1.046	0.675	≥0.5	Pass			

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## Test Graphs of Occupied Bandwidth

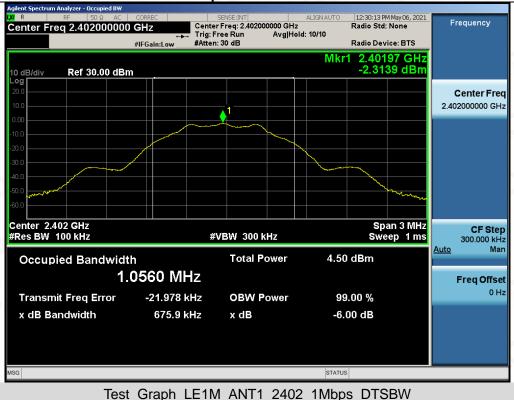
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Test\_Graph\_LE1M\_ANT1\_2480\_1Mbps\_OBW



Test Graphs of DTS Bandwidth

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## Test\_Graph\_LE1M\_ANT1\_2440\_1Mbps\_DTSBW



## Test\_Graph\_LE1M\_ANT1\_2480\_1Mbps\_DTSBW

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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

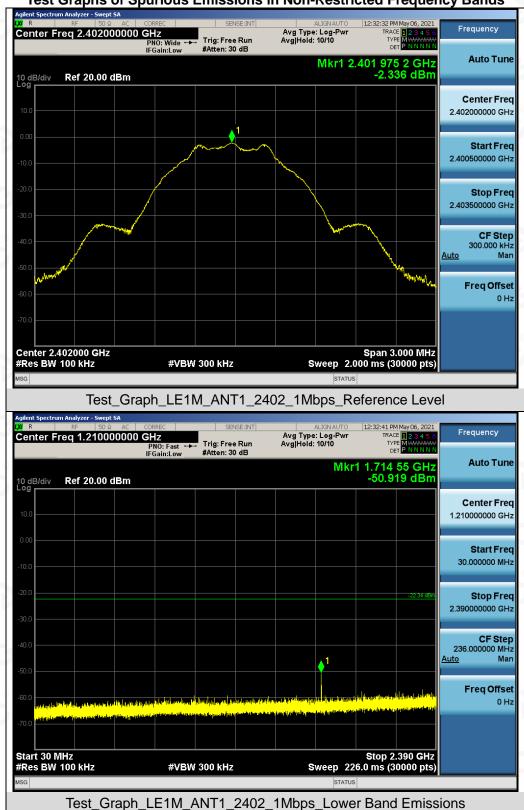
The same as described in section 6.

#### 9.4. LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT						
Appliechle 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				

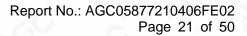
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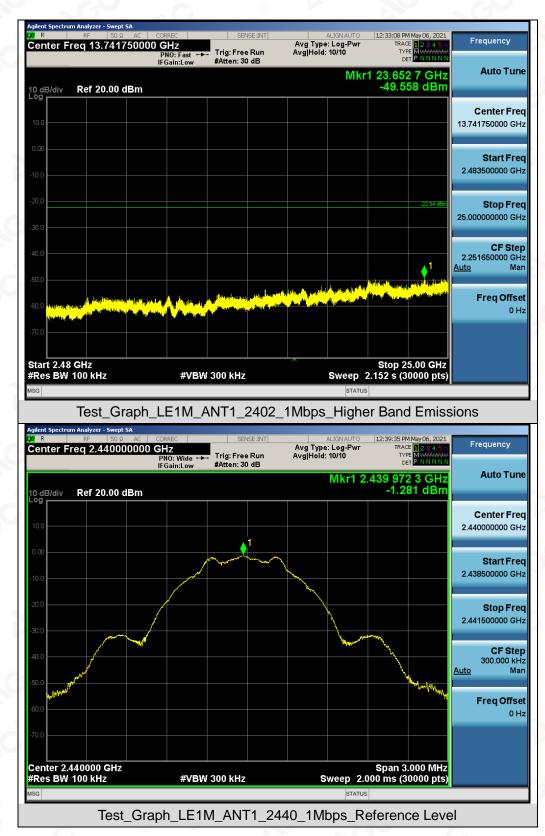


#### Test Graphs of Spurious Emissions in Non-Restricted Frequency Bands

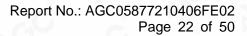
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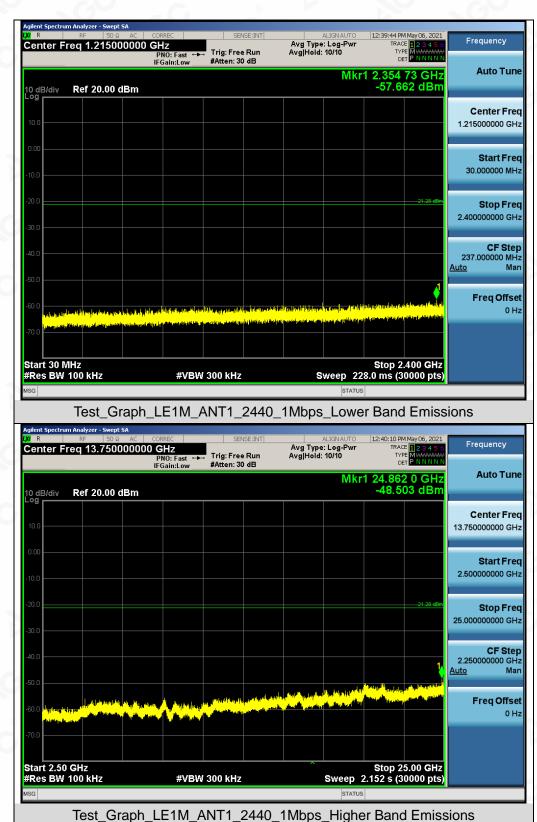




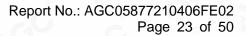
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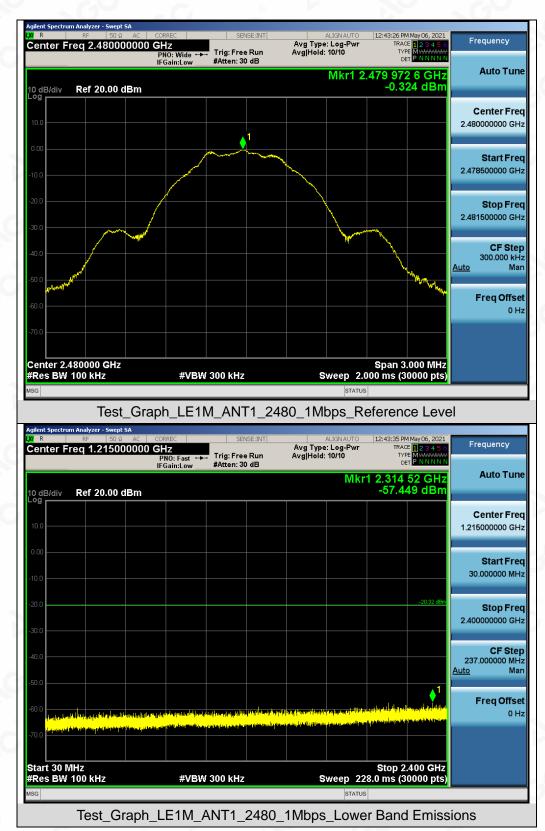




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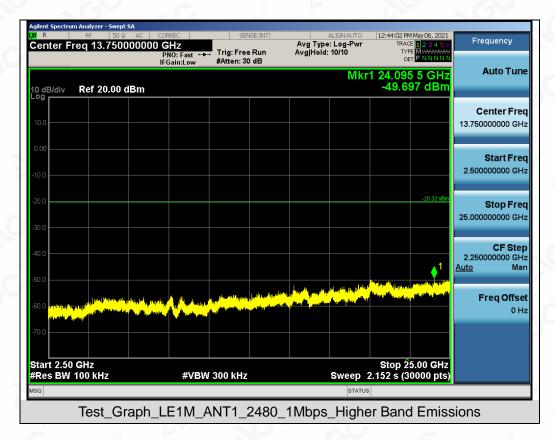




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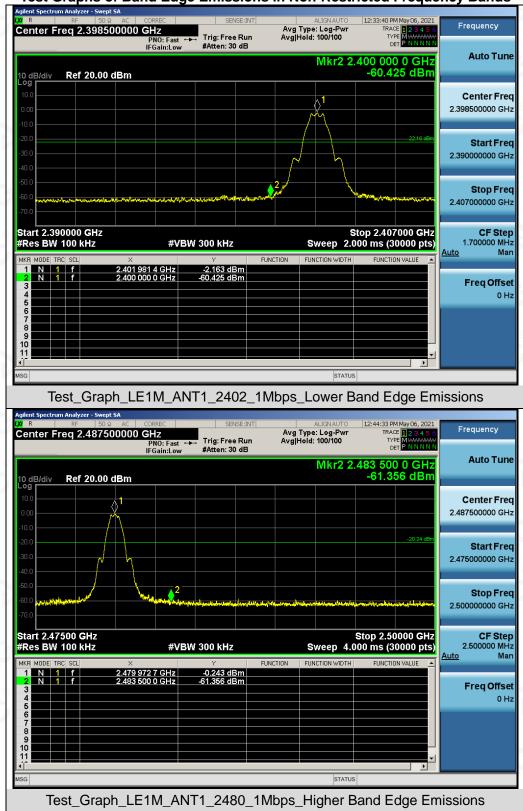
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 Attestation of Global Compliance(Shenzhen)Co., Ltd

 Attestation of Global Compliance(Shenzhen)Std & Tech Co., Ltd

 Tel: +86-755 2523 4088
 E-mail: agc@agc-cert.com





#### Test Graphs of Band Edge Emissions in Non-Restricted Frequency Bands

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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.

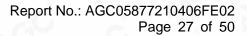
#### **10.4. LIMITS AND MEASUREMENT RESULT**

Test Data of Conducted Output Power Spectral Density								
Test ModeTest Channel (MHz)Power density (dBm/3kHz)Limit (dBm/3kHz)Pass or Fail								
	2402	-16.452	≪8	Pass				
GFSK 1M	2440	-16.795	≪8	Pass				
	2480	-14.959	≤8	Pass				

## Test Graphs of Conducted Output Power Spectral Density



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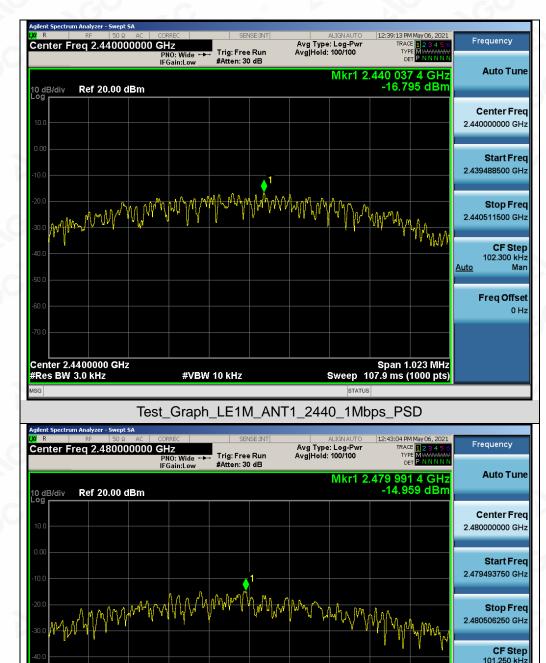


Auto

Span 1.013 MHz Sweep 106.8 ms (1000 pts) Mar

Freq Offset





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Test\_Graph\_LE1M\_ANT1\_2480\_1Mbps\_PSD

#VBW 10 kHz

Center 2.4800000 GHz #Res BW 3.0 kHz



## **11. RADIATED EMISSION**

#### **11.1. MEASUREMENT PROCEDURE**

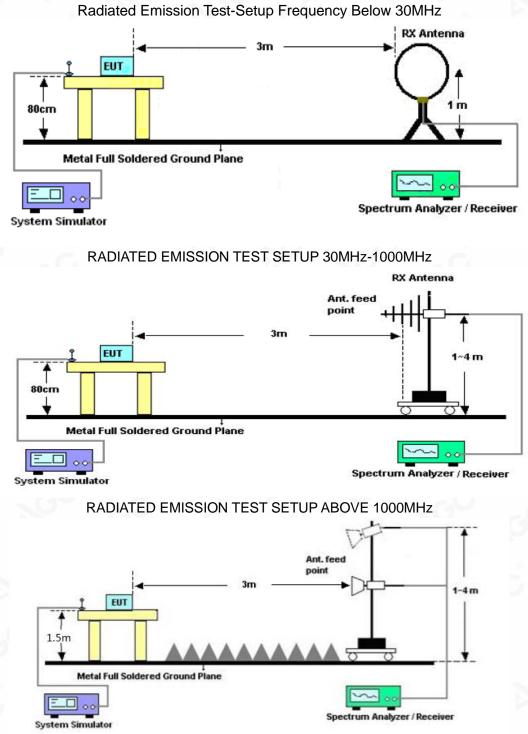
- 1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
- 2. Power on the EUT and all the supporting units. The turntable was rotated 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.

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## 11.2. TEST SETUP



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## **11.3. LIMITS AND MEASUREMENT RESULT**

15.209 Limit in the below table has to be followed

Frequencies (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.

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72.0 dBuV/m

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> Limit: Margin:

EUT	Smart Watch W11L	Model Name	IMISW11L		
Temperature	25° C	Relative Humidity	55.4%		
Pressure	960hPa	Test Voltage	Normal Voltage		
Test Mode	Mode 3	Antenna	Horizontal		

#### Radiated emission from 30MHz to 1000MHz

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	30.000	127.00	224.00		3.00 515.00		09.00 806.	00	1000.00 MHz
	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
6			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
	1	(	61.0400	5.92	17.79	23.71	40.00	-16.29	peak
3	2	13	37.6700	5.71	20.85	26.56	43.50	-16.94	peak
	3	4′	18.0000	5.91	24.98	30.89	46.00	-15.11	peak
	4	59	90.6599	6.06	26.77	32.83	46.00	-13.17	peak
	5	80	09.8800	5.97	30.54	36.51	46.00	-9.49	peak
	6	* 95	51.5000	6.29	32.14	38.43	46.00	-7.57	peak

**RESULT: PASS** 

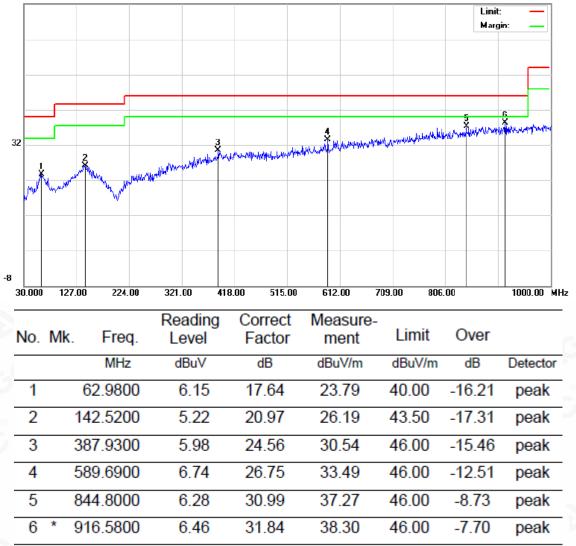
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EUT	Smart Watch W11L	Model Name	IMISW11L
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical

72.0 dBuV/m



#### RESULT: PASS Note:

1. Factor=Antenna Factor + Cable loss, Over=Measurement-Limit.

2. All test modes had been tested. The mode 3 is the worst case and recorded in the report.

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## Report No.: AGC05877210406FE02 Page 33 of 50

## Radiated emission above 1GHz

EUT	Smart Watch W11L	Model Name	IMISW11L
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	Malus Tra
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	- Value Type
4804.000	43.52	0.08	43.6	74	-30.4	peak
4804.000	35.26	0.08	35.34	54	-18.66	AVG
7206.000	38.37	2.21	40.58	74	-33.42	peak
7206.000	31.41	2.21	33.62	54	-20.38	AVG
	C	8			C.	8
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actor = Anter	na Factor + Cab	le Loss – Pre-	amplifier.		(2)	

EUT	Smart Watch W11L	Model Name	IMISW11L
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
4804.000	44.69	0.08	44.77	74	-29.23	peak
4804.000	34.35	0.08	34.43	54 💿	-19.57	AVG
7206.000	38.32	2.21	40.53	74	-33.47	peak
7206.000	30.47	2.21	32.68	54	-21.32	AVG
		<u> </u>		0		

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

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EUT	Smart Watch W11L	Model Name	IMISW11L
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	44.74	0.14	44.88	74	-29.12	peak
4880.000	35.53	0.14	35.67	54	-18.33	AVG
7320.000	39.62	2.36	9 41.98	74	-32.02	peak
7320.000	31.49	2.36	33.85	54	-20.15	AVG
60		8		- 60		8
emark:	Gy _ (		6			- 6
actor = Anter	na Factor + Cabl	e Loss – Pre-	amplifier.			

EUT	Smart Watch W11L	Model Name	IMISW11L
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	45.79	0.14	45.93	74	-28.07	peak
4880.000	38.58	0.14	38.72	54 💿	-15.28	AVG
7320.000	40.64	2.36	43	74	-31	peak
7320.000	32.32	2.36	34.68	54	-19.32	AVG
		100		®		

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

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#### Report No.: AGC05877210406FE02 Page 35 of 50

EUT	Smart Watch W11L	Model Name	IMISW11L
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	44.79	0.22	45.01	74	-28.99	peak
4960.000	35.54	0.22	35.76	54	-18.24	AVG
7440.000	38.36	2.64	9 41	74	-33	peak
7440.000	29.41	2.64	32.05	54	-21.95	AVG
						3

EUT	Smart Watch W11L	Model Name	IMISW11L
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical

Meter Reading	Factor	Emission Level	Limits	Margin	
(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type
42.65	0.22	42.87	74	-31.13	peak
34.32	0.22	34.54	54	-19.46	AVG
38.48	2.64	41.12	74 💿	-32.88	peak
29.41	2.64	32.05	54	-21.95	AVG
	0			60	.0
		3			
	(dBµV) 42.65 34.32 38.48	(dBµV)         (dB)           42.65         0.22           34.32         0.22           38.48         2.64	(dBµV)         (dB)         (dBµV/m)           42.65         0.22         42.87           34.32         0.22         34.54           38.48         2.64         41.12	(dBµV)         (dB)         (dBµV/m)         (dBµV/m)           42.65         0.22         42.87         74           34.32         0.22         34.54         54           38.48         2.64         41.12         74	(dBµV)         (dB)         (dBµV/m)         (dBµV/m)         (dB)           42.65         0.22         42.87         74         -31.13           34.32         0.22         34.54         54         -19.46           38.48         2.64         41.12         74         -32.88

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.

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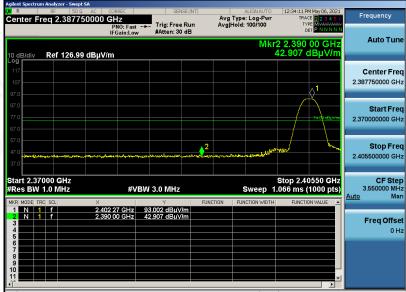


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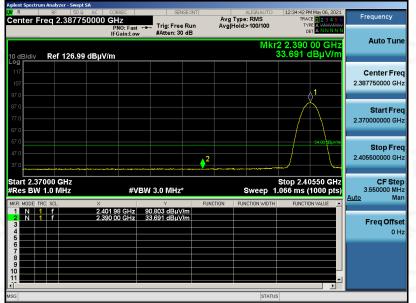
EUT	Smart Watch W11L	Model Name	IMISW11L
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Horizontal

## Test result for band edge emission at restricted bands

Test Graph for Peak Measurement



Test Graph for Average Measurement



**RESULT: PASS** 

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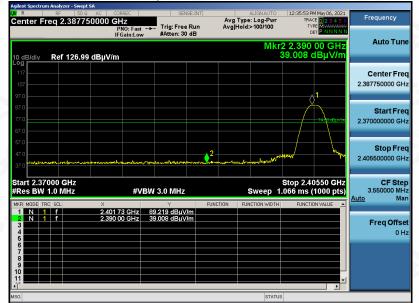
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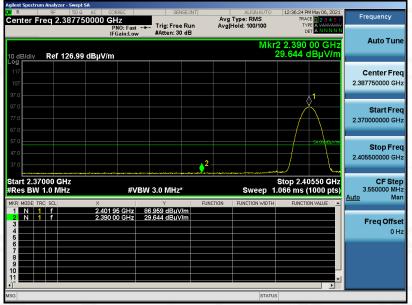
### Report No.: AGC05877210406FE02 Page 37 of 50

EUT	Smart Watch W11L	Model Name	IMISW11L
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Vertical

Test Graph for Peak Measurement



Test Graph for Average Measurement



**RESULT: PASS** 

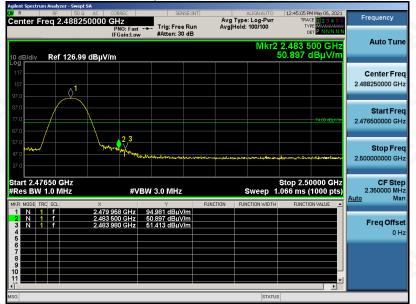
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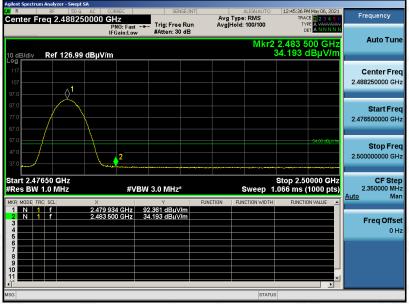
### Report No.: AGC05877210406FE02 Page 38 of 50

EUT	Smart Watch W11L	Model Name	IMISW11L
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Horizontal

Test Graph for Peak Measurement



Test Graph for Average Measurement



**RESULT: PASS** 

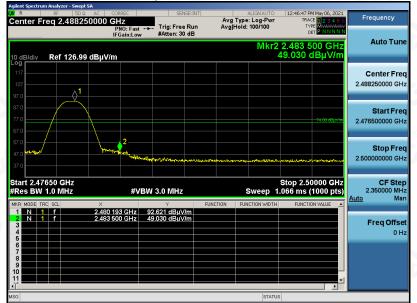
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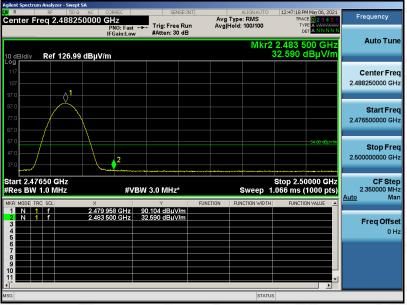
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EUT	Smart Watch W11L	Model Name	IMISW11L
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical

Test Graph for Peak Measurement



#### Test Graph for Average Measurement



### **RESULT: PASS**

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

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# 12. LINE CONDUCTED EMISSION TEST

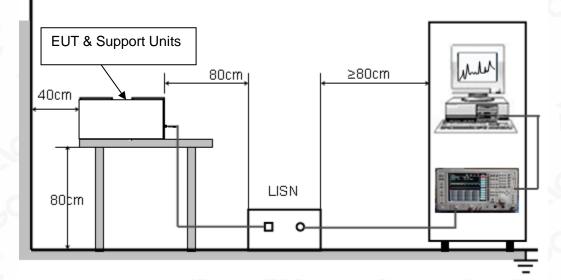
### **12.1. LIMITS OF LINE CONDUCTED EMISSION TEST**

Frequency	Maximum RF Line Voltage		
Frequency	Q.P.( dBuV)	Average( dBuV)	
150kHz~500kHz	66-56	56-46	
500kHz~5MHz	56	46	
5MHz~30MHz	60	50	

Note:

- 1. The lower limit shall apply at the transition frequency.
- 2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

## 12.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



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## 12.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

- The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- 2. Support equipment, if needed, was placed as per ANSI C63.10.
- 3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
- 4. All support equipment received AC120V/60Hz power from a LISN, if any.
- 5. The EUT received DC 5V power from adapter which received AC120V/60Hz power from a LISN.
- 6. The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
- 8. During the above scans, the emissions were maximized by cable manipulation.
- 9. The test mode(s) were scanned during the preliminary test.

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

### 12.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

- 1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
- A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less – 2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
- 3. The test data of the worst case condition(s) was reported on the Summary Data page.

### 12.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

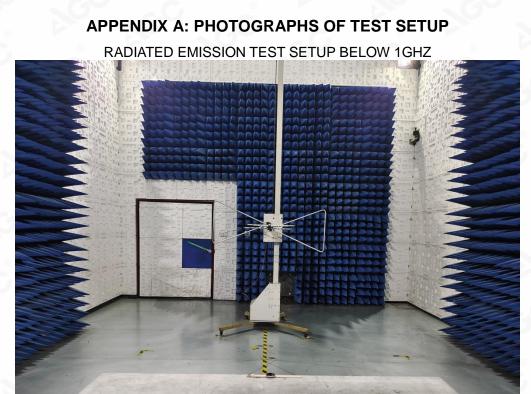
N/A

Note: The BT function cannot transmit when charging.

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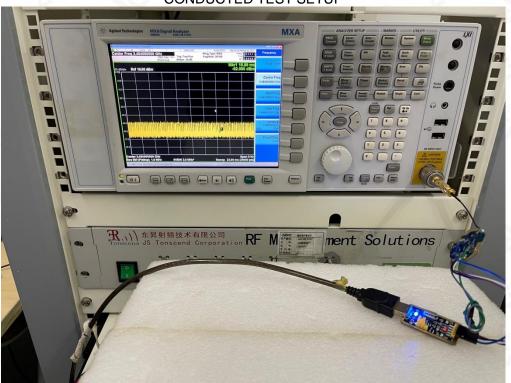
RADIATED EMISSION TEST SETUP ABOVE 1GHZ



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CONDUCTED TEST SETUP

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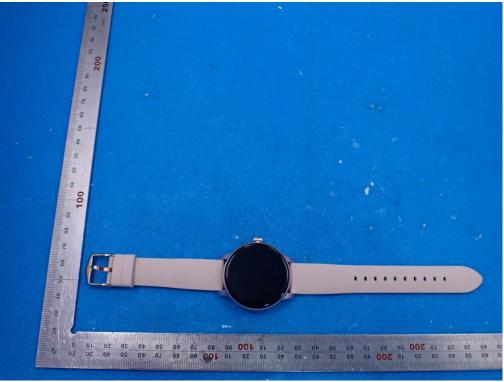


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### APPENDIX B: PHOTOGRAPHS OF EUT WHOLE VIEW OF EUT

TOP VIEW OF EUT



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### BOTTOM VIEW OF EUT



FRONT VIEW OF EUT



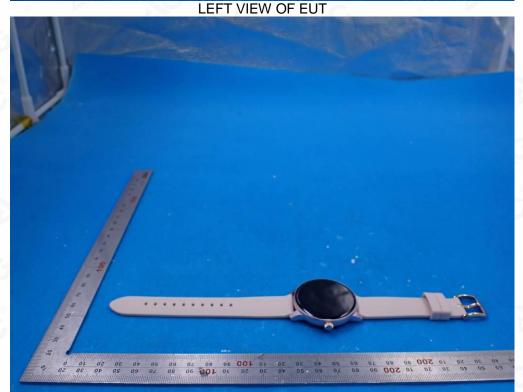
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### BACK VIEW OF EUT



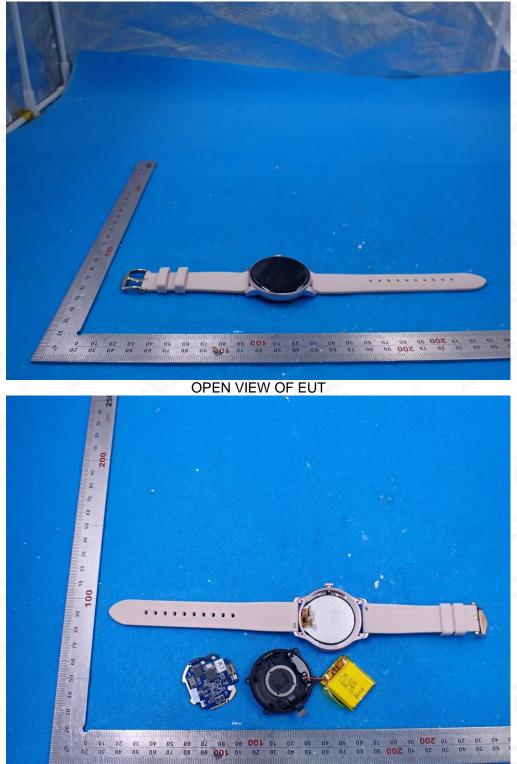


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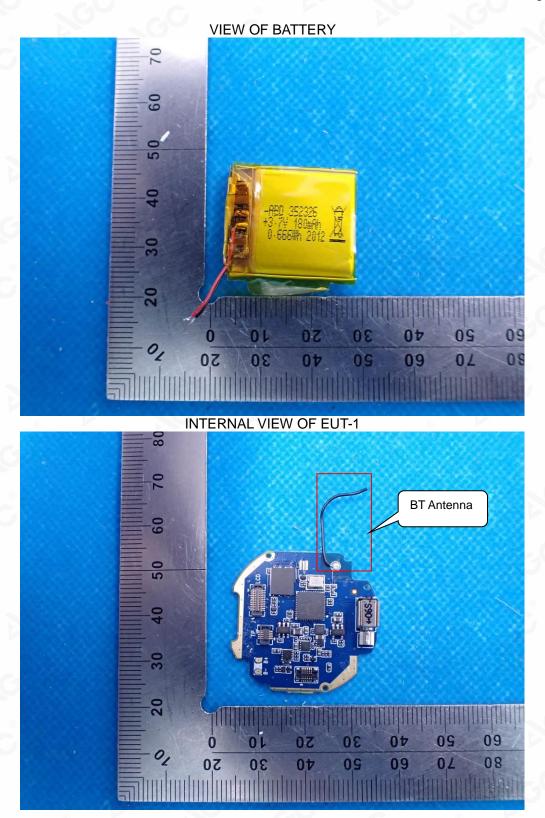
**RIGHT VIEW OF EUT** 



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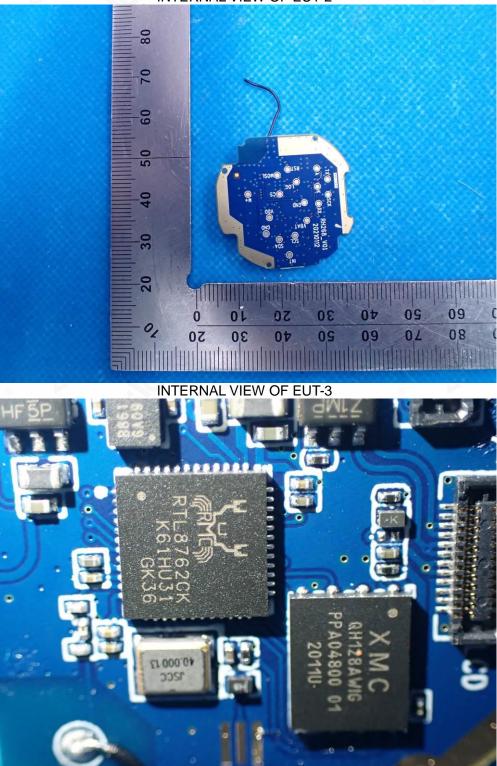
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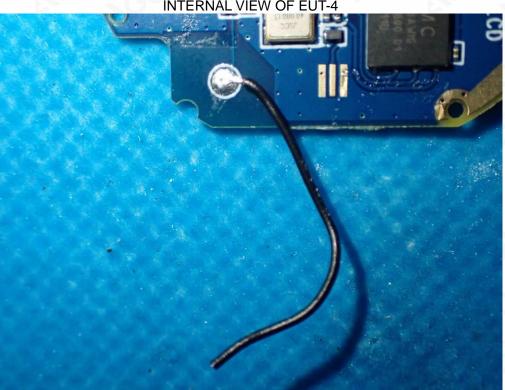


**INTERNAL VIEW OF EUT-2** 

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### **INTERNAL VIEW OF EUT-4**

-END OF REPORT----

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#### 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. The non-CMA report issued by AGC is only permitted to be used by the client as internal reference use and shall not be used for public demonstration purpose.

5. 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.

6. 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.

7. 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.

8. 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.

9. 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.

10. 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.

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