

FCC Test Report

Report No.: AGC05877230304FE02

FCC ID : 2APA9-IMISW13

APPLICATION PURPOSE: Original Equipment

PRODUCT DESIGNATION: IMILAB Smart Watch W13

BRAND NAME : IMILAB

MODEL NAME : IMISW13

APPLICANT: Shanghai Imilab Technology Co., Ltd.

DATE OF ISSUE : Mar. 22, 2023

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	n Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Mar. 22, 2023	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	IMILAB Smart Watch W13
Brand Name	IMILAB
Test Model	IMISW13
Date of receipt of test item	Mar. 20, 2023
Date of test	Mar. 20, 2023 to Mar. 22, 2023
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 (Project Engineer)	Mar. 22, 2023
Reviewed By	Calin Lin	
	Calvin Liu (Reviewer)	Mar. 22, 2023
Approved By	Max Zhang	
	Max Zhang (Authorized Officer)	Mar. 22, 2023



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2. GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION

The EUT is designed as a "IMILAB Smart Watch W13". 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	-4.660dBm (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	Monopole Antenna (Comply with requirements of the FCC part 15.203)
Antenna Gain	-6.97dBi
Hardware Version	RH303V02
Software Version	V003184
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: 2APA9-IMISW13** 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 ±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	$U_c = \pm 2.7 \%$
Uncertainty of Occupied Channel Bandwidth	U _c = ±2 %



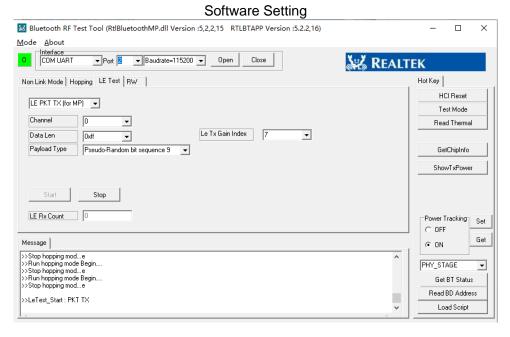
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4. DESCRIPTION OF TEST MODES

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.





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5. SYSTEM TEST CONFIGURATION

5.1. CONFIGURATION OF TESTED SYSTEM

Radiated Emission Configure:

EUT	

5.2. EQUIPMENT USED IN TESTED SYSTEM

Item	Equipment	Model No.	ID or Specification	Remark
1	IMILAB Smart Watch W13	IMISW13	2APA9-IMISW13	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 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

TEST EQUIPMEN										
Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due					
TEST RECEIVER	R&S	ESCI	10096	Mar. 28, 2022	Mar. 27, 2023					
EXA Signal Analyzer	Aglient	N9010A	MY53470504	Aug. 04, 2022	Aug. 03, 2023					
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 antenna (9K-30MHz)	ZHINAN	ZN30900C	18051	Mar. 12, 2022	Mar. 11, 2024					
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	Apr. 23, 2021	Apr. 22, 2023					
Broadband Preamplifier	ETS LINDGREN	3117PA	00225134	Sep. 02, 2022	Sep. 01, 2024					
ANTENNA	SCHWARZBECK	VULB9168	494	Jan. 05, 2023	Jan. 04, 2025					
Test software	Tonscend	JS32-RE (Ver.2.5)	N/A	N/A	N/A					



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7. PEAK OUTPUT POWER

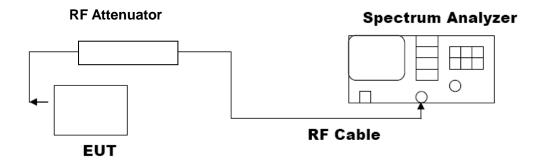
7.1. MEASUREMENT PROCEDURE

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





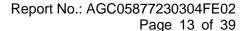
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7.3. LIMITS AND MEASUREMENT RESULT

	7.01 2 7.112						
Test Data of Conducted Output Power							
Test Mode	Test Mode Test Channel Peak Power Limits (MHz) (dBm) Pass or Fail						
	2402	-4.660	≤30	Pass			
GFSK 1M	2440	-4.957	≤30	Pass			
	2480	-6.125	≤30	Pass			

Test Graphs of Conducted Output Power Q RL RF 50 Ω AC CONNEC PNO: Fast FGain:Low Frequency Avg Type: Log-Pwr Avg|Hold: 100/100 Trig: Free Run #Atten: 40 dB **Auto Tune** Mkr1 2.401 977 GHz -4.660 dBm 10 dB/div Ref 30.00 dBm Center Freq 2.402000000 GHz Start Freq 2.399500000 GHz Stop Freq 2.404500000 GHz CF Step 500.000 kHz Freq Offset 0 Hz Center 2.402000 GHz #Res BW 1.5 MHz Span 5.000 MHz Sweep 1.066 ms (1000 pts) **#VBW 5.0 MHz**

Test_Graph_LE1M_ANT1_2402_1Mbps_Peak Power

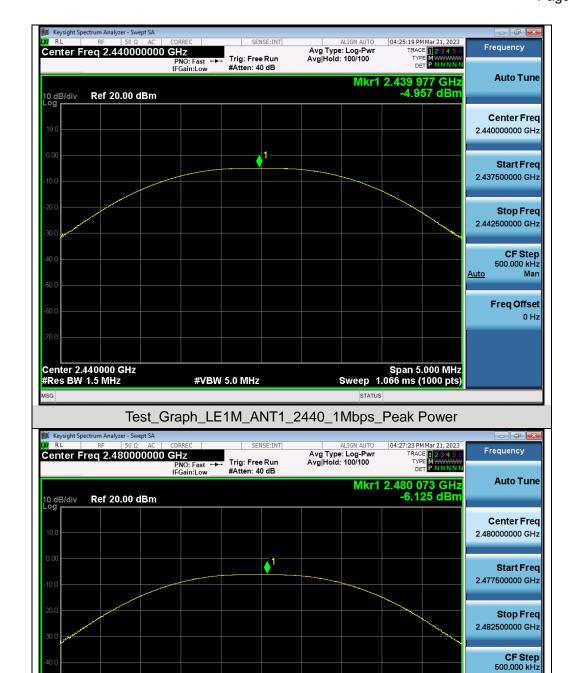


Auto

Span 5.000 MHz Sweep 1.066 ms (1000 pts) Man

Freq Offset





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Test_Graph_LE1M_ANT1_2480_1Mbps_Peak Power

#VBW 5.0 MHz

Center 2.480000 GHz #Res BW 1.5 MHz



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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.

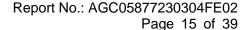
Note: The EUT was tested according to ANSI C63.10 for compliance to FCC PART 15.247 requirements.

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

The same as described in section 7.2.

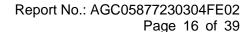
8.3. LIMITS AND MEASUREMENT RESULTS

Test Data of Occupied Bandwidth and DTS Bandwidth						
Test Mode	Test Channel (MHz)	99% Occupied Bandwidth (MHz)	-6dB Bandwidth (MHz)	Limits (MHz)	Pass or Fail	
	2402	1.024	0.669	≥0.5	Pass	
GFSK 1M	2440	1.029	0.670	≥0.5	Pass	
	2480	1.033	0.669	≥0.5	Pass	

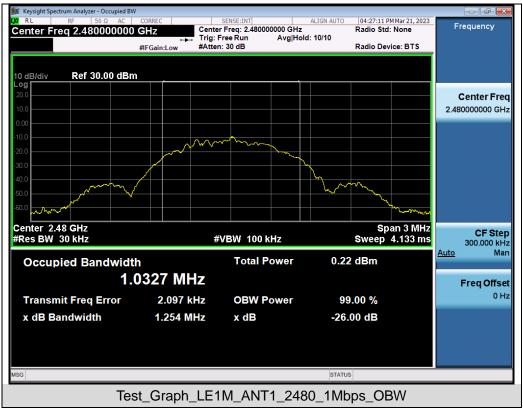


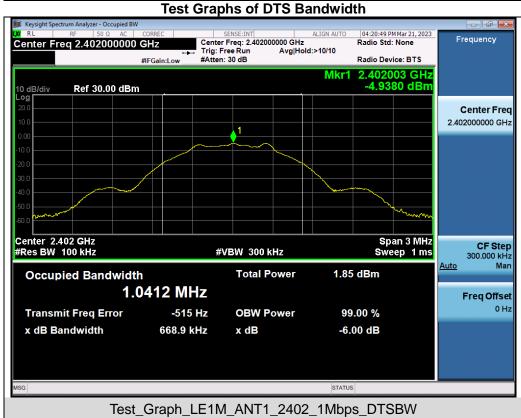


Test Graphs of Occupied Bandwidth 04:20:43 PM Mar 21, 2023 Radio Std: None SENSE:INT Center Freq: 2.402000000 GHz
Trig: Free Run Avg|Hol
#Atten: 30 dB Frequency Center Freq 2.402000000 GHz Avg|Hold: 10/10 Ref 30.00 dBm Center Freq 2.402000000 GHz Span 3 MHz Sweep 4.133 ms Center 2.402 GHz #Res BW 30 kHz **CF Step** #VBW 100 kHz 300,000 kHz Man Auto **Total Power** 2.00 dBm **Occupied Bandwidth** 1.0238 MHz Freq Offset 0 Hz **Transmit Freq Error** 3.696 kHz **OBW Power** 99.00 % x dB Bandwidth 1.249 MHz x dB -26.00 dB Test_Graph_LE1M_ANT1_2402_1Mbps_OBW 04:25:07 PM Mar 21, 2023 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** 1.51 dBm **Occupied Bandwidth** 1.0288 MHz Freq Offset 0 Hz **Transmit Freq Error** 2.913 kHz **OBW Power** 99.00 % x dB Bandwidth 1.253 MHz -26.00 dB x dB Test_Graph_LE1M_ANT1_2440_1Mbps_OBW



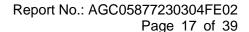






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Tel: +86-755 2523 4088 E-mail: agc@agccert.com Web: http://www.agccert.com/



Auto

Man

Freq Offset





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Test_Graph_LE1M_ANT1_2480_1Mbps_DTSBW

Total Power

OBW Power

x dB

0.32 dBm

99.00 %

-6.00 dB

Occupied Bandwidth

Transmit Freg Error

x dB Bandwidth

1.0445 MHz

-1.458 kHz

668.6 kHz



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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)

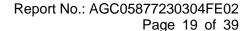
The same as described in section 7.2.

9.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6.

9.4. LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT						
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				



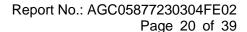


Test Graphs of Spurious Emissions in Non-Restricted Frequency Bands



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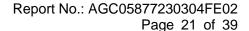
Test_Graph_LE1M_ANT1_2402_1Mbps_Lower Band Emissions



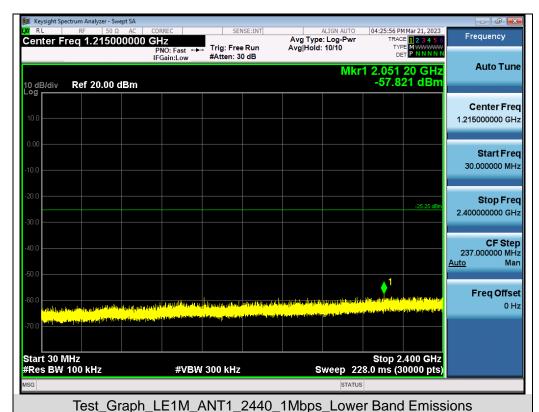




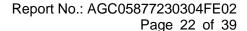






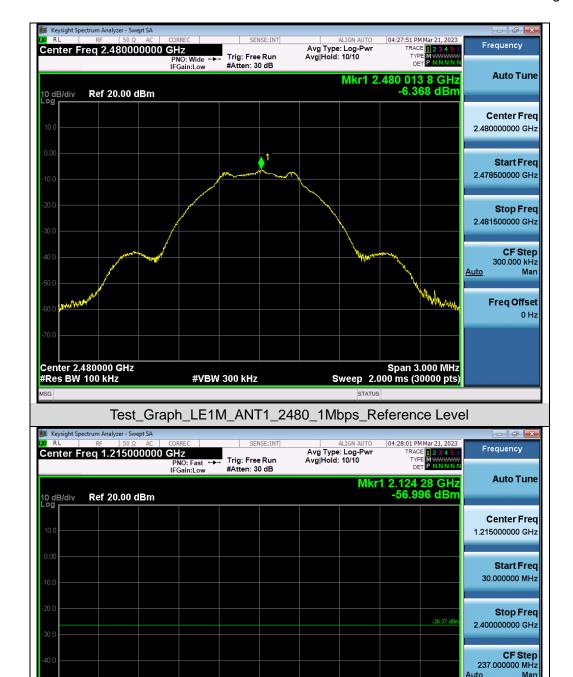






Freq Offset





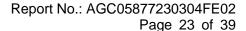
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Test_Graph_LE1M_ANT1_2480_1Mbps_Lower Band Emissions

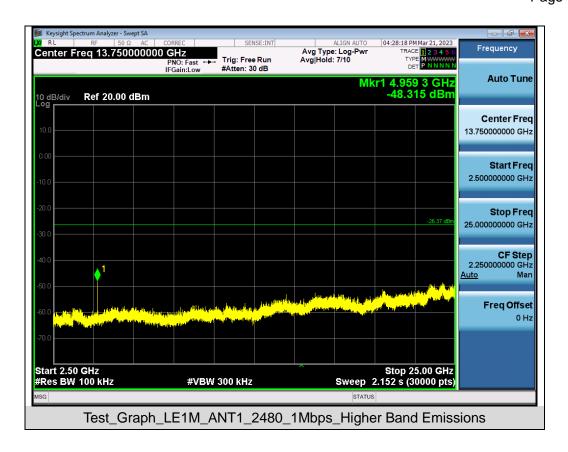
#VBW 300 kHz

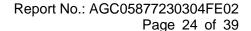
Stop 2.400 GHz Sweep 228.0 ms (30000 pts)

Start 30 MHz #Res BW 100 kHz



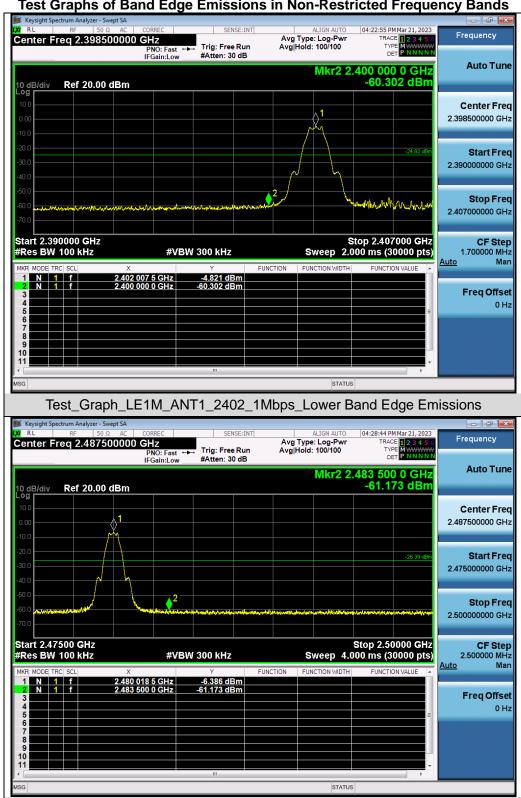








Test Graphs of Band Edge Emissions in Non-Restricted Frequency Bands



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Test_Graph_LE1M_ANT1_2480_1Mbps_Higher Band Edge Emissions



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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

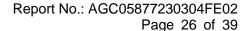
Refer to Section 6.

10.4. LIMITS AND MEASUREMENT RESULT

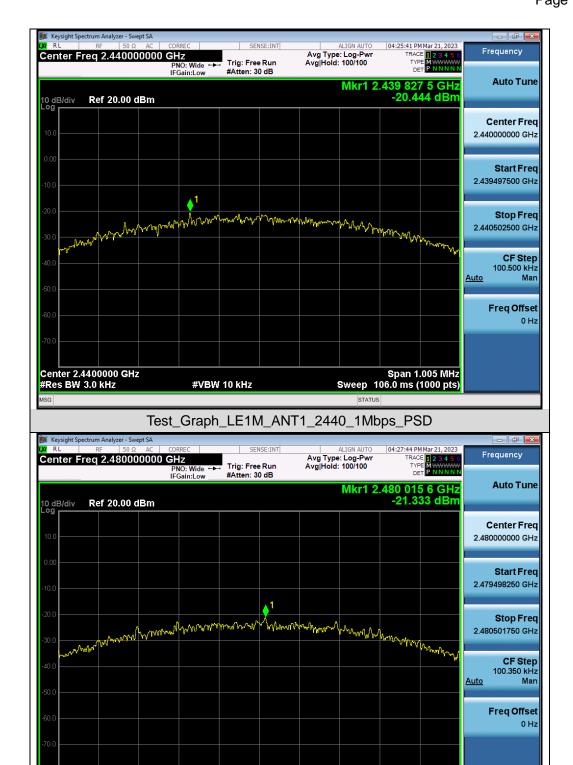
Test Data of Conducted Output Power Spectral Density					
Test Mode	Test Channel (MHz)	Power density (dBm/3kHz)	Limit (dBm/3kHz)	Pass or Fail	
	2402	-20.920	≤8	Pass	
GFSK 1M	2440	-20.444	≤8	Pass	
	2480	-21.333	≪8	Pass	

Test Graphs of Conducted Output Power Spectral Density









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Test_Graph_LE1M_ANT1_2480_1Mbps_PSD

#VBW 10 kHz

Span 1.004 MHz Sweep 105.8 ms (1000 pts)

Center 2.4800000 GHz #Res BW 3.0 kHz

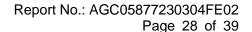


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11. RADIATED EMISSION

11.1. MEASUREMENT PROCEDURE

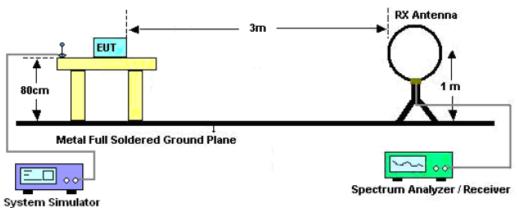
- 1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
- 2. Power on the EUT and all the supporting units. The turntable was rotated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



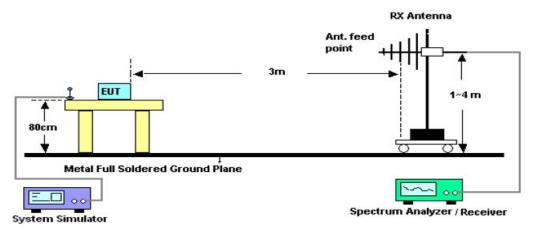


11.2. TEST SETUP

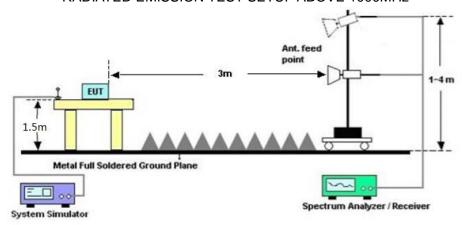
Radiated Emission Test-Setup Frequency Below 30MHz



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 (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

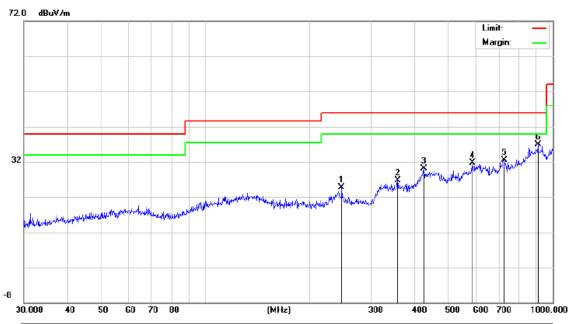
The amplitude of spurious emissions from 9kHz to 30MHz which are attenuated more than 20 dB below the permissible value need not be reported.



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Radiated emission from 30MHz to 1000MHz

EUT	IMILAB Smart Watch W13	Model Name	IMISW13
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Horizontal



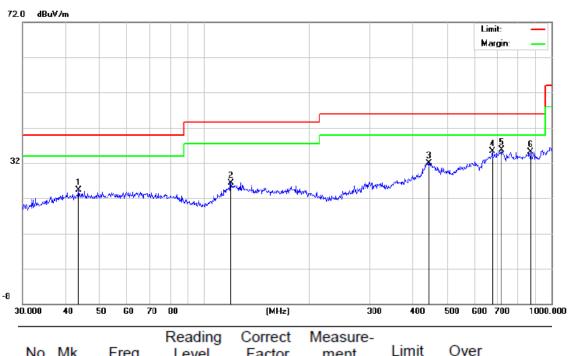
No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		246.8148	7.24	17.51	24.75	46.00	-21.25	peak
2		357.9286	6.08	20.55	26.63	46.00	-19.37	peak
3		425.0280	6.27	23.88	30.15	46.00	-15.85	peak
4		588.9050	7.07	24.66	31.73	46.00	-14.27	peak
5		724.2611	6.14	26.40	32.54	46.00	-13.46	peak
6	*	906.4823	7.32	29.54	36.86	46.00	-9.14	peak

RESULT: PASS



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EUT	IMILAB Smart Watch W13	Model Name	IMISW13
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		43.5057	7.40	16.93	24.33	40.00	-15.67	peak
2	1	19.4361	6.86	19.54	26.40	43.50	-17.10	peak
3	4	43.2943	6.03	25.95	31.98	46.00	-14.02	peak
4	6	75.2080	7.68	27.65	35.33	46.00	-10.67	peak
5	* 7	19.1995	7.03	28.77	35.80	46.00	-10.20	peak
6	8	72.1832	7.45	27.61	35.06	46.00	-10.94	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	IMILAB Smart Watch W13	Model Name	IMISW13
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	43.54	0.08	43.62	74	-30.38	peak
4804.000	35.44	0.08	35.52	54	-18.48	AVG
7206.000	38.67	2.21	40.88	74	-33.12	peak
7206.000	31.32	2.21	33.53	54	-20.47	AVG

Remark:

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

EUT	IMILAB Smart Watch W13	Model Name	IMISW13
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	44.61	0.08	44.69	74	-29.31	peak
4804.000	34.48	0.08	34.56	54	-19.44	AVG
7206.000	38.52	2.21	40.73	74	-33.27	peak
7206.000	30.47	2.21	32.68	54	-21.32	AVG

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



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EUT	IMILAB Smart Watch W13	Model Name	IMISW13
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	44.32	0.14	44.46	74	-29.54	peak
4880.000	35.41	0.14	35.55	54	-18.45	AVG
7320.000	39.59	2.36	41.95	74	-32.05	peak
7320.000	31.47	2.36	33.83	54	-20.17	AVG
emark:						

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

EUT	IMILAB Smart Watch W13	Model Name	IMISW13
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	45.62	0.14	45.76	74	-28.24	peak
4880.000	38.41	0.14	38.55	54	-15.45	AVG
7320.000	40.35	2.36	42.71	74	-31.29	peak
7320.000	32.48	2.36	34.84	54	-19.16	AVG

Remark:

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



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EUT	IMILAB Smart Watch W13	Model Name	IMISW13
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	44.72	0.22	44.94	74	-29.06	peak
4960.000	35.41	0.22	35.63	54	-18.37	AVG
7440.000	38.39	2.64	41.03	74	-32.97	peak
7440.000	29.56	2.64	32.2	54	-21.8	AVG
emark:						

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

EUT	IMILAB Smart Watch W13	Model Name	IMISW13
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	42.89	0.22	43.11	74	-30.89	peak
4960.000	34.52	0.22	34.74	54	-19.26	AVG
7440.000	38.41	2.64	41.05	74	-32.95	peak
7440.000	29.36	2.64	32	54	-22	AVG
Remark:					!	•
Factor = Anter	na Factor + Cabl	e Loss – Pre-	amplifier.	•		

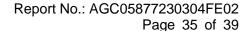
RESULT: PASS

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.

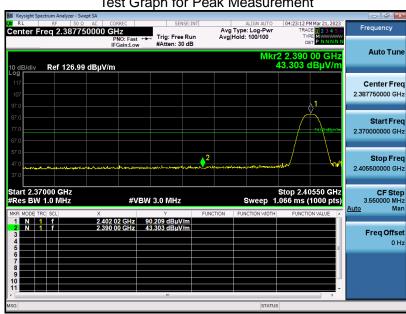


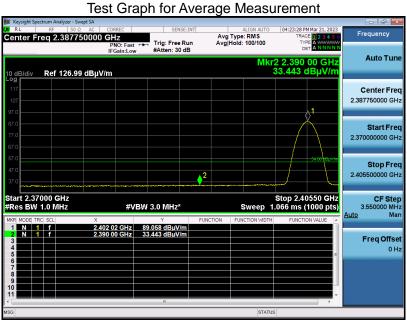


Test result for band edge emission at restricted bands

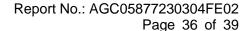
EUT	IMILAB Smart Watch W13	Model Name	IMISW13
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Horizontal

Test Graph for Peak Measurement





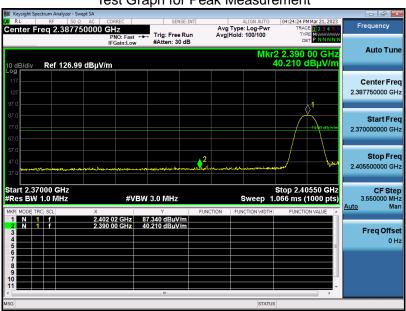
RESULT: PASS

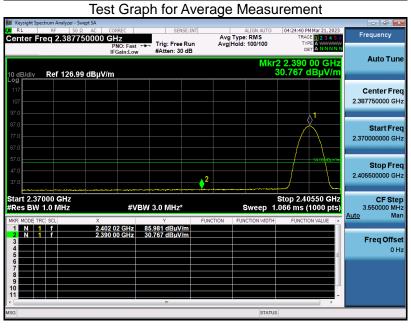




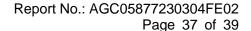
EUT IMILAB Smart Watch W13 Model Name IMISW13 25° C **Temperature Relative Humidity** 55.4% 960hPa **Test Voltage** Normal Voltage **Pressure Test Mode** Mode 1 **Antenna** Vertical

Test Graph for Peak Measurement





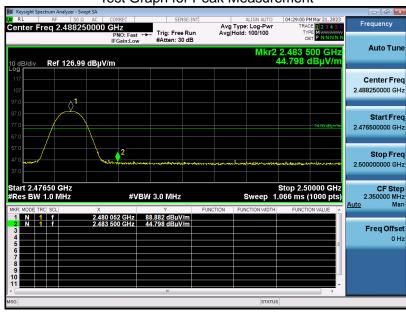
RESULT: PASS

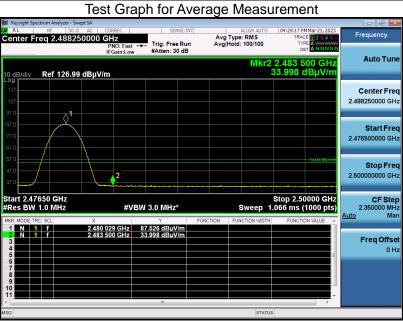




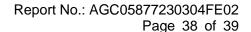
EUT IMILAB Smart Watch W13 Model Name IMISW13 25° C **Temperature Relative Humidity** 55.4% 960hPa **Test Voltage** Normal Voltage **Pressure Test Mode** Mode 3 **Antenna** Horizontal

Test Graph for Peak Measurement





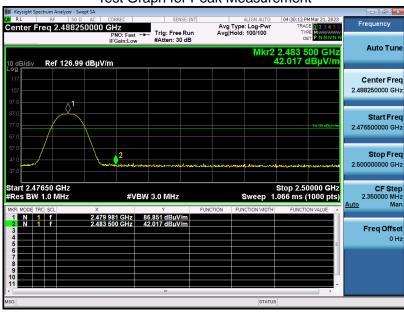
RESULT: PASS

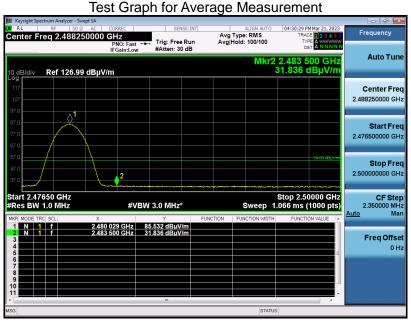




EUT IMILAB Smart Watch W13 IMISW13 **Model Name** 25° C **Temperature Relative Humidity** 55.4% 960hPa Normal Voltage **Pressure Test Voltage Test Mode** Mode 3 **Antenna** Vertical

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.: AGC05877230304AP01

APPENDIX B: PHOTOGRAPHS OF EUT Refer to the Report No.: AGC05877230304AP02

----END OF REPORT----



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- 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.