



FCC Test Report

Report No.: AGC06164220404FE02

FCC ID : 2AP3Q-FI2108ULB

APPLICATION PURPOSE: Original Equipment

PRODUCT DESIGNATION: Smart Body Fat Scale

BRAND NAME : N/A

FI2108ULB, FG2108ULB, FI2108LB, FG2108LB,

MODEL NAME : FI2108ULB-A, FG2108ULB-A, FI2108ULB-B,

FG2108ULB-B, FI1902B

APPLICANT: Guangdong Welland Technology Co., Ltd.

DATE OF ISSUE : May 06, 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	/	May 06, 2022	Valid	Initial Release

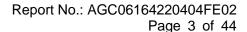




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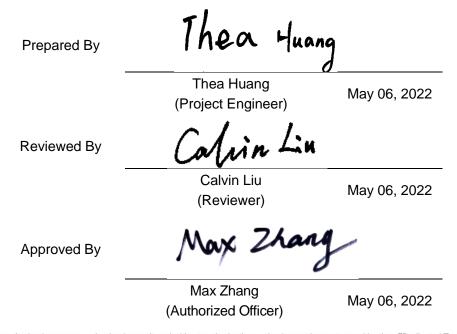
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1. VERIFICATION OF COMPLIANCE

Applicant	Guangdong Welland Technology Co., Ltd.	
Address	NO. 85 Minke East Road, Min Ying Science and Technology Park, Shiqi District, Zhongshan, Guangdong, China	
Manufacturer	Guangdong Welland Technology Co., Ltd.	
Address	NO. 85 Minke East Road, Min Ying Science and Technology Park, Shiqi District , Zhongshan, Guangdong, China	
Factory	Guangdong Welland Technology Co., Ltd.	
Address	NO. 85 Minke East Road, Min Ying Science and Technology Park, Shiqi District , Zhongshan, Guangdong, China	
Product Designation Smart Body Fat Scale		
Brand Name N/A		
Test Model FI2108ULB		
Series Model FG2108ULB, FI2108LB, FG2108ULB-A, FG2108ULB-A FI2108ULB-B, FG2108ULB-B, FI1902B		
Declaration of Difference All the same except for the model name and color.		
Date of test Apr. 20, 2022 to May 06, 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.



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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2. GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION

The EUT is designed as a "Smart Body Fat Scale". 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	-2.802dBm (Max)		
Bluetooth Version	V5.0		
Modulation	BR □GFSK, EDR □π /4-DQPSK, □8DPSK BLE □GFSK 1Mbps □GFSK 2Mbps		
Number of channels	40 Channels		
Antenna Designation	PCB Antenna (Comply with requirements of the FCC part 15.203)		
Antenna Gain	0.49dBi		
Hardware Version	V1.0		
Software Version	V1.0.0		
Power Supply	DC 3.7V by battery or DC 5V by adapter		
Note: The EUT doesn't support BR&EDR.			

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: 2AP3Q-FI2108ULB** 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	$U_c = \pm 2 \%$		
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.



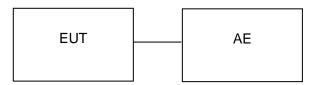


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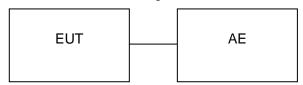
5. SYSTEM TEST CONFIGURATION

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	Smart Body Fat Scale	FI2108ULB	2AP3Q-FI2108ULB	EUT
2	Control Box	USB-TTL	N/A	AE
3	Adapter	MID210	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	Compliant



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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 CONDUCTED EMISSION TEST

120. 230						
Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due	
TEST RECEIVER	R&S	ESPI	101206	May 11, 2021	May 10, 2022	
LISN	R&S	ESH2-Z5	100086	Jun. 09, 2021	Jun. 08, 2022	
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	May 15,2021	May 14,2022
EXA Signal 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	Sep. 03, 2020	Sep. 02, 2022
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Oct. 31, 2021	Oct. 30, 2023
Active loop antenna (9K-30MHz)	ZHINAN	ZN30900C	18051	May 22, 2020	May 21, 2022
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	Apr. 23, 2021	Apr. 22, 2023
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

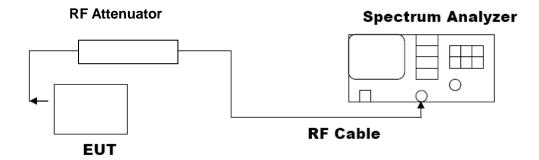
7.1. MEASUREMENT PROCEDURE

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





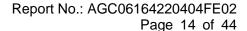
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7.3. LIMITS AND MEASUREMENT RESULT

	1.0						
Test Data of Conducted Output Power							
Test Mode	Test Channel (MHz)	Peak Power (dBm)	Limits (dBm)	Pass or Fail			
	2402	-3.267	≤30	Pass			
GFSK 1M	2440	-3.155	≤30	Pass			
	2480	-2.802	≤30	Pass			

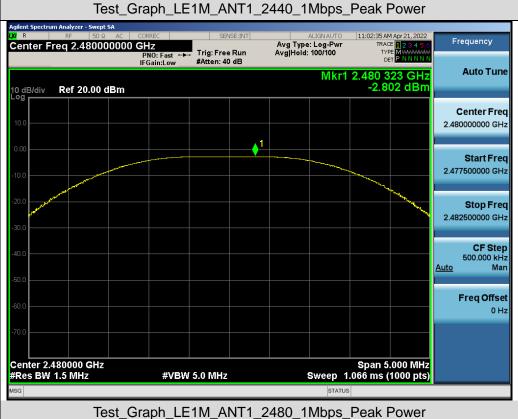
Test Graphs of Conducted Output Power













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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.

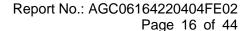
Note: The EUT was tested according to ANSI C63.10 for compliance to FCC PART 15.247 requirements.

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 Bandwidth (MHz)	-6dB Bandwidth (MHz)	Limits (MHz)	Pass or Fail		
	2402	1.130	0.902	≥0.5	Pass		
GFSK 1M	2440	1.142	0.898	≥0.5	Pass		
	2480	1.157	0.907	≥0.5	Pass		





Test Graphs of Occupied Bandwidth |10:53:39 AM Apr 21, 2022 Radio Std: None Frequency Center Freq: 2.402000000 GHz Center Freq 2.402000000 GHz AvalHold:>10/10 Trig: Free Run #Atten: 30 dB #IFGain:Low Radio Device: BTS 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 300.000 kHz **#VBW 100 kHz** Mar 3.28 dBm **Total Power** Occupied Bandwidth 1.1297 MHz Freq Offset 0 Hz 23.928 kHz 99.00 % **Transmit Freq Error OBW Power** -26.00 dB x dB Bandwidth 1.437 MHz x dB STATUS Test_Graph_LE1M_ANT1_2402_1Mbps_OBW | 10:59:31 AM Apr 21, 2022 Radio Std: None Frequency Center Freq: 2.440000000 GHz
Trig: Free Run Avg|Ho Center Freg 2.440000000 GHz Avg|Hold: 10/10 #IFGain:Low Radio Device: BTS Ref 30.00 dBm Center Freq 2.440000000 GHz

> Span 3 MHz Sweep 4.133 ms

3.36 dBm

99.00 %

-26.00 dB

CF Step 300.000 kHz

Freq Offset

Man

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#VBW 100 kHz

x dB

Total Power

OBW Power

Test_Graph_LE1M_ANT1_2440_1Mbps_OBW

Center 2.44 GHz #Res BW 30 kHz

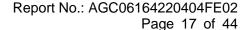
Occupied Bandwidth

Transmit Freq Error x dB Bandwidth

1.1424 MHz

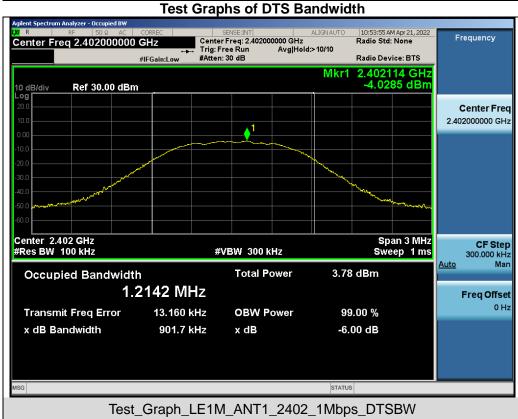
25.966 kHz

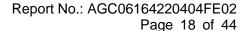
1.464 MHz



















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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)

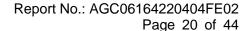
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9.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6.

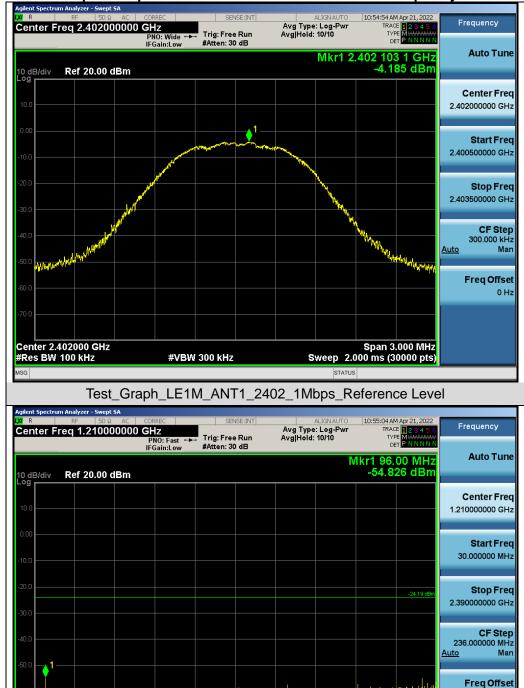
9.4. LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT					
Annii abla I inii	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



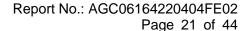
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Test_Graph_LE1M_ANT1_2402_1Mbps_Lower Band Emissions

#VBW 300 kHz

Stop 2.390 GHz Sweep 226.0 ms (30000 pts)

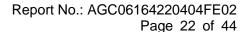
Start 30 MHz #Res BW 100 kHz



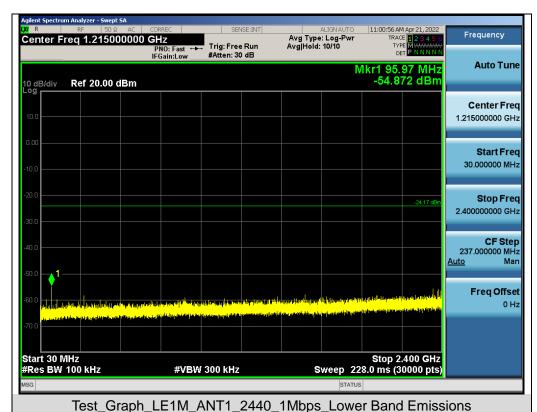




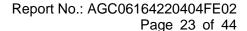




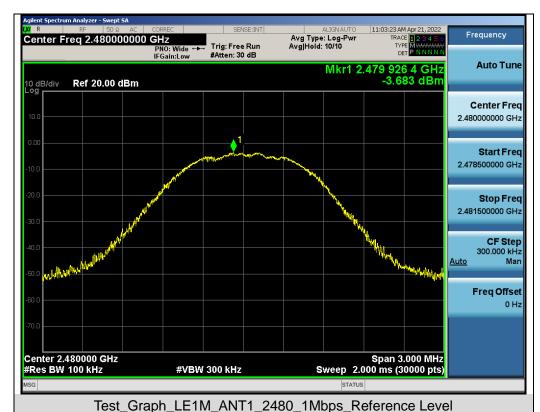


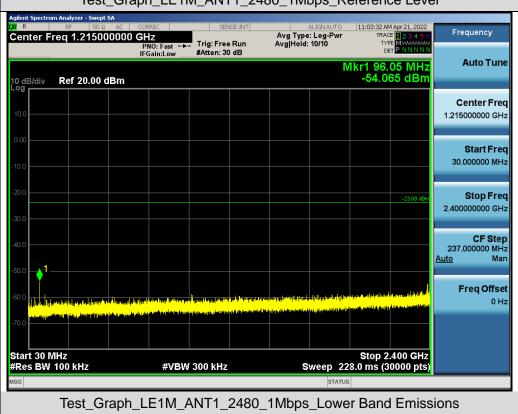


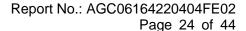




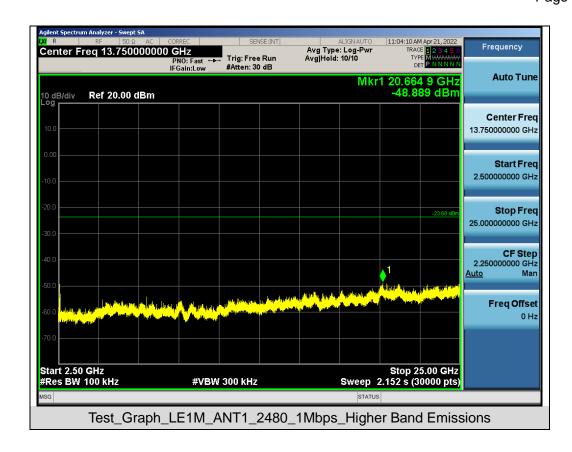


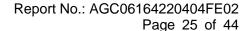






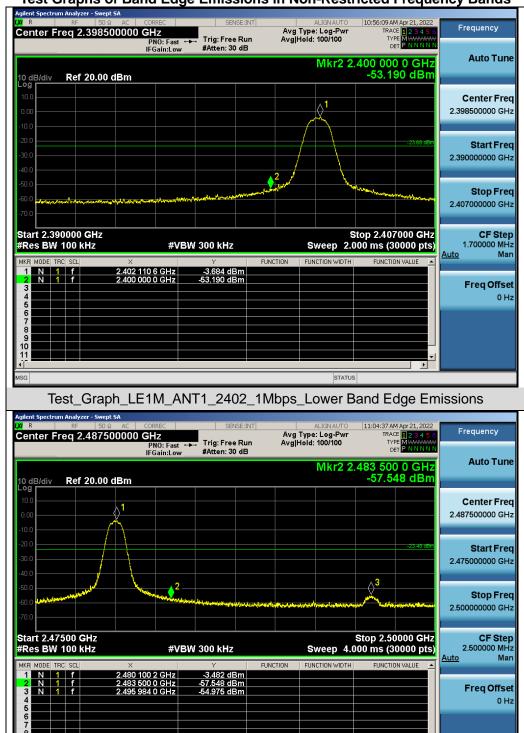








Test Graphs of Band Edge Emissions in Non-Restricted Frequency Bands



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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.

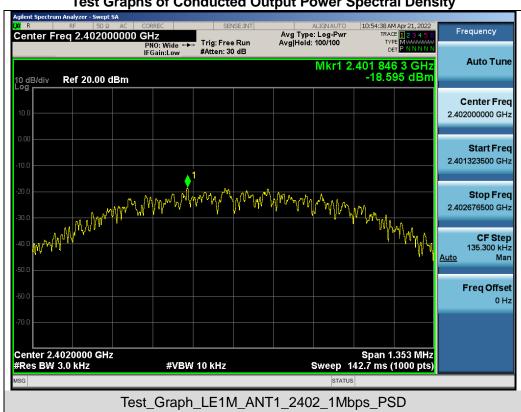
10.3. MEASUREMENT EQUIPMENT USED

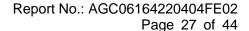
Refer to Section 6.

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	-18.595	≤8	Pass		
GFSK 1M	2440	-18.578	≪8	Pass		
	2480	-18.037	≪8	Pass		

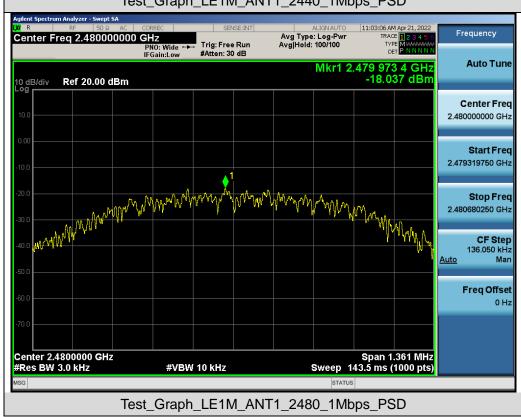
Test Graphs of Conducted Output Power Spectral Density











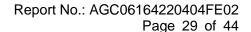


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11. RADIATED EMISSION

11.1. MEASUREMENT PROCEDURE

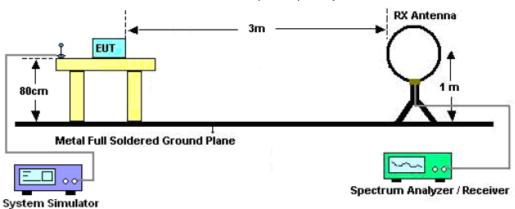
- 1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
- 2. Power on the EUT and all the supporting units. The turntable was rotated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



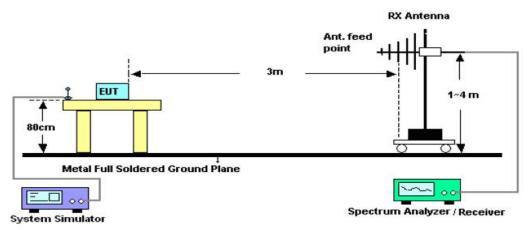


11.2. TEST SETUP

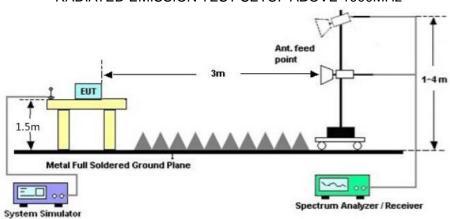
Radiated Emission Test-Setup Frequency Below 30MHz



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 (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

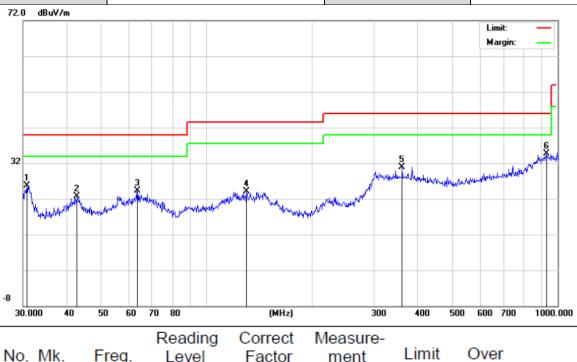
The amplitude of spurious emissions from 9kHz to 30MHz which are attenuated more than 20 dB below the permissible value need not be reported.



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Radiated emission from 30MHz to 1000MHz

EUT	Smart Body Fat Scale	Model Name	FI2108ULB
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Horizontal



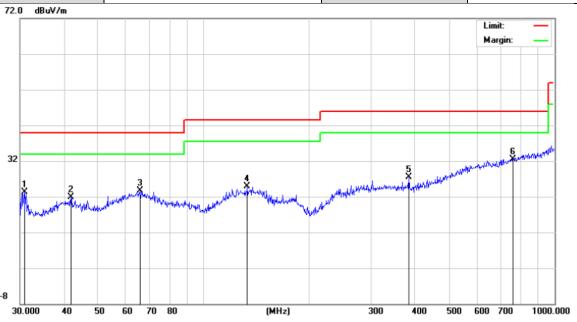
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		30.7454	12.57	13.19	25.76	40.00	-14.24	peak
2		42.7496	7.03	15.72	22.75	40.00	-17.25	peak
3		63.5356	6.60	17.70	24.30	40.00	-15.70	peak
4		129.9225	5.32	18.81	24.13	43.50	-19.37	peak
5	,	360.4476	7.00	23.98	30.98	46.00	-15.02	peak
6	*	929.0081	5.77	28.90	34.67	46.00	-11.33	peak

RESULT: PASS



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EUT	Smart Body Fat Scale	Model Name	FI2108ULB
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	3	30.8535	10.07	13.20	23.27	40.00	-16.73	peak
2	4	11.8596	6.07	15.77	21.84	40.00	-18.16	peak
3	6	55.8031	5.71	18.01	23.72	40.00	-16.28	peak
4	13	33.1511	5.69	19.14	24.83	43.50	-18.67	peak
5	38	33.9318	7.37	20.06	27.43	46.00	-18.57	peak
6	* 76	60.7036	5.05	27.52	32.57	46.00	-13.43	peak

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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Radiated emission above 1GHz

EUT	Smart Body Fat Scale	Model Name	FI2108ULB
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	43.58	0.08	43.66	74	-30.34	peak	
4804.000	35.63	0.08	35.71	54	-18.29	AVG	
7206.000	38.41	2.21	40.62	74	-33.38	peak	
7206.000	31.27	2.21	33.48	54	-20.52	AVG	

Remark:

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

EUT	Smart Body Fat Scale	Model Name	FI2108ULB
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 rype
4804.000	44.86	0.08	44.94	74	-29.06	peak
4804.000	34.59	0.08	34.67	54	-19.33	AVG
7206.000	38.47	2.21	40.68	74	-33.32	peak
7206.000	30.32	2.21	32.53	54	-21.47	AVG

Remark:

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

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EUT	Smart Body Fat Scale	Model Name	FI2108ULB
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	44.78	0.14	44.92	74	-29.08	peak
4880.000	35.52	0.14	35.66	54	-18.34	AVG
7320.000	39.41	2.36	41.77	74	-32.23	peak
7320.000	31.39	2.36	33.75	54	-20.25	AVG
Remark:						

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

EUT	Smart Body Fat Scale	Model Name	FI2108ULB
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	38.21	0.14	38.35	54	-15.65	AVG
7320.000	40.34	2.36	42.7	74	-31.3	peak
7320.000	32.45	2.36	34.81	54	-19.19	AVG

Remark:

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



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EUT	Smart Body Fat Scale	Model Name	FI2108ULB
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)	\ \text{value Type}
4960.000	44.95	0.22	45.17	74	-28.83	peak
4960.000	35.46	0.22	35.68	54	-18.32	AVG
7440.000	38.52	2.64	41.16	74	-32.84	peak
7440.000	29.23	2.64	31.87	54	-22.13	AVG
Remark:						

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

EUT	Smart Body Fat Scale	Model Name	FI2108ULB
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	42.66	0.22	42.88	74	-31.12	peak
4960.000	34.41	0.22	34.63	54	-19.37	AVG
7440.000	38.37	2.64	41.01	74	-32.99	peak
7440.000	29.52	2.64	32.16	54	-21.84	AVG
Remark:						

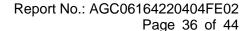
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

RESULT: PASS

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.

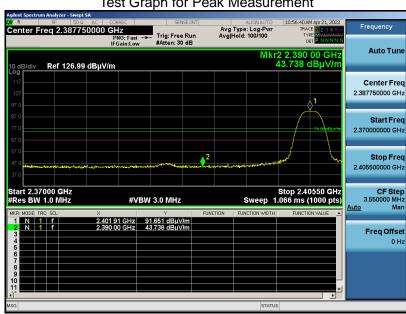




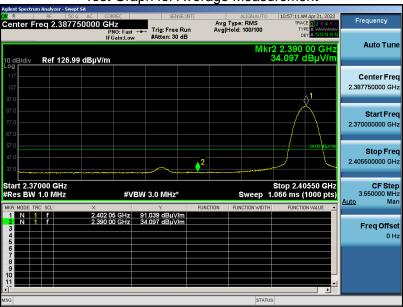
Test result for band edge emission at restricted bands

EUT	Smart Body Fat Scale	Model Name	FI2108ULB
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Horizontal

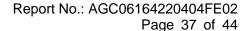
Test Graph for Peak Measurement







RESULT: PASS

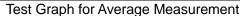


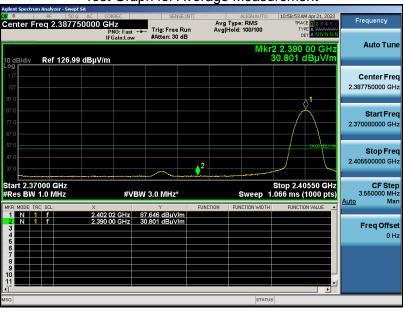


EUT	Smart Body Fat Scale	Model Name	FI2108ULB
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Vertical

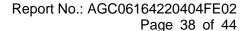
Test Graph for Peak Measurement







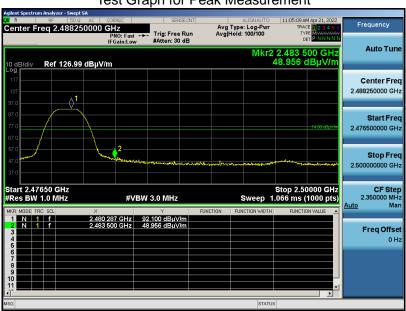
RESULT: PASS

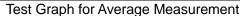




EUT Model Name FI2108ULB Smart Body Fat Scale 25° C **Temperature Relative Humidity** 55.4% 960hPa **Test Voltage** Normal Voltage **Pressure Test Mode** Mode 3 **Antenna** Horizontal

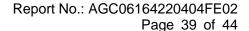
Test Graph for Peak Measurement







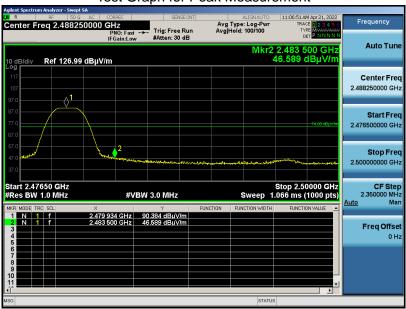
RESULT: PASS



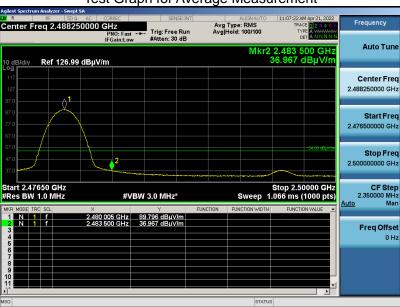


EUT	Smart Body Fat Scale	Model Name	FI2108ULB
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical

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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12. LINE CONDUCTED EMISSION TEST

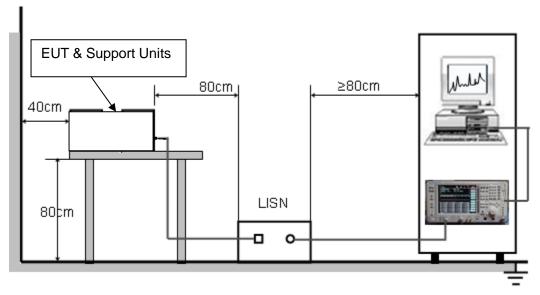
12.1. LIMITS OF LINE CONDUCTED EMISSION TEST

Francis	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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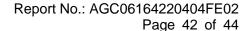
12.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

- 1. 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

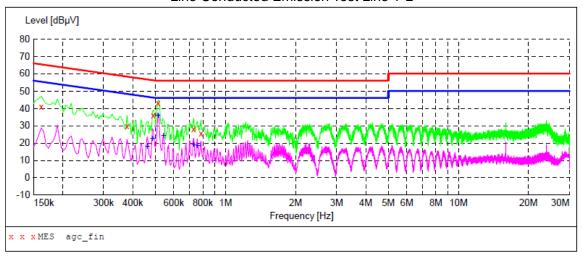
- 1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
- 2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were 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

Line Conducted Emission Test Line 1-L



MEASUREMENT RESULT: "agc_fin"

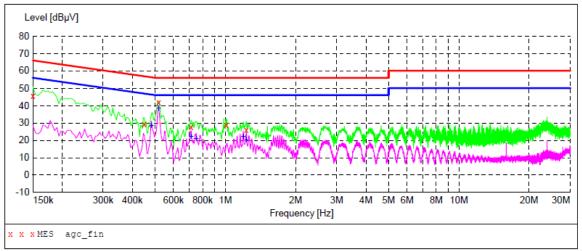
2022/4/23 9: Frequency MHz		Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.162000	41.00	6.8	65	24.4	QP	L1	GND
0.378000	29.70	5.8	58	28.6	QP	L1	GND
0.490000	36.20	5.4	56	20.0	QP	L1	GND
0.514000	43.00	5.4	56	13.0	QP	L1	GND
0.730000	27.90	5.4	56	28.1	QP	L1	GND
0.786000	25.50	5.4	56	30.5	QP	L1	GND

MEASUREMENT RESULT: "agc fin2"

20	022/4/23	9:0	7						
	Frequen M	IHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
	0.4620	00	18.10	5.5	47	28.6	AV	L1	GND
	0.4860	00	22.50	5.4	46	23.7	AV	L1	GND
	0.5140	00	35.90	5.4	46	10.1	AV	L1	GND
	0.5420	00	24.50	5.4	46	21.5	AV	L1	GND
	0.7300	00	19.20	5.4	46	26.8	AV	L1	GND
	0.7580	00	18.70	5.4	46	27.3	AV	L1	GND







MEASUREMENT RESULT: "agc_fin"

2022/4/23 Frequence Mi	_		Limit dBµV	Margin dB	Detector	Line	PE
0.1500	00 45.60	6.9	66	20.4	QP	N	GND
0.4500	00 29.20	5.5	57	27.7	QP	N	GND
0.5180	00 41.80	5.4	56	14.2	QP	N	GND
0.7140	00 27.50	5.4	56	28.5	QP	N	GND
1.0100	00 29.10	5.4	56	26.9	QP	N	GND
1.2300	00 26.00	5.7	56	30.0	QP	N	GND

MEASUREMENT RESULT: "agc fin2"

2022/4/23	9:03	3						
Freque	ncy MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.482	2000	28.60	5.4	46	17.7	AV	N	GND
0.518	3000	38.60	5.4	46	7.4	AV	N	GND
0.714	1000	22.20	5.4	46	23.8	AV	N	GND
0.750	000	21.10	5.4	46	24.9	AV	N	GND
1.194	000	22.10	5.7	46	23.9	AV	N	GND
1.230	000	20.20	5.7	46	25.8	AV	N	GND

RESULT: PASS

Note: All the test modes had been tested, the mode 3 was the worst case. Only the data of the worst case would be record in this test report.



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APPENDIX A: PHOTOGRAPHS OF TEST SETUP

Refer to the Report No.: AGC06164220404AP01

APPENDIX B: PHOTOGRAPHS OF EUT Refer to the Report No.: AGC06164220404AP02

----END OF REPORT----



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- 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.
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