

FCC Test Report

Report No.: AGC03285230301FE02

FCC ID	:	2AMWOFSC-BT909C
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	Bluetooth module
BRAND NAME	:	Feasycom
MODEL NAME	:	FSC-BT909C
APPLICANT	:	Shenzhen Feasycom Co., LTD
DATE OF ISSUE	:	May 17, 2023
STANDARD(S)	:	FCC Part 15.247
REPORT VERSION	:	V1.0
<u>Attestation of (</u>	<u>710</u>	bootal Compliance (Shenzhen) Co., Ltd





REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	May 17, 2023	Valid	Initial Release



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1. VERIFICATION OF COMPLIANCE

Applicant	Shenzhen Feasycom Co., LTD		
Address	Rm 508, Building A, Fenghuang Zhigu, No.50, Tiezai Road, Xixiang, Baoan District, Shenzhen Guangdong 518102, China		
Manufacturer	Shenzhen Feasycom Co., LTD		
Address	Rm 508, Building A, Fenghuang Zhigu, No.50, Tiezai Road, Xixiang, Baoan District, Shenzhen Guangdong 518102, China		
Factory	Shenzhen Feasycom Co., LTD		
Address	Rm 508, Building A, Fenghuang Zhigu, No.50, Tiezai Road, Xixiang, Baoan District, Shenzhen Guangdong 518102, China		
Product Designation	Bluetooth module		
Brand Name	Feasycom		
Test Model	FSC-BT909C		
Date of receipt of test item	Mar. 24, 2023		
Date of test	Mar. 24, 2023 to May 15, 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

Cool chang

Cool Cheng (Project Engineer)

May 17, 2023

Reviewed By

Arin Lin

Calvin Liu (Reviewer)

May 17, 2023

Approved By

Max Zhang

Max Zhang (Authorized Officer)

May 17, 2023



2. GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION

The EUT is designed as a "Bluetooth module". 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	2.402GHz to 2.480GHz
RF Output Power	12.900dBm (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	PCB Antenna (Comply with requirements of the FCC part 15.203)
Antenna Gain	2dBi
Hardware Version	V1.0
Software Version	V2.8.0
Power Supply	DC 3.3V

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



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

This submittal(s) (test report) is intended for FCC ID: 2AMWOFSC-BT909C 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.



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	$U_c = \pm 2.9 \text{ dB}$
Uncertainty of Radiated Emission below 1GHz	$U_c = \pm 3.8 \text{ dB}$
Uncertainty of Radiated Emission above 1GHz	$U_c = \pm 4.9 \text{ dB}$
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 = ±2.7 %
Uncertainty of Occupied Channel Bandwidth	$U_c = \pm 2 \%$



4. DESCRIPTION OF TEST MODES

NO.	TEST MODE DESCRIPTION
1	Low channel TX_2402MHz_GFSK_1Mbps
2	Middle channel TX_2440MHz_GFSK_1Mbps
3	High channel TX_2480MHz_GFSK_1Mbps

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.

Software Setting

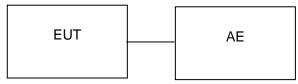
BlueTest3					>
-Test Commands	Test /	Arguments —		 	
CTS RTS LB	Chappa	el (0−39)	39	 Clos	se
ENABLE DUT MODE			100		
BLE TEST TX	Lengt	h (O—37)	37	Hel	P
BLE TEST RX	Rin -	attern (0-7)	0	 	
BLE TEST END	DIT D	attern (U-7)	lo.	Exect	ite
Set PIO				Cold B	
Read PIO				COLU	lese
Provoke Fault	~			Warm B	
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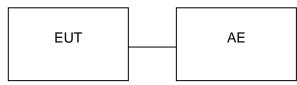
5. SYSTEM TEST CONFIGURATION

5.1. CONFIGURATION OF TESTED SYSTEM

Radiated Emission Configure:



Conducted Emission Configure:



5.2. EQUIPMENT USED IN TESTED SYSTEM

ltem	Equipment	Model No.	ID or Specification	Remark
1	Bluetooth module	FSC-BT909C	2AMWOFSC-BT909C	EUT
2	Control Box	FSC-DB005	N/A	AE
3	PC	XMA2002-AB	N/A	AE
4	PC Adapter	AD651	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



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

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
Test Receiver	R&S	ESPI	101206	Aug. 04, 2022	Aug. 03, 2023
Artificial power network	R&S	ESH2-Z5	100086	Jun. 08, 2022	Jun. 07, 2023
Test Software	R&S	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	RS	ESCI	100034	Aug. 03, 2022	Aug. 02, 2023
Wideband Antenna	SCHWARZBECK	VULB9168	VULB9168-49 4	Jan. 05, 2023	Jan. 04, 2024
Signal Analyzer	Aglient	N9020A	MY52090123	Aug. 04, 2022	Aug. 03, 2023
EXA Signal Analyzer	Agilent	N9010A	MY53470504	Aug. 04, 2022	Aug. 03, 2023
2.4GHz Filter	EM Electronics	N/A	N/A	Mar. 18, 2022	Mar. 19, 2024
Attenuator	ZHINAN	E-002	N/A	Aug. 04, 2022	Aug. 03, 2024
Horn Antenna	SCHWARZBEC	BBHA9170	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	3117	00154520	Sep. 06, 2021	Sep. 05, 2023
Preamplifer	ETS	3117-PA	00246148	Aug. 04, 2022	Aug. 03, 2024
Test software	FARA	V.RA-03A	N/A	N/A	N/A



7. PEAK OUTPUT POWER

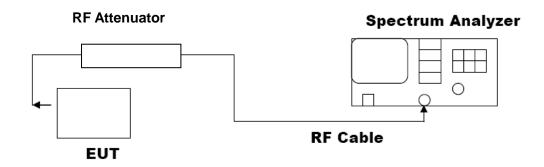
7.1. MEASUREMENT PROCEDURE

For peak power test:

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2. RBW≥DTS bandwidt.
- 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





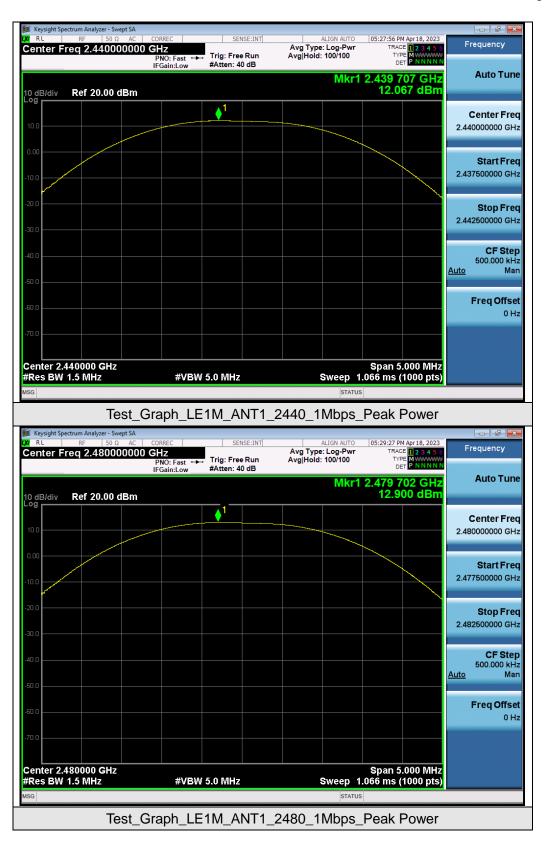
7.3. LIMITS AND MEASUREMENT RESULT

	Test Data of Conducted Output Power						
Test ModeTest Channel (MHz)Peak Power (dBm)Limits (dBm)Pass or							
	2402	8.288	≪30	Pass			
GFSK 1M	2440	12.067	≪30	Pass			
	2480	12.900	≪30	Pass			

Keysight Sp 05:24:17 PM Apr18, 2023 TRACE 1 2 3 4 5 6 TYPE MWWWW DET P NNNN SENSE:INT RI Center Freq 2.402000000 GHz PN0: Fast → IFGain:Low Frequency Avg Type: Log-Pwr Avg|Hold: 100/100 Trig: Free Run #Atten: 40 dB Auto Tune Mkr1 2.402 248 GHz 8.288 dBm 10 dB/div Ref 20.00 dBm **Center Freq** 1 2.402000000 GHz Start Freq 2.399500000 GHz Stop Freq 2.404500000 GHz **CF** Step 500.000 kHz <u>Auto</u> Man 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

Test Graphs of Conducted Output Power







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.

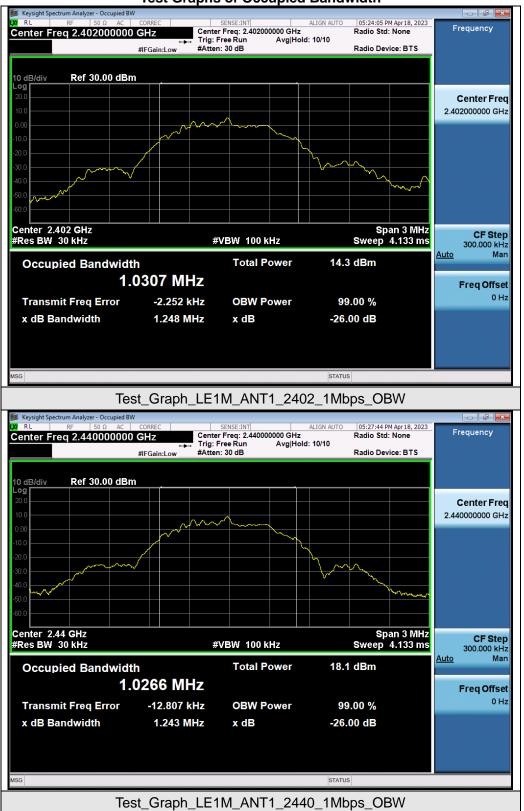
8.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

The same as described in section 7.2.

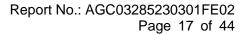
8.3. LIMITS AND MEASUREMENT RESULTS

	Test Data of Occupied Bandwidth and DTS Bandwidth						
Test ModeTest Channel (MHz)99% Occupied Bandwidth (MHz)-6dB Bandwidth (MHz)Limits (MHz)Pass or Fai							
	2402	1.031	0.700	≥0.5	Pass		
GFSK 1M	2440	1.027	0.695	≥0.5	Pass		
	2480	1.026	0.698	≥0.5	Pass		





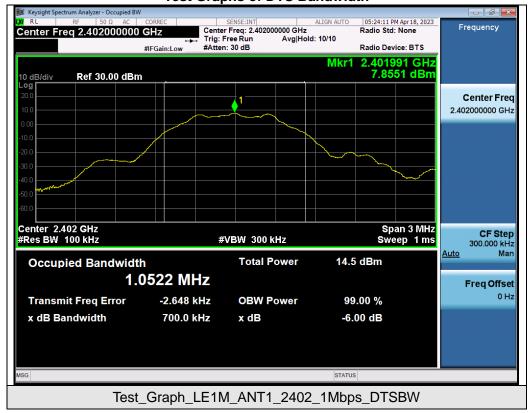
Test Graphs of Occupied Bandwidth



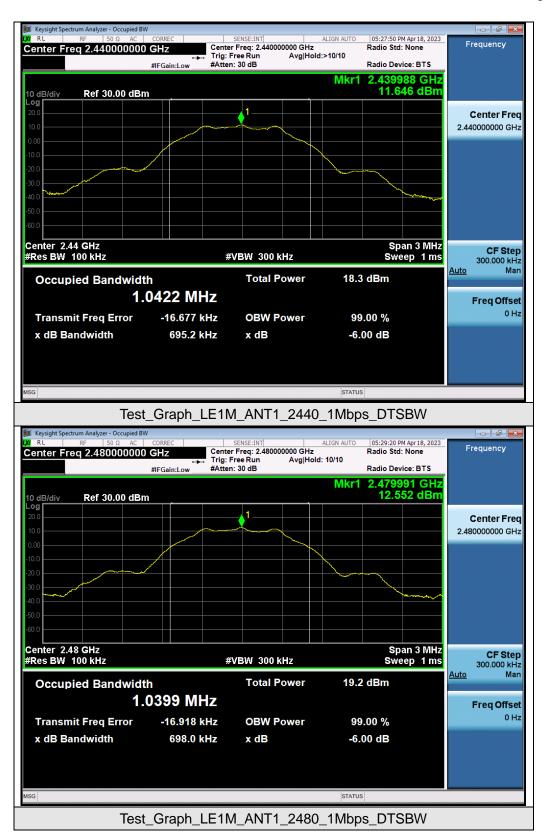




Test_Graph_LE1M_ANT1_2480_1Mbps_OBW Test Graphs of DTS Bandwidth









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

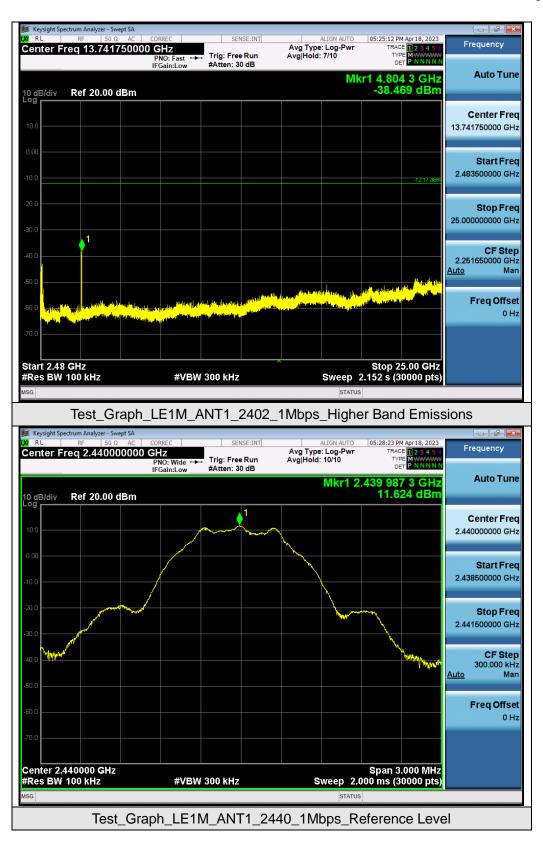
LIMITS AND MEASUREMENT RESULT				
Applieghte Limite	Measurement Re	sult		
Applicable Limits	Test Data	Criteria		
In any 100 kHz Bandwidth Outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produce by the intentional radiator shall 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		



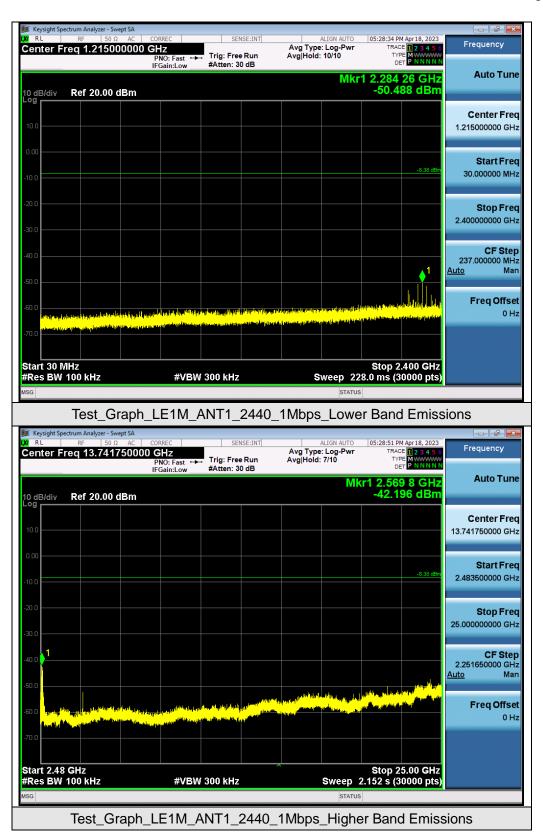


Test Graphs of Spurious Emissions in Non-Restricted Frequency Bands

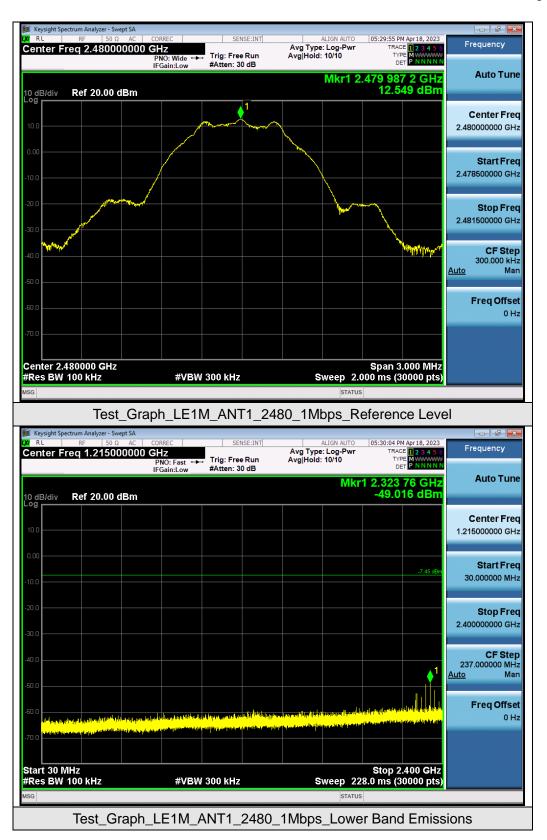




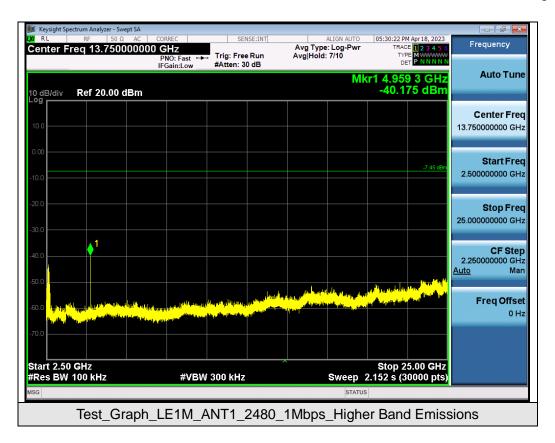
















Test Graphs of Band Edge Emissions in Non-Restricted Frequency Bands



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.

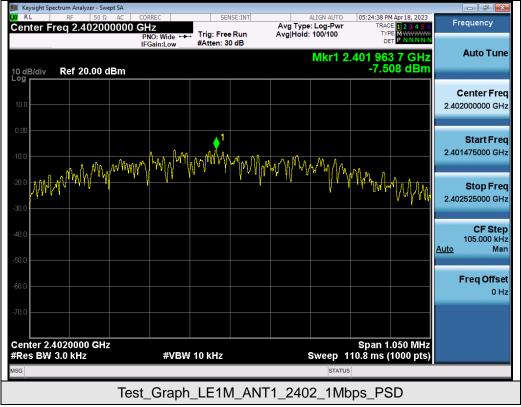
10.3. MEASUREMENT EQUIPMENT USED

Refer to Section 6.

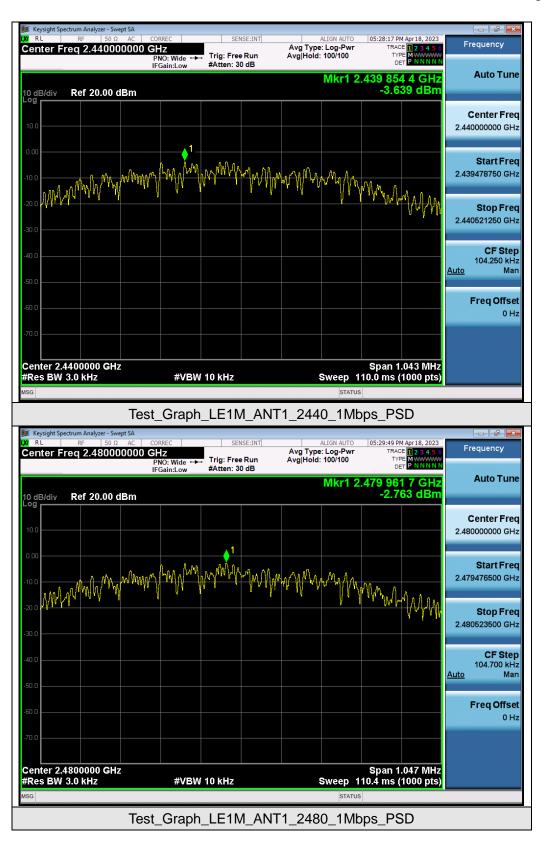
10.4. LIMITS AND MEASUREMENT RESULT

	Test Data of Conducted Output Power Spectral Density						
Test Mode	Test Channel (MHz)	Power density (dBm/3kHz)	Limit (dBm/3kHz)	Pass or Fail			
	2402	-7.508	≤8	Pass			
GFSK 1M	2440	-3.639	≪8	Pass			
	2480	-2.763	≪8	Pass			

Test Graphs of Conducted Output Power Spectral Density









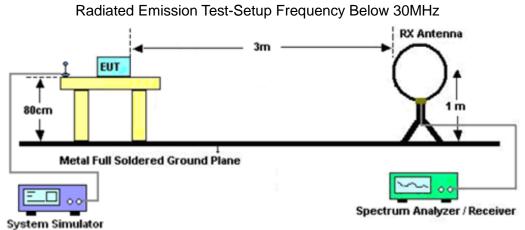
11. RADIATED EMISSION

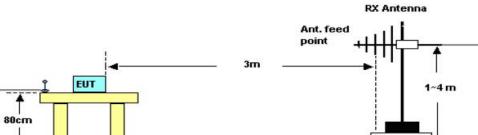
11.1. MEASUREMENT PROCEDURE

- 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.

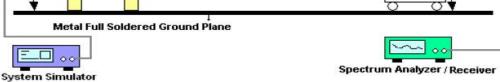


11.2. TEST SETUP

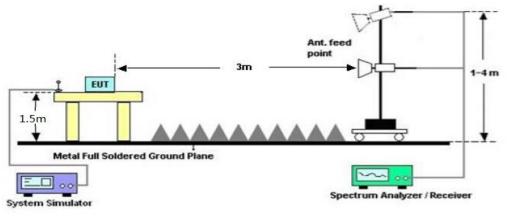




RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz





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

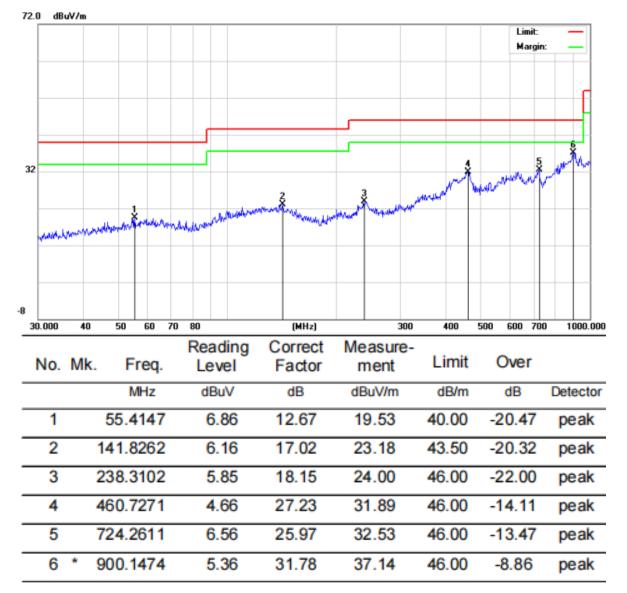
Radiated emission below 30MHz

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



EUT	Bluetooth module	Model Name	FSC-BT909C
Temperature	22.1°C	Relative Humidity	56.8%
Pressure	985hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Horizontal

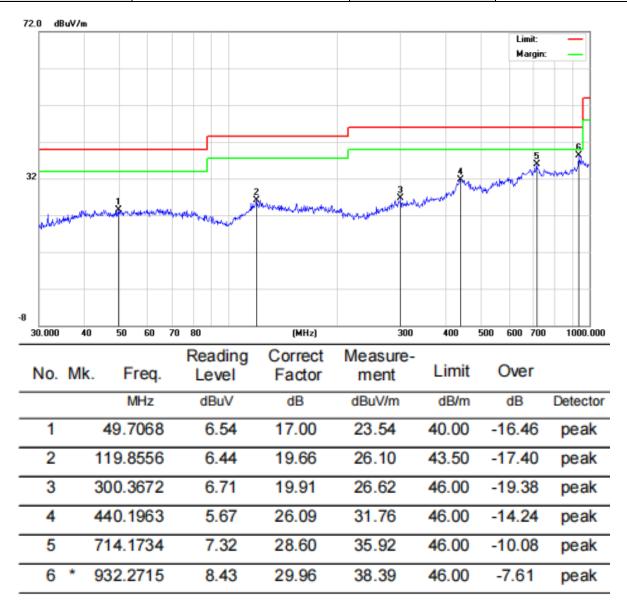
Radiated emission from 30MHz to 1000MHz



RESULT: PASS



EUT	Bluetooth module	Model Name	FSC-BT909C
Temperature	22.1°C	Relative Humidity	56.8%
Pressure	985hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical



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.



Radiated emission above 1GHz

EUT	Bluetooth module	Model Name	FSC-BT909C
Temperature	21.8°C	Relative Humidity	52.3%
Pressure	985hPa	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)		
4804.000	49.63	0.08	49.71	74	-24.29	peak	
4804.000	38.47	0.08	38.55	54	-15.45	AVG	
7206.000	47.21	2.21	49.42	74	-24.58	peak	
7206.000	36.55	2.21	38.76	54	-15.24	AVG	
omork							
emark.							
temark: actor = Anter	nna Factor + Cable	e Loss – Pre-	amplifier.				

EUT	Bluetooth module	Model Name	FSC-BT909C
Temperature	21.8°C	Relative Humidity	52.3%
Pressure	985hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type
4804.000	47.05	0.08	47.13	74	-26.87	peak
4804.000	36.92	0.08	37	54	-17	AVG
7206.000	46.84	2.21	49.05	74	-24.95	peak
7206.000	35.14	2.21	37.35	54	-16.65	AVG
Remark:						
actor = Anter	nna Factor + Cabl	e Loss – Pre-	amplifier			



EUT	Bluetooth module	Model Name	FSC-BT909C
Temperature	21.8°C	Relative Humidity	52.3%
Pressure	985hPa	Test Voltage	Normal Voltage
Test Mode	Mode 2	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type
4880.000	51.34	0.14	51.48	74	-22.52	peak
4880.000	40.21	0.14	40.35	54	-13.65	AVG
7320.000	48.26	2.36	50.62	74	-23.38	peak
7320.000	37.16	2.36	39.52	54	-14.48	AVG
Remark:						
actor = Anter	nna Factor + Cabl	e Loss – Pre-	amplifier.			

EUT	Bluetooth module	Model Name	FSC-BT909C
Temperature	21.8°C	Relative Humidity	52.3%
Pressure	985hPa	Test Voltage	Normal Voltage
Test Mode	Mode 2	Antenna	Vertical

				Margin	
(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type
50.24	0.14	50.38	74	-23.62	peak
37.74	0.14	37.88	54	-16.12	AVG
47.33	2.36	49.69	74	-24.31	peak
35.89	2.36	38.25	54	-15.75	AVG
-	50.24 37.74 47.33	50.24 0.14 37.74 0.14 47.33 2.36	50.24 0.14 50.38 37.74 0.14 37.88 47.33 2.36 49.69	50.24 0.14 50.38 74 37.74 0.14 37.88 54 47.33 2.36 49.69 74	50.24 0.14 50.38 74 -23.62 37.74 0.14 37.88 54 -16.12 47.33 2.36 49.69 74 -24.31



EUT	Bluetooth module	Model Name	FSC-BT909C
Temperature	21.8°C	Relative Humidity	52.3%
Pressure	985hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type
4960.000	52.31	0.22	52.53	74	-21.47	peak
4960.000	40.27	0.22	40.49	54	-13.51	AVG
7440.000	48.97	2.64	51.61	74	-22.39	peak
7440.000	37.44	2.64	40.08	54	-13.92	AVG
Remark:						
actor = Anter	na Factor + Cab	e Loss – Pre-a	amplifier.			

EUT	Bluetooth module	Model Name	FSC-BT909C
Temperature	21.8°C	Relative Humidity	52.3%
Pressure	985hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type
4960.000	51.24	0.22	51.46	74	-22.54	peak
4960.000	37.76	0.22	37.98	54	-16.02	AVG
7440.000	46.21	2.64	48.85	74	-25.15	peak
7440.000	35.68	2.64	38.32	54	-15.68	AVG
emark:						

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=Emission Level-Limit.

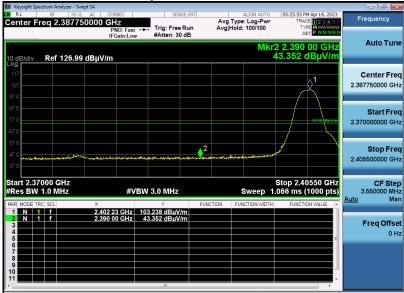
The "Factor" value can be calculated automatically by software of measurement system.



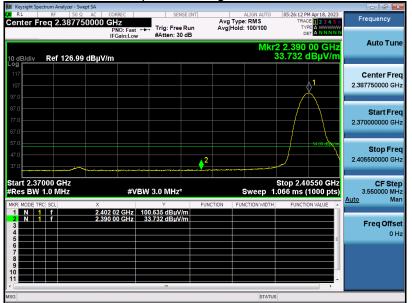
EUT	Bluetooth module	Model Name	FSC-BT909C
Temperature	22°C	Relative Humidity	62%
Pressure	985hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Horizontal

Test result for band edge emission at restricted bands

Test Graph for Peak Measurement



Test Graph for Average Measurement

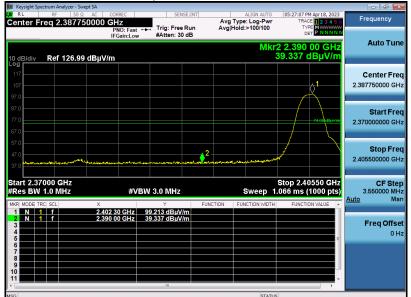


RESULT: PASS

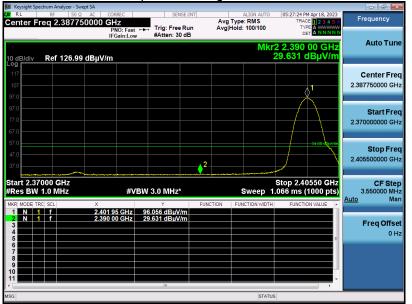


EUT	Bluetooth module	Model Name	FSC-BT909C
Temperature	22°C	Relative Humidity	62%
Pressure	985hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Vertical

Test Graph for Peak Measurement



Test Graph for Average Measurement

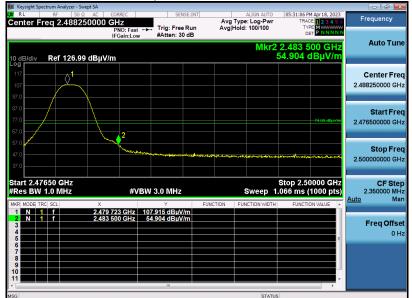


RESULT: PASS

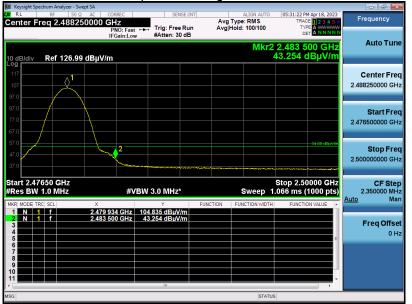


EUT	Bluetooth module	Model Name	FSC-BT909C
Temperature	22°C	Relative Humidity	62%
Pressure	985hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Horizontal

Test Graph for Peak Measurement



Test Graph for Average Measurement

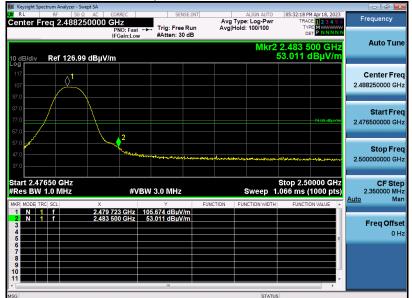


RESULT: PASS

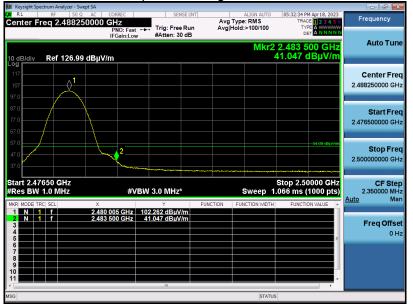


EUT	Bluetooth module	Model Name	FSC-BT909C
Temperature	22°C	Relative Humidity	62%
Pressure	985hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical

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.



12. LINE CONDUCTED EMISSION TEST

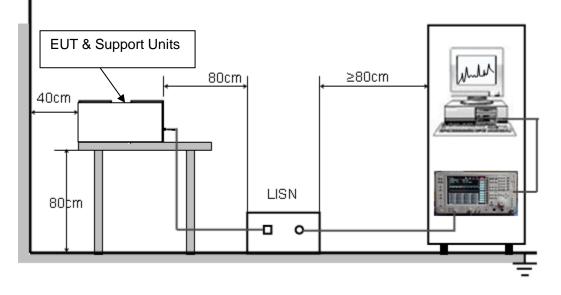
12.1. LIMITS OF LINE CONDUCTED EMISSION TEST

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





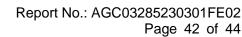
12.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

- 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.

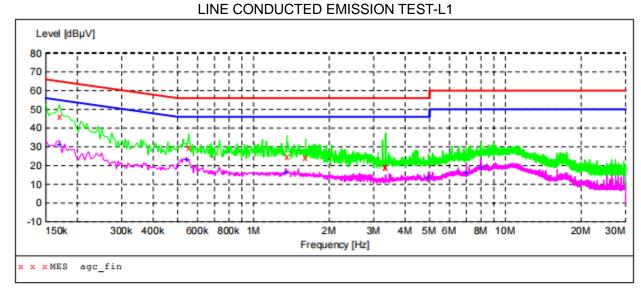
Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

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

MEASUREMENT RESULT: "agc fin"

2023/4/5 1:46 Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.170000 0.554000 1.358000 1.614000 3.338000 3.346000	46.30 29.60 24.50 24.30 19.20 19.10	6.2 6.3 6.3 6.4 6.4	65 56 56 56 56	18.7 26.4 31.5 31.7 36.8 36.9	QP QP QP QP QP QP	L1 L1 L1 L1 L1 L1	GND GND GND GND GND GND

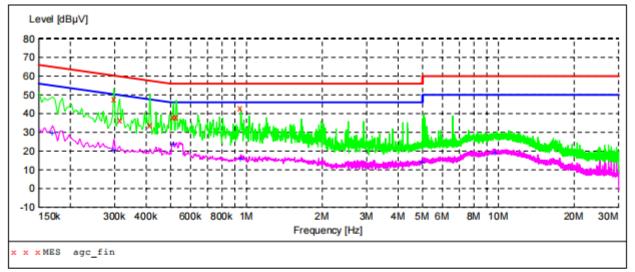
MEASUREMENT RESULT: "agc fin2"

2023/4/5 1:46 Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.170000	31.00	6.2	55	24.0	AV	L1	GND
0.542000	23.30	6.2	46	22.7	AV	L1	GND
1.342000	16.30	6.3	46	29.7	AV	L1	GND
4.958000	13.80	6.4	46	32.2	AV	L1	GND
6.994000	16.20	6.6	50	33.8	AV	L1	GND
7.990000	18.60	6.6	50	31.4	AV	L1	GND

RESULT: PASS



LINE CONDUCTED EMISSION TEST-N



MEASUREMENT RESULT: "agc fin"

2023/4/5 1:50 Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.298000 0.314000 0.414000 0.514000 0.526000 0.950000	47.70 36.40 33.80 38.20 38.20 43.00	6.2 6.2 6.2 6.2 6.2 6.3	60 58 56 56 56	12.6 23.5 23.8 17.8 17.8 13.0	QP QP QP QP QP QP	N N N N N	GND GND GND GND GND GND

MEASUREMENT RESULT: "agc fin2"

2023/4/5 1:49 Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.170000 0.298000 0.514000 0.950000 4.994000	29.50 20.60 23.60 15.60 14.20	6.2 6.2 6.3 6.4	55 50 46 46 46	25.5 29.7 22.4 30.4 31.8	AV AV AV AV AV	N N N N	GND GND GND GND GND
9.718000	18.90	6.7	50	31.1	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.



APPENDIX A: PHOTOGRAPHS OF TEST SETUP

Refer to the Report No.: AGC03285230301AP02

APPENDIX B: PHOTOGRAPHS OF EUT

Refer to the Report No.: AGC03285230301AP03

----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.

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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.