

# **FCC Test Report**

Report No.: AGC13300221202FE03

FCC ID : 2A3GJ-ANBK-01

**APPLICATION PURPOSE**: Original Equipment

**PRODUCT DESIGNATION**: Actto Wireless/Bluetooth type Number-Keypad

**BRAND NAME** : ACTTO

MODEL NAME : ANBK-01

**APPLICANT**: Shanghai Actto Plastics Co., Ltd.

**DATE OF ISSUE** : Jan. 06, 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 Versi	on Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Jan. 06, 2023	Valid	Initial Release



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



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## 1. VERIFICATION OF COMPLIANCE

Applicant	Shanghai Actto Plastics Co., Ltd.		
Address	1F 18B/L, Fashion Valley Creative Park, 618-1, Dingyuan Rd., Songjiang, Shanghai City, China		
Manufacturer	Shanghai Actto Plastics Co., Ltd.		
Address	1F 18B/L, Fashion Valley Creative Park, 618-1, Dingyuan Rd., Songjiang, Shanghai City, China		
Factory	DONGGUAN ACTTO ELECTRONIC TECHNOLOGY CO., LTD		
Address	Room201, 1st Building of No. 18, Hengli Shikeng Road, Hengli Shikeng Road, Hengli Town, Dongguan City.Guangdong Province of China		
Product Designation	Actto Wireless/Bluetooth type Number-Keypad		
Brand Name	ACTTO		
Test Model	ANBK-01		
Date of receipt of test item	Dec. 08, 2022		
Date of test	Dec. 08, 2022 to Jan. 06, 2023		
Deviation	No any deviation from the test method		
Condition of Test Sample	Normal		
Test Result	Pass		
Report Template	AGCRT-US-2.4G/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)	Jan. 06, 2023
Reviewed By	Calin Lin	
	Calvin Liu (Reviewer)	Jan. 06, 2023
Approved By	Max Zhang	
	Max Zhang (Authorized Officer)	Jan. 06, 2023



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## 2. GENERAL INFORMATION

## 2.1. PRODUCT DESCRIPTION

The EUT is designed as a "Actto Wireless/Bluetooth type Number-Keypad". 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	-1.656dBm (Max)		
Modulation	GFSK		
Number of channels	16 Channels		
Antenna Designation	PCB Antenna (Comply with requirements of the FCC part 15.203)		
Antenna Gain	-2.024dBi		
Hardware Version	1.0		
Software Version	1.0		
Power Supply	DC 1.5V by battery		

## 2.2. TABLE OF CARRIER FREQUENCYS

Frequency Band	Channel Number	Frequency
	1	2402
	2	2404
	3	2408
	4	2410
	5	2412
	6	2418
	7	2420
2400~2480MHz	8	2432
2400~2480IVII IZ	9	2440
	10	2450
	11	2454
	12	2464
	13	2468
	14	2470
	15	2476
	16	2480



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

This submittal(s) (test report) is intended for **FCC ID: 2A3GJ-ANBK-01** filling to comply with the FCC Part 15.247 requirements.

#### 2.4. TEST METHODOLOGY

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

#### 2.5. SPECIAL ACCESSORIES

Refer to section 5.2.

#### 2.6. EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

## 2.7. ANTENNA REQUIREMENT

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



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## 3. MEASUREMENT UNCERTAINTY

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

Item	Measurement Uncertainty		
Uncertainty of Conducted Emission for AC Port	$U_c = \pm 3.1 \text{ dB}$		
Uncertainty of Radiated Emission below 1GHz	$U_c = \pm 4.0 \text{ dB}$		
Uncertainty of Radiated Emission above 1GHz	$U_c = \pm 4.8 \text{ dB}$		
Uncertainty of total RF power, conducted	$U_c = \pm 0.8 \text{ dB}$		
Uncertainty of RF power density, conducted	$U_c = \pm 2.6 \text{ dB}$		
Uncertainty of spurious emissions, conducted	$U_c = \pm 2.7 \%$		
Uncertainty of Occupied Channel Bandwidth	U <sub>c</sub> = ±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.
- 4. The EUT adjusts the frequency through the button.

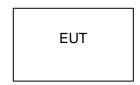


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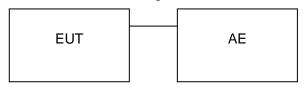
## 5. SYSTEM TEST CONFIGURATION

## **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	Actto Wireless/Bluetooth type Number-Keypad	ANBK-01	2A3GJ-ANBK-01	EUT

## 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 device under test is battery-powered and does not require evaluation of AC Power Line Conducted Emissi on.



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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 Co Fuhai Street, Bao'an District, Shenzhen, Guangdong, China	
Designation Number	CN1259
FCC Test Firm Registration Number	975832
A2LA Cert. No.	5054.02
Description	Attestation of Global Compliance (Shenzhen) Co., Ltd is accredited by A2LA

## **TEST EQUIPMENT OF RADIATED EMISSION TEST**

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	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. 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

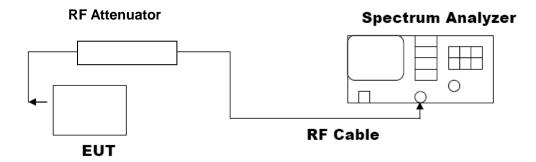
## 7.1. MEASUREMENT PROCEDURE

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





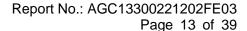
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## 7.3. LIMITS AND MEASUREMENT RESULT

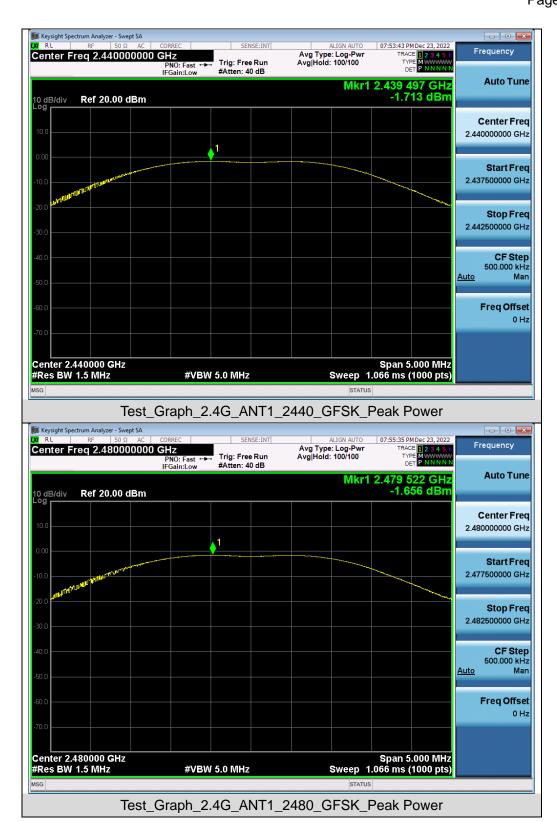
TIGI EIIII 10 7/172 IIIE 7/00 P.E.III ETT T.E.OOE I							
Test Data of Conducted Output Power							
Test Mode	Pass or Fail						
	2402	-1.832	≤30	Pass			
GFSK	2440	-1.713	≤30	Pass			
	2480	-1.656	≤30	Pass			

**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.

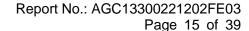
**Note:** The EUT was tested according to ANSI C63.10 for compliance to FCC PART 15.247 requirements.

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

The same as described in section 7.2.

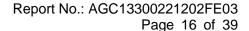
#### 8.3. LIMITS AND MEASUREMENT RESULTS

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	2.199	1.219	≥0.5	Pass		
GFSK	2440	2.203	1.227	≥0.5	Pass		
	2480	2.191	1.230	≥0.5	Pass		

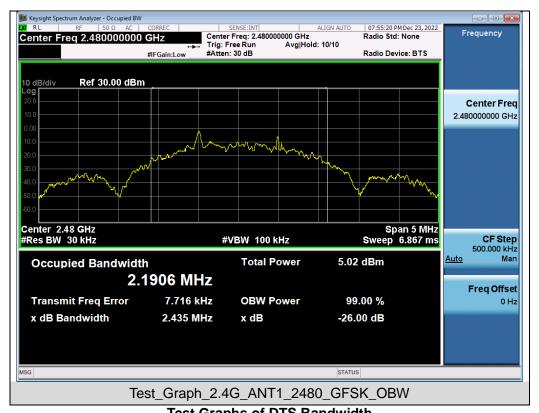


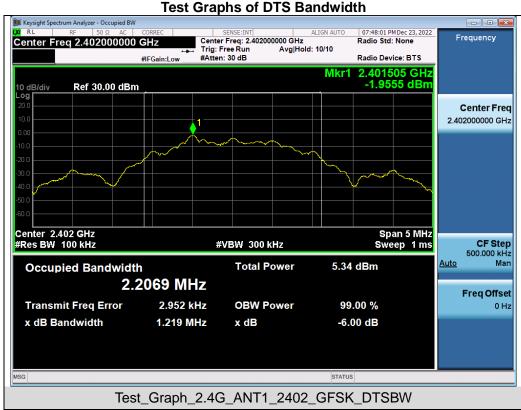


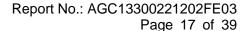


















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## 9. CONDUCTED SPURIOUS EMISSION

## 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)

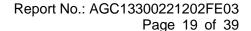
The same as described in section 7.2.

#### 9.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6.

#### 9.4. LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT				
AB. at L. Danie	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		

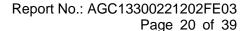




Test Graphs of Spurious Emissions in Non-Restricted Frequency Bands Frequency Avg Type: Log-Pwr Avg|Hold: 10/10 Center Freq 2.402000000 GHz Trig: Free Run #Atten: 30 dB IFGain:Low **Auto Tune** Mkr1 2.401 -1.912 dBm Ref 20.00 dBm 0 dB/div Center Freq 2.402000000 GHz Start Freq 2.399500000 GHz Stop Freq 2.404500000 GHz CF Step 500.000 kHz <u>Auto</u> Freq Offset 0 Hz Center 2.402000 GHz #Res BW 100 kHz Span 5.000 MHz Sweep 2.000 ms (30000 pts) #VBW 300 kHz Test\_Graph\_2.4G\_ANT1\_2402\_GFSK\_Reference Level Center Freg 1.210000000 GHz Avg Type: Log-Pwr Avg|Hold: 10/10 Trig: Free Run #Atten: 30 dB **Auto Tune** Mkr1 2.385 52 GHz -49.772 dBm Ref 20.00 dBm Center Freq 1.210000000 GHz Start Freq 30.000000 MHz Stop Freq 2.390000000 GHz **CF Step** 236.000000 MHz Man Auto Freq Offset 0 Hz Start 30 MHz #Res BW 100 kHz Stop 2.390 GHz Sweep 226.0 ms (30000 pts) **#VBW** 300 kHz

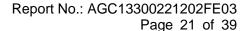
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Test\_Graph\_2.4G\_ANT1\_2402\_GFSK\_Lower Band Emissions

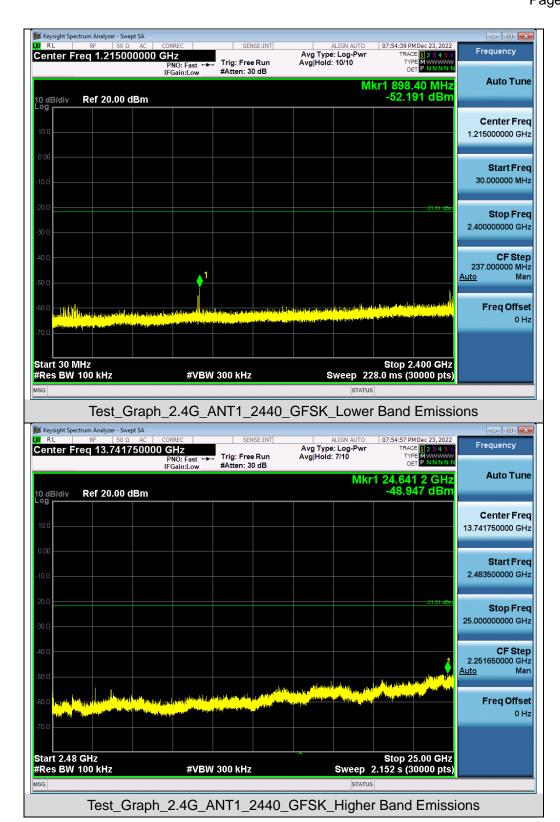


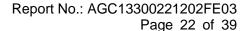






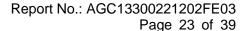




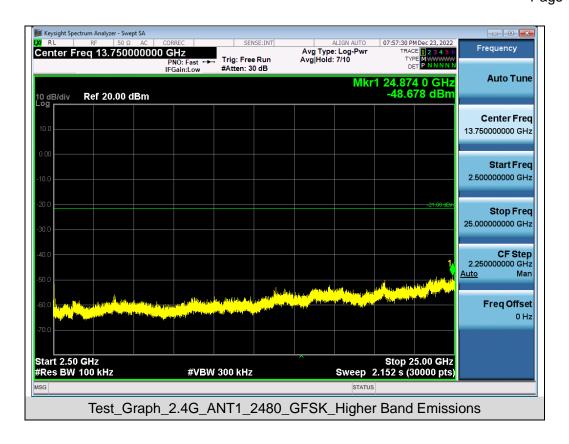


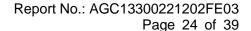














Test Graphs of Band Edge Emissions in Non-Restricted Frequency Bands Frequency Avg Type: Log-Pwr Avg|Hold: 100/100 Center Freq 2.398500000 GHz Trig: Free Run #Atten: 30 dB **Auto Tune** Mkr2 2.400 000 0 GHz -27.828 dBm Ref 20.00 dBm Center Freq 2.398500000 GHz Start Freq 2.390000000 GHz Stop Freq 2.407000000 GHz Stop 2.407000 GHz Sweep 2.000 ms (30000 pts) Start 2.390000 GHz CF Step 1.700000 MHz **#VBW 300 kHz** Auto <u>2.400 000 0 GHz</u> 2.399 011 4 GHz Freq Offset 0 Hz Test\_Graph\_2.4G\_ANT1\_2402\_GFSK\_Lower Band Edge Emissions Avg Type: Log-Pwr Avg|Hold: 100/100 Center Freg 2.487500000 GHz Trig: Free Run PNO: Fast ↔ #Atten: 30 dB **Auto Tune** Mkr2 2.483 500 0 GHz -42.509 dBm Ref 20.00 dBm Center Freq 2.487500000 GHz Start Freq 2.475000000 GHz Stop Freq 2.500000000 GHz Stop 2.50000 GHz Sweep 4.000 ms (30000 pts) Start 2.47500 GHz #Res BW 100 kHz #VBW 300 kHz 2.500000 MHz Man Auto FUNCTION FUNCTION WIDTH -37.158 dBn Freq Offset 0 Hz Test\_Graph\_2.4G\_ANT1\_2480\_GFSK\_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.

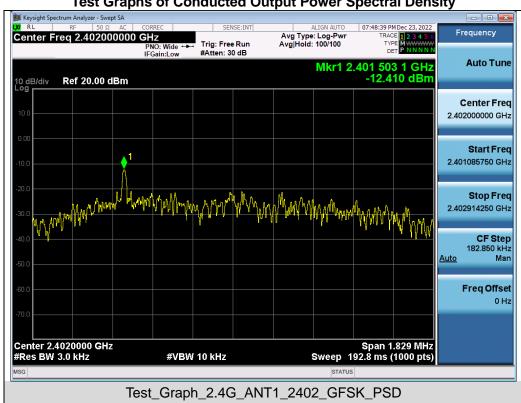
#### 10.3. MEASUREMENT EQUIPMENT USED

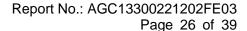
Refer to Section 6.

#### 10.4. LIMITS AND MEASUREMENT RESULT

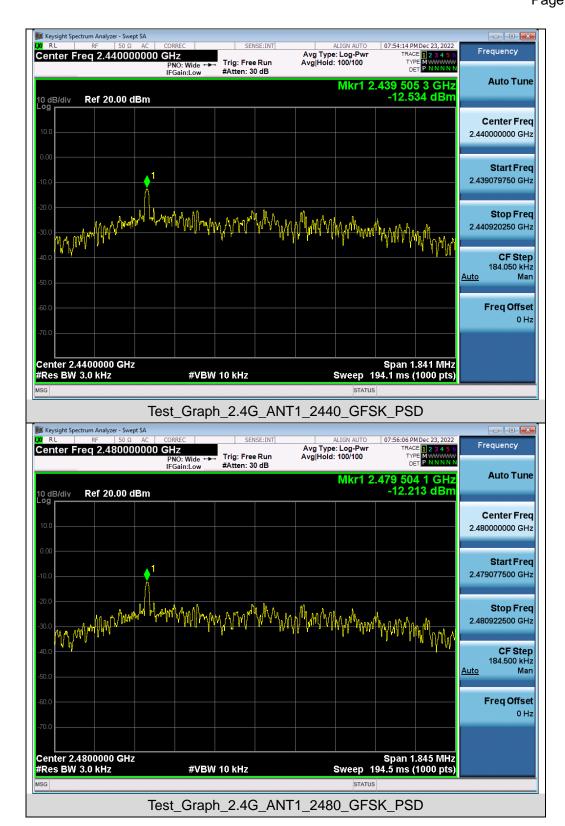
Test Data of Conducted Output Power Spectral Density							
Test Mode Test Channel Power density Limit (MHz) (dBm/3kHz) Pass or Fail							
	2402	-12.410	<b>≤8</b>	Pass			
GFSK	2440	-12.534	<b>≤8</b>	Pass			
	2480	-12.213	<b>≤8</b>	Pass			

Test Graphs of Conducted Output Power Spectral Density









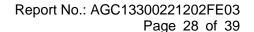


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## 11. RADIATED EMISSION

#### 11.1. MEASUREMENT PROCEDURE

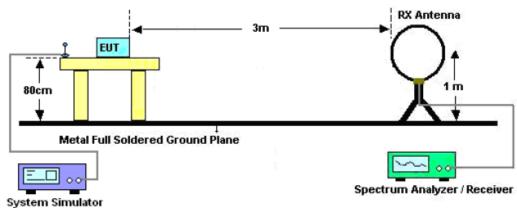
- 1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
- 2. Power on the EUT and all the supporting units. The turntable was rotated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



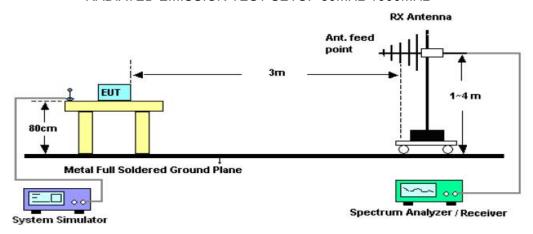


## 11.2. TEST SETUP

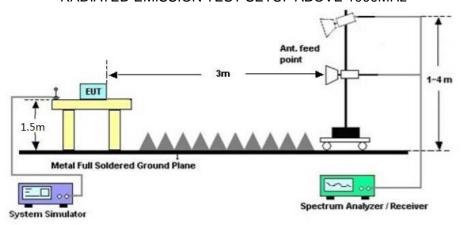
## Radiated Emission Test-Setup Frequency Below 30MHz



## 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

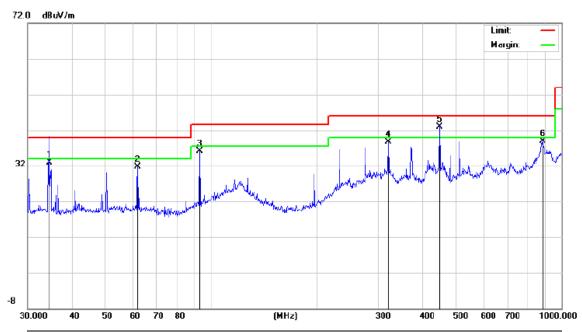
The amplitude of spurious emissions from 9kHz to 30MHz which are attenuated more than 20 dB below the permissible value need not be reported.



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## Radiated emission from 30MHz to 1000MHz

EUT	Actto Wireless/Bluetooth type Number-Keypad	Model Name	ANBK-01
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Horizontal



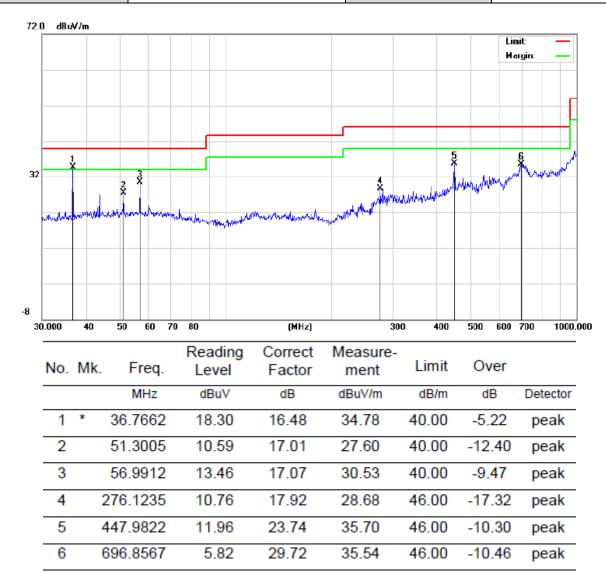
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		34.5173	18.07	14.74	32.81	40.00	-7.19	QP
2		61.7781	16.60	15.10	31.70	40.00	-8.30	peak
3		92.7871	19.45	16.72	36.17	43.50	-7.33	peak
4		319.9370	12.31	26.49	38.80	46.00	-7.20	peak
5	*	447.9822	16.74	26.22	42.96	46.00	-3.04	QP
6		881.4067	6.65	32.19	38.84	46.00	-7.16	peak

**RESULT: PASS** 



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EUT	Actto Wireless/Bluetooth type Number-Keypad	Model Name	ANBK-01
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	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.



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## Radiated emission above 1GHz

EUT	Actto Wireless/Bluetooth type Number-Keypad	Model Name	ANBK-01
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	43.57	0.08	43.65	74	-30.35	peak
4804.000	35.41	0.08	35.49	54	-18.51	AVG
7206.000	38.56	2.21	40.77	74	-33.23	peak
7206.000	31.69	2.21	33.9	54	-20.1	AVG
Domork						

Remark

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

EUT	Actto Wireless/Bluetooth type Number-Keypad	Model Name	ANBK-01
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	44.68	0.08	44.76	74	-29.24	peak
4804.000	34.45	0.08	34.53	54	-19.47	AVG
7206.000	38.39	2.21	40.6	74	-33.4	peak
7206.000	30.52	2.21	32.73	54	-21.27	AVG
Remark:						

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



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EUT	Actto Wireless/Bluetooth type Number-Keypad	Model Name	ANBK-01
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)	
4880.000	44.58	0.14	44.72	74	-29.28	peak
4880.000	35.41	0.14	35.55	54	-18.45	AVG
7320.000	39.33	2.36	41.69	74	-32.31	peak
7320.000	31.49	2.36	33.85	54	-20.15	AVG
emark:						

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

EUT	Actto Wireless/Bluetooth type Number-Keypad	Model Name	ANBK-01
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)	
4880.000	45.67	0.14	45.81	74	-28.19	peak
4880.000	38.45	0.14	38.59	54	-15.41	AVG
7320.000	40.39	2.36	42.75	74	-31.25	peak
7320.000	32.42	2.36	34.78	54	-19.22	AVG
Domosta						
Remark:						

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



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EUT	Actto Wireless/Bluetooth type Number-Keypad	Model Name	ANBK-01
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	44.87	0.22	45.09	74	-28.91	peak
4960.000	35.45	0.22	35.67	54	-18.33	AVG
7440.000	38.52	2.64	41.16	74	-32.84	peak
7440.000	29.63	2.64	32.27	54	-21.73	AVG

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

EUT	Actto Wireless/Bluetooth type Number-Keypad	Model Name	ANBK-01
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)	
4960.000	42.86	0.22	43.08	74	-30.92	peak
4960.000	34.59	0.22	34.81	54	-19.19	AVG
7440.000	38.47	2.64	41.11	74	-32.89	peak
7440.000	29.75	2.64	32.39	54	-21.61	AVG
Remark:						

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

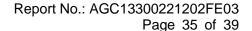
#### **RESULT: PASS**

#### Note:

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

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

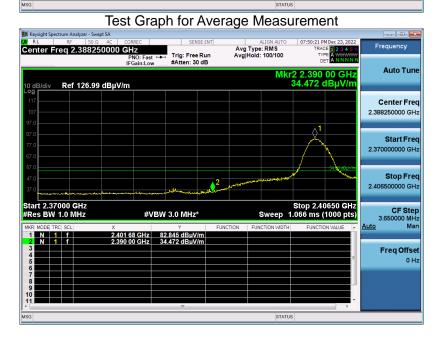
The "Factor" value can be calculated automatically by software of measurement system.



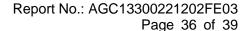


Test result for band edge emission at restricted bands

EUT	Actto Wireless/Bluetooth type Number-Keypad	Model Name	ANBK-01
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Horizontal

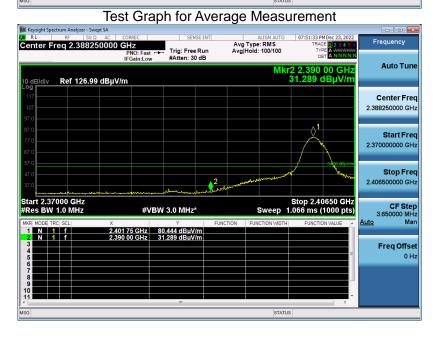


**RESULT: PASS** 

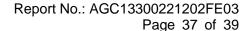




Actto Wireless/Bluetooth type **EUT Model Name** ANBK-01 Number-Keypad 25° C **Temperature Relative Humidity** 55.4% **Pressure** 960hPa **Test Voltage** Normal Voltage **Test Mode** Vertical Mode 1 **Antenna** 

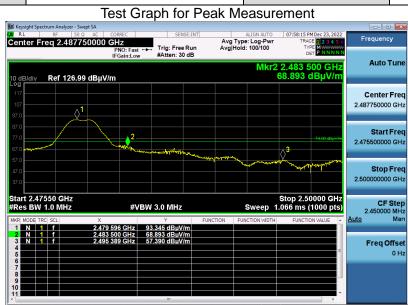


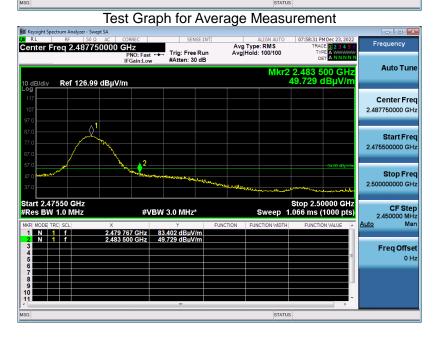
**RESULT: PASS** 



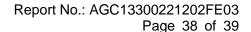


Actto Wireless/Bluetooth type **EUT Model Name** ANBK-01 Number-Keypad 25° C **Temperature Relative Humidity** 55.4% **Pressure** 960hPa **Test Voltage** Normal Voltage **Test Mode** Horizontal Mode 3 **Antenna** 



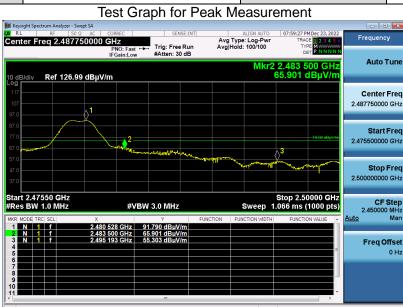


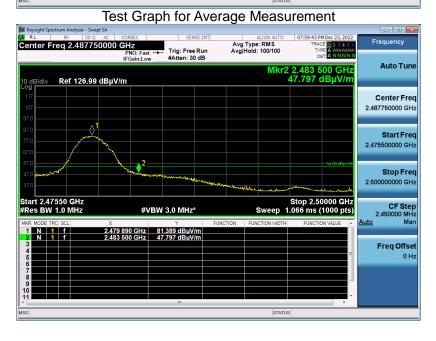
**RESULT: PASS** 





Actto Wireless/Bluetooth type **EUT Model Name** ANBK-01 Number-Keypad **Temperature** 25° C **Relative Humidity** 55.4% **Pressure** 960hPa **Test Voltage** Normal Voltage **Test Mode** Mode 3 **Antenna** Vertical





## **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.: AGC13300221202AP01

APPENDIX B: PHOTOGRAPHS OF EUT Refer to the Report No.: AGC13300221202AP02

----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.
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- 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.
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- 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.