

FCC Test Report

Report No.: AGC15705240351FR01

FCC ID : QV7-GC88752-98

APPLICATION PURPOSE : Original Equipment

PRODUCT DESIGNATION: INFERNO CRUISER

BRAND NAME : REVOLT

MODEL NAME : TG1025

APPLICANT: GUANGDONG SYMA MODEL AIRCRAFT INDUSTRIAL CO., LTD

DATE OF ISSUE : Apr. 11, 2024

STANDARD(S)

TEST PROCEDURE(S)

FCC Part 15 Subpart C §15.249

REPORT VERSION : V1.0

Attestation of Global CANDIOCE (Shenzhen) Co., Ltd



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Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Apr. 11, 2024	Valid	Initial Release

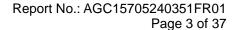




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APPENDIX B: PHOTOGRAPHS OF THE EUT	. 39



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1. VERIFICATION OF CONFORMITY

Applicant	GUANGDONG SYMA MODEL AIRCRAFT INDUSTRIAL CO., LTD
Address	NO. 2 WEST XINGYE ROAD LAIMEI INDUSTRIAL AREA CHENG HAI, Shantou, China
Manufacturer	GUANGDONG SYMA MODEL AIRCRAFT INDUSTRIAL CO., LTD
Address	NO. 2 WEST XINGYE ROAD LAIMEI INDUSTRIAL AREA CHENG HAI, Shantou, China
Factory	GUANGDONG SYMA MODEL AIRCRAFT INDUSTRIAL CO., LTD
Address	NO. 2 WEST XINGYE ROAD LAIMEI INDUSTRIAL AREA CHENG HAI, Shantou, China
Product Designation	INFERNO CRUISER
Brand Name	REVOLT
Test Model	TG1025
Series Model	N/A
Difference Description	N/A
Date of receipt of test item	Mar. 26, 2024
Date of Test	Mar. 26, 2024 to Apr. 11, 2024
Deviation	No any deviation from the test method
Condition of Test Sample	Normal
Test Result	Pass
Report Template	AGCRT-US-SRD/RF

Note: The test results of this report relate only to the tested sample identified in this report.

Prepared By	Jack Gai	
	Jack Gui (Project Engineer)	Apr. 11, 2024
Reviewed By	Calin Lin	
	Calvin Liu (Reviewer)	Apr. 11, 2024
Approved By	Max Zhang	
	Max Zhang (Authorized Officer)	Apr. 11, 2024



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2. GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION

A major technical description of EUT is described as following

Operation Frequency 2405MHz-2475MHz	
Maximum field strength	98.86dBµV/m(Peak)@3m 82.85dBµV/m(Average)@3m
Modulation	GFSK
Number of channels	71 Channels
Antenna Gain	0dBi
Antenna Designation	Wire Antenna
Hardware Version	2024.1v1.0
Software Version	2024.1v1.0
Power Supply	DC 3.0V by battery



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2.2. TABLE OF CARRIER FREQUENCY

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2405	37	2441
2	2406	38	2442
3	2407	39	2443
4	2408	40	2444
5	2409	41	2445
6	2410	42	2446
7	2411	43	2447
8	2412	44	2448
9	2413	45	2449
10	2414	46	2450
11	2415	47	2451
12	2416	48	2452
13	2417	49	2453
14	2418	50	2454
15	2419	51	2455
16	2420	52	2456
17	2421	53	2457
18	2422	54	2458
19	2423	55	2459
20	2424	56	2460
21	2425	57	2461
22	2426	58	2462
23	2427	59	2463
24	2428	60	2464
25	2429	61	2465
26	2430	62	2466
27	2431	63	2467
28	2432	64	2468
29	2433	65	2469
30	2434	66	2470
31	2435	67	2471
32	2436	68	2472
33	2437	69	2473
34	2438	70	2474
35	2439	71	2475
36	2440		



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2.3. 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 uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in measurement" (GUM) published by CISPR and ANSI.

- Uncertainty of Conducted Emission, Uc = ±2.9 dB
- Uncertainty of Radiated Emission below 1GHz, Uc = ±3.9 dB
- Uncertainty of Radiated Emission above 1GHz, Uc = ±4.9 dB
- Uncertainty of Occupied Channel Bandwidth: Uc = ±2 %



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4. DESCRIPTION OF TEST MODES

NO.	TEST MODE DESCRIPTION
1	Low channel TX_2405MHz_GFSK
2	Middle channel TX_2445MHz_GFSK
3	High channel TX_2475MHz_GFSK

Note:

- 1. All the test modes can be supply by battery, 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. Set the EUT into the individual test modes by pressing the EUT buttons.
- 4. For battery operated equipment, the equipment tests are performed using a new battery.



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5. SYSTEM TEST CONFIGURATION

5.1. CONFIGURATION OF EUT SYSTEM

Radiated Emission Configure:

EUT	

5.2 EQUIPMENT USED IN TESTED SYSTEM

Item	Equipment	Model No.	ID or Specification	Remark
1	INFERNO CRUISER	TG1025	QV7-GC88752-98	EUT

5.3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.249&15.209	Radiated Emission	Compliant
§15.249	Band Edges	Compliant
§15.215	20dB bandwidth	Compliant
§15.207	Conducted Emission	Not applicable

Note: The conducted emission tests at AC port are not required for devices which only employ battery power for operation.



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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 Comm 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	Feb. 01, 2024	Jan. 31, 2025
Signal Analyzer	Aglient	N9020A	MY52090123	Jun. 01, 2023	May 31, 2024
EXA Signal Analyzer	Agilent	N9010A	MY53470504	Feb. 01, 2024	Jan. 31, 2025
2.4GHz Filter	EM Electronics	N/A	N/A	Jun. 01, 2023	May 31, 2024
Attenuator	ZHINAN	E-002	N/A	Feb. 01, 2024	Jan. 31, 2025
Horn Antenna	SCHWARZBEC	BBHA9170	768	Jun. 01, 2023	May 31, 2024
Active Loop Antenna (9K-30Mhz)	ZHINAN	ZN30900C	18051	Mar. 05, 2024	Mar. 04, 2025
Double-Ridged Waveguide Horn	ETS	3117	00034609	Mar. 23, 2023	Mar. 22, 2024
Double-Ridged Waveguide Horn	ETS	3117	00034609	Mar. 31, 2024	Mar. 30, 2025
Preamplifer	ETS	3117-PA	00246148	Aug. 04, 2022	Aug. 03, 2024
Wideband Antenna	SCHWARZBECK	VULB9168	VULB9168-494	Jan. 05, 2024	Jan. 04, 2025
Test Software	Tonscend	4.0.0.0	N/A	N/A	N/A



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7. RADIATED EMISSION

7.1. TEST LIMIT

Standard FCC15.249

Fundamental Frequency	Field Strength of Fundamental	Field Strength of Harmonics	
	(millivolts/meter)	(microvolts/meter)	
900-928MHz	50	500	
2400-2483.5MHz	50	500	
5725-5875MHz	50	500	
24.0-24.25GHz	250	2500	

Standard FCC 15.209

Frequency	Distance	Field Strengths Limit		
(MHz)	Meters	μ V/m	dB(μV)/m	
0.009 ~ 0.490	300	2400/F(kHz)		
0.490 ~ 1.705	30	24000/F(kHz)		
1.705 ~ 30	30	30		
30 ~ 88	3	100	40.0	
88 ~ 216	3	150	43.5	
216 ~ 960	3	200	46.0	
960 ~ 1000	3	500	54.0	
Above 1000	3	Other:74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)		

Remark:

- (1) Emission level dB μ V = 20 log Emission level μ V/m.
- (2) The smaller limit shall apply at the cross point between two frequency bands.
- (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.



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7.2. 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 emissions, 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 minimum resolution bandwidth of 1 MHz. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- 7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
- 8.If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
- 9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
- 10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High Low scan is not required in this case.



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The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Start ~Stop Frequency	9kHz~150kHz/RB 200Hz for QP
Start ~Stop Frequency	150kHz~30MHz/RB 9kHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120kHz for QP
Start ~Stop Frequency	1GHz~26.5GHz 1MHz/3MHz for Peak, 1MHz/3MHz for Average

Receiver Parameter	Setting
Start ~Stop Frequency	9kHz~150kHz/RB 200Hz for QP
Start ~Stop Frequency	150kHz~30MHz/RB 9kHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120kHz for QP

- The following is the test setup of Field Strength of Fundamental:
 - ➤ Peak detection: RBW is greater than the main frequency OBW, VBW=50MHz / Sweep=AUTO
 - Average detection: RBW is greater than the main frequency OBW, VBW=50MHz / Sweep=AUTO
- The following is the test setup of Band Edge:

The EUT operates at transmitting mode. The operate channel is tested to verify the largest transmission and spurious emissions power at the continuous transmission mode.

- Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
 - Peak detection: RBW=1MHz, VBW=3MHz / Sweep=AUTO
 - Average detection: RBW=1MHz; VBW=1/T / Sweep=AUTO (Duty cycle is less than 98%)
 - Average detection: RBW=1MHz; VBW=3M / Sweep=AUTO
 - Other procedures refer to clause 7.2.



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Quasi-Peak Measurements below 1GHz

- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. Span was set greater than 1MHz
- 3. RBW = as shown in the table above
- 4. Detector = CISPR quasi-peak
- 5. Sweep time = auto couple
- 6. Trace was allowed to stabilize

Peak Measurements above 1GHz

- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. RBW = 1MHz
- 3. VBW = 3MHz
- 4. Detector = peak
- 5. Sweep time = auto couple
- 6. Trace mode = max hold
- 7. Trace was allowed to stabilize

Average Measurements above 1GHz (Method VB)

- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. RBW = 1MHz
- 3. VBW setting requirements are as follows:
- 4. If the EUT is configured to transmit with duty cycle ≥ 98%, set VBW = 10 Hz.
- 5. If the EUT duty cycle is < 98%, set VBW ≥ 1/T. T is the minimum transmission duration.
- 6. Detector = Peak

7. Sweep time = auto



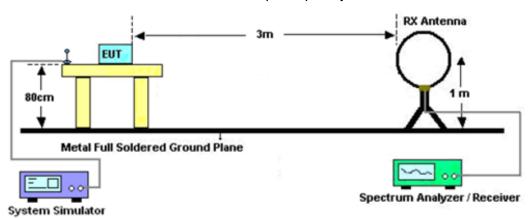
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- 8. Trace mode = max hold
- 8. Trace was allowed to stabilize

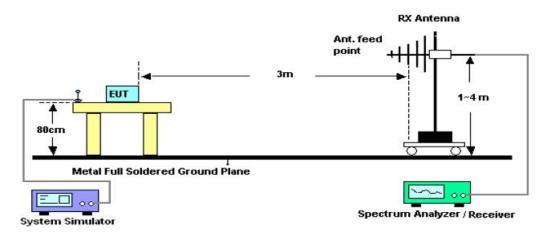


7.3. TEST SETUP

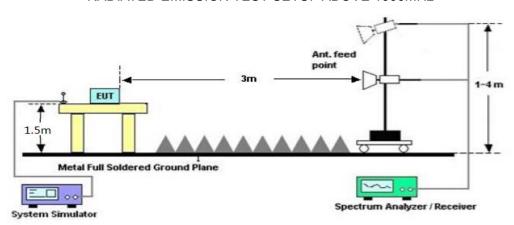
Radiated Emission Test-Setup Frequency Below 30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz



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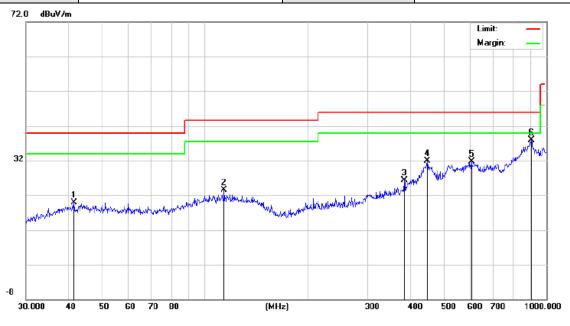
7.4. TEST RESULT

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.

RADIATED EMISSION 30MHz-1GHZ

EUT	INFERNO CRUISER	Model Name	TG1025			
Temperature	23.2° C	Relative Humidity	59.8 %			
Pressure	985kPa	Test Voltage	DC 3.0V by battery			
Test Mode	Mode 3	Polarization	Horizontal			

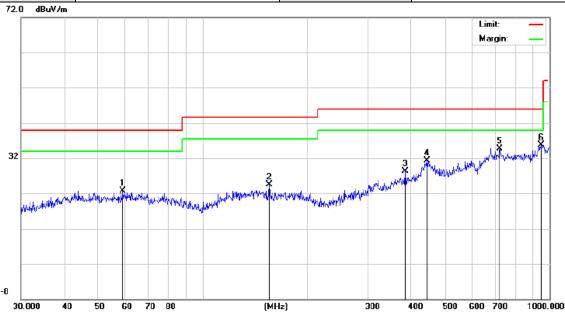


No.	Μŀ	k. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dΒ	Detector
1		41.5670	6.15	13.79	19.94	40.00	-20.06	peak
2		114.1138	7.19	16.34	23.53	43.50	-19.97	peak
3		383.9318	7.72	18.63	26.35	46.00	-19.65	peak
4		447.9822	7.04	24.82	31.86	46.00	-14.14	peak
5		603.5392	6.61	25.12	31.73	46.00	-14.27	peak
6	*	903.3094	6.54	31.34	37.88	46.00	-8.12	peak

RESULT: PASS



EUT	INFERNO CRUISER	Model Name	TG1025
Temperature	23.2° C	Relative Humidity	59.8 %
Pressure	985kPa	Test Voltage	DC 3.0V by battery
Test Mode	Mode 3	Polarization	Vertical



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dΒ	dBuV/m	dBuV/m	dΒ	Detector
1		59.0251	5.55	17.09	22.64	40.00	-17.36	peak
2		155.9101	6.26	18.20	24.46	43.50	-19.04	peak
3		383.9318	6.67	21.56	28.23	46.00	-17.77	peak
4		443.2943	5.41	25.95	31.36	46.00	-14.64	peak
5		719.1995	6.01	28.77	34.78	46.00	-11.22	peak
6	*	945.4399	5.00	30.78	35.78	46.00	-10.22	peak

RESULT: PASS

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

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

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



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FIELD STRENGTH OF FUNDAMENTAL

EUT	INFERNO CRUISER	Model Name	TG1025
Temperature	23.2° C	Relative Humidity	59.8 %
Pressure	985kPa	Test Voltage	DC 3.0V by battery
Test Modulation	GFSK	Polarization	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
2405	45.42	49.05	94.47	114.00	-19.53	peak
2405	29.25	49.05	78.30	94.00	-15.70	AVG
2445	44.17	49.12	93.29	114.00	-20.71	peak
2445	28.33	49.12	77.45	94.00	-16.55	AVG
2475	49.61	49.25	98.86	114.00	-15.14	peak
2475	33.60	49.25	82.85	94.00	-11.15	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	INFERNO CRUISER	Model Name	TG1025
Temperature	23.2° C	Relative Humidity	59.8 %
Pressure	985kPa	Test Voltage	DC 3.0V by battery
Test Modulation	GFSK	Polarization	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
2405	44.37	49.05	91.53	114.00	-22.47	peak
2405	29.51	49.05	75.35	94.00	-18.65	AVG
2445	45.31	49.12	90.98	114.00	-23.02	peak
2445	30.11	49.12	74.21	94.00	-19.79	AVG
2475	40.78	49.25	92.91	114.00	-21.09	peak
2475	30.48	49.25	77.15	94.00	-16.85	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						



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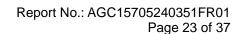
RADIATED EMISSION ABOVE 1GHZ

EUT	INFERNO CRUISER	Model Name	TG1025
Temperature	23.2° C	Relative Humidity	59.8 %
Pressure	985kPa	Test Voltage	DC 3.0V by battery
Test Mode	Mode 1	Polarization	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
4810.000	46.62	3.76	50.38	74.00	-23.62	peak
4810.000	37.53	3.76	41.29	54.00	-12.71	AVG
7215.000	41.86	8.17	50.03	74.00	-23.97	peak
7215.000	31.73	8.17	39.90	54.00	-14.10	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	INFERNO CRUISER	Model Name	TG1025
Temperature	23.2° C	Relative Humidity	59.8 %
Pressure	985kPa	Test Voltage	DC 3.0V by battery
Test Mode	Mode 1	Polarization	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
4810.000	46.57	3.76	50.33	74.00	-23.67	peak
4810.000	38.19	3.76	41.95	54.00	-12.05	AVG
7215.000	42.26	8.17	50.43	74.00	-23.57	peak
7215.000	31.73	8.17	39.90	54.00	-14.10	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						





EUT	INFERNO CRUISER	Model Name	TG1025
Temperature	23.2° C	Relative Humidity	59.8 %
Pressure	985kPa	Test Voltage	DC 3.0V by battery
Test Mode	Mode 2	Polarization	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type
4890.000	46.43	3.78	50.21	74.00	-23.79	peak
4890.000	38.76	3.78	42.54	54.00	-11.46	AVG
7335.000	41.88	8.23	50.11	74.00	-23.89	peak
7335.000	32.55	8.23	40.78	54.00	-13.22	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	INFERNO CRUISER	Model Name	TG1025
Temperature	23.2° C	Relative Humidity	59.8 %
Pressure	985kPa	Test Voltage	DC 3.0V by battery
Test Mode	Mode 2	Polarization	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
4890.000	46.34	3.78	50.12	74.00	-23.88	peak
4890.000	35.40	3.78	39.18	54.00	-14.82	AVG
7335.000	41.07	8.23	49.30	74.00	-24.70	peak
7335.000 32.16 8.23 40.39 54.00 -13.61 AVG						
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						



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EUT	INFERNO CRUISER	Model Name	TG1025
Temperature	23.2° C	Relative Humidity	59.8 %
Pressure	985kPa	Test Voltage	DC 3.0V by battery
Test Mode	Mode 3	Polarization	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
4950.000	46.37	3.81	50.18	74.00	-23.82	peak
4950.000	36.96	3.81	40.77	54.00	-13.23	AVG
7425.000	41.84	8.27	50.11	74.00	-23.89	peak
7425.000	32.22	8.27	40.49	54.00	-13.51	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	INFERNO CRUISER	Model Name	TG1025
Temperature	23.2° C	Relative Humidity	59.8 %
Pressure	985kPa	Test Voltage	DC 3.0V by battery
Test Mode	Mode 3	Polarization	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type			
(MHz)	(dBµV)	(dB)	(dBµV/m) (dBµV/m)		(dB)	value Type			
4950.000	47.26	3.81	51.07	74.00	-22.93	peak			
4950.000	38.73	3.81	42.54	54.00	-11.46	AVG			
7425.000 42.88 8.27 51.15 74.00 -22.85 pe									
7425.000	31.25	8.27	39.52	54.00	-14.48	AVG			
Remark:	Remark:								
Factor = Ante	nna Factor + C	able Loss – Pr	e-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=Emission Level-Limit.

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



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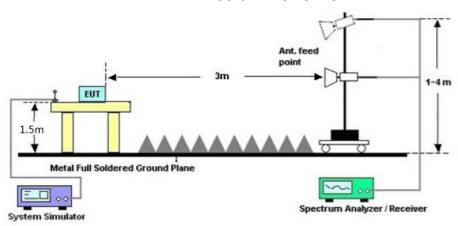
8. BAND EDGE EMISSION

8.1. MEASUREMENT PROCEDURE

- 1. The EUT operates at transmitting mode. The operate channel is tested to verify the largest transmission and spurious emissions power at the continuous transmission mode.
- 2. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission: (a) PEAK: RBW=1MHz, VBW=3MHz / Sweep=AUTO
- (b) AVERAGE: RBW=1MHz; VBW=3MHz / Sweep=AUTO
- 3. Other procedures refer to clause 7.2.

8.2. TEST SETUP

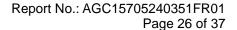
RADIATED EMISSION TEST SETUP



8.3 RADIATED TEST RESULT

Note:

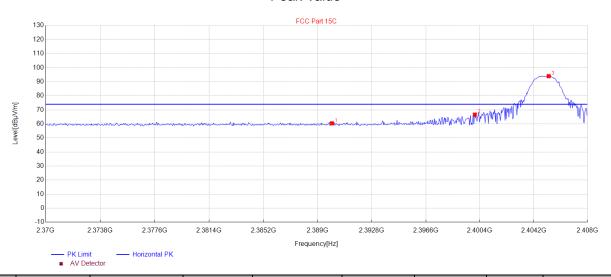
- 1. Factor=Antenna Factor + Cable loss Amplifier gain. Field Strength=Factor + Reading level
- 2. The factor had been edited in the "Input Correction" of the Spectrum Analyzer. So the Amplitude of test plots is equal to Reading level plus the Factor in dB. Use the A dB(μ V) to represent the Amplitude. Use the F dB(μ V/m) to represent the Field Strength. So A=F.





EUT	INFERNO CRUISER	Model Name	TG1025
Temperature	21.2° C	Relative Humidity	59.5 %
Pressure	985kPa	Test Voltage	DC 3.0V by battery
Test Mode	Mode 1	Polarization	Horizontal

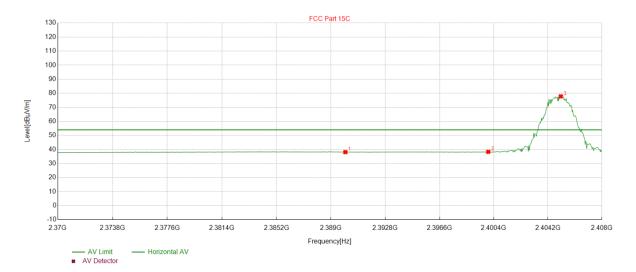
Peak Value



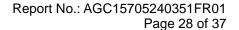
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2390.008	60.42	34.40	74.00	13.58	150	300	Horizontal
2	2400.05	66.60	34.43	74.00	7.40	150	267	Horizontal
3	2405.2613	93.97	34.44	114.00	20.03	150	92	Horizontal



Average Value



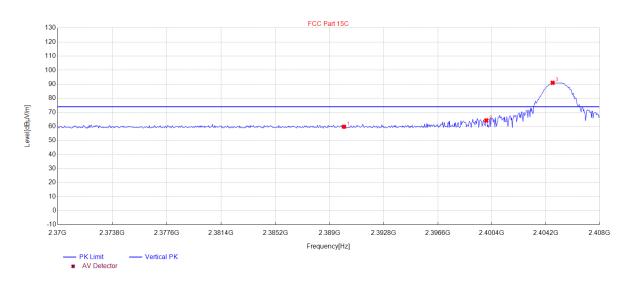
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2390.008	38.12	34.40	54.00	15.88	150	239	Horizontal
2	2400.012	38.33	34.43	54.00	15.67	150	107	Horizontal
3	2405.1091	77.80	34.44	94.00	16.20	150	86	Horizontal





EUT	INFERNO CRUISER	Model Name	TG1025
Temperature	21.2° C	Relative Humidity	59.5 %
Pressure	985kPa	Test Voltage	DC 3.0V by battery
Test Mode	Mode 1	Polarization	Vertical

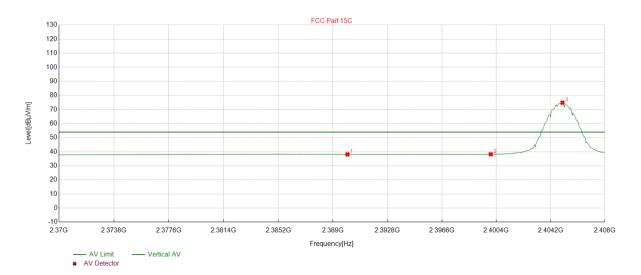
Peak Value



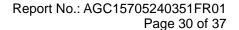
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2390.008	59.74	34.40	74.00	14.26	150	10	Vertical
2	2400.012	64.20	34.43	74.00	9.80	150	149	Vertical
3	2404.6907	91.03	34.44	114.00	22.97	150	195	Vertical



Average Value



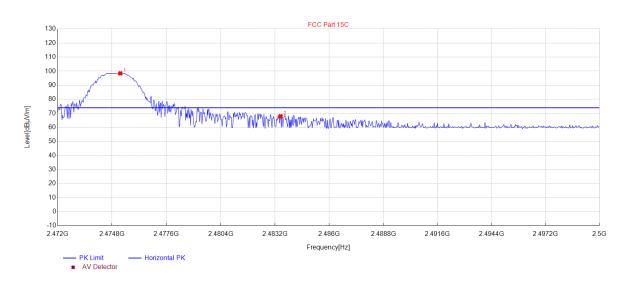
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2390.008	38.10	34.40	54.00	15.90	150	312	Vertical
2	2400.012	38.21	34.43	54.00	15.79	150	200	Vertical
3	2405.033	74.84	34.44	94.00	19.16	150	200	Vertical





EUT	INFERNO CRUISER	Model Name	TG1025
Temperature	21.2° C	Relative Humidity	59.5 %
Pressure	985kPa	Test Voltage	DC 3.0V by battery
Test Mode	Mode 3	Polarization	Horizontal

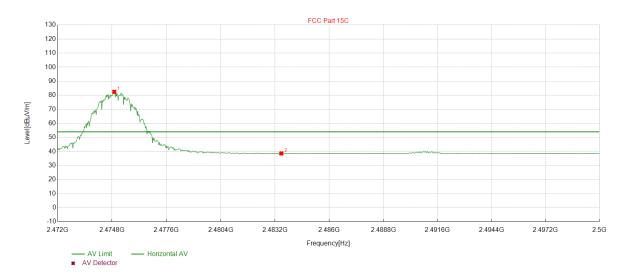
Peak Value



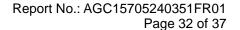
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2475.2232	98.46	34.64	114.00	15.54	150	76	Horizontal
2	2483.4915	67.92	34.66	74.00	6.08	150	84	Horizontal



Average Value



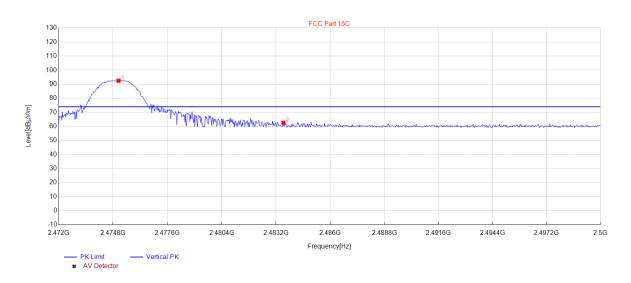
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2474.9149	82.45	34.64	94.00	11.55	150	78	Horizontal
2	2483.5195	38.62	34.66	54.00	15.38	150	82	Horizontal





EUT	INFERNO CRUISER	Model Name	TG1025
Temperature	21.2° C	Relative Humidity	59.5 %
Pressure	985kPa	Test Voltage	DC 3.0V by battery
Test Mode	Mode 3	Polarization	Vertical

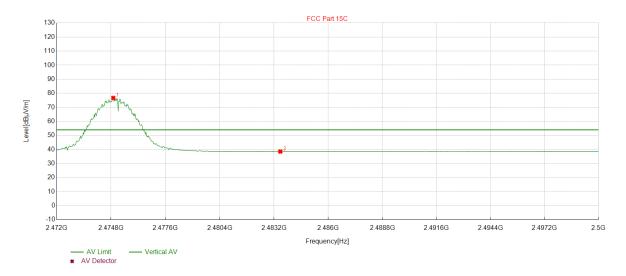
Peak Value



NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2475.0831	92.49	34.64	114.00	21.51	150	27	Vertical
2	2483.5756	62.56	34.66	74.00	11.44	150	358	Vertical



Average Value



NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2474.9149	76.68	34.64	94.00	17.32	150	27	Vertical
2	2483.5195	38.52	34.66	54.00	15.48	150	124	Vertical



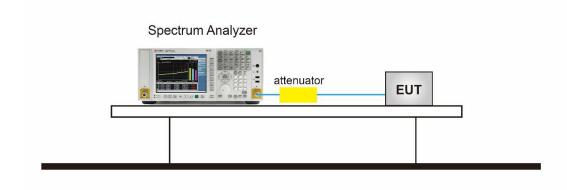
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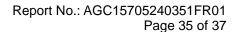
9. 20DB BANDWIDTH

9.1. MEASUREMENT PROCEDURE

- 1. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 2. Set SPA Centre Frequency = Operation Frequency, RBW= 30kHz, VBW≥1 × RBW.
- 3. Set SPA Trace 1 Max hold, then View.

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







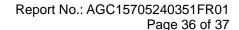
9.3. MEASUREMENT RESULTS

TEST ITEM	20DB BANDWIDTH
TEST MODULATION	GFSK

Test Channel (MHz)	20DB BANDWIDTH (MHz)	99% BANDWIDTH (MHz)	Criteria
2405	1.215	1.1651	PASS
2445	1.198	1.1682	PASS
2475	1.274	1.2057	PASS

TEST PLOT OF BANDWIDTH FOR LOW CHANNEL







TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



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10. FCC LINE CONDUCTED EMISSION TEST

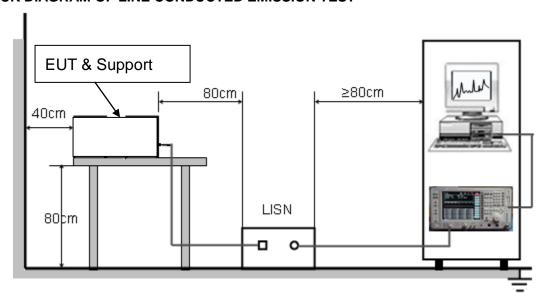
10.1. LIMITS OF LINE CONDUCTED EMISSION TEST

F	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.

10.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST





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10.3. 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 C63.10-2013 (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 C63.10-2013.
- 3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10-2013.
- 4. All support equipment received AC120V/60Hz power from a LISN, if any.
- 5. The EUT received DC 3.0V power from battery.
- 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.

10.4. 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.

10.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

Note: The conducted emission tests at AC port are not required for devices which only employ battery power for operation.



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APPENDIX A: PHOTOGRAPHS OF TEST SETUP

Refer to the Report No.: AGC15705240351AP02

APPENDIX B: PHOTOGRAPHS OF THE EUT

Refer to the Report No.: AGC15705240351AP03

----END OF REPORT----



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