

# FCC Test Report

## Report No.: AGC15705240329FR01

FCC ID	:	2BEOV-DRONE
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	R/C DRONE
BRAND NAME	:	N/A
MODEL NAME	:	Please see page 5
APPLICANT	:	Shantou Zhongli Intelligent Technology Co., LTD.
DATE OF ISSUE	:	Mar. 22, 2024
STANDARD(S) TEST PROCEDURE(S)	:	FCC Part 15 Subpart C §15.249
REPORT VERSION	:	V1.0







#### Report Revise Record

<b>Report Version</b>	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Mar. 22, 2024	Valid	Initial Release



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## **1. VERIFICATION OF CONFORMITY**

Applicant	Shantou Zhongli Intelligent Technology Co., LTD.	
Address	Hezhou Industrial Zone, Chenghai District, Shantou City, Guangdong Province, China	
Manufacturer	Shantou Zhongli Intelligent Technology Co., LTD.	
Address	Hezhou Industrial Zone, Chenghai District, Shantou City, Guangdong Province, China	
Factory	Shantou Zhongli Intelligent Technology Co., LTD.	
Address	Hezhou Industrial Zone, Chenghai District, Shantou City, Guangdong Province, China	
Product Designation	R/C DRONE	
Brand Name	N/A	
Test Model	SG105MAX	
Series Model	Please see page 6	
Date of receipt of test item	The circuit design and PCB design of the product are the same as the internalstructure, Only different on product appearance color.	
Date of receipt of test item	Mar. 19, 2024	
Date of Test	Mar. 19, 2024 to Mar. 22, 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

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Mar. 22, 2024

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Mar. 22, 2024

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Max Zhang

Max Zhang (Authorized Officer)

Mar. 22, 2024



## 2. GENERAL INFORMATION

## 2.1. PRODUCT DESCRIPTION

A major technical description of EUT is described as following

Operation Frequency	2405MHz-2475MHz	
Maximum field strength	99.97dBµV/m(Peak)@3m 88.42dBµV/m(Average)@3m	
Modulation	GFSK	
Number of channels	68 Channels	
Antenna Gain	2dBi	
Antenna Designation	Dipole Antenna	
Hardware Version	V1.0.0.231008	
Software Version	V1.0.0.231008	
Power Supply	DC 3.7V by battery	
Series Model	SG100PRO, SG100PLUS, SG100MAX, SG200PRO, SG200MAX, SG300, SG300MAX, SG500MAX, SG500PRO, SG600PRO, SG600MAX, SG700-D, SG800PRO, SG800MAX, SG900PRO, SG900MAX, SG101PRO, SG101MAX, SG102, SG102PRO, SG102MAX, SG103, SG103PRO, SG103MAX, SG105, SG105PRO, SG107, SG107PRO, SG107MAX, SG108, SG108PRO, SG108MA, SG109, SG109PRO, SG109MAX, SG109MAX2, SG901PRO, SG901MAX, SG902, SG902PRO, SG902MAX, SG903, SG903PRO, SG903MAX, SG905, SG905PRO, SG905MAX, SG906MAX, SG906MAX1, SG906MAX2, SG906MAX3, SG906MINI, SG906MINI, SE, SG907PRO, SG907MAX, SG907MAX2, SG908PRO, SG908MAX, SG908MAX2, SG909, SG909PRO, SG909MAX, SG909MAX2, SG601, SG601PRO, SG601MAX, SG602, SG602PRO, SG602MAX, SG603, SG603PRO, SG603MAX, SG605, SG605PRO, SG605MAX, SG606PRO, SG606MAX, SG606MAX2, SG607PRO, SG607MAX, SG607MAX2, SG608PRO, SG608MAX, SG608MAX2, SG609PRO, SG609MAX, SG609MAX2, SG806PRO, SG806MAX, SG608MAX2, SG609PRO, SG609MAX, SG609MAX2, SG806PRO, SG806MAX3, SG607PRO, SG607MAX, SG609MAX, SG609MAX2, SG806PRO, SG806MAX3, SG607PRO, SG607MAX, SG609MAX, SG609MAX2, SG806PRO, SG806MAX2, SG607PRO, SG607MAX, SG609MAX, SG609MAX2, SG806PRO, SG806MAX2, SG607PRO, SG607MAX, SG609MAX, SG609MAX2, SG806PRO, SG806MAX2, SG608MAX2, SG609PRO, SG609MAX, SG609MAX2, SG806PRO, SG806MAX3, SK, 8KPRO, 8KMAX, 8000W, 8000 MAX, 8000W MAX2, SG106, SG106PRO, SG106PINA, SG106MAX	



#### 2.2. TABLE OF CARRIER FREQUENCY

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



#### 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.



## **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 =  $\pm 2$  %



## 4. DESCRIPTION OF TEST MODES

NO.	TEST MODE DESCRIPTION		
1	Low channel TX_2405MHz_GFSK		
2	Middle channel TX_2440MHz_GFSK		
3	High channel TX_2475MHz_GFSK		
1. A	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. The battery is full-charged during the test.



## 5. SYSTEM TEST CONFIGURATION

#### **5.1. CONFIGURATION OF EUT SYSTEM**

Radiated Emission Configure:

EUT

Conducted Emission Configure:

EUT		AE
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#### **5.2 EQUIPMENT USED IN TESTED SYSTEM**

ltem	Equipment	Model No.	ID or Specification	Remark
1	Adapter	HW-200440C00	HUAWEI	AE

## **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	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	Jun. 03, 2023	Jun. 02, 2024
Artificial power network	R&S	ESH2-Z5	100086	Jun. 03, 2023	Jun. 02, 2024
Attenuator	East sheep	LM-XX-6-5W	N/A	Jun. 09, 2023	Jun. 08, 2024

#### 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	Jun. 01, 2023	May 31, 2024
2.4GHz Filter	EM Electronics	N/A	N/A	Jun. 01, 2023	May 31, 2024
Attenuator	ZHINAN	E-002	N/A	Aug. 04, 2022	Aug. 03, 2024
Horn Antenna	SCHWARZBEC	BBHA9170	768	Sep. 24, 2023	Sep. 23, 2025
Active Loop Antenna (9K-30Mhz)	ZHINAN	ZN30900C	18051	Mar. 05, 2024	Mar. 04, 2025
Double-Ridged Waveguide Horn	ETS	3117	00034609	Jun. 03, 2023	Jun. 02, 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



## 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	<b>μ V/m</b>	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 le						
(2) The employ limit chall each other excess point between two frequency hands						

(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.



## 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.



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

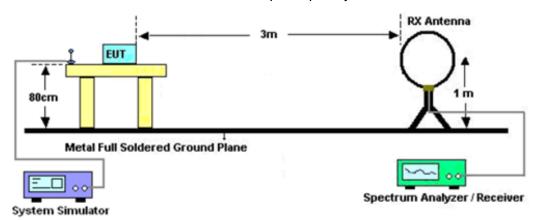
Spectrum Parameter	Setting
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP
	1GHz~26.5GHz
Start ~Stop Frequency	RBW 2.4MHz/ VBW 8MHz for Peak,
	RBW 2.4MHz/3MHz for Average

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

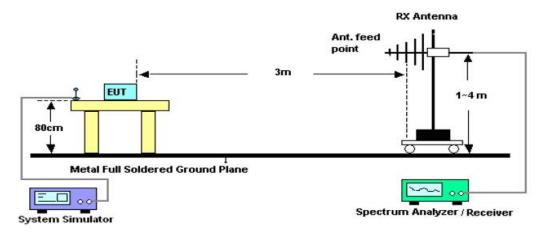


## 7.3. TEST SETUP

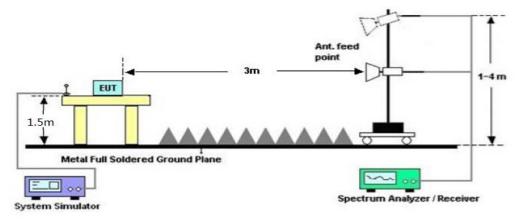
Radiated Emission Test-Setup Frequency Below 30MHz



#### RADIATED EMISSION TEST SETUP 30MHz-1000MHz



## RADIATED EMISSION TEST SETUP ABOVE 1000MHz





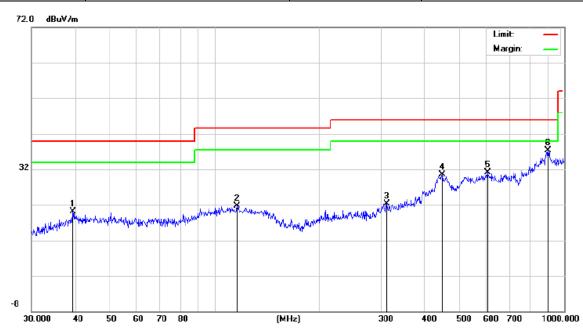
## 7.4. TEST RESULT

#### **RADIATED EMISSION BELOW 30MHZ**

**RADIATED EMISSION 30MHz-1GHZ** 

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	R/C DRONE	Model Name	SG105MAX			
Temperature	21.7°C	Relative Humidity	59.9 %			
Pressure	985kPa	Test Voltage	DC 3.7V by battery			
Test Mode	Mode 3	Polarization	Horizontal			



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		39.4371	6.46	13.66	20.12	40.00	-19.88	peak
2		116.1321	5.30	16.36	21.66	43.50	-21.84	peak
3		311.0867	5.87	16.50	22.37	46.00	-23.63	peak
4		447.9822	5.63	24.82	30.45	46.00	-15.55	peak
5		603.5392	6.03	25.12	31.15	46.00	-14.85	peak
6	*	900.1474	5.52	31.78	37.30	46.00	-8.70	peak

## **RESULT: PASS**

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

 Attestation of Global Compliance(Shenzhen)Co., Ltd

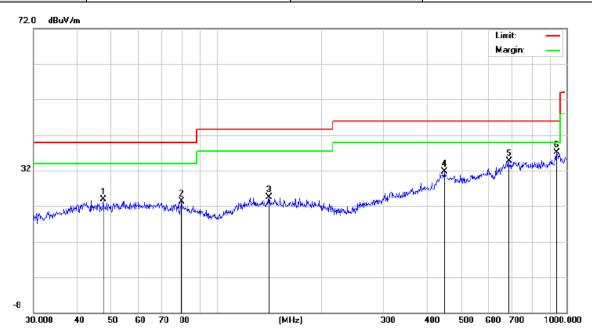
 Attestation of Global Compliance(Shenzhen)Std & Tech Co., Ltd

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EUT	R/C DRONE	Model Name	SG105MAX
Temperature	21.7°C	Relative Humidity	59.9 %
Pressure	985kPa	Test Voltage	DC 3.7V by battery
Test Mode	Mode 3	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		47.4918	6.87	16.97	23.84	40.00	-16.16	peak
2		79.5209	6.45	16.90	23.35	40.00	-16.65	peak
3		141.3298	6.29	18.20	24.49	43.50	-19.01	peak
4		447.9822	5.96	25.74	31.70	46.00	-14.30	peak
5		684.7454	6.82	27.79	34.61	46.00	-11.39	peak
6	*	938.8326	6.27	30.84	37.11	46.00	-8.89	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 1 is the worst case and recorded in the report.



EUT	R/C DRONE	Model Name	SG105MAX
Temperature	21.7°C	Relative Humidity	59.9 %
Pressure	985kPa	Test Voltage	DC 3.7V by battery
Test Modulation	GFSK	Polarization	Horizontal

## FIELD STRENGTH OF FUNDAMENTAL

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Time		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type		
2405	49.88	49.05	98.93	114.00	-15.07	peak		
2405	37.68	49.05	86.73	94.00	-7.27	AVG		
2440	45.99	49.12	95.11	114.00	-18.89	peak		
2440	34.82	49.12	83.94	94.00	-10.06	AVG		
2475	50.72	49.25	99.97	114.00	-14.03	peak		
2475	38.82	49.25	88.07	94.00	-5.94	AVG		
Remark:								
Factor = Anter	actor = Antenna Factor + Cable Loss – Pre-amplifier.							

EUT	R/C DRONE	Model Name	SG105MAX
Temperature	21.7°C	Relative Humidity	59.9 %
Pressure	985kPa	Test Voltage	DC 3.7V by battery
Test Modulation	GFSK	Polarization	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	- Value Type
2405	44.37	49.05	99.97	114.00	-14.03	peak
2405	29.51	49.05	88.42	94.00	-5.58	AVG
2440	45.31	49.12	96.63	114.00	-17.37	peak
2440	30.11	49.12	83.54	94.00	-10.46	AVG
2475	40.78	49.25	98.58	114.00	-15.43	peak
2475	30.48	49.25	81.76	94.00	-12.24	AVG
Remark:						
Factor = Anter	nna Factor + Cabl	e Loss – Pre-	amplifier.			



#### **RADIATED EMISSION ABOVE 1GHZ**

EUT	R/C DRONE	Model Name	SG105MAX
Temperature	21.7°C	Relative Humidity	59.9 %
Pressure	985kPa	Test Voltage	DC 3.7V by battery
Test Mode	Mode 1	Polarization	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Trees
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type
4810	50.43	3.76	54.19	74.00	-19.81	peak
4810	38.28	3.76	42.04	54.00	-11.96	AVG
7215	47.32	8.17	55.49	74.00	-18.51	peak
7215	37.12	8.17	45.29	54.00	-8.71	AVG

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

EUT	R/C DRONE	Model Name	SG105MAX
Temperature	21.7°C	Relative Humidity	59.9 %
Pressure	985kPa	Test Voltage	DC 3.7V by battery
Test Mode	Mode 1	Polarization	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Time
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type
4810	48.63	3.76	52.39	74.00	-21.61	peak
4810	37.72	3.76	41.48	54.00	-12.52	AVG
7215	46.26	8.17	54.43	74.00	-19.57	peak
7215	35.47	8.17	43.64	54.00	-10.36	AVG
Remark:						
actor = Anter	nna Factor + Cab	e Loss – Pre-	amplifier.			



EUT	R/C DRONE	Model Name	SG105MAX
Temperature	21.7°C	Relative Humidity	59.9 %
Pressure	985kPa	Test Voltage	DC 3.7V by battery
Test Mode	Mode 2	Polarization	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Tree
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type
4880	49.31	3.78	53.09	74.00	-20.91	peak
4880	37.75	3.78	41.53	54.00	-12.47	AVG
7320	46.67	8.23	54.90	74.00	-19.10	peak
7320	35.56	8.23	43.79	54.00	-10.21	AVG

EUT	R/C DRONE	Model Name	SG105MAX
Temperature	21.7°C	Relative Humidity	59.9 %
Pressure	985kPa	Test Voltage	DC 3.7V by battery
Test Mode	Mode 2	Polarization	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type
4880	47.19	3.78	50.97	74.00	-23.03	peak
4880	36.83	3.78	40.61	54.00	-13.39	AVG
7320	45.26	8.23	53.49	74.00	-20.51	peak
7320	35.24	8.23	43.47	54.00	-10.53	AVG
Remark:						
Factor = Anter	na Factor + Cabl	e Loss – Pre-a	mplifier.			



EUT	R/C DRONE	Model Name	SG105MAX
Temperature	21.7°C	Relative Humidity	59.9 %
Pressure	985kPa	Test Voltage	DC 3.7V by battery
Test Mode	Mode 3	Polarization	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Tree
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type
4950	49.95	3.81	53.76	74.00	-20.24	peak
4950	39.62	3.81	43.43	54.00	-10.57	AVG
7425	47.87	8.27	56.14	74.00	-17.86	peak
7425	37.51	8.27	45.78	54.00	-8.22	AVG

EUT	R/C DRONE	Model Name	SG105MAX
Temperature	21.7°C	Relative Humidity	59.9 %
Pressure	985kPa	Test Voltage	DC 3.7V by battery
Test Mode	Mode 3	Polarization	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	- Value Type
4950	46.52	3.81	50.33	74.00	-23.67	peak
4950	37.65	3.81	41.46	54.00	-12.54	AVG
7425	44.77	8.27	53.04	74.00	-20.96	peak
7425	35.53	8.27	43.80	54.00	-10.20	AVG
Remark:						
actor = Anter	nna Factor + Cabl	e Loss – Pre	amplifier			

#### **RESULT: PASS**

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

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

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



## 8. BAND EDGE EMISSION

#### 8.1. MEASUREMENT PROCEDURE

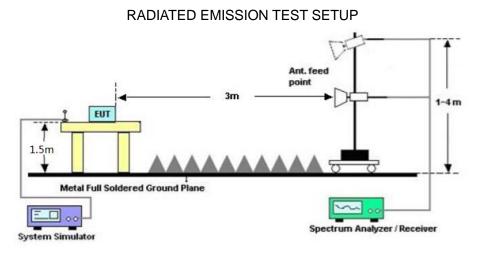
1. The EUT operates at transmitting mode. The operate channel is tested to verify the largest transmission and spurious emissions power at the continuous transmission mode.

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



#### **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( $\mu$ V) to represent the Amplitude. Use the F dB( $\mu$ V/m) to represent the Field Strength. So A=F.



EUT	R/C DRONE	Model Name	SG105MAX
Temperature	21.7°C	Relative Humidity	59.9 %
Pressure	985kPa	Test Voltage	DC 3.7V by battery
Test Mode	Mode 1	Polarization	Horizontal



Peak Value

#### Average Value





EUT	R/C DRONE	Model Name	SG105MAX
Temperature	21.7°C	Relative Humidity	59.9 %
Pressure	985kPa	Test Voltage	DC 3.7V by battery
Test Mode	Mode 1	Polarization	Vertical

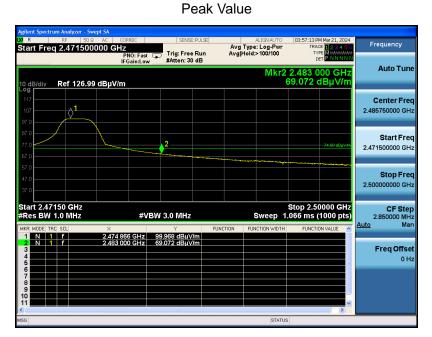


Average Value





EUT	R/C DRONE	Model Name	SG105MAX
Temperature	21.7°C	Relative Humidity	59.9 %
Pressure	985kPa	Test Voltage	DC 3.7V by battery
Test Mode	Mode 3	Polarization	Horizontal



#### Average Value





EUT	R/C DRONE	Model Name	SG105MAX
Temperature	21.7°C	Relative Humidity	59.9 %
Pressure	985kPa	Test Voltage	DC 3.7V by battery
Test Mode	Mode 3	Polarization	Vertical



#### Average Value



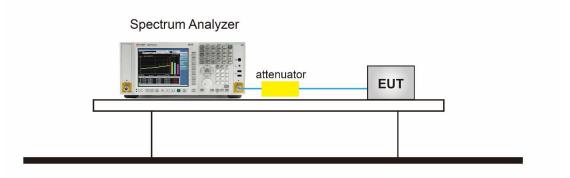


## 9. 20DB BANDWIDTH

#### 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)





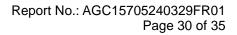
#### 9.3. MEASUREMENT RESULTS

TEST ITEM	20DB BANDWIDTH
TEST MODULATION	GFSK

Test Channel (MHz)	20DB BANDWIDTH (MHz)	99% BANDWIDTH (MHz)	Criteria
2405	1.635	1.6386	PASS
2440	1.726	1.8479	PASS
2475	1.947	1.9108	PASS

#### TEST PLOT OF BANDWIDTH FOR LOW CHANNEL









#### TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL





## **10. FCC LINE CONDUCTED EMISSION TEST**

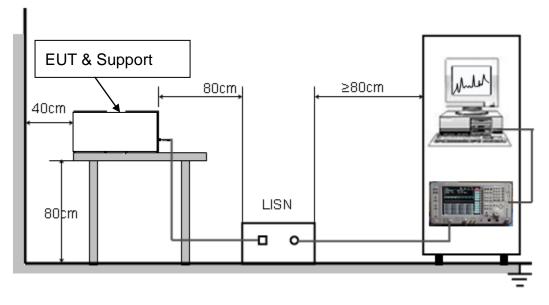
## **10.1. LIMITS OF LINE CONDUCTED EMISSION TEST**

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.

#### **10.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST**





## **10.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST**

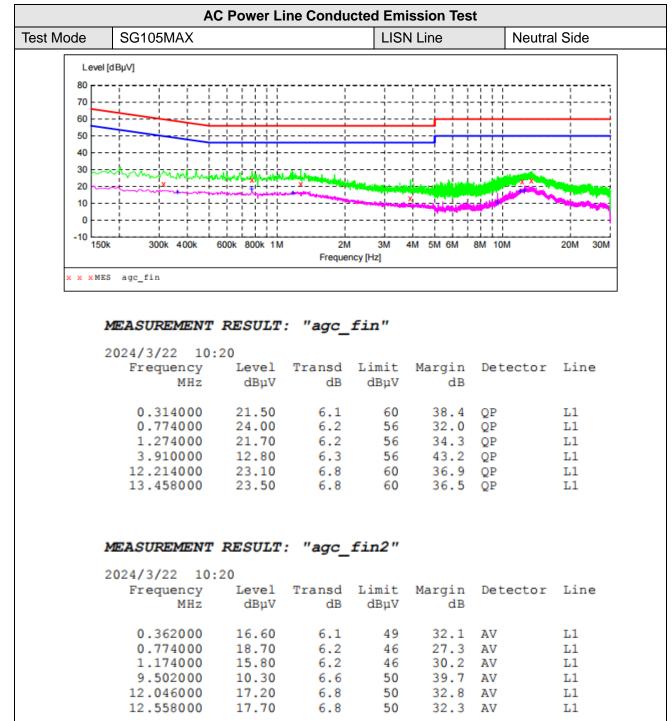
- The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10 (see Test Facility for the dimensions of the ground 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 4.5V 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.
- 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.

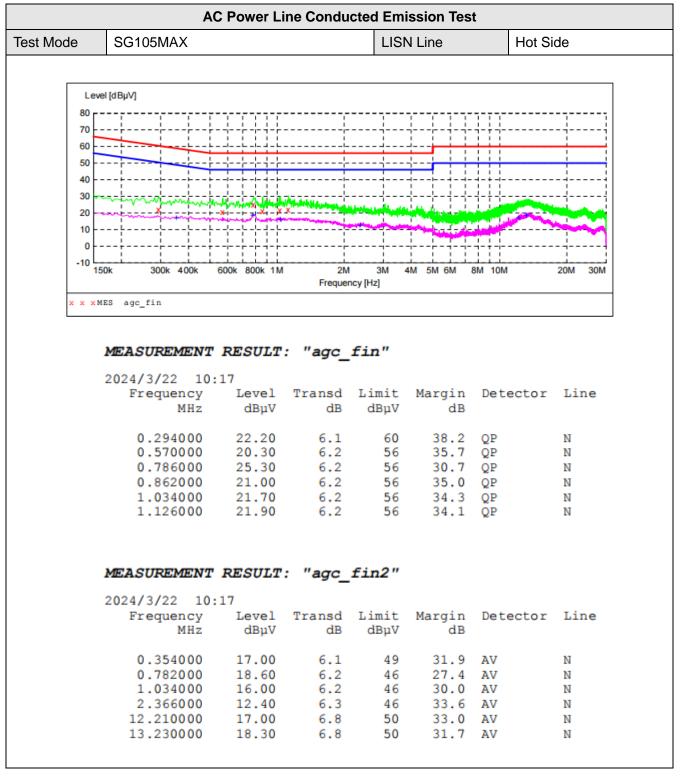




## 10.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

#### **RESULT: Pass**





#### **RESULT: PASS**



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## APPENDIX A: PHOTOGRAPHS OF TEST SETUP

Refer to the Report No.: AGC15705240329AP02

## APPENDIX B: PHOTOGRAPHS OF THE EUT

Refer to the Report No.: AGC15705240329AP03

----END OF REPORT----

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