

# **FCC Test Report**

Report No.: AGC09966200501FE08

FCC ID : 2AVSK-620

**APPLICATION PURPOSE**: Original Equipment

**PRODUCT DESIGNATION**: Smart Phone

BRAND NAME : ClearCellular

**MODEL NAME** : CLEARPHONE 620

**APPLICANT** : ClearCellular, Limited.

**DATE OF ISSUE** : Jun. 18, 2020

**STANDARD(S)** : FCC Part 15.247

REPORT VERSION : V1.0

### Attestation of Global Compliance (Shenzhen) Co., Ltd

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#### REPORT REVISE RECORD

Report Version Revise Time		Issued Date Valid Version		Notes	
V1.0	9 1	Jun. 18, 2020	Valid	Initial Release	

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#### 1. VERIFICATION OF COMPLIANCE

Applicant	ClearCellular, Limited.	
Address 107 Richmond Street Lower Hutt state New Zealand		
Manufacturer	COOSEA GROUP (HK) COMPANY LIMITED	
Address	UNIT 5-6 16F MULTIFIELD PLAZA 3-7A PRAT AVENUE TSIM SHA TSUI KL HONGKONG	
Factory	ClearCellular, Limited.	
Address	107 Richmond Street Lower Hutt state New Zealand	
Product Designation	Smart Phone	
Brand Name	ClearCellular	
Test Model	ClearPHONE 620	
Date of test	May 15, 2020~Jun. 18, 2020	
Deviation	No any deviation from the test method	
Condition of Test Sample	Normal	
Test Result	Pass	
Report Template	AGCRT-US-BLE/RF	

#### We hereby certify that:

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC part 15.247.

Prepared By

Donjon Huang (Project Engineer)

Reviewed By

Max Zhang (Reviewer)

Jun. 18, 2020

Approved By

Forrest Lei (Authorized Officer)

Jun. 18, 2020

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#### 2.GENERAL INFORMATION

#### 2.1PRODUCT DESCRIPTION

The EUT is designed as a "Smart Phone". 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	5.406dBm(Max)
Bluetooth Version	V4.2
Modulation	BR □GFSK, EDR □π /4-DQPSK, □8DPSK BLE □GFSK 1Mbps
Number of channels	40 Channel
Antenna Designation	PIFA Antenna(Comply with requirements of the FCC part 15.203)
Antenna Gain	-1.0dBi
Hardware Version	K7011Q-01
Software Version	K7011.GB.HD J.Q0.ANASAPA9DATJDFTL.0402_1614.V2.1
Power Supply DC 3.85V by Built-in Li-ion Battery	

#### 2.2. TABLE OF CARRIER FREQUENCYS

Frequency Band	Channel Number	Frequency		
	0	2402MHZ		
		2404MHZ		
2400~2483.5MHZ				
100 CO	38	2478 MHZ		
	39	2480 MHZ		

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

This submittal(s) (test report) is intended for **FCC ID: 2AVSK-620** filing to comply with the FCC Part 15.247 requirements.

#### 2.4TEST 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 2.2.

#### 2.6 EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

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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%.

- Uncertainty of Conducted Emission, Uc = ±3.2 dB
- Uncertainty of Radiated Emission below 1GHz, Uc = ±3.9 dB
- Uncertainty of Radiated Emission above 1GHz, Uc = ±4.8 dB
- Uncertainty of total RF power, conducted, Uc = ±0.8dB
- Uncertainty of RF power density, conducted, Uc = ±2.6dB
- Uncertainty of spurious emissions, conducted, Uc = ±2.7dB
- Uncertainty of Occupied Channel Bandwidth: Uc = ±2 %

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#### 4. DESCRIPTION OF TEST MODES

NO.	TEST MODE DESCRIPTION			
1	Low channel TX			
2	Middle channel TX			
3	High channel TX			

#### Note:

- 1. Only the result of the worst case was recorded in the report, if no other cases.
- 2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.
- 3. For Conducted Test method, a temporary antenna connector is provided by the manufacture.

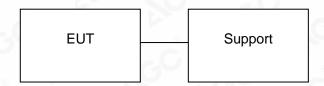
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#### 5. SYSTEM TEST CONFIGURATION

#### **5.1 CONFIGURATION OF TESTED SYSTEM**



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

Item Equipment		Model No.	Model No. ID or Specification	
1	Smart Phone	ClearPHONE 620	2AVSK-620	EUT
2	Adapter	HJ-FC017K7-US	Input: AC 100-240V, 50/60Hz, 0.6A Output: DC 9V, 2A	AE
3	Battery	BL-A5CT	DC3.85V 4900mAh	AE
4	USB Cable	N/A	N/A	AE

#### **5.3. SUMMARY OF TEST RESULTS**

FCC RULES	DESCRIPTION OF TEST	RESULT
15.247 (b)(3) Peak Output Power		Compliant
15.247 (a)(2)	247 (a)(2) 6 dB Bandwidth	
15.247 (d) Conducted Spurious Emission		Compliant
15.247 (e) Maximum Conducted Output Power Density		Compliant
15.209 Radiated Emission		Compliant
15.207	Conducted Emission	Compliant

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#### 6. TEST FACILITY

Test Site	Attestation of Global Compliance (Shenzhen) Co., Ltd			
Location  1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community Fuhai Street, Bao'an District, Shenzhen, Guangdong, China				
Designation Numbe	r CN1259			
FCC Test Firm Registration Numbe	r 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	May 15, 2020	May 14, 2022
LISN	R&S	ESH2-Z5	100086	Aug. 26, 2019	Aug. 25, 2020
Test software	R&S	ES-K1(Ver.V1. 71)	N/A	N/A	N/A

#### TEST EQUIPMENT OF RADIATED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	May 15, 2020	May 14, 2022
EXA Signal Analyzer	Aglient	N9010A	MY53470504	Dec. 12, 2019	Dec. 11, 2020
2.4GHz Fliter	EM Electronics	2400-2500MHz	N/A	Feb. 23, 2020	Feb. 22, 2022
Attenuator	ZHINAN	E-002	N/A	Sep. 09, 2019	Sep. 08, 2020
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Sep. 09, 2019	Sep. 08, 2021
Active loop antenna (9K-30MHz)	ZHINAN	ZN30900C	18051	May 22, 2020	May 21, 2022
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	May. 17, 2019	May. 16, 2021
Broadband Preamplifier	ETS LINDGREN	3117PA	00225134	Oct. 15, 2019	Oct. 14, 2020
ANTENNA	SCHWARZBECK	VULB9168	494	Jan. 09, 2019	Jan. 08, 2021
Test software	FARA	EZ-EMC (Ver RA-03A)	N/A	N/A	N/A

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#### 7. PEAK OUTPUT POWER

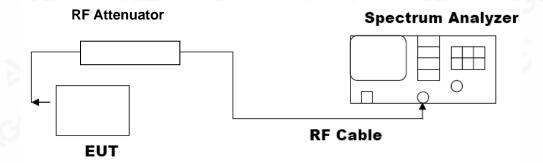
#### 7.1. MEASUREMENT PROCEDURE

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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he test results the test report.

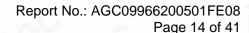
#### 7.3. LIMITS AND MEASUREMENT RESULT

	PEAK OUTPUT POWER MEASUREMENT RESULT FOR GFSK MOUDULATION						
Frequency Peak Power Applicable Limits (dBm) Pass or Fa							
2.402	5.100	30	Pass				
2.440	5.406	30	Pass				
2.480	4.868	30	Pass				

CH<sub>0</sub>



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#### 8. 6 DB BANDWIDTH

#### **8.1. 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 Centre Frequency = Operation Frequency, RBW= 100 KHz, VBW ≥ 3×RBW.
- 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

LIMITS AND MEASUREMENT RESULT							
Applicable Limite		Applicable Limits					
Applicable Limits	Test Data	(kHz)	Criteria				
>500KHZ	Low Channel	683.7	PASS				
	Middle Channel	679.0	PASS				
	High Channel	674.4	PASS				

#### TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



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#### TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



#### TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



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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.

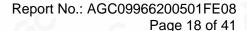
#### 9.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6.

#### 9.4. LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT					
Analia alda I insite	Measurement Res	sult			
Applicable Limits	Test Data	Criteria			
In any 100 KHz Bandwidth Outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produce by the intentional radiator shall be at least 20 dB below that in 100KHz bandwidth within the band that contains the highest level of the desired power.	At least -20dBc than the reference level	PASS			

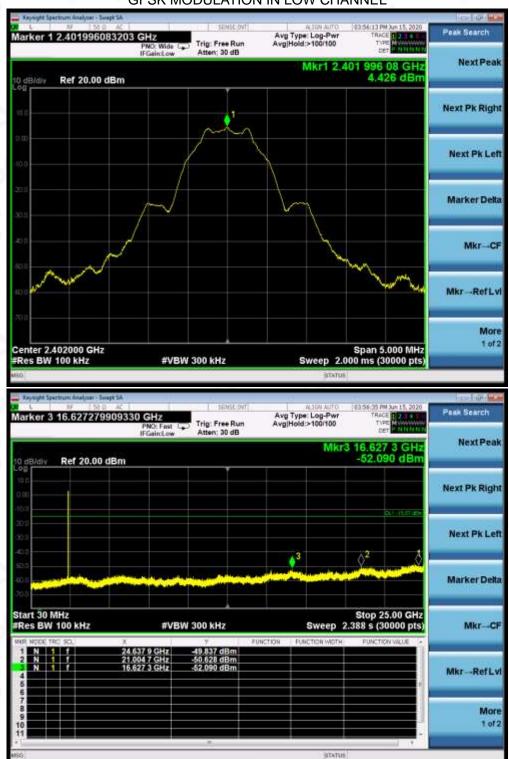
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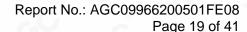


#### **TEST RESULT FOR ENTIRE FREQUENCY RANGE**

GFSK MODULATION IN LOW CHANNEL

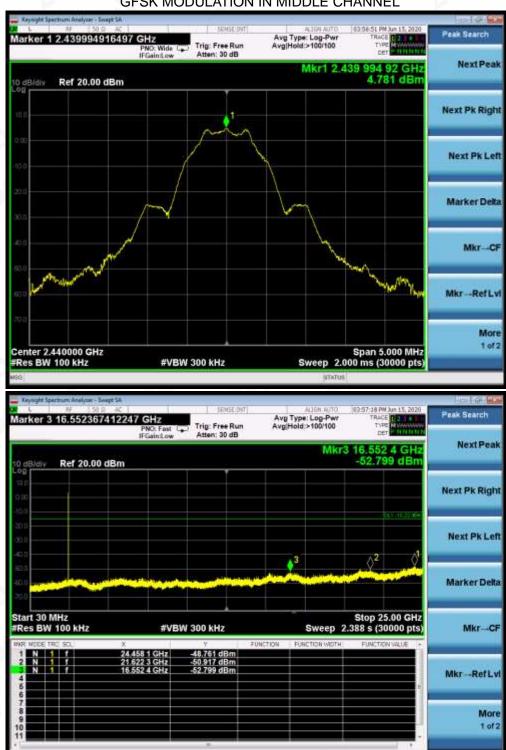


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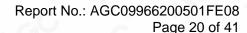




#### GFSK MODULATION IN MIDDLE CHANNEL



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#### GFSK MODULATION IN HIGH CHANNEL



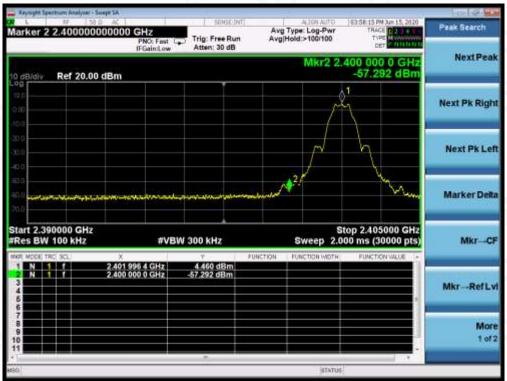
Note: The peak emissions without marker on the above plots are fundamental wave and need not to compare with the limit.

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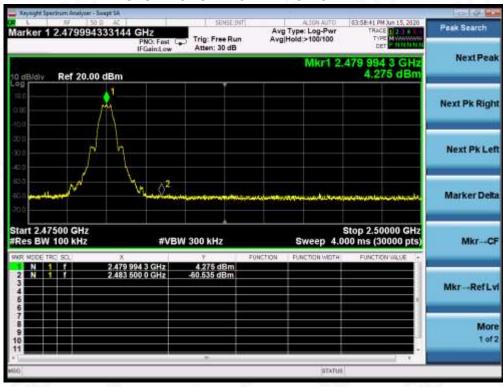


#### **TEST RESULT FOR BAND EDGE**

#### GFSK MODULATION IN LOW CHANNEL



#### GFSK MODULATION IN HIGH CHANNEL



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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 SPA Trace 1 Max hold, then View.

Note: The method of PKPSD in the KDB 558074 item 10.2 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**

Channel No.	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low Channel	-9.690	8	Pass
Middle Channel	-9.353	8	Pass
High Channel	-9.866	8	Pass

#### TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL



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#### TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL



#### TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL



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#### 11. RADIATED EMISSION

#### 11.1. MEASUREMENT PROCEDURE

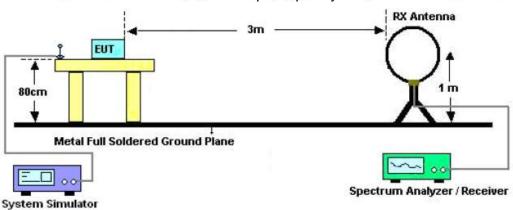
- 1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
- 2. Power on the EUT and all the supporting units. The turntable was rotated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

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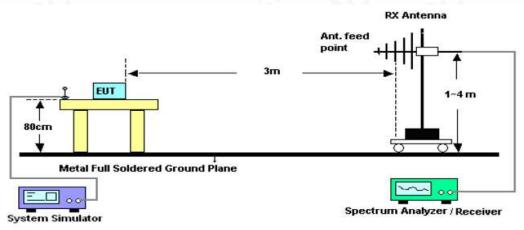


#### 11.2. TEST SETUP

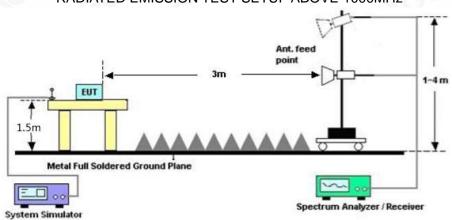
#### Radiated Emission Test-Setup Frequency Below 30MHz



#### 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 (micorvolts/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**

No emission found between lowest internal used/generated frequencies to 30MHz.

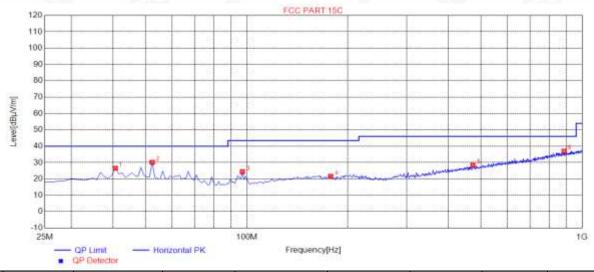
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#### **RADIATED EMISSION BELOW 1GHZ**

EUT	Smart Phone	Model Name	CLEARPHONE 620
Temperature	25° C	Relative Humidity	53%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Horizontal



NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	40.6000	26.55	14.92	40.00	13.45	100	80	Horizontal
2	52.3000	30.14	14.50	40.00	9.86	100	75	Horizontal
3	97.1500	24.40	11.06	43.50	19.10	200	116	Horizontal
4	178.0750	21.60	13.18	43.50	21.90	100	263	Horizontal
5	472.5250	28.36	21.48	46.00	17.64	100	144	Horizontal
6	883.9750	37.01	29.82	46.00	8.99	200	285	Horizontal

**RESULT: PASS** 

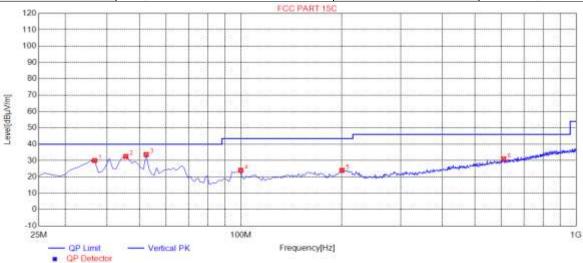
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/Inspection The test results

EUT	Smart Phone	Model Name	CLEARPHONE 620
Temperature	25° C	Relative Humidity	53%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Vertical



NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	36.7000	29.99	14.14	40.00	10.01	100	43	Vertical
2	45.4750	32.55	14.80	40.00	7.45	100	154	Vertical
3	52.3000	33.71	14.50	40.00	6.29	100	358	Vertical
4	100.0750	24.06	11.38	43.50	19.44	100	128	Vertical
5	200.5000	24.05	12.09	43.50	19.45	100	354	Vertical
6	608.0500	30.98	24.44	46.00	15.02	100	194	Vertical

## RESULT: PASS Note:

1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.

2. All test modes had been tested. The mode 1 is the worst case and recorded in the report.

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

EUT	Smart Phone	Model Name	CLEARPHONE 620
Temperature	25° C	Relative Humidity	53%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	\/alva Tree
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type
4804.011	50.24	0.08	50.32	74.00	-23.68	peak
4804.011	39.13	0.08	39.21	54.00	-14.79	AVG
7206.022	48.36	2.21	50.57	74.00	-23.43	peak
7206.022	37.44	2.21	39.65	54.00	-14.35	AVG
	(8)				®	
		8				®

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

EUT	Smart Phone	Model Name	Smart Phone
Temperature	25° C	Relative Humidity	53%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits ®	Margin	Value Tene
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type
4804.011	49.96	0.08	50.04	74.00	-23.96	peak
4804.011	39.11	0.08	39.19	54.00	-14.81	AVG
7206.022	48.51	2.21	50.72	74.00	-23.28	peak
7206.022	37.66	2.21	39.87	54.00	-14.13	AVG
	©			- C	®	
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Remark:		- 0				
actor = Anter	nna Factor + Cabl	e Loss – Pre-ai	mplifier.			

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EUT	Smart Phone	Model Name	CLEARPHONE 620
Temperature	25° C	Relative Humidity	53%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 2	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Time
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type
4880.005	51.33	0.14	51.47	74.00	-22.53	peak
4880.005	41.11	0.14	41.25	54.00	-12.75	AVG
7320.140	50.00	2.36	52.36	74.00	-21.64	peak
7320.140	39.51	2.36	41.87	54.00	-12.13	AVG
60		®		-60	®	®
mark:			⊚			

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

EUT	Smart Phone	Model Name	Smart Phone
Temperature	25° C	Relative Humidity	53%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 2	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Time
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type
4880.050	51.39	0.14	51.53	74.00	-22.47	peak
4880.050	39.85	0.14	39.99	54.00	-14.01	AVG
7320.080	49.52	2.36	51.88	74.00	-22.12	peak
7320.080	37.28	2.36	39.64	54.00	-14.36	AVG
0		-60	⊗			10
emark:						

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

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EUT	Smart Phone	Model Name	CLEARPHONE 620
Temperature	25° C	Relative Humidity	53%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Teres
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type
4960.012	51.28	0.22	51.50	74.00	-22.50	peak
4960.012	39.26	0.22	39.48	54.00	-14.52	AVG
7440.027	50.13	2.64	52.77	74.00	-21.23	peak
7440.027	38.33	2.64	40.97	54.00	-13.03	AVG
	8				(2)	
						(8)

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

EUT	Smart Phone	Model Name	Smart Phone
Temperature	25° C	Relative Humidity	53%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Tree
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type
4960.013	49.96	0.22	50.18	74	-23.82	peak
4960.013	42.11	0.22	42.33	54	-11.67	AVG
7440.027	48.87	2.64	51.51	74	-22.49	peak
7440.027	40.36	2.64	43.00	54	-11.00	AVG
	9 6				C	(8)
Remark:		- 60	<u> </u>			
actor = Anter	nna Factor + Cable	Loss - Pre-	amplifier.	8		

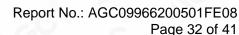
#### **RESULT: PASS**

Other emissions from 1G to 25 GHz are considered as ambient noise. No recording in the test report.

Factor = Antenna Factor + Cable loss - Amplifier gain, Over=Measure-Limit.

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

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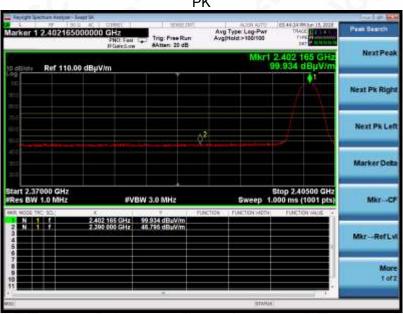


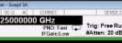


TEST RESULT FOR RESTRICTED BANDS REQUIREMENTS

EUT	Smart Phone	Model Name	CLEARPHONE 620
Temperature	25° C	Relative Humidity	53%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Horizontal



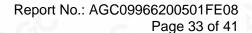






**RESULT: PASS** 

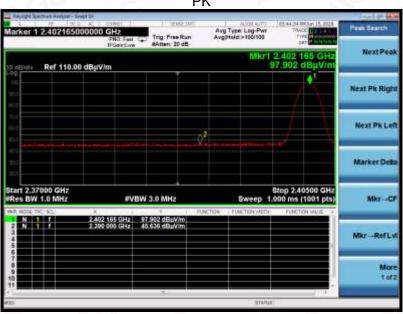
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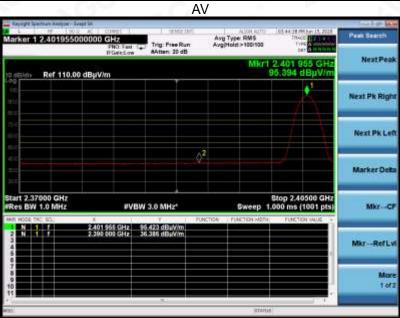




EUT	Smart Phone	Model Name	CLEARPHONE 620
Temperature	25° C	Relative Humidity	53%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Vertical

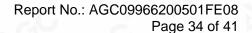






**RESULT: PASS** 

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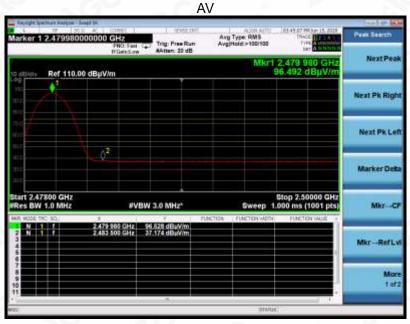




EUT	Smart Phone	Model Name	CLEARPHONE 620
Temperature	25° C	Relative Humidity	53%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Horizontal

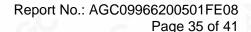






**RESULT: PASS** 

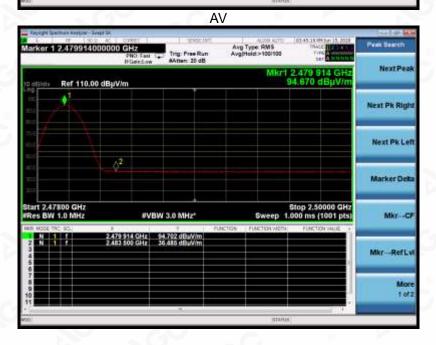
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**EUT Smart Phone Model Name CLEARPHONE 620 Temperature** 25° C **Relative Humidity** 53% Normal Voltage **Pressure** 960hPa **Test Voltage Test Mode** Mode 3 **Antenna** Vertical





#### **RESULT: PASS**

**Note**: 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.

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/Inspection The test results

he test report.

#### 12. FCC LINE CONDUCTED EMISSION TEST

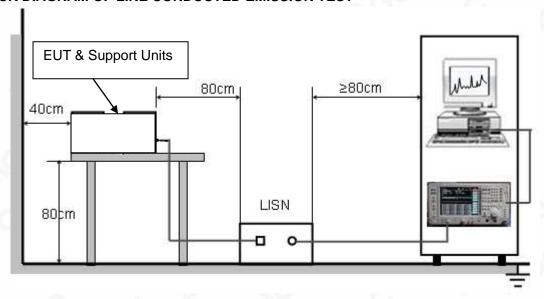
#### 12.1. LIMITS OF LINE CONDUCTED EMISSION TEST

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.

#### 12.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



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#### 12.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

- 1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a Smart Phone op 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 equipments received AC120V/60Hz power from a LISN, if any.
- 5. The EUT received DC charging voltage by PC which received AC120V/60Hz power by a LISN..
- 6. The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
- 8. During the above scans, the emissions were maximized by cable manipulation.
- 9. The test mode(s) were scanned during the preliminary test.

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

#### 12.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

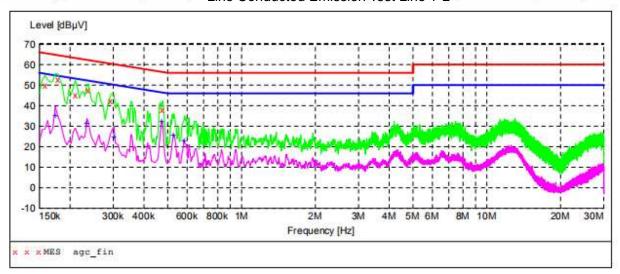
- 1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
- 2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
- 3. The test data of the worst case condition(s) was reported on the Summary Data page.

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#### 12.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

Line Conducted Emission Test Line 1-L



#### MEASUREMENT RESULT: "agc\_fin"

2	2020/5/22 22:	35						
	Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
	MHz	dBµV	dB	dBµV	dB			
	0.158000	49.90	10.3	66	15.7	QP	L1	GND
	0.178000	52.60	10.3	65	12.0	QP	L1	GND
	0.210000	45.00	10.3	63	18.2	QP	L1	GND
	0.238000	47.30	10.3	62	14.9	QP	L1	GND
	0.294000	42.30	10.3	60	18.1	QP	L1	GND
	0.478000	38.00	10.3	56	18.4	QP	L1	GND

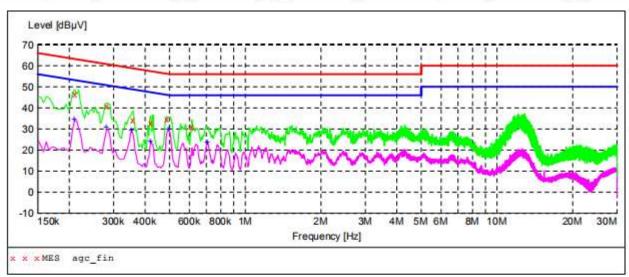
#### MEASUREMENT RESULT: "agc fin2"

2020/5/22	22:35	5						
Frequenc Mi	ey Hz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.17400	00	35.20	10.3	55	19.6	AV	L1	GND
0.2340	00	31.40	10.3	52	20.9	AV	L1	GND
0.3020	00	24.80	10.3	50	25.4	AV	L1	GND
0.47400	00	32.20	10.3	46	14.2	AV	L1	GND
0.53000	00	25.60	10.3	46	20.4	AV	L1	GND
0.58200	00	23.00	10.3	46	23.0	AV	L1	GND

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#### Line Conducted Emission Test Line 2-N



#### MEASUREMENT RESULT: "agc fin"

2020/5/22 23:	01						
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.210000	46.50	10.3	63	16.7	QP	N	GND
0.282000	40.90	10.3	61	19.9	QP	N	GND
0.358000	34.20	10.3	59	24.6	QP	N	GND
0.422000	32.90	10.3	57	24.5	QP	N	GND
0.490000	34.60	10.3	56	21.6	QP	N	GND
0.614000	30.80	10.3	56	25.2	QP	N	GND

#### MEASUREMENT RESULT: "agc fin2"

2020/5/22 23: Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
MHz	dBµV	dB	dΒμV	dB			
0.210000	34.80	10.3	53	18.4	AV	N	GND
0.282000	30.80	10.3	51	20.0	AV	N	GND
0.354000	29.60	10.3	49	19.3	AV	N	GND
0.422000	24.30	10.3	47	23.1	AV	N	GND
0.498000	29.70	10.3	46	16.3	AV	N	GND
0.710000	23.60	10.3	46	22.4	AV	N	GND

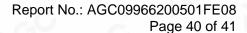
#### **RESULT: PASS**

Note: All the test modes had been tested, the mode 1 was the worst case. Only the data of the worst case would be record in this test report.

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#### APPENDIX A: PHOTOGRAPHS OF TEST SETUP

RADIATED EMISSION TEST SETUP BELOW 1GHZ

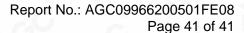


RADIATED EMISSION TEST SETUP ABOVE 1GHZ



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#### CONDUCTED EMISSION TEST SETUP



----END OF REPORT----

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#### Conditions of Issuance of Test Reports

- 1. All samples and goods are accepted by the Attestation of Global Compliance (Shenzhen) Co., Ltd (the "Company") solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the company and any person, firm or company requesting its services (the "Clients").
- 2. Any report issued by Company as a result of this application for testing services (the "Report") shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to its customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.
- 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.
- 4. The non-CMA report issued by AGC is only permitted to be used by the client as internal reference use and shall not be used for public demonstration purpose.
- 5. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.
- 6. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.
- 7. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.
- 8. 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.
- 9. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.
- 10. 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.

he test report.

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