

EMC-TRF-01 Rev 1.1

Report No.: GZCR240800092305 Page: 1 of 48 FCC ID: 2BARH-ULTRACRAFT

TEST REPORT

Application No.:	GZCR2408000923AT
Applicant:	GUANGZHOU HEYGEARS IMC. INC
Address of Applicant:	BLOCK B2, 501, 601, ENTERPRISE ACCELERATOR, KAIFA DISTRICT, GUANGZHOU, GUANGDONG, CHINA
Manufacturer:	GUANGZHOU HEYGEARS IMC. INC
Address of Manufacturer:	BLOCK B2, 501, 601, ENTERPRISE ACCELERATOR, KAIFA DISTRICT, GUANGZHOU, GUANGDONG, CHINA
Factory:	GUANGZHOU HEYGEARS IMC. INC
Address of Factory:	BLOCK B2, 501, 601, ENTERPRISE ACCELERATOR, KAIFA DISTRICT, GUANGZHOU, GUANGDONG, CHINA
Product Name:	ULtraCraft Rapid Production System
Model No.:	UltraCraft A2D HD
Trade Mark:	HEYGEARS
Standard(s) :	47 CFR Part 15, Subpart C 15.225
Date of Receipt:	2024-08-06
Date of Test:	2024-08-22 to 2024-10-30
Date of Issue:	2024-11-20
Test Result:	Pass*

* In the configuration tested, the EUT complied with the standards specified above.

Ridge Lin

Ricky Liu Manager



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	Revision Record				
Version Report No. Date Remark					
01	GZCR240800092305	2024-11-20	Original		

Authorized for issue by:			
		Damon. Gum	
	D	Damon Guan/Project Engineer	
		vius cui	
	v	/ico Cui/Reviewer	



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Test Summary 2

Radio Spectrum Technical Requirement					
Item	Standard	Method	Requirement	Result	
Antenna Requirement	47 CFR Part 15, Subpart C 15.225	N/A	47 CFR Part 15, Subpart C 15.203	Pass	

Radio Spectrum Matter Part						
Item	Standard	Method	Requirement	Result		
Conducted Emissions at Mains Terminals (150kHz-30MHz)	-	ANSI C63.10 (2013) Section 6.2	47 CFR Part 15, Subpart C 15.207	Pass		
20dB Bandwidth		ANSI C63.10 (2013) Section 6.9	47 CFR Part 15, Subpart C 15.215	Pass		
Emission Mask	47 CFR Part 15,	ANSI C63.10 (2013) Section 6.4	47 CFR Part 15, Subpart C 15.225(a)&(b)&(C)	Pass		
Frequency tolerance	Subpart C 15.225	ANSI C63.10 (2013) Section 6.8	47 CFR Part 15, Subpart C 15.225(e)	Pass		
Radiated Emissions (9kHz-30MHz)		ANSI C63.10 (2013) Section 6.4&6.5	47 CFR Part 15, Subpart C 15.225(d) & 15.209	Pass		
Radiated Emissions (30MHz-1GHz)		ANSI C63.10 (2013) Section 6.4&6.5	47 CFR Part 15, Subpart C 15.225(d) & 15.209	Pass**		
**: The EUT passed R	adiated Emissions (30MHz-1GHz) test after	modification.			

Note:

E.U.T./EUT means Equipment Under Test.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.



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Guangzhou

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4 General Information

4.1 Details of E.U.T.

Power supply:	AC 100-240V, 50/60Hz, 340W
Cable(s):	About 1.6m x 3 wires unscreened AC mains cable.
	USB Port x2
	RJ45 Port x1
	4 Pin DC output Port x1(Reserved only, function not developed)
Test Voltage:	AC 120 V, 60 Hz
Operation Frequency:	13.56MHz
Antenna Number:	2
Modulation Type:	ASK
Antenna Type:	Loop Antenna

Remark: The information in this section is provided by the applicant or manufacturer, SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.				
The EUT has been tested as an independent unit.							

4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Emissions at Mains Terminals (150kHz- 30MHz)	± 3.22dB
20dB Bandwidth	± 0.274%
Emission Mask	± 3.19dB
Frequency tolerance	± 7.25 E-8
Radiated Emissions (9kHz-30MHz)	± 3.19dB
Radiated Emissions (30MHz-1GHz)	± 5.14dB (30MHz-1GHz):3m;±4.90dB (30MHz-1GHz):10m

Remark:

The U_{lab} (lab Uncertainty) is less than U_{cispr} (CISPR Uncertainty) or U_{ETSI}(ETSI Uncertainty).

Emission decision rule:

- Compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit, marked as Pass in the report.

 Non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit, marked as Fail in the report.



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4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory, No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663 Tel: +86 20 82155555 No tests were sub-contracted.

4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• ACMA

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian/New Zealand Regulatory Compliance Mark (RCM).

• SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

• FCC Recognized Accredited Test Firm(Registration No.: 486818)

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818.

• ISED (Registration No.: 4620B, CAB identifier: CN0052)

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

• VCCI (Registration No.: R-12460, C-12584, G-20107 and T-11179)

The 10m Semi-anechoic chamber, 966 Anechoic Chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-12460, C-12584, G-20107 and T-11179 respectively.

• CBTL (Lab Code: TL129)

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2017, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None



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Equipment List 5

Conducted Emissions at Mains Terminals (150kHz-30MHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Coaxial Cable	HangTianXing	2m	EMC0107	2023-08-24	2025-08-23
Shielding Room	ChangZhou ZhongYu	8m x 3m x 3.8m	EMC0306	2022-10-16	2025-10-15
Two-Line V-Network-GZ	Rohde & Schwarz	ENV216	EMC2135	2024-09-02	2025-09-01
EMI Test Receiver (9kHz-3.6GHz)	Rohde & Schwarz	ESR3	EMC2221	2024-05-13	2025-05-12
Test Software E3r	Audix	Ver.6.191211	GZE100-77	N/A	N/A

20dB Bandwidth					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
MI CABLE	SGS-EMC	0.8M	EMC2137	2023-11-02	2025-11-01
MXA Signal Analyzer (10Hz-8.4GHz)	Agilent Technologies	N9020A	SEM004-10	2024-02-20	2025-02-19

Emission Mask					
Equipment	Manufacturer	Manufacturer Model No. Invento		Cal Date	Cal Due Date
Active Loop Antenna- RED	ETS-Lindgren	6502	EMC2190	2024-04-08	2026-04-07
EMI Test Receiver (1Hz- 8GHz)	Rohde & Schwarz	ESW8 EMC2229		2024-02-19	2025-02-18
Test Software E3	Test Software E3 Audix		er.6.120110a GZE100-61		N/A
966 Anechoic Chamber Shenzhen C.R.T		CRTSGSSAC9 66 EMC2230		2022-04-12	2025-04-11
Coaxial Cable	Mirco-COAX UTIFLEX ve	LA2-C125- 8000	EMC2239	2023-06-14	2025-06-13

Frequency tolerance								
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date			
MI CABLE	SGS-EMC	0.8M	EMC2137	2023-11-02	2025-11-01			
Temperature Chamber	GZ GongWen Co.Ltd.	GDJW-100	EMC0039	2024-06-17	2025-06-16			
MXA Signal Analyzer (10Hz-8.4GHz)	Agilent Technologies	N9020A	SEM004-10	2024-02-20	2025-02-19			



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Radiated Emissions (9kHz-30MHz)								
Equipment	Manufacturer Model No. Inventory N		Inventory No.	Cal Date	Cal Due Date			
Active Loop Antenna- RED	ETS-Lindgren	6502	EMC2190	2024-04-08	2026-04-07			
EMI Test Receiver (1Hz- 8GHz)	Rohde & Schwarz	ESW8 EMC2229		2024-02-19	2025-02-18			
Test Software E3	Test Software E3 Audix		er.6.120110a GZE100-61		N/A			
966 Anechoic Chamber Shenzhen C		CRTSGSSAC9 66	EMC2230	2022-04-12	2025-04-11			
Coaxial Cable	Mirco-COAX UTIFLEX ve	LA2-C125- 8000	EMC2239	2023-06-14	2025-06-13			

Radiated Emissions (30MHz-1GHz)								
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date			
966 Anechoic Chamber	Shenzhen C.R.T	CRTSGSSAC9 66 EMC223		2022-04-12	2025-04-11			
EMI Test Receiver(1Hz- 8GHz)	Rohde & Schwarz	ESW8 EMC2229		2024-02-19	2025-02-18			
Amplifier(9k-1000MHz)	SONOMA	310	EMC2237	2024-03-22	2025-03-21			
Trilog Broadband Antenna (25MHz-2GHz)	Schwarzbeck Mess- Elektronik	VULB 9168	VULB 9168 EMC2238		2025-04-19			
Coaxial Cable Mirco-COAX UTIFLEX ve		LA2-C125- 8000 EMC2239		2023-06-14	2025-06-13			
Test Software E3 Audix		Ver.6.191211	GZE100-81	N/A	N/A			

General used equipment							
Equipment Manufacturer			Model No	Inventory No	Cal Date	Cal Due Date	
	DMM	Fluke	73	EMC0006	2024-06-13	2025-06-12	



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Radio Spectrum Technical Requirement 6

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203

6.1.2 Conclusion

15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement.

Antenna location: Refer to Internal photos



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Radio Spectrum Matter Test Results 7

Conducted Emissions at Mains Terminals (150kHz-30MHz) 7.1

Test Requirement	47 CFR Part 15, Subpart C 15.207
Test Method:	ANSI C63.10 (2013) Section 6.2
Limit:	

	Limit (dBuV)			
Frequency range (MHz)	Quasi-peak	Average		
0.15-0.5	66 to 56*	56 to 46*		
0.5-5	56	46		
5-30	60	50		

* Decreases with the logarithm of the frequency.

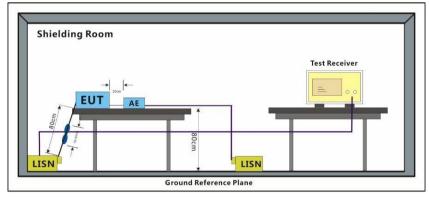
7.1.1 E.U.T. Operation

Operating Environment:							
Temperature:	26.2 °C	Humidity:	51.4 % RH	Atmospheric Pressure:	1005		

7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	06	NFC 1 TX mode with modulation
Final test	08	NFC 2 TX mode with modulation

7.1.3 Test Setup Diagram





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7.1.4 Measurement Procedure and Data

The mains terminal disturbance voltage test was conducted in a shielded room.

2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50µH + 5ohm linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.

3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,

4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.

5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

Remark: Level=Read Level+ Cable Loss+ LISN Factor



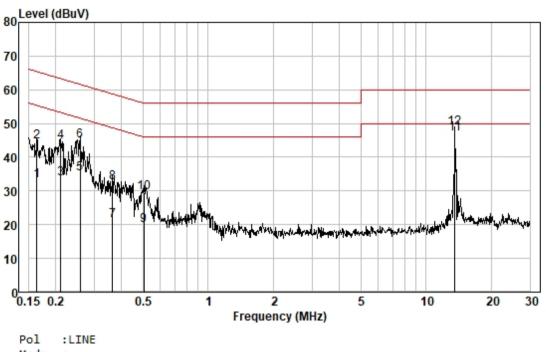
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Test Mode: 06; Line: Live line

Pol	:LIN
Mode	:
Model	:
Power	:

	Frequenc MHz	Read Level dBuV	Cable Loss dB	LISN Factor dB	Measured Level dBuV	Limit Line dBuV	Over Limit dB	Remark
1	0.163	23.38	0.04	9.55	32.97	55.30	-22.33	Average
2	0.163	34.86	0.04	9.55	44.45	65.30	-20.85	QP
3	0.211	24.05	0.04	9.55	33.64	53.18	-19.54	Average
4	0.211	34.92	0.04	9.55	44.51	63.18	-18.67	QP
5	0.259	25.65	0.04	9.56	35.25	51.47	-16.22	Average
6	0.259	35.25	0.04	9.56	44.85	61.47	-16.62	QP
7	0.363	11.73	0.05	9.57	21.35	48.65	-27.30	Average
8	0.363	22.75	0.05	9.57	32.37	58.65	-26.28	QP
9	0.507	10.30	0.05	9.56	19.91	46.00	-26.09	Average
10	0.507	19.93	0.05	9.56	29.54	56.00	-26.46	QP
11	13.551	36.80	0.31	9.84	46.95	50.00	-3.05	Average
12	13.551	38.48	0.31	9.84	48.63	60.00	-11.37	QP -



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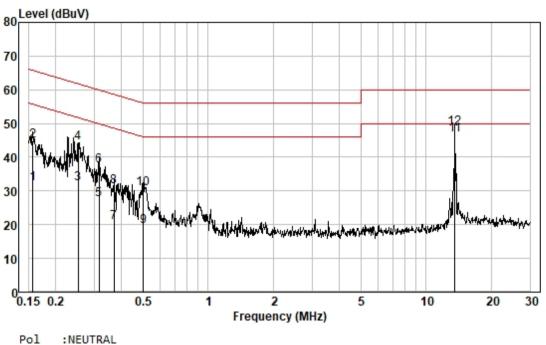
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Test Mode: 06; Line: Neutral Line

Mode : Model : Power :

	Frequenc MHz	Read Level dBuV	Cable Loss dB	LISN Factor dB	Measured Level dBuV	Limit Line dBuV	Over Limit dB	Remark
1	0.156	22.70	0.04	9.52	32.26	55.65	-23.39	Average
2	0.156	35.21	0.04	9.52	44.77	65.65	-20.88	QP
3	0.253	22.51	0.04	9.53	32.08	51.64	-19.56	Average
4	0.253	34.59	0.04	9.53	44.16	61.64	-17.48	QP
5	0.315	17.99	0.04	9.53	27.56	49.84	-22.28	Average
6	0.315	27.91	0.04	9.53	37.48	59.84	-22.36	QP
7	0.369	11.10	0.05	9.54	20.69	48.52	-27.83	Average
8	0.369	21.83	0.05	9.54	31.42	58.52	-27.10	QP
9	0.505	9.93	0.05	9.54	19.52	46.00	-26.48	Average
10	0.505	20.99	0.05	9.54	30.58	56.00	-25.42	QP
11	13.551	36.58	0.31	9.86	46.75	50.00	-3.25	Average
12	13.551	38.53	0.31	9.86	48.70	60.00	-11.30	QP



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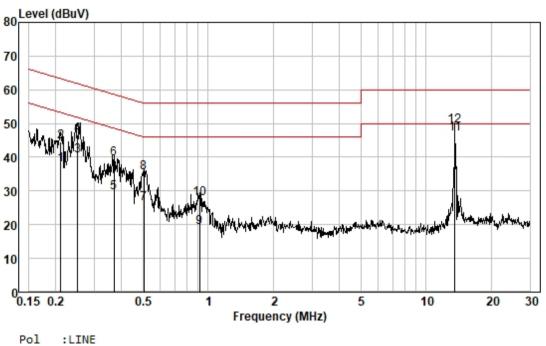
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Test Mode: 08; Line: Live line

Mode : Model : Power :

	Frequenc MHz	Read Level dBuV	Cable Loss dB	LISN Factor dB	Measured Level dBuV	Limit Line dBuV	Over Limit dB	Remark
1	0.211	28.20	0.04	9.55	37.79	53.18	-15.39	Average
2	0.211	35.01	0.04	9.55	44.60	63.18	-18.58	QP
3	0.252	30.82	0.04	9.56	40.42	51.69	-11.27	Average
4	0.252	37.17	0.04	9.56	46.77	61.69	-14.92	QP
5	0.369	19.90	0.05	9.57	29.52	48.52	-19.00	Average
6	0.369	29.91	0.05	9.57	39.53	58.52	-18.99	QP
7	0.507	16.62	0.05	9.56	26.23	46.00	-19.77	Average
8	0.507	25.78	0.05	9.56	35.39	56.00	-20.61	QP
9	0.914	9.41	0.07	9.57	19.05	46.00	-26.95	Average
10	0.914	18.20	0.07	9.57	27.84	56.00	-28.16	QP
11	13.551	36.66	0.31	9.84	46.81	50.00	-3.19	Average
12	13.551	39.03	0.31	9.84	49.18	60.00	-10.82	QP



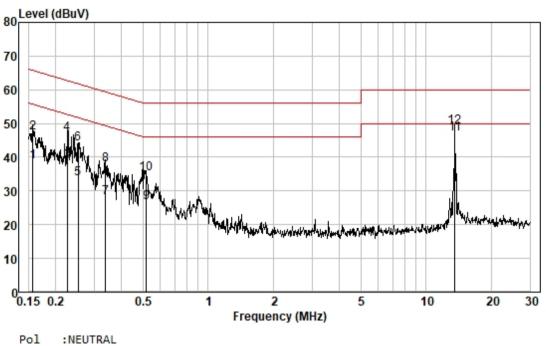
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Test Mode: 08; Line: Neutral Line

Mode : Model : Power :

	Frequenc MHz	Read Level dBuV	Cable Loss dB	LISN Factor dB	Measured Level dBuV	Limit Line dBuV	Over Limit dB	Remark
1	0.157	29.11	0.04	9.52	38.67	55.62	-16.95	Average
2	0.157	37.58	0.04	9.52	47.14	65.62	-18.48	QP
3	0.226	28.98	0.04	9.53	38.55	52.61	-14.06	Average
4	0.226	37.33	0.04	9.53	46.90	62.61	-15.71	QP
5	0.253	24.10	0.04	9.53	33.67	51.64	-17.97	Average
6	0.253	34.30	0.04	9.53	43.87	61.64	-17.77	QP
7	0.337	18.43	0.05	9.54	28.02	49.27	-21.25	Average
8	0.337	28.18	0.05	9.54	37.77	59.27	-21.50	QP
9	0.521	17.02	0.05	9.54	26.61	46.00	-19.39	Average
10	0.521	25.51	0.05	9.54	35.10	56.00	-20.90	QP
11	13.560	36.80	0.31	9.86	46.97	50.00	-3.03	Average
12	13.560	38.94	0.31	9.86	49.11	60.00	-10.89	QP



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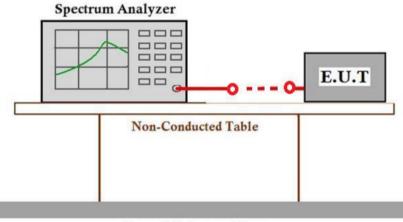
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7.2 20dB Bandwidth Test Requirement Test Method:	47 CFR Part 15, Subpart C 15.215 ANSI C63.10 (2013) Section 6.9		
7.2.1 E.U.T. OperationOperating Environment: Temperature:20.3	°C Humidity: 53.9 % RH	Atmosphe	ric Pressure: 1013 mbar
7.2.2 Test Mode Description Pre-scan / Mode	Description		

Code	Description
6	NFC 1 TX mode with modulation
8	NFC 2 TX mode with modulation
	ode 6

7.2.3 Test Setup Diagram



Ground Reference Plane

7.2.4 Measurement Procedure and Data

The useful radiated emission from the EUT was detected by the spectrum analyser with peak detector.



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Test Mode: 06

operating frequency	20dB Bandwidth	Limit	Result
13.560 MHz	104.5 kHz		Pass

Test Graphs

Keysight Spec		Trig:	SENSE:INT er Freq: 13.560000 MHz Free Run Avg n: 10 dB	ALIGN OFF	04:36:11 PM Oct 25, 2024 Radio Std: None Radio Device: BTS	Span
15 dB/div Log -15.0 -30.0 -45.0	Ref 0.00 dBm		1	Mki	1 13.5612 MHz -44.860 dBm	700.00 kHz
-60.0 -75.0 -90.0 -105 -120 -135			A more and a second	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Maymman	Full Span
Center 13. #Res BW Occup	^{2 kHz} ied Bandwidth		¥VBW 6.2 kHz Total Power	-41.7	Span 700.0 kHz #Sweep 49.8 ms 1 dBm	
	hit Freq Error andwidth	1.358 kHz 104.5 kHz	% of OBW P x dB		9.00 % .00 dB	



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Test Mode: 08

operating frequency	20dB Bandwidth	Limit	Result
13.560 MHz	114.6 kHz		Pass

Test Graphs

Keysight Spectrum Analyzer	r - Occupied BW 50 Ω DC #IFGain:L	Center Freq: 1 Trig: Free Run #Atten: 10 dB	3.560000 MHz	Radio Sto		Trace/Detector
	.00 dBm			Mkr1 13.50 -44.2	512 MHz 76 dBm	
-15.0		1-				Clear Write
-45.0 -60.0 -75.0 -90.0 -105	N WWW	man	ᡗ᠆ᠬᠰᡢᢩ᠕ᢇᠲ	My M	Mirre	Average
-105						Max Hold
Center 13.5600 MH #Res BW 2 kHz		#VBW	6.2 kHz tal Power		700.0 kHz 0 49.8 ms	Min Hold
Occupied Ba	363.7		lai Fower	-41.1 uBm		Detector Average►
Transmit Freq x dB Bandwidt		961 kHz % d 4.6 kHz x d	of OBW Power	99.00 % -20.00 dB		<u>Auto</u> Man
		4.0 KHZ X U	-	-20.00 dB		



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7.3 Emission Mask

Test Requirement	47 CFR Part 15, Subpart C 15.225(a)&(b)&(C)
Test Method:	ANSI C63.10 (2013) Section 6.4

Limit:

(a) The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.

- (b) Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.
- (c) Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.

(d) The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in § 15.209.

Below 30MHz

The test was performed at a 3m test site.

The factor calculated by the following equation:

$$FS_{\text{limit}} = FS_{\text{max}} - 40 \log \left(\frac{d_{\text{limit}}}{d_{\text{measure}}}\right)$$

where

FS_{limit}	is the calculation of field strength at the limit distance, expressed in $dB\mu V/m$
FS_{max}	is the measured field strength, expressed in dBµV/m
d_{measure}	is the distance of the measurement point from the EUT
d_{limit}	is the reference distance or the distance of the $\lambda/2\pi$ point

The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 84dBuV/m at 30 meters.

7.3.1 E.U.T. Operation

Operating Enviror	nment:					
Temperature:	22.4 °C	Humidity:	52.1 % RH	Atmospheric Pressure:	1004	mbar

7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	06	NFC 1 TX mode with modulation
Final test	08	NFC 2 TX mode with modulation



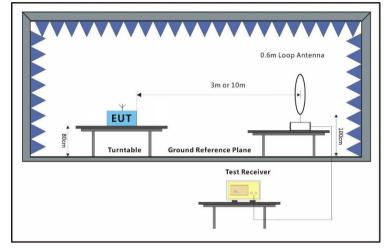
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7.3.3 Test Setup Diagram



7.3.4 Measurement Procedure and Data

For testing performed with the loop antenna, the center of the loop was positioned 1 m above the ground and positioned with its plane vertical at the specified distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane. Only the worst position of vertical was shown in the report.



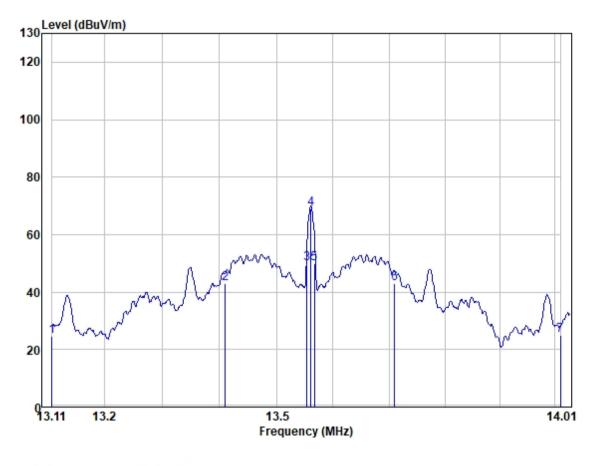
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Test Mode: 06; Polarity: Vertical



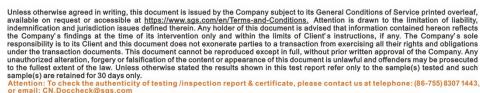
Site	:	966	Chamber
Job	:		
Model	:		
Power	:		
Test Mode	:		

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		Read	Anterna	Cable	Preamp	Measured	Limit	Over	Pol/	
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	13.110	46.51	10.61	0.19	32.80	24.51			VERTICAL	QP
2	13.410	65.13	10.54	0.19	32.80	43.06			VERTICAL	QP
3	13.554	72.11	10.51	0.20	32.81	50.01			VERTICAL	QP
4	13.561	91.01	10.51	0.20	32.81	68.91			VERTICAL	QP
5	13.567	72.18	10.51	0.20	32.81	50.08			VERTICAL	QP
6	13.710	65.04	10.49	0.20	32.81	42.92			VERTICAL	QP
7	14.010	47.22	10.43	0.20	32.81	25.04			VERTICAL	QP



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Frequency (MHz)	Measured Level (dBuV/m) @3m	Extrapolation Correction (dB) @3 m to 30 m	Level (dBuV/m) @ 30m	Limit (dBuV/m) @30m	Over limit (dB)
13.110	24.51	-40	-15.49	29.54	-45.03
13.410	43.06	-40	3.06	40.51	-37.45
13.550	50.01	-40	10.01	50.47	-40.46
13.560	68.91	-40	28.91	84	-55.09
13.570	50.08	-40	10.08	50.47	-40.39
13.710	42.92	-40	2.92	40.51	-37.59
14.010	25.04	-40	-14.96	29.54	-44.5

Remark: Extrapolation Correction (dB)@3m to 30 m = 40*log(3/30)=-40 according to FCC part 15.31 (f) (1) Level (dBuV/m) @ 30m = Measured Level (dBuV/m) @3m + Extrapolation Correction (dB)@3 m to 30 m



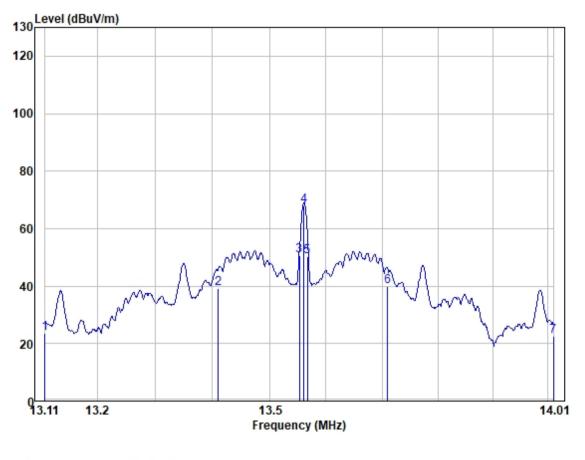
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Test Mode: 08; Polarity: Vertical



Site	:	966	Chamber
Job	:		
Model	:		
Power	:		
Test Mode	:		

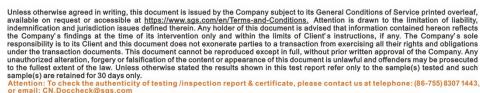
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						Measured			Pol/	
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	13.110	45.43	10.61	0.19	32.80	23.43			VERTICAL	QP
2	13.410	61.18	10.54	0.19	32.80	39.11			VERTICAL	QP
3	13.553	72.72	10.51	0.20	32.81	50.62			VERTICAL	QP
4	13.561	90.01	10.51	0.20	32.81	67.91			VERTICAL	QP
5	13.567	72.45	10.51	0.20	32.81	50.35			VERTICAL	QP
6	13.710	61.98	10.49	0.20	32.81	39.86			VERTICAL	QP
7	14.010	44.74	10.43	0.20	32.81	22.56			VERTICAL	QP



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Frequency (MHz)	Measured Level (dBuV/m) @3m	Extrapolation Correction (dB) @3 m to 30 m	Level (dBuV/m) @ 30m	Limit (dBuV/m) @30m	Over limit (dB)
13.110	23.43	-40	-16.57	29.54	-46.11
13.410	39.11	-40	-0.89	40.51	-41.4
13.550	50.62	-40	10.62	50.47	-39.85
13.560	67.91	-40	27.91	84	-56.09
13.570	50.35	-40	10.35	50.47	-40.12
13.710	39.86	-40	-0.14	40.51	-40.65
14.010	22.56	-40	-17.44	29.54	-46.98

Remark: Extrapolation Correction (dB)@3m to 30 m = 40*log(3/30)=-40 according to FCC part 15.31 (f) (1) Level (dBuV/m) @ 30m = Measured Level (dBuV/m) @3m + Extrapolation Correction (dB)@3 m to 30 m



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7.4 Frequency tolerance

Test Requirement	47 CFR Part 15, Subpart C 15.225(e)
Test Method:	ANSI C63.10 (2013) Section 6.8
Limit:	Within $\pm 0.01\%$ of the operating frequency

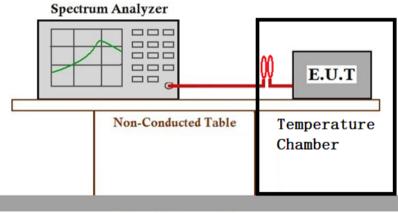
7.4.1 E.U.T. Operation

Operating Enviro	nment:					
Temperature:	20.3 °C	Humidity:	53.9 % RH	Atmospheric Pressure:	1013	mbar

7.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	06	NFC 1 TX mode with modulation
Final test	08	NFC 2 TX mode with modulation

7.4.3 Test Setup Diagram



Ground Reference Plane

7.4.4 Measurement Procedure and Data

The EUT was placed in an environmental test chamber and powered such that control element received normal voltage and the transmitter provided maximum RF output.



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Mode 06; NFC 1 At startup:

Limit: ± 0.01%

Voltage (V AC)	Temperature (°C)	Frequency Measured (MHz)	Test data (%)	Verdict
	-20	13.56107	0.0079%	Pass
	-10	13.56128	0.0094%	Pass
	0	13.56122	0.0090%	Pass
	10	13.56105	0.0077%	Pass
V _{norm} : 120	T _{normal} : +20	13.56045	0.0033%	Pass
	30	13.56123	0.0091%	Pass
	40	13.56134	0.0099%	Pass
	50	13.56126	0.0093%	Pass
V _{max} : 132	T · +20	13.56111	0.0082%	Pass
V _{min} : 108	T _{normal} : +20	13.56121	0.0089%	Pass

At 2 minutes later:

Limit: ± 0.01%

Voltage (V AC)	Temperature (°C)	Frequency Measured (MHz)	Test data (%)	Verdict
	-20	13.56113	0.0083%	Pass
	-10	13.56105	0.0078%	Pass
	0	13.56113	0.0083%	Pass
	10	13.56108	0.0080%	Pass
V _{norm} : 120	T _{normal} : +20	13.56045	0.0033%	Pass
	30	13.56114	0.0084%	Pass
	40	13.56109	0.0081%	Pass
	50	13.56113	0.0083%	Pass
V _{max} : 132	T · +20	13.56133	0.0098%	Pass
V _{min} : 108	T _{normal} : +20	13.56106	0.0078%	Pass



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At 5 minutes later:

Limit: ± 0.01%

Voltage (V AC)	Temperature (°C)	Frequency Measured (MHz)	Test data (%)	Verdict
	-20	13.5612	0.0089%	Pass
	-10	13.56119	0.0087%	Pass
	0	13.56109	0.0081%	Pass
	10	13.56133	0.0098%	Pass
V _{norm} : 120	T _{normal} : +20	13.56045	0.0033%	Pass
	30	13.5611	0.0081%	Pass
	40	13.56128	0.0094%	Pass
	50	13.5612	0.0089%	Pass
V _{max} : 132	T :+20	13.56128	0.0095%	Pass
V _{min} : 108	T _{normal} : +20	13.56134	0.0099%	Pass

At 10 minutes later:

Limit: ± 0.01%

Voltage (V AC)	Temperature (°C)	Frequency Measured (MHz)	Test data (%)	Verdict
	-20	13.5611	0.0081%	Pass
	-10	13.56115	0.0085%	Pass
	0	13.56121	0.0089%	Pass
	10	13.5613	0.0096%	Pass
V _{norm} : 120	T _{normal} : +20	13.56045	0.0033%	Pass
	30	13.561	0.0074%	Pass
	40	13.56107	0.0079%	Pass
	50	13.56118	0.0087%	Pass
V _{max} : 132	T · +20	13.56133	0.0098%	Pass
V _{min} : 108	T _{normal} : +20	13.56115	0.0085%	Pass



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Mode 08; NFC 2 At startup:

Limit: ± 0.01%

Voltage (V AC)	Temperature (°C)	Frequency Measured (MHz)	Test data (%)	Verdict
	-20	13.56128	0.0094%	Pass
	-10	13.56101	0.0074%	Pass
	0	13.56135	0.0100%	Pass
	10	13.56132	0.0097%	Pass
V _{norm} : 120	T _{normal} : +20	13.56045	0.0033%	Pass
	30	13.56131	0.0097%	Pass
	40	13.56112	0.0083%	Pass
	50	13.5611	0.0081%	Pass
V _{max} : 132	T :+20	13.56115	0.0085%	Pass
V _{min} : 108	T _{normal} : +20	13.5613	0.0096%	Pass

At 2 minutes later:

Limit: ± 0.01%

Voltage (V AC)	Temperature (°C)	Frequency Measured (MHz)	Test data (%)	Verdict
	-20	13.56134	0.0099%	Pass
	-10	13.561	0.0074%	Pass
	0	13.56133	0.0098%	Pass
	10	13.56105	0.0077%	Pass
V _{norm} : 120	T _{normal} : +20	13.56045	0.0033%	Pass
	30	13.56117	0.0086%	Pass
	40	13.56135	0.0099%	Pass
	50	13.56118	0.0087%	Pass
V _{max} : 132	T :+20	13.56123	0.0091%	Pass
V _{min} : 108	T _{normal} : +20	13.56102	0.0075%	Pass



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At 5 minutes later:

Limit: ± 0.01%

Voltage (V AC)	Temperature (°C)	Frequency Measured (MHz)	Test data (%)	Verdict
	-20	13.56127	0.0094%	Pass
	-10	13.56109	0.0080%	Pass
	0	13.56115	0.0085%	Pass
	10	13.56109	0.0081%	Pass
V _{norm} : 120	T _{normal} : +20	13.56045	0.0033%	Pass
	30	13.5611	0.0081%	Pass
	40	13.56115	0.0085%	Pass
	50	13.56117	0.0086%	Pass
V _{max} : 132	T · +20	13.56122	0.0090%	Pass
V _{min} : 108	T _{normal} : +20	13.56126	0.0093%	Pass

At 10 minutes later:

Limit: ± 0.01%

Voltage (V AC)	Temperature (°C)	Frequency Measured (MHz)	Test data (%)	Verdict
	-20	13.56121	0.0089%	Pass
	-10	13.56108	0.0079%	Pass
	0	13.56108	0.0079%	Pass
	10	13.56119	0.0088%	Pass
V _{norm} : 120	T _{normal} : +20	13.56045	0.0033%	Pass
	30	13.56135	0.0100%	Pass
	40	13.56114	0.0084%	Pass
	50	13.56104	0.0077%	Pass
V _{max} : 132	T · +20	13.56109	0.0080%	Pass
V _{min} : 108	T _{normal} : +20	13.56106	0.0078%	Pass



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7.5 Radiated Emissions (9kHz-30MHz)

Test Requirement	47 CFR Part 15, Subpart C 15.225(d) & 15.209				
Test Method:	ANSI C63.10 (2013) Section 6.4&6.5				
Test Distance:	3 m				
Limit:					
	Field strength	Limit			

Frequency(MHz)	Field strength	Limit	Detector	Measurement Distance
Frequency(MHz)	(microvolts/meter)	(dBuV/m)	Delecioi	(meters)
0.009-0.490	2400/F(kHz)	-	-	300
0.490-1.705	24000/F(kHz)	-	-	30
1.705-30	30	-	-	30

Below 30MHz

If field strength is measured at only a single point, then that point shall be at the radial from the EUT that produces the maximum emission at the frequency being measured, as described in 5.4. If that point is closer to the EUT than $\lambda/2\pi$ and the limit distance is greater than $\lambda/2\pi$, the measurement shall be extrapolated to the limit distance by conservatively presuming that the field strength decreases at a 40 dB/decade of distance rate to the $\lambda/2\pi$ distance, and at a 20 dB/decade of distance rate beyond $\lambda/2\pi$. This shall be accomplished using Equation (2):

 $FS_{(10m)} = FS_{(30/300m)} + 40\log\{d_{(near field)}/d_{(10m)}\} + 20\log\{d_{(30/300m)}/d_{(near field)}\}$ (2)

If the single point measured is at a distance greater than $\lambda/2\pi$, then extrapolation to the limit distance shall be calculated using Equation (3):

 $FS_{(10m)} = FS_{(30/300m)} + 20log\{d_{(30/300m)}/d_{(10m)}\}$

(3)

If both the single point and the limit distance are equal to or closer to the EUT than $\lambda/2\pi$, then extrapolation to the limit distance shall be calculated using Equation (4):

 $FS_{(10m)} = FS_{(30/300m)} + 40log\{d_{(30/300m)}/d_{(10m)}\}$

(4)

Remark:

 $d_{\text{near field}} = 47.77 \ \text{/} \ f_{\text{MHz}}$ where f_{MHz} is the frequency of the emission being measured in MHz.

Remark:

1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor



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$$FS_{\text{limit}} = FS_{\text{max}} - 40 \log \left(\frac{d_{\text{limit}}}{d_{\text{measure}}}\right)$$

where

FS_{limit}	is the calculation of field strength at the limit distance, expressed in $dB\mu V/m$
FS_{\max}	is the measured field strength, expressed in dBµV/m
d_{measure}	is the distance of the measurement point from the EUT
d_{limit}	is the reference distance or the distance of the $\lambda/2\pi$ point

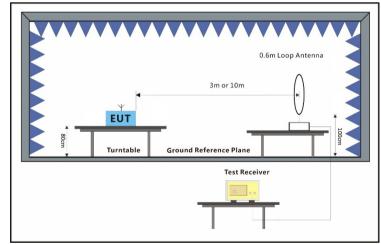
7.5.1 E.U.T. Operation

Operating Enviror	iment:					
Temperature:	22.4 °C	Humidity:	55.8 % RH	Atmospheric Pressure:	1004	mbar

7.5.2 Test Mode Description

Pre-scan / Final test		Description
Final test	06	NFC 1 TX mode with modulation
Final test	08	NFC 2 TX mode with modulation

7.5.3 Test Setup Diagram



7.5.4 Measurement Procedure and Data

For testing performed with the loop antenna, the center of the loop was positioned 1 m above the ground and positioned with its plane vertical at the specified distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane. Only the worst position of vertical was shown in the report.



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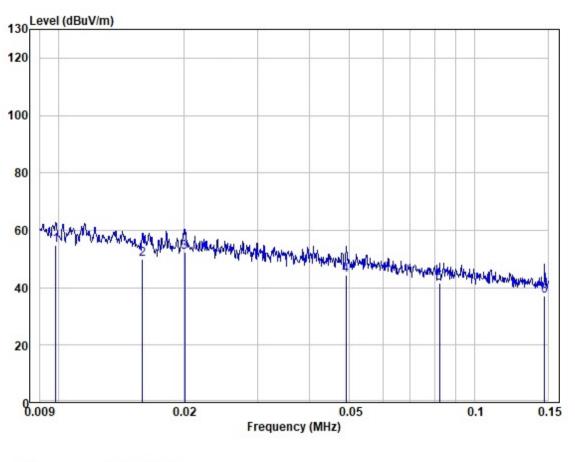
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Test Mode: 06; Polarity: Vertical

:	966	Chamber
:		
:		
:		
:		
		: 966 : :

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	Freq	Read Level				Measured Level	Pol/ Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m		
1	0.010	66.01	21.58	0.01	32.84	54.76	VERTICAL	Average
2	0.016	64.99	17.89	0.01	32.84	50.05	VERTICAL	Average
3	0.020	68.12	17.00	0.01	32.84	52.29	VERTICAL	Average
4	0.049	62.14	14.96	0.01	32.84	44.27	VERTICAL	Average
5	0.082	59.70	14.68	0.01	32.84	41.55	VERTICAL	Average
6	0.147	55.15	14.70	0.01	32.84	37.02	VERTICAL	Average

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Frequency (MHz)	Level @3m (dBuV/m)	Limit @300m (dBuV/m)	Convert Factor (dB)@3 m to 300 m	Level @ 300m (dBuV/m)	Over limit (dB)	Remark
0.010	54.76	47.60	-80	-25.24	-72.84	AV
0.016	50.05	43.52	-80	-29.95	-73.47	AV
0.020	52.29	41.58	-80	-27.71	-69.29	AV
0.049	44.27	33.80	-80	-35.73	-69.53	AV
0.082	41.55	29.33	-80	-38.45	-67.78	AV
0.147	37.02	24.26	-80	-42.98	-67.24	AV

Remark: Extrapolation Correction (dB)@3m to 300 m = 40*log(3/300)=-80 according to FCC part 15.31 (f) (1) Level (dBuV/m) @ 300m = Measured Level (dBuV/m) @3m + Extrapolation Correction (dB)@3 m to 300 m



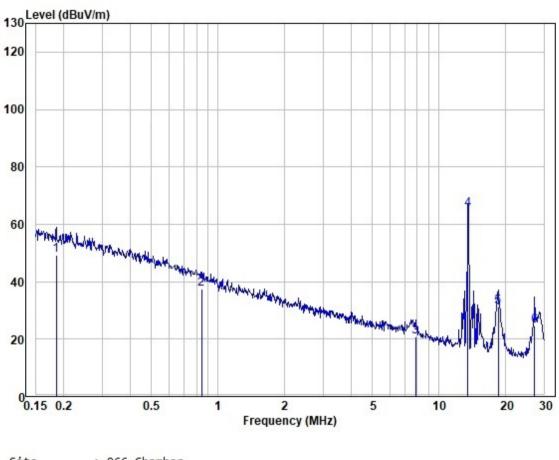
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Test Mode: 06; Polarity: Vertical

Site	:	966	Chamber
Job	:		
Model	:		
Power	:		
Test Mode	:		

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	Freq					Measured Level	Pol/ Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m		
1	0.185	67.23	14.67	0.01	32.84	49.07	VERTICAL	Average
2	0.844	56.55	13.66	0.05	32.83	37.43	VERTICAL	QP
3	7.852	41.15	12.31	0.14	32.81	20.79	VERTICAL	QP
4	13.561	87.20	10.51	0.20	32.81	65.10	VERTICAL	QP
5	18.622	54.04	9.57	0.23	32.81	31.03	VERTICAL	QP
6	27.127	50.90	6.23	0.28	32.83	24.58	VERTICAL	QP

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Frequency (MHz)	Level @3m (dBuV/m)	Limit @300m (dBuV/m)	Convert Factor (dB) @3m to 300 m	Level @ 300m (dBuV/m)	Over limit (dB)	Remark
0.185	49.07	22.26	-80	-30.93	-53.19	AV
Frequency (MHz)	Level @3m (dBuV/m)	Limit @30m (dBuV/m)	Convert Factor (dB) @3m to 30 m	Level @ 30m (dBuV/m)	Over limit (dB)	Remark
0.844	37.43	29.08	40	-2.57	-31.65	QP
7.852	20.79	29.54	40	-19.21	-48.75	QP
13.561	65.10	29.54	40	25.10	-4.44	QP
18.622	31.03	29.54	40	-8.97	-38.51	QP
27.127	24.58	29.54	40	-15.42	-44.96	QP

Remark:

Extrapolation Correction (dB)@3m to 300 m = 40*log(3/300)=-80 according to FCC part 15.31 (f) (1) Extrapolation Correction (dB)@3m to 30 m = 40*log(3/30)=-40 according to FCC part 15.31 (f) (1) Level (dBuV/m) @ 300m = Measured Level (dBuV/m) @3m + Extrapolation Correction (dB)@3 m to 300 m Level (dBuV/m) @ 30m = Measured Level (dBuV/m) @3m + Extrapolation Correction (dB)@3 m to 30 m

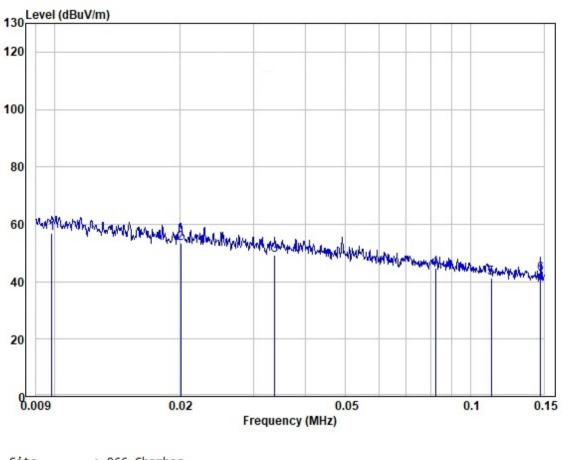


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Test Mode: 08; Polarity: Vertical

Site	:	966	Chamber
Job	:		
Model	:		
Power	:		
Test Mode	:		
Test Mode	:		

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s Co. Ltd

Laboratory.

Freq	Read Level				Measured Level	Pol/ Phase	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m		
0.010	68.01	21.58	0.01	32.84	56.76	VERTICAL	Average
0.020	69.12	17.00	0.01	32.84	53.29	VERTICAL	Average
0.034	66.62	15.52	0.01	32.84	49.31	VERTICAL	Average
0.082	62.70	14.68	0.01	32.84	44.55	VERTICAL	Average
0.112	59.48	14.74	0.01	32.84	41.39	VERTICAL	Average
0.147	60.77	14.70	0.01	32.84	42.64	VERTICAL	Average
	MHz 0.010 0.020 0.034 0.082 0.112	Freq Level MHz dBuV 0.010 68.01 0.020 69.12 0.034 66.62 0.082 62.70 0.112 59.48	Freq Level Factor MHz dBuV dB/m 0.010 68.01 21.58 0.020 69.12 17.00 0.034 66.62 15.52 0.082 62.70 14.68 0.112 59.48 14.74	Freq Level Factor Loss MHz dBuV dB/m dB 0.010 68.01 21.58 0.01 0.020 69.12 17.00 0.01 0.034 66.62 15.52 0.01 0.082 62.70 14.68 0.01 0.112 59.48 14.74 0.01	Freq Level Factor Loss Factor MHz dBuV dB/m dB dB 0.010 68.01 21.58 0.01 32.84 0.020 69.12 17.00 0.01 32.84 0.034 66.62 15.52 0.01 32.84 0.082 62.70 14.68 0.01 32.84 0.112 59.48 14.74 0.01 32.84	Freq Level Factor Loss Factor Level MHz dBuV dB/m dB dB dBuV/m 0.010 68.01 21.58 0.01 32.84 56.76 0.020 69.12 17.00 0.01 32.84 53.29 0.034 66.62 15.52 0.01 32.84 49.31 0.082 62.70 14.68 0.01 32.84 44.55 0.112 59.48 14.74 0.01 32.84 41.39	Freq Level Factor Loss Factor Level Phase MHz dBuV dB/m dB dB dBuV/m

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Frequency (MHz)	Level @3m (dBuV/m)	Limit @300m (dBuV/m)	Convert Factor (dB)@3 m to 300 m	Level @ 300m (dBuV/m)	Over limit (dB)	Remark
0.010	56.76	47.60	-40	16.76	-30.84	AV
0.020	53.29	41.58	-40	13.29	-28.29	AV
0.034	49.31	36.97	-40	9.31	-27.66	AV
0.082	44.55	29.33	-40	4.55	-24.78	AV
0.112	41.39	26.62	-40	1.39	-25.23	AV
0.147	42.64	24.26	-40	2.64	-21.62	AV

Remark: Extrapolation Correction (dB)@3m to 300 m = 40*log(3/300)=-80 according to FCC part 15.31 (f) (1) Level (dBuV/m) @ 300m = Measured Level (dBuV/m) @3m + Extrapolation Correction (dB)@3 m to 300 m



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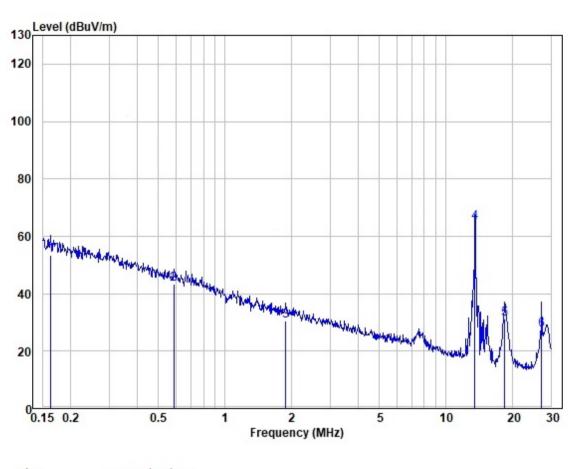
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Test Mode: 08; Polarity: Vertical

Site	:	966	Chamber
Job	:		
Model	:		
Power	:		
Test Mode	:		

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C Laboratory.

	Freq	Read Level	Anterna Factor			Measured Level	Pol/ Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m		
1	0.163	71.47	14.69	0.01	32.84	53.33	VERTICAL	Average
2	0.589	61.92	14.26	0.05	32.83	43.40	VERTICAL	QP
3	1.888	49.37	13.97	0.06	32.83	30.57	VERTICAL	QP
4	13.561	86.78	10.51	0.20	32.81	64.68	VERTICAL	QP
5	18.524	54.24	9.57	0.23	32.81	31.23	VERTICAL	QP
6	27.127	53.59	6.23	0.28	32.83	27.27	VERTICAL	QP

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Frequency (MHz)	Level @3m (dBuV/m)	Limit @300m (dBuV/m)	Convert Factor (dB)	Level @ 300m (dBuV/m)	Over limit (dB)	Remark
0.163	53.33	23.36	-80	-26.67	-50.03	AV
Frequency (MHz)	Level @3m (dBuV/m)	Limit @30m (dBuV/m)	Convert Factor (dB)	Level @ 30m (dBuV/m)	Over limit (dB)	Remark
0.589	43.40	32.20	-40	3.40	-28.80	QP
1.888	30.57	29.54	-40	-9.43	-38.97	QP
13.561	64.68	29.54	-40	24.68	-4.86	QP
18.524	31.23	29.54	-40	-8.77	-38.31	QP
27.127	27.27	29.54	-40	-12.73	-42.27	QP

Remark:

Extrapolation Correction (dB)@3m to 300 m = $40*\log(3/300)=-80$ according to FCC part 15.31 (f) (1) Extrapolation Correction (dB)@3m to 30 m = $40^{10}(3/30) = -40$ according to FCC part 15.31 (f) (1) Level (dBuV/m) @ 300m = Measured Level (dBuV/m) @3m + Extrapolation Correction (dB)@3 m to 300 m Level (dBuV/m) @ 30m = Measured Level (dBuV/m) @3m + Extrapolation Correction (dB)@3 m to 30 m



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7.6 Radiated Emissions (30MHz-1GHz)

Test Requirement	47 CFR Part 15, Subpart C 15.225(d) & 15.209
Test Method:	ANSI C63.10 (2013) Section 6.4&6.5
Limit:	

Field Measurement Frequency(MHz) strength(microvolts/meter) distance(meters) 30-88 100 3 88-216 150 3 200 3 216-960 Above 960 500 3

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

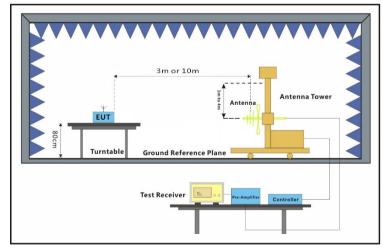
7.6.1 E.U.T. Operation

Operating Enviro	nment:					
Temperature:	22.5 °C	Humidity:	52.5 % RH	Atmospheric Pressure:	1013	mbar

7.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	06	NFC 1 TX mode with modulation
Final test	08	NFC 2 TX mode with modulation

7.6.3 Test Setup Diagram





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7.6.4 Measurement Procedure and Data

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground for below 1GHz at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, guasi-peak or average method as specified and then reported in a data sheet. g. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report. Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor



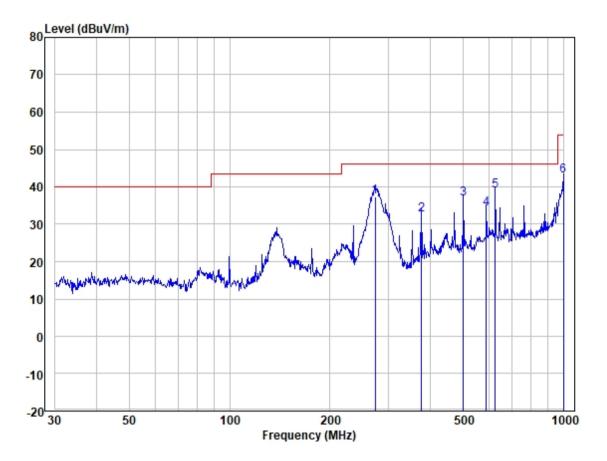
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Test Mode: 06; Polarity: Horizontal

Site	:	966	Chamber
Job	:		
Model	:		
Power	:	120v	r
Test Mode:			

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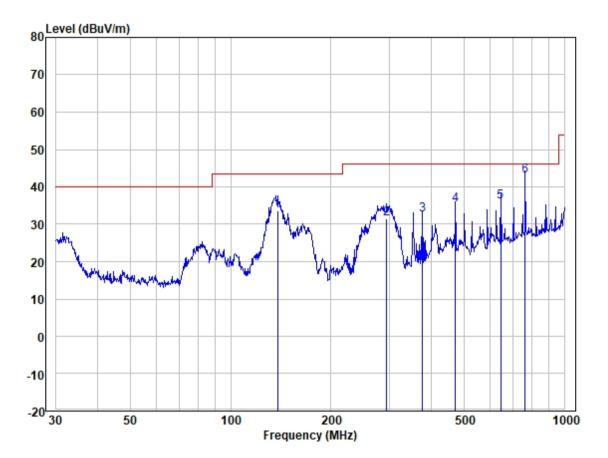
		Read	Anterna	Cable	Preamp	Measured	Limit	Over	Pol/	
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	273.234	50.68	18.46	0.95	32.87	37.22	46.02	-8.80	HORIZONTAL	QP
2	375.939	43.43	20.87	1.13	32.91	32.52	46.02	-13.50	HORIZONTAL	QP
3	501.179	45.01	23.58	1.29	32.99	36.89	46.02	-9.13	HORIZONTAL	QP
4	586.844	40.32	25.33	1.42	32.91	34.16	46.02	-11.86	HORIZONTAL	QP
5	625.078	44.22	26.20	1.45	32.84	39.03	46.02	-6.99	HORIZONTAL	QP
6	1000.000	42.60	30.05	1.84	31.64	42.85	53.98	-11.13	HORIZONTAL	QP

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Test Mode: 06; Polarity: Vertical

Site	:	966	Chamber
Job	:		
Model	:		
Power	:	120	v
Test Mode:			

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		Read	Anterna	Cable	Preamp	Measured	Limit	Over	Pol/	
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	138.387	47.22	18.59	0.64	32.81	33.64	43.52	-9.88	VERTICAL	QP
2	293.084	44.21	19.13	0.97	32.88	31.43	46.02	-14.59	VERTICAL	QP
3	375.939	43.39	20.87	1.13	32.91	32.48	46.02	-13.54	VERTICAL	QP
4	470.523	43.70	23.11	1.27	32.98	35.10	46.02	-10.92	VERTICAL	QP
5	645.120	40.73	26.63	1.47	32.75	36.08	46.02	-9.94	VERTICAL	QP
6	763.376	45.71	28.13	1.63	32.46	43.01	46.02	-3.01	VERTICAL	QP

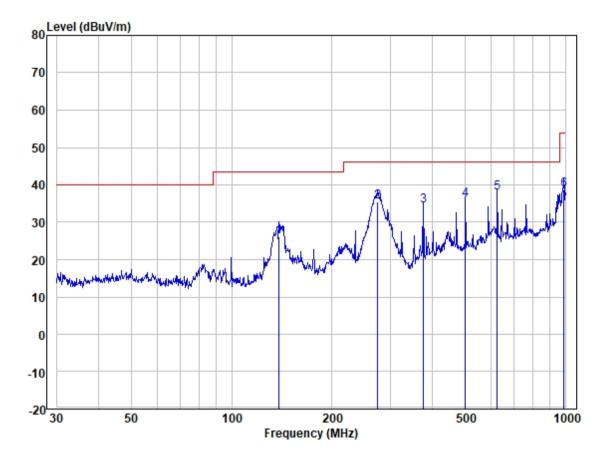
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Test Mode: 08; Polarity: Horizontal

Site	:	966 Chamber
Job	:	
Model	:	
Power	:	120v
Test Mode:		

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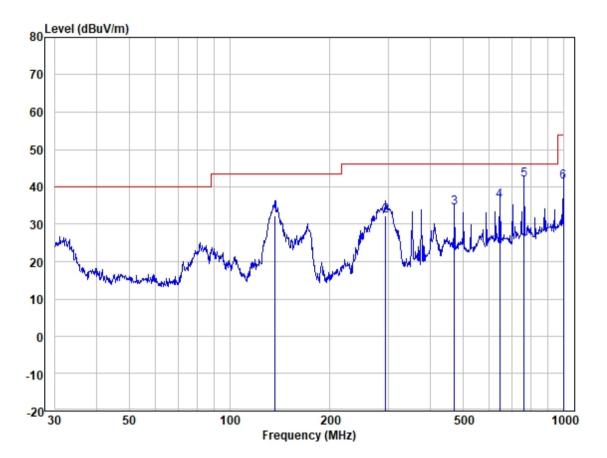
	Freq					Measured Level			Pol/ Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	138.874	39.66	18.59	0.64	32.81	26.08	43.52	-17.44	HORIZONTAL	QP
2	274.194	48.73	18.52	0.95	32.87	35.33	46.02	-10.69	HORIZONTAL	QP
3	375.939	45.20	20.87	1.13	32.91	34.29	46.02	-11.73	HORIZONTAL	QP
4	501.179	44.05	23.58	1.29	32.99	35.93	46.02	-10.09	HORIZONTAL	QP
5	625.078	42.96	26.20	1.45	32.84	37.77	46.02	-8.25	HORIZONTAL	QP
6	989.536	38.74	29.80	1.84	31.66	38.72	53.98	-15.26	HORIZONTAL	QP

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Test Mode: 08; Polarity: Vertical

Site	:	966	Chamber
Job	:		
Model	:		
Power	:	120	V
Test Mode:			

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	Freq					Measured Level			Pol/ Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	136.939	46.05	18.50	0.64	32.81	32.38	43.52	-11.14	VERTICAL	QP
2	293.084	45.08	19.13	0.97	32.88	32.30	46.02	-13.72	VERTICAL	QP
3	470.523	43.13	23.11	1.27	32.98	34.53	46.02	-11.49	VERTICAL	QP
4	645.120	40.93	26.63	1.47	32.75	36.28	46.02	-9.74	VERTICAL	QP
5	763.376	44.62	28.13	1.63	32.46	41.92	46.02	-4.10	VERTICAL	QP
6	1000.000	41.21	30.05	1.84	31.64	41.46	53.98	-12.52	VERTICAL	QP

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Test Setup Photo 8

Refer to Appendix - Test Setup Photo for GZCR240800092305



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EUT Constructional Details (EUT Photos) 9

Refer to Appendix - External and Internal Photos for GZCR2408000923AT

- End of the Report -



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