



TEST REPORT

Application No.: GZCR2203000316AT
Applicant: Lidl US, LLC
Address of Applicant: 3500 S Clark Street, ARLINGTON VA 22202, USA
Manufacturer: Lidl US, LLC
Address of Manufacturer: 3500 S Clark Street, ARLINGTON VA 22202, USA
Factory: FUJIAN YOUTONG INDUSTRIES CO., LTD.
Address of Factory: North part of 1st, 2nd-3rd floor, Building 1#, M9511 industries Park, No.18, Majiang Road, Mawei District, Fuzhou City, Fujian, China

Equipment Under Test (EUT):

EUT Name: Qi & USB Charging station

Model No.: HG07781A-US, HG07781B-US

✱

Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.

Standard(s) : 47 CFR Part 15, Subpart C

Date of Receipt: 2022-03-29

Date of Test: 2022-03-29 to 2022-04-08

Date of Issue: 2022-04-11

Test Result:

Pass*

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

Kobe Jian

Kobe Jian
EMC Laboratory Manager



Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2022-04-11		Original

Authorized for issue by				
Tested By				
		Curry Wu/Project Engineer		
Reviewed By				
		Ricky Liu/Reviewer		

2 Test Summary

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

Radio Spectrum Matter Part				
Item	Standard	Method	Requirement	Result
20dB Bandwidth	47 CFR Part 15, Subpart C	ANSI C63.10 (2013) Section 6.9.2	47 CFR Part 15, Subpart C 15.215	Pass
Restricted band		ANSI C63.10 (2013) Section 6.10.5	47 CFR Part 15, Subpart C 15.205	Pass
Conducted Emissions at AC Mains Power Port (150kHz-30MHz)		ANSI C63.10 (2013) Section 6.2	47 CFR Part 15, Subpart C 15.207	Pass
Radiated Emissions (9kHz-30MHz)		ANSI C63.10 (2013) Section 6.4	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Radiated Emissions (30MHz-1GHz)		ANSI C63.10 (2013) Section 6.5	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass

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.

Declaration of EUT Family Grouping:

Model No.: HG07781A-US, HG07781B-US

Only the model HG07781A-US was tested, since according to the declaration from the applicant, the electrical circuit design, PCB layout, components used and internal wiring and functions were identical for the above models, with only difference on color and model No..



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4 General Information

4.1 Details of E.U.T.

Power supply:	Input: DC 9V/3A Output: WPC: 5W/7.5W/10W Dual USB-A output: 5V/1A
Cable(s):	Type-C cable: 105cm shielded
Modulation Type:	Load modulation
Antenna Type:	Loop antenna
Operation Frequency:	114.6kHz to 144.2kHz
Remark:	Tests were conducted in all load modes and the worst case mode was reported in each test item.

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Adapter	Xiaomi	MDY-12-ES	Client supplied
iPhone 8	Apple	A1863	REF. No.SEA16J00
Mobile Phone	Nexus	MRA58K	REF. No.SEA16P00
Mobile Phone	SAMSUNG	SM-G9810	REF. No.SEA16K00

4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
20dB Bandwidth	+/-3%
Restricted band	± 3%
Conducted Emissions at AC Mains Power Port (150kHz-30MHz)	±2.76dB
Radiated Emissions (9kHz-30MHz)	± 4.5dB
Radiated Emissions (30MHz-1GHz)	±5.00dB (30MHz-1GHz; 3m);±4.38dB (30MHz-1GHz; 10m)

4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,
198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District,
Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.

4.5 Test Facility

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

- **NVLAP (Lab Code: 200611-0)**

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

- **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.

- **CNAS (Lab Code: L0167)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2018 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2017 General Requirements) for the Competence of Testing Laboratories.

- **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.



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4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None



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5 Equipment List

20dB Bandwidth					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMI Test Receiver(1Hz-8GHz)	Rohde & Schwarz	ESW8	EMC2220	2021-05-26	2022-05-25
6dB Attenuator	HP	8491A	EMC2062	2020-04-15	2022-04-14
MI CABLE	SGS-EMC	0.8M	EMC2136	2021-11-01	2023-11-01

Restricted band					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMI Test Receiver(1Hz-8GHz)	Rohde & Schwarz	ESW8	EMC2220	2021-05-26	2022-05-25
6dB Attenuator	HP	8491A	EMC2062	2020-04-15	2022-04-14
MI CABLE	SGS-EMC	0.8M	EMC2136	2021-11-01	2023-11-01

Conducted Emissions at AC Mains Power Port (150kHz-30MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Shielding Room	ChangZhou ZhongYu	8m x 3m x 3.8m	EMC0306	N/A	N/A
Two-Line V-Network	Rohde & Schwarz	ENV216	EMC0118	2021-12-23	2022-12-22
Two-Line V-Network-GZ	Rohde & Schwarz	ENV216	EMC2135	2021-09-24	2022-09-23
Coaxial Cable	HangTianXing	2m	EMC0107	2020-09-09	2022-09-08
Test Software E3c	Audix	Ver. 5.4.1221b	GZE100-62	N/A	N/A
EMI Test Receiver(9kHz-3.6GHz)	Rohde & Schwarz	ESR3	EMC2221	2021-06-01	2022-05-31

Radiated Emissions (9kHz-30MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Chamber cable	HangTianXing	N/A	EMC0542	2020-09-09	2022-09-08
Amplifier(9kHz-1.3GHz)	HP	8447F	EMC2065	2021-05-19	2022-05-18
Active Loop Antenna-RED	ETS-Lindgren	6502	EMC2190	2022-04-06	2024-04-05
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2019-10-20	2022-10-19
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A
EMI Test Receiver(1Hz-8GHz)	Rohde & Schwarz	ESW8	EMC2220	2021-05-26	2022-05-25



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Radiated Emissions (30MHz-1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Chamber cable	HangTianXing	N/A	EMC0542	2020-09-09	2022-09-08
Trilog Broadband Antenna(25MHz-1GHz)-Lab	SCHWARZBECK MESS-ELEKTRONIK	VULB 9168	SEM003-18	2022-02-21	2025-02-20
Amplifier(9kHz-1.3GHz)	HP	8447F	EMC2065	2021-05-19	2022-05-18
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2019-10-20	2022-10-19
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A
EMI Test Receiver(1Hz-8GHz)	Rohde & Schwarz	ESW8	EMC2220	2021-05-26	2022-05-25

General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
DMM	Fluke	73	EMC0006	2021-07-05	2022-07-05
DMM	Fluke	73	EMC0007	2021-07-05	2022-07-05



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6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203

6.1.2 Conclusion

Standard 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 use an unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

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.

Please refer to internal photos.

7 Radio Spectrum Matter Test Results

7.1 20dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.215

Test Method: ANSI C63.10 (2013) Section 6.9.2

7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 23.2 °C

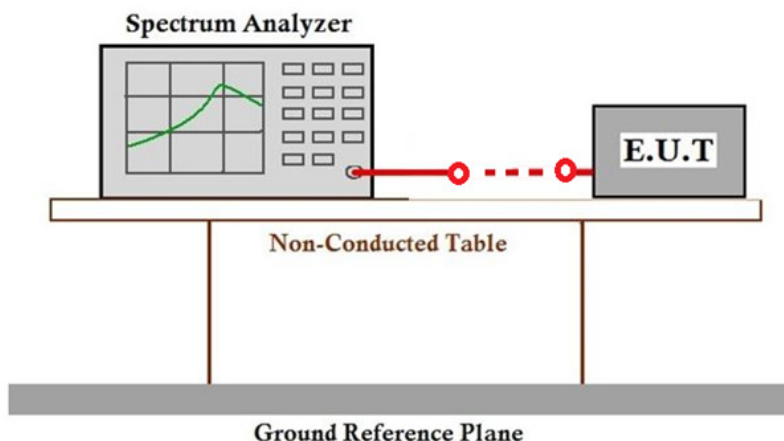
Humidity: 56.4 % RH

Atmospheric Pressure: 1003 mbar

7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Pre-scan	00	Charge mode_Keep the EUT charging(5W)
Pre-scan	01	Charge mode_Keep the EUT charging(7.5W)
Final test	02	Charge mode_Keep the EUT charging(10W)

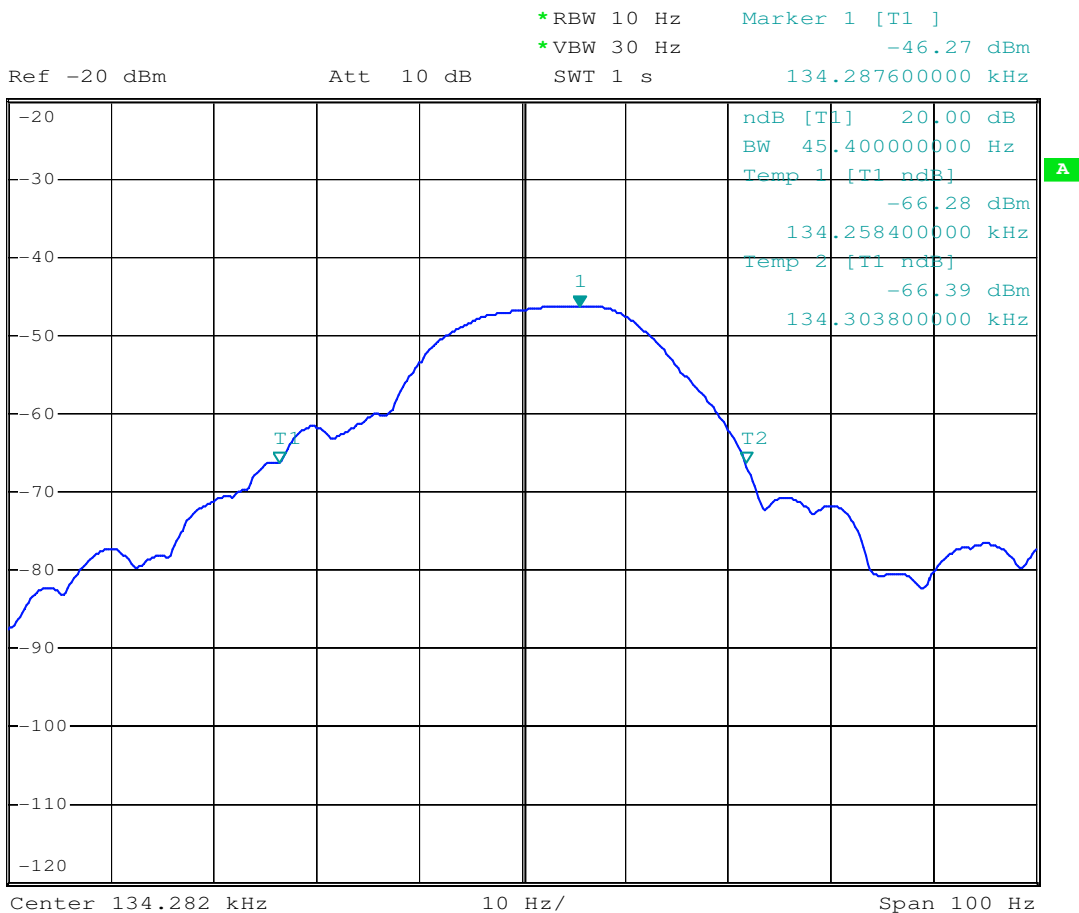
7.1.3 Test Setup Diagram



7.1.4 Measurement Procedure and Data

Mode 02:

Test Frequency(KHz)	20dB bandwidth (KHz)	Limit (KHz)	Results
134.2876	0.0454	N/A	Pass



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7.2 Restricted band

Test Requirement: 47 CFR Part 15, Subpart C 15.205
 Test Method: ANSI C63.10 (2013) Section 6.10.5
 Limit: The fundamental wave can't fall in the restricted band 90KHz-110KHz

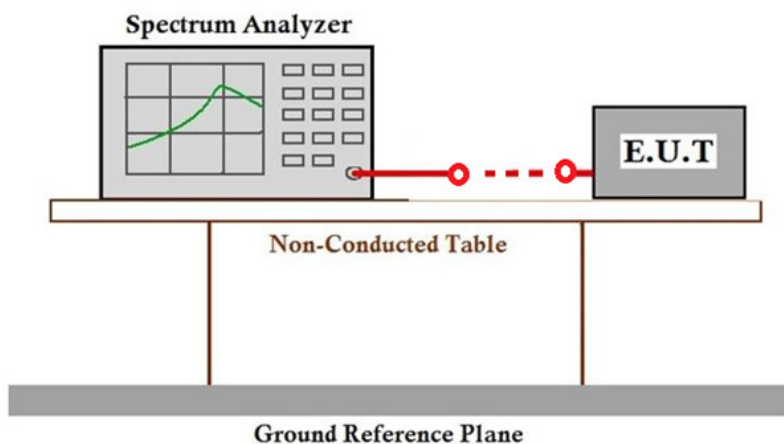
7.2.1 E.U.T. Operation

Operating Environment:
 Temperature: 23.9 °C Humidity: 56.3 % RH Atmospheric Pressure: 1003 mbar

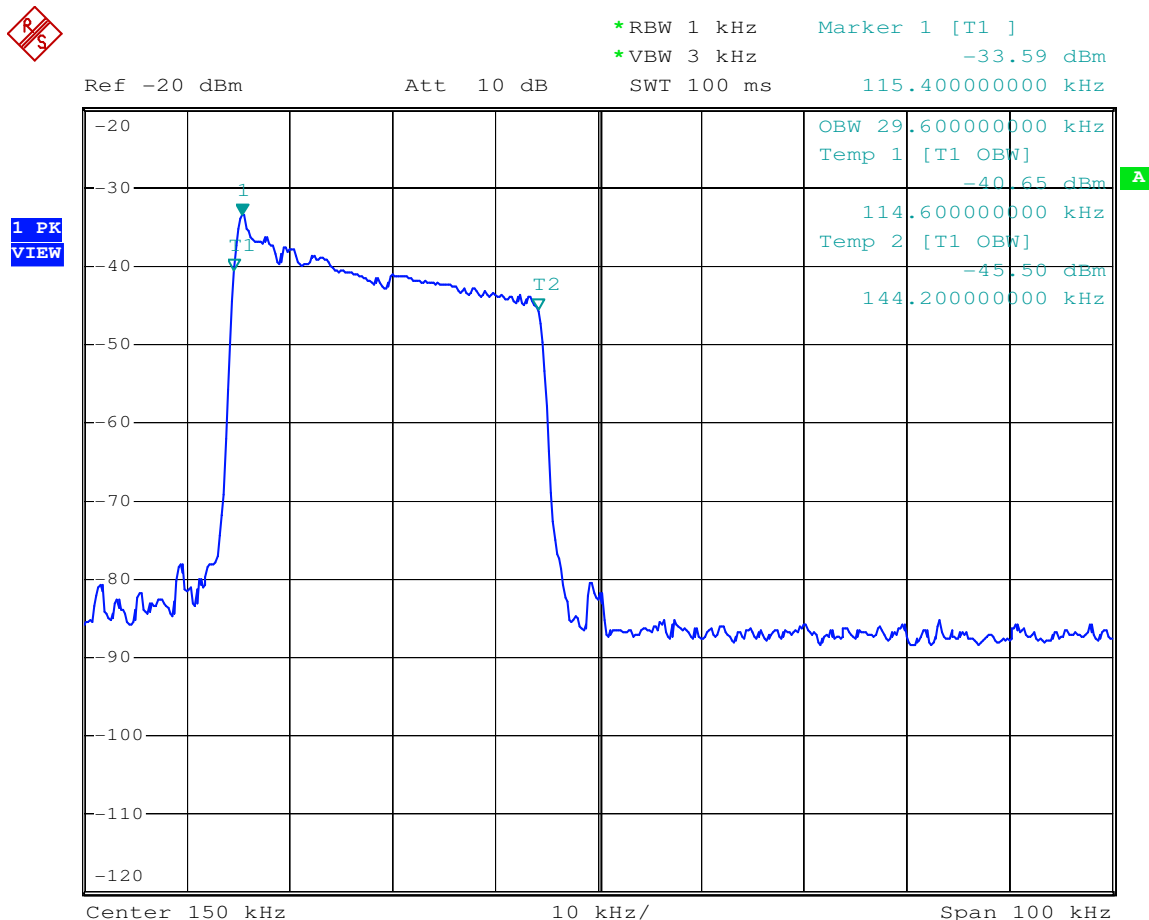
7.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Pre-scan	00	Charge mode_Keep the EUT charging(5W)
Pre-scan	01	Charge mode_Keep the EUT charging(7.5W)
Final test	02	Charge mode_Keep the EUT charging(10W)

7.2.3 Test Setup Diagram



7.2.4 Measurement Procedure and Data



According the test data above, the fundamental wave is not fall in the restricted band 90KHz-110KHz, the field strength also meets the 15.209 requirement, please refer to clause 7.4.

7.3 Conducted Emissions at AC Mains Power Port (150kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.207

Test Method: ANSI C63.10 (2013) Section 6.2

Limit:

Frequency of emission(MHz)	Conducted limit(dBμV)	
	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.

Detector: Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

7.3.1 E.U.T. Operation

Operating Environment:

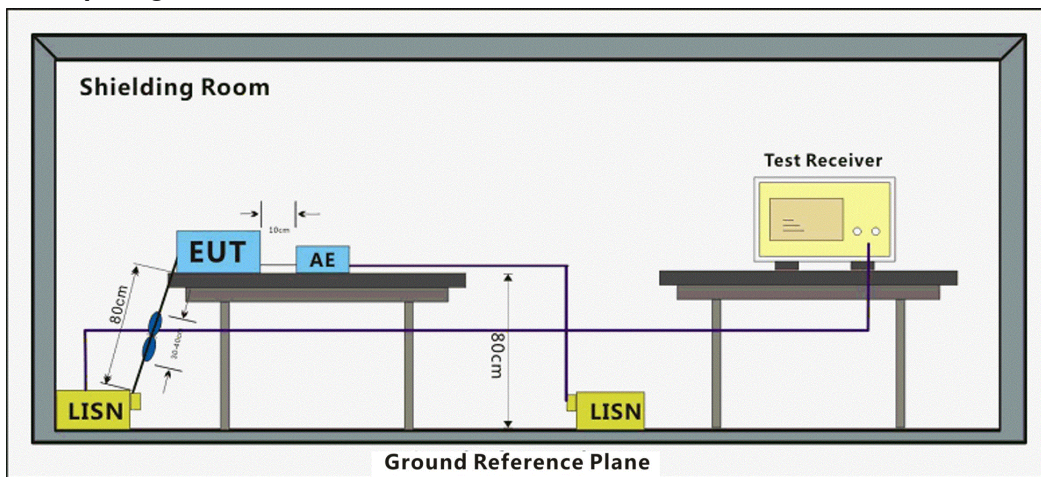
Temperature: 23.8 °C

Humidity: 56.1 % RH

Atmospheric Pressure: 1003 mbar

7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Pre-scan	00	Charge mode_Keep the EUT charging(5W)
Pre-scan	01	Charge mode_Keep the EUT charging(7.5W)
Final test	02	Charge mode_Keep the EUT charging(10W)

7.3.3 Test Setup Diagram

7.3.4 Measurement Procedure and Data

- 1) 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.

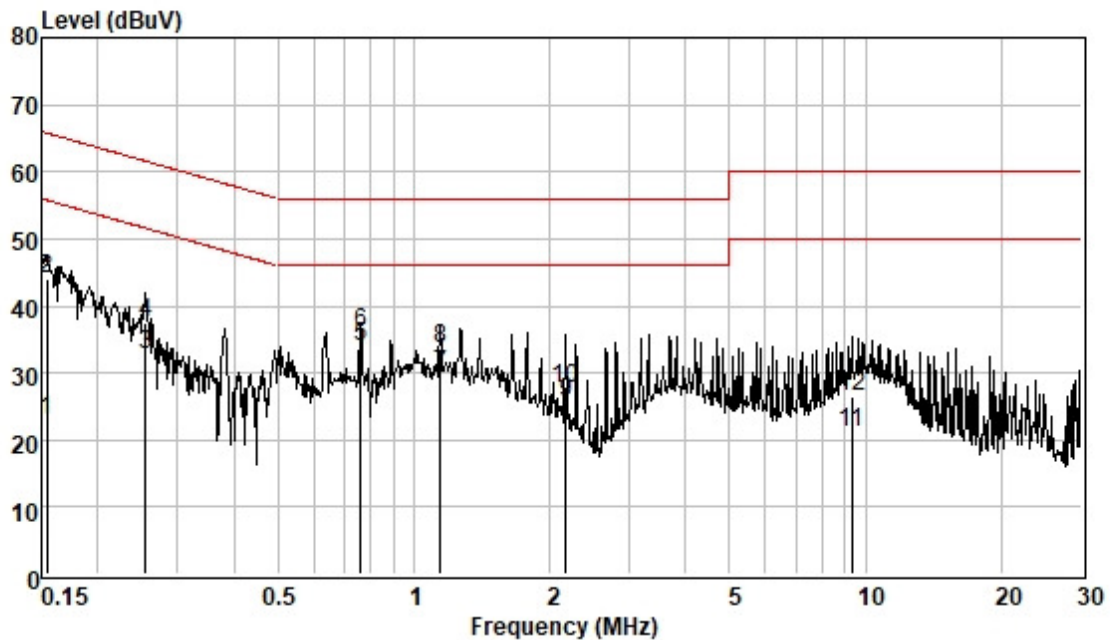
Remark: LISN=Read Level+ Cable Loss+ LISN Factor



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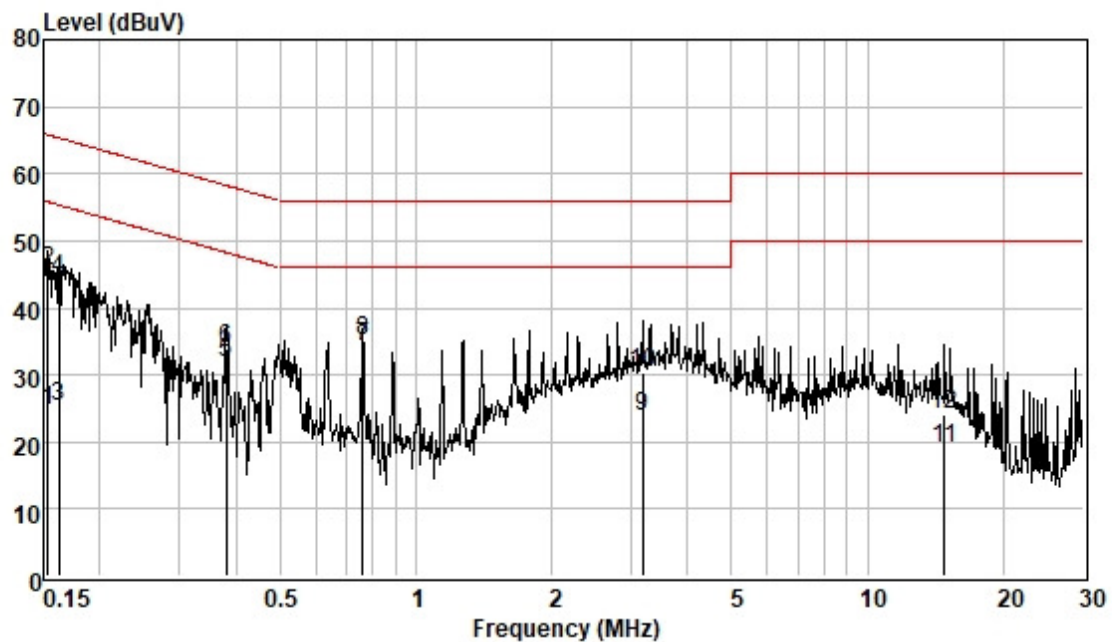
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Test Mode: 02; Line: Live line

Pol : LINE
Mode :
Model :

	Freque	Read	Cable	LISN	Measured	Limit	Over	Remark
	nc	Level	Loss	Factor	Level	Line	Limit	
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.154	13.25	0.06	9.54	22.85	55.78	-32.93	Average
2	0.154	34.38	0.06	9.54	43.98	65.78	-21.80	QP
3	0.255	23.14	0.06	9.57	32.77	51.60	-18.83	Average
4	0.255	27.72	0.06	9.57	37.35	61.60	-24.25	QP
5	0.763	24.18	0.07	9.60	33.85	46.00	-12.15	Average
6	0.763	26.45	0.07	9.60	36.12	56.00	-19.88	QP
7	1.147	19.98	0.08	9.60	29.66	46.00	-16.34	Average
8	1.147	23.78	0.08	9.60	33.46	56.00	-22.54	QP
9	2.167	15.96	0.12	9.60	25.68	46.00	-20.32	Average
10	2.167	17.88	0.12	9.60	27.60	56.00	-28.40	QP
11	9.302	11.03	0.22	9.77	21.02	50.00	-28.98	Average
12	9.302	16.36	0.22	9.77	26.35	60.00	-33.65	QP

Test Mode: 02; Line: Neutral Line

Pol : NEUTRAL
Mode :
Model :

	Freque	Read	Cable	LISN	Measured	Limit	Over	Remark
	nc	Level	Loss	Factor	Level	Line	Limit	
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.153	15.18	0.06	9.53	24.77	55.82	-31.05	Average
2	0.153	35.87	0.06	9.53	45.46	65.82	-20.36	QP
3	0.162	15.71	0.06	9.54	25.31	55.34	-30.03	Average
4	0.162	34.65	0.06	9.54	44.25	65.34	-21.09	QP
5	0.381	22.26	0.06	9.58	31.90	48.25	-16.35	Average
6	0.381	24.41	0.06	9.58	34.05	58.25	-24.20	QP
7	0.763	24.50	0.07	9.59	34.16	46.00	-11.84	Average
8	0.763	25.34	0.07	9.59	35.00	56.00	-21.00	QP
9	3.173	13.99	0.15	9.61	23.75	46.00	-22.25	Average
10	3.173	20.55	0.15	9.61	30.31	56.00	-25.69	QP
11	14.750	8.88	0.31	9.86	19.05	50.00	-30.95	Average
12	14.750	13.84	0.31	9.86	24.01	60.00	-35.99	QP

7.4 Radiated Emissions (9kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.4

Measurement Distance: 3m

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz. 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.

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):

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

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):

$$FS_{(10m)} = FS_{(30/300m)} + 20\log\{d_{(30/300m)}/d_{(10m)}\} \quad (3)$$

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):

$$FS_{(10m)} = FS_{(30/300m)} + 40\log\{d_{(30/300m)}/d_{(10m)}\} \quad (4)$$

Remark:

$$d_{near\ field} = 47.77 / f_{MHz}$$

where f_{MHz} is the frequency of the emission being measured in MHz.



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7.4.1 E.U.T. Operation

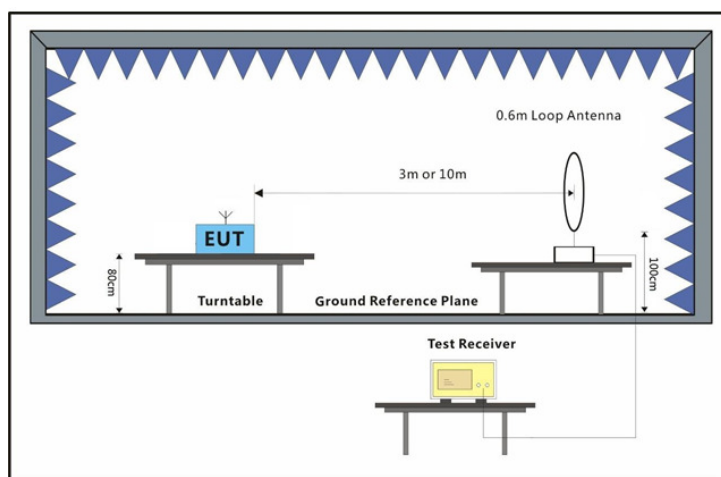
Operating Environment:

Temperature: 23.6 °C Humidity: 56.8 % RH Atmospheric Pressure: 1003 mbar

7.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Pre-scan	00	Charge mode_Keep the EUT charging(5W)
Pre-scan	01	Charge mode_Keep the EUT charging(7.5W)
Final test	02	Charge mode_Keep the EUT charging(10W)

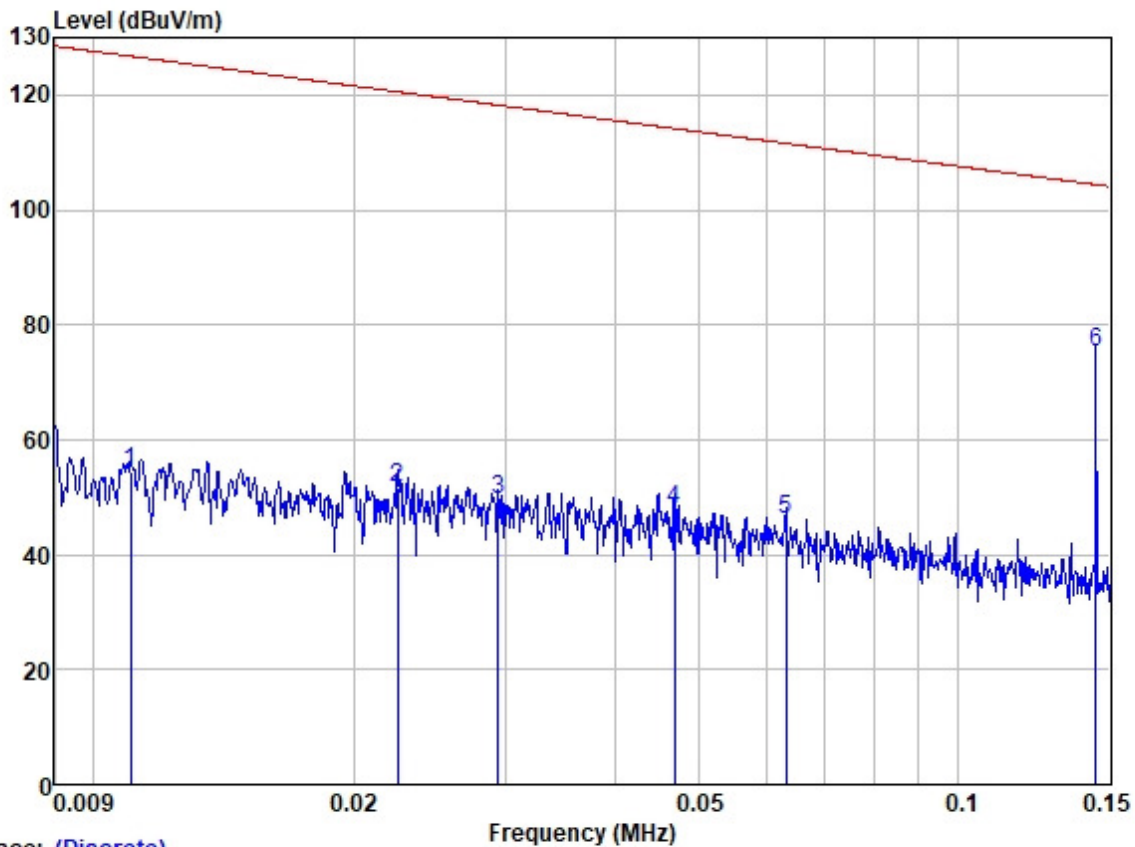
7.4.3 Test Setup Diagram



7.4.4 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.

Test Mode: 02; Polarity: Coplanar



Trace: (Discrete)

Site : SGS

Condition:

Job :

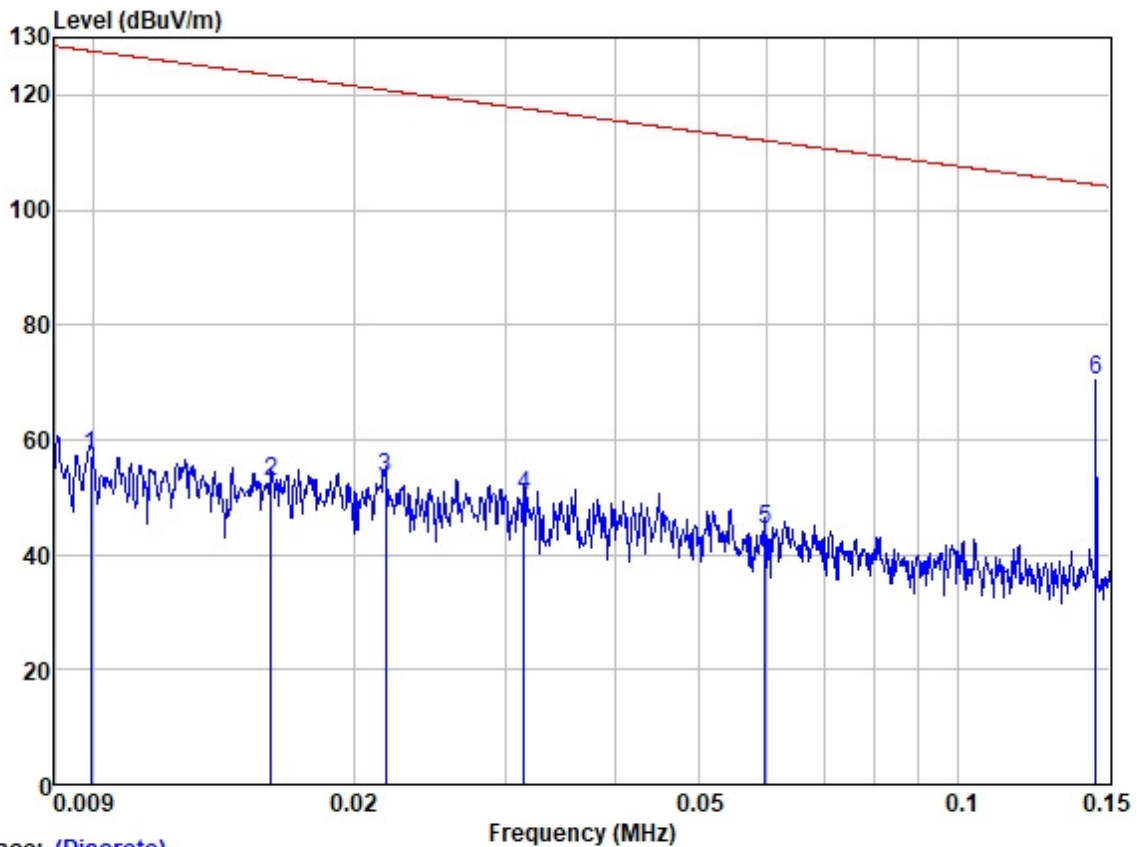
Model :

Power :

Test Mode:

	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	0.011	66.96	15.58	0.05	28.19	54.40	126.76	-72.36	VERTICAL	Average
2	0.022	67.28	12.92	0.05	28.45	51.80	120.58	-68.78	VERTICAL	Average
3	0.029	65.53	12.62	0.05	28.77	49.43	118.26	-68.83	VERTICAL	Average
4	0.047	64.96	11.93	0.05	29.26	47.68	114.18	-66.50	VERTICAL	Average
5	0.063	63.88	11.54	0.05	29.36	46.11	111.58	-65.47	VERTICAL	Average
6	0.144	93.93	10.62	0.05	29.46	75.14	104.42	-29.28	VERTICAL	Average

Test Mode: 02; Polarity: coaxial

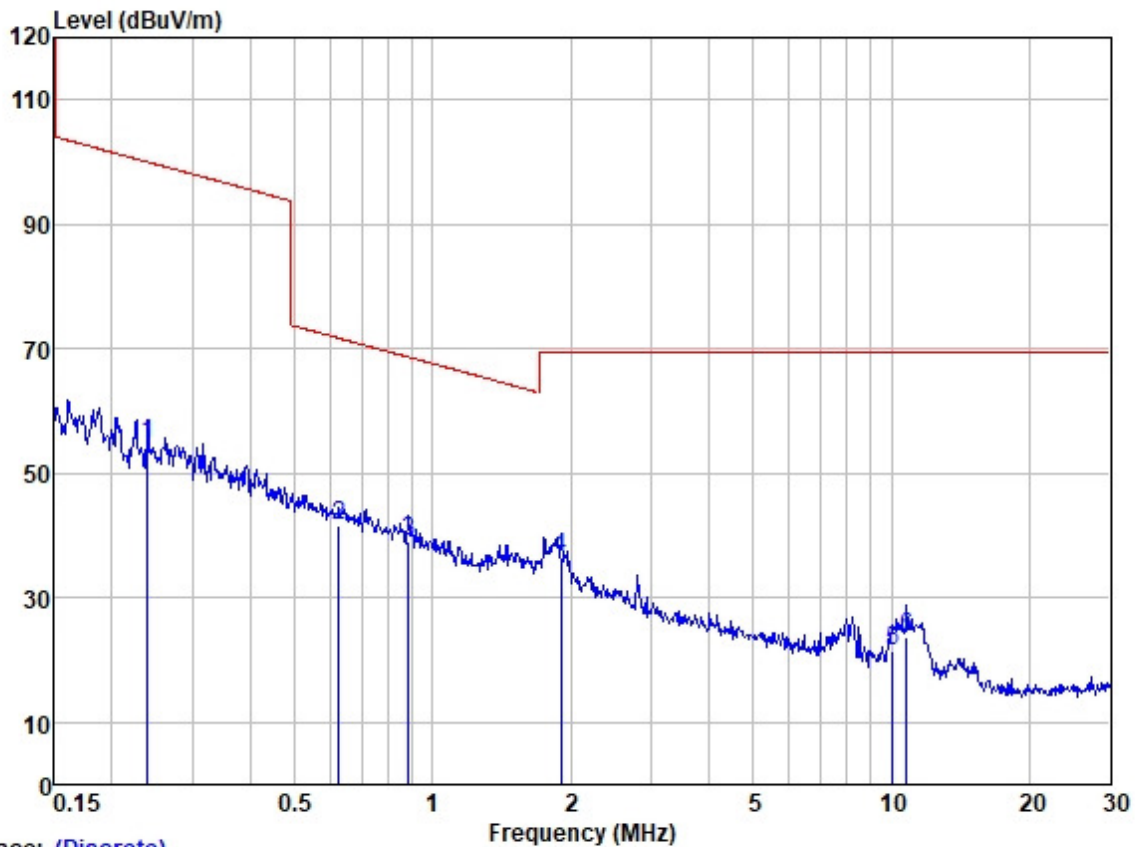


Trace: (Discrete)

Site : SGS
Condition:
Job :
Model :
Power :
Test Mode:

	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
		Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	0.010	69.44	15.94	0.05	28.17	57.26	127.69	-70.43	HORIZONTAL	Average
2	0.016	67.49	13.62	0.05	28.29	52.87	123.51	-70.64	HORIZONTAL	Average
3	0.022	68.84	12.95	0.05	28.43	53.41	120.85	-67.44	HORIZONTAL	Average
4	0.031	66.60	12.45	0.05	28.92	50.18	117.65	-67.47	HORIZONTAL	Average
5	0.060	62.04	11.66	0.05	29.35	44.40	112.07	-67.67	HORIZONTAL	Average
6	0.144	89.14	10.62	0.05	29.46	70.35	104.42	-34.07	HORIZONTAL	Average

Test Mode: 02; Polarity: coaxial



Trace: (Discrete)

Site : SGS

Condition:

Job :

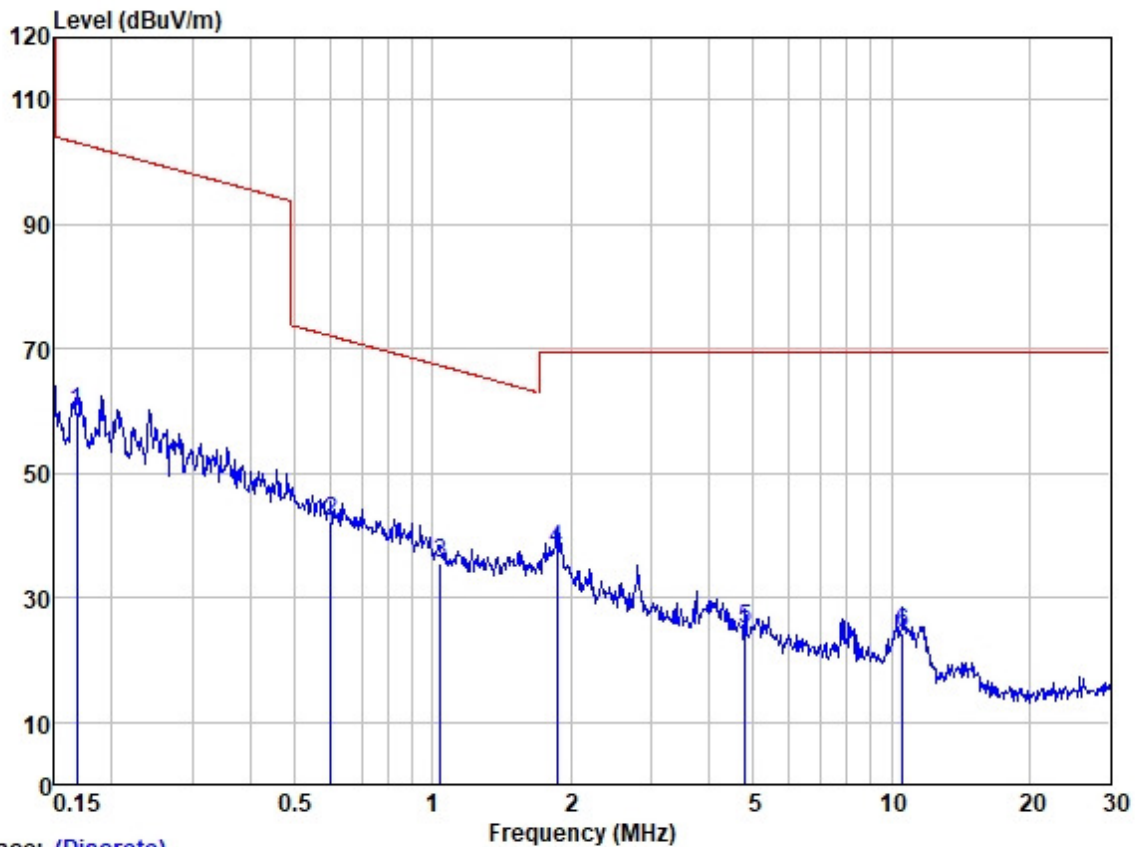
Model :

Power :

Test Mode:

	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	0.239	73.31	10.79	0.05	29.45	54.70	100.03	-45.33	HORIZONTAL	Average
2	0.624	60.28	10.63	0.11	29.42	41.60	71.70	-30.10	HORIZONTAL	QP
3	0.885	57.94	10.43	0.13	29.41	39.09	68.67	-29.58	HORIZONTAL	QP
4	1.908	54.62	10.98	0.20	29.38	36.42	69.54	-33.12	HORIZONTAL	QP
5	10.072	40.14	10.10	0.52	29.29	21.47	69.54	-48.07	HORIZONTAL	QP
6	10.790	42.58	9.93	0.53	29.28	23.76	69.54	-45.78	HORIZONTAL	QP

Test Mode: 02; Polarity: Coplanar



Trace: (Discrete)

Site : SGS

Condition:

Job :

Model :

Power :

Test Mode:

	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	0.168	78.40	10.74	0.05	29.45	59.74	103.12	-43.38	VERTICAL	Average
2	0.601	60.96	10.65	0.10	29.42	42.29	72.02	-29.73	VERTICAL	QP
3	1.043	54.40	10.42	0.13	29.41	35.54	67.24	-31.70	VERTICAL	QP
4	1.868	56.12	10.97	0.19	29.38	37.90	69.54	-31.64	VERTICAL	QP
5	4.797	43.50	10.51	0.35	29.33	25.03	69.54	-44.51	VERTICAL	QP
6	10.564	43.25	9.99	0.53	29.29	24.48	69.54	-45.06	VERTICAL	QP

7.5 Radiated Emissions (30MHz-1GHz)

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.5

Measurement Distance: 10m

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
30-88	100	3
88-216	150	3
216-960	200	3
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 9-90kHz, 110-490kHz and 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.

7.5.1 E.U.T. Operation

Operating Environment:

Temperature: 23.1 °C

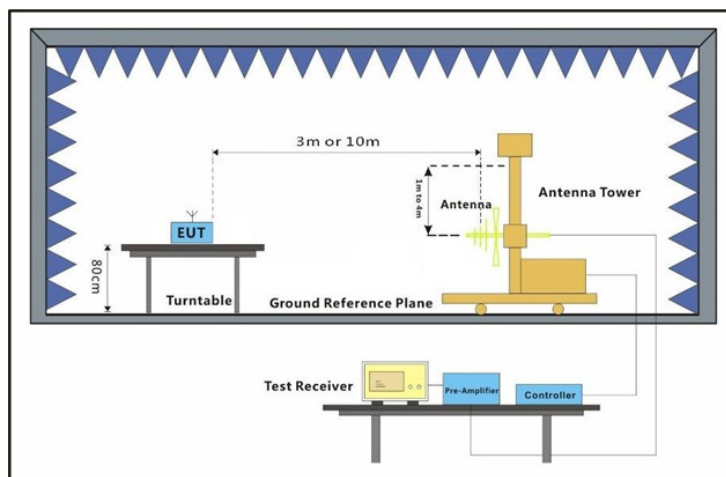
Humidity: 56.3 % RH

Atmospheric Pressure: 1003 mbar

7.5.2 Test Mode Description

Pre-scan / Mode	Code	Description
Final test		
Pre-scan	00	Charge mode_Keep the EUT charging(5W)
Pre-scan	01	Charge mode_Keep the EUT charging(7.5W)
Final test	02	Charge mode_Keep the EUT charging(10W)

7.5.3 Test Setup Diagram



7.5.4 Measurement Procedure and Data

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 10 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, quasi-peak or average method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j. Repeat above procedures until all frequencies measured was complete.

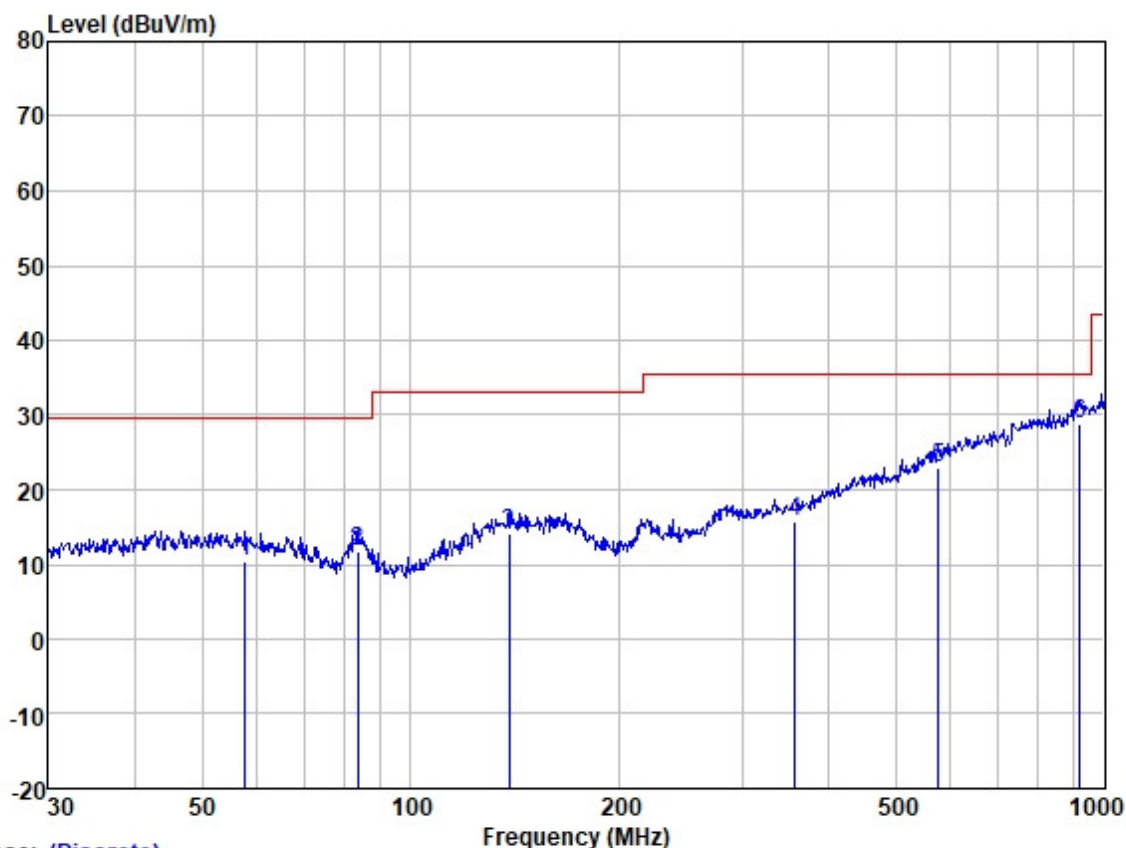
Remark: Level=Read Level+Cable Loss+Antenna Factor-Preamplifier Factor



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Test Mode: 02; Polarity: Horizontal



Trace: (Discrete)

Site : SGS

Condition:

Job :

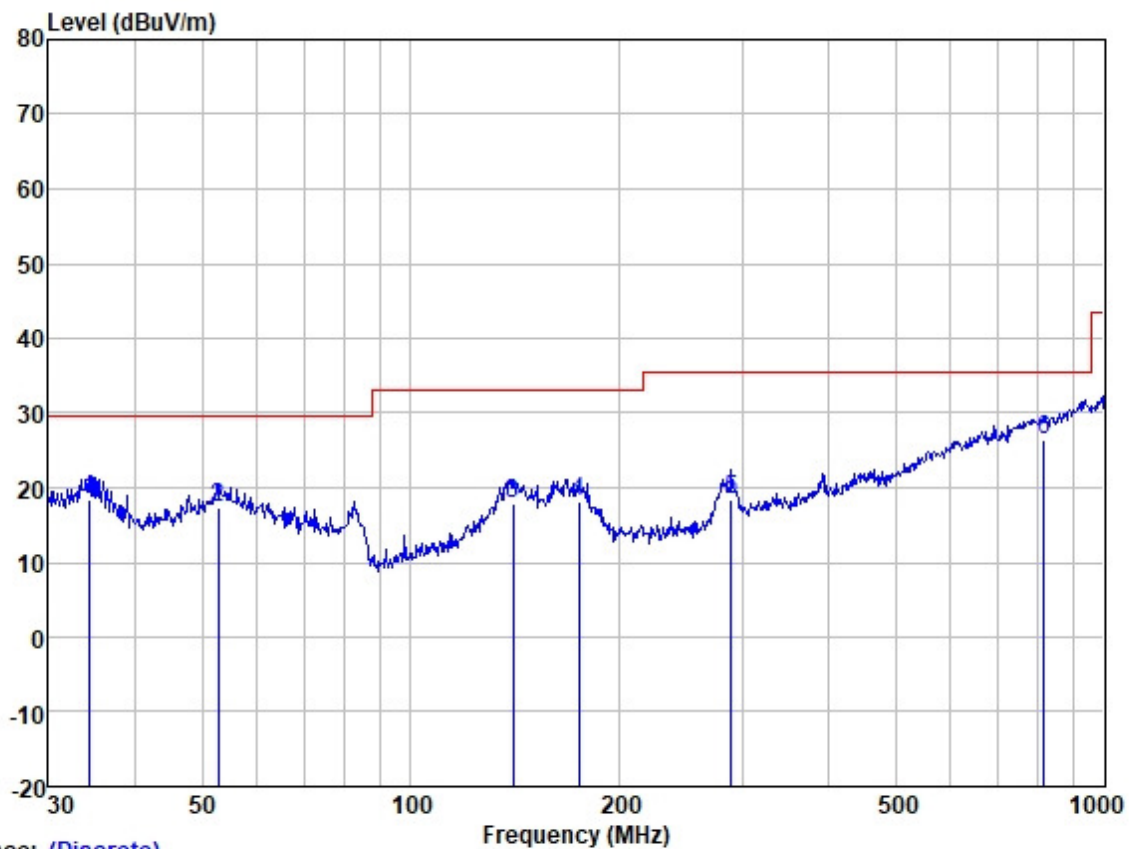
Model :

Power :

Test Mode:

	Freq	ReadAntenna	Cable Preamp	Limit	Over				
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	57.594	23.11	13.15	1.22	27.16	10.32	29.50	-19.18	HORIZONTAL QP
2	83.816	29.21	8.08	1.53	27.09	11.73	29.50	-17.77	HORIZONTAL QP
3	138.387	26.38	12.71	2.07	26.94	14.22	33.10	-18.88	HORIZONTAL QP
4	357.929	24.65	14.35	3.70	27.09	15.61	35.60	-19.99	HORIZONTAL QP
5	576.644	26.94	19.08	5.02	28.18	22.86	35.60	-12.74	HORIZONTAL QP
6	922.516	25.80	23.78	7.01	27.82	28.77	35.60	-6.83	HORIZONTAL QP

Test Mode: 02; Polarity: Vertical



Trace: (Discrete)

Site : SGS

Condition:

Job :

Model :

Power :

Test Mode:

	Freq	ReadAntenna	Cable Preamp	Limit	Over					
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	34.396	32.21	12.41	1.06	27.18	18.50	29.50	-11.00	VERTICAL	QP
2	52.760	29.75	13.54	1.17	27.17	17.29	29.50	-12.21	VERTICAL	QP
3	140.342	29.82	12.87	2.10	26.92	17.87	33.10	-15.23	VERTICAL	QP
4	174.424	30.14	12.30	2.42	26.76	18.10	33.10	-15.00	VERTICAL	QP
5	290.017	28.80	12.96	3.12	26.56	18.32	35.60	-17.28	VERTICAL	QP
6	818.834	25.38	22.65	6.30	28.00	26.33	35.60	-9.27	VERTICAL	QP

The test was performed at a 10m test site. According to below formulate and the test data at 10m test distance,

$$L_3 / L_{10} = D_{10} / D_3$$

Note:

L₃: Level @ 3m distance. Unit: uV/m;

L₁₀: Level @ 10m distance. Unit: uV/m;

D₃: 3m distance. Unit: m

D₁₀: 10m distance. Unit: m

The level at 3m test distance is below:

Mode 02:

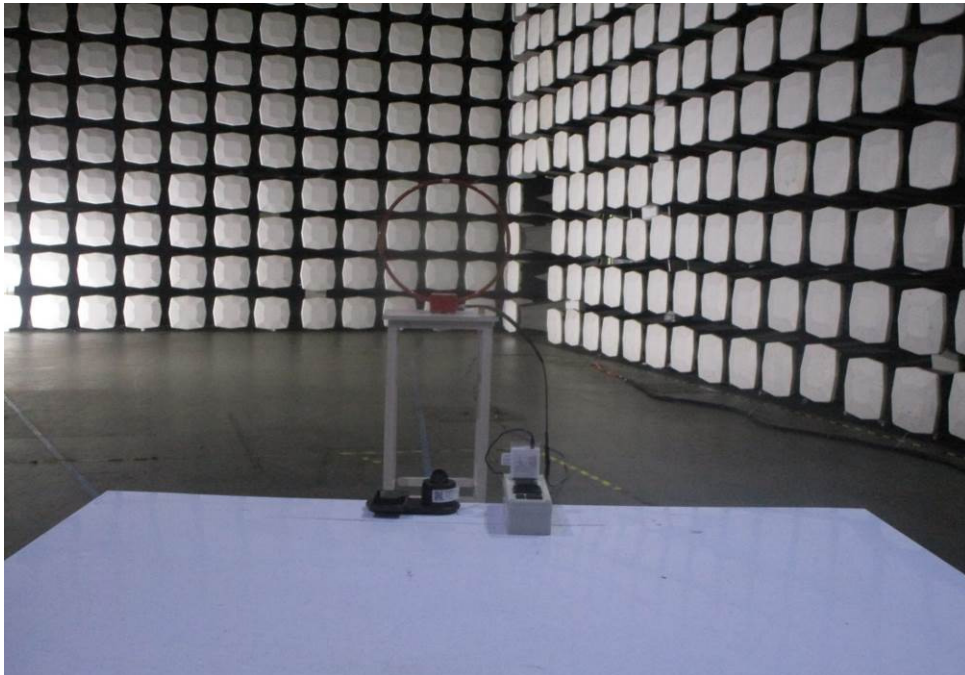
Frequency (MHz)	Level 10m (dBuV/m)	@ 10m (uV/m)	Level @ 3m (uV/m)	Level @ 3m (dBuV/m)	Limit @ 3m (dBuV/m)	Margin (dB)	Ant. Polarization
57.594	10.32	3.28	10.94	20.78	40.00	-19.22	H
83.816	11.73	3.86	12.86	22.19	40.00	-17.81	H
138.387	14.22	5.14	17.13	24.68	43.50	-18.82	H
357.929	15.61	6.03	20.11	26.07	46.00	-19.93	H
576.644	22.86	13.90	46.33	33.32	46.00	-12.68	H
922.516	28.77	27.45	91.49	39.23	46.00	-6.77	H
34.396	18.50	8.41	28.05	28.96	40.00	-11.04	V
52.760	17.29	7.32	24.40	27.75	40.00	-12.25	V
140.342	17.87	7.83	26.08	28.33	43.50	-15.17	V
174.424	18.10	8.04	26.78	28.56	43.50	-14.94	V
290.017	18.32	8.24	27.47	28.78	46.00	-17.22	V
818.834	26.33	20.73	69.08	36.79	46.00	-9.21	V

8 Test Setup Photo

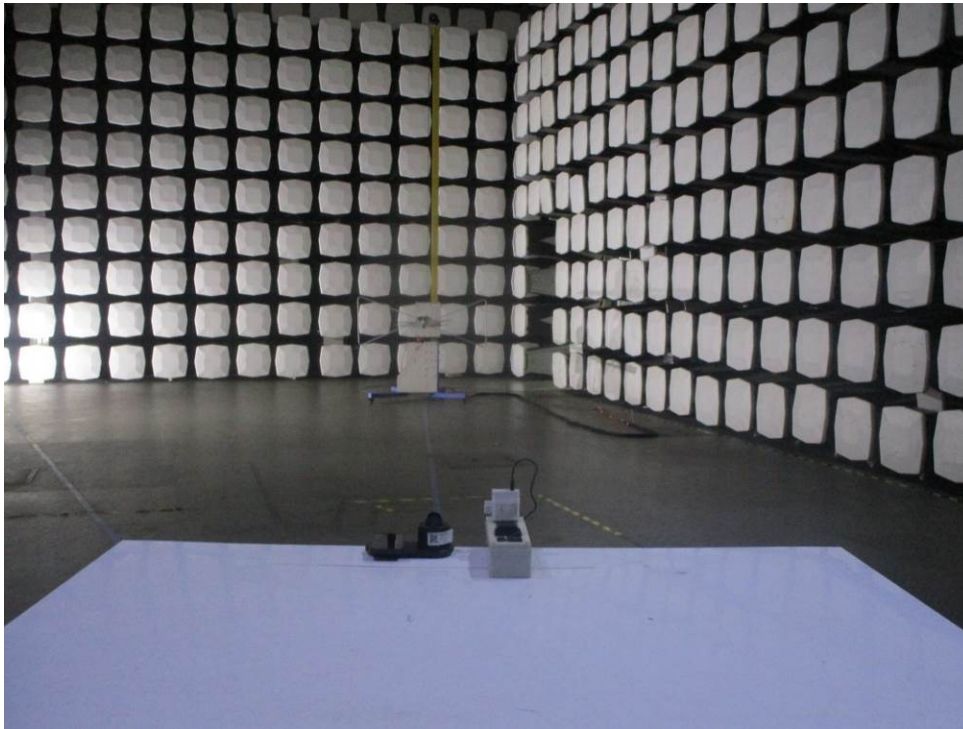
Conducted Emissions at AC Mains Power Port (150kHz-30MHz)



Radiated Emissions (9kHz-30MHz)



Radiated Emissions (30MHz-1GHz)



9 EUT Constructional Details (EUT Photos)

Refer to Appendix – External and Internal Photos for GZCR2203000316AT

- End of the Report -



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