



TEST REPORT

Application No.: GZCR2203000324AT
Applicant: Teenage Engineering AB
Address of Applicant: Textilgatan 31 Stockholm 12030 Sweden
Manufacturer: Teenage Engineering AB
Address of Manufacturer: Textilgatan 31 Stockholm 12030 Sweden
Factory: Eolane (China) Co., Ltd.
Address of Factory: 49 Plant, #9 Dongfu Road, Suzhou Industrial Park, 215123 Suzhou, China
Equipment Under Test (EUT):
EUT Name: OP-1 field
Model No.: TE002AS002
Trade Mark: 
Standard(s) : 47 CFR Part 15, Subpart C 15.239
Date of Receipt: 2021-12-09
Date of Test: 2021-12-29 to 2022-04-03
Date of Issue: 2022-04-25

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

Kobe Jian
EMC Laboratory Manager



Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2022-04-25		Original

Authorized for issue by:				
				
		Curry Wu/Project Engineer		
				
		Ricky Liu/Reviewer		

2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	Method	Requirement	Result
Antenna Requirement	47 CFR Part 15, Subpart C 15.239	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 15.239	ANSI C63.10 (2013) Section 6.9	47 CFR Part 15, Subpart C 15.239(a)	Pass
Conducted Emissions at AC Power Line (150kHz-30MHz)		ANSI C63.10 (2013) Section 6.2	ANSI C63.10 (2013) Section 6.2	Pass
Field Strength of the Fundamental Signal (15.239(b))		ANSI C63.10 (2013) Section 6.5	47 CFR Part 15, Subpart C 15.239(b)	Pass
Radiated Spurious Emissions (Below 1GHz)		ANSI C63.10 (2013) Section 6.4&6.5	47 CFR Part 15, Subpart C 15.209 & 15.239 (c)	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.

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SGS-CSTC Standards Technical Services Co., Ltd.
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4 General Information

4.1 Details of E.U.T.

Power supply: Rechargeable battery: DC 3.7V(Charging by Type C cable)
Frequency Range: 88.1 MHz~107.9MHz
Modulation Technique: FM
Shannel Spacing: 100kHz
Antenna Type: Diploe Antenna

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Adapter	Sony	UCH 32	REF. No.SEA05A03A

4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Emissions at AC Power Line (150kHz-30MHz)	3.12dB
20dB Bandwidth	± 3%
Field Strength of the Fundamental Signal (15.239(b))	±5.00dB (30MHz-1GHz; 3m);±4.38dB (30MHz-1GHz; 10m);± 4.52dB (1GHz-6GHz);
Radiated Emissions (9kHz-30MHz)	±5.06dB (3m); ±4.46dB (10m)
Radiated Emissions (30MHz-1GHz)	±5.00dB (30MHz-1GHz; 3m);±4.38dB (30MHz-1GHz; 10m)
Remark: The U_{lab} (lab Uncertainty) is less than U_{CISPR} (CISPR Uncertainty), so the test results – compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit; – non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.	

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:



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Guangzhou branch EMC Laboratory 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

● 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
EXA Signal Analyzer(10Hz-44GHz)	Agilent Technologies	N9010A	EMC2138	2021-09-16	2022-09-15
6dB Attenuator	HP	8491A	EMC2062	2020-04-15	2022-04-14
MI CABLE	SGS-EMC	0.8M	EMC2136	2021-11-01	2023-11-01
Test Software	TST	V2.0	GZE100-78	N/A	N/A

Conducted Emissions at AC Power Line (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 Spurious Emissions (Below 1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMI Test Receiver(10Hz-26.5GHz)	Rohde & Schwarz	ESIB26	EMC0522	2021-12-17	2022-12-16
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	2022-02-22	2023-02-21
Amplifier(9kHz-1.3GHz)	HP	8447F	EMC2065	2021-05-19	2022-05-18
High Pass Filter (915MHz)	FSY MICROWAVE	HM1465-9SS	EMC2079	2021-12-17	2022-12-16
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

Field Strength of the Fundamental					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMI Test Receiver(10Hz-26.5GHz)	Rohde & Schwarz	ESIB26	EMC0522	2021-12-17	2022-12-16



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	2022-02-22	2023-02-21
Amplifier(9kHz-1.3GHz)	HP	8447F	EMC2065	2021-05-19	2022-05-18
High Pass Filter (915MHz)	FSY MICROWAVE	HM1465-9SS	EMC2079	2021-12-17	2022-12-16
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

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 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. This requirement does not apply to carrier current devices or to devices operated under the provisions of 15.211, 15.213, 15.217, 15.219, 15.221, or 15.236. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

EUT Antenna:

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

Antenna location: Refer to Internal photos



7 Radio Spectrum Matter Test Results

7.1 Conducted Emissions at AC Power Line (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		

7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 24.2 °C

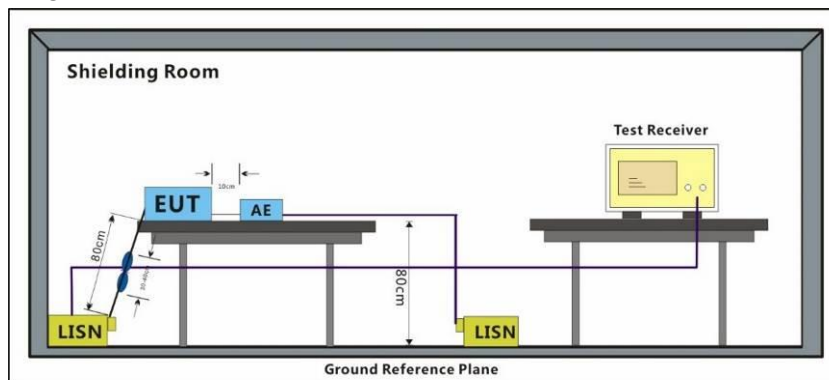
Humidity: 54.7 % RH

Atmospheric Pressure: 1003 mbar

7.1.1 Test Mode Description

Pre-scan /	Mode	Description
Final test	Code	
Final test	03	Charge + TX mode_Keep the EUT in transmitting with modulation mode.

7.1.2 Test Setup Diagram

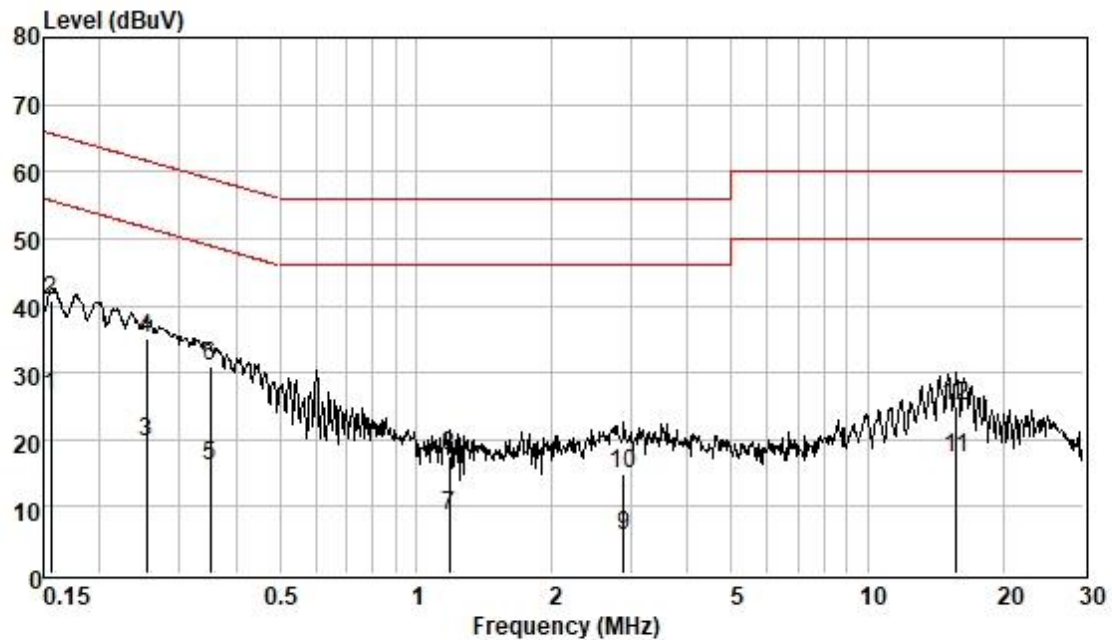


7.1.3 Measurement Procedure and Data

- 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.

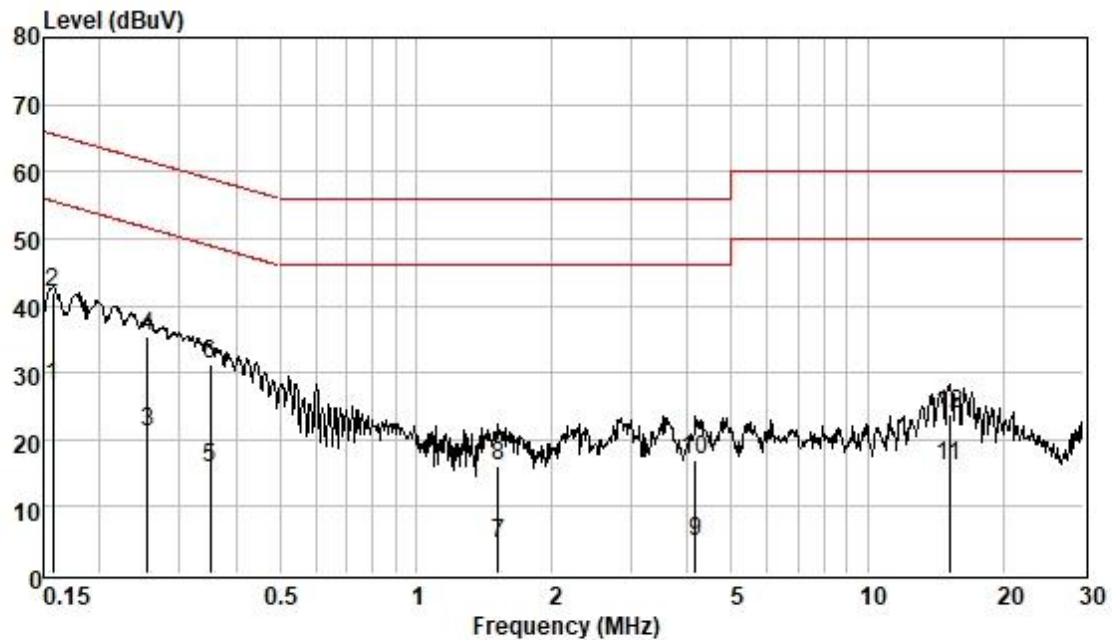
Remark: LISN=Read Level+ Cable Loss+ LISN Factor

Test Mode: 03; Line: Live Line

Pol : LINE
Mode :
Model :

	Freque MHz	Read Level dBuV	Cable Loss dB	LISN Factor dB	Measured Level dBuV	Limit Line dBuV	Over Limit dB	Remark
1	0.156	16.77	0.06	9.54	26.37	55.69	-29.32	Average
2	0.156	31.17	0.06	9.54	40.77	65.69	-24.92	QP
3	0.253	10.05	0.06	9.57	19.68	51.64	-31.96	Average
4	0.253	25.39	0.06	9.57	35.02	61.64	-26.62	QP
5	0.350	6.36	0.06	9.58	16.00	48.96	-32.96	Average
6	0.350	21.23	0.06	9.58	30.87	58.96	-28.09	QP
7	1.184	-1.02	0.08	9.60	8.66	46.00	-37.34	Average
8	1.184	7.92	0.08	9.60	17.60	56.00	-38.40	QP
9	2.884	-4.20	0.14	9.61	5.55	46.00	-40.45	Average
10	2.884	5.19	0.14	9.61	14.94	56.00	-41.06	QP
11	15.718	7.04	0.32	9.83	17.19	50.00	-32.81	Average
12	15.718	14.82	0.32	9.83	24.97	60.00	-35.03	QP

Test Mode: 03; 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	0.157	18.32	0.06	9.53	27.91	55.60	-27.69	Average
2	0.157	32.26	0.06	9.53	41.85	65.60	-23.75	QP
3	0.255	11.55	0.06	9.56	21.17	51.60	-30.43	Average
4	0.255	25.89	0.06	9.56	35.51	61.60	-26.09	QP
5	0.350	6.24	0.06	9.57	15.87	48.96	-33.09	Average
6	0.350	21.69	0.06	9.57	31.32	58.96	-27.64	QP
7	1.519	-5.29	0.10	9.59	4.40	46.00	-41.60	Average
8	1.519	6.40	0.10	9.59	16.09	56.00	-39.91	QP
9	4.158	-5.01	0.17	9.63	4.79	46.00	-41.21	Average
10	4.158	7.09	0.17	9.63	16.89	56.00	-39.11	QP
11	15.146	5.97	0.31	9.86	16.14	50.00	-33.86	Average
12	15.146	13.68	0.31	9.86	23.85	60.00	-36.15	QP

7.2 20dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.239(a)

Test Method: ANSI C63.10 (2013) Section 6.9

Limit:

<200 kHz

The 200 kHz band shall lie wholly within the above specified frequency ranges

7.2.1 E.U.T. Operation

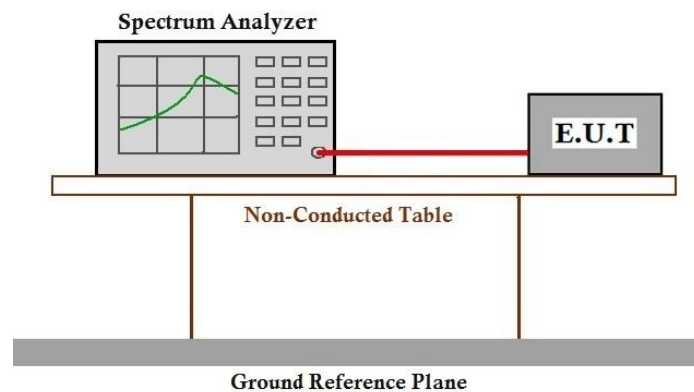
Operating Environment:

Temperature: 24.2 °C

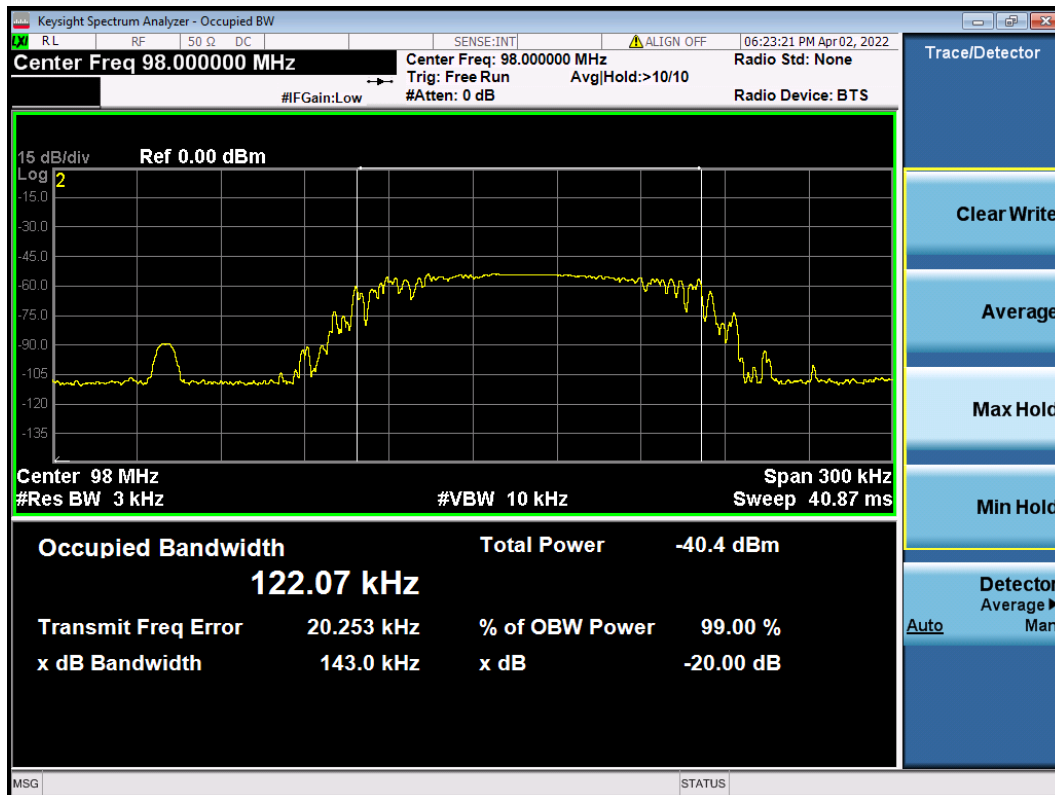
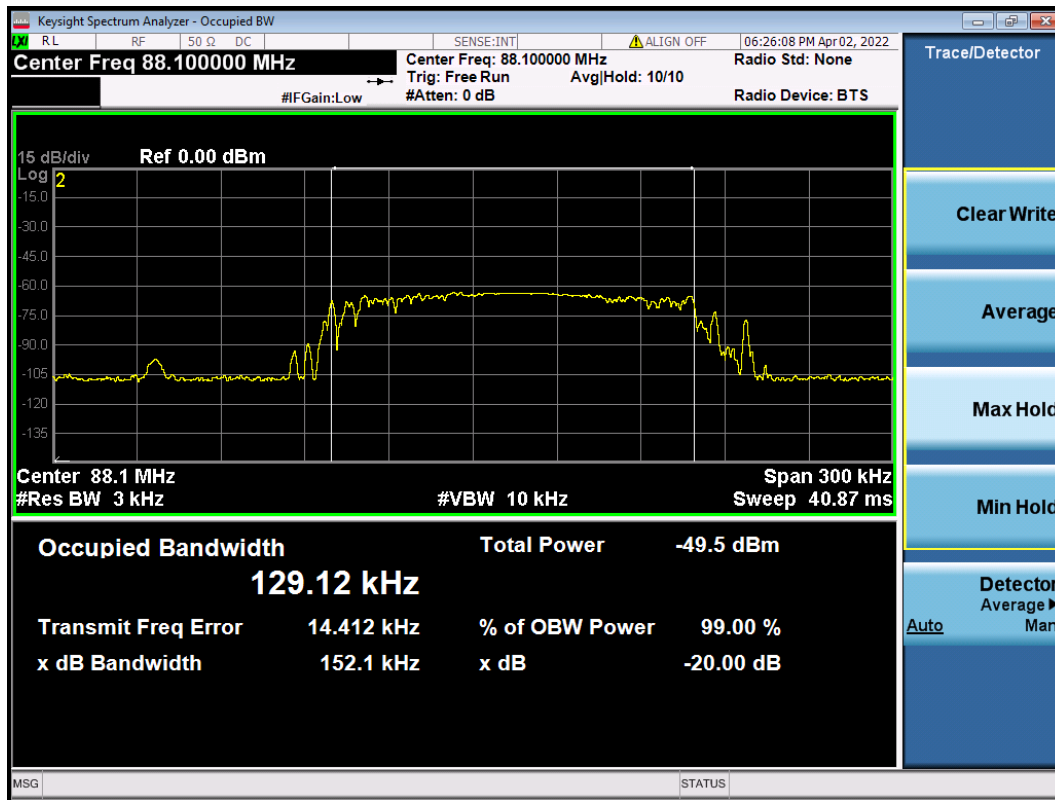
Humidity: 54.7 % RH

Atmospheric Pressure: 1003 mbar

7.2.2 Test Setup Diagram



7.2.3 Measurement Procedure and Data





7.3 Field Strength of the Fundamental Signal (15.239(b))

Test Requirement 47 CFR Part 15, Subpart C 15.239(b)

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

Limit:

≤250 microvolts/meter at 3 meters, the emission limit is based on measurement instrumentation employing an average Detector. The provisions in § 15.35 for limiting peak emissions apply.

7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 24.2 °C

Humidity: 54.7 % RH

Atmospheric Pressure: 1003 mbar

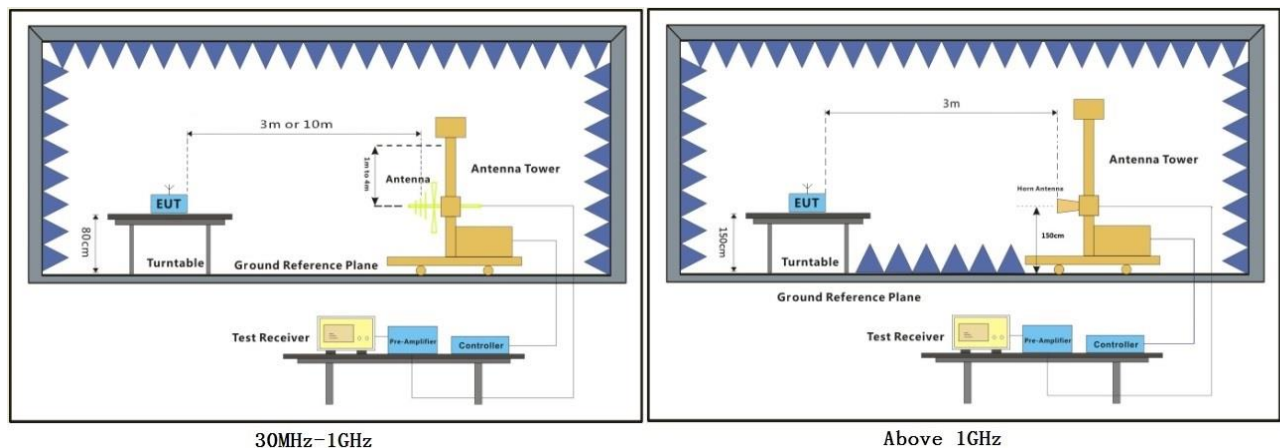
7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
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Pre-scan	02	TX mode_Keep the EUT in transmitting with modulation mode.
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Final test	03	Charge + TX mode_Keep the EUT in transmitting with modulation mode.
------------	----	---

7.3.3 Test Setup Diagram



7.3.4 Measurement Procedure and Data

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- d. 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.
- e. 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.
- f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g. 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.
- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- i. 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 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Field Strength of Fundamental Emissions and Field strength of spurious emissions Value					
Operating Frequency (MHz)	Field Strength (dBuV/m)	Detector	Limit @3m (dBuV/m)	Over Limit (dB)	Antenna
88.1	44.31	Peak	67.96	-23.65	Horizontal
	42.46	Average	47.96	-5.50	Horizontal
	46.15	Peak	67.96	-21.81	Vertical
	45.09	Average	47.96	-2.87	Vertical
98	45.71	Peak	67.96	-22.25	Horizontal
	43.65	Average	47.96	-4.31	Horizontal
	47.25	Peak	67.96	-20.71	Vertical
	45.12	Average	47.96	-2.84	Vertical
107.9	46.31	Peak	67.96	-21.65	Horizontal
	44.47	Average	47.96	-3.49	Horizontal
	48.83	Peak	67.96	-19.13	Vertical
	47.05	Average	47.96	-0.91	Vertical

Field Strength of band edge Emissions and band edge Emissions Value					
Operating Frequency (MHz)	Field Strength (dBuV/m)	Detector	Limit @3m (dBuV/m)	Margin(dB)	Antenna
88	32.78	Peak	40	-7.22	Horizontal
	35.44	Peak	40	-4.56	Vertical
108	35.19	Peak	43.5	-8.31	Horizontal
	36.86	Peak	43.5	-6.64	Vertical

Note: If the PK measured values lower than average mode limit, the EUT shall be deemed to meet average limits and then no additional average mode measurement performed.

7.4 Radiated Spurious Emissions (Below 1GHz)

Test Requirement 47 CFR Part 15, Subpart C 15.209 & 15.239 (c)

Test Method: ANSI C63.10 (2013) Section 6.4&6.5

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
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.

7.4.1 E.U.T. Operation

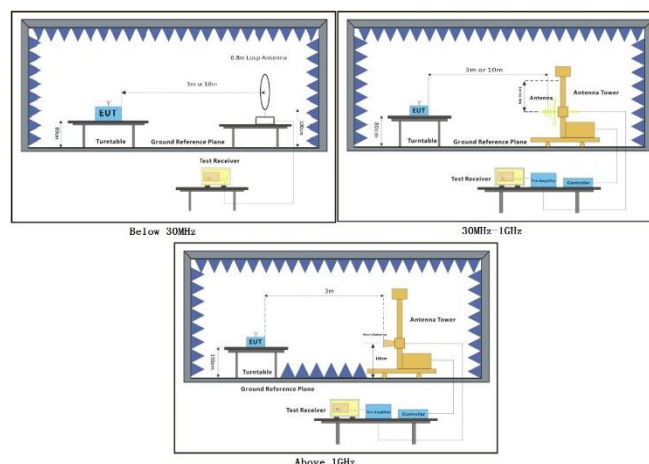
Operating Environment:

Temperature: 24.2 °C Humidity: 54.7 % RH Atmospheric Pressure: 1003 mbar

7.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Pre-scan	02	TX mode_Keep the EUT in transmitting with modulation mode.
Final test	03	Charge + TX mode_Keep the EUT in transmitting with modulation mode.

7.4.3 Test Setup Diagram



7.4.4 Measurement Procedure and Data

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- d. 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.
- e. 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.
- f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g. 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.
- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- i. 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:

1) For emission below 1GHz, through pre-scan found the worst case is the lowest channel. Only the worst case is recorded in the report.

2) 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

3) Scan from 9kHz to 25GHz, the disturbance above 18GHz and below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

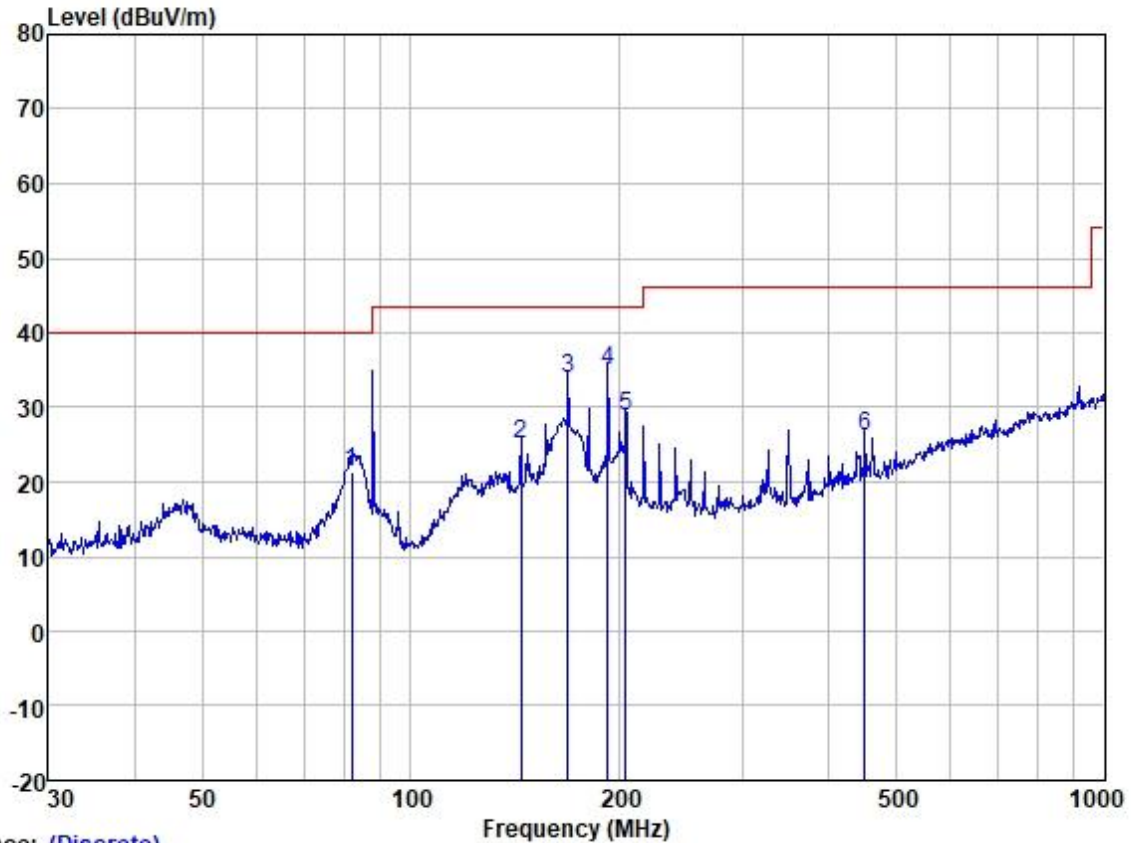
Note: The disturbance above 1GHz was very low, and there is no highest point could be found when testing, so only the below 1GHz had been displayed in the report.



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Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Test Mode: 03; Channel: Low, Polarization: Horizontal



Trace: (Discrete)

Site : SGS

Condition:

Job :

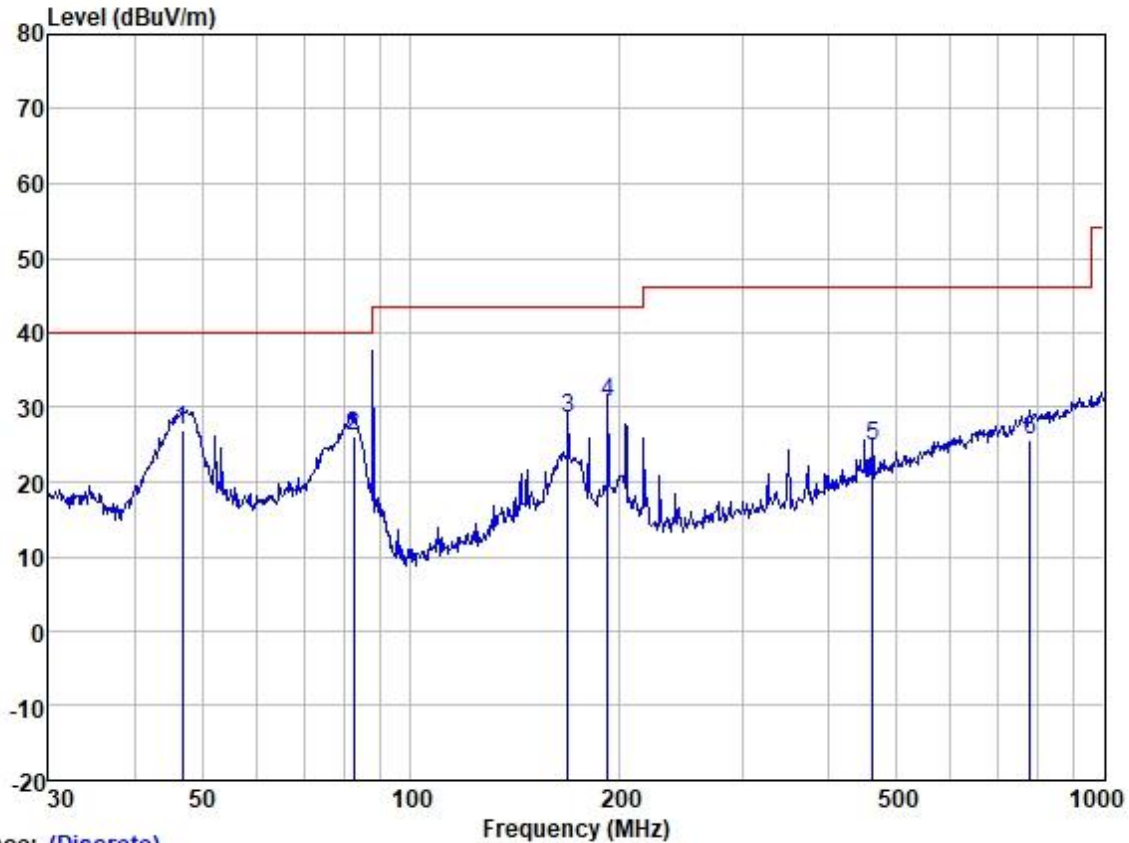
Model :

Power :

Test Mode: FM 88.1

	Freq	Read Level	Antenna Factor	Cable Loss	Preamplifier Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	82.071	38.63	8.39	1.50	27.09	21.43	40.00	-18.57	HORIZONTAL	QP
2	144.335	36.62	13.13	2.15	26.87	25.03	43.50	-18.47	HORIZONTAL	QP
3	168.414	45.53	12.83	2.39	26.77	33.98	43.50	-9.52	HORIZONTAL	QP
4	192.419	49.10	10.12	2.50	26.74	34.98	43.50	-8.52	HORIZONTAL	QP
5	204.238	43.42	9.49	2.54	26.73	28.72	43.50	-14.78	HORIZONTAL	QP
6	451.135	32.86	16.85	4.19	27.72	26.18	46.00	-19.82	HORIZONTAL	QP

Test Mode: 03; Channel: Low, Polarization: Vertical



Trace: (Discrete)

Site : SGS

Condition:

Job :

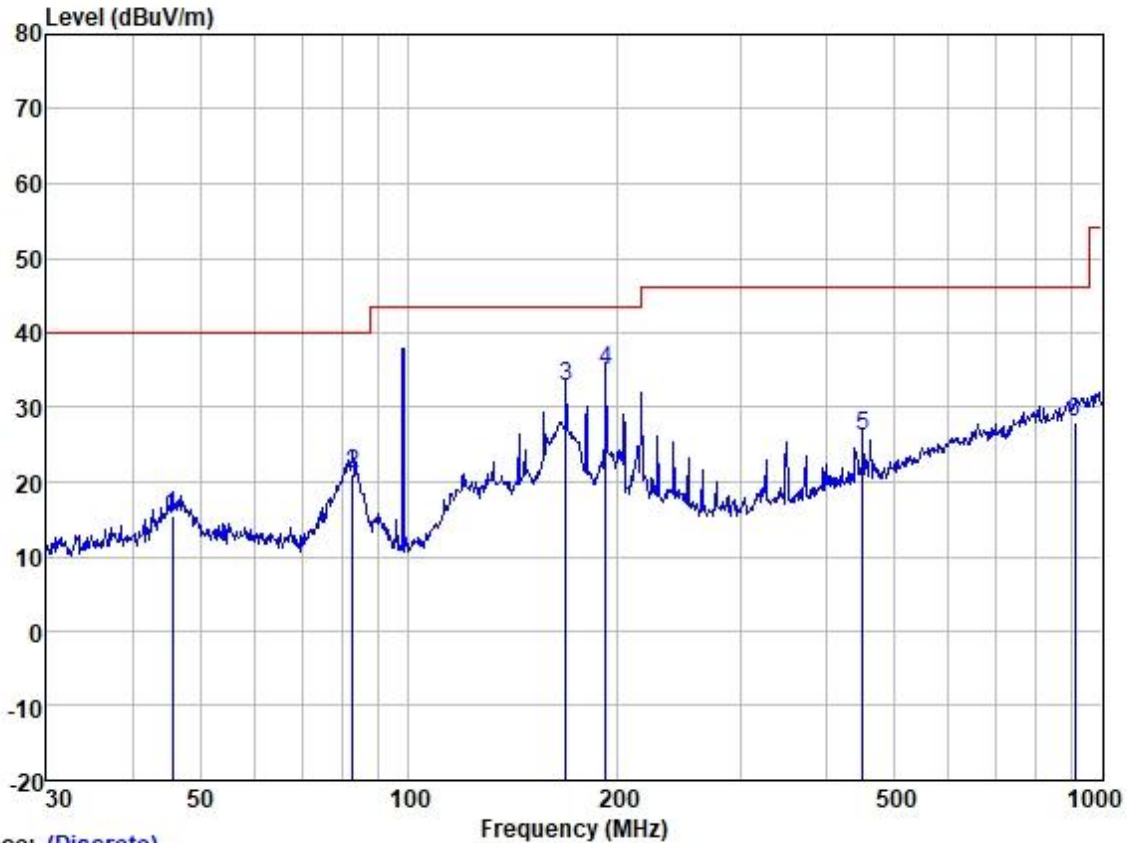
Model :

Power :

Test Mode: FM 88.1

	Freq	Read Level	Antenna Factor	Cable Loss	Preamplifier Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	46.830	39.43	13.52	1.13	27.17	26.91	40.00	-13.09	VERTICAL	QP
2	82.648	43.57	8.28	1.50	27.09	26.26	40.00	-13.74	VERTICAL	QP
3	168.414	40.06	12.83	2.39	26.77	28.51	43.50	-14.99	VERTICAL	QP
4	192.419	44.90	10.12	2.50	26.74	30.78	43.50	-12.72	VERTICAL	QP
5	463.970	31.35	17.04	4.27	27.82	24.84	46.00	-21.16	VERTICAL	QP
6	782.345	25.38	22.23	6.11	28.05	25.67	46.00	-20.33	VERTICAL	QP

Test Mode: 03; Channel: Middle, Polarization: Horizontal



Trace: (Discrete)

Site : SGS

Condition:

Job :

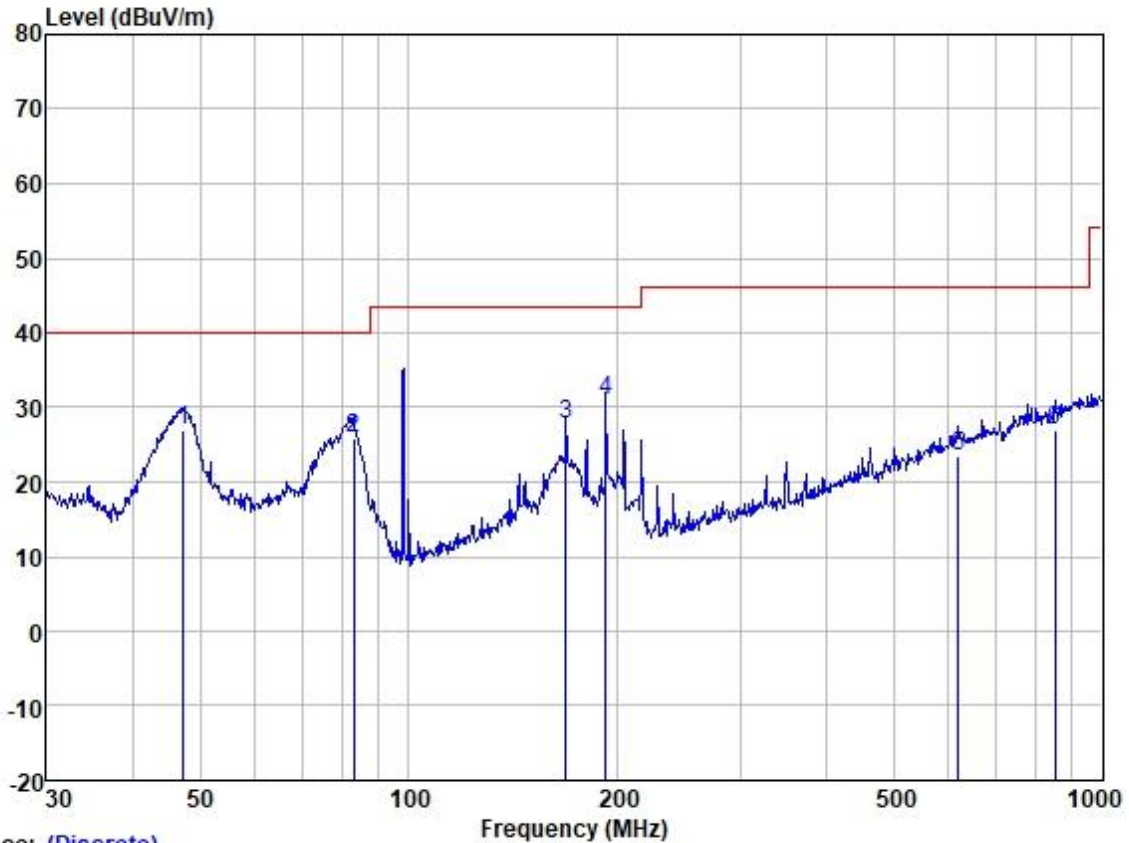
Model :

Power :

Test Mode: FM 98

	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	45.535	28.13	13.45	1.12	27.17	15.53	40.00	-24.47	HORIZONTAL	QP
2	82.938	38.30	8.22	1.51	27.09	20.94	40.00	-19.06	HORIZONTAL	QP
3	168.414	44.38	12.83	2.39	26.77	32.83	43.50	-10.67	HORIZONTAL	QP
4	192.419	49.01	10.12	2.50	26.74	34.89	43.50	-8.61	HORIZONTAL	QP
5	451.135	32.73	16.85	4.19	27.72	26.05	46.00	-19.95	HORIZONTAL	QP
6	912.862	25.39	23.45	6.96	27.83	27.97	46.00	-18.03	HORIZONTAL	QP

Test Mode: 03; Channel: Middle, Polarization: Vertical



Trace: (Discrete)

Site : SGS

Condition:

Job :

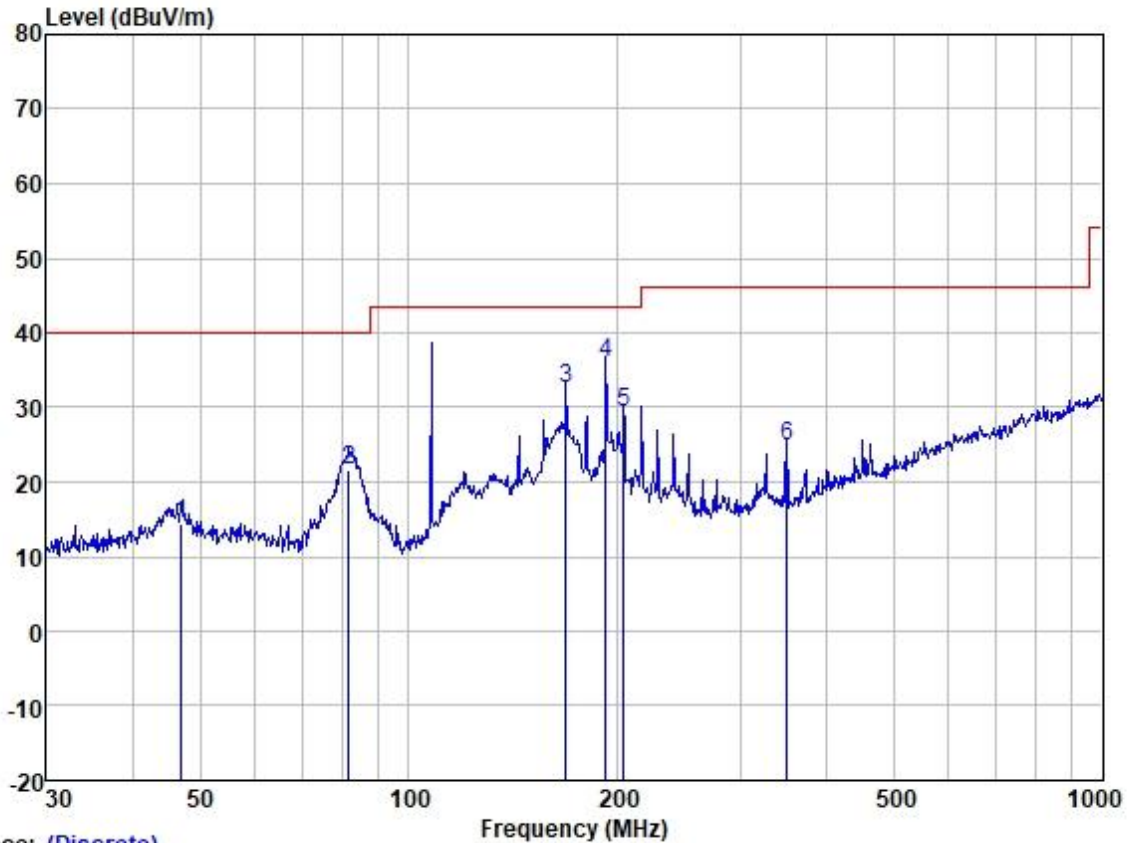
Model :

Power :

Test Mode: FM 98

	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	47.326	39.34	13.54	1.13	27.17	26.84	40.00	-13.16	VERTICAL QP
2	83.230	43.22	8.17	1.51	27.09	25.81	40.00	-14.19	VERTICAL QP
3	168.414	39.39	12.83	2.39	26.77	27.84	43.50	-15.66	VERTICAL QP
4	192.419	45.15	10.12	2.50	26.74	31.03	43.50	-12.47	VERTICAL QP
5	620.710	26.18	20.12	5.28	28.20	23.38	46.00	-22.62	VERTICAL QP
6	854.025	25.91	22.50	6.55	27.92	27.04	46.00	-18.96	VERTICAL QP

Test Mode: 03; Channel: High, Polarization: Horizontal



Trace: (Discrete)

Site : SGS

Condition:

Job :

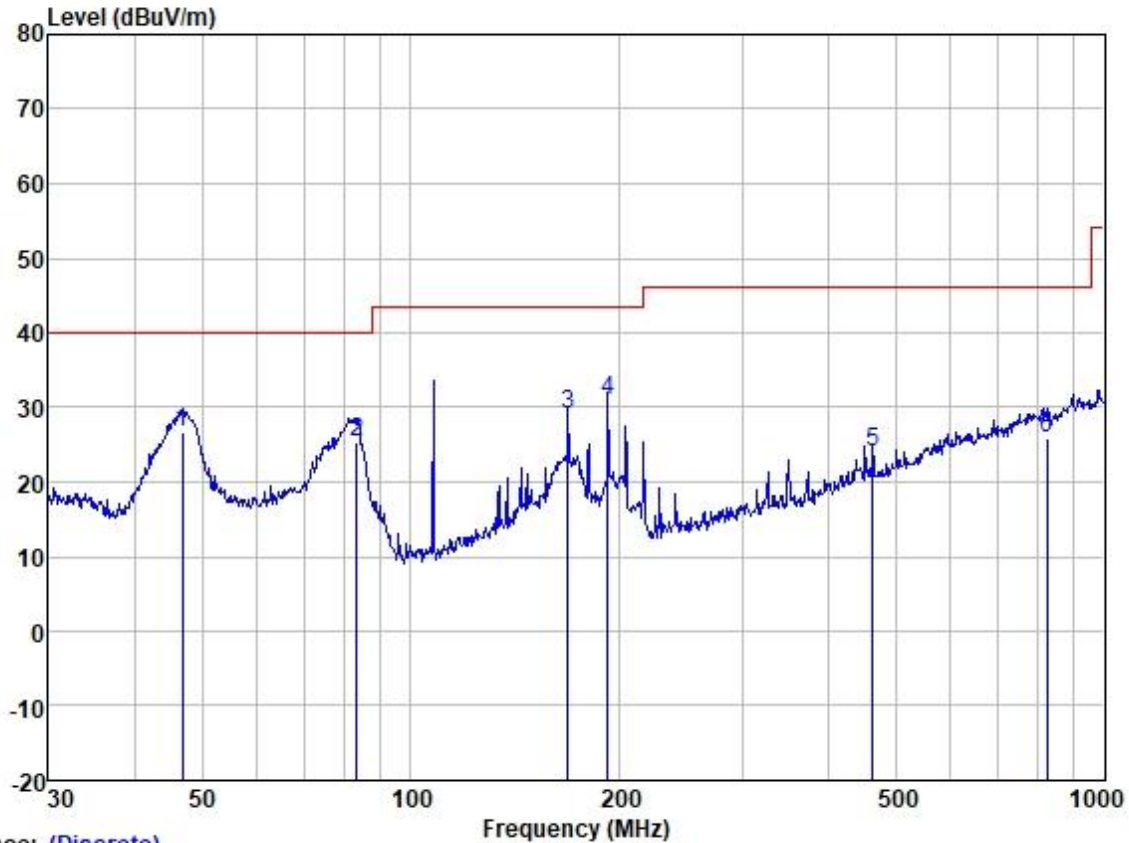
Model :

Power :

Test Mode: FM 107.9

	Freq	Read Level	Antenna Factor	Cable Loss	Preamplifier Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	46.995	26.86	13.53	1.13	27.17	14.35	40.00	-25.65	HORIZONTAL	QP
2	81.783	38.61	8.46	1.50	27.09	21.48	40.00	-18.52	HORIZONTAL	QP
3	168.414	44.08	12.83	2.39	26.77	32.53	43.50	-10.97	HORIZONTAL	QP
4	192.419	50.05	10.12	2.50	26.74	35.93	43.50	-7.57	HORIZONTAL	QP
5	204.238	44.07	9.49	2.54	26.73	29.37	43.50	-14.13	HORIZONTAL	QP
6	350.477	33.95	14.19	3.63	27.01	24.76	46.00	-21.24	HORIZONTAL	QP

Test Mode: 03; Channel: High, Polarization: Vertical



Trace: (Discrete)

Site : SGS

Condition:

Job :

Model :

Power :

Test Mode: FM 107.9

	Freq	Read Level	Antenna Factor	Cable Loss	Preamplifier Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	46.830	39.06	13.52	1.13	27.17	26.54	40.00	-13.46	VERTICAL	QP
2	83.522	42.89	8.12	1.51	27.09	25.43	40.00	-14.57	VERTICAL	QP
3	168.414	40.57	12.83	2.39	26.77	29.02	43.50	-14.48	VERTICAL	QP
4	192.419	45.18	10.12	2.50	26.74	31.06	43.50	-12.44	VERTICAL	QP
5	463.970	30.55	17.04	4.27	27.82	24.04	46.00	-21.96	VERTICAL	QP
6	827.493	24.92	22.49	6.38	27.99	25.80	46.00	-20.20	VERTICAL	QP

8 Test Setup Photo

Refer to Appendix – Setup Photos for GZCR2203000324AT

9 EUT Constructional Details (EUT Photos)

Refer to Appendix - Photographs of EUT Constructional Details for GZCR2203000324AT

- End of the Report -