TEST REPORT

Application No.:	GZCR2502000195HS
Applicant:	Panduit Corp.
Address of Applicant:	18900 Panduit Drive, Tinley Park, IL 60487, United States of America
Manufacturer:	Panduit Corp.
Address of Manufacturer:	18900 Panduit Drive, Tinley Park, IL 60487, United States of America
Factory:	Wenzhou Yeeka Technology Co.,Ltd
Address of Factory:	No.350, Yongtai Road, Panqiao, Ouhai District, Wenzhou City, Zhejiang Province, China, 325018
Product Name:	Smart Rack Handle
Model No.:	ACF
Trade Mark:	Panduit
Standard(s) :	47 CFR Part 15, Subpart C 15.225
Date of Receipt:	2025-02-12
Date of Test:	2025-03-05 to 2025-03-05
Date of Issue:	2025-04-29
Test Result:	**Pass***

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

Ricky Liu
Manager

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Revision Record			
Version	**Report No.**	**Date**	**Remark**
01	GZCR250200019502	2025-04-29	Original

Authorized for issue by:				
		Luke Lin **Luke Lin/Project Engineer**		
		Vico Cui **Vico Cui/Reviewer**		

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2 Test Summary

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**
20dB Bandwidth	47 CFR Part 15, Subpart C 15.225	ANSI C63.10 (2013) Section 6.9	47 CFR Part 15, Subpart C 15.215	Pass
Emission Mask		ANSI C63.10 (2013) Section 6.4	47 CFR Part 15, Subpart C 15.225(a)&(b)&(C)	Pass
Frequency tolerance		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

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 Branch Testing Center, EMC Laboratory

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3 Contents

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4 General Information

4.1 Details of E.U.T.

Power supply: DC 12 V
Cable(s): None
Test Voltage: DC 12V powered by DC power supply refer to section 4.2
Operation Frequency: 13.56MHz
Antenna type: Loop Antenna
Modulation Type: ASK
Antenna Number: 1

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.
DC Power Supply	GWINSTEK	GPS-3030DD (Input: AC100-240V, 50/60Hz; Output: DC Max.30V, 3A)	EMC0008

4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
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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5 Equipment List

20dB Bandwidth					
Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal Date**	**Cal Due Date**
MXA Signal Analyzer (10Hz-8.4GHz)	Agilent Technologies	N9020A	SEM004-10	2024-12-03	2025-12-02
MI CABLE	SGS-EMC	0.8M	EMC2136	2023-11-02	2025-11-01

Emission Mask					
Equipment	**Manufacturer**	**Model No.**	**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	2024-12-03	2025-12-02
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A
966 Anechoic Chamber	Shenzhen C.R.T	CRTSGSSAC966	EMC2230	2022-04-12	2025-04-11
Coaxial Cable	Mirco-COAX UTIFLEX ve	LA2-C125-8000	EMC2239	2024-12-04	2026-12-03

Frequency tolerance					
Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal Date**	**Cal Due Date**
Temperature Chamber	GZ GongWen Co.Ltd.	GDJW-100	EMC0039	2024-12-03	2025-12-02
MXA Signal Analyzer (10Hz-8.4GHz)	Agilent Technologies	N9020A	SEM004-10	2024-12-03	2025-12-02
MI CABLE	SGS-EMC	0.8M	EMC2136	2023-11-02	2025-11-01

Radiated Emissions (9kHz-30MHz)					
Equipment	**Manufacturer**	**Model No.**	**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	2024-12-03	2025-12-02
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A
966 Anechoic Chamber	Shenzhen C.R.T	CRTSGSSAC966	EMC2230	2022-04-12	2025-04-11
Coaxial Cable	Mirco-COAX UTIFLEX ve	LA2-C125-8000	EMC2239	2024-12-04	2026-12-03

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Radiated Emissions (30MHz-1GHz)					
Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal Date**	**Cal Due Date**
966 Anechoic Chamber	Shenzhen C.R.T	CRTSGSSAC966	EMC2230	2022-04-12	2025-04-11
EMI Test Receiver (1Hz-8GHz)	Rohde & Schwarz	ESW8	EMC2229	2024-12-03	2025-12-02
Amplifier(9k-1000MHz)	SONOMA	310	EMC2237	2024-12-03	2025-12-02
Trilog Broadband Antenna (25MHz-2GHz)	Schwarzbeck Mess-Elektronik	VULB 9168	EMC2238	2022-04-20	2025-04-19
Coaxial Cable	Mirco-COAX UTIFLEX ve	LA2-C125-8000	EMC2239	2024-12-04	2026-12-03
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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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, 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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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

7.1.1 E.U.T. Operation

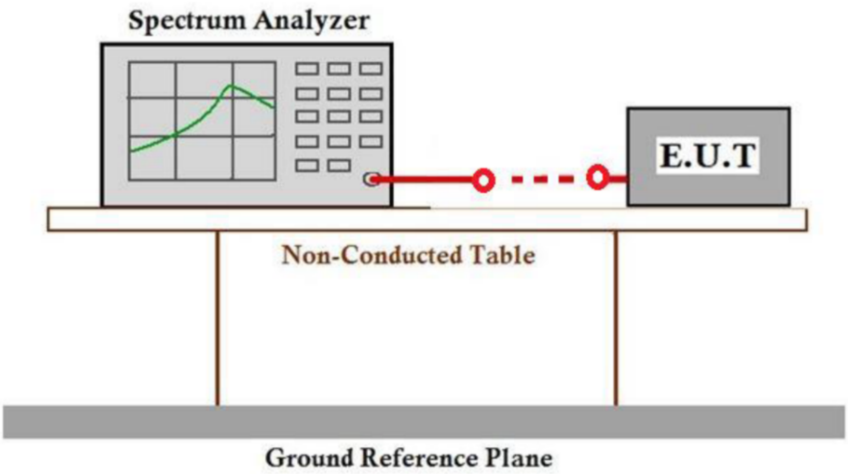
Operating Environment:

Temperature: 22.8 °C Humidity: 57.5 % RH Atmospheric Pressure: 1020 mbar

7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	13.56MHz TX mode with modulation

7.1.3 Test Setup Diagram



7.1.4 Measurement Procedure and Data

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

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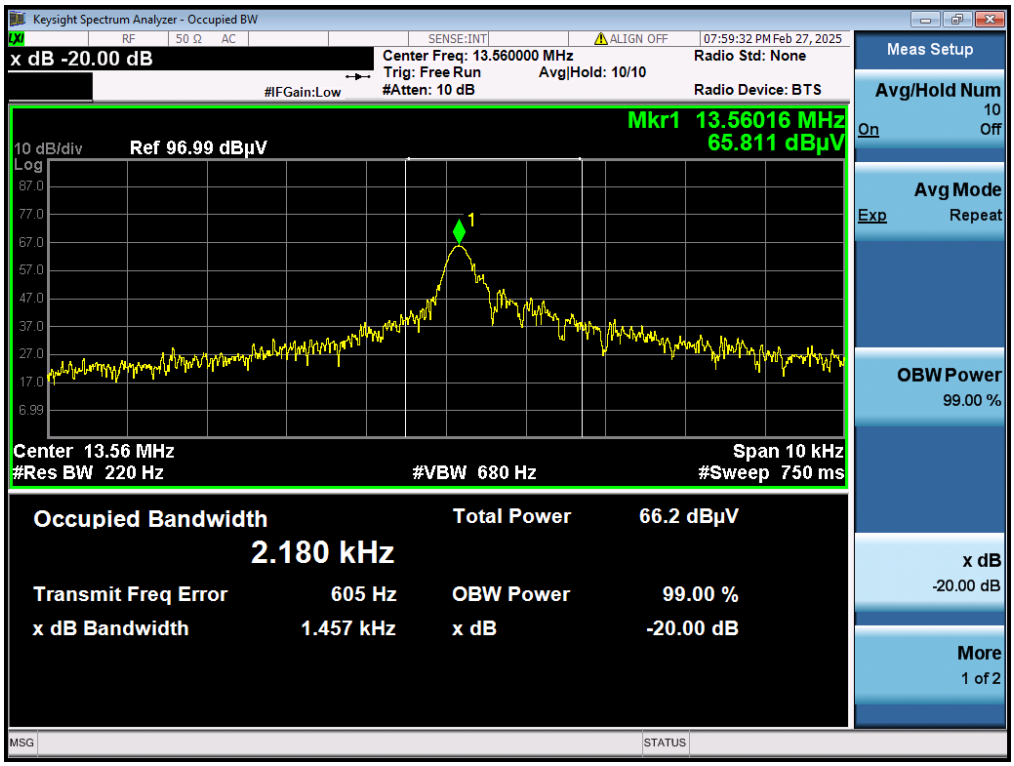

Operating Frequency (MHz)	20dB Bandwidth (MHz)	Operating frequency Limit	Result
13.56	0.001457	--	Pass

Remark: The setting of RBW was the minimum for the spectrum.

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7.2 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 dBμV/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.

7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 25.3 °C Humidity: 55.0 % RH Atmospheric Pressure: 1012 mbar

7.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	13.56MHz TX mode with modulation

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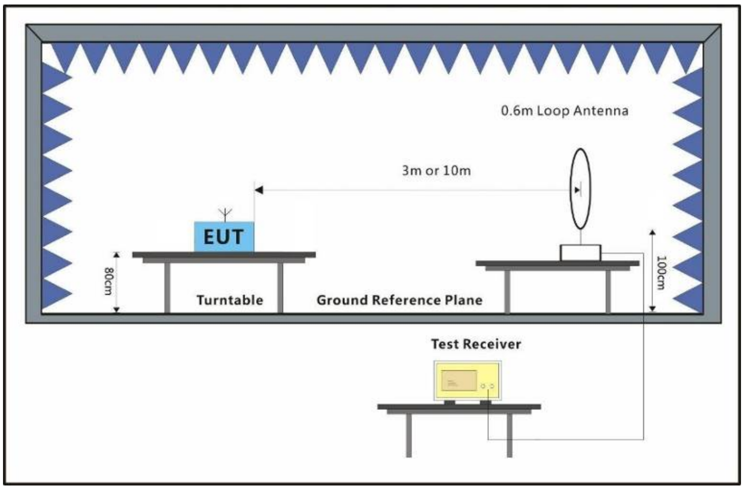
7.2.3 Test Setup Diagram



7.2.4 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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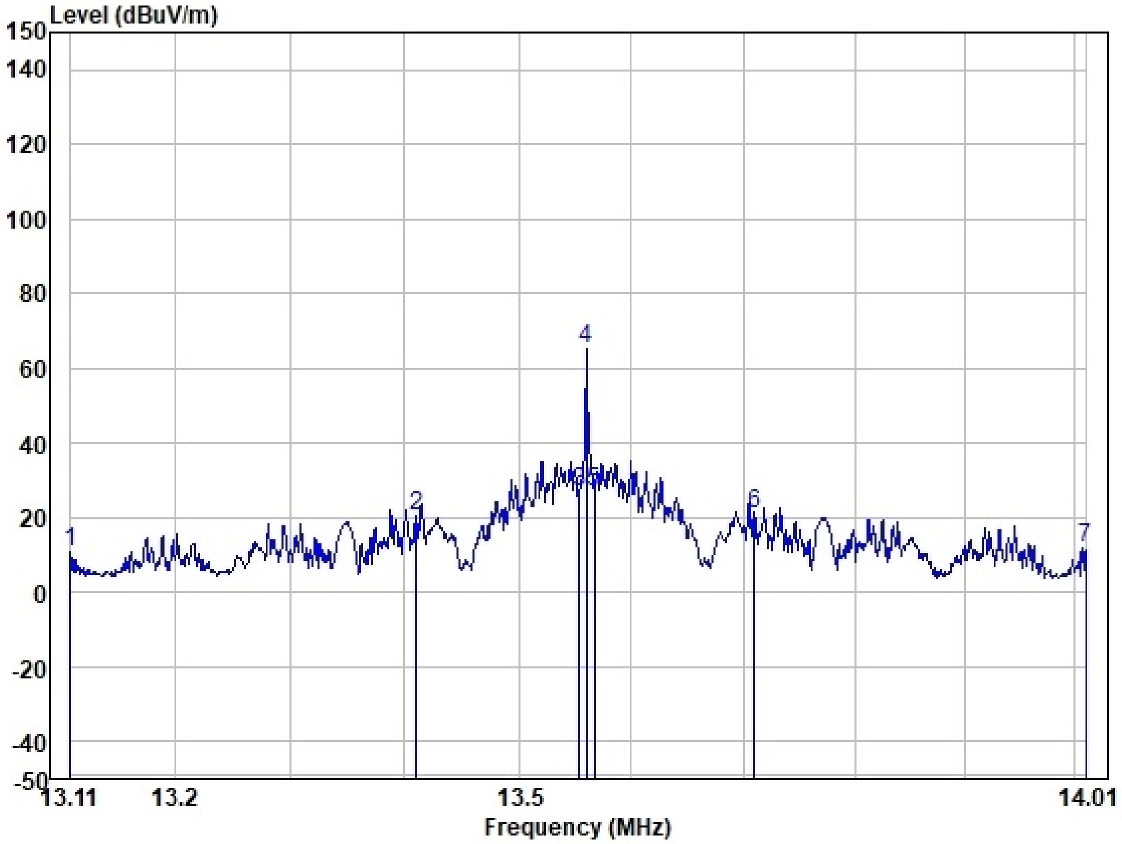
Test Mode: 00; Polarity: Vertical




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

	Freq	Read Level	Anterna Factor	Cable Loss	Preamp Factor	Measured Level	Pol/ Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m		
1	13.110	32.54	10.61	0.19	32.80	10.54	HORIZONTAL	QP
2	13.410	42.54	10.54	0.19	32.80	20.47	HORIZONTAL	QP
3	13.553	48.93	10.51	0.20	32.81	26.83	HORIZONTAL	QP
4	13.560	87.10	10.51	0.20	32.81	65.00	HORIZONTAL	QP
5	13.567	49.04	10.51	0.20	32.81	26.94	HORIZONTAL	QP
6	13.710	43.25	10.49	0.20	32.81	21.13	HORIZONTAL	QP
7	14.010	34.15	10.43	0.20	32.81	11.97	HORIZONTAL	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	10.54	-40	-29.46	29.54	-59.00
13.410	20.47	-40	-19.53	40.51	-60.04
13.550	26.83	-40	-13.17	50.47	-63.64
13.560	65.00	-40	25.00	84.00	-59.00
13.570	26.94	-40	-13.06	50.47	-63.53
13.710	21.13	-40	-18.87	40.51	-59.38
14.010	11.97	-40	-28.03	29.54	-57.57

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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7.3 Frequency tolerance

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

7.3.1 E.U.T. Operation

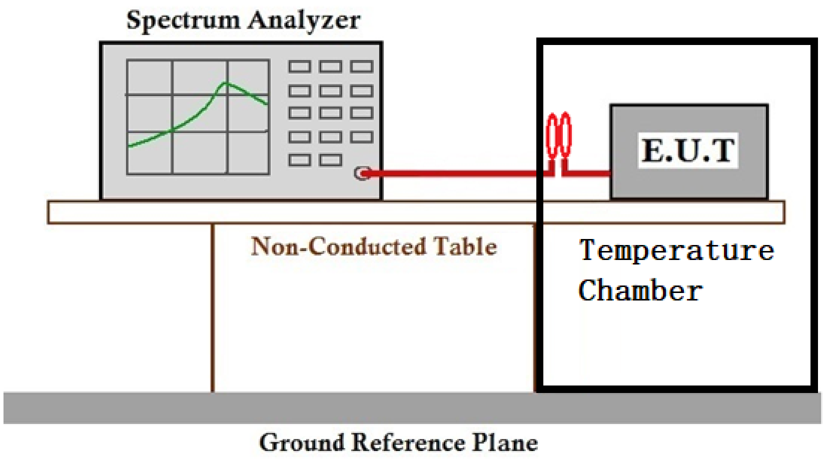
Operating Environment:

Temperature: 22.8 °C Humidity: 57.5 % RH Atmospheric Pressure: 1020 mbar

7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	13.56MHz TX mode with modulation

7.3.3 Test Setup Diagram



7.3.4 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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Limit: ±0.01%

Start up

Voltage (V DC)	Temperature (°C)	Frequency Measured (MHz)	Test data (%)	Verdict
V_{norm} : 12	-20	13.561197	0.0088%	Pass
	-10	13.561162	0.0086%	Pass
	0	13.561202	0.0089%	Pass
	10	13.56101	0.0074%	Pass
	T_{normal} : +20	13.560448	REF	REF
	30	13.561295	0.0096%	Pass
	40	13.561077	0.0079%	Pass
	50	13.5612	0.0088%	Pass
V_{max} : 13.8	T_{normal} : +20	13.561006	0.0074%	Pass
V_{min} : 10.2		13.561127	0.0083%	Pass

2min

Voltage (V DC)	Temperature (°C)	Frequency Measured (MHz)	Test data (%)	Verdict
V_{norm} : 12	-20	13.561298	0.0096%	Pass
	-10	13.561052	0.0078%	Pass
	0	13.561202	0.0089%	Pass
	10	13.561111	0.0082%	Pass
	T_{normal} : +20	13.560448	REF	REF
	30	13.561343	0.0099%	Pass
	40	13.561176	0.0087%	Pass
	50	13.561031	0.0076%	Pass
V_{max} : 13.8	T_{normal} : +20	13.561337	0.0099%	Pass
V_{min} : 10.2		13.561305	0.0096%	Pass

5min

Voltage (V AC)	Temperature (°C)	Frequency Measured (MHz)	Test data (%)	Verdict
V_{norm} : 12	-20	13.561093	0.0081%	Pass
	-10	13.561072	0.0079%	Pass
	0	13.561277	0.0094%	Pass
	10	13.561258	0.0093%	Pass
	T_{normal} : +20	13.560448	REF	REF
	30	13.561073	0.0079%	Pass
	40	13.561066	0.0079%	Pass
	50	13.56127	0.0094%	Pass
V_{max} : 13.8	T_{normal} : +20	13.56121	0.0089%	Pass
V_{min} : 10.2		13.561238	0.0091%	Pass

10min

Voltage (V AC)	Temperature (°C)	Frequency Measured (MHz)	Test data (%)	Verdict
V_{norm} : 12	-20	13.561147	0.0085%	Pass
	-10	13.561016	0.0075%	Pass
	0	13.561113	0.0082%	Pass
	10	13.56128	0.0094%	Pass
	T_{normal} : +20	13.560448	REF	REF
	30	13.561083	0.0080%	Pass
	40	13.561141	0.0084%	Pass
	50	13.561108	0.0082%	Pass
V_{max} : 13.8	T_{normal} : +20	13.561162	0.0086%	Pass
V_{min} : 10.2		13.561213	0.0089%	Pass

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7.4 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: 3m

Limit:

Frequency(MHz)	Field strength (microvolts/meter)	Limit (dBuV/m)	Detector	Measurement Distance (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 λ/2π and the limit distance is greater than λ/2π, 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 λ/2π distance, and at a 20 dB/decade of distance rate beyond λ/2π. This shall be accomplished using Equation (2):

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

If the single point measured is at a distance greater than λ/2π, 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 λ/2π, 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:

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

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

where

FS_{limit}	is the calculation of field strength at the limit distance, expressed in dBμV/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 λ/2π point

7.4.1 E.U.T. Operation

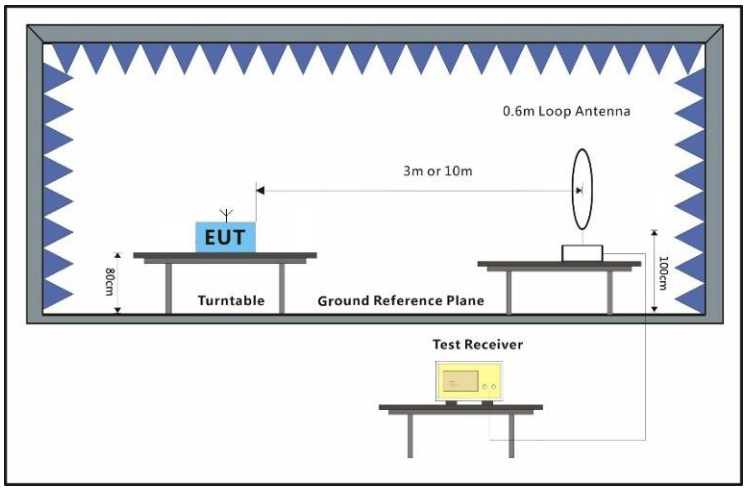
Operating Environment:

Temperature: 25.3 °C Humidity: 54.9 % RH Atmospheric Pressure: 1012 mbar

7.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	13.56MHz TX mode with modulation

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. Only the worst position of vertical was shown in the report.

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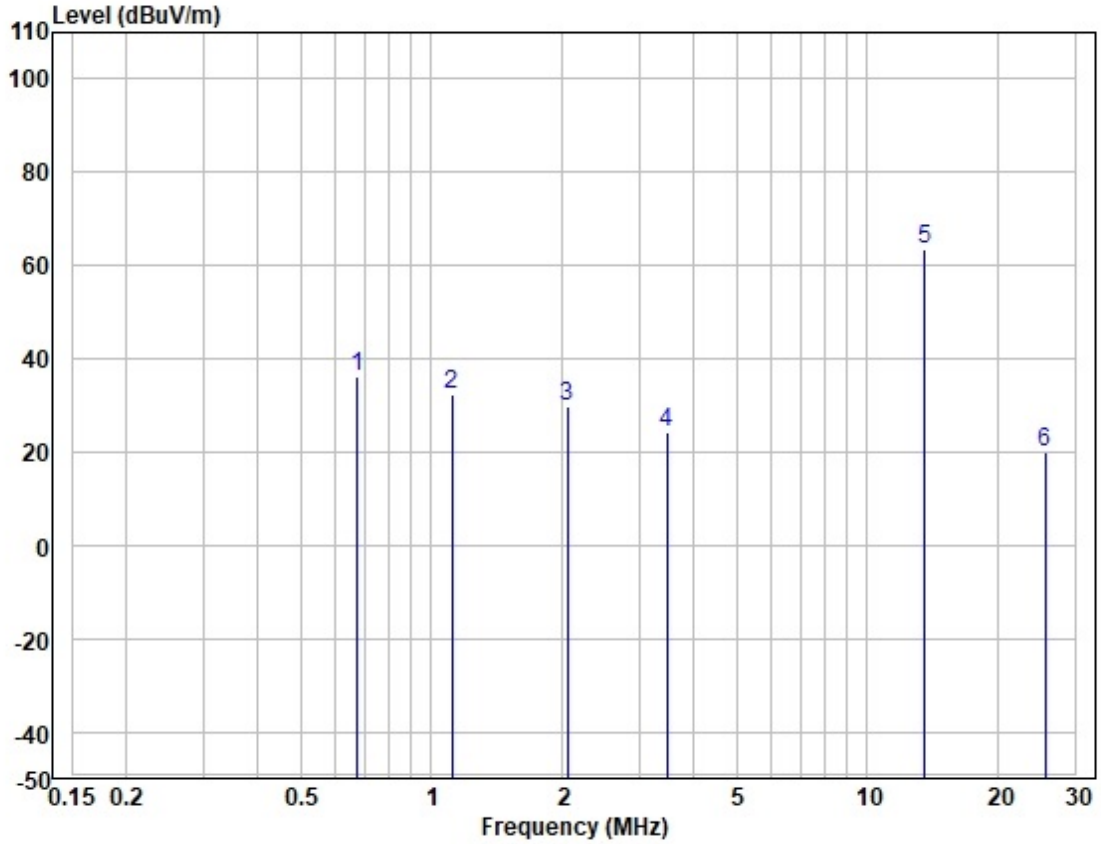
Test Mode: 00; Polarity: Vertical



loop :
Test Mode:
Model :

Frequency MHz	Read level dBuV/m	Cable Loss dB	Antenna Factor dBS/m	Preamp Factor db	Measured level dBuV/m
0.675	54.63	0.05	14.13	32.83	35.98
1.111	51.91	0.05	13.37	32.83	32.50
2.055	48.44	0.06	13.98	32.83	29.65
3.472	43.62	0.07	13.30	32.82	24.17
13.551	85.45	0.20	10.51	32.81	63.35
25.591	45.34	0.28	6.97	32.83	19.76

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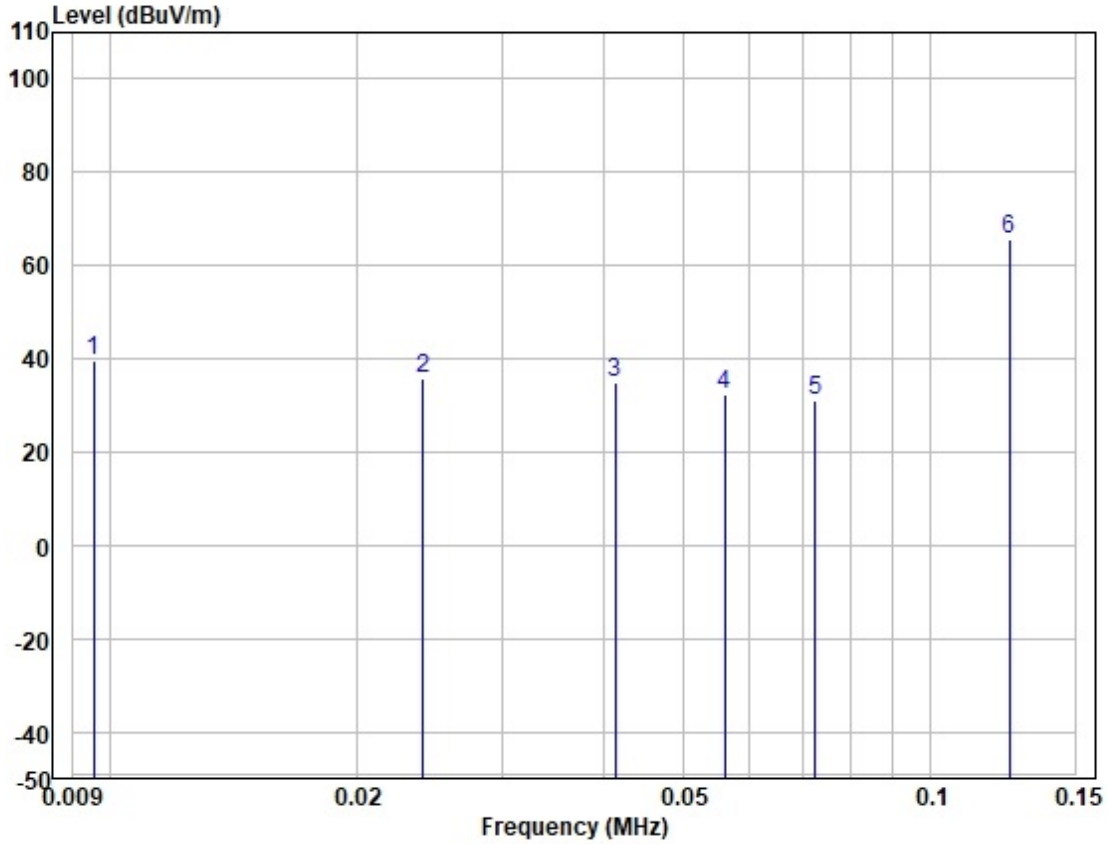
Test Mode: 00; Polarity: Vertical



loop :
Test Mode:
Model :

Frequency MHz	Read level dBuV/m	Cable Loss dB	Antenna Factor dBS/m	Preamp Factor db	Measured level dBuV/m
0.010	50.68	0.01	21.69	32.84	39.54
0.024	52.11	0.01	16.46	32.84	35.74
0.041	52.55	0.01	15.14	32.84	34.86
0.056	50.25	0.01	14.86	32.84	32.28
0.072	49.28	0.01	14.82	32.84	31.27
0.125	83.67	0.01	14.73	32.84	65.57

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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	39.54	47.60	-80	-40.46	-88.06	AV
0.024	35.74	40.00	-80	-44.26	-84.26	AV
0.041	34.86	35.35	-80	-45.14	-80.49	AV
0.056	32.28	32.64	-80	-47.72	-80.36	AV
0.072	31.27	30.46	-80	-48.73	-79.19	AV
0.125	65.57	25.67	-80	-14.43	-40.10	AV
Frequency (MHz)	Level @3m (dBuV/m)	Limit @30m (dBuV/m)	Convert Factor (dB)@3 m to 30 m	Level @ 30m (dBuV/m)	Over limit (dB)	Remark
0.675	35.98	31.02	-40	-4.02	-35.04	QP
1.111	32.50	26.69	-40	-7.50	-34.19	QP
2.055	29.65	29.54	-40	-10.35	-39.89	QP
3.472	24.17	29.54	-40	-15.83	-45.37	QP
13.551	63.35	29.54	-40	23.35	-6.19	QP
25.591	19.76	29.54	-40	-20.24	-49.78	QP

Remark1:

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

Remark2: The frequency 125kHz is another intentional transmitter, and please refer to test report GZCR250200019503 for details

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7.5 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:

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 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

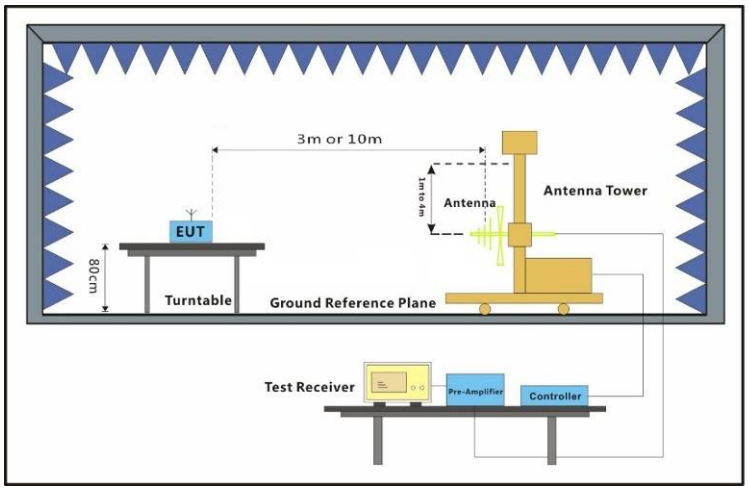
Operating Environment:

Temperature: 25.4 °C Humidity: 54.5 % RH Atmospheric Pressure: 1012 mbar

7.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	13.56MHz TX mode with modulation

7.5.3 Test Setup Diagram



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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 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, quasi-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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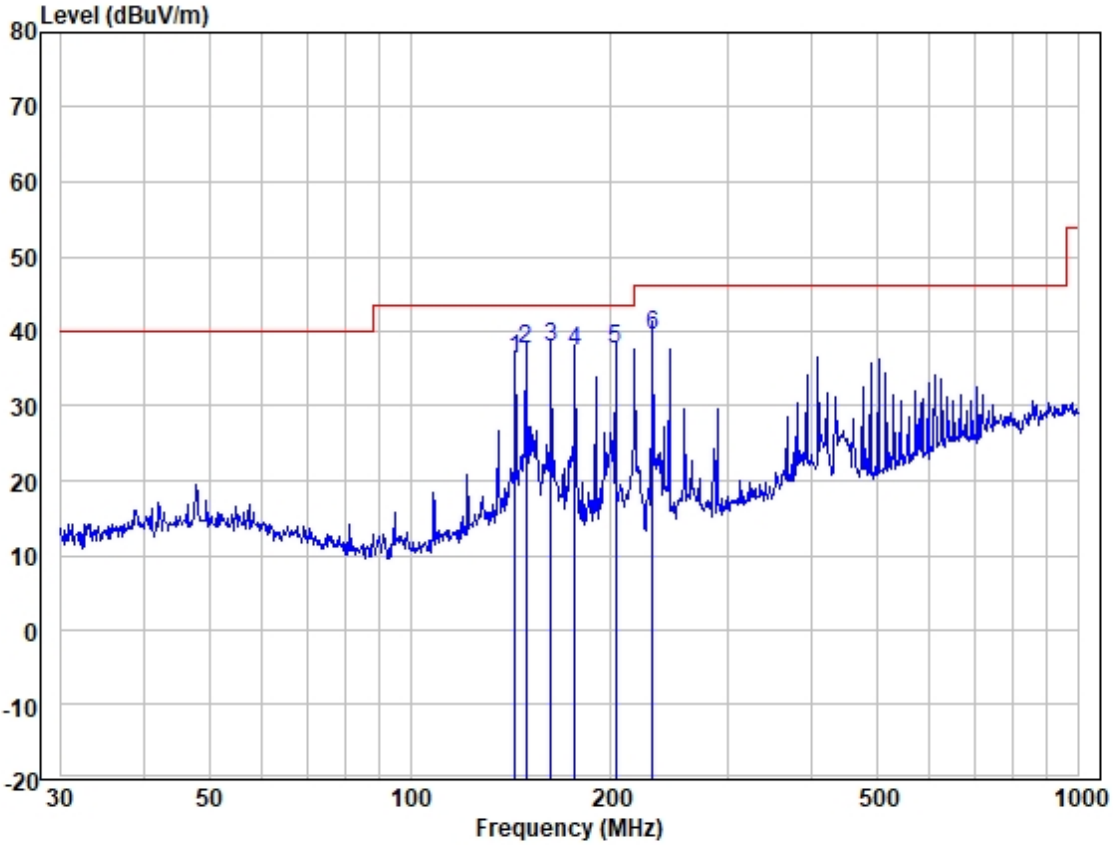
Test Mode: 00; Polarity: Horizontal



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

	Freq	Read Level	Anterna Factor	Cable Loss	Preamp Factor	Measured Level	Limit Line	Over Limit	Pol/ Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	143.830	49.65	18.77	0.65	32.74	36.33	43.52	-7.19	HORIZONTAL	QP
2	148.963	50.78	19.00	0.67	32.75	37.70	43.52	-5.82	HORIZONTAL	QP
3	162.611	50.93	19.11	0.71	32.78	37.97	43.52	-5.55	HORIZONTAL	QP
4	176.269	51.21	18.09	0.74	32.79	37.25	43.52	-6.27	HORIZONTAL	QP
5	203.523	53.81	15.75	0.79	32.81	37.54	43.52	-5.98	HORIZONTAL	QP
6	230.907	55.05	16.35	0.83	32.82	39.41	46.02	-6.61	HORIZONTAL	QP

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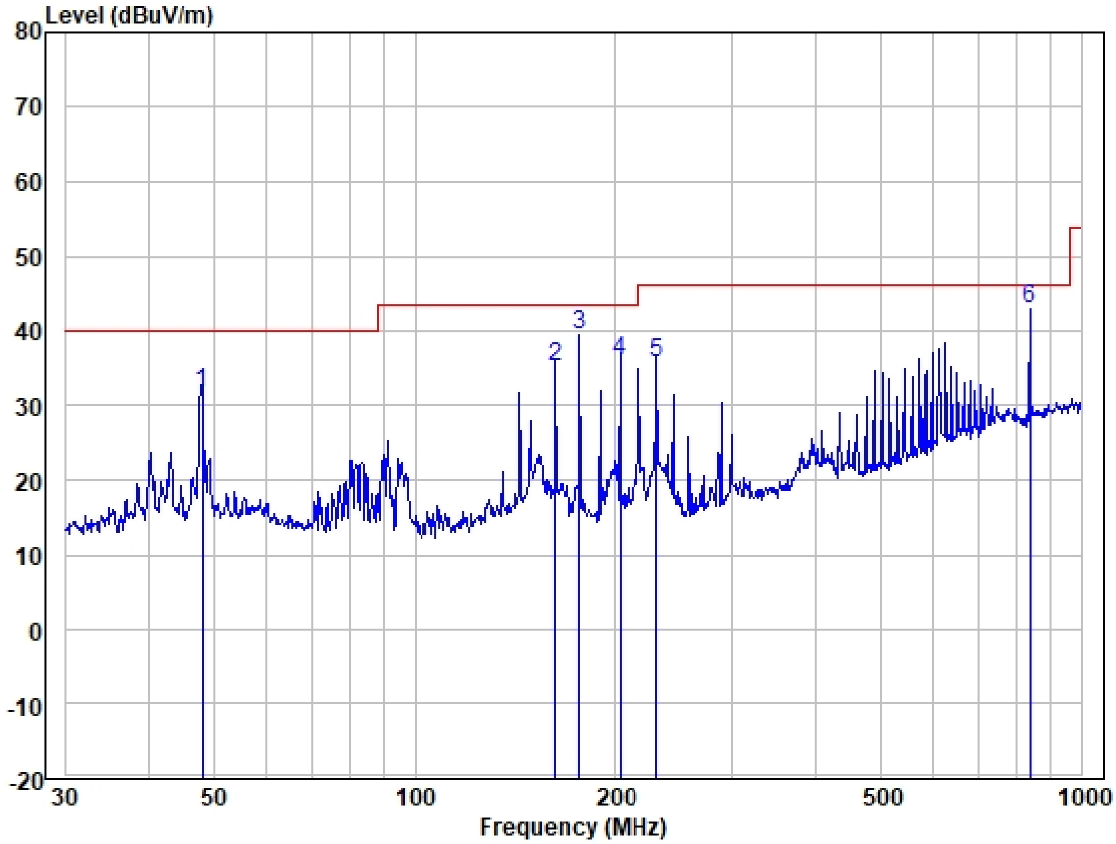
Test Mode: 00; Polarity: Vertical



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

	Freq	Read Level	Anterna Factor	Cable Loss	Preamp Factor	Measured Level	Limit Line	Over Limit	Pol/ Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	47.994	44.73	19.52	0.38	32.79	31.84	40.00	-8.16	VERTICAL	QP
2	162.611	48.27	19.11	0.71	32.78	35.31	43.52	-8.21	VERTICAL	QP
3	176.269	53.40	18.09	0.74	32.79	39.44	43.52	-4.08	VERTICAL	QP
4	203.523	52.27	15.75	0.79	32.81	36.00	43.52	-7.52	VERTICAL	QP
5	230.907	51.33	16.35	0.83	32.82	35.69	46.02	-10.33	VERTICAL	QP
6	836.244	44.11	28.64	1.69	31.53	42.91	46.02	-3.11	VERTICAL	QP

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8 Test Setup Photo

Refer to Appendix_Test Setup Photo for GZCR250200019502

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9 EUT Constructional Details (EUT Photos)

Refer to External and Internal Photos for GZCR2502000195HS

- End of the Report -

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