TEST REPORT

Application No.:	GZEM2403001784HS
Applicant:	Guangdong Galanz Enterprises Co., Ltd.
Address of Applicant:	25 Ronggui Nan Road, Shunde, Foshan, Guangdong, China
Manufacturer:	Guangdong Galanz Appliances Manufacturing Co., Ltd.
Address of Manufacturer:	No. 3, East Xingpu Avenue, Maxin Industrial Zone, Huangpu Town, Zhongshan City, Guangdong Province, China
Factory:	1. Guangdong Galanz Appliances Manufacturing Co., Ltd. 2. Guangdong Galanz Microwave Oven and Electrical Appliances Manufacturing Co., Ltd.
Address of Factory:	1. No. 3, East Xingpu Avenue, Maxin Industrial Zone, Huangpu Town, Zhongshan City, Guangdong Province, China 2. No.25, South Ronggui Avenue, Shunde District, Foshan City, Guangdong Province, China
Product Name:	Microwave oven
Model No.:	Please refer to page 2.
Trade Mark:	GALANZ, Whirlpool, KitchenAid
Standard(s) :	47 CFR Part 18
Date of Receipt:	2024-04-01
Date of Test:	2024-04-02 to 2024-04-09
Date of Issue:	2024-05-13
Test Result:	**Pass***

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

Ricky Liu
Manager

Model No.: P12043(X)-(Y), P12043(X)H-(Y), P12043(X)H-(Y)-FR**, P12043APH-SUA(L2), P12043(X)-(Y)(L2), P12043(X)H-(Y)(L2), P12043(X)H-(Y)(L2)-FR**, KMCS122RBS**, KMCS122RPS**, WMCS7022RB**, WMCS7022RW**, WMCS7022RZ**, WMCS7022RS**, KMCS122RSS**

P: with microwave function only

120: denote the output power is 1200W

43: denote different cavity in 43liters.

Variable (X) may be AL, AP, AJ, ASL, ASP, ATL, ATP, EL, EP, ESL, ESP, ETL, ETP, ML, MP, MSL, MSP, MTL, MTP, MYL

Variable (Y) may compose by one to five characters from A to Z and/or numbers from 0 to 9 representing the differences of appearance.

* could be from 0 to 9 or from A to Z or blank ♣

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

Revision Record			
Version	**Report No.**	**Date**	**Remark**
01	GZEM230300130002	2023-05-12	Original
02	GZEM230300130004	2024-05-13	Amendment report: Updated manufacturer's and factory's information; Updated models; Added trademark.

Authorized for issue by:				
		Damon Guan/Project Engineer		
		Vico Cui/Reviewer		

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2 Test Summary

Emission Part				
Item	**Standard**	**Method**	**Requirement**	**Result**
Conducted Emissions at Mains Terminals (150kHz-30MHz)	47 CFR Part 18	FCC/OST MP-5:1986	18.307	Pass
Radiated Emissions (Magnetic field Strength)(9kHz-30MHz)		FCC/OST MP-5:1986	18.305(b)	Pass
Radiated Emissions (30MHz-1GHz)		FCC/OST MP-5:1986	18.305(b)	Pass
Radiated Emissions (above 1GHz)		FCC/OST MP-5:1986	18.305(b)	Pass
Output Power Measurement		FCC OST/MP-5:1986	FCC OST/MP-5:1986 Clause 4.3	Pass
Operating Frequency Measurement		FCC OST/MP-5:1986	18.301	Pass
Radiation Hazard Test		FCC OST/MP-5:1986	1 mW/cm2	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.

Remark for report GZEM230300130002:

Model No.: P12043(X)-(Y), P12043(X)H-(Y), P12043(X)H-(Y)-FR**

P: with microwave function only

120: denote the output power is 1200W

43: denote different cavity in 43liters.

Variable (X) may be

AL, AP, ASL, ASP, ATL, ATP, EL, EP, ESL, ESP, ETL, ETP, ML, MP, MSL, MSP, MTL, MTP, MYL.

Variable (Y) may compose by one to five characters from A to Z and/or numbers from 0 to 9. It represents the differences of the appearance.

*could be from 0 to 9

According to the declaration from the applicant, the electrical circuit design, layout, components used and internal wiring were identical for all models, with only difference on the outer appearance and model name.

Therefore only one model P12043APH-SUA was tested in this report.

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♣Remark for report GZEM230300130004:

This report GZEM230300130004 is based on original report GZEM230300130002, with the following changes:

1. Updated manufacturer's and factory's information.
2. Added trademark Whirlpool, KitchenAid.
3. Updated models as below:

P12043(X)-(Y), P12043(X)H-(Y), P12043(X)H-(Y)-FR**, P12043APH-SUA(L2), P12043(X)-(Y)(L2), P12043(X)H-(Y)(L2), P12043(X)H-(Y)(L2)-FR**, KMCS122RBS**, KMCS122RPS**, WMCS7022RB**, WMCS7022RW**, WMCS7022RZ**, WMCS7022RS**, KMCS122RSS**

P: with microwave function only

120: denote the output power is 1200W

43: denote different cavity in 43liters.

Variable (X) may be AL, AP, AJ, ASL, ASP, ATL, ATP, EL, EP, ESL, ESP, ETL, ETP, ML, MP, MSL, MSP, MTL, MTP, MYL

Variable (Y) may compose by one to five characters from A to Z and/or numbers from 0 to 9 representing the differences of appearance.

* could be from 0 to 9 or from A to Z or blank

According to the declaration from the applicant, the models in this report GZEM230300130004 and models in original report GZEM230300130002 were identical in mechanical and electrical construction, only being different on the door open method.

All tests items were performed to model P12043APH-SUA(L2) and recorded the new test results in this report GZEM230300130004.

Other tests please refer to original report GZEM230300130002 for details.

3 Contents

4 General Information

4.1 Details of E.U.T.

Power supply: AC 120V, 60Hz
Microwave frequency: 2450MHz
Cable(s): About 1.0m x 3 wires unscreened AC mains cable.

4.2 Description of Support Units

Load for microwave ovens for testing:

1200mL of water in the beaker for power output and frequency measurement.
One of 840 and the other of 360mL of water for second and third harmonic radiation measurement.
840mL of water for all other measurement

4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Emissions at Mains Terminals (150kHz-30MHz)	2.76dB (150kHz to 30MHz)
Radiated Emissions (Magnetic field Strength) (9kHz-30MHz)	3.08dB(9kHz to 150kHz), 3.12dB(150kHz to 30MHz) (LLAS)
Radiated Emissions (30MHz-1GHz)	5.00dB (30MHz-1GHz):3m; 4.38dB (30MHz-1GHz):10m
Radiated Emissions (above 1GHz)	5.12dB (1GHz-6GHz); 5.38dB (6GHz-18GHz); 5.61dB (18GHz-40GHz)
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,

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

5 Equipment List

Conducted Emissions at Mains Terminals (150kHz-30MHz)					
Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal Date**	**Cal Due Date**
Coaxial Cable	HangTianXing	2m	EMC0107	2023-08-04	2024-08-03
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	2023-09-08	2024-09-07
EMI Test Receiver (9kHz-3.6GHz)	Rohde & Schwarz	ESR3	EMC2221	2023-05-19	2024-05-18
Test Software E3r	Audix	Ver.6.11812	GZE100-77	N/A	N/A
Artificial Mains Network (LISN)	AFJ Instruments	LT32C	EMC2046	2023-10-20	2024-10-19

Radiated Emissions (Magnetic field Strength)(9kHz-30MHz)					
Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal Date**	**Cal Due Date**
Coaxial Cable (RE 2m Loop)	INFINITE	CC223N-10	EMC0703	2023-06-25	2025-06-24
2m Large Loop Antenna System (ZN3040)	ZHINAN	ZN3040	EMC2187	2024-03-22	2026-03-21
Amplifier(9k-1000MHz)	SONOMA	310	EMC2237	2024-03-22	2025-03-21
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	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	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	CRTSGSSAC966	EMC2230	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（25M-2GHz)	SCHWRZBECK	VULB 9168	EMC2238	2022-04-20	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

Radiated Emissions (above 1GHz)					
Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal Date**	**Cal Due Date**
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2023-11-10	2024-11-09
EMI Test Receiver (10Hz-26.5GHz)	Rohde & Schwarz	ESIB26	EMC0522	2023-12-15	2024-12-14
Chamber cable (Above 1GHz)	Scoflex	KMKM-8.0m	EMC0545	2022-08-24	2024-08-23
Horn Antenna (1GHz-18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2022-09-23	2025-09-22
2.4GHz Filter	Micro-Tronics	BRM 50702	EMC2069	2023-11-10	2024-11-09
EXA Signal Analyzer (10Hz-44GHz)	Keysight	N9010A	EMC2138	2023-08-23	2024-08-22
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2023-12-20	2026-12-19
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A

Output Power Measurement					
Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal Date**	**Cal Due Date**
Digital thermometer	FLUKE	51_2	EMC2200	2023-07-25	2024-07-24
Digital power analyzer for harmonics & flicker testing	EMTEST	DPA 500N	EMC2235	2024-04-19	2025-04-18
Programmable multifunctional ac/dc power source	EMTEST	NETWAVE 7-400	EMC2234	2024-04-19	2025-04-18
NET.Control	EMTEST	Ver 3.2.3	GZE100-80	N/A	N/A

Operating Frequency Measurement					
Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal Date**	**Cal Due Date**
EMI Test Receiver (10Hz-26.5GHz)	Rohde & Schwarz	ESIB26	EMC0522	2023-12-15	2024-12-14
Chamber cable (Above 1GHz)	Scoflex	KMKM-8.0m	EMC0545	2022-08-24	2024-08-23
Horn Antenna (1GHz-18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2022-09-23	2025-09-22
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2023-12-20	2026-12-19
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A

Radiation Hazard Test					
Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal Date**	**Cal Due Date**
Electric Field Probe(100KHz-3GHz)	WANDEL & GOLTERMANN	EMR-20	EMC0907	2023-05-11	2024-05-10

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General used equipment					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
DMM	Fluke	73	EMC0006	2023-06-11	2024-06-10

6 Emission Test Results

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

Test Requirement: 47 CFR Part 18
Test Method: FCC/OST MP-5:1986
Limit:
Frequency Range: 150kHz to 30MHz
0.15 to 0.5 MHz: 66dB(μV)-56dB(μV) quasi-peak, 56dB(μV)-46dB(μV) average
0.5 to 5 MHz: 56dB(μV) quasi-peak, 46dB(μV) average
5 to 30 MHz: 60dB(μV) quasi-peak, 50dB(μV) average
Detector: Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

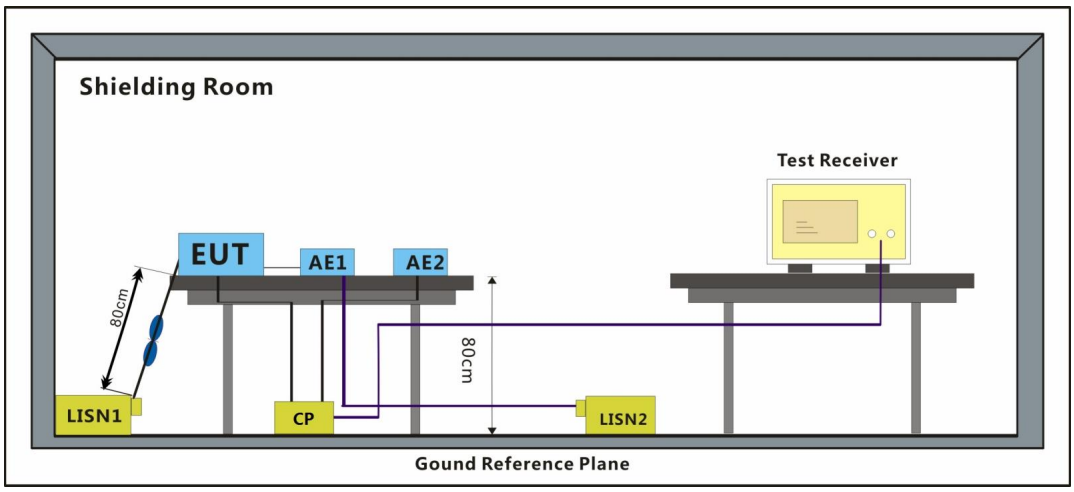
6.1.1 E.U.T. Operation

Operating Environment:
Temperature: 26.5 °C Humidity: 56.3 % RH Atmospheric Pressure: 1020 mbar

6.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Test the EUT in microwave mode with maximum power.
Pre-scan	01	Test the EUT in microwave mode with middle power.
Pre-scan	02	Test the EUT in microwave mode with lowest power.

6.1.3 Test Setup Diagram



6.1.4 Measurement Procedure and Data

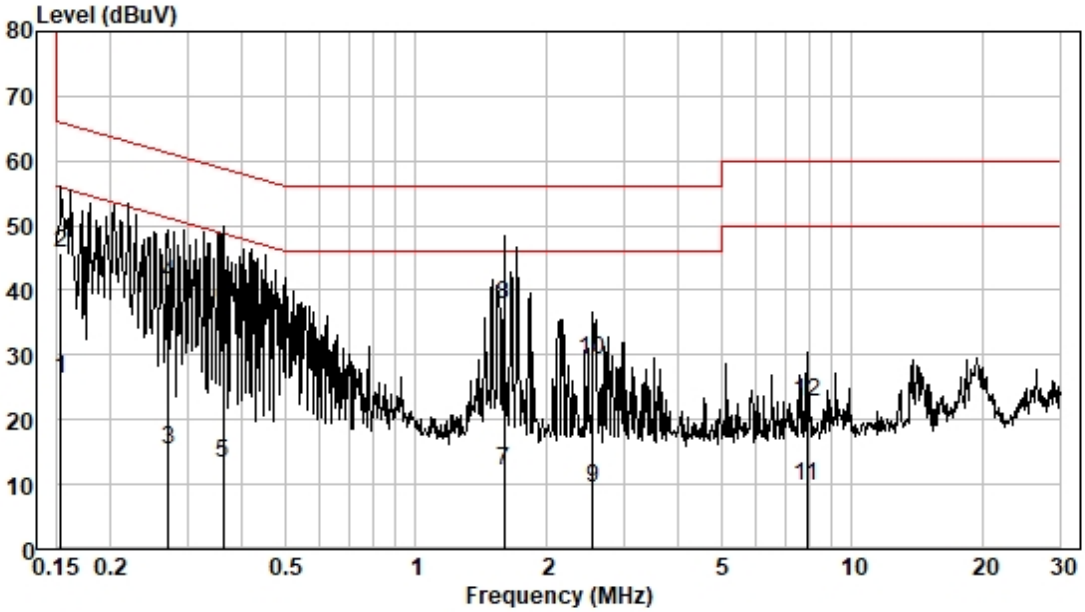
Frequency range: 150KHz-30MHz

An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.

The red line show in graphic is the limit in standard used in this section.

Measured Level = Read level + Cable Loss + LISN Factor

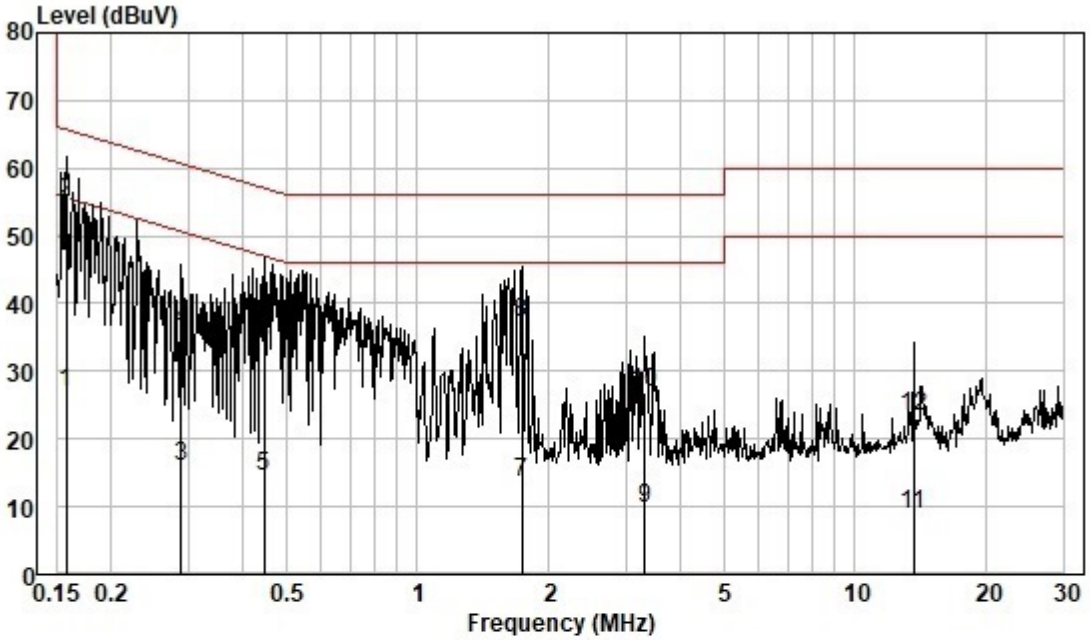
Test Mode: 00; Line: Live line



Pol :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	0.153	16.64	0.04	9.55	26.23	55.82	-29.59	Average
2	0.153	36.29	0.04	9.55	45.88	65.82	-19.94	QP
3	0.270	5.73	0.04	9.56	15.33	51.12	-35.79	Average
4	0.270	31.52	0.04	9.56	41.12	61.12	-20.00	QP
5	0.361	3.76	0.05	9.57	13.38	48.69	-35.31	Average
6	0.361	27.57	0.05	9.57	37.19	58.69	-21.50	QP
7	1.593	2.29	0.11	9.56	11.96	46.00	-34.04	Average
8	1.593	28.23	0.11	9.56	37.90	56.00	-18.10	QP
9	2.540	-0.24	0.14	9.57	9.47	46.00	-36.53	Average
10	2.540	19.50	0.14	9.57	29.21	56.00	-26.79	QP
11	7.893	-0.22	0.23	9.71	9.72	50.00	-40.28	Average
12	7.893	12.88	0.23	9.71	22.82	60.00	-37.18	QP

Test Mode: 00; Line: Neutral Line



Pol :NEUTRAL
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	17.33	0.04	9.52	26.89	55.60	-28.71	Average
2	0.157	46.15	0.04	9.52	55.71	65.60	-9.89	QP
3	0.288	6.27	0.04	9.53	15.84	50.59	-34.75	Average
4	0.288	26.45	0.04	9.53	36.02	60.59	-24.57	QP
5	0.447	4.84	0.05	9.54	14.43	46.93	-32.50	Average
6	0.447	24.41	0.05	9.54	34.00	56.93	-22.93	QP
7	1.734	4.05	0.11	9.55	13.71	46.00	-32.29	Average
8	1.734	27.47	0.11	9.55	37.13	56.00	-18.87	QP
9	3.310	0.13	0.16	9.58	9.87	46.00	-36.13	Average
10	3.310	17.13	0.16	9.58	26.87	56.00	-29.13	QP
11	13.623	-1.40	0.31	9.86	8.77	50.00	-41.23	Average
12	13.623	13.11	0.31	9.86	23.28	60.00	-36.72	QP

6.2 Radiated Emissions (Magnetic field Strength)(9kHz-30MHz)

Test Requirement: 47 CFR Part 18

Test Method: FCC/OST MP-5:1986

Limit:

Measurement Distance: 3 m

Frequency Range: 9kHz to 30MHz

Detector: Peak for pre-scan, Average for the final result
(200Hz Resolution Bandwidth for 9kHz to 150kHz;
9kHz Resolution Bandwidth for 150kHz to 30MHz)

Equipment:	Operating frequency:	RF Power generated by equipment (watts):	Limit dB(uV/m) average:
Any type unless otherwise specified (miscellaneous)	Any ISM frequency	**1160.6**	Limit=20lg(25*SQRT(**1160.6**/500))+20lg(300/3)=**71.62 dBuV/m** @ 3m distance.

6.2.1 E.U.T. Operation

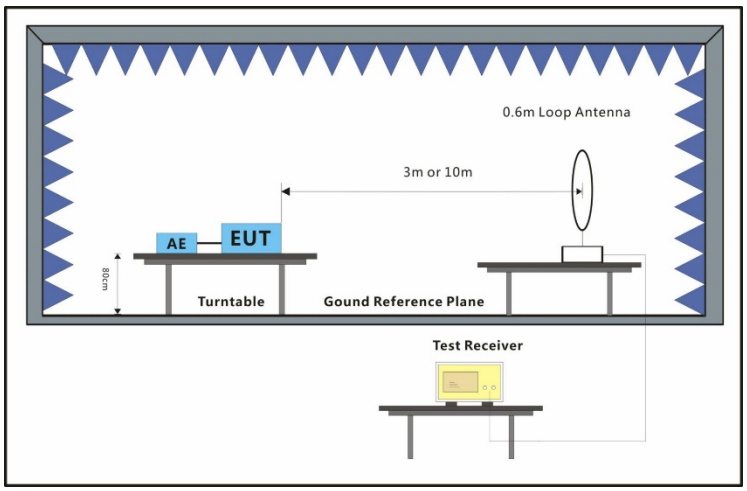
Operating Environment:

Temperature: 22.5 °C Humidity: 53.7 % RH Atmospheric Pressure: 1020 mbar

6.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Test the EUT in microwave mode with maximum power.
Pre-scan	01	Test the EUT in microwave mode with middle power.
Pre-scan	02	Test the EUT in microwave mode with lowest power.

6.2.3 Test Setup Diagram



6.2.4 Measurement Procedure and Data

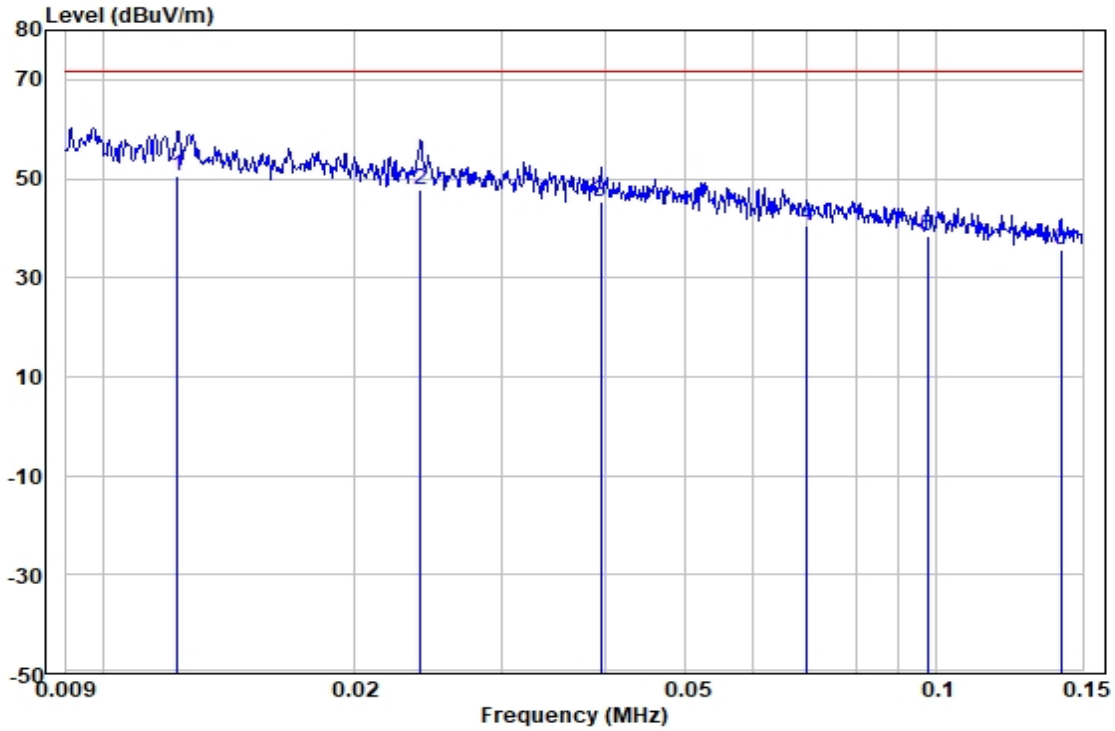
Frequency range: 9KHz-30MHz

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Average measurements were conducted based on the peak sweep graph. The EUT was measured by loop antenna with 2 orthogonal polarities.

The red line show in graphic is the limit in standard used in this section.

Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor

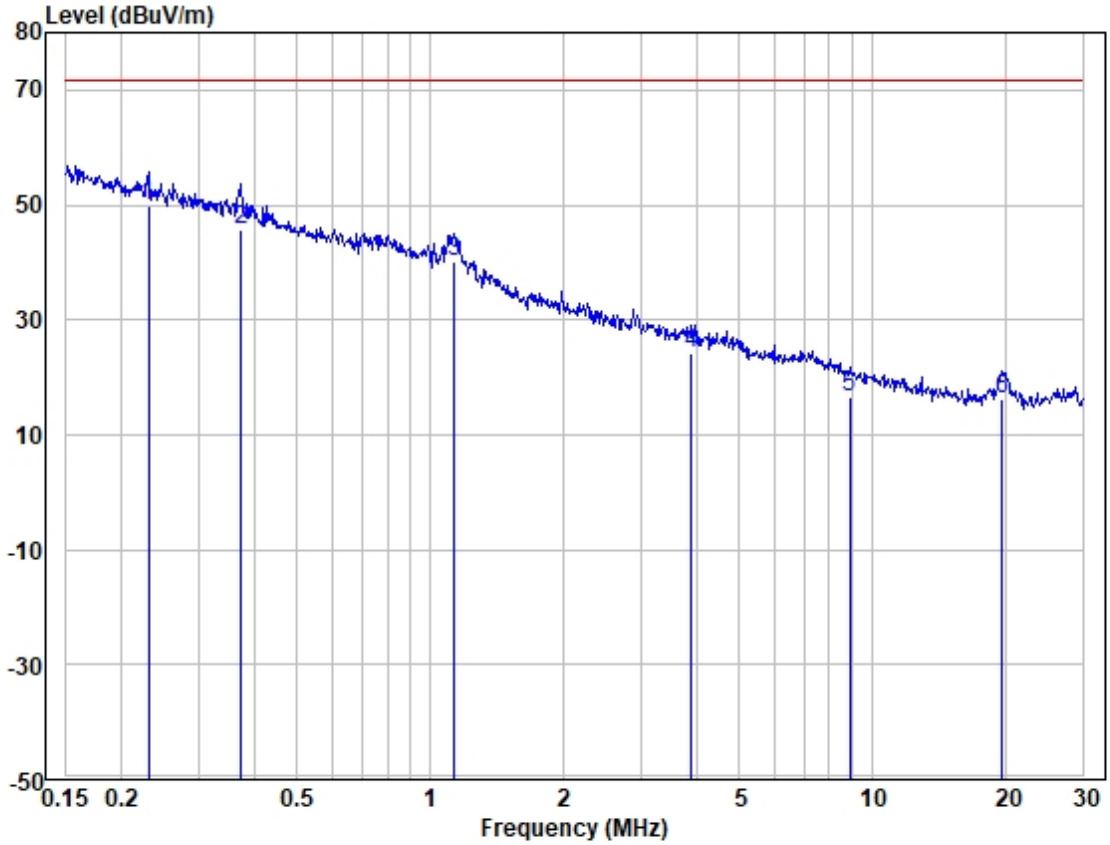
Test Mode: 00; Polarity: Horizontal



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	0.012	65.99	17.58	0.01	32.90	50.68	71.62	-20.94	HORIZONTAL	Average
2	0.024	66.94	13.67	0.01	32.90	47.72	71.62	-23.90	HORIZONTAL	Average
3	0.040	65.81	12.45	0.01	32.90	45.37	71.62	-26.25	HORIZONTAL	Average
4	0.070	61.41	12.01	0.01	32.90	40.53	71.62	-31.09	HORIZONTAL	Average
5	0.098	59.34	11.95	0.01	32.90	38.40	71.62	-33.22	HORIZONTAL	Average
6	0.141	56.74	11.90	0.01	32.90	35.75	71.62	-35.87	HORIZONTAL	Average

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	0.230	70.76	11.86	0.01	32.90	49.73	71.62	-21.89	HORIZONTAL	Average
2	0.373	66.81	11.86	0.01	32.90	45.78	71.62	-25.84	HORIZONTAL	Average
3	1.135	61.05	11.84	0.05	32.90	40.04	71.62	-31.58	HORIZONTAL	Average
4	3.901	45.29	11.67	0.08	32.90	24.14	71.62	-47.48	HORIZONTAL	Average
5	8.916	38.60	10.77	0.16	32.90	16.63	71.62	-54.99	HORIZONTAL	Average
6	19.740	39.98	8.72	0.24	32.90	16.04	71.62	-55.58	HORIZONTAL	Average

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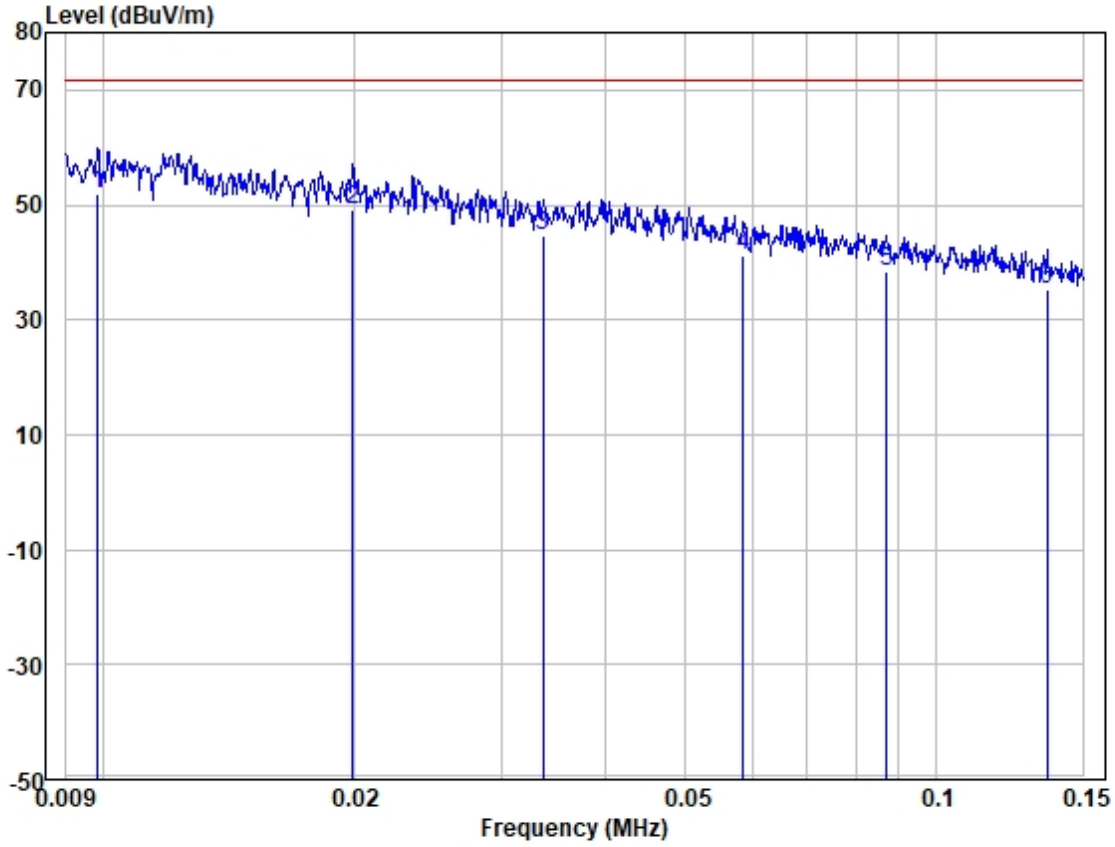
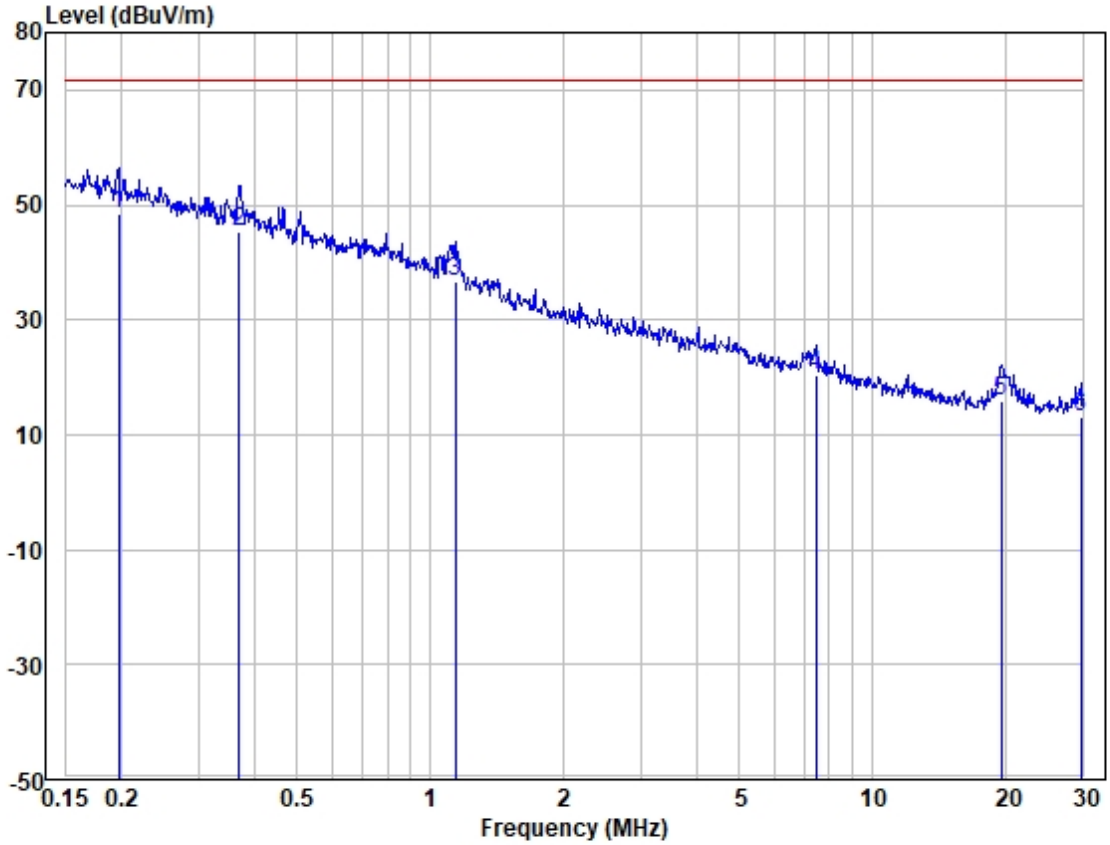
Test Mode: 00; Polarity: Vertical



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	0.010	65.98	18.68	0.01	32.90	51.77	71.62	-19.85	VERTICAL	Average
2	0.020	67.88	14.21	0.01	32.90	49.20	71.62	-22.42	VERTICAL	Average
3	0.034	64.93	12.76	0.01	32.90	44.80	71.62	-26.82	VERTICAL	Average
4	0.059	61.85	12.11	0.01	32.90	41.07	71.62	-30.55	VERTICAL	Average
5	0.087	59.41	11.96	0.01	32.90	38.48	71.62	-33.14	VERTICAL	Average
6	0.136	56.12	11.91	0.01	32.90	35.14	71.62	-36.48	VERTICAL	Average

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	0.198	69.49	11.85	0.01	32.90	48.45	71.62	-23.17	VERTICAL	Average
2	0.369	66.33	11.86	0.01	32.90	45.30	71.62	-26.32	VERTICAL	Average
3	1.141	57.75	11.84	0.05	32.90	36.74	71.62	-34.88	VERTICAL	Average
4	7.446	41.42	11.80	0.13	32.90	20.45	71.62	-51.17	VERTICAL	Average
5	19.635	39.96	8.72	0.24	32.90	16.02	71.62	-55.60	VERTICAL	Average
6	29.684	39.34	6.37	0.30	32.87	13.14	71.62	-58.48	VERTICAL	Average

6.3 Radiated Emissions (30MHz-1GHz)

Test Requirement: 47 CFR Part 18
Test Method: FCC/OST MP-5:1986
Limit:
Measurement Distance: 3 m
Frequency Range: 30 MHz to 1 GHz
Detector: Peak for pre-scan, average for the final result
(120 kHz Resolution Bandwidth for 30 MHz to 1 GHz)

Equipment:	Operating frequency:	RF Power generated by equipment (watts):	Limit dB(uV/m) average:
Any type unless otherwise specified (miscellaneous)	Any ISM frequency	**1160.6**	Limit=20lg(25*SQRT(**1160.6**/500))+20lg(300/3)=**71.62 dBuV/m** @ 3m distance.

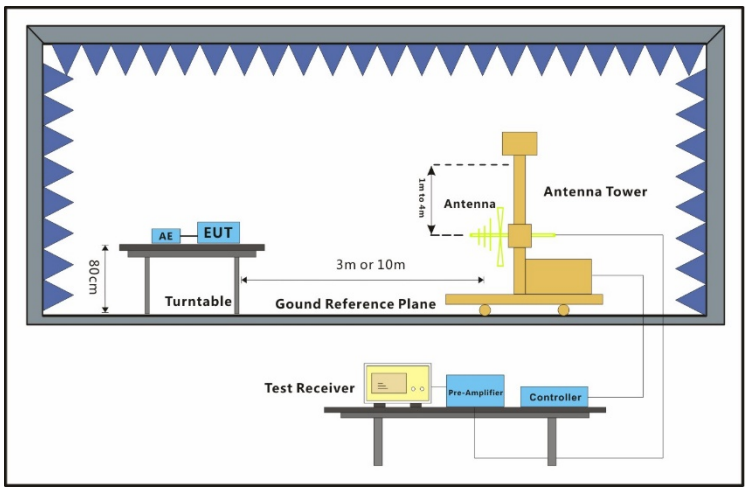
6.3.1 E.U.T. Operation

Operating Environment:
Temperature: 23.1 °C Humidity: 52.7 % RH Atmospheric Pressure: 1020 mbar

6.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Test the EUT in microwave mode with maximum power.
Pre-scan	01	Test the EUT in microwave mode with middle power.
Pre-scan	02	Test the EUT in microwave mode with lowest power.

6.3.3 Test Setup Diagram



6.3.4 Measurement Procedure and Data

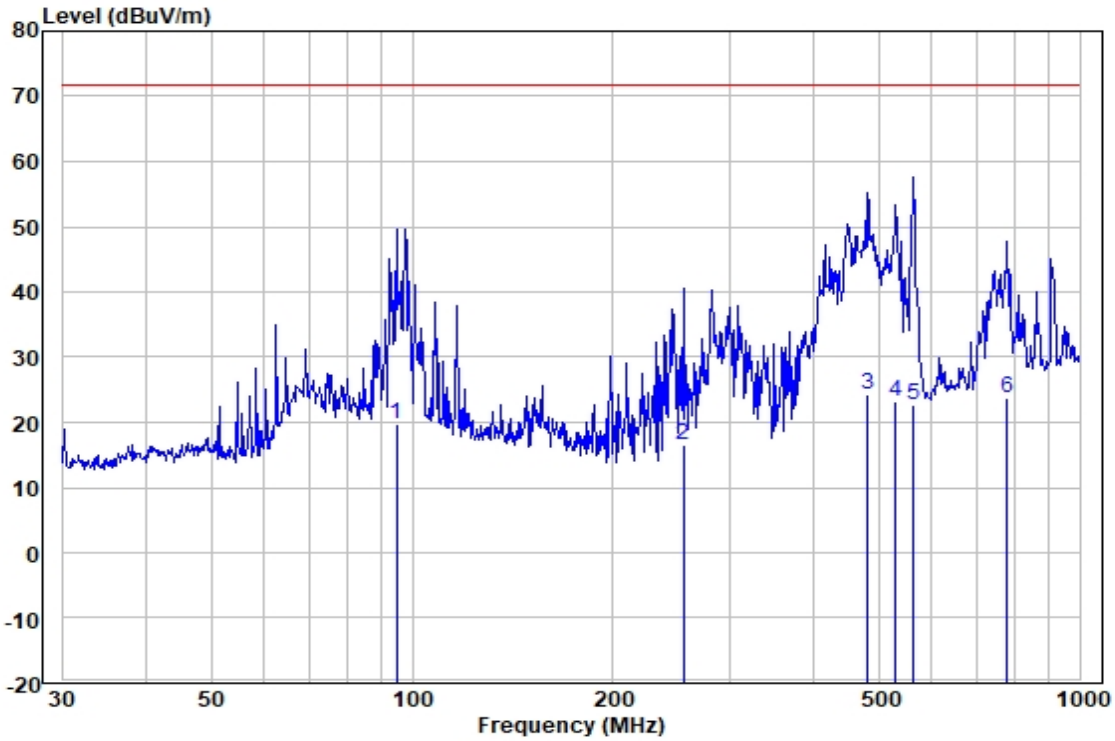
Frequency range: 30MHz-1GHz

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Average measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

The red line show in graphic is the limit in standard used in this section.

Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor

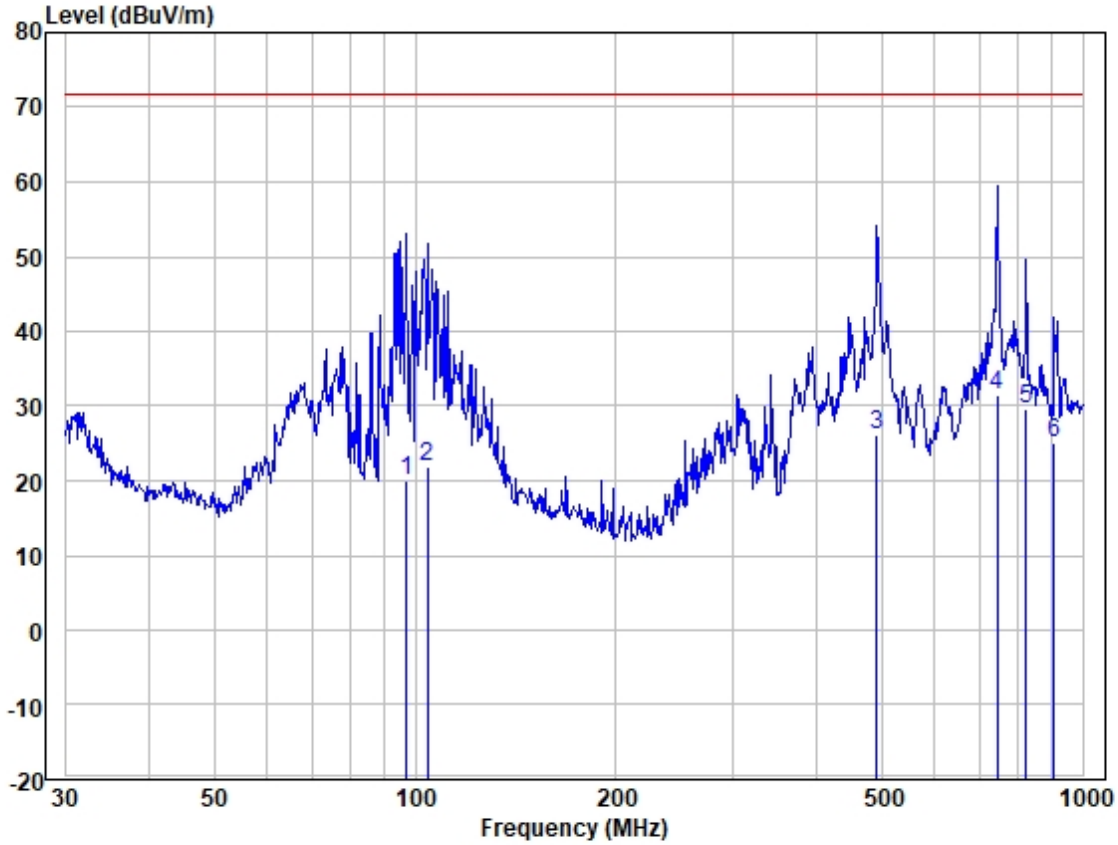
Test Mode: 00; Polarity: Horizontal



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

	Freq	Read Level	Antenna 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	94.760	38.12	13.86	0.53	32.80	19.71	71.62	-51.91	HORIZONTAL	Average
2	254.728	30.72	17.69	0.91	32.80	16.52	71.62	-55.10	HORIZONTAL	Average
3	480.528	32.73	23.08	1.28	32.89	24.20	71.62	-47.42	HORIZONTAL	Average
4	530.101	30.53	24.26	1.32	32.90	23.21	71.62	-48.41	HORIZONTAL	Average
5	562.662	29.57	24.65	1.39	32.90	22.71	71.62	-48.91	HORIZONTAL	Average
6	776.878	25.94	28.38	1.64	32.35	23.61	71.62	-48.01	HORIZONTAL	Average

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	97.115	38.22	14.14	0.53	32.80	20.09	71.62	-51.53	VERTICAL	Average
2	104.536	38.76	15.34	0.55	32.80	21.85	71.62	-49.77	VERTICAL	Average
3	490.745	34.29	23.33	1.28	32.90	26.00	71.62	-45.62	VERTICAL	Average
4	744.866	34.39	27.97	1.59	32.55	31.40	71.62	-40.22	VERTICAL	Average
5	821.710	31.96	28.26	1.67	32.21	29.68	71.62	-41.94	VERTICAL	Average
6	906.482	25.31	29.48	1.76	31.57	24.98	71.62	-46.64	VERTICAL	Average

6.4 Radiated Emissions (above 1GHz)

Test Requirement: 47 CFR Part 18
Test Method: FCC/OST MP-5:1986
Limit:
Measurement Distance: 3 m
Frequency Range: Above 1GHz
Detector: Peak for pre-scan, Average for the final result
(1MHz Resolution Bandwidth for 1000MHz Above)

Equipment:	Operating frequency:	RF Power generated by equipment (watts):	Limit dB(uV/m) average:
Any type unless otherwise specified (miscellaneous)	Any ISM frequency	**1160.6**	Limit=20lg(25*SQRT(**1160.6**/500))+20lg(300/3)=**71.62 dBuV/m** @ 3m distance.

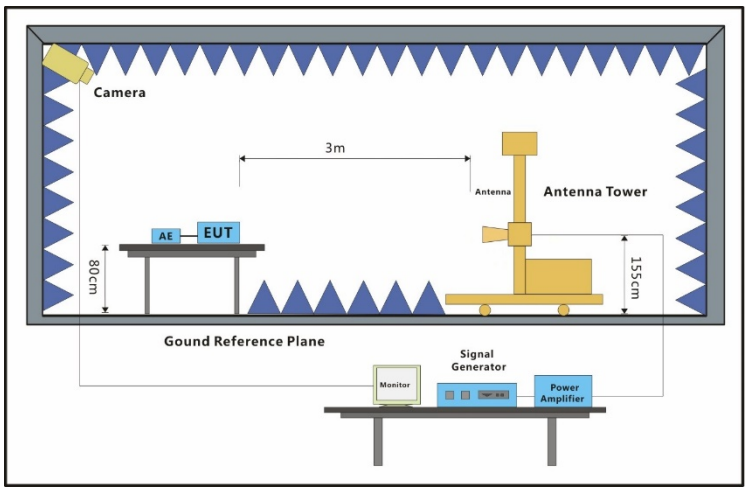
6.4.1 E.U.T. Operation

Operating Environment:
Temperature: 24.4 °C Humidity: 64.7 % RH Atmospheric Pressure: 1020 mbar

6.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Test the EUT in microwave mode with maximum power.
Pre-scan	01	Test the EUT in microwave mode with middle power.
Pre-scan	02	Test the EUT in microwave mode with lowest power.

6.4.3 Test Setup Diagram



6.4.4 Measurement Procedure and Data

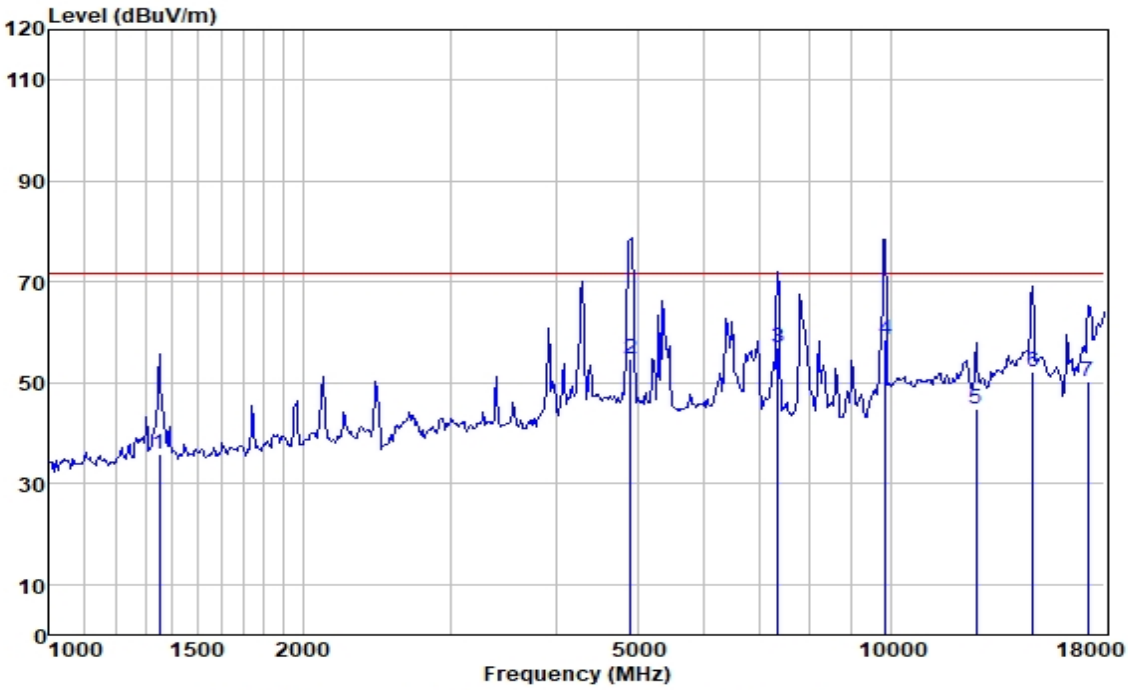
Frequency range: Above 1GHz

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Average measurements were conducted based on the peak sweep graph. The EUT was measured by Horn antenna with 2 orthogonal polarities.

The red line show in graphic is the limit in standard used in this section.

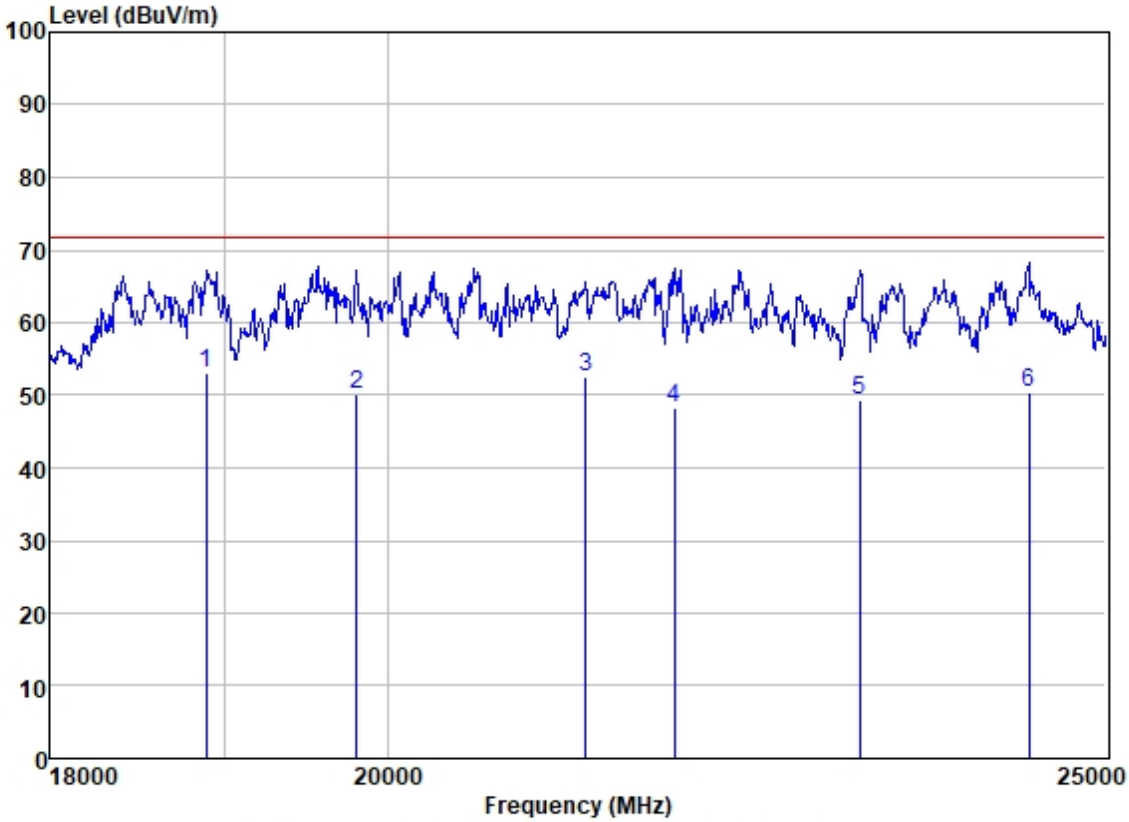
Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor

Test Mode: 00; Polarity: Horizontal



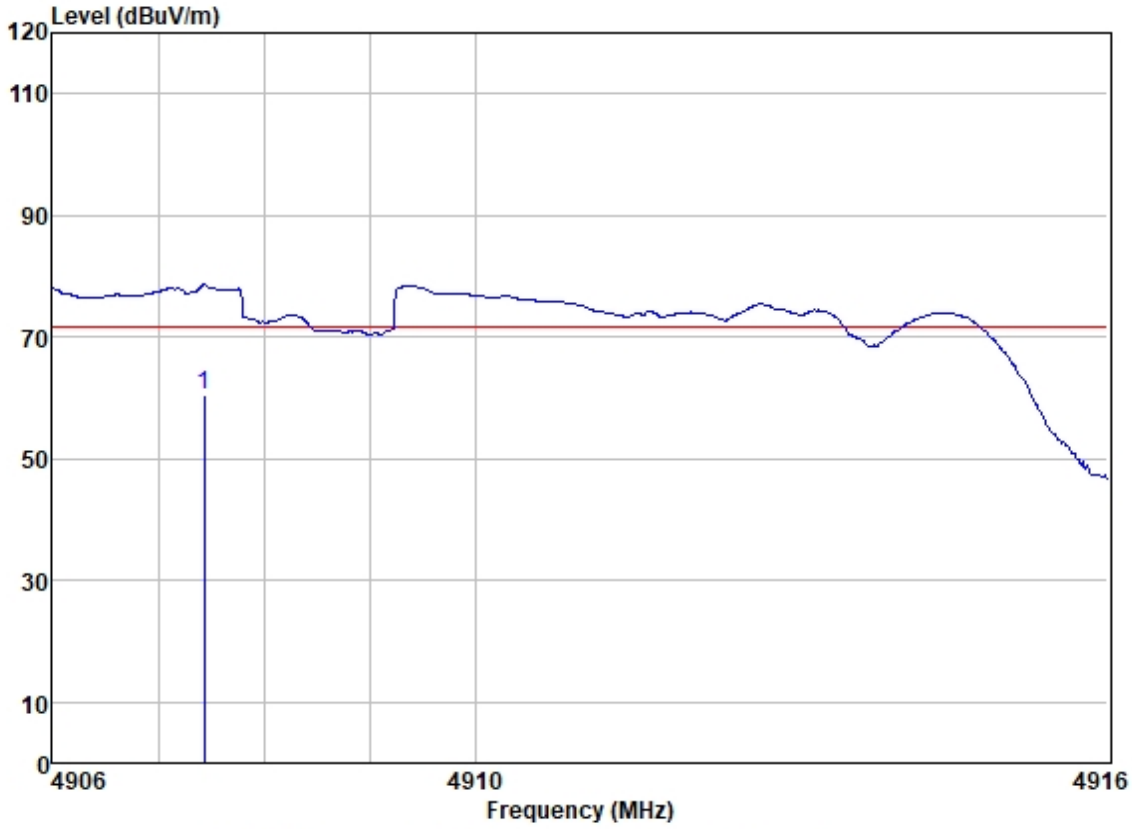
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1350.667	46.33	24.14	2.85	37.59	35.73	71.62	-35.89	HORIZONTAL	Average
2	4911.340	51.89	34.15	5.25	36.68	54.61	71.62	-17.01	HORIZONTAL	Average
3	7350.398	51.01	36.12	6.79	36.95	56.97	71.62	-14.65	HORIZONTAL	Average
4	9866.789	48.79	38.91	7.66	36.81	58.55	71.62	-13.07	HORIZONTAL	Average
5	12651.130	32.98	38.57	9.59	36.31	44.83	71.62	-26.79	HORIZONTAL	Average
6	14788.150	35.85	41.56	10.54	35.81	52.14	71.62	-19.48	HORIZONTAL	Average
7	17186.530	32.05	42.28	12.01	36.10	50.24	71.62	-21.38	HORIZONTAL	Average

Test Mode: 00; Polarity: Horizontal



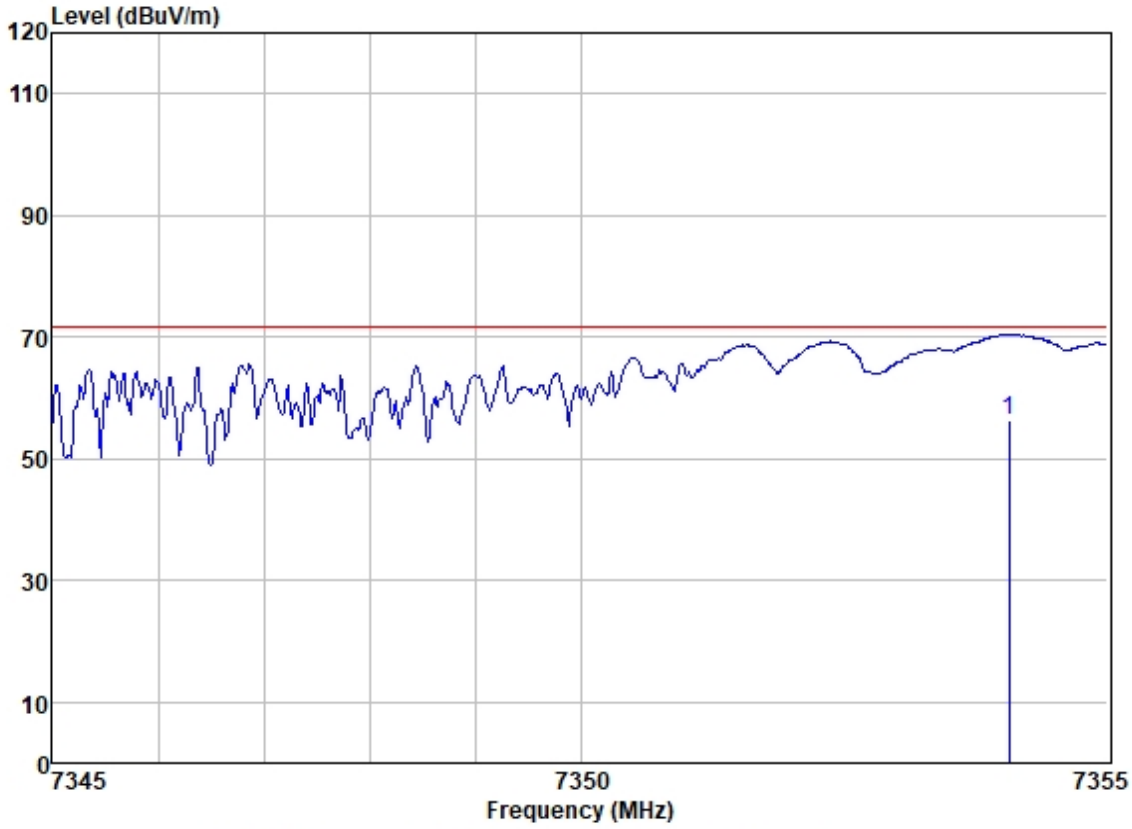
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	18896.760	33.84	37.99	16.88	35.60	53.11	71.62	-18.51	HORIZONTAL	Average
2	19799.130	30.55	38.00	17.25	35.60	50.20	71.62	-21.42	HORIZONTAL	Average
3	21262.040	31.79	37.96	18.12	35.39	52.48	71.62	-19.14	HORIZONTAL	Average
4	21856.920	26.93	38.18	18.55	35.31	48.35	71.62	-23.27	HORIZONTAL	Average
5	23157.860	26.18	39.60	19.33	35.79	49.32	71.62	-22.30	HORIZONTAL	Average
6	24407.610	26.34	39.49	20.67	36.12	50.38	71.62	-21.24	HORIZONTAL	Average

Test Mode: 00; Polarity: Horizontal



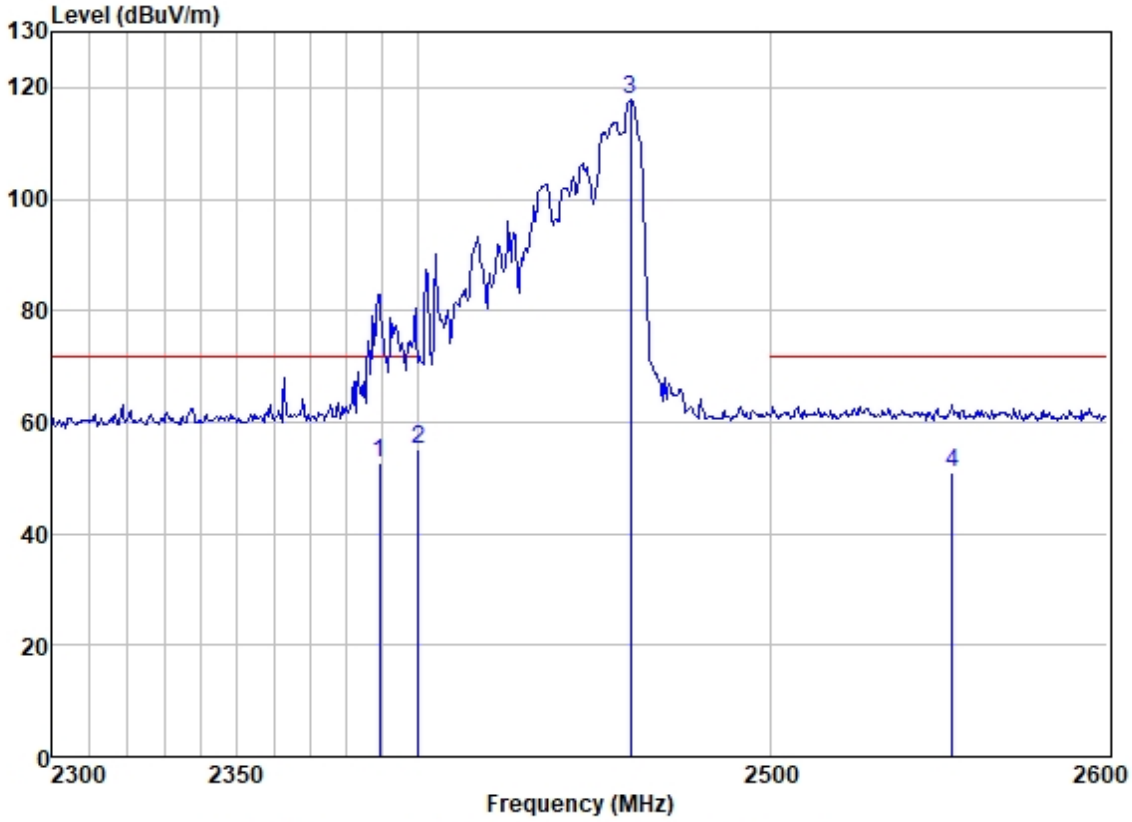
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	4907.439	59.14	32.93	5.24	36.68	60.63	71.62	-10.99	HORIZONTAL	Average

Test Mode: 00; Polarity: Horizontal



	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	7354.060	50.09	36.54	6.79	36.95	56.47	71.62	-15.15	HORIZONTAL	Average

Test Mode: 00; Polarity: Horizontal



	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2389.098	21.56	27.45	3.77	0.00	52.78	71.62	-18.84	HORIZONTAL	Average
2	2400.000	23.98	27.46	3.78	0.00	55.22	71.62	-16.40	HORIZONTAL	Average
3	2459.837	86.27	27.69	3.81	0.00	117.77	------	------	HORIZONTAL	peak
4	2553.248	19.08	28.02	3.86	0.00	50.96	71.62	-20.66	HORIZONTAL	Average

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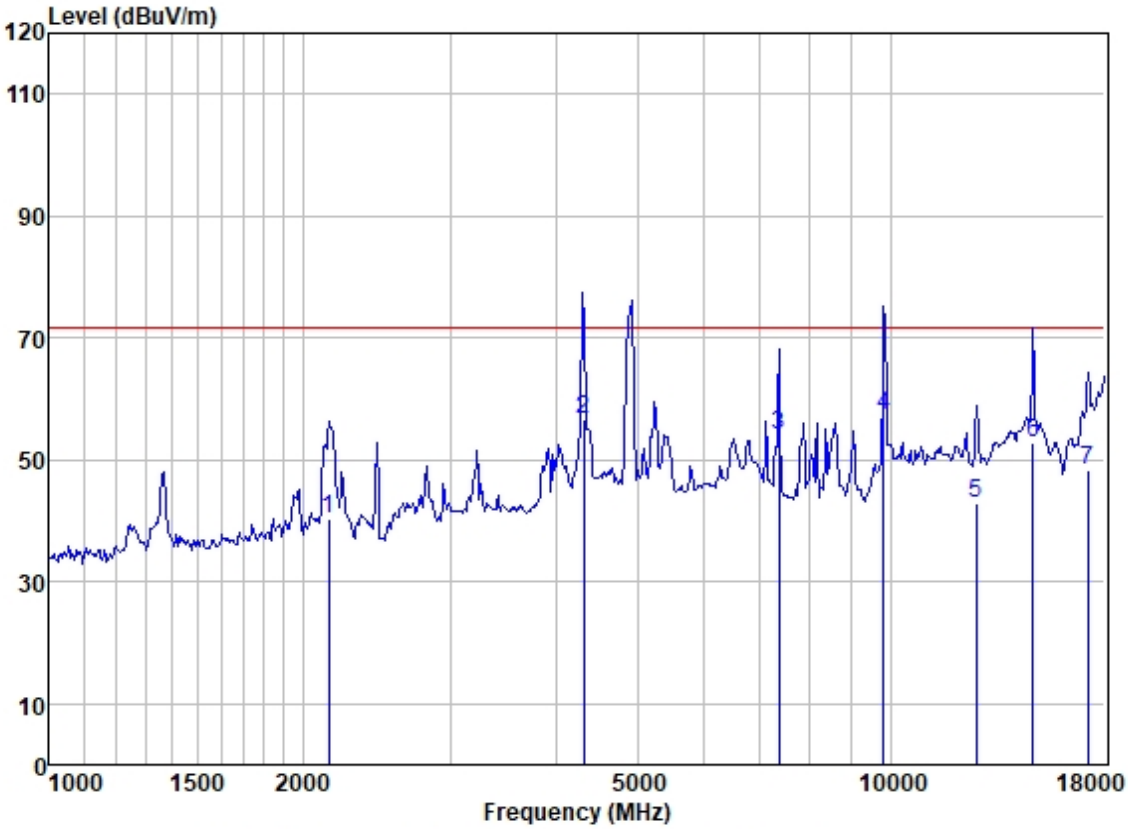
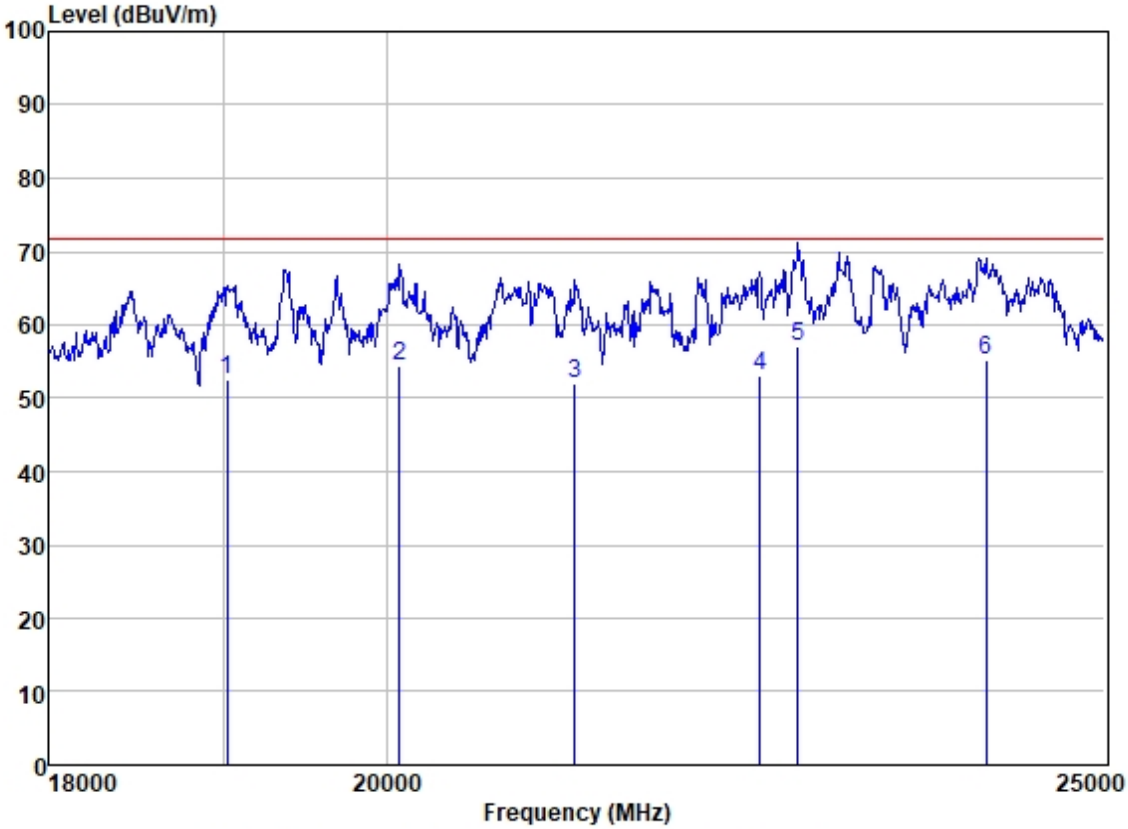
Test Mode: 00; Polarity: Vertical



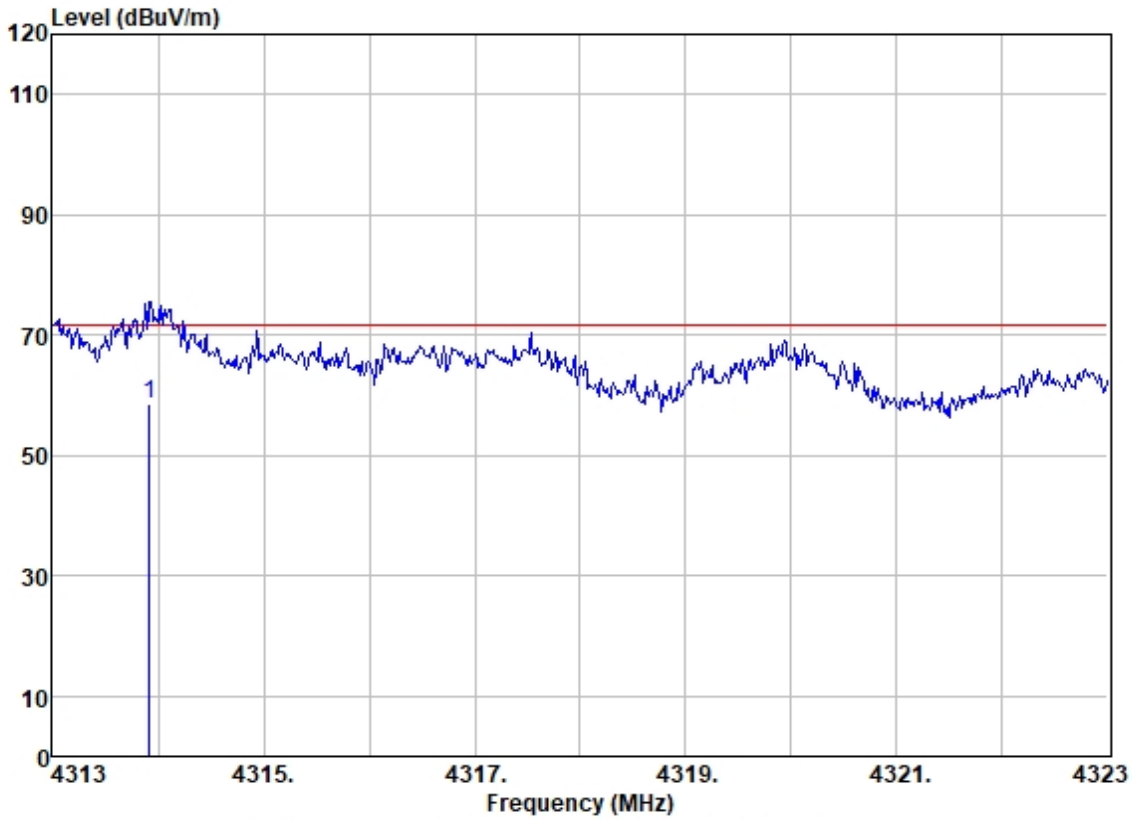
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2151.034	47.36	26.73	3.45	37.27	40.27	71.62	-31.35	VERTICAL	Average
2	4318.579	55.16	33.15	4.81	36.62	56.50	71.62	-15.12	VERTICAL	Average
3	7366.246	48.15	36.18	6.77	36.96	54.14	71.62	-17.48	VERTICAL	Average
4	9809.916	47.52	38.86	7.66	36.81	57.23	71.62	-14.39	VERTICAL	Average
5	12651.130	31.18	38.57	9.59	36.31	43.03	71.62	-28.59	VERTICAL	Average
6	14788.150	36.36	41.56	10.54	35.81	52.65	71.62	-18.97	VERTICAL	Average
7	17186.530	30.25	42.28	12.01	36.10	48.44	71.62	-23.18	VERTICAL	Average

Test Mode: 00; Polarity: Vertical



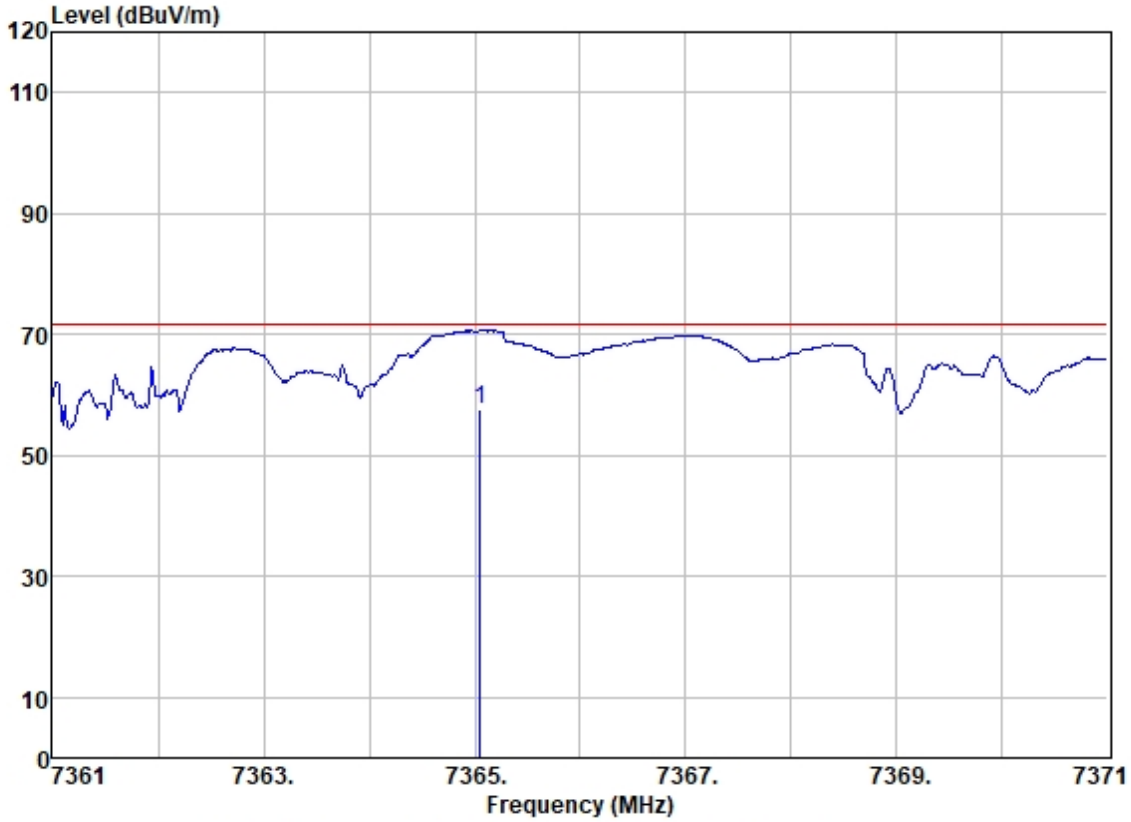
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	19021.320	33.16	38.00	16.90	35.60	52.46	71.62	-19.16	VERTICAL	Average
2	20074.190	34.65	38.00	17.33	35.59	54.39	71.62	-17.23	VERTICAL	Average
3	21199.270	31.51	37.95	18.08	35.41	52.13	71.62	-19.49	VERTICAL	Average
4	22453.690	30.94	38.79	18.86	35.45	53.14	71.62	-18.48	VERTICAL	Average
5	22720.810	34.35	39.31	19.09	35.57	57.18	71.62	-14.44	VERTICAL	Average
6	24088.990	31.21	39.58	20.45	36.11	55.13	71.62	-16.49	VERTICAL	Average

Test Mode: 00; Polarity: Vertical



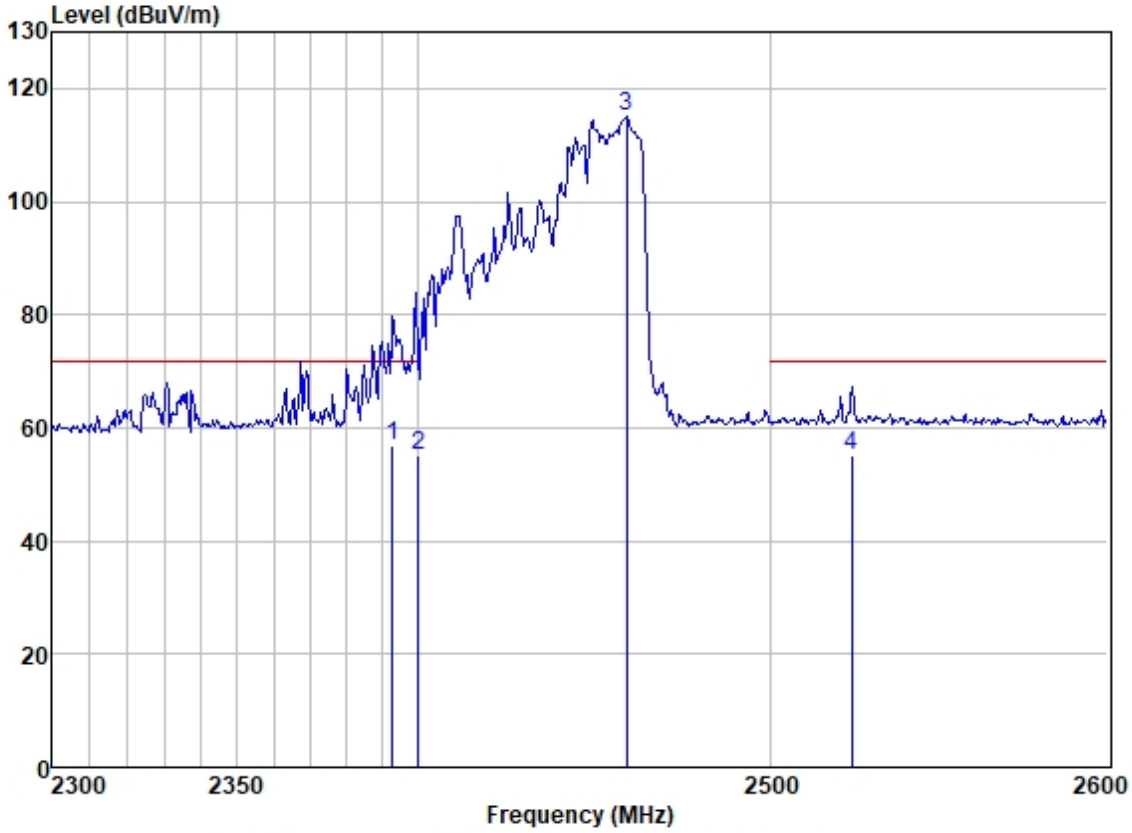
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	4313.920	58.87	31.62	4.81	36.62	58.68	71.62	-12.94	VERTICAL	Average

Test Mode: 00; Polarity: Vertical



	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	7365.050	51.47	36.47	6.77	36.96	57.75	71.62	-13.87	VERTICAL	Average

Test Mode: 00; Polarity: Vertical



	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2392.615	25.48	27.45	3.77	0.00	56.70	71.62	-14.92	VERTICAL	Average
2	2400.000	24.04	27.46	3.78	0.00	55.28	71.62	-16.34	VERTICAL	Average
3	2458.631	83.60	27.69	3.81	0.00	115.10	------	------	VERTICAL	peak
4	2523.682	23.37	27.91	3.84	0.00	55.12	71.62	-16.50	VERTICAL	Average

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6.5 Output Power Measurement

Test Requirement: 47 CFR Part 18

Test Method: FCC OST/MP-5:1986

Limit:

Power output Measurement:

Formula:

$$P = \frac{4{,}187 \cdot m_w (T_2 - T_1) + 0{,}55 \cdot m_c (T_2 - T_0)}{t}$$

NOTE :

P is the microwave power output, in watts

m_w is the mass of the water, in grams

m_c is the mass of the container, in grams

T_0 is the ambient temperature, in degrees Celsius

T_1 is the initial temperature of the water, in degrees Celsius

T_2 is the final temperature of the water, in degrees Celsius

t is the heating time, in seconds, excluding the magnetron filament heating-up time.

Input Power Measurement:

The EUT was set up according to the MP-5 for input power measurement, the input power and current was measured using a power analyzer. Water load in a beaker was located in the center of the oven and the microwave oven was set to maximum power.

Base on the measured input power it was found that the microwave oven can operating as the user manual's specifications.

6.5.1 E.U.T. Operation

Operating Environment:

Temperature: 22.5 °C Humidity: 52. % RH Atmospheric Pressure: 1020 mbar

6.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Test the EUT in microwave mode with maximum power.

6.5.3 Measurement Procedure and Data

Output Power Data

Mass of water (g)	Mass of the container (g)	Ambient temperature (℃)	Initial temperature (℃)	Final temperature (℃)	Heating time(s)	Power output (watts)
1204	411	19.9	10.0	19.9	43	1160.6

Input Power Data

Input Voltage (V)	Input Current (A)	Power Factor	Measured input power (W)	Rated input power (W)
120.08	14.47	0.94	1633	1700

6.6 Operating Frequency Measurement

Test Requirement: 47 CFR Part 18

Test Method: FCC OST/MP-5:1986

Limit:

Frequency Range: 2400-2500 MHz

Detector: Average for the final result for outside ISM band(2450MHz±50MHz)

Outside band limit: (a) ISM equipment operation on a frequency specified in §18.301 is permitted unlimited radiated energy in the band specified for that frequency.

(b) The field strength levels of emissions which lie outside the bands specified in §18.301,unless otherwise indicated, shall not exceed the following:

RF Power generated by equipment(watts)	Field strength Limit(uV/m) @300m
Below 500	25
500 or more	25*SQRT(power/500)

Power =**1160.6 W** according to clause 6.1.2

Limit**=20lg(25*SQRT(power/500))+20lg(300/3)=71.62dBuV/m @ 3m distance.**

ISM band: ISM equipment may be operated on any frequency above 9 kHz.

And the frequency band 2400-2500MHz is allocated for use by ISM equipment.

(§18.301)

ISM frequency	Tolerance
6.78MHz	±15.0kHz
13.56MHz	±7.0kHz
27.12MHz	±163.0kHz
40.68MHz	±20.0kHz
915MHz	±13.0MHz
2450MHz	**±50.0MHz**
5800MHz	±75.0MHz
24125MHz	±125.0MHz
61.25GHz	±250.0MHz
122.5GHz	±500.0MHz
245.00GHz	±1.0GHz

6.6.1 E.U.T. Operation

Operating Environment:

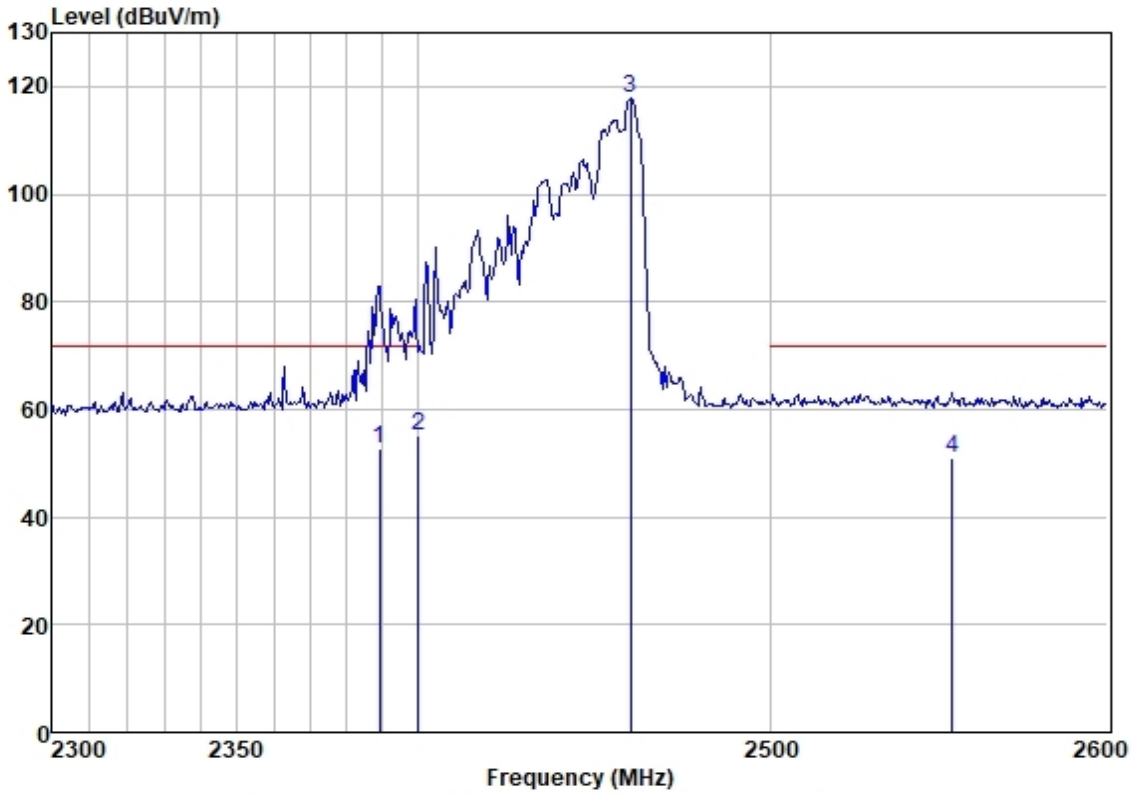
Temperature: 24.4 °C Humidity: 64.7 % RH Atmospheric Pressure: 1020 mbar

6.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Test the EUT in microwave mode with maximum power.
Pre-scan	01	Test the EUT in microwave mode with middle power.
Pre-scan	02	Test the EUT in microwave mode with lowest power.

6.6.3 Measurement Procedure and Data

Test Mode: 00; The variation of frequency with line voltage



	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2389.098	21.56	27.45	3.77	0.00	52.78	71.62	-18.84	HORIZONTAL	Average
2	2400.000	23.98	27.46	3.78	0.00	55.22	71.62	-16.40	HORIZONTAL	Average
3	2459.837	86.27	27.69	3.81	0.00	117.77	------	------	HORIZONTAL	peak
4	2553.248	19.08	28.02	3.86	0.00	50.96	71.62	-20.66	HORIZONTAL	Average

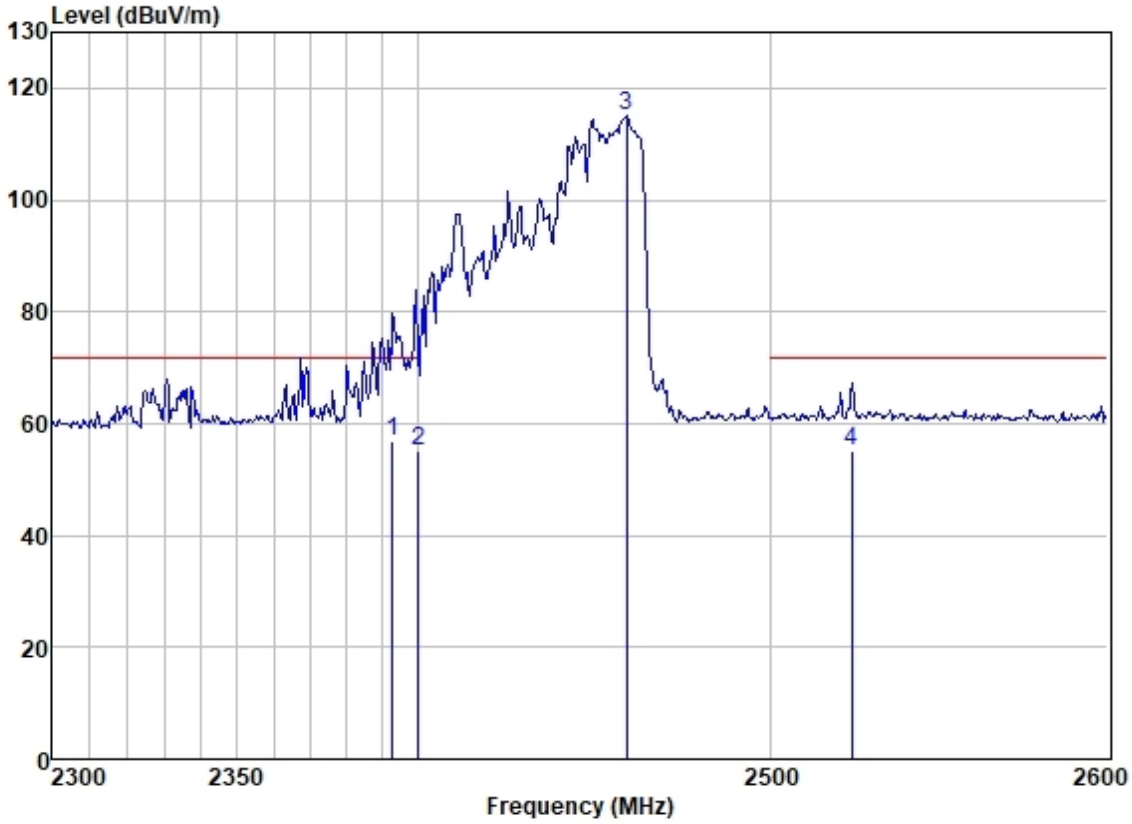
The variation of frequency with line voltage.

The operating frequency was measured using a spectrum analyzer, the supply voltage was setting at the rated AC voltage, measured was start with EUT at room temperature. The EUT was started to warm by at least 10 minutes, the operating frequency was monitored as the rated voltage was varied from 80% to 125%.

Test record was found the worst situation is when the line voltage is 125% of rated AC voltage.

ISM frequency(MHz)	Tolerance(MHz)	Measurement Data(MHz)
2450	±50	2459.837

Test Mode: 00; The variation of frequency with time



	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2392.615	25.48	27.45	3.77	0.00	56.70	71.62	-14.92	VERTICAL	Average
2	2400.000	24.04	27.46	3.78	0.00	55.28	71.62	-16.34	VERTICAL	Average
3	2458.631	83.60	27.69	3.81	0.00	115.10	------	------	VERTICAL	peak
4	2523.682	23.37	27.91	3.84	0.00	55.12	71.62	-16.50	VERTICAL	Average

The variation of frequency with time

The operating frequency was measured using a spectrum analyzer, the supply voltage was setting at the rated AC voltage, measured was start with EUT at room temperature, the operating frequency was monitored until the water load was reduced to 20 percent of the original quantity.

Test record was found the worst situation is when the water load is reduced to 20 percent of the original quantity.

ISM frequency(MHz)	Tolerance(MHz)	Measurement Data(MHz)
2450	±50	2458.631

6.7 Radiation Hazard Test

Test Requirement: 47 CFR Part 18

Test Method: FCC OST/MP-5:1986

6.7.1 E.U.T. Operation

Operating Environment:

Temperature: 22.5 °C Humidity: 52.5 % RH Atmospheric Pressure: 1020 mbar

6.7.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Test the EUT in microwave mode with maximum power.
Pre-scan	01	Test the EUT in microwave mode with middle power.
Pre-scan	02	Test the EUT in microwave mode with lowest power.

6.7.3 Measurement Procedure and Data

Maximum measure level (mW/cm²)	Limit (mW/cm²)	Test Result
0.142	1	Pass

7 Test Setup Photo

Refer to Appendix - Test Setup Photo for GZEM230300130004

8 EUT Constructional Details (EUT Photos)

Refer to Appendix - External and Internal Photos for GZEM2403001784HS

- End of the Report -