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### TEST REPORT

Application No.:	GZEM2012017159HS
Applicant:	Guangdong Galanz Enterprises Co., Ltd.
Address of Applicant:	25 Ronggui Nan Road, Shunde, Foshan, Guangdong, China
Manufacturer:	Guangdong Galanz Microwave Electrical Appliances Manufacturing Co., Ltd.
Address of Manufacturer:	3 Xingpu Avenue, Huangpu, Zhongshan, Guangdong, China.
Factory:	<ol> <li>Guangdong Galanz Microwave Electrical Appliances Manufacturing Co., Ltd.</li> <li>Guangdong Galanz Microwave Oven and Electrical Appliances Manufacturing Co., Ltd.</li> </ol>
Address of Factory:	1. 3 Xingpu Avenue, Huangpu, Zhongshan, Guangdong, China.
	2. 25 Ronggui Nan Road, Shunde, Foshan, Guangdong, China
Equipment Under Test (El	ЈТ):
FCC ID: UHW10048003	
EUT Name:	Microwave Oven
Model No.:	RED480JAH-PA0H0A, RED480JBH-PA0H0A, RED480JBH-PA0H1A, NS-OTR16SS8Q, NS-OTR16SS9, NS-OTR16WH9, NS-OTR16BK9,
	RED480 (X) H-(Y) series ¤
¤	Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.
Trade Mark:	Galanz
Standard(s):	47 CFR Part 18
Date of Receipt:	2020-12-10
Date of Test:	2020-12-14 to 2020-12-16
Date of Issue:	2020-12-30
Test Result:	Pass*

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

ste Jun

Kobe Jian EMC Laboratory Manager



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Revision Record							
Version Chapter Date Modifier Remark							
01		2020-12-30		Original			

Authorized for issue by:			
Tested By	Vamon Gum	2020-12-14 to 2020-12-16	
	Damon_Guan /Project Engineer	Date	
Checked By	Terry Lai	2020-12-30	
	Terry_Lai /Reviewer	Date	



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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	
Output Power Measurement	47 CFR Part 18	FCC OST/MP-5:1986	FCC OST/MP-5:1986 Clause 4.3	Pass	
Operating Frequency Measurement	47 CFR Part 18	FCC OST/MP-5:1986	18.301	Pass	
Radiation Hazard Test	47 CFR Part 18	FCC OST/MP-5:1986	1 mW/cm <sup>2</sup>	Pass	
Radiated Emissions (30MHz-1GHz)	47 CFR Part 18	FCC OST/MP-5:1986	18.305	Pass	
Radiated Emissions (above 1GHz)	47 CFR Part 18	FCC OST/MP-5:1986	18.305	Pass	
Radiated Emissions (Magnetic field Strength) (9kHz-30MHz)	47 CFR Part 18	FCC OST/MP-5:1986	18.305	Pass	

### **¤** Declaration of EUT Family Grouping:

Model No.: RED480JAH-PA0H0A, RED480JBH-PA0H0A, RED480JBH-PA0H1A, NS-OTR16SS8Q, NS-OTR16SS9, NS-OTR16WH9, NS-OTR16BK9, RED480 (X) H-(Y) series

Variable (X): It represents the differences of the appearance, including combination of letters and/or numbers, which don't affect the certification.

Variable (Y) may compose by one to six characters from A to Z and/or numbers from 0 to 9. It denotes one of the cosmetics of the microwave oven, which don't affect the certification.

RED480JAH-PA0H0A is identical to NS-OTR16SS8Q except for the model name and brand name. RED480JBH-PA0H0A is identical to NS-OTR16SS9 except for the model name and brand name. RED480JBH-PA0H1A is identical to NS-OTR16WH9 and NS-OTR16BK9 except for the model name and brand name.

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 model name, brand name and outer appearance.

Therefore only one model RED480JBH-PA0H0A was tested in this report.



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### 4 General Information

### 4.1 Details of E.U.T.

Power Supply:	AC 120V 60Hz
Test Voltage:	AC 120V 60Hz
Cable:	About 1.0m x 3 wires unscreened AC mains cable.

### 4.2 Description of Support Units

Load for microwave ovens for testing:

1000mL of water in the beaker for power output and frequency measurement.

One of 700 and the other of 300mL of water for second and third harmonic radiation measurement. 700mL of water for all other measurement

### 4.3 Measurement Uncertainty

No.	Item Measurement Uncertainty					
-	Conducted Disturbance Voltage at	3.63dB (9kHz to 150kHz)				
I	Mains Terminals	3.22dB (150kHz to 30MHz)				
2	Disturbance Power	3.78dB				
		5.0dB (9kHz-30MHz)				
0	Radiated Emissions	5.0dB (30MHz-1GHz)				
3		5.2dB (1GHz-6GHz)				
		5.5dB (6GHz-25GHz)				

### 4.4 Test Location

All tests were performed at:

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

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

No tests were sub-contracted.



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### 4.5 Test Facility

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

#### • NVLAP (Lab Code: 200611-0)

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

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

#### • ACMA

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our NVLAP accreditation.

#### • 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 2.948 Listed Test Firm(Registration No.: 282399)

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 282399, May 31, 2002.

#### • 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, Jul 13, 2017.

#### Industry Canada (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-10449 and T-11179)

The 10m Semi-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-10449 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 17025:2005, 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

Conducted Emissions at Mains Terminals (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	2020-01-10	2021-01-09	
LISN	Rohde & Schwarz	ENV216	EMC2135	2020-09-25	2021-09-24	
EMI Test Receiver	Rohde & Schwarz	ESCS30	EMC0506	2020-11-13	2021-11-12	
Coaxial Cable	HangTianXing	2m	EMC0107	2020-09-09	2022-09-08	
Voltage Probe	SGS-EMC	N/A	EMC0106	2019-05-10	2021-05-09	
Conical Metal Housing	SGS-EMC	N/A	EMC0167	2020-04-19	2022-04-18	
Test Software E3c	Audix	Ver. 5.4.1221b	GZE100-62	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	2020-05-29	2021-05-28

Radiated Emissions (30MHz-1GHz)						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
EMI Test Receiver	Rohde & Schwarz	ESIB26	EMC0522	2020-01-10	2021-01-09	
EMI Test Receiver	Rohde & Schwarz	ESCI	EMC0056	2020-01-10	2021-01-09	
Chamber cable	HangTianXing	N/A	EMC0542	2019-06-28	2021-06-27	
Trilog Broadband Antenna 25MHz-1GHz	SCHWARZBECKME SS-ELEKTRONIK	VULB 9168	EMC2174	2018-09-06	2021-09-05	
Trilog Broadband Antenna 30MHz-1GHz	SCHWARZBECKME SS-ELEKTRONIK	VULB 9168	SEM003-18	2019-02-22	2022-02-22	
Bi-log Type Antenna	Schaffner Chase	CBL6143	EMC0519	2020-06-08	2023-06-07	
Horn Antenna 1GHz-18GHz	Rohde & Schwarz	HF906	EMC0518	2018-09-02	2021-09-01	
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2020-01-10	2021-01-09	
Amplifier	HP	8447F	EMC2065	2020-05-26	2021-05-25	
Pre-Amplifier MH648A	ANRITSU CORP	MH648A	EMC2086	2020-11-13	2021-11-12	
Active Loop Antenna	ETS-Lindgren	6502	EMC2190	2019-12-27	2021-12-26	
High Pass Filter(915MHz)	FSY MICROWAVE	HM1465-9SS	EMC2079	2020-01-10	2021-01-09	
2.4GHz Filter	Micro-Tronics	BRM 50702	EMC2069	2020-01-10	2021-01-09	
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2019-10-20	2022-10-19	
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2017-12-19	2020-12-18	
MXE EMI Receiver	Keysight	N9038A	EMC2139	2020-11-13	2021-11-12	
EXA Signal Analyzer	Keysight	N9010A	EMC2138	2020-09-17	2021-09-16	
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A	



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Radiated Emissions (above 1GHz)						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
EMI Test Receiver	Rohde & Schwarz	ESIB26	EMC0522	2020-01-10	2021-01-09	
EMI Test Receiver	Rohde & Schwarz	ESCI	EMC0056	2020-01-10	2021-01-09	
Chamber cable	HangTianXing	N/A	EMC0542	2019-06-28	2021-06-27	
Trilog Broadband Antenna 25MHz-1GHz	SCHWARZBECKME SS-ELEKTRONIK	VULB 9168	EMC2174	2018-09-06	2021-09-05	
Bi-log Type Antenna	Schaffner Chase	CBL6143	EMC0519	2020-06-08	2023-06-07	
Horn Antenna	SCHWARZBECKME SS-ELEKTRONIK	BBHA 9120D	EMC2016	2019-09-25	2022-09-24	
Horn Antenna 1GHz-18GHz	Rohde & Schwarz	HF906	EMC0518	2018-09-02	2021-09-01	
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2020-01-10	2021-01-09	
Amplifier	HP	8447F	EMC2065	2020-05-26	2021-05-25	
Pre-Amplifier MH648A	ANRITSU CORP	MH648A	EMC2086	2020-11-13	2021-11-12	
Active Loop Antenna	EMCO	6502	EMC0523	2018-03-05	2021-03-04	
High Pass Filter(915MHz)	FSY MICROWAVE	HM1465-9SS	EMC2079	2020-01-10	2021-01-09	
2.4GHz Filter	Micro-Tronics	BRM 50702	EMC2069	2020-01-10	2021-01-09	
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2019-10-20	2022-10-19	
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2017-12-19	2020-12-18	
MXE EMI Receiver	Keysight	N9038A	EMC2139	2020-11-13	2021-11-12	
EXA Signal Analyzer	Keysight	N9010A	EMC2138	2020-09-17	2021-09-16	
Trilog Broadband Antenna 30MHz-1GHz	SCHWARZBECKME SS-ELEKTRONIK	VULB 9168	SEM003-18	2019-02-22	2022-02-22	
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A	



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Radiated Emissions (Magnetic field Strength) (9kHz-30MHz)						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
EMI Test Receiver	Rohde & Schwarz	ESIB26	EMC0522	2020-01-10	2021-01-09	
EMI Test Receiver	Rohde & Schwarz	ESCI	EMC0056	2020-01-10	2021-01-09	
Chamber cable	HangTianXing	N/A	EMC0542	2019-06-28	2021-06-27	
Trilog Broadband Antenna 25MHz-1GHz	SCHWARZBECKME SS-ELEKTRONIK	VULB 9168	EMC2174	2018-09-06	2021-09-05	
Trilog Broadband Antenna 30MHz-1GHz	SCHWARZBECKME SS-ELEKTRONIK	VULB 9168	SEM003-18	2019-02-22	2022-02-22	
Bi-log Type Antenna	Schaffner Chase	CBL6143	EMC0519	2020-06-08	2023-06-07	
Horn Antenna 1GHz-18GHz	Rohde & Schwarz	HF906	EMC0518	2018-09-02	2021-09-01	
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2020-01-10	2021-01-09	
Amplifier	HP	8447F	EMC2065	2020-05-26	2021-05-25	
Pre-Amplifier MH648A	ANRITSU CORP	MH648A	EMC2086	2020-11-13	2021-11-12	
Active Loop Antenna	ETS-Lindgren	6502	EMC2190	2019-12-27	2021-12-26	
High Pass Filter(915MHz)	FSY MICROWAVE	HM1465-9SS	EMC2079	2020-01-10	2021-01-09	
2.4GHz Filter	Micro-Tronics	BRM 50702	EMC2069	2020-01-10	2021-01-09	
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2019-10-20	2022-10-19	
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2017-12-19	2020-12-18	
MXE EMI Receiver	Keysight	N9038A	EMC2139	2020-11-13	2021-11-12	
EXA Signal Analyzer	Keysight	N9010A	EMC2138	2020-09-17	2021-09-16	
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A	

General used equipment					
Equipment	Manufacturer	Model No	<b>Inventory No</b>	Cal Date	Cal Due Date
DMM	Fluke	73	EMC0006	2020-07-09	2021-07-08
DMM	Fluke	73	EMC0007	2020-07-09	2021-07-08



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#### **Emission Test Results** 6

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

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

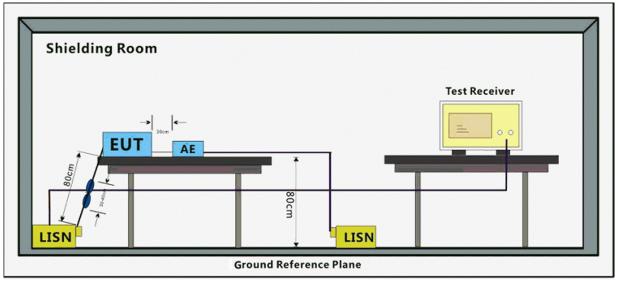
### 6.1.1 E.U.T. Operation

**Operating Environment:** 

Temperature:	23.9 °C	Humidity:	52	% RH	Atmospheric Pressure:	1020	mbar
Pretest these	a: Test the EUT in microwave mode with maximum power.						
modes to find the	b: Test the EUT in microwave mode with middle power.						
worst case:	c: Test the EUT in microwave mode with lowest power.						
The worst case	a: Test the EUT in microwave mode with maximum power.						

The worst case for final test:

6.1.2 Test Setup Diagram



### 6.1.3 Measurement Data

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.

Measured Level = Read level + Cable Loss + LISN Factor

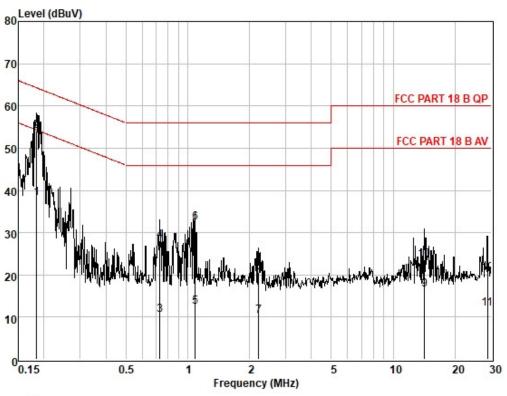


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Mode:a; Line:Live Line



Pol :LINE Mode : Model :

Frequenc MHz	Read Level dBuV	Cable Loss dB	LISN Factor dB	Measured Level dBuV	Limit Line dBuV	Over Limit dB	Remark
0.10	22.40	0.00	0.00	20.47	54.00	16.11	
0.18	28.49	0.06	9.62	38.17	54.28	-16.11	Average
0.18	44.33	0.06	9.62	54.01	64.28	-10.27	QP
0.73	0.78	0.07	9.63	10.48	46.00	-35.52	Average
0.73	18.34	0.07	9.63	28.04	56.00	-27.96	QP
1.09	2.65	0.08	9.62	12.35	46.00	-33.65	Average
1.09	22.67	0.08	9.62	32.37	56.00	-23.63	QP
2.21	0.53	0.13	9.62	10.28	46.00	-35.72	Average
2.21	10.92	0.13	9.62	20.67	56.00	-35.33	QP
14.21	6.48	0.30	9.73	16.51	50.00	-33.49	Average
14.21	13.61	0.30	9.73	23.64	60.00	-36.36	QP
28.75	1.62	0.43	9.97	12.02	50.00	-37.98	Average
28.75	9.91	0.43	9.97	20.31	60.00	-39.69	QP

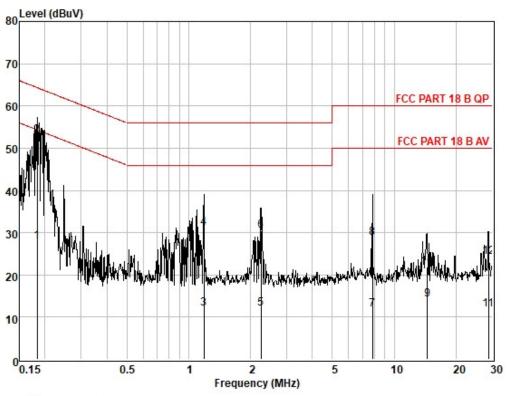


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Mode:a; Line:Neutral Line



Pol :NEUTRAL Mode : Model :

Frequenc MHz	Read Level dBuV	Cable Loss dB	LISN Factor dB	Measured Level dBuV	Limit Line dBuV	Over Limit dB	Remark
0.18	18.29	0.06	9.55	27.90	54.33	-26.43	Average
0.18	43.29	0.06	9.55	52.90	64.33	-11.43	QP
1.18	2.29	0.08	9.55	11.92	46.00	-34.08	Average
1.18	21.38	0.08	9.55	31.01	56.00	-24.99	QP
2.25	2.29	0.13	9.54	11.96	46.00	-34.04	Average
2.25	20.77	0.13	9.54	30.44	56.00	-25.56	QP
7.85	2.06	0.21	9.58	11.85	50.00	-38.15	Average
7.85	19.06	0.21	9.58	28.85	60.00	-31.15	QP
14.52	4.16	0.30	9.64	14.10	50.00	-35.90	Average
14.52	11.92	0.30	9.64	21.86	60.00	-38.14	QP
28.75	1.45	0.43	9.90	11.78	50.00	-38.22	Average
28.75	13.87	0.43	9.90	24.20	60.00	-35.80	QP



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### 6.1 Output Power Measurement

Test Requirement:	47 CFR Part 18
Test Method:	FCC OST/MP-5:1986

#### 6.1.1 E.U.T. Operation

**Operating Environment:** 

Temperature:24.5 °CHumidity:52.8 % RHAtmospheric Pressure:1017mbarTest modea: Test the EUT in microwave heating mode, setting at maximum power level.

#### 6.1.2 Measurement Data

Mass of water (g)	Mass of the container (g)	Ambient temperature	Initial temperature	Final temperature	Heating time(s)	Power output (watts)
		(°C)	(°C)	(°C)	11	( )
1000	410	19.9	9.8	20.1	44	981.2

#### Formula :

$$P = \frac{4,187 \cdot m_{\rm w} \left(T_2 - T_1\right) + 0,55 \cdot m_{\rm c} \left(T_2 - T_0\right)}{t}$$

NOTE :

P is the microwave power output, in watts

mw is the mass of the water, in grams

mc is the mass of the container, in grams

To is the ambient temperature, in degrees Celsius

T1 is the initial temperature of the water, in degrees Celsius

T2 is the final temperature of the water, in degrees Celsius

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

### 6.1.3 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.

Input Voltage (V)	Input Current (A)	Power Factor	Measured input power (W)	Rated input power (W)
120.03	13.21	0.934	1481	1500



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### 6.2 Radiation Hazard Test

EILT Operation	
Test distance:	Five centimeters from the oven surface
Test Method:	FCC OST/MP-5:1986
Test Requirement:	47 CFR Part 18

### 6.2.1 E.U.T. Operation

Operating Environment:

Temperature:25.2 °CHumidity:52.6 % RHAtmospheric Pressure:1020mbarTest modea: Test the EUT in microwave heating mode, setting at maximum power level.

#### 6.2.2 Measurement Data

Maximum measure level	Limit	Pass/Fail
(mW/cm²)	(mW/cm²)	
0.15	1.00	Pass



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#### 6.3 **Operating Frequency**

Test Requirement:	47 CFR Part 18
Test Method:	FCC OST/MP-5:1986
Frequency Range:	2400-2500 MHz
Detector:	Average for the final result for outside ISM band(2450MHz $\pm$ 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 =981.2 W according to clause 6.1.2

Limit=20lg(25\*SQRT(power/500))+20lg(300/3)=70.89dBuV/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)

(310.301)	
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

### 6.3.1 E.U.T. Operation

**Operating Environment:** 

1 0										
Temperature:	24.2 °C	Humidity:	54.7 % RH	Atmospheric Pressure:	1015	mbar				
Test mode	a: Test the EUT in microwave heating mode, setting at maximum power level.									
	b: Test the EUT in microwave heating mode, setting at middle power level.									
	c: Test the EUT in microwave heating mode, setting at lowest power level.									
Worst mode	a: Test the E	UT in microv	wave heating mo	ode, setting at maximum po	wer leve	¥I.				



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#### 6.3.2 Measurement Data

1)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	2476		

2)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	2477

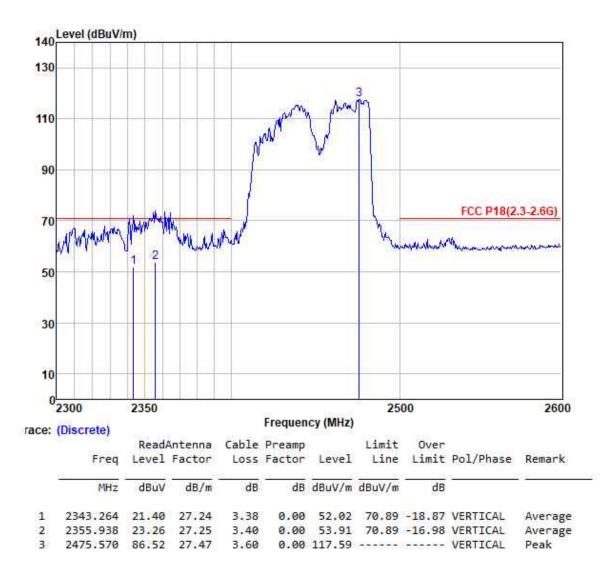


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1)The variation of frequency with time



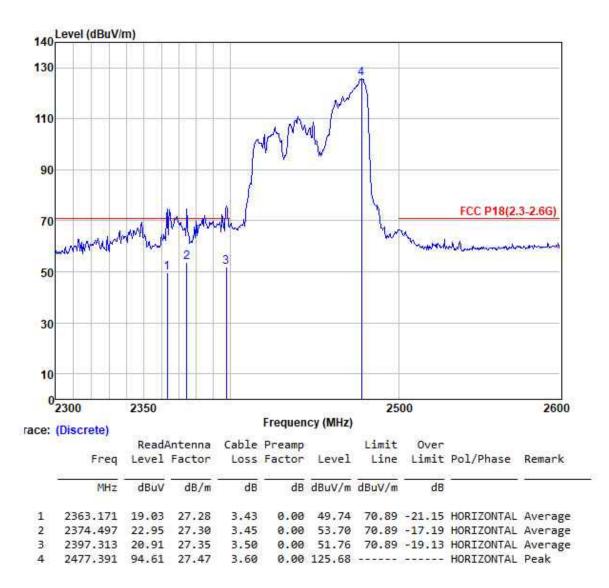


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2)The variation of frequency with line voltage





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### 6.4 Radiated Emissions (30MHz-1GHz)

Test Requirement:	47 CFR Part 18									
Test Method:	FCC OST/MP-5:1986									
Frequency Range:	30MHz to 1GHz									
Measurement Distance:	3m									
Detector:	Peak for pre-scan, Average for the final result									
	(100 kHz Resolution Bandwidth for	30MHz to 1,000MHz)								
Limit:	(a) ISM equipment operation on a fre unlimited radiated energy in the ban	equency specified in §18.301 is permitted dependent of the 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	Field strength Limit(uV/m)								
	by equipment(watts)	@300m								
	Below 500	25								
	500 or more	25*SQRT(power/500)								

Power =981.2 W according to clause 6.1.2

Limit=20lg(25\*SQRT(power/500))+20lg(300/3)=70.89dBuV/m @ 3m distance.

#### 6.4.1 E.U.T. Operation

worst case:

**Operating Environment:** 

Temperature: 22.9 °C Humidity: 60.8 % RH Atmospheric Pressure: 1020 mbar Pretest these a: Test the EUT in microwave mode with maximum power.

modes to find the b: Test the EUT in microwave mode with middle power.

c: Test the EUT in microwave mode with lowest power.

The worst case for final test:

a: Test the EUT in microwave mode with maximum power.

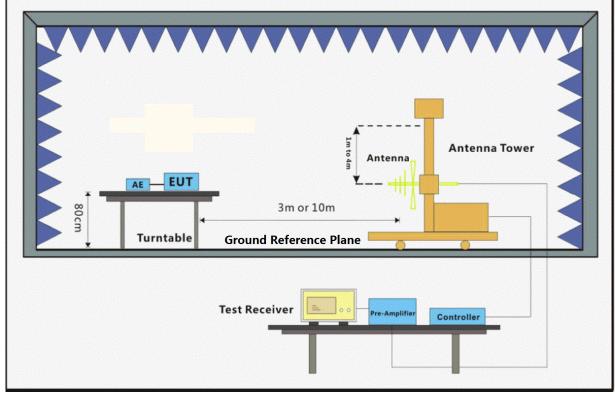


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#### 6.4.2 Test Setup Diagram



#### 6.4.3 Measurement Data

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.

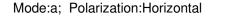
Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor

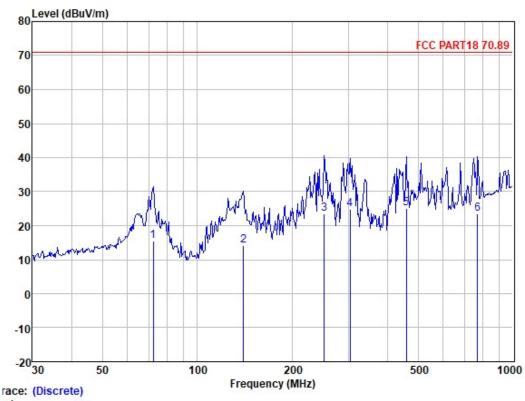


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Site : SGS Condition: FCC PART18 70.89 3m HORIZONTAL Job : Model : Power : Test Mode:

		ReadAntenna									
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark	
1	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		-	
1	72.338	29.67	11.43	1.43	27.11	15.42	70.89	-55.47	HORIZONTAL	Average	
2	139.851	25.67	13.30	2.10	26.93	14.14	70.89	-56.75	HORIZONTAL	Average	
3	252.063	35.06	12.10	2.92	26.61	23.47	70.89	-47.42	HORIZONTAL	Average	
4	304.610	34.42	13.70	3.21	26.57	24.76	70.89	-46.13	HORIZONTAL	Average	
5	459.114	31.19	17.48	4.25	27.78	25.14	70.89	-45.75	HORIZONTAL	Average	
6	771.449	23.13	22.22	6.08	28.06	23.37	70.89	-47.52	HORIZONTAL	Average	

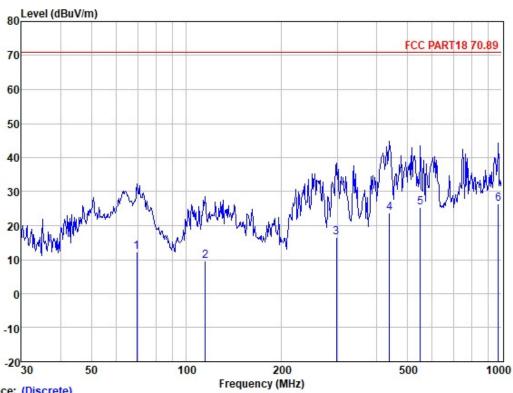


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race: (Discrete) Site : SGS Condition: FCC PART18 70.89 3m VERTICAL Job : Model : Power : Test Mode:

		ReadAntenna		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark		
1	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		-		
1	69.600	26.13	11.97	1.41	27.13	12.38	70.89	-58.51	VERTICAL	Average		
2	114.917	24.16	10.63	1.83	27.05	9.57	70.89	-61.32	VERTICAL	Average		
3	298.268	26.30	13.57	3.16	26.55	16.48	70.89	-54.41	VERTICAL	Average		
4	440.196	30.13	17.00	4.13	27.57	23.69	70.89	-47.20	VERTICAL	Average		
5	550.948	30.01	18.70	4.83	28.11	25.43	70.89	-45.46	VERTICAL	Average		
6	972.337	22.70	23.97	7.31	27.70	26.28	70.89	-44.61	VERTICAL	Average		



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### 6.5 Radiated Emissions (above 1GHz)

Test Requirement:	47 CFR Part 18
Test Method:	FCC OST/MP-5:1986
Frequency Range:	Above 1GHz
Measurement Distance:	3m
Detector:	Peak for pre-scan, Average for the final result
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 =982.1 W according to clause 6.1.2

Limit=20lg(25\*SQRT(power/500))+20lg(300/3)=70.89dBuV/m @ 3m distance.

#### 6.5.1 E.U.T. Operation

**Operating Environment:** 

22.9 °C Humidity: 60.8 % RH Atmospheric Pressure: 1020 mbar a: Test the EUT in microwave mode with maximum power.

Temperature: Pretest these modes to find the worst case:

b: Test the EUT in microwave mode with middle power.

c: Test the EUT in microwave mode with lowest power.

The worst case for final test:

a: Test the EUT in microwave mode with maximum power.

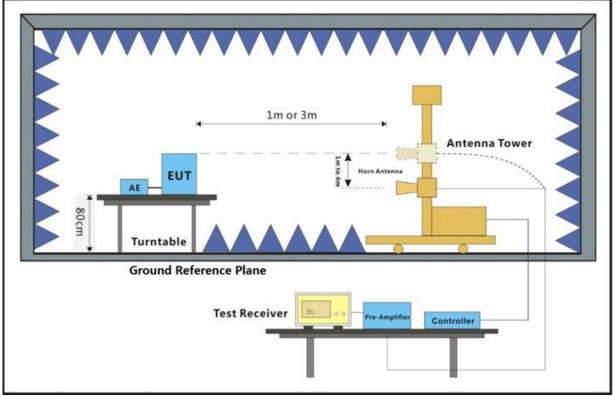


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#### 6.5.2 Test Setup Diagram



#### 6.5.3 Measurement Data

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.

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

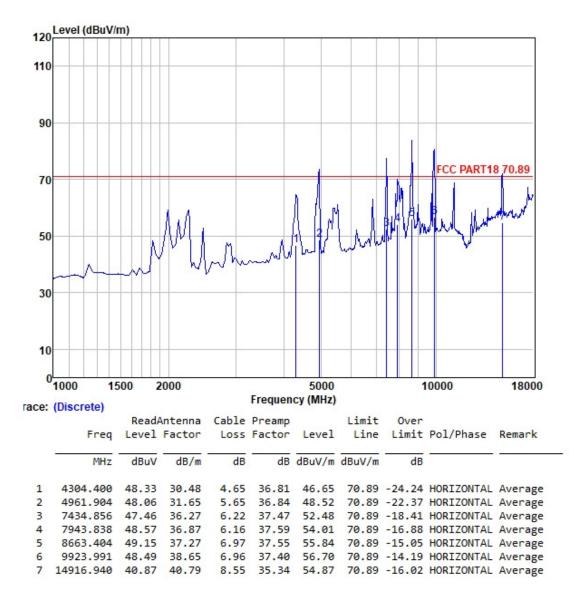


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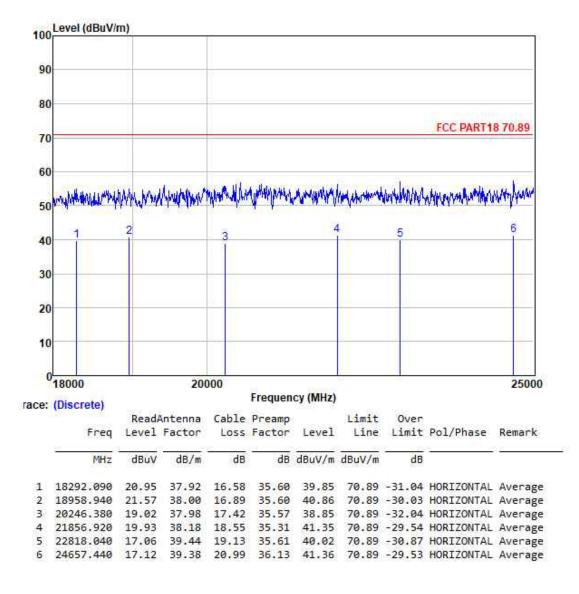


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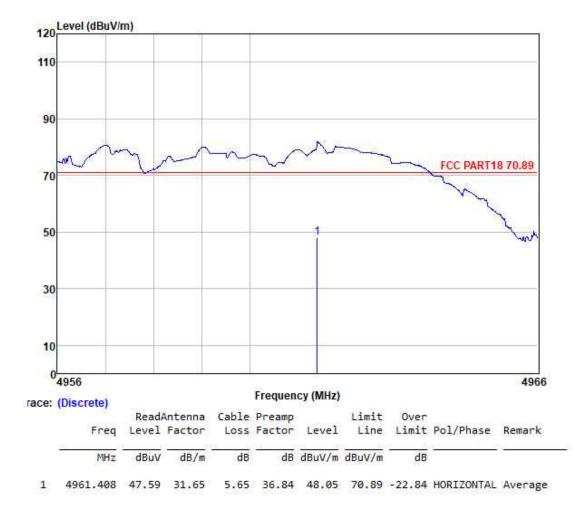


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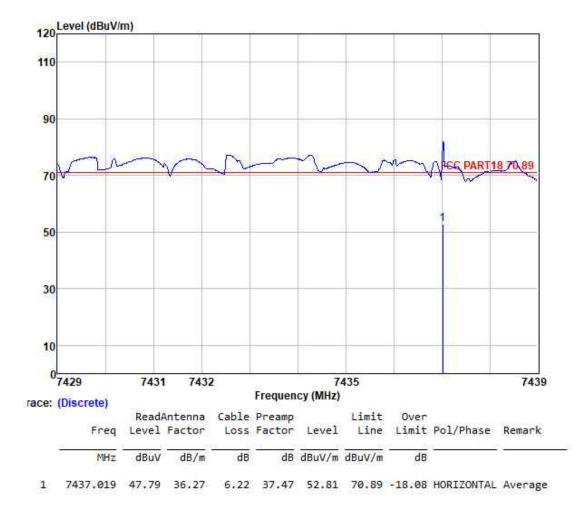


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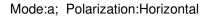


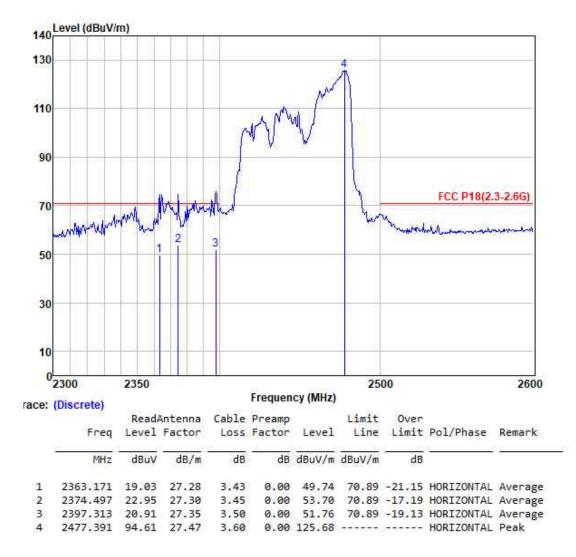


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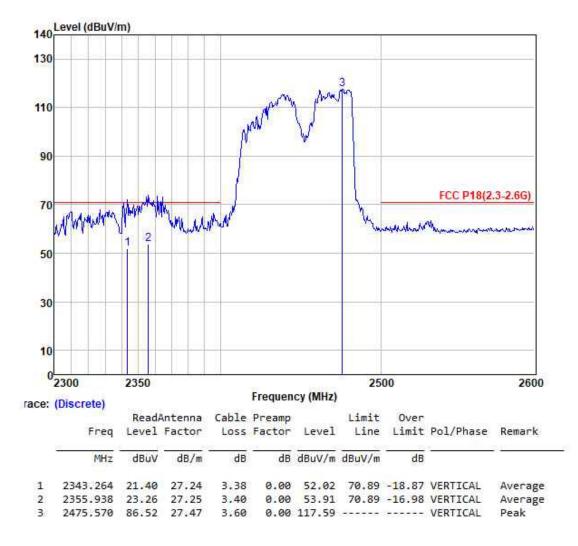


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#### Mode:a; Polarization:Vertical



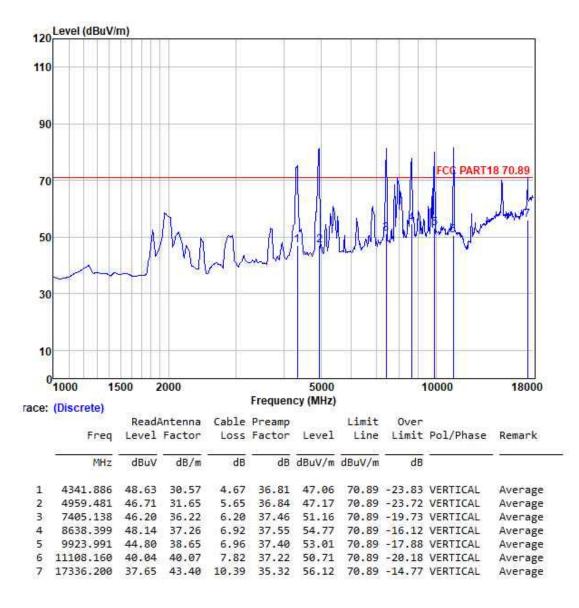


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#### Mode:a; Polarization:Vertical



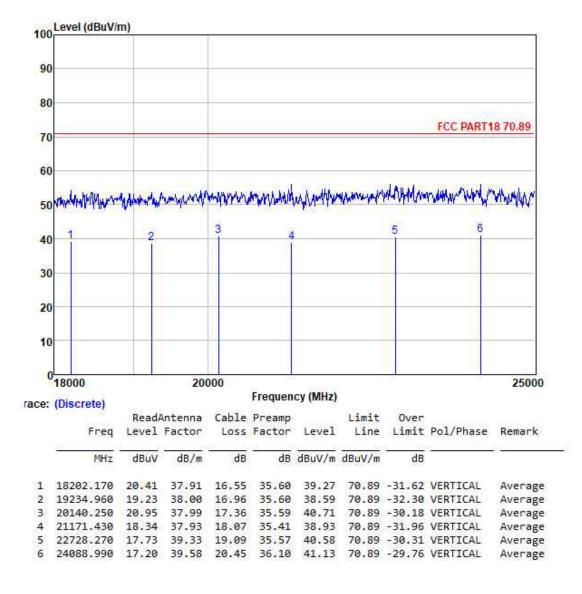


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#### Mode:a; Polarization:Vertical



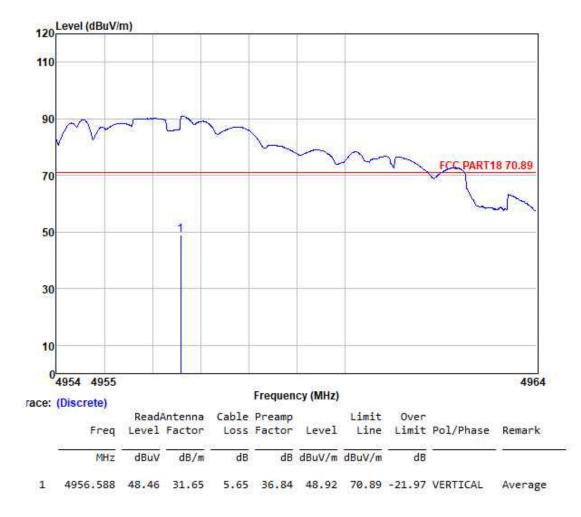


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#### Mode:a; Polarization:Vertical

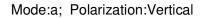


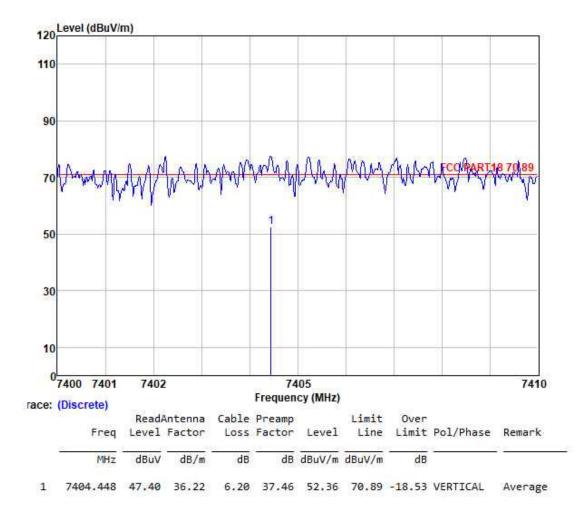


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### 6.6 Radiated Emissions (Magnetic field Strength) (9kHz-30MHz)

Test Requirement:	47 CFR Part 18								
Test Method:	FCC OST/MP-5:1986								
Frequency Range:	9kHz to 30MHz								
Measurement Distance:	10m								
Detector:	Peak for pre-scan, Average for the f	final result							
	(200Hz Resolution Bandwidth for 9k	Hz to 150kHz;							
	9kHz Resolution Bandwidth for 150	kHz to 30MHz)							
Limit:	(a) ISM equipment operation on a free unlimited radiated energy in the ban	equency specified in §18.301 is permitted and 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	Field strength Limit(uV/m)							
	by equipment(watts)	@300m							
	Below 500	25							
	500 or more	25*SQRT(power/500)							
	Power =981.2 W according to claus	se 6.1.2							

Limit=20lg(25\*SQRT(power/500))+20lg(300/10)=**60.43** uV/m @ 10m distance.

#### 6.6.1 E.U.T. Operation

**Operating Environment:** 

Temperature:22.9 °CHumidity:60.8 % RHAtmospheric Pressure:1020mbarPretest thesea: Test the EUT in microwave mode with maximum power.

b: Test the EUT in microwave mode with middle power.

worst case: The worst case

for final test:

modes to find the

c: Test the EUT in microwave mode with lowest power.

a: Test the EUT in microwave mode with maximum power.

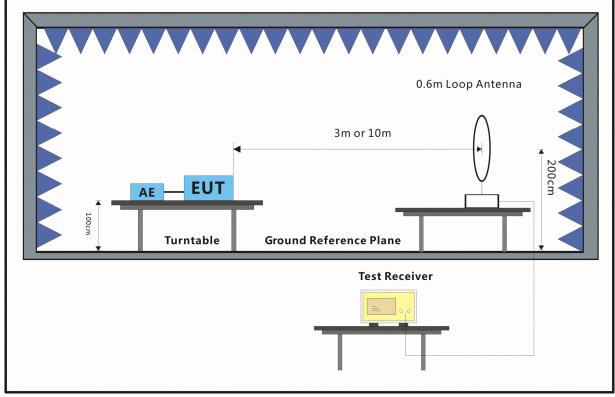


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#### 6.6.2 Test Setup Diagram



#### 6.6.3 Measurement Data

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.

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

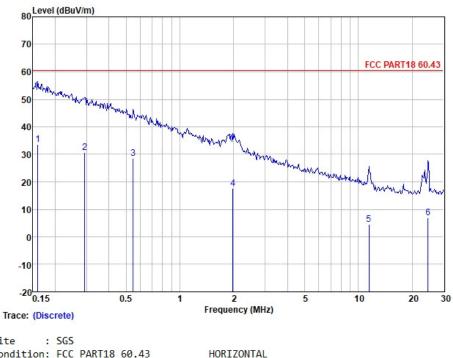


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#### Mode:a; Polarization:Horizontal



Site Condition: FCC PART18 60.43 Job Model : Power : Test Mode:

	Freq	Read Level	Anterna Factor		Preamp Factor		d Limit Line		Pol/ Phase Remark
	MHz	dBuV	dB/m	dB	dB d	BuA/m	dBuA/m	dBuA/m	·
1	0.16	52.18	10.71	0.05	29.45	33.49	60.43	-26.94	HORIZONTAL Ave
2	0.29	49.39	10.77	0.05	29.44	30.77	60.43	-29.66	HORIZONTAL Ave
3	0.55	47.10	10.68	0.09	29.42	28.45	60.43	-31.98	HORIZONTAL Ave
4	1.98	35.68	11.00	0.20	29.38	17.50	60.43	-42.93	HORIZONTAL Ave
5	11.44	23.56	9.76	0.54	29.28	4.58	60.43	-55.85	HORIZONTAL Ave
6	24.53	26.75	8.31	0.92	29.15	6.83	60.43	-53.60	HORIZONTAL Ave

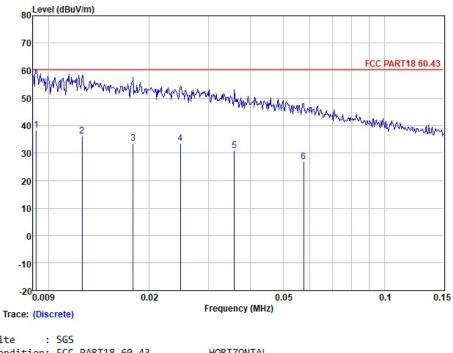


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#### Mode:a: Polarization:Horizontal



Site Condition: FCC PART18 60.43 Job Model : Power 1 Test Mode:

0.06 44.65

11.71

0.05

HORIZONTAL

6

Anterna Cable Preamp Measured Limit Over Pol/ Read Freq Level Factor Loss Factor Level Line Limit Phase Remark MHZ dBuV dB/m dB dB dBuA/m dBuA/m dBuA/m 0.01 48.92 17.67 0.05 28.15 38.49 60.43 -21.94 HORIZONTAL Ave 1 2 0.01 49.39 15.13 0.05 28.22 36.35 60.43 -24.08 HORIZONTAL Ave 3 0.02 48.52 13.24 0.05 28.33 33.48 60.43 -26.95 HORIZONTAL Ave 0.02 49.13 0.05 60.43 -26.92 HORIZONTAL Ave 4 12.85 28.52 33.51 5 0.04 47.88 12.17 0.05 29.09 31.01 60.43 -29.42 HORIZONTAL Ave

29.34 27.07

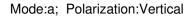
60.43 -33.36 HORIZONTAL Ave

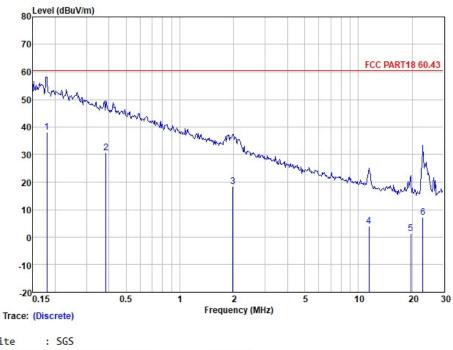


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Site Condition: FCC PART18 60.43 Job Model : Power : Test Mode:

VERTICAL

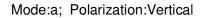
	Freq	Read Level	Anterna Factor			Measured Level				Remark
	MHz	dBuV	dB/m	dB	dB	dBuA/m	dBuA/m	dBuA/m		
1	0.18	56.76	10.77	0.05	29.45	38.13	60.43	-22.30	VERTICA	L Ave
2	0.39	49.35	10.72	0.06	29.43	30.70	60.43	-29.73	VERTICA	L Ave
3	1.98	36.63	11.00	0.20	29.38	18.45	60.43	-41.98	VERTICA	L Ave
4	11.44	22.94	9.76	0.54	29.28	3.96	60.43	-56.47	VERTICA	L Ave
5	19.64	21.40	8.41	0.72	29.20	1.33	60.43	-59.10	VERTICA	L Ave
6	23.02	27.21	8.34	0.86	29.17	7.24	60.43	-53.19	VERTICA	L Ave

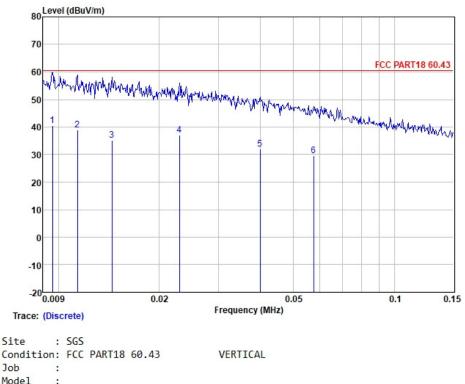


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Model : Power :

Test Mode:

	Freq	Read Level	Anterna Factor			Measured Level			Pol/ Phase	Remark
	MHz	dBuV	dB/m	dB	dB d	BuA/m	dBuA/m	dBuA/m		
1	0.01	52.13	16.59	0.05	28.16	40.61	60.43	-19.82	VERTICA	L Ave
2	0.01	51.57	15.50	0.05	28.20	38.92	60.43	-21.51	VERTICA	L Ave
3	0.01	49.21	14.25	0.05	28.26	35.25	60.43	-25.18	VERTICA	L Ave
4	0.02	52.45	12.91	0.05	28.46	36.95	60.43	-23.48	VERTICA	L Ave
5	0.04	49.05	12.06	0.05	29.17	31.99	60.43	-28.44	VERTICA	L Ave
6	0.06	47.16	11.71	0.05	29.34	29.58	60.43	-30.85	VERTICA	L Ave

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