SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch

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TEST REPORT

Application No.:	GZEM1807004159HS
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:	1 Guangdong Galanz Microwave Electrical Appliances Manufacturing Co.,Ltd. 2 GUANGDONG GALANZ MICROWAVE OVEN MANUFACTURING CO.,LTD.
Address of Factory:	3 Xingpu Avenue, Huangpu, Zhongshan, Guangdong, China
Equipment Under Test (EUT):	
EUT Name:	Please refer to page 2 for all model.
Trade Mark:	Galanz
FCC ID:	UHW7020006
Standard(s) :	47 CFR Part 18
Date of Receipt:	2018-07-19
Date of Test:	2018-07-25 to 2018-07-27
Date of Issue:	2018-07-31
Test Result:	**Pass***

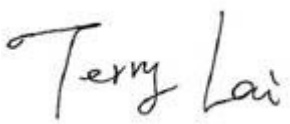
* In the configuration tested, the EUT complied with the standards specified above.

Kobe Jian
EMC Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

EUT Name:	Microwave oven
Model No.:	P70J20AL-V1, P70J20AL-V2, P70J20AP-V2, P70J20L-V1, P70J20L-V2, P70J20P-V2, P70J20 (X) -(Y) (Variable (X) may be L, P, SL, SP, TL, TP, AL, AP, ASL, ASP, ATL, ATP, EL, EP, ESL, ESP, ETL, ETP. “L” is pull-out type door, P is push-button type door. When there is no letter before “L”, ”P”, denotes mechanical control model; When there is “A” , “E” denote the electrical control model. “S” denotes stainless steel cavity; “T” denotes the painted cavity; When there is neither “S” nor “T” before “L”, “P”, denotes the epoxy painted cavity. 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.) ¤
¤	Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		2018-07-31		Original

Authorized for issue by:				
Tested By		 **Damon_Guan /Project Engineer**		2018-07-25 to 2018-07-27 **Date**
Checked By		 **Terry_Lai /Reviewer**		2018-07-31 **Date**

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	Class B	Pass
Radiated Emissions (30MHz-1GHz)	47 CFR Part 18	FCC OST/MP-5:1986	Class B	Pass
Radiated Emissions (above 1GHz)	47 CFR Part 18	FCC OST/MP-5:1986	Class B	Pass
Radiated Emissions (Magnetic field Strength) (9kHz-30MHz)	47 CFR Part 18	FCC OST/MP-5:1986	Class B	Pass

¤ Declaration of EUT Family Grouping:

Model No.: P70J20AL-V1, P70J20AL-V2, P70J20AP-V2, P70J20L-V1, P70J20L-V2, P70J20P-V2, P70J20 (X) -(Y) (Variable (X) may be L, P, SL, SP, TL, TP, AL, AP, ASL, ASP, ATL, ATP, EL, EP, ESL, ESP, ETL, ETP. “L” is pull-out type door, P is push-button type door. When there is no letter before “L”, ”P”, denotes mechanical control model; When there is “A” , “E” denote the electrical control model. “S” denotes stainless steel cavity; “T” denotes the painted cavity; When there is neither “S” nor “T” before “L”, “P”, denotes the epoxy painted cavity. 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.)

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 P70J20AL-V2 was tested in this report.

3 Contents

4 General Information

4.1 Details of E.U.T.

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

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
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
1	Conducted Disturbance Voltage at Mains Terminals	3.63dB (9kHz to 150kHz)
		3.22dB (150kHz to 30MHz)
2	Disturbance Power	3.78dB
3	Radiated Emissions	5.0dB (30MHz-1GHz)
		5.0dB (1GHz-6GHz)
4	Temperature	0.4℃
5	Humidity	1.3%
6	DC power	0.5 %

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.

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-CL01:2006 accreditation criteria for testing laboratories (identical to

ISO/IEC 17025:2005 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-1)**

The 3m/10m Alternate Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Certification and Engineering of Industry Canada for radio equipment testing with Registration No. 4620B-1.

- **VCCI (Registration No.: R-2460, C-2584, G-449 and T-1179)**

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-2460, C-2584，G-449 and T-1179 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.

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**
Shielding Room	Zhong Yu	8m x 3m x 3.8m	EMC0306	N/A	N/A
Two-Line V-Netwok	R&S	ENV216	EMC0118	2018-01-19	2019-01-18
LISN	SCHAFFNER CHASE	MN2050D/1	EMC0102	2017-09-20	2018-09-19
EMI Test Receiver	Rohde & Schwarz	ESCS30	EMC0506	2017-11-27	2018-11-26
Coaxial Cable	HangTianXing	2m	EMC0107	2017-07-23	2019-07-22
Voltage Probe	SGS	N/A	EMC0106	2018-04-04	2020-04-03
Conical Metal Housing	SGS-EMC	N/A	EMC0167	2018-04-19	2020-04-18
Test Software E3c	Audix	Ver. 5.4.1221b	GZE100-62	N/A	N/A

Radiated Emissions (30MHz-1GHz)					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
EMI Test Receiver	Rohde & Schwarz	ESIB26	EMC0522	2018-01-19	2019-01-18
EMI Test Receiver	Rohde & Schwarz	ESCI	EMC0056	2018-01-19	2019-01-18
Chamber cable	HangTianXing	N/A	EMC0542	2017-06-30	2019-06-30
Trilog Broadband Antenna 30MHz-1GHz	SCHWARZBECKMESS-ELEKTRONIK	VULB 9160	EMC2025	2016-09-08	2019-09-07
Bi-log Type Antenna	Schaffner -Chase	CBL6112B	EMC0524	2016-09-08	2019-09-07
Bi-log Type Antenna	Schaffner -Chase	CBL6143	EMC0519	2017-05-04	2020-05-03
Horn Antenna 1GHz-18GHz	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2016-09-09	2019-09-08
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2018-01-08	2019-01-07
Amplifier	HP	8447F	EMC2065	2018-06-01	2019-05-31
Pre-Amplifier MH648A	ANRITSU CORP	MH648A	EMC2086	2017-11-20	2018-11-19
Active Loop Antenna	EMCO	6502	EMC0523	2018-02-24	2019-02-23
High Pass Filter(915MHz)	FSY MICROWAVE	HM1465-9SS	EMC2079	2018-01-19	2019-01-18
2.4GHz Filter	Micro-Tronics	BRM 50702	EMC2069	2018-01-08	2019-01-07
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2017-06-18	2019-06-18
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2017-11-29	2018-11-28
MXE EMI Receiver	Keysight	N9038A	EMC2139	2017-11-15	2018-11-14
EXA Signal Analyzer	Keysight	N9010A	EMC2138	2017-11-15	2018-11-14
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A

Radiated Emissions (above 1GHz)					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
EMI Test Receiver	Rohde & Schwarz	ESIB26	EMC0522	2018-01-19	2019-01-18
EMI Test Receiver	Rohde & Schwarz	ESCI	EMC0056	2018-01-19	2019-01-18
Chamber cable	HangTianXing	N/A	EMC0542	2017-06-30	2019-06-30
Trilog Broadband Antenna 30MHz-1GHz	SCHWARZBECKMESS-ELEKTRONIK	VULB 9160	EMC2025	2016-09-08	2019-09-07
Bi-log Type Antenna	Schaffner -Chase	CBL6112B	EMC0524	2016-09-08	2019-09-07
Bi-log Type Antenna	Schaffner -Chase	CBL6143	EMC0519	2017-05-04	2020-05-03
Horn Antenna 1GHz-18GHz	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2016-09-09	2019-09-08
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2018-01-08	2019-01-07
Amplifier	HP	8447F	EMC2065	2018-06-01	2019-05-31
Pre-Amplifier MH648A	ANRITSU CORP	MH648A	EMC2086	2017-11-20	2018-11-19
Active Loop Antenna	EMCO	6502	EMC0523	2018-02-24	2019-02-23
High Pass Filter(915MHz)	FSY MICROWAVE	HM1465-9SS	EMC2079	2018-01-19	2019-01-18
2.4GHz Filter	Micro-Tronics	BRM 50702	EMC2069	2018-01-08	2019-01-07
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2017-06-18	2019-06-18
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2017-11-29	2018-11-28
MXE EMI Receiver	Keysight	N9038A	EMC2139	2017-11-15	2018-11-14
EXA Signal Analyzer	Keysight	N9010A	EMC2138	2017-11-15	2018-11-14
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A

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	2018-01-19	2019-01-18
EMI Test Receiver	Rohde & Schwarz	ESCI	EMC0056	2018-01-19	2019-01-18
Chamber cable	HangTianXing	N/A	EMC0542	2017-06-30	2019-06-30
Trilog Broadband Antenna 30MHz-1GHz	SCHWARZBECKMESS-ELEKTRONIK	VULB 9160	EMC2025	2016-09-08	2019-09-07
Bi-log Type Antenna	Schaffner -Chase	CBL6112B	EMC0524	2016-09-08	2019-09-07
Bi-log Type Antenna	Schaffner -Chase	CBL6143	EMC0519	2017-05-04	2020-05-03
Horn Antenna 1GHz-18GHz	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2016-09-09	2019-09-08
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2018-01-08	2019-01-07
Amplifier	HP	8447F	EMC2065	2018-06-01	2019-05-31
Pre-Amplifier MH648A	ANRITSU CORP	MH648A	EMC2086	2017-11-20	2018-11-19
Active Loop Antenna	EMCO	6502	EMC0523	2018-02-24	2019-02-23
High Pass Filter(915MHz)	FSY MICROWAVE	HM1465-9SS	EMC2079	2018-01-19	2019-01-18
2.4GHz Filter	Micro-Tronics	BRM 50702	EMC2069	2018-01-08	2019-01-07
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2017-06-18	2019-06-18
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2017-11-29	2018-11-28
MXE EMI Receiver	Keysight	N9038A	EMC2139	2017-11-15	2018-11-14
EXA Signal Analyzer	Keysight	N9010A	EMC2138	2017-11-15	2018-11-14
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A

General used equipment					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
DMM	Fluke	73	EMC0006	2018-07-26	2019-07-25
DMM	Fluke	73	EMC0007	2018-07-26	2019-07-25

6 Emission Test Results

6.1 Operating Frequency

Test Requirement: 47 CFR Part 18

Test Method: FCC OST/MP-5:1986

Frequency Range: 2400-2500 MHz

Detector: Peak

Limit:

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
6.78 MHz	±15.0 kHz
13.56 MHz	±7.0 kHz
27.12 MHz	±163.0 kHz
40.68 MHz	±20.0 kHz
915 MHz	±13.0 MHz
2,450 MHz	±50.0 MHz
5,800 MHz	±75.0 MHz
24,125 MHz	±125.0 MHz
61.25 GHz	±250.0 MHz
122.50 GHz	±500.0 MHz
245.00 GHz	±1.0 GHz

6.1.1 E.U.T. Operation

Operating Environment:

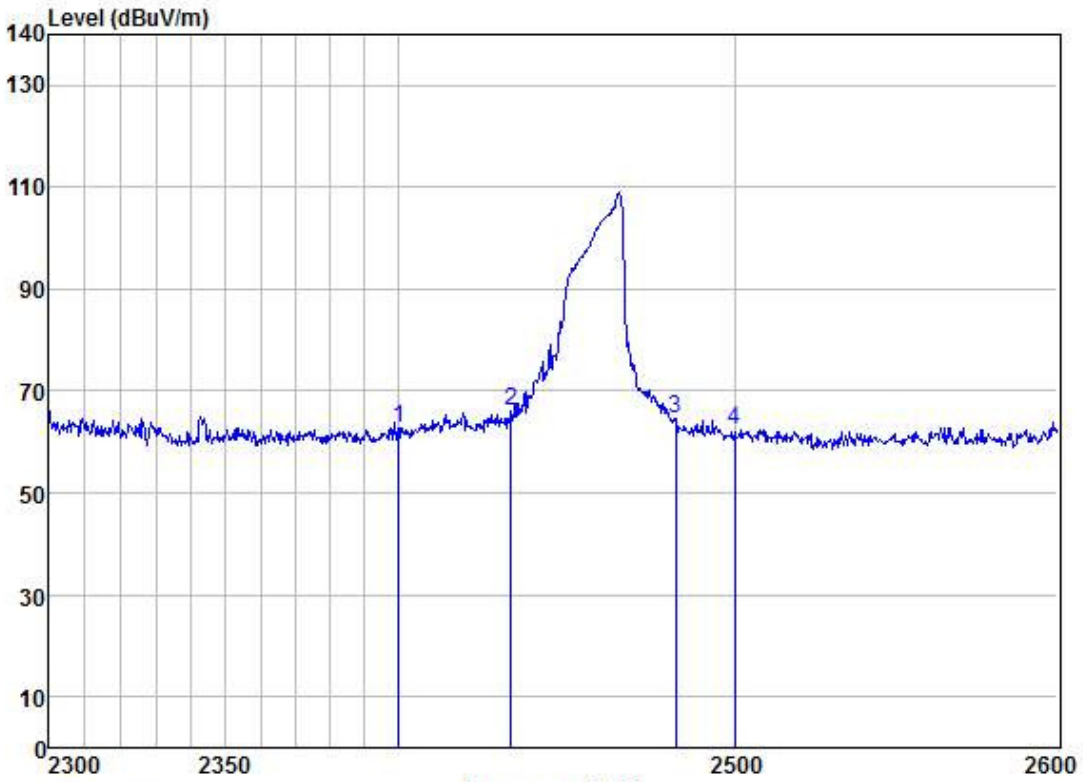
Temperature: 23.7 °C Humidity: 54.9 % RH Atmospheric Pressure: 1020 mbar

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

6.1.2 Measurement Data

Polarization	ISM frequency(MHz)	Tolerance(MHz)	Measurement Data(MHz)
Horizontal	2450	±50	2432.8-2482.0
Vertical	2450	±50	2409.1-2493.3

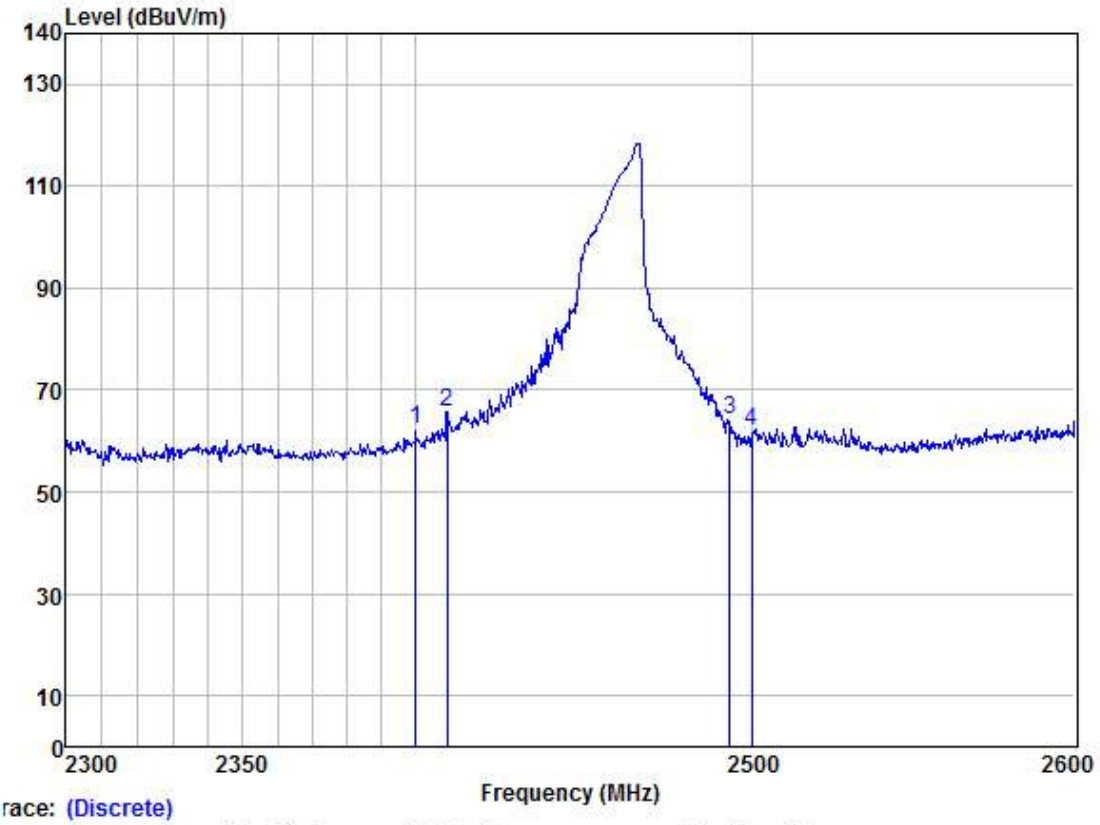
Mode:a; Polarization:Horizontal



race: (Discrete)

	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	2400.000	31.47	26.45	4.86	0.00	62.78	------	------	HORIZONTAL	Peak
2	2432.844	34.55	26.51	5.09	0.00	66.15	------	------	HORIZONTAL	Peak
3	2481.952	32.94	26.58	5.23	0.00	64.75	------	------	HORIZONTAL	Peak
4	2500.000	30.69	26.60	4.95	0.00	62.24	------	------	HORIZONTAL	Peak

Mode:a; Polarization:Vertical



race: (Discrete)

	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	2400.000	31.12	26.45	4.86	0.00	62.43	------	------	VERTICAL	Peak
2	2409.099	34.30	26.46	4.90	0.00	65.66	------	------	VERTICAL	Peak
3	2493.319	32.57	26.59	5.09	0.00	64.25	------	------	VERTICAL	Peak
4	2500.000	30.46	26.60	4.95	0.00	62.01	------	------	VERTICAL	Peak

6.2 RF Output Power Measurement

Test Requirement: 47 CFR Part 18

Test Method: FCC OST/MP-5:1986

6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 23.7 °C Humidity: 54.9 % RH Atmospheric Pressure: 1020 mbar

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

6.2.2 Measurement Data

Mass of water (g)	Mass of the container (g)	Ambient temperature (℃)	Initial temperature (℃)	Final temperature (℃)	Heating time(S)	Power output (watts)
1000	368	21.1	19.4	38.7	125	676.8

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.**

6.3 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(μV)-56dB(μV) quasi-peak, 56dB(μV)-46dB(μV) 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

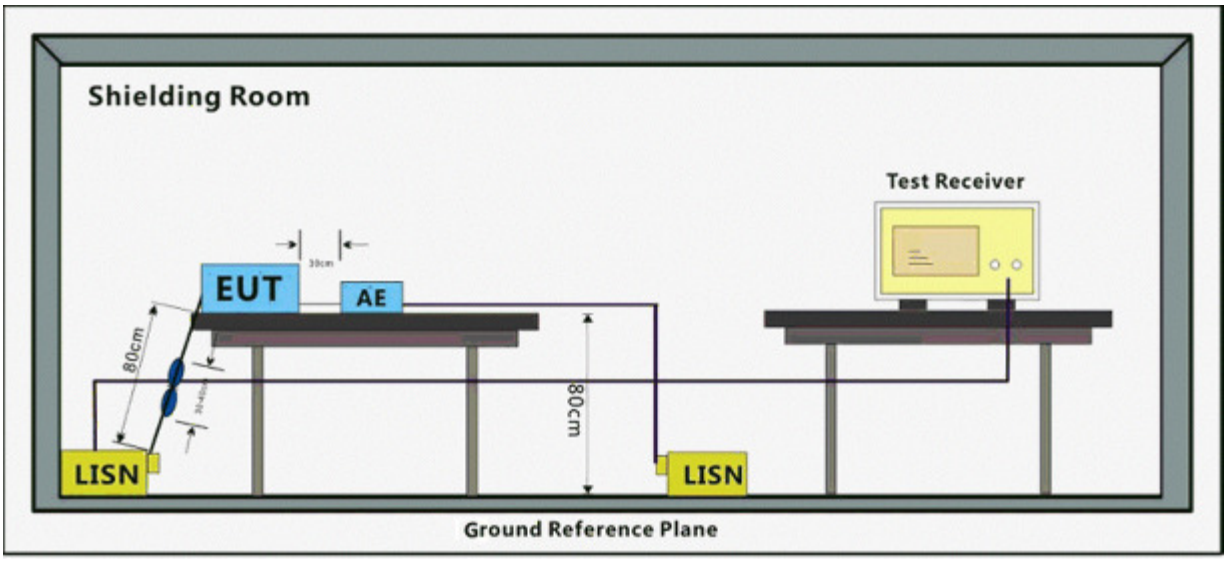
6.3.1 E.U.T. Operation

Operating Environment:

Temperature: 23.7 °C Humidity: 54.9 % RH Atmospheric Pressure: 1020 mbar

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

6.3.2 Test Setup Diagram

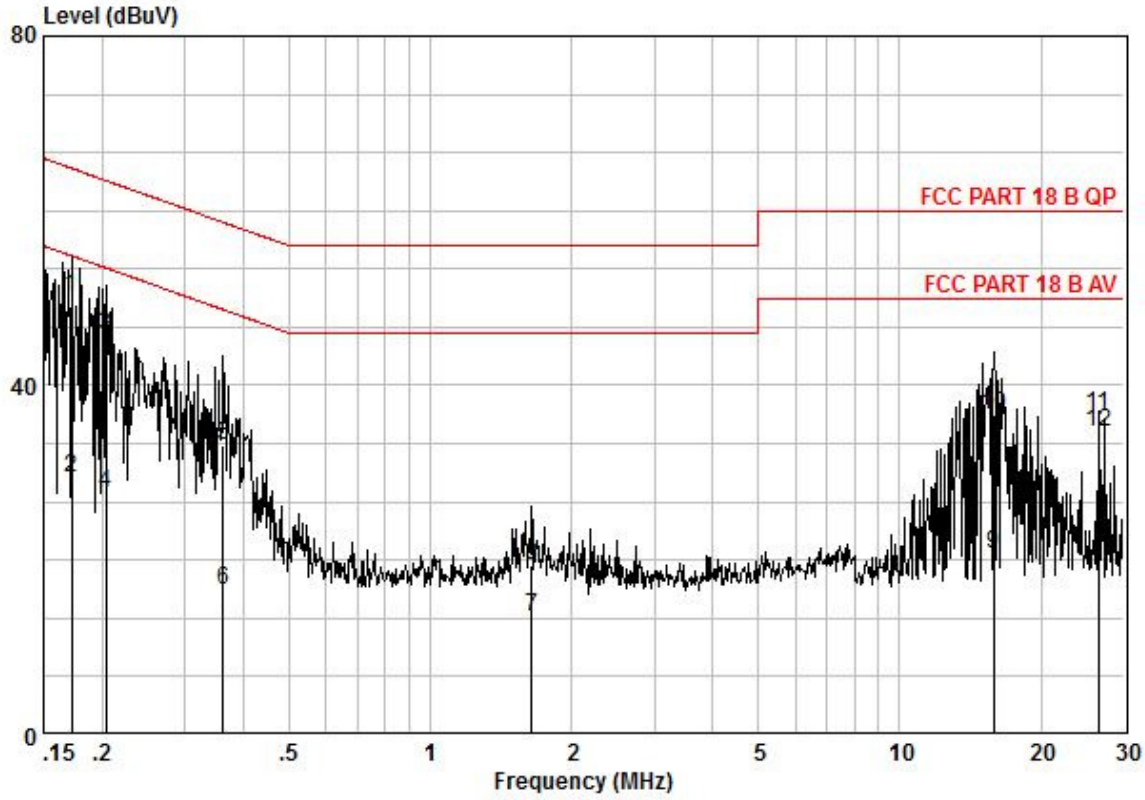


6.3.3 Measurement Data

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

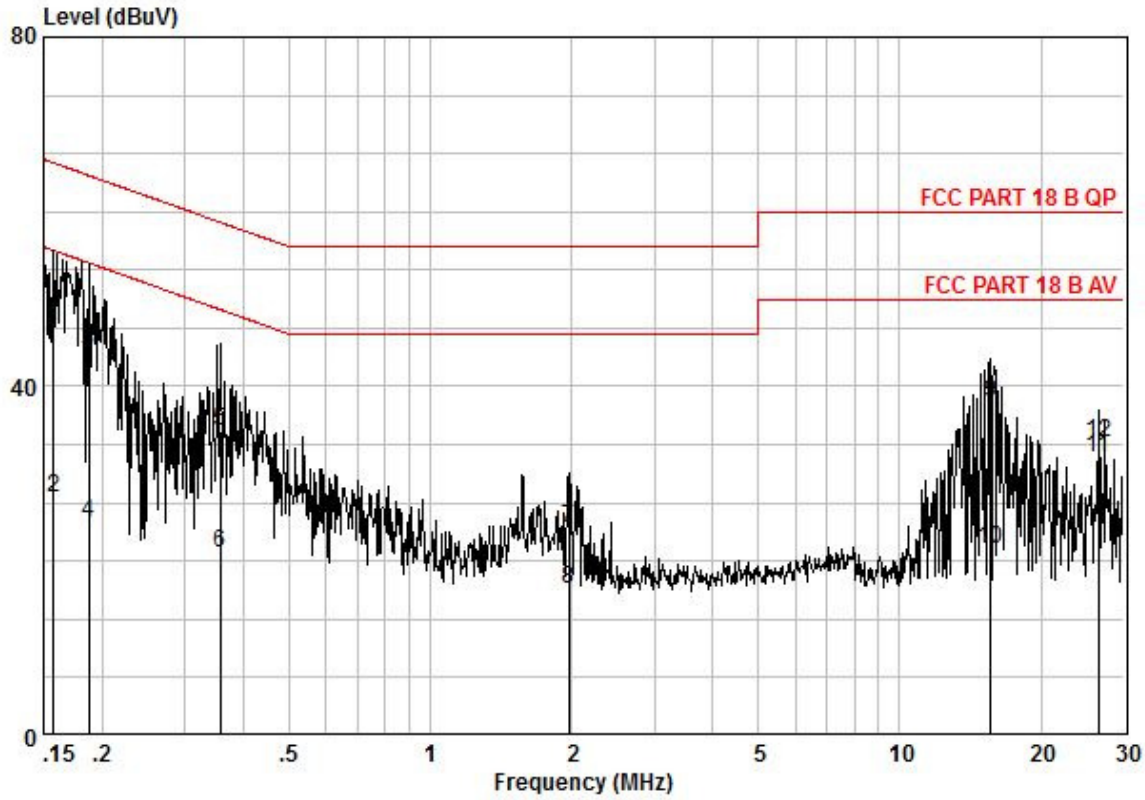
Mode:a; Line:Live Line



Pol :LIVE
No :
Model :

Frequency MHz	read level dBuV	Cable Loss dB	LISN Factor dB	Measured level dBuV	Limit Line dBuV	Over limit dB	Remark
0,17	40,43	0,10	9,54	50,07	64,86	-14,79	QP
0,17	19,82	0,10	9,54	29,46	54,86	-25,40	AVERAGE
0,20	36,14	0,10	9,62	45,86	63,45	-17,58	QP
0,20	17,96	0,10	9,62	27,68	53,45	-25,76	AVERAGE
0,36	23,42	0,16	9,64	33,22	58,69	-25,47	QP
0,36	6,71	0,16	9,64	16,51	48,69	-32,18	AVERAGE
1,64	3,63	0,33	9,62	13,58	46,00	-32,42	AVERAGE
1,64	9,50	0,33	9,62	19,45	56,00	-36,55	QP
15,89	10,17	0,70	9,73	20,60	50,00	-29,40	AVERAGE
15,89	26,23	0,70	9,73	36,66	60,00	-23,34	QP
26,55	26,44	0,63	9,64	36,71	60,00	-23,29	QP
26,55	24,39	0,63	9,64	34,66	50,00	-15,34	AVERAGE

Mode:a; Line:Neutral Line



Pol :NEUTRAL
No :
Model :

Frequency MHz	read level dBuV	Cable Loss dB	LISN Factor dB	Measured level dBuV	Limit Line dBuV	Over limit dB	Remark
0,16	37,31	0,10	9,42	46,83	65,60	-18,78	QP
0,16	17,78	0,10	9,42	27,30	55,60	-28,31	AVERAGE
0,19	34,48	0,10	9,54	44,12	64,15	-20,03	QP
0,19	14,67	0,10	9,54	24,31	54,15	-29,84	AVERAGE
0,36	25,18	0,16	9,56	34,91	58,78	-23,87	QP
0,36	11,30	0,16	9,56	21,03	48,78	-27,75	AVERAGE
1,97	13,76	0,39	9,52	23,68	56,00	-32,32	QP
1,97	6,84	0,39	9,52	16,76	46,00	-29,24	AVERAGE
15,63	27,68	0,70	9,69	38,07	60,00	-21,93	QP
15,63	10,96	0,70	9,69	21,35	50,00	-28,65	AVERAGE
26,55	21,47	0,63	9,68	31,78	50,00	-18,22	AVERAGE
26,55	23,35	0,63	9,68	33,66	60,00	-26,34	QP

6.4 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: 3m

Detector: Peak for pre-scan, Average for the final result

(200 Hz Resolution Bandwidth for 9 kHz to 150 kHz

9 kHz Resolution Bandwidth for 150 kHz to 30 MHz)

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 =676.8 W according to cluse6.2.2

Limit**=20lg(25*SQRT(power/500))+20lg(300/3)=30.67+40=69.27dBuV/m @ 3m distance.**

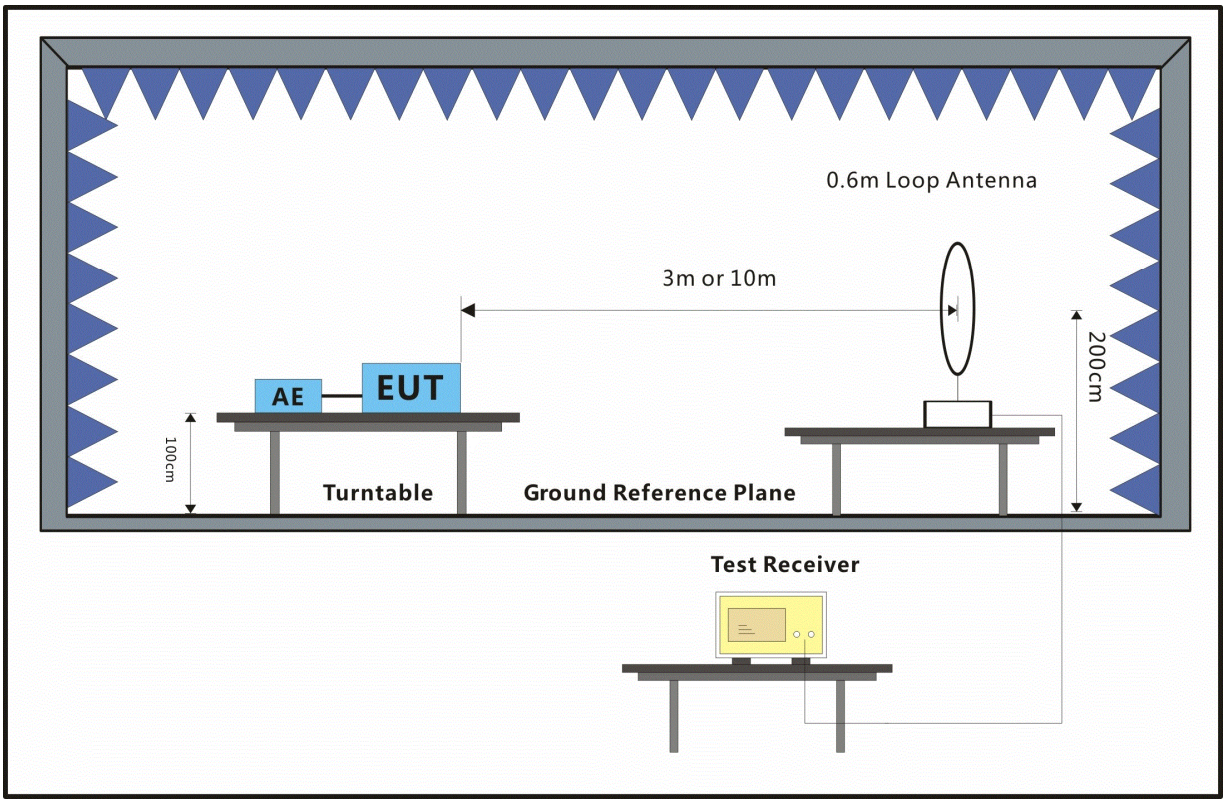
6.4.1 E.U.T. Operation

Operating Environment:

Temperature: 25.4 °C Humidity: 67.3 % RH Atmospheric Pressure: 1020 mbar

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

6.4.2 Test Setup Diagram

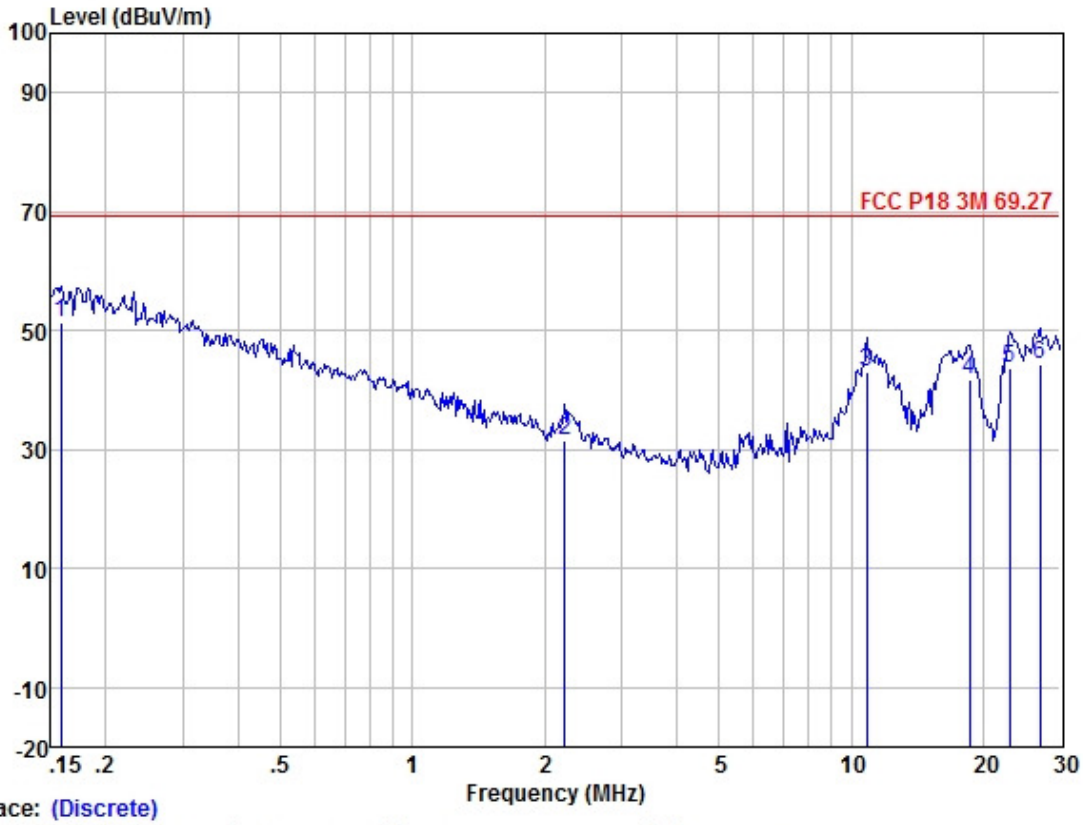


6.4.3 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak 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

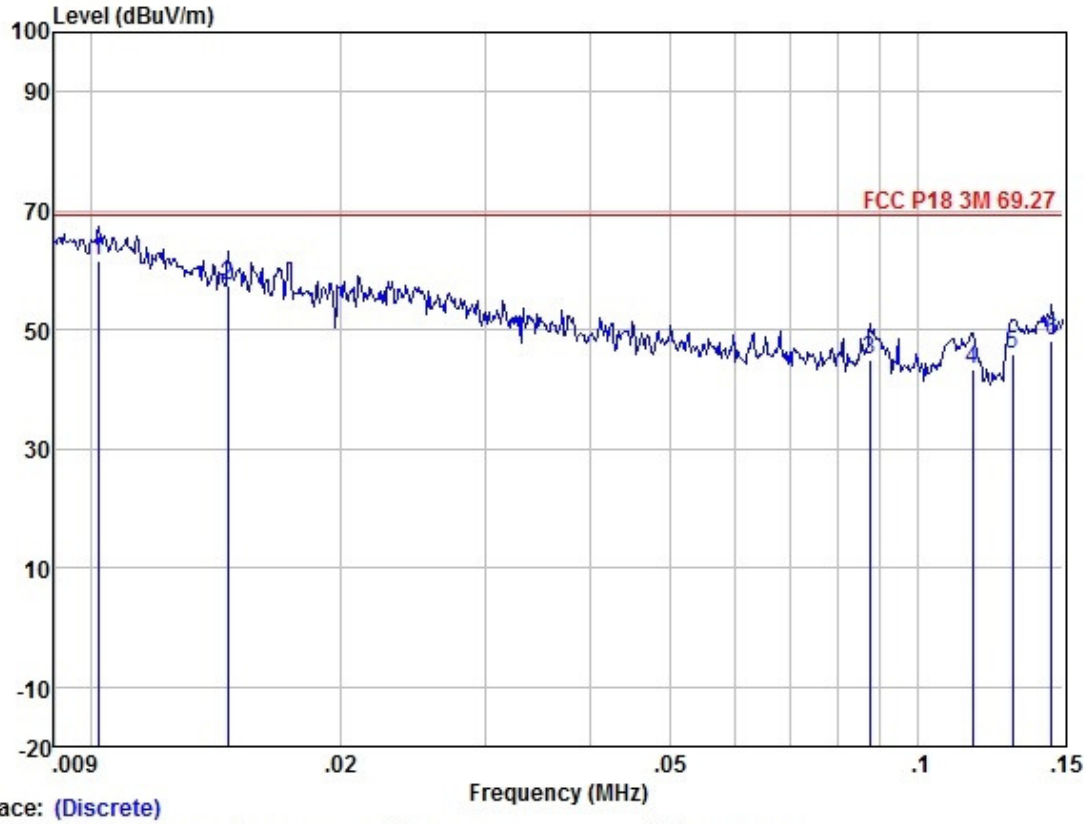
Mode:a; Polarization:Horizontal



Trace: (Discrete)

	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	0.158	67.92	12.89	0.00	29.30	51.51	69.27	-17.76	HORIZONTAL	Average
2	2.225	48.41	12.34	0.12	29.20	31.67	69.27	-37.60	HORIZONTAL	Average
3	10.847	61.28	10.56	0.30	29.20	42.94	69.27	-26.33	HORIZONTAL	Average
4	18.622	59.68	10.62	0.47	29.10	41.67	69.27	-27.60	HORIZONTAL	Average
5	23.018	62.00	10.38	0.50	29.10	43.78	69.27	-25.49	HORIZONTAL	Average
6	26.984	62.80	10.05	0.50	29.10	44.25	69.27	-25.02	HORIZONTAL	Average

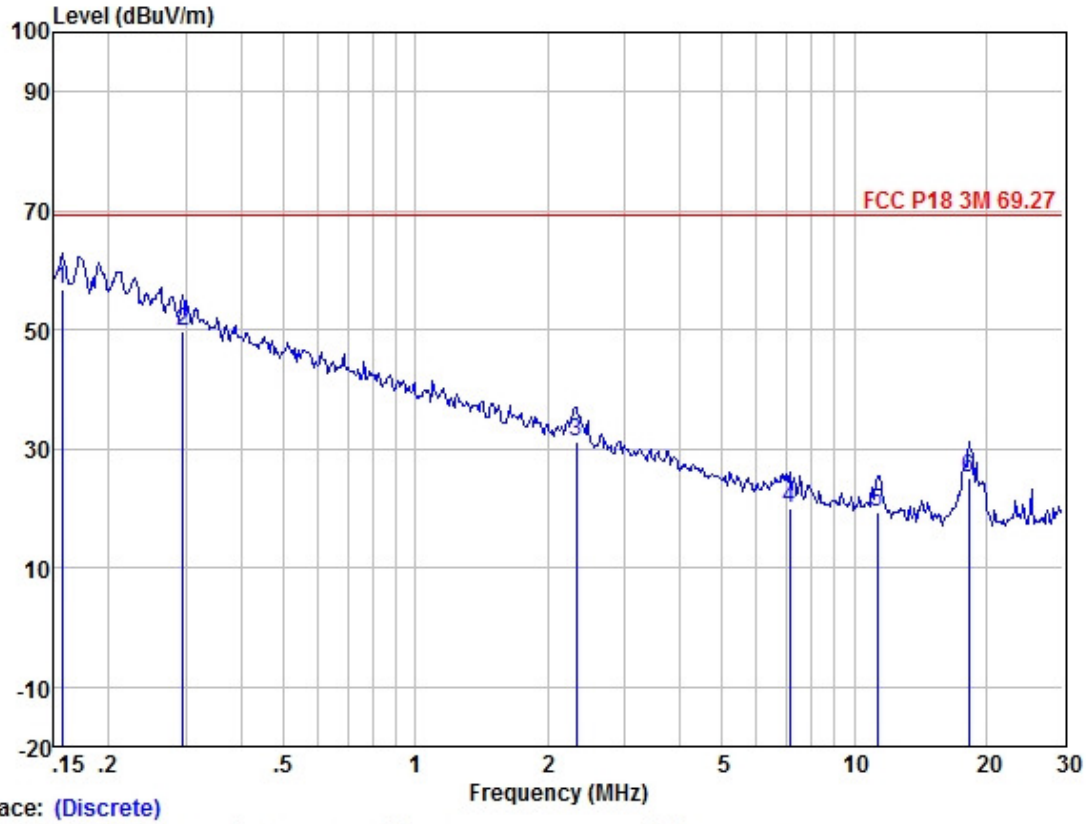
Mode:a; Polarization:Horizontal



Trace: (Discrete)

	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	0.010	67.80	21.84	0.00	28.13	61.51	69.27	-7.76	HORIZONTAL	Average
2	0.015	67.24	18.95	0.00	28.87	57.32	69.27	-11.95	HORIZONTAL	Average
3	0.087	61.29	12.95	0.00	29.30	44.94	69.27	-24.33	HORIZONTAL	Average
4	0.116	59.66	12.97	0.00	29.30	43.33	69.27	-25.94	HORIZONTAL	Average
5	0.130	62.15	12.93	0.00	29.30	45.78	69.27	-23.49	HORIZONTAL	Average
6	0.145	64.68	12.90	0.00	29.30	48.28	69.27	-20.99	HORIZONTAL	Average

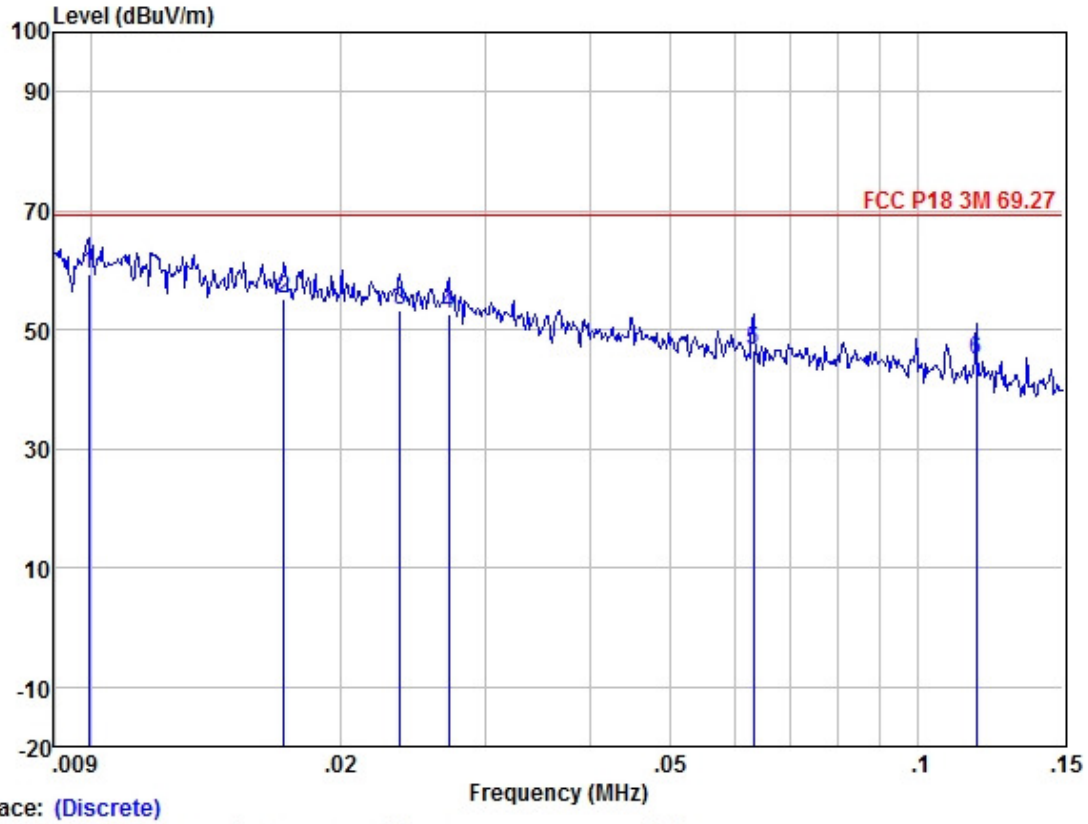
Mode:a; Polarization:Vertical



Trace: (Discrete)

	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	0.156	73.23	12.90	0.00	29.30	56.83	69.27	-12.44	VERTICAL	Average
2	0.296	66.16	12.76	0.10	29.30	49.72	69.27	-19.55	VERTICAL	Average
3	2.321	47.80	12.31	0.13	29.20	31.04	69.27	-38.23	VERTICAL	Average
4	7.137	38.26	10.74	0.30	29.20	20.10	69.27	-49.17	VERTICAL	Average
5	11.317	37.63	10.53	0.32	29.20	19.28	69.27	-49.99	VERTICAL	Average
6	18.232	43.17	10.60	0.42	29.10	25.09	69.27	-44.18	VERTICAL	Average

Mode:a; Polarization:Vertical



Trace: (Discrete)

	Freq	ReadAntenna Level	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	0.010	65.64	21.90	0.00	28.08	59.46	69.27	-9.81	VERTICAL	Average
2	0.017	66.60	17.68	0.00	28.99	55.29	69.27	-13.98	VERTICAL	Average
3	0.024	65.84	16.56	0.00	29.18	53.22	69.27	-16.05	VERTICAL	Average
4	0.027	65.87	16.02	0.00	29.21	52.68	69.27	-16.59	VERTICAL	Average
5	0.063	63.19	12.83	0.00	29.30	46.72	69.27	-22.55	VERTICAL	Average
6	0.118	61.43	12.97	0.00	29.30	45.10	69.27	-24.17	VERTICAL	Average

6.5 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 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 =676.8 W according to cluse6.2.2

Limit**=20lg(25*SQRT(power/500))+20lg(300/3)=30.67+40=69.27dBuV/m @ 3m distance.**

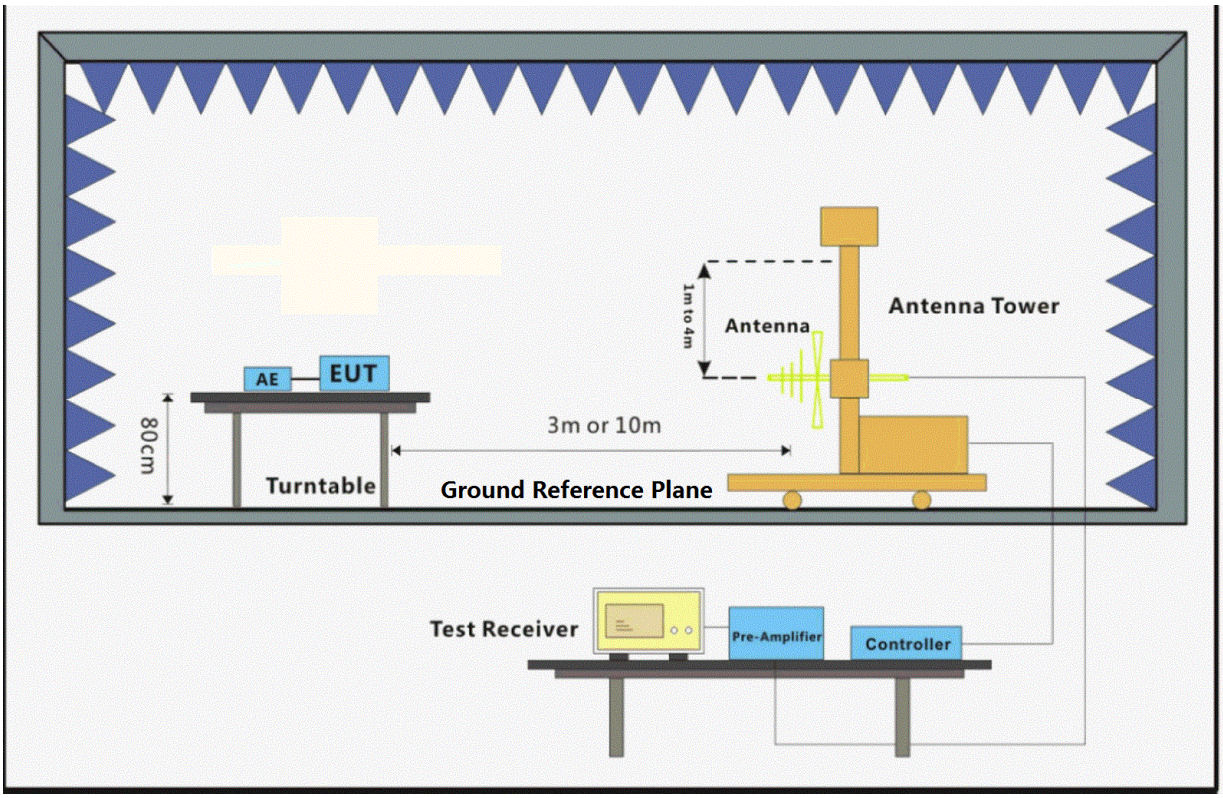
6.5.1 E.U.T. Operation

Operating Environment:

Temperature: 25.4 °C Humidity: 67.3 % RH Atmospheric Pressure: 1020 mbar

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

6.5.2 Test Setup Diagram

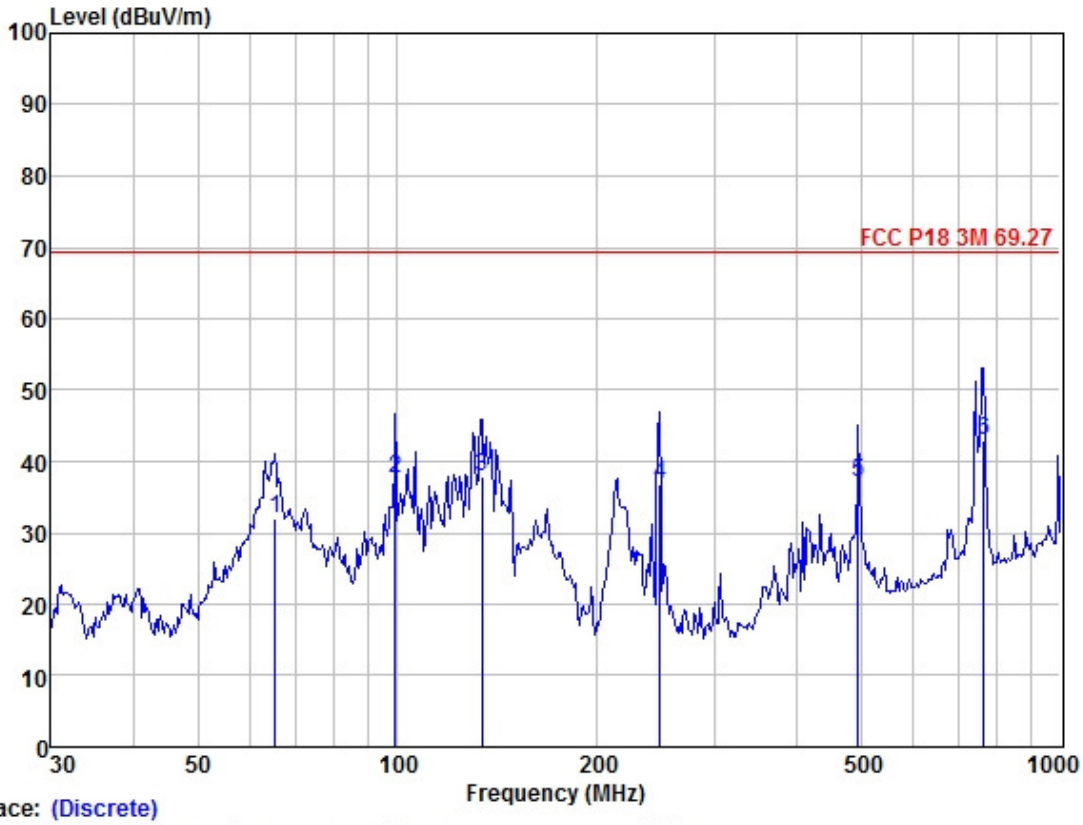


6.5.3 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak 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

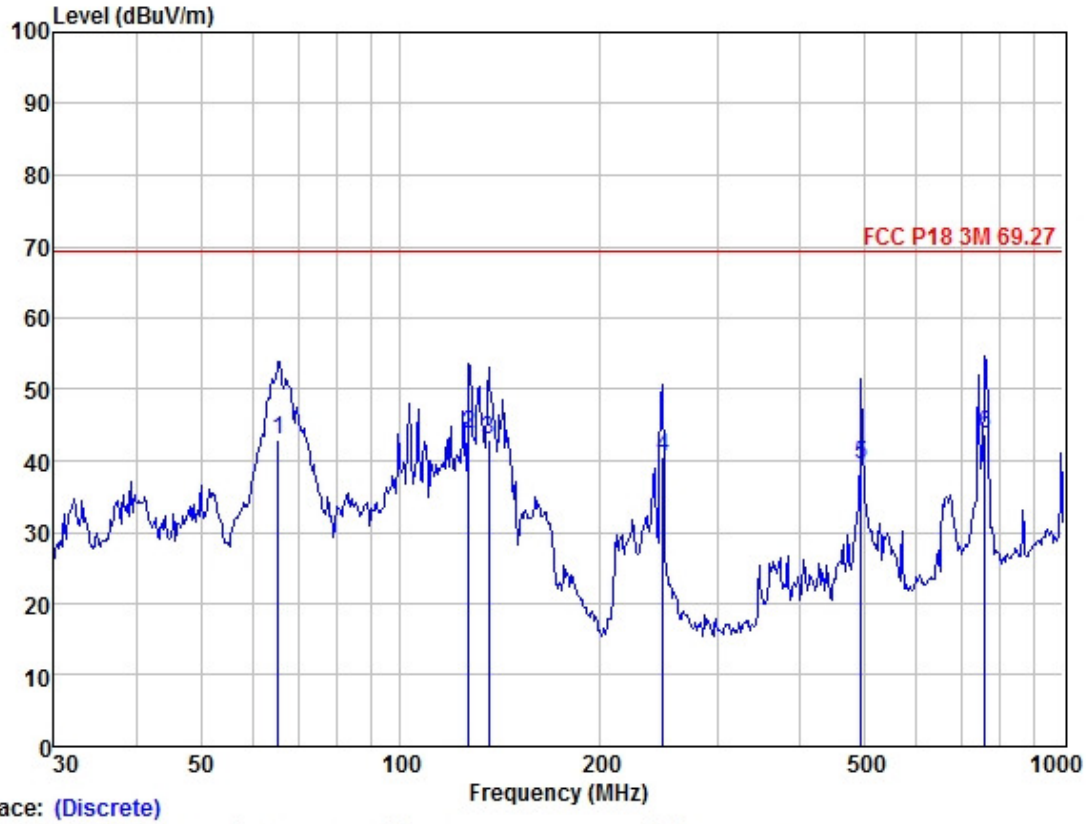
Mode:a; Polarization:Horizontal



Trace: (Discrete)

	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	65.343	44.91	13.29	0.80	27.00	32.00	69.27	-37.27	HORIZONTAL	Average
2	99.180	54.32	9.12	1.10	26.90	37.64	69.27	-31.63	HORIZONTAL	Average
3	134.088	50.87	12.60	1.24	26.87	37.84	69.27	-31.43	HORIZONTAL	Average
4	248.552	49.08	12.53	1.65	26.40	36.86	69.27	-32.41	HORIZONTAL	Average
5	495.934	44.41	18.07	2.40	27.82	37.06	69.27	-32.21	HORIZONTAL	Average
6	766.057	45.89	22.12	2.90	27.88	43.03	69.27	-26.24	HORIZONTAL	Average

Mode:a; Polarization:Vertical



Trace: (Discrete)

	Freq	ReadLevel	AntennaFactor	CableLoss	PreampFactor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	65.343	55.75	13.29	0.80	27.00	42.84	69.27	-26.43	VERTICAL	Average
2	126.772	57.71	11.60	1.22	26.89	43.64	69.27	-25.63	VERTICAL	Average
3	135.982	55.92	12.75	1.25	26.86	43.06	69.27	-26.21	VERTICAL	Average
4	248.552	52.76	12.53	1.65	26.40	40.54	69.27	-28.73	VERTICAL	Average
5	495.934	46.87	18.07	2.40	27.82	39.52	69.27	-29.75	VERTICAL	Average
6	760.704	46.60	22.06	2.90	27.90	43.66	69.27	-25.61	VERTICAL	Average

6.6 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

(1 MHz Resolution Bandwidth for 1,000MHz to 25,000MHz)

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 =676.8 W according to cluse6.2.2

Limit**=20lg(25*SQRT(power/500))+20lg(300/3)=30.67+40=69.27dBuV/m @ 3m distance.**

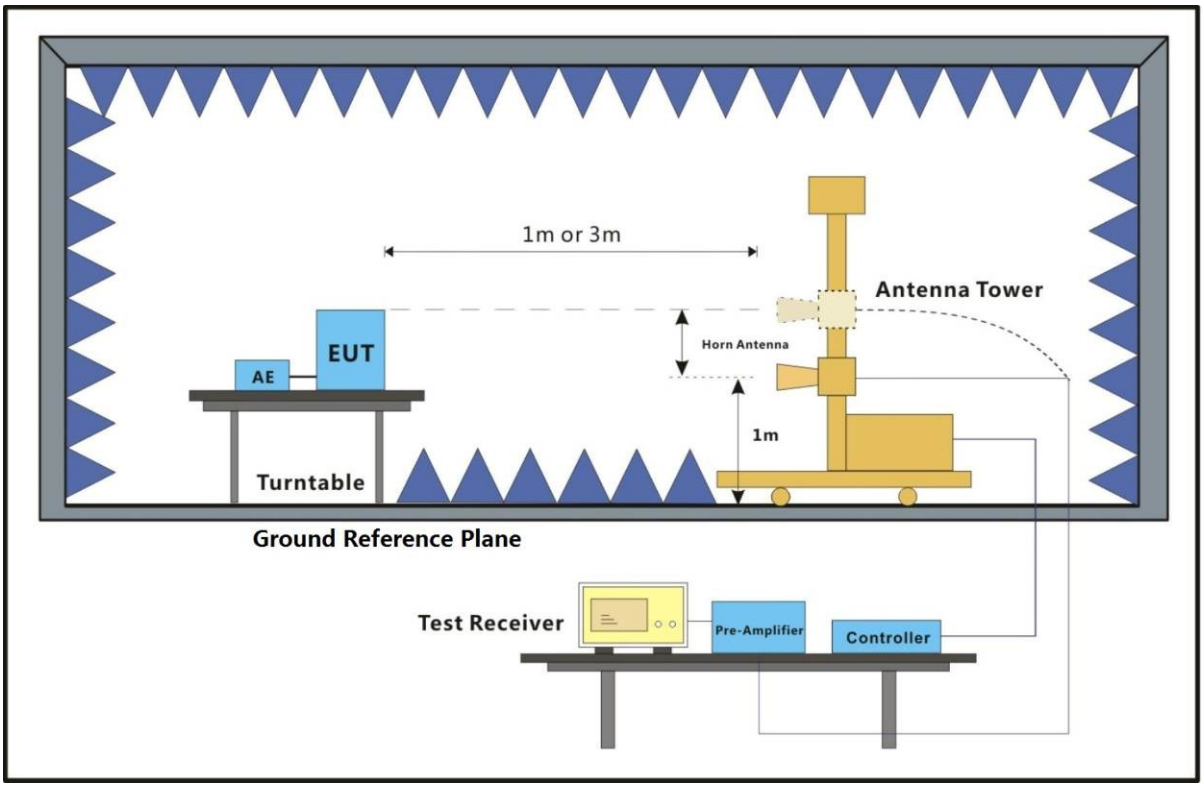
6.6.1 E.U.T. Operation

Operating Environment:

Temperature: 23 °C Humidity: 58 % RH Atmospheric Pressure: 1020 mbar

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

6.6.2 Test Setup Diagram

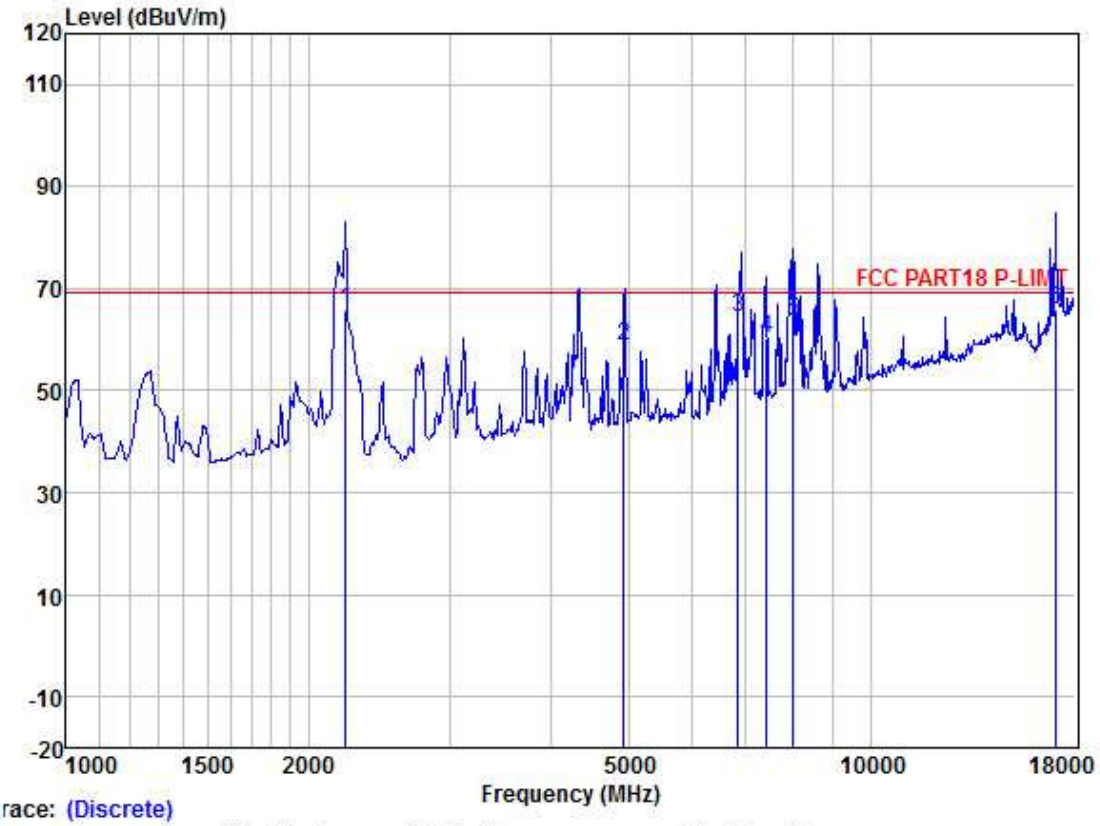


6.6.3 Measurement Data

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 Horn antenna with 2 orthogonal polarities.

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

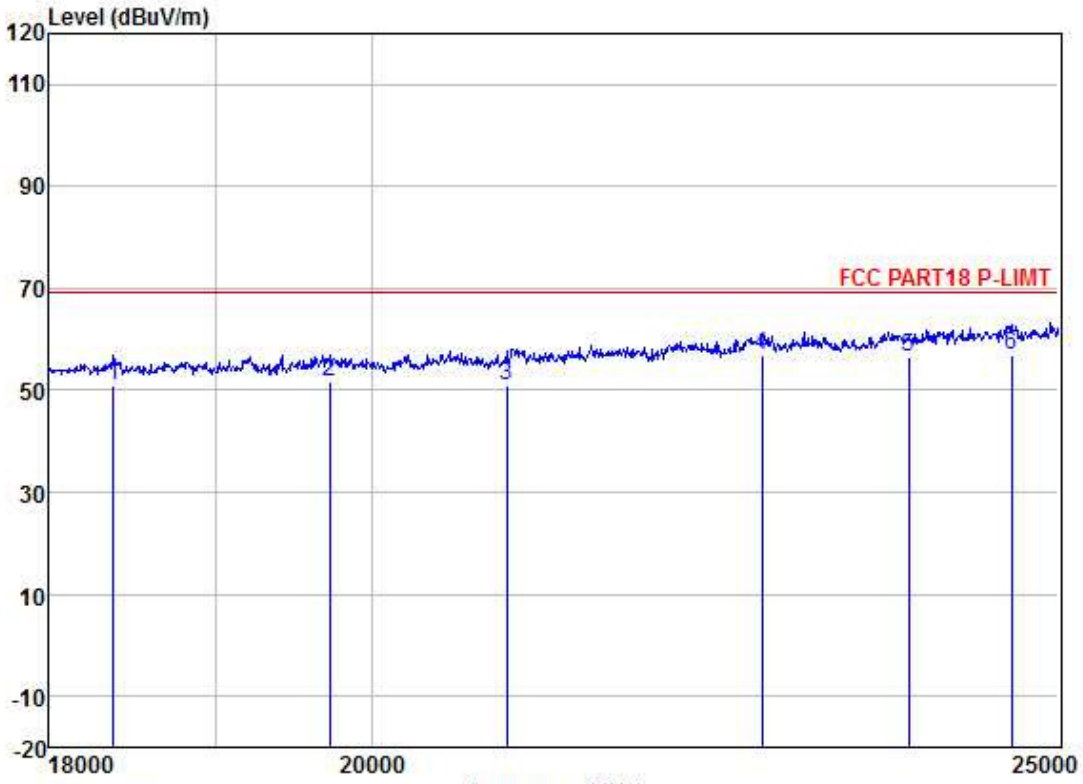
Mode:a; Polarization:Horizontal



race: (Discrete)

	Freq	ReadAntenna Level	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	2224.200	70.83	25.86	6.75	37.46	65.98	69.27	-3.29	HORIZONTAL	Average
2	4940.750	57.13	31.03	7.67	36.95	58.88	69.27	-10.39	HORIZONTAL	Average
3	6855.800	59.01	34.93	7.22	36.96	64.20	69.27	-5.07	HORIZONTAL	Average
4	7426.100	53.72	35.92	7.43	36.92	60.15	69.27	-9.12	HORIZONTAL	Average
5	8013.020	55.73	36.49	8.35	36.90	63.67	69.27	-5.60	HORIZONTAL	Average
6	17006.800	43.48	41.80	16.47	35.87	65.88	69.27	-3.39	HORIZONTAL	Average

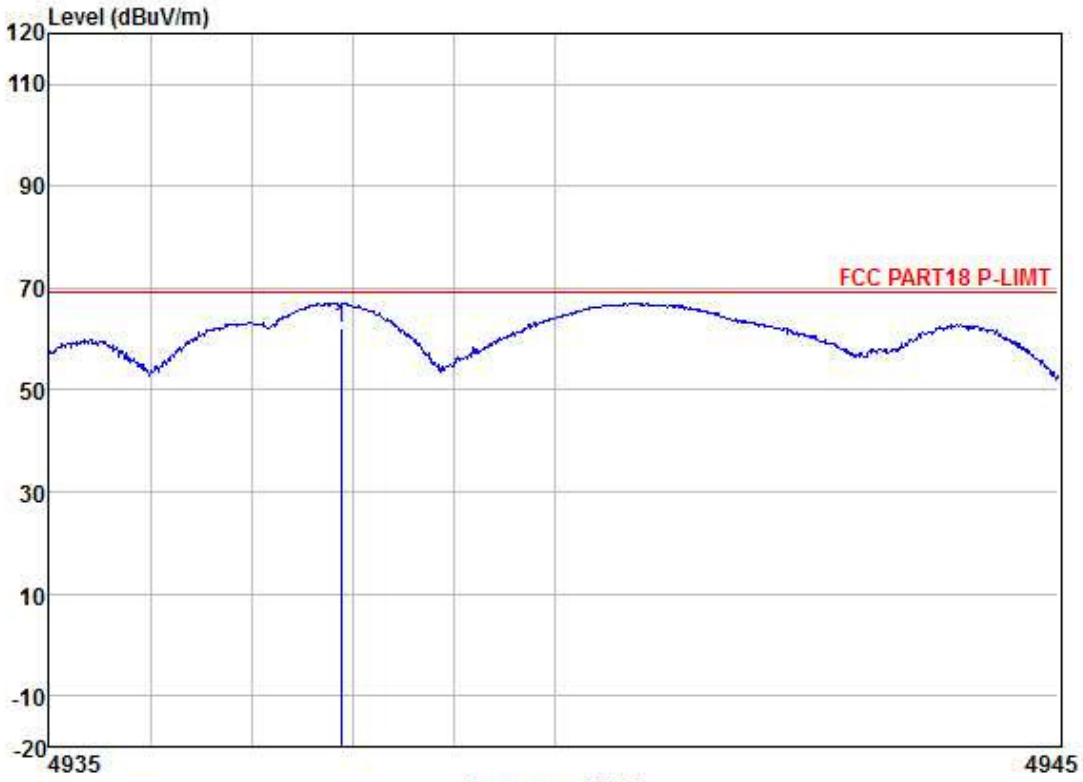
Mode:a; Polarization:Horizontal



race: (Discrete)

	Freq	ReadAntenna Level	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	18382.440	32.14	37.93	16.62	35.60	51.09	69.27	-18.18	HORIZONTAL	Average
2	19721.230	32.21	38.00	17.22	35.60	51.83	69.27	-17.44	HORIZONTAL	Average
3	20888.190	30.41	37.91	17.95	35.47	50.80	69.27	-18.47	HORIZONTAL	Average
4	22698.430	34.20	39.28	19.07	35.54	57.01	69.27	-12.26	HORIZONTAL	Average
5	23805.790	32.86	39.60	20.25	36.06	56.65	69.27	-12.62	HORIZONTAL	Average
6	24616.970	32.67	39.40	20.95	36.13	56.89	69.27	-12.38	HORIZONTAL	Average

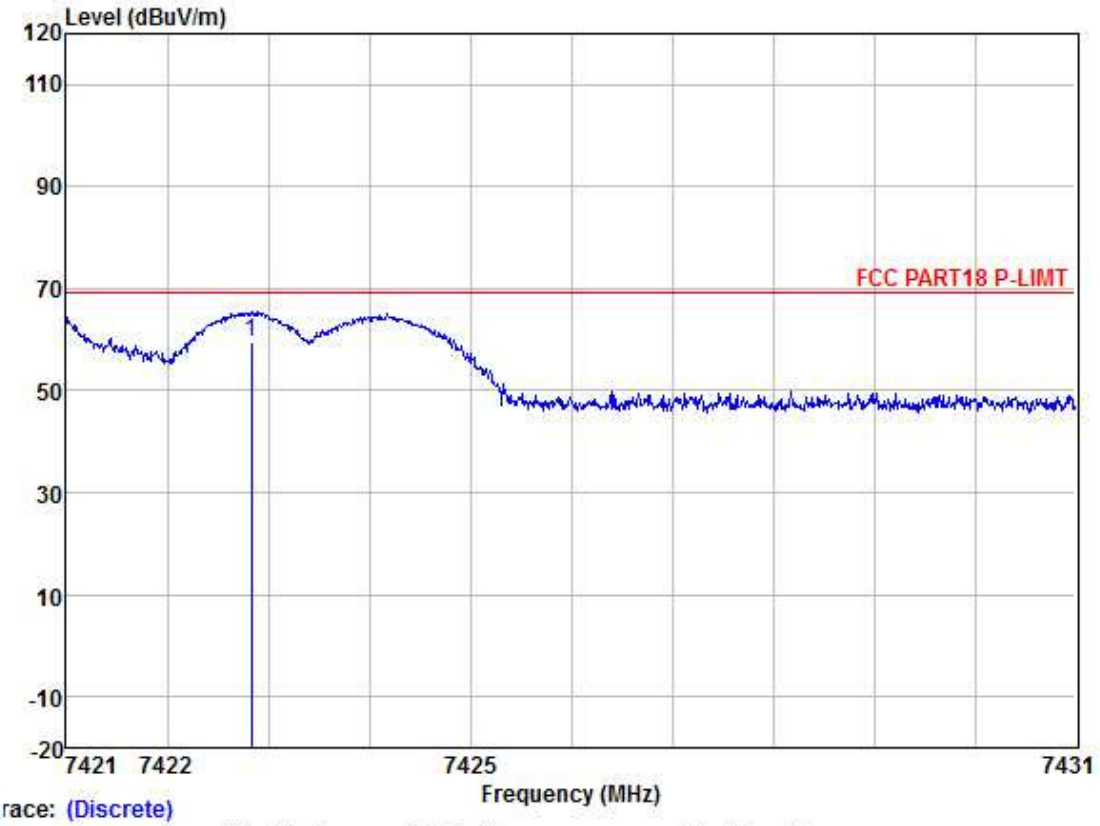
Mode:a; Polarization:Horizontal



race: (Discrete)

	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	4937.888	60.37	31.03	7.67	36.95	62.12	69.27	-7.15	HORIZONTAL	Average

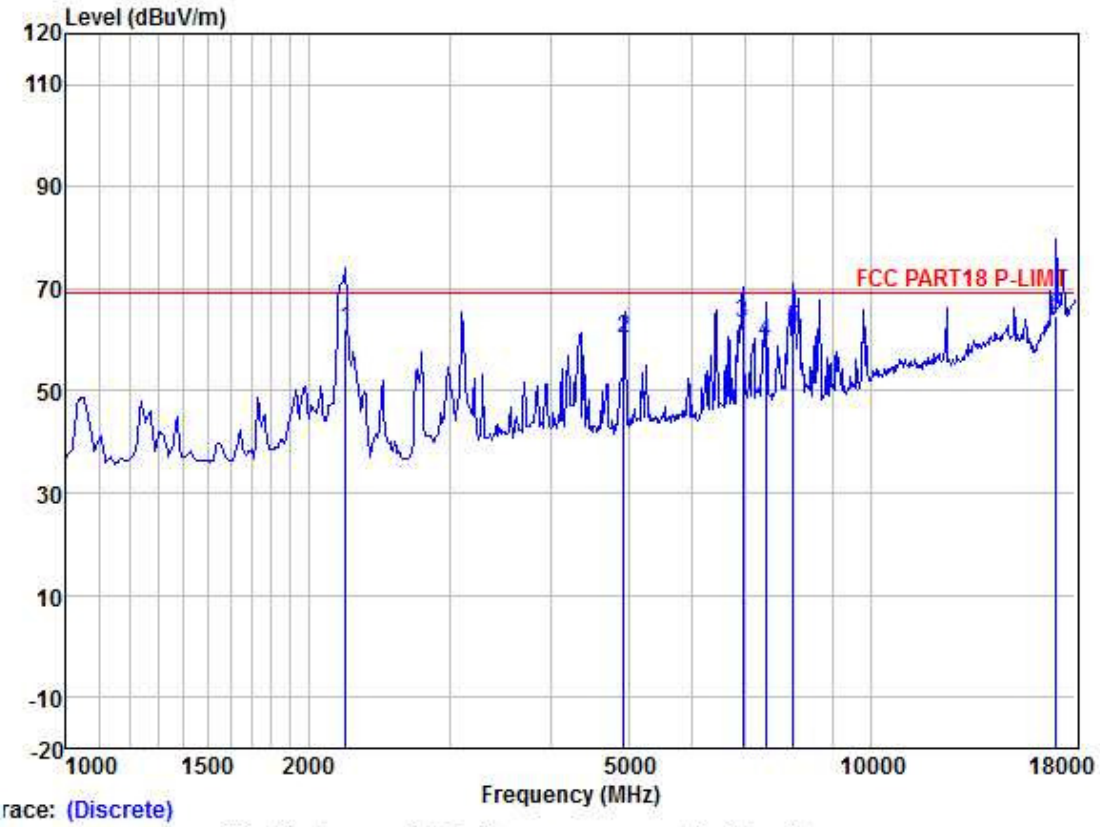
Mode:a; Polarization:Horizontal



race: (Discrete)

	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	7422.829	53.15	35.92	7.43	36.92	59.58	69.27	-9.69	HORIZONTAL	Average

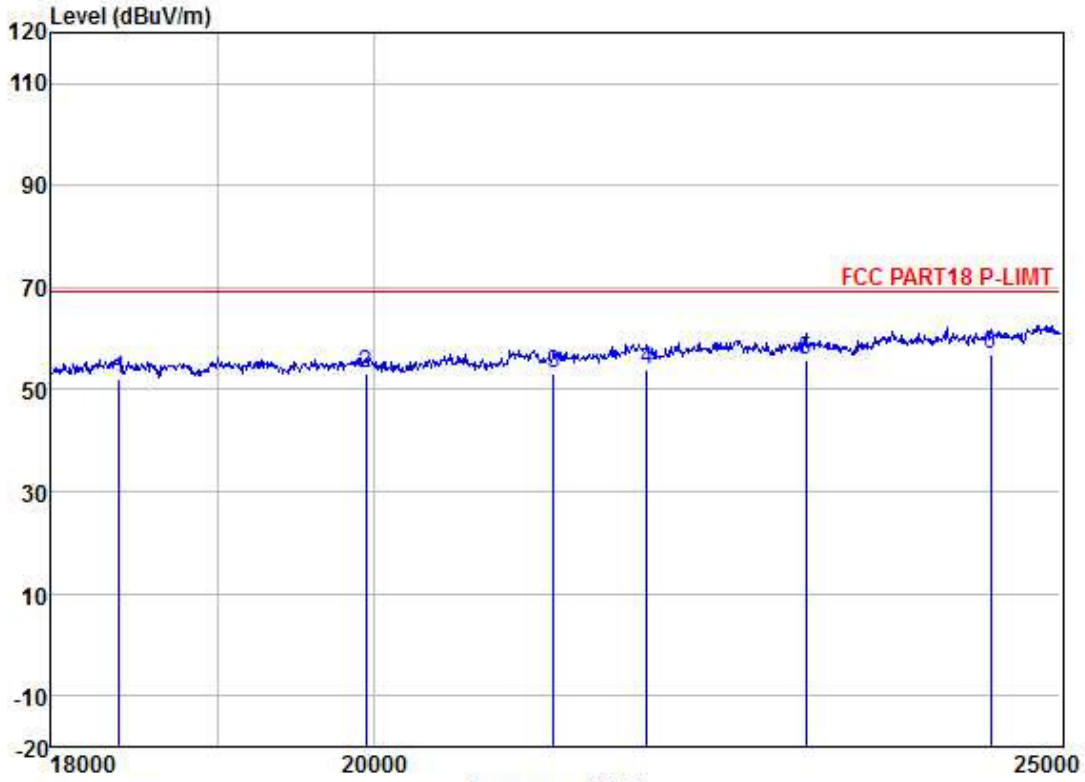
Mode:a; Polarization:Vertical



race: (Discrete)

	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	2226.950	66.97	25.86	6.75	37.46	62.12	69.27	-7.15	VERTICAL	Average
2	4940.200	58.59	31.03	7.67	36.95	60.34	69.27	-8.93	VERTICAL	Average
3	6934.778	58.00	35.03	7.26	36.95	63.34	69.27	-5.93	VERTICAL	Average
4	7420.300	53.13	35.89	7.42	36.92	59.52	69.27	-9.75	VERTICAL	Average
5	8013.020	54.31	36.49	8.35	36.90	62.25	69.27	-7.02	VERTICAL	Average
6	17038.150	42.06	41.87	16.71	35.87	64.77	69.27	-4.50	VERTICAL	Average

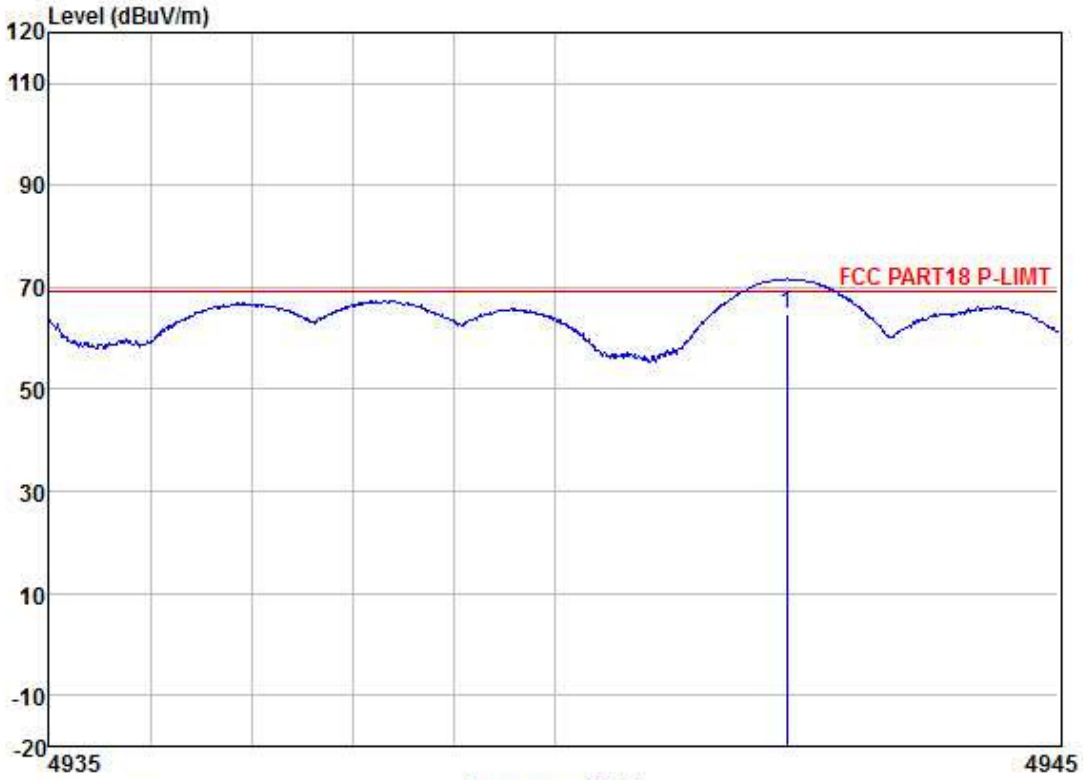
Mode:a; Polarization:Vertical



race: (Discrete)

	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	18400.570	33.05	37.93	16.64	35.60	52.02	69.27	-17.25	VERTICAL	Average
2	19942.740	33.56	38.00	17.29	35.60	53.25	69.27	-16.02	VERTICAL	Average
3	21199.270	32.51	37.95	18.08	35.41	53.13	69.27	-16.14	VERTICAL	Average
4	21849.740	32.34	38.17	18.55	35.31	53.75	69.27	-15.52	VERTICAL	Average
5	23013.770	32.78	39.60	19.21	35.75	55.84	69.27	-13.43	VERTICAL	Average
6	24439.710	32.80	39.47	20.72	36.12	56.87	69.27	-12.40	VERTICAL	Average

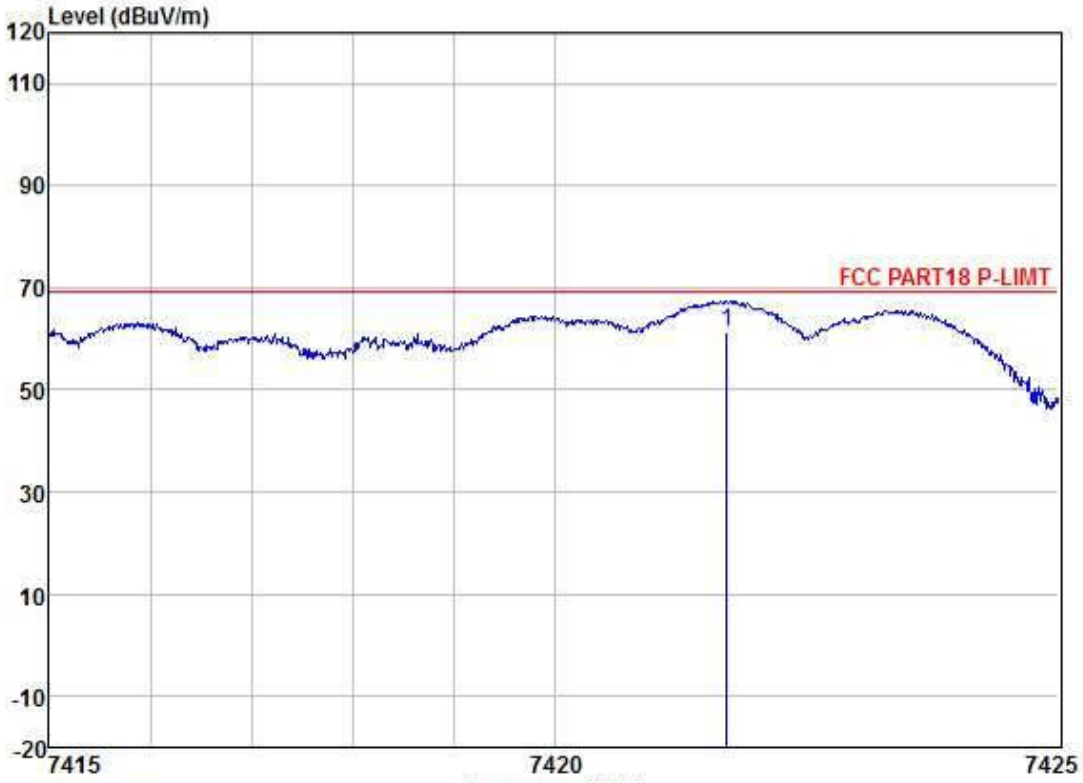
Mode:a; Polarization:Vertical



race: (Discrete)

	Freq	ReadAntenna Level	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	4942.308	62.92	31.03	7.67	36.95	64.67	69.27	-4.60	VERTICAL	Average

Mode:a; Polarization:Vertical



race: (Discrete)

	Freq	ReadAntenna Level	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	7421.708	55.13	35.89	7.42	36.92	61.52	69.27	-7.75	VERTICAL	Average

--End of Report—