



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

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Report No.: GZEM180900526101
Page: 1 of 103

TEST REPORT

Application No.: GZEM1809005261CR
Applicant: Foshan Sunnai Electrical Appliance Co., Ltd
Address of Applicant: Xingtan Industrial and Technology Zone, Xingtan Town, Shunde, Foshan, Guangdong, China
Manufacturer: Foshan Sunnai Electrical Appliance Co., Ltd
Address of Manufacturer: Xingtan Industrial and Technology Zone, Xingtan Town, Shunde, Foshan, Guangdong, China
Factory: Foshan Sunnai Electrical Appliance Co., Ltd
Address of Factory: Xingtan Industrial and Technology Zone, Xingtan Town, Shunde, Foshan, Guangdong, China
Equipment Under Test (EUT):
FCC ID: 2AR5ISW-180W
EUT Name: wine cooler
Model No.: SW-12W, SW-18W, SW-24W, SW-28W, SW-15W, SW-30W, SW-63W, SW-38W, SW-43W, SW-40W, SW-51W, SW-44W, SW-66W, SW-75W, SW-126W, SW-137W, SW-125W, SW-152W, SW-180W, SW-192W, SW-215W, SW-242W
□ Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.
Standard(s) : 47 CFR Part 15, Subpart C 15.247
Date of Receipt: 2018-09-10
Date of Test: 2018-09-17 to 2018-09-29
Date of Issue: 2019-04-19

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



Kobe Jian
Lab 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.

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

Report No.: GZEM180900526101
Page: 2 of 103

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2019-04-19		Original

Authorized for issue by:				
Tested By				2018-09-17 to 2018-09-29
		Curry_Wu /Project Engineer		Date
Checked By				2018-10-19
		Ricky Liu /Reviewer		Date



2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	Method	Requirement	Result
Antenna Requirement	47 CFR Part 15, Subpart C 15.247	N/A	47 CFR Part 15, Subpart C 15.203 & 15.247(c)	Pass

Radio Spectrum Matter Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at AC Power Line (150kHz-30MHz)	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.2	47 CFR Part 15, Subpart C 15.207	Pass
Minimum 6dB Bandwidth	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.8.1	47 CFR Part 15, Subpart C 15.247a(2)	Pass
Conducted Peak Output Power	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.9.1	47 CFR Part 15, Subpart C 15.247(b)(3)	Pass
Power Spectrum Density	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.10.2	47 CFR Part 15, Subpart C 15.247(e)	Pass
Conducted Band Edges Measurement	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.13.3.2	47 CFR Part 15, Subpart C 15.247(d)	Pass
Conducted Spurious Emissions	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.11	47 CFR Part 15, Subpart C 15.247(d)	Pass
Radiated Emissions which fall in the restricted bands	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.10.5	47 CFR Part 15, Subpart C 15.209 & 15.247(d)	Pass
Radiated Spurious Emissions	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.4,6.5,6.6	47 CFR Part 15, Subpart C 15.209 & 15.247(d)	Pass



☒ Declaration of EUT Family Grouping:

Model No.: SW-12W, SW-18W, SW-24W, SW-28W, SW-15W, SW-30W, SW-63W, SW-38W, SW-43W, SW-40W, SW-51W, SW-44W, SW-66W, SW-75W, SW-126W, SW-137W, SW-125W, SW-152W, SW-180W, SW-192W, SW-215W, SW-242W

According to the declaration from the applicant, the electrical circuit design, layout, components used and internal wiring were identical for all models, All models are used same WIFI module, with only difference as below.

Model SW-12W, SW-18W, SW-24W, SW-28W, SW-15W, SW-30W, SW-63W are the similar except for the cavity, appearance size; SW-38W, SW-43W, SW-40W, SW-51W, SW-44W, SW-66W, SW-75W are the similar except for the cavity, appearance size; SW-126W, SW-137W, SW-125W, SW-152W, SW-180W, SW-192W, SW-215W, SW-242W are the similar except for the cavity, appearance size. The model has one storage compartment or one divides into two storage compartments were have the same evaporator circuit.

Therefore only one model SW-180W were tested in this report.



3 Contents

	Page
1 Cover Page	1
2 Test Summary	3
3 Contents	5
4 General Information	7
4.1 Details of E.U.T.....	7
4.2 Description of Support Units	7
4.3 Measurement Uncertainty.....	7
4.4 Test Location	8
4.5 Test Facility.....	9
4.6 Deviation from Standards.....	10
4.7 Abnormalities from Standard Conditions	10
5 Equipment List	11
6 Radio Spectrum Technical Requirement.....	15
6.1 Antenna Requirement	15
6.1.1 Test Requirement:	15
6.1.2 Conclusion.....	15
7 Radio Spectrum Matter Test Results	16
7.1 Conducted Emissions at AC Power Line (150kHz-30MHz)	16
7.1.1 E.U.T. Operation.....	17
7.1.2 Test Setup Diagram.....	17
7.1.3 Measurement Procedure and Data.....	18
7.2 Minimum 6dB Bandwidth	21
7.2.1 E.U.T. Operation.....	21
7.2.2 Test Setup Diagram.....	21
7.2.3 Measurement Procedure and Data.....	21
7.3 Conducted Peak Output Power.....	22
7.3.1 E.U.T. Operation.....	23
7.3.2 Test Setup Diagram.....	23
7.3.3 Measurement Procedure and Data.....	23
7.4 Power Spectrum Density.....	24
7.4.1 E.U.T. Operation.....	24
7.4.2 Test Setup Diagram.....	24
7.4.3 Measurement Procedure and Data.....	24
7.5 Conducted Band Edges Measurement.....	25
7.5.1 E.U.T. Operation.....	26
7.5.2 Test Setup Diagram.....	26
7.5.3 Measurement Procedure and Data.....	26
7.6 Conducted Spurious Emissions	27
7.6.1 E.U.T. Operation.....	28
7.6.2 Test Setup Diagram.....	28
7.6.3 Measurement Procedure and Data.....	28
7.7 Radiated Emissions which fall in the restricted bands	29
7.7.1 E.U.T. Operation.....	30



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

Report No.: GZEM180900526101
Page: 6 of 103

7.7.2	Test Setup Diagram	30
7.7.3	Measurement Procedure and Data	31
7.8	Radiated Spurious Emissions	40
7.8.1	E.U.T. Operation	41
7.8.2	Test Setup Diagram	41
7.8.3	Measurement Procedure and Data	42
8	Appendix	58
8.1	Appendix 15.247	58



4 General Information

4.1 Details of E.U.T.

Power Supply:	AC 120V
Test Voltage:	AC 120V 60Hz
Cable:	About 1.2m x 3 wires unscreened AC mains cable
Antenna Gain	0dBi
Antenna Type	Integral Antenna
Channel Spacing	5MHz
Modulation Type	802.11b: DSSS 802.11g/n: OFDM
Number of Channels	802.11b/g/n(HT20):11 802.11n(HT40):7
Operation Frequency	802.11b/g/n(HT20): 2412MHz to 2462MHz 802.11n(HT40): 2422MHz to 2452MHz

4.2 Description of Support Units

The EUT has been tested with corresponding accessories as below:

Supplied by SGS:

Description	Manufacturer	Model No.	SN/Certificate NO
Mobile Phone	SAMSUNG	GT-9500	RV1D82X8W9X

4.3 Measurement Uncertainty

RF

No.	Item	Measurement Uncertainty
1	Radio Frequency	$\pm 5.5 \times 10^{-8}$
2	Duty cycle	$\pm 0.57\%$
3	Occupied Bandwidth	$\pm 3\%$
4	RF Conducted power	$\pm 0.68\text{dB}$
5	RF Power Density	$\pm 1.50\text{dB}$
6	Conducted Spurious Emissions	$\pm 1.04\text{dB}$
7	RF Radiated Power	$\pm 4.5\text{dB}$ (below 1GHz)
		$\pm 4.8\text{dB}$ (above 1GHz)
8	Radiated Spurious Emission Test	$\pm 4.5\text{dB}$ (30MHz-1GHz)
		$\pm 4.8\text{dB}$ (1GHz-18GHz)
9	Temperature	$\pm 0.4^{\circ}\text{C}$
10	Humidity	$\pm 1.3\%$
11	Supply Voltages	$\pm 1.5\%$
12	Time	$\pm 3\%$



4.4 Test Location

All tests were performed at:

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

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

No tests were sub-contracted.

4.5 Test Facility

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

● 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 AC Power Line (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	R&S	ENV216	EMC2135	2019-09-21	2019-09-20
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

Minimum 6dB Bandwidth					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EXA Signal Analyzer	AgilentTechnologies	N9010A	EMC2138	2017-11-15	2018-11-14
6dB Attenuator	HP	8491A	EMC2062	2018-04-04	2020-04-03
Test Software JS1120-3	HangTianXing	V2.6	GZE100-69	N/A	N/A

Conducted Peak Output Power					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EXA Signal Analyzer	AgilentTechnologies	N9010A	EMC2138	2017-11-15	2018-11-14
6dB Attenuator	HP	8491A	EMC2062	2018-04-04	2020-04-03
Test Software JS1120-3	HangTianXing	V2.6	GZE100-69	N/A	N/A

Power Spectrum Density					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EXA Signal Analyzer	AgilentTechnologies	N9010A	EMC2138	2017-11-15	2018-11-14
6dB Attenuator	HP	8491A	EMC2062	2018-04-04	2020-04-03
Test Software JS1120-3	HangTianXing	V2.6	GZE100-69	N/A	N/A



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

Report No.: GZEM180900526101

Page: 12 of 103

Conducted Band Edges Measurement					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
MXA Signal Analyzer	AgilentTechnologies	N9020A	SEM004-10	2018-03-10	2019-03-09
ESG Vector Signal Generator	Keysight	E4438C	SEM006-03	2018-04-10	2019-04-10
EXG Analog Signal Generator	AgilentTechnologies	N5171B	SEM006-04	2017-07-26	2020-07-25
Power Meter	AgilentTechnologies	U2021XA_Ch2	SEM009-02	2018-09-20	2019-09-19
Power Meter	AgilentTechnologies	U2021XA_Ch3	SEM009-03	2018-09-20	2019-09-19
EXA Signal Analyzer	AgilentTechnologies	N9010A	EMC2138	2017-11-15	2018-11-14
6dB Attenuator	HP	8491A	EMC2062	2018-04-04	2020-04-03
Test Software JS1120-3	HangTianXing	V2.6	GZE100-69	N/A	N/A

Conducted Spurious Emissions					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EXA Signal Analyzer	AgilentTechnologies	N9010A	EMC2138	2017-11-15	2018-11-14
6dB Attenuator	HP	8491A	EMC2062	2018-04-04	2020-04-03
Test Software JS1120-3	HangTianXing	V2.6	GZE100-69	N/A	N/A



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

Report No.: GZEM180900526101

Page: 13 of 103

Radiated Emissions which fall in the restricted bands					
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	SCHWARZBECKME SS-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
Trilog Broadband Antenna 30MHz-1GHz	SCHWARZBECKME SS-ELEKTRONIK	VULB 9168	SEM003-18	2016-06-29	2019-06-28
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A



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

Report No.: GZEM180900526101

Page: 14 of 103

Radiated Spurious Emissions					
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	SCHWARZBECKME SS-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
Trilog Broadband Antenna 30MHz-1GHz	SCHWARZBECKME SS-ELEKTRONIK	VULB 9168	SEM003-18	2016-06-29	2019-06-28
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	2018-07-20	2019-07-19
DMM	Fluke	73	EMC0007	2018-07-19	2019-07-18

6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203 & 15.247(c)

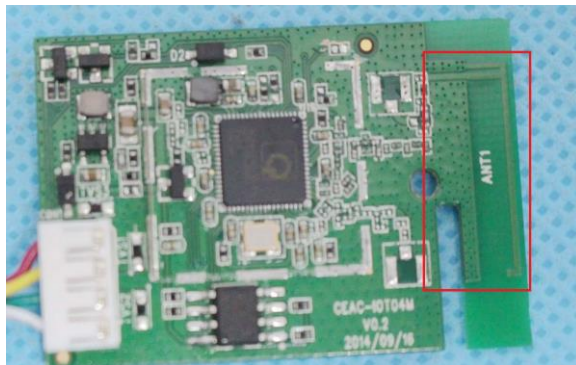
6.1.2 Conclusion

Standard Requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.



EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 0dBi.

The antenna position is about 1.8m height



7 Radio Spectrum Matter Test Results

7.1 Conducted Emissions at AC Power Line (150kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.207
Test Method: ANSI C63.10 (2013) Section 6.2
Limit:

Frequency of emission(MHz)	Conducted limit(dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

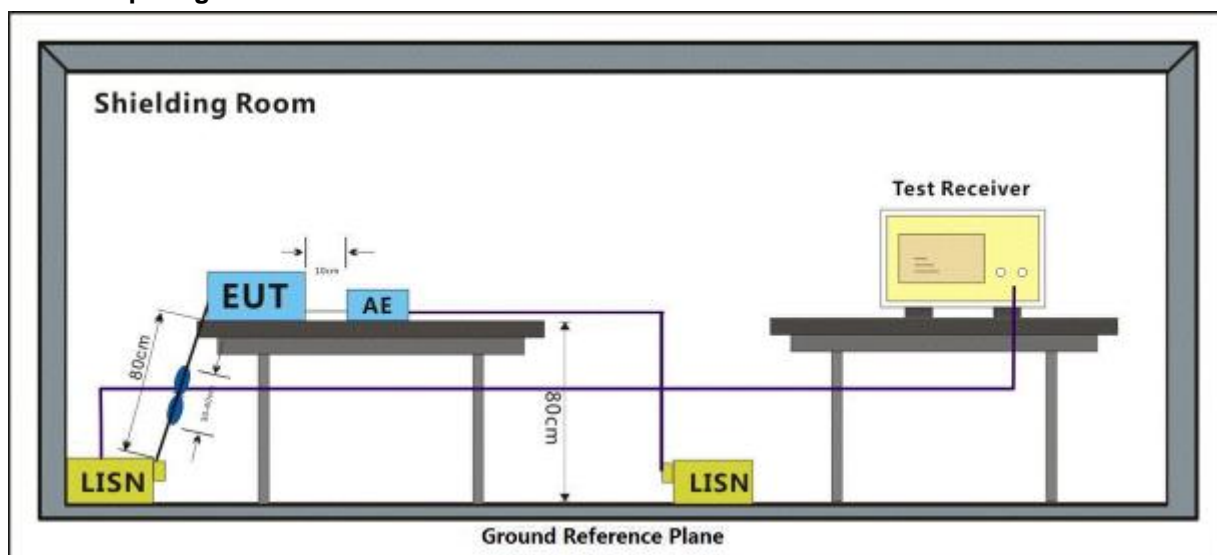
7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 23.9 °C Humidity: 52 % RH Atmospheric Pressure: 1020 mbar

Test Mode: a:TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40). Only the data of worst case is recorded in the report.

7.1.2 Test Setup Diagram



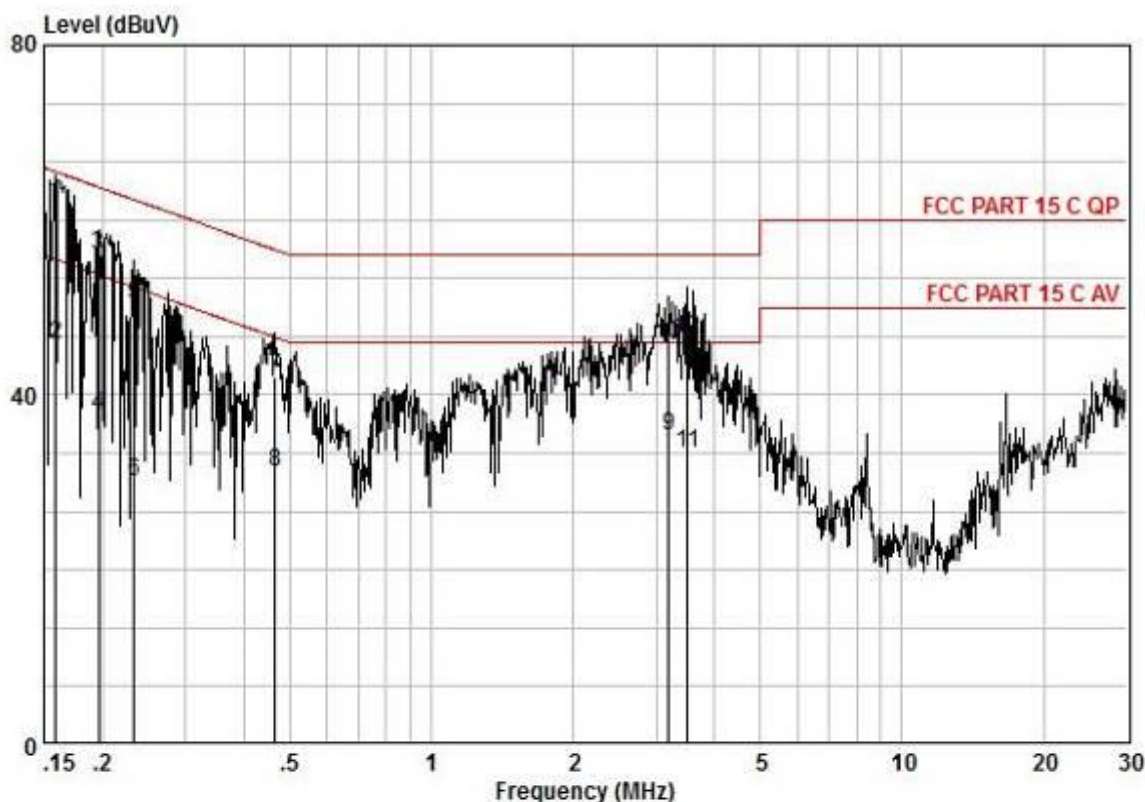


7.1.3 Measurement Procedure and Data

- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50μH + 5ohm linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
- 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
- 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
- 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

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

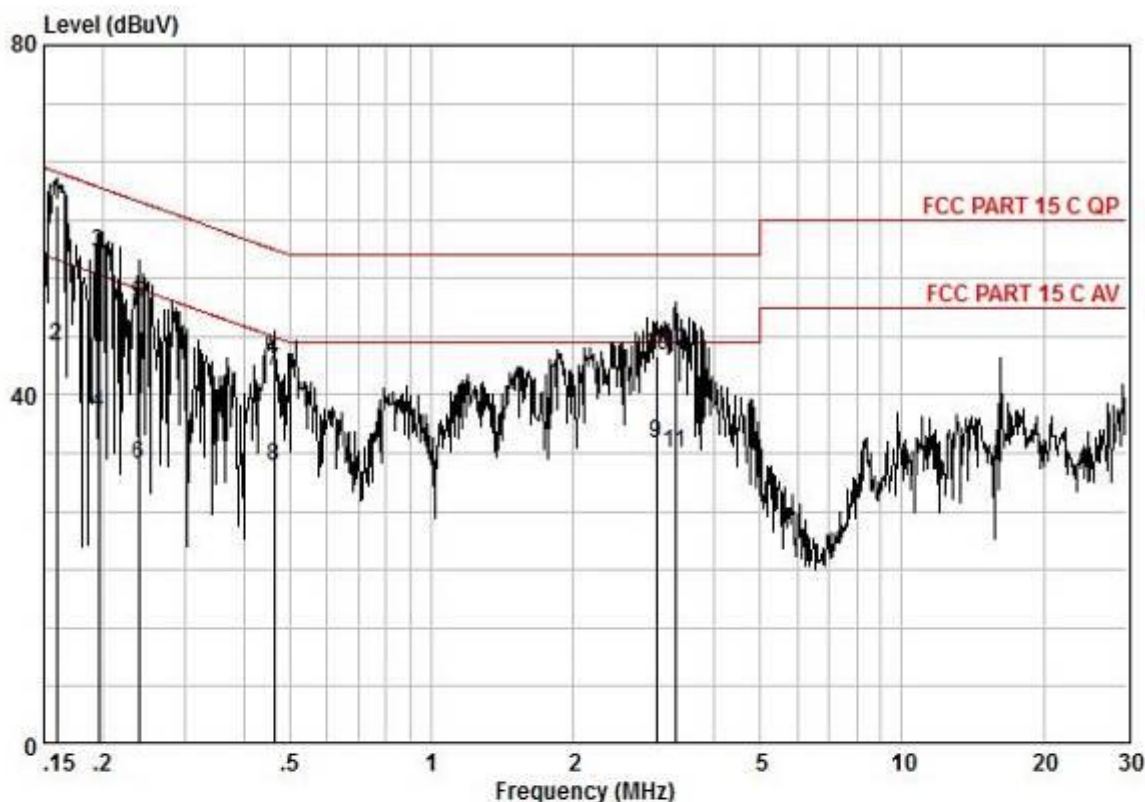
Mode:a; Line:Live Line



Pol :LIVE
No :SW-180
Model :

Frequency MHz	read level dBuV	Cable Loss dB	LISN Factor dB	Measured level dBuV	Limit Line dBuV	Over limit dB	Remark
0,16	52,23	0,10	9,49	61,82	65,52	-3,69	QP
0,16	36,16	0,10	9,49	45,75	55,52	-9,76	AVERAGE
0,20	46,32	0,10	9,61	56,03	63,76	-7,72	QP
0,20	28,10	0,10	9,61	37,81	53,76	-15,94	AVERAGE
0,23	40,71	0,12	9,63	50,45	62,35	-11,90	QP
0,23	20,31	0,12	9,63	30,05	52,35	-22,30	AVERAGE
0,47	32,32	0,19	9,65	42,16	56,58	-14,42	QP
0,47	21,33	0,19	9,65	31,17	46,58	-15,41	AVERAGE
3,19	25,09	0,55	9,62	35,26	46,00	-10,74	AVERAGE
3,19	35,57	0,55	9,62	45,74	56,00	-10,26	QP
3,51	23,19	0,58	9,62	33,40	46,00	-12,60	AVERAGE
3,51	36,14	0,58	9,62	46,35	56,00	-9,65	QP

Mode:a; Line:Neutral Line



Pol	: NEUTRAL						
No	: SW-180						
Model	:						
Frequency MHz	read level dBuV	Cable Loss dB	LISN Factor dB	Measured level dBuV	Limit Line dBuV	Over limit dB	Remark
0.16	52.27	0.10	9.43	61.80	65.47	-3.67	QP
0.16	36.00	0.10	9.43	45.53	55.47	-9.94	AVERAGE
0.20	46.51	0.10	9.58	56.19	63.76	-7.57	QP
0.20	28.28	0.10	9.58	37.96	53.76	-15.80	AVERAGE
0.24	40.57	0.12	9.58	50.27	62.13	-11.86	QP
0.24	22.28	0.12	9.58	31.98	52.13	-20.15	AVERAGE
0.46	32.93	0.19	9.55	42.68	56.63	-13.95	QP
0.46	22.04	0.19	9.55	31.79	46.63	-14.84	AVERAGE
3.01	24.34	0.54	9.56	34.44	46.00	-11.56	AVERAGE
3.01	34.35	0.54	9.56	44.45	56.00	-11.55	QP
3.29	23.29	0.56	9.57	33.42	46.00	-12.58	AVERAGE
3.29	34.82	0.56	9.57	44.95	56.00	-11.05	QP

7.2 Minimum 6dB Bandwidth

Test Requirement: 47 CFR Part 15, Subpart C 15.247a(2)
Test Method: ANSI C63.10 (2013) Section 11.8.1
Limit: ≥ 500 kHz

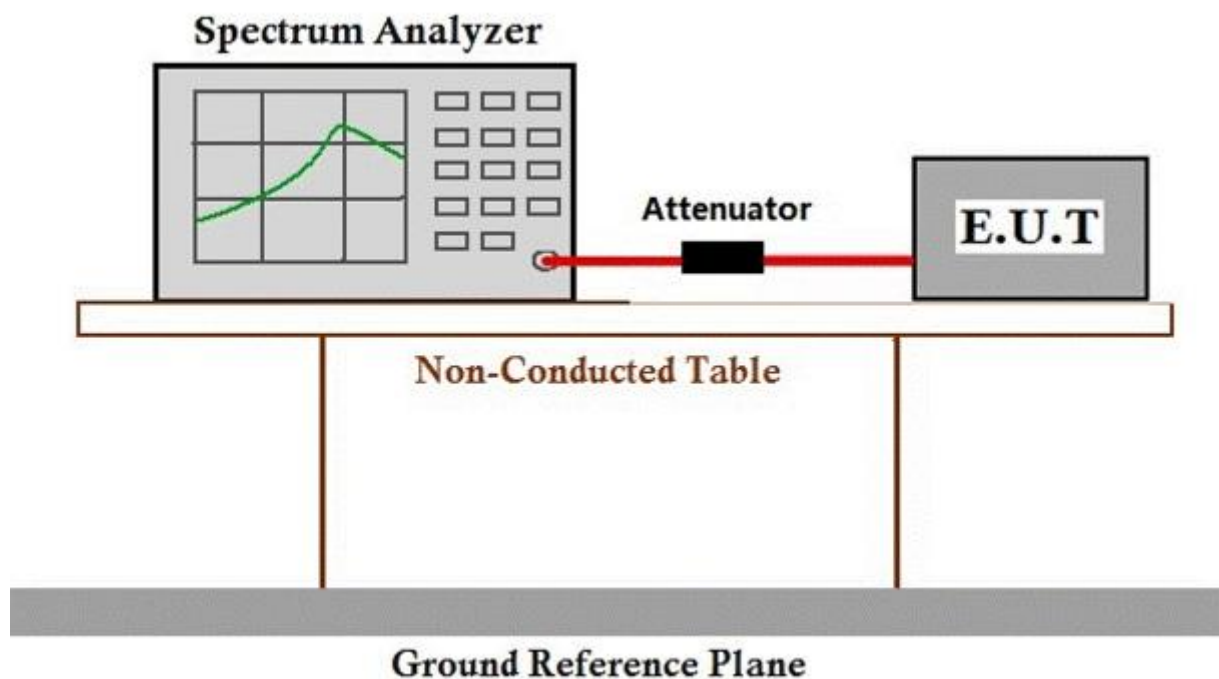
7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 24.6 °C Humidity: 49.2 % RH Atmospheric Pressure: 1020 mbar

Test mode a:TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40). Only the data of worst case is recorded in the report.

7.2.2 Test Setup Diagram



7.2.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247



7.3 Conducted Peak Output Power

Test Requirement 47 CFR Part 15, Subpart C 15.247(b)(3)
Test Method: ANSI C63.10 (2013) Section 11.9.1
Limit:

Frequency range(MHz)	Output power of the intentional radiator(watt)
902-928	1 for ≥ 50 hopping channels
	0.25 for $25 \leq$ hopping channels < 50
	1 for digital modulation
2400-2483.5	1 for ≥ 75 non-overlapping hopping channels
	0.125 for all other frequency hopping systems
	1 for digital modulation
5725-5850	1 for frequency hopping systems and digital modulation

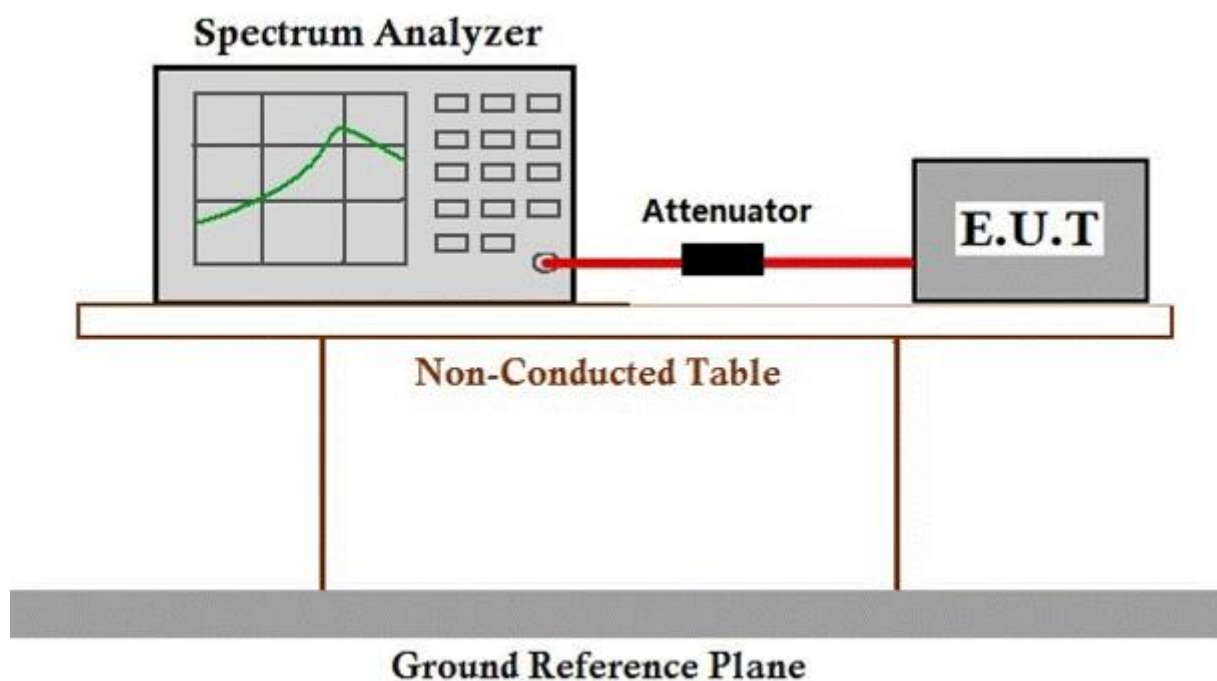
7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 24.6 °C Humidity: 49.2 % RH Atmospheric Pressure: 1020 mbar

Test mode a:TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40). Only the data of worst case is recorded in the report.

7.3.2 Test Setup Diagram



7.3.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247

7.4 Power Spectrum Density

Test Requirement	47 CFR Part 15, Subpart C 15.247(e)
Test Method:	ANSI C63.10 (2013) Section 11.10.2
Limit:	$\leq 8\text{dBm}$ in any 3 kHz band during any time interval of continuous transmission

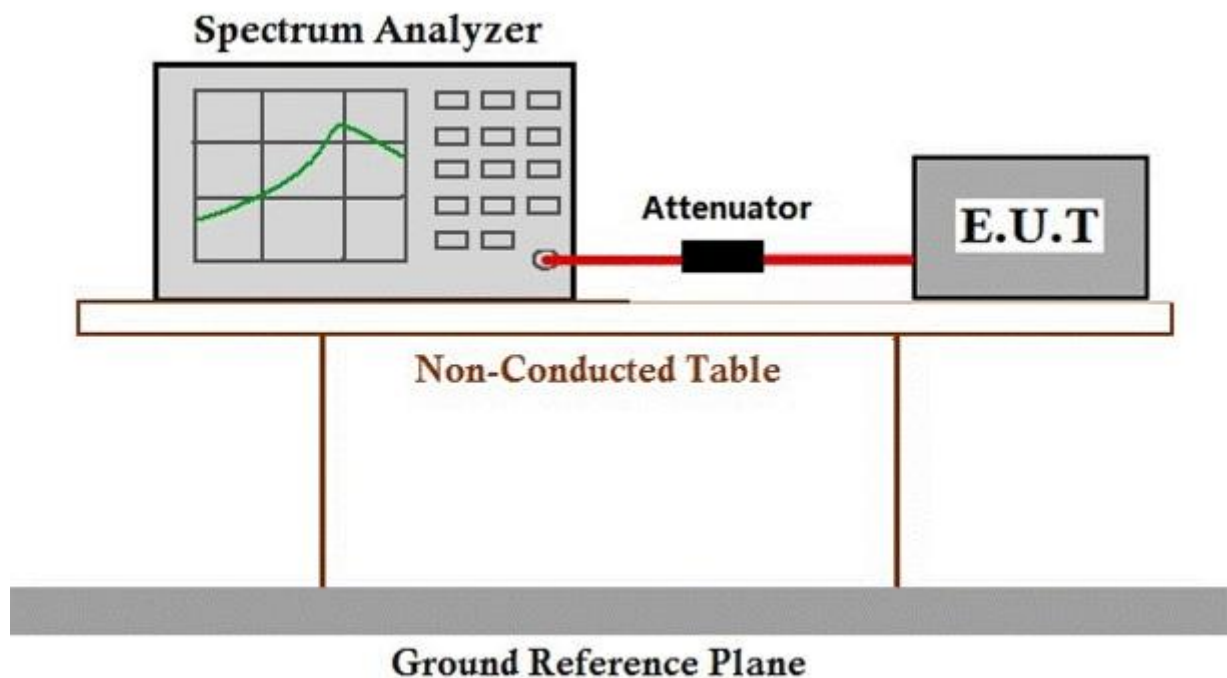
7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 24.6 °C Humidity: 49.3 % RH Atmospheric Pressure: 1020 mbar

Test mode a:TX mode_ Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40). Only the data of worst case is recorded in the report.

7.4.2 Test Setup Diagram



7.4.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247



7.5 Conducted Band Edges Measurement

Test Requirement	47 CFR Part 15, Subpart C 15.247(d)
Test Method:	ANSI C63.10 (2013) Section 11.13.3.2
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c))

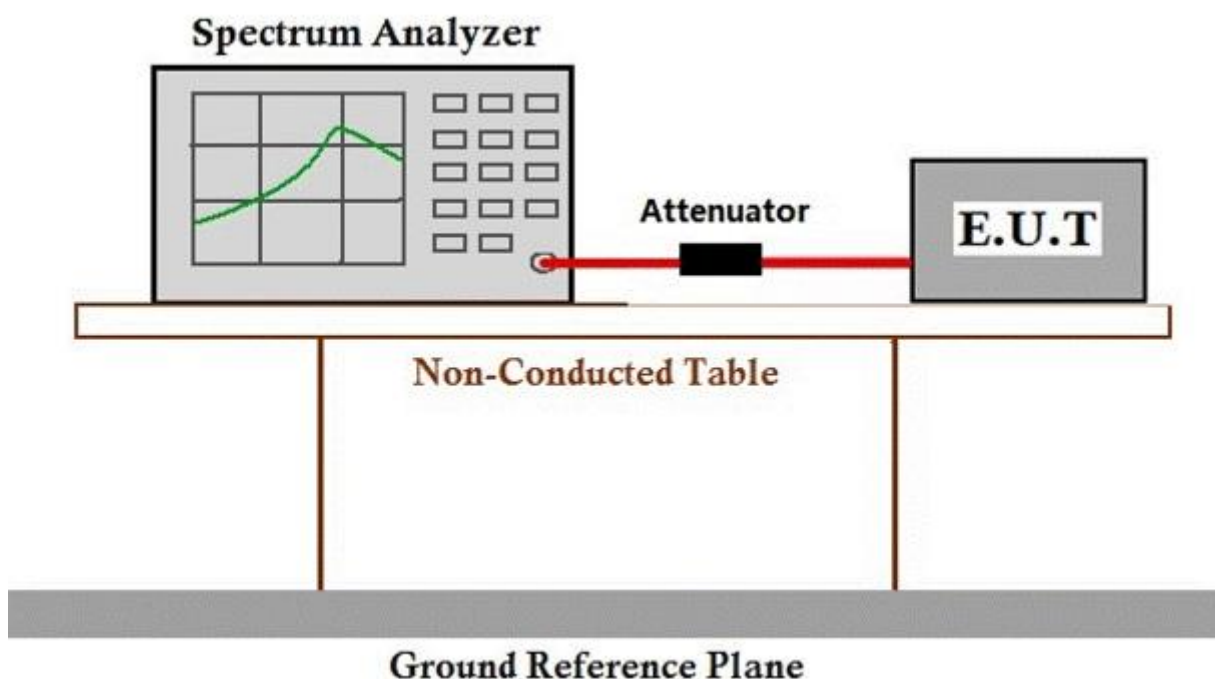
7.5.1 E.U.T. Operation

Operating Environment:

Temperature: 24.6 °C Humidity: 49.4 % RH Atmospheric Pressure: 1020 mbar

Test mode a:TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40). Only the data of worst case is recorded in the report.

7.5.2 Test Setup Diagram



7.5.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247



7.6 Conducted Spurious Emissions

Test Requirement	47 CFR Part 15, Subpart C 15.247(d)
Test Method:	ANSI C63.10 (2013) Section 11.11
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c))

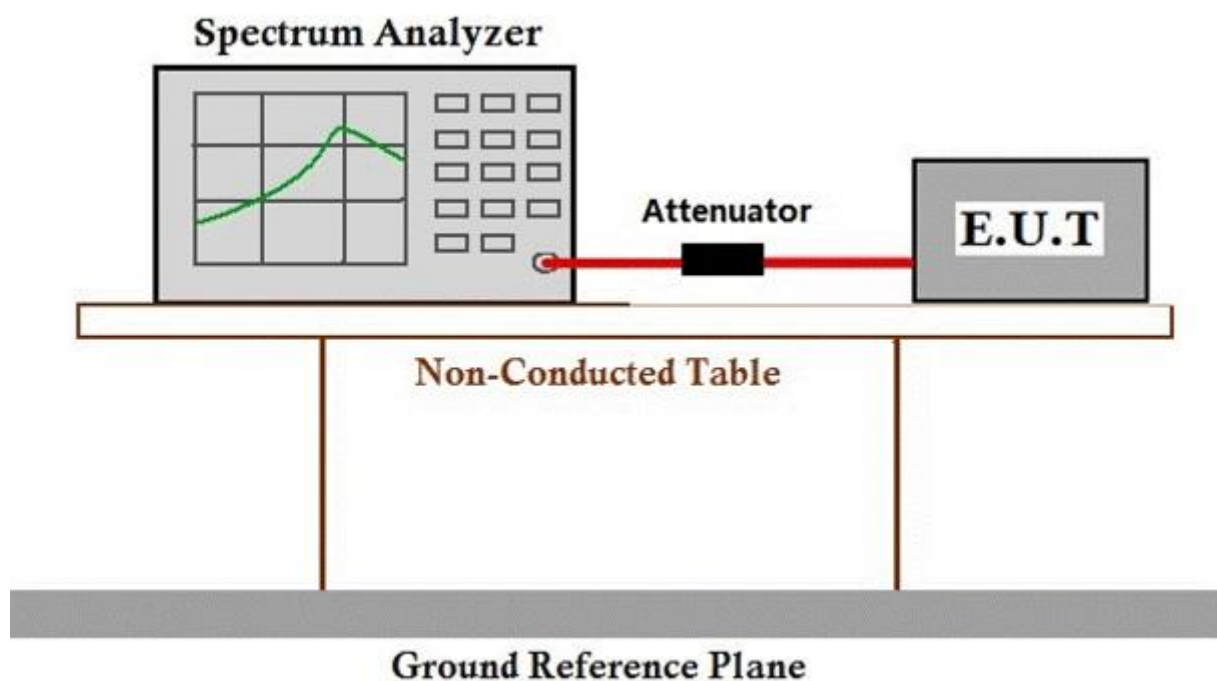
7.6.1 E.U.T. Operation

Operating Environment:

Temperature: 24.6 °C Humidity: 49.3 % RH Atmospheric Pressure: 1020 mbar

Test mode a:TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40). Only the data of worst case is recorded in the report.

7.6.2 Test Setup Diagram



7.6.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247



7.7 Radiated Emissions which fall in the restricted bands

Test Requirement 47 CFR Part 15, Subpart C 15.209 & 15.247(d)
Test Method: ANSI C63.10 (2013) Section 6.10.5
Measurement Distance: 3m
Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

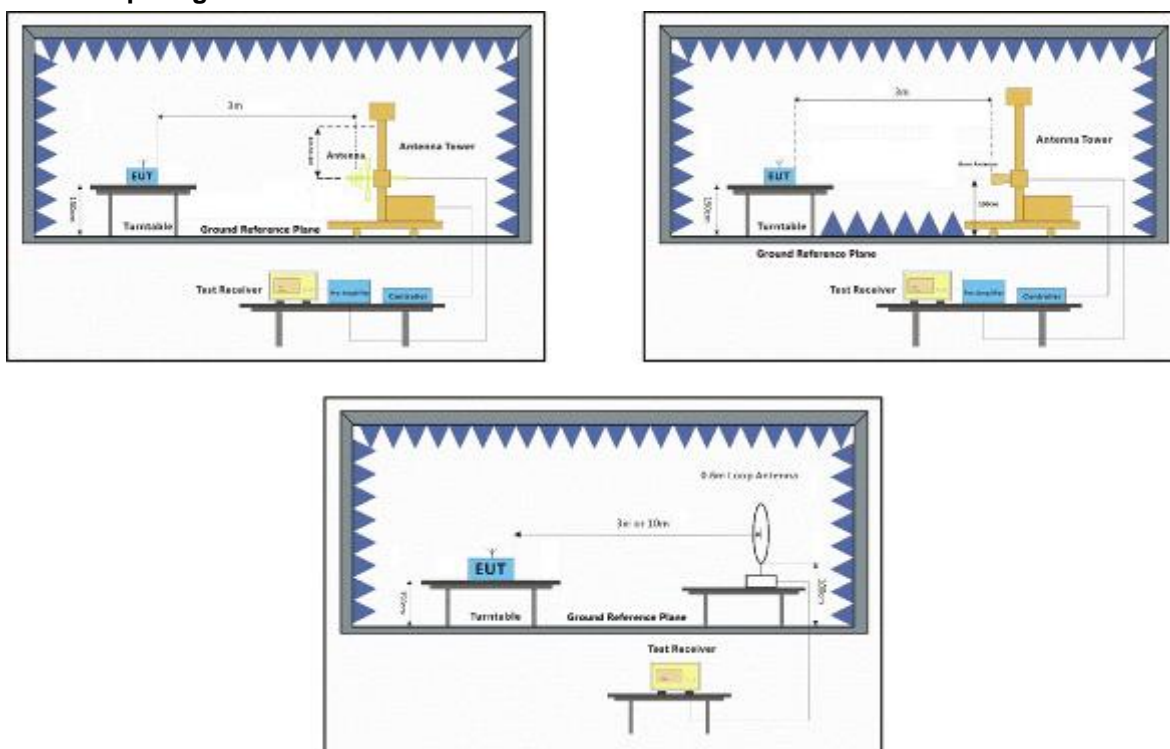
7.7.1 E.U.T. Operation

Operating Environment:

Temperature: 23 °C Humidity: 55 % RH Atmospheric Pressure: 1020 mbar

Test Mode: a:TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40). Only the data of worst case is recorded in the report.

7.7.2 Test Setup Diagram





7.7.3 Measurement Procedure and Data

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j. Repeat above procedures until all frequencies measured was complete.

Remark 1: $\text{Level} = \text{Read Level} + \text{Cable Loss} + \text{Antenna Factor} - \text{Preamplifier Factor}$

Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

$\text{Level} = \text{Read Level} + \text{Antenna Factor} + \text{Cable Loss} - \text{Preamplifier Factor}$

Mode:a; Polarization:Horizontal; Modulation:b; bandwidth:20MHz; Channel:Low

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	35.73	26.25	5.03	37.44	29.57	54.00	-24.43	HORIZONTAL Average
2	2310.000	50.13	26.25	5.03	37.44	43.97	74.00	-30.03	HORIZONTAL Peak
3	2390.000	50.14	26.43	4.88	37.42	44.03	74.00	-29.97	HORIZONTAL Peak
4	2390.000	60.99	26.43	4.88	37.42	54.88	74.00	-19.12	HORIZONTAL Peak
5	2483.500	37.18	26.58	5.23	37.40	31.59	54.00	-22.41	HORIZONTAL Average
6	2483.500	52.58	26.58	5.23	37.40	46.99	74.00	-27.01	HORIZONTAL Peak
7	2500.000	36.46	26.60	4.95	37.39	30.62	54.00	-23.38	HORIZONTAL Average
8	2500.000	52.71	26.60	4.95	37.39	46.87	74.00	-27.13	HORIZONTAL Peak

Mode:a; Polarization:Vertical; Modulation:b; bandwidth:20MHz; Channel:Low

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	32.71	26.25	5.03	37.44	26.55	54.00	-27.45	VERTICAL Average
2	2310.000	47.59	26.25	5.03	37.44	41.43	74.00	-32.57	VERTICAL Peak
3	2390.000	36.50	26.43	4.88	37.42	30.39	54.00	-23.61	VERTICAL Average
4	2390.000	50.96	26.43	4.88	37.42	44.85	74.00	-29.15	VERTICAL Peak
5	2483.500	31.62	26.58	5.23	37.40	26.03	54.00	-27.97	VERTICAL Average
6	2483.500	47.61	26.58	5.23	37.40	42.02	74.00	-31.98	VERTICAL Peak
7	2500.000	32.09	26.60	4.95	37.39	26.25	54.00	-27.75	VERTICAL Average
8	2500.000	46.91	26.60	4.95	37.39	41.07	74.00	-32.93	VERTICAL Peak

Mode:a; Polarization:Horizontal; Modulation:b; bandwidth:20MHz; Channel:High

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	34.74	26.25	5.03	37.44	28.58	54.00	-25.42	HORIZONTAL Average
2	2310.000	47.35	26.25	5.03	37.44	41.19	74.00	-32.81	HORIZONTAL Peak
3	2390.000	44.51	26.43	4.88	37.42	38.40	54.00	-15.60	HORIZONTAL Average
4	2390.000	55.13	26.43	4.88	37.42	49.02	74.00	-24.98	HORIZONTAL Peak
5	2483.500	53.64	26.58	5.23	37.40	48.05	54.00	-5.95	HORIZONTAL Average
6	2483.500	65.87	26.58	5.23	37.40	60.28	74.00	-13.72	HORIZONTAL Peak
7	2500.000	41.49	26.60	4.95	37.39	35.65	54.00	-18.35	HORIZONTAL Average
8	2500.000	55.87	26.60	4.95	37.39	50.03	74.00	-23.97	HORIZONTAL Peak

Mode:a; Polarization:Vertical; Modulation:b; bandwidth:20MHz; Channel:High

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	33.39	26.25	5.03	37.44	27.23	54.00	-26.77	VERTICAL Average
2	2310.000	45.63	26.25	5.03	37.44	39.47	74.00	-34.53	VERTICAL Peak
3	2390.000	32.67	26.43	4.88	37.42	26.56	54.00	-27.44	VERTICAL Average
4	2390.000	46.37	26.43	4.88	37.42	40.26	74.00	-33.74	VERTICAL Peak
5	2483.500	30.81	26.58	5.23	37.40	25.22	54.00	-28.78	VERTICAL Average
6	2483.500	44.54	26.58	5.23	37.40	38.95	74.00	-35.05	VERTICAL Peak
7	2500.000	32.44	26.60	4.95	37.39	26.60	54.00	-27.40	VERTICAL Average
8	2500.000	45.11	26.60	4.95	37.39	39.27	74.00	-34.73	VERTICAL Peak

Mode:a; Polarization:Horizontal; Modulation:g; bandwidth:20MHz; Channel:Low

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	36.15	26.25	5.03	37.44	29.99	54.00	-24.01	HORIZONTAL Average
2	2310.000	49.66	26.25	5.03	37.44	43.50	74.00	-30.50	HORIZONTAL Peak
3	2390.000	54.44	26.43	4.88	37.42	48.33	74.00	-25.67	HORIZONTAL Peak
4	2390.000	68.77	26.43	4.88	37.42	62.66	74.00	-11.34	HORIZONTAL Peak
5	2483.500	38.81	26.58	5.23	37.40	33.22	54.00	-20.78	HORIZONTAL Average
6	2483.500	52.10	26.58	5.23	37.40	46.51	74.00	-27.49	HORIZONTAL Peak
7	2500.000	38.81	26.60	4.95	37.39	32.97	54.00	-21.03	HORIZONTAL Average
8	2500.000	52.61	26.60	4.95	37.39	46.77	74.00	-27.23	HORIZONTAL Peak

Mode:a; Polarization:Vertical; Modulation:g; bandwidth:20MHz; Channel:Low

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	31.81	26.25	5.03	37.44	25.65	54.00	-28.35	VERTICAL Average
2	2310.000	46.27	26.25	5.03	37.44	40.11	74.00	-33.89	VERTICAL Peak
3	2390.000	43.48	26.43	4.88	37.42	37.37	54.00	-16.63	VERTICAL Average
4	2390.000	58.74	26.43	4.88	37.42	52.63	74.00	-21.37	VERTICAL Peak
5	2483.500	33.10	26.58	5.23	37.40	27.51	54.00	-26.49	VERTICAL Average
6	2483.500	47.58	26.58	5.23	37.40	41.99	74.00	-32.01	VERTICAL Peak
7	2500.000	33.29	26.60	4.95	37.39	27.45	54.00	-26.55	VERTICAL Average
8	2500.000	46.88	26.60	4.95	37.39	41.04	74.00	-32.96	VERTICAL Peak

Mode:a; Polarization:Horizontal; Modulation:g; bandwidth:20MHz; Channel:High

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	34.85	26.25	5.03	37.44	28.69	54.00	-25.31	HORIZONTAL Average
2	2310.000	47.02	26.25	5.03	37.44	40.86	74.00	-33.14	HORIZONTAL Peak
3	2390.000	35.35	26.43	4.88	37.42	29.24	54.00	-24.76	HORIZONTAL Average
4	2390.000	50.04	26.43	4.88	37.42	43.93	74.00	-30.07	HORIZONTAL Peak
5	2483.500	38.82	26.58	5.23	37.40	33.23	54.00	-20.77	HORIZONTAL Average
6	2483.500	50.87	26.58	5.23	37.40	45.28	74.00	-28.72	HORIZONTAL Peak
7	2500.000	35.40	26.60	4.95	37.39	29.56	54.00	-24.44	HORIZONTAL Average
8	2500.000	49.44	26.60	4.95	37.39	43.60	74.00	-30.40	HORIZONTAL Peak

Mode:a; Polarization:Vertical; Modulation:g; bandwidth:20MHz; Channel:High

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	31.96	26.25	5.03	37.44	25.80	54.00	-28.20	VERTICAL Average
2	2310.000	46.41	26.25	5.03	37.44	40.25	74.00	-33.75	VERTICAL Peak
3	2390.000	32.84	26.43	4.88	37.42	26.73	54.00	-27.27	VERTICAL Average
4	2390.000	46.19	26.43	4.88	37.42	40.08	74.00	-33.92	VERTICAL Peak
5	2483.500	32.90	26.58	5.23	37.40	27.31	54.00	-26.69	VERTICAL Average
6	2483.500	45.67	26.58	5.23	37.40	40.08	74.00	-33.92	VERTICAL Peak
7	2500.000	31.59	26.60	4.95	37.39	25.75	54.00	-28.25	VERTICAL Average
8	2500.000	44.85	26.60	4.95	37.39	39.01	74.00	-34.99	VERTICAL Peak

Mode:a; Polarization:Horizontal; Modulation:n; bandwidth:20MHz; Channel:Low

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	36.14	26.25	5.03	37.44	29.98	54.00	-24.02	HORIZONTAL Average
2	2310.000	46.40	26.25	5.03	37.44	40.24	74.00	-33.76	HORIZONTAL Peak
3	2390.000	37.35	26.43	4.88	37.42	31.24	54.00	-22.76	HORIZONTAL Average
4	2390.000	50.59	26.43	4.88	37.42	44.48	74.00	-29.52	HORIZONTAL Peak
5	2483.500	37.78	26.58	5.23	37.40	32.19	54.00	-21.81	HORIZONTAL Average
6	2483.500	50.36	26.58	5.23	37.40	44.77	74.00	-29.23	HORIZONTAL Peak
7	2500.000	36.46	26.60	4.95	37.39	30.62	54.00	-23.38	HORIZONTAL Average
8	2500.000	50.44	26.60	4.95	37.39	44.60	74.00	-29.40	HORIZONTAL Peak

Mode:a; Polarization:Vertical; Modulation:n; bandwidth:20MHz; Channel:Low

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	32.23	26.25	5.03	37.44	26.07	54.00	-27.93	VERTICAL Average
2	2310.000	46.02	26.25	5.03	37.44	39.86	74.00	-34.14	VERTICAL Peak
3	2390.000	35.04	26.43	4.88	37.42	28.93	54.00	-25.07	VERTICAL Average
4	2390.000	47.01	26.43	4.88	37.42	40.90	74.00	-33.10	VERTICAL Peak
5	2483.500	35.02	26.58	5.23	37.40	29.43	54.00	-24.57	VERTICAL Average
6	2483.500	47.02	26.58	5.23	37.40	41.43	74.00	-32.57	VERTICAL Peak
7	2500.000	33.09	26.60	4.95	37.39	27.25	54.00	-26.75	VERTICAL Average
8	2500.000	46.85	26.60	4.95	37.39	41.01	74.00	-32.99	VERTICAL Peak

Mode:a; Polarization:Horizontal; Modulation:n; bandwidth:20MHz; Channel:High

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	32.95	26.25	5.03	37.44	26.79	54.00	-27.21	HORIZONTAL Average
2	2310.000	46.38	26.25	5.03	37.44	40.22	74.00	-33.78	HORIZONTAL Peak
3	2390.000	33.89	26.43	4.88	37.42	27.78	54.00	-26.22	HORIZONTAL Average
4	2390.000	47.15	26.43	4.88	37.42	41.04	74.00	-32.96	HORIZONTAL Peak
5	2483.500	36.73	26.58	5.23	37.40	31.14	54.00	-22.86	HORIZONTAL Average
6	2483.500	51.65	26.58	5.23	37.40	46.06	74.00	-27.94	HORIZONTAL Peak
7	2500.000	35.28	26.60	4.95	37.39	29.44	54.00	-24.56	HORIZONTAL Average
8	2500.000	50.64	26.60	4.95	37.39	44.80	74.00	-29.20	HORIZONTAL Peak

Mode:a; Polarization:Vertical; Modulation:n; bandwidth:20MHz; Channel:High

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	32.42	26.25	5.03	37.44	26.26	54.00	-27.74	VERTICAL Average
2	2310.000	45.65	26.25	5.03	37.44	39.49	74.00	-34.51	VERTICAL Peak
3	2390.000	31.19	26.43	4.88	37.42	25.08	54.00	-28.92	VERTICAL Average
4	2390.000	45.77	26.43	4.88	37.42	39.66	74.00	-34.34	VERTICAL Peak
5	2483.500	33.16	26.58	5.23	37.40	27.57	54.00	-26.43	VERTICAL Average
6	2483.500	46.44	26.58	5.23	37.40	40.85	74.00	-33.15	VERTICAL Peak
7	2500.000	33.01	26.60	4.95	37.39	27.17	54.00	-26.83	VERTICAL Average
8	2500.000	46.46	26.60	4.95	37.39	40.62	74.00	-33.38	VERTICAL Peak

Mode:a; Polarization:Horizontal; Modulation:n; bandwidth:40MHz; Channel:Low

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	33.25	26.25	5.03	37.44	27.09	54.00	-26.91	HORIZONTAL Average
2	2310.000	46.95	26.25	5.03	37.44	40.79	74.00	-33.21	HORIZONTAL Peak
3	2390.000	34.95	26.43	4.88	37.42	28.84	54.00	-25.16	HORIZONTAL Average
4	2390.000	49.24	26.43	4.88	37.42	43.13	74.00	-30.87	HORIZONTAL Peak
5	2483.500	35.60	26.58	5.23	37.40	30.01	54.00	-23.99	HORIZONTAL Average
6	2483.500	50.68	26.58	5.23	37.40	45.09	74.00	-28.91	HORIZONTAL Peak
7	2500.000	34.33	26.60	4.95	37.39	28.49	54.00	-25.51	HORIZONTAL Average
8	2500.000	49.64	26.60	4.95	37.39	43.80	74.00	-30.20	HORIZONTAL Peak

Mode:a; Polarization:Vertical; Modulation:n; bandwidth:40MHz; Channel:Low

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	33.60	26.25	5.03	37.44	27.44	54.00	-26.56	VERTICAL Average
2	2310.000	46.46	26.25	5.03	37.44	40.30	74.00	-33.70	VERTICAL Peak
3	2390.000	34.72	26.43	4.88	37.42	28.61	54.00	-25.39	VERTICAL Average
4	2390.000	45.95	26.43	4.88	37.42	39.84	74.00	-34.16	VERTICAL Peak
5	2483.500	34.49	26.58	5.23	37.40	28.90	54.00	-25.10	VERTICAL Average
6	2483.500	47.13	26.58	5.23	37.40	41.54	74.00	-32.46	VERTICAL Peak
7	2500.000	33.01	26.60	4.95	37.39	27.17	54.00	-26.83	VERTICAL Average
8	2500.000	45.77	26.60	4.95	37.39	39.93	74.00	-34.07	VERTICAL Peak

Mode:a; Polarization:Horizontal; Modulation:n; bandwidth:40MHz; Channel:High

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	31.99	26.25	5.03	37.44	25.83	54.00	-28.17	HORIZONTAL Average
2	2310.000	45.83	26.25	5.03	37.44	39.67	74.00	-34.33	HORIZONTAL Peak
3	2390.000	33.85	26.43	4.88	37.42	27.74	54.00	-26.26	HORIZONTAL Average
4	2390.000	47.69	26.43	4.88	37.42	41.58	74.00	-32.42	HORIZONTAL Peak
5	2483.500	55.98	26.58	5.23	37.40	50.39	54.00	-3.61	HORIZONTAL Average
6	2483.500	74.27	26.58	5.23	37.40	68.68	74.00	-5.32	HORIZONTAL Peak
7	2500.000	37.39	26.60	4.95	37.39	31.55	54.00	-22.45	HORIZONTAL Average
8	2500.000	51.83	26.60	4.95	37.39	45.99	74.00	-28.01	HORIZONTAL Peak

Mode:a; Polarization:Vertical; Modulation:n; bandwidth:40MHz; Channel:High

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	32.74	26.25	5.03	37.44	26.58	54.00	-27.42	VERTICAL Average
2	2310.000	45.79	26.25	5.03	37.44	39.63	74.00	-34.37	VERTICAL Peak
3	2390.000	32.57	26.43	4.88	37.42	26.46	54.00	-27.54	VERTICAL Average
4	2390.000	45.88	26.43	4.88	37.42	39.77	74.00	-34.23	VERTICAL Peak
5	2483.500	56.44	26.58	5.23	37.40	50.85	54.00	-3.15	VERTICAL Average
6	2483.500	70.12	26.58	5.23	37.40	64.53	74.00	-9.47	VERTICAL Peak
7	2500.000	33.87	26.60	4.95	37.39	28.03	54.00	-25.97	VERTICAL Average
8	2500.000	48.11	26.60	4.95	37.39	42.27	74.00	-31.73	VERTICAL Peak



7.8 Radiated Spurious Emissions

Test Requirement 47 CFR Part 15, Subpart C 15.209 & 15.247(d)
Test Method: ANSI C63.10 (2013) Section 6.4,6.5,6.6
Measurement Distance: 3m
Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

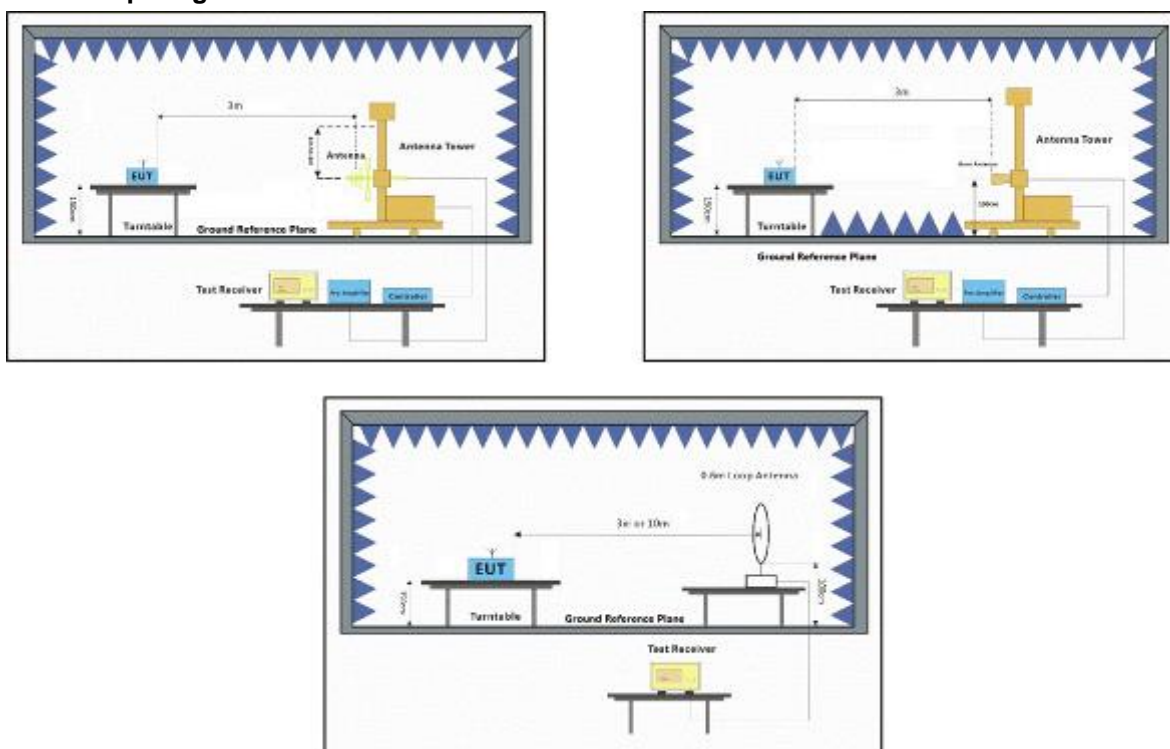
7.8.1 E.U.T. Operation

Operating Environment:

Temperature: 23 °C Humidity: 55 % RH Atmospheric Pressure: 1020 mbar

Test Mode: a:TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40). Only the data of worst case is recorded in the report.

7.8.2 Test Setup Diagram





7.8.3 Measurement Procedure and Data

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j. Repeat above procedures until all frequencies measured was complete.

Remark:

- 1) For emission below 1GHz, through pre-scan found the worst case is the lowest channel. Only the worst case is recorded in the report.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
$$\text{Final Test Level} = \text{Receiver Reading} + \text{Antenna Factor} + \text{Cable Factor} - \text{Preamplifier Factor}$$
- 3) Scan from 9kHz to 25GHz, the disturbance above 18GHz and below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
- 4) For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown



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Guangzhou Branch

Report No.: GZEM180900526101

Page: 43 of 103

Mode:a; Polarization:Horizontal; Modulation:b; bandwidth:20MHz; Channel:Low

	Freq	ReadAntenna		Cable	Preamp		Limit	Over		
		Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	32.864	22.27	12.29	0.16	22.26	12.46	40.00	-27.54	HORIZONTAL	QP
2	46.830	23.03	12.92	0.68	24.60	12.03	40.00	-27.97	HORIZONTAL	QP
3	60.069	25.75	12.20	0.58	25.23	13.30	40.00	-26.70	HORIZONTAL	QP
4	94.098	31.37	8.40	0.85	26.92	13.70	43.50	-29.80	HORIZONTAL	QP
5	160.909	28.85	13.37	1.27	28.10	15.39	43.50	-28.11	HORIZONTAL	QP
6	793.396	29.67	22.66	2.78	28.72	26.39	46.00	-19.61	HORIZONTAL	QP

Mode:a; Polarization:Horizontal; Modulation:b; bandwidth:20MHz; Channel:Low

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Level	Limit	Over	Pol/Phase	Remark	
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	4824.962	41.96	30.82	6.01	36.94	41.85	54.00	-12.15	HORIZONTAL Average
2	4824.962	51.33	30.82	6.01	36.94	51.22	74.00	-22.78	HORIZONTAL Peak
3	5746.982	37.05	32.10	7.05	36.99	39.21	54.00	-14.79	HORIZONTAL Average
4	5746.982	47.43	32.10	7.05	36.99	49.59	74.00	-24.41	HORIZONTAL Peak
5	7236.833	30.90	35.55	7.35	36.93	36.87	54.00	-17.13	HORIZONTAL Average
6	7236.833	44.31	35.55	7.35	36.93	50.28	74.00	-23.72	HORIZONTAL Peak
7	8943.274	31.90	36.47	8.18	37.00	39.55	54.00	-14.45	HORIZONTAL Average
8	8943.274	44.51	36.47	8.18	37.00	52.16	74.00	-21.84	HORIZONTAL Peak
9	9648.916	31.17	37.54	8.18	37.08	39.81	54.00	-14.19	HORIZONTAL Average
10	9648.916	43.24	37.54	8.18	37.08	51.88	74.00	-22.12	HORIZONTAL Peak
11	12060.950	25.61	39.46	10.71	37.17	38.61	54.00	-15.39	HORIZONTAL Average
12	12060.950	40.40	39.46	10.71	37.17	53.40	74.00	-20.60	HORIZONTAL Peak

Mode:a; Polarization:Vertical; Modulation:b; bandwidth:20MHz; Channel:Low

	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	50.409	24.77	12.98	0.60	24.88	13.47	40.00	-26.53	VERTICAL	QP
2	91.175	33.62	7.79	0.84	26.73	15.52	43.50	-27.98	VERTICAL	QP
3	133.619	28.56	12.74	0.99	28.17	14.12	43.50	-29.38	VERTICAL	QP
4	173.814	28.87	12.86	1.32	28.08	14.97	43.50	-28.53	VERTICAL	QP
5	658.836	29.59	21.14	2.12	28.84	24.01	46.00	-21.99	VERTICAL	QP
6	887.610	30.43	23.90	2.88	28.06	29.15	46.00	-16.85	VERTICAL	QP

Mode:a; Polarization:Vertical; Modulation:b; bandwidth:20MHz; Channel:Low

	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	3546.577	31.88	28.01	6.20	36.95	29.14	54.00	-24.86	VERTICAL	Average
2	3546.577	45.88	28.01	6.20	36.95	43.14	74.00	-30.86	VERTICAL	Peak
3	4824.962	32.47	30.82	6.01	36.94	32.36	54.00	-21.64	VERTICAL	Average
4	4824.962	47.67	30.82	6.01	36.94	47.56	74.00	-26.44	VERTICAL	Peak
5	7236.474	30.36	35.55	7.35	36.93	36.33	54.00	-17.67	VERTICAL	Average
6	7236.474	43.96	35.55	7.35	36.93	49.93	74.00	-24.07	VERTICAL	Peak
7	9152.479	30.85	36.73	8.37	37.04	38.91	54.00	-15.09	VERTICAL	Average
8	9152.479	44.90	36.73	8.37	37.04	52.96	74.00	-21.04	VERTICAL	Peak
9	9648.140	29.93	37.54	8.18	37.08	38.57	54.00	-15.43	VERTICAL	Average
10	9648.140	43.38	37.54	8.18	37.08	52.02	74.00	-21.98	VERTICAL	Peak
11	12060.540	28.39	39.46	10.71	37.17	41.39	54.00	-12.61	VERTICAL	Average
12	12060.540	41.52	39.46	10.71	37.17	54.52	74.00	-19.48	VERTICAL	Peak

Mode:a; Polarization:Horizontal; Modulation:b; bandwidth:20MHz; Channel:middle

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3924.135	32.22	29.35	7.47	36.91	32.13	54.00	-21.87	HORIZONTAL Average
2	3924.135	44.97	29.35	7.47	36.91	44.88	74.00	-29.12	HORIZONTAL Peak
3	4884.662	34.16	30.95	6.86	36.95	35.02	54.00	-18.98	HORIZONTAL Average
4	4884.662	47.31	30.95	6.86	36.95	48.17	74.00	-25.83	HORIZONTAL Peak
5	7326.015	30.38	35.74	7.39	36.92	36.59	54.00	-17.41	HORIZONTAL Average
6	7326.015	43.51	35.74	7.39	36.92	49.72	74.00	-24.28	HORIZONTAL Peak
7	8343.918	31.78	36.20	8.13	36.92	39.19	54.00	-14.81	HORIZONTAL Average
8	8343.918	44.04	36.20	8.13	36.92	51.45	74.00	-22.55	HORIZONTAL Peak
9	9768.257	31.16	37.74	8.37	37.09	40.18	54.00	-13.82	HORIZONTAL Average
10	9768.257	44.64	37.74	8.37	37.09	53.66	74.00	-20.34	HORIZONTAL Peak
11	12210.420	25.63	39.21	10.98	37.06	38.76	54.00	-15.24	HORIZONTAL Average
12	12210.420	39.37	39.21	10.98	37.06	52.50	74.00	-21.50	HORIZONTAL Peak

Mode:a; Polarization:Vertical; Modulation:b; bandwidth:20MHz; Channel:middle

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3992.781	34.29	29.48	7.26	36.90	34.13	54.00	-19.87	VERTICAL Average
2	3992.781	47.69	29.48	7.26	36.90	47.53	74.00	-26.47	VERTICAL Peak
3	4884.110	31.80	30.95	6.86	36.95	32.66	54.00	-21.34	VERTICAL Average
4	4884.110	43.99	30.95	6.86	36.95	44.85	74.00	-29.15	VERTICAL Peak
5	7326.015	31.51	35.74	7.39	36.92	37.72	54.00	-16.28	VERTICAL Average
6	7326.015	43.96	35.74	7.39	36.92	50.17	74.00	-23.83	VERTICAL Peak
7	8248.005	31.06	36.30	8.21	36.92	38.65	54.00	-15.35	VERTICAL Average
8	8248.005	43.91	36.30	8.21	36.92	51.50	74.00	-22.50	VERTICAL Peak
9	9748.221	29.82	37.70	8.33	37.09	38.76	54.00	-15.24	VERTICAL Average
10	9748.221	44.85	37.70	8.33	37.09	53.79	74.00	-20.21	VERTICAL Peak
11	11701.380	28.31	39.26	10.37	37.19	40.75	54.00	-13.25	VERTICAL Average
12	11701.380	41.16	39.26	10.37	37.19	53.60	74.00	-20.40	VERTICAL Peak

Mode:a; Polarization:Horizontal; Modulation:b; bandwidth:20MHz; Channel:High

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3790.361	31.40	28.97	7.83	36.92	31.28	54.00	-22.72	HORIZONTAL Average
2	3790.361	44.25	28.97	7.83	36.92	44.13	74.00	-29.87	HORIZONTAL Peak
3	4924.043	31.09	31.01	7.49	36.95	32.64	54.00	-21.36	HORIZONTAL Average
4	4924.043	46.00	31.01	7.49	36.95	47.55	74.00	-26.45	HORIZONTAL Peak
5	7386.150	29.00	35.85	7.42	36.92	35.35	54.00	-18.65	HORIZONTAL Average
6	7386.150	43.85	35.85	7.42	36.92	50.20	74.00	-23.80	HORIZONTAL Peak
7	9047.272	30.33	36.57	8.29	37.02	38.17	54.00	-15.83	HORIZONTAL Average
8	9047.272	44.12	36.57	8.29	37.02	51.96	74.00	-22.04	HORIZONTAL Peak
9	9848.530	28.78	37.82	8.46	37.09	37.97	54.00	-16.03	HORIZONTAL Average
10	9848.530	42.19	37.82	8.46	37.09	51.38	74.00	-22.62	HORIZONTAL Peak
11	12310.580	25.72	39.03	11.10	36.97	38.88	54.00	-15.12	HORIZONTAL Average
12	12310.580	40.94	39.03	11.10	36.97	54.10	74.00	-19.90	HORIZONTAL Peak

Mode:a; Polarization:Vertical; Modulation:b; bandwidth:20MHz; Channel:High

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3465.510	33.76	27.90	5.76	36.96	30.46	54.00	-23.54	VERTICAL Average
2	3465.510	46.35	27.90	5.76	36.96	43.05	74.00	-30.95	VERTICAL Peak
3	4924.181	31.58	31.01	7.49	36.95	33.13	54.00	-20.87	VERTICAL Average
4	4924.181	44.98	31.01	7.49	36.95	46.53	74.00	-27.47	VERTICAL Peak
5	7386.474	29.40	35.85	7.42	36.92	35.75	54.00	-18.25	VERTICAL Average
6	7386.474	43.46	35.85	7.42	36.92	49.81	74.00	-24.19	VERTICAL Peak
7	8866.062	31.74	36.42	8.09	36.99	39.26	54.00	-14.74	VERTICAL Average
8	8866.062	44.34	36.42	8.09	36.99	51.86	74.00	-22.14	VERTICAL Peak
9	9848.151	30.63	37.82	8.46	37.09	39.82	54.00	-14.18	VERTICAL Average
10	9848.151	44.58	37.82	8.46	37.09	53.77	74.00	-20.23	VERTICAL Peak
11	12310.350	28.87	39.03	11.10	36.97	42.03	54.00	-11.97	VERTICAL Average
12	12310.350	41.09	39.03	11.10	36.97	54.25	74.00	-19.75	VERTICAL Peak

Mode:a; Polarization:Horizontal; Modulation:g; bandwidth:20MHz; Channel:Low

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3619.064	32.81	28.20	6.52	36.94	30.59	54.00	-23.41	HORIZONTAL Average
2	3619.064	45.04	28.20	6.52	36.94	42.82	74.00	-31.18	HORIZONTAL Peak
3	4824.962	44.21	30.82	6.01	36.94	44.10	54.00	-9.90	HORIZONTAL Average
4	4824.962	54.54	30.82	6.01	36.94	54.43	74.00	-19.57	HORIZONTAL Peak
5	5746.982	35.67	32.10	7.05	36.99	37.83	54.00	-16.17	HORIZONTAL Average
6	5746.982	48.64	32.10	7.05	36.99	50.80	74.00	-23.20	HORIZONTAL Peak
7	7236.070	30.56	35.55	7.35	36.93	36.53	54.00	-17.47	HORIZONTAL Average
8	7236.070	44.11	35.55	7.35	36.93	50.08	74.00	-23.92	HORIZONTAL Peak
9	9648.221	29.08	37.54	8.18	37.08	37.72	54.00	-16.28	HORIZONTAL Average
10	9648.221	42.61	37.54	8.18	37.08	51.25	74.00	-22.75	HORIZONTAL Peak
11	12060.440	25.84	39.46	10.71	37.17	38.84	54.00	-15.16	HORIZONTAL Average
12	12060.440	40.77	39.46	10.71	37.17	53.77	74.00	-20.23	HORIZONTAL Peak

Mode:a; Polarization:Vertical; Modulation:g; bandwidth:20MHz; Channel:Low

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3958.309	32.92	29.42	7.35	36.90	32.79	54.00	-21.21	VERTICAL Average
2	3958.309	45.38	29.42	7.35	36.90	45.25	74.00	-28.75	VERTICAL Peak
3	4824.962	33.95	30.82	6.01	36.94	33.84	54.00	-20.16	VERTICAL Average
4	4824.962	46.67	30.82	6.01	36.94	46.56	74.00	-27.44	VERTICAL Peak
5	7236.788	29.07	35.55	7.35	36.93	35.04	54.00	-18.96	VERTICAL Average
6	7236.788	43.72	35.55	7.35	36.93	49.69	74.00	-24.31	VERTICAL Peak
7	8764.146	28.34	36.33	8.00	36.97	35.70	54.00	-18.30	VERTICAL Average
8	8764.146	44.61	36.33	8.00	36.97	51.97	74.00	-22.03	VERTICAL Peak
9	9648.018	28.47	37.54	8.18	37.08	37.11	54.00	-16.89	VERTICAL Average
10	9648.018	42.48	37.54	8.18	37.08	51.12	74.00	-22.88	VERTICAL Peak
11	12060.850	27.84	39.46	10.71	37.17	40.84	54.00	-13.16	VERTICAL Average
12	12060.850	41.52	39.46	10.71	37.17	54.52	74.00	-19.48	VERTICAL Peak

Mode:a; Polarization:Horizontal; Modulation:g; bandwidth:20MHz; Channel:middle

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3757.637	31.66	28.82	7.65	36.92	31.21	54.00	-22.79	HORIZONTAL Average
2	3757.637	45.18	28.82	7.65	36.92	44.73	74.00	-29.27	HORIZONTAL Peak
3	4884.043	33.52	30.95	6.86	36.95	34.38	54.00	-19.62	HORIZONTAL Average
4	4884.043	48.90	30.95	6.86	36.95	49.76	74.00	-24.24	HORIZONTAL Peak
5	7326.015	27.88	35.74	7.39	36.92	34.09	54.00	-19.91	HORIZONTAL Average
6	7326.015	44.00	35.74	7.39	36.92	50.21	74.00	-23.79	HORIZONTAL Peak
7	8465.379	26.17	36.11	8.04	36.94	33.38	54.00	-20.62	HORIZONTAL Average
8	8465.379	40.50	36.11	8.04	36.94	47.71	74.00	-26.29	HORIZONTAL Peak
9	9768.689	27.69	37.74	8.37	37.09	36.71	54.00	-17.29	HORIZONTAL Average
10	9768.689	41.35	37.74	8.37	37.09	50.37	74.00	-23.63	HORIZONTAL Peak
11	12210.850	27.19	39.21	10.98	37.06	40.32	54.00	-13.68	HORIZONTAL Average
12	12210.850	41.13	39.21	10.98	37.06	54.26	74.00	-19.74	HORIZONTAL Peak

Mode:a; Polarization:Vertical; Modulation:g; bandwidth:20MHz; Channel:middle

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3823.371	29.24	29.08	7.83	36.91	29.24	54.00	-24.76	VERTICAL Average
2	3823.371	44.43	29.08	7.83	36.91	44.43	74.00	-29.57	VERTICAL Peak
3	4884.662	30.97	30.95	6.86	36.95	31.83	54.00	-22.17	VERTICAL Average
4	4884.662	45.87	30.95	6.86	36.95	46.73	74.00	-27.27	VERTICAL Peak
5	7326.070	29.90	35.74	7.39	36.92	36.11	54.00	-17.89	VERTICAL Average
6	7326.070	44.42	35.74	7.39	36.92	50.63	74.00	-23.37	VERTICAL Peak
7	8866.062	28.76	36.42	8.09	36.99	36.28	54.00	-17.72	VERTICAL Average
8	8866.062	44.06	36.42	8.09	36.99	51.58	74.00	-22.42	VERTICAL Peak
9	9768.916	29.19	37.74	8.37	37.09	38.21	54.00	-15.79	VERTICAL Average
10	9768.916	43.03	37.74	8.37	37.09	52.05	74.00	-21.95	VERTICAL Peak
11	12210.270	25.98	39.21	10.98	37.06	39.11	54.00	-14.89	VERTICAL Average
12	12210.270	41.27	39.21	10.98	37.06	54.40	74.00	-19.60	VERTICAL Peak

Mode:a; Polarization:Horizontal; Modulation:g; bandwidth:20MHz; Channel:High

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3801.333	30.74	29.01	7.89	36.92	30.72	54.00	-23.28	HORIZONTAL Average
2	3801.333	45.56	29.01	7.89	36.92	45.54	74.00	-28.46	HORIZONTAL Peak
3	4924.977	30.87	31.01	7.49	36.95	32.42	54.00	-21.58	HORIZONTAL Average
4	4924.977	45.83	31.01	7.49	36.95	47.38	74.00	-26.62	HORIZONTAL Peak
5	7386.429	29.22	35.85	7.42	36.92	35.57	54.00	-18.43	HORIZONTAL Average
6	7386.429	43.91	35.85	7.42	36.92	50.26	74.00	-23.74	HORIZONTAL Peak
7	9099.724	27.31	36.64	8.33	37.03	35.25	54.00	-18.75	HORIZONTAL Average
8	9099.724	42.98	36.64	8.33	37.03	50.92	74.00	-23.08	HORIZONTAL Peak
9	9848.230	28.27	37.82	8.46	37.09	37.46	54.00	-16.54	HORIZONTAL Average
10	9848.230	43.47	37.82	8.46	37.09	52.66	74.00	-21.34	HORIZONTAL Peak
11	12310.240	27.25	39.03	11.10	36.97	40.41	54.00	-13.59	HORIZONTAL Average
12	12310.240	41.17	39.03	11.10	36.97	54.33	74.00	-19.67	HORIZONTAL Peak

Mode:a; Polarization:Vertical; Modulation:g; bandwidth:20MHz; Channel:High

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3790.361	31.32	28.97	7.83	36.92	31.20	54.00	-22.80	VERTICAL Average
2	3790.361	46.04	28.97	7.83	36.92	45.92	74.00	-28.08	VERTICAL Peak
3	4924.977	31.78	31.01	7.49	36.95	33.33	54.00	-20.67	VERTICAL Average
4	4924.977	45.54	31.01	7.49	36.95	47.09	74.00	-26.91	VERTICAL Peak
5	7386.150	27.13	35.85	7.42	36.92	33.48	54.00	-20.52	VERTICAL Average
6	7386.150	42.61	35.85	7.42	36.92	48.96	74.00	-25.04	VERTICAL Peak
7	8539.102	29.94	36.13	8.00	36.94	37.13	54.00	-16.87	VERTICAL Average
8	8539.102	44.38	36.13	8.00	36.94	51.57	74.00	-22.43	VERTICAL Peak
9	9848.018	28.74	37.82	8.46	37.09	37.93	54.00	-16.07	VERTICAL Average
10	9848.018	40.85	37.82	8.46	37.09	50.04	74.00	-23.96	VERTICAL Peak
11	12310.220	26.87	39.03	11.10	36.97	40.03	54.00	-13.97	VERTICAL Average
12	12310.220	40.51	39.03	11.10	36.97	53.67	74.00	-20.33	VERTICAL Peak

Mode:a; Polarization:Horizontal; Modulation:n; bandwidth:20MHz; Channel:Low

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Level	Limit	Over	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	34.882	22.98	12.42	0.22	22.69	12.93	40.00	-27.07 HORIZONTAL QP
2	53.318	23.64	12.78	0.59	24.97	12.04	40.00	-27.96 HORIZONTAL QP
3	69.845	25.81	10.82	0.72	25.52	11.83	40.00	-28.17 HORIZONTAL QP
4	93.113	30.37	8.16	0.85	26.86	12.52	43.50	-30.98 HORIZONTAL QP
5	174.424	28.73	12.84	1.32	28.08	14.81	43.50	-28.69 HORIZONTAL QP
6	872.183	29.02	23.73	2.93	28.29	27.39	46.00	-18.61 HORIZONTAL QP

Mode:a; Polarization:Horizontal; Modulation:n; bandwidth:20MHz; Channel:Low

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Level	Limit	Over	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	3834.438	31.87	29.12	7.80	36.91	31.88	54.00	-22.12 HORIZONTAL Average
2	3834.438	45.39	29.12	7.80	36.91	45.40	74.00	-28.60 HORIZONTAL Peak
3	4824.721	32.89	30.82	6.01	36.94	32.78	54.00	-21.22 HORIZONTAL Average
4	4824.721	46.66	30.82	6.01	36.94	46.55	74.00	-27.45 HORIZONTAL Peak
5	7236.038	29.24	35.55	7.35	36.93	35.21	54.00	-18.79 HORIZONTAL Average
6	7236.038	44.46	35.55	7.35	36.93	50.43	74.00	-23.57 HORIZONTAL Peak
7	8866.062	28.44	36.42	8.09	36.99	35.96	54.00	-18.04 HORIZONTAL Average
8	8866.062	44.64	36.42	8.09	36.99	52.16	74.00	-21.84 HORIZONTAL Peak
9	9648.980	28.58	37.54	8.18	37.08	37.22	54.00	-16.78 HORIZONTAL Average
10	9648.980	43.83	37.54	8.18	37.08	52.47	74.00	-21.53 HORIZONTAL Peak
11	12060.100	25.89	39.46	10.71	37.17	38.89	54.00	-15.11 HORIZONTAL Average
12	12060.100	40.73	39.46	10.71	37.17	53.73	74.00	-20.27 HORIZONTAL Peak

Mode:a; Polarization:Vertical; Modulation:n; bandwidth:20MHz; Channel:Low

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Level	Limit	Over	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	30.638	21.28	12.22	0.07	21.56	12.01	40.00	-27.99 VERTICAL QP
2	44.901	22.18	12.81	0.71	24.46	11.24	40.00	-28.76 VERTICAL QP
3	73.617	24.78	10.09	0.75	25.67	9.95	40.00	-30.05 VERTICAL QP
4	143.326	27.80	13.14	1.07	28.15	13.86	43.50	-29.64 VERTICAL QP
5	180.649	29.17	12.67	1.34	28.09	15.09	43.50	-28.41 VERTICAL QP
6	890.728	28.42	23.92	2.87	28.01	27.20	46.00	-18.80 VERTICAL QP

Mode:a; Polarization:Vertical; Modulation:n; bandwidth:20MHz; Channel:Low

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Level	Limit	Over	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	3992.781	32.42	29.48	7.26	36.90	32.26	54.00	-21.74 VERTICAL Average
2	3992.781	45.27	29.48	7.26	36.90	45.11	74.00	-28.89 VERTICAL Peak
3	4824.993	32.95	30.85	6.15	36.94	33.01	54.00	-20.99 VERTICAL Average
4	4824.993	46.17	30.85	6.15	36.94	46.23	74.00	-27.77 VERTICAL Peak
5	7236.527	28.79	35.55	7.35	36.93	34.76	54.00	-19.24 VERTICAL Average
6	7236.527	43.72	35.55	7.35	36.93	49.69	74.00	-24.31 VERTICAL Peak
7	8688.480	28.94	36.25	7.94	36.96	36.17	54.00	-17.83 VERTICAL Average
8	8688.480	44.07	36.25	7.94	36.96	51.30	74.00	-22.70 VERTICAL Peak
9	9648.151	28.21	37.54	8.18	37.08	36.85	54.00	-17.15 VERTICAL Average
10	9648.151	42.95	37.54	8.18	37.08	51.59	74.00	-22.41 VERTICAL Peak
11	12060.700	26.62	39.46	10.71	37.17	39.62	54.00	-14.38 VERTICAL Average
12	12060.700	40.47	39.46	10.71	37.17	53.47	74.00	-20.53 VERTICAL Peak

Mode:a; Polarization:Horizontal; Modulation:n; bandwidth:20MHz; Channel:middle

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3867.831	30.79	29.22	7.69	36.91	30.79	54.00	-23.21	HORIZONTAL Average
2	3867.831	44.68	29.22	7.69	36.91	44.68	74.00	-29.32	HORIZONTAL Peak
3	4934.307	32.06	31.01	7.49	36.95	33.61	54.00	-20.39	HORIZONTAL Average
4	4934.307	45.07	31.01	7.49	36.95	46.62	74.00	-27.38	HORIZONTAL Peak
5	7386.015	30.55	35.85	7.42	36.92	36.90	54.00	-17.10	HORIZONTAL Average
6	7386.015	44.29	35.85	7.42	36.92	50.64	74.00	-23.36	HORIZONTAL Peak
7	8969.161	28.17	36.49	8.21	37.01	35.86	54.00	-18.14	HORIZONTAL Average
8	8969.161	43.59	36.49	8.21	37.01	51.28	74.00	-22.72	HORIZONTAL Peak
9	9848.349	28.72	37.82	8.46	37.09	37.91	54.00	-16.09	HORIZONTAL Average
10	9848.349	42.44	37.82	8.46	37.09	51.63	74.00	-22.37	HORIZONTAL Peak
11	12310.580	26.50	39.03	11.10	36.97	39.66	54.00	-14.34	HORIZONTAL Average
12	12310.580	41.19	39.03	11.10	36.97	54.35	74.00	-19.65	HORIZONTAL Peak

Mode:a; Polarization:Vertical; Modulation:n; bandwidth:20MHz; Channel:middle

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3901.516	31.60	29.30	7.56	36.91	31.55	54.00	-22.45	VERTICAL Average
2	3901.516	45.31	29.30	7.56	36.91	45.26	74.00	-28.74	VERTICAL Peak
3	4884.721	31.45	30.95	6.86	36.95	32.31	54.00	-21.69	VERTICAL Average
4	4884.721	45.96	30.95	6.86	36.95	46.82	74.00	-27.18	VERTICAL Peak
5	7326.267	30.35	35.74	7.39	36.92	36.56	54.00	-17.44	VERTICAL Average
6	7326.267	43.43	35.74	7.39	36.92	49.64	74.00	-24.36	VERTICAL Peak
7	8995.123	30.54	36.50	8.24	37.01	38.27	54.00	-15.73	VERTICAL Average
8	8995.123	44.05	36.50	8.24	37.01	51.78	74.00	-22.22	VERTICAL Peak
9	9848.349	30.00	37.82	8.46	37.09	39.19	54.00	-14.81	VERTICAL Average
10	9848.349	42.38	37.82	8.46	37.09	51.57	74.00	-22.43	VERTICAL Peak
11	12210.520	27.75	39.21	10.98	37.06	40.88	54.00	-13.12	VERTICAL Average
12	12210.520	40.35	39.21	10.98	37.06	53.48	74.00	-20.52	VERTICAL Peak

Mode:a; Polarization:Horizontal; Modulation:n; bandwidth:20MHz; Channel:High

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3790.361	30.87	28.97	7.83	36.92	30.75	54.00	-23.25	HORIZONTAL Average
2	3790.361	44.00	28.97	7.83	36.92	43.88	74.00	-30.12	HORIZONTAL Peak
3	4924.721	30.20	31.01	7.49	36.95	31.75	54.00	-22.25	HORIZONTAL Average
4	4924.721	44.19	31.01	7.49	36.95	45.74	74.00	-28.26	HORIZONTAL Peak
5	7386.727	28.36	35.85	7.42	36.92	34.71	54.00	-19.29	HORIZONTAL Average
6	7386.727	41.55	35.85	7.42	36.92	47.90	74.00	-26.10	HORIZONTAL Peak
7	8563.818	30.11	36.15	7.99	36.94	37.31	54.00	-16.69	HORIZONTAL Average
8	8563.818	43.52	36.15	7.99	36.94	50.72	74.00	-23.28	HORIZONTAL Peak
9	9848.430	28.87	37.82	8.46	37.09	38.06	54.00	-15.94	HORIZONTAL Average
10	9848.430	41.44	37.82	8.46	37.09	50.63	74.00	-23.37	HORIZONTAL Peak
11	12310.740	26.05	39.03	11.10	36.97	39.21	54.00	-14.79	HORIZONTAL Average
12	12310.740	40.02	39.03	11.10	36.97	53.18	74.00	-20.82	HORIZONTAL Peak

Mode:a; Polarization:Vertical; Modulation:n; bandwidth:20MHz; Channel:High

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3867.831	29.11	29.22	7.69	36.91	29.11	54.00	-24.89	VERTICAL Average
2	3867.831	43.67	29.22	7.69	36.91	43.67	74.00	-30.33	VERTICAL Peak
3	4924.993	32.76	31.01	7.49	36.95	34.31	54.00	-19.69	VERTICAL Average
4	4924.993	45.05	31.01	7.49	36.95	46.60	74.00	-27.40	VERTICAL Peak
5	7386.015	28.11	35.85	7.42	36.92	34.46	54.00	-19.54	VERTICAL Average
6	7386.015	43.31	35.85	7.42	36.92	49.66	74.00	-24.34	VERTICAL Peak
7	8440.945	29.19	36.13	8.06	36.93	36.45	54.00	-17.55	VERTICAL Average
8	8440.945	41.11	36.13	8.06	36.93	48.37	74.00	-25.63	VERTICAL Peak
9	9848.820	29.70	37.82	8.46	37.09	38.89	54.00	-15.11	VERTICAL Average
10	9848.820	42.87	37.82	8.46	37.09	52.06	74.00	-21.94	VERTICAL Peak
11	12310.610	27.72	39.03	11.10	36.97	40.88	54.00	-13.12	VERTICAL Average
12	12310.610	41.76	39.03	11.10	36.97	54.92	74.00	-19.08	VERTICAL Peak

Mode:a; Polarization:Horizontal; Modulation:n; bandwidth:40MHz; Channel:Low

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Level	Limit	Over	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	39.994	21.62	12.60	0.61	23.68	11.15	40.00	-28.85 HORIZONTAL QP
2	53.318	24.06	12.78	0.59	24.97	12.46	40.00	-27.54 HORIZONTAL QP
3	71.832	25.19	10.50	0.73	25.58	10.84	40.00	-29.16 HORIZONTAL QP
4	138.874	26.48	13.06	1.03	28.16	12.41	43.50	-31.09 HORIZONTAL QP
5	180.649	29.27	12.67	1.34	28.09	15.19	43.50	-28.31 HORIZONTAL QP
6	916.069	28.88	24.13	3.60	28.35	28.26	46.00	-17.74 HORIZONTAL QP

Mode:a; Polarization:Horizontal; Modulation:n; bandwidth:40MHz; Channel:Low

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Level	Limit	Over	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	4844.721	33.11	30.88	6.31	36.94	33.36	54.00	-20.64 HORIZONTAL Average
2	4844.721	47.13	30.88	6.31	36.94	47.38	74.00	-26.62 HORIZONTAL Peak
3	5713.856	30.08	32.06	6.91	36.99	32.06	54.00	-21.94 HORIZONTAL Average
4	5713.856	44.85	32.06	6.91	36.99	46.83	74.00	-27.17 HORIZONTAL Peak
5	7266.278	29.47	35.60	7.36	36.92	35.51	54.00	-18.49 HORIZONTAL Average
6	7266.278	43.73	35.60	7.36	36.92	49.77	74.00	-24.23 HORIZONTAL Peak
7	8995.123	29.31	36.50	8.24	37.01	37.04	54.00	-16.96 HORIZONTAL Average
8	8995.123	44.81	36.50	8.24	37.01	52.54	74.00	-21.46 HORIZONTAL Peak
9	9688.820	27.27	37.61	8.25	37.08	36.05	54.00	-17.95 HORIZONTAL Average
10	9688.820	43.34	37.61	8.25	37.08	52.12	74.00	-21.88 HORIZONTAL Peak
11	12210.270	25.03	39.21	10.98	37.06	38.16	54.00	-15.84 HORIZONTAL Average
12	12210.270	40.23	39.21	10.98	37.06	53.36	74.00	-20.64 HORIZONTAL Peak

Mode:a; Polarization:Vertical; Modulation:n; bandwidth:40MHz; Channel:Low

	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	30.211	22.23	12.20	0.05	21.48	13.00	40.00	-27.00	VERTICAL	QP
2	52.391	23.78	12.86	0.60	24.93	12.31	40.00	-27.69	VERTICAL	QP
3	69.845	24.50	10.82	0.72	25.52	10.52	40.00	-29.48	VERTICAL	QP
4	139.851	27.28	13.10	1.03	28.16	13.25	43.50	-30.25	VERTICAL	QP
5	180.649	28.09	12.67	1.34	28.09	14.01	43.50	-29.49	VERTICAL	QP
6	942.131	28.01	24.44	3.59	28.18	27.86	46.00	-18.14	VERTICAL	QP

Mode:a; Polarization:Vertical; Modulation:n; bandwidth:40MHz; Channel:Low

	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	3867.831	30.20	29.22	7.69	36.91	30.20	54.00	-23.80	VERTICAL	Average
2	3867.831	44.87	29.22	7.69	36.91	44.87	74.00	-29.13	VERTICAL	Peak
3	4844.721	32.33	30.88	6.31	36.94	32.58	54.00	-21.42	VERTICAL	Average
4	4844.721	46.62	30.88	6.31	36.94	46.87	74.00	-27.13	VERTICAL	Peak
5	7266.015	30.16	35.60	7.36	36.92	36.20	54.00	-17.80	VERTICAL	Average
6	7266.015	44.54	35.60	7.36	36.92	50.58	74.00	-23.42	VERTICAL	Peak
7	8368.069	28.25	36.18	8.11	36.93	35.61	54.00	-18.39	VERTICAL	Average
8	8368.069	43.71	36.18	8.11	36.93	51.07	74.00	-22.93	VERTICAL	Peak
9	9688.221	28.11	37.61	8.25	37.08	36.89	54.00	-17.11	VERTICAL	Average
10	9688.221	42.56	37.61	8.25	37.08	51.34	74.00	-22.66	VERTICAL	Peak
11	12110.210	24.06	39.37	10.82	37.15	37.10	54.00	-16.90	VERTICAL	Average
12	12110.210	39.38	39.37	10.82	37.15	52.42	74.00	-21.58	VERTICAL	Peak

Mode:a; Polarization:Horizontal; Modulation:n; bandwidth:40MHz; Channel:middle

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	4884.151	31.16	30.95	6.86	36.95	32.02	54.00	-21.98	HORIZONTAL Average
2	4884.151	45.00	30.95	6.86	36.95	45.86	74.00	-28.14	HORIZONTAL Peak
3	5864.443	29.89	32.22	7.44	37.00	32.55	54.00	-21.45	HORIZONTAL Average
4	5864.443	43.62	32.22	7.44	37.00	46.28	74.00	-27.72	HORIZONTAL Peak
5	7326.542	28.23	35.74	7.39	36.92	34.44	54.00	-19.56	HORIZONTAL Average
6	7326.542	42.18	35.74	7.39	36.92	48.39	74.00	-25.61	HORIZONTAL Peak
7	8416.584	27.05	36.15	8.07	36.93	34.34	54.00	-19.66	HORIZONTAL Average
8	8416.584	43.31	36.15	8.07	36.93	50.60	74.00	-23.40	HORIZONTAL Peak
9	9768.020	29.23	37.74	8.37	37.09	38.25	54.00	-15.75	HORIZONTAL Average
10	9768.020	42.19	37.74	8.37	37.09	51.21	74.00	-22.79	HORIZONTAL Peak
11	12210.100	28.28	39.21	10.98	37.06	41.41	54.00	-12.59	HORIZONTAL Average
12	12210.100	41.07	39.21	10.98	37.06	54.20	74.00	-19.80	HORIZONTAL Peak

Mode:a; Polarization:Vertical; Modulation:n; bandwidth:40MHz; Channel:middle

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3834.438	32.20	29.12	7.80	36.91	32.21	54.00	-21.79	VERTICAL Average
2	3834.438	45.76	29.12	7.80	36.91	45.77	74.00	-28.23	VERTICAL Peak
3	4884.058	32.01	30.95	6.86	36.95	32.87	54.00	-21.13	VERTICAL Average
4	4884.058	46.35	30.95	6.86	36.95	47.21	74.00	-26.79	VERTICAL Peak
5	7326.122	28.25	35.74	7.39	36.92	34.46	54.00	-19.54	VERTICAL Average
6	7326.122	44.07	35.74	7.39	36.92	50.28	74.00	-23.72	VERTICAL Peak
7	8969.161	28.12	36.49	8.21	37.01	35.81	54.00	-18.19	VERTICAL Average
8	8969.161	44.87	36.49	8.21	37.01	52.56	74.00	-21.44	VERTICAL Peak
9	9768.710	27.68	37.74	8.37	37.09	36.70	54.00	-17.30	VERTICAL Average
10	9768.710	42.91	37.74	8.37	37.09	51.93	74.00	-22.07	VERTICAL Peak
11	12210.900	27.60	39.21	10.98	37.06	40.73	54.00	-13.27	VERTICAL Average
12	12210.900	41.40	39.21	10.98	37.06	54.53	74.00	-19.47	VERTICAL Peak

Mode:a; Polarization:Horizontal; Modulation:n; bandwidth:40MHz; Channel:High

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	4904.977	33.58	30.97	7.07	36.95	34.67	54.00	-19.33	HORIZONTAL Average
2	4904.977	46.33	30.97	7.07	36.95	47.42	74.00	-26.58	HORIZONTAL Peak
3	6698.373	30.06	34.61	7.17	36.97	34.87	54.00	-19.13	HORIZONTAL Average
4	6698.373	43.54	34.61	7.17	36.97	48.35	74.00	-25.65	HORIZONTAL Peak
5	7356.070	30.40	35.78	7.40	36.92	36.66	54.00	-17.34	HORIZONTAL Average
6	7356.070	44.86	35.78	7.40	36.92	51.12	74.00	-22.88	HORIZONTAL Peak
7	8917.462	29.47	36.45	8.14	37.00	37.06	54.00	-16.94	HORIZONTAL Average
8	8917.462	44.46	36.45	8.14	37.00	52.05	74.00	-21.95	HORIZONTAL Peak
9	9808.432	31.11	37.79	8.41	37.09	40.22	54.00	-13.78	HORIZONTAL Average
10	9808.432	44.55	37.79	8.41	37.09	53.66	74.00	-20.34	HORIZONTAL Peak
11	12260.580	28.91	39.15	11.02	37.03	42.05	54.00	-11.95	HORIZONTAL Average
12	12260.580	41.33	39.15	11.02	37.03	54.47	74.00	-19.53	HORIZONTAL Peak

Mode:a; Polarization:Vertical; Modulation:n; bandwidth:40MHz; Channel:High

	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3757.637	32.12	28.82	7.65	36.92	31.67	54.00	-22.33	VERTICAL Average
2	3757.637	45.55	28.82	7.65	36.92	45.10	74.00	-28.90	VERTICAL Peak
3	4904.993	31.07	30.97	7.07	36.95	32.16	54.00	-21.84	VERTICAL Average
4	4904.993	45.41	30.97	7.07	36.95	46.50	74.00	-27.50	VERTICAL Peak
5	7356.015	31.65	35.78	7.40	36.92	37.91	54.00	-16.09	VERTICAL Average
6	7356.015	44.20	35.78	7.40	36.92	50.46	74.00	-23.54	VERTICAL Peak
7	8392.292	28.50	36.16	8.09	36.93	35.82	54.00	-18.18	VERTICAL Average
8	8392.292	43.19	36.16	8.09	36.93	50.51	74.00	-23.49	VERTICAL Peak
9	9808.390	29.94	37.79	8.41	37.09	39.05	54.00	-14.95	VERTICAL Average
10	9808.390	42.06	37.79	8.41	37.09	51.17	74.00	-22.83	VERTICAL Peak
11	12260.610	26.12	39.15	11.02	37.03	39.26	54.00	-14.74	VERTICAL Average
12	12260.610	40.07	39.15	11.02	37.03	53.21	74.00	-20.79	VERTICAL Peak



8 Appendix

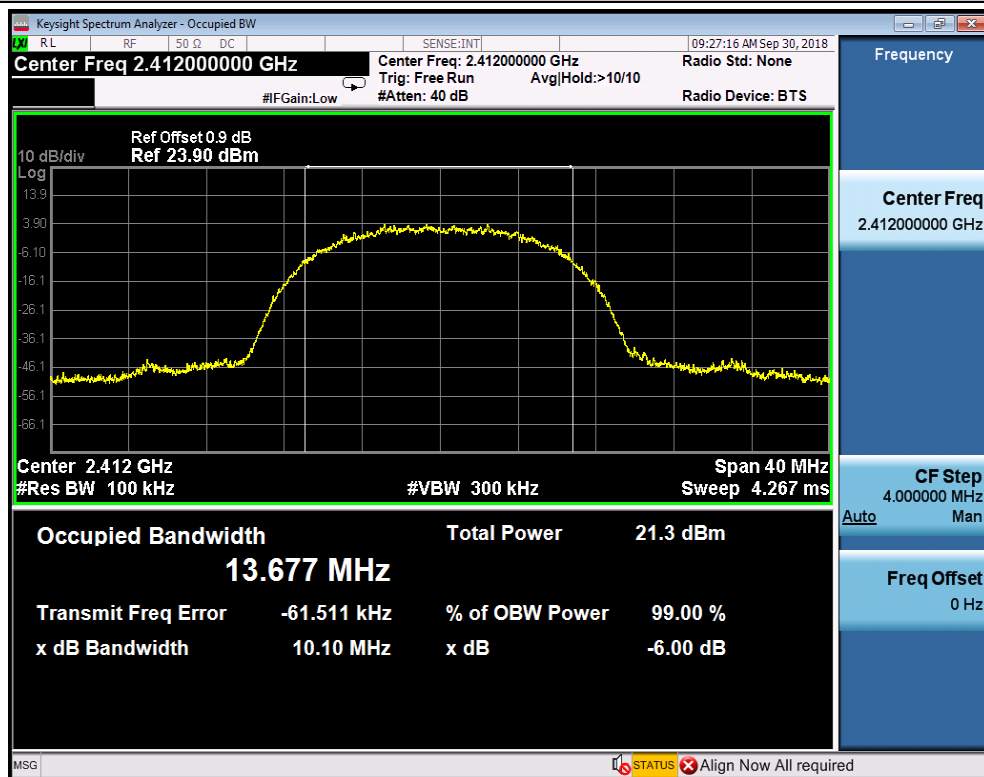
8.1 Appendix 15.247

1.6dB Bandwidth

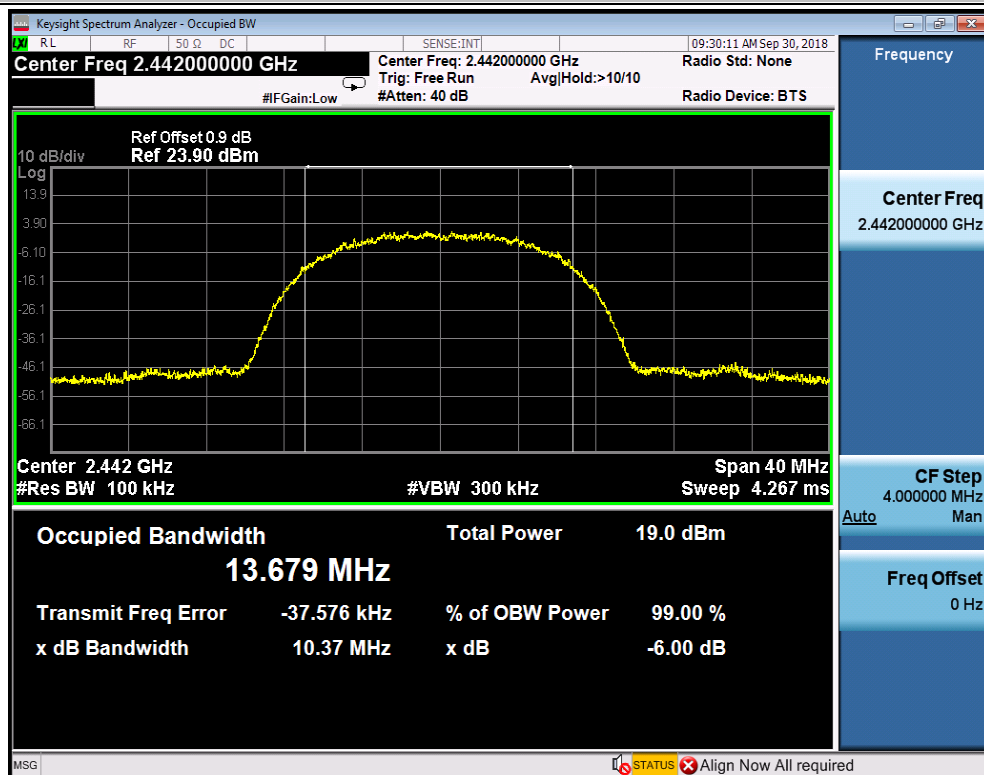
Test Mode	Test Channel	Ant	OBW[MHz]	EBW[MHz]	Limit[MHz]	Verdict
11B	2412	Ant1	13.678	10.10	0.5	PASS
11B	2442	Ant1	13.669	10.37	0.5	PASS
11B	2462	Ant1	13.696	10.20	0.5	PASS
11G	2412	Ant1	16.406	16.33	0.5	PASS
11G	2442	Ant1	16.408	16.33	0.5	PASS
11G	2462	Ant1	16.394	16.33	0.5	PASS
11N20SISO	2412	Ant1	17.599	17.53	0.5	PASS
11N20SISO	2442	Ant1	17.650	17.70	0.5	PASS
11N20SISO	2462	Ant1	17.658	17.73	0.5	PASS
11N40SISO	2422	Ant1	36.217	36.43	0.5	PASS
11N40SISO	2442	Ant1	36.183	36.42	0.5	PASS
11N40SISO	2452	Ant1	36.217	36.44	0.5	PASS

TEST PLOT

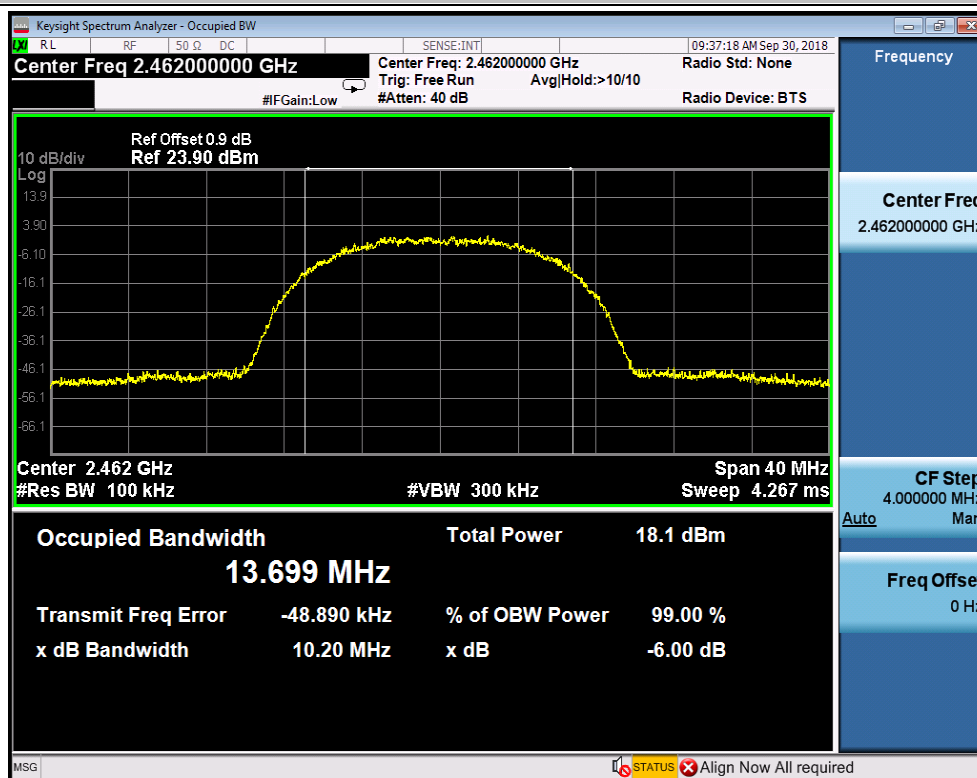
6dB Bandwidth_11B_2412_Ant1



6dB Bandwidth_11B_2442_Ant1



6dB Bandwidth_11B_2462_Ant1



6dB Bandwidth_11G_2412_Ant1

