



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

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Report No.: GZEM181100255701
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TEST REPORT

Application No.: GZEM1811002557CR
Applicant: Guangzhou Taiji Electronic Co.,Ltd
Address of Applicant: Floor 25, Everbright Bank Building, 689 Tianhe North, Guangzhou, Guangdong China
Manufacturer: The same as Applicant
Address of Manufacturer: The same as Applicant
Factory: The same as Applicant
Address of Factory: The same as Applicant
Equipment Under Test (EUT):
EUT Name: Mobile Nail Printer
Model No.: FM-NP1801V, FM-NP1802X
Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.
Trade Mark: O'2NAILS, Nailla, STYLEMATE, FULLMATE, ARTPRO NAIL
Standard(s) : 47 CFR Part 15, Subpart C 15.247
Date of Receipt: 2018-11-06
Date of Test: 2018-11-12 to 2018-11-28
Date of Issue: 2018-12-13

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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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2018-12-13		Original

Authorized for issue by:			
Tested By			2018-11-12 to 2018-11-28
	Curry_Wu /Project Engineer		Date
Checked By			2018-12-13
	Ricky_Liu /Reviewer		Date



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2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	Method	Requirement	Result
Antenna Requirement	47 CFR Part 15, Subpart C 15.247	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)	Pass①
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

①: The EUT passed the Radiated Emissions which fall in the restricted bands test after modification.

■ Declaration of EUT Family Grouping:

Model No.: FM-NP1801V, FM-NP1802X

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 material of shell.

Therefore only one model FM-NP1802X was tested in this report.



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4 General Information

4.1 Details of E.U.T.

Power Supply:	DC 5V 2A
Test Voltage:	AC 120V 60Hz (Adaptor supply by SGS)
Cable:	about 0.5m unscreened USB cable
Antenna Gain	0dBi
Antenna Type	PCB Antenna
Channel Spacing	5MHz
Modulation Type	802.11b: DSSS (CCK, DQPSK, DBPSK) 802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)
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 as an independent unit.

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	$\pm 3\%$



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4.4 Test Location

All tests were performed at:

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No tests were sub-contracted.



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4.5 Test Facility

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

● **NVLAP (Lab Code: 200611-0)**

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

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

● **ACMA**

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

● **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

● **CNAS (Lab Code: L0167)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2006 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.



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4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

The EUT passed the Radiated Emissions which fall in the restricted bands test after modification.



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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-Network	R&S	ENV216	EMC0118	2018-01-19	2019-01-18
LISN	R&S	ENV216	EMC2135	2018-09-21	2019-09-20
EMI Test Receiver	Rohde & Schwarz	ESCS30	EMC0506	2018-11-19	2019-11-18
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	2018-11-19	2019-11-18
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	2018-11-19	2019-11-18
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	2018-11-19	2019-11-18
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 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	2018-11-19	2019-11-18
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	2018-11-19	2019-11-18
6dB Attenuator	HP	8491A	EMC2062	2018-04-04	2020-04-03
Test Software JS1120-3	HangTianXing	V2.6	GZE100-69	N/A	N/A



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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	2018-11-19	2019-11-18
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	2018-11-19	2019-11-18
EXA Signal Analyzer	Keysight	N9010A	EMC2138	2018-11-19	2019-11-18
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



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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	2018-11-19	2019-11-18
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	2018-11-19	2019-11-18
EXA Signal Analyzer	Keysight	N9010A	EMC2138	2018-11-19	2019-11-18
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



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6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203 & 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.



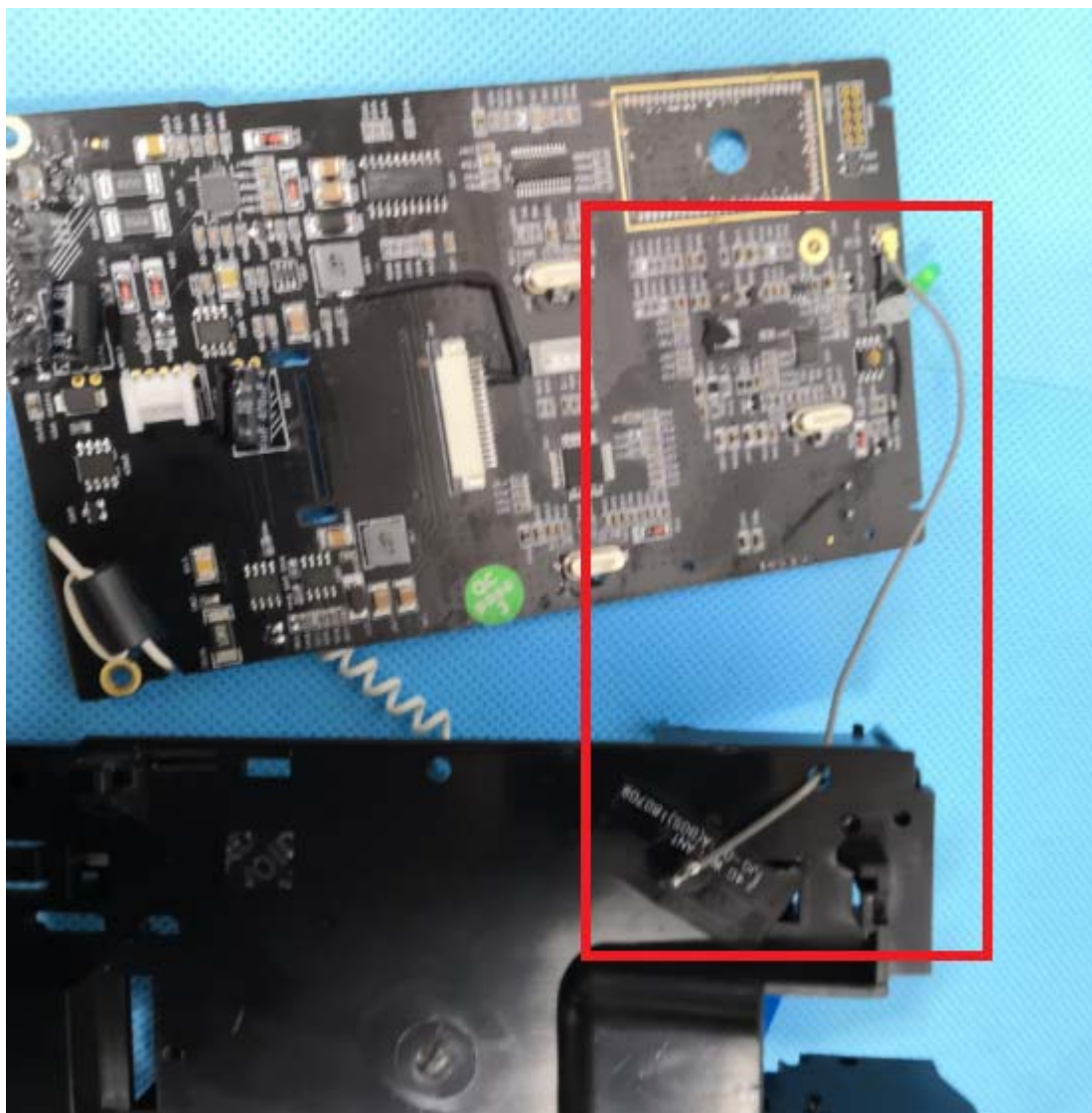
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EUT Antenna:

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

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.



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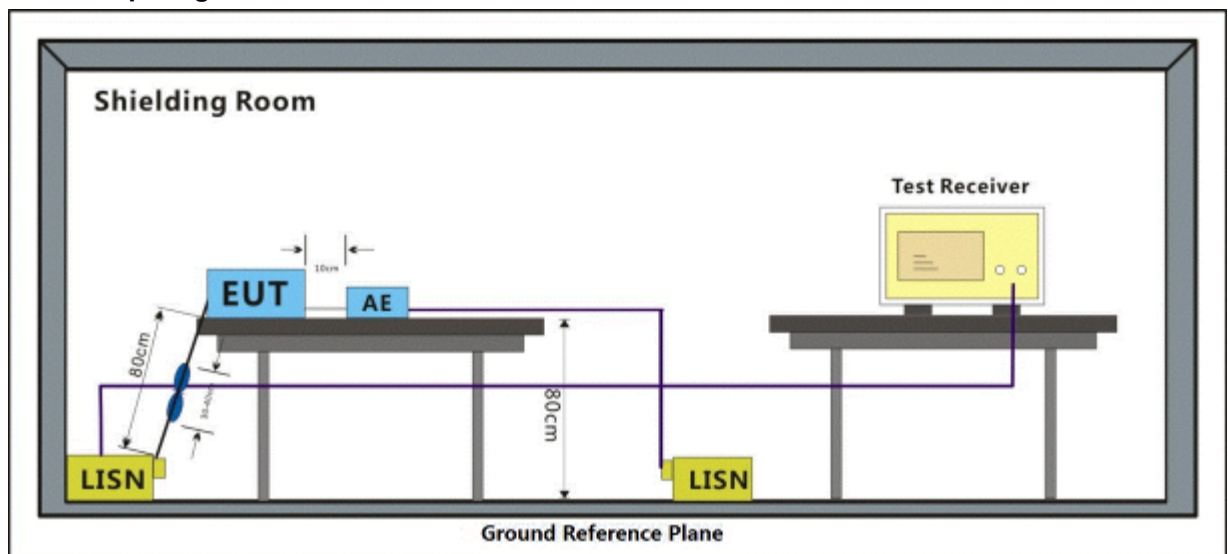
7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 24.3 °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

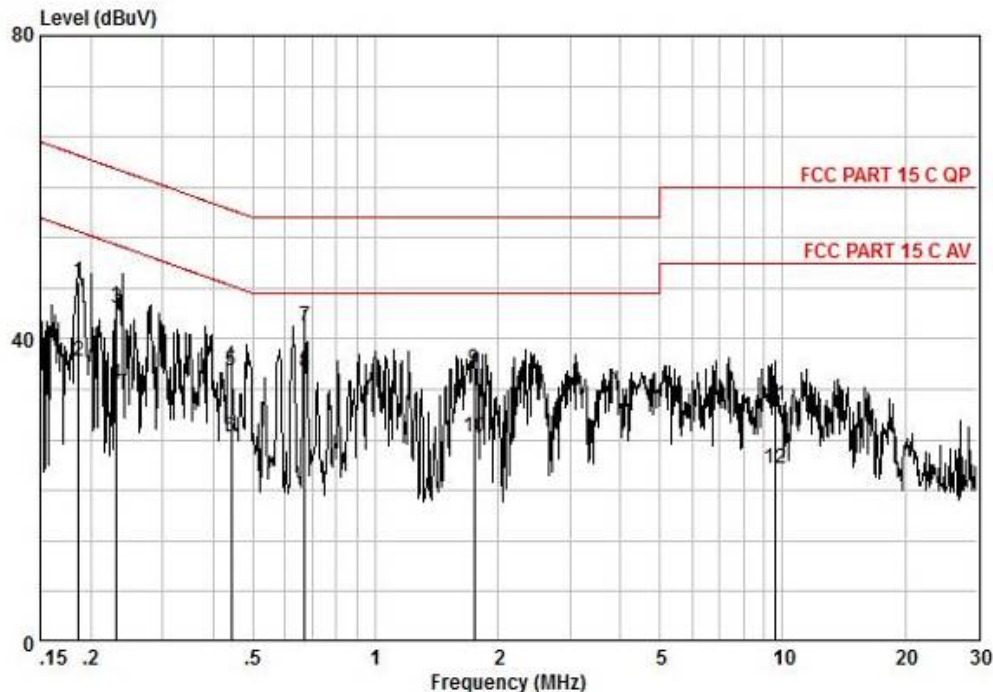
- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50μH + 5ohm linear impedance. The power cables of all other units of the EUT were connected to 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



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Mode:a; Line:Live Line



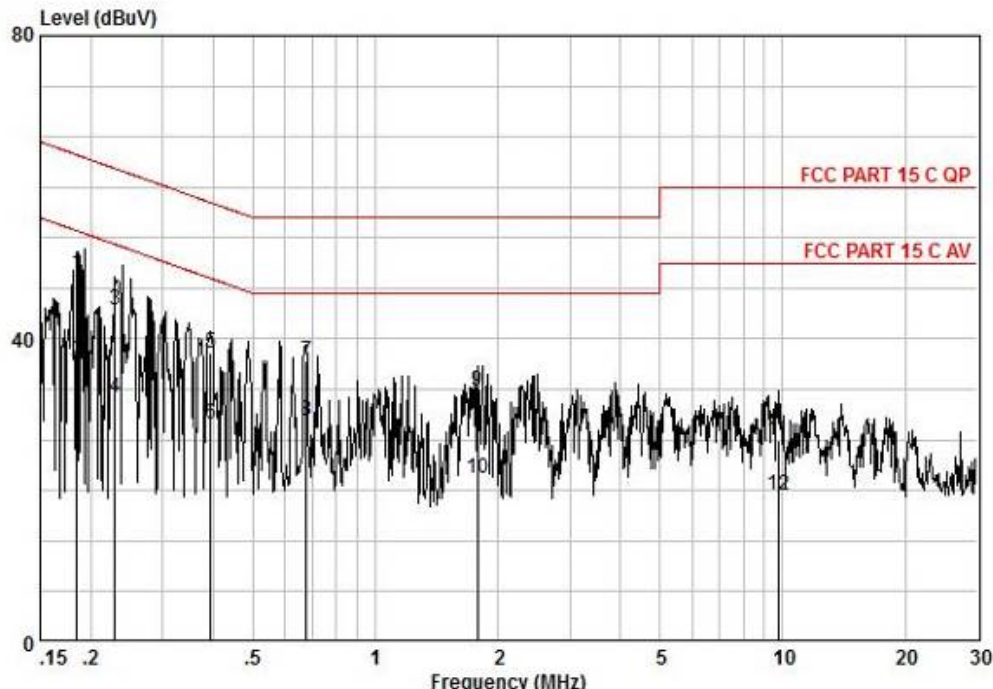
Pol No Model	:LIVE : :						
Frequency MHz	read level dBUV	Cable Loss dB	LISN Factor dB	Measured level dBUV	Limit Line dBUV	Over limit dB	Remark
0,19	37,76	0,10	9,58	47,44	64,20	-16,75	QP
0,19	27,31	0,10	9,58	36,99	54,20	-17,20	AVERAGE
0,23	34,21	0,12	9,62	43,95	62,39	-18,44	QP
0,23	24,35	0,12	9,62	34,09	52,39	-18,30	AVERAGE
0,44	25,91	0,19	9,65	35,74	57,02	-21,28	QP
0,44	17,16	0,19	9,65	26,99	47,02	-20,03	AVERAGE
0,67	31,74	0,24	9,61	41,60	56,00	-14,40	QP
0,67	25,75	0,24	9,61	35,61	46,00	-10,39	AVERAGE
1,74	25,96	0,35	9,61	35,93	56,00	-20,07	QP
1,74	17,05	0,35	9,61	27,02	46,00	-18,98	AVERAGE
9,60	21,00	0,61	9,64	31,24	60,00	-28,76	QP
9,60	12,55	0,61	9,64	22,79	50,00	-27,21	AVERAGE



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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
0.18	38.99	0.10	9.53	48.62	64.28	-15.66	QP
0.18	27.36	0.10	9.53	36.99	54.28	-17.29	AVERAGE
0.23	34.17	0.12	9.58	43.87	62.48	-18.61	QP
0.23	22.46	0.12	9.58	32.16	52.48	-20.32	AVERAGE
0.39	28.50	0.17	9.56	38.23	57.99	-19.76	QP
0.39	19.00	0.17	9.56	28.73	47.99	-19.26	AVERAGE
0.68	27.28	0.24	9.59	37.11	56.00	-18.89	QP
0.68	19.34	0.24	9.59	29.17	46.00	-16.83	AVERAGE
1.78	23.18	0.36	9.53	33.07	56.00	-22.93	QP
1.78	11.71	0.36	9.53	21.60	46.00	-24.40	AVERAGE
9.76	16.30	0.60	9.64	26.54	60.00	-33.46	QP
9.76	9.11	0.60	9.64	19.35	50.00	-30.65	AVERAGE



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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

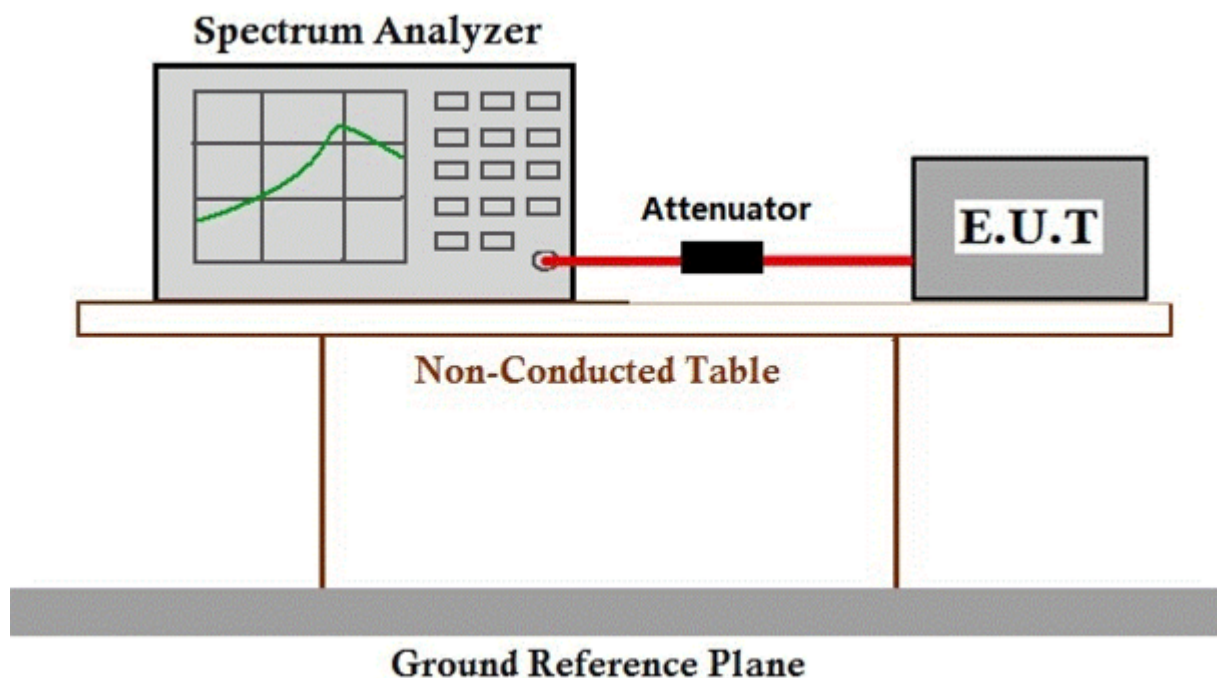
7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 61.1 % 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



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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



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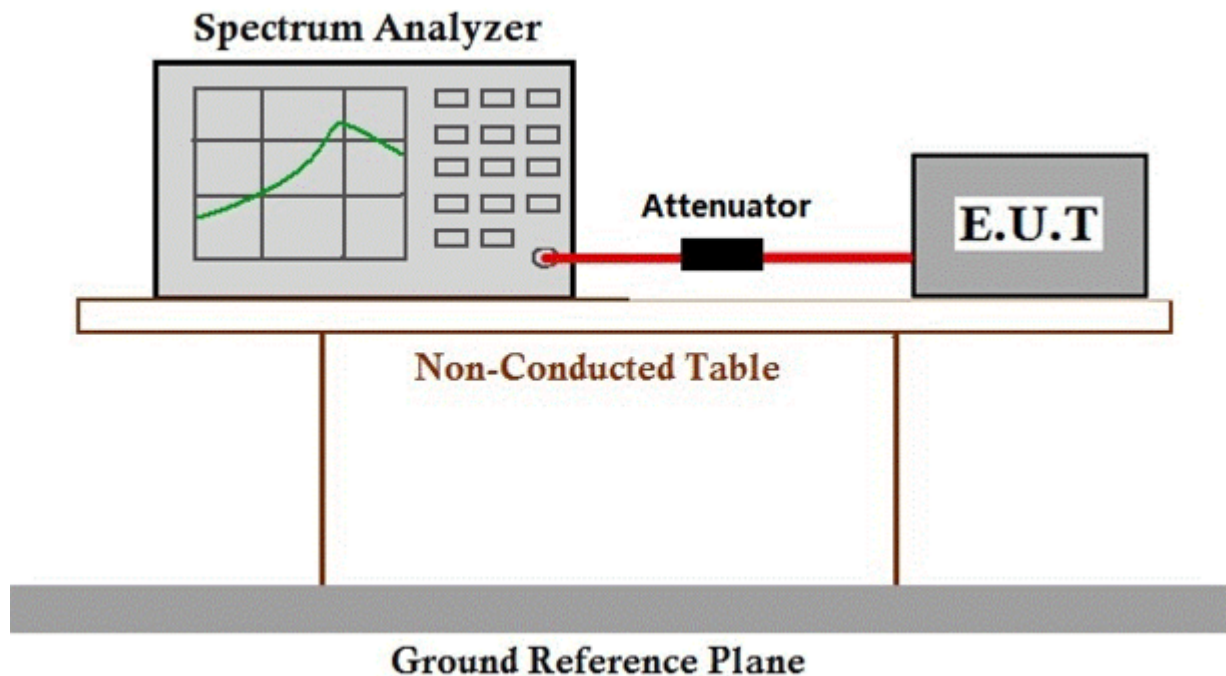
7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 61.1 % 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

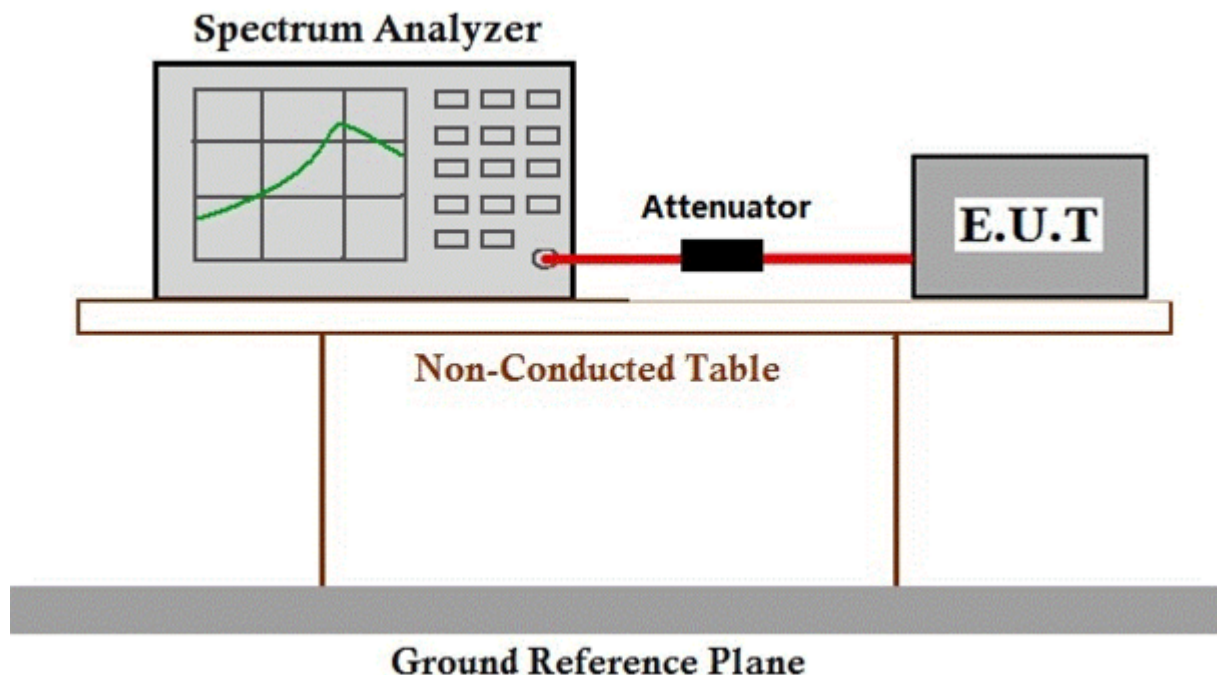
7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 61.1 % 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



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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))



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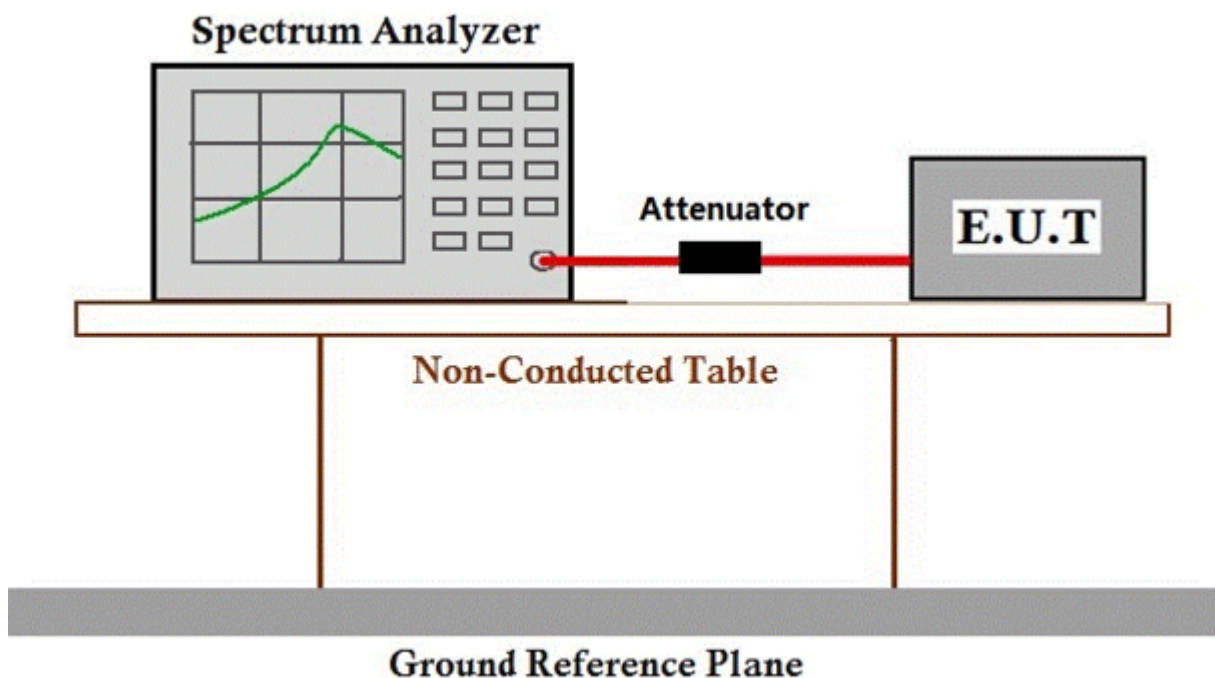
7.5.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 61.1 % 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



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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))



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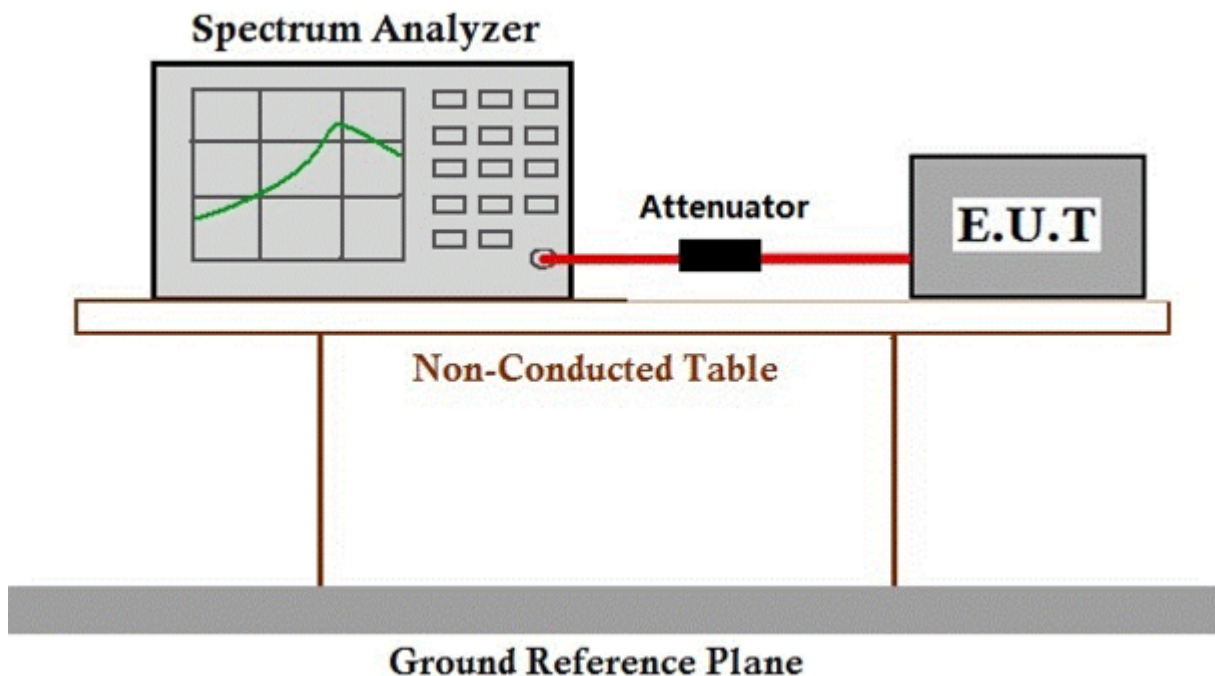
7.6.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 61.1 % 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



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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.



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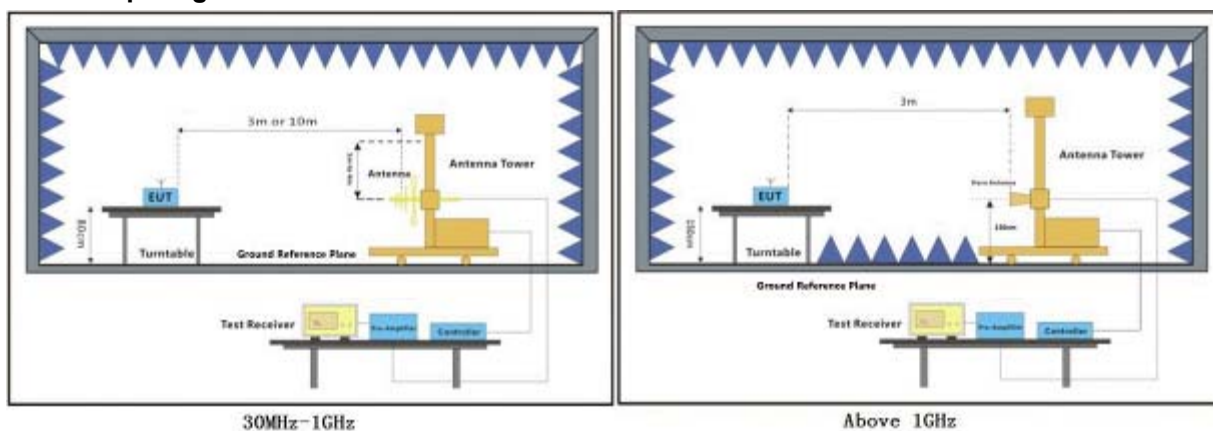
7.7.1 E.U.T. Operation

Operating Environment:

Temperature: 24.9 °C Humidity: 60 % 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



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

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



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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	2310.000	34.64	26.25	5.03	37.44	28.48	54.00	-25.52 HORIZONTAL Average
2	2310.000	47.54	26.25	5.03	37.44	41.38	74.00	-32.62 HORIZONTAL Peak
3	2390.000	40.33	26.43	4.88	37.42	34.22	54.00	-19.78 HORIZONTAL Average
4	2390.000	55.23	26.43	4.88	37.42	49.12	74.00	-24.88 HORIZONTAL Peak
5	2483.500	33.55	26.58	5.23	37.40	27.96	54.00	-26.04 HORIZONTAL Average
6	2483.500	49.66	26.58	5.23	37.40	44.07	74.00	-29.93 HORIZONTAL Peak
7	2500.000	30.01	26.60	4.95	37.39	24.17	54.00	-29.83 HORIZONTAL Average
8	2500.000	47.45	26.60	4.95	37.39	41.61	74.00	-32.39 HORIZONTAL Peak

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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	2310.000	35.81	26.25	5.03	37.44	29.65	54.00	-24.35 VERTICAL Average
2	2310.000	49.91	26.25	5.03	37.44	43.75	74.00	-30.25 VERTICAL Peak
3	2390.000	37.35	26.43	4.88	37.42	31.24	54.00	-22.76 VERTICAL Average
4	2390.000	51.51	26.43	4.88	37.42	45.40	74.00	-28.60 VERTICAL Peak
5	2483.500	33.13	26.58	5.23	37.40	27.54	54.00	-26.46 VERTICAL Average
6	2483.500	49.60	26.58	5.23	37.40	44.01	74.00	-29.99 VERTICAL Peak
7	2500.000	34.91	26.60	4.95	37.39	29.07	54.00	-24.93 VERTICAL Average
8	2500.000	48.89	26.60	4.95	37.39	43.05	74.00	-30.95 VERTICAL Peak



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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	2310.000	38.51	26.25	5.03	37.44	32.35	54.00	-21.65 HORIZONTAL Average
2	2310.000	49.72	26.25	5.03	37.44	43.56	74.00	-30.44 HORIZONTAL Peak
3	2390.000	37.16	26.43	4.88	37.42	31.05	54.00	-22.95 HORIZONTAL Average
4	2390.000	53.85	26.43	4.88	37.42	47.74	74.00	-26.26 HORIZONTAL Peak
5	2483.500	39.48	26.58	5.23	37.40	33.89	54.00	-20.11 HORIZONTAL Average
6	2483.500	53.63	26.58	5.23	37.40	48.04	74.00	-25.96 HORIZONTAL Peak
7	2500.000	38.60	26.60	4.95	37.39	32.76	54.00	-21.24 HORIZONTAL Average
8	2500.000	52.75	26.60	4.95	37.39	46.91	74.00	-27.09 HORIZONTAL Peak

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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	2310.000	35.11	26.25	5.03	37.44	28.95	54.00	-25.05 VERTICAL Average
2	2310.000	47.44	26.25	5.03	37.44	41.28	74.00	-32.72 VERTICAL Peak
3	2390.000	37.01	26.43	4.88	37.42	30.90	54.00	-23.10 VERTICAL Average
4	2390.000	51.64	26.43	4.88	37.42	45.53	74.00	-28.47 VERTICAL Peak
5	2483.500	37.83	26.58	5.23	37.40	32.24	54.00	-21.76 VERTICAL Average
6	2483.500	52.48	26.58	5.23	37.40	46.89	74.00	-27.11 VERTICAL Peak
7	2500.000	36.23	26.60	4.95	37.39	30.39	54.00	-23.61 VERTICAL Average
8	2500.000	53.24	26.60	4.95	37.39	47.40	74.00	-26.60 VERTICAL Peak



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Mode:a; Polarization:Horizontal; Modulation:g; 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	2310.000	36.63	26.25	5.03	37.44	30.47	54.00	-23.53 HORIZONTAL Average
2	2310.000	52.08	26.25	5.03	37.44	45.92	74.00	-28.08 HORIZONTAL Peak
3	2390.000	47.62	26.43	4.88	37.42	41.51	54.00	-12.49 HORIZONTAL Average
4	2390.000	65.90	26.43	4.88	37.42	59.79	74.00	-14.21 HORIZONTAL Peak
5	2483.500	39.56	26.58	5.23	37.40	33.97	54.00	-20.03 HORIZONTAL Average
6	2483.500	54.61	26.58	5.23	37.40	49.02	74.00	-24.98 HORIZONTAL Peak
7	2500.000	39.01	26.60	4.95	37.39	33.17	54.00	-20.83 HORIZONTAL Average
8	2500.000	51.15	26.60	4.95	37.39	45.31	74.00	-28.69 HORIZONTAL Peak

Mode:a; Polarization:Vertical; Modulation:g; 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	2310.000	30.40	26.25	5.03	37.44	24.24	54.00	-29.76 VERTICAL Average
2	2310.000	45.94	26.25	5.03	37.44	39.78	74.00	-34.22 VERTICAL Peak
3	2390.000	44.38	26.43	4.88	37.42	38.27	54.00	-15.73 VERTICAL Average
4	2390.000	55.90	26.43	4.88	37.42	49.79	74.00	-24.21 VERTICAL Peak
5	2483.500	31.98	26.58	5.23	37.40	26.39	54.00	-27.61 VERTICAL Average
6	2483.500	49.34	26.58	5.23	37.40	43.75	74.00	-30.25 VERTICAL Peak
7	2500.000	31.78	26.60	4.95	37.39	25.94	54.00	-28.06 VERTICAL Average
8	2500.000	45.33	26.60	4.95	37.39	39.49	74.00	-34.51 VERTICAL Peak



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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	2310.000	34.49	26.25	5.03	37.44	28.33	54.00	-25.67 HORIZONTAL Average
2	2310.000	47.42	26.25	5.03	37.44	41.26	74.00	-32.74 HORIZONTAL Peak
3	2390.000	40.45	26.43	4.88	37.42	34.34	54.00	-19.66 HORIZONTAL Average
4	2390.000	54.85	26.43	4.88	37.42	48.74	74.00	-25.26 HORIZONTAL Peak
5	2483.500	50.58	26.58	5.23	37.40	44.99	54.00	-9.01 HORIZONTAL Average
6	2483.500	62.48	26.58	5.23	37.40	56.89	74.00	-17.11 HORIZONTAL Peak
7	2500.000	39.74	26.60	4.95	37.39	33.90	54.00	-20.10 HORIZONTAL Average
8	2500.000	53.61	26.60	4.95	37.39	47.77	74.00	-26.23 HORIZONTAL Peak

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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	2310.000	31.04	26.25	5.03	37.44	24.88	54.00	-29.12 VERTICAL Average
2	2310.000	46.13	26.25	5.03	37.44	39.97	74.00	-34.03 VERTICAL Peak
3	2390.000	35.70	26.43	4.88	37.42	29.59	54.00	-24.41 VERTICAL Average
4	2390.000	49.86	26.43	4.88	37.42	43.75	74.00	-30.25 VERTICAL Peak
5	2483.500	45.55	26.58	5.23	37.40	39.96	54.00	-14.04 VERTICAL Average
6	2483.500	60.32	26.58	5.23	37.40	54.73	74.00	-19.27 VERTICAL Peak
7	2500.000	39.31	26.60	4.95	37.39	33.47	54.00	-20.53 VERTICAL Average
8	2500.000	52.83	26.60	4.95	37.39	46.99	74.00	-27.01 VERTICAL Peak



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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	2310.000	34.60	26.25	5.03	37.44	28.44	54.00	-25.56 HORIZONTAL Average
2	2310.000	48.89	26.25	5.03	37.44	42.73	74.00	-31.27 HORIZONTAL Peak
3	2390.000	48.87	26.43	4.88	37.42	42.76	54.00	-11.24 HORIZONTAL Average
4	2390.000	67.75	26.43	4.88	37.42	61.64	74.00	-12.36 HORIZONTAL Peak
5	2483.500	36.54	26.58	5.23	37.40	30.95	54.00	-23.05 HORIZONTAL Average
6	2483.500	53.32	26.58	5.23	37.40	47.73	74.00	-26.27 HORIZONTAL Peak
7	2500.000	35.12	26.60	4.95	37.39	29.28	54.00	-24.72 HORIZONTAL Average
8	2500.000	50.43	26.60	4.95	37.39	44.59	74.00	-29.41 HORIZONTAL Peak

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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	2310.000	32.76	26.25	5.03	37.44	26.60	54.00	-27.40 VERTICAL Average
2	2310.000	47.94	26.25	5.03	37.44	41.78	74.00	-32.22 VERTICAL Peak
3	2390.000	44.24	26.43	4.88	37.42	38.13	54.00	-15.87 VERTICAL Average
4	2390.000	61.99	26.43	4.88	37.42	55.88	74.00	-18.12 VERTICAL Peak
5	2483.500	36.52	26.58	5.23	37.40	30.93	54.00	-23.07 VERTICAL Average
6	2483.500	53.30	26.58	5.23	37.40	47.71	74.00	-26.29 VERTICAL Peak
7	2500.000	34.20	26.60	4.95	37.39	28.36	54.00	-25.64 VERTICAL Average
8	2500.000	48.62	26.60	4.95	37.39	42.78	74.00	-31.22 VERTICAL Peak



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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	2310.000	33.47	26.25	5.03	37.44	27.31	54.00	-26.69 HORIZONTAL Average
2	2310.000	47.82	26.25	5.03	37.44	41.66	74.00	-32.34 HORIZONTAL Peak
3	2390.000	38.85	26.43	4.88	37.42	32.74	54.00	-21.26 HORIZONTAL Average
4	2390.000	55.48	26.43	4.88	37.42	49.37	74.00	-24.63 HORIZONTAL Peak
5	2483.500	51.45	26.58	5.23	37.40	45.86	54.00	-8.14 HORIZONTAL Average
6	2483.500	64.49	26.58	5.23	37.40	58.90	74.00	-15.10 HORIZONTAL Peak
7	2500.000	38.79	26.60	4.95	37.39	32.95	54.00	-21.05 HORIZONTAL Average
8	2500.000	53.16	26.60	4.95	37.39	47.32	74.00	-26.68 HORIZONTAL Peak

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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	2310.000	31.14	26.25	5.03	37.44	24.98	54.00	-29.02 VERTICAL Average
2	2310.000	47.04	26.25	5.03	37.44	40.88	74.00	-33.12 VERTICAL Peak
3	2390.000	36.54	26.43	4.88	37.42	30.43	54.00	-23.57 VERTICAL Average
4	2390.000	50.79	26.43	4.88	37.42	44.68	74.00	-29.32 VERTICAL Peak
5	2483.500	50.25	26.58	5.23	37.40	44.66	54.00	-9.34 VERTICAL Average
6	2483.500	62.48	26.58	5.23	37.40	56.89	74.00	-17.11 VERTICAL Peak
7	2500.000	37.63	26.60	4.95	37.39	31.79	54.00	-22.21 VERTICAL Average
8	2500.000	52.71	26.60	4.95	37.39	46.87	74.00	-27.13 VERTICAL Peak



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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	2310.000	33.25	26.25	5.03	37.44	27.09	54.00	-26.91 HORIZONTAL Average
2	2310.000	48.97	26.25	5.03	37.44	42.81	74.00	-31.19 HORIZONTAL Peak
3	2390.000	43.14	26.43	4.88	37.42	37.03	54.00	-16.97 HORIZONTAL Average
4	2390.000	57.74	26.43	4.88	37.42	51.63	74.00	-22.37 HORIZONTAL Peak
5	2483.500	37.95	26.58	5.23	37.40	32.36	54.00	-21.64 HORIZONTAL Average
6	2483.500	53.00	26.58	5.23	37.40	47.41	74.00	-26.59 HORIZONTAL Peak
7	2500.000	37.77	26.60	4.95	37.39	31.93	54.00	-22.07 HORIZONTAL Average
8	2500.000	50.59	26.60	4.95	37.39	44.75	74.00	-29.25 HORIZONTAL Peak

Mode:a; Polarization:Vertical; 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	2310.000	34.46	26.25	5.03	37.44	28.30	54.00	-25.70 VERTICAL Average
2	2310.000	48.23	26.25	5.03	37.44	42.07	74.00	-31.93 VERTICAL Peak
3	2390.000	41.33	26.43	4.88	37.42	35.22	54.00	-18.78 VERTICAL Average
4	2390.000	52.79	26.43	4.88	37.42	46.68	74.00	-27.32 VERTICAL Peak
5	2483.500	35.29	26.58	5.23	37.40	29.70	54.00	-24.30 VERTICAL Average
6	2483.500	52.93	26.58	5.23	37.40	47.34	74.00	-26.66 VERTICAL Peak
7	2500.000	34.66	26.60	4.95	37.39	28.82	54.00	-25.18 VERTICAL Average
8	2500.000	49.48	26.60	4.95	37.39	43.64	74.00	-30.36 VERTICAL Peak



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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	2310.000	33.66	26.25	5.03	37.44	27.50	54.00	-26.50 HORIZONTAL Average
2	2310.000	47.74	26.25	5.03	37.44	41.58	74.00	-32.42 HORIZONTAL Peak
3	2390.000	41.12	26.43	4.88	37.42	35.01	54.00	-18.99 HORIZONTAL Average
4	2390.000	54.50	26.43	4.88	37.42	48.39	74.00	-25.61 HORIZONTAL Peak
5	2483.500	41.65	26.58	5.23	37.40	36.06	54.00	-17.94 HORIZONTAL Average
6	2483.500	57.20	26.58	5.23	37.40	51.61	74.00	-22.39 HORIZONTAL Peak
7	2500.000	37.12	26.60	4.95	37.39	31.28	54.00	-22.72 HORIZONTAL Average
8	2500.000	53.52	26.60	4.95	37.39	47.68	74.00	-26.32 HORIZONTAL Peak

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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	2310.000	32.65	26.25	5.03	37.44	26.49	54.00	-27.51 VERTICAL Average
2	2310.000	46.05	26.25	5.03	37.44	39.89	74.00	-34.11 VERTICAL Peak
3	2390.000	37.32	26.43	4.88	37.42	31.21	54.00	-22.79 VERTICAL Average
4	2390.000	51.08	26.43	4.88	37.42	44.97	74.00	-29.03 VERTICAL Peak
5	2483.500	40.32	26.58	5.23	37.40	34.73	54.00	-19.27 VERTICAL Average
6	2483.500	54.98	26.58	5.23	37.40	49.39	74.00	-24.61 VERTICAL Peak
7	2500.000	37.72	26.60	4.95	37.39	31.88	54.00	-22.12 VERTICAL Average
8	2500.000	52.16	26.60	4.95	37.39	46.32	74.00	-27.68 VERTICAL Peak



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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.



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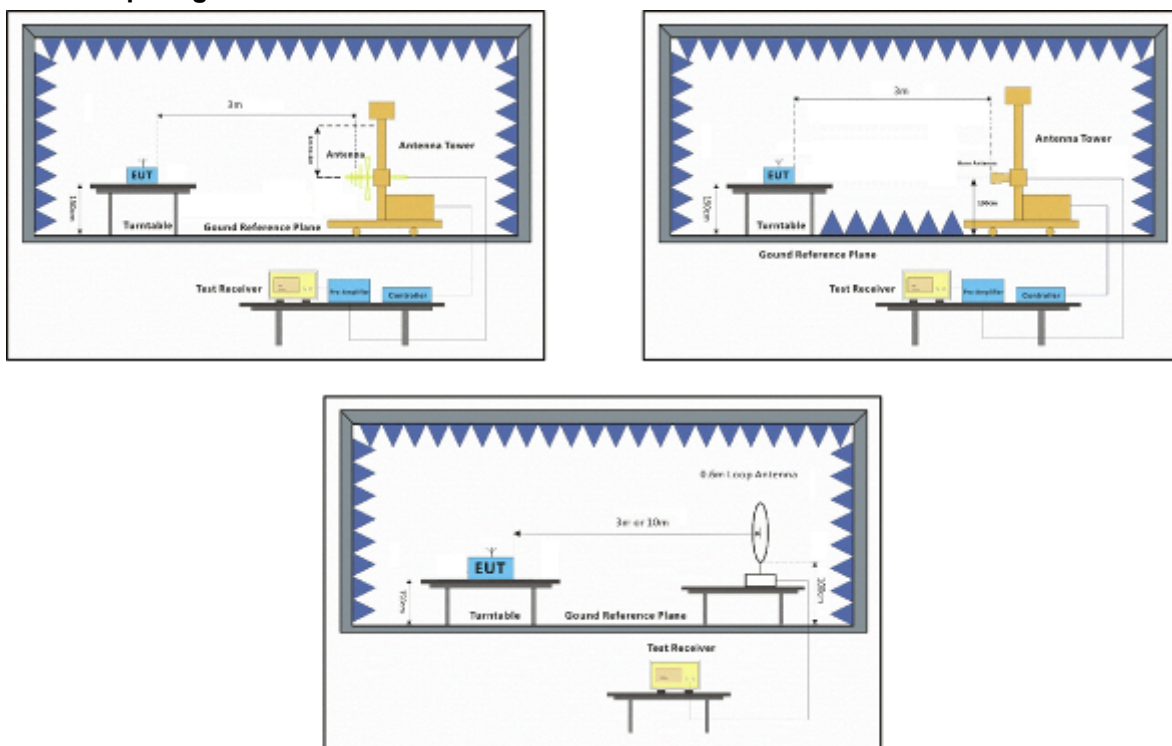
7.8.1 E.U.T. Operation

Operating Environment:

Temperature: 24.9 °C Humidity: 60 % 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



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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:
Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – 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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Mode:a; Polarization:Horizontal; Modulation:b; bandwidth:20MHz; Channel:Low

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Limit	Over				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	Pol/Phase Remark
1	32.864	22.76	12.29	0.16	22.26	12.95	40.00	-27.05	HORIZONTAL QP
2	46.178	23.25	12.89	0.69	24.55	12.28	40.00	-27.72	HORIZONTAL QP
3	180.649	29.23	12.67	1.34	28.09	15.15	43.50	-28.35	HORIZONTAL QP
4	586.844	28.39	20.43	1.95	29.28	21.49	46.00	-24.51	HORIZONTAL QP
5	810.265	28.12	22.80	2.76	28.62	25.06	46.00	-20.94	HORIZONTAL QP
6	919.287	27.28	24.16	3.74	28.43	26.75	46.00	-19.25	HORIZONTAL QP

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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Limit	Over				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	Pol/Phase Remark
1	3801.333	29.46	29.01	7.89	36.92	29.44	54.00	-24.56	HORIZONTAL Average
2	3801.333	45.31	29.01	7.89	36.92	45.29	74.00	-28.71	HORIZONTAL Peak
3	4824.030	50.76	30.82	6.01	36.94	50.65	54.00	-3.35	HORIZONTAL Average
4	4824.030	56.85	30.82	6.01	36.94	56.74	74.00	-17.26	HORIZONTAL Peak
5	7236.122	29.96	35.55	7.35	36.93	35.93	54.00	-18.07	HORIZONTAL Average
6	7236.122	44.18	35.55	7.35	36.93	50.15	74.00	-23.85	HORIZONTAL Peak
7	8688.480	23.94	36.25	7.94	36.96	31.17	54.00	-22.83	HORIZONTAL Average
8	8688.480	43.92	36.25	7.94	36.96	51.15	74.00	-22.85	HORIZONTAL Peak
9	9648.257	29.87	37.54	8.18	37.08	38.51	54.00	-15.49	HORIZONTAL Average
10	9648.257	45.53	37.54	8.18	37.08	54.17	74.00	-19.83	HORIZONTAL Peak
11	12060.270	26.14	39.46	10.71	37.17	39.14	54.00	-14.86	HORIZONTAL Average
12	12060.270	42.33	39.46	10.71	37.17	55.33	74.00	-18.67	HORIZONTAL Peak



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Mode:a; Polarization:Vertical; 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	dBuV/m	dBuV/m	dB	
1	47.492	27.11	12.94	0.65	24.67	16.03	40.00	-23.97 VERTICAL QP
2	101.644	28.70	9.71	0.85	27.19	12.07	43.50	-31.43 VERTICAL QP
3	163.755	27.27	13.29	1.28	28.09	13.75	43.50	-29.75 VERTICAL QP
4	543.274	30.38	19.23	2.17	29.70	22.08	46.00	-23.92 VERTICAL QP
5	684.745	29.05	21.33	2.22	28.86	23.74	46.00	-22.26 VERTICAL QP
6	890.728	29.07	23.92	2.87	28.01	27.85	46.00	-18.15 VERTICAL QP

Mode:a; Polarization:Vertical; 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	dBuV/m	dBuV/m	dB	
1	3141.145	33.12	27.90	5.65	37.02	29.65	54.00	-24.35 VERTICAL Average
2	4823.910	50.19	30.82	6.01	36.94	50.08	54.00	-3.92 VERTICAL Average
3	4823.910	56.00	30.82	6.01	36.94	55.89	74.00	-18.11 VERTICAL Peak
4	6213.441	28.63	33.09	6.93	36.99	31.66	54.00	-22.34 VERTICAL Average
5	6213.441	44.23	33.09	6.93	36.99	47.26	74.00	-26.74 VERTICAL Peak
6	7236.038	32.42	35.55	7.35	36.93	38.39	54.00	-15.61 VERTICAL Average
7	7236.038	45.23	35.55	7.35	36.93	51.20	74.00	-22.80 VERTICAL Peak
8	9648.257	43.90	37.54	8.18	37.08	52.54	54.00	-1.46 VERTICAL Average
9	9648.257	48.82	37.54	8.18	37.08	57.46	74.00	-16.54 VERTICAL Peak
10	12060.610	28.04	39.46	10.71	37.17	41.04	54.00	-12.96 VERTICAL Average
11	12060.610	41.37	39.46	10.71	37.17	54.37	74.00	-19.63 VERTICAL Peak



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

	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	3790.361	30.52	28.97	7.83	36.92	30.40	54.00	-23.60 HORIZONTAL Average
2	3790.361	44.53	28.97	7.83	36.92	44.41	74.00	-29.59 HORIZONTAL Peak
3	4884.043	49.86	30.95	6.86	36.95	50.72	54.00	-3.28 HORIZONTAL Average
4	4884.043	54.20	30.95	6.86	36.95	55.06	74.00	-18.94 HORIZONTAL Peak
5	5934.778	32.25	32.26	7.32	37.00	34.83	54.00	-19.17 HORIZONTAL Average
6	5934.778	46.48	32.26	7.32	37.00	49.06	74.00	-24.94 HORIZONTAL Peak
7	7326.945	31.92	35.74	7.39	36.92	38.13	54.00	-15.87 HORIZONTAL Average
8	7326.945	43.37	35.74	7.39	36.92	49.58	74.00	-24.42 HORIZONTAL Peak
9	9768.450	30.66	37.74	8.37	37.09	39.68	54.00	-14.32 HORIZONTAL Average
10	9768.450	43.26	37.74	8.37	37.09	52.28	74.00	-21.72 HORIZONTAL Peak
11	12210.250	26.79	39.21	10.98	37.06	39.92	54.00	-14.08 HORIZONTAL Average
12	12210.250	41.06	39.21	10.98	37.06	54.19	74.00	-19.81 HORIZONTAL Peak

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

	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	3801.333	31.85	29.01	7.89	36.92	31.83	54.00	-22.17 VERTICAL Average
2	3801.333	45.38	29.01	7.89	36.92	45.36	74.00	-28.64 VERTICAL Peak
3	4884.040	50.07	30.95	6.86	36.95	50.93	54.00	-3.07 VERTICAL Average
4	4884.040	55.44	30.95	6.86	36.95	56.30	74.00	-17.70 VERTICAL Peak
5	7326.806	28.21	35.74	7.39	36.92	34.42	54.00	-19.58 VERTICAL Average
6	7326.806	44.41	35.74	7.39	36.92	50.62	74.00	-23.38 VERTICAL Peak
7	8440.945	28.91	36.13	8.06	36.93	36.17	54.00	-17.83 VERTICAL Average
8	8440.945	44.51	36.13	8.06	36.93	51.77	74.00	-22.23 VERTICAL Peak
9	9768.603	27.35	37.74	8.37	37.09	36.37	54.00	-17.63 VERTICAL Average
10	9768.603	44.79	37.74	8.37	37.09	53.81	74.00	-20.19 VERTICAL Peak
11	12210.540	27.44	39.21	10.98	37.06	40.57	54.00	-13.43 VERTICAL Average
12	12210.540	41.02	39.21	10.98	37.06	54.15	74.00	-19.85 VERTICAL Peak



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

	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	3823.371	31.15	29.08	7.83	36.91	31.15	54.00	-22.85 HORIZONTAL Average
2	3823.371	45.12	29.08	7.83	36.91	45.12	74.00	-28.88 HORIZONTAL Peak
3	4924.721	49.22	31.01	7.49	36.95	50.77	54.00	-3.23 HORIZONTAL Average
4	4924.721	51.50	31.01	7.49	36.95	53.05	74.00	-20.95 HORIZONTAL Peak
5	7386.516	30.36	35.85	7.42	36.92	36.71	54.00	-17.29 HORIZONTAL Average
6	7386.516	43.92	35.85	7.42	36.92	50.27	74.00	-23.73 HORIZONTAL Peak
7	8738.852	28.22	36.30	7.98	36.96	35.54	54.00	-18.46 HORIZONTAL Average
8	8738.852	44.26	36.30	7.98	36.96	51.58	74.00	-22.42 HORIZONTAL Peak
9	9848.420	29.48	37.82	8.46	37.09	38.67	54.00	-15.33 HORIZONTAL Average
10	9848.420	43.68	37.82	8.46	37.09	52.87	74.00	-21.13 HORIZONTAL Peak
11	12310.850	25.84	39.03	11.10	36.97	39.00	54.00	-15.00 HORIZONTAL Average
12	12310.850	40.13	39.03	11.10	36.97	53.29	74.00	-20.71 HORIZONTAL Peak

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

	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	31.89	29.12	7.80	36.91	31.90	54.00	-22.10 VERTICAL Average
2	3834.438	44.98	29.12	7.80	36.91	44.99	74.00	-29.01 VERTICAL Peak
3	4924.721	49.43	31.01	7.49	36.95	50.98	54.00	-3.02 VERTICAL Average
4	4924.721	54.32	31.01	7.49	36.95	55.87	74.00	-18.13 VERTICAL Peak
5	7386.914	31.09	35.85	7.42	36.92	37.44	54.00	-16.56 VERTICAL Average
6	7386.914	44.16	35.85	7.42	36.92	50.51	74.00	-23.49 VERTICAL Peak
7	9047.272	30.67	36.57	8.29	37.02	38.51	54.00	-15.49 VERTICAL Average
8	9047.272	44.30	36.57	8.29	37.02	52.14	74.00	-21.86 VERTICAL Peak
9	9848.312	29.71	37.82	8.46	37.09	38.90	54.00	-15.10 VERTICAL Average
10	9848.312	44.33	37.82	8.46	37.09	53.52	74.00	-20.48 VERTICAL Peak
11	12310.220	27.29	39.03	11.10	36.97	40.45	54.00	-13.55 VERTICAL Average
12	12310.220	41.15	39.03	11.10	36.97	54.31	74.00	-19.69 VERTICAL Peak



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Mode:a; Polarization:Horizontal; Modulation:g; 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	40.702	22.80	12.62	0.62	23.76	12.28	40.00	-27.72 HORIZONTAL QP
2	65.803	24.88	11.30	0.67	25.42	11.43	40.00	-28.57 HORIZONTAL QP
3	179.386	28.52	12.71	1.34	28.08	14.49	43.50	-29.01 HORIZONTAL QP
4	541.373	28.87	19.15	2.19	29.73	20.48	46.00	-25.52 HORIZONTAL QP
5	658.836	29.01	21.14	2.12	28.84	23.43	46.00	-22.57 HORIZONTAL QP
6	893.857	29.23	23.95	2.86	27.97	28.07	46.00	-17.93 HORIZONTAL QP

Mode:a; Polarization:Horizontal; Modulation:g; 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	3495.691	32.90	27.90	5.93	36.95	29.78	54.00	-24.22 HORIZONTAL Average
2	3495.691	46.63	27.90	5.93	36.95	43.51	74.00	-30.49 HORIZONTAL Peak
3	4824.962	45.77	30.82	6.01	36.94	45.66	54.00	-8.34 HORIZONTAL Average
4	4824.962	50.50	30.82	6.01	36.94	50.39	74.00	-23.61 HORIZONTAL Peak
5	7236.474	32.65	35.55	7.35	36.93	38.62	54.00	-15.38 HORIZONTAL Average
6	7236.474	44.31	35.55	7.35	36.93	50.28	74.00	-23.72 HORIZONTAL Peak
7	8319.836	31.09	36.22	8.15	36.92	38.54	54.00	-15.46 HORIZONTAL Average
8	8319.836	44.36	36.22	8.15	36.92	51.81	74.00	-22.19 HORIZONTAL Peak
9	9648.916	31.06	37.54	8.18	37.08	39.70	54.00	-14.30 HORIZONTAL Average
10	9648.916	45.64	37.54	8.18	37.08	54.28	74.00	-19.72 HORIZONTAL Peak
11	12060.850	27.79	39.46	10.71	37.17	40.79	54.00	-13.21 HORIZONTAL Average
12	12060.850	42.09	39.46	10.71	37.17	55.09	74.00	-18.91 HORIZONTAL Peak



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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Limit Line	Over Limit	Pol/Phase	Remark		
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	30.000	23.73	12.20	0.05	21.45	14.53	40.00	-25.47	VERTICAL QP
2	46.503	23.59	12.90	0.68	24.57	12.60	40.00	-27.40	VERTICAL QP
3	163.755	28.14	13.29	1.28	28.09	14.62	43.50	-28.88	VERTICAL QP
4	568.613	29.97	20.10	1.95	29.30	22.72	46.00	-23.28	VERTICAL QP
5	724.261	29.33	21.66	3.56	29.53	25.02	46.00	-20.98	VERTICAL QP
6	890.728	28.71	23.92	2.87	28.01	27.49	46.00	-18.51	VERTICAL QP

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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Limit Line	Over Limit	Pol/Phase	Remark		
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3924.135	29.39	29.35	7.47	36.91	29.30	54.00	-24.70	VERTICAL Average
2	3924.135	44.86	29.35	7.47	36.91	44.77	74.00	-29.23	VERTICAL Peak
3	4824.962	45.53	30.82	6.01	36.94	45.42	54.00	-8.58	VERTICAL Average
4	4824.962	49.39	30.82	6.01	36.94	49.28	74.00	-24.72	VERTICAL Peak
5	7236.527	28.42	35.55	7.35	36.93	34.39	54.00	-19.61	VERTICAL Average
6	7236.527	43.98	35.55	7.35	36.93	49.95	74.00	-24.05	VERTICAL Peak
7	8416.584	28.94	36.15	8.07	36.93	36.23	54.00	-17.77	VERTICAL Average
8	8416.584	44.44	36.15	8.07	36.93	51.73	74.00	-22.27	VERTICAL Peak
9	9648.018	28.80	37.54	8.18	37.08	37.44	54.00	-16.56	VERTICAL Average
10	9648.018	43.93	37.54	8.18	37.08	52.57	74.00	-21.43	VERTICAL Peak
11	12060.240	27.59	39.46	10.71	37.17	40.59	54.00	-13.41	VERTICAL Average
12	12060.240	41.87	39.46	10.71	37.17	54.87	74.00	-19.13	VERTICAL Peak



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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	3823.371	29.97	29.08	7.83	36.91	29.97	54.00	-24.03 HORIZONTAL Average
2	3823.371	44.45	29.08	7.83	36.91	44.45	74.00	-29.55 HORIZONTAL Peak
3	4884.151	47.44	30.95	6.86	36.95	48.30	54.00	-5.70 HORIZONTAL Average
4	4884.151	51.41	30.95	6.86	36.95	52.27	74.00	-21.73 HORIZONTAL Peak
5	7326.527	29.92	35.74	7.39	36.92	36.13	54.00	-17.87 HORIZONTAL Average
6	7326.527	43.64	35.74	7.39	36.92	49.85	74.00	-24.15 HORIZONTAL Peak
7	8943.274	27.95	36.47	8.18	37.00	35.60	54.00	-18.40 HORIZONTAL Average
8	8943.274	43.51	36.47	8.18	37.00	51.16	74.00	-22.84 HORIZONTAL Peak
9	9768.916	31.40	37.74	8.37	37.09	40.42	54.00	-13.58 HORIZONTAL Average
10	9768.916	45.47	37.74	8.37	37.09	54.49	74.00	-19.51 HORIZONTAL Peak
11	12210.350	28.27	39.21	10.98	37.06	41.40	54.00	-12.60 HORIZONTAL Average
12	12210.350	40.99	39.21	10.98	37.06	54.12	74.00	-19.88 HORIZONTAL Peak

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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	3890.255	31.98	29.27	7.61	36.91	31.95	54.00	-22.05 VERTICAL Average
2	3890.255	44.70	29.27	7.61	36.91	44.67	74.00	-29.33 VERTICAL Peak
3	4884.151	35.20	30.95	6.86	36.95	36.06	54.00	-17.94 VERTICAL Average
4	4884.151	48.71	30.95	6.86	36.95	49.57	74.00	-24.43 VERTICAL Peak
5	7326.092	28.82	35.74	7.39	36.92	35.03	54.00	-18.97 VERTICAL Average
6	7326.092	43.40	35.74	7.39	36.92	49.61	74.00	-24.39 VERTICAL Peak
7	8489.882	26.03	36.10	8.03	36.94	33.22	54.00	-20.78 VERTICAL Average
8	8489.882	44.58	36.10	8.03	36.94	51.77	74.00	-22.23 VERTICAL Peak
9	9768.916	29.43	37.74	8.37	37.09	38.45	54.00	-15.55 VERTICAL Average
10	9768.916	44.89	37.74	8.37	37.09	53.91	74.00	-20.09 VERTICAL Peak
11	12210.100	27.79	39.21	10.98	37.06	40.92	54.00	-13.08 VERTICAL Average
12	12210.100	41.29	39.21	10.98	37.06	54.42	74.00	-19.58 VERTICAL Peak



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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	3958.309	28.99	29.42	7.35	36.90	28.86	54.00	-25.14 HORIZONTAL Average
2	3958.309	44.88	29.42	7.35	36.90	44.75	74.00	-29.25 HORIZONTAL Peak
3	4924.721	32.13	31.01	7.49	36.95	33.68	54.00	-20.32 HORIZONTAL Average
4	4924.721	47.87	31.01	7.49	36.95	49.42	74.00	-24.58 HORIZONTAL Peak
5	7386.516	27.13	35.85	7.42	36.92	33.48	54.00	-20.52 HORIZONTAL Average
6	7386.516	42.75	35.85	7.42	36.92	49.10	74.00	-24.90 HORIZONTAL Peak
7	8764.146	26.79	36.33	8.00	36.97	34.15	54.00	-19.85 HORIZONTAL Average
8	8764.146	43.55	36.33	8.00	36.97	50.91	74.00	-23.09 HORIZONTAL Peak
9	9848.221	26.67	37.82	8.46	37.09	35.86	54.00	-18.14 HORIZONTAL Average
10	9848.221	42.83	37.82	8.46	37.09	52.02	74.00	-21.98 HORIZONTAL Peak
11	12310.580	26.87	39.03	11.10	36.97	40.03	54.00	-13.97 HORIZONTAL Average
12	12310.580	40.91	39.03	11.10	36.97	54.07	74.00	-19.93 HORIZONTAL Peak

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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	3790.361	31.14	28.97	7.83	36.92	31.02	54.00	-22.98 VERTICAL Average
2	3790.361	45.41	28.97	7.83	36.92	45.29	74.00	-28.71 VERTICAL Peak
3	4924.721	35.50	31.01	7.49	36.95	37.05	54.00	-16.95 VERTICAL Average
4	4924.721	48.39	31.01	7.49	36.95	49.94	74.00	-24.06 VERTICAL Peak
5	7386.015	30.10	35.85	7.42	36.92	36.45	54.00	-17.55 VERTICAL Average
6	7386.015	43.85	35.85	7.42	36.92	50.20	74.00	-23.80 VERTICAL Peak
7	8995.123	29.27	36.50	8.24	37.01	37.00	54.00	-17.00 VERTICAL Average
8	8995.123	44.49	36.50	8.24	37.01	52.22	74.00	-21.78 VERTICAL Peak
9	9848.221	29.03	37.82	8.46	37.09	38.22	54.00	-15.78 VERTICAL Average
10	9848.221	43.88	37.82	8.46	37.09	53.07	74.00	-20.93 VERTICAL Peak
11	12310.740	28.15	39.03	11.10	36.97	41.31	54.00	-12.69 VERTICAL Average
12	12310.740	41.03	39.03	11.10	36.97	54.19	74.00	-19.81 VERTICAL Peak



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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Limit	Over					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	Pol/Phase	Remark
1	39.715	22.35	12.60	0.60	23.65	11.90	40.00	-28.10	HORIZONTAL	QP
2	53.318	24.52	12.78	0.59	24.97	12.92	40.00	-27.08	HORIZONTAL	QP
3	132.685	27.55	12.66	0.98	28.17	13.02	43.50	-30.48	HORIZONTAL	QP
4	180.649	29.30	12.67	1.34	28.09	15.22	43.50	-28.28	HORIZONTAL	QP
5	622.890	29.11	20.74	2.10	29.21	22.74	46.00	-23.26	HORIZONTAL	QP
6	887.610	29.43	23.90	2.88	28.06	28.15	46.00	-17.85	HORIZONTAL	QP

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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Limit	Over					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	Pol/Phase	Remark
1	3856.668	30.86	29.19	7.73	36.91	30.87	54.00	-23.13	HORIZONTAL	Average
2	3856.668	45.31	29.19	7.73	36.91	45.32	74.00	-28.68	HORIZONTAL	Peak
3	4824.962	31.50	30.82	6.01	36.94	31.39	54.00	-22.61	HORIZONTAL	Average
4	4824.962	47.78	30.82	6.01	36.94	47.67	74.00	-26.33	HORIZONTAL	Peak
5	6737.207	28.89	34.70	7.18	36.97	33.80	54.00	-20.20	HORIZONTAL	Average
6	6737.207	43.42	34.70	7.18	36.97	48.33	74.00	-25.67	HORIZONTAL	Peak
7	7236.102	29.82	35.55	7.35	36.93	35.79	54.00	-18.21	HORIZONTAL	Average
8	7236.102	45.10	35.55	7.35	36.93	51.07	74.00	-22.93	HORIZONTAL	Peak
9	9648.925	27.65	37.54	8.18	37.08	36.29	54.00	-17.71	HORIZONTAL	Average
10	9648.925	43.79	37.54	8.18	37.08	52.43	74.00	-21.57	HORIZONTAL	Peak
11	12060.350	26.29	39.46	10.71	37.17	39.29	54.00	-14.71	HORIZONTAL	Average
12	12060.350	42.68	39.46	10.71	37.17	55.68	74.00	-18.32	HORIZONTAL	Peak



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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Limit Line	Over Limit	Pol/Phase	Remark		
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	46.503	25.44	12.90	0.68	24.57	14.45	40.00	-25.55	VERTICAL QP
2	60.069	24.03	12.20	0.58	25.23	11.58	40.00	-28.42	VERTICAL QP
3	180.649	30.02	12.67	1.34	28.09	15.94	43.50	-27.56	VERTICAL QP
4	582.743	29.68	20.36	1.91	29.22	22.73	46.00	-23.27	VERTICAL QP
5	729.358	30.51	21.73	3.47	29.46	26.25	46.00	-19.75	VERTICAL QP
6	938.833	29.43	24.39	3.62	28.22	29.22	46.00	-16.78	VERTICAL QP

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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Limit Line	Over Limit	Pol/Phase	Remark		
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	4824.962	44.22	30.82	6.01	36.94	44.11	54.00	-9.89	VERTICAL Average
2	4824.962	49.26	30.82	6.01	36.94	49.15	74.00	-24.85	VERTICAL Peak
3	5813.812	30.11	32.17	7.46	37.00	32.74	54.00	-21.26	VERTICAL Average
4	5813.812	44.11	32.17	7.46	37.00	46.74	74.00	-27.26	VERTICAL Peak
5	7236.172	29.19	35.55	7.35	36.93	35.16	54.00	-18.84	VERTICAL Average
6	7236.172	43.97	35.55	7.35	36.93	49.94	74.00	-24.06	VERTICAL Peak
7	8440.945	28.27	36.13	8.06	36.93	35.53	54.00	-18.47	VERTICAL Average
8	8440.945	44.69	36.13	8.06	36.93	51.95	74.00	-22.05	VERTICAL Peak
9	9648.221	28.77	37.54	8.18	37.08	37.41	54.00	-16.59	VERTICAL Average
10	9648.221	44.81	37.54	8.18	37.08	53.45	74.00	-20.55	VERTICAL Peak
11	12060.270	26.95	39.46	10.71	37.17	39.95	54.00	-14.05	VERTICAL Average
12	12060.270	41.09	39.46	10.71	37.17	54.09	74.00	-19.91	VERTICAL Peak



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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	3823.371	33.51	29.08	7.83	36.91	33.51	54.00	-20.49 HORIZONTAL Average
2	3823.371	44.52	29.08	7.83	36.91	44.52	74.00	-29.48 HORIZONTAL Peak
3	4884.043	41.57	30.95	6.86	36.95	42.43	54.00	-11.57 HORIZONTAL Average
4	4884.043	47.18	30.95	6.86	36.95	48.04	74.00	-25.96 HORIZONTAL Peak
5	6835.278	30.72	34.89	7.21	36.96	35.86	54.00	-18.14 HORIZONTAL Average
6	6835.278	43.87	34.89	7.21	36.96	49.01	74.00	-24.99 HORIZONTAL Peak
7	7326.463	31.15	35.74	7.39	36.92	37.36	54.00	-16.64 HORIZONTAL Average
8	7326.463	43.67	35.74	7.39	36.92	49.88	74.00	-24.12 HORIZONTAL Peak
9	9768.689	30.53	37.74	8.37	37.09	39.55	54.00	-14.45 HORIZONTAL Average
10	9768.689	44.33	37.74	8.37	37.09	53.35	74.00	-20.65 HORIZONTAL Peak
11	12210.760	26.14	39.21	10.98	37.06	39.27	54.00	-14.73 HORIZONTAL Average
12	12210.760	40.61	39.21	10.98	37.06	53.74	74.00	-20.26 HORIZONTAL Peak

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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	4133.699	30.63	29.62	6.79	36.90	30.14	54.00	-23.86 VERTICAL Average
2	4133.699	45.93	29.62	6.79	36.90	45.44	74.00	-28.56 VERTICAL Peak
3	4884.043	44.77	30.95	6.86	36.95	45.63	54.00	-8.37 VERTICAL Average
4	4884.043	48.85	30.95	6.86	36.95	49.71	74.00	-24.29 VERTICAL Peak
5	7326.122	30.13	35.74	7.39	36.92	36.34	54.00	-17.66 VERTICAL Average
6	7326.122	43.91	35.74	7.39	36.92	50.12	74.00	-23.88 VERTICAL Peak
7	9648.399	28.00	37.54	8.18	37.08	36.64	54.00	-17.36 VERTICAL Average
8	9648.399	42.92	37.54	8.18	37.08	51.56	74.00	-22.44 VERTICAL Peak
9	10545.010	26.76	39.05	9.58	37.12	38.27	54.00	-15.73 VERTICAL Average
10	10545.010	40.24	39.05	9.58	37.12	51.75	74.00	-22.25 VERTICAL Peak
11	12210.220	28.24	39.21	10.98	37.06	41.37	54.00	-12.63 VERTICAL Average
12	12210.220	41.61	39.21	10.98	37.06	54.74	74.00	-19.26 VERTICAL Peak



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

	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	4098.010	30.91	29.58	6.92	36.90	30.51	54.00	-23.49 HORIZONTAL Average
2	4098.010	45.33	29.58	6.92	36.90	44.93	74.00	-29.07 HORIZONTAL Peak
3	4924.721	32.59	31.01	7.49	36.95	34.14	54.00	-19.86 HORIZONTAL Average
4	4924.721	46.39	31.01	7.49	36.95	47.94	74.00	-26.06 HORIZONTAL Peak
5	6974.982	32.53	35.08	7.27	36.94	37.94	54.00	-16.06 HORIZONTAL Average
6	6974.982	44.28	35.08	7.27	36.94	49.69	74.00	-24.31 HORIZONTAL Peak
7	7386.882	30.10	35.85	7.42	36.92	36.45	54.00	-17.55 HORIZONTAL Average
8	7386.882	43.57	35.85	7.42	36.92	49.92	74.00	-24.08 HORIZONTAL Peak
9	9848.789	30.60	37.82	8.46	37.09	39.79	54.00	-14.21 HORIZONTAL Average
10	9848.789	43.42	37.82	8.46	37.09	52.61	74.00	-21.39 HORIZONTAL Peak
11	12310.220	27.09	39.03	11.10	36.97	40.25	54.00	-13.75 HORIZONTAL Average
12	12310.220	42.60	39.03	11.10	36.97	55.76	74.00	-18.24 HORIZONTAL Peak

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

	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	3790.361	29.99	28.97	7.83	36.92	29.87	54.00	-24.13 VERTICAL Average
2	3790.361	44.82	28.97	7.83	36.92	44.70	74.00	-29.30 VERTICAL Peak
3	4924.721	32.26	31.01	7.49	36.95	33.81	54.00	-20.19 VERTICAL Average
4	4924.721	47.72	31.01	7.49	36.95	49.27	74.00	-24.73 VERTICAL Peak
5	6835.278	28.93	34.89	7.21	36.96	34.07	54.00	-19.93 VERTICAL Average
6	6835.278	43.47	34.89	7.21	36.96	48.61	74.00	-25.39 VERTICAL Peak
7	7386.020	30.03	35.85	7.42	36.92	36.38	54.00	-17.62 VERTICAL Average
8	7386.020	42.63	35.85	7.42	36.92	48.98	74.00	-25.02 VERTICAL Peak
9	9848.724	28.65	37.82	8.46	37.09	37.84	54.00	-16.16 VERTICAL Average
10	9848.724	43.23	37.82	8.46	37.09	52.42	74.00	-21.58 VERTICAL Peak
11	12310.380	25.87	39.03	11.10	36.97	39.03	54.00	-14.97 VERTICAL Average
12	12310.380	40.31	39.03	11.10	36.97	53.47	74.00	-20.53 VERTICAL Peak



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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Limit	Over				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	Pol/Phase Remark
1	39.715	21.98	12.60	0.60	23.65	11.53	40.00	-28.47	HORIZONTAL QP
2	50.057	23.68	13.00	0.60	24.87	12.41	40.00	-27.59	HORIZONTAL QP
3	153.200	27.97	13.32	1.22	28.11	14.40	43.50	-29.10	HORIZONTAL QP
4	180.649	29.40	12.67	1.34	28.09	15.32	43.50	-28.18	HORIZONTAL QP
5	661.151	29.02	21.16	2.13	28.85	23.46	46.00	-22.54	HORIZONTAL QP
6	922.516	29.16	24.20	3.72	28.40	28.68	46.00	-17.32	HORIZONTAL QP

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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Limit	Over				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	Pol/Phase Remark
1	3901.516	29.75	29.30	7.56	36.91	29.70	54.00	-24.30	HORIZONTAL Average
2	3901.516	44.61	29.30	7.56	36.91	44.56	74.00	-29.44	HORIZONTAL Peak
3	4844.975	31.72	30.88	6.31	36.94	31.97	54.00	-22.03	HORIZONTAL Average
4	4844.975	45.95	30.88	6.31	36.94	46.20	74.00	-27.80	HORIZONTAL Peak
5	7266.144	26.43	35.60	7.36	36.92	32.47	54.00	-21.53	HORIZONTAL Average
6	7266.144	42.97	35.60	7.36	36.92	49.01	74.00	-24.99	HORIZONTAL Peak
7	8343.918	28.76	36.20	8.13	36.92	36.17	54.00	-17.83	HORIZONTAL Average
8	8343.918	44.06	36.20	8.13	36.92	51.47	74.00	-22.53	HORIZONTAL Peak
9	9648.717	28.63	37.54	8.18	37.08	37.27	54.00	-16.73	HORIZONTAL Average
10	9648.717	43.34	37.54	8.18	37.08	51.98	74.00	-22.02	HORIZONTAL Peak
11	12110.220	26.45	39.37	10.82	37.15	39.49	54.00	-14.51	HORIZONTAL Average
12	12110.220	40.51	39.37	10.82	37.15	53.55	74.00	-20.45	HORIZONTAL Peak



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

	Freq	ReadAntenna		Cable	Preamp	Level	Limit	Over	Pol/Phase	Remark
		Level	Factor	Loss	Factor		Line	Limit		
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	46.503	24.96	12.90	0.68	24.57	13.97	40.00	-26.03	VERTICAL	QP
2	64.887	27.44	11.50	0.65	25.38	14.21	40.00	-25.79	VERTICAL	QP
3	151.067	28.32	13.29	1.19	28.12	14.68	43.50	-28.82	VERTICAL	QP
4	462.346	29.39	17.73	2.00	29.47	19.65	46.00	-26.35	VERTICAL	QP
5	694.417	29.96	21.38	2.25	28.87	24.72	46.00	-21.28	VERTICAL	QP
6	916.069	29.36	24.13	3.60	28.35	28.74	46.00	-17.26	VERTICAL	QP

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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Limit Line	Over Limit	Pol/Phase	Remark		
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	4133.699	30.78	29.62	6.79	36.90	30.29	54.00	-23.71	VERTICAL Average
2	4133.699	45.75	29.62	6.79	36.90	45.26	74.00	-28.74	VERTICAL Peak
3	4844.993	31.83	30.88	6.31	36.94	32.08	54.00	-21.92	VERTICAL Average
4	4844.993	44.32	30.88	6.31	36.94	44.57	74.00	-29.43	VERTICAL Peak
5	7266.806	26.88	35.60	7.36	36.92	32.92	54.00	-21.08	VERTICAL Average
6	7266.806	43.15	35.60	7.36	36.92	49.19	74.00	-24.81	VERTICAL Peak
7	8200.463	27.58	36.35	8.25	36.91	35.27	54.00	-18.73	VERTICAL Average
8	8200.463	43.53	36.35	8.25	36.91	51.22	74.00	-22.78	VERTICAL Peak
9	9688.430	28.86	37.61	8.25	37.08	37.64	54.00	-16.36	VERTICAL Average
10	9688.430	44.89	37.61	8.25	37.08	53.67	74.00	-20.33	VERTICAL Peak
11	12110.850	26.69	39.37	10.82	37.12	39.76	54.00	-14.24	VERTICAL Average
12	12110.850	41.07	39.37	10.82	37.12	54.14	74.00	-19.86	VERTICAL Peak



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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	3757.637	32.29	28.82	7.65	36.92	31.84	54.00	-22.16 HORIZONTAL Average
2	3757.637	45.32	28.82	7.65	36.92	44.87	74.00	-29.13 HORIZONTAL Peak
3	4884.721	30.94	30.95	6.86	36.95	31.80	54.00	-22.20 HORIZONTAL Average
4	4884.721	46.17	30.95	6.86	36.95	47.03	74.00	-26.97 HORIZONTAL Peak
5	6717.762	28.08	34.65	7.18	36.97	32.94	54.00	-21.06 HORIZONTAL Average
6	6717.762	44.17	34.65	7.18	36.97	49.03	74.00	-24.97 HORIZONTAL Peak
7	7326.102	29.78	35.74	7.39	36.92	35.99	54.00	-18.01 HORIZONTAL Average
8	7326.102	43.72	35.74	7.39	36.92	49.93	74.00	-24.07 HORIZONTAL Peak
9	9768.991	29.83	37.74	8.37	37.09	38.85	54.00	-15.15 HORIZONTAL Average
10	9768.991	44.28	37.74	8.37	37.09	53.30	74.00	-20.70 HORIZONTAL Peak
11	12210.420	26.21	39.21	10.98	37.06	39.34	54.00	-14.66 HORIZONTAL Average
12	12210.420	40.42	39.21	10.98	37.06	53.55	74.00	-20.45 HORIZONTAL Peak

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

	Freq	ReadAntenna Level Factor	Cable Preamp Loss Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	3890.255	32.35	29.27	7.61	36.91	32.32	54.00	-21.68 VERTICAL Average
2	3890.255	44.61	29.27	7.61	36.91	44.58	74.00	-29.42 VERTICAL Peak
3	4884.982	34.07	30.95	6.86	36.95	34.93	54.00	-19.07 VERTICAL Average
4	4884.982	47.66	30.95	6.86	36.95	48.52	74.00	-25.48 VERTICAL Peak
5	7386.461	29.12	35.85	7.42	36.92	35.47	54.00	-18.53 VERTICAL Average
6	7386.461	43.87	35.85	7.42	36.92	50.22	74.00	-23.78 VERTICAL Peak
7	8738.852	28.82	36.30	7.98	36.96	36.14	54.00	-17.86 VERTICAL Average
8	8738.852	44.50	36.30	7.98	36.96	51.82	74.00	-22.18 VERTICAL Peak
9	9768.800	29.97	37.74	8.37	37.09	38.99	54.00	-15.01 VERTICAL Average
10	9768.800	43.61	37.74	8.37	37.09	52.63	74.00	-21.37 VERTICAL Peak
11	12210.350	26.93	39.21	10.98	37.06	40.06	54.00	-13.94 VERTICAL Average
12	12210.350	40.73	39.21	10.98	37.06	53.86	74.00	-20.14 VERTICAL Peak



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

	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	4904.977	33.66	30.97	7.07	36.95	34.75	54.00	-19.25 HORIZONTAL Average
2	4904.977	45.88	30.97	7.07	36.95	46.97	74.00	-27.03 HORIZONTAL Peak
3	6231.427	27.08	33.19	6.93	36.99	30.21	54.00	-23.79 HORIZONTAL Average
4	6231.427	44.07	33.19	6.93	36.99	47.20	74.00	-26.80 HORIZONTAL Peak
5	7356.788	27.66	35.78	7.40	36.92	33.92	54.00	-20.08 HORIZONTAL Average
6	7356.788	43.96	35.78	7.40	36.92	50.22	74.00	-23.78 HORIZONTAL Peak
7	8416.584	28.05	36.15	8.07	36.93	35.34	54.00	-18.66 HORIZONTAL Average
8	8416.584	43.54	36.15	8.07	36.93	50.83	74.00	-23.17 HORIZONTAL Peak
9	9808.916	28.34	37.79	8.41	37.09	37.45	54.00	-16.55 HORIZONTAL Average
10	9808.916	44.94	37.79	8.41	37.09	54.05	74.00	-19.95 HORIZONTAL Peak
11	12260.270	26.53	39.15	11.02	37.03	39.67	54.00	-14.33 HORIZONTAL Average
12	12260.270	41.59	39.15	11.02	37.03	54.73	74.00	-19.27 HORIZONTAL Peak

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

	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	3801.333	32.87	29.01	7.89	36.92	32.85	54.00	-21.15 VERTICAL Average
2	3801.333	45.59	29.01	7.89	36.92	45.57	74.00	-28.43 VERTICAL Peak
3	4904.151	32.73	30.97	7.07	36.95	33.82	54.00	-20.18 VERTICAL Average
4	4904.151	46.38	30.97	7.07	36.95	47.47	74.00	-26.53 VERTICAL Peak
5	7356.516	29.75	35.78	7.40	36.92	36.01	54.00	-17.99 VERTICAL Average
6	7356.516	43.58	35.78	7.40	36.92	49.84	74.00	-24.16 VERTICAL Peak
7	8319.836	29.99	36.22	8.15	36.92	37.44	54.00	-16.56 VERTICAL Average
8	8319.836	44.41	36.22	8.15	36.92	51.86	74.00	-22.14 VERTICAL Peak
9	9808.257	29.48	37.79	8.41	37.09	38.59	54.00	-15.41 VERTICAL Average
10	9808.257	41.70	37.79	8.41	37.09	50.81	74.00	-23.19 VERTICAL Peak
11	12260.700	27.09	39.15	11.02	37.03	40.23	54.00	-13.77 VERTICAL Average
12	12260.700	40.08	39.15	11.02	37.03	53.22	74.00	-20.78 VERTICAL Peak



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8 Appendix

8.1 Appendix 15.247

1.6dB Bandwidth

Test Mode	Test Channel	Ant	OBW[MHz]	EBW[MHz]	Limit	Verdict
11B	2412	Ant1	15.688	8.341	0.5	PASS
11B	2442	Ant1	15.574	8.339	0.5	PASS
11B	2462	Ant1	15.603	8.366	0.5	PASS
11G	2412	Ant1	16.475	15.11	0.5	PASS
11G	2442	Ant1	16.436	15.11	0.5	PASS
11G	2462	Ant1	16.450	15.12	0.5	PASS
11N20SISO	2412	Ant1	17.461	15.09	0.5	PASS
11N20SISO	2442	Ant1	17.656	15.99	0.5	PASS
11N20SISO	2462	Ant1	17.657	15.12	0.5	PASS
11N40SISO	2422	Ant1	35.784	35.08	0.5	PASS
11N40SISO	2442	Ant1	35.875	35.10	0.5	PASS
11N40SISO	2452	Ant1	35.912	35.10	0.5	PASS



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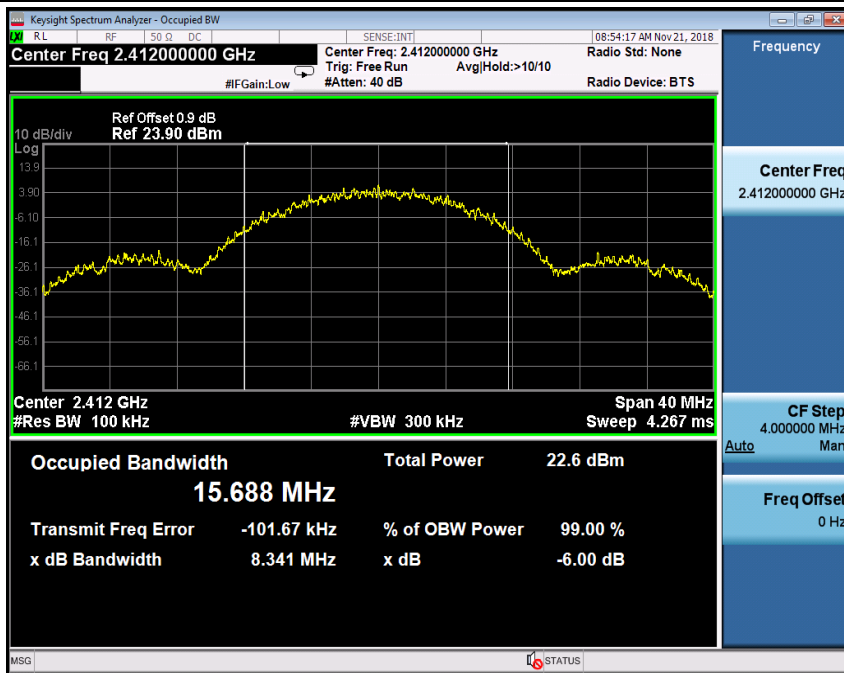
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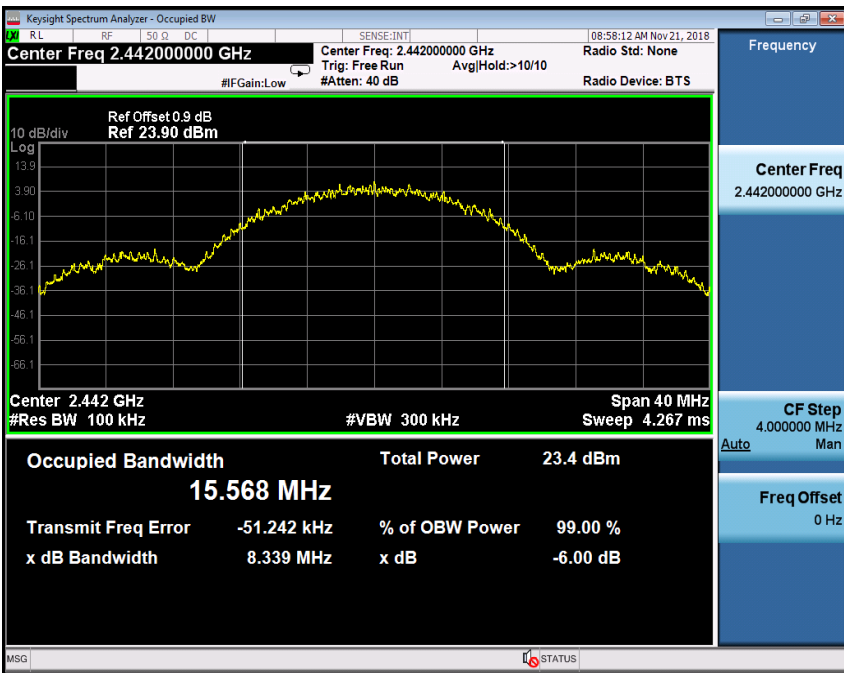
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TEST PLOT

6dB Bandwidth_11B_2412_Ant1



6dB Bandwidth_11B_2442_Ant1



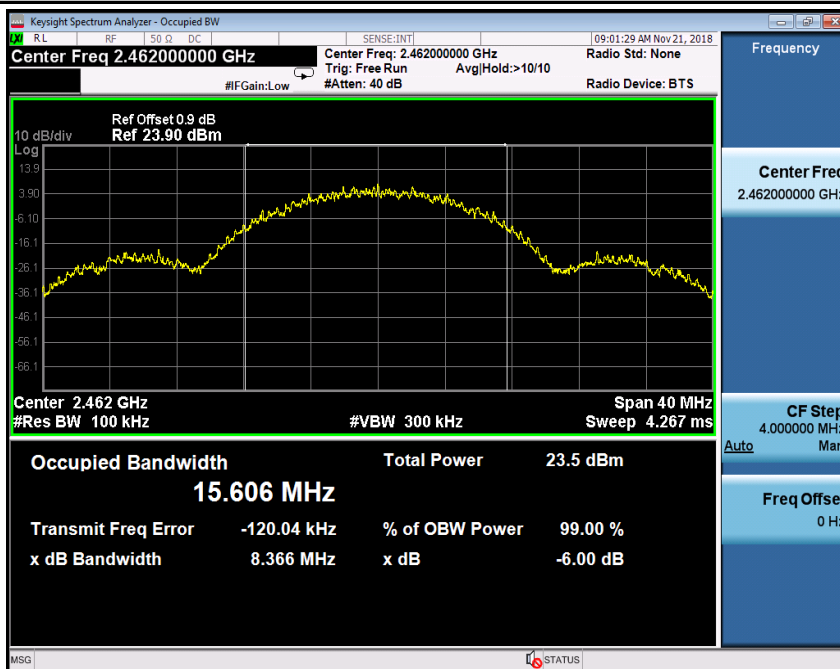
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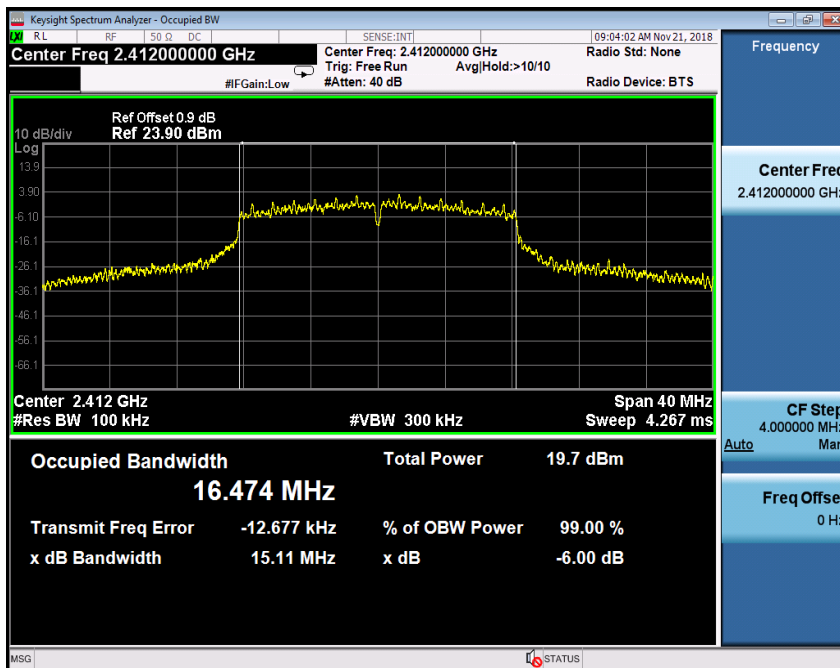
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6dB Bandwidth_11B_2462_Ant1



6dB Bandwidth_11G_2412_Ant1



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