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Report No.: GZEM190801489203
Page: 1 of 140
FCC ID: PUU-CSWONBLXWF1T

TEST REPORT

Application No.: GZEM1908014892CR
Applicant: GE Lighting
Address of Applicant: Nele park, Cleveland, OH 44112
Manufacturer: GE Lighting
Address of Manufacturer: Nele park, Cleveland, OH 44112
Factory: Nanchang Innotech Techonology Co.,Ltd
Address of Factory: No.399, Rule Lake Avenue, Nanchang Airport Economic Zone, Nanchang, China

Equipment Under Test (EUT):

FCC ID: PUU-CSWONBLXWF1T

EUT Name: Smart Switch

Model No.: CSWONBLPWF1, CSWONBLTWF1.

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

HVIN: CSWONBLPWF1T, CSWONBLTWF1

Trade Mark: GE

Standard(s) : 47 CFR Part 15, Subpart C 15.247

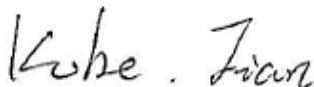
Date of Receipt: 2019-08-07

Date of Test: 2019-08-13 to 2019-08-19

Date of Issue: 2019-08-24

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



Kobe Jian

EMC Laboratory Manager

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

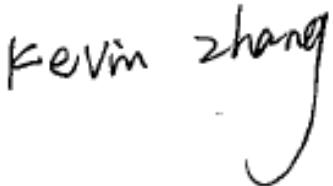
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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2019-08-24		Original

Authorized for issue by:			
Tested By		2019-08-13 to 2019-08-19	
	Kevin_Zhang /Project Engineer	Date	
Checked By		2019-08-24	
	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)	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

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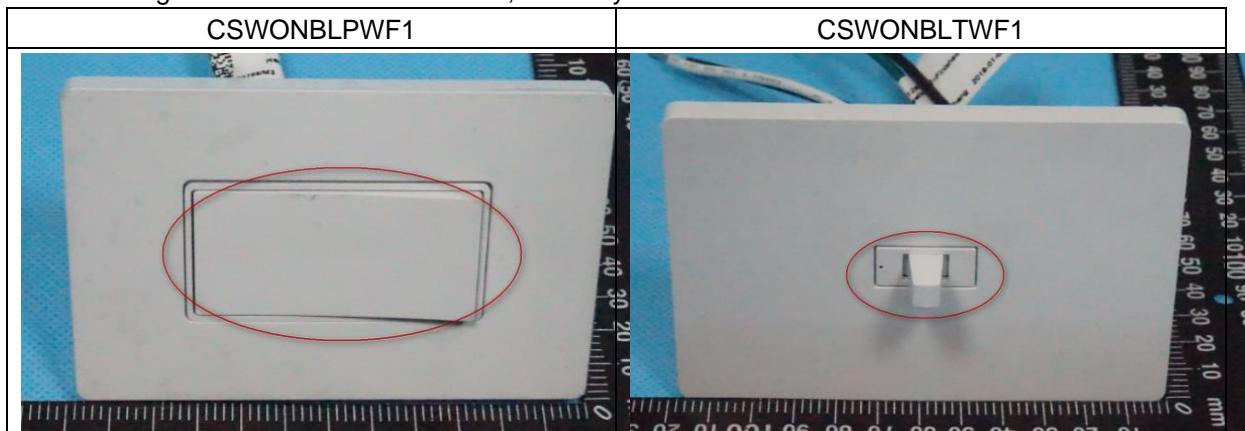


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☒ Declaration of EUT Family Grouping:

Model No.: CSWONBLPWF1, CSWONBLTWF1

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 button.



Model CSWONBLPWF1 and CSWONBLTWF1 have the same Wi-Fi and Bluetooth modules.

Therefore only one model CSWONBLTWF1 was tested in this report.

Model No.:	HVIN:
CSWONBLPWF1	CSWONBLPWF1T
CSWONBLTWF1	CSWONBLTWF1T

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4 General Information

4.1 Details of E.U.T.

Power Supply:	AC 120V 60Hz
Test Voltage:	AC 120V 60Hz
Cable:	GROUND cable (unshielded, 20cm) NEUTRAL cable (unshielded, 20cm) LINE cable (unshielded, 20cm) LOAD cable (unshielded, 20cm)
Antenna Gain	0dBi
Antenna Type	Integrated 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 Environment Parameter

Environment Parameter	Selected Values During Tests	
Relative Humidity	Ambient	
Value	Temperature(°C)	Voltage(V)
TNVN	25	120
TLVN	0	120
THVN	50	120

Note:

VN: Normal Voltage

TN: Normal Temperature

TL: Low Extreme Test Temperature

TH: High Extreme Test Temperature



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Operation Frequency each of channel (802.11b/g/n HT20)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	5	2432MHz	9	2452MHz		
2	2417MHz	6	2437MHz	10	2457MHz		
3	2422MHz	7	2442MHz	11	2462MHz		
4	2427MHz	8	2447MHz				

Operation Frequency each of channel(802.11n HT40)					
Channel	Frequency	Channel	Frequency	Channel	Frequency
3	2422MHz	6	2437MHz	9	2452MHz
4	2427MHz	7	2442MHz		
5	2432MHz	8	2447MHz		

Using test software was control EUT work in continuous transmitter and receiver mode. And select test channel as below:

For 802.11b/g/n (HT20):

Channel	Frequency
The lowest channel (CH1)	2412MHz
The middle channel (CH7)	2442MHz
The highest channel (CH11)	2462MHz

For 802.11n (HT40):

Channel	Frequency
The lowest channel (CH3)	2422MHz
The middle channel (CH7)	2442MHz
The highest channel (CH9)	2452MHz

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4.3 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
iPad mini	Apple	A1432	/
Laptop	Apple	A1466	C1MQ2JLNG940
Router	NETGEAR	DGN2200	REF. No. SEA2200

4.4 Measurement Uncertainty

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	$\pm 3\%$

4.5 Test Location

All tests were performed at:

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Guangzhou, China 510663

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

No tests were sub-contracted.

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4.6 Test Facility

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

● NVLAP (Lab Code: 200611-0)

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

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

● ACMA

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

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

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

● CNAS (Lab Code: L0167)

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2018 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2017 General Requirements) for the Competence of Testing Laboratories.

● FCC Recognized 2.948 Listed Test Firm(Registration No.: 282399)

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

● FCC Recognized Accredited Test Firm(Registration No.: 486818)

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818, Jul 13, 2017.

● Industry Canada (Registration No.: 4620B, CAB identifier: CN0052)

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

● VCCI (Registration No.: R-12460, C-12584, G-10449 and T-11179)

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-12460, C-12584, G-10449 and T-11179 respectively.

● CBTL (Lab Code: TL129)

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2005, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.

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4.7 Deviation from Standards

None

4.8 Abnormalities from Standard Conditions

None



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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-Netwok	R&S	ENV216	EMC0118	2019-01-11	2020-01-10
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	2018-09-20	2020-09-19
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
MI CABLE	SGS	0.8M	EMC2136	2017-11-02	2019-11-01
MI CABLE	SGS	0.8M	EMC2137	2017-11-02	2019-11-01

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
MI CABLE	SGS	0.8M	EMC2136	2017-11-02	2019-11-01
MI CABLE	SGS	0.8M	EMC2137	2017-11-02	2019-11-01

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
MI CABLE	SGS	0.8M	EMC2136	2017-11-02	2019-11-01
MI CABLE	SGS	0.8M	EMC2137	2017-11-02	2019-11-01

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Conducted Band Edges Measurement					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
MXA Signal Analyzer	AgilentTechnologies	N9020A	SEM004-10	2019-02-24	2020-02-23
ESG Vector Signal Generator	Keysight	E4438C	SEM006-03	2019-04-05	2020-04-04
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
MI CABLE	SGS	0.8M	EMC2136	2017-11-02	2019-11-01
MI CABLE	SGS	0.8M	EMC2137	2017-11-02	2019-11-01

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
MI CABLE	SGS	0.8M	EMC2136	2017-11-02	2019-11-01
MI CABLE	SGS	0.8M	EMC2137	2017-11-02	2019-11-01

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	2019-01-20	2020-01-19
EMI Test Receiver	Rohde & Schwarz	ESCI	EMC0056	2019-01-20	2020-01-19
Chamber cable	HangTianXing	N/A	EMC0542	2019-06-28	2021-06-27
Trilog Broadband Antenna 30MHz-1GHz	SCHWARZBECKMESS-ELEKTRONIK	VULB 9160	EMC2025	2016-09-08	2019-09-07
Bi-log Type Antenna	Schaffner -Chase	CBL6112B	EMC0524	2016-09-08	2019-09-07
Bi-log Type Antenna	Schaffner -Chase	CBL6143	EMC0519	2017-05-04	2020-05-03
Horn Antenna 1GHz-18GHz	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2016-09-09	2019-09-08
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2019-01-07	2020-01-08
Amplifier	HP	8447F	EMC2065	2019-05-29	2020-05-28
Pre-Amplifier MH648A	ANRITSU CORP	MH648A	EMC2086	2018-11-19	2019-11-18
Active Loop Antenna	EMCO	6502	EMC0523	2018-03-05	2020-03-04

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High Pass Filter(915MHz)	FSY MICROWAVE	HM1465-9SS	EMC2079	2019-01-11	2020-01-10
2.4GHz Filter	Micro-Tronics	BRM 50702	EMC2069	2019-01-11	2020-01-10
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2018-12-08	2019-12-07
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2017-12-19	2019-12-18
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	SCHWARZBECKMESS-ELEKTRONIK	VULB 9168	SEM003-18	2019-02-22	2022-02-22
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A

Radiated Spurious Emissions

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMI Test Receiver	Rohde & Schwarz	ESIB26	EMC0522	2019-01-20	2020-01-19
EMI Test Receiver	Rohde & Schwarz	ESCI	EMC0056	2019-01-20	2020-01-19
Chamber cable	HangTianXing	N/A	EMC0542	2019-06-28	2021-06-27
Trilog Broadband Antenna 30MHz-1GHz	SCHWARZBECKMESS-ELEKTRONIK	VULB 9160	EMC2025	2016-09-08	2019-09-07
Bi-log Type Antenna	Schaffner -Chase	CBL6112B	EMC0524	2016-09-08	2019-09-07
Bi-log Type Antenna	Schaffner -Chase	CBL6143	EMC0519	2017-05-04	2020-05-03
Horn Antenna 1GHz-18GHz	SCHWARZBECKMESS-ELEKTRONIK	BBHA 9120D	EMC2026	2016-09-09	2019-09-08
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2019-01-07	2020-01-08
Amplifier	HP	8447F	EMC2065	2019-05-29	2020-05-28
Pre-Amplifier MH648A	ANRITSU CORP	MH648A	EMC2086	2018-11-19	2019-11-18
Active Loop Antenna	EMCO	6502	EMC0523	2018-03-05	2020-03-04
High Pass Filter(915MHz)	FSY MICROWAVE	HM1465-9SS	EMC2079	2019-01-11	2020-01-10
2.4GHz Filter	Micro-Tronics	BRM 50702	EMC2069	2019-01-11	2020-01-10
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2018-12-08	2019-12-07
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2017-12-19	2019-12-18
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	SCHWARZBECKMESS-ELEKTRONIK	VULB 9168	SEM003-18	2019-02-22	2022-02-22
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A

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General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
DMM	Fluke	73	EMC0006	2019-07-16	2020-07-15
DMM	Fluke	73	EMC0007	2019-07-16	2020-07-15



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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.



EUT Antenna:

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

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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(dB μ V)	
	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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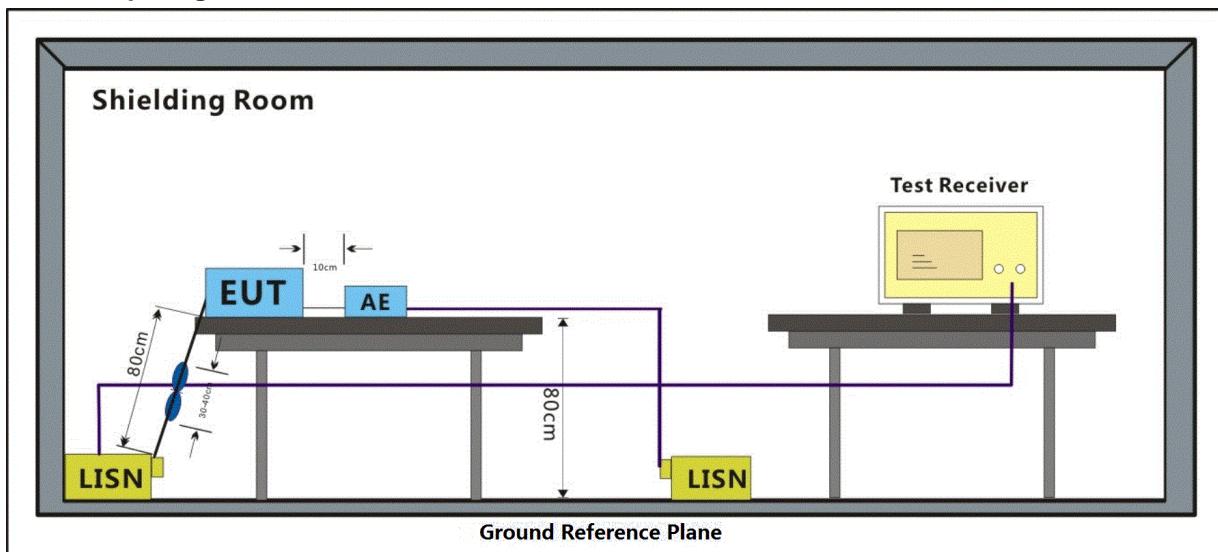
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7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 23.2 °C Humidity: 52 % RH Atmospheric Pressure: 1020 mbar
Test mode d: Wireless Working_Keep the EUT in communication with other device.

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.

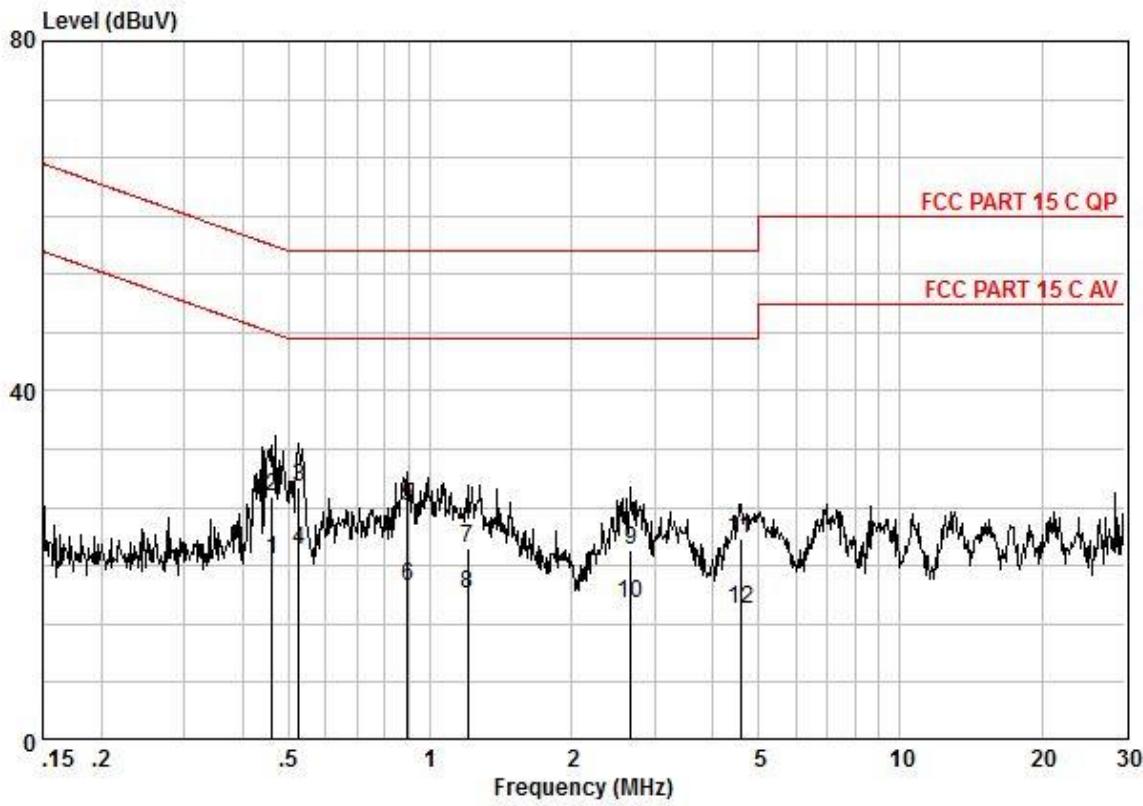
Remark: LISN=Read Level+ Cable Loss+ LISN Factor

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Mode:d; Line:Live Line



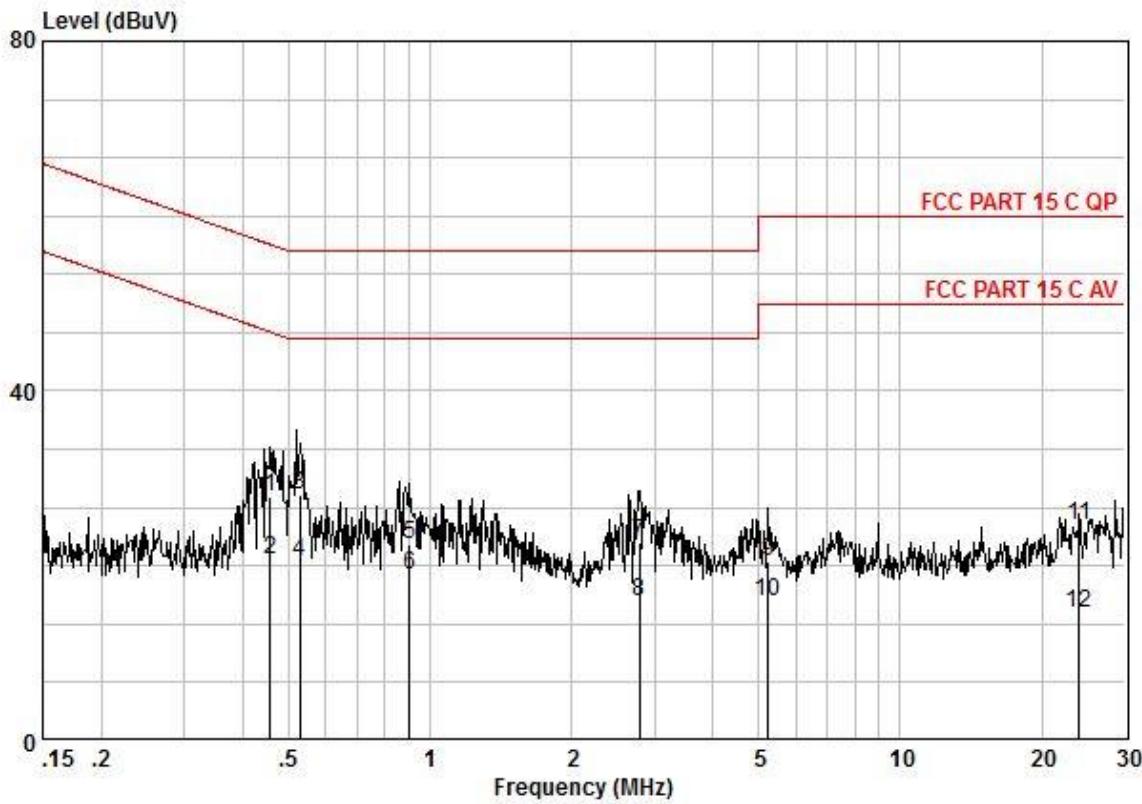
Pol : LIVE
No :
Model :

Frequency MHz	read level dBuV	Cable Loss dB	LISN Factor dB	Measured level dBuV	Limit Line dBuV	Over limit dB	Remark
0.46	11.02	0.10	9.67	20.78	46.67	-25.89	Average
0.46	18.06	0.10	9.67	27.83	56.67	-28.84	QP
0.53	19.26	0.10	9.67	29.03	56.00	-26.97	QP
0.53	12.07	0.10	9.67	21.84	46.00	-24.16	Average
0.89	16.95	0.10	9.67	26.72	56.00	-29.28	QP
0.89	7.93	0.10	9.67	17.70	46.00	-28.30	Average
1.20	12.18	0.10	9.68	21.96	56.00	-34.04	QP
1.20	7.08	0.10	9.68	16.86	46.00	-29.14	Average
2.68	11.83	0.17	9.69	21.69	56.00	-34.31	QP
2.68	5.84	0.17	9.69	15.70	46.00	-30.30	Average
4.57	13.15	0.20	9.71	23.06	56.00	-32.94	QP
4.57	5.07	0.20	9.71	14.98	46.00	-31.02	Average

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Mode:d; 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
0.46	18.12	0.10	9.60	27.82	56.76	-28.94	QP
0.46	11.03	0.10	9.60	20.73	46.76	-26.03	Average
0.53	18.33	0.10	9.60	28.03	56.00	-27.97	QP
0.53	10.73	0.10	9.60	20.43	46.00	-25.57	Average
0.90	12.75	0.10	9.61	22.46	56.00	-33.54	QP
0.90	9.17	0.10	9.61	18.88	46.00	-27.12	Average
2.79	12.80	0.18	9.62	22.60	56.00	-33.40	QP
2.79	6.05	0.18	9.62	15.86	46.00	-30.14	Average
5.25	10.74	0.20	9.66	20.60	60.00	-39.40	QP
5.25	6.12	0.20	9.66	15.98	50.00	-34.02	Average
24.01	14.17	0.40	10.03	24.60	60.00	-35.40	QP
24.01	4.17	0.40	10.03	14.60	50.00	-35.40	Average

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7.2 Minimum 6dB Bandwidth

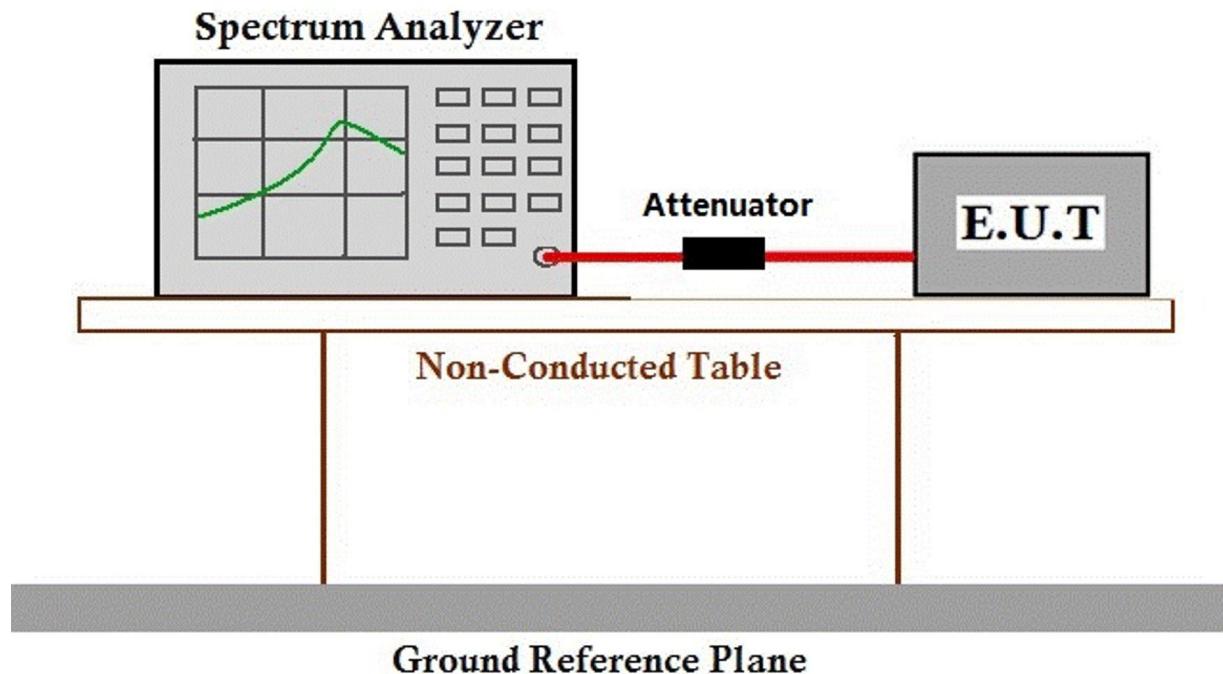
Test Requirement 47 CFR Part 15, Subpart C 15.247a(2)
Test Method: ANSI C63.10 (2013) Section 11.8.1
Limit: ≥ 500 kHz

7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 25.3 °C Humidity: 55.4 % RH Atmospheric Pressure: 1020 mbar
Test mode c: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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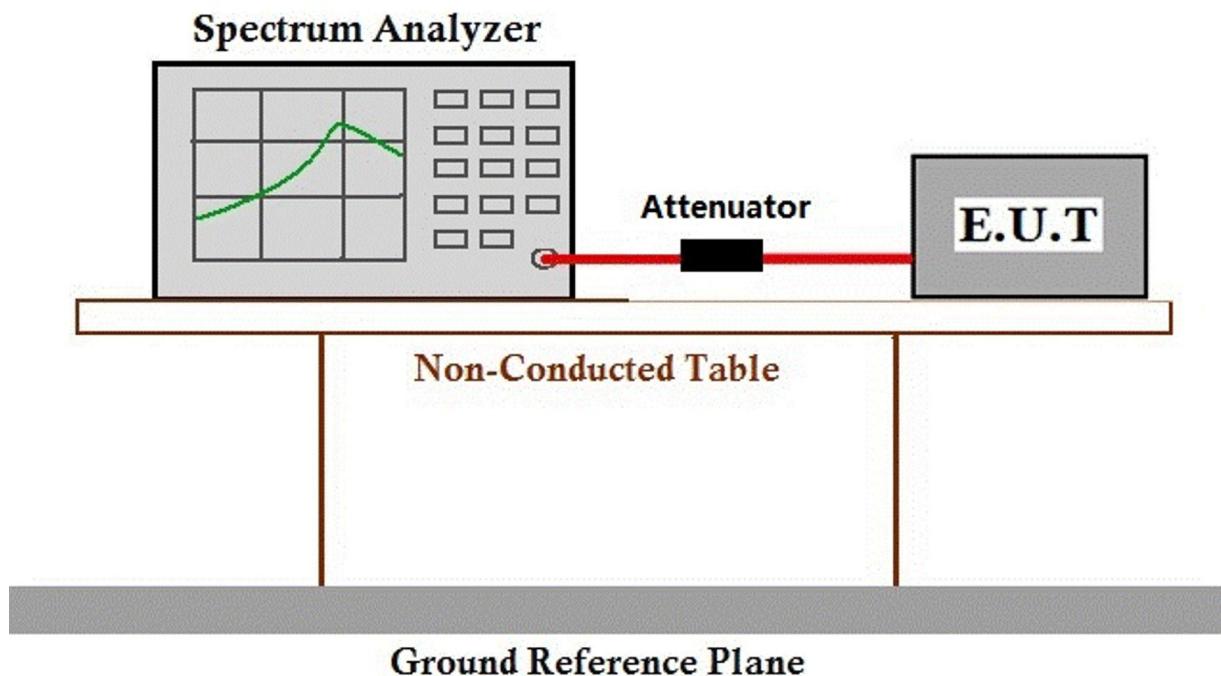
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7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 25.3 °C Humidity: 55.4 % RH Atmospheric Pressure: 1020 mbar
Test mode c: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

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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

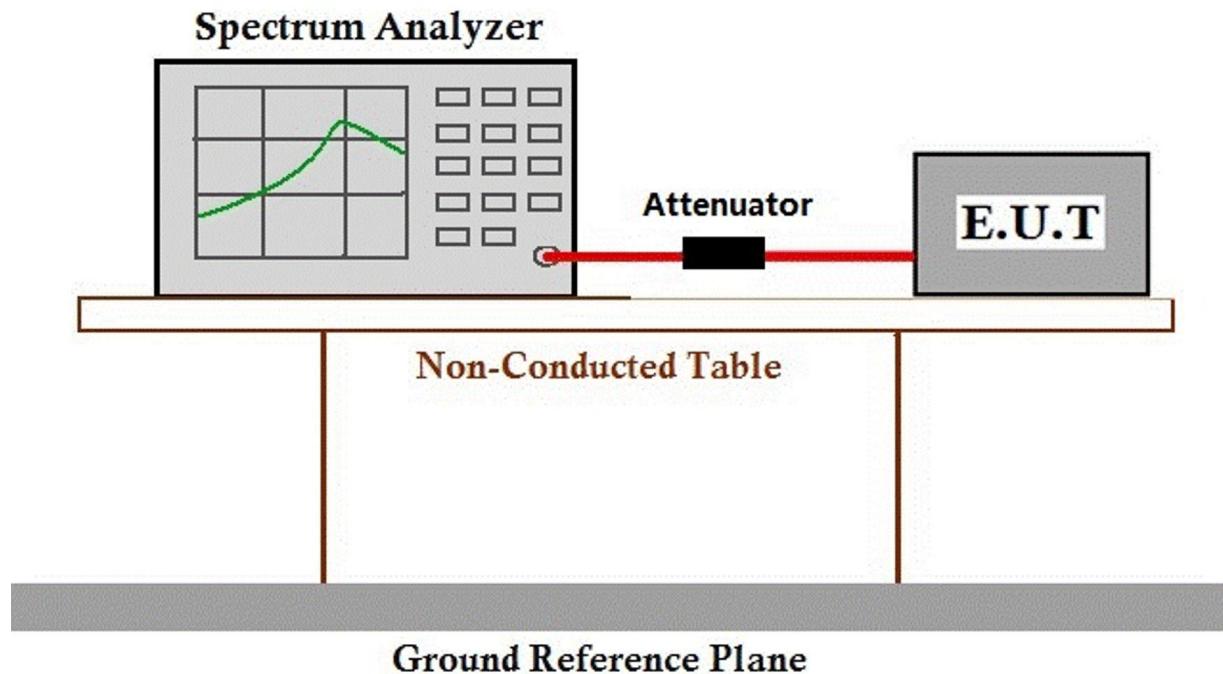
7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 25.3 °C Humidity: 55.4 % RH Atmospheric Pressure: 1020 mbar

Test mode c: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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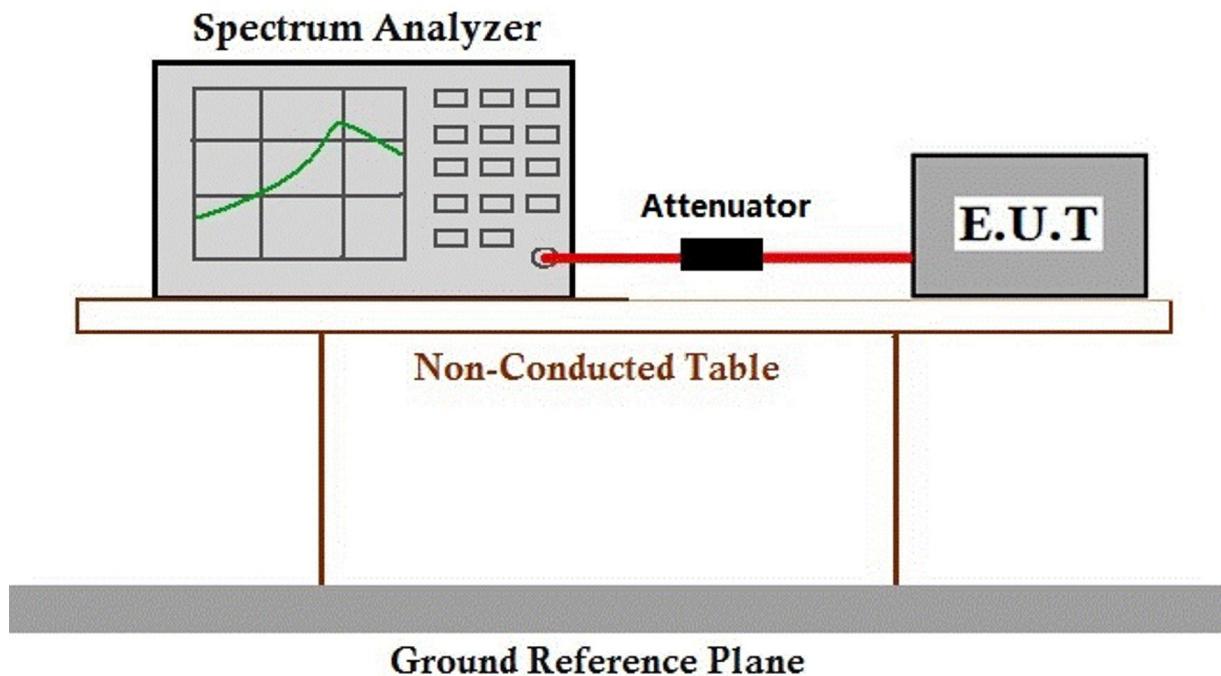
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7.5.1 E.U.T. Operation

Operating Environment:

Temperature: 25.3 °C Humidity: 55.4 % RH Atmospheric Pressure: 1020 mbar
Test mode c: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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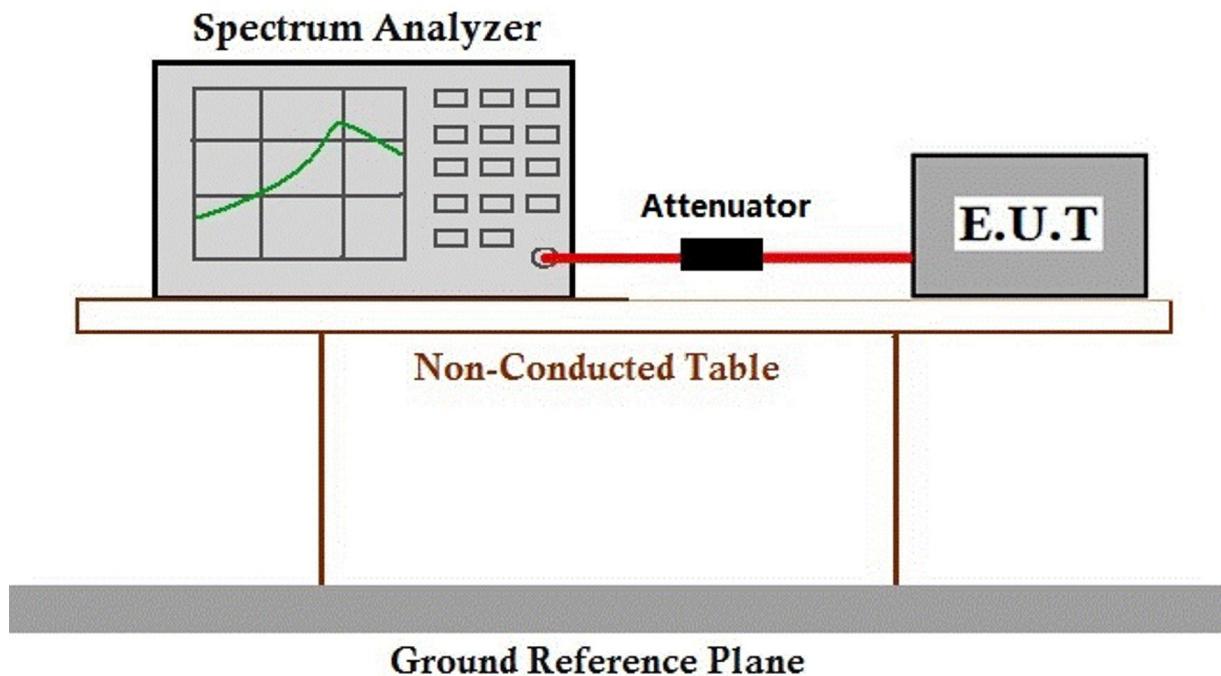
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7.6.1 E.U.T. Operation

Operating Environment:

Temperature: 25.3 °C Humidity: 55.4 % RH Atmospheric Pressure: 1020 mbar
Test mode c: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:

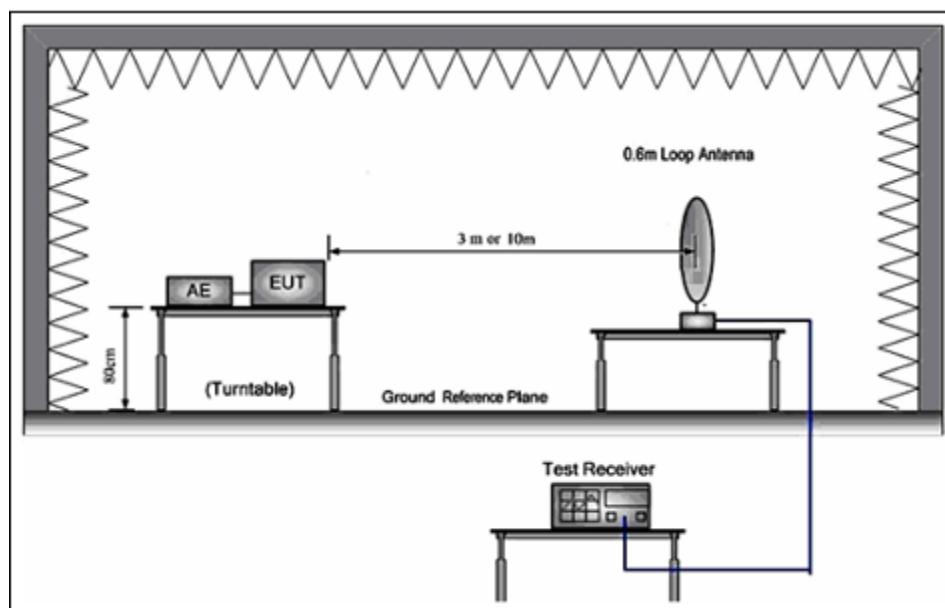
Temperature: 25.4 °C Humidity: 55.5 % RH Atmospheric Pressure: 1020 mbar

Test mode

c: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

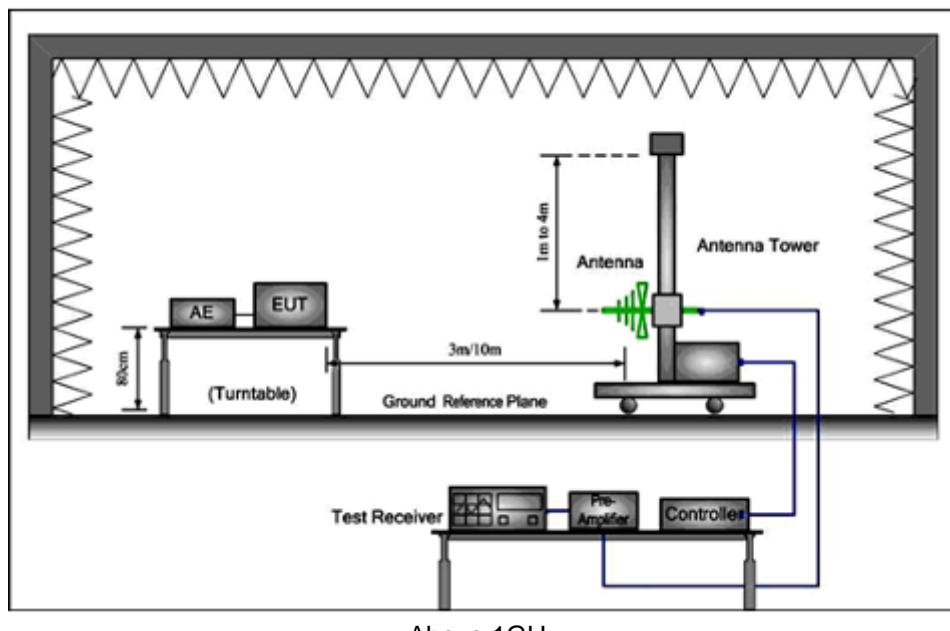
9kHz to 30MHz



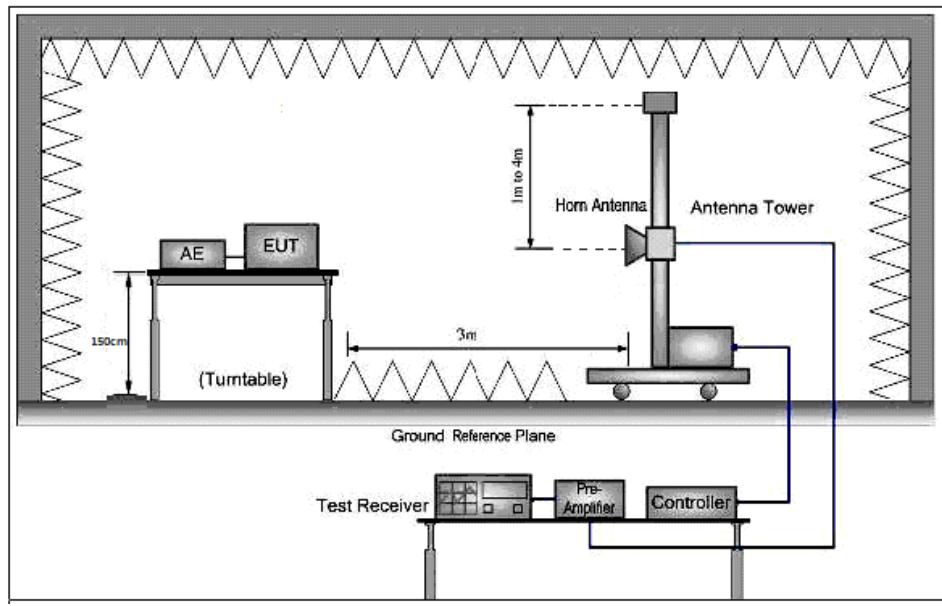
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30MHz to 1GHz



Above 1GHz



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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:c; Polarization:Horizontal; Modulation:b; bandwidth:20MHz; Channel:Low

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	28.63	26.25	3.32	37.44	20.76	54.00	-33.24	HORIZONTAL Average
2	2310.000	45.17	26.25	3.32	37.44	37.30	74.00	-36.70	HORIZONTAL Peak
3	2390.000	29.67	26.43	3.48	37.42	22.16	54.00	-31.84	HORIZONTAL Average
4	2390.000	45.24	26.43	3.48	37.42	37.73	74.00	-36.27	HORIZONTAL Peak
5	2483.500	27.80	26.58	3.53	37.40	20.51	54.00	-33.49	HORIZONTAL Average
6	2483.500	46.13	26.58	3.53	37.40	38.84	74.00	-35.16	HORIZONTAL Peak
7	2500.000	30.98	26.60	3.40	37.39	23.59	54.00	-30.41	HORIZONTAL Average
8	2500.000	45.91	26.60	3.40	37.39	38.52	74.00	-35.48	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	33.49	26.25	3.32	37.44	25.62	54.00	-28.38	VERTICAL Average
2	2310.000	46.55	26.25	3.32	37.44	38.68	74.00	-35.32	VERTICAL Peak
3	2390.000	33.86	26.43	3.48	37.42	26.35	54.00	-27.65	VERTICAL Average
4	2390.000	46.48	26.43	3.48	37.42	38.97	74.00	-35.03	VERTICAL Peak
5	2483.500	32.55	26.58	3.53	37.40	25.26	54.00	-28.74	VERTICAL Average
6	2483.500	45.30	26.58	3.53	37.40	38.01	74.00	-35.99	VERTICAL Peak
7	2500.000	31.10	26.60	3.40	37.39	23.71	54.00	-30.29	VERTICAL Average
8	2500.000	47.10	26.60	3.40	37.39	39.71	74.00	-34.29	VERTICAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	31.53	26.25	3.32	37.44	23.66	54.00	-30.34	HORIZONTAL Average
2	2310.000	45.76	26.25	3.32	37.44	37.89	74.00	-36.11	HORIZONTAL Peak
3	2390.000	34.37	26.43	3.48	37.42	26.86	54.00	-27.14	HORIZONTAL Average
4	2390.000	46.37	26.43	3.48	37.42	38.86	74.00	-35.14	HORIZONTAL Peak
5	2483.500	30.83	26.58	3.53	37.40	23.54	54.00	-30.46	HORIZONTAL Average
6	2483.500	46.55	26.58	3.53	37.40	39.26	74.00	-34.74	HORIZONTAL Peak
7	2500.000	30.30	26.60	3.40	37.39	22.91	54.00	-31.09	HORIZONTAL Average
8	2500.000	47.46	26.60	3.40	37.39	40.07	74.00	-33.93	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	32.08	26.25	3.32	37.44	24.21	54.00	-29.79	VERTICAL Average
2	2310.000	46.17	26.25	3.32	37.44	38.30	74.00	-35.70	VERTICAL Peak
3	2390.000	31.12	26.43	3.48	37.42	23.61	54.00	-30.39	VERTICAL Average
4	2390.000	46.09	26.43	3.48	37.42	38.58	74.00	-35.42	VERTICAL Peak
5	2483.500	30.45	26.58	3.53	37.40	23.16	54.00	-30.84	VERTICAL Average
6	2483.500	45.98	26.58	3.53	37.40	38.69	74.00	-35.31	VERTICAL Peak
7	2500.000	32.29	26.60	3.40	37.39	24.90	54.00	-29.10	VERTICAL Average
8	2500.000	46.40	26.60	3.40	37.39	39.01	74.00	-34.99	VERTICAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	29.40	26.25	3.32	37.44	21.53	54.00	-32.47	HORIZONTAL Average
2	2310.000	44.38	26.25	3.32	37.44	36.51	74.00	-37.49	HORIZONTAL Peak
3	2390.000	31.08	26.43	3.48	37.42	23.57	54.00	-30.43	HORIZONTAL Average
4	2390.000	45.94	26.43	3.48	37.42	38.43	74.00	-35.57	HORIZONTAL Peak
5	2483.500	30.92	26.58	3.53	37.40	23.63	54.00	-30.37	HORIZONTAL Average
6	2483.500	45.37	26.58	3.53	37.40	38.08	74.00	-35.92	HORIZONTAL Peak
7	2500.000	28.77	26.60	3.40	37.39	21.38	54.00	-32.62	HORIZONTAL Average
8	2500.000	46.52	26.60	3.40	37.39	39.13	74.00	-34.87	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	32.29	26.25	3.32	37.44	24.42	54.00	-29.58	VERTICAL Average
2	2310.000	44.38	26.25	3.32	37.44	36.51	74.00	-37.49	VERTICAL Peak
3	2390.000	31.09	26.43	3.48	37.42	23.58	54.00	-30.42	VERTICAL Average
4	2390.000	46.07	26.43	3.48	37.42	38.56	74.00	-35.44	VERTICAL Peak
5	2483.500	31.89	26.58	3.53	37.40	24.60	54.00	-29.40	VERTICAL Average
6	2483.500	46.06	26.58	3.53	37.40	38.77	74.00	-35.23	VERTICAL Peak
7	2500.000	30.01	26.60	3.40	37.39	22.62	54.00	-31.38	VERTICAL Average
8	2500.000	46.77	26.60	3.40	37.39	39.38	74.00	-34.62	VERTICAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	30.54	26.25	3.32	37.44	22.67	54.00	-31.33	HORIZONTAL Average
2	2310.000	44.70	26.25	3.32	37.44	36.83	74.00	-37.17	HORIZONTAL Peak
3	2390.000	31.48	26.43	3.48	37.42	23.97	54.00	-30.03	HORIZONTAL Average
4	2390.000	45.08	26.43	3.48	37.42	37.57	74.00	-36.43	HORIZONTAL Peak
5	2483.500	30.41	26.58	3.53	37.40	23.12	54.00	-30.88	HORIZONTAL Average
6	2483.500	44.81	26.58	3.53	37.40	37.52	74.00	-36.48	HORIZONTAL Peak
7	2500.000	29.79	26.60	3.40	37.39	22.40	54.00	-31.60	HORIZONTAL Average
8	2500.000	45.86	26.60	3.40	37.39	38.47	74.00	-35.53	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	29.10	26.25	3.32	37.44	21.23	54.00	-32.77	VERTICAL Average
2	2310.000	45.80	26.25	3.32	37.44	37.93	74.00	-36.07	VERTICAL Peak
3	2390.000	30.72	26.43	3.48	37.42	23.21	54.00	-30.79	VERTICAL Average
4	2390.000	46.10	26.43	3.48	37.42	38.59	74.00	-35.41	VERTICAL Peak
5	2483.500	31.06	26.58	3.53	37.40	23.77	54.00	-30.23	VERTICAL Average
6	2483.500	45.77	26.58	3.53	37.40	38.48	74.00	-35.52	VERTICAL Peak
7	2500.000	30.90	26.60	3.40	37.39	23.51	54.00	-30.49	VERTICAL Average
8	2500.000	45.62	26.60	3.40	37.39	38.23	74.00	-35.77	VERTICAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	28.09	26.25	3.32	37.44	20.22	54.00	-33.78	HORIZONTAL Average
2	2310.000	44.55	26.25	3.32	37.44	36.68	74.00	-37.32	HORIZONTAL Peak
3	2390.000	30.65	26.43	3.48	37.42	23.14	54.00	-30.86	HORIZONTAL Average
4	2390.000	45.51	26.43	3.48	37.42	38.00	74.00	-36.00	HORIZONTAL Peak
5	2483.500	31.97	26.58	3.53	37.40	24.68	54.00	-29.32	HORIZONTAL Average
6	2483.500	46.03	26.58	3.53	37.40	38.74	74.00	-35.26	HORIZONTAL Peak
7	2500.000	31.55	26.60	3.40	37.39	24.16	54.00	-29.84	HORIZONTAL Average
8	2500.000	45.43	26.60	3.40	37.39	38.04	74.00	-35.96	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	31.03	26.25	3.32	37.44	23.16	54.00	-30.84	VERTICAL Average
2	2310.000	45.57	26.25	3.32	37.44	37.70	74.00	-36.30	VERTICAL Peak
3	2390.000	30.47	26.43	3.48	37.42	22.96	54.00	-31.04	VERTICAL Average
4	2390.000	44.71	26.43	3.48	37.42	37.20	74.00	-36.80	VERTICAL Peak
5	2483.500	31.30	26.58	3.53	37.40	24.01	54.00	-29.99	VERTICAL Average
6	2483.500	45.31	26.58	3.53	37.40	38.02	74.00	-35.98	VERTICAL Peak
7	2500.000	30.87	26.60	3.40	37.39	23.48	54.00	-30.52	VERTICAL Average
8	2500.000	46.11	26.60	3.40	37.39	38.72	74.00	-35.28	VERTICAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	30.27	26.25	3.32	37.44	22.40	54.00	-31.60	HORIZONTAL Average
2	2310.000	45.54	26.25	3.32	37.44	37.67	74.00	-36.33	HORIZONTAL Peak
3	2390.000	30.59	26.43	3.48	37.42	23.08	54.00	-30.92	HORIZONTAL Average
4	2390.000	45.17	26.43	3.48	37.42	37.66	74.00	-36.34	HORIZONTAL Peak
5	2483.500	32.24	26.58	3.53	37.40	24.95	54.00	-29.05	HORIZONTAL Average
6	2483.500	45.81	26.58	3.53	37.40	38.52	74.00	-35.48	HORIZONTAL Peak
7	2500.000	30.06	26.60	3.40	37.39	22.67	54.00	-31.33	HORIZONTAL Average
8	2500.000	45.12	26.60	3.40	37.39	37.73	74.00	-36.27	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	32.19	26.25	3.32	37.44	24.32	54.00	-29.68	VERTICAL Average
2	2310.000	44.68	26.25	3.32	37.44	36.81	74.00	-37.19	VERTICAL Peak
3	2390.000	30.98	26.43	3.48	37.42	23.47	54.00	-30.53	VERTICAL Average
4	2390.000	45.49	26.43	3.48	37.42	37.98	74.00	-36.02	VERTICAL Peak
5	2483.500	31.32	26.58	3.53	37.40	24.03	54.00	-29.97	VERTICAL Average
6	2483.500	45.40	26.58	3.53	37.40	38.11	74.00	-35.89	VERTICAL Peak
7	2500.000	28.67	26.60	3.40	37.39	21.28	54.00	-32.72	VERTICAL Average
8	2500.000	45.89	26.60	3.40	37.39	38.50	74.00	-35.50	VERTICAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	30.82	26.25	3.32	37.44	22.95	54.00	-31.05	HORIZONTAL Average
2	2310.000	46.22	26.25	3.32	37.44	38.35	74.00	-35.65	HORIZONTAL Peak
3	2390.000	31.22	26.43	3.48	37.42	23.71	54.00	-30.29	HORIZONTAL Average
4	2390.000	45.66	26.43	3.48	37.42	38.15	74.00	-35.85	HORIZONTAL Peak
5	2483.500	28.74	26.58	3.53	37.40	21.45	54.00	-32.55	HORIZONTAL Average
6	2483.500	47.75	26.58	3.53	37.40	40.46	74.00	-33.54	HORIZONTAL Peak
7	2500.000	30.05	26.60	3.40	37.39	22.66	54.00	-31.34	HORIZONTAL Average
8	2500.000	46.41	26.60	3.40	37.39	39.02	74.00	-34.98	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	30.80	26.25	3.32	37.44	22.93	54.00	-31.07	VERTICAL Average
2	2310.000	45.01	26.25	3.32	37.44	37.14	74.00	-36.86	VERTICAL Peak
3	2390.000	30.68	26.43	3.48	37.42	23.17	54.00	-30.83	VERTICAL Average
4	2390.000	45.18	26.43	3.48	37.42	37.67	74.00	-36.33	VERTICAL Peak
5	2483.500	31.16	26.58	3.53	37.40	23.87	54.00	-30.13	VERTICAL Average
6	2483.500	45.56	26.58	3.53	37.40	38.27	74.00	-35.73	VERTICAL Peak
7	2500.000	32.39	26.60	3.40	37.39	25.00	54.00	-29.00	VERTICAL Average
8	2500.000	44.84	26.60	3.40	37.39	37.45	74.00	-36.55	VERTICAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line Limit	Over Pol/Phase	Remark
	Level	Factor	Loss	Factor				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	2310.000	33.09	26.25	3.32	37.44	25.22	54.00	-28.78 HORIZONTAL Average
2	2310.000	45.34	26.25	3.32	37.44	37.47	74.00	-36.53 HORIZONTAL Peak
3	2390.000	30.68	26.43	3.48	37.42	23.17	54.00	-30.83 HORIZONTAL Average
4	2390.000	44.81	26.43	3.48	37.42	37.30	74.00	-36.70 HORIZONTAL Peak
5	2483.500	32.17	26.58	3.53	37.40	24.88	54.00	-29.12 HORIZONTAL Average
6	2483.500	44.82	26.58	3.53	37.40	37.53	74.00	-36.47 HORIZONTAL Peak
7	2500.000	29.77	26.60	3.40	37.39	22.38	54.00	-31.62 HORIZONTAL Average
8	2500.000	44.70	26.60	3.40	37.39	37.31	74.00	-36.69 HORIZONTAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line Limit	Over Pol/Phase	Remark
	Level	Factor	Loss	Factor				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	2310.000	32.21	26.25	3.32	37.44	24.34	54.00	-29.66 VERTICAL Average
2	2310.000	47.40	26.25	3.32	37.44	39.53	74.00	-34.47 VERTICAL Peak
3	2390.000	32.16	26.43	3.48	37.42	24.65	54.00	-29.35 VERTICAL Average
4	2390.000	46.18	26.43	3.48	37.42	38.67	74.00	-35.33 VERTICAL Peak
5	2483.500	30.90	26.58	3.53	37.40	23.61	54.00	-30.39 VERTICAL Average
6	2483.500	46.07	26.58	3.53	37.40	38.78	74.00	-35.22 VERTICAL Peak
7	2500.000	29.78	26.60	3.40	37.39	22.39	54.00	-31.61 VERTICAL Average
8	2500.000	46.77	26.60	3.40	37.39	39.38	74.00	-34.62 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:

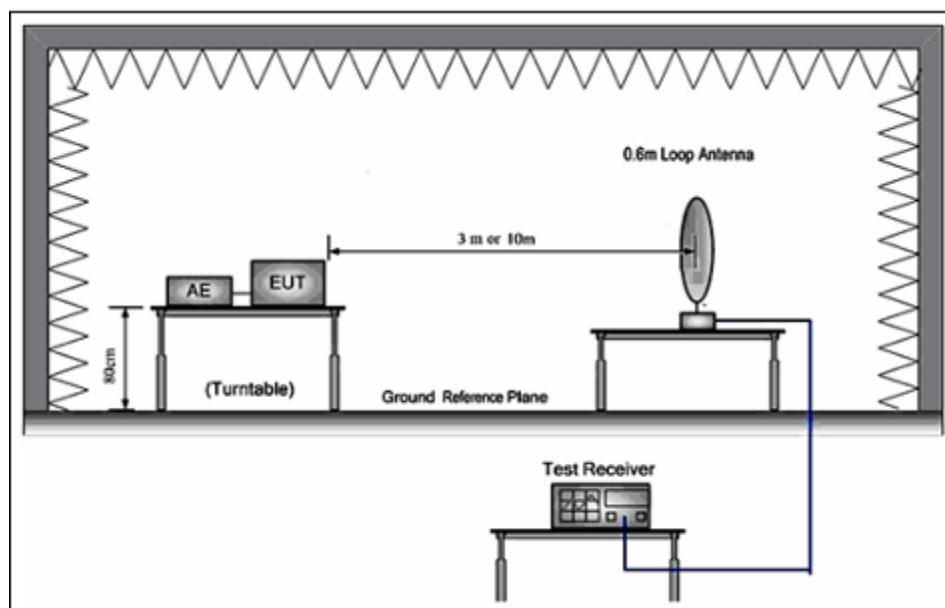
Temperature: 25.4 °C Humidity: 54.5 % RH Atmospheric Pressure: 1020 mbar

Test mode

c: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

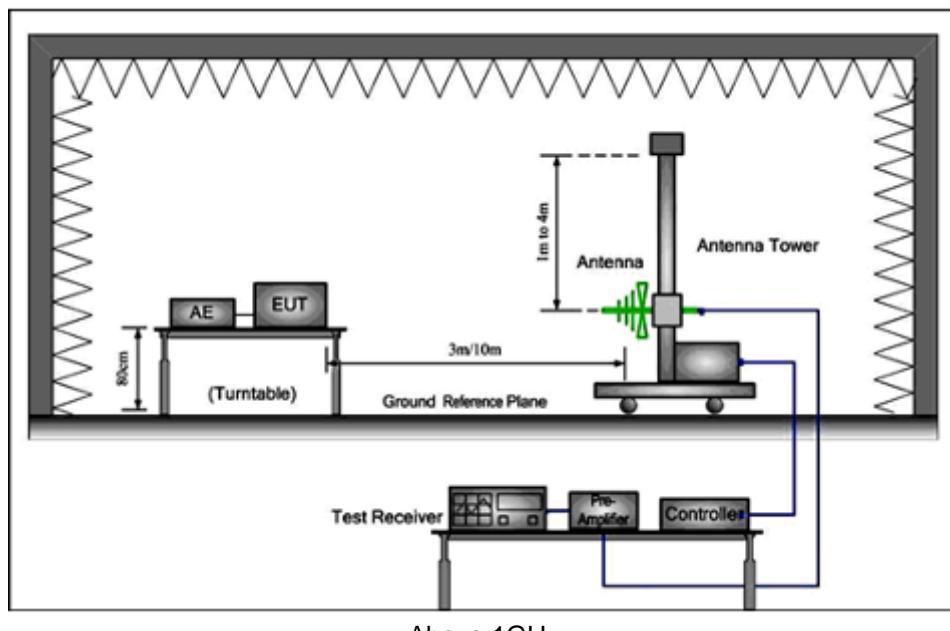
9kHz to 30MHz



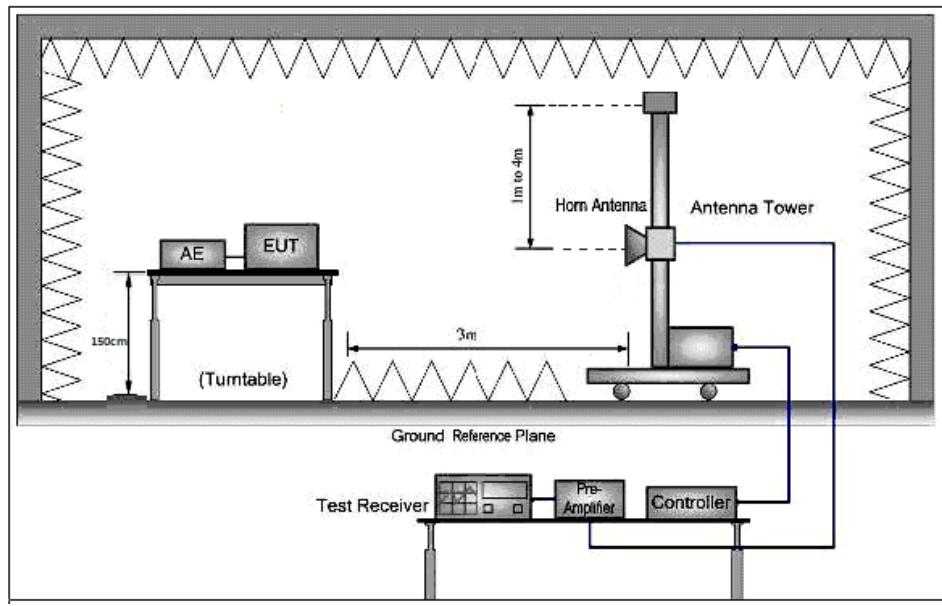
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30MHz to 1GHz



Above 1GHz



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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:c; Polarization:Horizontal; Modulation:b; bandwidth:20MHz; Channel:Low

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3415.787	37.20	27.90	4.13	36.97	32.26	54.00	-21.74	VERTICAL Average
2	3415.787	45.87	27.90	4.13	36.97	40.93	74.00	-33.07	VERTICAL Peak
3	4824.016	39.68	30.82	5.42	36.94	38.98	54.00	-15.02	VERTICAL Average
4	4824.016	50.23	30.82	5.42	36.94	49.53	74.00	-24.47	VERTICAL Peak
5	6303.890	38.71	33.60	5.97	36.99	41.29	54.00	-12.71	VERTICAL Average
6	6303.890	44.48	33.60	5.97	36.99	47.06	74.00	-26.94	VERTICAL Peak
7	7236.052	38.95	35.55	6.03	36.93	43.60	54.00	-10.40	VERTICAL Average
8	7236.052	47.54	35.55	6.03	36.93	52.19	74.00	-21.81	VERTICAL Peak
9	9648.450	38.29	37.54	7.06	37.08	45.81	54.00	-8.19	VERTICAL Average
10	9648.450	45.88	37.54	7.06	37.08	53.40	74.00	-20.60	VERTICAL Peak
11	12060.130	32.18	39.46	8.17	37.17	42.64	54.00	-11.36	VERTICAL Average
12	12060.130	43.57	39.46	8.17	37.17	54.03	74.00	-19.97	VERTICAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3890.255	36.59	29.27	4.60	36.91	33.55	54.00	-20.45	HORIZONTAL Average
2	3890.255	44.74	29.27	4.60	36.91	41.70	74.00	-32.30	HORIZONTAL Peak
3	4824.016	40.39	30.82	5.42	36.94	39.69	54.00	-14.31	HORIZONTAL Average
4	4824.016	51.82	30.82	5.42	36.94	51.12	74.00	-22.88	HORIZONTAL Peak
5	6142.019	34.19	32.76	6.12	37.00	36.07	54.00	-17.93	HORIZONTAL Average
6	6142.019	44.44	32.76	6.12	37.00	46.32	74.00	-27.68	HORIZONTAL Peak
7	7236.052	38.30	35.55	6.03	36.93	42.95	54.00	-11.05	HORIZONTAL Average
8	7236.052	46.89	35.55	6.03	36.93	51.54	74.00	-22.46	HORIZONTAL Peak
9	9648.689	36.19	37.54	7.06	37.08	43.71	54.00	-10.29	HORIZONTAL Average
10	9648.689	44.79	37.54	7.06	37.08	52.31	74.00	-21.69	HORIZONTAL Peak
11	12060.740	34.84	39.46	8.17	37.17	45.30	54.00	-8.70	HORIZONTAL Average
12	12060.740	42.78	39.46	8.17	37.17	53.24	74.00	-20.76	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3347.371	38.21	27.90	4.08	36.98	33.21	54.00	-20.79	HORIZONTAL Average
2	3347.371	45.41	27.90	4.08	36.98	40.41	74.00	-33.59	HORIZONTAL Peak
3	4884.962	39.61	30.95	5.52	36.95	39.13	54.00	-14.87	HORIZONTAL Average
4	4884.962	47.61	30.95	5.52	36.95	47.13	74.00	-26.87	HORIZONTAL Peak
5	6142.019	37.19	32.76	6.12	37.00	39.07	54.00	-14.93	HORIZONTAL Average
6	6142.019	44.43	32.76	6.12	37.00	46.31	74.00	-27.69	HORIZONTAL Peak
7	7326.888	37.51	35.74	6.13	36.92	42.46	54.00	-11.54	HORIZONTAL Average
8	7326.888	44.89	35.74	6.13	36.92	49.84	74.00	-24.16	HORIZONTAL Peak
9	9768.820	38.94	37.74	7.01	37.09	46.60	54.00	-7.40	HORIZONTAL Average
10	9768.820	45.76	37.74	7.01	37.09	53.42	74.00	-20.58	HORIZONTAL Peak
11	12210.130	32.85	39.21	8.08	37.06	43.08	54.00	-10.92	HORIZONTAL Average
12	12210.130	44.97	39.21	8.08	37.06	55.20	74.00	-18.80	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	4169.698	38.28	29.67	4.60	36.90	35.65	54.00	-18.35	VERTICAL Average
2	4169.698	45.51	29.67	4.60	36.90	42.88	74.00	-31.12	VERTICAL Peak
3	4884.151	39.95	30.95	5.52	36.95	39.47	54.00	-14.53	VERTICAL Average
4	4884.151	50.22	30.95	5.52	36.95	49.74	74.00	-24.26	VERTICAL Peak
5	6071.417	35.28	32.51	6.16	37.00	36.95	54.00	-17.05	VERTICAL Average
6	6071.417	45.13	32.51	6.16	37.00	46.80	74.00	-27.20	VERTICAL Peak
7	7326.267	37.19	35.74	6.13	36.92	42.14	54.00	-11.86	VERTICAL Average
8	7326.267	46.58	35.74	6.13	36.92	51.53	74.00	-22.47	VERTICAL Peak
9	9768.525	34.86	37.74	7.01	37.09	42.52	54.00	-11.48	VERTICAL Average
10	9768.525	45.76	37.74	7.01	37.09	53.42	74.00	-20.58	VERTICAL Peak
11	12210.350	33.19	39.21	8.08	37.06	43.42	54.00	-10.58	VERTICAL Average
12	12210.350	44.74	39.21	8.08	37.06	54.97	74.00	-19.03	VERTICAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	4062.629	37.19	29.55	4.60	36.90	34.44	54.00	-19.56	HORIZONTAL Average
2	4062.629	45.87	29.55	4.60	36.90	43.12	74.00	-30.88	HORIZONTAL Peak
3	4924.490	43.05	31.01	5.60	36.95	42.71	54.00	-11.29	HORIZONTAL Average
4	4924.490	50.85	31.01	5.60	36.95	50.51	74.00	-23.49	HORIZONTAL Peak
5	6285.695	34.68	33.51	5.98	36.99	37.18	54.00	-16.82	HORIZONTAL Average
6	6285.695	44.86	33.51	5.98	36.99	47.36	74.00	-26.64	HORIZONTAL Peak
7	7386.461	35.79	35.85	6.19	36.92	40.91	54.00	-13.09	HORIZONTAL Average
8	7386.461	46.65	35.85	6.19	36.92	51.77	74.00	-22.23	HORIZONTAL Peak
9	9848.497	36.67	37.82	6.99	37.09	44.39	54.00	-9.61	HORIZONTAL Average
10	9848.497	45.41	37.82	6.99	37.09	53.13	74.00	-20.87	HORIZONTAL Peak
11	12310.620	31.59	39.03	8.01	36.97	41.66	54.00	-12.34	HORIZONTAL Average
12	12310.620	45.35	39.03	8.01	36.97	55.42	74.00	-18.58	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	4062.629	37.14	29.55	4.60	36.90	34.39	54.00	-19.61	VERTICAL Average
2	4062.629	45.20	29.55	4.60	36.90	42.45	74.00	-31.55	VERTICAL Peak
3	4924.490	39.84	31.01	5.60	36.95	39.50	54.00	-14.50	VERTICAL Average
4	4924.490	49.74	31.01	5.60	36.95	49.40	74.00	-24.60	VERTICAL Peak
5	6377.195	39.17	33.91	5.91	36.99	42.00	54.00	-12.00	VERTICAL Average
6	6377.195	45.33	33.91	5.91	36.99	48.16	74.00	-25.84	VERTICAL Peak
7	7386.254	38.65	35.85	6.19	36.92	43.77	54.00	-10.23	VERTICAL Average
8	7386.254	44.24	35.85	6.19	36.92	49.36	74.00	-24.64	VERTICAL Peak
9	9848.164	36.61	37.82	6.99	37.09	44.33	54.00	-9.67	VERTICAL Average
10	9848.164	45.55	37.82	6.99	37.09	53.27	74.00	-20.73	VERTICAL Peak
11	12310.350	35.51	39.03	8.01	36.97	45.58	54.00	-8.42	VERTICAL Average
12	12310.350	44.42	39.03	8.01	36.97	54.49	74.00	-19.51	VERTICAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3856.668	38.74	29.19	4.60	36.91	35.62	54.00	-18.38	HORIZONTAL Average
2	3856.668	45.86	29.19	4.60	36.91	42.74	74.00	-31.26	HORIZONTAL Peak
3	4824.887	39.91	30.82	5.42	36.94	39.21	54.00	-14.79	HORIZONTAL Average
4	4824.887	46.04	30.82	5.42	36.94	45.34	74.00	-28.66	HORIZONTAL Peak
5	6071.417	38.72	32.51	6.16	37.00	40.39	54.00	-13.61	HORIZONTAL Average
6	6071.417	45.37	32.51	6.16	37.00	47.04	74.00	-26.96	HORIZONTAL Peak
7	7236.646	38.72	35.55	6.03	36.93	43.37	54.00	-10.63	HORIZONTAL Average
8	7236.646	45.95	35.55	6.03	36.93	50.60	74.00	-23.40	HORIZONTAL Peak
9	9648.151	36.71	37.54	7.06	37.08	44.23	54.00	-9.77	HORIZONTAL Average
10	9648.151	45.93	37.54	7.06	37.08	53.45	74.00	-20.55	HORIZONTAL Peak
11	12060.760	31.94	39.46	8.17	37.17	42.40	54.00	-11.60	HORIZONTAL Average
12	12060.760	42.67	39.46	8.17	37.17	53.13	74.00	-20.87	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3958.309	38.67	29.42	4.60	36.90	35.79	54.00	-18.21	VERTICAL Average
2	3958.309	45.28	29.42	4.60	36.90	42.40	74.00	-31.60	VERTICAL Peak
3	4824.016	39.84	30.82	5.42	36.94	39.14	54.00	-14.86	VERTICAL Average
4	4824.016	45.73	30.82	5.42	36.94	45.03	74.00	-28.97	VERTICAL Peak
5	6451.353	36.18	34.15	5.87	36.98	39.22	54.00	-14.78	VERTICAL Average
6	6451.353	44.43	34.15	5.87	36.98	47.47	74.00	-26.53	VERTICAL Peak
7	7386.857	38.71	35.85	6.19	36.92	43.83	54.00	-10.17	VERTICAL Average
8	7386.857	45.24	35.85	6.19	36.92	50.36	74.00	-23.64	VERTICAL Peak
9	9848.789	35.41	37.82	6.99	37.09	43.13	54.00	-10.87	VERTICAL Average
10	9848.789	45.76	37.82	6.99	37.09	53.48	74.00	-20.52	VERTICAL Peak
11	12310.950	33.29	39.03	8.01	36.97	43.36	54.00	-10.64	VERTICAL Average
12	12310.950	44.07	39.03	8.01	36.97	54.14	74.00	-19.86	VERTICAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	4133.699	38.64	29.62	4.60	36.90	35.96	54.00	-18.04	HORIZONTAL Average
2	4133.699	45.43	29.62	4.60	36.90	42.75	74.00	-31.25	HORIZONTAL Peak
3	4884.151	39.68	30.95	5.52	36.95	39.20	54.00	-14.80	HORIZONTAL Average
4	4884.151	47.24	30.95	5.52	36.95	46.76	74.00	-27.24	HORIZONTAL Peak
5	6488.754	37.19	34.25	5.85	36.98	40.31	54.00	-13.69	HORIZONTAL Average
6	6488.754	44.80	34.25	5.85	36.98	47.92	74.00	-26.08	HORIZONTAL Peak
7	7326.034	38.29	35.74	6.13	36.92	43.24	54.00	-10.76	HORIZONTAL Average
8	7326.034	46.41	35.74	6.13	36.92	51.36	74.00	-22.64	HORIZONTAL Peak
9	9768.916	38.28	37.74	7.01	37.09	45.94	54.00	-8.06	HORIZONTAL Average
10	9768.916	45.41	37.74	7.01	37.09	53.07	74.00	-20.93	HORIZONTAL Peak
11	12210.710	34.76	39.21	8.08	37.06	44.99	54.00	-9.01	HORIZONTAL Average
12	12210.710	44.32	39.21	8.08	37.06	54.55	74.00	-19.45	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3823.371	37.45	29.08	4.60	36.91	34.22	54.00	-19.78	VERTICAL Average
2	3823.371	45.23	29.08	4.60	36.91	42.00	74.00	-32.00	VERTICAL Peak
3	4884.151	38.97	30.95	5.52	36.95	38.49	54.00	-15.51	VERTICAL Average
4	4884.151	46.10	30.95	5.52	36.95	45.62	74.00	-28.38	VERTICAL Peak
5	5932.638	36.19	32.26	6.00	37.00	37.45	54.00	-16.55	VERTICAL Average
6	5932.638	44.94	32.26	6.00	37.00	46.20	74.00	-27.80	VERTICAL Peak
7	7326.267	38.94	35.74	6.13	36.92	43.89	54.00	-10.11	VERTICAL Average
8	7326.267	45.04	35.74	6.13	36.92	49.99	74.00	-24.01	VERTICAL Peak
9	9768.432	35.95	37.74	7.01	37.09	43.61	54.00	-10.39	VERTICAL Average
10	9768.432	44.93	37.74	7.01	37.09	52.59	74.00	-21.41	VERTICAL Peak
11	12210.210	33.86	39.21	8.08	37.06	44.09	54.00	-9.91	VERTICAL Average
12	12210.210	44.33	39.21	8.08	37.06	54.56	74.00	-19.44	VERTICAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3757.637	38.24	28.82	4.58	36.92	34.72	54.00	-19.28	HORIZONTAL Average
2	3757.637	45.87	28.82	4.58	36.92	42.35	74.00	-31.65	HORIZONTAL Peak
3	4924.490	36.49	31.01	5.60	36.95	36.15	54.00	-17.85	HORIZONTAL Average
4	4924.490	46.26	31.01	5.60	36.95	45.92	74.00	-28.08	HORIZONTAL Peak
5	6526.373	36.97	34.32	5.84	36.98	40.15	54.00	-13.85	HORIZONTAL Average
6	6526.373	44.52	34.32	5.84	36.98	47.70	74.00	-26.30	HORIZONTAL Peak
7	7386.034	34.18	35.85	6.19	36.92	39.30	54.00	-14.70	HORIZONTAL Average
8	7386.034	45.29	35.85	6.19	36.92	50.41	74.00	-23.59	HORIZONTAL Peak
9	9848.717	35.44	37.82	6.99	37.09	43.16	54.00	-10.84	HORIZONTAL Average
10	9848.717	45.94	37.82	6.99	37.09	53.66	74.00	-20.34	HORIZONTAL Peak
11	12310.220	35.68	39.03	8.01	36.97	45.75	54.00	-8.25	HORIZONTAL Average
12	12310.220	43.51	39.03	8.01	36.97	53.58	74.00	-20.42	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3935.493	38.71	29.37	4.60	36.90	35.78	54.00	-18.22	VERTICAL Average
2	3935.493	45.26	29.37	4.60	36.90	42.33	74.00	-31.67	VERTICAL Peak
3	4924.151	38.22	31.01	5.60	36.95	37.88	54.00	-16.12	VERTICAL Average
4	4924.151	45.20	31.01	5.60	36.95	44.86	74.00	-29.14	VERTICAL Peak
5	6106.616	34.19	32.63	6.14	37.00	35.96	54.00	-18.04	VERTICAL Average
6	6106.616	44.65	32.63	6.14	37.00	46.42	74.00	-27.58	VERTICAL Peak
7	7386.914	39.99	35.85	6.19	36.92	45.11	54.00	-8.89	VERTICAL Average
8	7386.914	45.15	35.85	6.19	36.92	50.27	74.00	-23.73	VERTICAL Peak
9	9848.432	37.64	37.82	6.99	37.09	45.36	54.00	-8.64	VERTICAL Average
10	9848.432	44.95	37.82	6.99	37.09	52.67	74.00	-21.33	VERTICAL Peak
11	12310.950	34.22	39.03	8.01	36.97	44.29	54.00	-9.71	VERTICAL Average
12	12310.950	44.98	39.03	8.01	36.97	55.05	74.00	-18.95	VERTICAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3935.493	40.19	29.37	4.60	36.90	37.26	54.00	-16.74	HORIZONTAL Average
2	3935.493	44.97	29.37	4.60	36.90	42.04	74.00	-31.96	HORIZONTAL Peak
3	4824.016	39.55	30.82	5.42	36.94	38.85	54.00	-15.15	HORIZONTAL Average
4	4824.016	45.86	30.82	5.42	36.94	45.16	74.00	-28.84	HORIZONTAL Peak
5	5424.184	38.19	31.81	6.13	36.99	39.14	54.00	-14.86	HORIZONTAL Average
6	5424.184	45.36	31.81	6.13	36.99	46.31	74.00	-27.69	HORIZONTAL Peak
7	7236.114	38.60	35.55	6.03	36.93	43.25	54.00	-10.75	HORIZONTAL Average
8	7236.114	45.81	35.55	6.03	36.93	50.46	74.00	-23.54	HORIZONTAL Peak
9	9648.151	40.28	37.54	7.06	37.08	47.80	54.00	-6.20	HORIZONTAL Average
10	9648.151	45.31	37.54	7.06	37.08	52.83	74.00	-21.17	HORIZONTAL Peak
11	12060.520	37.44	39.46	8.17	37.17	47.90	54.00	-6.10	HORIZONTAL Average
12	12060.520	44.33	39.46	8.17	37.17	54.79	74.00	-19.21	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3455.508	38.59	27.90	4.20	36.96	33.73	54.00	-20.27	VERTICAL Average
2	3455.508	46.06	27.90	4.20	36.96	41.20	74.00	-32.80	VERTICAL Peak
3	4824.760	39.86	30.82	5.42	36.94	39.16	54.00	-14.84	VERTICAL Average
4	4824.760	45.05	30.82	5.42	36.94	44.35	74.00	-29.65	VERTICAL Peak
5	6106.616	37.54	32.63	6.14	37.00	39.31	54.00	-14.69	VERTICAL Average
6	6106.616	44.54	32.63	6.14	37.00	46.31	74.00	-27.69	VERTICAL Peak
7	7236.888	38.60	35.55	6.03	36.93	43.25	54.00	-10.75	VERTICAL Average
8	7236.888	46.36	35.55	6.03	36.93	51.01	74.00	-22.99	VERTICAL Peak
9	9648.588	38.97	37.54	7.06	37.08	46.49	54.00	-7.51	VERTICAL Average
10	9648.588	45.56	37.54	7.06	37.08	53.08	74.00	-20.92	VERTICAL Peak
11	12060.850	38.17	39.46	8.17	37.17	48.63	54.00	-5.37	VERTICAL Average
12	12060.850	43.14	39.46	8.17	37.17	53.60	74.00	-20.40	VERTICAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3823.371	35.28	29.08	4.60	36.91	32.05	54.00	-21.95	HORIZONTAL Average
2	3823.371	44.84	29.08	4.60	36.91	41.61	74.00	-32.39	HORIZONTAL Peak
3	4884.043	39.68	30.95	5.52	36.95	39.20	54.00	-14.80	HORIZONTAL Average
4	4884.043	45.71	30.95	5.52	36.95	45.23	74.00	-28.77	HORIZONTAL Peak
5	5664.525	40.18	32.01	6.37	36.99	41.57	54.00	-12.43	HORIZONTAL Average
6	5664.525	45.60	32.01	6.37	36.99	46.99	74.00	-27.01	HORIZONTAL Peak
7	7326.267	38.19	35.74	6.13	36.92	43.14	54.00	-10.86	HORIZONTAL Average
8	7326.267	45.85	35.74	6.13	36.92	50.80	74.00	-23.20	HORIZONTAL Peak
9	9768.371	38.19	37.74	7.01	37.09	45.85	54.00	-8.15	HORIZONTAL Average
10	9768.371	45.26	37.74	7.01	37.09	52.92	74.00	-21.08	HORIZONTAL Peak
11	12210.470	35.94	39.21	8.08	37.06	46.17	54.00	-7.83	HORIZONTAL Average
12	12210.470	44.39	39.21	8.08	37.06	54.62	74.00	-19.38	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3992.781	37.86	29.48	4.60	36.90	35.04	54.00	-18.96	VERTICAL Average
2	3992.781	45.29	29.48	4.60	36.90	42.47	74.00	-31.53	VERTICAL Peak
3	4884.151	37.69	30.95	5.52	36.95	37.21	54.00	-16.79	VERTICAL Average
4	4884.151	45.90	30.95	5.52	36.95	45.42	74.00	-28.58	VERTICAL Peak
5	5932.638	39.79	32.26	6.00	37.00	41.05	54.00	-12.95	VERTICAL Average
6	5932.638	45.30	32.26	6.00	37.00	46.56	74.00	-27.44	VERTICAL Peak
7	7326.741	38.79	35.74	6.13	36.92	43.74	54.00	-10.26	VERTICAL Average
8	7326.741	45.76	35.74	6.13	36.92	50.71	74.00	-23.29	VERTICAL Peak
9	9768.018	39.28	37.74	7.01	37.09	46.94	54.00	-7.06	VERTICAL Average
10	9768.018	44.74	37.74	7.01	37.09	52.40	74.00	-21.60	VERTICAL Peak
11	12210.820	35.96	39.21	8.08	37.06	46.19	54.00	-7.81	VERTICAL Average
12	12210.820	43.67	39.21	8.08	37.06	53.90	74.00	-20.10	VERTICAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3619.064	36.94	28.20	4.51	36.94	32.71	54.00	-21.29	HORIZONTAL Average
2	3619.064	45.23	28.20	4.51	36.94	41.00	74.00	-33.00	HORIZONTAL Peak
3	4924.490	40.18	31.01	5.60	36.95	39.84	54.00	-14.16	HORIZONTAL Average
4	4924.490	45.80	31.01	5.60	36.95	45.46	74.00	-28.54	HORIZONTAL Peak
5	6414.167	38.64	34.03	5.89	36.99	41.57	54.00	-12.43	HORIZONTAL Average
6	6414.167	44.82	34.03	5.89	36.99	47.75	74.00	-26.25	HORIZONTAL Peak
7	7386.893	39.68	35.85	6.19	36.92	44.80	54.00	-9.20	HORIZONTAL Average
8	7386.893	45.95	35.85	6.19	36.92	51.07	74.00	-22.93	HORIZONTAL Peak
9	9848.432	38.14	37.82	6.99	37.09	45.86	54.00	-8.14	HORIZONTAL Average
10	9848.432	45.58	37.82	6.99	37.09	53.30	74.00	-20.70	HORIZONTAL Peak
11	12310.710	33.28	39.03	8.01	36.97	43.35	54.00	-10.65	HORIZONTAL Average
12	12310.710	44.65	39.03	8.01	36.97	54.72	74.00	-19.28	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3890.255	37.49	29.27	4.60	36.91	34.45	54.00	-19.55	VERTICAL Average
2	3890.255	45.57	29.27	4.60	36.91	42.53	74.00	-31.47	VERTICAL Peak
3	4924.888	38.94	31.01	5.60	36.95	38.60	54.00	-15.40	VERTICAL Average
4	4924.888	44.97	31.01	5.60	36.95	44.63	74.00	-29.37	VERTICAL Peak
5	6249.464	36.18	33.30	6.02	36.99	38.51	54.00	-15.49	VERTICAL Average
6	6249.464	44.88	33.30	6.02	36.99	47.21	74.00	-26.79	VERTICAL Peak
7	7386.518	38.97	35.85	6.19	36.92	44.09	54.00	-9.91	VERTICAL Average
8	7386.518	45.21	35.85	6.19	36.92	50.33	74.00	-23.67	VERTICAL Peak
9	9848.151	37.15	37.82	6.99	37.09	44.87	54.00	-9.13	VERTICAL Average
10	9848.151	45.32	37.82	6.99	37.09	53.04	74.00	-20.96	VERTICAL Peak
11	12310.130	34.81	39.03	8.01	36.97	44.88	54.00	-9.12	VERTICAL Average
12	12310.130	45.03	39.03	8.01	36.97	55.10	74.00	-18.90	VERTICAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Over Line Limit	Over Pol/Phase	Remark
	MHz	dBuV	dB/m	dB				
1	71.581	28.10	11.59	0.90	26.44	14.15	40.00	-25.85 HORIZONTAL QP
2	100.934	41.17	9.25	1.10	26.40	25.12	43.50	-18.38 HORIZONTAL QP
3	154.279	37.40	13.78	1.31	26.44	26.05	43.50	-17.45 HORIZONTAL QP
4	174.424	38.57	12.65	1.41	26.45	26.18	43.50	-17.32 HORIZONTAL QP
5	275.157	40.53	13.00	1.72	26.65	28.60	46.00	-17.40 HORIZONTAL QP
6	357.929	33.30	14.75	1.96	27.24	22.77	46.00	-23.23 HORIZONTAL QP

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Over Line Limit	Over Pol/Phase	Remark
	MHz	dBuV	dB/m	dB				
1	3823.371	38.64	29.08	4.60	36.91	35.41	54.00	-18.59 HORIZONTAL Average
2	3823.371	45.51	29.08	4.60	36.91	42.28	74.00	-31.72 HORIZONTAL Peak
3	4844.058	37.92	30.88	5.45	36.94	37.31	54.00	-16.69 HORIZONTAL Average
4	4844.058	45.48	30.88	5.45	36.94	44.87	74.00	-29.13 HORIZONTAL Peak
5	6377.195	36.18	33.91	5.91	36.99	39.01	54.00	-14.99 HORIZONTAL Average
6	6377.195	44.61	33.91	5.91	36.99	47.44	74.00	-26.56 HORIZONTAL Peak
7	7266.114	38.79	35.60	6.06	36.92	43.53	54.00	-10.47 HORIZONTAL Average
8	7266.114	45.53	35.60	6.06	36.92	50.27	74.00	-23.73 HORIZONTAL Peak
9	9688.430	39.58	37.61	7.04	37.08	47.15	54.00	-6.85 HORIZONTAL Average
10	9688.430	46.24	37.61	7.04	37.08	53.81	74.00	-20.19 HORIZONTAL Peak
11	12110.220	34.29	39.37	8.14	37.15	44.65	54.00	-9.35 HORIZONTAL Average
12	12110.220	43.97	39.37	8.14	37.15	54.33	74.00	-19.67 HORIZONTAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Over Line Limit	Over Pol/Phase	Remark
	Level	Factor	Loss	Factor				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	37.812	36.92	13.28	0.70	26.52	24.38	40.00	-15.62 VERTICAL QP
2	48.332	36.31	13.99	0.70	26.50	24.50	40.00	-15.50 VERTICAL QP
3	69.600	40.80	11.97	0.90	26.46	27.21	40.00	-12.79 VERTICAL QP
4	107.134	42.46	10.20	1.13	26.40	27.39	43.50	-16.11 VERTICAL QP
5	173.814	38.79	12.70	1.40	26.45	26.44	43.50	-17.06 VERTICAL QP
6	431.032	29.43	16.75	2.30	27.40	21.08	46.00	-24.92 VERTICAL QP

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Over Line Limit	Over Pol/Phase	Remark
	Level	Factor	Loss	Factor				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	3958.309	35.15	29.42	4.60	36.90	32.27	54.00	-21.73 VERTICAL Average
2	3958.309	44.99	29.42	4.60	36.90	42.11	74.00	-31.89 VERTICAL Peak
3	4844.888	40.29	30.88	5.45	36.94	39.68	54.00	-14.32 VERTICAL Average
4	4844.888	46.15	30.88	5.45	36.94	45.54	74.00	-28.46 VERTICAL Peak
5	6142.019	34.97	32.76	6.12	37.00	36.85	54.00	-17.15 VERTICAL Average
6	6142.019	44.49	32.76	6.12	37.00	46.37	74.00	-27.63 VERTICAL Peak
7	7266.015	38.94	35.60	6.06	36.92	43.68	54.00	-10.32 VERTICAL Average
8	7266.015	45.56	35.60	6.06	36.92	50.30	74.00	-23.70 VERTICAL Peak
9	9688.497	39.74	37.61	7.04	37.08	47.31	54.00	-6.69 VERTICAL Average
10	9688.497	45.13	37.61	7.04	37.08	52.70	74.00	-21.30 VERTICAL Peak
11	12110.520	34.87	39.37	8.14	37.12	45.26	54.00	-8.74 VERTICAL Average
12	12110.520	44.55	39.37	8.14	37.12	54.94	74.00	-19.06 VERTICAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3485.601	37.50	27.90	4.27	36.96	32.71	54.00	-21.29	HORIZONTAL Average
2	3485.601	45.82	27.90	4.27	36.96	41.03	74.00	-32.97	HORIZONTAL Peak
3	4884.151	39.19	30.95	5.52	36.95	38.71	54.00	-15.29	HORIZONTAL Average
4	4884.151	45.41	30.95	5.52	36.95	44.93	74.00	-29.07	HORIZONTAL Peak
5	6177.627	37.45	32.92	6.09	36.99	39.47	54.00	-14.53	HORIZONTAL Average
6	6177.627	44.85	32.92	6.09	36.99	46.87	74.00	-27.13	HORIZONTAL Peak
7	7326.052	38.91	35.74	6.13	36.92	43.86	54.00	-10.14	HORIZONTAL Average
8	7326.052	45.05	35.74	6.13	36.92	50.00	74.00	-24.00	HORIZONTAL Peak
9	9768.149	34.71	37.74	7.01	37.09	42.37	54.00	-11.63	HORIZONTAL Average
10	9768.149	44.64	37.74	7.01	37.09	52.30	74.00	-21.70	HORIZONTAL Peak
11	12210.420	34.68	39.21	8.08	37.06	44.91	54.00	-9.09	HORIZONTAL Average
12	12210.420	44.99	39.21	8.08	37.06	55.22	74.00	-18.78	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3757.637	38.16	28.82	4.58	36.92	34.64	54.00	-19.36	VERTICAL Average
2	3757.637	45.52	28.82	4.58	36.92	42.00	74.00	-32.00	VERTICAL Peak
3	4884.245	39.76	30.95	5.52	36.95	39.28	54.00	-14.72	VERTICAL Average
4	4884.245	45.13	30.95	5.52	36.95	44.65	74.00	-29.35	VERTICAL Peak
5	6285.695	38.95	33.51	5.98	36.99	41.45	54.00	-12.55	VERTICAL Average
6	6285.695	45.25	33.51	5.98	36.99	47.75	74.00	-26.25	VERTICAL Peak
7	7326.006	38.56	35.74	6.13	36.92	43.51	54.00	-10.49	VERTICAL Average
8	7326.006	45.15	35.74	6.13	36.92	50.10	74.00	-23.90	VERTICAL Peak
9	9768.151	37.61	37.74	7.01	37.09	45.27	54.00	-8.73	VERTICAL Average
10	9768.151	45.52	37.74	7.01	37.09	53.18	74.00	-20.82	VERTICAL Peak
11	12210.610	35.49	39.21	8.08	37.06	45.72	54.00	-8.28	VERTICAL Average
12	12210.610	44.32	39.21	8.08	37.06	54.55	74.00	-19.45	VERTICAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3935.493	37.61	29.37	4.60	36.90	34.68	54.00	-19.32	HORIZONTAL Average
2	3935.493	45.28	29.37	4.60	36.90	42.35	74.00	-31.65	HORIZONTAL Peak
3	4904.948	39.67	30.97	5.55	36.95	39.24	54.00	-14.76	HORIZONTAL Average
4	4904.948	45.53	30.97	5.55	36.95	45.10	74.00	-28.90	HORIZONTAL Peak
5	6340.436	36.28	33.76	5.94	36.99	38.99	54.00	-15.01	HORIZONTAL Average
6	6340.436	44.80	33.76	5.94	36.99	47.51	74.00	-26.49	HORIZONTAL Peak
7	7356.763	39.18	35.78	6.15	36.92	44.19	54.00	-9.81	HORIZONTAL Average
8	7356.763	43.08	35.78	6.15	36.92	48.09	74.00	-25.91	HORIZONTAL Peak
9	9808.972	34.70	37.79	7.00	37.09	42.40	54.00	-11.60	HORIZONTAL Average
10	9808.972	44.26	37.79	7.00	37.09	51.96	74.00	-22.04	HORIZONTAL Peak
11	12260.350	34.69	39.15	8.06	37.03	44.87	54.00	-9.13	HORIZONTAL Average
12	12260.350	44.46	39.15	8.06	37.03	54.64	74.00	-19.36	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit Level	Line	Over Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3890.255	37.68	29.27	4.60	36.91	34.64	54.00	-19.36	VERTICAL Average
2	3890.255	46.71	29.27	4.60	36.91	43.67	74.00	-30.33	VERTICAL Peak
3	4904.339	37.69	30.97	5.55	36.95	37.26	54.00	-16.74	VERTICAL Average
4	4904.339	45.30	30.97	5.55	36.95	44.87	74.00	-29.13	VERTICAL Peak
5	5967.033	37.42	32.28	6.10	37.00	38.80	54.00	-15.20	VERTICAL Average
6	5967.033	44.89	32.28	6.10	37.00	46.27	74.00	-27.73	VERTICAL Peak
7	7356.015	39.68	35.78	6.15	36.92	44.69	54.00	-9.31	VERTICAL Average
8	7356.015	45.04	35.78	6.15	36.92	50.05	74.00	-23.95	VERTICAL Peak
9	9808.540	34.70	37.79	7.00	37.09	42.40	54.00	-11.60	VERTICAL Average
10	9808.540	44.91	37.79	7.00	37.09	52.61	74.00	-21.39	VERTICAL Peak
11	12260.610	36.10	39.15	8.06	37.03	46.28	54.00	-7.72	VERTICAL Average
12	12260.610	44.40	39.15	8.06	37.03	54.58	74.00	-19.42	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	14.819	10.07	0.5	PASS
11B	2442	Ant1	14.813	10.07	0.5	PASS
11B	2462	Ant1	14.820	10.07	0.5	PASS
11G	2412	Ant1	16.441	16.52	0.5	PASS
11G	2442	Ant1	16.442	16.52	0.5	PASS
11G	2462	Ant1	16.444	16.52	0.5	PASS
11N20SISO	2412	Ant1	17.643	17.71	0.5	PASS
11N20SISO	2442	Ant1	17.643	17.68	0.5	PASS
11N20SISO	2462	Ant1	17.646	17.68	0.5	PASS
11N40SISO	2422	Ant1	35.799	36.34	0.5	PASS
11N40SISO	2442	Ant1	35.800	36.35	0.5	PASS
11N40SISO	2452	Ant1	35.794	36.35	0.5	PASS

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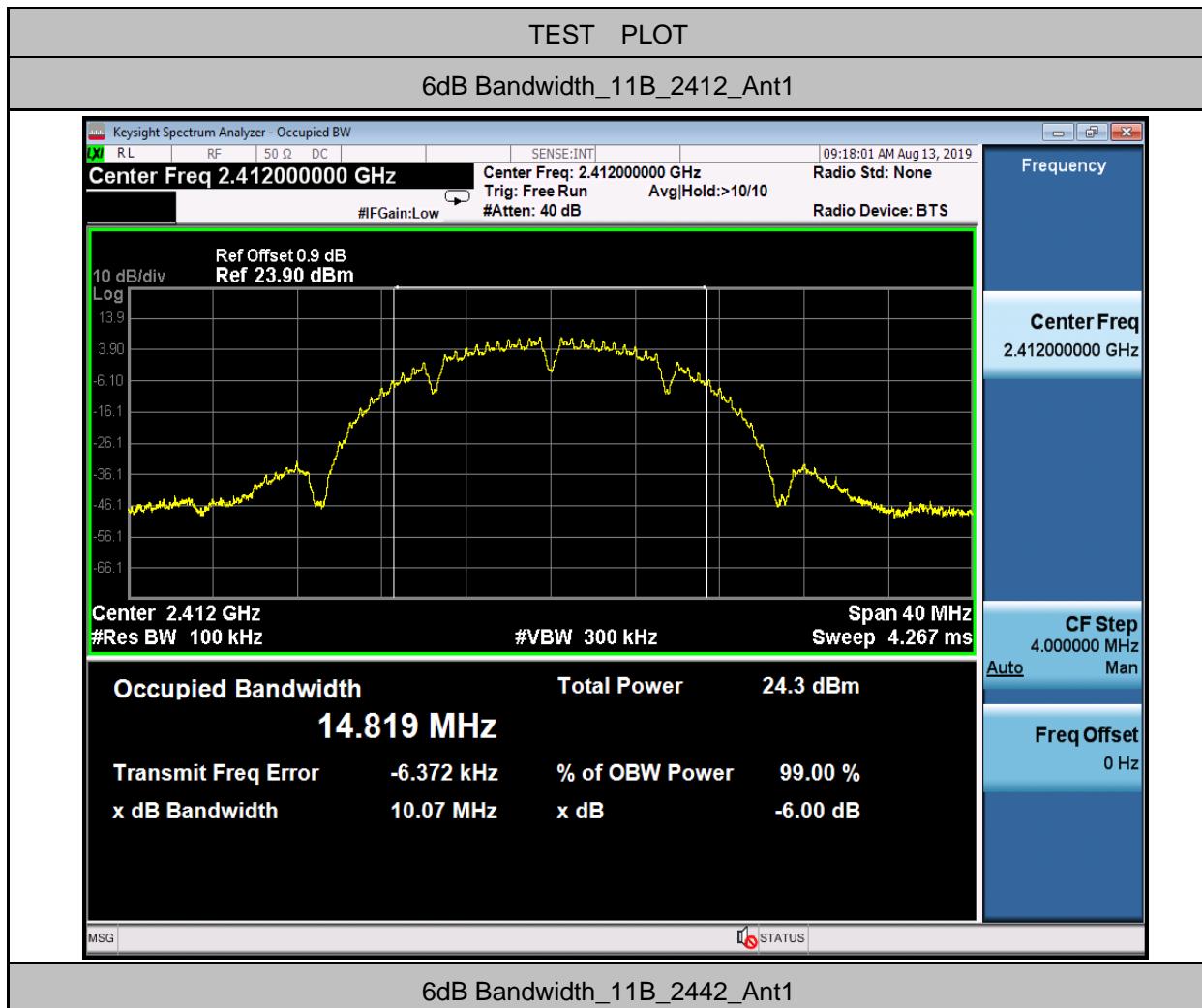
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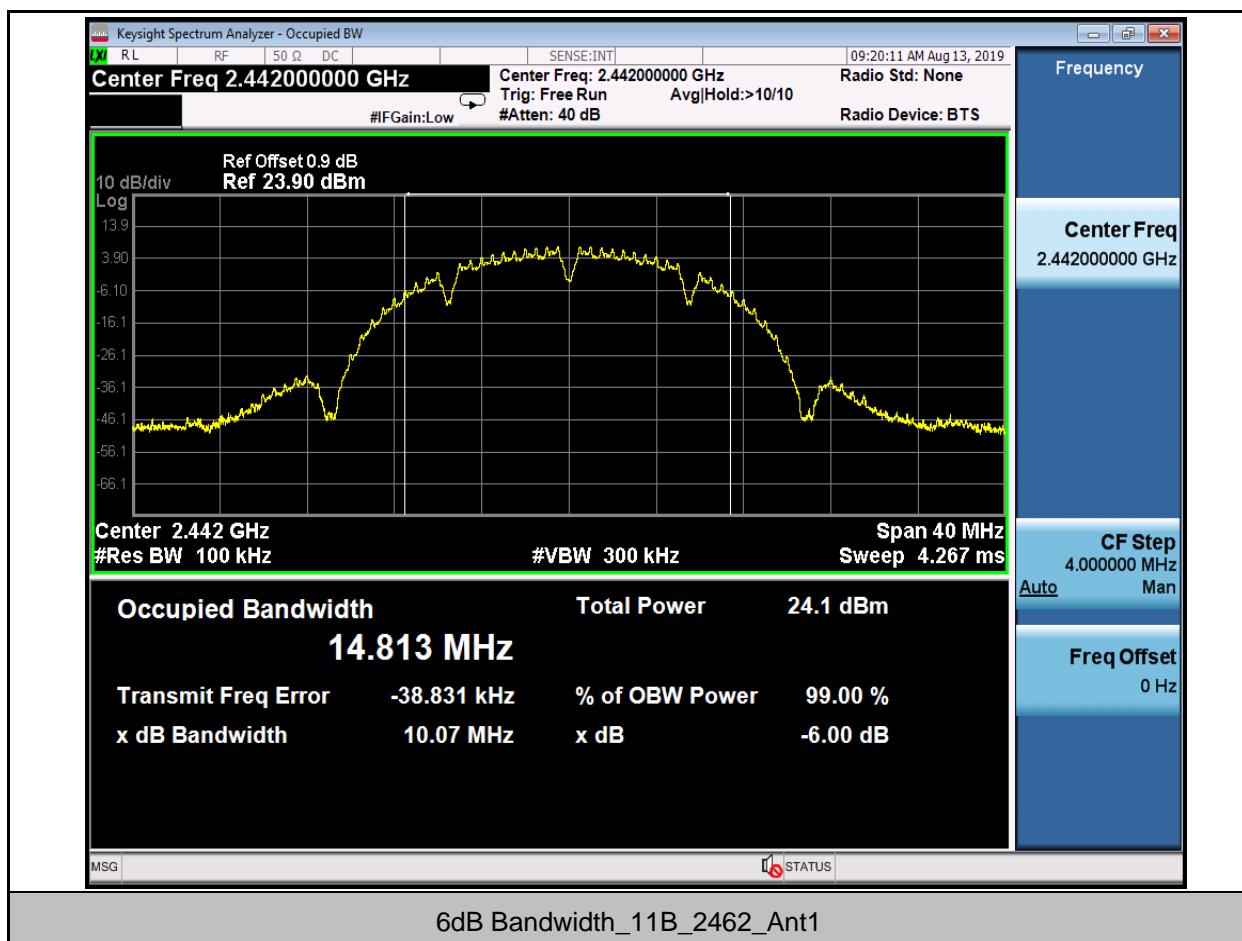


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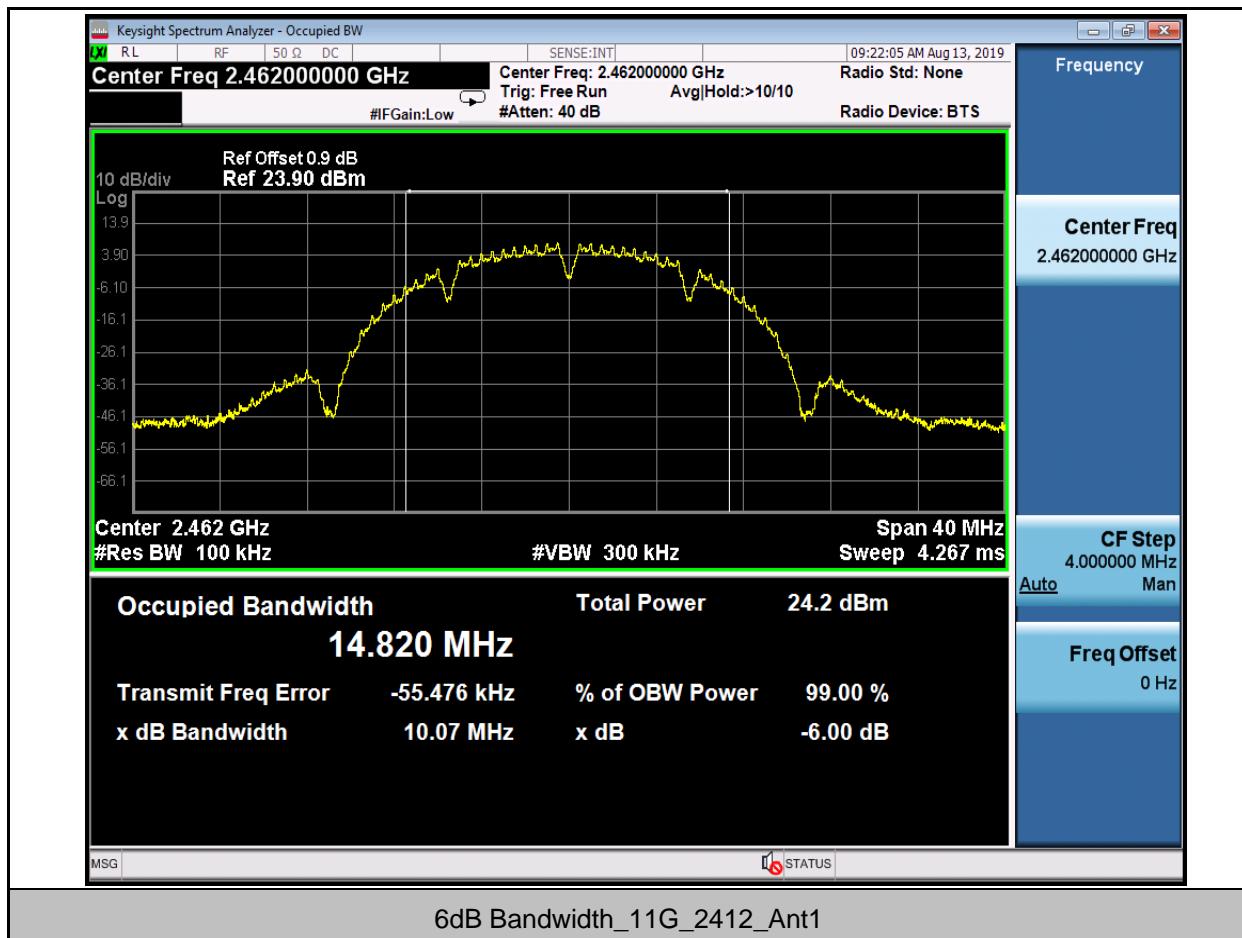
6dB Bandwidth_11B_2462_Ant1

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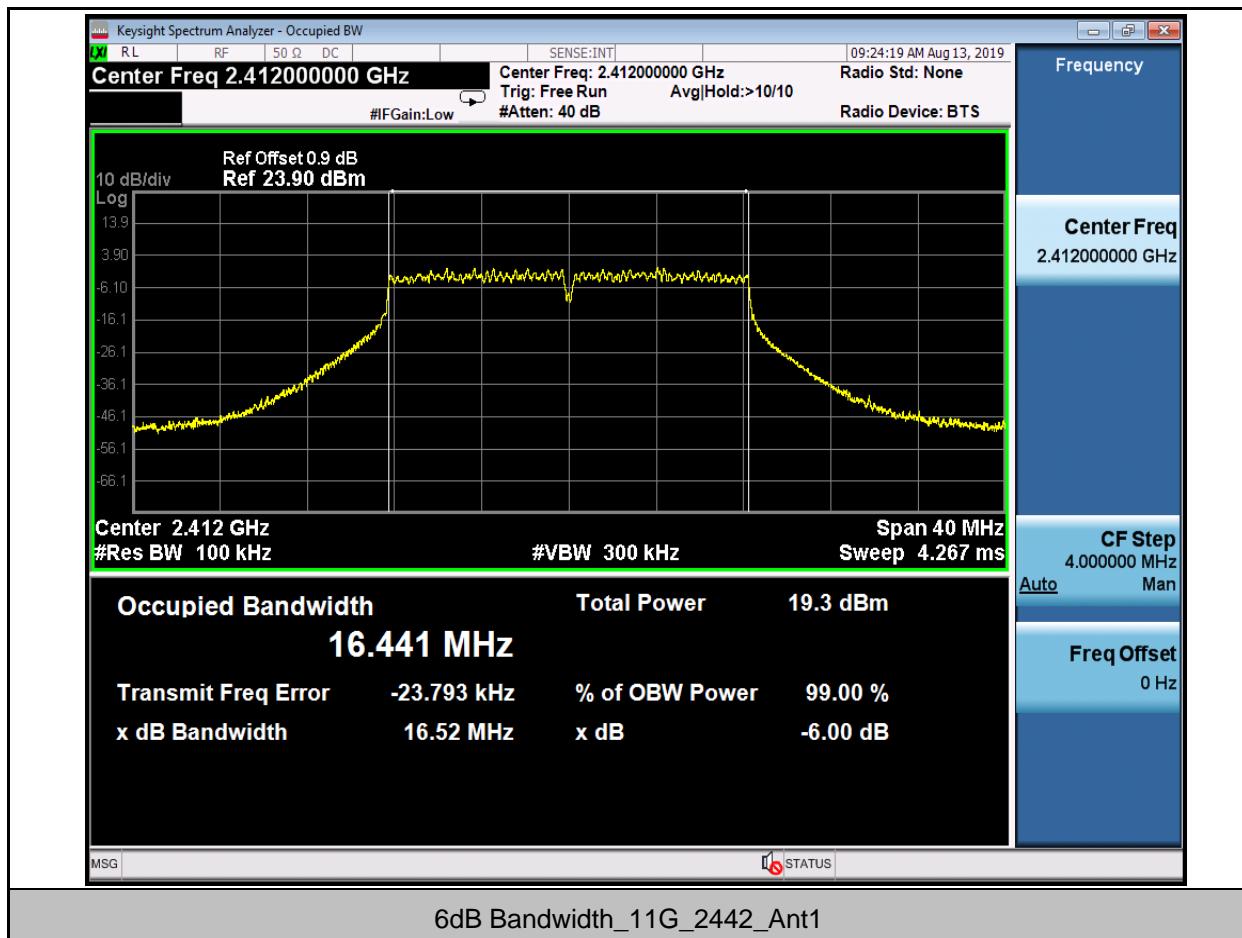
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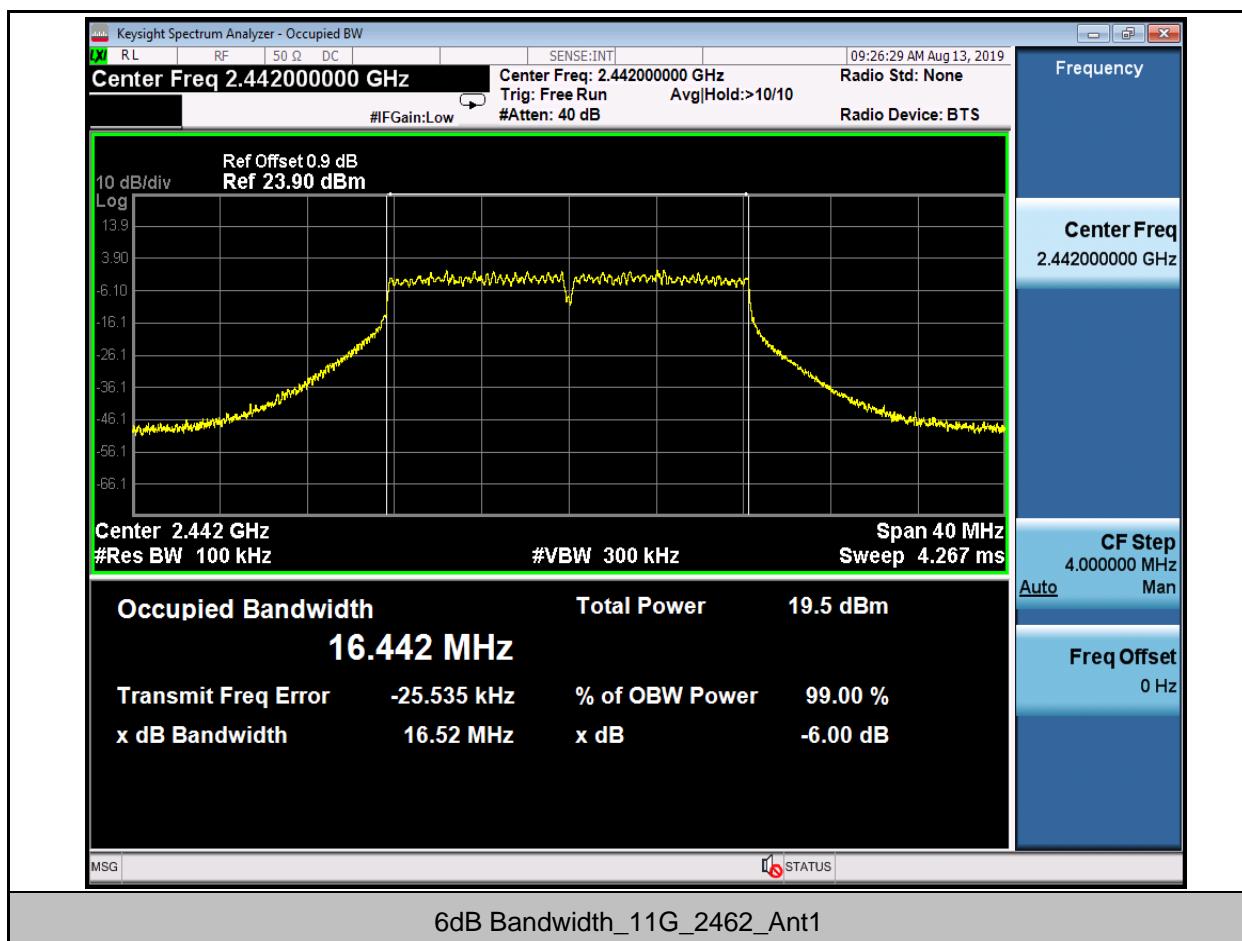
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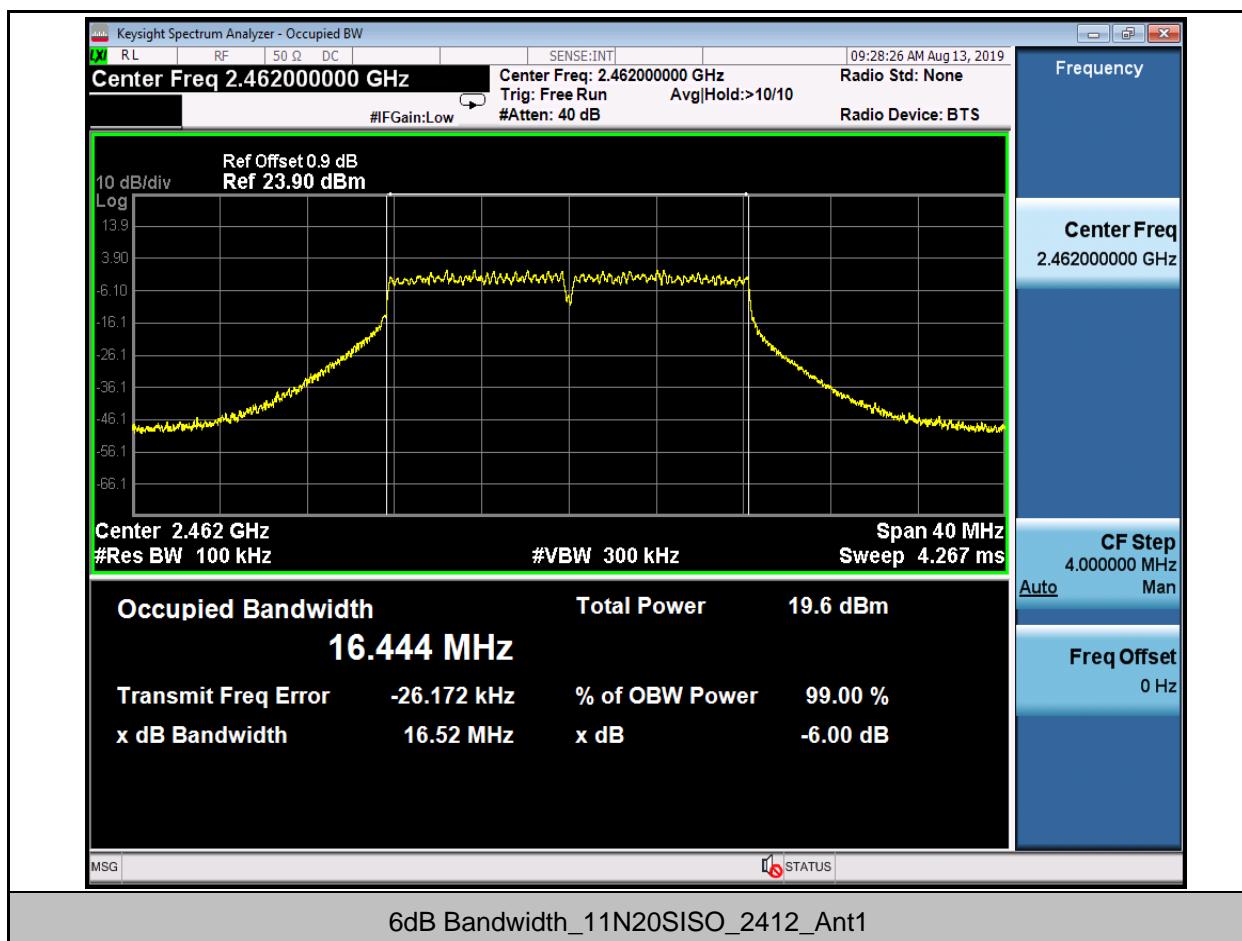


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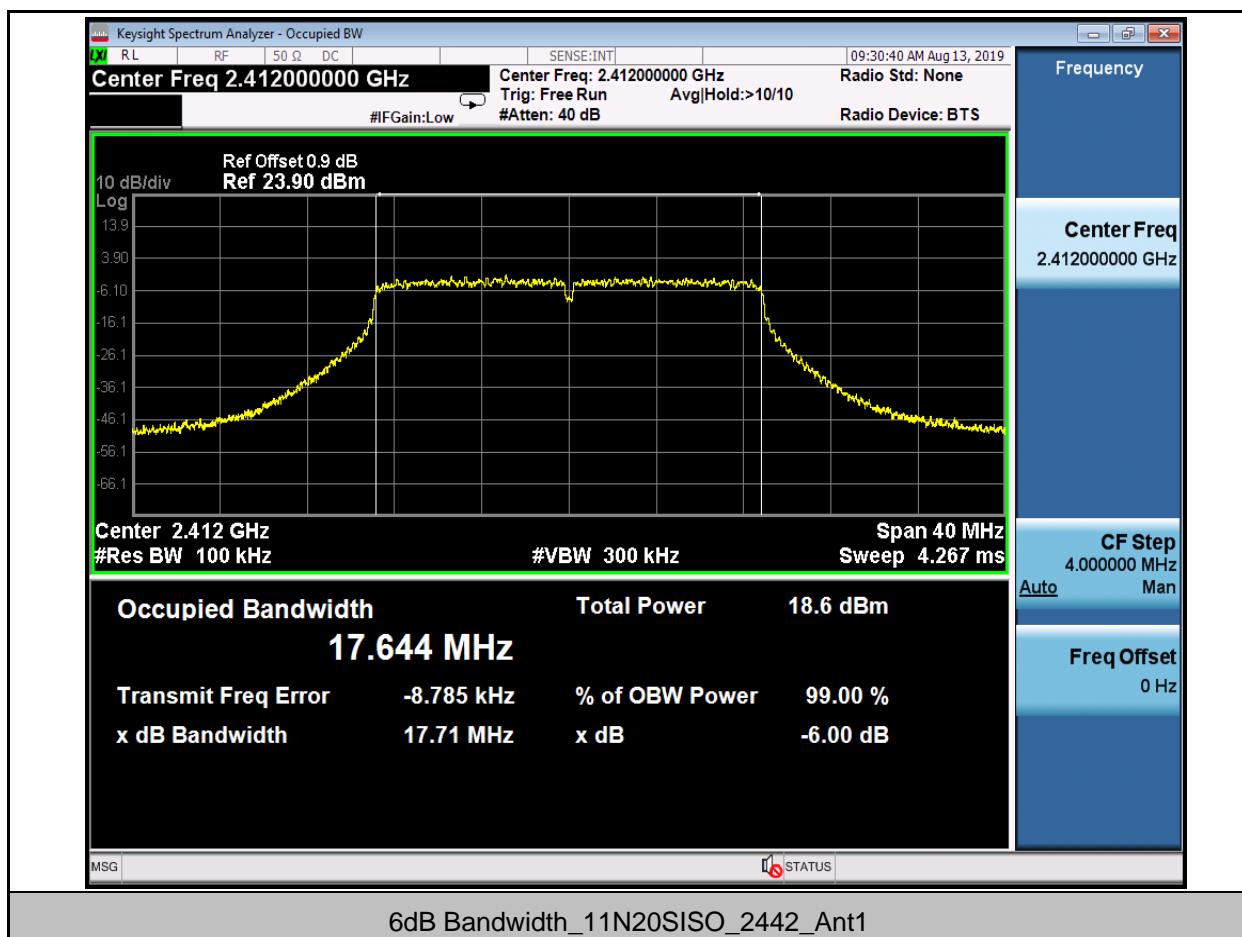
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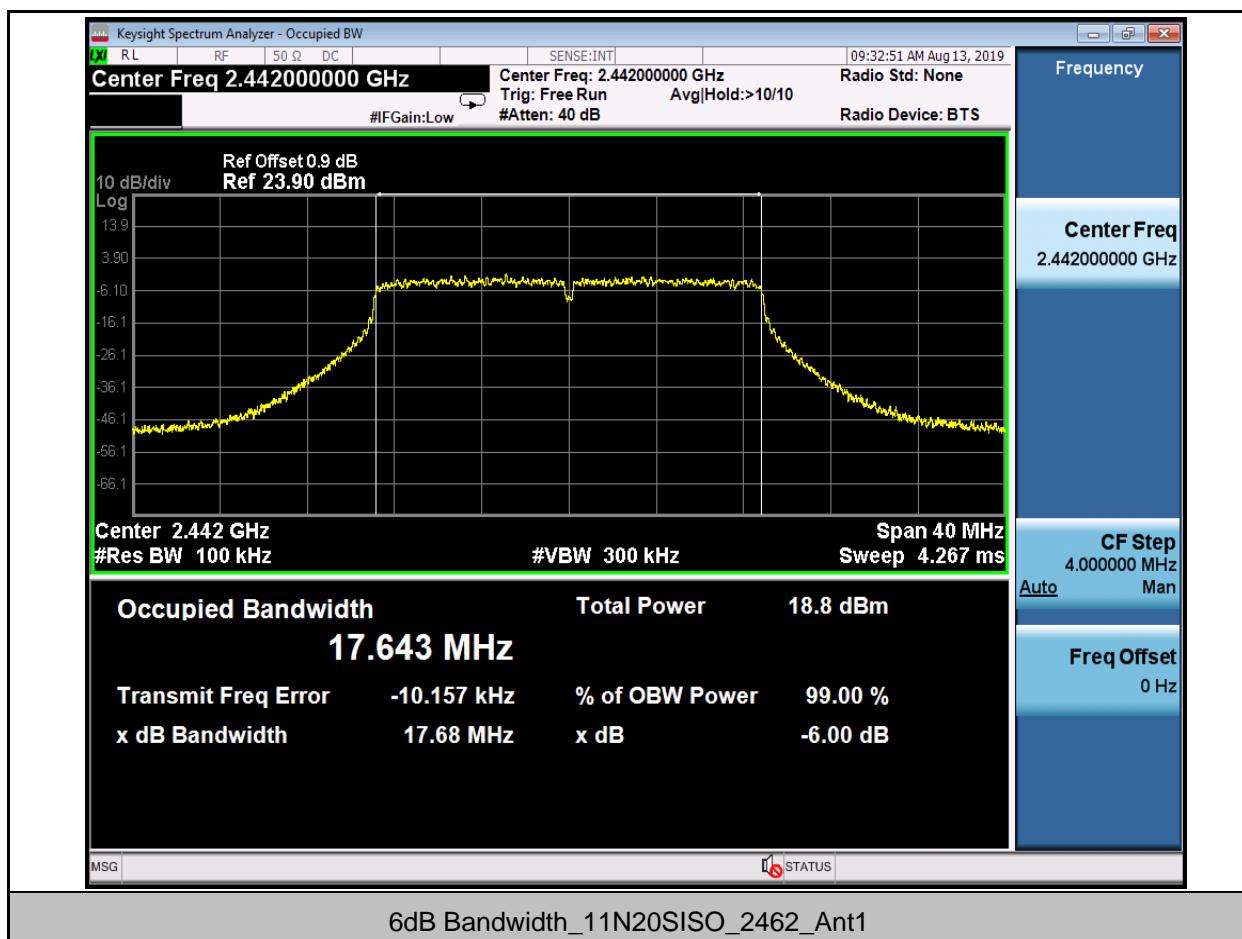


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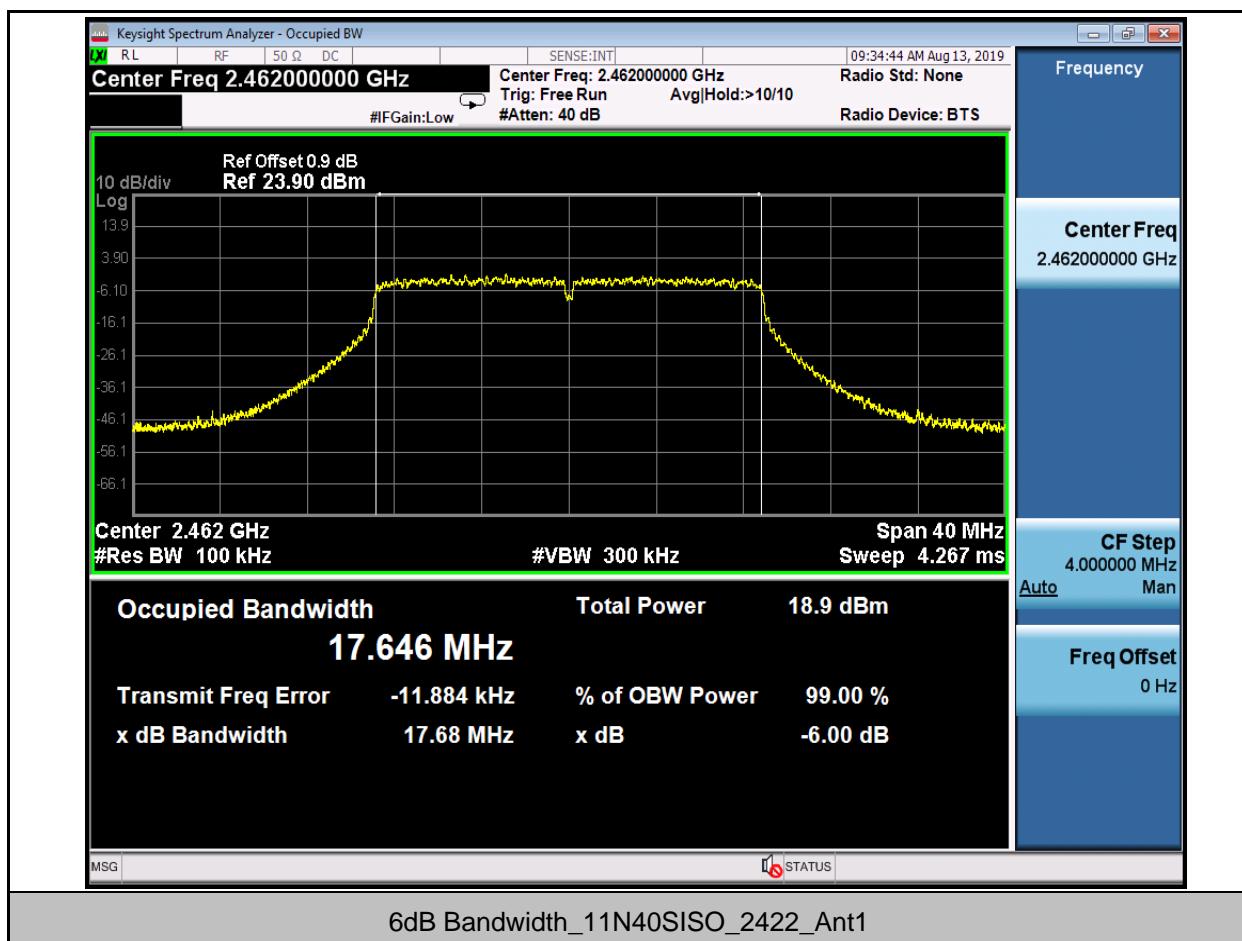
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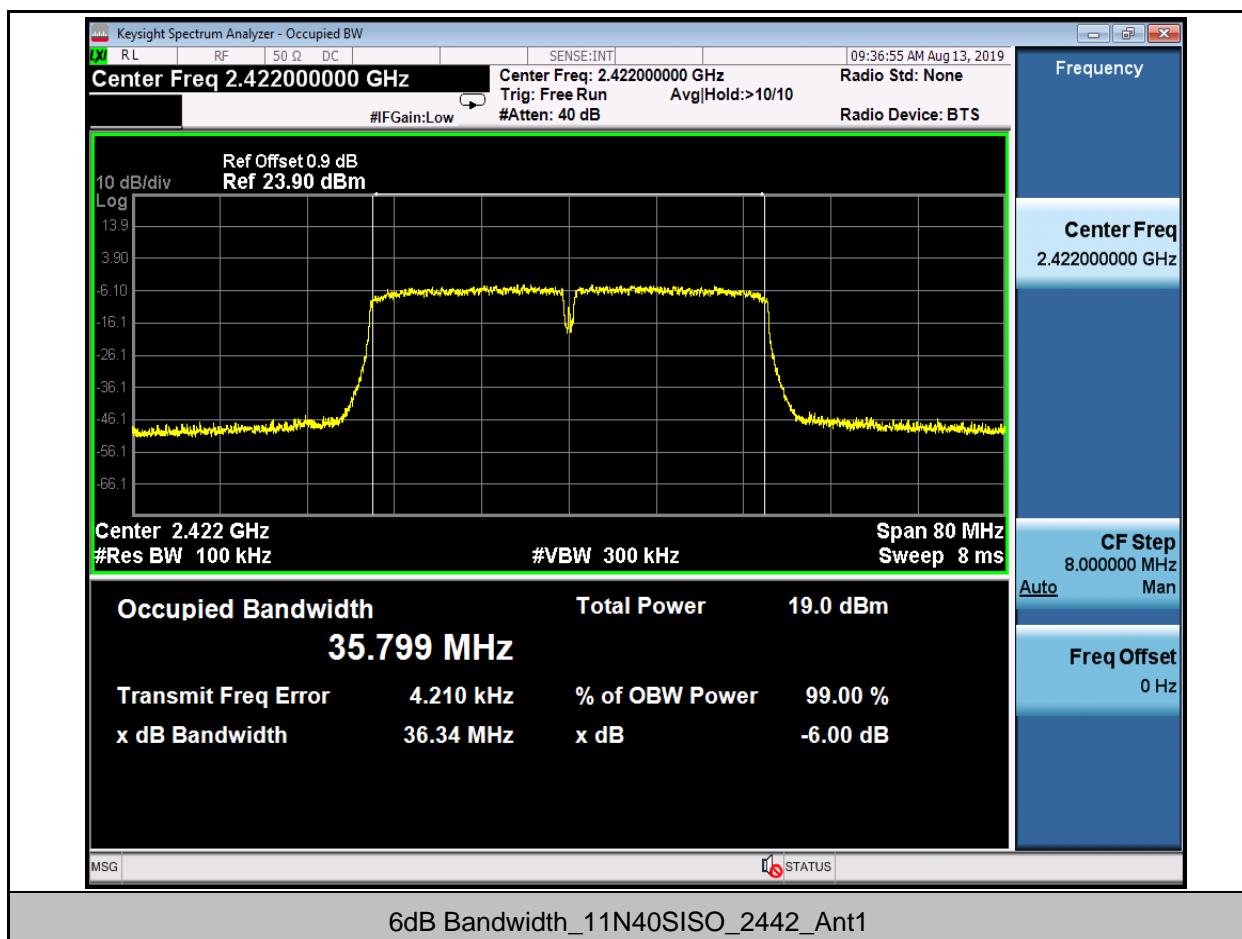
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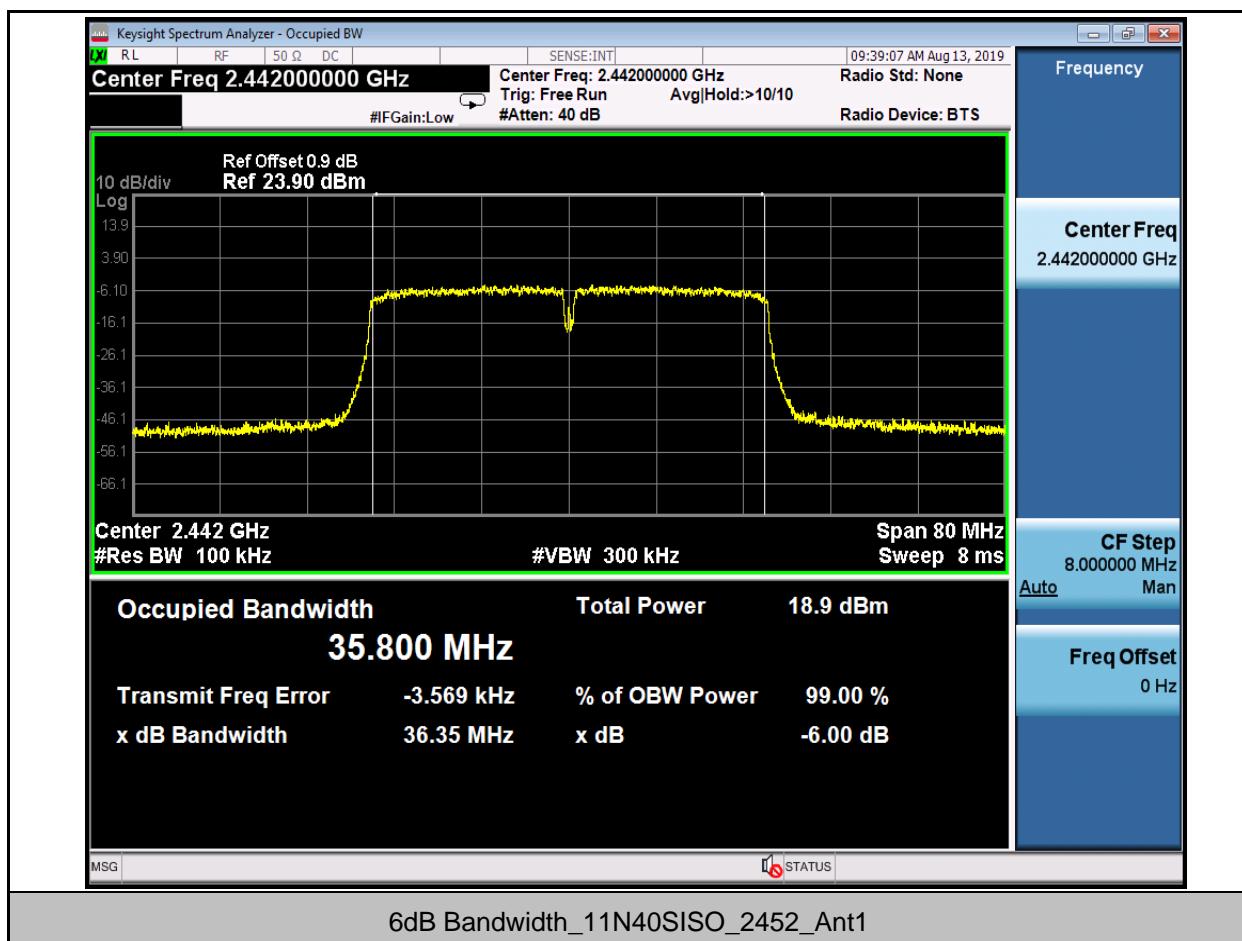
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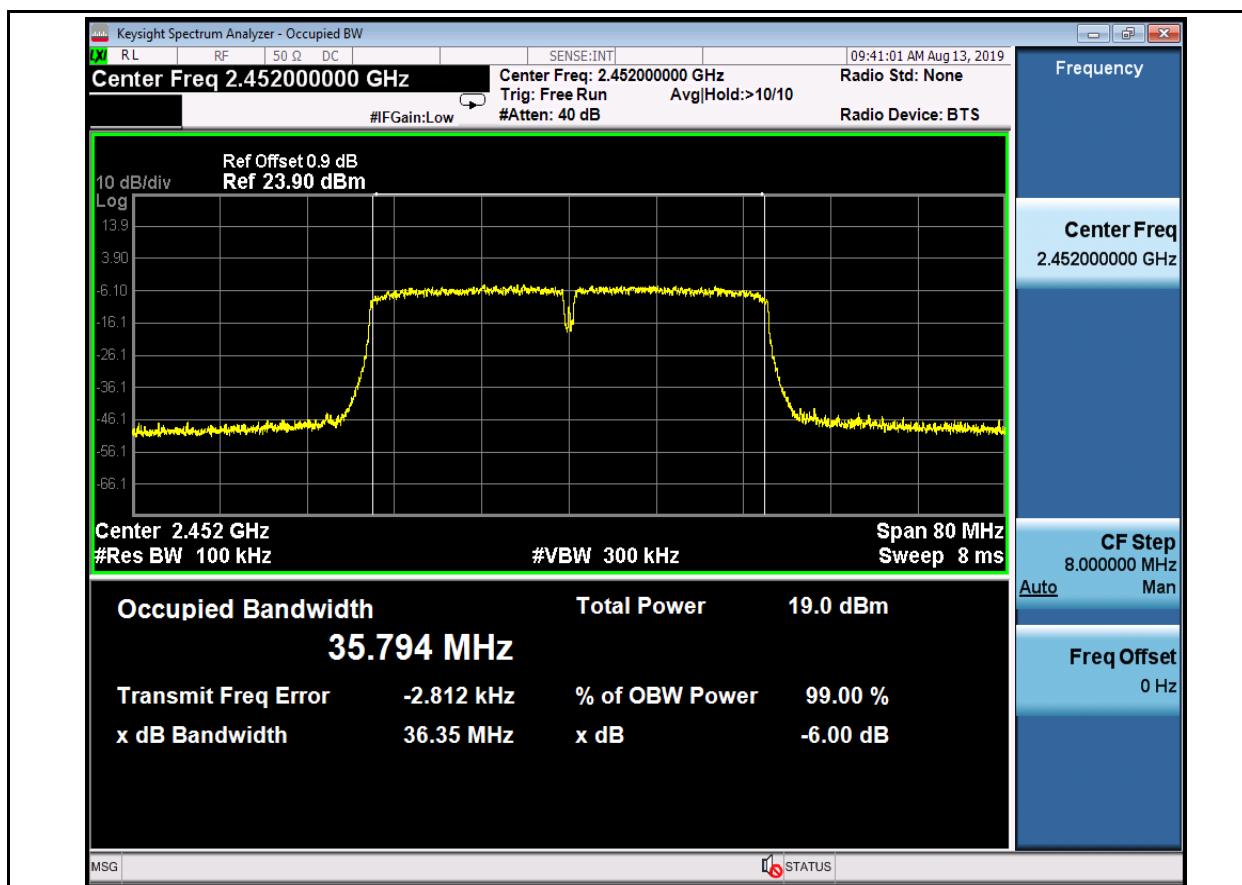
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2. Maximum peak conducted output power

Test Mode	Test Channel	Ant	Power[dBm]	Limit[dBm]	Verdict
11B	2412	Ant1	19.99	30	PASS
11B	2442	Ant1	19.88	30	PASS
11B	2462	Ant1	19.96	30	PASS
11G	2412	Ant1	20.71	30	PASS
11G	2442	Ant1	20.92	30	PASS
11G	2462	Ant1	20.92	30	PASS
11N20SISO	2412	Ant1	20.26	30	PASS
11N20SISO	2442	Ant1	20.49	30	PASS
11N20SISO	2462	Ant1	20.61	30	PASS
11N40SISO	2422	Ant1	20.56	30	PASS
11N40SISO	2442	Ant1	20.58	30	PASS
11N40SISO	2452	Ant1	20.69	30	PASS

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TEST PLOT

Maximum peak conducted output power_11B_2412_Ant1



Maximum peak conducted output power_11B_2442_Ant1

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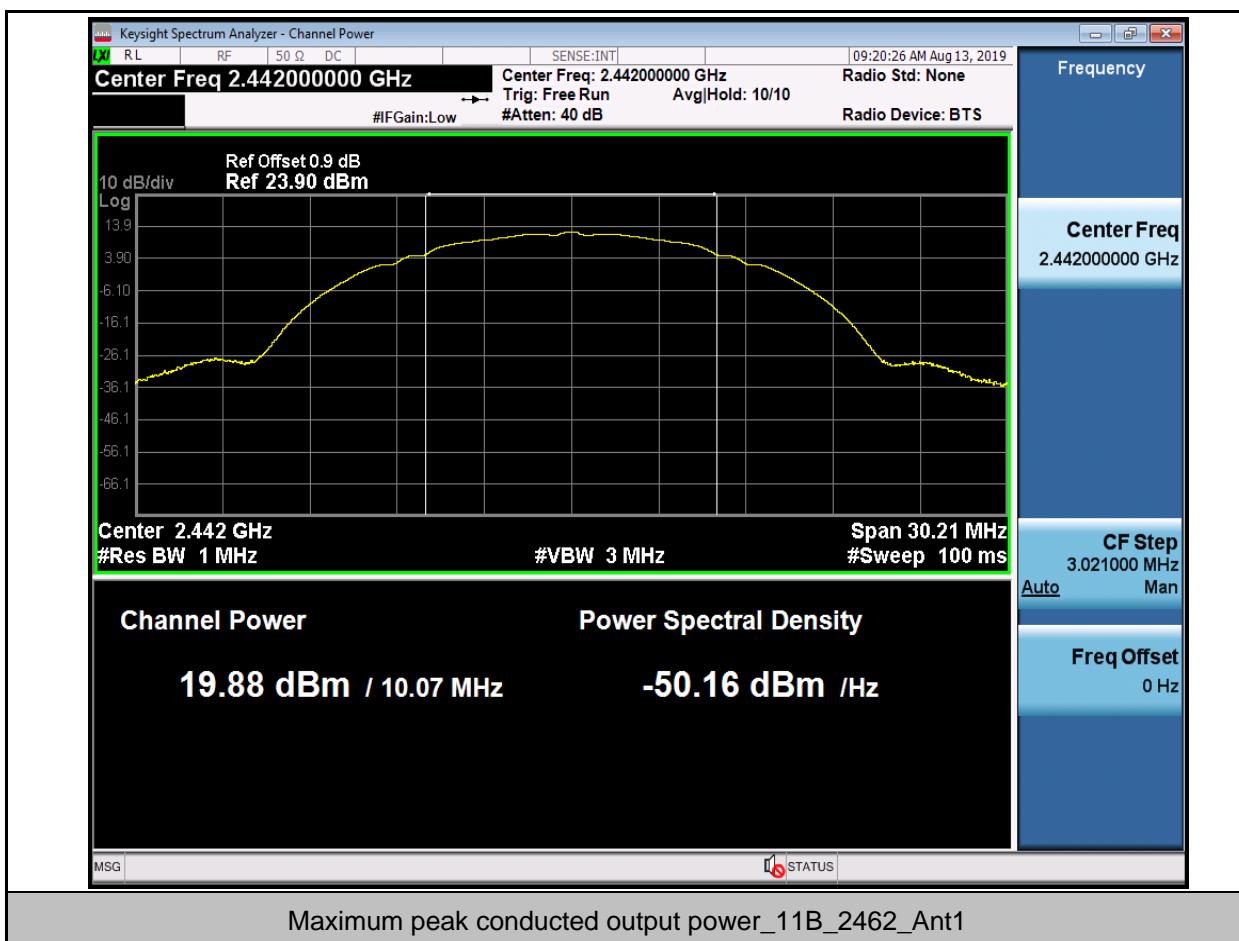
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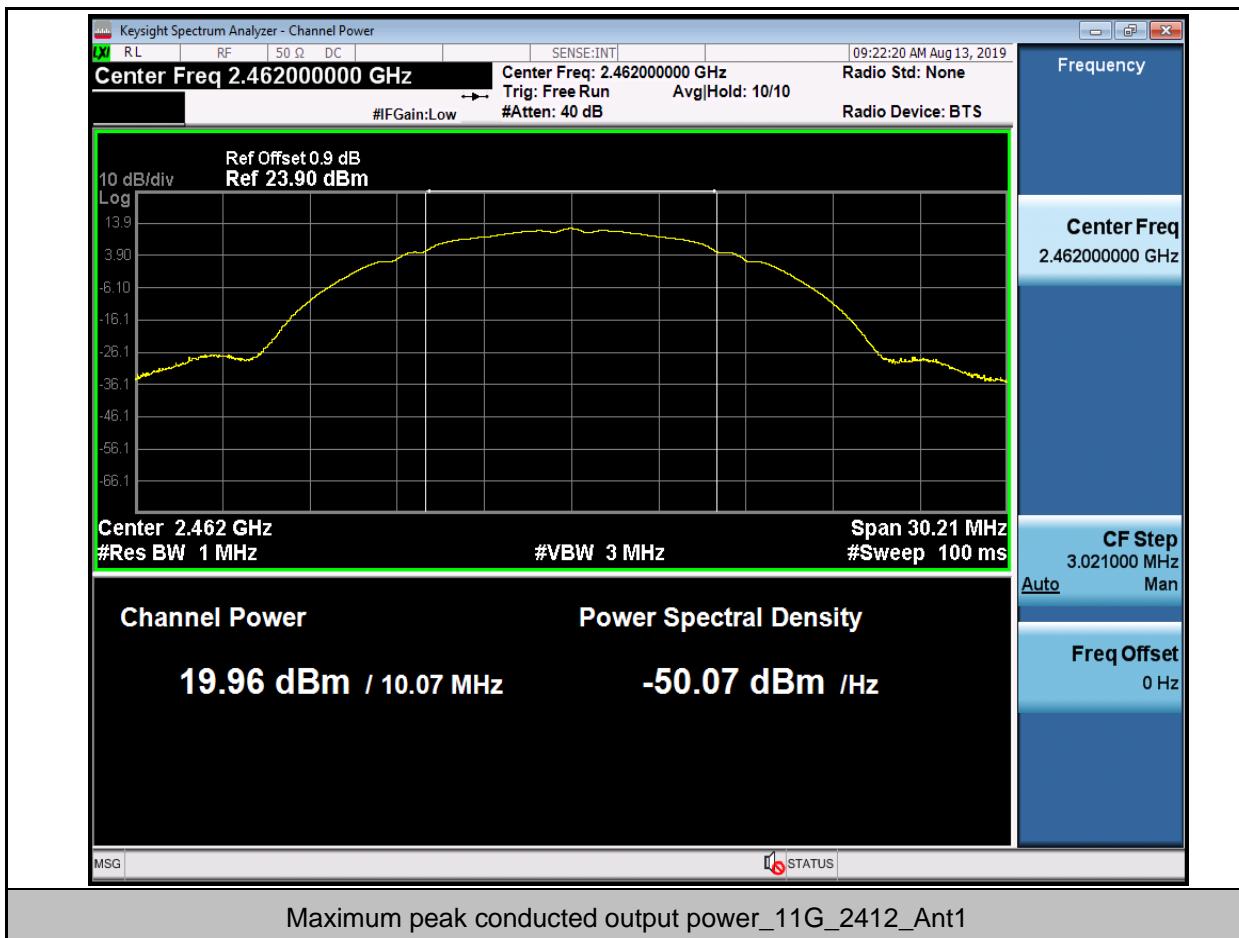


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Maximum peak conducted output power_11G_2412_Ant1

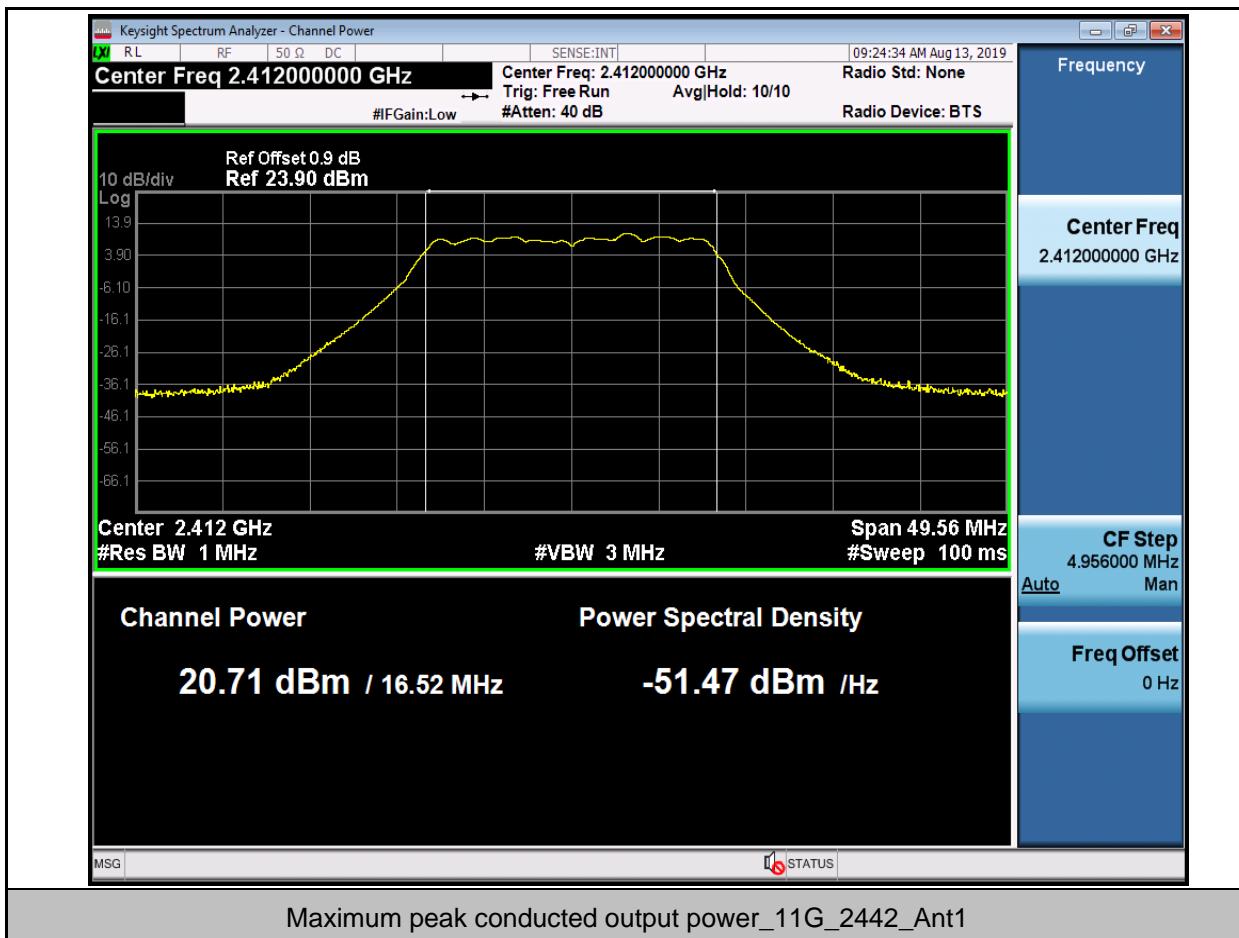
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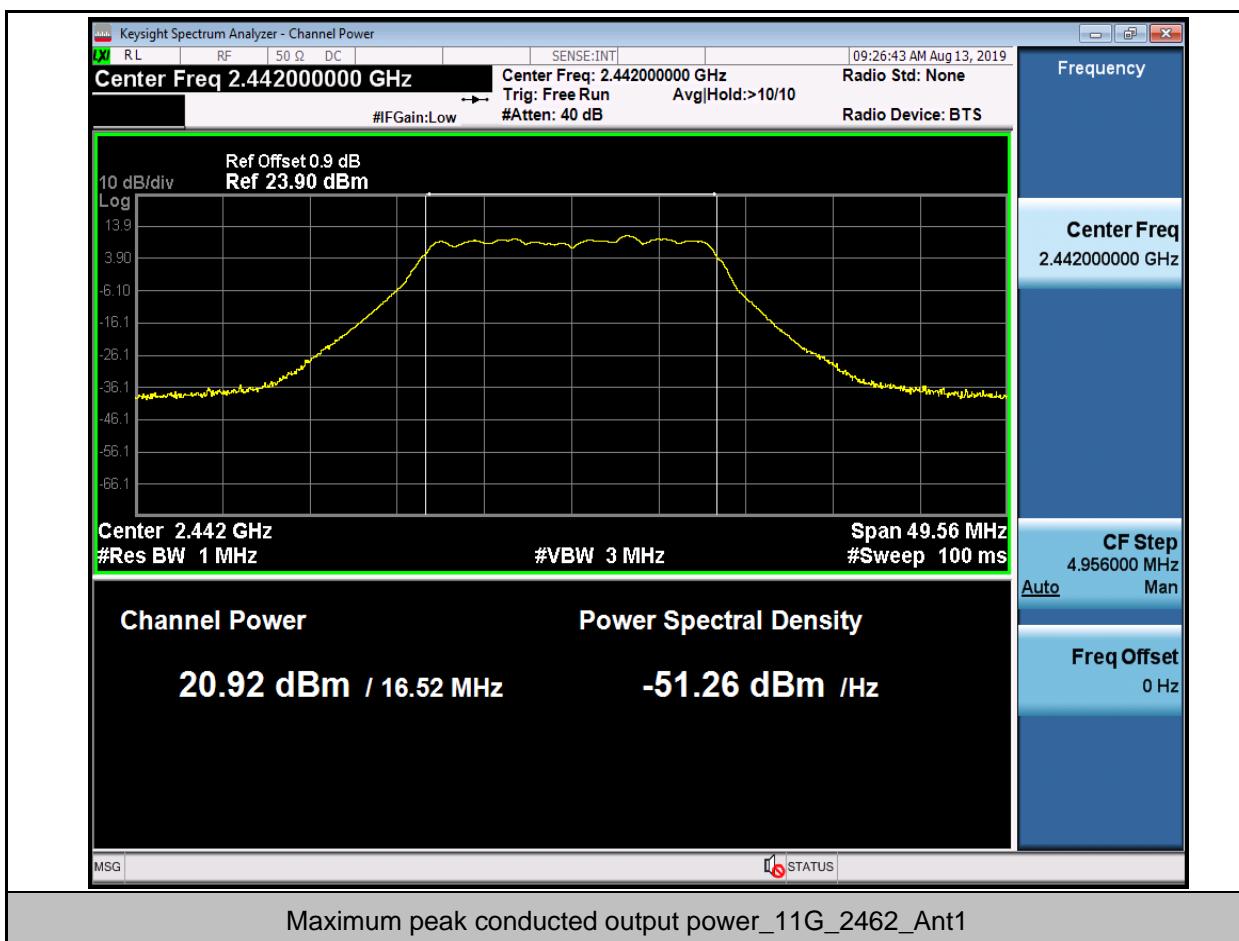


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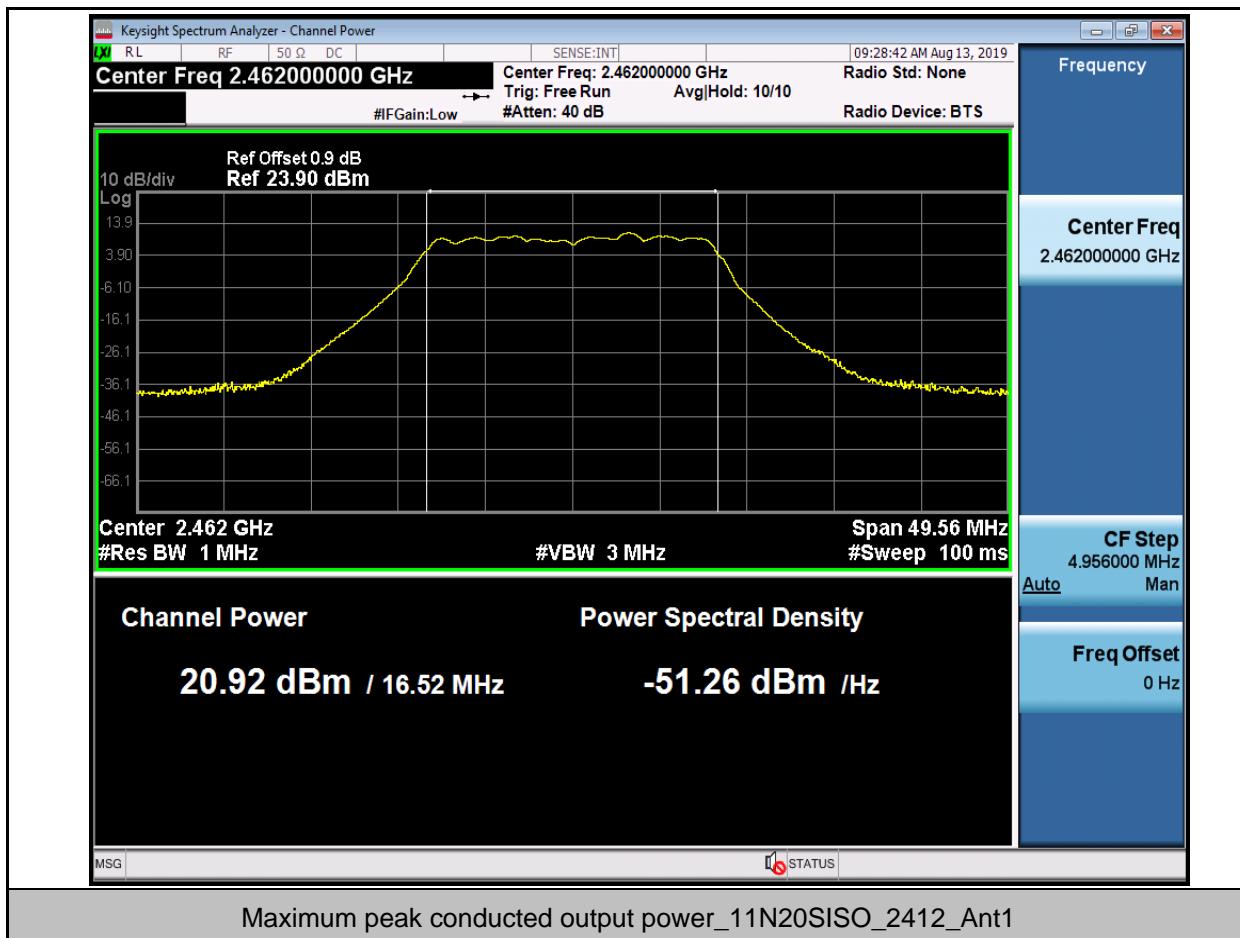


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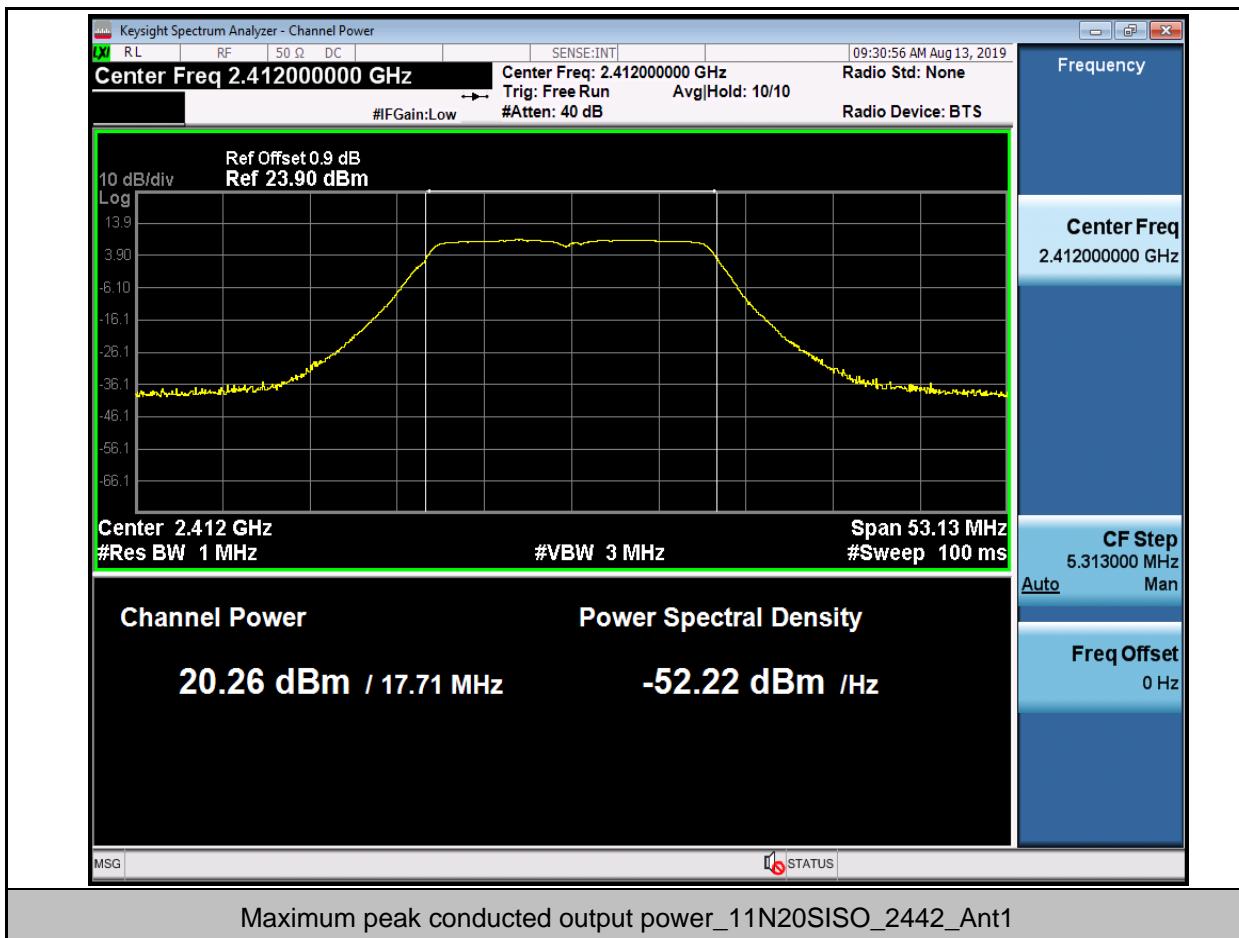


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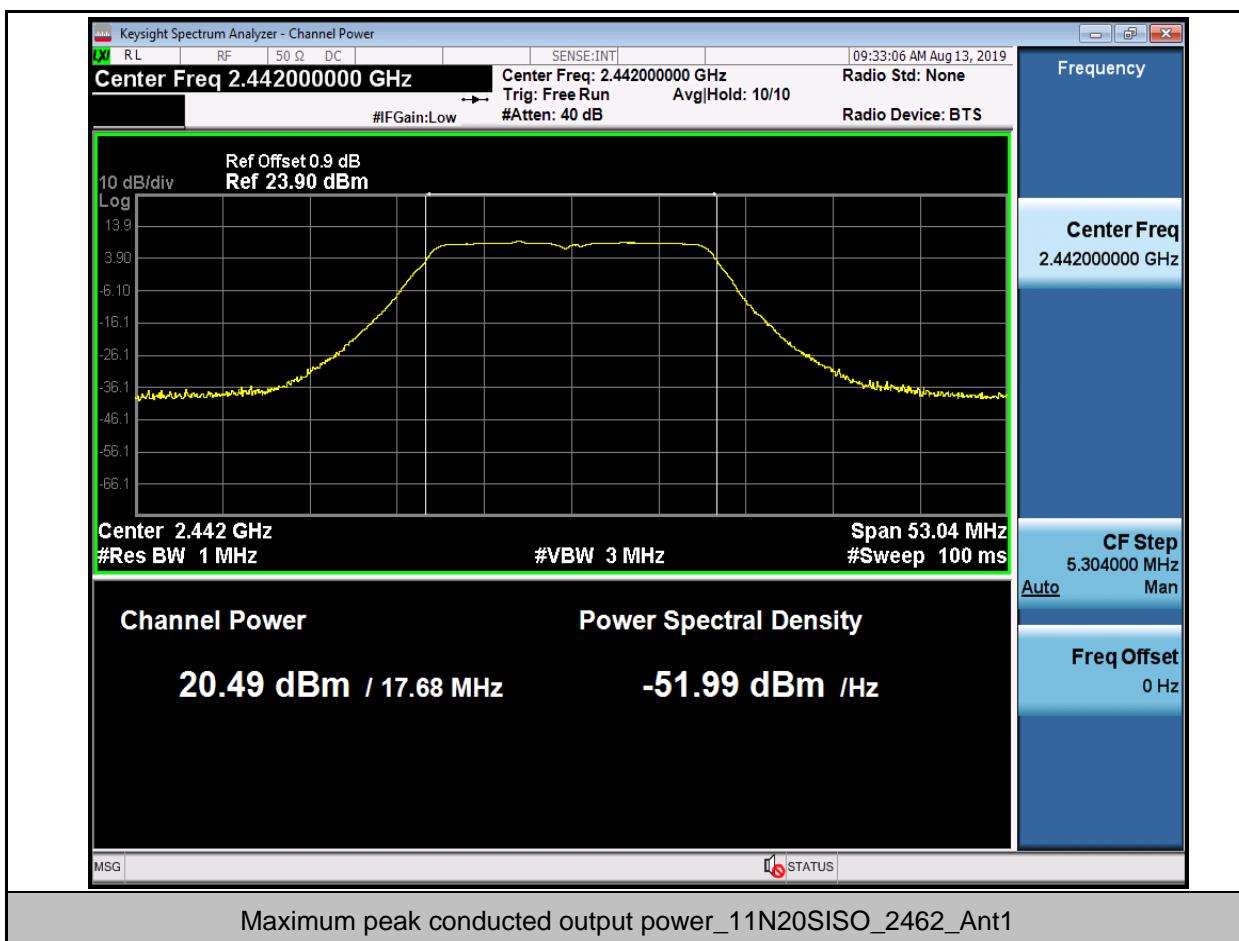


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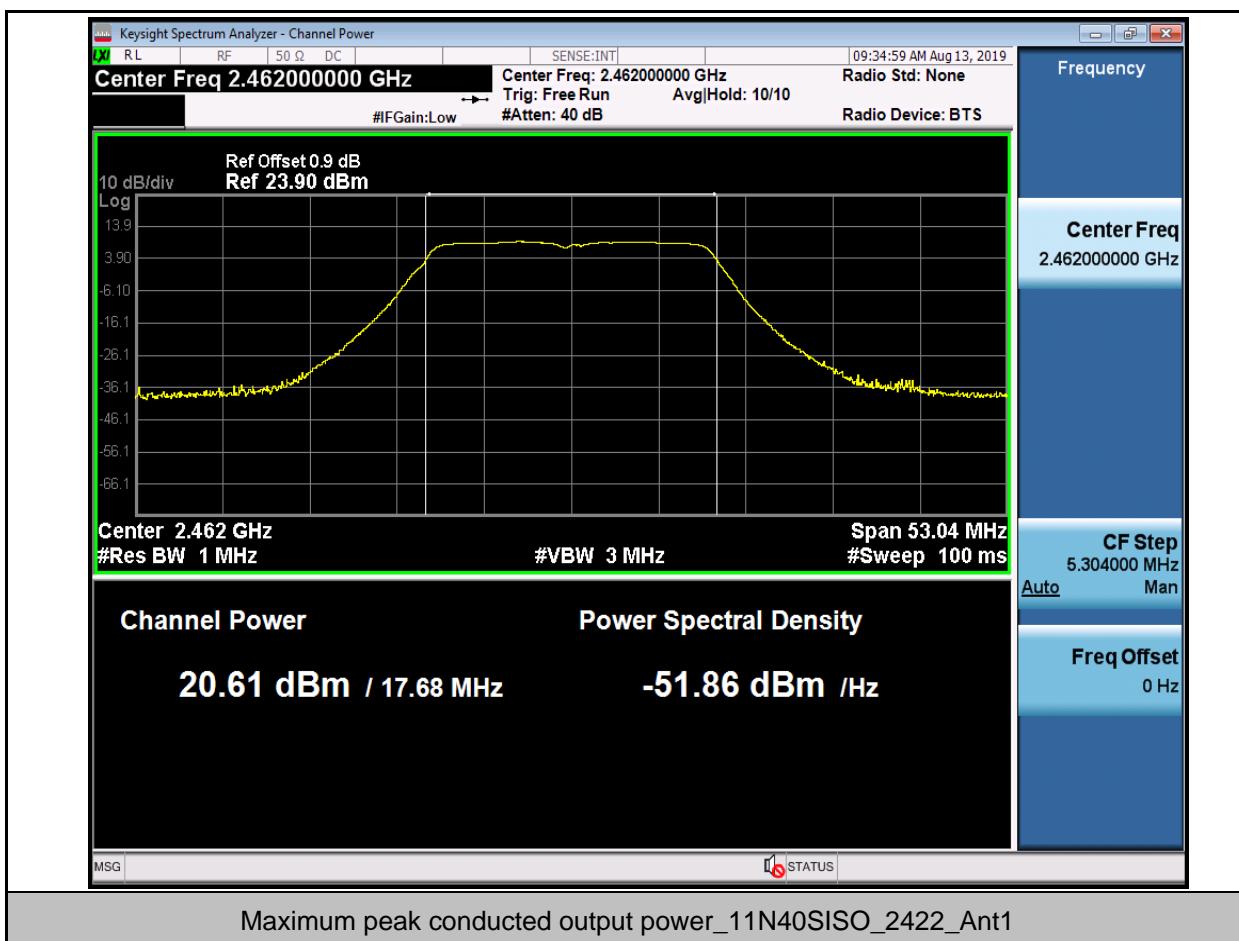


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