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Report No.: GZEM190701414602
Page: 1 of 99

TEST REPORT

Application No.: GZEM1907014146CR
Applicant: GUANGZHOU BOSMA TECHNOLOGY CO., LTD.
Address of Applicant: FL. 2&3, A5, NO.11 Kaiyuan Ave., Science City, Guangzhou, China
Manufacturer: GUANGZHOU BOSMA TECHNOLOGY CO., LTD.
Address of Manufacturer: FL. 2&3, A5, NO.11 Kaiyuan Ave., Science City, Guangzhou, China
Factory: GUANGZHOU BOSMA TECHNOLOGY CO., LTD.
Address of Factory: FL. 2&3, A5, NO.11 Kaiyuan Ave., Science City, Guangzhou, China
Equipment Under Test (EUT):
EUT Name: IP Camera
Model No.: XC
Trade Mark: BOSMA
Standard(s) : 47 CFR Part 15, Subpart C 15.247
Date of Receipt: 2019-07-09
Date of Test: 2019-07-15 to 2019-08-19
Date of Issue: 2019-08-26

Test Result:	Pass*
---------------------	--------------

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

Kobe Jian

EMC Laboratory Manager

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

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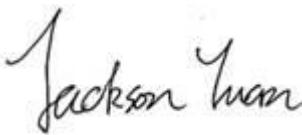


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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2019-08-26		Original

Authorized for issue by:			
Tested By	 Jackson Yuan		2019-07-15 to 2019-08-19
	Jackson_Yuan /Project Engineer	Date	
Checked By	 Ricky Liu		2019-08-26
	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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3 Contents

	Page
1 Cover Page	1
2 Test Summary	3
3 Contents	4
4 General Information	6
4.1 Details of E.U.T.....	6
4.2 Description of Support Units	6
4.3 Measurement Uncertainty	7
4.4 Test Location	7
4.5 Test Facility.....	8
4.6 Deviation from Standards.....	9
4.7 Abnormalities from Standard Conditions	9
5 Equipment List	10
6 Radio Spectrum Technical Requirement.....	14
6.1 Antenna Requirement	14
6.1.1 Test Requirement:	14
6.1.2 Conclusion.....	14
7 Radio Spectrum Matter Test Results	15
7.1 Conducted Emissions at AC Power Line (150kHz-30MHz)	15
7.1.1 E.U.T. Operation.....	15
7.1.2 Test Setup Diagram.....	15
7.1.3 Measurement Procedure and Data	16
7.2 Minimum 6dB Bandwidth	19
7.2.1 E.U.T. Operation.....	19
7.2.2 Test Setup Diagram.....	19
7.2.3 Measurement Procedure and Data	19
7.3 Conducted Peak Output Power.....	20
7.3.1 E.U.T. Operation.....	20
7.3.2 Test Setup Diagram.....	20
7.3.3 Measurement Procedure and Data	20
7.4 Power Spectrum Density.....	21
7.4.1 E.U.T. Operation.....	21
7.4.2 Test Setup Diagram.....	21
7.4.3 Measurement Procedure and Data	21
7.5 Conducted Band Edges Measurement.....	22
7.5.1 E.U.T. Operation.....	22
7.5.2 Test Setup Diagram.....	22
7.5.3 Measurement Procedure and Data	22
7.6 Conducted Spurious Emissions	23
7.6.1 E.U.T. Operation.....	23
7.6.2 Test Setup Diagram.....	23
7.6.3 Measurement Procedure and Data	23

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7.7	Radiated Emissions which fall in the restricted bands	24
7.7.1	E.U.T. Operation.....	24
7.7.2	Test Setup Diagram.....	24
7.7.3	Measurement Procedure and Data.....	25
7.8	Radiated Spurious Emissions	34
7.8.1	E.U.T. Operation.....	34
7.8.2	Test Setup Diagram.....	35
7.8.3	Measurement Procedure and Data.....	36
8	Appendix.....	53
8.1	Appendix 15.247	53



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4 General Information

4.1 Details of E.U.T.

Power Supply:	DC 5.0 V powered by the AC/DC adapter as below:
	Model: GQ-050200-ZU
	Input: AC 100-240 V, 50/60 Hz, 0.4 A Max
	Output: DC 5V 2 A
Test Voltage:	AC 120 V, 60 Hz
Cable:	For main unit: Micro USB ports; Mini SD card ports; For AC/DC adapter: AC plug; USB ports with 1.5 m unshielded cables.
Antenna Gain	3 dBi
Antenna Type	PIFA 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
Software	QSTool

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Laptop	Lenovo	T430u	REF. No. SEA1800

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4.3 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	$\pm 3\%$

4.4 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-CL01:2018 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2017 General Requirements) for the Competence of Testing Laboratories.

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

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

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

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

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

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

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

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

● CBTL (Lab Code: TL129)

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

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4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None



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5 Equipment List

Conducted Emissions at 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

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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	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	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	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	SCHWARZBECKME SS-ELEKTRONIK	VULB 9168	SEM003-18	2019-02-22	2022-02-22
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A

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Radiated 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	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	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	SCHWARZBECKME SS-ELEKTRONIK	VULB 9168	SEM003-18	2019-02-22	2022-02-22
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A

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:

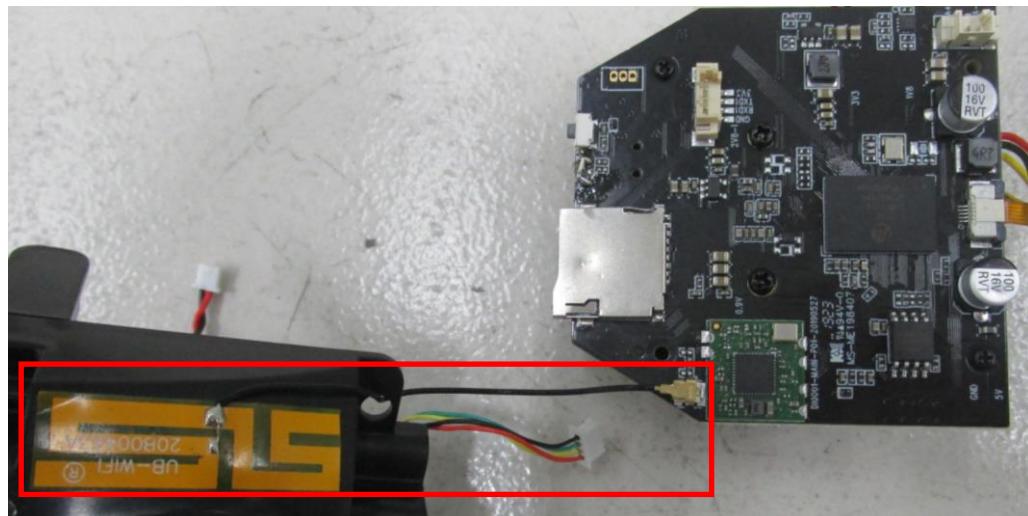
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit 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 3dBi.



Test result: The unit does meet the FCC requirements.

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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.

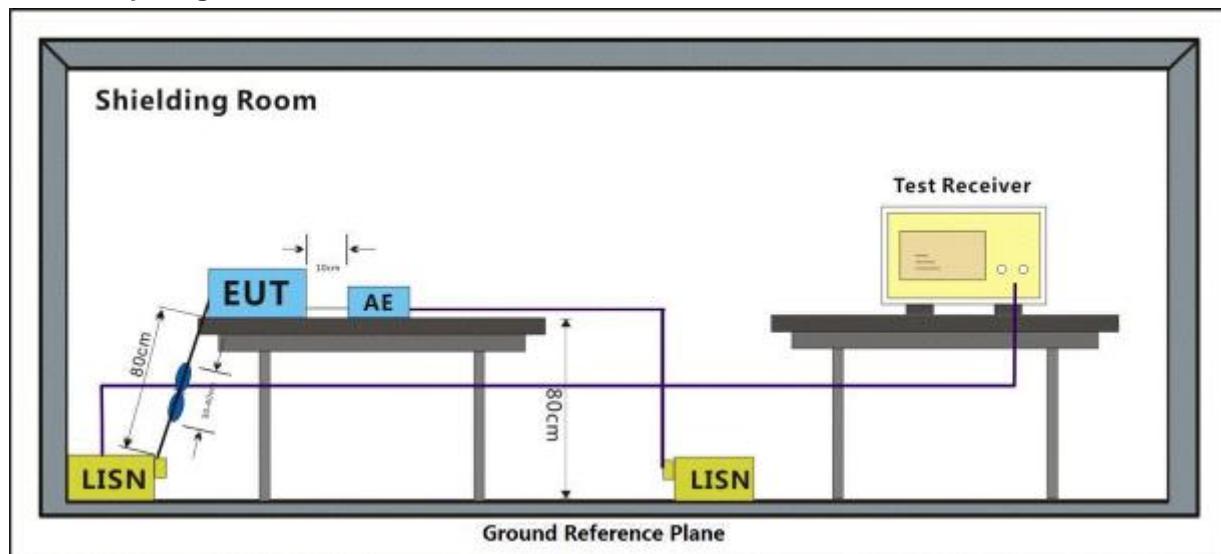
7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 24.1 °C Humidity: 50.6 % RH Atmospheric Pressure: 1020 mbar

Test mode b: 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



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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.

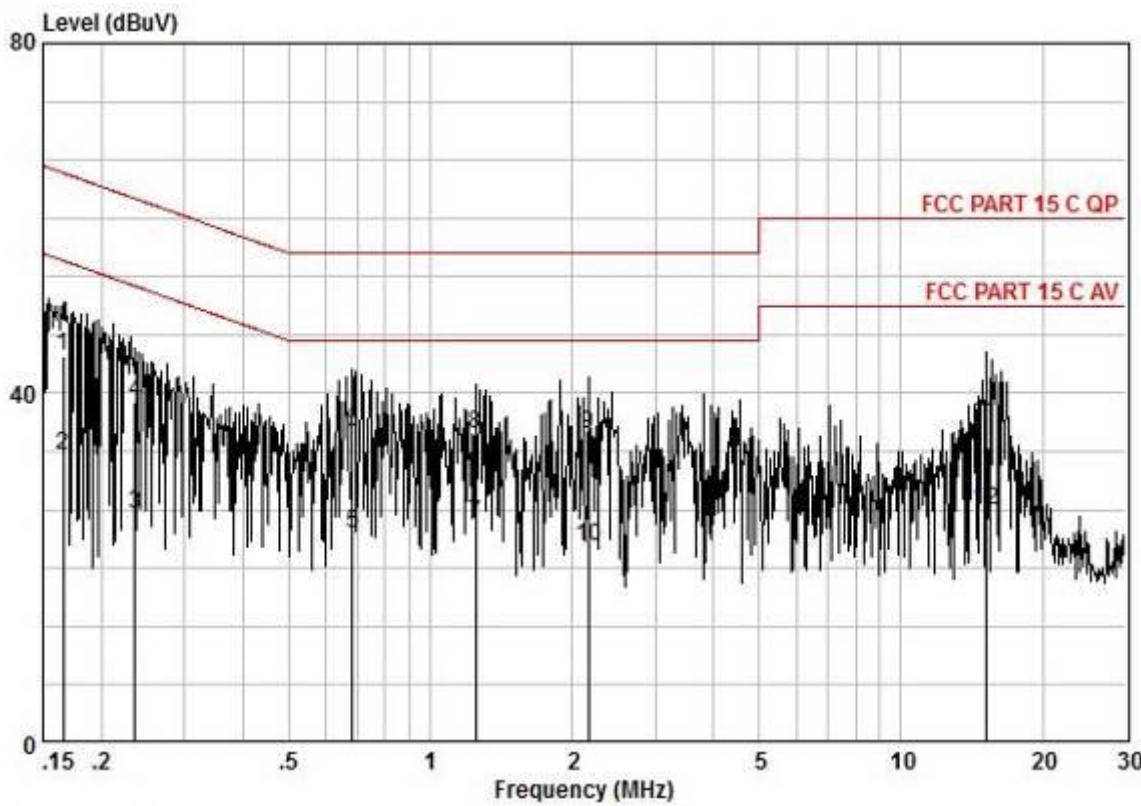
Remark: LISN=Read Level+ Cable Loss+ LISN Factor



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Mode:b; Line:Live Line



Pol :LIVE
No :
Model :

Frequency MHz	read level dBuV	Cable Loss dB	LISN Factor dB	Measured level dBuV	Limit Line dBuV	Over limit dB	Remark
0.17	34.74	0.10	9.51	44.35	65.16	-20.81	QP
0.17	23.21	0.10	9.51	32.82	55.16	-22.34	AVERAGE
0.24	16.35	0.12	9.63	26.09	52.26	-26.17	AVERAGE
0.24	29.29	0.12	9.63	39.03	62.26	-23.23	QP
0.68	14.09	0.25	9.61	23.95	46.00	-22.05	AVERAGE
0.68	25.77	0.25	9.61	35.63	56.00	-20.37	QP
1.25	15.05	0.30	9.62	24.97	46.00	-21.03	AVERAGE
1.25	25.37	0.30	9.62	35.29	56.00	-20.71	QP
2.17	25.26	0.43	9.61	35.30	56.00	-20.70	QP
2.17	12.35	0.43	9.61	22.39	46.00	-23.61	AVERAGE
15.15	26.19	0.70	9.67	36.56	60.00	-23.44	QP
15.15	16.12	0.70	9.67	26.49	50.00	-23.51	AVERAGE

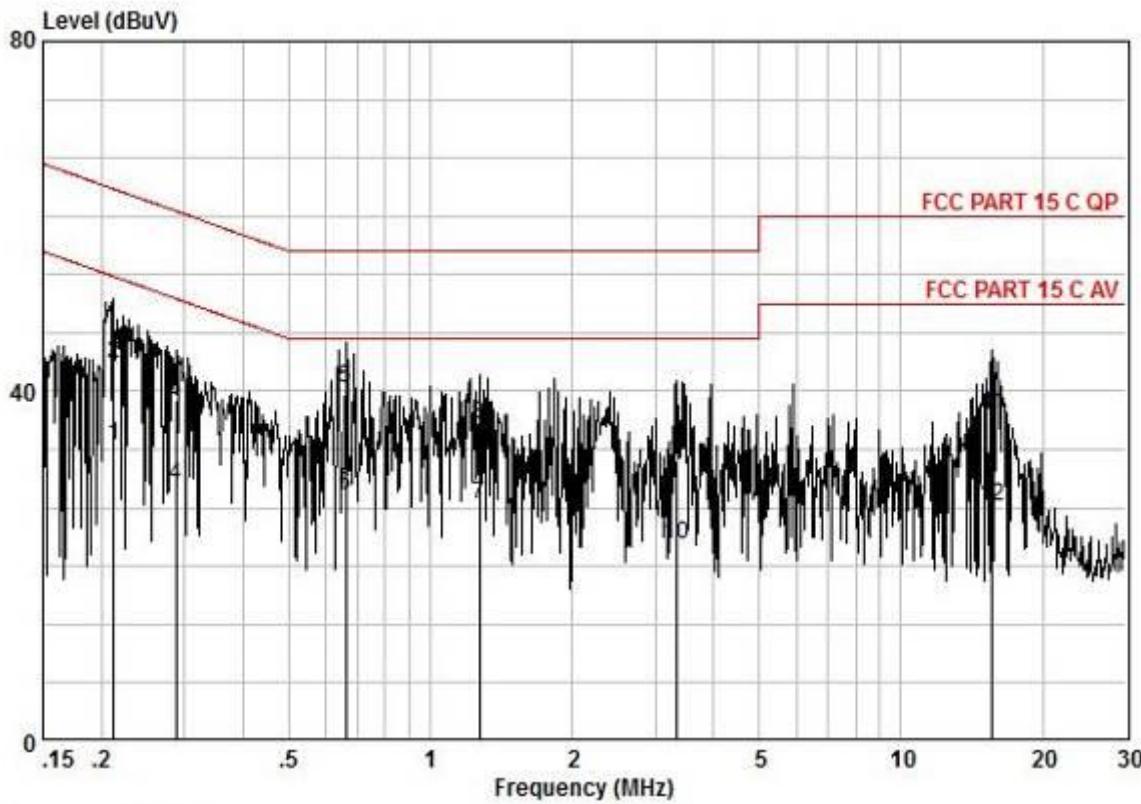
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Mode:b; Line:Neutral Line



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
0.21	24.08	0.11	9.59	33.77	53.10	-19.32	AVERAGE
0.21	33.49	0.11	9.59	43.18	63.10	-19.91	QP
0.29	29.24	0.14	9.57	38.95	60.59	-21.63	QP
0.29	19.53	0.14	9.57	29.24	50.59	-21.34	AVERAGE
0.66	30.61	0.24	9.58	40.43	56.00	-15.57	QP
0.66	18.33	0.24	9.58	28.15	46.00	-17.85	AVERAGE
1.27	17.15	0.30	9.57	27.02	46.00	-18.98	AVERAGE
1.27	26.27	0.30	9.57	36.14	56.00	-19.86	QP
3.35	21.92	0.57	9.57	32.06	56.00	-23.94	QP
3.35	12.22	0.57	9.57	22.36	46.00	-23.64	AVERAGE
15.63	26.93	0.70	9.69	37.32	60.00	-22.68	QP
15.63	16.47	0.70	9.69	26.86	50.00	-23.14	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

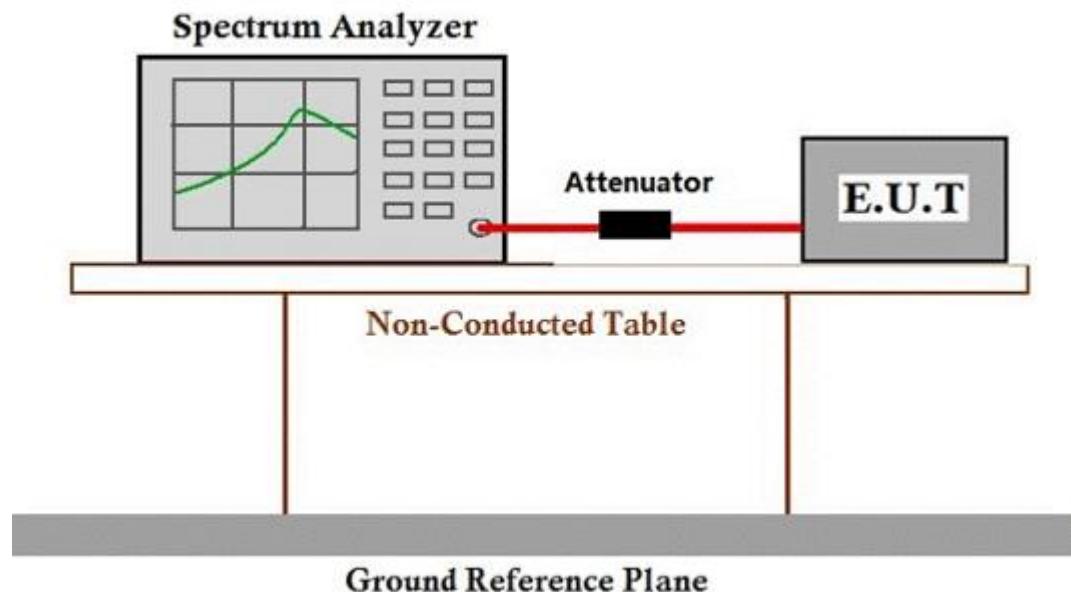
7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 25.2 °C Humidity: 59.6 % RH Atmospheric Pressure: 1020 mbar

Test mode b: 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

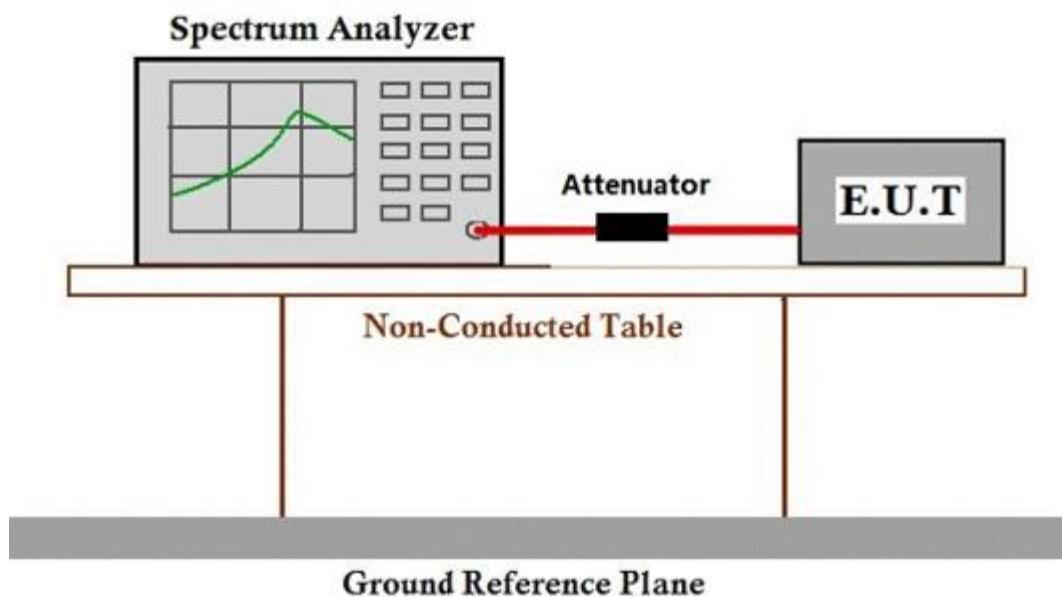
7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 25.2 °C Humidity: 59.6 % RH Atmospheric Pressure: 1020 mbar

Test mode b: 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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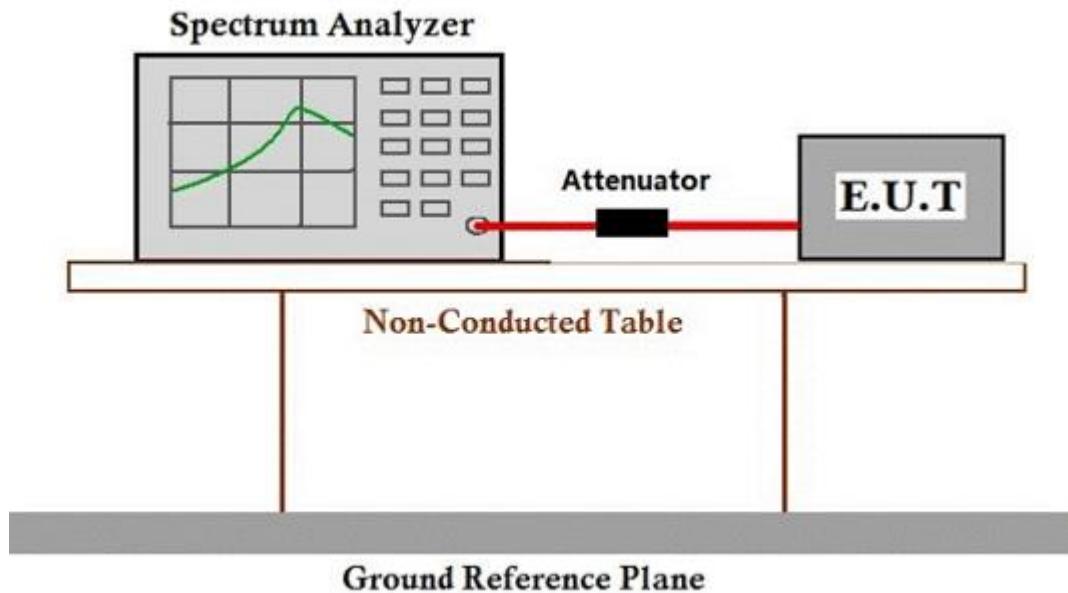
7.4 Power Spectrum Density

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

7.4.1 E.U.T. Operation

Operating Environment:
Temperature: 25.2 °C Humidity: 59.6 % RH Atmospheric Pressure: 1020 mbar
Test mode b: 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))

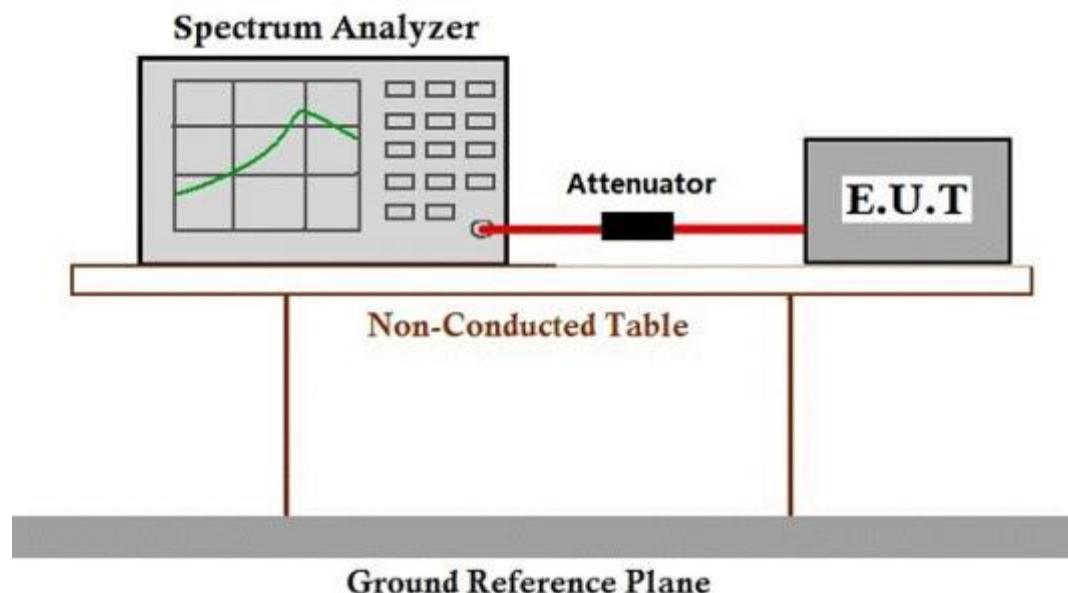
7.5.1 E.U.T. Operation

Operating Environment:

Temperature: 25.2 °C Humidity: 59.6 % RH Atmospheric Pressure: 1020 mbar

Test mode b: 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))

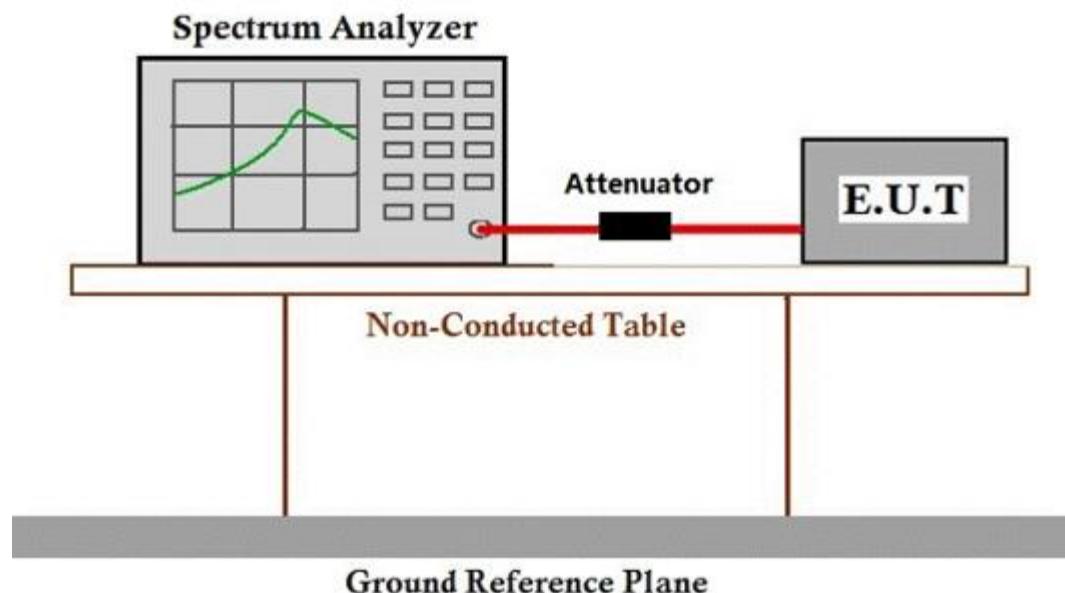
7.6.1 E.U.T. Operation

Operating Environment:

Temperature: 25.2 °C Humidity: 59.6 % RH Atmospheric Pressure: 1020 mbar

Test mode b: 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.

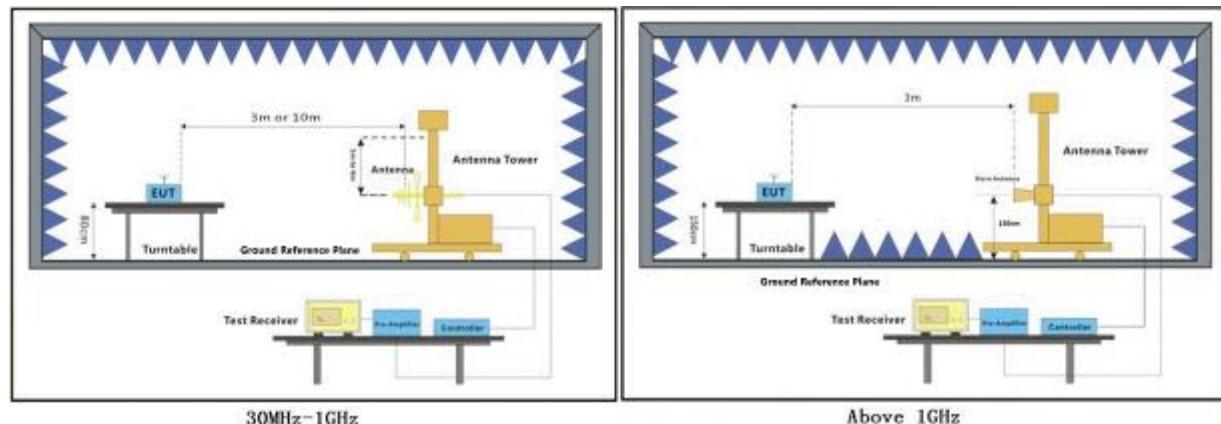
7.7.1 E.U.T. Operation

Operating Environment:

Temperature: 21 °C Humidity: 52 % RH Atmospheric Pressure: 1020 mbar

Test mode b: 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:b; Polarization:Horizontal; Modulation:b; bandwidth:20MHz; Channel:Low

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	31.66	26.25	3.32	37.44	23.79	54.00	-30.21	HORIZONTAL Average
2	2310.000	44.32	26.25	3.32	37.44	36.45	74.00	-37.55	HORIZONTAL Peak
3	2390.000	32.21	26.43	3.48	37.42	24.70	54.00	-29.30	HORIZONTAL Average
4	2390.000	44.39	26.43	3.48	37.42	36.88	74.00	-37.12	HORIZONTAL Peak
5	2483.500	32.69	26.58	3.53	37.40	25.40	54.00	-28.60	HORIZONTAL Average
6	2483.500	45.14	26.58	3.53	37.40	37.85	74.00	-36.15	HORIZONTAL Peak
7	2500.000	32.95	26.60	3.40	37.39	25.56	54.00	-28.44	HORIZONTAL Average
8	2500.000	44.11	26.60	3.40	37.39	36.72	74.00	-37.28	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	33.60	26.25	3.32	37.44	25.73	54.00	-28.27	VERTICAL Average
2	2310.000	46.46	26.25	3.32	37.44	38.59	74.00	-35.41	VERTICAL Peak
3	2390.000	35.48	26.43	3.48	37.42	27.97	54.00	-26.03	VERTICAL Average
4	2390.000	48.40	26.43	3.48	37.42	40.89	74.00	-33.11	VERTICAL Peak
5	2483.500	37.88	26.58	3.53	37.40	30.59	54.00	-23.41	VERTICAL Average
6	2483.500	48.38	26.58	3.53	37.40	41.09	74.00	-32.91	VERTICAL Peak
7	2500.000	40.66	26.60	3.40	37.39	33.27	54.00	-20.73	VERTICAL Average
8	2500.000	49.66	26.60	3.40	37.39	42.27	74.00	-31.73	VERTICAL Peak

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	33.94	26.25	3.32	37.44	26.07	54.00	-27.93	HORIZONTAL Average
2	2310.000	44.96	26.25	3.32	37.44	37.09	74.00	-36.91	HORIZONTAL Peak
3	2390.000	30.45	26.43	3.48	37.42	22.94	54.00	-31.06	HORIZONTAL Average
4	2390.000	45.87	26.43	3.48	37.42	38.36	74.00	-35.64	HORIZONTAL Peak
5	2483.500	32.50	26.58	3.53	37.40	25.21	54.00	-28.79	HORIZONTAL Average
6	2483.500	47.60	26.58	3.53	37.40	40.31	74.00	-33.69	HORIZONTAL Peak
7	2500.000	32.31	26.60	3.40	37.39	24.92	54.00	-29.08	HORIZONTAL Average
8	2500.000	44.83	26.60	3.40	37.39	37.44	74.00	-36.56	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	34.64	26.25	3.32	37.44	26.77	54.00	-27.23	VERTICAL Average
2	2310.000	47.62	26.25	3.32	37.44	39.75	74.00	-34.25	VERTICAL Peak
3	2390.000	35.26	26.43	3.48	37.42	27.75	54.00	-26.25	VERTICAL Average
4	2390.000	46.57	26.43	3.48	37.42	39.06	74.00	-34.94	VERTICAL Peak
5	2483.500	39.84	26.58	3.53	37.40	32.55	54.00	-21.45	VERTICAL Average
6	2483.500	54.96	26.58	3.53	37.40	47.67	74.00	-26.33	VERTICAL Peak
7	2500.000	33.77	26.60	3.40	37.39	26.38	54.00	-27.62	VERTICAL Average
8	2500.000	48.95	26.60	3.40	37.39	41.56	74.00	-32.44	VERTICAL Peak

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	33.25	26.25	3.32	37.44	25.38	54.00	-28.62	HORIZONTAL Average
2	2310.000	45.26	26.25	3.32	37.44	37.39	74.00	-36.61	HORIZONTAL Peak
3	2390.000	34.28	26.43	3.48	37.42	26.77	54.00	-27.23	HORIZONTAL Average
4	2390.000	44.92	26.43	3.48	37.42	37.41	74.00	-36.59	HORIZONTAL Peak
5	2483.500	35.13	26.58	3.53	37.40	27.84	54.00	-26.16	HORIZONTAL Average
6	2483.500	45.87	26.58	3.53	37.40	38.58	74.00	-35.42	HORIZONTAL Peak
7	2500.000	35.44	26.60	3.40	37.39	28.05	54.00	-25.95	HORIZONTAL Average
8	2500.000	46.11	26.60	3.40	37.39	38.72	74.00	-35.28	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	34.66	26.25	3.32	37.44	26.79	54.00	-27.21	VERTICAL Average
2	2310.000	46.76	26.25	3.32	37.44	38.89	74.00	-35.11	VERTICAL Peak
3	2390.000	38.81	26.43	3.48	37.42	31.30	54.00	-22.70	VERTICAL Average
4	2390.000	52.95	26.43	3.48	37.42	45.44	74.00	-28.56	VERTICAL Peak
5	2483.500	38.00	26.58	3.53	37.40	30.71	54.00	-23.29	VERTICAL Average
6	2483.500	49.29	26.58	3.53	37.40	42.00	74.00	-32.00	VERTICAL Peak
7	2500.000	37.55	26.60	3.40	37.39	30.16	54.00	-23.84	VERTICAL Average
8	2500.000	50.93	26.60	3.40	37.39	43.54	74.00	-30.46	VERTICAL Peak

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	34.18	26.25	3.32	37.44	26.31	54.00	-27.69	HORIZONTAL Average
2	2310.000	44.82	26.25	3.32	37.44	36.95	74.00	-37.05	HORIZONTAL Peak
3	2390.000	33.57	26.43	3.48	37.42	26.06	54.00	-27.94	HORIZONTAL Average
4	2390.000	44.48	26.43	3.48	37.42	36.97	74.00	-37.03	HORIZONTAL Peak
5	2483.500	48.33	26.58	3.53	37.40	41.04	54.00	-12.96	HORIZONTAL Average
6	2483.500	63.80	26.58	3.53	37.40	56.51	74.00	-17.49	HORIZONTAL Peak
7	2500.000	38.09	26.60	3.40	37.39	30.70	54.00	-23.30	HORIZONTAL Average
8	2500.000	45.27	26.60	3.40	37.39	37.88	74.00	-36.12	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	36.73	26.25	3.32	37.44	28.86	54.00	-25.14	VERTICAL Average
2	2310.000	47.21	26.25	3.32	37.44	39.34	74.00	-34.66	VERTICAL Peak
3	2390.000	34.41	26.43	3.48	37.42	26.90	54.00	-27.10	VERTICAL Average
4	2390.000	46.40	26.43	3.48	37.42	38.89	74.00	-35.11	VERTICAL Peak
5	2483.500	51.41	26.58	3.53	37.40	44.12	54.00	-9.88	VERTICAL Average
6	2483.500	71.11	26.58	3.53	37.40	63.82	74.00	-10.18	VERTICAL Peak
7	2500.000	47.16	26.60	3.40	37.39	39.77	54.00	-14.23	VERTICAL Average
8	2500.000	58.55	26.60	3.40	37.39	51.16	74.00	-22.84	VERTICAL Peak

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	34.92	26.25	3.32	37.44	27.05	54.00	-26.95	HORIZONTAL Average
2	2310.000	45.67	26.25	3.32	37.44	37.80	74.00	-36.20	HORIZONTAL Peak
3	2390.000	37.33	26.43	3.48	37.42	29.82	54.00	-24.18	HORIZONTAL Average
4	2390.000	46.49	26.43	3.48	37.42	38.98	74.00	-35.02	HORIZONTAL Peak
5	2483.500	34.37	26.58	3.53	37.40	27.08	54.00	-26.92	HORIZONTAL Average
6	2483.500	46.51	26.58	3.53	37.40	39.22	74.00	-34.78	HORIZONTAL Peak
7	2500.000	35.79	26.60	3.40	37.39	28.40	54.00	-25.60	HORIZONTAL Average
8	2500.000	46.70	26.60	3.40	37.39	39.31	74.00	-34.69	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	37.53	26.25	3.32	37.44	29.66	54.00	-24.34	VERTICAL Average
2	2310.000	48.70	26.25	3.32	37.44	40.83	74.00	-33.17	VERTICAL Peak
3	2390.000	41.06	26.43	3.48	37.42	33.55	54.00	-20.45	VERTICAL Average
4	2390.000	48.30	26.43	3.48	37.42	40.79	74.00	-33.21	VERTICAL Peak
5	2483.500	39.97	26.58	3.53	37.40	32.68	54.00	-21.32	VERTICAL Average
6	2483.500	49.78	26.58	3.53	37.40	42.49	74.00	-31.51	VERTICAL Peak
7	2500.000	39.95	26.60	3.40	37.39	32.56	54.00	-21.44	VERTICAL Average
8	2500.000	51.16	26.60	3.40	37.39	43.77	74.00	-30.23	VERTICAL Peak

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	34.66	26.25	3.32	37.44	26.79	54.00	-27.21	HORIZONTAL Average
2	2310.000	46.05	26.25	3.32	37.44	38.18	74.00	-35.82	HORIZONTAL Peak
3	2390.000	35.48	26.43	3.48	37.42	27.97	54.00	-26.03	HORIZONTAL Average
4	2390.000	46.45	26.43	3.48	37.42	38.94	74.00	-35.06	HORIZONTAL Peak
5	2483.500	40.70	26.58	3.53	37.40	33.41	54.00	-20.59	HORIZONTAL Average
6	2483.500	58.96	26.58	3.53	37.40	51.67	74.00	-22.33	HORIZONTAL Peak
7	2500.000	35.34	26.60	3.40	37.39	27.95	54.00	-26.05	HORIZONTAL Average
8	2500.000	47.18	26.60	3.40	37.39	39.79	74.00	-34.21	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	36.95	26.25	3.32	37.44	29.08	54.00	-24.92	VERTICAL Average
2	2310.000	47.84	26.25	3.32	37.44	39.97	74.00	-34.03	VERTICAL Peak
3	2390.000	39.02	26.43	3.48	37.42	31.51	54.00	-22.49	VERTICAL Average
4	2390.000	47.98	26.43	3.48	37.42	40.47	74.00	-33.53	VERTICAL Peak
5	2483.500	50.14	26.58	3.53	37.40	42.85	54.00	-11.15	VERTICAL Average
6	2483.500	72.86	26.58	3.53	37.40	65.57	74.00	-8.43	VERTICAL Peak
7	2500.000	40.65	26.60	3.40	37.39	33.26	54.00	-20.74	VERTICAL Average
8	2500.000	50.99	26.60	3.40	37.39	43.60	74.00	-30.40	VERTICAL Peak

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	47.76	26.25	3.32	37.44	39.89	54.00	-14.11	HORIZONTAL Average
2	2310.000	47.34	26.25	3.32	37.44	39.47	74.00	-34.53	HORIZONTAL Peak
3	2390.000	48.65	26.43	3.48	37.42	41.14	54.00	-12.86	HORIZONTAL Average
4	2390.000	67.49	26.43	3.48	37.42	59.98	74.00	-14.02	HORIZONTAL Peak
5	2483.500	39.67	26.58	3.53	37.40	32.38	54.00	-21.62	HORIZONTAL Average
6	2483.500	52.36	26.58	3.53	37.40	45.07	74.00	-28.93	HORIZONTAL Peak
7	2500.000	37.85	26.60	3.40	37.39	30.46	54.00	-23.54	HORIZONTAL Average
8	2500.000	50.17	26.60	3.40	37.39	42.78	74.00	-31.22	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	37.17	26.25	3.32	37.44	29.30	54.00	-24.70	VERTICAL Average
2	2310.000	47.91	26.25	3.32	37.44	40.04	74.00	-33.96	VERTICAL Peak
3	2390.000	49.44	26.43	3.48	37.42	41.93	54.00	-12.07	VERTICAL Average
4	2390.000	70.94	26.43	3.48	37.42	63.43	74.00	-10.57	VERTICAL Peak
5	2483.500	42.97	26.58	3.53	37.40	35.68	54.00	-18.32	VERTICAL Average
6	2483.500	52.63	26.58	3.53	37.40	45.34	74.00	-28.66	VERTICAL Peak
7	2500.000	41.74	26.60	3.40	37.39	34.35	54.00	-19.65	VERTICAL Average
8	2500.000	50.85	26.60	3.40	37.39	43.46	74.00	-30.54	VERTICAL Peak

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	36.92	26.25	3.32	37.44	29.05	54.00	-24.95	HORIZONTAL Average
2	2310.000	48.79	26.25	3.32	37.44	40.92	74.00	-33.08	HORIZONTAL Peak
3	2390.000	36.38	26.43	3.48	37.42	28.87	54.00	-25.13	HORIZONTAL Average
4	2390.000	48.08	26.43	3.48	37.42	40.57	74.00	-33.43	HORIZONTAL Peak
5	2483.500	35.91	26.58	3.53	37.40	28.62	54.00	-25.38	HORIZONTAL Average
6	2483.500	55.84	26.58	3.53	37.40	48.55	74.00	-25.45	HORIZONTAL Peak
7	2500.000	38.11	26.60	3.40	37.39	30.72	54.00	-23.28	HORIZONTAL Average
8	2500.000	50.19	26.60	3.40	37.39	42.80	74.00	-31.20	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	37.11	26.25	3.32	37.44	29.24	54.00	-24.76	VERTICAL Average
2	2310.000	48.14	26.25	3.32	37.44	40.27	74.00	-33.73	VERTICAL Peak
3	2390.000	35.06	26.43	3.48	37.42	27.55	54.00	-26.45	VERTICAL Average
4	2390.000	47.65	26.43	3.48	37.42	40.14	74.00	-33.86	VERTICAL Peak
5	2483.500	38.56	26.58	3.53	37.40	31.27	54.00	-22.73	VERTICAL Average
6	2483.500	55.92	26.58	3.53	37.40	48.63	74.00	-25.37	VERTICAL Peak
7	2500.000	40.88	26.60	3.40	37.39	33.49	54.00	-20.51	VERTICAL Average
8	2500.000	49.19	26.60	3.40	37.39	41.80	74.00	-32.20	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.

7.8.1 E.U.T. Operation

Operating Environment:

Temperature: 21 °C Humidity: 52 % RH Atmospheric Pressure: 1020 mbar

Test mode b: 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.

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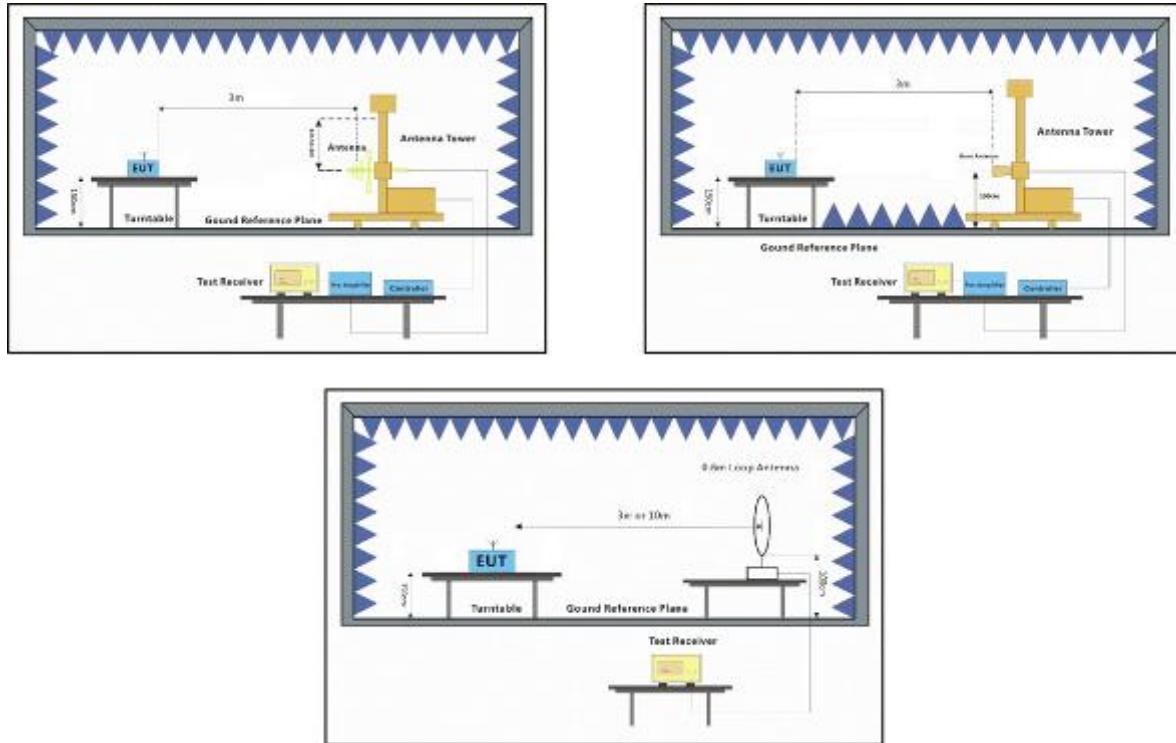
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7.8.2 Test Setup Diagram



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

Freq	ReadAntenna		Cable Preamp		Limit	Over	Over	Remark
	Level	Factor	Loss	Factor				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	172.599	32.02	13.00	1.40	26.44	19.98	43.50	-23.52 HORIZONTAL QP
2	234.168	34.15	12.14	1.61	26.53	21.37	46.00	-24.63 HORIZONTAL QP
3	270.375	35.55	13.21	1.70	26.64	23.82	46.00	-22.18 HORIZONTAL QP
4	319.937	37.87	14.22	1.87	27.01	26.95	46.00	-19.05 HORIZONTAL QP
5	406.088	33.38	16.37	2.22	27.36	24.61	46.00	-21.39 HORIZONTAL QP
6	665.804	26.71	21.05	2.77	27.34	23.19	46.00	-22.81 HORIZONTAL QP

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

Freq	ReadAntenna		Cable Preamp		Limit	Over	Over	Remark
	Level	Factor	Loss	Factor				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	2871.934	35.08	27.70	3.70	37.15	29.33	54.00	-24.67 HORIZONTAL Average
2	2871.934	47.15	27.70	3.70	37.15	41.40	74.00	-32.60 HORIZONTAL Peak
3	3587.818	36.97	28.11	4.49	36.94	32.63	54.00	-21.37 HORIZONTAL Average
4	3587.818	45.43	28.11	4.49	36.94	41.09	74.00	-32.91 HORIZONTAL Peak
5	4824.016	36.28	30.82	5.42	36.94	35.58	54.00	-18.42 HORIZONTAL Average
6	4824.016	46.93	30.82	5.42	36.94	46.23	74.00	-27.77 HORIZONTAL Peak
7	7236.015	31.98	35.55	6.03	36.93	36.63	54.00	-17.37 HORIZONTAL Average
8	7236.015	44.88	35.55	6.03	36.93	49.53	74.00	-24.47 HORIZONTAL Peak
9	9648.151	35.91	37.54	7.06	37.08	43.43	54.00	-10.57 HORIZONTAL Average
10	9648.151	45.51	37.54	7.06	37.08	53.03	74.00	-20.97 HORIZONTAL Peak
11	12060.350	35.28	39.46	8.17	37.17	45.74	54.00	-8.26 HORIZONTAL Average
12	12060.350	44.02	39.46	8.17	37.17	54.48	74.00	-19.52 HORIZONTAL Peak

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Freq	ReadAntenna		Cable		Preamp	Limit	Over	Limit Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	33.328	32.29	13.99	0.60	26.54	20.34	40.00	-19.66	VERTICAL QP
2	167.824	31.18	13.33	1.37	26.44	19.44	43.50	-24.06	VERTICAL QP
3	322.189	36.69	14.27	1.88	27.03	25.81	46.00	-20.19	VERTICAL QP
4	403.250	32.19	16.33	2.22	27.36	23.38	46.00	-22.62	VERTICAL QP
5	638.369	27.25	20.66	2.71	27.37	23.25	46.00	-22.75	VERTICAL QP
6	851.035	27.44	22.95	3.10	27.20	26.29	46.00	-19.71	VERTICAL QP

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Limit Pol/Phase	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2871.934	36.28	27.70	3.70	37.15	30.53	54.00	-23.47	VERTICAL Average
2	2871.934	47.53	27.70	3.70	37.15	41.78	74.00	-32.22	VERTICAL Peak
3	3526.134	39.97	27.96	4.38	36.95	35.36	54.00	-18.64	VERTICAL Average
4	3526.134	45.79	27.96	4.38	36.95	41.18	74.00	-32.82	VERTICAL Peak
5	4824.760	35.87	30.82	5.42	36.94	35.17	54.00	-18.83	VERTICAL Average
6	4824.760	45.15	30.82	5.42	36.94	44.45	74.00	-29.55	VERTICAL Peak
7	7236.122	39.19	35.55	6.03	36.93	43.84	54.00	-10.16	VERTICAL Average
8	7236.122	45.17	35.55	6.03	36.93	49.82	74.00	-24.18	VERTICAL Peak
9	9648.149	32.17	37.54	7.06	37.08	39.69	54.00	-14.31	VERTICAL Average
10	9648.149	44.82	37.54	7.06	37.08	52.34	74.00	-21.66	VERTICAL Peak
11	12060.380	32.08	39.46	8.17	37.17	42.54	54.00	-11.46	VERTICAL Average
12	12060.380	44.45	39.46	8.17	37.17	54.91	74.00	-19.09	VERTICAL Peak

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Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2964.712	36.26	27.85	3.77	37.09	30.79	54.00	-23.21	HORIZONTAL Average
2	2964.712	45.68	27.85	3.77	37.09	40.21	74.00	-33.79	HORIZONTAL Peak
3	3856.668	34.84	29.19	4.60	36.91	31.72	54.00	-22.28	HORIZONTAL Average
4	3856.668	44.19	29.19	4.60	36.91	41.07	74.00	-32.93	HORIZONTAL Peak
5	4884.151	39.76	30.95	5.52	36.95	39.28	54.00	-14.72	HORIZONTAL Average
6	4884.151	49.91	30.95	5.52	36.95	49.43	74.00	-24.57	HORIZONTAL Peak
7	7326.833	36.27	35.74	6.13	36.92	41.22	54.00	-12.78	HORIZONTAL Average
8	7326.833	45.19	35.74	6.13	36.92	50.14	74.00	-23.86	HORIZONTAL Peak
9	9768.018	35.10	37.74	7.01	37.09	42.76	54.00	-11.24	HORIZONTAL Average
10	9768.018	44.29	37.74	7.01	37.09	51.95	74.00	-22.05	HORIZONTAL Peak
11	12210.700	32.05	39.21	8.08	37.06	42.28	54.00	-11.72	HORIZONTAL Average
12	12210.700	42.36	39.21	8.08	37.06	52.59	74.00	-21.41	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2774.030	36.98	27.43	3.68	37.26	30.83	54.00	-23.17	VERTICAL Average
2	2774.030	47.49	27.43	3.68	37.26	41.34	74.00	-32.66	VERTICAL Peak
3	3318.471	35.27	27.90	4.07	36.98	30.26	54.00	-23.74	VERTICAL Average
4	3318.471	45.99	27.90	4.07	36.98	40.98	74.00	-33.02	VERTICAL Peak
5	4884.948	38.28	30.95	5.52	36.95	37.80	54.00	-16.20	VERTICAL Average
6	4884.948	49.49	30.95	5.52	36.95	49.01	74.00	-24.99	VERTICAL Peak
7	7326.461	32.69	35.74	6.13	36.92	37.64	54.00	-16.36	VERTICAL Average
8	7326.461	44.79	35.74	6.13	36.92	49.74	74.00	-24.26	VERTICAL Peak
9	9768.371	36.97	37.74	7.01	37.09	44.63	54.00	-9.37	VERTICAL Average
10	9768.371	45.69	37.74	7.01	37.09	53.35	74.00	-20.65	VERTICAL Peak
11	12210.420	34.76	39.21	8.08	37.06	44.99	54.00	-9.01	VERTICAL Average
12	12210.420	44.52	39.21	8.08	37.06	54.75	74.00	-19.25	VERTICAL Peak

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2774.030	38.68	27.43	3.68	37.26	32.53	54.00	-21.47	HORIZONTAL Average
2	2774.030	47.48	27.43	3.68	37.26	41.33	74.00	-32.67	HORIZONTAL Peak
3	3556.843	36.27	28.03	4.44	36.95	31.79	54.00	-22.21	HORIZONTAL Average
4	3556.843	45.59	28.03	4.44	36.95	41.11	74.00	-32.89	HORIZONTAL Peak
5	4924.490	37.62	31.01	5.60	36.95	37.28	54.00	-16.72	HORIZONTAL Average
6	4924.490	47.89	31.01	5.60	36.95	47.55	74.00	-26.45	HORIZONTAL Peak
7	7386.015	34.29	35.85	6.19	36.92	39.41	54.00	-14.59	HORIZONTAL Average
8	7386.015	44.91	35.85	6.19	36.92	50.03	74.00	-23.97	HORIZONTAL Peak
9	9848.430	36.03	37.82	6.99	37.09	43.75	54.00	-10.25	HORIZONTAL Average
10	9848.430	44.78	37.82	6.99	37.09	52.50	74.00	-21.50	HORIZONTAL Peak
11	12310.740	34.55	39.03	8.01	36.97	44.62	54.00	-9.38	HORIZONTAL Average
12	12310.740	44.26	39.03	8.01	36.97	54.33	74.00	-19.67	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2939.115	35.27	27.82	3.74	37.10	29.73	54.00	-24.27	VERTICAL Average
2	2939.115	47.22	27.82	3.74	37.10	41.68	74.00	-32.32	VERTICAL Peak
3	3790.361	36.84	28.97	4.60	36.92	33.49	54.00	-20.51	VERTICAL Average
4	3790.361	45.69	28.97	4.60	36.92	42.34	74.00	-31.66	VERTICAL Peak
5	4924.490	39.65	31.01	5.60	36.95	39.31	54.00	-14.69	VERTICAL Average
6	4924.490	48.42	31.01	5.60	36.95	48.08	74.00	-25.92	VERTICAL Peak
7	7386.122	35.05	35.85	6.19	36.92	40.17	54.00	-13.83	VERTICAL Average
8	7386.122	44.64	35.85	6.19	36.92	49.76	74.00	-24.24	VERTICAL Peak
9	9848.710	36.27	37.82	6.99	37.09	43.99	54.00	-10.01	VERTICAL Average
10	9848.710	45.66	37.82	6.99	37.09	53.38	74.00	-20.62	VERTICAL Peak
11	12310.710	35.08	39.03	8.01	36.97	45.15	54.00	-8.85	VERTICAL Average
12	12310.710	44.61	39.03	8.01	36.97	54.68	74.00	-19.32	VERTICAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit	Over	Over	Remark
	Level	Factor	Loss	Factor				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	54.071	24.73	14.35	0.79	26.49	13.38	40.00	-26.62 HORIZONTAL QP
2	144.842	27.63	13.14	1.29	26.43	15.63	43.50	-27.87 HORIZONTAL QP
3	172.599	32.02	13.00	1.40	26.44	19.98	43.50	-23.52 HORIZONTAL QP
4	234.991	34.58	12.18	1.61	26.53	21.84	46.00	-24.16 HORIZONTAL QP
5	406.088	33.38	16.37	2.22	27.36	24.61	46.00	-21.39 HORIZONTAL QP
6	833.317	27.59	22.70	3.10	27.24	26.15	46.00	-19.85 HORIZONTAL QP

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

Freq	ReadAntenna		Cable Preamp		Limit	Over	Over	Remark
	Level	Factor	Loss	Factor				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	2774.030	37.64	27.43	3.68	37.26	31.49	54.00	-22.51 HORIZONTAL Average
2	2774.030	46.49	27.43	3.68	37.26	40.34	74.00	-33.66 HORIZONTAL Peak
3	3757.637	36.29	28.82	4.58	36.92	32.77	54.00	-21.23 HORIZONTAL Average
4	3757.637	45.69	28.82	4.58	36.92	42.17	74.00	-31.83 HORIZONTAL Peak
5	4824.490	38.14	30.82	5.42	36.94	37.44	54.00	-16.56 HORIZONTAL Average
6	4824.490	46.16	30.82	5.42	36.94	45.46	74.00	-28.54 HORIZONTAL Peak
7	7236.461	36.97	35.55	6.03	36.93	41.62	54.00	-12.38 HORIZONTAL Average
8	7236.461	45.40	35.55	6.03	36.93	50.05	74.00	-23.95 HORIZONTAL Peak
9	9648.018	37.06	37.54	7.06	37.08	44.58	54.00	-9.42 HORIZONTAL Average
10	9648.018	45.74	37.54	7.06	37.08	53.26	74.00	-20.74 HORIZONTAL Peak
11	12060.950	34.67	39.46	8.17	37.17	45.13	54.00	-8.87 HORIZONTAL Average
12	12060.950	44.95	39.46	8.17	37.17	55.41	74.00	-18.59 HORIZONTAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit	Over	Over	Remark
	Level	Factor	Loss	Factor				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	34.037	31.96	13.95	0.60	26.54	19.97	40.00	-20.03 VERTICAL QP
2	50.057	29.40	14.50	0.70	26.50	18.10	40.00	-21.90 VERTICAL QP
3	61.346	26.69	13.98	0.80	26.48	14.99	40.00	-25.01 VERTICAL QP
4	144.842	30.58	13.14	1.29	26.43	18.58	43.50	-24.92 VERTICAL QP
5	266.609	30.58	12.98	1.69	26.62	18.63	46.00	-27.37 VERTICAL QP
6	638.369	27.25	20.66	2.71	27.37	23.25	46.00	-22.75 VERTICAL QP

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

Freq	ReadAntenna		Cable Preamp		Limit	Over	Over	Remark
	Level	Factor	Loss	Factor				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	2905.331	38.29	27.76	3.71	37.13	32.63	54.00	-21.37 VERTICAL Average
2	2905.331	46.94	27.76	3.71	37.13	41.28	74.00	-32.72 VERTICAL Peak
3	3912.809	37.16	29.32	4.60	36.91	34.17	54.00	-19.83 VERTICAL Average
4	3912.809	44.95	29.32	4.60	36.91	41.96	74.00	-32.04 VERTICAL Peak
5	4824.948	36.62	30.82	5.42	36.94	35.92	54.00	-18.08 VERTICAL Average
6	4824.948	45.94	30.82	5.42	36.94	45.24	74.00	-28.76 VERTICAL Peak
7	7236.788	38.53	35.55	6.03	36.93	43.18	54.00	-10.82 VERTICAL Average
8	7236.788	45.65	35.55	6.03	36.93	50.30	74.00	-23.70 VERTICAL Peak
9	9648.525	37.15	37.54	7.06	37.08	44.67	54.00	-9.33 VERTICAL Average
10	9648.525	45.83	37.54	7.06	37.08	53.35	74.00	-20.65 VERTICAL Peak
11	12060.350	34.85	39.46	8.17	37.17	45.31	54.00	-8.69 VERTICAL Average
12	12060.350	43.61	39.46	8.17	37.17	54.07	74.00	-19.93 VERTICAL Peak

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2774.030	36.97	27.43	3.68	37.26	30.82	54.00	-23.18	HORIZONTAL Average
2	2774.030	46.28	27.43	3.68	37.26	40.13	74.00	-33.87	HORIZONTAL Peak
3	3587.818	36.92	28.11	4.49	36.94	32.58	54.00	-21.42	HORIZONTAL Average
4	3587.818	45.75	28.11	4.49	36.94	41.41	74.00	-32.59	HORIZONTAL Peak
5	4884.043	34.19	30.95	5.52	36.95	33.71	54.00	-20.29	HORIZONTAL Average
6	4884.043	44.90	30.95	5.52	36.95	44.42	74.00	-29.58	HORIZONTAL Peak
7	7326.015	34.95	35.74	6.13	36.92	39.90	54.00	-14.10	HORIZONTAL Average
8	7326.015	44.38	35.74	6.13	36.92	49.33	74.00	-24.67	HORIZONTAL Peak
9	9768.151	36.53	37.74	7.01	37.09	44.19	54.00	-9.81	HORIZONTAL Average
10	9768.151	46.11	37.74	7.01	37.09	53.77	74.00	-20.23	HORIZONTAL Peak
11	12210.900	35.26	39.21	8.08	37.06	45.49	54.00	-8.51	HORIZONTAL Average
12	12210.900	44.49	39.21	8.08	37.06	54.72	74.00	-19.28	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2973.293	38.25	27.87	3.78	37.09	32.81	54.00	-21.19	VERTICAL Average
2	2973.293	47.24	27.87	3.78	37.09	41.80	74.00	-32.20	VERTICAL Peak
3	3890.255	36.12	29.27	4.60	36.91	33.08	54.00	-20.92	VERTICAL Average
4	3890.255	45.93	29.27	4.60	36.91	42.89	74.00	-31.11	VERTICAL Peak
5	4884.058	36.94	30.95	5.52	36.95	36.46	54.00	-17.54	VERTICAL Average
6	4884.058	45.53	30.95	5.52	36.95	45.05	74.00	-28.95	VERTICAL Peak
7	7326.267	35.22	35.74	6.13	36.92	40.17	54.00	-13.83	VERTICAL Average
8	7326.267	44.52	35.74	6.13	36.92	49.47	74.00	-24.53	VERTICAL Peak
9	9768.430	36.28	37.74	7.01	37.09	43.94	54.00	-10.06	VERTICAL Average
10	9768.430	45.30	37.74	7.01	37.09	52.96	74.00	-21.04	VERTICAL Peak
11	12210.580	34.17	39.21	8.08	37.06	44.40	54.00	-9.60	VERTICAL Average
12	12210.580	44.94	39.21	8.08	37.06	55.17	74.00	-18.83	VERTICAL Peak

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2905.331	38.34	27.76	3.71	37.13	32.68	54.00	-21.32	HORIZONTAL Average
2	2905.331	47.68	27.76	3.71	37.13	42.02	74.00	-31.98	HORIZONTAL Peak
3	3958.309	36.10	29.42	4.60	36.90	33.22	54.00	-20.78	HORIZONTAL Average
4	3958.309	45.49	29.42	4.60	36.90	42.61	74.00	-31.39	HORIZONTAL Peak
5	4924.490	36.19	31.01	5.60	36.95	35.85	54.00	-18.15	HORIZONTAL Average
6	4924.490	45.26	31.01	5.60	36.95	44.92	74.00	-29.08	HORIZONTAL Peak
7	7386.646	37.14	35.85	6.19	36.92	42.26	54.00	-11.74	HORIZONTAL Average
8	7386.646	45.67	35.85	6.19	36.92	50.79	74.00	-23.21	HORIZONTAL Peak
9	9848.430	36.82	37.82	6.99	37.09	44.54	54.00	-9.46	HORIZONTAL Average
10	9848.430	45.01	37.82	6.99	37.09	52.73	74.00	-21.27	HORIZONTAL Peak
11	12310.950	34.77	39.03	8.01	36.97	44.84	54.00	-9.16	HORIZONTAL Average
12	12310.950	44.02	39.03	8.01	36.97	54.09	74.00	-19.91	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2888.584	37.62	27.73	3.70	37.14	31.91	54.00	-22.09	VERTICAL Average
2	2888.584	46.31	27.73	3.70	37.14	40.60	74.00	-33.40	VERTICAL Peak
3	3845.537	35.98	29.15	4.60	36.91	32.82	54.00	-21.18	VERTICAL Average
4	3845.537	44.91	29.15	4.60	36.91	41.75	74.00	-32.25	VERTICAL Peak
5	4924.948	35.97	31.01	5.60	36.95	35.63	54.00	-18.37	VERTICAL Average
6	4924.948	45.00	31.01	5.60	36.95	44.66	74.00	-29.34	VERTICAL Peak
7	7386.015	35.76	35.85	6.19	36.92	40.88	54.00	-13.12	VERTICAL Average
8	7386.015	44.63	35.85	6.19	36.92	49.75	74.00	-24.25	VERTICAL Peak
9	9848.151	34.91	37.82	6.99	37.09	42.63	54.00	-11.37	VERTICAL Average
10	9848.151	44.80	37.82	6.99	37.09	52.52	74.00	-21.48	VERTICAL Peak
11	12310.350	35.70	39.03	8.01	36.97	45.77	54.00	-8.23	VERTICAL Average
12	12310.350	44.62	39.03	8.01	36.97	54.69	74.00	-19.31	VERTICAL Peak

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

Freq	ReadAntenna		Cable Preamp		Limit	Over	Over	Over	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	54.071	24.73	14.35	0.79	26.49	13.38	40.00	-26.62	HORIZONTAL QP
2	144.842	27.63	13.14	1.29	26.43	15.63	43.50	-27.87	HORIZONTAL QP
3	172.599	32.02	13.00	1.40	26.44	19.98	43.50	-23.52	HORIZONTAL QP
4	234.991	34.58	12.18	1.61	26.53	21.84	46.00	-24.16	HORIZONTAL QP
5	406.088	33.38	16.37	2.22	27.36	24.61	46.00	-21.39	HORIZONTAL QP
6	798.980	27.24	22.40	3.00	27.29	25.35	46.00	-20.65	HORIZONTAL QP

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

Freq	ReadAntenna		Cable Preamp		Limit	Over	Over	Over	Remark
	Level	Factor	Loss	Factor					
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2905.331	36.96	27.76	3.71	37.13	31.30	54.00	-22.70	HORIZONTAL Average
2	2905.331	46.81	27.76	3.71	37.13	41.15	74.00	-32.85	HORIZONTAL Peak
3	3757.637	38.27	28.82	4.58	36.92	34.75	54.00	-19.25	HORIZONTAL Average
4	3757.637	45.47	28.82	4.58	36.92	41.95	74.00	-32.05	HORIZONTAL Peak
5	4824.948	36.18	30.82	5.42	36.94	35.48	54.00	-18.52	HORIZONTAL Average
6	4824.948	45.68	30.82	5.42	36.94	44.98	74.00	-29.02	HORIZONTAL Peak
7	7236.006	36.38	35.55	6.03	36.93	41.03	54.00	-12.97	HORIZONTAL Average
8	7236.006	45.95	35.55	6.03	36.93	50.60	74.00	-23.40	HORIZONTAL Peak
9	9648.684	38.67	37.54	7.06	37.08	46.19	54.00	-7.81	HORIZONTAL Average
10	9648.684	45.71	37.54	7.06	37.08	53.23	74.00	-20.77	HORIZONTAL Peak
11	12060.740	33.27	39.46	8.17	37.17	43.73	54.00	-10.27	HORIZONTAL Average
12	12060.740	43.24	39.46	8.17	37.17	53.70	74.00	-20.30	HORIZONTAL Peak

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Mode:b; 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	33.328	32.29	13.99	0.60	26.54	20.34	40.00	-19.66	VERTICAL QP
2	50.057	29.40	14.50	0.70	26.50	18.10	40.00	-21.90	VERTICAL QP
3	142.824	30.08	13.08	1.28	26.43	18.01	43.50	-25.49	VERTICAL QP
4	167.824	31.18	13.33	1.37	26.44	19.44	43.50	-24.06	VERTICAL QP
5	440.196	30.58	16.99	2.30	27.41	22.46	46.00	-23.54	VERTICAL QP
6	851.035	27.44	22.95	3.10	27.20	26.29	46.00	-19.71	VERTICAL QP

Mode:b; 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	2973.293	37.52	27.87	3.78	37.09	32.08	54.00	-21.92	VERTICAL Average
2	2973.293	46.91	27.87	3.78	37.09	41.47	74.00	-32.53	VERTICAL Peak
3	3992.781	36.98	29.48	4.60	36.90	34.16	54.00	-19.84	VERTICAL Average
4	3992.781	45.58	29.48	4.60	36.90	42.76	74.00	-31.24	VERTICAL Peak
5	4824.151	37.14	30.82	5.42	36.94	36.44	54.00	-17.56	VERTICAL Average
6	4824.151	45.29	30.82	5.42	36.94	44.59	74.00	-29.41	VERTICAL Peak
7	7236.015	36.29	35.55	6.03	36.93	40.94	54.00	-13.06	VERTICAL Average
8	7236.015	45.56	35.55	6.03	36.93	50.21	74.00	-23.79	VERTICAL Peak
9	9648.432	35.72	37.54	7.06	37.08	43.24	54.00	-10.76	VERTICAL Average
10	9648.432	45.17	37.54	7.06	37.08	52.69	74.00	-21.31	VERTICAL Peak
11	12060.130	34.59	39.46	8.17	37.17	45.05	54.00	-8.95	VERTICAL Average
12	12060.130	43.97	39.46	8.17	37.17	54.43	74.00	-19.57	VERTICAL Peak

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2956.155	36.94	27.84	3.76	37.09	31.45	54.00	-22.55	HORIZONTAL Average
2	2956.155	46.41	27.84	3.76	37.09	40.92	74.00	-33.08	HORIZONTAL Peak
3	3856.668	35.70	29.19	4.60	36.91	32.58	54.00	-21.42	HORIZONTAL Average
4	3856.668	45.17	29.19	4.60	36.91	42.05	74.00	-31.95	HORIZONTAL Peak
5	4884.948	37.42	30.95	5.52	36.95	36.94	54.00	-17.06	HORIZONTAL Average
6	4884.948	46.10	30.95	5.52	36.95	45.62	74.00	-28.38	HORIZONTAL Peak
7	7326.461	39.28	35.74	6.13	36.92	44.23	54.00	-9.77	HORIZONTAL Average
8	7326.461	45.24	35.74	6.13	36.92	50.19	74.00	-23.81	HORIZONTAL Peak
9	9768.684	34.69	37.74	7.01	37.09	42.35	54.00	-11.65	HORIZONTAL Average
10	9768.684	44.96	37.74	7.01	37.09	52.62	74.00	-21.38	HORIZONTAL Peak
11	12210.620	36.27	39.21	8.08	37.06	46.50	54.00	-7.50	HORIZONTAL Average
12	12210.620	44.20	39.21	8.08	37.06	54.43	74.00	-19.57	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2774.030	36.38	27.43	3.68	37.26	30.23	54.00	-23.77	VERTICAL Average
2	2774.030	46.60	27.43	3.68	37.26	40.45	74.00	-33.55	VERTICAL Peak
3	3485.601	37.44	27.90	4.27	36.96	32.65	54.00	-21.35	VERTICAL Average
4	3485.601	46.15	27.90	4.27	36.96	41.36	74.00	-32.64	VERTICAL Peak
5	4884.151	38.70	30.95	5.52	36.95	38.22	54.00	-15.78	VERTICAL Average
6	4884.151	45.15	30.95	5.52	36.95	44.67	74.00	-29.33	VERTICAL Peak
7	7326.052	37.15	35.74	6.13	36.92	42.10	54.00	-11.90	VERTICAL Average
8	7326.052	45.64	35.74	6.13	36.92	50.59	74.00	-23.41	VERTICAL Peak
9	9768.018	35.68	37.74	7.01	37.09	43.34	54.00	-10.66	VERTICAL Average
10	9768.018	45.65	37.74	7.01	37.09	53.31	74.00	-20.69	VERTICAL Peak
11	12210.270	34.91	39.21	8.08	37.06	45.14	54.00	-8.86	VERTICAL Average
12	12210.270	43.50	39.21	8.08	37.06	53.73	74.00	-20.27	VERTICAL Peak

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2939.115	37.13	27.82	3.74	37.10	31.59	54.00	-22.41	HORIZONTAL Average
2	2939.115	46.43	27.82	3.74	37.10	40.89	74.00	-33.11	HORIZONTAL Peak
3	3790.361	38.54	28.97	4.60	36.92	35.19	54.00	-18.81	HORIZONTAL Average
4	3790.361	45.14	28.97	4.60	36.92	41.79	74.00	-32.21	HORIZONTAL Peak
5	4924.016	36.27	31.01	5.60	36.95	35.93	54.00	-18.07	HORIZONTAL Average
6	4924.016	45.31	31.01	5.60	36.95	44.97	74.00	-29.03	HORIZONTAL Peak
7	7386.015	34.08	35.85	6.19	36.92	39.20	54.00	-14.80	HORIZONTAL Average
8	7386.015	44.01	35.85	6.19	36.92	49.13	74.00	-24.87	HORIZONTAL Peak
9	9848.018	36.07	37.82	6.99	37.09	43.79	54.00	-10.21	HORIZONTAL Average
10	9848.018	45.37	37.82	6.99	37.09	53.09	74.00	-20.91	HORIZONTAL Peak
11	12310.350	34.94	39.03	8.01	36.97	45.01	54.00	-8.99	HORIZONTAL Average
12	12310.350	45.32	39.03	8.01	36.97	55.39	74.00	-18.61	HORIZONTAL Peak

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level				
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2973.293	37.43	27.87	3.78	37.09	31.99	54.00	-22.01	VERTICAL Average
2	2973.293	46.55	27.87	3.78	37.09	41.11	74.00	-32.89	VERTICAL Peak
3	3935.493	38.65	29.37	4.60	36.90	35.72	54.00	-18.28	VERTICAL Average
4	3935.493	45.49	29.37	4.60	36.90	42.56	74.00	-31.44	VERTICAL Peak
5	4924.668	37.14	31.01	5.60	36.95	36.80	54.00	-17.20	VERTICAL Average
6	4924.668	45.30	31.01	5.60	36.95	44.96	74.00	-29.04	VERTICAL Peak
7	7386.267	34.28	35.85	6.19	36.92	39.40	54.00	-14.60	VERTICAL Average
8	7386.267	44.36	35.85	6.19	36.92	49.48	74.00	-24.52	VERTICAL Peak
9	9848.588	34.27	37.82	6.99	37.09	41.99	54.00	-12.01	VERTICAL Average
10	9848.588	44.51	37.82	6.99	37.09	52.23	74.00	-21.77	VERTICAL Peak
11	12310.130	34.94	39.03	8.01	36.97	45.01	54.00	-8.99	VERTICAL Average
12	12310.130	45.82	39.03	8.01	36.97	55.89	74.00	-18.11	VERTICAL Peak

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor						
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	54.071	24.73	14.35	0.79	26.49	13.38	40.00	-26.62	HORIZONTAL	QP
2	119.018	27.28	10.96	1.20	26.41	13.03	43.50	-30.47	HORIZONTAL	QP
3	144.842	27.63	13.14	1.29	26.43	15.63	43.50	-27.87	HORIZONTAL	QP
4	172.599	32.02	13.00	1.40	26.44	19.98	43.50	-23.52	HORIZONTAL	QP
5	665.804	26.71	21.05	2.77	27.34	23.19	46.00	-22.81	HORIZONTAL	QP
6	896.997	27.07	23.38	3.10	27.06	26.49	46.00	-19.51	HORIZONTAL	QP

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

Freq	ReadAntenna		Cable		Preamp	Limit	Over	Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor						
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	3078.229	36.24	27.90	3.88	37.04	30.98	54.00	-23.02	HORIZONTAL	Average
2	3078.229	46.56	27.90	3.88	37.04	41.30	74.00	-32.70	HORIZONTAL	Peak
3	3856.668	37.41	29.19	4.60	36.91	34.29	54.00	-19.71	HORIZONTAL	Average
4	3856.668	45.28	29.19	4.60	36.91	42.16	74.00	-31.84	HORIZONTAL	Peak
5	4844.339	36.91	30.88	5.45	36.94	36.30	54.00	-17.70	HORIZONTAL	Average
6	4844.339	45.42	30.88	5.45	36.94	44.81	74.00	-29.19	HORIZONTAL	Peak
7	7266.429	35.37	35.60	6.06	36.92	40.11	54.00	-13.89	HORIZONTAL	Average
8	7266.429	44.68	35.60	6.06	36.92	49.42	74.00	-24.58	HORIZONTAL	Peak
9	9688.151	36.91	37.61	7.04	37.08	44.48	54.00	-9.52	HORIZONTAL	Average
10	9688.151	45.20	37.61	7.04	37.08	52.77	74.00	-21.23	HORIZONTAL	Peak
11	12110.350	35.03	39.37	8.14	37.15	45.39	54.00	-8.61	HORIZONTAL	Average
12	12110.350	44.05	39.37	8.14	37.15	54.41	74.00	-19.59	HORIZONTAL	Peak

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Mode:b; 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	43.202	30.25	13.91	0.67	26.51	18.32	40.00	-21.68	VERTICAL QP
2	61.346	26.69	13.98	0.80	26.48	14.99	40.00	-25.01	VERTICAL QP
3	167.824	31.18	13.33	1.37	26.44	19.44	43.50	-24.06	VERTICAL QP
4	266.609	30.58	12.98	1.69	26.62	18.63	46.00	-27.37	VERTICAL QP
5	440.196	30.58	16.99	2.30	27.41	22.46	46.00	-23.54	VERTICAL QP
6	804.603	27.57	22.44	3.00	27.29	25.72	46.00	-20.28	VERTICAL QP

Mode:b; 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	2774.030	37.42	27.43	3.68	37.26	31.27	54.00	-22.73	VERTICAL Average
2	2774.030	46.78	27.43	3.68	37.26	40.63	74.00	-33.37	VERTICAL Peak
3	3779.422	35.07	28.92	4.59	36.92	31.66	54.00	-22.34	VERTICAL Average
4	3779.422	44.52	28.92	4.59	36.92	41.11	74.00	-32.89	VERTICAL Peak
5	4844.993	36.26	30.88	5.45	36.94	35.65	54.00	-18.35	VERTICAL Average
6	4844.993	45.33	30.88	5.45	36.94	44.72	74.00	-29.28	VERTICAL Peak
7	7266.741	34.58	35.60	6.06	36.92	39.32	54.00	-14.68	VERTICAL Average
8	7266.741	44.86	35.60	6.06	36.92	49.60	74.00	-24.40	VERTICAL Peak
9	9688.151	36.79	37.61	7.04	37.08	44.36	54.00	-9.64	VERTICAL Average
10	9688.151	45.97	37.61	7.04	37.08	53.54	74.00	-20.46	VERTICAL Peak
11	12110.390	35.68	39.37	8.14	37.15	46.04	54.00	-7.96	VERTICAL Average
12	12110.390	43.90	39.37	8.14	37.15	54.26	74.00	-19.74	VERTICAL Peak

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