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Report No.: GZEM190301158602
 Page: 1 of 119
 FCC ID: 2API3RVAR10421SL120

TEST REPORT

Application No.: GZEM1903011586CR
Applicant: R.F.E ASIA PACIFIC LTD
Address of Applicant: Room 2608-2609, 1 Hung To Road. Kwun Tong, Hong Kong
Factory: OMA FITNESS EQUIPMENT CO LTD.
Address of Factory: No.93 Tai An Road South, Yang'e village, Lunjiao Town, Shunde, Foshan City, Guangdong, CHINA

Equipment Under Test (EUT):
FCC ID: 2API3RVAR10421SL120
EUT Name: A4.0 Treadmill +TFT- Silver-120V
Model No.: RVAR-10421SLT-1
Trade Mark: Reebok
Standard(s) : 47 CFR Part 15, Subpart C 15.247
Date of Receipt: 2019-03-27
Date of Test: 2019-04-10 to 2019-04-23
Date of Issue: 2019-12-19

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

Kobe Jian
 Lab Manager

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



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2019-12-19		Original

Authorized for issue by:			
Tested By			2019-04-10 to 2019-04-23
	Jackson_Yuan /Project Engineer		Date
Checked By			2019-12-19
	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 **

** The EUT passed Radiated Spurious Emissions test after modification.



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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.....	16
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.....	21
7.3.3 Measurement Procedure and Data.....	21
7.4 Power Spectrum Density.....	22
7.4.1 E.U.T. Operation.....	22
7.4.2 Test Setup Diagram.....	22
7.4.3 Measurement Procedure and Data.....	22
7.5 Conducted Band Edges Measurement.....	23
7.5.1 E.U.T. Operation.....	23
7.5.2 Test Setup Diagram.....	24
7.5.3 Measurement Procedure and Data.....	24
7.6 Conducted Spurious Emissions.....	25
7.6.1 E.U.T. Operation.....	25



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7.6.2	Test Setup Diagram.....	26
7.6.3	Measurement Procedure and Data	26
7.7	Radiated Emissions which fall in the restricted bands.....	27
7.7.1	E.U.T. Operation.....	27
7.7.2	Test Setup Diagram.....	28
7.7.3	Measurement Procedure and Data	29
7.8	Radiated Spurious Emissions.....	46
7.8.1	E.U.T. Operation.....	47
7.8.2	Test Setup Diagram.....	47
7.8.3	Measurement Procedure and Data	48
8	Appendix	75
8.1	Appendix 15.247	75



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4 General Information

4.1 Details of E.U.T.

Power Supply:	AC 120 V, 60 Hz
Rated Power:	1700W
Test Voltage:	AC 120 V, 60 Hz
Cable:	AC mains (unshielded, 1.2 m) MP3 in ports with unshielded 0.5 m cables
Antenna Gain	2 dBi
Antenna Type	Integral 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
S/N	A1
Hardware & Version	HV01
Software & Version	SV01
Test Software	ESP.exe
Power level setting	20 dBm

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Notebook	IBM	T30	S/N78-3VMLX 06/01
Wi-Fi test board	SGS EMC	RF 07	RF 07



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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:

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

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No tests were sub-contracted.



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4.5 Test Facility

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

● **NVLAP (Lab Code: 200611-0)**

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

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

● **ACMA**

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

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

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

● **CNAS (Lab Code: L0167)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2006 accreditation criteria for testing laboratories (identical to

ISO/IEC 17025:2005 General Requirements) for the Competence of Testing Laboratories.

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

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

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

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

● **Industry Canada (Registration No.: 4620B, 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

The EUT passed Radiated Spurious Emissions test after modification.



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5 Equipment List

Conducted Emissions at AC Power Line (150kHz-30MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Shielding Room	Zhong Yu	8m x 3m x 3.8m	EMC0306	N/A	N/A
Two-Line V-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	2017-07-23	2019-07-22
Voltage Probe	SGS	N/A	EMC0106	2018-04-04	2020-04-03
Conical Metal Housing	SGS-EMC	N/A	EMC0167	2018-04-19	2020-04-18
Test Software E3c	Audix	Ver. 5.4.1221b	GZE100-62	N/A	N/A

Minimum 6dB Bandwidth					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EXA Signal Analyzer	AgilentTechnologies	N9010A	EMC2138	2018-11-19	2019-11-18
6dB Attenuator	HP	8491A	EMC2062	2018-04-04	2020-04-03
Test Software JS1120-3	HangTianXing	V2.6	GZE100-69	N/A	N/A
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



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Report No.: GZEM190301158602
Page: 11 of 119

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 Band Edges Measurement

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 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	2017-06-30	2019-06-30
Trilog Broadband Antenna 30MHz-1GHz	SCHWARZBECKME SS-ELEKTRONIK	VULB 9160	EMC2025	2016-09-08	2019-09-07
Bi-log Type Antenna	Schaffner -Chase	CBL6112B	EMC0524	2016-09-08	2019-09-07
Bi-log Type Antenna	Schaffner -Chase	CBL6143	EMC0519	2017-05-04	2020-05-03
Horn Antenna 1GHz-18GHz	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2016-09-09	2019-09-08
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2019-01-07	2020-01-08
Amplifier	HP	8447F	EMC2065	2018-06-01	2019-05-31
Pre-Amplifier MH648A	ANRITSU CORP	MH648A	EMC2086	2018-11-19	2019-11-18
Active Loop Antenna	EMCO	6502	EMC0523	2018-03-05	2020-03-04
High Pass Filter(915MHz)	FSY MICROWAVE	HM1465-9SS	EMC2079	2019-01-11	2020-01-10



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2.4GHz Filter	Micro-Tronics	BRM 50702	EMC2069	2019-01-11	2020-01-10
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2017-06-18	2019-06-18
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2017-12-19	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	2016-06-29	2019-06-28
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	2017-06-30	2019-06-30
Trilog Broadband Antenna 30MHz-1GHz	SCHWARZBECKME SS-ELEKTRONIK	VULB 9160	EMC2025	2016-09-08	2019-09-07
Bi-log Type Antenna	Schaffner -Chase	CBL6112B	EMC0524	2016-09-08	2019-09-07
Bi-log Type Antenna	Schaffner -Chase	CBL6143	EMC0519	2017-05-04	2020-05-03
Horn Antenna 1GHz-18GHz	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2016-09-09	2019-09-08
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2019-01-07	2020-01-08
Amplifier	HP	8447F	EMC2065	2018-06-01	2019-05-31
Pre-Amplifier MH648A	ANRITSU CORP	MH648A	EMC2086	2018-11-19	2019-11-18
Active Loop Antenna	EMCO	6502	EMC0523	2018-03-05	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	2017-06-18	2019-06-18
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	2016-06-29	2019-06-28
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	2018-07-20	2019-07-19
DMM	Fluke	73	EMC0007	2018-07-19	2019-07-18



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6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

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

6.1.2 Conclusion

Standard Requirement:

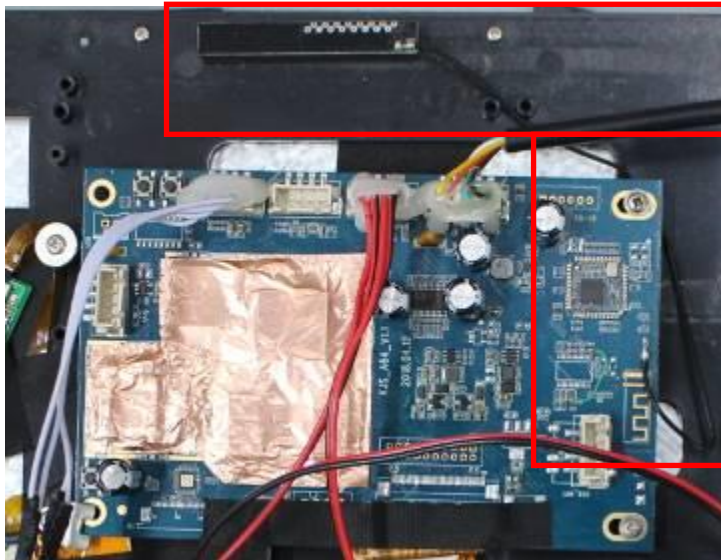
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit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

15.247(b) (4) requirement:

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

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 2 dBi.



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(dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

7.1.1 E.U.T. Operation

Operating Environment:

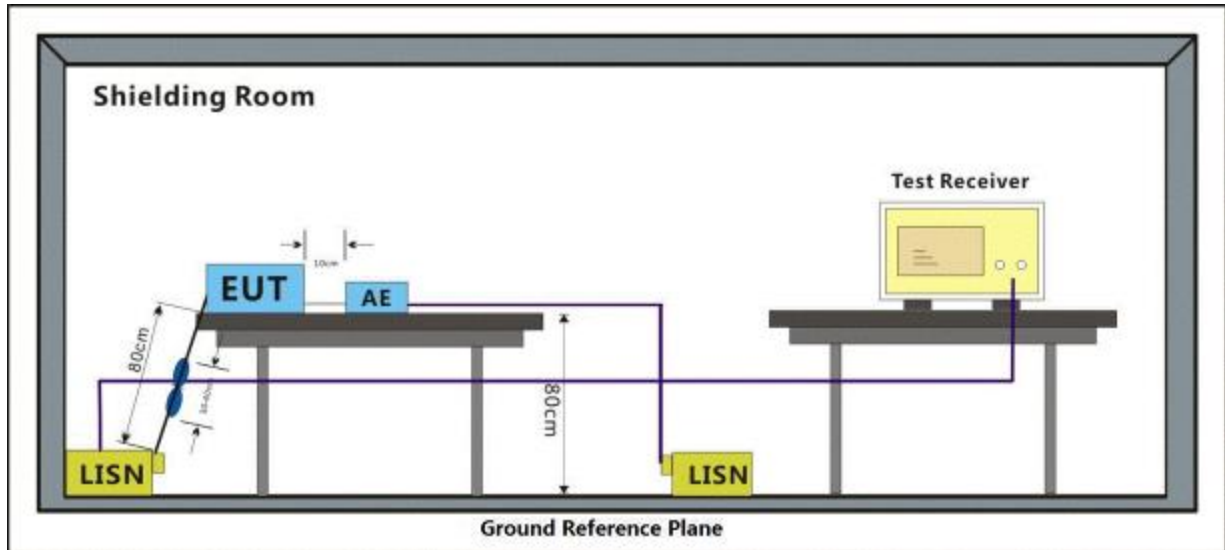
Temperature: 23.8 °C Humidity: 52 % RH Atmospheric Pressure: 1020 mbar
Test mode c: TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 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.



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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.

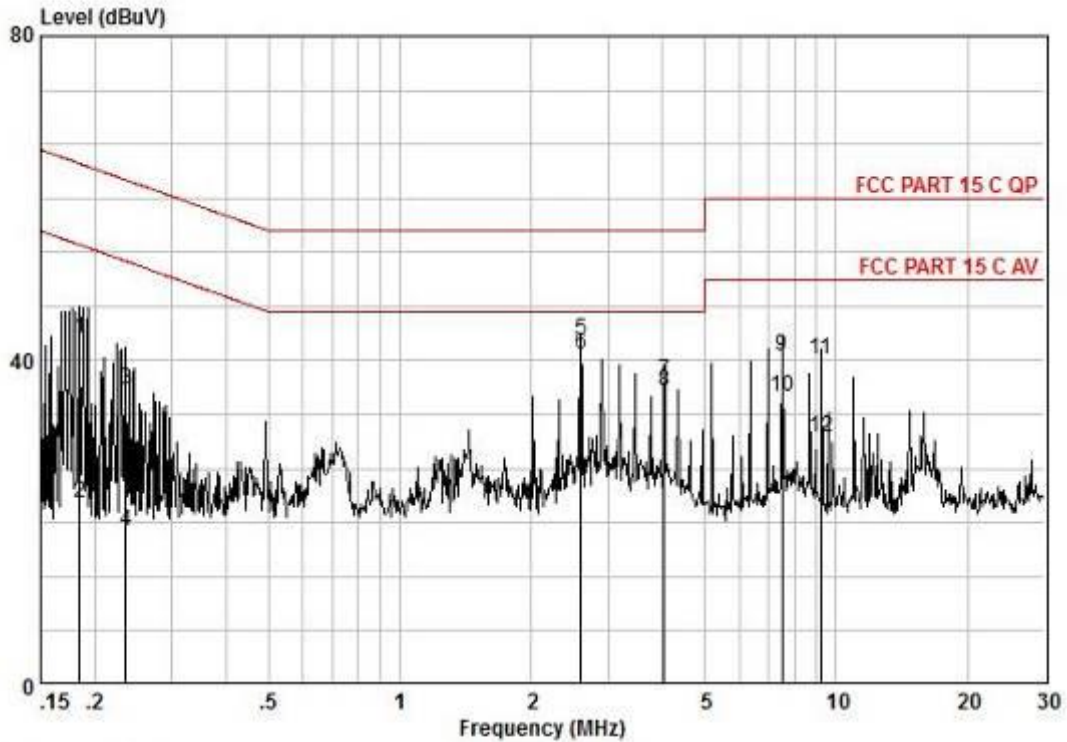
Remark: LISN=Read Level+ Cable Loss+ LISN Factor



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Mode:c; Line:Live Line



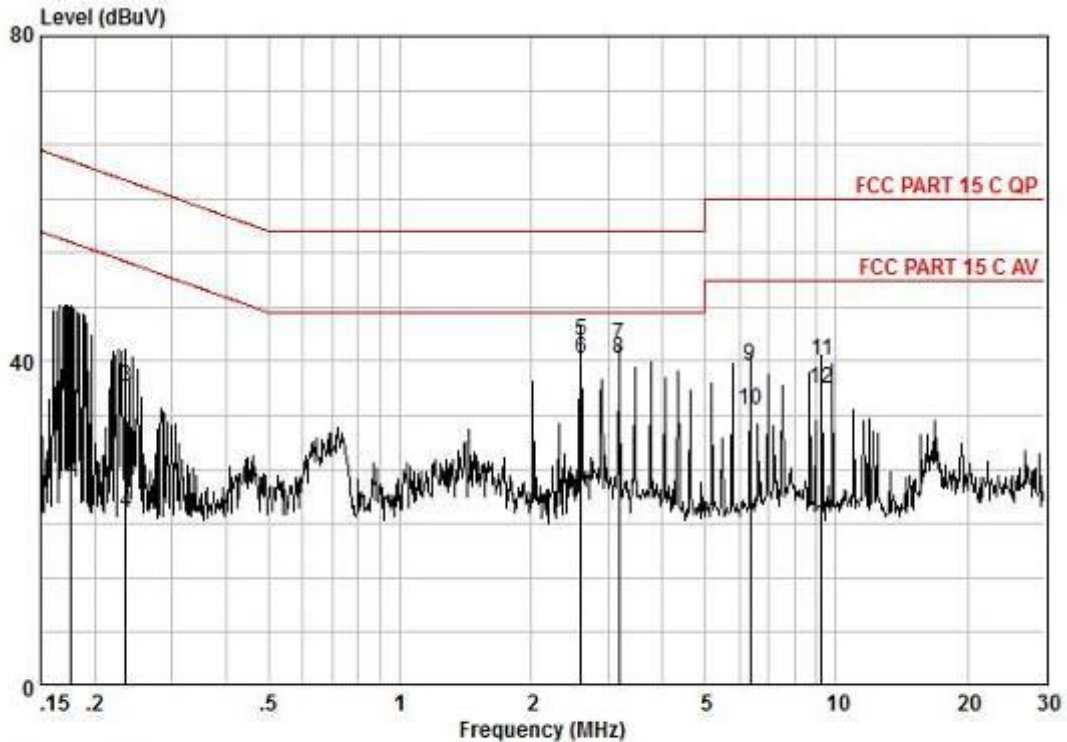
Frequency MHz	read level dBuV	Cable Loss dB	LISN Factor dB	Measured level dBuV	Limit Line dBuV	Over limit dB	Remark
0.18	32.93	0.10	9.66	42.69	64.28	-21.59	QP
0.18	12.64	0.10	9.66	22.40	54.28	-31.88	AVERAGE
0.24	26.57	0.10	9.67	36.34	62.26	-25.92	QP
0.24	9.20	0.10	9.67	18.97	52.26	-33.29	AVERAGE
2.59	32.71	0.16	9.69	42.56	56.00	-13.44	QP
2.59	30.93	0.16	9.69	40.78	46.00	-5.22	AVERAGE
4.04	27.51	0.20	9.70	37.41	56.00	-18.59	QP
4.04	26.27	0.20	9.70	36.17	46.00	-9.83	AVERAGE
7.50	30.41	0.30	9.74	40.45	60.00	-19.55	QP
7.50	25.58	0.30	9.74	35.62	50.00	-14.38	AVERAGE
9.23	30.06	0.30	9.75	40.11	60.00	-19.89	QP
9.23	20.46	0.30	9.75	30.51	50.00	-19.49	AVERAGE



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Mode:c; Line:Neutral Line



Pol : NEUTRAL
 No :
 Model :

Frequency MHz	read level dBuV	Cable Loss dB	LISN dB	Measured level dBuV	Limit Line dBuV	Over limit dB	Remark
0.18	32.48	0.10	9.60	42.18	64.68	-22.50	QP
0.18	16.01	0.10	9.60	25.71	54.68	-28.97	AVERAGE
0.24	27.17	0.10	9.59	36.86	62.26	-25.40	QP
0.24	11.73	0.10	9.59	21.42	52.26	-30.84	AVERAGE
2.59	32.69	0.16	9.62	42.47	56.00	-13.53	QP
2.59	30.51	0.16	9.62	40.29	46.00	-5.71	AVERAGE
3.17	32.26	0.20	9.62	42.08	56.00	-13.92	QP
3.17	30.55	0.20	9.62	40.37	46.00	-5.63	AVERAGE
6.35	29.60	0.24	9.68	39.52	60.00	-20.48	QP
6.35	24.10	0.24	9.68	34.02	50.00	-15.98	AVERAGE
9.25	30.13	0.30	9.72	40.15	60.00	-19.85	QP
9.25	26.66	0.30	9.72	36.68	50.00	-13.32	AVERAGE



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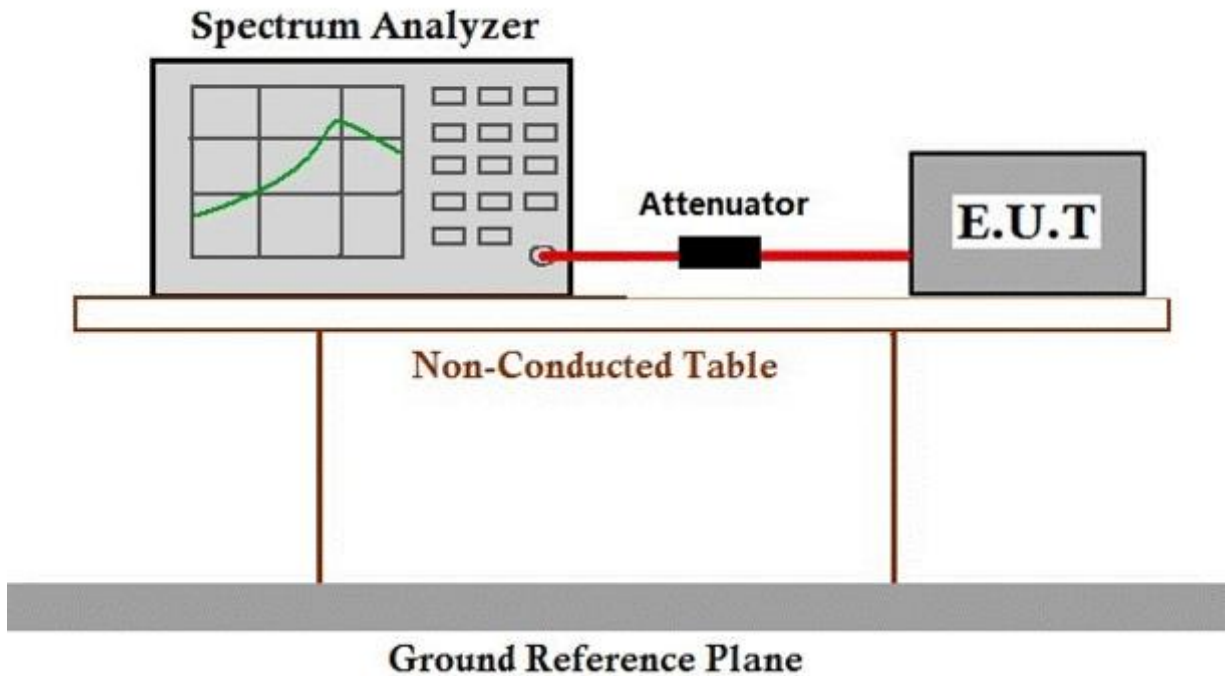
7.2 Minimum 6dB Bandwidth

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: 23.1 °C Humidity: 61.2 % 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



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≤ 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: 23.1 °C Humidity: 61.2 % RH Atmospheric Pressure: 1020 mbar

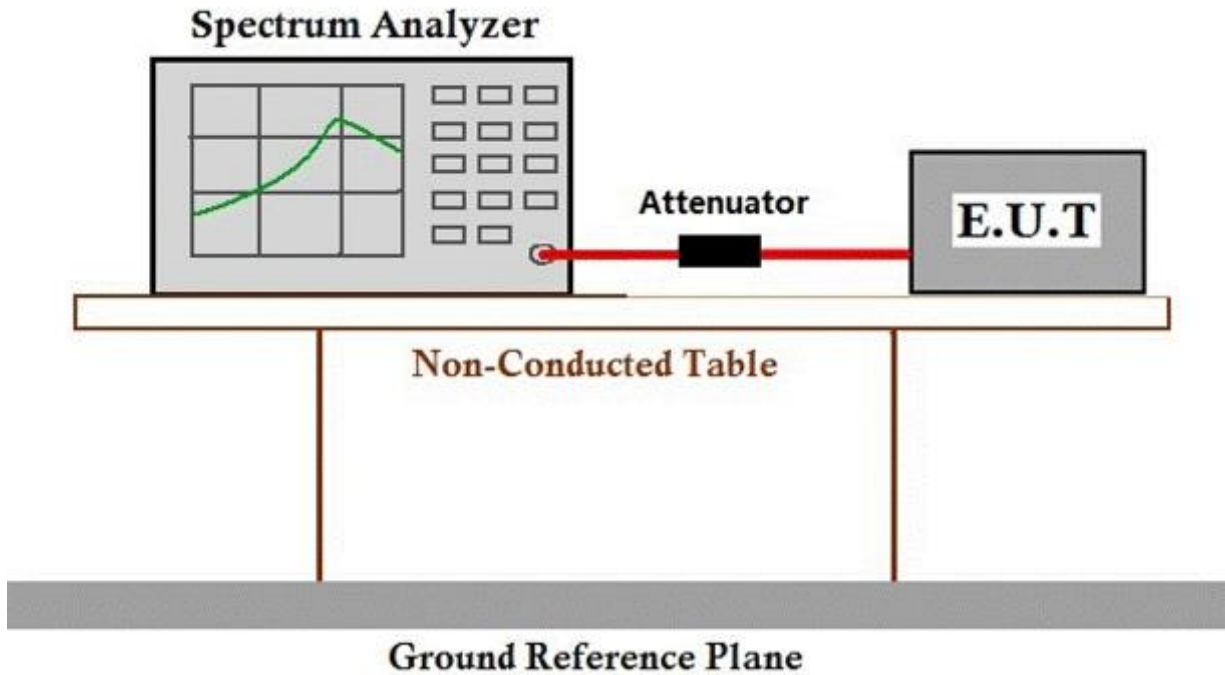
Test mode c: TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst 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.



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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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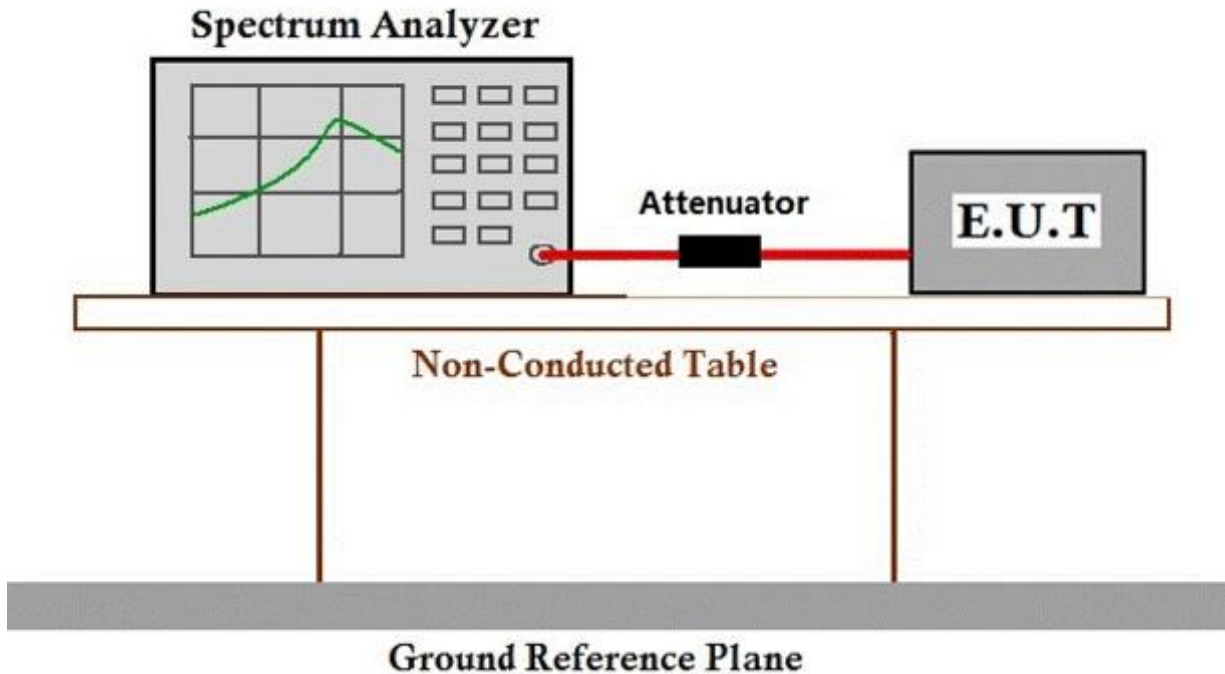
7.4 Power Spectrum Density

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: 23.1 °C Humidity: 61.2 % 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))

7.5.1 E.U.T. Operation

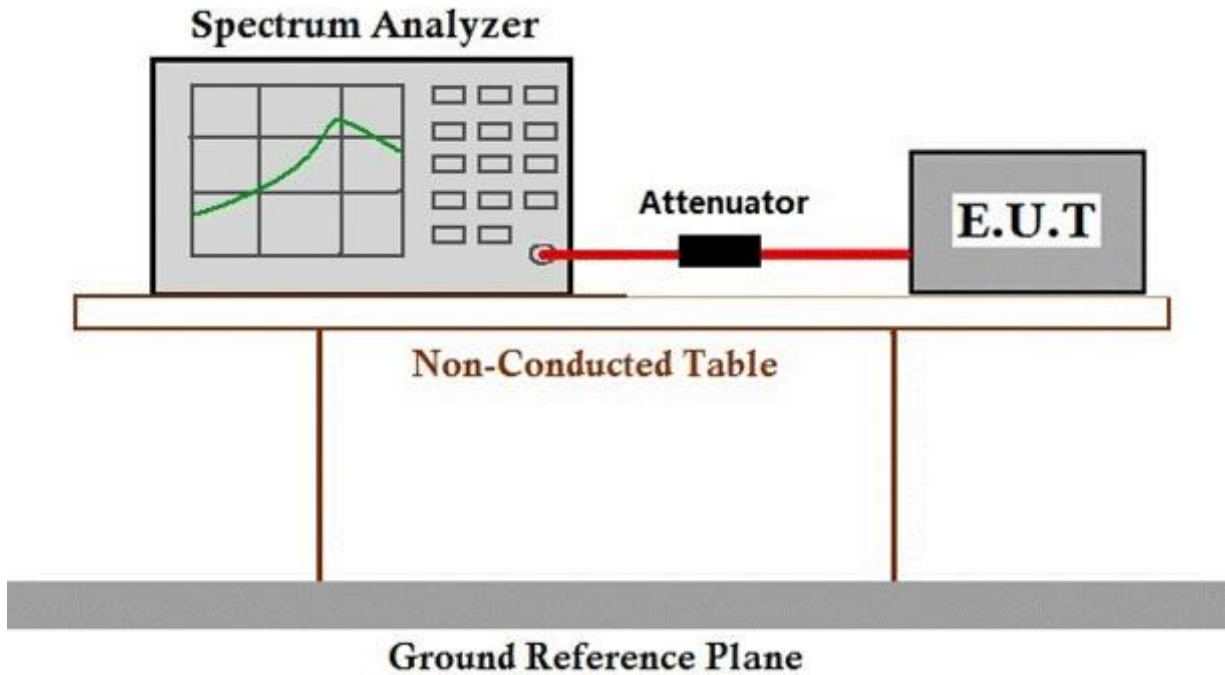
Operating Environment:	
Temperature:	23.1 °C Humidity: 61.2 % RH Atmospheric Pressure: 1020 mbar
Test mode	c: TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of 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.



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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

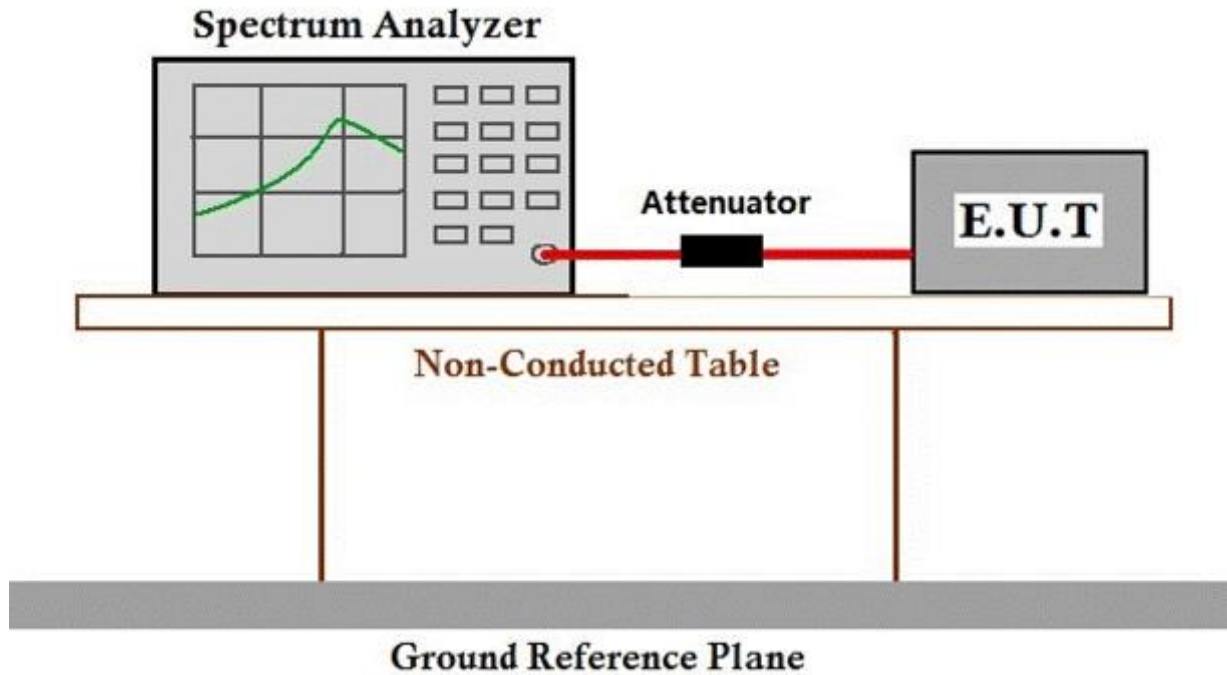
Operating Environment:	
Temperature:	23.1 °C Humidity: 61.2 % RH Atmospheric Pressure: 1020 mbar
Test mode	c: TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of 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.



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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: 23 °C Humidity: 51 % 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.



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7.7.2 Test Setup Diagram

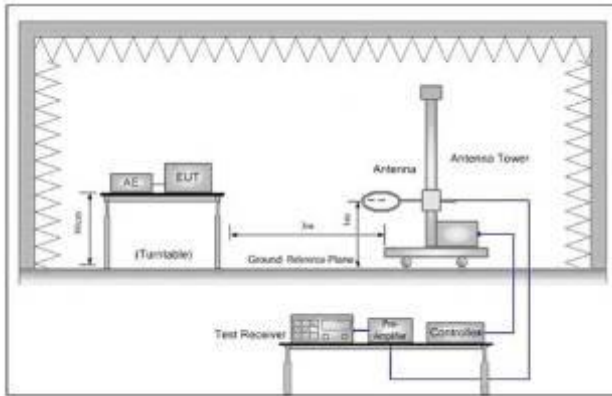


Figure 1. Below 30MHz

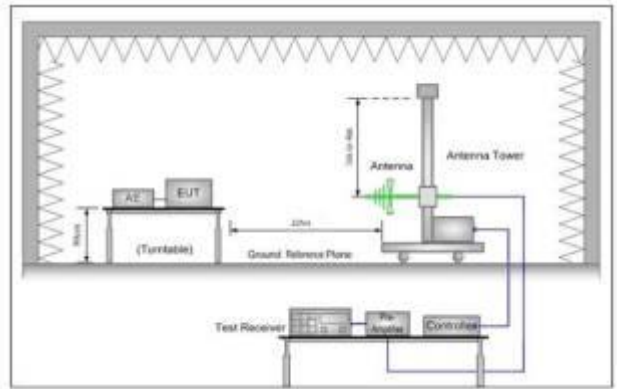


Figure 2. 30MHz to 1GHz

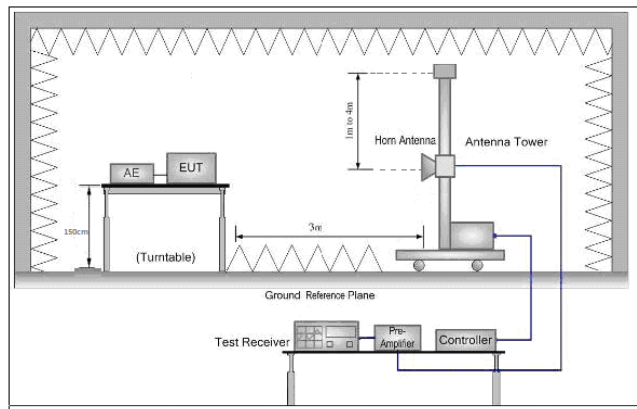


Figure 3. Above 1 GHz



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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.

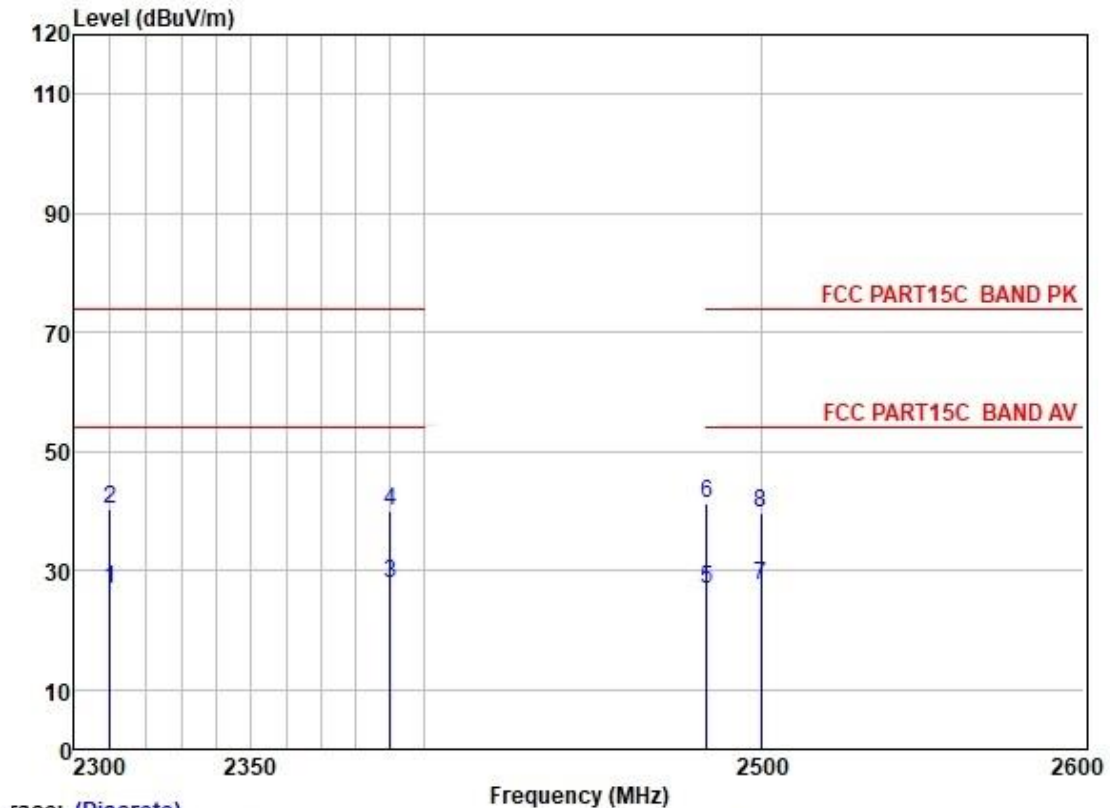
Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor



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



Trace: (Discrete)

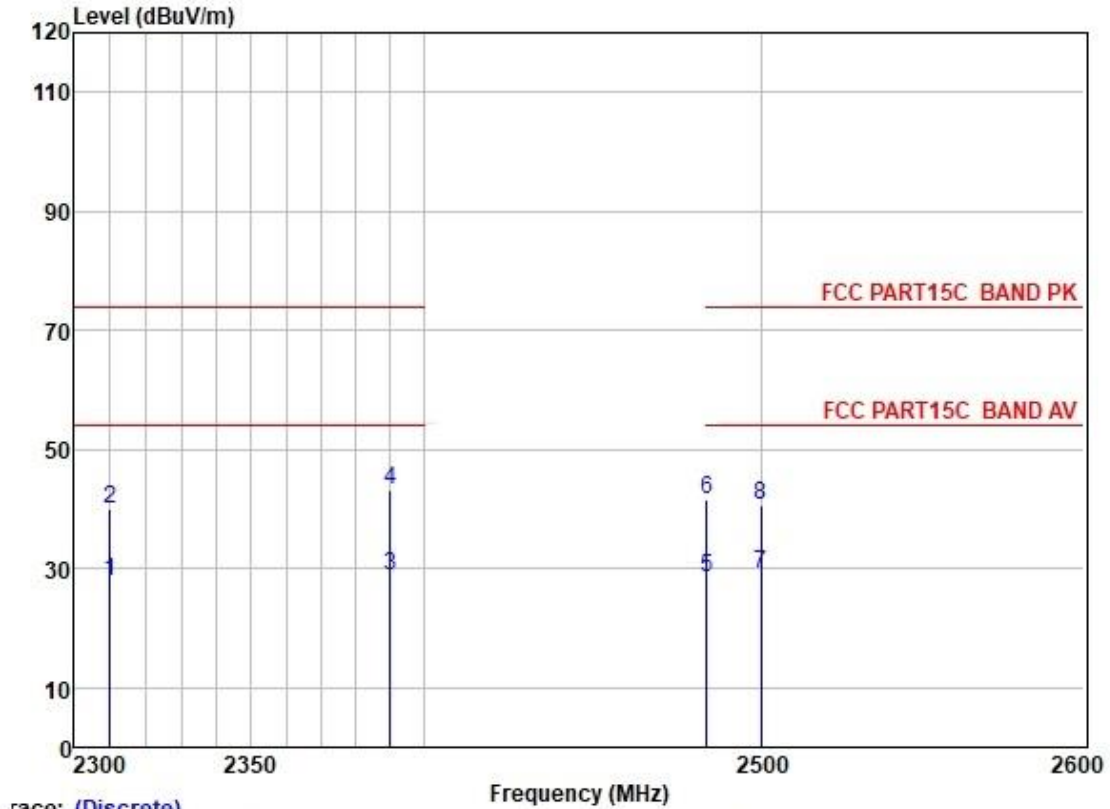
	Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2310.000	33.08	26.25	5.03	37.44	26.92	54.00	-27.08	HORIZONTAL	Average
2	2310.000	46.34	26.25	5.03	37.44	40.18	74.00	-33.82	HORIZONTAL	Peak
3	2390.000	33.82	26.43	4.88	37.42	27.71	54.00	-26.29	HORIZONTAL	Average
4	2390.000	45.97	26.43	4.88	37.42	39.86	74.00	-34.14	HORIZONTAL	Peak
5	2483.500	32.59	26.58	5.23	37.40	27.00	54.00	-27.00	HORIZONTAL	Average
6	2483.500	46.81	26.58	5.23	37.40	41.22	74.00	-32.78	HORIZONTAL	Peak
7	2500.000	33.28	26.60	4.95	37.39	27.44	54.00	-26.56	HORIZONTAL	Average
8	2500.000	45.64	26.60	4.95	37.39	39.80	74.00	-34.20	HORIZONTAL	Peak



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



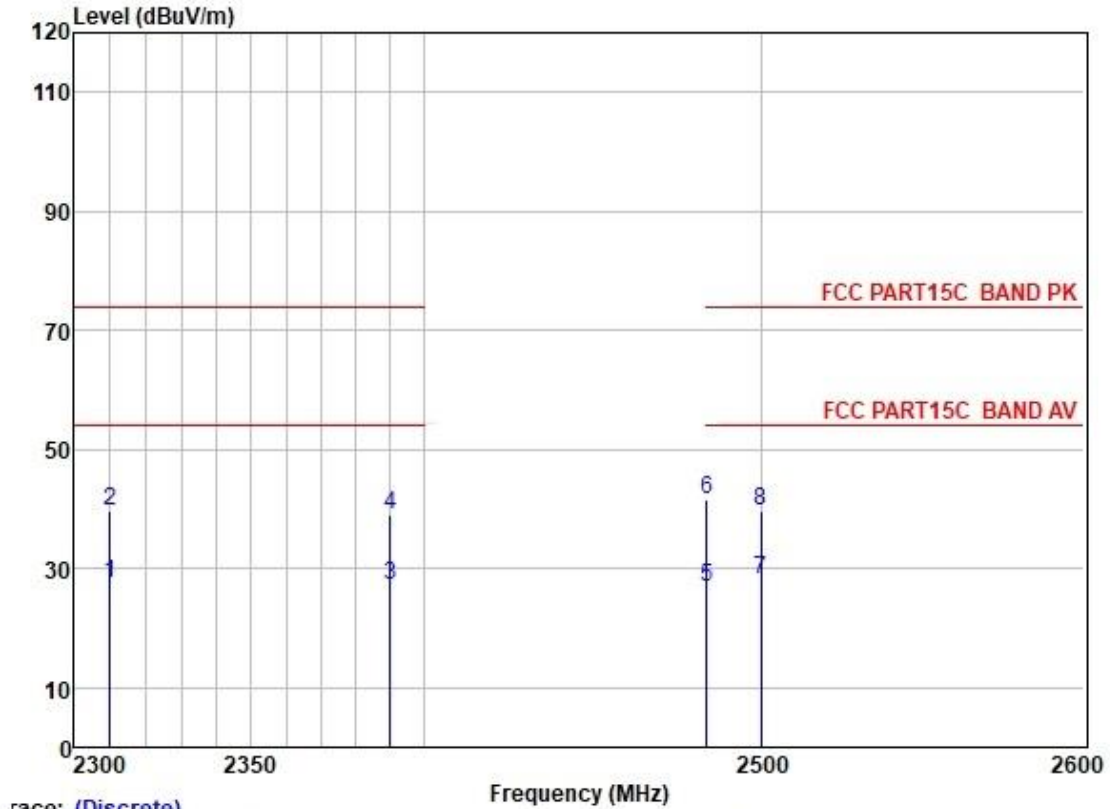
Trace: (Discrete)

	ReadAntenna	Cable	Preamp	Limit	Over				
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2310.000	34.10	26.25	5.03	37.44	27.94	54.00	-26.06	VERTICAL Average
2	2310.000	46.20	26.25	5.03	37.44	40.04	74.00	-33.96	VERTICAL Peak
3	2390.000	34.97	26.43	4.88	37.42	28.86	54.00	-25.14	VERTICAL Average
4	2390.000	49.18	26.43	4.88	37.42	43.07	74.00	-30.93	VERTICAL Peak
5	2483.500	34.17	26.58	5.23	37.40	28.58	54.00	-25.42	VERTICAL Average
6	2483.500	47.22	26.58	5.23	37.40	41.63	74.00	-32.37	VERTICAL Peak
7	2500.000	34.99	26.60	4.95	37.39	29.15	54.00	-24.85	VERTICAL Average
8	2500.000	46.55	26.60	4.95	37.39	40.71	74.00	-33.29	VERTICAL Peak



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



Trace: (Discrete)

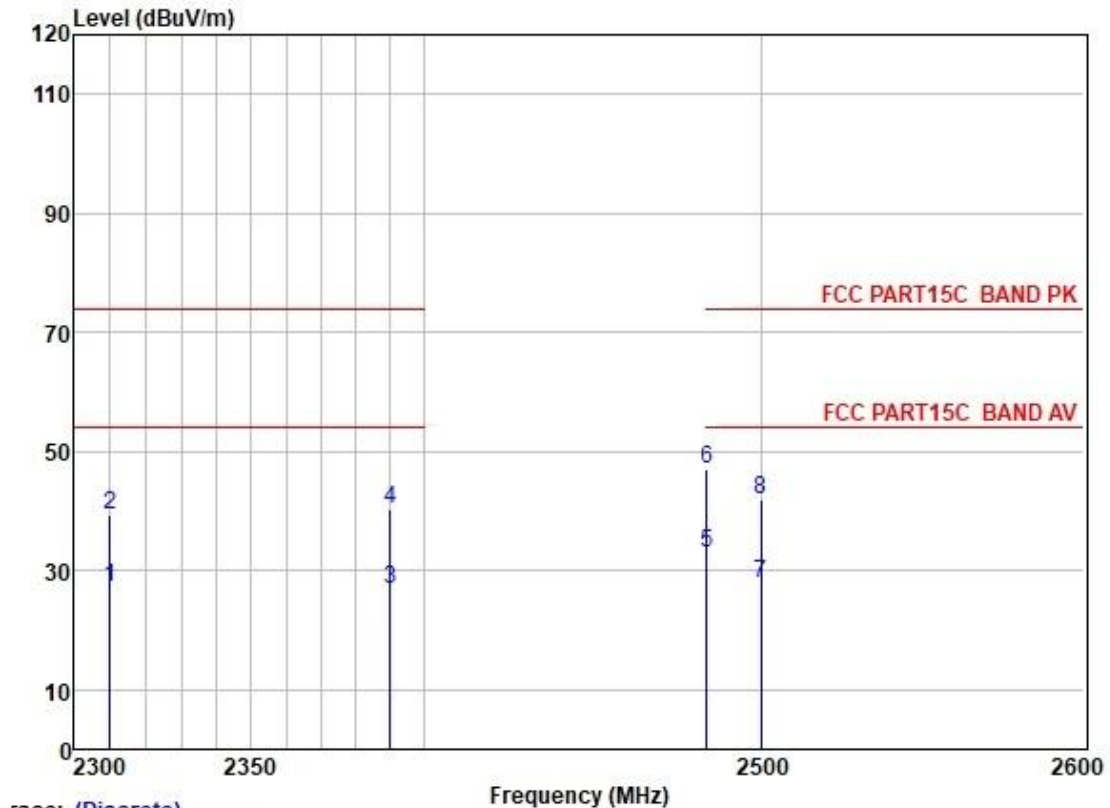
	Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2310.000	33.75	26.25	5.03	37.44	27.59	54.00	-26.41	HORIZONTAL	Average
2	2310.000	45.88	26.25	5.03	37.44	39.72	74.00	-34.28	HORIZONTAL	Peak
3	2390.000	33.37	26.43	4.88	37.42	27.26	54.00	-26.74	HORIZONTAL	Average
4	2390.000	45.13	26.43	4.88	37.42	39.02	74.00	-34.98	HORIZONTAL	Peak
5	2483.500	32.45	26.58	5.23	37.40	26.86	54.00	-27.14	HORIZONTAL	Average
6	2483.500	47.05	26.58	5.23	37.40	41.46	74.00	-32.54	HORIZONTAL	Peak
7	2500.000	33.97	26.60	4.95	37.39	28.13	54.00	-25.87	HORIZONTAL	Average
8	2500.000	45.66	26.60	4.95	37.39	39.82	74.00	-34.18	HORIZONTAL	Peak



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



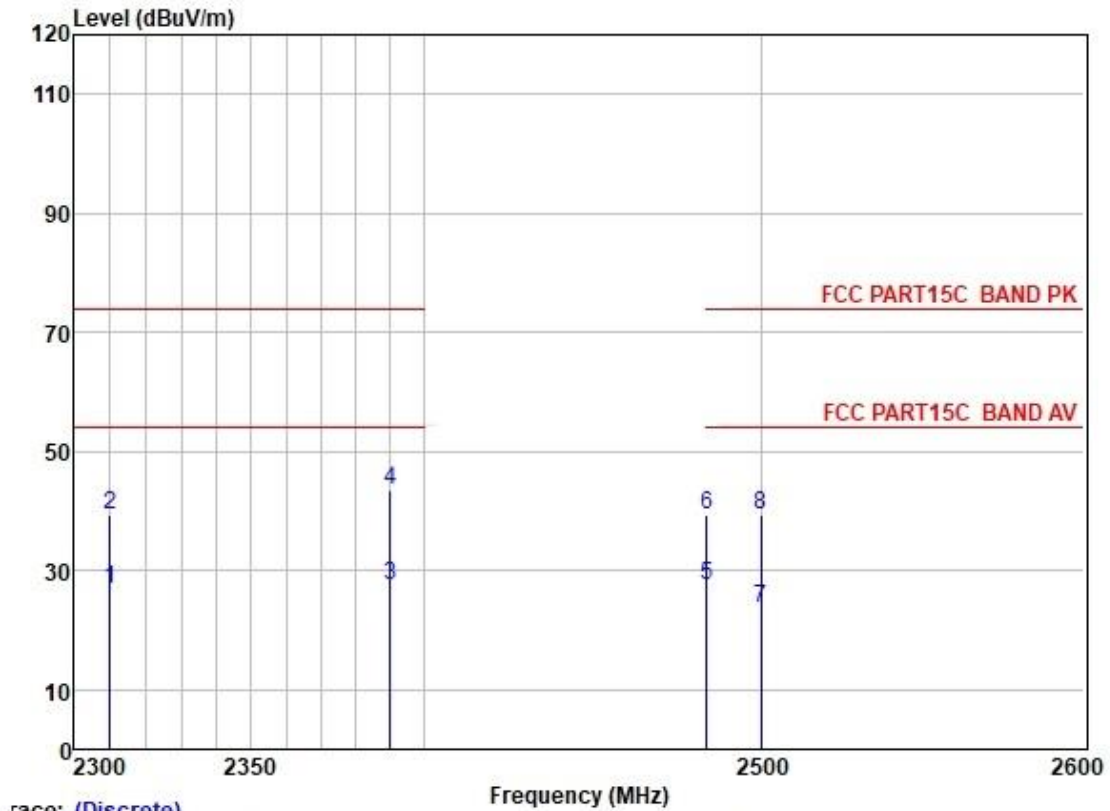
Trace: (Discrete)

	ReadAntenna	Cable	Preamp	Limit	Over				
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2310.000	33.30	26.25	5.03	37.44	27.14	54.00	-26.86	VERTICAL Average
2	2310.000	45.66	26.25	5.03	37.44	39.50	74.00	-34.50	VERTICAL Peak
3	2390.000	33.15	26.43	4.88	37.42	27.04	54.00	-26.96	VERTICAL Average
4	2390.000	46.40	26.43	4.88	37.42	40.29	74.00	-33.71	VERTICAL Peak
5	2483.500	38.70	26.58	5.23	37.40	33.11	54.00	-20.89	VERTICAL Average
6	2483.500	52.71	26.58	5.23	37.40	47.12	74.00	-26.88	VERTICAL Peak
7	2500.000	33.77	26.60	4.95	37.39	27.93	54.00	-26.07	VERTICAL Average
8	2500.000	47.73	26.60	4.95	37.39	41.89	74.00	-32.11	VERTICAL Peak



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



Trace: (Discrete)

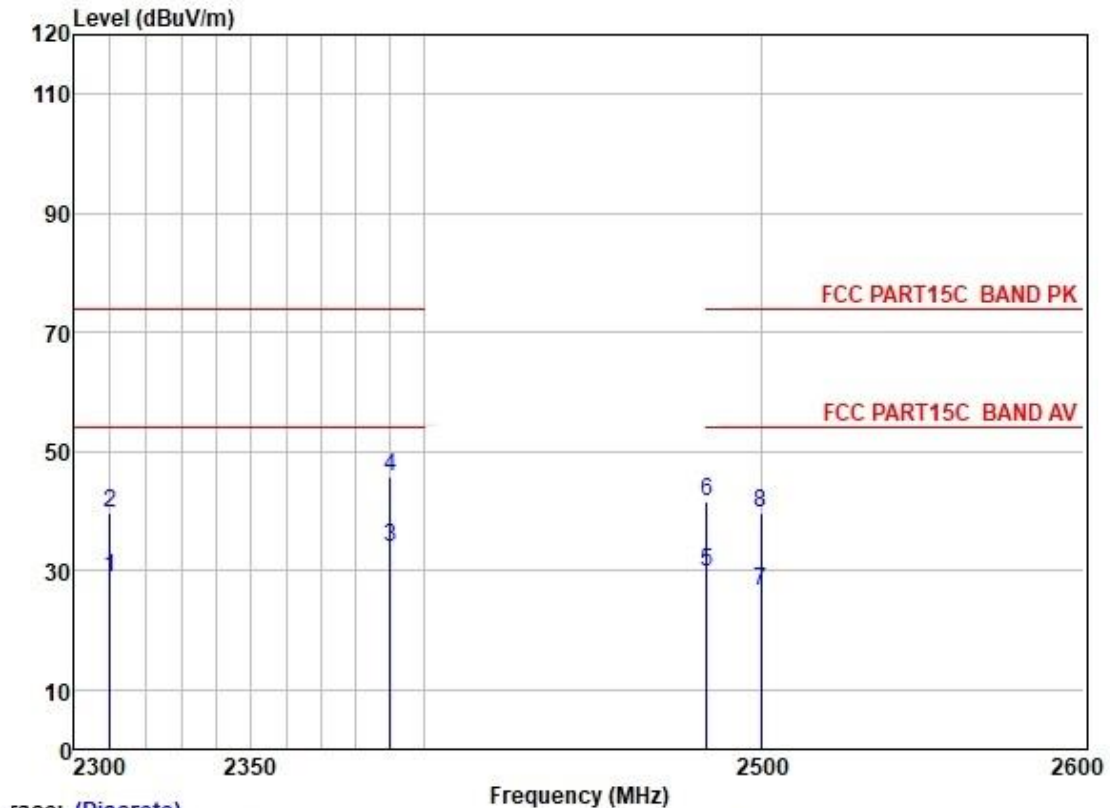
	Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2310.000	32.98	26.25	5.03	37.44	26.82	54.00	-27.18	HORIZONTAL	Average
2	2310.000	45.52	26.25	5.03	37.44	39.36	74.00	-34.64	HORIZONTAL	Peak
3	2390.000	33.58	26.43	4.88	37.42	27.47	54.00	-26.53	HORIZONTAL	Average
4	2390.000	49.53	26.43	4.88	37.42	43.42	74.00	-30.58	HORIZONTAL	Peak
5	2483.500	33.13	26.58	5.23	37.40	27.54	54.00	-26.46	HORIZONTAL	Average
6	2483.500	44.89	26.58	5.23	37.40	39.30	74.00	-34.70	HORIZONTAL	Peak
7	2500.000	29.47	26.60	4.95	37.39	23.63	54.00	-30.37	HORIZONTAL	Average
8	2500.000	45.15	26.60	4.95	37.39	39.31	74.00	-34.69	HORIZONTAL	Peak



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



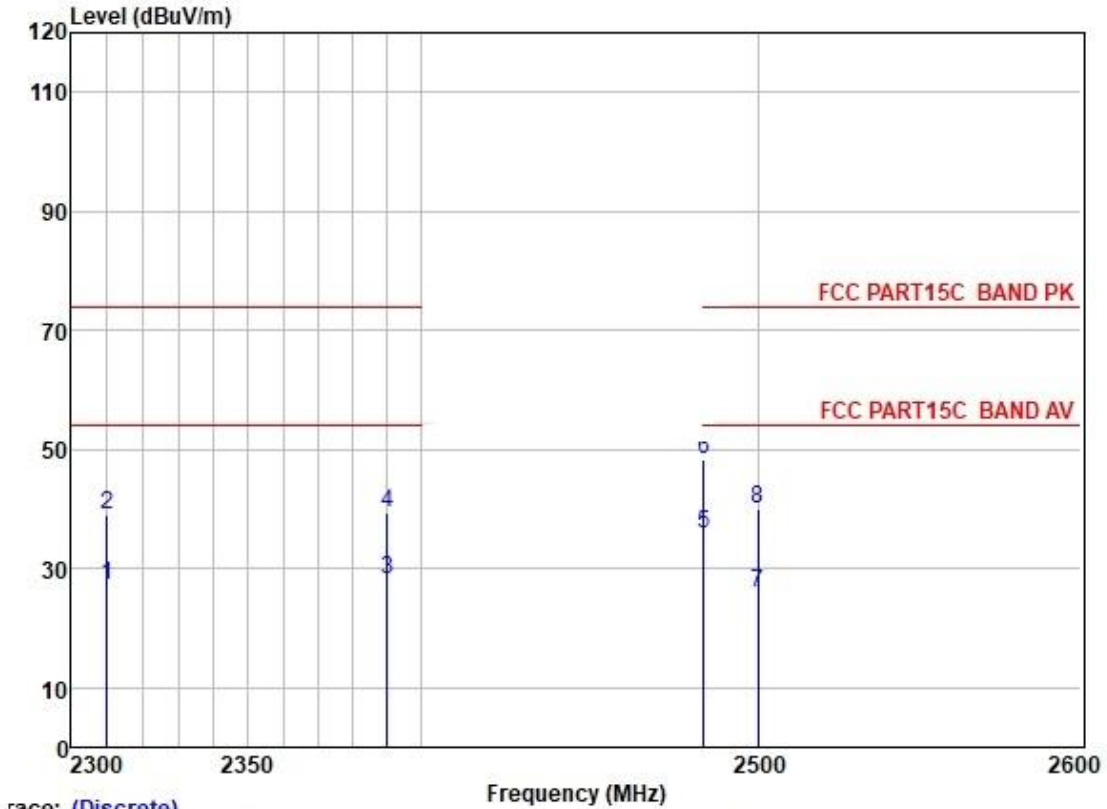
Trace: (Discrete)

	ReadAntenna	Cable	Preamp	Limit	Over				
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2310.000	35.06	26.25	5.03	37.44	28.90	54.00	-25.10	VERTICAL Average
2	2310.000	45.79	26.25	5.03	37.44	39.63	74.00	-34.37	VERTICAL Peak
3	2390.000	40.00	26.43	4.88	37.42	33.89	54.00	-20.11	VERTICAL Average
4	2390.000	51.94	26.43	4.88	37.42	45.83	74.00	-28.17	VERTICAL Peak
5	2483.500	35.24	26.58	5.23	37.40	29.65	54.00	-24.35	VERTICAL Average
6	2483.500	47.19	26.58	5.23	37.40	41.60	74.00	-32.40	VERTICAL Peak
7	2500.000	32.53	26.60	4.95	37.39	26.69	54.00	-27.31	VERTICAL Average
8	2500.000	45.61	26.60	4.95	37.39	39.77	74.00	-34.23	VERTICAL Peak



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



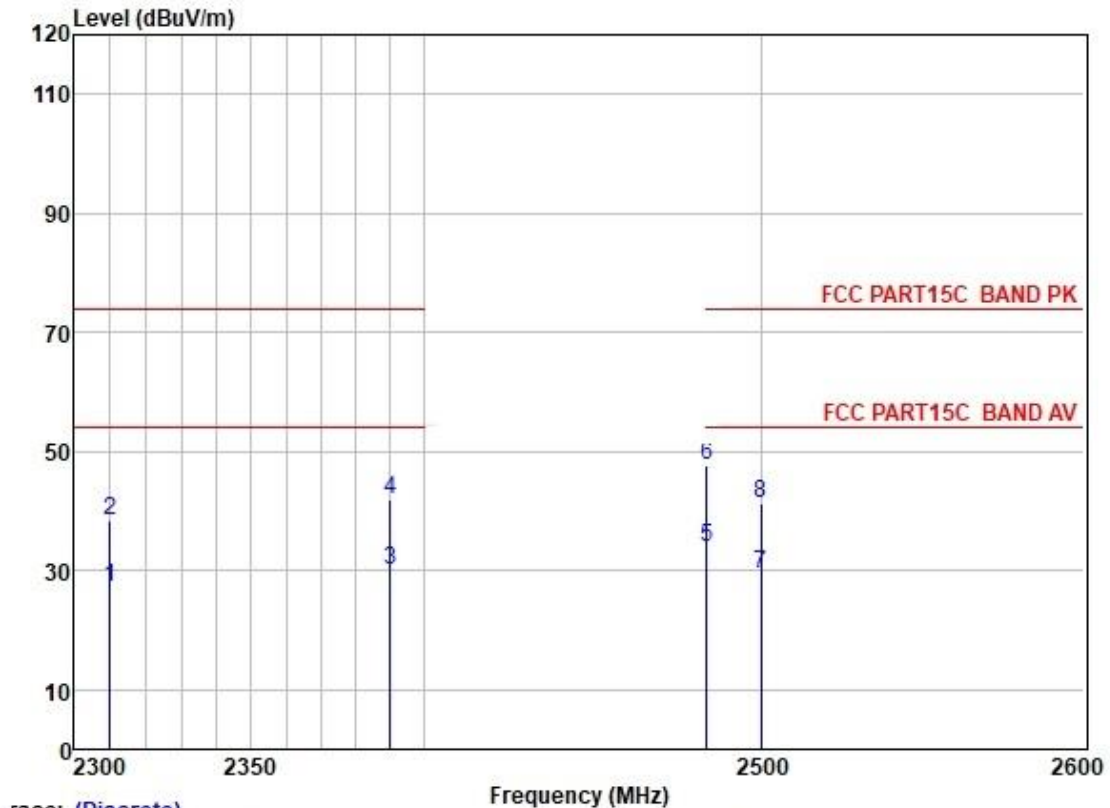
Trace: (Discrete)

	Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2310.000	33.32	26.25	5.03	37.44	27.16	54.00	-26.84	HORIZONTAL	Average
2	2310.000	45.22	26.25	5.03	37.44	39.06	74.00	-34.94	HORIZONTAL	Peak
3	2390.000	34.22	26.43	4.88	37.42	28.11	54.00	-25.89	HORIZONTAL	Average
4	2390.000	45.50	26.43	4.88	37.42	39.39	74.00	-34.61	HORIZONTAL	Peak
5	2483.500	41.44	26.58	5.23	37.40	35.85	54.00	-18.15	HORIZONTAL	Average
6	2483.500	53.89	26.58	5.23	37.40	48.30	74.00	-25.70	HORIZONTAL	Peak
7	2500.000	31.60	26.60	4.95	37.39	25.76	54.00	-28.24	HORIZONTAL	Average
8	2500.000	45.82	26.60	4.95	37.39	39.98	74.00	-34.02	HORIZONTAL	Peak



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



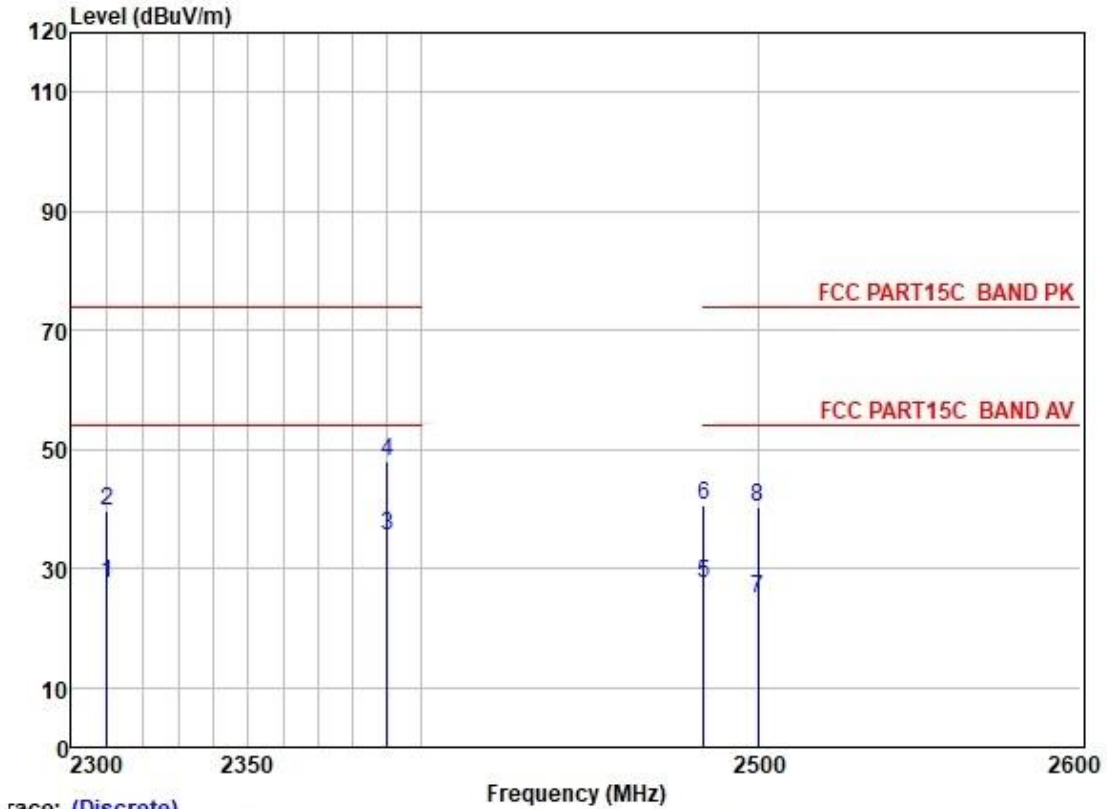
Trace: (Discrete)

	ReadAntenna	Cable	Preamp	Limit	Over				
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2310.000	33.32	26.25	5.03	37.44	27.16	54.00	-26.84	VERTICAL Average
2	2310.000	44.48	26.25	5.03	37.44	38.32	74.00	-35.68	VERTICAL Peak
3	2390.000	36.32	26.43	4.88	37.42	30.21	54.00	-23.79	VERTICAL Average
4	2390.000	47.88	26.43	4.88	37.42	41.77	74.00	-32.23	VERTICAL Peak
5	2483.500	39.47	26.58	5.23	37.40	33.88	54.00	-20.12	VERTICAL Average
6	2483.500	53.22	26.58	5.23	37.40	47.63	74.00	-26.37	VERTICAL Peak
7	2500.000	35.40	26.60	4.95	37.39	29.56	54.00	-24.44	VERTICAL Average
8	2500.000	47.14	26.60	4.95	37.39	41.30	74.00	-32.70	VERTICAL Peak



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



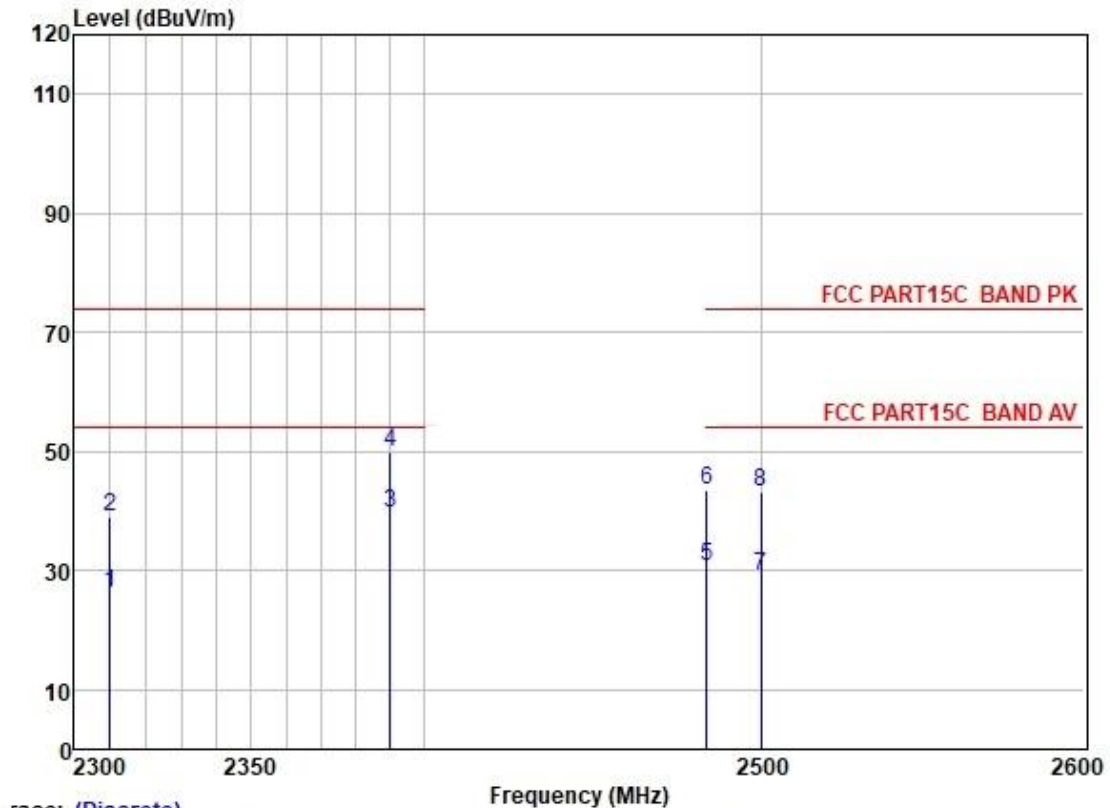
Trace: (Discrete)

	Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2310.000	33.56	26.25	5.03	37.44	27.40	54.00	-26.60	HORIZONTAL	Average
2	2310.000	45.81	26.25	5.03	37.44	39.65	74.00	-34.35	HORIZONTAL	Peak
3	2390.000	41.67	26.43	4.88	37.42	35.56	54.00	-18.44	HORIZONTAL	Average
4	2390.000	54.19	26.43	4.88	37.42	48.08	74.00	-25.92	HORIZONTAL	Peak
5	2483.500	33.23	26.58	5.23	37.40	27.64	54.00	-26.36	HORIZONTAL	Average
6	2483.500	46.24	26.58	5.23	37.40	40.65	74.00	-33.35	HORIZONTAL	Peak
7	2500.000	30.78	26.60	4.95	37.39	24.94	54.00	-29.06	HORIZONTAL	Average
8	2500.000	46.05	26.60	4.95	37.39	40.21	74.00	-33.79	HORIZONTAL	Peak



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



Trace: (Discrete)

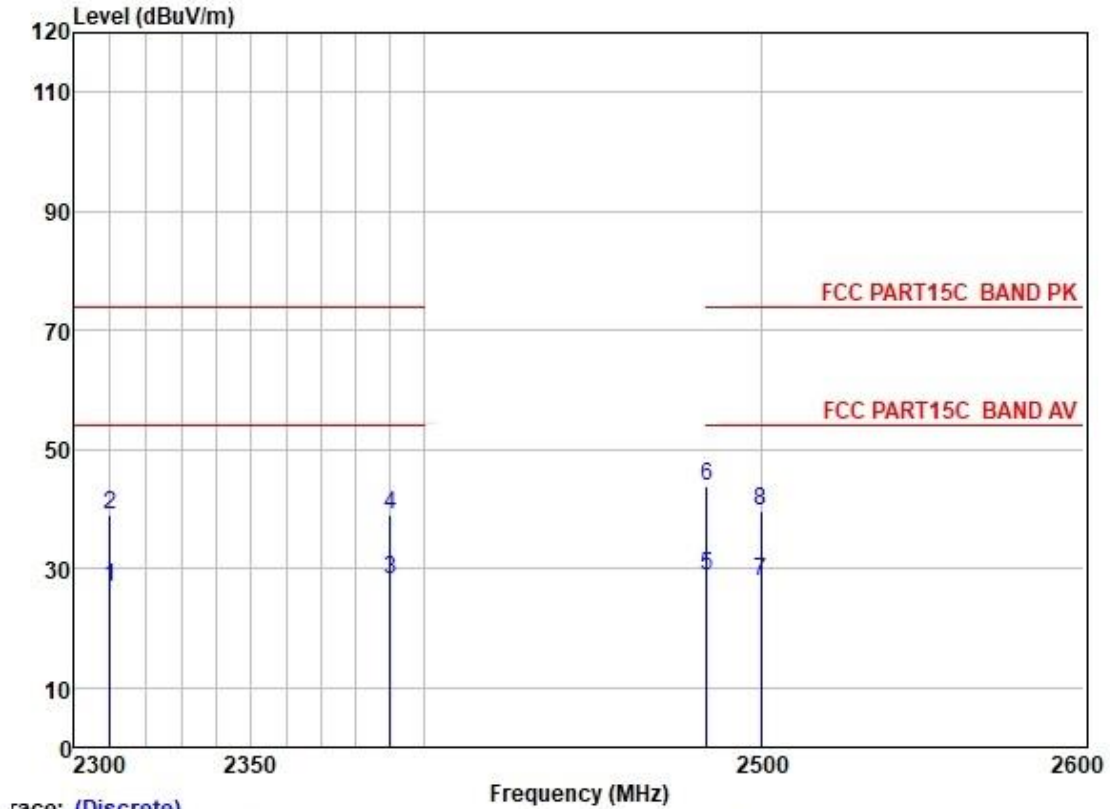
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2310.000	32.54	26.25	5.03	37.44	26.38	54.00	-27.62	VERTICAL	Average
2	2310.000	45.08	26.25	5.03	37.44	38.92	74.00	-35.08	VERTICAL	Peak
3	2390.000	45.69	26.43	4.88	37.42	39.58	54.00	-14.42	VERTICAL	Average
4	2390.000	56.12	26.43	4.88	37.42	50.01	74.00	-23.99	VERTICAL	Peak
5	2483.500	36.31	26.58	5.23	37.40	30.72	54.00	-23.28	VERTICAL	Average
6	2483.500	48.98	26.58	5.23	37.40	43.39	74.00	-30.61	VERTICAL	Peak
7	2500.000	34.87	26.60	4.95	37.39	29.03	54.00	-24.97	VERTICAL	Average
8	2500.000	49.11	26.60	4.95	37.39	43.27	74.00	-30.73	VERTICAL	Peak



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



Trace: (Discrete)

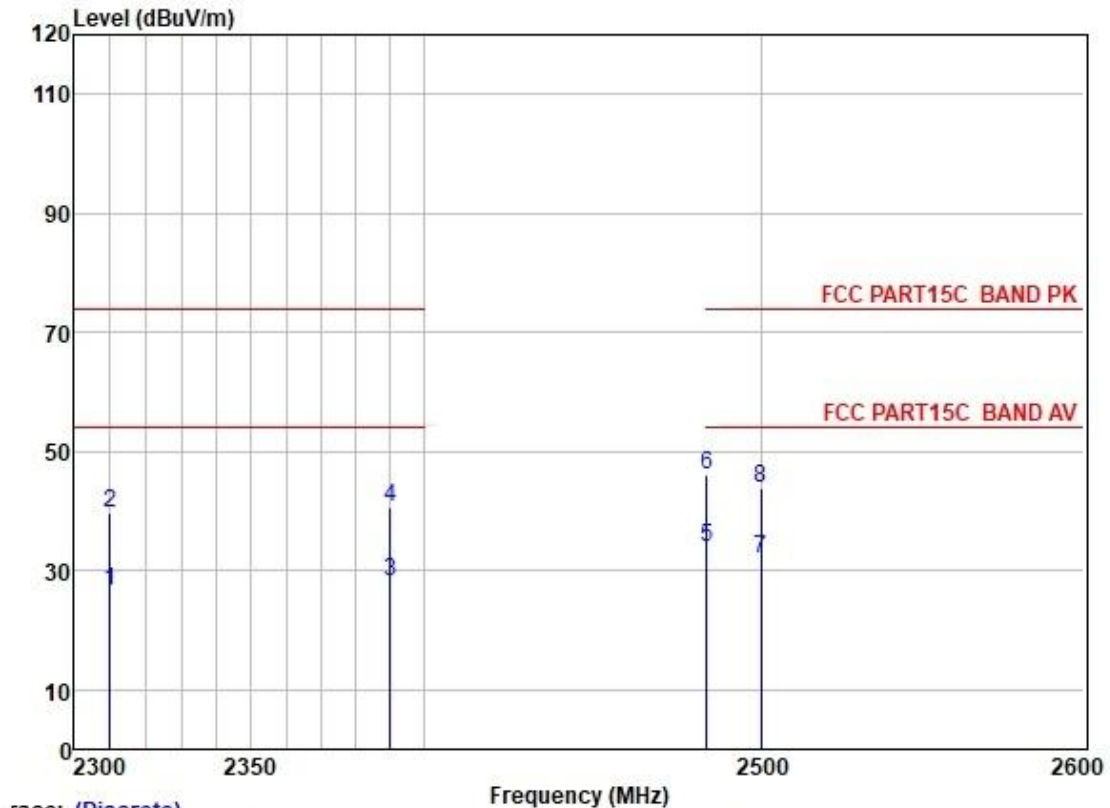
	Read	Antenna	Cable	Preamp	Level	Limit	Over		
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2310.000	33.00	26.25	5.03	37.44	26.84	54.00	-27.16	HORIZONTAL Average
2	2310.000	45.12	26.25	5.03	37.44	38.96	74.00	-35.04	HORIZONTAL Peak
3	2390.000	34.16	26.43	4.88	37.42	28.05	54.00	-25.95	HORIZONTAL Average
4	2390.000	45.01	26.43	4.88	37.42	38.90	74.00	-35.10	HORIZONTAL Peak
5	2483.500	34.41	26.58	5.23	37.40	28.82	54.00	-25.18	HORIZONTAL Average
6	2483.500	49.48	26.58	5.23	37.40	43.89	74.00	-30.11	HORIZONTAL Peak
7	2500.000	33.61	26.60	4.95	37.39	27.77	54.00	-26.23	HORIZONTAL Average
8	2500.000	45.61	26.60	4.95	37.39	39.77	74.00	-34.23	HORIZONTAL Peak



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



Trace: (Discrete)

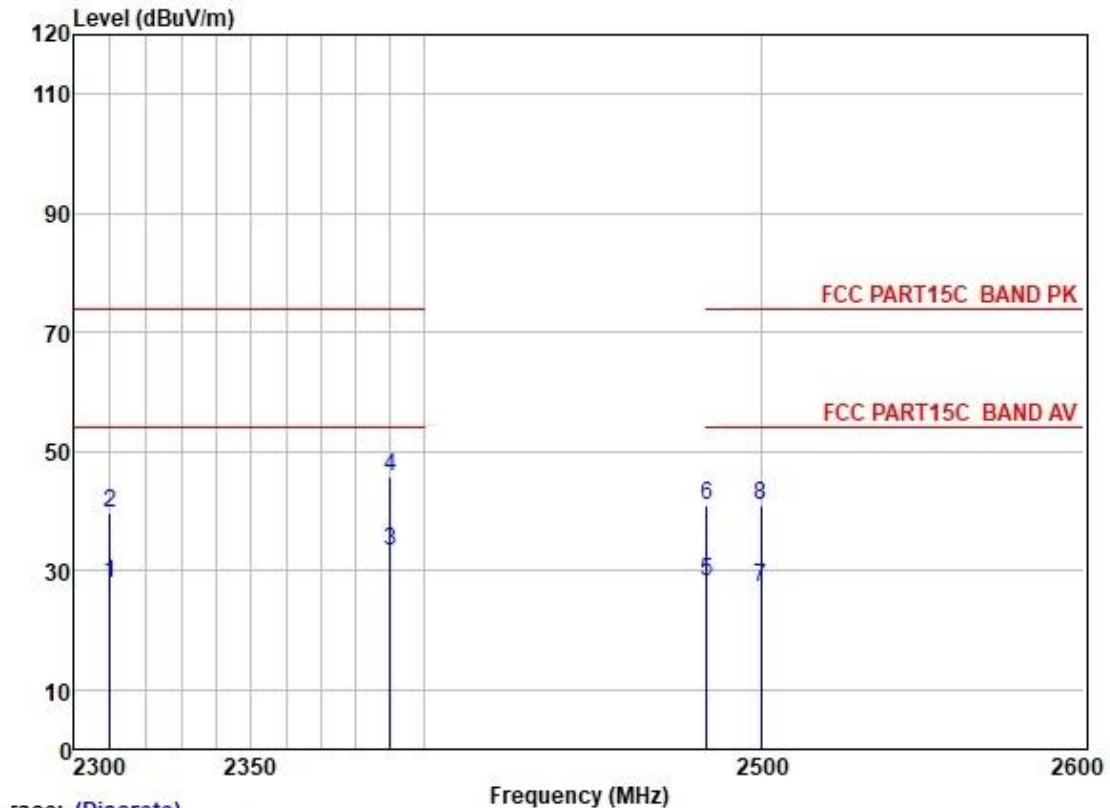
	ReadAntenna	Cable	Preamp	Limit	Over				
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2310.000	32.64	26.25	5.03	37.44	26.48	54.00	-27.52	VERTICAL Average
2	2310.000	45.96	26.25	5.03	37.44	39.80	74.00	-34.20	VERTICAL Peak
3	2390.000	34.30	26.43	4.88	37.42	28.19	54.00	-25.81	VERTICAL Average
4	2390.000	46.67	26.43	4.88	37.42	40.56	74.00	-33.44	VERTICAL Peak
5	2483.500	39.38	26.58	5.23	37.40	33.79	54.00	-20.21	VERTICAL Average
6	2483.500	51.67	26.58	5.23	37.40	46.08	74.00	-27.92	VERTICAL Peak
7	2500.000	37.76	26.60	4.95	37.39	31.92	54.00	-22.08	VERTICAL Average
8	2500.000	49.79	26.60	4.95	37.39	43.95	74.00	-30.05	VERTICAL Peak



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



Trace: (Discrete)

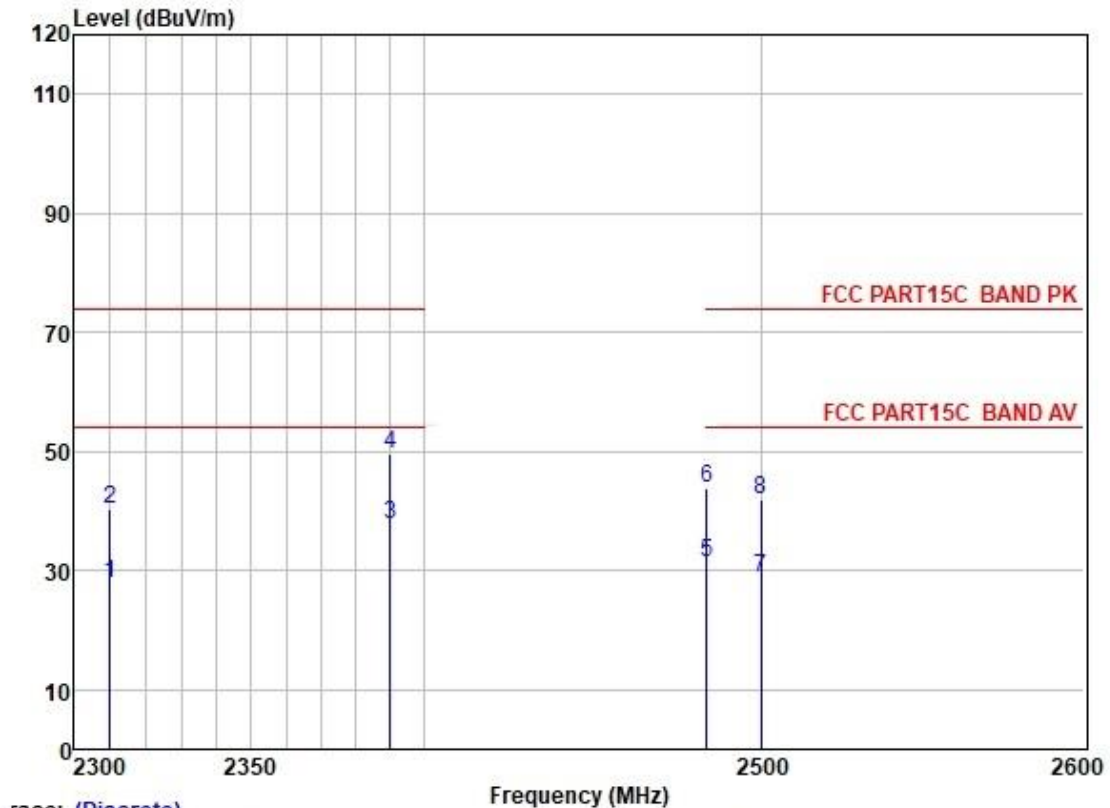
	Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2310.000	33.99	26.25	5.03	37.44	27.83	54.00	-26.17	HORIZONTAL	Average
2	2310.000	45.69	26.25	5.03	37.44	39.53	74.00	-34.47	HORIZONTAL	Peak
3	2390.000	39.31	26.43	4.88	37.42	33.20	54.00	-20.80	HORIZONTAL	Average
4	2390.000	51.75	26.43	4.88	37.42	45.64	74.00	-28.36	HORIZONTAL	Peak
5	2483.500	33.71	26.58	5.23	37.40	28.12	54.00	-25.88	HORIZONTAL	Average
6	2483.500	46.68	26.58	5.23	37.40	41.09	74.00	-32.91	HORIZONTAL	Peak
7	2500.000	32.95	26.60	4.95	37.39	27.11	54.00	-26.89	HORIZONTAL	Average
8	2500.000	46.78	26.60	4.95	37.39	40.94	74.00	-33.06	HORIZONTAL	Peak



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



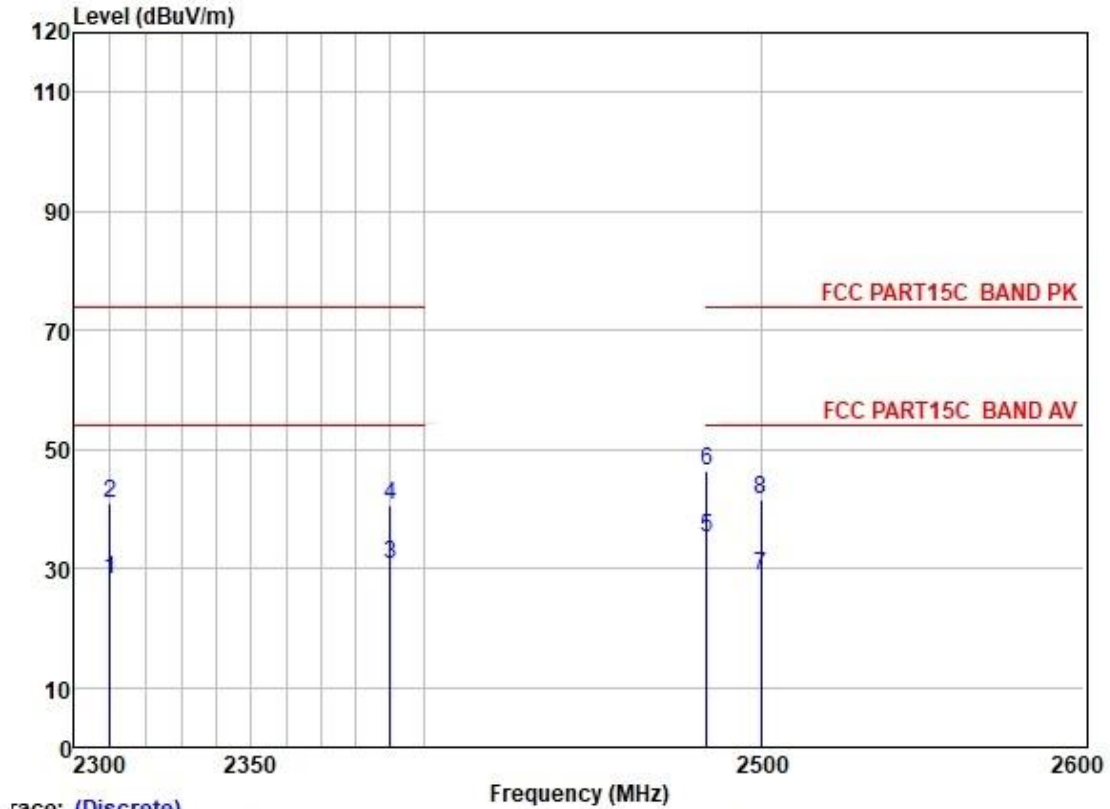
Trace: (Discrete)

	ReadAntenna	Cable	Preamp	Limit	Over				
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2310.000	33.88	26.25	5.03	37.44	27.72	54.00	-26.28	VERTICAL Average
2	2310.000	46.46	26.25	5.03	37.44	40.30	74.00	-33.70	VERTICAL Peak
3	2390.000	44.03	26.43	4.88	37.42	37.92	54.00	-16.08	VERTICAL Average
4	2390.000	55.82	26.43	4.88	37.42	49.71	74.00	-24.29	VERTICAL Peak
5	2483.500	36.89	26.58	5.23	37.40	31.30	54.00	-22.70	VERTICAL Average
6	2483.500	49.33	26.58	5.23	37.40	43.74	74.00	-30.26	VERTICAL Peak
7	2500.000	34.56	26.60	4.95	37.39	28.72	54.00	-25.28	VERTICAL Average
8	2500.000	47.64	26.60	4.95	37.39	41.80	74.00	-32.20	VERTICAL Peak



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



Trace: (Discrete)

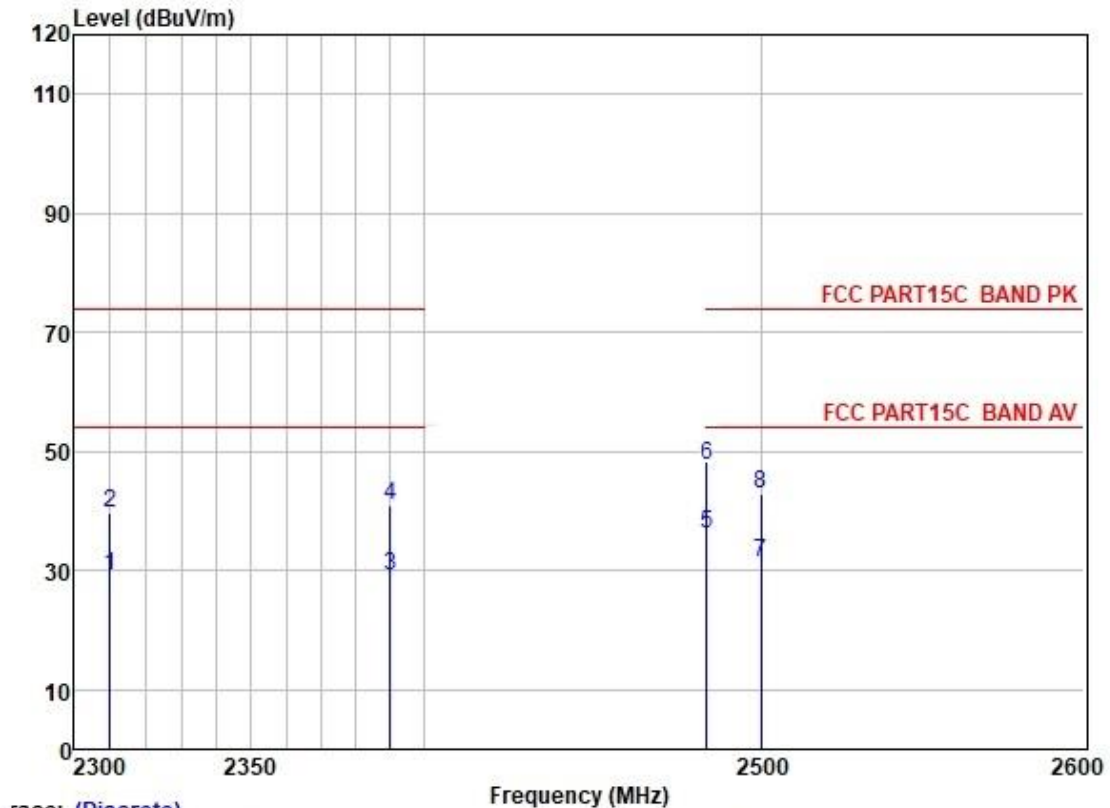
	Freq	ReadAntenna	Cable	Preamp	Level	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	34.39	26.25	5.03	37.44	28.23	54.00	-25.77	HORIZONTAL Average
2	2310.000	46.98	26.25	5.03	37.44	40.82	74.00	-33.18	HORIZONTAL Peak
3	2390.000	36.78	26.43	4.88	37.42	30.67	54.00	-23.33	HORIZONTAL Average
4	2390.000	46.78	26.43	4.88	37.42	40.67	74.00	-33.33	HORIZONTAL Peak
5	2483.500	40.86	26.58	5.23	37.40	35.27	54.00	-18.73	HORIZONTAL Average
6	2483.500	52.02	26.58	5.23	37.40	46.43	74.00	-27.57	HORIZONTAL Peak
7	2500.000	34.69	26.60	4.95	37.39	28.85	54.00	-25.15	HORIZONTAL Average
8	2500.000	47.30	26.60	4.95	37.39	41.46	74.00	-32.54	HORIZONTAL Peak



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



Trace: (Discrete)

Trace	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2310.000	35.23	26.25	5.03	37.44	29.07	54.00	-24.93	VERTICAL	Average
2	2310.000	45.88	26.25	5.03	37.44	39.72	74.00	-34.28	VERTICAL	Peak
3	2390.000	35.23	26.43	4.88	37.42	29.12	54.00	-24.88	VERTICAL	Average
4	2390.000	47.09	26.43	4.88	37.42	40.98	74.00	-33.02	VERTICAL	Peak
5	2483.500	41.71	26.58	5.23	37.40	36.12	54.00	-17.88	VERTICAL	Average
6	2483.500	54.61	26.58	5.23	37.40	49.02	74.00	-24.98	VERTICAL	Peak
7	2500.000	37.19	26.60	4.95	37.39	31.35	54.00	-22.65	VERTICAL	Average
8	2500.000	48.80	26.60	4.95	37.39	42.96	74.00	-31.04	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: 23 °C Humidity: 51 % 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

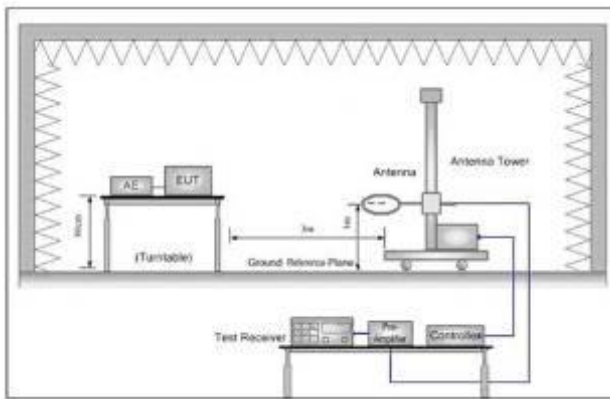


Figure 1. Below 30MHz

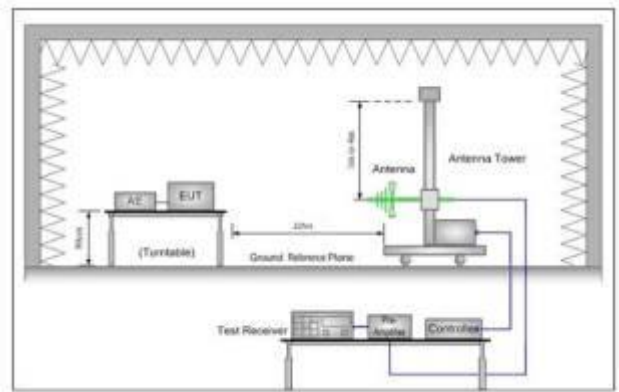


Figure 2. 30MHz to 1GHz

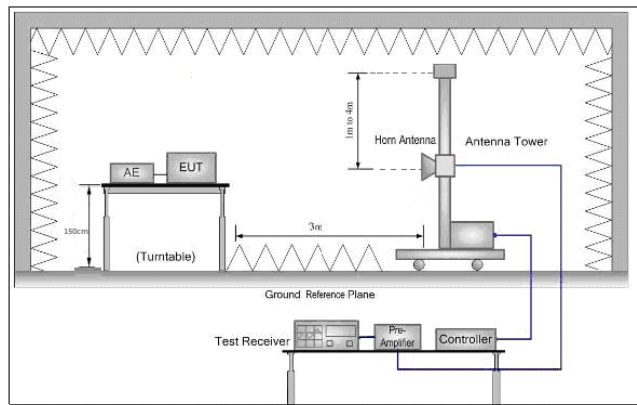


Figure 3. Above 1 GHz



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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:

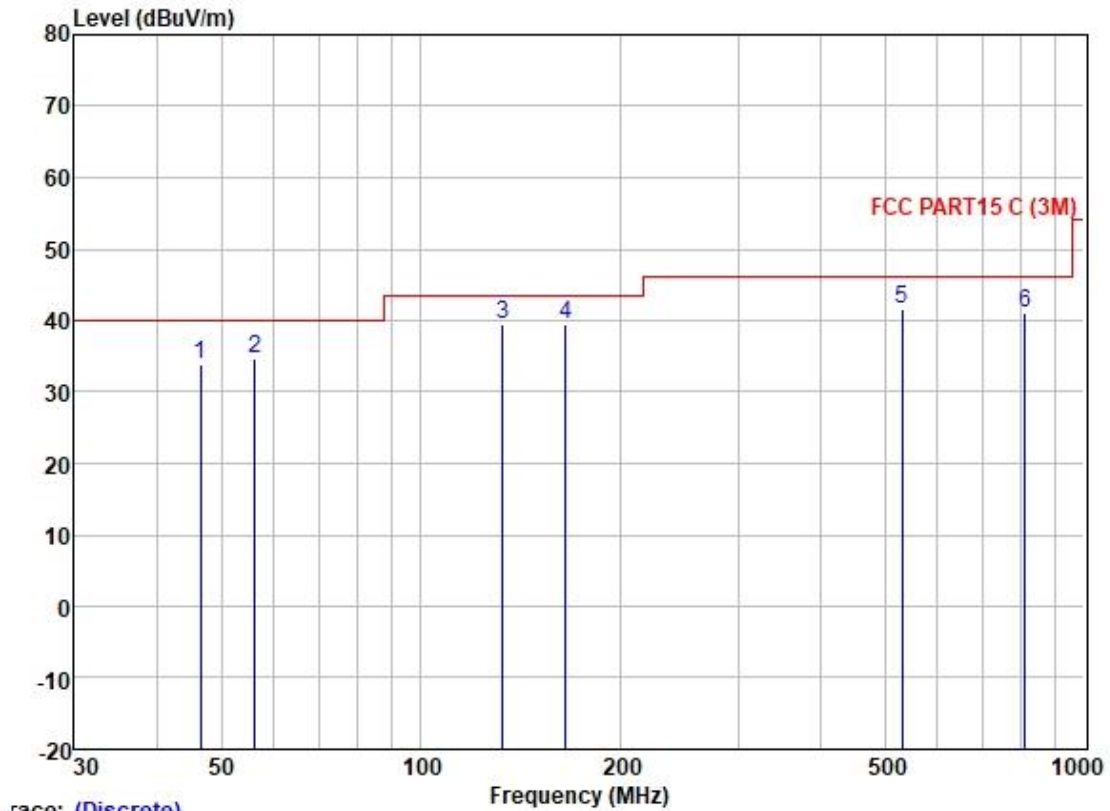
- 1) For emission below 1GHz, through pre-scan found the worst case is the lowest channel and IEEE 802.11b. Only the worst case is recorded in the report.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as 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



Trace: (Discrete)

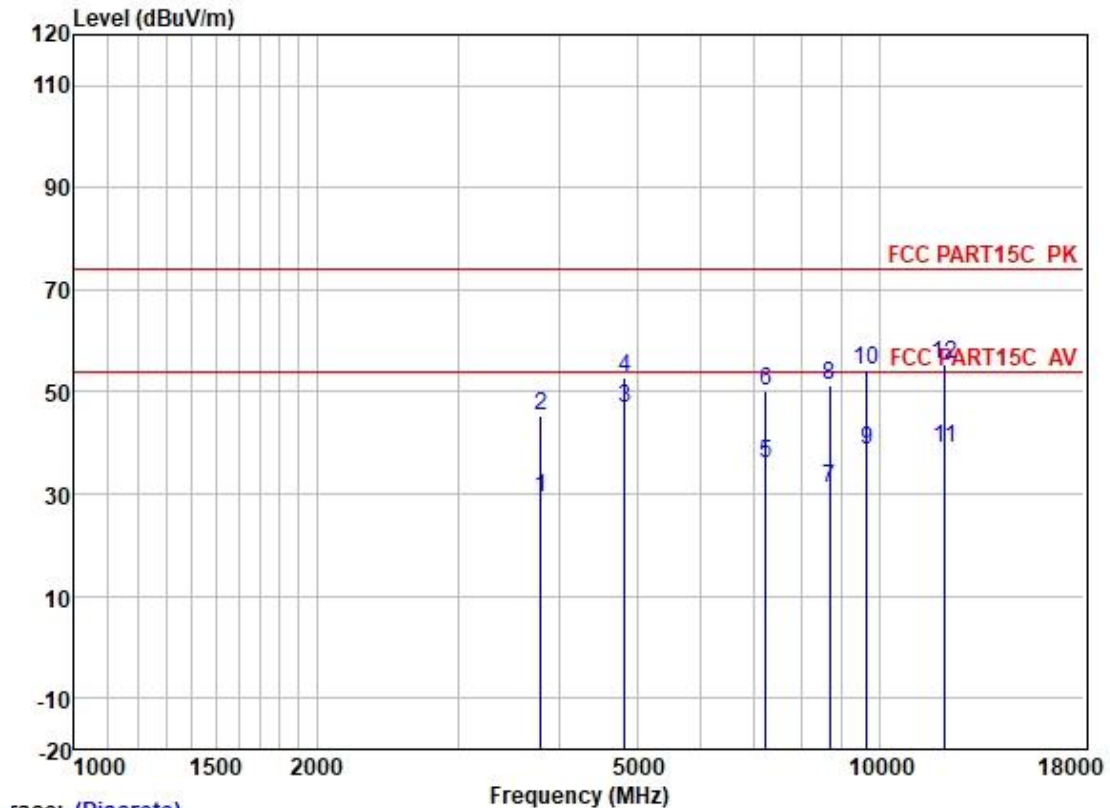
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	46.503	44.88	12.90	0.68	24.57	33.89	40.00	-6.11	HORIZONTAL	QP
2	56.197	46.82	12.43	0.59	25.12	34.72	40.00	-5.28	HORIZONTAL	QP
3	132.685	54.04	12.66	0.98	28.17	39.51	43.50	-3.99	HORIZONTAL	QP
4	164.908	52.95	13.26	1.29	28.09	39.41	43.50	-4.09	HORIZONTAL	QP
5	530.101	50.52	18.80	2.26	29.87	41.71	46.00	-4.29	HORIZONTAL	QP
6	813.112	43.98	22.83	2.77	28.61	40.97	46.00	-5.03	HORIZONTAL	QP



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



Trace: (Discrete)

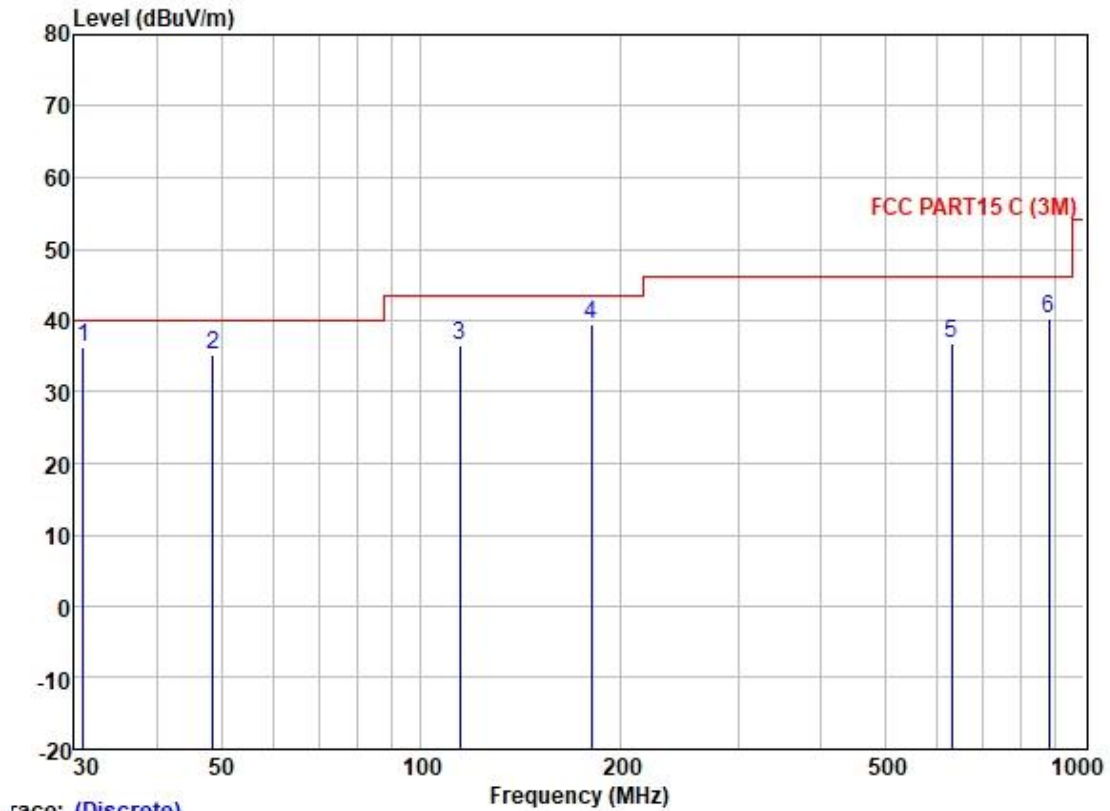
	ReadAntenna	Cable	Preamp	Limit	Over				
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	3801.333	29.46	29.01	7.89	36.92	29.44	54.00	-24.56	HORIZONTAL Average
2	3801.333	45.31	29.01	7.89	36.92	45.29	74.00	-28.71	HORIZONTAL Peak
3	4824.030	46.76	30.82	6.01	36.94	46.65	54.00	-7.35	HORIZONTAL Average
4	4824.030	52.85	30.82	6.01	36.94	52.74	74.00	-21.26	HORIZONTAL Peak
5	7236.122	29.96	35.55	7.35	36.93	35.93	54.00	-18.07	HORIZONTAL Average
6	7236.122	44.18	35.55	7.35	36.93	50.15	74.00	-23.85	HORIZONTAL Peak
7	8688.480	23.94	36.25	7.94	36.96	31.17	54.00	-22.83	HORIZONTAL Average
8	8688.480	43.92	36.25	7.94	36.96	51.15	74.00	-22.85	HORIZONTAL Peak
9	9648.257	29.87	37.54	8.18	37.08	38.51	54.00	-15.49	HORIZONTAL Average
10	9648.257	45.53	37.54	8.18	37.08	54.17	74.00	-19.83	HORIZONTAL Peak
11	12060.270	26.14	39.46	10.71	37.17	39.14	54.00	-14.86	HORIZONTAL Average
12	12060.270	42.33	39.46	10.71	37.17	55.33	74.00	-18.67	HORIZONTAL Peak



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



Trace: (Discrete)

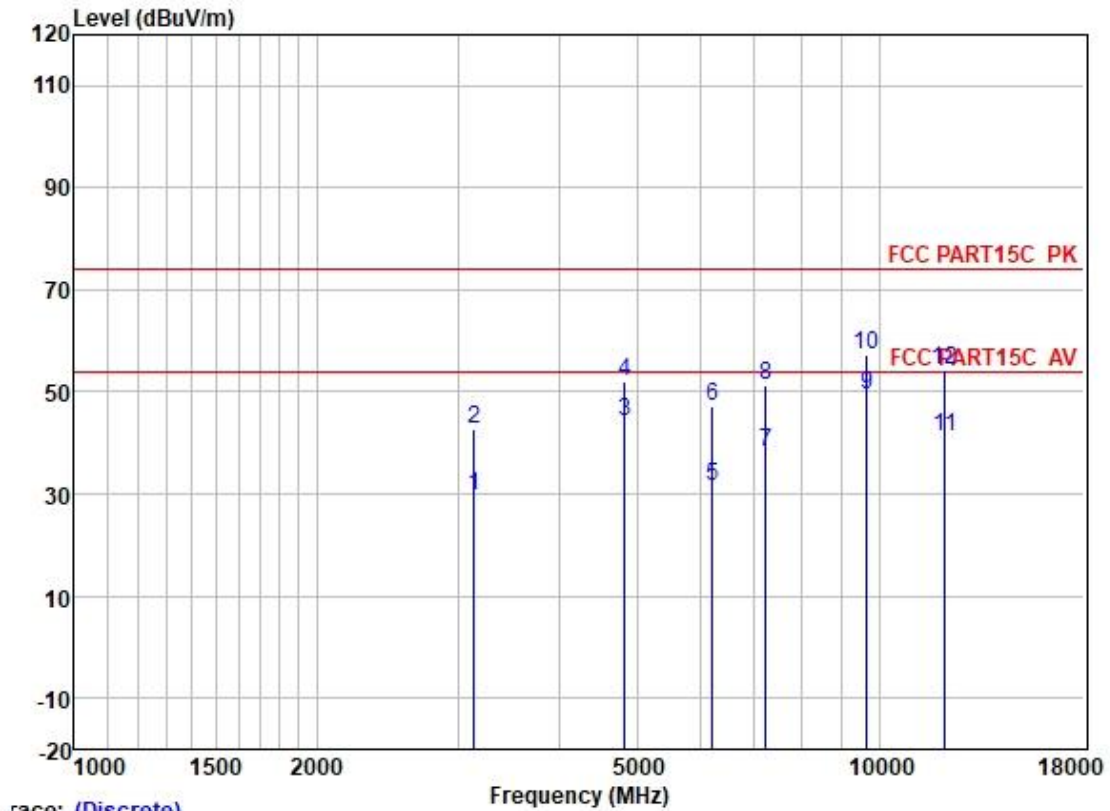
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	30.962	45.56	12.22	0.07	21.63	36.22	40.00	-3.78	VERTICAL	QP
2	48.502	46.51	12.97	0.63	24.78	35.33	40.00	-4.67	VERTICAL	QP
3	114.515	52.54	11.17	0.91	28.00	36.62	43.50	-6.88	VERTICAL	QP
4	180.649	53.63	12.67	1.34	28.09	39.55	43.50	-3.95	VERTICAL	QP
5	629.477	42.89	20.80	2.10	29.09	36.70	46.00	-9.30	VERTICAL	QP
6	884.503	41.67	23.87	2.89	28.11	40.32	46.00	-5.68	VERTICAL	QP



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

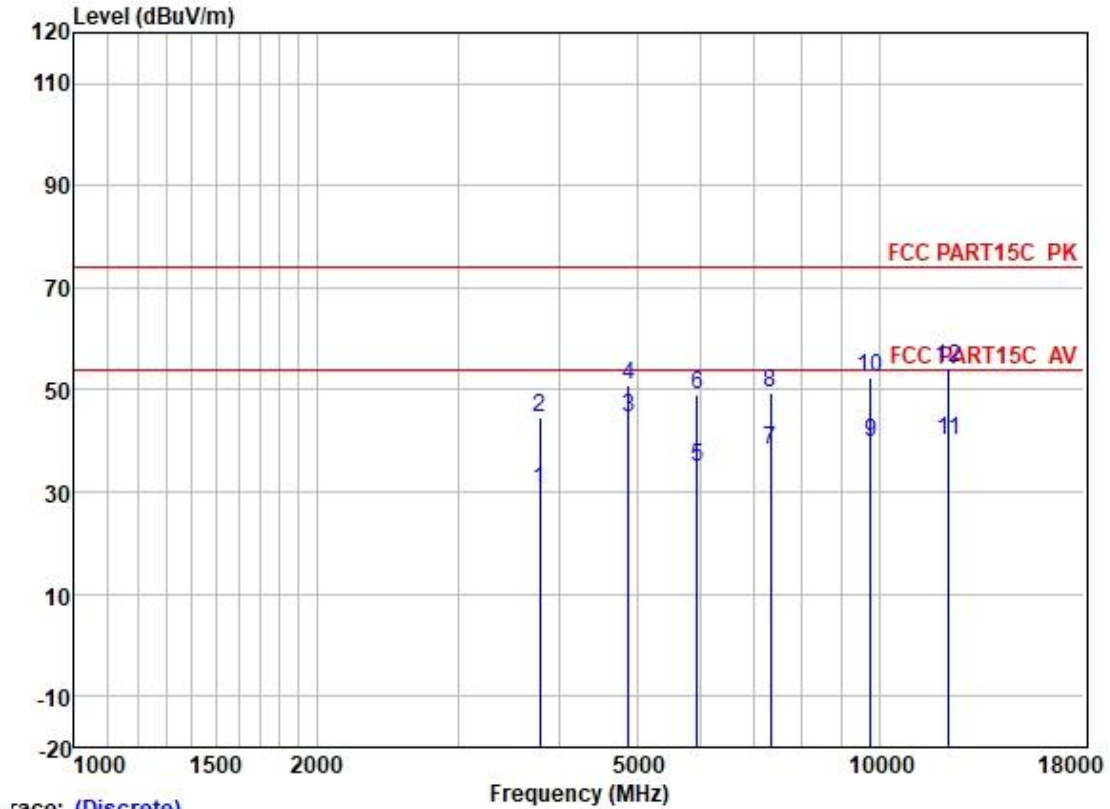


Trace: (Discrete)	ReadAntenna	Cable	Preamp	Limit	Over				
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	3141.145	33.12	27.90	5.65	37.02	29.65	54.00	-24.35	VERTICAL Average
2	3141.145	46.34	27.90	5.65	37.02	42.87	74.00	-31.13	VERTICAL Peak
3	4823.910	44.19	30.82	6.01	36.94	44.08	54.00	-9.92	VERTICAL Average
4	4823.910	52.00	30.82	6.01	36.94	51.89	74.00	-22.11	VERTICAL Peak
5	6213.441	28.63	33.09	6.93	36.99	31.66	54.00	-22.34	VERTICAL Average
6	6213.441	44.23	33.09	6.93	36.99	47.26	74.00	-26.74	VERTICAL Peak
7	7236.038	32.42	35.55	7.35	36.93	38.39	54.00	-15.61	VERTICAL Average
8	7236.038	45.23	35.55	7.35	36.93	51.20	74.00	-22.80	VERTICAL Peak
9	9648.257	40.90	37.54	8.18	37.08	49.54	54.00	-4.46	VERTICAL Average
10	9648.257	48.82	37.54	8.18	37.08	57.46	74.00	-16.54	VERTICAL Peak
11	12060.610	28.04	39.46	10.71	37.17	41.04	54.00	-12.96	VERTICAL Average
12	12060.610	41.37	39.46	10.71	37.17	54.37	74.00	-19.63	VERTICAL Peak



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



Trace: (Discrete)

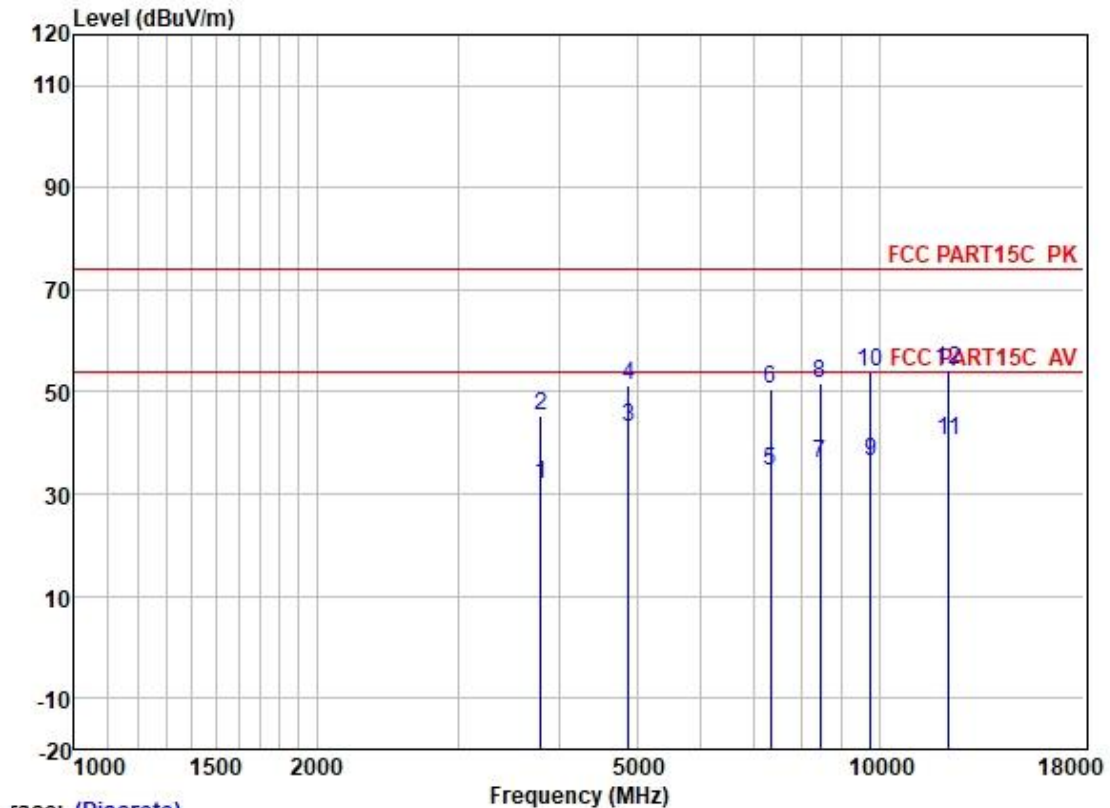
	Freq	ReadLevel	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	3790.361	30.52	28.97	7.83	36.92	30.40	54.00	-23.60	HORIZONTAL	Average
2	3790.361	44.53	28.97	7.83	36.92	44.41	74.00	-29.59	HORIZONTAL	Peak
3	4884.043	43.86	30.95	6.86	36.95	44.72	54.00	-9.28	HORIZONTAL	Average
4	4884.043	50.20	30.95	6.86	36.95	51.06	74.00	-22.94	HORIZONTAL	Peak
5	5934.778	32.25	32.26	7.32	37.00	34.83	54.00	-19.17	HORIZONTAL	Average
6	5934.778	46.48	32.26	7.32	37.00	49.06	74.00	-24.94	HORIZONTAL	Peak
7	7326.945	31.92	35.74	7.39	36.92	38.13	54.00	-15.87	HORIZONTAL	Average
8	7326.945	43.37	35.74	7.39	36.92	49.58	74.00	-24.42	HORIZONTAL	Peak
9	9768.450	30.66	37.74	8.37	37.09	39.68	54.00	-14.32	HORIZONTAL	Average
10	9768.450	43.26	37.74	8.37	37.09	52.28	74.00	-21.72	HORIZONTAL	Peak
11	12210.250	26.79	39.21	10.98	37.06	39.92	54.00	-14.08	HORIZONTAL	Average
12	12210.250	41.06	39.21	10.98	37.06	54.19	74.00	-19.81	HORIZONTAL	Peak



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



Trace: (Discrete)

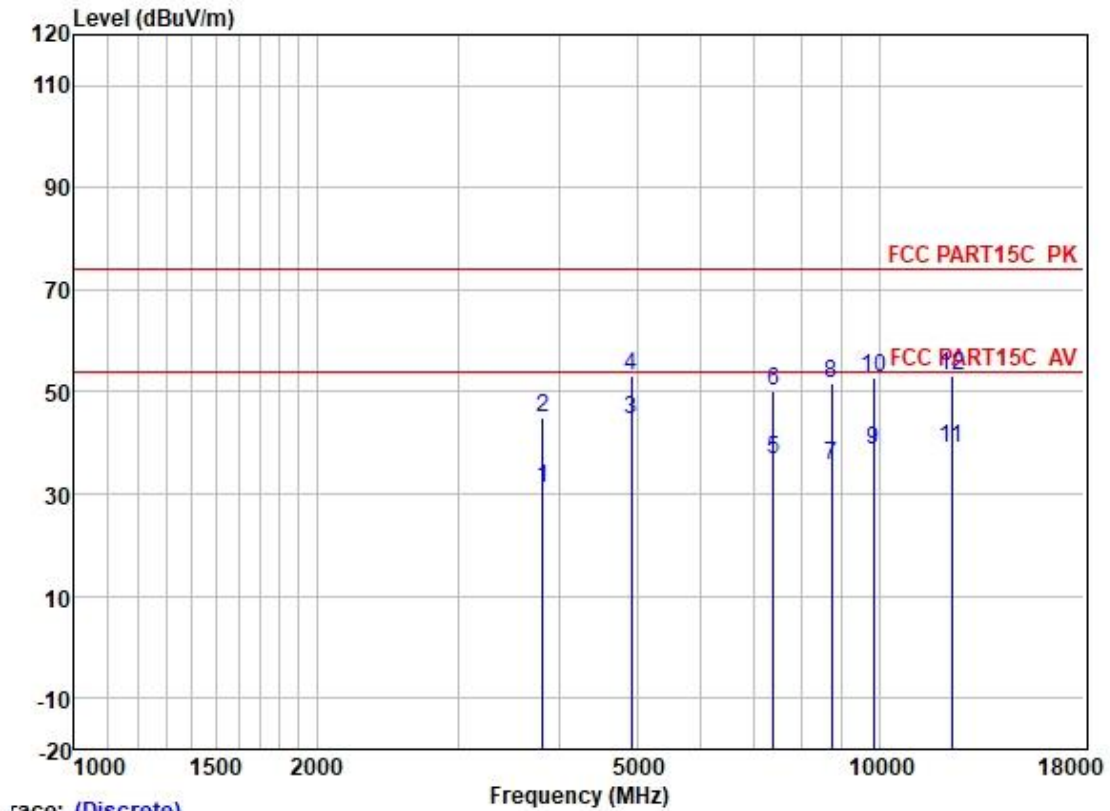
	ReadAntenna	Cable	Preamp	Limit	Over				
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	3801.333	31.85	29.01	7.89	36.92	31.83	54.00	-22.17	VERTICAL Average
2	3801.333	45.38	29.01	7.89	36.92	45.36	74.00	-28.64	VERTICAL Peak
3	4884.040	42.07	30.95	6.86	36.95	42.93	54.00	-11.07	VERTICAL Average
4	4884.040	50.44	30.95	6.86	36.95	51.30	74.00	-22.70	VERTICAL Peak
5	7326.806	28.21	35.74	7.39	36.92	34.42	54.00	-19.58	VERTICAL Average
6	7326.806	44.41	35.74	7.39	36.92	50.62	74.00	-23.38	VERTICAL Peak
7	8440.945	28.91	36.13	8.06	36.93	36.17	54.00	-17.83	VERTICAL Average
8	8440.945	44.51	36.13	8.06	36.93	51.77	74.00	-22.23	VERTICAL Peak
9	9768.603	27.35	37.74	8.37	37.09	36.37	54.00	-17.63	VERTICAL Average
10	9768.603	44.79	37.74	8.37	37.09	53.81	74.00	-20.19	VERTICAL Peak
11	12210.540	27.44	39.21	10.98	37.06	40.57	54.00	-13.43	VERTICAL Average
12	12210.540	41.02	39.21	10.98	37.06	54.15	74.00	-19.85	VERTICAL Peak



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



Trace: (Discrete)

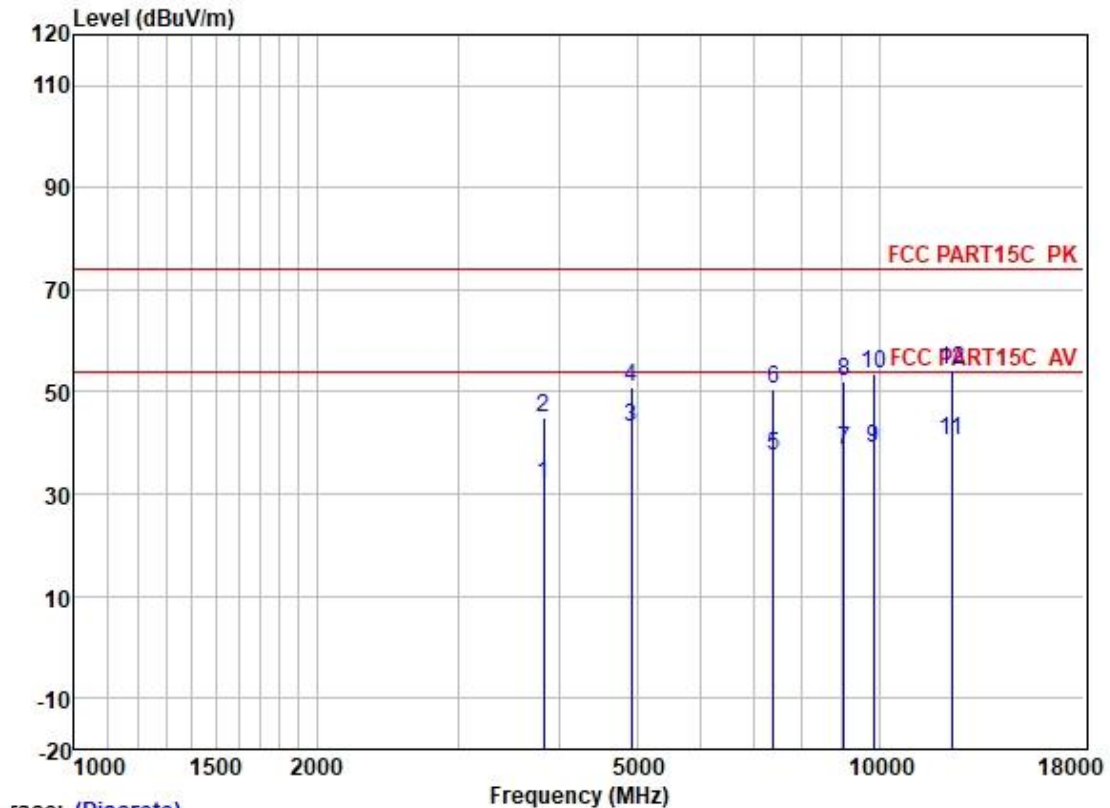
	Read	Antenna	Cable	Preamp	Level	Limit	Over		
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	3823.371	31.15	29.08	7.83	36.91	31.15	54.00	-22.85	HORIZONTAL Average
2	3823.371	45.12	29.08	7.83	36.91	45.12	74.00	-28.88	HORIZONTAL Peak
3	4924.721	43.22	31.01	7.49	36.95	44.77	54.00	-9.23	HORIZONTAL Average
4	4924.721	51.50	31.01	7.49	36.95	53.05	74.00	-20.95	HORIZONTAL Peak
5	7386.516	30.36	35.85	7.42	36.92	36.71	54.00	-17.29	HORIZONTAL Average
6	7386.516	43.92	35.85	7.42	36.92	50.27	74.00	-23.73	HORIZONTAL Peak
7	8738.852	28.22	36.30	7.98	36.96	35.54	54.00	-18.46	HORIZONTAL Average
8	8738.852	44.26	36.30	7.98	36.96	51.58	74.00	-22.42	HORIZONTAL Peak
9	9848.420	29.48	37.82	8.46	37.09	38.67	54.00	-15.33	HORIZONTAL Average
10	9848.420	43.68	37.82	8.46	37.09	52.87	74.00	-21.13	HORIZONTAL Peak
11	12310.850	25.84	39.03	11.10	36.97	39.00	54.00	-15.00	HORIZONTAL Average
12	12310.850	40.13	39.03	11.10	36.97	53.29	74.00	-20.71	HORIZONTAL Peak



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



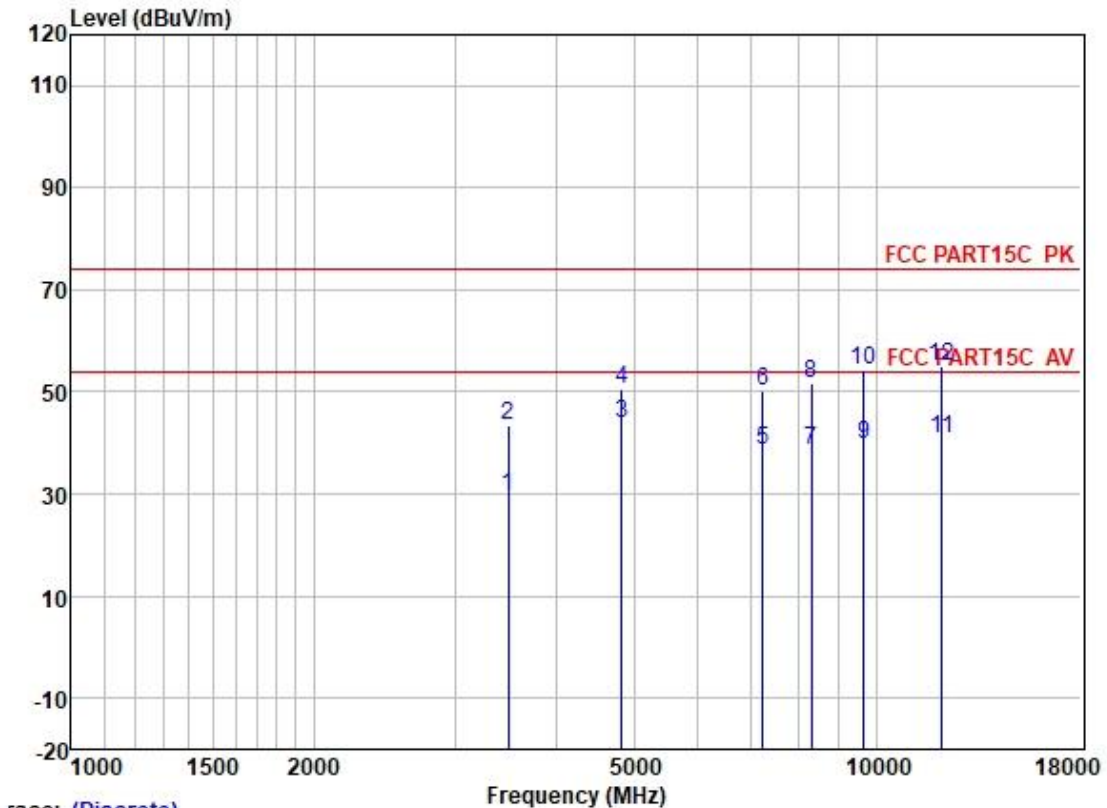
Trace: (Discrete)

	ReadAntenna	Cable	Preamp	Limit	Over				
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	3834.438	31.89	29.12	7.80	36.91	31.90	54.00	-22.10	VERTICAL Average
2	3834.438	44.98	29.12	7.80	36.91	44.99	74.00	-29.01	VERTICAL Peak
3	4924.721	41.43	31.01	7.49	36.95	42.98	54.00	-11.02	VERTICAL Average
4	4924.721	49.32	31.01	7.49	36.95	50.87	74.00	-23.13	VERTICAL Peak
5	7386.914	31.09	35.85	7.42	36.92	37.44	54.00	-16.56	VERTICAL Average
6	7386.914	44.16	35.85	7.42	36.92	50.51	74.00	-23.49	VERTICAL Peak
7	9047.272	30.67	36.57	8.29	37.02	38.51	54.00	-15.49	VERTICAL Average
8	9047.272	44.30	36.57	8.29	37.02	52.14	74.00	-21.86	VERTICAL Peak
9	9848.312	29.71	37.82	8.46	37.09	38.90	54.00	-15.10	VERTICAL Average
10	9848.312	44.33	37.82	8.46	37.09	53.52	74.00	-20.48	VERTICAL Peak
11	12310.220	27.29	39.03	11.10	36.97	40.45	54.00	-13.55	VERTICAL Average
12	12310.220	41.15	39.03	11.10	36.97	54.31	74.00	-19.69	VERTICAL Peak



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



Trace: (Discrete)

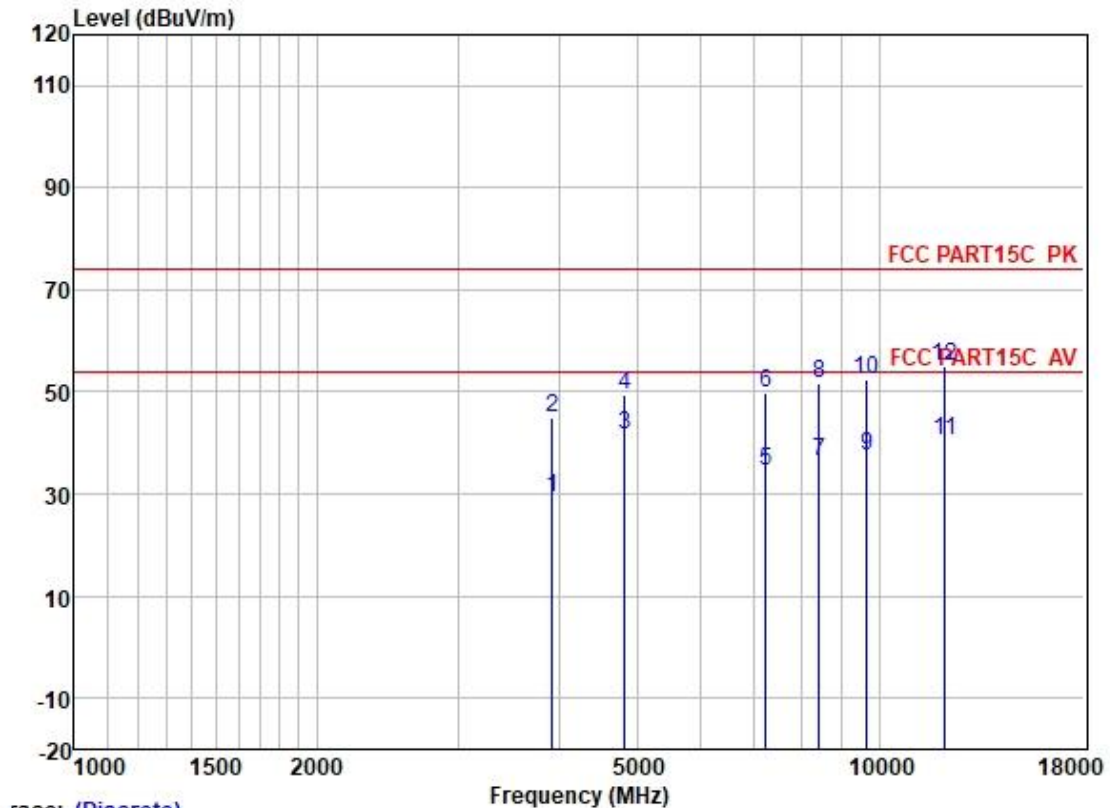
	Read	Antenna	Cable	Preamp	Level	Limit	Over		
1	Freq	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3495.691	32.90	27.90	5.93	36.95	29.78	54.00	-24.22	HORIZONTAL Average
2	3495.691	46.63	27.90	5.93	36.95	43.51	74.00	-30.49	HORIZONTAL Peak
3	4824.962	43.77	30.82	6.01	36.94	43.66	54.00	-10.34	HORIZONTAL Average
4	4824.962	50.50	30.82	6.01	36.94	50.39	74.00	-23.61	HORIZONTAL Peak
5	7236.474	32.65	35.55	7.35	36.93	38.62	54.00	-15.38	HORIZONTAL Average
6	7236.474	44.31	35.55	7.35	36.93	50.28	74.00	-23.72	HORIZONTAL Peak
7	8319.836	31.09	36.22	8.15	36.92	38.54	54.00	-15.46	HORIZONTAL Average
8	8319.836	44.36	36.22	8.15	36.92	51.81	74.00	-22.19	HORIZONTAL Peak
9	9648.916	31.06	37.54	8.18	37.08	39.70	54.00	-14.30	HORIZONTAL Average
10	9648.916	45.64	37.54	8.18	37.08	54.28	74.00	-19.72	HORIZONTAL Peak
11	12060.850	27.79	39.46	10.71	37.17	40.79	54.00	-13.21	HORIZONTAL Average
12	12060.850	42.09	39.46	10.71	37.17	55.09	74.00	-18.91	HORIZONTAL Peak



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 No.198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgsgroup.com.cn
 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

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



Trace: (Discrete)

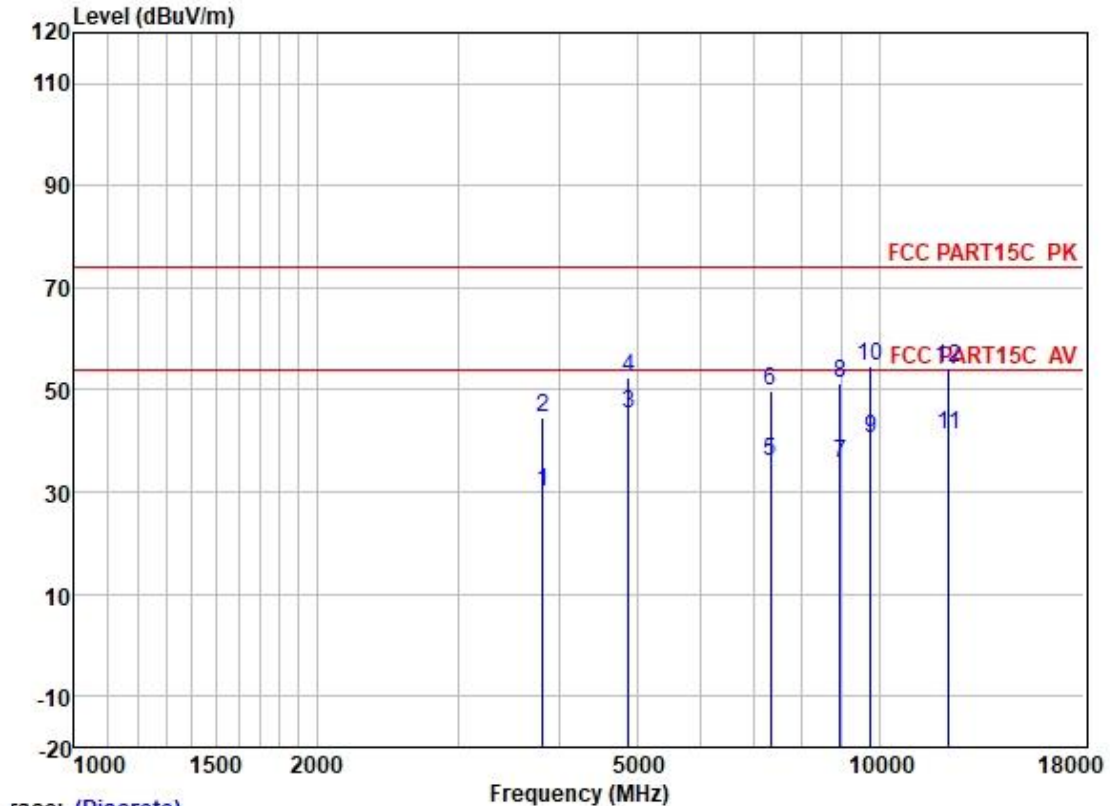
	Read	Antenna	Cable	Preamp	Level	Limit	Over		
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	3924.135	29.39	29.35	7.47	36.91	29.30	54.00	-24.70	VERTICAL Average
2	3924.135	44.86	29.35	7.47	36.91	44.77	74.00	-29.23	VERTICAL Peak
3	4824.962	41.53	30.82	6.01	36.94	41.42	54.00	-12.58	VERTICAL Average
4	4824.962	49.39	30.82	6.01	36.94	49.28	74.00	-24.72	VERTICAL Peak
5	7236.527	28.42	35.55	7.35	36.93	34.39	54.00	-19.61	VERTICAL Average
6	7236.527	43.98	35.55	7.35	36.93	49.95	74.00	-24.05	VERTICAL Peak
7	8416.584	28.94	36.15	8.07	36.93	36.23	54.00	-17.77	VERTICAL Average
8	8416.584	44.44	36.15	8.07	36.93	51.73	74.00	-22.27	VERTICAL Peak
9	9648.018	28.80	37.54	8.18	37.08	37.44	54.00	-16.56	VERTICAL Average
10	9648.018	43.93	37.54	8.18	37.08	52.57	74.00	-21.43	VERTICAL Peak
11	12060.240	27.59	39.46	10.71	37.17	40.59	54.00	-13.41	VERTICAL Average
12	12060.240	41.87	39.46	10.71	37.17	54.87	74.00	-19.13	VERTICAL Peak



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



Trace: (Discrete)

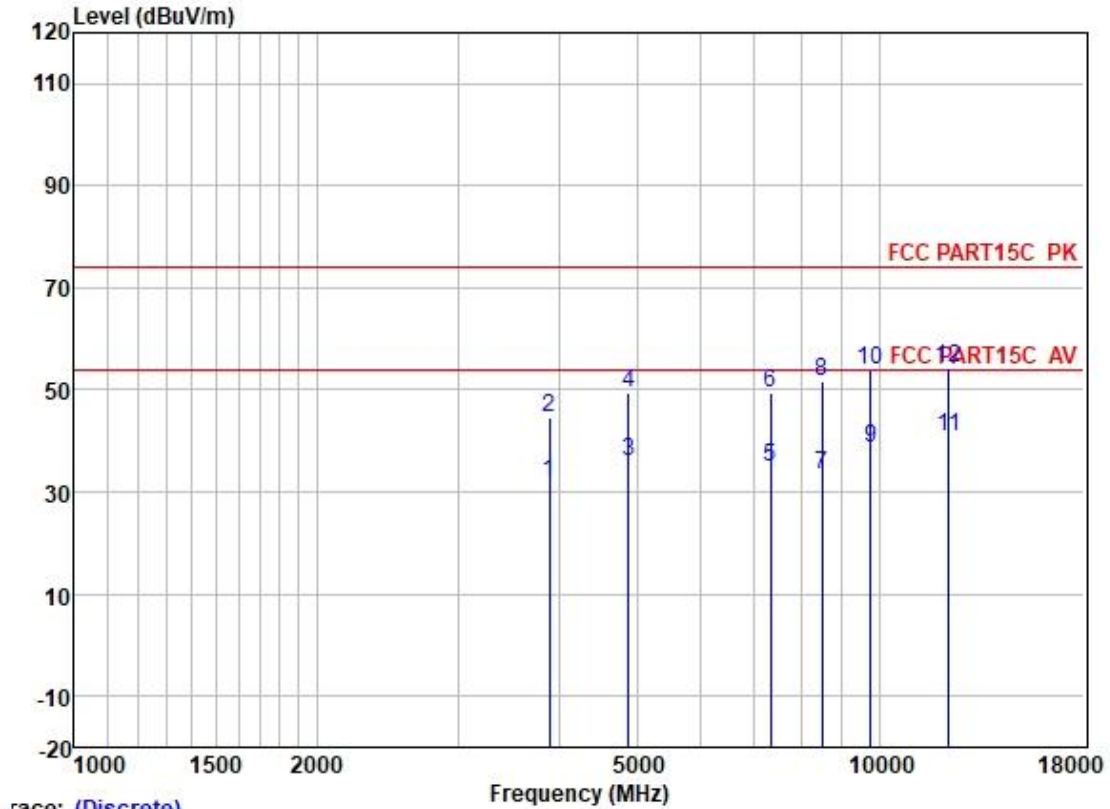
	Freq	ReadAntenna	Cable	Preamp	Level	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dB		
1	3823.371	29.97	29.08	7.83	36.91	29.97	54.00	-24.03	HORIZONTAL Average
2	3823.371	44.45	29.08	7.83	36.91	44.45	74.00	-29.55	HORIZONTAL Peak
3	4884.151	44.44	30.95	6.86	36.95	45.30	54.00	-8.70	HORIZONTAL Average
4	4884.151	51.41	30.95	6.86	36.95	52.27	74.00	-21.73	HORIZONTAL Peak
5	7326.527	29.92	35.74	7.39	36.92	36.13	54.00	-17.87	HORIZONTAL Average
6	7326.527	43.64	35.74	7.39	36.92	49.85	74.00	-24.15	HORIZONTAL Peak
7	8943.274	27.95	36.47	8.18	37.00	35.60	54.00	-18.40	HORIZONTAL Average
8	8943.274	43.51	36.47	8.18	37.00	51.16	74.00	-22.84	HORIZONTAL Peak
9	9768.916	31.40	37.74	8.37	37.09	40.42	54.00	-13.58	HORIZONTAL Average
10	9768.916	45.47	37.74	8.37	37.09	54.49	74.00	-19.51	HORIZONTAL Peak
11	12210.350	28.27	39.21	10.98	37.06	41.40	54.00	-12.60	HORIZONTAL Average
12	12210.350	40.99	39.21	10.98	37.06	54.12	74.00	-19.88	HORIZONTAL Peak



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



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



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