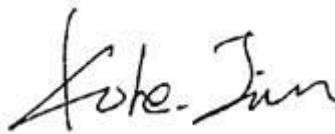


TEST REPORT

Application No.: GZEM2101000686CR
Applicant: GUANGDONG PIEBOT ROBOTICS TECHNOLOGY CO., LTD
Address of Applicant: Room302, Building 3 No.38, Dongke Road, Dongcheng Street, Dongguan City, Guangdong Province
Manufacturer: GUANGDONG PIEBOT ROBOTICS TECHNOLOGY CO., LTD
Address of Manufacturer: Room302, Building 3 No.38, Dongke Road, Dongcheng Street, Dongguan City, Guangdong Province
Factory: GUANGDONG PIEBOT ROBOTICS TECHNOLOGY CO., LTD
Address of Factory: Room302, Building 3 No.38, Dongke Road, Dongcheng Street, Dongguan City, Guangdong Province
Equipment Under Test (EUT):
EUT Name: Floor sweeping robot; Self-Emptying Dustbin
Model No.: Floor sweeping robot: C1-01,
Self-Emptying Dustbin: C1JCB001
Trade Mark: PIEPOT
Standard(s) : 47 CFR Part 15, Subpart C 15.247
Date of Receipt: 2021-01-29
Date of Test: 2021-04-08 to 2021-04-30
Date of Issue: 2021-05-07

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

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



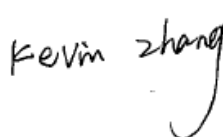
Kobe Jian
EMC Laboratory Manager



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2021-05-07		Original

Authorized for issue by				
Tested By		 Kevin Zhang /Project Engineer		
Reviewed By		 Ricky Liu/Reviewer		

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(b)(4)	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
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
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
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 15.205 & 15.209	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 15.205 & 15.209	Pass**

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

Note:

E.U.T./EUT means Equipment Under Test.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.



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4 General Information

4.1 Details of E.U.T.

Power supply: AC 120 V, 60Hz for Self-Emptying Dustbin*
DC 14.52 V powered by built-in battery for Robot Vacuum* as below:
Option 1:
Model: N016-4S2P
Rated: DC 14.4V, 5200mAh
Option 2:
Model: C433-A3-4S2P
Rated: DC 14.52V, 5000mAh

Cable(s): AC mains (unshielded, 1.2 m)

Test Voltage: AC 120 V, 60 Hz for charging
DC 14 V for normal working

Operation Frequency: 802.11b/g/n(HT20): 2412MHz to 2462MHz;802.11n(HT40): 2422MHz to 2452MHz

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

Channel Spacing: 5MHz

Antenna Type: Integral Antenna

Antenna Gain: 4.72 dBi declared by applicant

Software Version: SV02

Hardware Version: JVE-S2

Testing Software: WifiSRRC.exe

Sample NO.: A1

Power Setting: Default can not be changed by user

*Remark: There is no any RF parts in this unit and please refer to the SDoC report GZEM210100068601

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
MacBook Air	APPLE	Apple A1370	C02GR7BPDJYD

4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Emissions at AC Power Line (150kHz-30MHz)	3.12dB
Conducted Peak Output Power	± 0.75dB
Minimum 6dB Bandwidth	± 3%
Power Spectrum Density	± 2.84dB
Conducted Band Edges Measurement	± 0.75dB
Conducted Spurious Emissions	± 0.75dB
Radiated Emissions which fall in the restricted bands	± 4.5dB (Below 1GHz); ± 4.8dB (Above 1GHz)
Radiated Spurious Emissions	± 4.5dB (Below 1GHz); ± 4.8dB (Above 1GHz)
Remark: The U_{lab} (lab Uncertainty) is less than U_{cispri} (CISPR Uncertainty), so the test results – compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit; – non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.	

4.4 Test Location

All tests were performed at:

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

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

No tests were sub-contracted.

4.5 Test Facility

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

- **NVLAP (Lab Code: 200611-0)**

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

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

- **ACMA**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian/New Zealand Regulatory Compliance Mark (RCM).

- **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 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.

- **ISED (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-20107 and T-11179)**

The 10m Semi-anechoic chamber, 966 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-20107 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 17025:2017, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.



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Guangzhou Branch, EMC Laboratory

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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) 82075068 sgs.china@sgs.com

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
EMI Test Receiver(ESCS30)	Rohde & Schwarz	ESCS30	EMC0506	2020-11-13	2021-11-12
Shielding Room	ChangZhou ZhongYu	8m x 3m x 3.8m	EMC0306	N/A	N/A
LISN ENV216 (EMC2135)	Rohde & Schwarz	ENV216	EMC2135	2020-09-25	2021-09-24
Coaxial Cable	HangTianXing	2m	EMC0107	2020-09-09	2022-09-08
Test Software E3c	Audix	Ver. 5.4.1221b	GZE100-62	N/A	N/A

Conducted Peak Output Power					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EXA Signal Analyzer (N9010A)	Agilent Technologies	N9010A	EMC2138	2020-09-17	2021-09-16
6dB Attenuator	HP	8491A	EMC2062	2020-04-15	2022-04-14
Test Software JS1120-3	HangTianXing	V2.6	GZE100-69	N/A	N/A
MI CABLE	SGS-EMC	0.8M	EMC2136	2019-11-02	2021-11-01

Minimum 6dB Bandwidth					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EXA Signal Analyzer (N9010A)	Agilent Technologies	N9010A	EMC2138	2020-09-17	2021-09-16
6dB Attenuator	HP	8491A	EMC2062	2020-04-15	2022-04-14
Test Software JS1120-3	HangTianXing	V2.6	GZE100-69	N/A	N/A
MI CABLE	SGS-EMC	0.8M	EMC2136	2019-11-02	2021-11-01

Power Spectrum Density					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EXA Signal Analyzer (N9010A)	Agilent Technologies	N9010A	EMC2138	2020-09-17	2021-09-16
6dB Attenuator	HP	8491A	EMC2062	2020-04-15	2022-04-14
Test Software JS1120-3	HangTianXing	V2.6	GZE100-69	N/A	N/A
MI CABLE	SGS-EMC	0.8M	EMC2136	2019-11-02	2021-11-01



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Guangzhou Branch: No. 198 Kachu Road, Science Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075068 sgs.china@sgs.com

Conducted Band Edges Measurement					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EXA Signal Analyzer (N9010A)	Agilent Technologies	N9010A	EMC2138	2020-09-17	2021-09-16
6dB Attenuator	HP	8491A	EMC2062	2020-04-15	2022-04-14
Test Software JS1120-3	HangTianXing	V2.6	GZE100-69	N/A	N/A
MI CABLE	SGS-EMC	0.8M	EMC2136	2019-11-02	2021-11-01

Conducted Spurious Emissions					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EXA Signal Analyzer (N9010A)	Agilent Technologies	N9010A	EMC2138	2020-09-17	2021-09-16
6dB Attenuator	HP	8491A	EMC2062	2020-04-15	2022-04-14
Test Software JS1120-3	HangTianXing	V2.6	GZE100-69	N/A	N/A
MI CABLE	SGS-EMC	0.8M	EMC2136	2019-11-02	2021-11-01

Radiated Emissions which fall in the restricted bands					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Chamber cable	HangTianXing	N/A	EMC0542	2019-06-28	2021-06-27
Horn Antenna(BBHA 9120D)	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2019-09-25	2022-09-24
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2021-01-08	2022-01-07
2.4GHz Filter	Micro-Tronics	BRM 50702	EMC2069	2021-01-08	2022-01-07
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2020-12-20	2023-12-19
MXE EMI Receiver(N9038A)	Keysight	N9038A	EMC2139	2020-11-13	2021-11-12
EXA Signal Analyzer(N9010A)	Keysight	N9010A	EMC2138	2020-09-17	2021-09-16
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
Chamber cable	HangTianXing	N/A	EMC0542	2019-06-28	2021-06-27
Horn Antenna(BBHA 9120D)	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2019-09-25	2022-09-24
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2021-01-08	2022-01-07
2.4GHz Filter	Micro-Tronics	BRM 50702	EMC2069	2021-01-08	2022-01-07
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2020-12-20	2023-12-19
MXE EMI Receiver(N9038A)	Keysight	N9038A	EMC2139	2020-11-13	2021-11-12
EXA Signal Analyzer(N9010A)	Keysight	N9010A	EMC2138	2020-09-17	2021-09-16
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	2020-07-09	2021-07-08
DMM	Fluke	73	EMC0007	2020-07-09	2021-07-08



6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203 & 15.247(b)(4)

6.1.2 Conclusion

Standard Requirement:

Testing shall be performed using the highest gain antenna of each combination of licence-exempt transmitter and antenna type, with the transmitter output power set at the maximum level. When a measurement at the antenna connector is used to determine RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna manufacturer. 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 4.72 dBi.

Please refer to internal photos.

7 Radio Spectrum Matter Test Results

7.1 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

7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 25.8 °C

Humidity: 56.1 % RH

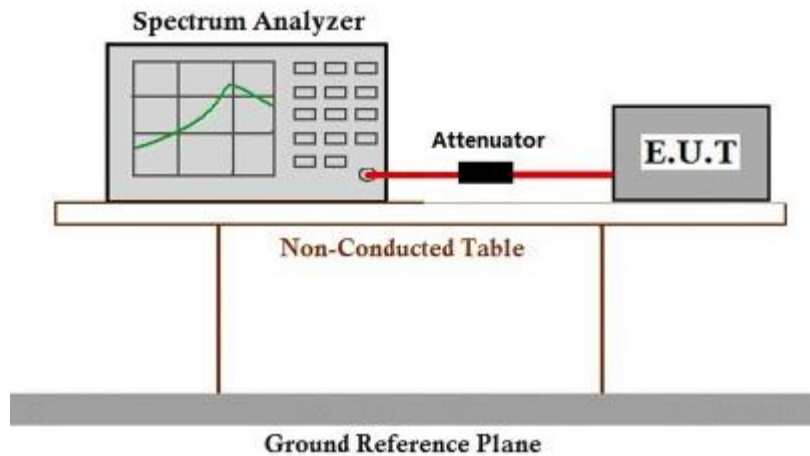
Atmospheric Pressure: 1010 mbar

7.1.2 Test Mode Description

Pre-scan / Mode	Description
Final test Code	

Final test	02	Charge + TX mode_Keep the EUT in charging and 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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7.1.3 Test Setup Diagram



7.1.4 Measurement Procedure and Data

Please Refer To Appendix For Details

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

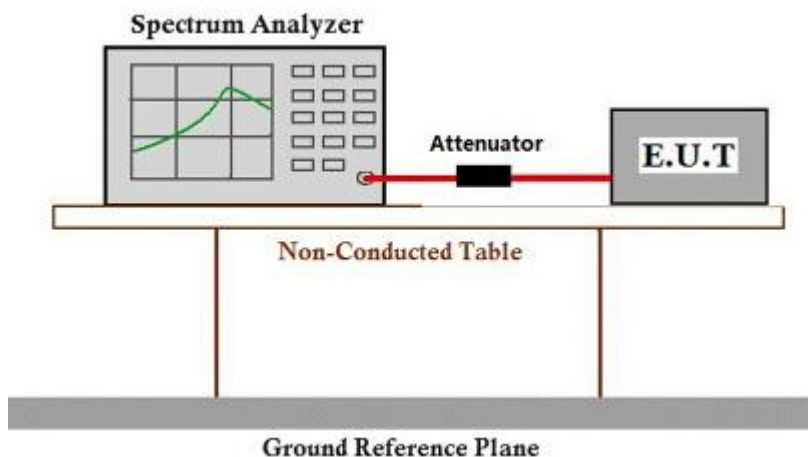
Operating Environment:

Temperature: 25.8 °C Humidity: 56.1 % RH Atmospheric Pressure: 1010 mbar

7.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	02	Charge + TX mode_Keep the EUT in charging and 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.

7.2.3 Test Setup Diagram



7.2.4 Measurement Procedure and Data

Please Refer To Appendix For Details

7.3 Power Spectrum Density

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

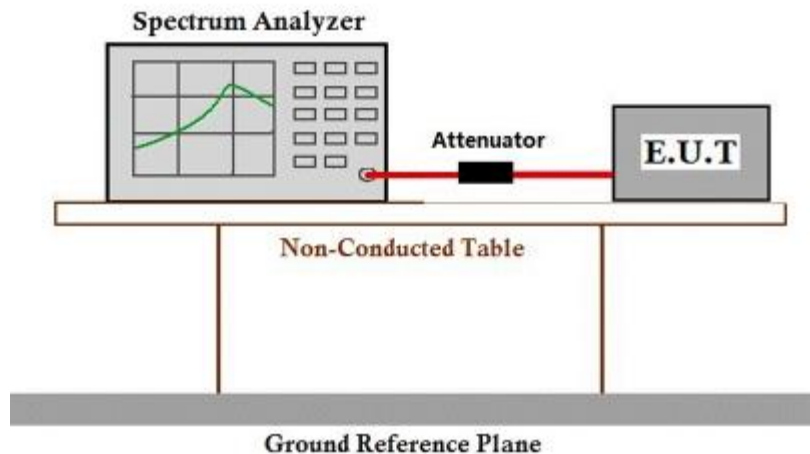
7.3.1 E.U.T. Operation

Operating Environment:
 Temperature: 25.8 °C Humidity: 56.1 % RH Atmospheric Pressure: 1010 mbar

7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	02	Charge + TX mode_Keep the EUT in charging and 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.

7.3.3 Test Setup Diagram



7.3.4 Measurement Procedure and Data

Please Refer To Appendix For Details

7.4 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)).

7.4.1 E.U.T. Operation

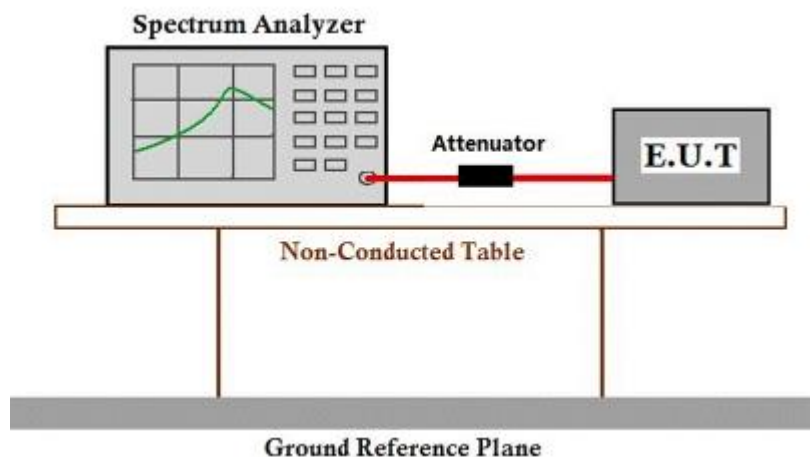
Operating Environment:

Temperature: 25.8 °C Humidity: 56.1 % RH Atmospheric Pressure: 1010 mbar

7.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	02	Charge + TX mode_Keep the EUT in charging and 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.

7.4.3 Test Setup Diagram



7.4.4 Measurement Procedure and Data

Please Refer To Appendix For Details

7.5 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)).

7.5.1 E.U.T. Operation

Operating Environment:

Temperature: 25.8 °C

Humidity: 56.1 % RH

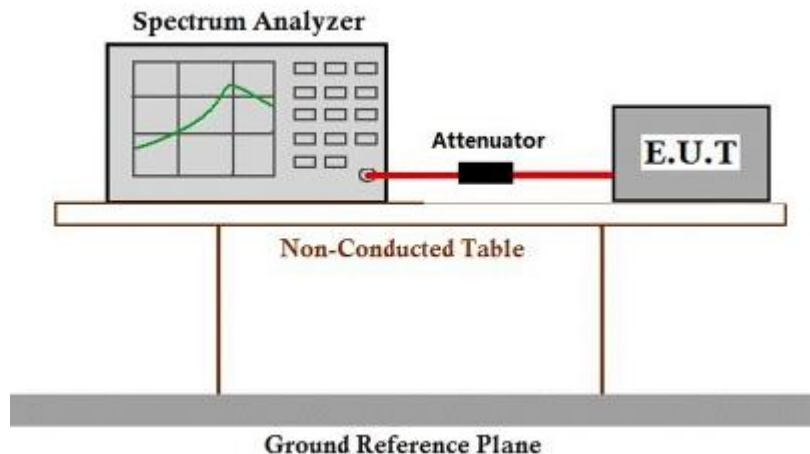
Atmospheric Pressure: 1010 mbar

7.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
--------------------------	--------------	-------------

Final test	02	Charge + TX mode_Keep the EUT in charging and 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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7.5.3 Test Setup Diagram



7.5.4 Measurement Procedure and Data

Please Refer To Appendix For Details

7.6 Radiated Emissions which fall in the restricted bands

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.10.5

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.

7.6.1 E.U.T. Operation

Operating Environment:

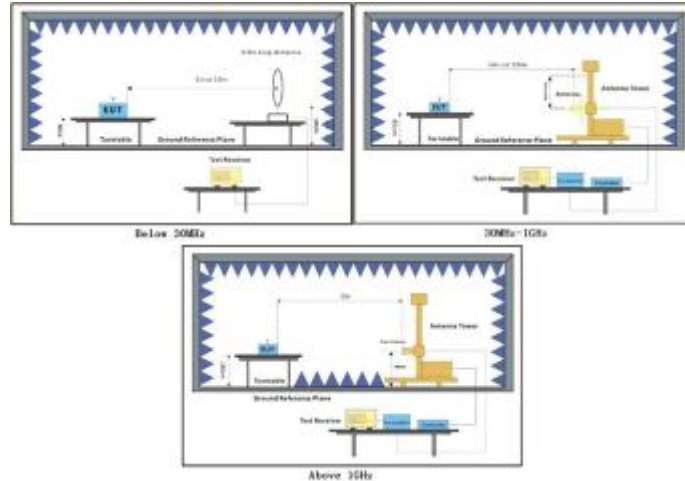
Temperature: 25.2 °C Humidity: 62.3 % RH Atmospheric Pressure: 1010 mbar

7.6.2 Test Mode Description

Pre-scan / Mode
Final test Code Description

Charge + TX mode_Keep the EUT in charging and 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.

7.6.3 Test Setup Diagram



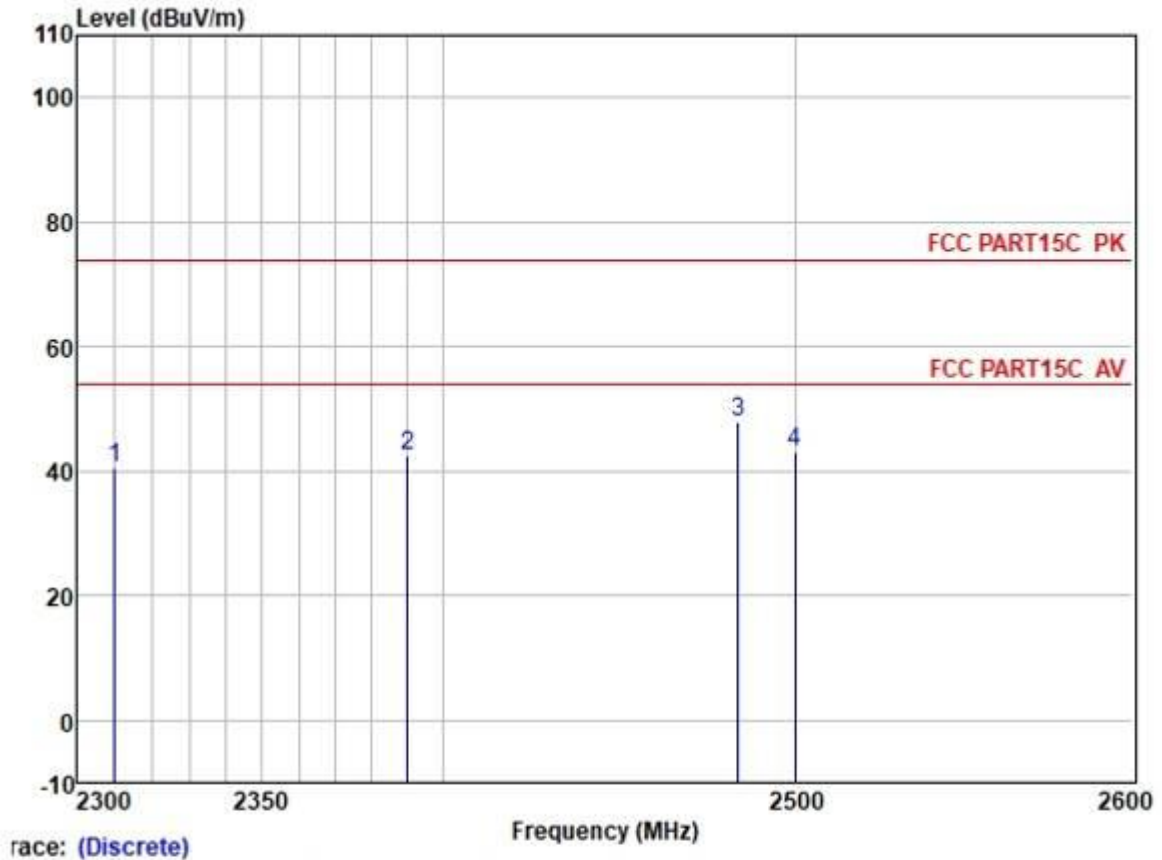
7.6.4 Measurement Procedure and Data

- 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.
- 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.
- 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.
- 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.
- 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.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- 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.
- Test the EUT in the lowest channel, the middle channel, the Highest channel.
- 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.
- Repeat above procedures until all frequencies measured was complete.

Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

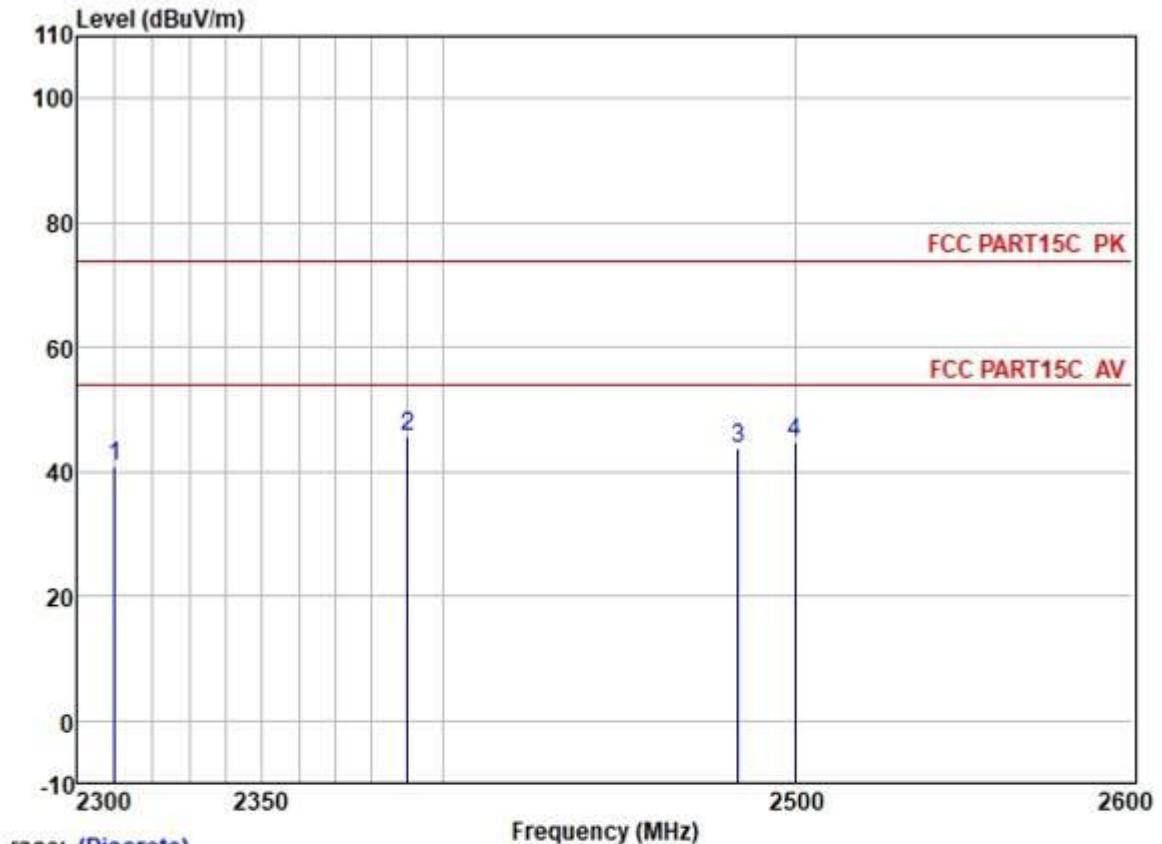
Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level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

Test Mode: 02; Polarity: Horizontal; Modulation: 802.11b; Bandwidth: 20MHz; Channel: High;



	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	47.07	27.15	3.32	36.94	40.60	74.00	-33.40	HORIZONTAL Peak
2	2390.000	48.45	27.33	3.48	36.92	42.34	74.00	-31.66	HORIZONTAL Peak
3	2483.500	53.83	27.48	3.53	36.90	47.94	74.00	-26.06	HORIZONTAL Peak
4	2500.000	49.10	27.50	3.40	36.89	43.11	74.00	-30.89	HORIZONTAL Peak

Test Mode: 02; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:Low;



Trace: (Discrete)

	Freq	ReadAntenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	2310.000	47.48	27.15	3.32	36.94	41.01	74.00	-32.99
2	2390.000	51.68	27.33	3.48	36.92	45.57	74.00	-28.43
3	2483.500	49.67	27.48	3.53	36.90	43.78	74.00	-30.22
4	2500.000	50.56	27.50	3.40	36.89	44.57	74.00	-29.43



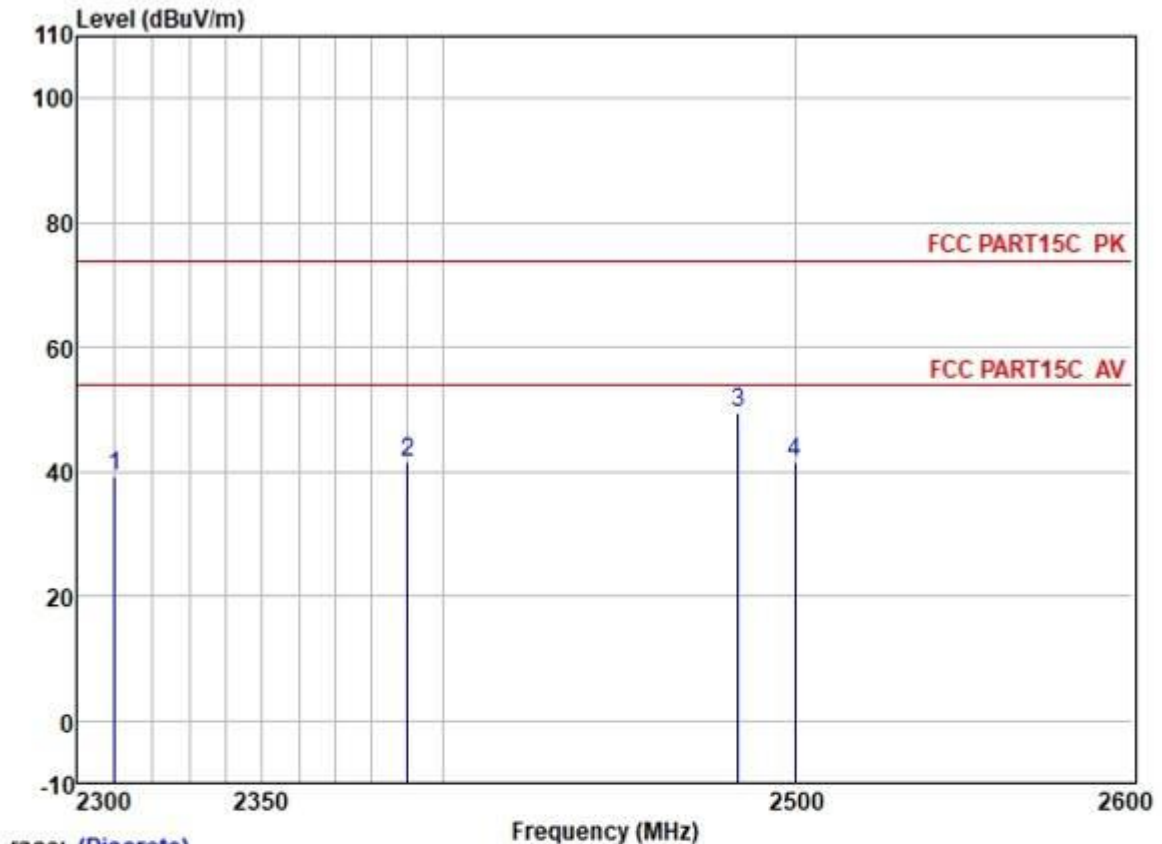
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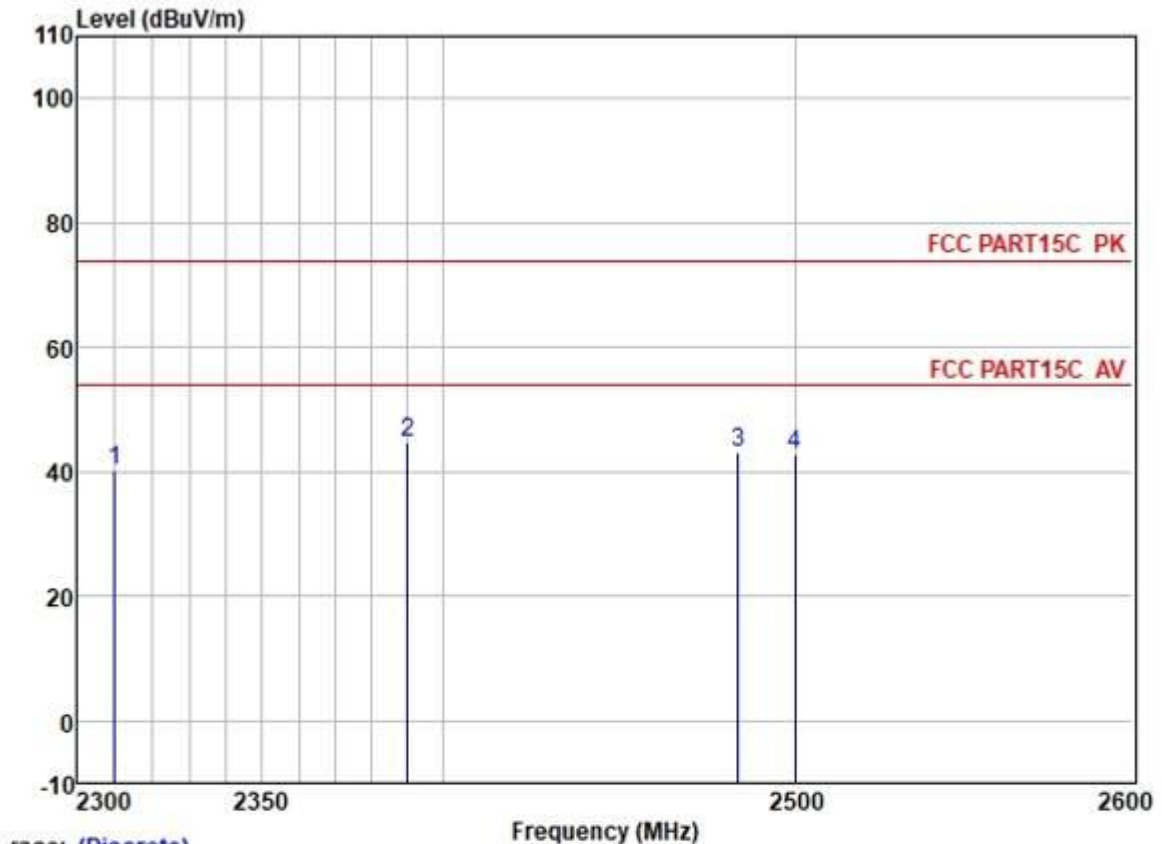
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中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075068 sgs.china@sgs.com

Test Mode: 02; Polarity: Horizontal; Modulation: 802.11g; Bandwidth: 20MHz; Channel: High;



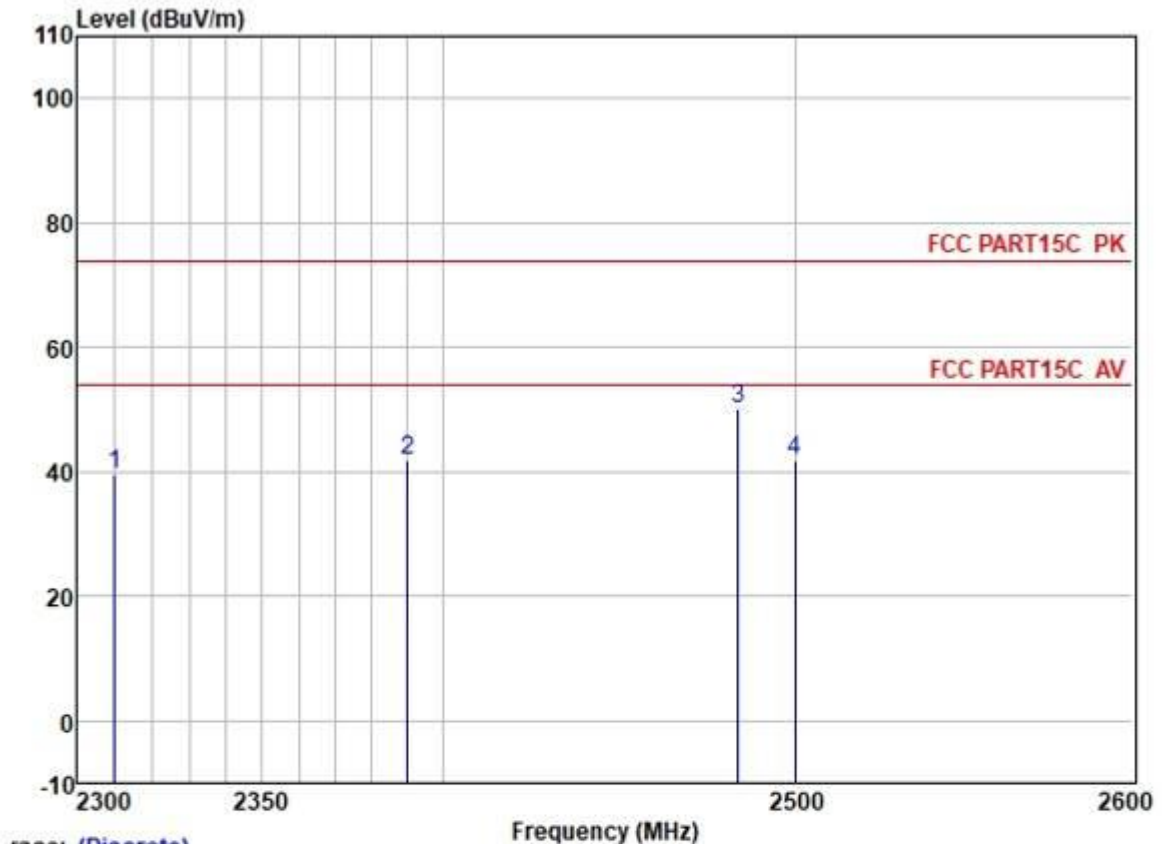
	Freq	ReadAntenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	2310.000	45.70	27.15	3.32	36.94	39.23	74.00	-34.77 HORIZONTAL Peak
2	2390.000	47.64	27.33	3.48	36.92	41.53	74.00	-32.47 HORIZONTAL Peak
3	2483.500	55.25	27.48	3.53	36.90	49.36	74.00	-24.64 HORIZONTAL Peak
4	2500.000	47.39	27.50	3.40	36.89	41.40	74.00	-32.60 HORIZONTAL Peak

Test Mode: 02; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:Low;



	Read	Antenna	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	46.61	27.15	3.32	36.94	40.14	74.00	-33.86	HORIZONTAL Peak
2	2390.000	50.69	27.33	3.48	36.92	44.58	74.00	-29.42	HORIZONTAL Peak
3	2483.500	49.14	27.48	3.53	36.90	43.25	74.00	-30.75	HORIZONTAL Peak
4	2500.000	48.82	27.50	3.40	36.89	42.83	74.00	-31.17	HORIZONTAL Peak

Test Mode: 02; Polarity: Horizontal; Modulation: 802.11n; Bandwidth: 20MHz; Channel: High;



Trace: (Discrete)

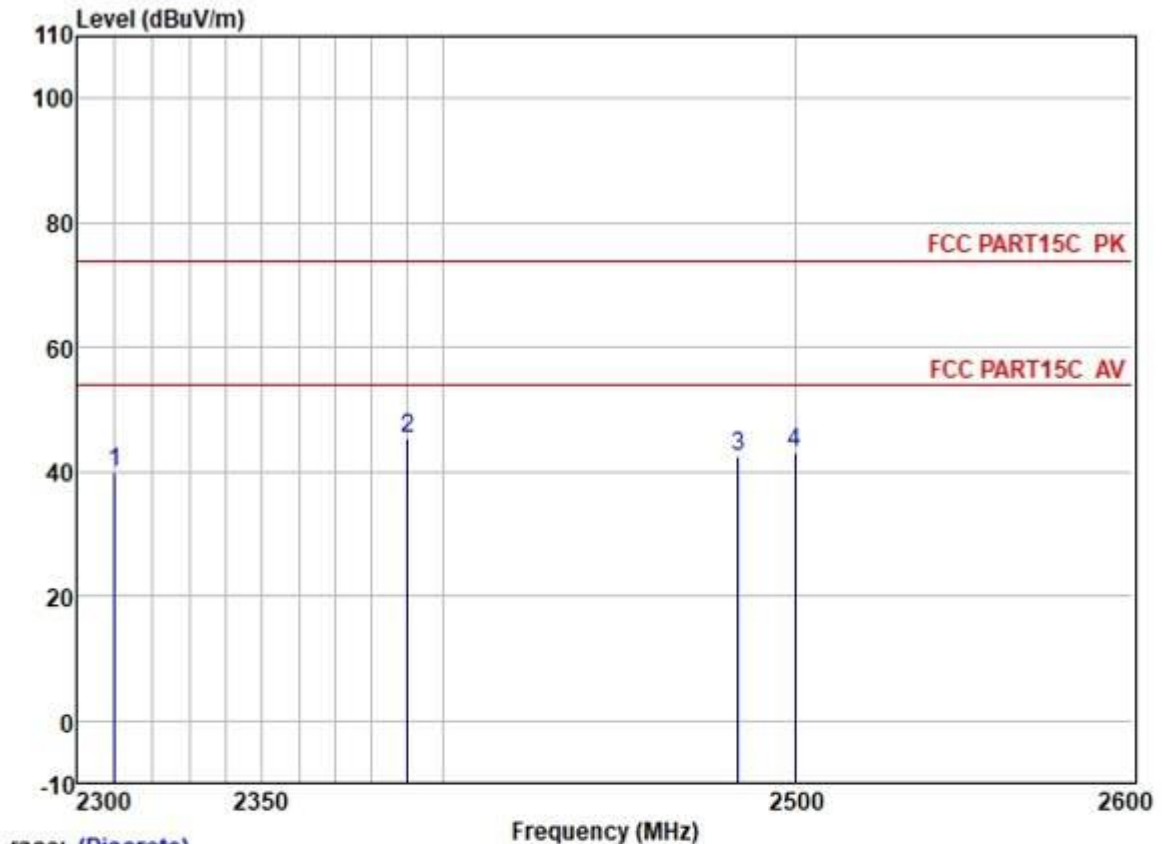
	Freq	ReadAntenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	2310.000	46.11	27.15	3.32	36.94	39.64	74.00	-34.36
2	2390.000	48.04	27.33	3.48	36.92	41.93	74.00	-32.07
3	2483.500	56.09	27.48	3.53	36.90	50.20	74.00	-23.80
4	2500.000	47.88	27.50	3.40	36.89	41.89	74.00	-32.11



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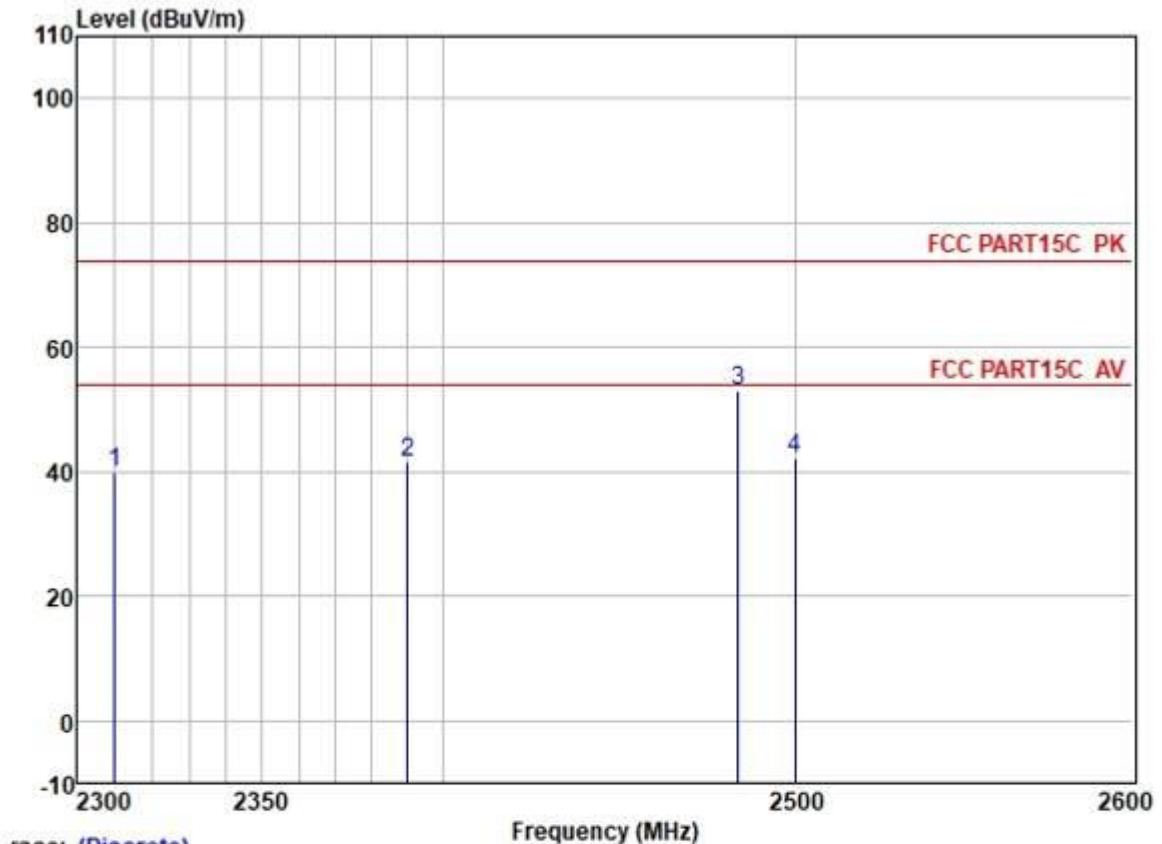
Test Mode: 02; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low;



Trace: (Discrete)

	Freq	Read	Antenna	Cable	Preamp	Level	Limit	Over		
	MHz	Level	Factor	Loss	Factor	dBuV/m	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2310.000	46.25	27.15	3.32	36.94	39.78	74.00	-34.22	HORIZONTAL	Peak
2	2390.000	51.34	27.33	3.48	36.92	45.23	74.00	-28.77	HORIZONTAL	Peak
3	2483.500	48.27	27.48	3.53	36.90	42.38	74.00	-31.62	HORIZONTAL	Peak
4	2500.000	49.27	27.50	3.40	36.89	43.28	74.00	-30.72	HORIZONTAL	Peak

Test Mode: 02; Polarity: Horizontal; Modulation: 802.11n; Bandwidth: 40MHz; Channel: High;



Trace: (Discrete)

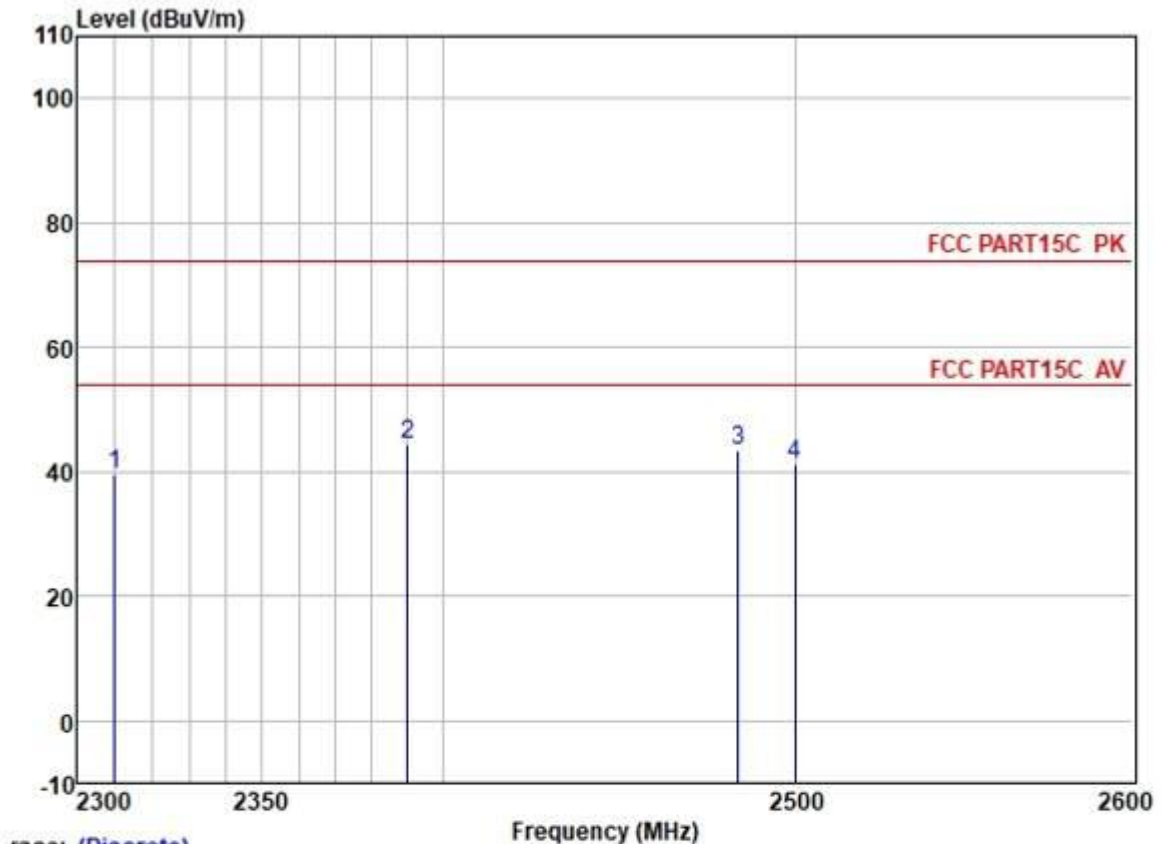
	Freq	ReadAntenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	2310.000	46.53	27.15	3.32	36.94	40.06	74.00	-33.94
2	2390.000	47.60	27.33	3.48	36.92	41.49	74.00	-32.51
3	2483.500	58.93	27.48	3.53	36.90	53.04	74.00	-20.96
4	2500.000	48.26	27.50	3.40	36.89	42.27	74.00	-31.73



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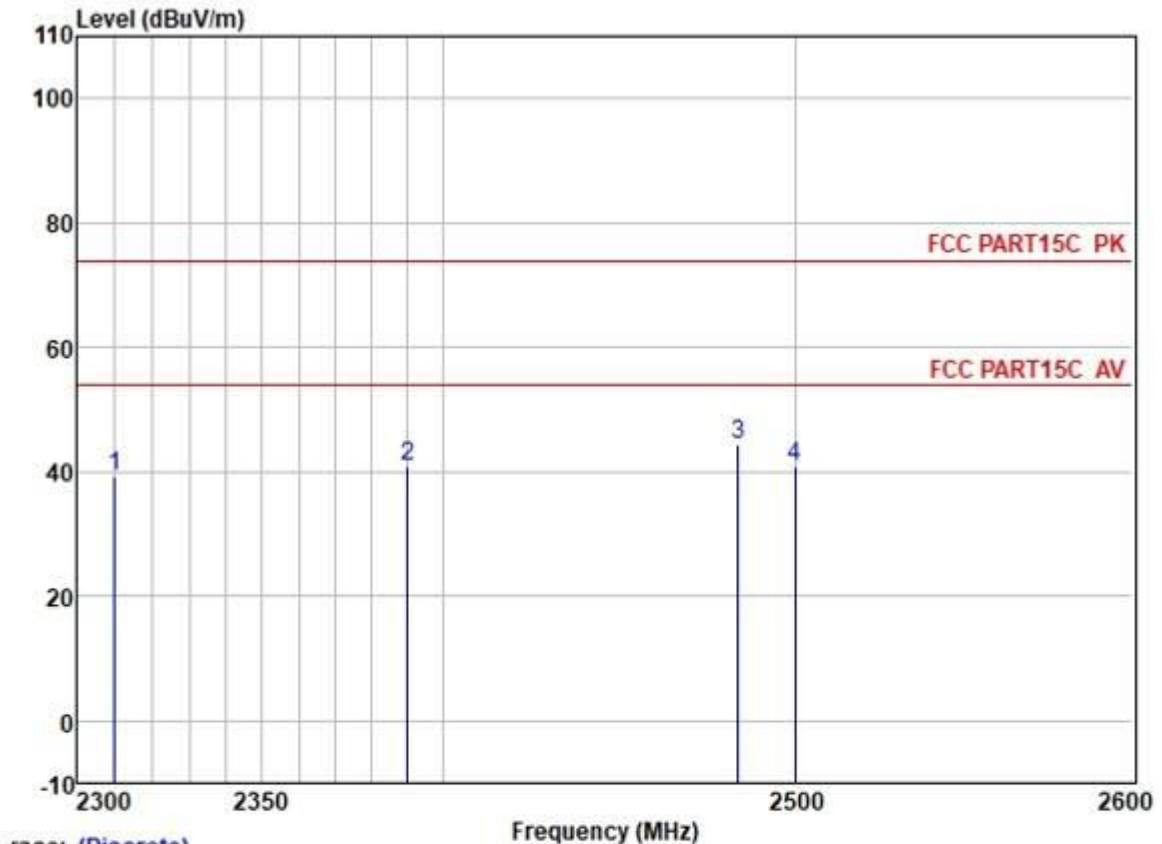
Test Mode: 02; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low;



Trace: (Discrete)

	Freq	ReadAntenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	2310.000	46.20	27.15	3.32	36.94	39.73	74.00	-34.27
2	2390.000	50.44	27.33	3.48	36.92	44.33	74.00	-29.67
3	2483.500	49.43	27.48	3.53	36.90	43.54	74.00	-30.46
4	2500.000	47.25	27.50	3.40	36.89	41.26	74.00	-32.74

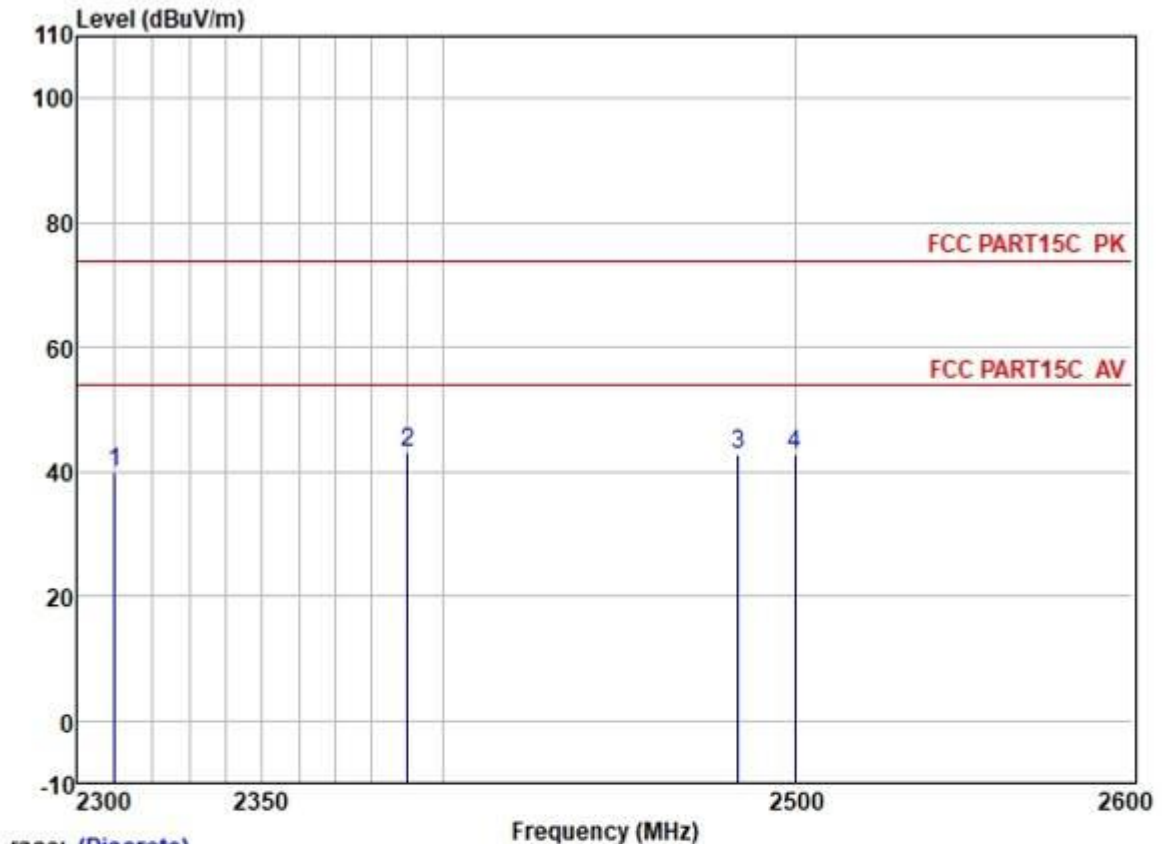
Test Mode: 02; Polarity: Vertical; Modulation: 802.11b; Bandwidth: 20MHz; Channel: High;



Trace: (Discrete)

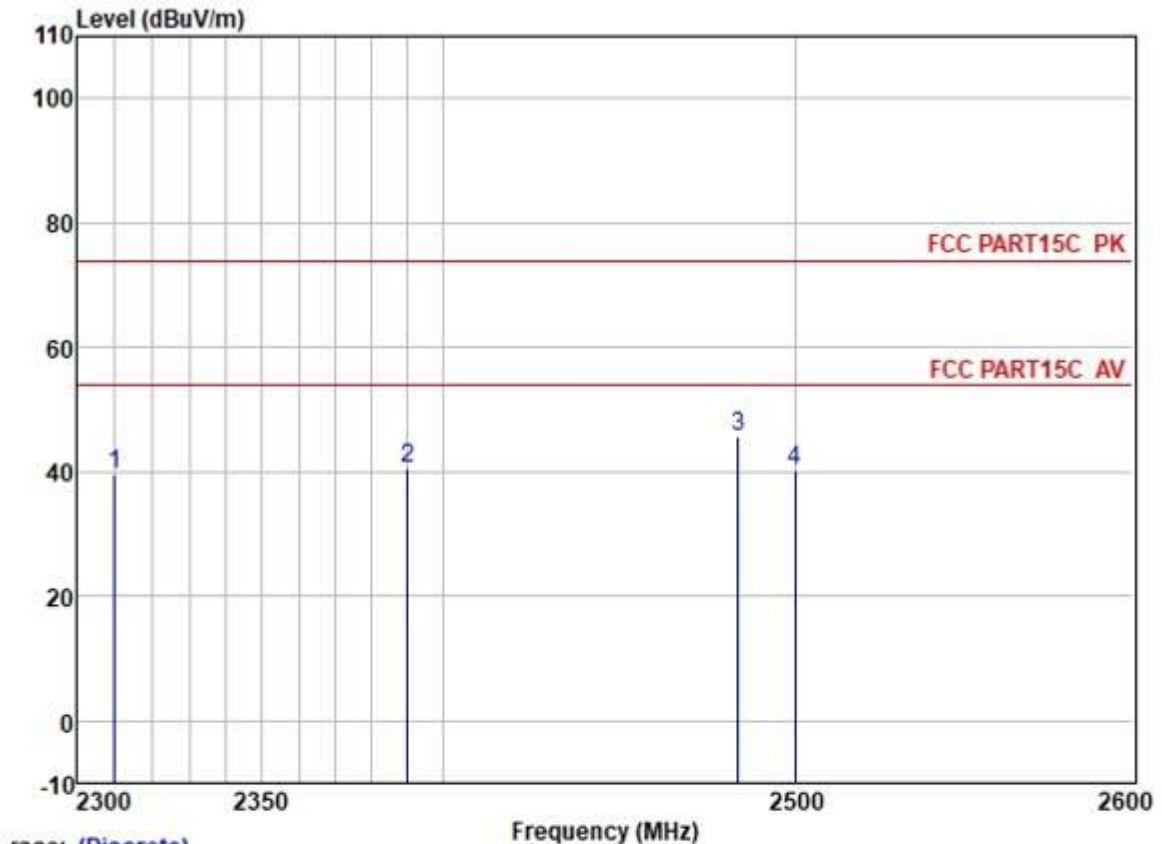
	Freq	ReadAntenna	Cable	Preamp	Limit	Over			
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	45.81	27.15	3.32	36.94	39.34	74.00	-34.66	VERTICAL Peak
2	2390.000	47.03	27.33	3.48	36.92	40.92	74.00	-33.08	VERTICAL Peak
3	2483.500	50.40	27.48	3.53	36.90	44.51	74.00	-29.49	VERTICAL Peak
4	2500.000	46.89	27.50	3.40	36.89	40.90	74.00	-33.10	VERTICAL Peak

Test Mode: 02; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:Low;



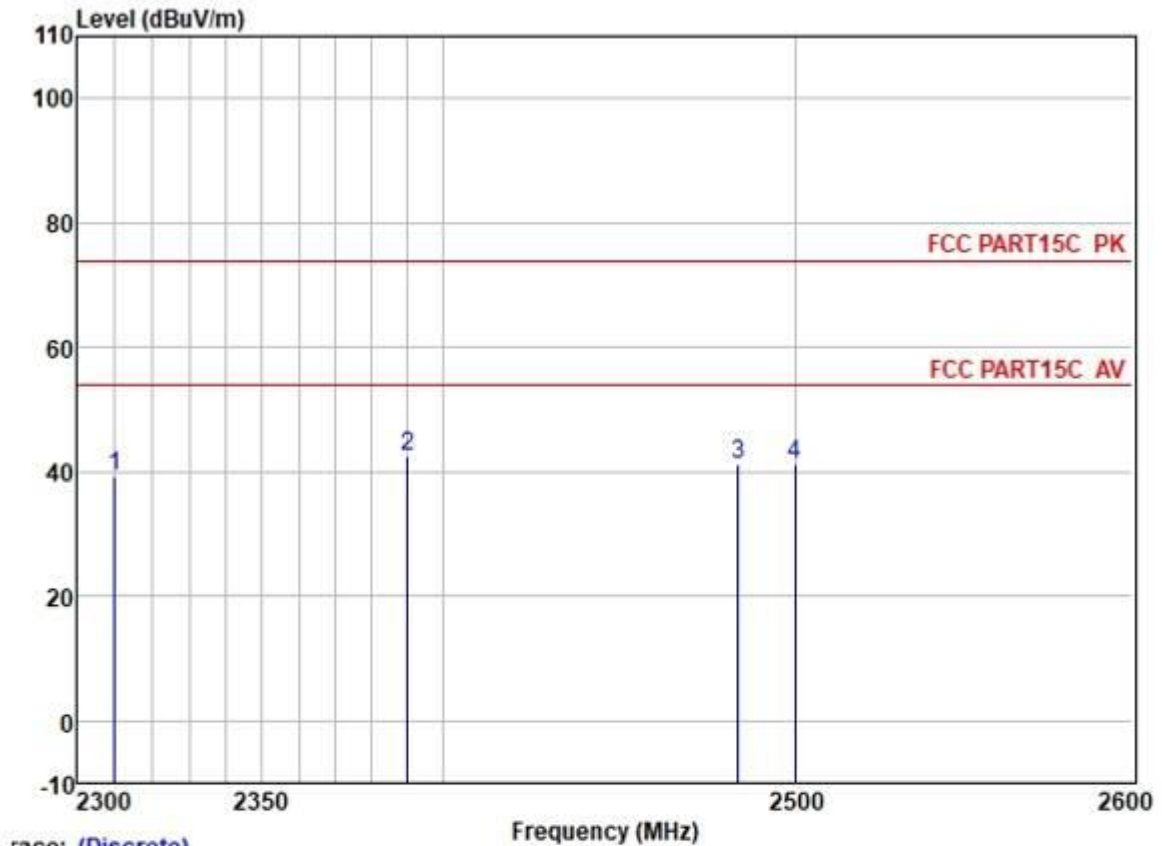
	ReadAntenna	Cable	Preamp		Limit	Over			
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1 2310.000	46.30	27.15	3.32	36.94	39.83	74.00	-34.17	VERTICAL	Peak
2 2390.000	49.23	27.33	3.48	36.92	43.12	74.00	-30.88	VERTICAL	Peak
3 2483.500	48.81	27.48	3.53	36.90	42.92	74.00	-31.08	VERTICAL	Peak
4 2500.000	48.83	27.50	3.40	36.89	42.84	74.00	-31.16	VERTICAL	Peak

Test Mode: 02; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:High;



	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2310.000	45.96	27.15	3.32	36.94	39.49	74.00	-34.51	VERTICAL	Peak
2	2390.000	46.68	27.33	3.48	36.92	40.57	74.00	-33.43	VERTICAL	Peak
3	2483.500	51.46	27.48	3.53	36.90	45.57	74.00	-28.43	VERTICAL	Peak
4	2500.000	46.30	27.50	3.40	36.89	40.31	74.00	-33.69	VERTICAL	Peak

Test Mode: 02; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:Low;



Trace: (Discrete)

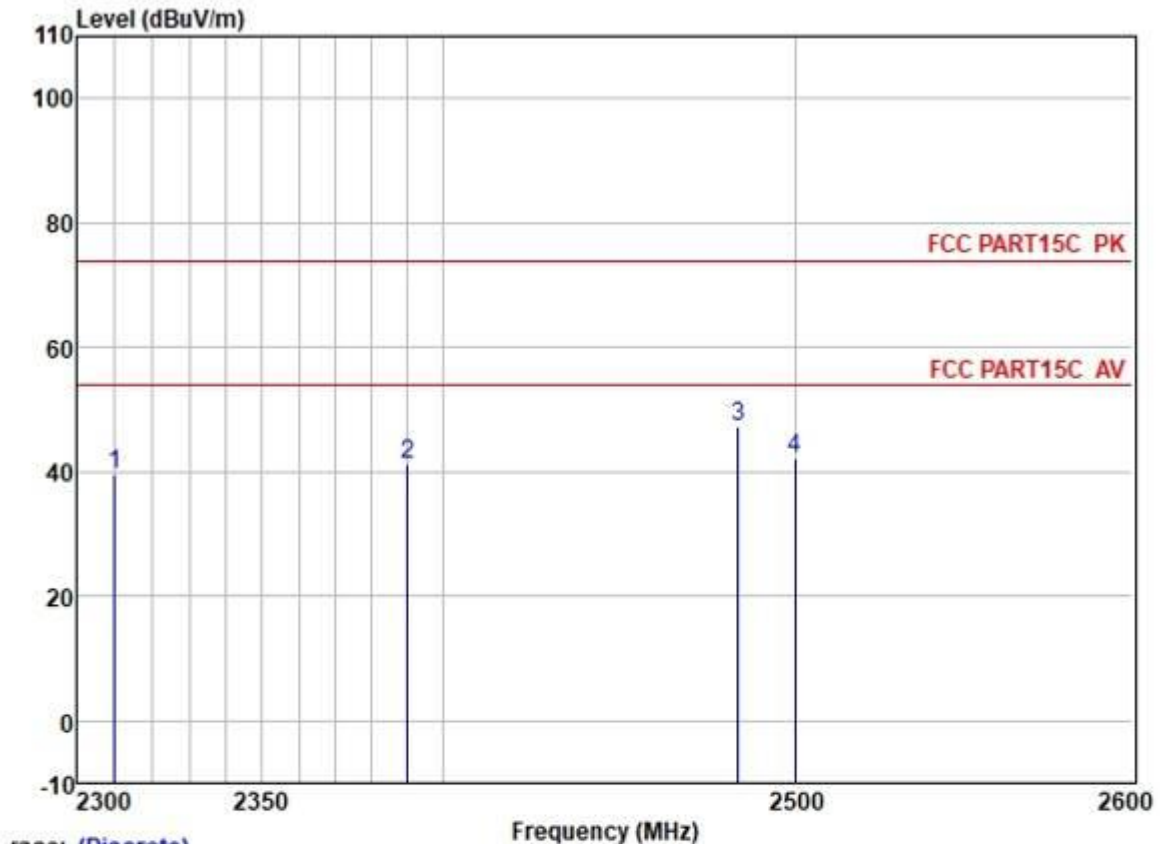
	Freq	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2310.000	45.64	27.15	3.32	36.94	39.17	74.00	-34.83	VERTICAL	Peak
2	2390.000	48.67	27.33	3.48	36.92	42.56	74.00	-31.44	VERTICAL	Peak
3	2483.500	47.06	27.48	3.53	36.90	41.17	74.00	-32.83	VERTICAL	Peak
4	2500.000	47.22	27.50	3.40	36.89	41.23	74.00	-32.77	VERTICAL	Peak



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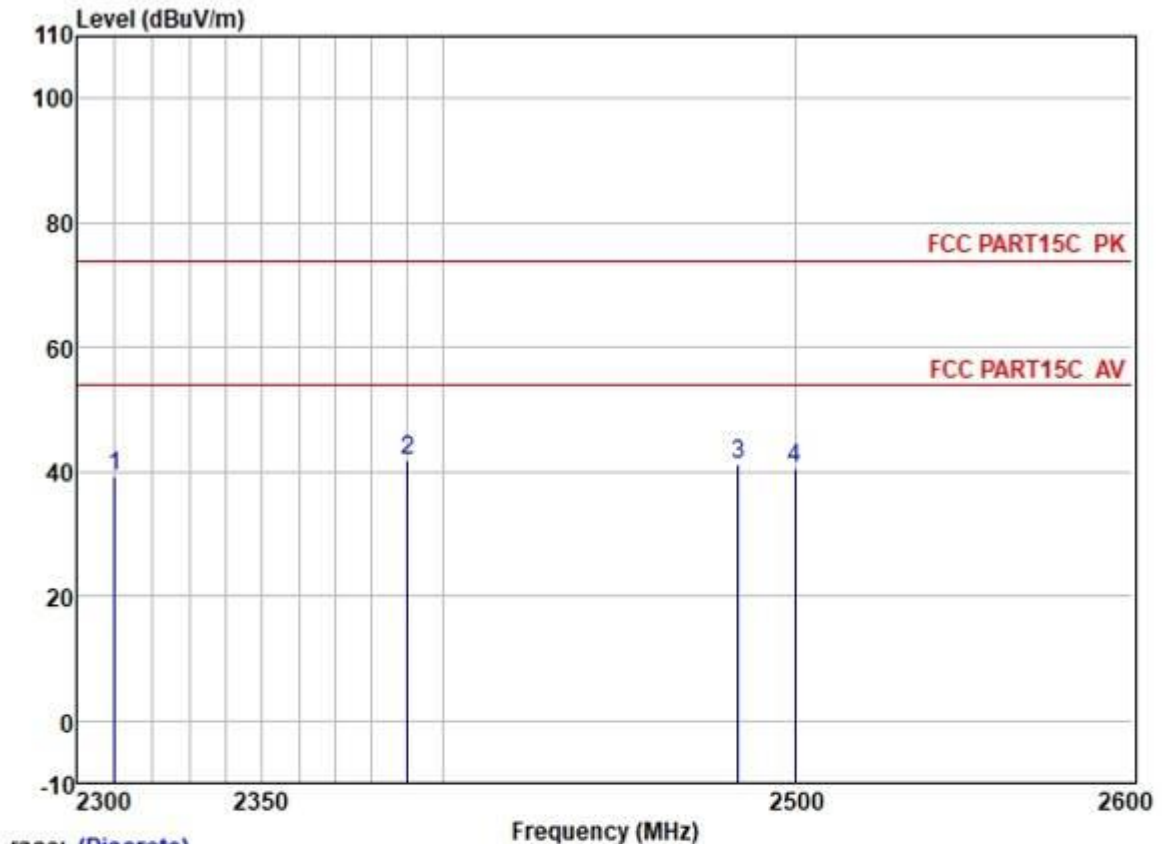
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Test Mode: 02; Polarity: Vertical; Modulation: 802.11n; Bandwidth: 20MHz; Channel: High;



race: (Discrete)	Frequency (MHz)									
		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	46.20	27.15	3.32	36.94	39.73	74.00	-34.27	VERTICAL	Peak
2	2390.000	47.37	27.33	3.48	36.92	41.26	74.00	-32.74	VERTICAL	Peak
3	2483.500	53.11	27.48	3.53	36.90	47.22	74.00	-26.78	VERTICAL	Peak
4	2500.000	48.08	27.50	3.40	36.89	42.09	74.00	-31.91	VERTICAL	Peak

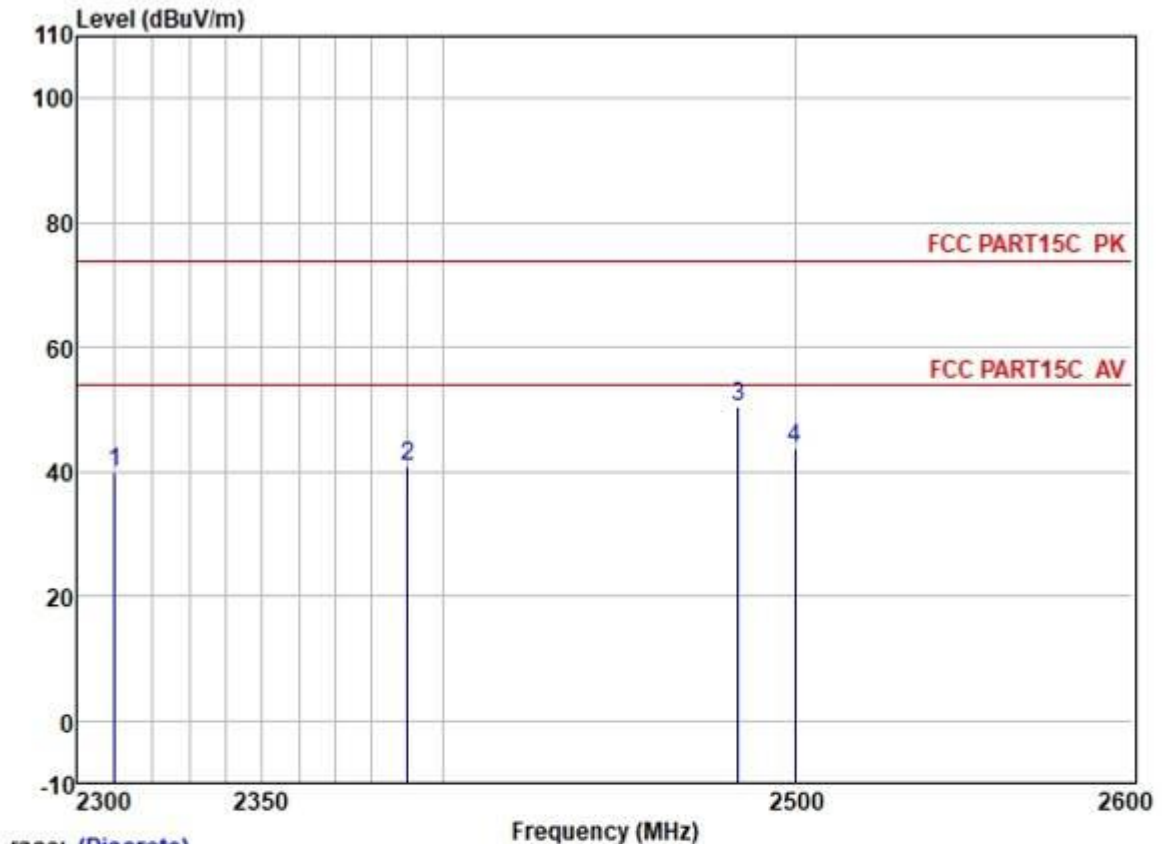
Test Mode: 02; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low;



Trace: (Discrete)

	Read	Antenna	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	45.64	27.15	3.32	36.94	39.17	74.00	-34.83	VERTICAL Peak
2	2390.000	48.03	27.33	3.48	36.92	41.92	74.00	-32.08	VERTICAL Peak
3	2483.500	47.22	27.48	3.53	36.90	41.33	74.00	-32.67	VERTICAL Peak
4	2500.000	46.40	27.50	3.40	36.89	40.41	74.00	-33.59	VERTICAL Peak

Test Mode: 02; Polarity: Vertical; Modulation: 802.11n; Bandwidth: 40MHz; Channel: High;



Trace: (Discrete)

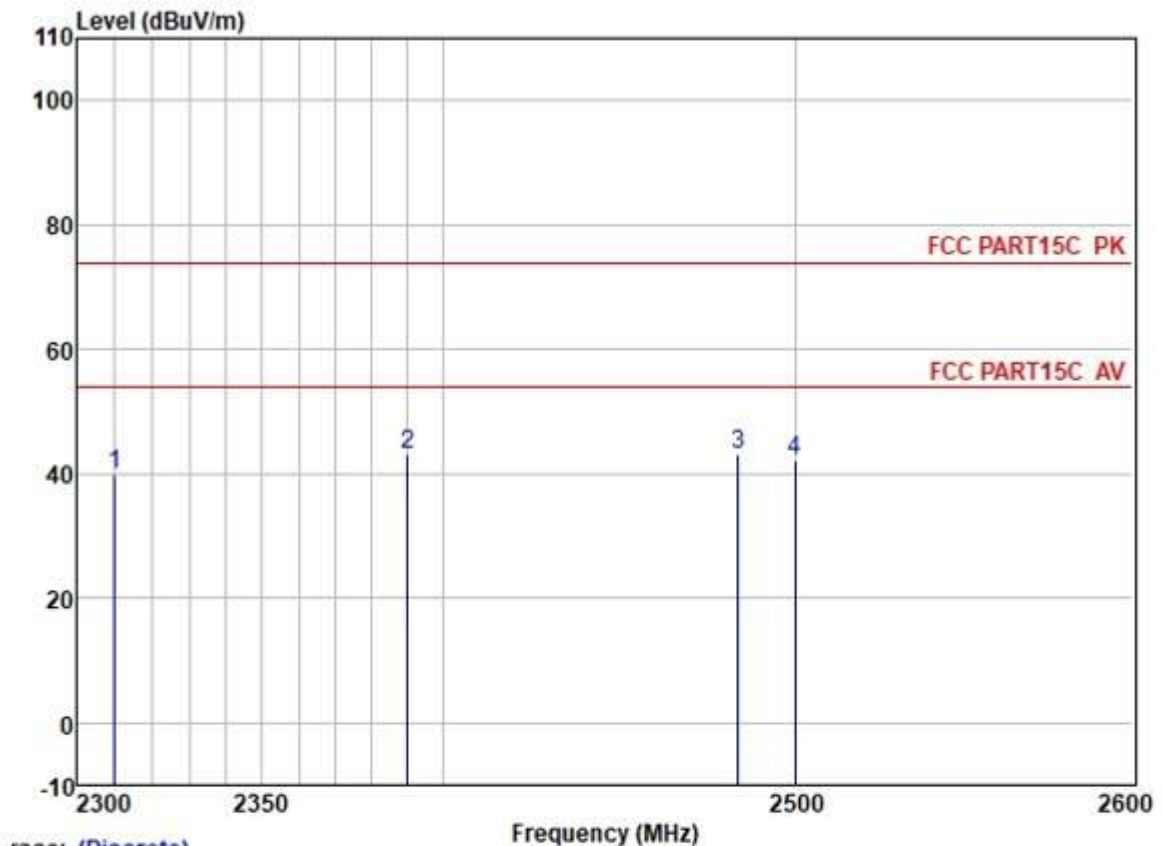
	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
		Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2310.000	46.26	27.15	3.32	36.94	39.79	74.00	-34.21	VERTICAL	Peak
2	2390.000	46.93	27.33	3.48	36.92	40.82	74.00	-33.18	VERTICAL	Peak
3	2483.500	56.32	27.48	3.53	36.90	50.43	74.00	-23.57	VERTICAL	Peak
4	2500.000	49.63	27.50	3.40	36.89	43.64	74.00	-30.36	VERTICAL	Peak



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Test Mode: 02; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low;



	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	46.34	27.15	3.32	36.94	39.87	74.00	-34.13	VERTICAL	Peak
2 2390.000	49.17	27.33	3.48	36.92	43.06	74.00	-30.94	VERTICAL	Peak
3 2483.500	48.95	27.48	3.53	36.90	43.06	74.00	-30.94	VERTICAL	Peak
4 2500.000	48.11	27.50	3.40	36.89	42.12	74.00	-31.88	VERTICAL	Peak

7.7 Radiated Spurious Emissions

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.4,6.5,6.6

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: 25.3 °C Humidity: 62.5 % RH Atmospheric Pressure: 1010 mbar

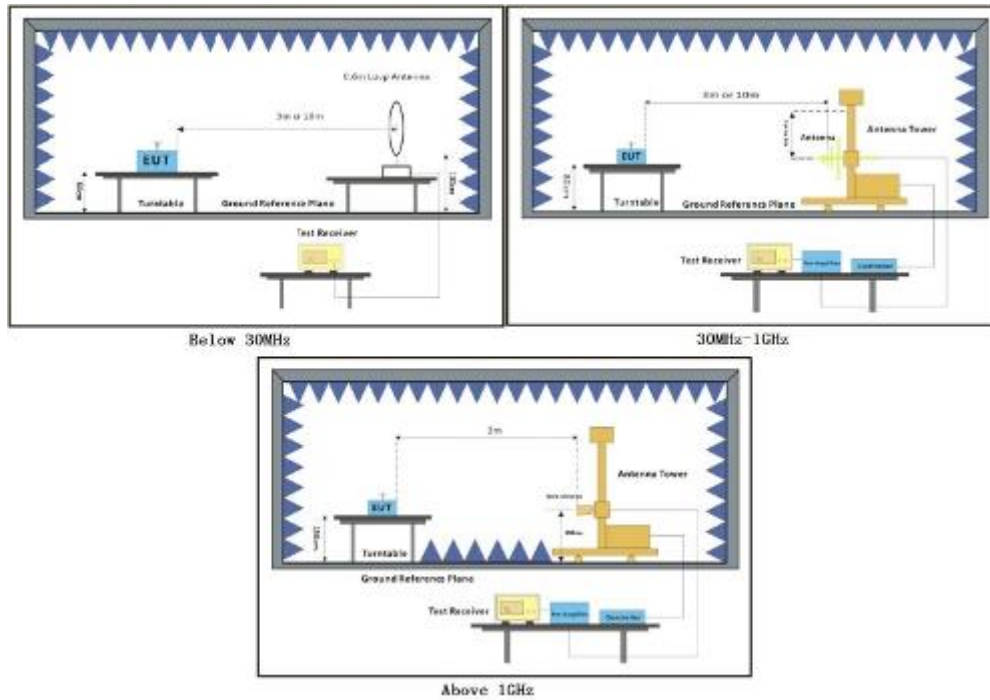
7.7.2 Test Mode Description

Pre-scan / Mode
Final test Code Description

Final test 02 Charge + TX mode_Keep the EUT in charging and 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.



7.7.3 Test Setup Diagram



7.7.4 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

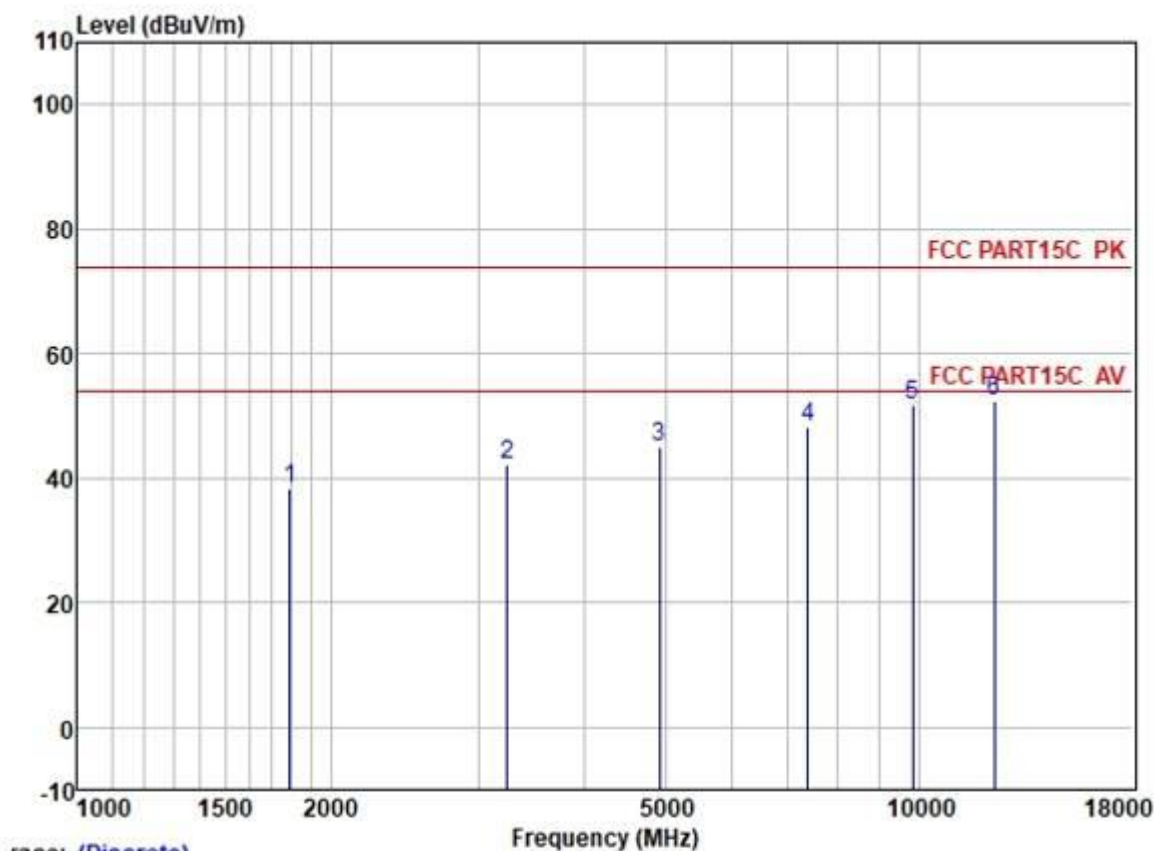
3) Scan from 9kHz to 25GHz, the disturbance above 18GHz and below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB 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 in the report.

5) Antenna: 2 denotes the type of antenna for 30-1000MHz; Antenna: 3 denotes the type of antenna for above 1000MHz.



Test Mode: 02; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:High; Antenna: 3



race: (Discrete)

	Freq	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1787.762	46.39	25.92	2.98	37.03	38.26	74.00	-35.74	HORIZONTAL	Peak
2	3242.619	45.95	28.67	4.02	36.50	42.14	74.00	-31.86	HORIZONTAL	Peak
3	4924.396	44.45	31.62	5.60	36.50	45.17	74.00	-28.83	HORIZONTAL	Peak
4	7386.542	42.62	36.17	6.19	36.77	48.21	74.00	-25.79	HORIZONTAL	Peak
5	9848.161	42.57	38.58	6.99	36.32	51.82	74.00	-22.18	HORIZONTAL	Peak
6	12310.480	41.90	38.63	8.01	36.23	52.31	74.00	-21.69	HORIZONTAL	Peak



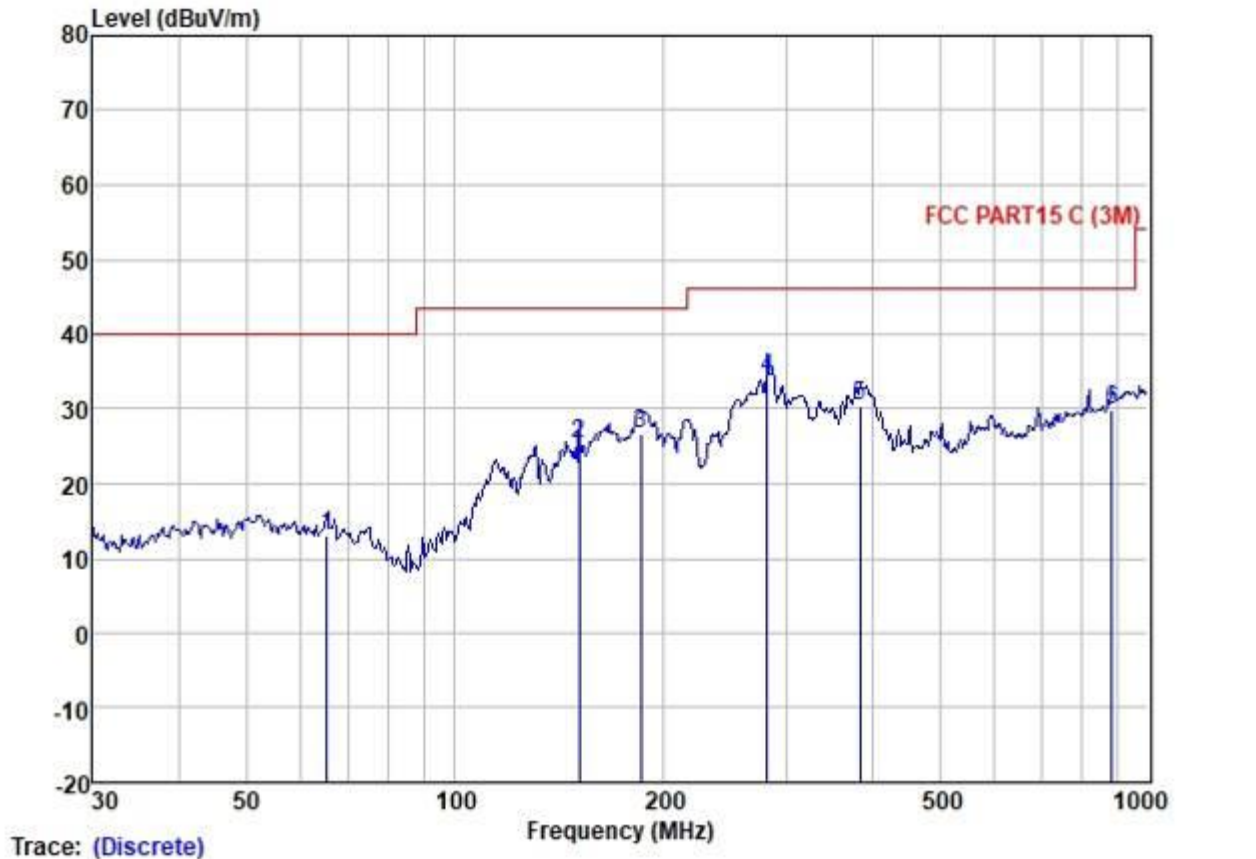
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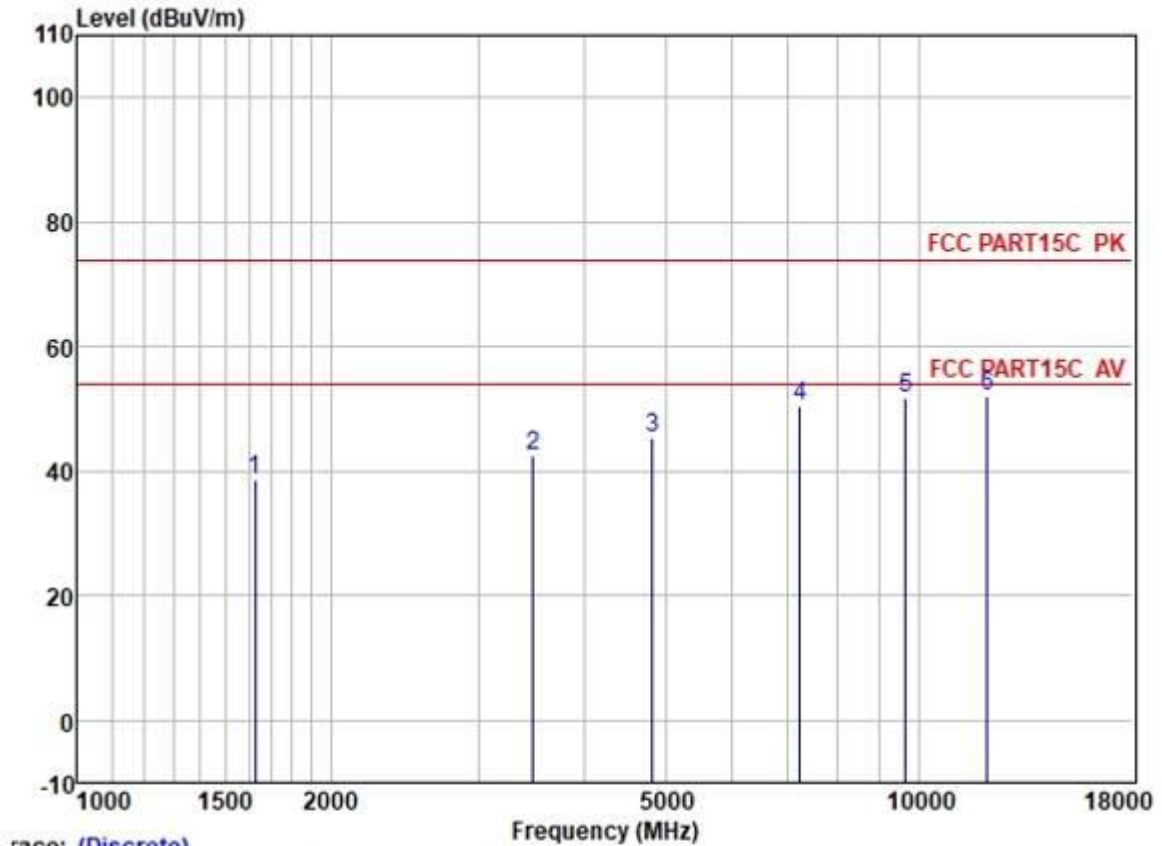
Test Mode: 02; Polarity: Horizontal; Modulation: 802.11b; Bandwidth: 20MHz; Channel: Low; Antenna: 2



Site : SGS
Condition : FCC PART15 C (3M) HORIZONTAL
Job :
Model : 主测
Power :
Test Mode : CHARGING

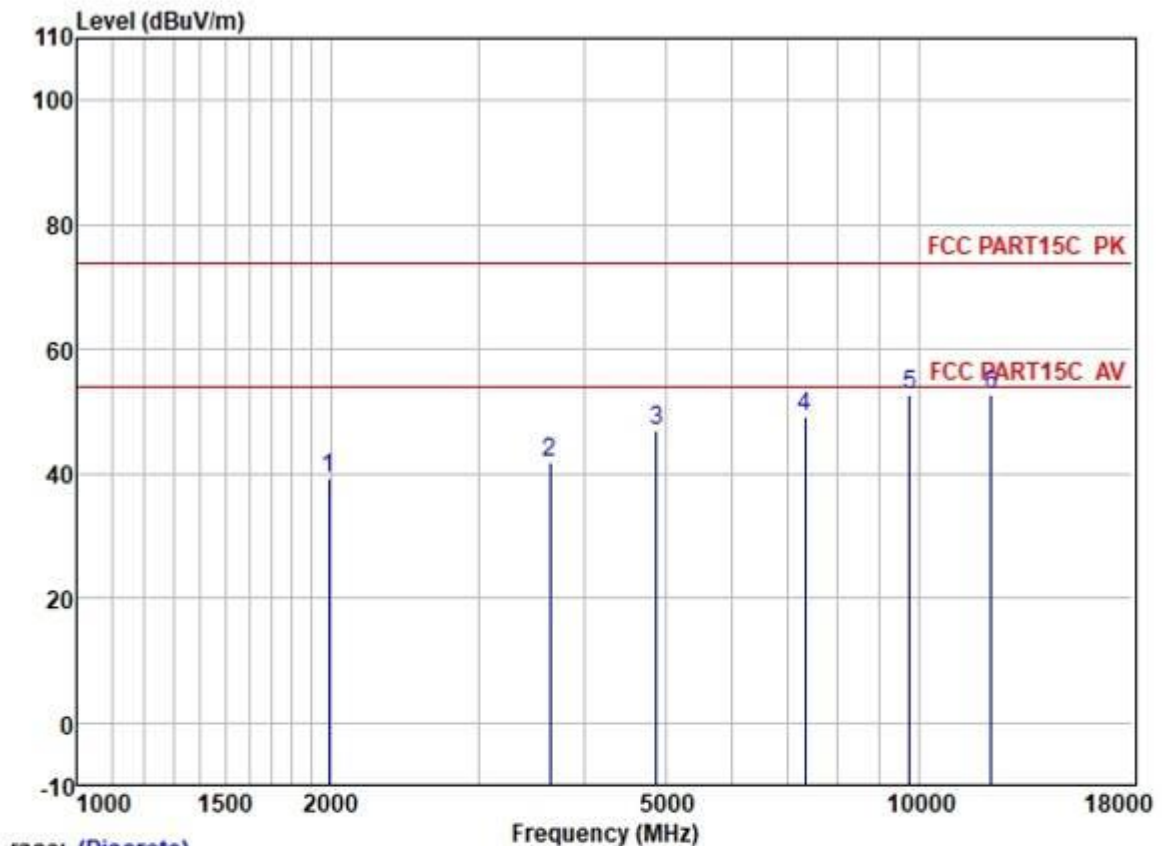
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Measured Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dBuV		
1	65.34	26.22	12.68	1.35	27.15	13.10	40.00	-26.90	HORIZONTAL	QP
2	151.07	36.26	13.80	2.24	26.83	25.47	43.50	-18.03	HORIZONTAL	QP
3	185.14	39.61	11.37	2.47	26.75	26.70	43.50	-16.80	HORIZONTAL	QP
4	281.99	44.44	13.23	3.10	26.56	34.21	46.00	-11.79	HORIZONTAL	QP
5	383.93	38.25	15.50	3.87	27.26	30.36	46.00	-15.64	HORIZONTAL	QP
6	887.61	27.67	23.07	6.86	27.86	29.74	46.00	-16.26	HORIZONTAL	QP

Test Mode: 02; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:Low; Antenna: 3



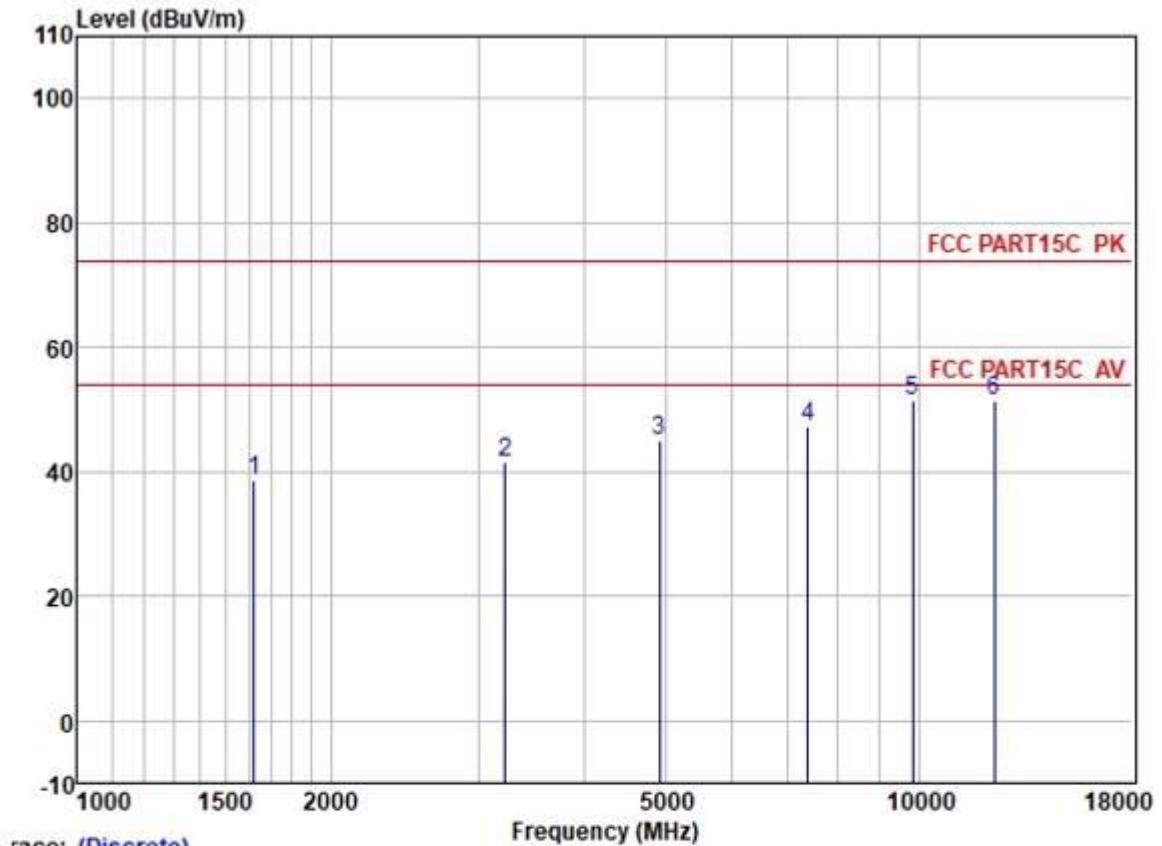
	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1625.121	47.43	25.61	2.80	37.06	38.78	74.00	-35.22	HORIZONTAL	Peak
2	3485.601	45.88	28.89	4.27	36.46	42.58	74.00	-31.42	HORIZONTAL	Peak
3	4824.335	45.00	31.45	5.42	36.48	45.39	74.00	-28.61	HORIZONTAL	Peak
4	7236.475	45.42	35.70	6.03	36.75	50.40	74.00	-23.60	HORIZONTAL	Peak
5	9648.670	42.56	38.40	7.06	36.35	51.67	74.00	-22.33	HORIZONTAL	Peak
6	12060.130	41.34	38.88	8.17	36.38	52.01	74.00	-21.99	HORIZONTAL	Peak

Test Mode: 02; Polarity: Horizontal; Modulation: 802.11b; Bandwidth: 20MHz; Channel: middle; Antenna: 3



	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1989.550	47.12	26.09	3.08	37.00	39.29	74.00	-34.71	HORIZONTAL	Peak
2	3650.582	44.63	29.13	4.52	36.43	41.85	74.00	-32.15	HORIZONTAL	Peak
3	4884.975	46.23	31.56	5.52	36.50	46.81	74.00	-27.19	HORIZONTAL	Peak
4	7326.267	43.90	36.00	6.13	36.76	49.27	74.00	-24.73	HORIZONTAL	Peak
5	9768.221	43.41	38.53	7.01	36.33	52.62	74.00	-21.38	HORIZONTAL	Peak
6	12210.420	42.10	38.74	8.08	36.30	52.62	74.00	-21.38	HORIZONTAL	Peak

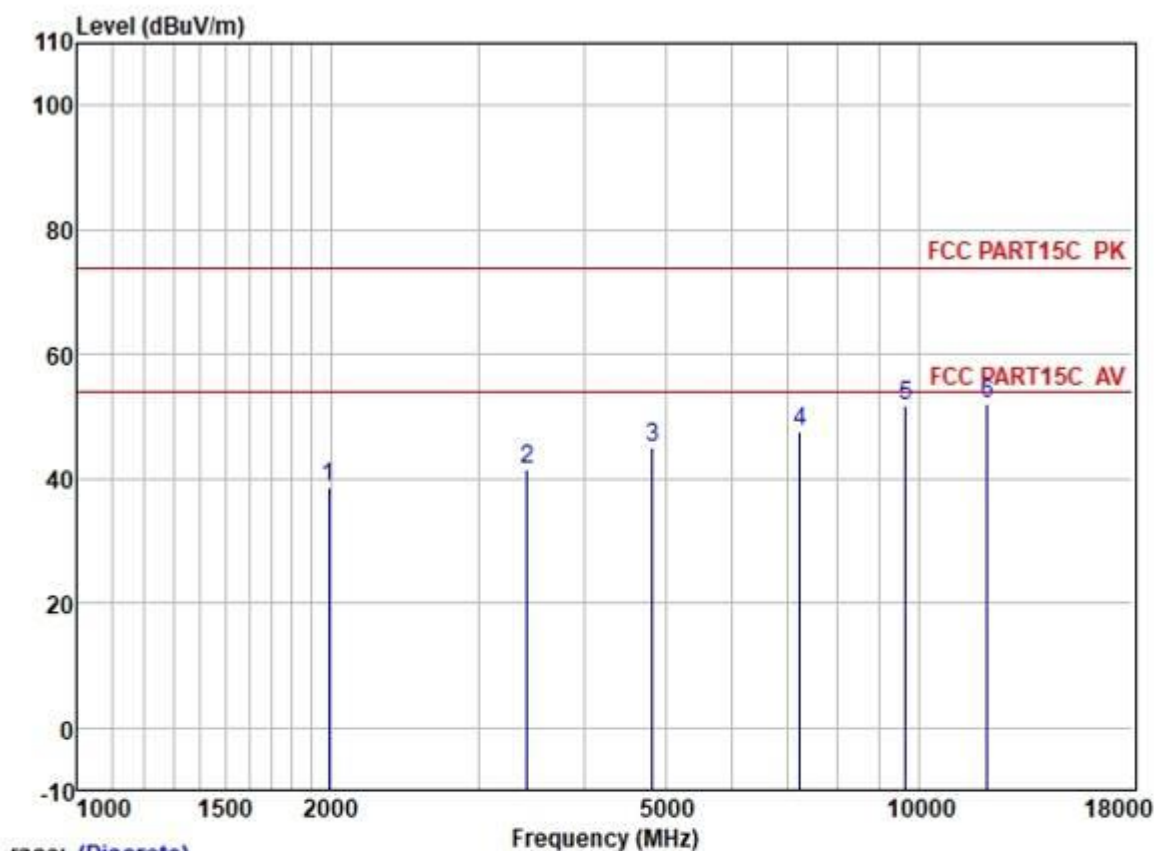
Test Mode: 02; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:High; Antenna: 3



Trace: (Discrete)

	Freq	ReadAntenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	1620.431	47.30	25.60	2.80	37.07	38.63	74.00	-35.37
2	3223.928	45.33	28.63	4.01	36.50	41.47	74.00	-32.53
3	4924.190	44.18	31.62	5.60	36.50	44.90	74.00	-29.10
4	7386.375	41.85	36.17	6.19	36.77	47.44	74.00	-26.56
5	9848.123	42.04	38.58	6.99	36.32	51.29	74.00	-22.71
6	12310.710	40.98	38.63	8.01	36.23	51.39	74.00	-22.61

Test Mode: 02; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:Low; Antenna: 3



race: (Discrete)

	Freq	ReadAntenna Level	Cable Factor	Preamp Loss	Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1989.550	46.39	26.09	3.08	37.00	38.56	74.00	-35.44	HORIZONTAL	Peak
2	3425.675	44.97	28.86	4.15	36.46	41.52	74.00	-32.48	HORIZONTAL	Peak
3	4824.633	44.60	31.45	5.42	36.48	44.99	74.00	-29.01	HORIZONTAL	Peak
4	7236.373	42.49	35.70	6.03	36.75	47.47	74.00	-26.53	HORIZONTAL	Peak
5	9648.123	42.70	38.40	7.06	36.35	51.81	74.00	-22.19	HORIZONTAL	Peak
6	12060.470	41.45	38.88	8.17	36.38	52.12	74.00	-21.88	HORIZONTAL	Peak

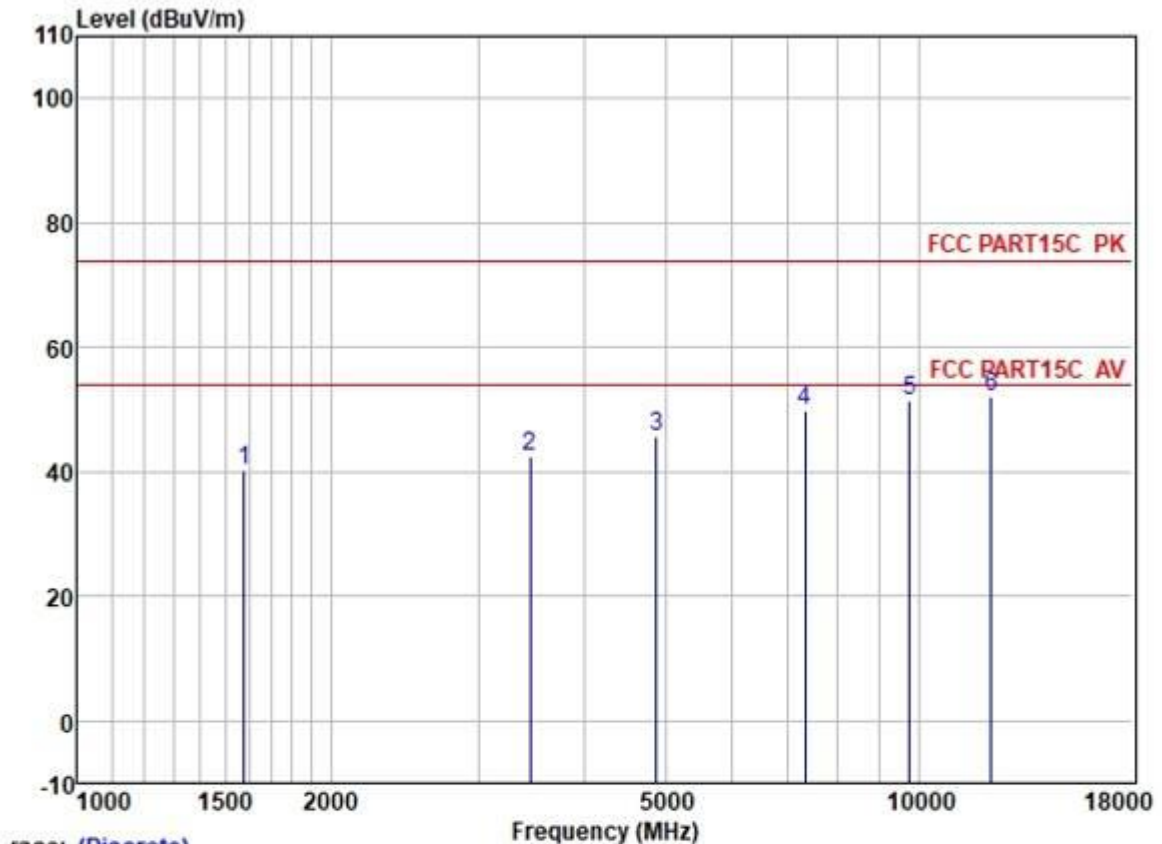


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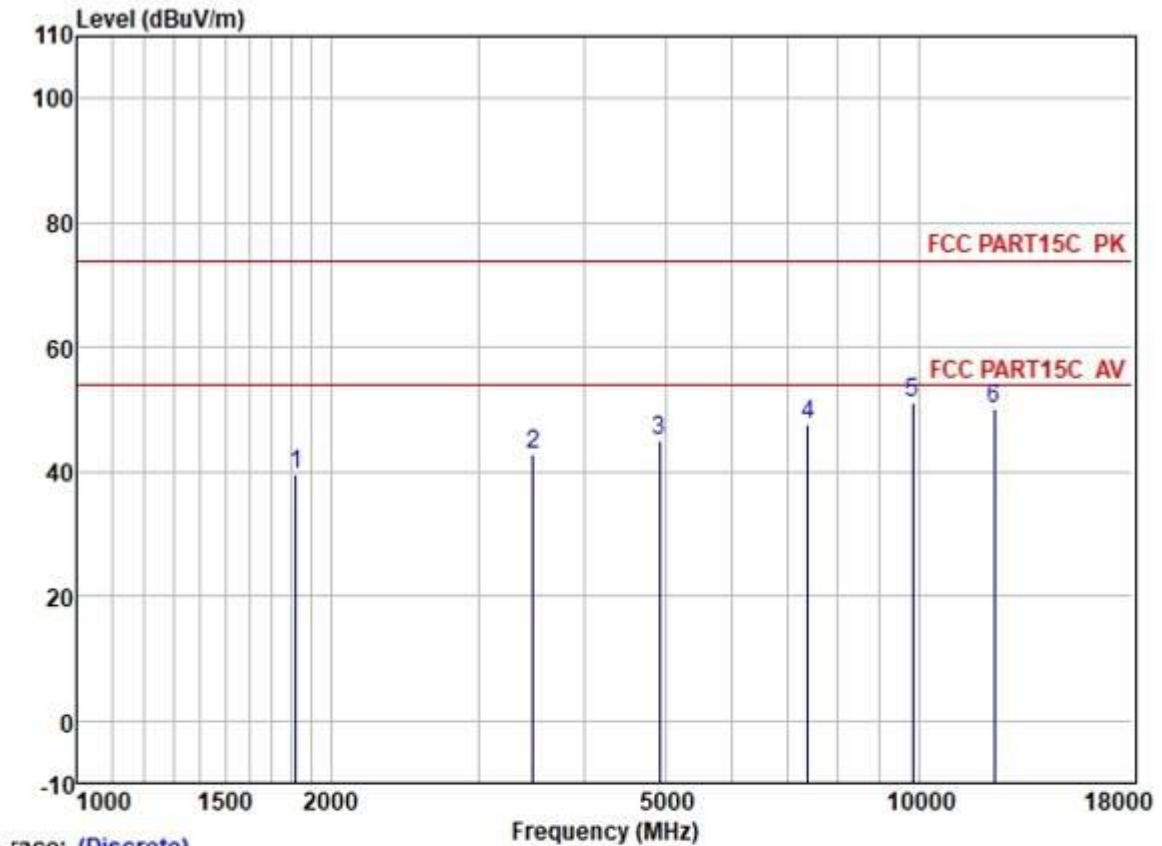
Test Mode: 02; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:middle; Antenna: 3



Trace: (Discrete)

	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1578.822	48.93	25.56	2.80	37.08	40.21	74.00	-33.79	HORIZONTAL	Peak
2	3455.508	45.75	28.88	4.20	36.46	42.37	74.00	-31.63	HORIZONTAL	Peak
3	4884.888	45.13	31.56	5.52	36.50	45.71	74.00	-28.29	HORIZONTAL	Peak
4	7326.015	44.46	36.00	6.13	36.76	49.83	74.00	-24.17	HORIZONTAL	Peak
5	9768.149	42.20	38.53	7.01	36.33	51.41	74.00	-22.59	HORIZONTAL	Peak
6	12210.760	41.64	38.74	8.08	36.30	52.16	74.00	-21.84	HORIZONTAL	Peak

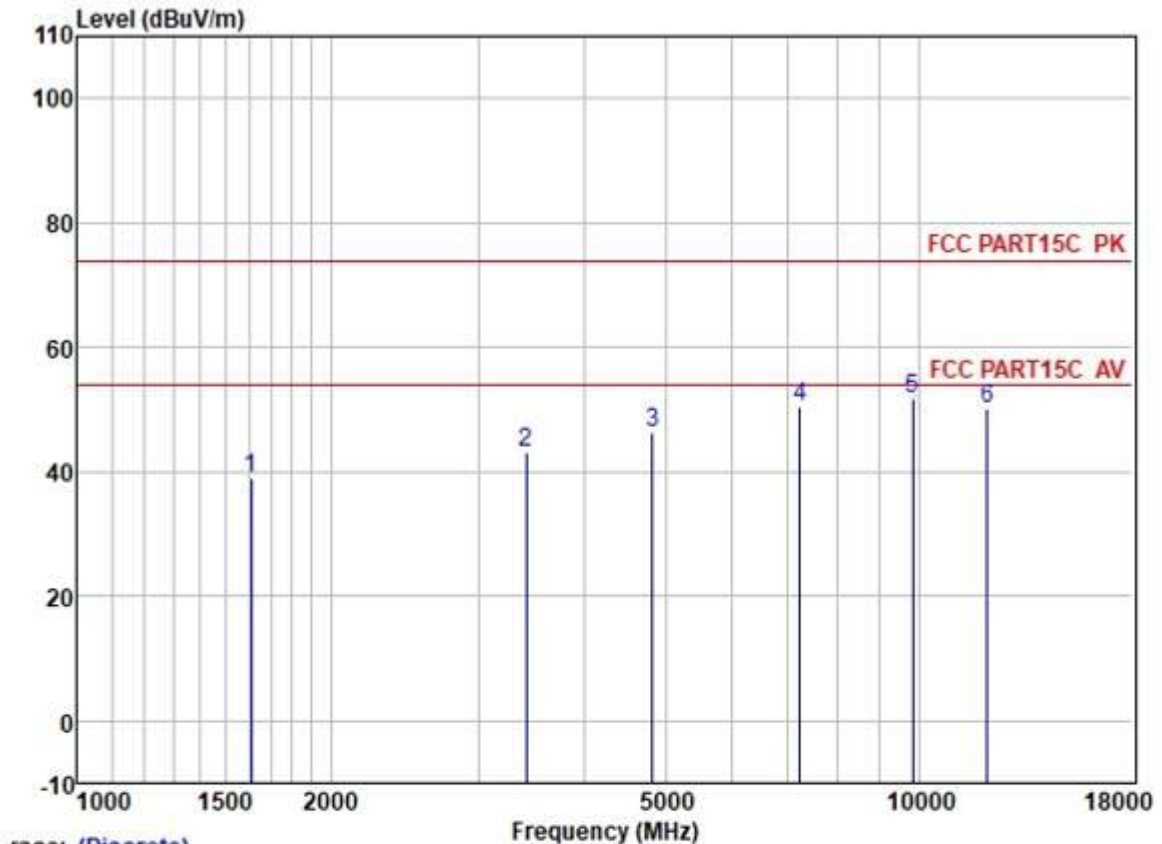
Test Mode: 02; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High; Antenna: 3



Trace: (Discrete)

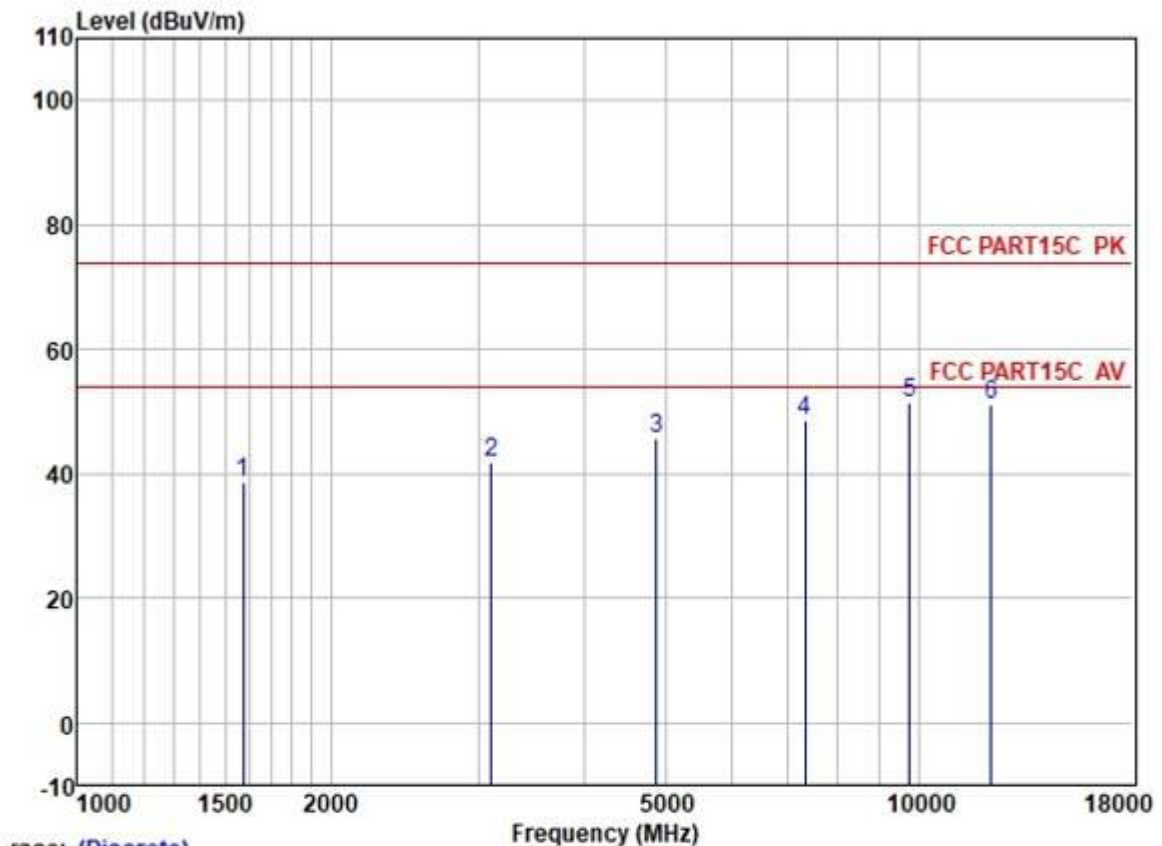
	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
		Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1819.036	47.55	25.97	2.98	37.02	39.48	74.00	-34.52	HORIZONTAL	Peak
2	3485.601	46.10	28.89	4.27	36.46	42.80	74.00	-31.20	HORIZONTAL	Peak
3	4924.007	44.32	31.62	5.60	36.50	45.04	74.00	-28.96	HORIZONTAL	Peak
4	7386.763	42.13	36.17	6.19	36.77	47.72	74.00	-26.28	HORIZONTAL	Peak
5	9848.480	41.77	38.58	6.99	36.32	51.02	74.00	-22.98	HORIZONTAL	Peak
6	12310.070	39.68	38.63	8.01	36.23	50.09	74.00	-23.91	HORIZONTAL	Peak

Test Mode: 02; Polarity: Horizontal; Modulation: 802.11n; Bandwidth: 20MHz; Channel: Low; Antenna: 3



		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	1611.091	47.65	25.59	2.80	37.07	38.97	74.00	-35.03	HORIZONTAL	Peak
2	3415.787	46.53	28.85	4.13	36.47	43.04	74.00	-30.96	HORIZONTAL	Peak
3	4824.440	45.90	31.45	5.42	36.48	46.29	74.00	-27.71	HORIZONTAL	Peak
4	7236.461	45.46	35.70	6.03	36.75	50.44	74.00	-23.56	HORIZONTAL	Peak
5	9848.525	42.53	38.58	6.99	36.32	51.78	74.00	-22.22	HORIZONTAL	Peak
6	12060.470	39.59	38.88	8.17	36.38	50.26	74.00	-23.74	HORIZONTAL	Peak

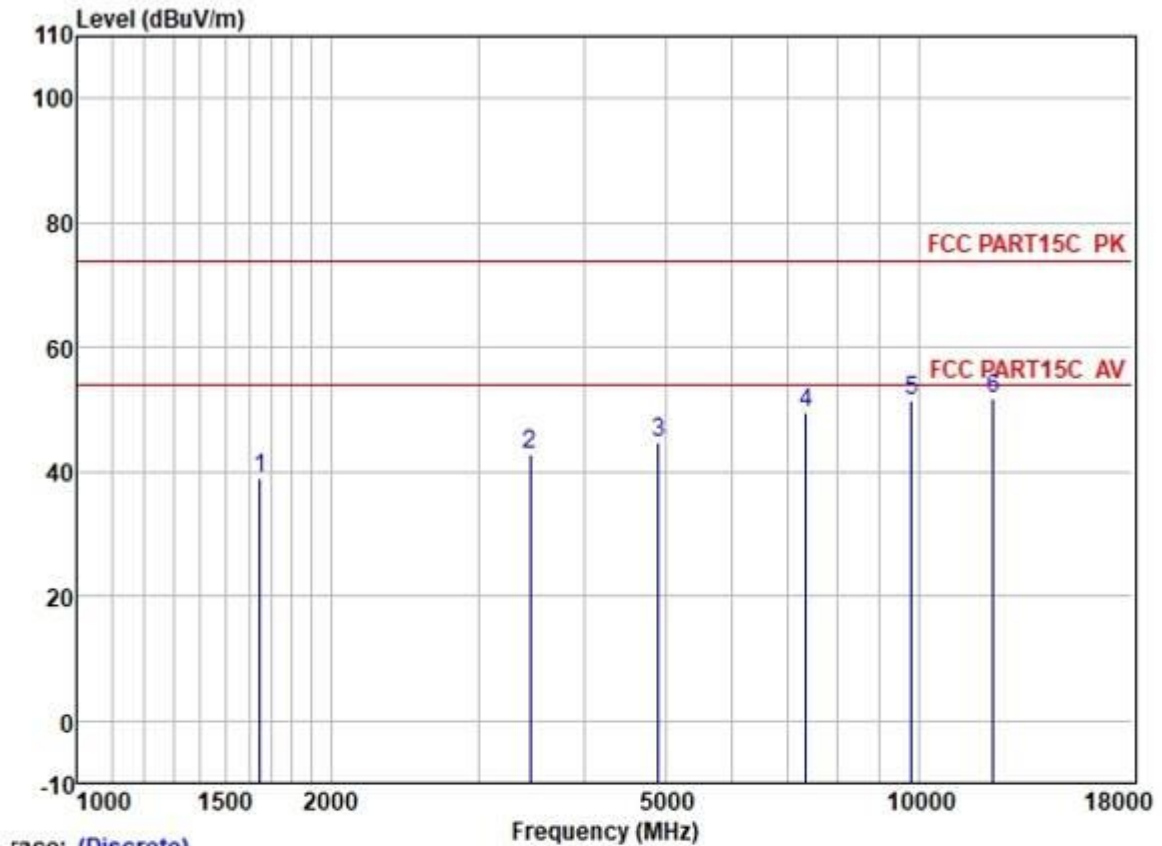
Test Mode: 02; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:middle; Antenna: 3



race: (Discrete)

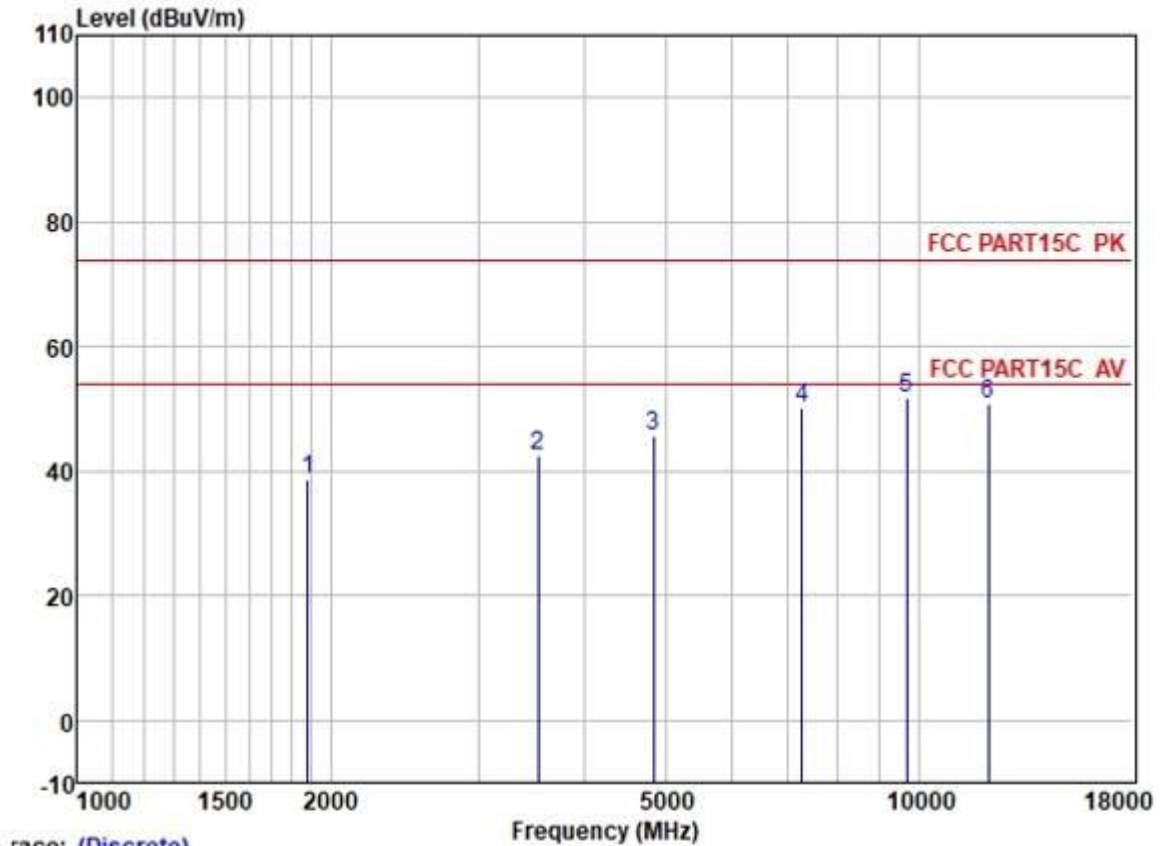
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1574.265	47.46	25.56	2.80	37.08	38.74	74.00	-35.26	HORIZONTAL	Peak
2	3105.037	45.95	28.48	3.91	36.53	41.81	74.00	-32.19	HORIZONTAL	Peak
3	4884.300	45.09	31.56	5.52	36.50	45.67	74.00	-28.33	HORIZONTAL	Peak
4	7326.052	43.13	36.00	6.13	36.76	48.50	74.00	-25.50	HORIZONTAL	Peak
5	9768.020	42.22	38.53	7.01	36.33	51.43	74.00	-22.57	HORIZONTAL	Peak
6	12210.750	40.75	38.74	8.08	36.30	51.27	74.00	-22.73	HORIZONTAL	Peak

Test Mode: 02; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High; Antenna: 3



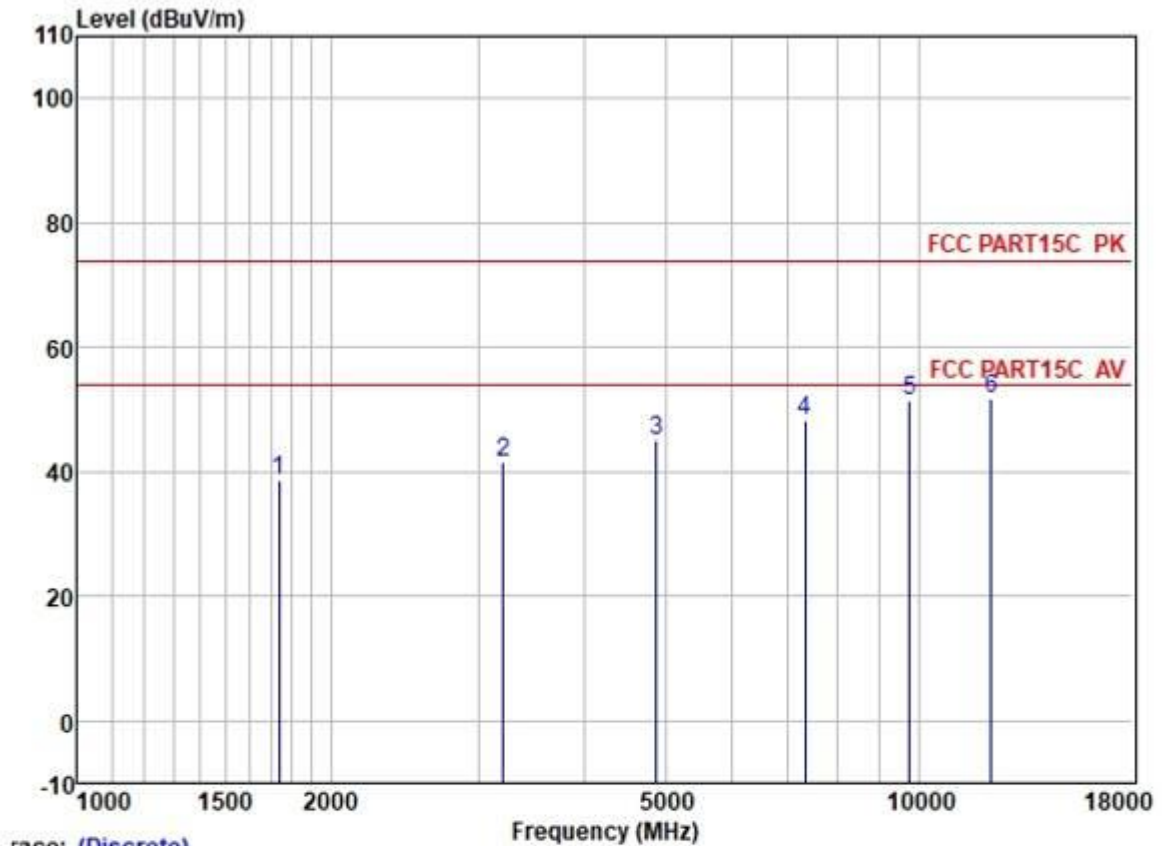
	Freq	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1648.778	47.64	25.63	2.80	37.06	39.01	74.00	-34.99	HORIZONTAL Peak
2	3455.508	46.11	28.88	4.20	36.46	42.73	74.00	-31.27	HORIZONTAL Peak
3	4904.151	44.06	31.58	5.55	36.50	44.69	74.00	-29.31	HORIZONTAL Peak
4	7356.763	44.03	36.06	6.15	36.76	49.48	74.00	-24.52	HORIZONTAL Peak
5	9808.972	42.18	38.56	7.00	36.32	51.42	74.00	-22.58	HORIZONTAL Peak
6	12260.610	41.23	38.70	8.06	36.27	51.72	74.00	-22.28	HORIZONTAL Peak

Test Mode: 02; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low; Antenna: 3



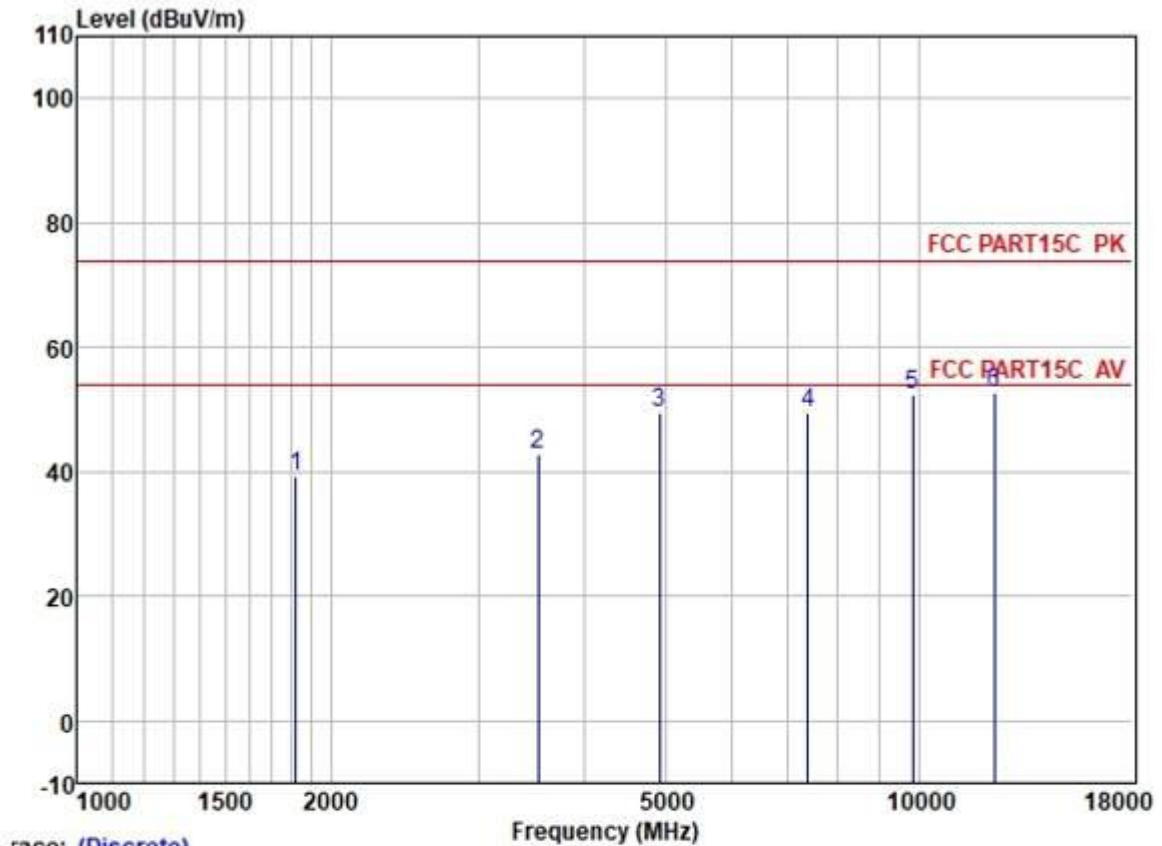
	ReadAntenna	Cable	Preamp		Limit	Over			
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1877.800	46.81	26.02	2.92	37.02	38.73	74.00	-35.27	HORIZONTAL Peak
2	3526.134	45.50	28.94	4.38	36.45	42.37	74.00	-31.63	HORIZONTAL Peak
3	4844.299	45.28	31.50	5.45	36.48	45.75	74.00	-28.25	HORIZONTAL Peak
4	7266.788	44.93	35.78	6.06	36.75	50.02	74.00	-23.98	HORIZONTAL Peak
5	9688.450	42.60	38.44	7.04	36.34	51.74	74.00	-22.26	HORIZONTAL Peak
6	12110.470	40.32	38.83	8.14	36.36	50.93	74.00	-23.07	HORIZONTAL Peak

Test Mode: 02; Polarity: Horizontal; Modulation: 802.11n; Bandwidth: 40MHz; Channel: middle; Antenna: 3



	Read	Antenna	Cable	Preamp	Limit	Over		
Freq	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1736.829	46.91	25.82	2.86	37.04	38.55	74.00	-35.45 HORIZONTAL Peak
2	3205.345	45.29	28.60	4.00	36.51	41.38	74.00	-32.62 HORIZONTAL Peak
3	4884.490	44.55	31.56	5.52	36.50	45.13	74.00	-28.87 HORIZONTAL Peak
4	7326.708	43.01	36.00	6.13	36.76	48.38	74.00	-25.62 HORIZONTAL Peak
5	9768.925	42.30	38.53	7.01	36.33	51.51	74.00	-22.49 HORIZONTAL Peak
6	12210.270	41.35	38.74	8.08	36.30	51.87	74.00	-22.13 HORIZONTAL Peak

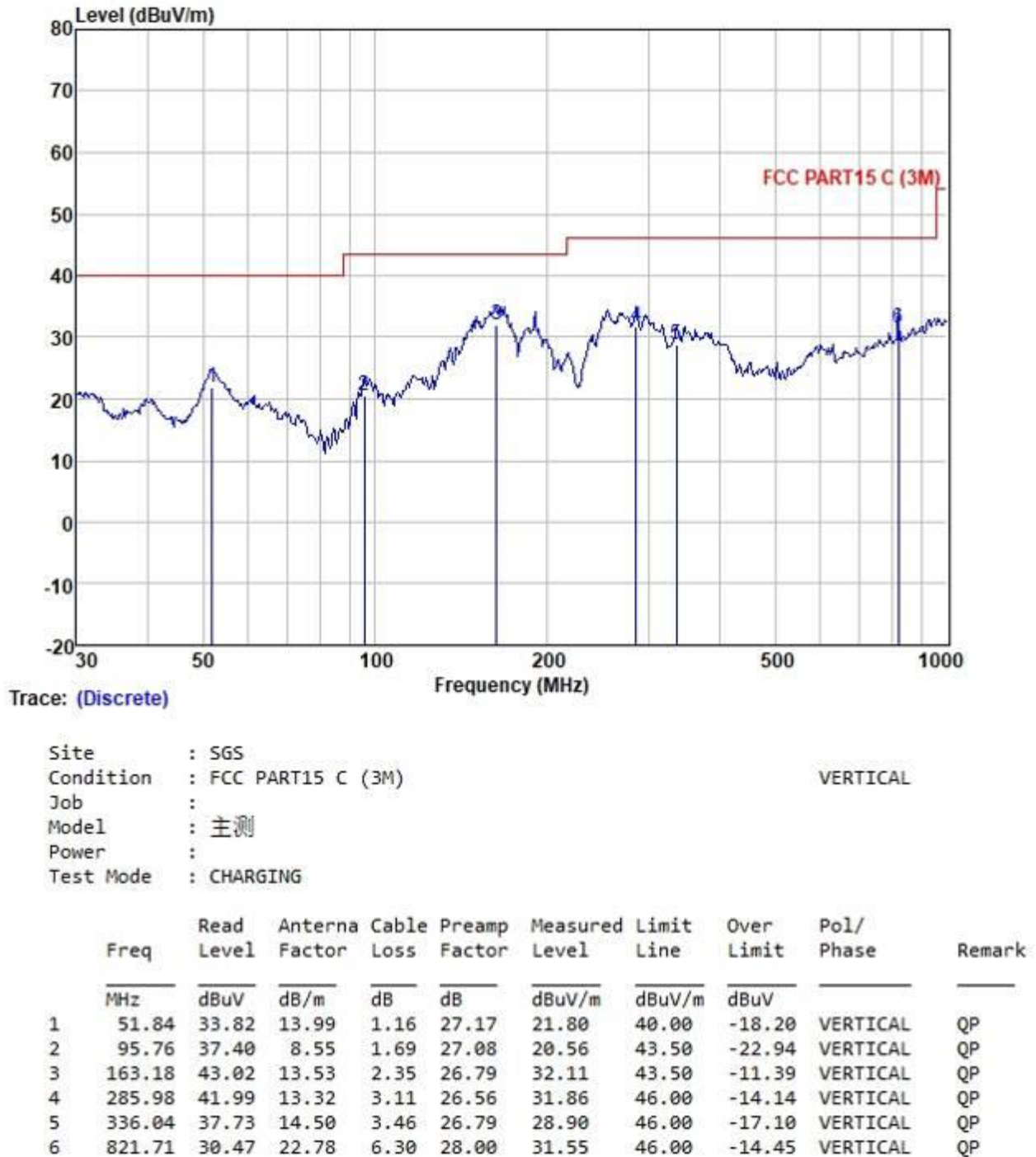
Test Mode: 02; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:High; Antenna: 3



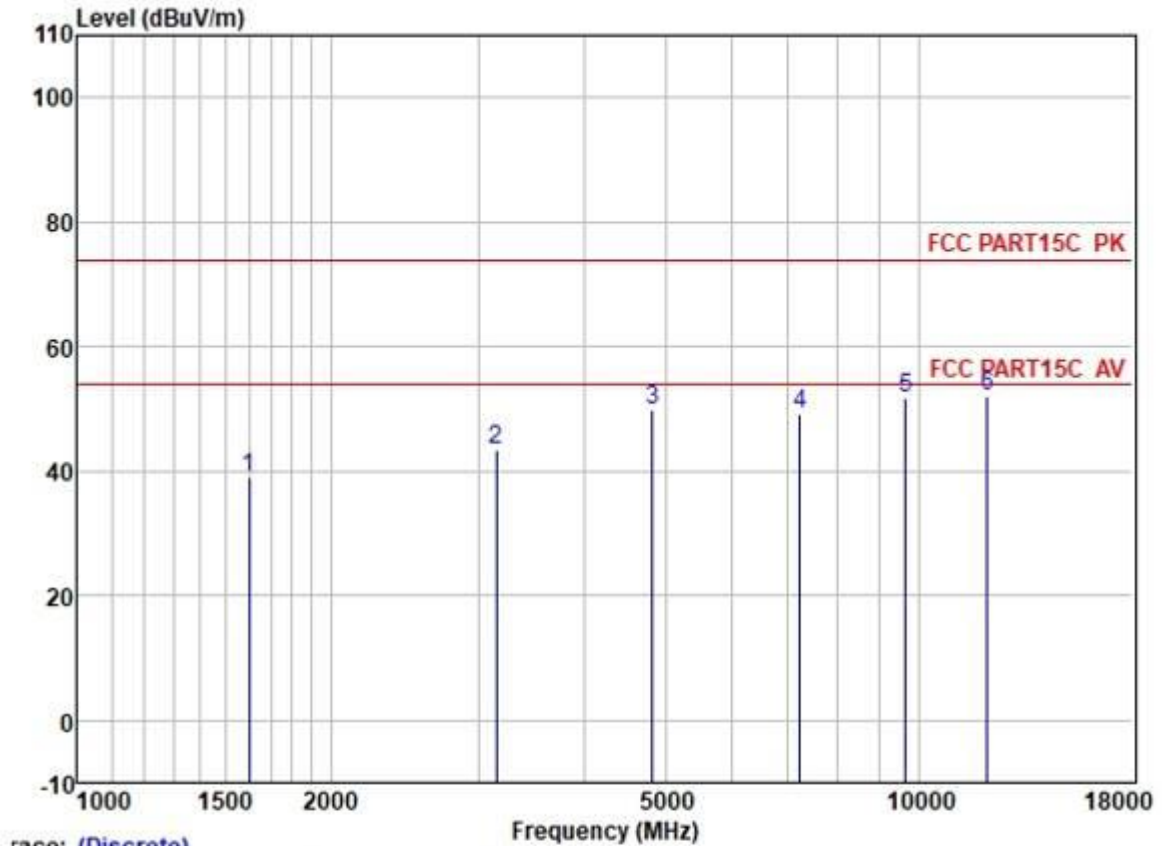
Trace: (Discrete)

	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
		Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1819.036	47.23	25.97	2.98	37.02	39.16	74.00	-34.84	VERTICAL	Peak
2	3526.134	46.05	28.94	4.38	36.45	42.92	74.00	-31.08	VERTICAL	Peak
3	4924.490	48.81	31.62	5.60	36.50	49.53	74.00	-24.47	VERTICAL	Peak
4	7386.052	44.00	36.17	6.19	36.77	49.59	74.00	-24.41	VERTICAL	Peak
5	9848.789	43.00	38.58	6.99	36.32	52.25	74.00	-21.75	VERTICAL	Peak
6	12310.760	42.25	38.63	8.01	36.23	52.66	74.00	-21.34	VERTICAL	Peak

Test Mode: 02; Polarity: Vertical; Modulation: 802.11b; Bandwidth: 20MHz; Channel: Low; Antenna: 2

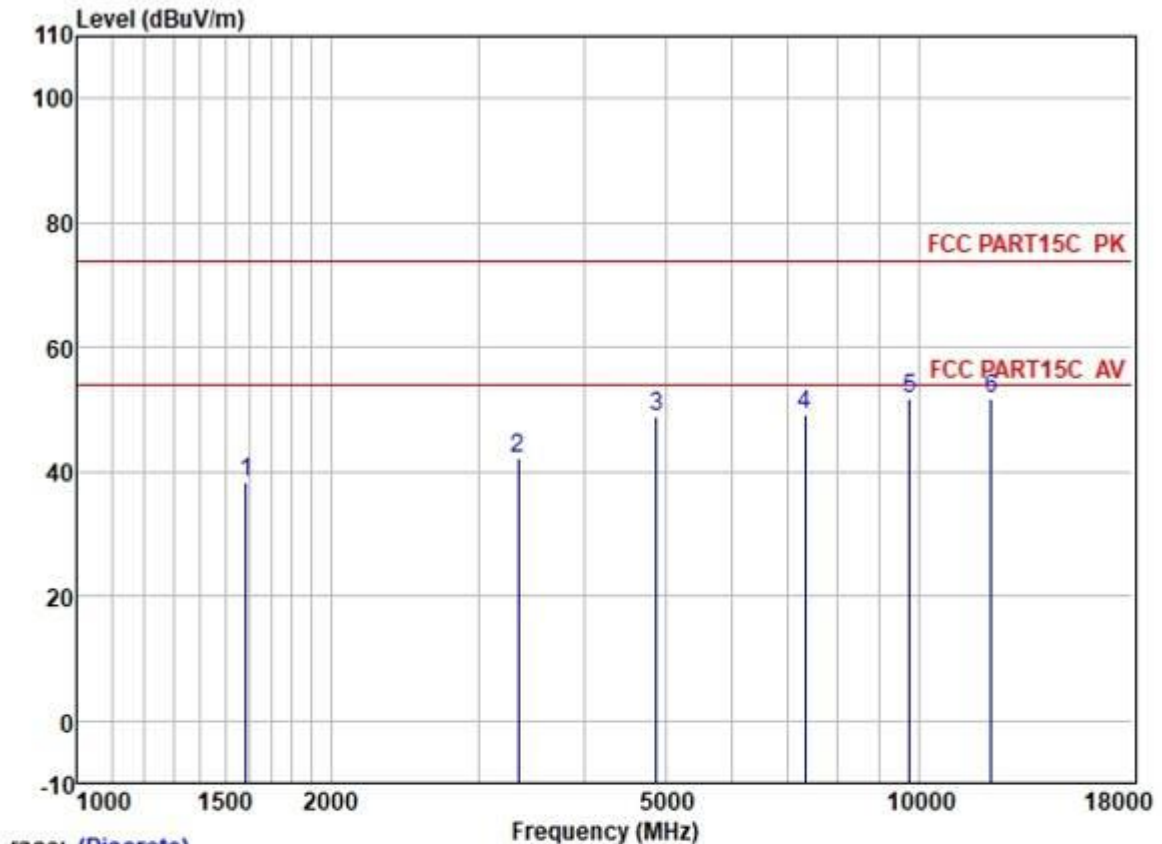


Test Mode: 02; Polarity: Vertical; Modulation: 802.11b; Bandwidth: 20MHz; Channel: Low; Antenna: 3



	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1601.804	47.72	25.58	2.80	37.07	39.03	74.00	-34.97	VERTICAL	Peak
2	3150.237	47.38	28.52	3.96	36.52	43.34	74.00	-30.66	VERTICAL	Peak
3	4824.505	49.55	31.45	5.42	36.48	49.94	74.00	-24.06	VERTICAL	Peak
4	7236.015	44.28	35.70	6.03	36.75	49.26	74.00	-24.74	VERTICAL	Peak
5	9648.925	42.77	38.40	7.06	36.35	51.88	74.00	-22.12	VERTICAL	Peak
6	12060.420	41.34	38.88	8.17	36.38	52.01	74.00	-21.99	VERTICAL	Peak

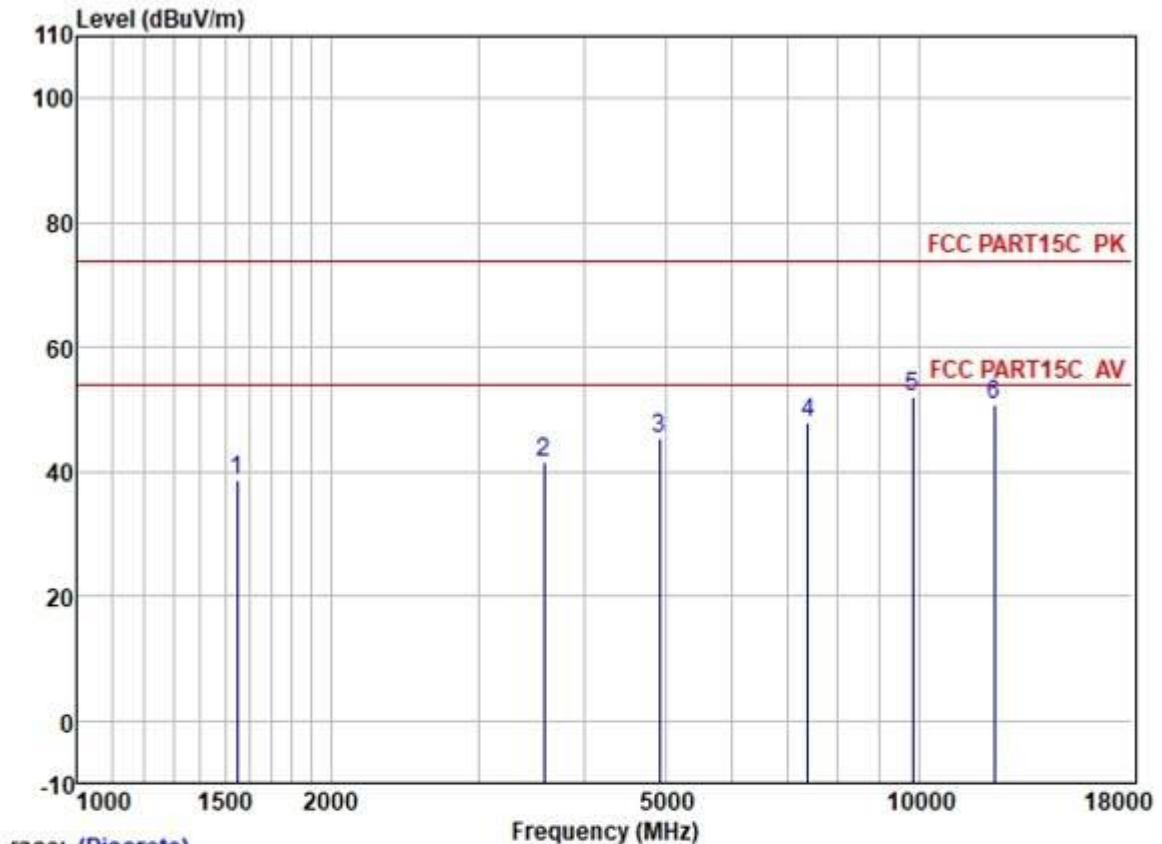
Test Mode: 02; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:middle; Antenna: 3



Trace: (Discrete)

	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1587.975	47.18	25.57	2.80	37.08	38.47	74.00	-35.53	VERTICAL	Peak
2	3337.710	45.66	28.79	4.08	36.48	42.05	74.00	-31.95	VERTICAL	Peak
3	4884.946	48.20	31.56	5.52	36.50	48.78	74.00	-25.22	VERTICAL	Peak
4	7326.122	43.79	36.00	6.13	36.76	49.16	74.00	-24.84	VERTICAL	Peak
5	9768.710	42.63	38.53	7.01	36.33	51.84	74.00	-22.16	VERTICAL	Peak
6	12210.220	41.21	38.74	8.08	36.30	51.73	74.00	-22.27	VERTICAL	Peak

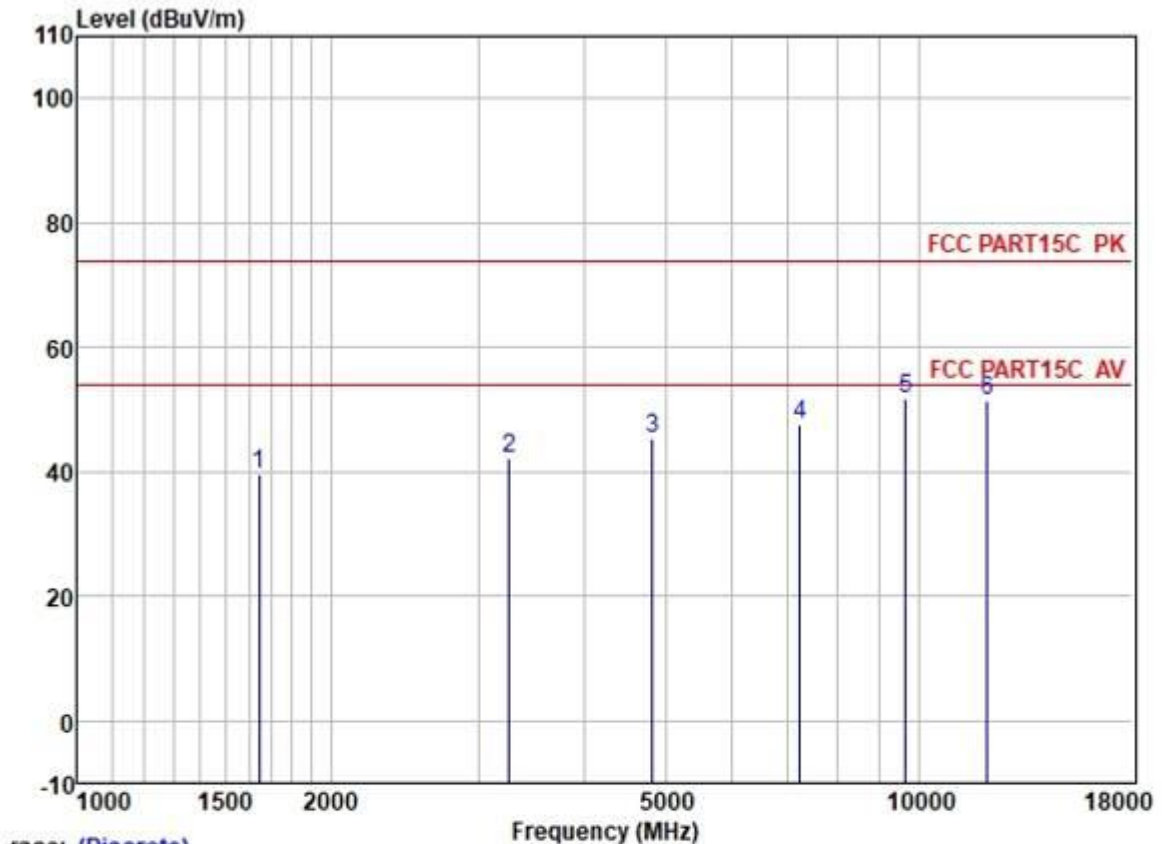
Test Mode: 02; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:High; Antenna: 3



Trace: (Discrete)

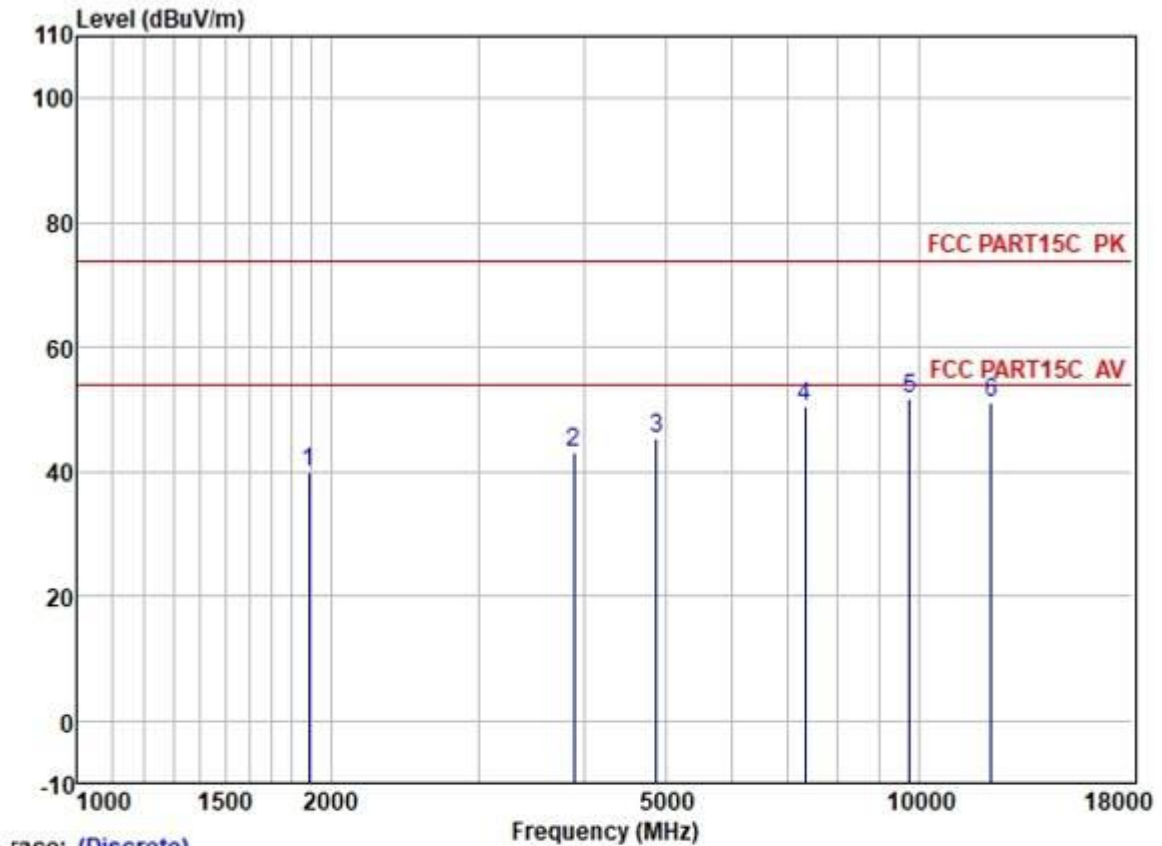
	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1547.199	47.45	25.53	2.80	37.09	38.69	74.00	-35.31	VERTICAL	Peak
2	3587.818	44.54	29.02	4.49	36.44	41.61	74.00	-32.39	VERTICAL	Peak
3	4924.440	44.66	31.62	5.60	36.50	45.38	74.00	-28.62	VERTICAL	Peak
4	7386.727	42.31	36.17	6.19	36.77	47.90	74.00	-26.10	VERTICAL	Peak
5	9848.717	42.98	38.58	6.99	36.32	52.23	74.00	-21.77	VERTICAL	Peak
6	12310.270	40.23	38.63	8.01	36.23	50.64	74.00	-23.36	VERTICAL	Peak

Test Mode: 02; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:Low; Antenna: 3



	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	1644.019	48.38	25.63	2.80	37.06	39.75	74.00	-34.25	VERTICAL Peak
2	3261.418	46.03	28.70	4.03	36.49	42.27	74.00	-31.73	VERTICAL Peak
3	4824.151	44.92	31.45	5.42	36.48	45.31	74.00	-28.69	VERTICAL Peak
4	7236.373	42.76	35.70	6.03	36.75	47.74	74.00	-26.26	VERTICAL Peak
5	9648.540	42.77	38.40	7.06	36.35	51.88	74.00	-22.12	VERTICAL Peak
6	12060.700	40.62	38.88	8.17	36.38	51.29	74.00	-22.71	VERTICAL Peak

Test Mode: 02; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:middle; Antenna: 3



Trace: (Discrete)

	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
		Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1883.236	47.91	26.03	2.91	37.01	39.84	74.00	-34.16	VERTICAL	Peak
2	3890.255	45.15	29.67	4.60	36.41	43.01	74.00	-30.99	VERTICAL	Peak
3	4884.069	44.69	31.56	5.52	36.50	45.27	74.00	-28.73	VERTICAL	Peak
4	7326.646	45.08	36.00	6.13	36.76	50.45	74.00	-23.55	VERTICAL	Peak
5	9768.430	42.67	38.53	7.01	36.33	51.88	74.00	-22.12	VERTICAL	Peak
6	12210.850	40.65	38.74	8.08	36.30	51.17	74.00	-22.83	VERTICAL	Peak