

**TEST REPORT**

<b>Application No.:</b>	GZCR2406000645HS
<b>Applicant:</b>	Echelon Fitness Multimedia, LLC
<b>Address of Applicant:</b>	605 Chestnut Street, Suite 700, Chattanooga, TN 37450
<b>Manufacturer:</b>	Echelon Fitness Multimedia, LLC
<b>Address of Manufacturer:</b>	605 Chestnut Street, Suite 700, Chattanooga, TN 37450
<b>Factory:</b>	Oma Fitness Equipment Co., Ltd
<b>Address of Factory:</b>	93 Tai An Road South, Yang'e Village, Lunjiao Town, Shunde, Foshan, 528000, Guangdong, China
<b>Product Name:</b>	Motorized Treadmill, Stride-50-RCX-22
<b>Model No.:</b>	STRIDE-RCXs-22, STRIDE-RCXs-XX (X=0~9, X=A~Z) *
*	Please refer to section 2 of this report which indicates which item was actually tested and which were electrically identical.
<b>Trade Mark:</b>	Echelon
<b>Standard(s) :</b>	47 CFR Part 15, Subpart C 15.247
<b>Date of Receipt:</b>	2024-06-06
<b>Date of Test:</b>	2024-06-18 to 2024-08-06
<b>Date of Issue:</b>	2024-09-12
<b>Test Result:</b>	<b>Pass*</b>

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



Ricky Liu  
Manager



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Revision Record			
Version	Report No.	Date	Remark
01	GZCR240600064503	2024-09-12	Original

Authorized for issue by			
		Luke Lin _____ Luke Lin/Project Engineer	
		Vico Cui _____ Vico Cui/Reviewer	

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## 2 Test Summary

<b>Radio Spectrum Technical Requirement</b>				
<b>Item</b>	<b>Standard</b>	<b>Method</b>	<b>Requirement</b>	<b>Result</b>
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

<b>Radio Spectrum Matter Part</b>				
<b>Item</b>	<b>Standard</b>	<b>Method</b>	<b>Requirement</b>	<b>Result</b>
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
Radiated Emissions which fall in the restricted bands		ANSI C63.10 (2013) Section 11.12	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Radiated Spurious Emissions Below 1GHz		ANSI C63.10 (2013) Section 6.4,6.5	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Radiated Spurious Emissions Above 1GHz		ANSI C63.10 (2013) Section 6.6	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Conducted Peak Output Power		ANSI C63.10 (2013) Section 11.9.1	47 CFR Part 15, Subpart C 15.247(b)(3)	Pass
Minimum 6dB Bandwidth		ANSI C63.10 (2013) Section 11.8.1	47 CFR Part 15, Subpart C 15.247a(2)	Pass
Power Spectrum Density		ANSI C63.10 (2013) Section 11.10.2	47 CFR Part 15, Subpart C 15.247(e)	Pass
Conducted Band Edges Measurement		ANSI C63.10 (2013) Section 11.13.3.2	47 CFR Part 15, Subpart C 15.247(d)	Pass
Conducted Spurious Emissions		ANSI C63.10 (2013) Section 11.11	47 CFR Part 15, Subpart C 15.247(d)	Pass

### 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.

### ♣ Declaration of EUT Family Grouping:

Model No.: STRIDE-RCXs-22, STRIDE-RCXs-XX (X=0~9, X=A~Z)

STRIDE-RCXs-XX (X=0~9, X=A~Z) are same as STRIDE-RCXs-22, except for the model's name.

Therefore only one model STRIDE-RCXs-22 were tested in this report.

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## 4 General Information

### 4.1 Details of E.U.T.

Power supply: AC 120V 60Hz  
Test voltage: AC 120V 60Hz  
Cable(s): AC mains, 3 wires, 2.0m, unshielded.  
For BLE  
Operation Frequency: 2402MHz to 2480MHz  
Modulation Type: GFSK  
Number of Channels: 40  
Channel Spacing: 2MHz  
Antenna type: PCB Antenna  
Antenna Number: 1  
Antenna Gain: -4.26 dBi according to antenna specification

For 2.4 GHz Wi-Fi  
Operation frequency: 802.11b/g/n(HT20): 2412MHz to 2462MHz  
Modulation Type: 802.11n(HT40): 2422MHz to 2452MHz  
Number of Channels: 802.11b: DSSS (CCK, DQPSK, DBPSK);  
802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)  
802.11b/g/n(HT20):11;  
802.11n(HT40):7  
Channel Spacing: 5MHz  
Antenna Type: PIFA Antenna  
Antenna Number: 2  
Antenna Gain: 2.27dBi for antenna 1 according to antenna specification  
2.12dBi for antenna 2 according to antenna specification  
Remark: Two antennas can simultaneous transmission

Remark: The information in this section is provided by the applicant or manufacturer, SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.

### 4.2 Description of Support Units

The EUT has been tested as an independent unit.



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### 4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Emissions at AC Power Line (150kHz-30MHz)	±2.76dB
Radiated Emissions which fall in the restricted bands	±5.00dB (30MHz-1GHz; 3m); ±4.38dB (30MHz-1GHz; 10m); ±5.12dB (1GHz-6GHz); ±5.38dB (6GHz-18GHz); ±5.61dB (18GHz-40GHz)
Radiated Spurious Emissions Below 1GHz	±5.00dB (3m); ±4.38dB (10m)
Radiated Spurious Emissions Above 1GHz	±5.12dB (1GHz-6GHz); ±5.38dB (6GHz-18GHz); ±5.61dB (18GHz-40GHz)
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
Remark: The $U_{lab}$ (lab Uncertainty) is less than $U_{cisp}$ (CISPR Uncertainty) or $U_{ETSI}$ (ETSI Uncertainty).	
Emission decision rule: – Compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit, marked as Pass in the report. – Non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit, marked as Fail in the report.	

### 4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,  
No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou,  
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Tel: +86 20 82155555

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:

- **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.

- **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.

## 4.6 Deviation from Standards

None

## 4.7 Abnormalities from Standard Conditions

None

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## 5 Equipment List

Conducted Emissions at AC Power Line (150kHz-30MHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Coaxial Cable	HangTianXing	2m	EMC0107	2023-08-24	2025-08-23
Shielding Room	ChangZhou ZhongYu	8m x 3m x 3.8m	EMC0306	2022-10-16	2025-10-15
Two-Line V-Network-GZ	Rohde & Schwarz	ENV216	EMC2135	2023-09-08	2024-09-07
EMI Test Receiver (9kHz-3.6GHz)	Rohde & Schwarz	ESR3	EMC2221	2024-05-13	2025-05-12
Test Software E3r	Audix	Ver.6.11812	GZE100-77	N/A	N/A

Radiated Emissions which fall in the restricted bands					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2023-11-10	2024-11-09
EMI Test Receiver (10Hz-26.5GHz)	Rohde & Schwarz	ESIB26	EMC0522	2023-12-15	2024-12-14
Chamber cable (Above 1GHz)	Scoflex	KMKG-8.0m	EMC0545	2022-08-24	2024-08-23
Horn Antenna (1GHz-18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2022-09-23	2025-09-22
Horn Antenna (14-40GHz)	SCHWARZBECK	BBHA 9170	EMC2041	2023-06-18	2026-06-17
EXA Signal Analyzer (10Hz-44GHz)	Keysight	N9010A	EMC2138	2023-08-23	2024-08-22
MXE EMI Receiver (10Hz-8.4GHz)	Keysight	N9038A	EMC2139	2023-10-20	2024-10-19
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2023-12-20	2026-12-19
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A

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**Radiated Spurious Emissions Below 1GHz**

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2022-10-16	2025-10-15
Coaxial cable	Mirco-COAX UTIFLEX	311A	EMC0540	2023-06-14	2025-06-13
Amplifier (9kHz-1.3GHz)	HP	8447F	EMC2065	2024-06-17	2025-06-16
Active Loop Antenna-RED	ETS-Lindgren	6502	EMC2190	2024-04-08	2026-04-07
EMI Test Receiver (9kHz-7GHz)	Rohde & Schwarz	ESR7	EMC2220	2024-05-13	2025-05-12
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A
Trilog Broadband Antenna (25MHz-1GHz)	SCHWARZBECK MESS-ELEKTRONIK	VULB 9168	EMC2174	2022-06-19	2025-06-18

**Radiated Spurious Emissions Above 1GHz**

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2023-11-10	2024-11-09
EMI Test Receiver (10Hz-26.5GHz)	Rohde & Schwarz	ESIB26	EMC0522	2023-12-15	2024-12-14
Chamber cable (Above 1GHz)	Scoflex	KMKM-8.0m	EMC0545	2022-08-24	2024-08-23
Horn Antenna (1GHz-18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2022-09-23	2025-09-22
Horn Antenna (14-40GHz)	SCHWARZBECK	BBHA 9170	EMC2041	2023-06-18	2026-06-17
2.4GHz Filter	Micro-Tronics	BRM 50702	EMC2069	2023-11-10	2024-11-09
EXA Signal Analyzer (10Hz-44GHz)	Keysight	N9010A	EMC2138	2023-08-23	2024-08-22
MXE EMI Receiver (10Hz-8.4GHz)	Keysight	N9038A	EMC2139	2023-10-20	2024-10-19
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2023-12-20	2026-12-19
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A

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**RF Conducted Test**

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
MI CABLE	SGS-EMC	0.8M	EMC2137	2023-11-02	2025-11-01
4X4 Power sensor Unit	TST	TSPS2023R	EMC2226	2023-08-23	2024-08-22
Test Software	TST	V2.0	GZE100-78	N/A	N/A
EXA Signal Analyzer (10Hz-44GHz)	Keysight	N9010A	EMC2138	2023-08-23	2024-08-22

**General used equipment**

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
DMM	Fluke	73	EMC0006	2024-06-13	2025-06-12

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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(b)(4)

#### 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:

For BLE

The antenna is integrated on the main PCB and no consideration of replacement.

The best case gain of the antenna is -4.26 dBi.

For 2.4 GHz Wi-Fi

The antenna is integrated on the main PCB and no consideration of replacement.

The best case gain of the antenna is 2.27dBi for antenna 1; 2.12dBi for antenna 2; the directional gain is 5.28dBi.

$$\text{Directional gain} = 10 \log \left[ \left( 10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20} \right)^2 / N_{\text{ANT}} \right] \text{dBi}$$

Antenna location: Refer to internal photo.



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## 7 Radio Spectrum Matter Test Results

### 7.1 Conducted Emissions at AC Power Line (150kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.207

Test Method: ANSI C63.10 (2013) Section 6.2

Limit:

Frequency of emission (MHz)	Conducted limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

\*Decreases with the logarithm of the frequency.

Detector: Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

#### 7.1.1 E.U.T. Operation

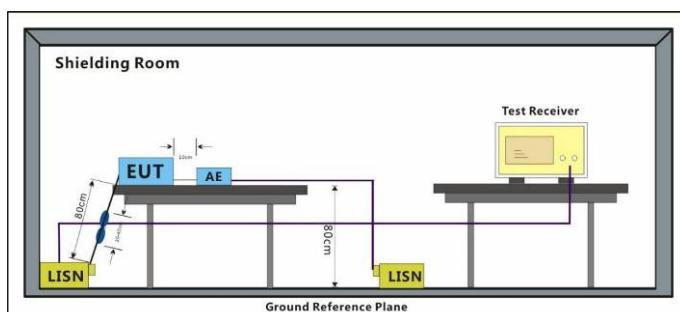
Operating Environment:

Temperature: 23.0 °C      Humidity: 55.1 % RH      Atmospheric Pressure: 1004 mbar

#### 7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	05	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), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	07	TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation.

#### 7.1.3 Test Setup Diagram



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**7.1.4 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: Level=Read Level+ Cable Loss+ LISN Factor

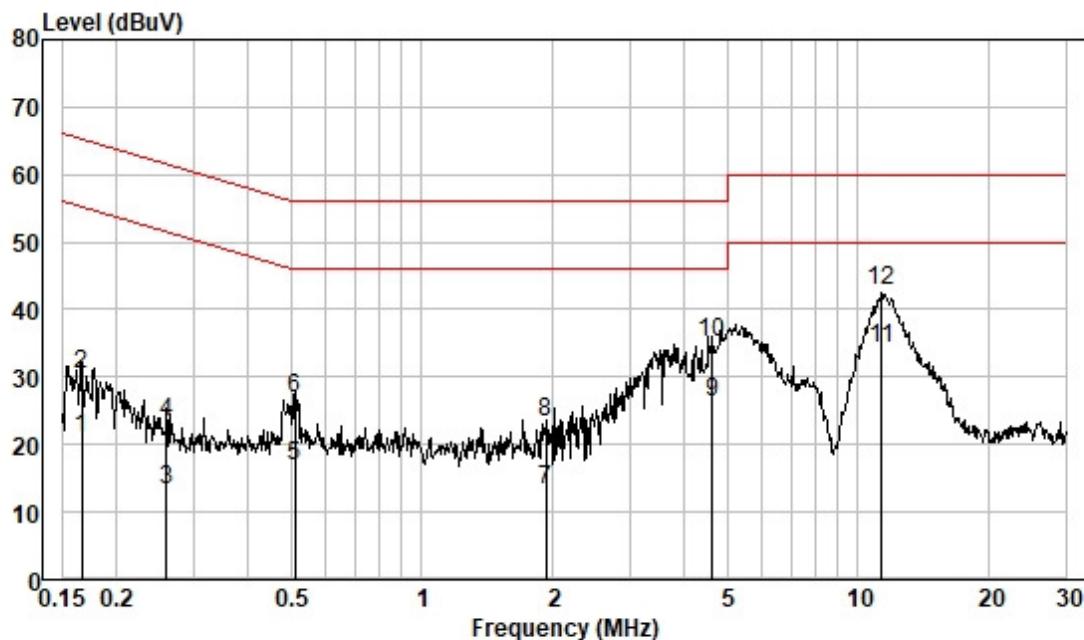
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Test Mode: 05 &amp; 07; Line: Live line



Pol :LINE

Mode :RT

Model :7747TA

Power :

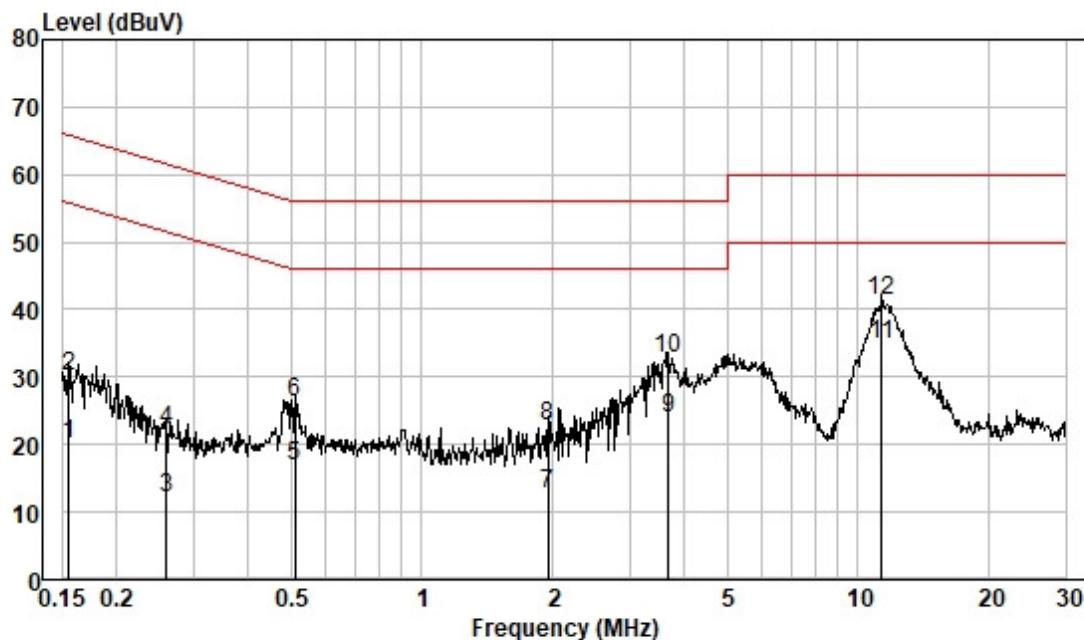
Frequenc MHz	Read Level dBuV	Cable Loss dB	LISN Factor dB	Measured Level dBuV	Limit Line dBuV	Over Limit dB	Remark
	-----	-----	-----	-----	-----	-----	
1 0.166	11.29	0.04	9.55	20.88	55.16	-34.28	Average
2 0.166	20.84	0.04	9.55	30.43	65.16	-34.73	QP
3 0.260	3.76	0.04	9.56	13.36	51.42	-38.06	Average
4 0.260	13.58	0.04	9.56	23.18	61.42	-38.24	QP
5 0.513	7.08	0.05	9.56	16.69	46.00	-29.31	Average
6 0.513	17.29	0.05	9.56	26.90	56.00	-29.10	QP
7 1.928	3.55	0.12	9.57	13.24	46.00	-32.76	Average
8 1.928	13.59	0.12	9.57	23.28	56.00	-32.72	QP
9 4.622	16.49	0.19	9.62	26.30	46.00	-19.70	Average
10 4.622	25.44	0.19	9.62	35.25	56.00	-20.75	QP
11 11.317	24.18	0.27	9.78	34.23	50.00	-15.77	Average
12 11.317	32.61	0.27	9.78	42.66	60.00	-17.34	QP

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Test Mode: 05 &amp; 07; Line: Neutral Line



Pol : NEUTRAL

Mode : RT

Model : 7747TA

Power :

	Read	Cable	LISN	Measured	Limit	Over	
Frequenc	Level	Loss	Factor	Level	Line	Limit	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.155	10.39	0.04	9.52	19.95	55.74	-35.79
2	0.155	20.63	0.04	9.52	30.19	65.74	-35.55
3	0.260	2.45	0.04	9.53	12.02	51.42	-39.40
4	0.260	12.69	0.04	9.53	22.26	61.42	-39.16
5	0.513	7.23	0.05	9.54	16.82	46.00	-29.18
6	0.513	16.82	0.05	9.54	26.41	56.00	-29.59
7	1.949	3.14	0.12	9.55	12.81	46.00	-33.19
8	1.949	12.93	0.12	9.55	22.60	56.00	-33.40
9	3.681	14.03	0.17	9.58	23.78	46.00	-22.22
10	3.681	23.14	0.17	9.58	32.89	56.00	-23.11
11	11.317	24.63	0.27	9.79	34.69	50.00	-15.31
12	11.317	31.25	0.27	9.79	41.31	60.00	-18.69



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**7.2 Radiated Emissions which fall in the restricted bands**

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

Test Method: ANSI C63.10 (2013) Section 11.12

Limit:

Test Distance: 3 m

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.

**7.2.1 E.U.T. Operation**

Operating Environment:

Temperature: 25.2 °C Humidity: 59.8 % RH Atmospheric Pressure: 1003 mbar

**7.2.2 Test Mode Description**

Pre-scan / Final test	Mode Code	Description
Final test	05	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), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	07	TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation.

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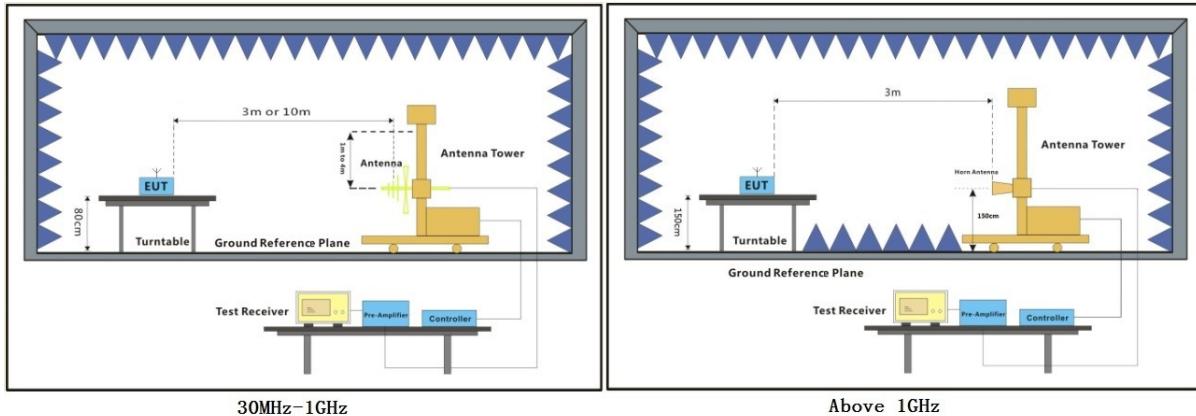
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### 7.2.3 Test Setup Diagram



### 7.2.4 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 Highest channel.
- The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which is the worst case.
- Repeat above procedures until all frequencies measured was complete.

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

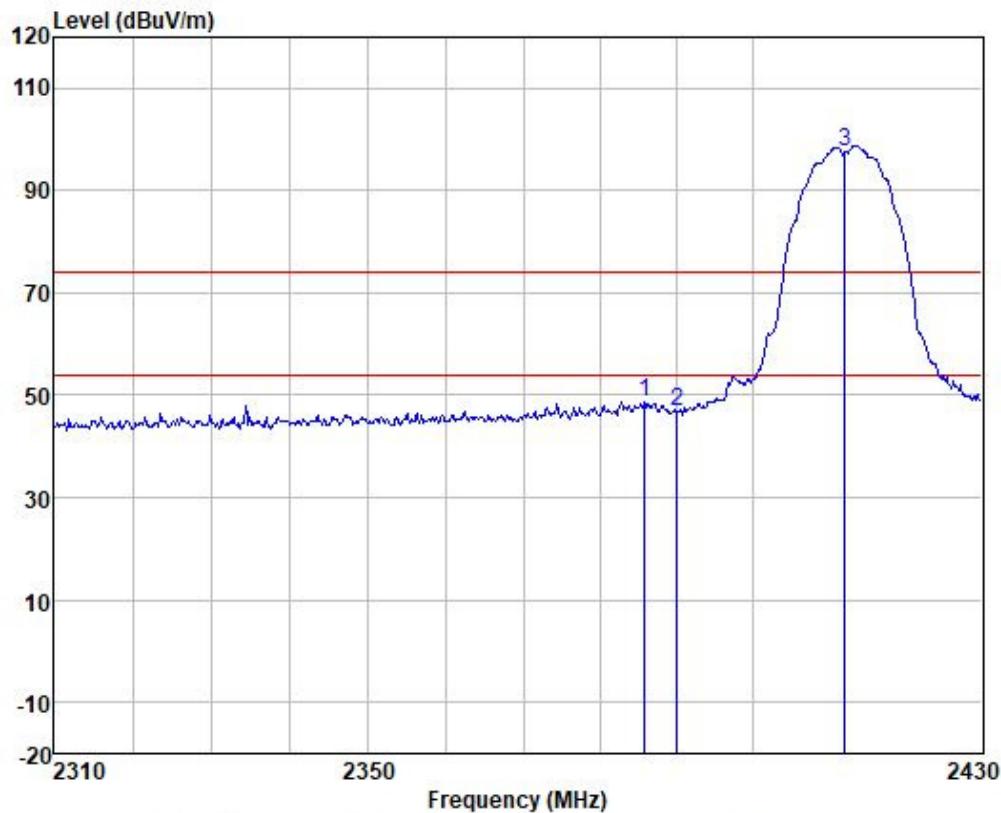
Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level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



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Test Mode: 05; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Freq	Read	Antenna	Cable	Preamp	Limit	Over	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2385.736	54.80	27.68	3.54	37.22	48.80	74.00	-25.20	VERTICAL peak
2	2390.000	52.73	27.68	3.54	37.21	46.74	74.00	-27.26	VERTICAL peak
3 *	2412.000	103.50	27.74	3.58	37.21	97.61	74.00	23.61	VERTICAL peak

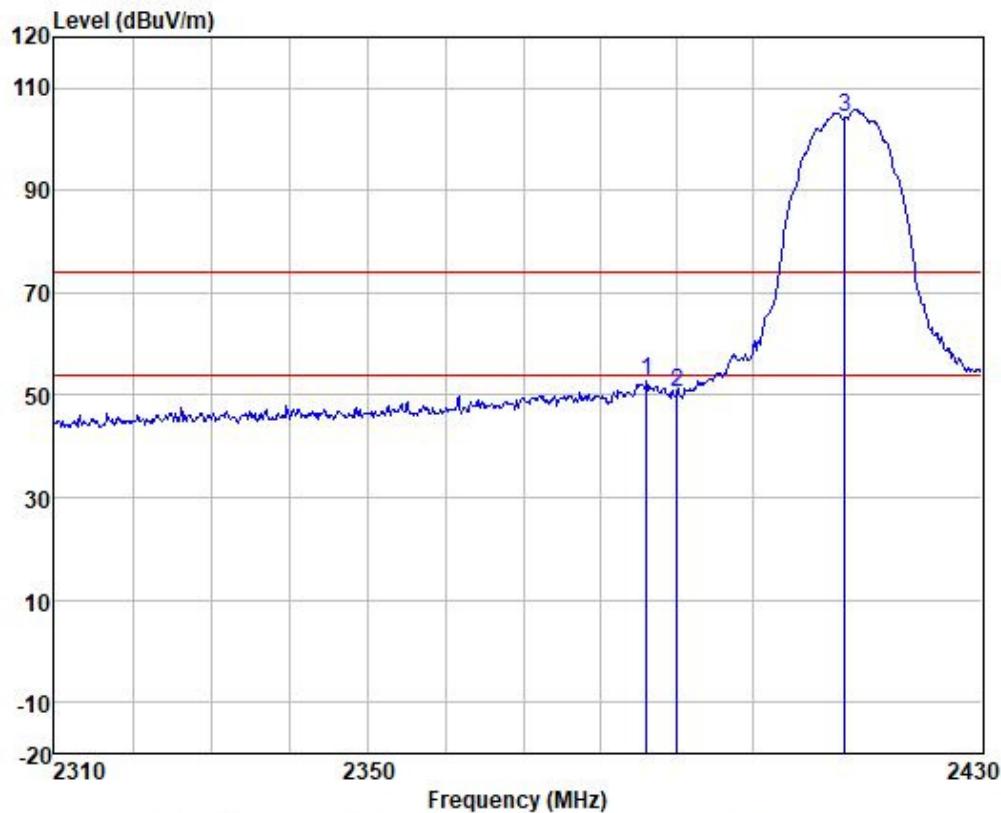


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Test Mode: 05; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Freq	ReadAntenna	Cable	Preamp	Limit	Over	Over	Remark	
	Level	Factor	Loss					
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2385.978	58.72	27.68	3.54	37.22	52.72	74.00	-21.28 HORIZONTAL peak
2	2390.000	56.60	27.68	3.54	37.21	50.61	74.00	-23.39 HORIZONTAL peak
3 *	2412.000	110.34	27.74	3.58	37.21	104.45	74.00	30.45 HORIZONTAL peak

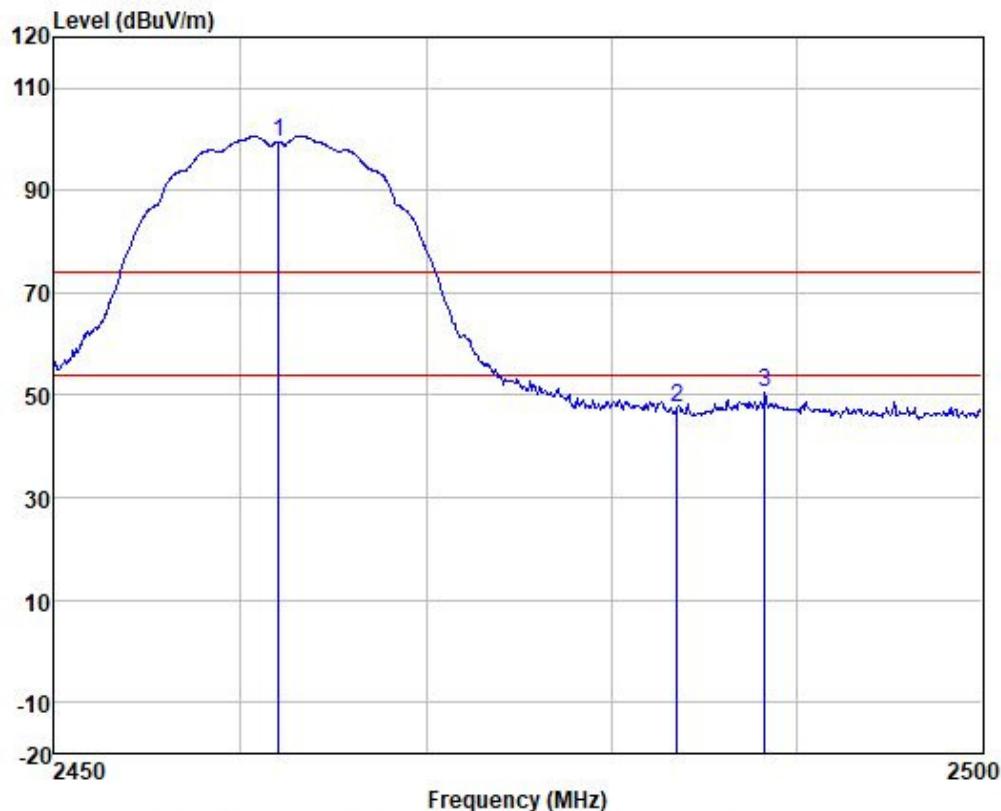


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Test Mode: 05; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:High



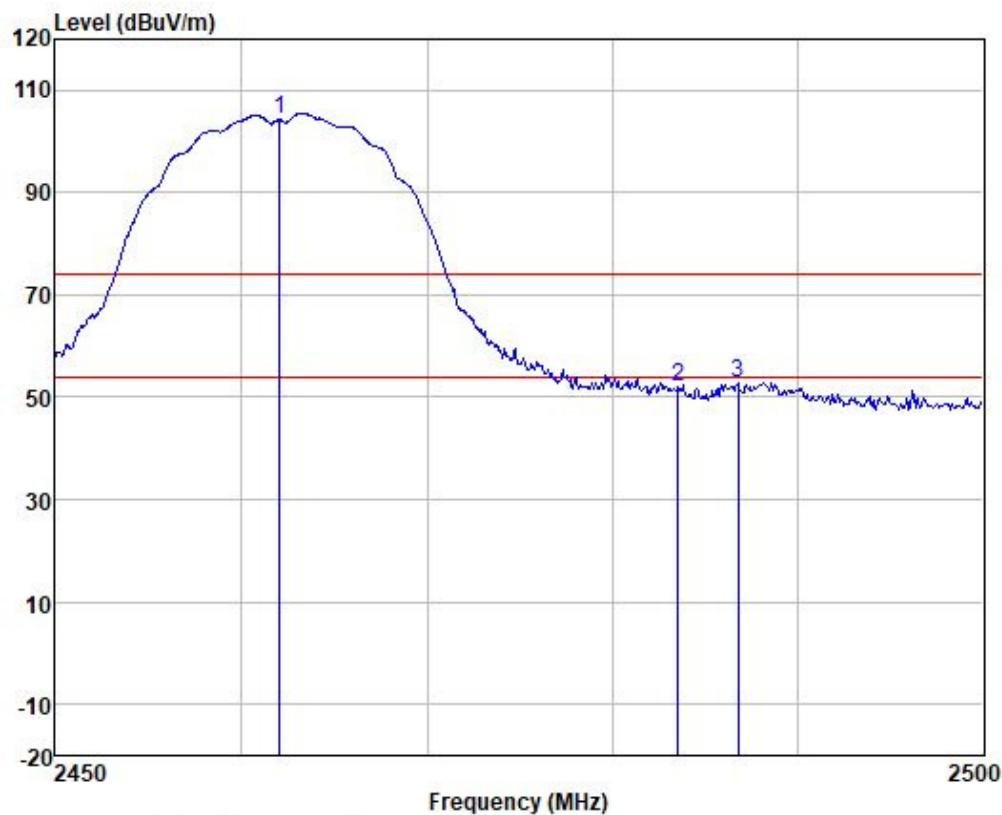
Freq MHz	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Limit Level	Line Level	Over Limit	Over Limit Pol/Phase	Remark
	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1 * 2462.000	105.25	27.82	3.69	37.20	99.56	74.00	25.56	VERTICAL	peak
2 2483.500	53.26	27.85	3.74	37.19	47.66	74.00	-26.34	VERTICAL	peak
3 2488.260	56.33	27.85	3.74	37.19	50.73	74.00	-23.27	VERTICAL	peak



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Test Mode: 05; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:High



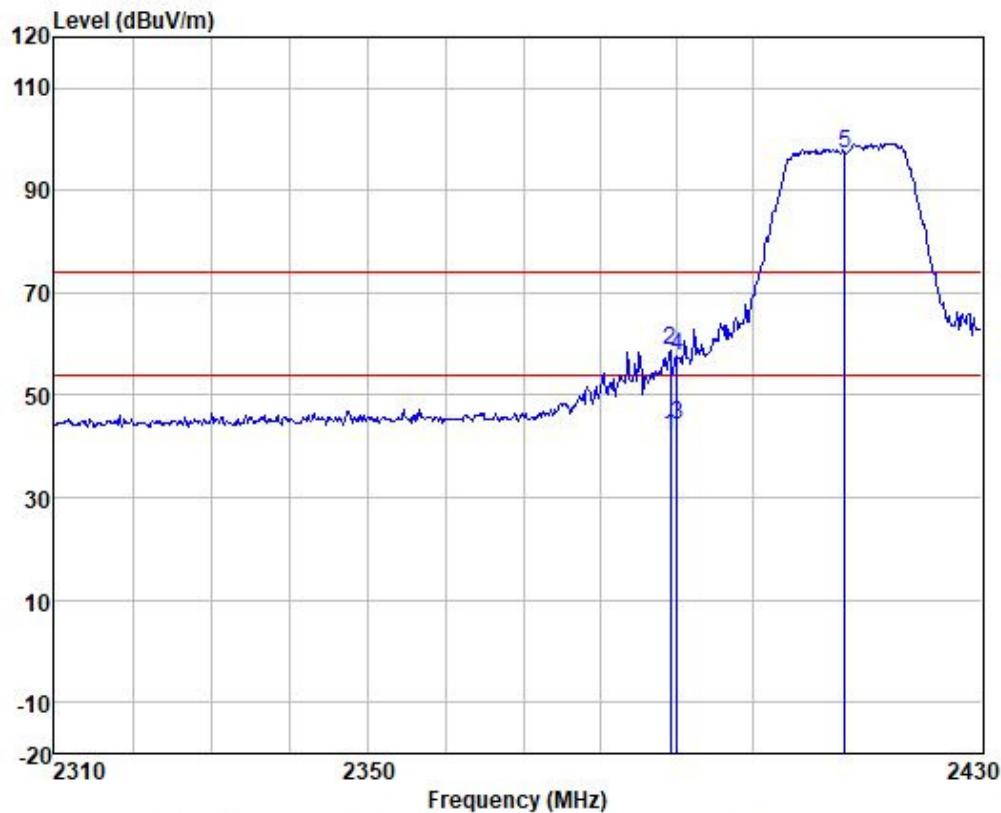
Freq MHz	Read Antenna Level dBuV	Antenna Factor	Cable Loss dB	Preamp Factor	Level dB	Limit Line dBuV/m	Over Limit dB	Over Limit Pol/Phase	Remark
	MHz	dB/m			dBuV/m	dBuV/m			
1 * 2462.000	109.93	27.82	3.69	37.20	104.24	74.00	30.24	HORIZONTAL	peak
2 2483.500	57.72	27.85	3.74	37.19	52.12	74.00	-21.88	HORIZONTAL	peak
3 2486.752	58.49	27.85	3.74	37.19	52.89	74.00	-21.11	HORIZONTAL	peak

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Test Mode: 05; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



Freq	Read	Antenna	Cable	Preamp	Limit	Over	Over	Over	Remark
	Level	Factor	Loss	Factor					
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	dB	
1	2389.121	48.10	27.68	3.54	37.22	42.10	54.00	-11.90	VERTICAL Average
2	2389.121	64.79	27.68	3.54	37.22	58.79	74.00	-15.21	VERTICAL peak
3	2390.000	50.12	27.68	3.54	37.21	44.13	54.00	-9.87	VERTICAL Average
4	2390.000	63.55	27.68	3.54	37.21	57.56	74.00	-16.44	VERTICAL peak
5 *	2412.000	102.93	27.74	3.58	37.21	97.04	74.00	23.04	VERTICAL peak

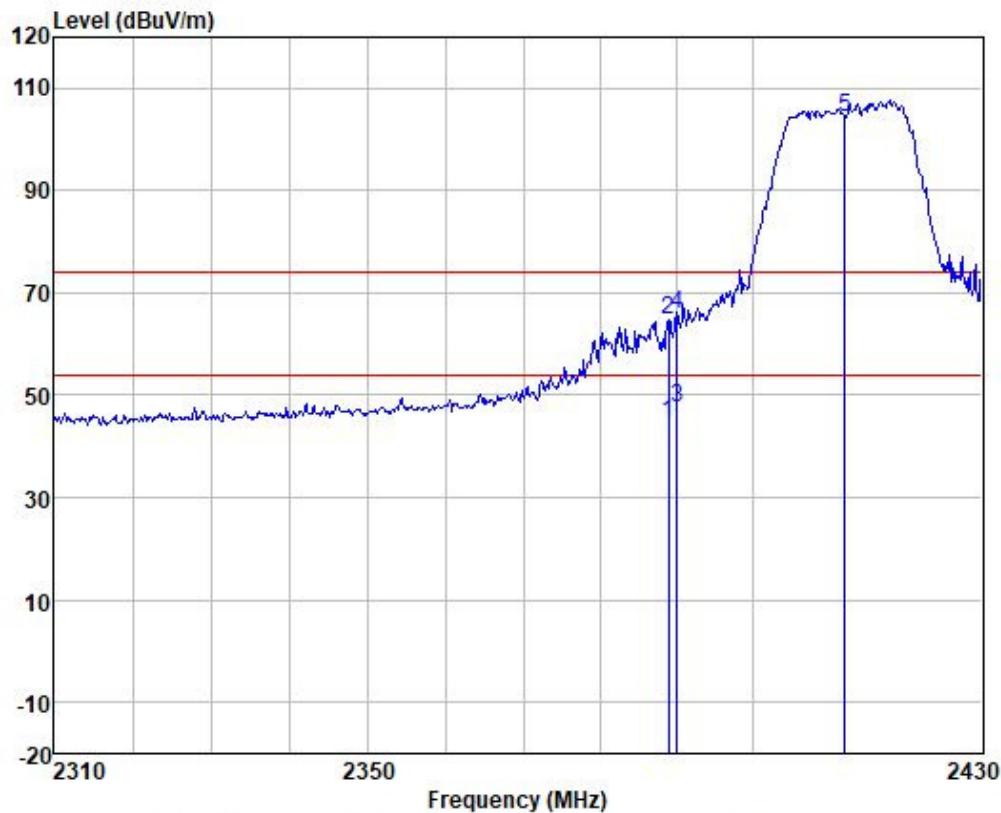
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Test Mode: 05; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



Freq	Read	Antenna	Cable	Preamp	Limit	Over	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2388.879	50.49	27.68	3.54	37.22	44.49	54.00	-9.51	HORIZONTAL Average
2	2388.879	70.62	27.68	3.54	37.22	64.62	74.00	-9.38	HORIZONTAL peak
3	2390.000	53.64	27.68	3.54	37.21	47.65	54.00	-6.35	HORIZONTAL Average
4	2390.000	71.88	27.68	3.54	37.21	65.89	74.00	-8.11	HORIZONTAL peak
5	* 2412.000	110.04	27.74	3.58	37.21	104.15	74.00	30.15	HORIZONTAL peak

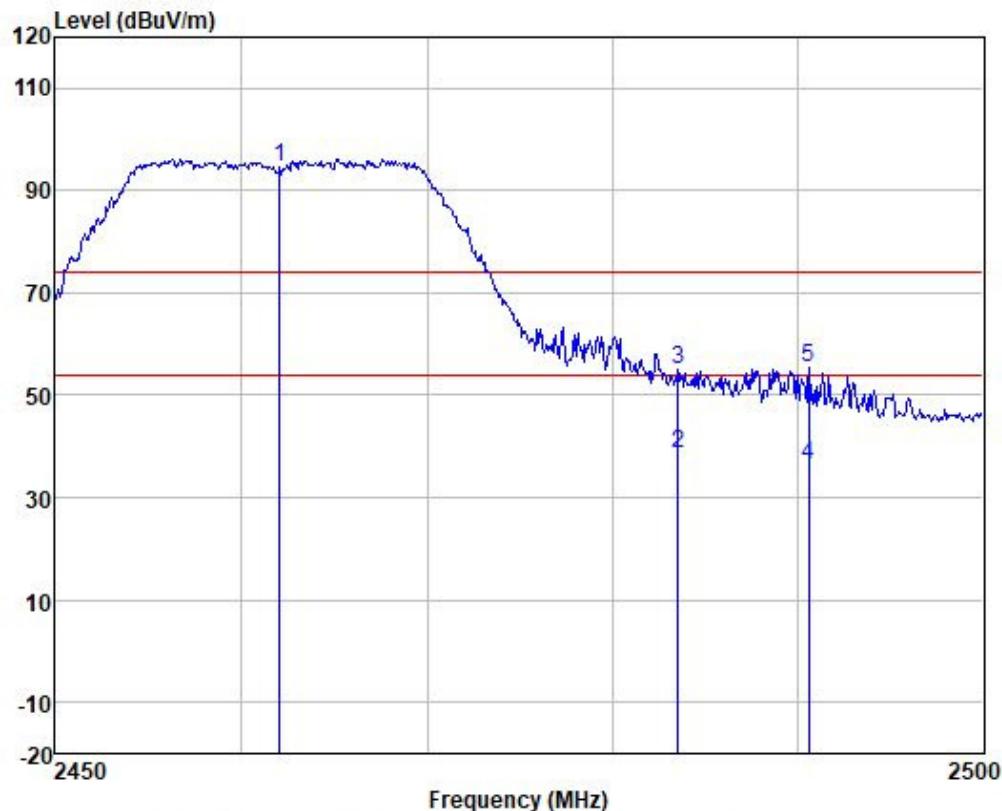


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Test Mode: 05; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:High



	Freq	ReadAntenna Level	Cable Loss	Preamp Factor	Limit Level	Over Line	Over Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	2462.000	100.14	27.82	3.69	37.20	94.45	74.00	20.45 VERTICAL peak
2	2483.500	44.16	27.85	3.74	37.19	38.56	54.00	-15.44 VERTICAL Average
3	2483.500	60.47	27.85	3.74	37.19	54.87	74.00	-19.13 VERTICAL peak
4	2490.573	41.96	27.86	3.75	37.19	36.38	54.00	-17.62 VERTICAL Average
5	2490.573	60.98	27.86	3.75	37.19	55.40	74.00	-18.60 VERTICAL peak

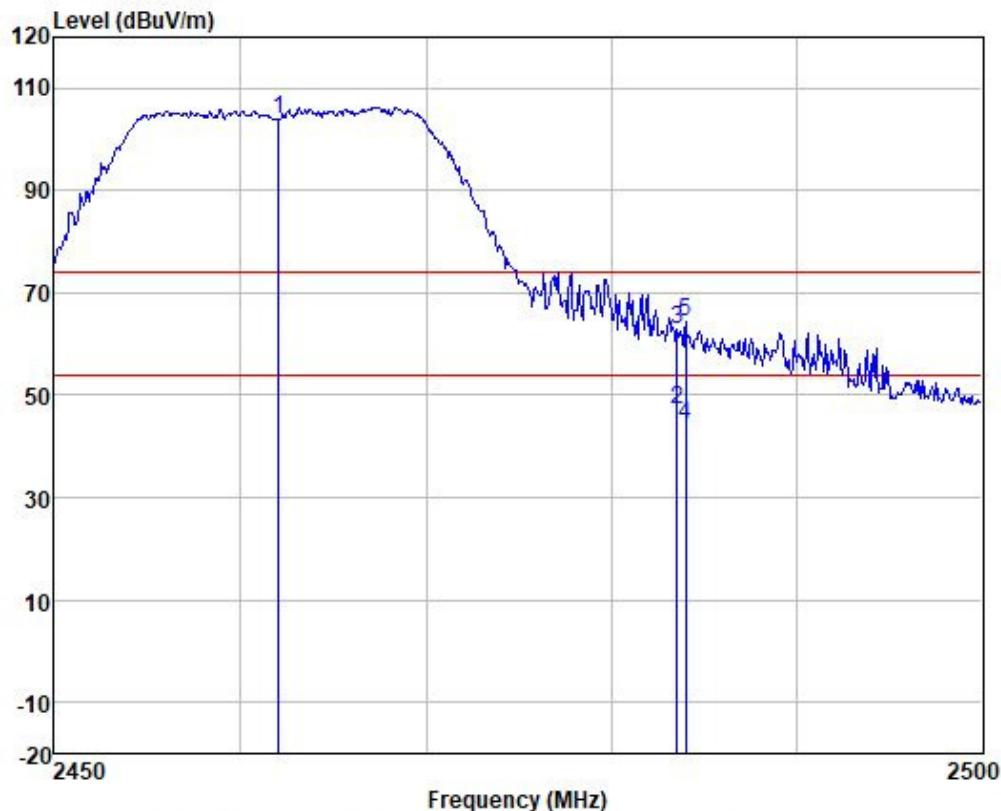
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Test Mode: 05; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:High



Freq	Read	Antenna	Cable	Preamp	Limit	Over	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1 *	2462.000	109.71	27.82	3.69	37.20	104.02	74.00	30.02	HORIZONTAL peak
2	2483.500	52.78	27.85	3.74	37.19	47.18	54.00	-6.82	HORIZONTAL Average
3	2483.500	68.43	27.85	3.74	37.19	62.83	74.00	-11.17	HORIZONTAL peak
4	2483.990	49.70	27.85	3.74	37.19	44.10	54.00	-9.90	HORIZONTAL Average
5	2483.990	70.09	27.85	3.74	37.19	64.49	74.00	-9.51	HORIZONTAL peak

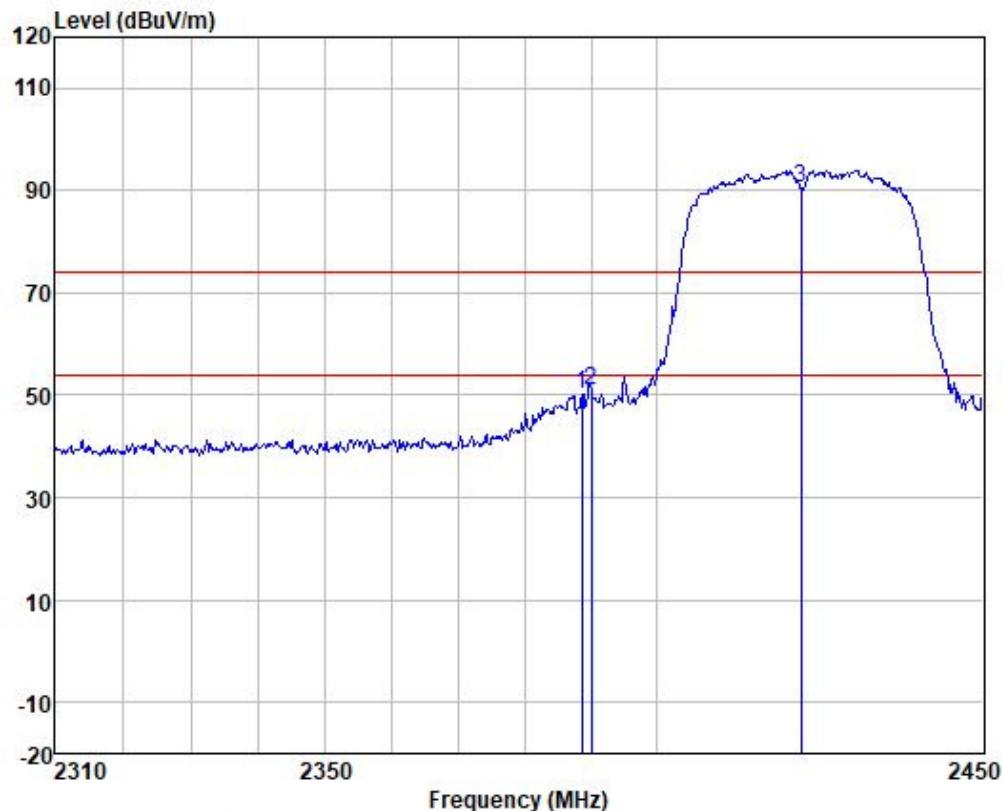
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Test Mode: 05; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



Freq MHz	Read Antenna Level dBuV	Antenna Level Factor	Cable Loss dB	Preamp Factor	Level dB	Limit Line dBuV/m	Over Limit dB	Over Limit Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1 2388.508	56.27	27.68	3.54	37.22	50.27	74.00	-23.73	VERTICAL	peak
2 2390.000	56.82	27.68	3.54	37.21	50.83	74.00	-23.17	VERTICAL	peak
3 * 2422.000	96.28	27.75	3.60	37.21	90.42	74.00	16.42	VERTICAL	peak

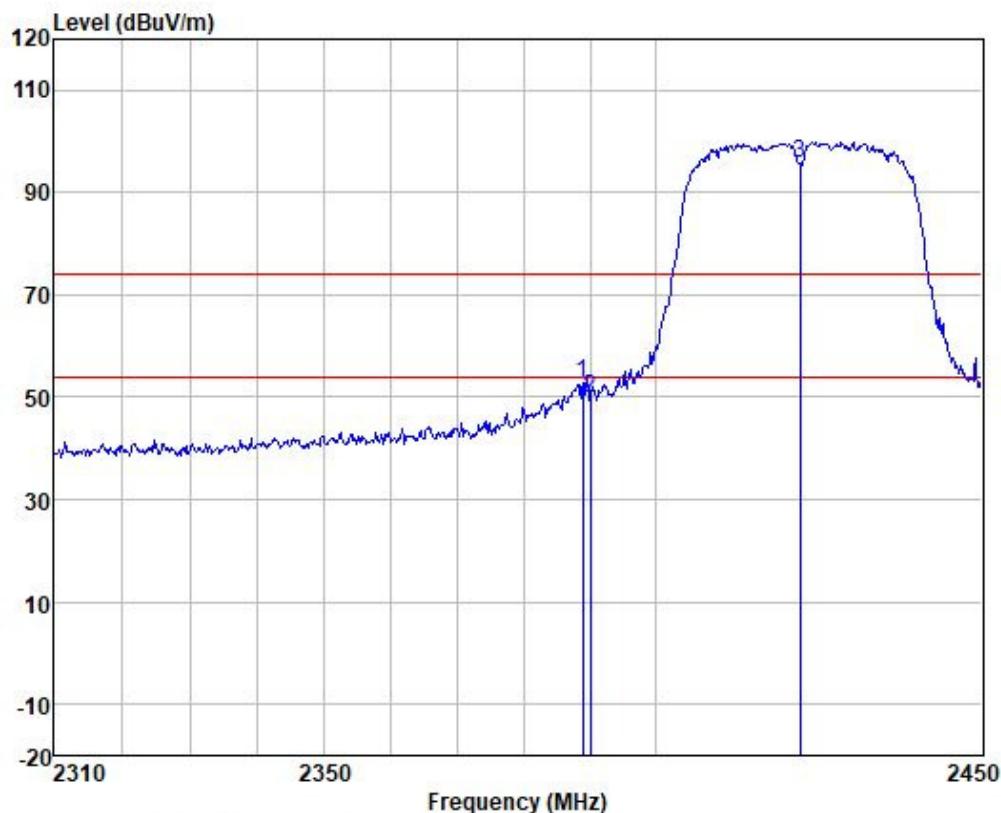


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Test Mode: 05; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



Freq MHz	ReadAntenna Level	Cable Loss	Preamp Factor	Limit Line dBuV/m	Over Limit dB	Over Limit Pol/Phase	Remark
	dBuV	dB/m	dB				
1 2388.789	58.65	27.68	3.54	37.22	52.65	74.00	-21.35 HORIZONTAL peak
2 2390.000	55.92	27.68	3.54	37.21	49.93	74.00	-24.07 HORIZONTAL peak
3 * 2422.000	101.49	27.75	3.60	37.21	95.63	74.00	21.63 HORIZONTAL peak

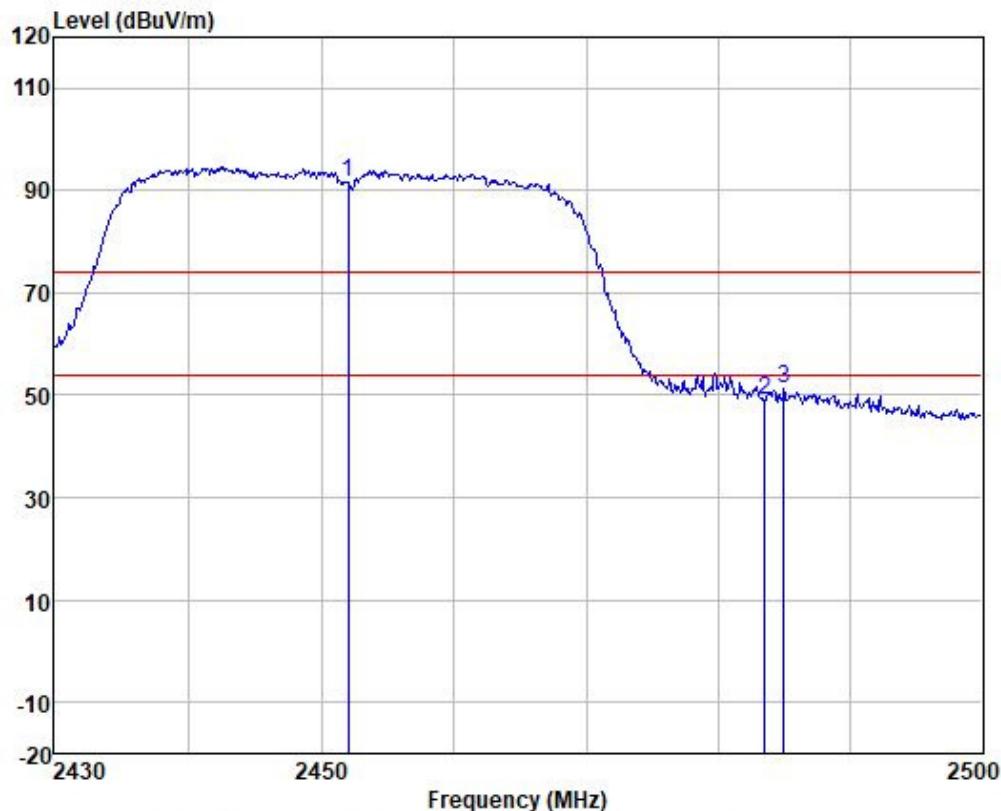


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t (86-20) 82155555 [sgs.china@sgs.com](mailto:sgs.china@sgs.com)

Test Mode: 05; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



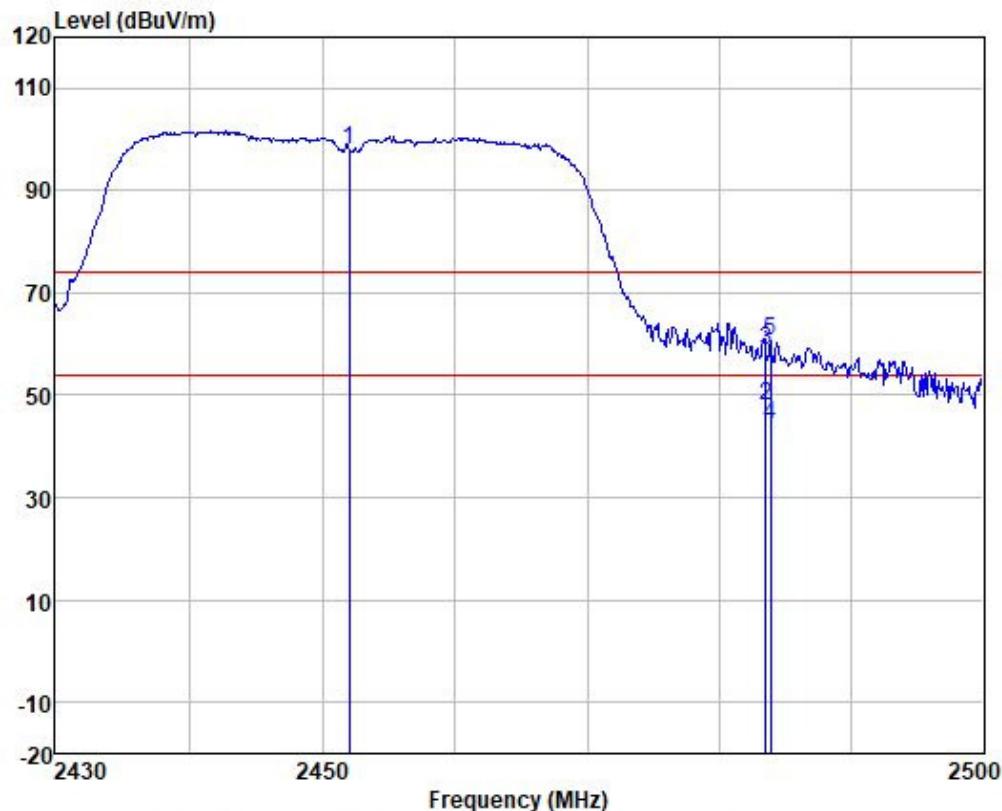
Freq MHz	Read Antenna Level dBuV	Antenna Level Factor	Cable Loss dB	Preamp Factor	Limit Line dBuV/m	Over Limit dB	Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV/m	dBuV/m		
1 * 2452.000	97.45	27.80	3.66	37.20	91.71	74.00	17.71	VERTICAL peak
2 2483.500	54.76	27.85	3.74	37.19	49.16	74.00	-24.84	VERTICAL peak
3 2484.993	56.95	27.85	3.74	37.19	51.35	74.00	-22.65	VERTICAL peak



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Test Mode: 05; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



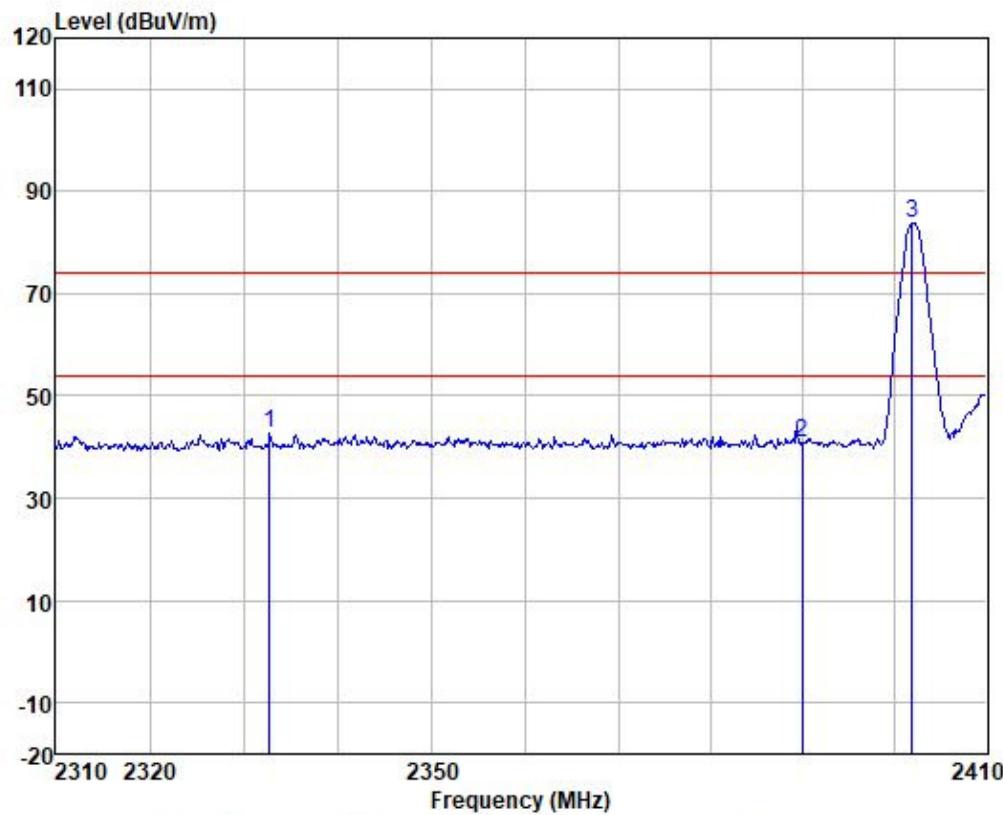
Freq	Read	Antenna	Cable	Preamp	Limit		Over	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor	Level	Line	Limit			
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB			
1 *	2452.000	103.80	27.80	3.66	37.20	98.06	74.00	24.06	HORIZONTAL	peak
2	2483.500	53.57	27.85	3.74	37.19	47.97	54.00	-6.03	HORIZONTAL	Average
3	2483.500	64.51	27.85	3.74	37.19	58.91	74.00	-15.09	HORIZONTAL	peak
4	2483.865	49.94	27.85	3.74	37.19	44.34	54.00	-9.66	HORIZONTAL	Average
5	2483.865	66.41	27.85	3.74	37.19	60.81	74.00	-13.19	HORIZONTAL	peak

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Test Mode: 07; Polarity: Vertical; Modulation:GFSK; Channel:Low



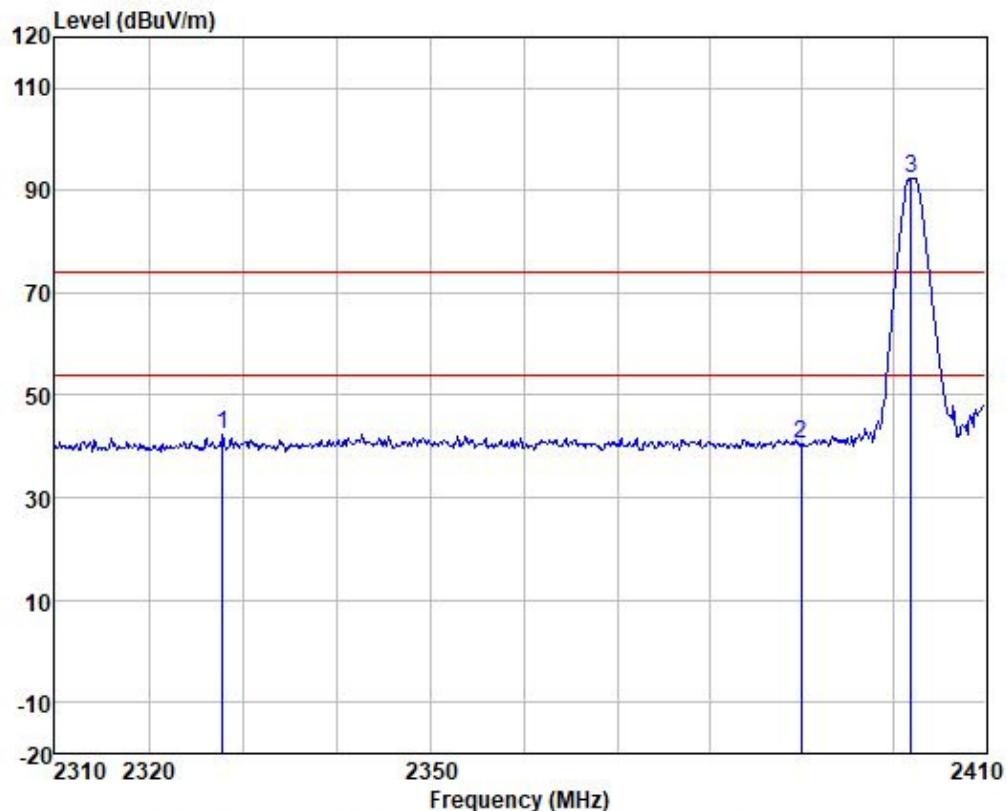
Freq	Read	Antenna	Cable	Preamp	Limit	Over	Limit	Over	Pol/Phase	Remark
	Freq	Level	Factor	Loss						
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2332.626	48.79	27.55	3.47	37.23	42.58	74.00	-31.42	VERTICAL	peak
2	2390.000	47.01	27.68	3.54	37.21	41.02	74.00	-32.98	VERTICAL	peak
3 *	2402.000	89.62	27.71	3.56	37.21	83.68	74.00	9.68	VERTICAL	peak

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Test Mode: 07; Polarity: Horizontal; Modulation:GFSK; Channel:Low



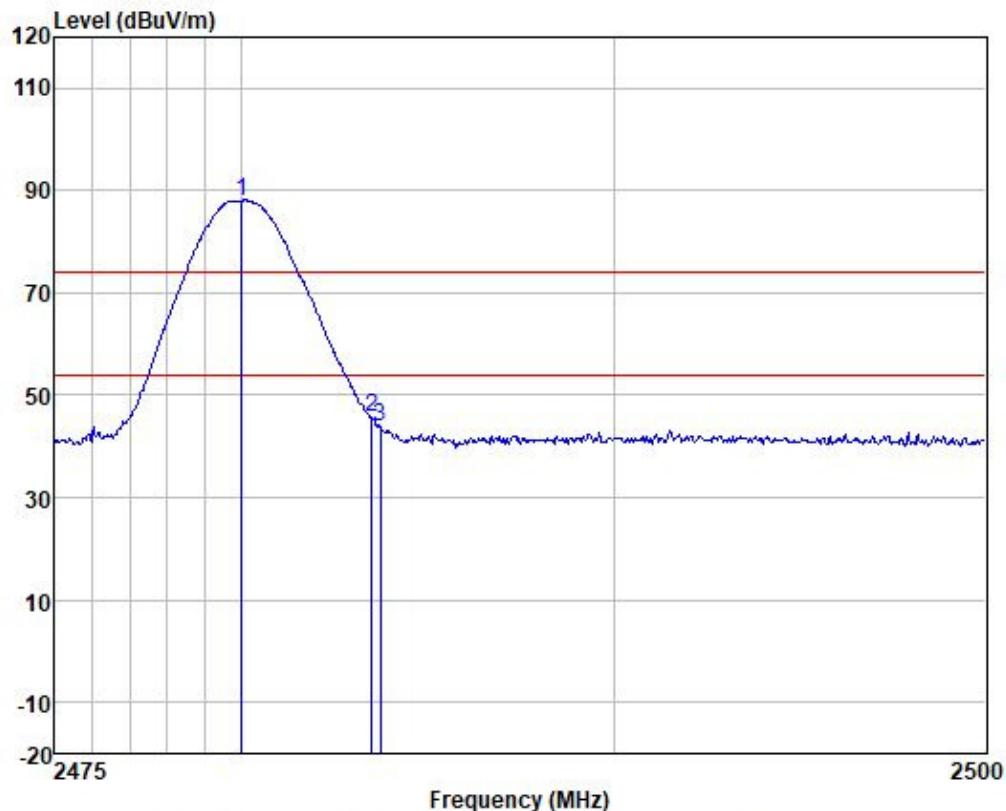
Freq	Read	Antenna	Cable	Preamp	Limit	Over	Over	Remark
	Level	Factor	Loss	Factor				
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 2327.787	48.63	27.54	3.47	37.23	42.41	74.00	-31.59	HORIZONTAL peak
2 2390.000	46.51	27.68	3.54	37.21	40.52	74.00	-33.48	HORIZONTAL peak
3 * 2402.000	98.43	27.71	3.56	37.21	92.49	74.00	18.49	HORIZONTAL peak



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Test Mode: 07; Polarity: Vertical; Modulation:GFSK; Channel:High

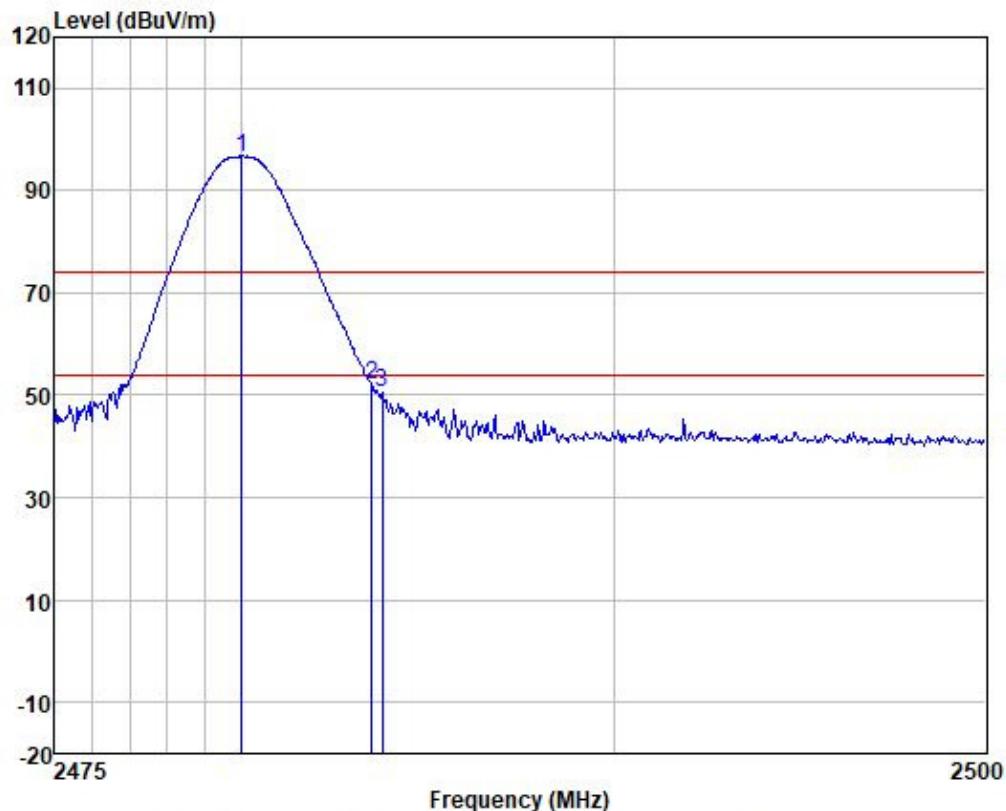


Freq	Read	Antenna	Cable	Preamp	Limit	Over	Over	Remark
	Level	Factor	Loss	Factor				
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 *	2480.000	93.62	27.84	3.72	37.19	87.99	74.00	13.99 VERTICAL peak
2	2483.500	51.16	27.85	3.74	37.19	45.56	74.00	-28.44 VERTICAL peak
3	2483.721	49.34	27.85	3.74	37.19	43.74	74.00	-30.26 VERTICAL peak

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Test Mode: 07; Polarity: Horizontal; Modulation:GFSK; Channel:High



Freq	Read	Antenna	Cable	Preamp	Limit	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor				
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 *	2480.000	102.29	27.84	3.72	37.19	96.66	74.00	22.66 HORIZONTAL peak
2	2483.500	57.72	27.85	3.74	37.19	52.12	74.00	-21.88 HORIZONTAL peak
3	2483.771	56.25	27.85	3.74	37.19	50.65	74.00	-23.35 HORIZONTAL peak



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### 7.3 Radiated Spurious Emissions Below 1GHz

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

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

Limit:

Test Distance: 3 m for 30MHz to 1GHz; 10 m for 9kHz to 30 MHz

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
960-1000	500	3

#### 7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 24.8 °C Humidity: 57.7 % RH Atmospheric Pressure: 1003 mbar

#### 7.3.2 Test Mode Description

Pre-scan / Mode Final test	Mode Code	Description
Final test	05	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), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	07	TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation.

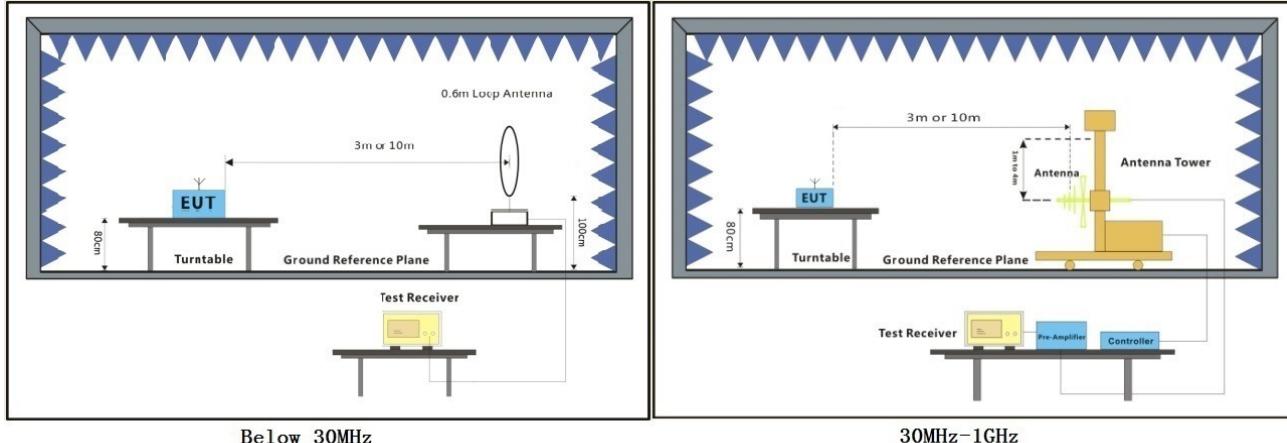
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### 7.3.3 Test Setup Diagram



### 7.3.4 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.
- 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 quasi-peak 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:

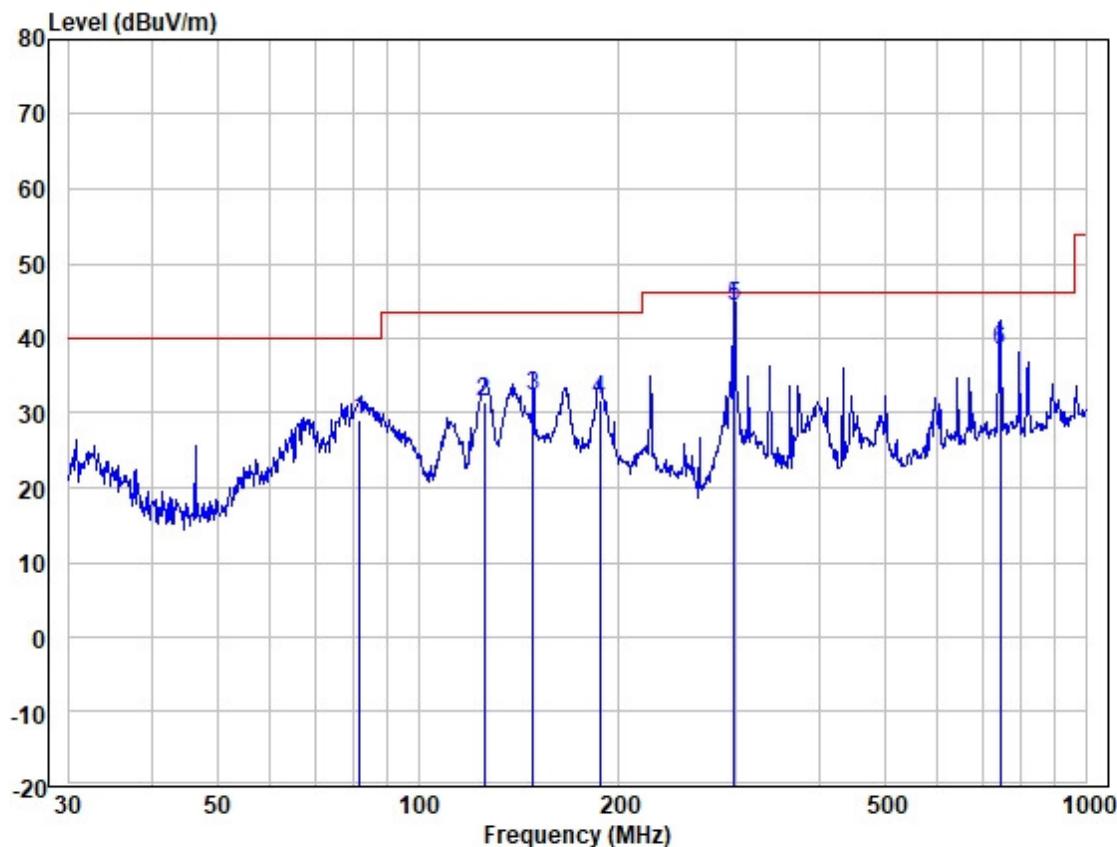
- Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor
- Scan from 9kHz to 30MHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.



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Test Mode: 05 &amp; 07; Polarity: Horizontal



Site : 966 Chamber  
Job :  
Model : 7747TA  
Power :  
Test Mode : BT

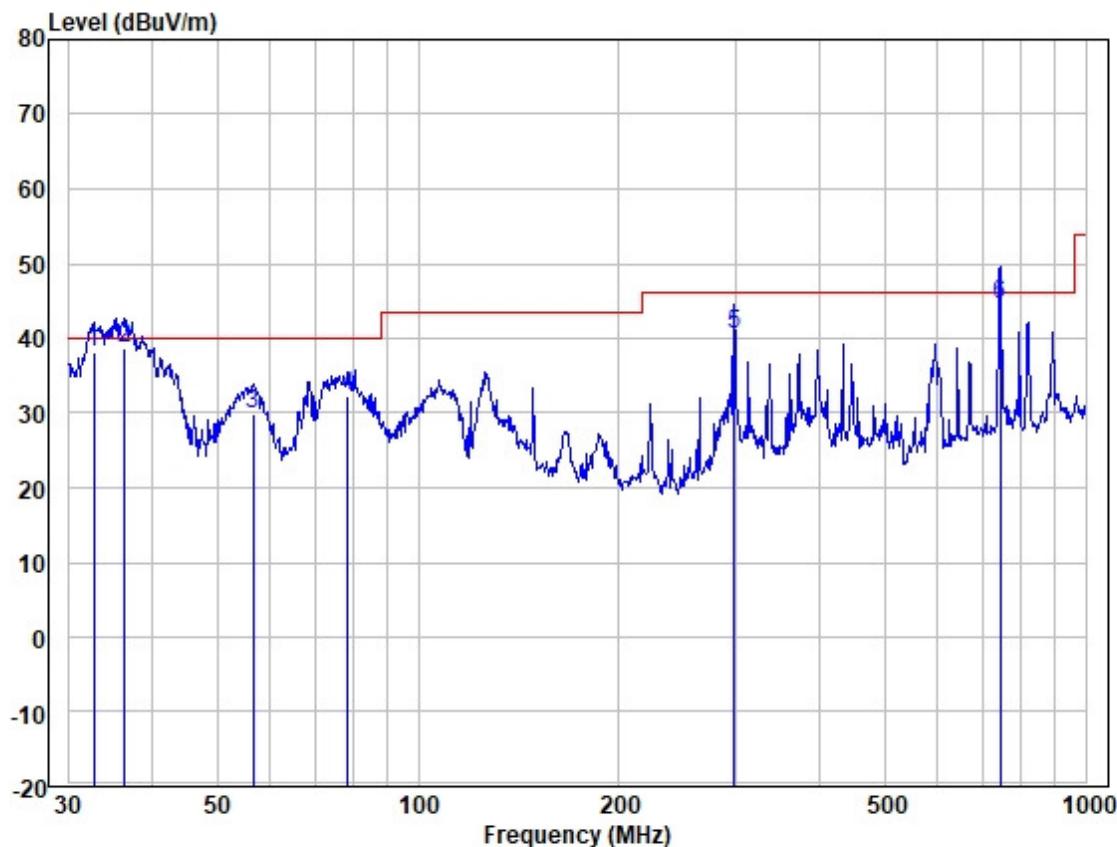
Freq	Read	Antena	Cable	Preamp	Measured	Limit	Over	Pol/	Remark
	Level	Factor	Loss	Factor	Level	Line	Limit	Phase	
1 81.783	46.45	14.98	0.50	32.82	29.11	40.00	-10.89	HORIZONTAL	QP
2 125.446	46.04	17.69	0.61	32.81	31.53	43.52	-11.99	HORIZONTAL	QP
3 148.441	45.56	18.96	0.66	32.82	32.36	43.52	-11.16	HORIZONTAL	QP
4 187.096	47.18	16.70	0.76	32.84	31.80	43.52	-11.72	HORIZONTAL	QP
5 297.224	57.11	19.19	0.98	32.88	44.40	46.02	-1.62	HORIZONTAL	QP
6 744.866	41.38	27.97	1.59	32.47	38.47	46.02	-7.55	HORIZONTAL	QP

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Test Mode: 05 &amp; 07; Polarity: Vertical



Site : 966 Chamber  
Job :  
Model : 7747TA  
Power :  
Test Mode : BT

Freq	Read	Antena	Cable	Preamp	Measured	Limit	Over	Pol/	Remark
	Level	Factor	Loss	Factor	Level	Line	Limit	Phase	
1	32.749	52.86	17.79	0.31	32.85	38.11	40.00	-1.89	VERTICAL QP
2	36.381	52.58	18.59	0.33	32.86	38.64	40.00	-1.36	VERTICAL QP
3	56.593	43.06	19.18	0.40	32.87	29.77	40.00	-10.23	VERTICAL QP
4	78.413	49.20	15.53	0.49	32.83	32.39	40.00	-7.61	VERTICAL QP
5	297.224	53.29	19.19	0.98	32.88	40.58	46.02	-5.44	VERTICAL QP
6	742.866	47.66	27.87	1.58	32.47	44.64	46.02	-1.38	VERTICAL QP

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## 7.4 Radiated Spurious Emissions Above 1GHz

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

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

Limit:

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance(meters)
Above 1000	500	3

### 7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 25.2 °C Humidity: 59.8 % RH Atmospheric Pressure: 1003 mbar

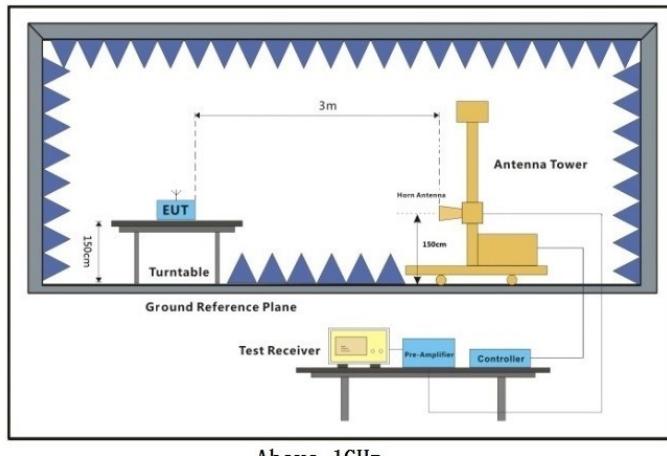
### 7.4.2 Test Mode Description

Pre-scan / Mode	Description
Final test	Code
Final test	05
Final test	07

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), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

TX mode\_Keep the EUT in continuously transmitting mode with GFSK modulation.

### 7.4.3 Test Setup Diagram



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**7.4.4 Measurement Procedure and Data**

- a. 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.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. 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.
- d. 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.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. 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 or average method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- h. 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.
- i. Repeat above procedures until all frequencies measured was complete.

Remark:

1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor
2. Scan from 1GHz to 25GHz, the disturbance above 18GHz 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.
3. As shown in this section, 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.

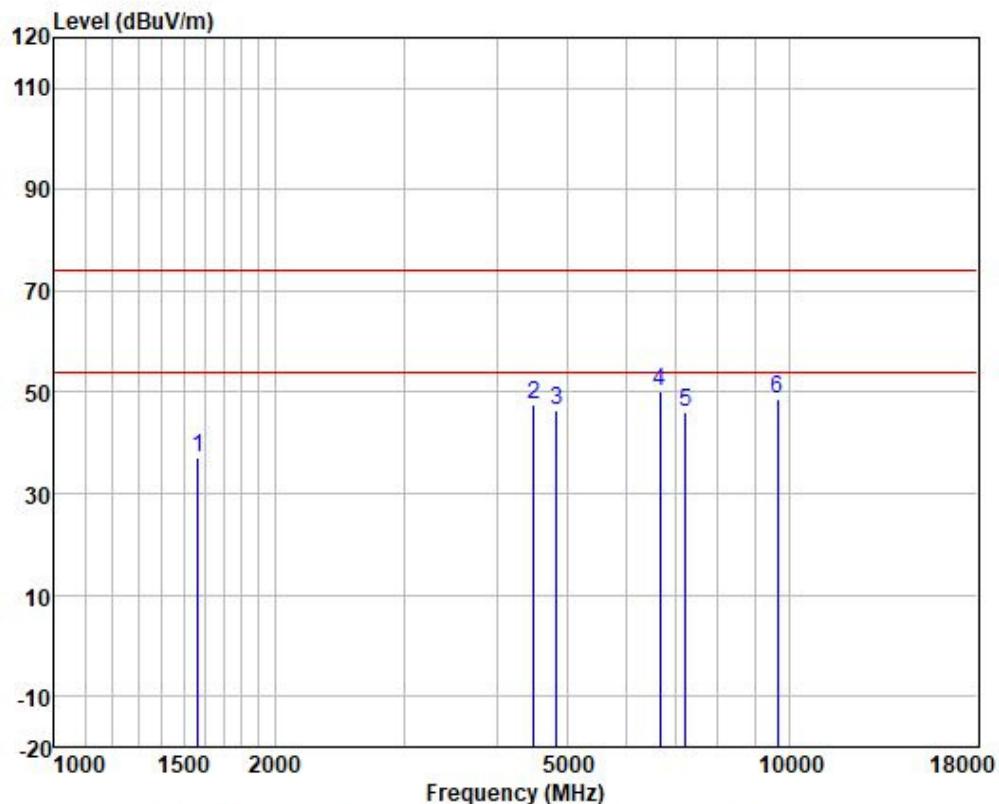


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Test Mode: 05; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Freq	Read	Antenna	Cable	Preamplifier	Limit	Over	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1569.721	47.06	24.60	3.10	37.47	37.29	74.00	-36.71	VERTICAL peak
2	4495.125	44.11	34.17	5.81	36.63	47.46	74.00	-26.54	VERTICAL peak
3	4824.000	43.02	34.16	5.85	36.67	46.36	74.00	-27.64	VERTICAL peak
4	6679.040	45.40	34.28	7.35	36.85	50.18	74.00	-23.82	VERTICAL peak
5	7236.000	39.60	35.78	7.54	36.94	45.98	74.00	-28.02	VERTICAL peak
6	9648.000	38.74	38.70	8.12	36.82	48.74	74.00	-25.26	VERTICAL peak

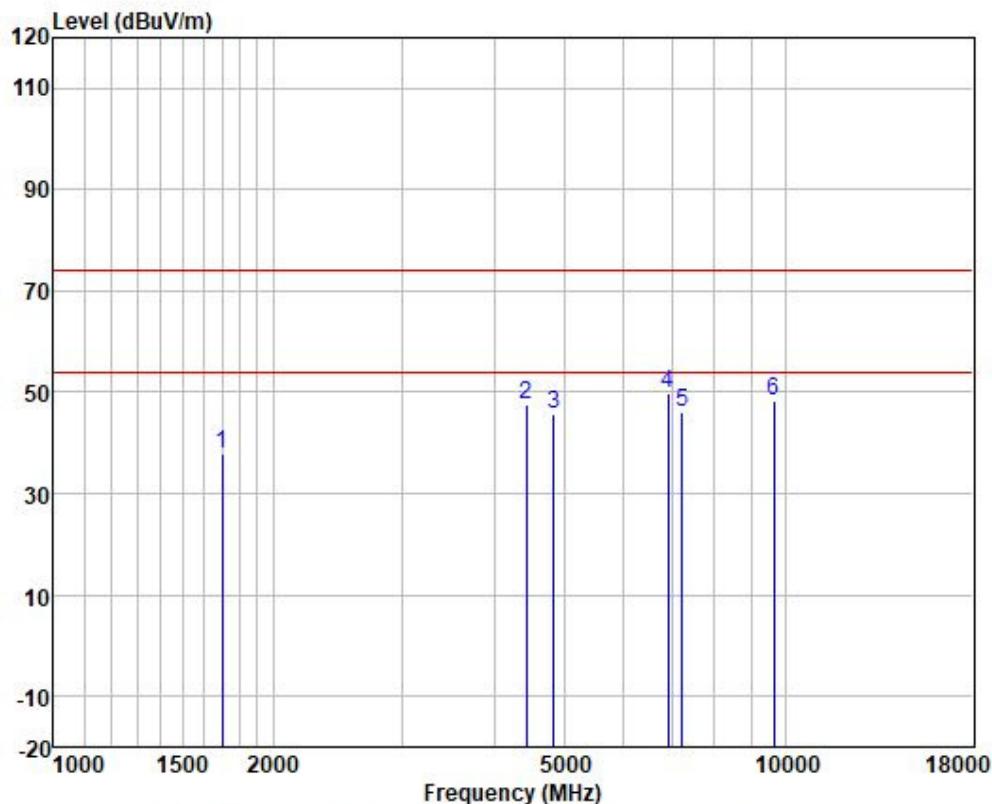
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Test Mode: 05; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



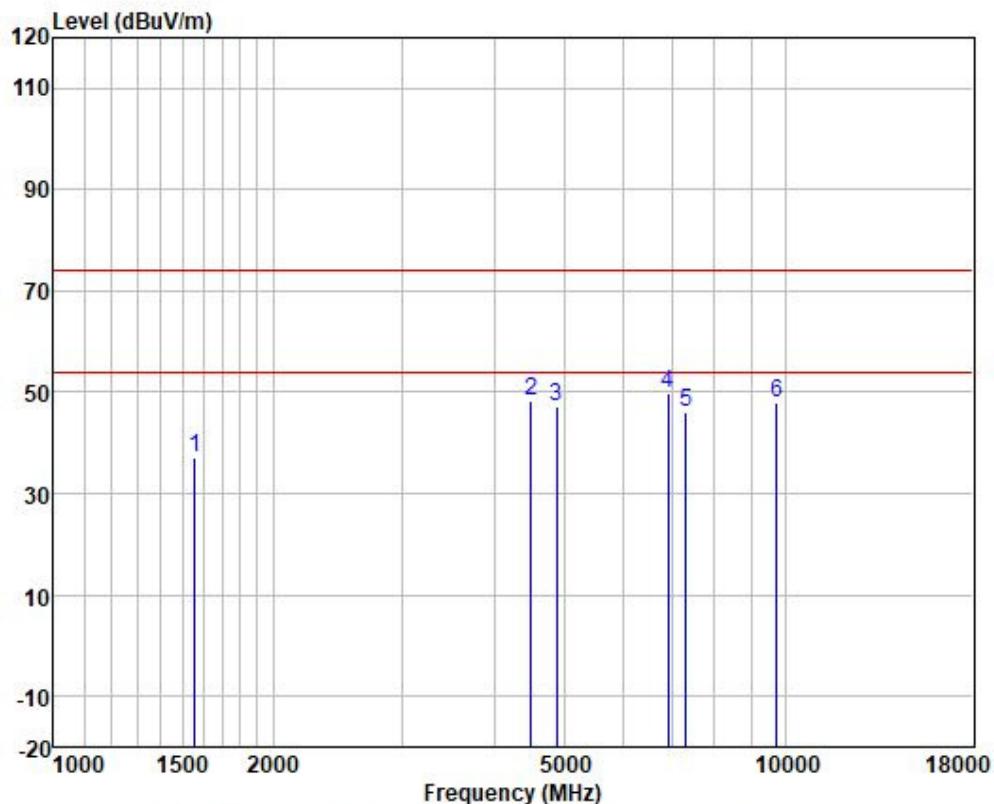
Freq	Read	Antenna	Cable	Preamp	Limit	Over	Limit	Over	Pol/Phase	Remark
	MHz	Level	Factor	Loss						
	MHz	dBuV	dB/m		dB	dB	dBuV/m	dBuV/m		
1	1702.042	46.81	25.15	3.18	37.39	37.75	74.00	-36.25	HORIZONTAL	peak
2	4430.628	44.40	33.87	5.79	36.63	47.43	74.00	-26.57	HORIZONTAL	peak
3	4824.000	42.55	34.16	5.85	36.67	45.89	74.00	-28.11	HORIZONTAL	peak
4	6914.763	44.20	34.97	7.48	36.88	49.77	74.00	-24.23	HORIZONTAL	peak
5	7236.000	39.87	35.78	7.54	36.94	46.25	74.00	-27.75	HORIZONTAL	peak
6	9648.000	38.24	38.70	8.12	36.82	48.24	74.00	-25.76	HORIZONTAL	peak

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Test Mode: 05; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:middle



Freq	Read	Antenna	Cable	Preamp	Limit	Over	Limit	Over	Pol/Phase	Remark
	MHz	Level	Factor	Loss						
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1560.673	47.01	24.57	3.09	37.47	37.20	74.00	-36.80	VERTICAL	peak
2	4495.125	44.88	34.17	5.81	36.63	48.23	74.00	-25.77	VERTICAL	peak
3	4874.000	43.73	34.15	5.85	36.67	47.06	74.00	-26.94	VERTICAL	peak
4	6914.763	44.13	34.97	7.48	36.88	49.70	74.00	-24.30	VERTICAL	peak
5	7311.000	39.47	36.00	7.55	36.95	46.07	74.00	-27.93	VERTICAL	peak
6	9748.000	37.86	38.81	8.17	36.81	48.03	74.00	-25.97	VERTICAL	peak

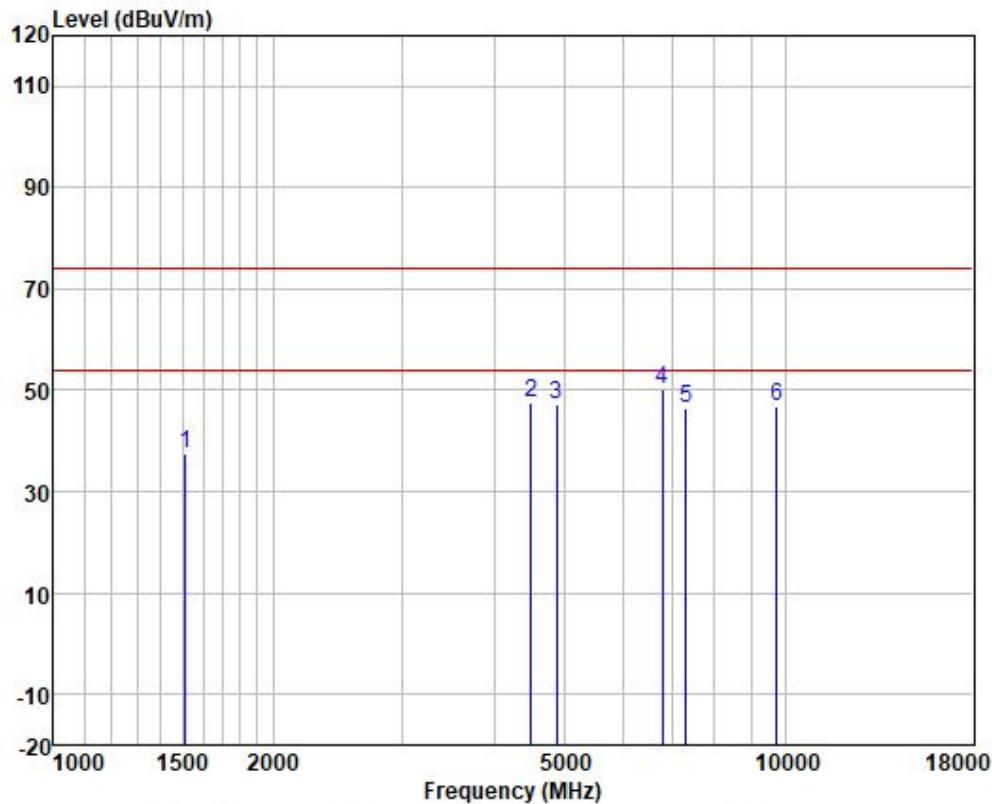
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Test Mode: 05; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:middle



Freq	Read	Antenna	Cable	Preamp	Limit	Over	Remark	
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase
	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1516.210	47.50	24.47	3.05	37.50	37.52	74.00	-36.48 HORIZONTAL peak
2	4495.125	44.21	34.17	5.81	36.63	47.56	74.00	-26.44 HORIZONTAL peak
3	4874.000	43.88	34.15	5.85	36.67	47.21	74.00	-26.79 HORIZONTAL peak
4	6795.879	44.86	34.69	7.42	36.86	50.11	74.00	-23.89 HORIZONTAL peak
5	7311.000	39.81	36.00	7.55	36.95	46.41	74.00	-27.59 HORIZONTAL peak
6	9748.000	36.80	38.81	8.17	36.81	46.97	74.00	-27.03 HORIZONTAL peak

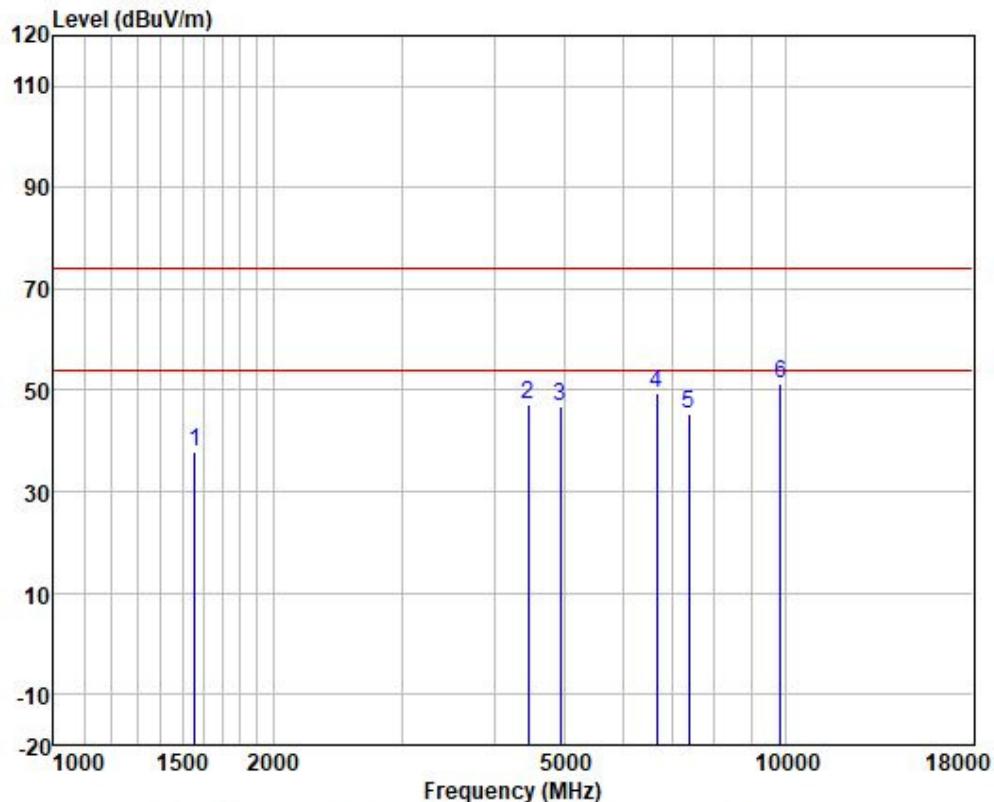
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Test Mode: 05; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:High



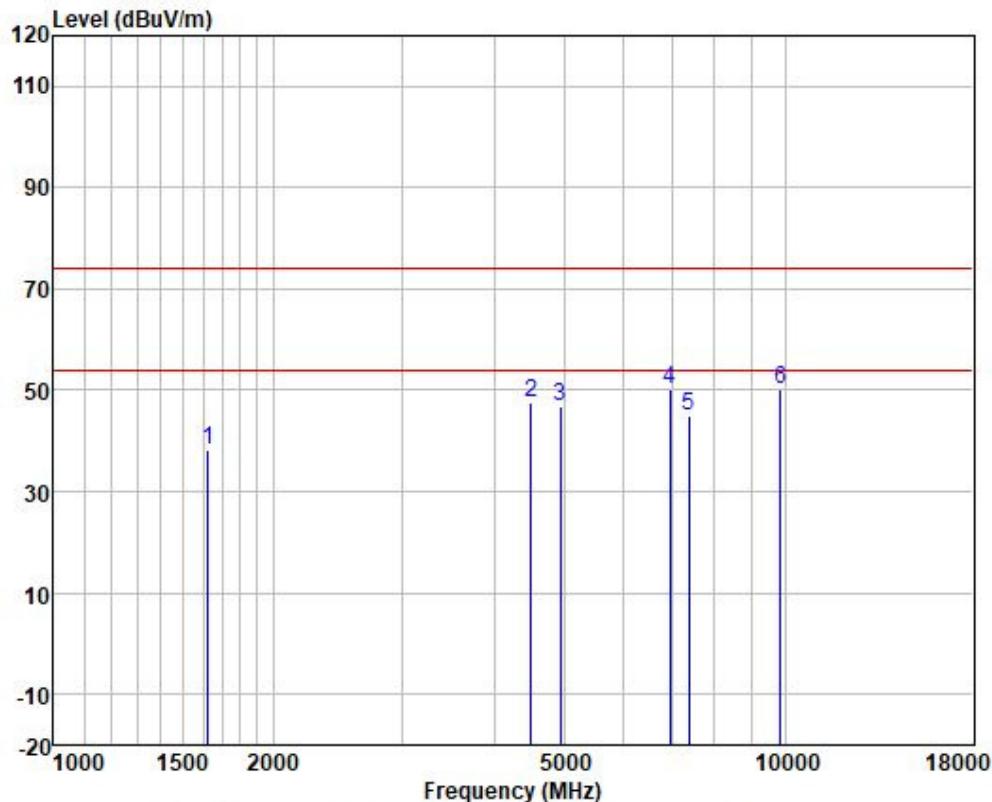
Freq	Read	Antenna	Cable	Preamp	Limit	Over	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1 1560.673	47.60	24.57	3.09	37.47	37.79	74.00	-36.21	VERTICAL	peak
2 4456.315	44.02	34.00	5.80	36.63	47.19	74.00	-26.81	VERTICAL	peak
3 4924.000	43.44	34.15	5.86	36.68	46.77	74.00	-27.23	VERTICAL	peak
4 6679.040	44.84	34.28	7.35	36.85	49.62	74.00	-24.38	VERTICAL	peak
5 7386.000	38.60	36.23	7.57	36.96	45.44	74.00	-28.56	VERTICAL	peak
6 9848.000	41.01	38.88	8.20	36.81	51.28	74.00	-22.72	VERTICAL	peak

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Test Mode: 05; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:High



Freq	Read	Antenna	Cable	Preamp	Limit	Over	Limit	Over	Remark
	MHz	Level	Factor	Loss					
	dBuV	dB/m		dB	dBuV/m	dBuV/m		dB	
1	1625.121	47.74	24.77	3.14	37.42	38.23	74.00	-35.77	HORIZONTAL peak
2	4495.125	44.19	34.17	5.81	36.63	47.54	74.00	-26.46	HORIZONTAL peak
3	4924.000	43.38	34.15	5.86	36.68	46.71	74.00	-27.29	HORIZONTAL peak
4	6954.852	44.51	35.04	7.49	36.89	50.15	74.00	-23.85	HORIZONTAL peak
5	7386.000	38.20	36.23	7.57	36.96	45.04	74.00	-28.96	HORIZONTAL peak
6	9848.000	40.05	38.88	8.20	36.81	50.32	74.00	-23.68	HORIZONTAL peak

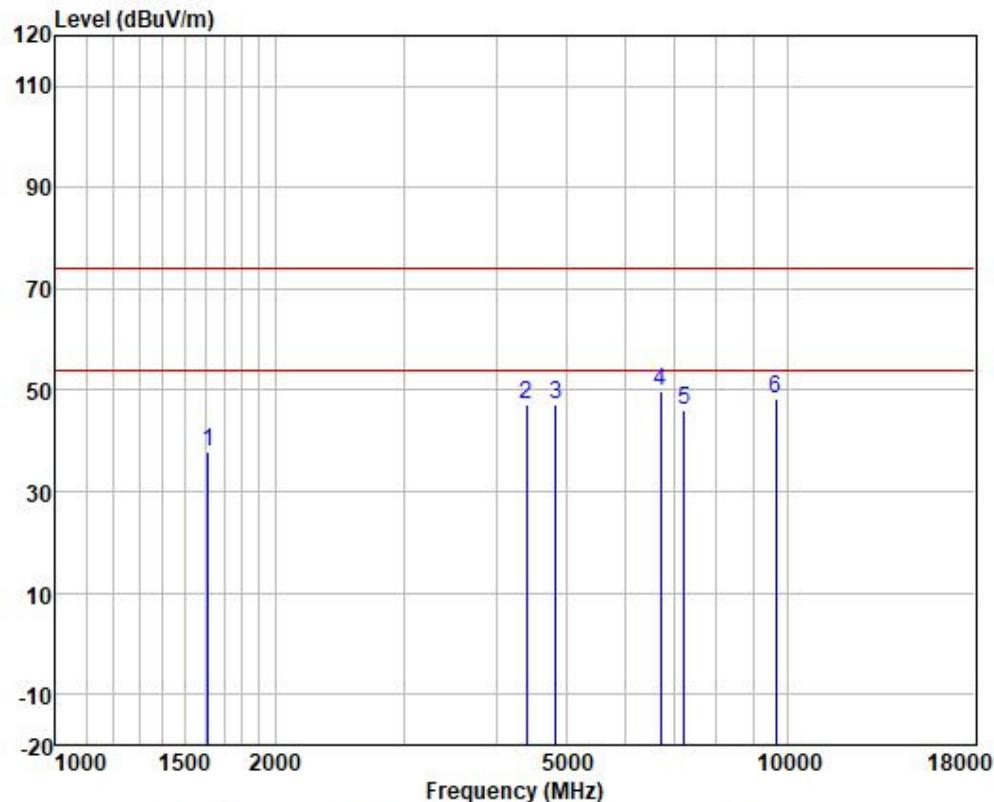
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Test Mode: 05; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



Freq	Read	Antenna	Cable	Preamp	Limit	Over	Remark
	MHz	Level	Factor	Loss	Factor	Line	
	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	1615.754	47.33	24.74	3.13	37.44	37.76	74.00 -36.24 VERTICAL peak
2	4405.090	44.25	33.74	5.78	36.62	47.15	74.00 -26.85 VERTICAL peak
3	4824.000	43.69	34.16	5.85	36.67	47.03	74.00 -26.97 VERTICAL peak
4	6717.762	44.68	34.42	7.38	36.85	49.63	74.00 -24.37 VERTICAL peak
5	7236.000	39.70	35.78	7.54	36.94	46.08	74.00 -27.92 VERTICAL peak
6	9648.000	38.20	38.70	8.12	36.82	48.20	74.00 -25.80 VERTICAL peak

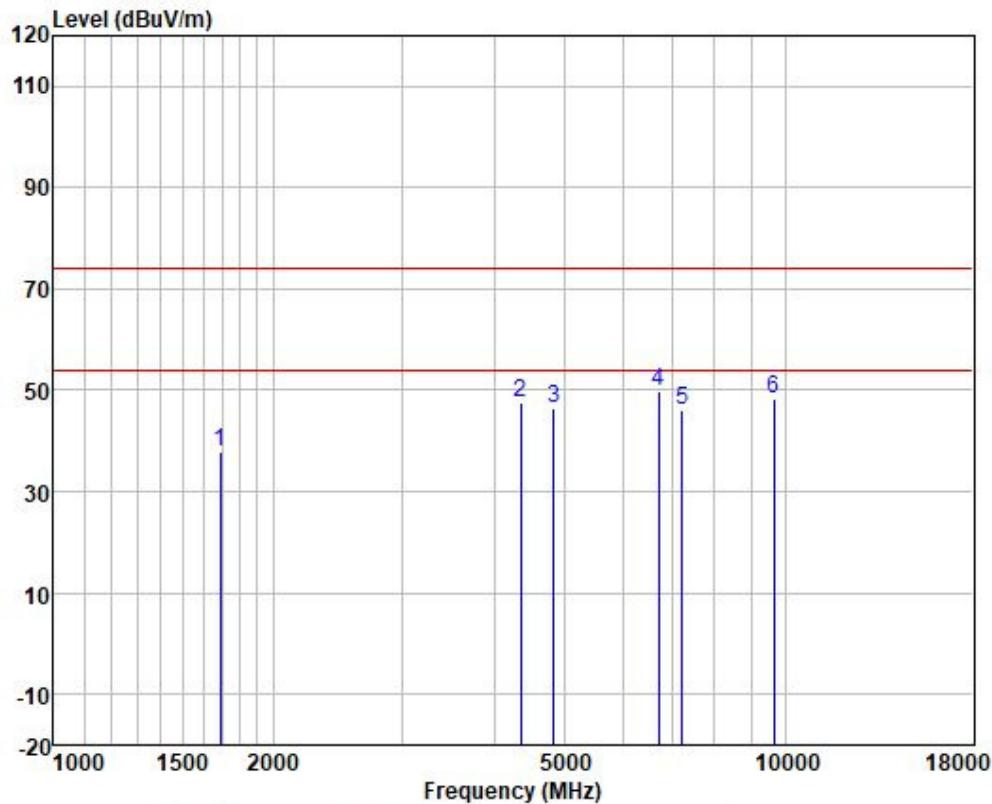
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Test Mode: 05; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



Freq	Read	Antenna	Cable	Preamplifier	Limit	Over	Over	Remark
	Level	Factor	Loss	Factor				
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1692.231	46.90	25.09	3.17	37.40	37.76	74.00	-36.24 HORIZONTAL peak
2	4354.454	44.87	33.43	5.78	36.62	47.46	74.00	-26.54 HORIZONTAL peak
3	4824.000	42.98	34.16	5.85	36.67	46.32	74.00	-27.68 HORIZONTAL peak
4	6717.762	44.69	34.42	7.38	36.85	49.64	74.00	-24.36 HORIZONTAL peak
5	7236.000	39.76	35.78	7.54	36.94	46.14	74.00	-27.86 HORIZONTAL peak
6	9648.000	38.39	38.70	8.12	36.82	48.39	74.00	-25.61 HORIZONTAL peak

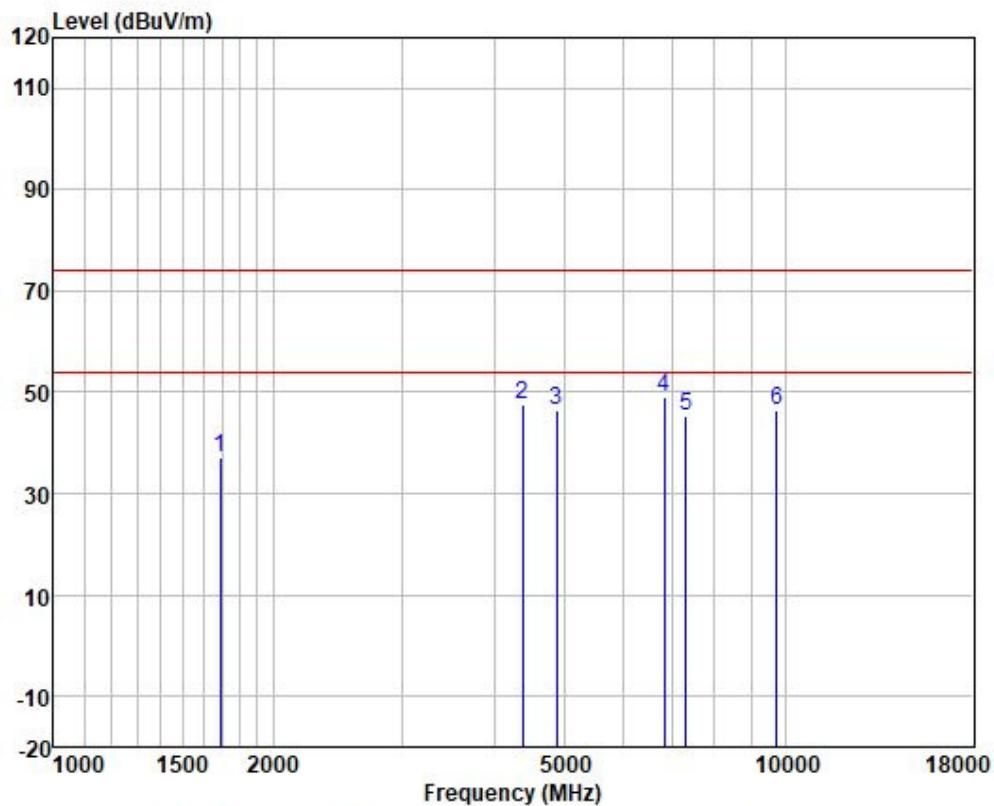
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Test Mode: 05; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:middle



Freq	Read	Antenna	Cable	Preamp	Limit	Over	Remark	
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase
	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1692.231	46.40	25.09	3.17	37.40	37.26	74.00	-36.74 VERTICAL peak
2	4379.699	44.98	33.59	5.78	36.62	47.73	74.00	-26.27 VERTICAL peak
3	4874.000	43.11	34.15	5.85	36.67	46.44	74.00	-27.56 VERTICAL peak
4	6835.278	43.88	34.79	7.44	36.87	49.24	74.00	-24.76 VERTICAL peak
5	7311.000	38.87	36.00	7.55	36.95	45.47	74.00	-28.53 VERTICAL peak
6	9748.000	36.30	38.81	8.17	36.81	46.47	74.00	-27.53 VERTICAL peak

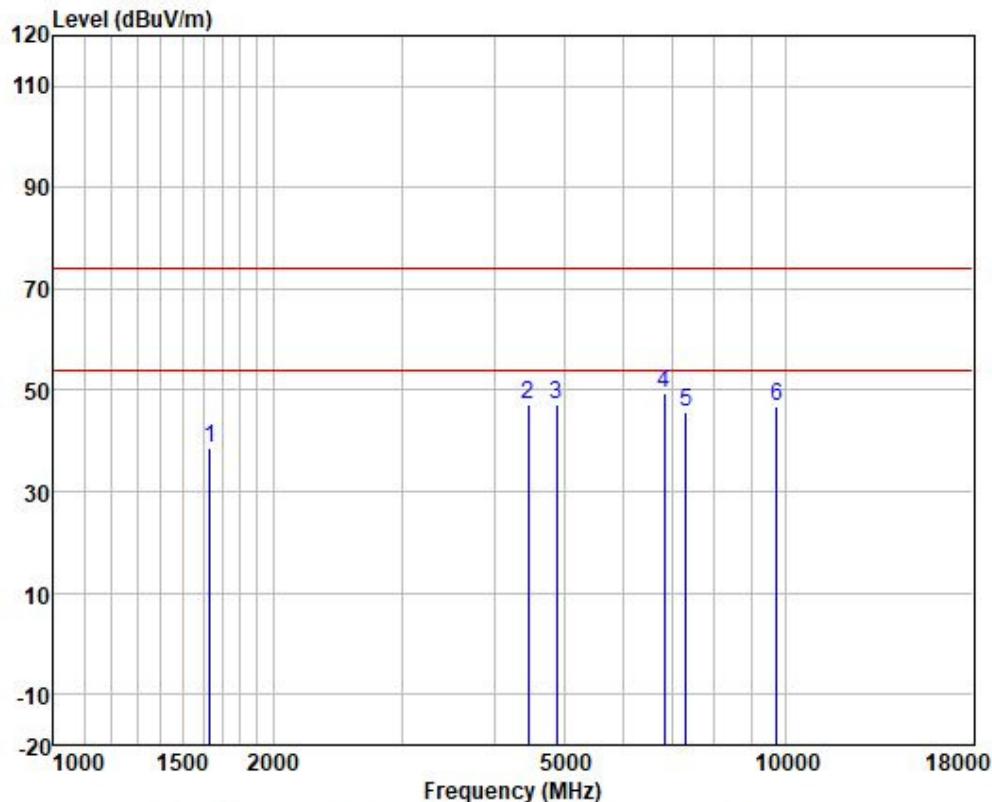
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sgs.china@sgs.com t (86-20) 82155555

Test Mode: 05; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:middle



Freq	Read	Antenna	Cable	Preamplifier	Limit	Over	Over	Remark
	Level	Factor	Loss	Factor				
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1634.543	47.98	24.81	3.14	37.42	38.51	74.00	-35.49 HORIZONTAL peak
2	4456.315	44.02	34.00	5.80	36.63	47.19	74.00	-26.81 HORIZONTAL peak
3	4874.000	43.71	34.15	5.85	36.67	47.04	74.00	-26.96 HORIZONTAL peak
4	6835.278	44.09	34.79	7.44	36.87	49.45	74.00	-24.55 HORIZONTAL peak
5	7311.000	39.09	36.00	7.55	36.95	45.69	74.00	-28.31 HORIZONTAL peak
6	9748.000	36.52	38.81	8.17	36.81	46.69	74.00	-27.31 HORIZONTAL peak

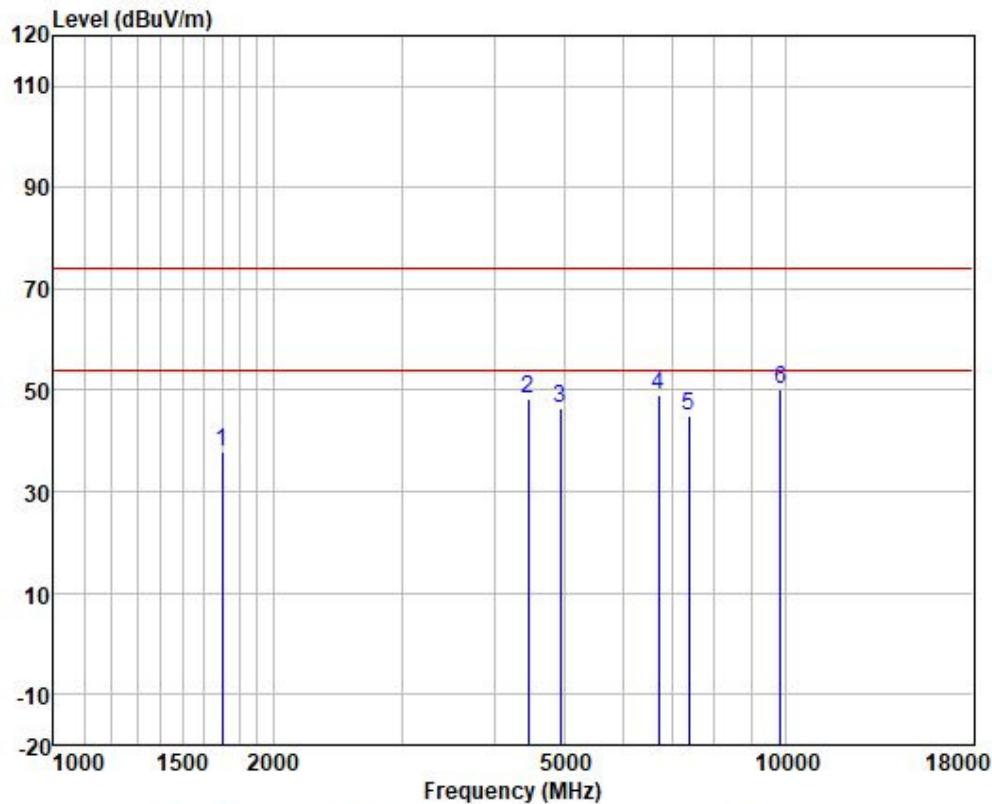
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t (86-20) 82155555 sgs.china@sgs.com

Test Mode: 05; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:High



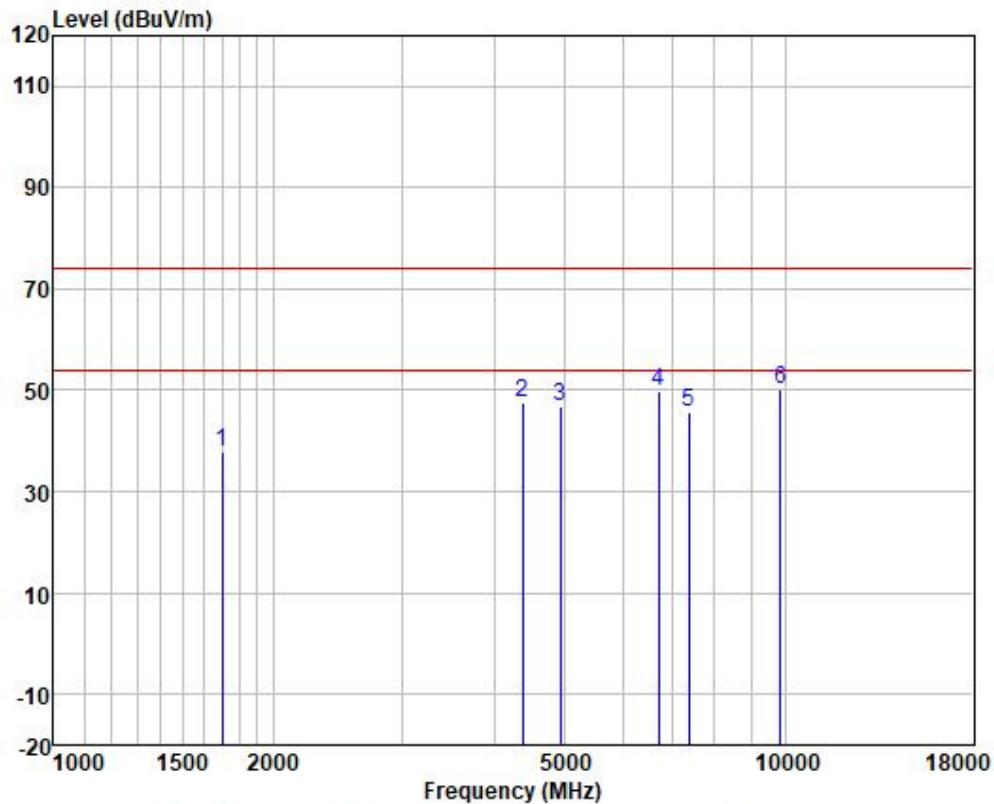
Freq	Read	Antenna	Cable	Preamp	Limit	Over	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1702.042	46.94	25.15	3.18	37.39	37.88	74.00	-36.12	VERTICAL peak
2	4456.315	45.13	34.00	5.80	36.63	48.30	74.00	-25.70	VERTICAL peak
3	4924.000	43.04	34.15	5.86	36.68	46.37	74.00	-27.63	VERTICAL peak
4	6717.762	44.21	34.42	7.38	36.85	49.16	74.00	-24.84	VERTICAL peak
5	7386.000	38.24	36.23	7.57	36.96	45.08	74.00	-28.92	VERTICAL peak
6	9848.000	40.04	38.88	8.20	36.81	50.31	74.00	-23.69	VERTICAL peak

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Test Mode: 05; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:High



Freq	Read	Antenna	Cable	Preamp	Limit	Over	Limit	Over	Remark
	Level	Factor	Loss	Factor					
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	dB	
1	1702.042	47.04	25.15	3.18	37.39	37.98	74.00	-36.02	HORIZONTAL peak
2	4379.699	45.01	33.59	5.78	36.62	47.76	74.00	-26.24	HORIZONTAL peak
3	4924.000	43.44	34.15	5.86	36.68	46.77	74.00	-27.23	HORIZONTAL peak
4	6717.762	44.93	34.42	7.38	36.85	49.88	74.00	-24.12	HORIZONTAL peak
5	7386.000	38.90	36.23	7.57	36.96	45.74	74.00	-28.26	HORIZONTAL peak
6	9848.000	39.86	38.88	8.20	36.81	50.13	74.00	-23.87	HORIZONTAL peak

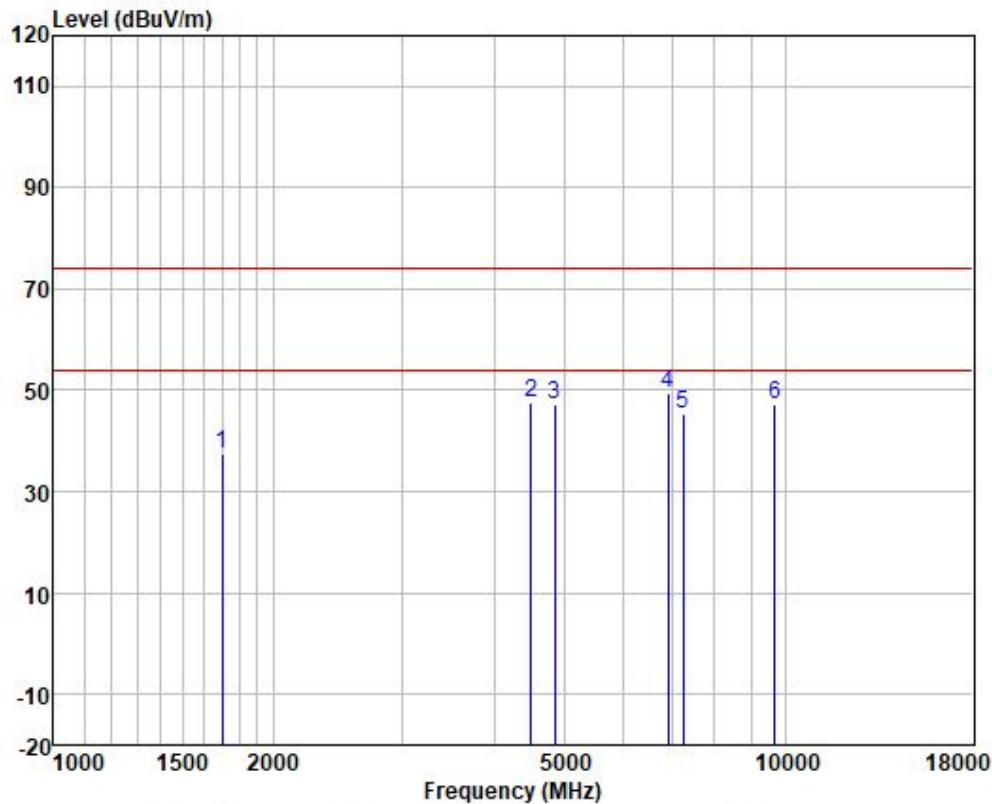
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Test Mode: 05; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



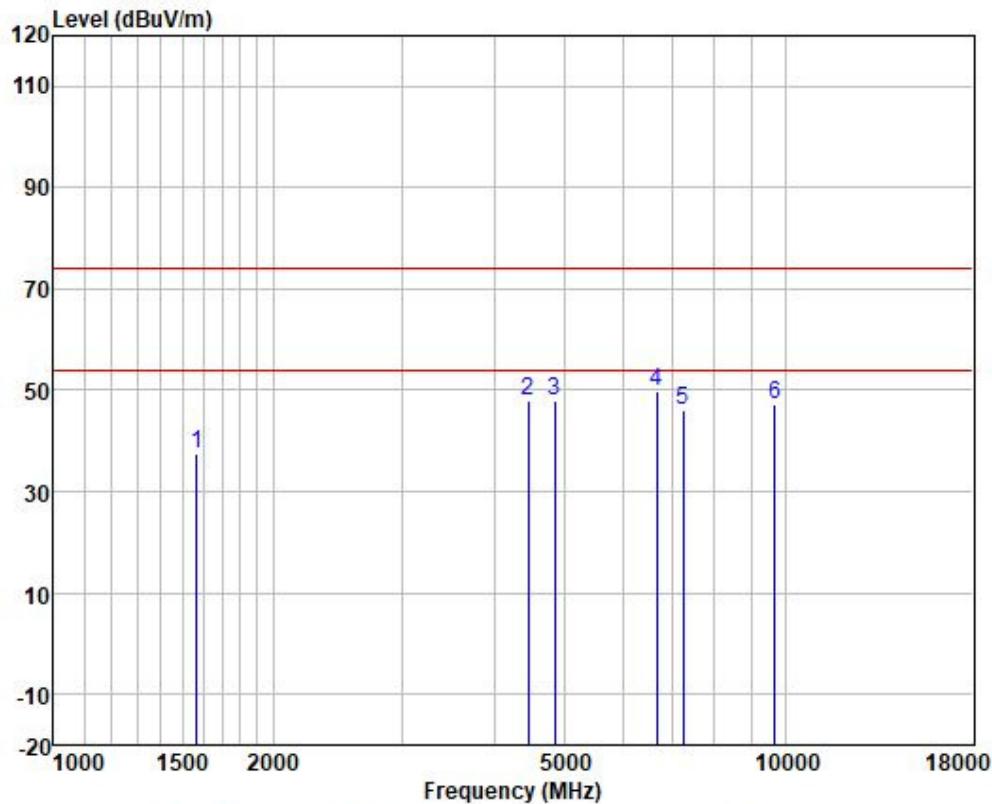
Freq	Read	Antenna	Cable	Preamp	Limit	Over	Limit	Over	Pol/Phase	Remark
	MHz	Level	Factor	Loss						
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1702.042	46.67	25.15	3.18	37.39	37.61	74.00	-36.39	VERTICAL	peak
2	4495.125	44.30	34.17	5.81	36.63	47.65	74.00	-26.35	VERTICAL	peak
3	4844.000	43.92	34.15	5.85	36.67	47.25	74.00	-26.75	VERTICAL	peak
4	6914.763	43.69	34.97	7.48	36.88	49.26	74.00	-24.74	VERTICAL	peak
5	7266.000	38.71	35.86	7.54	36.94	45.17	74.00	-28.83	VERTICAL	peak
6	9688.000	37.14	38.75	8.14	36.82	47.21	74.00	-26.79	VERTICAL	peak

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Test Mode: 05; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



Freq	Read	Antenna	Cable	Preamp	Limit	Over	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1569.721	47.35	24.60	3.10	37.47	37.58	74.00	-36.42	HORIZONTAL peak
2	4456.315	44.81	34.00	5.80	36.63	47.98	74.00	-26.02	HORIZONTAL peak
3	4844.000	44.52	34.15	5.85	36.67	47.85	74.00	-26.15	HORIZONTAL peak
4	6679.040	45.00	34.28	7.35	36.85	49.78	74.00	-24.22	HORIZONTAL peak
5	7266.000	39.57	35.86	7.54	36.94	46.03	74.00	-27.97	HORIZONTAL peak
6	9688.000	36.99	38.75	8.14	36.82	47.06	74.00	-26.94	HORIZONTAL peak

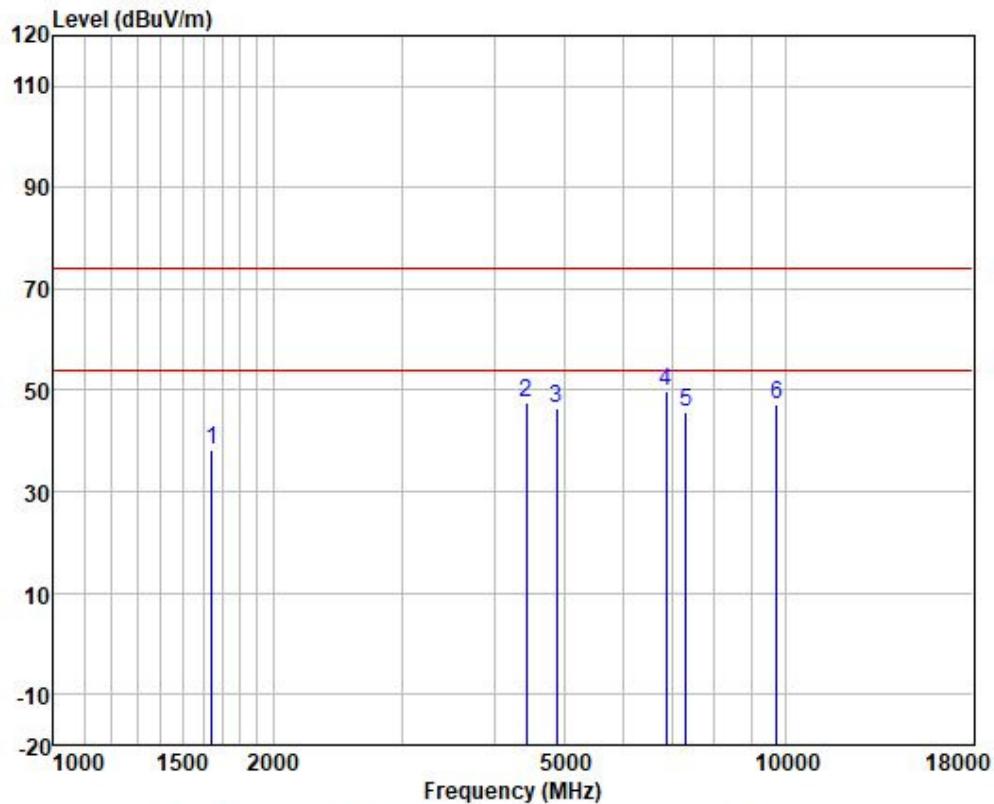
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t (86-20) 82155555 sgs.china@sgs.com

Test Mode: 05; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:middle



Freq	Read	Antenna	Cable	Preamp	Limit	Over	Over	Remark
	Level	Factor	Loss	Factor				
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1644.019	47.63	24.84	3.15	37.42	38.20	74.00	-35.80 VERTICAL peak
2	4430.628	44.55	33.87	5.79	36.63	47.58	74.00	-26.42 VERTICAL peak
3	4874.000	43.06	34.15	5.85	36.67	46.39	74.00	-27.61 VERTICAL peak
4	6874.906	44.53	34.88	7.46	36.87	50.00	74.00	-24.00 VERTICAL peak
5	7311.000	39.20	36.00	7.55	36.95	45.80	74.00	-28.20 VERTICAL peak
6	9748.000	36.98	38.81	8.17	36.81	47.15	74.00	-26.85 VERTICAL peak

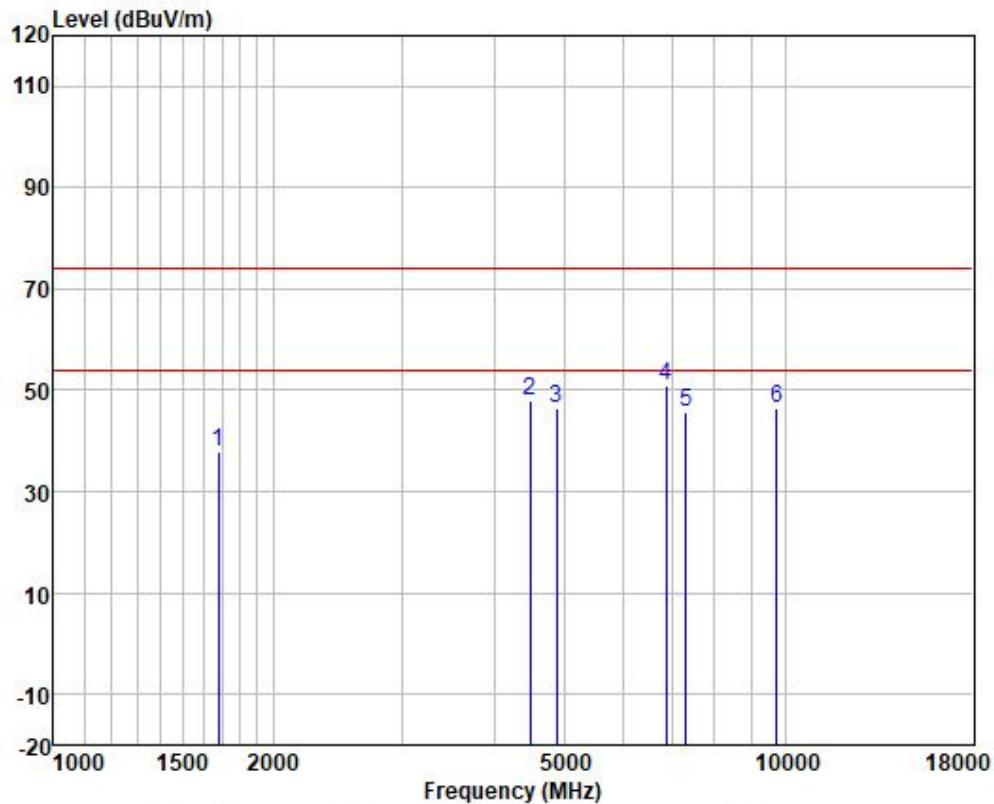
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t (86-20) 82155555 sgs.china@sgs.com

Test Mode: 05; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:middle



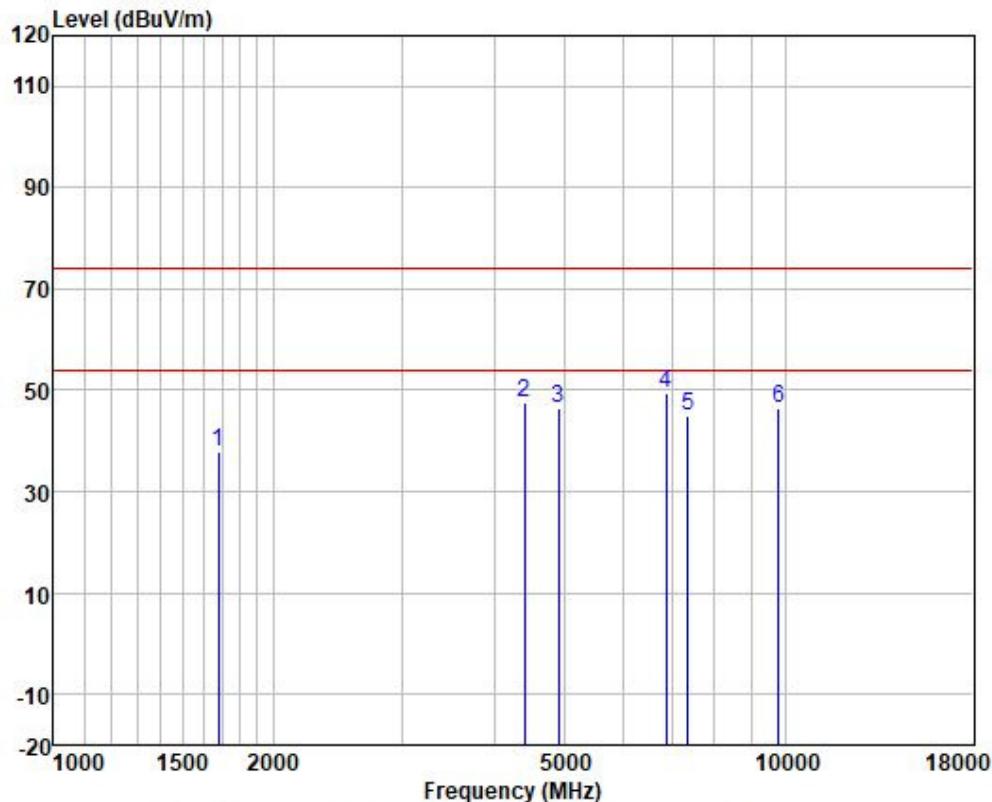
Freq	Read	Antenna	Cable	Preamp	Limit	Over	Limit	Over	Remark
	Level	Factor	Loss	Factor					
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	dB	
1	1682.477	46.93	25.03	3.17	37.40	37.73	74.00	-36.27	HORIZONTAL peak
2	4482.150	44.68	34.12	5.80	36.63	47.97	74.00	-26.03	HORIZONTAL peak
3	4874.000	42.95	34.15	5.85	36.67	46.28	74.00	-27.72	HORIZONTAL peak
4	6874.906	45.54	34.88	7.46	36.87	51.01	74.00	-22.99	HORIZONTAL peak
5	7311.000	39.22	36.00	7.55	36.95	45.82	74.00	-28.18	HORIZONTAL peak
6	9748.000	36.40	38.81	8.17	36.81	46.57	74.00	-27.43	HORIZONTAL peak

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Test Mode: 05; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



Freq	Read	Antenna	Cable	Preamp	Limit	Over	Limit	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1 1682.477	47.16	25.03	3.17	37.40	37.96	74.00	-36.04	VERTICAL	peak
2 4405.090	44.55	33.74	5.78	36.62	47.45	74.00	-26.55	VERTICAL	peak
3 4904.000	43.13	34.15	5.85	36.68	46.45	74.00	-27.55	VERTICAL	peak
4 6874.906	44.06	34.88	7.46	36.87	49.53	74.00	-24.47	VERTICAL	peak
5 7356.000	38.11	36.12	7.56	36.95	44.84	74.00	-29.16	VERTICAL	peak
6 9808.000	36.32	38.86	8.19	36.81	46.56	74.00	-27.44	VERTICAL	peak

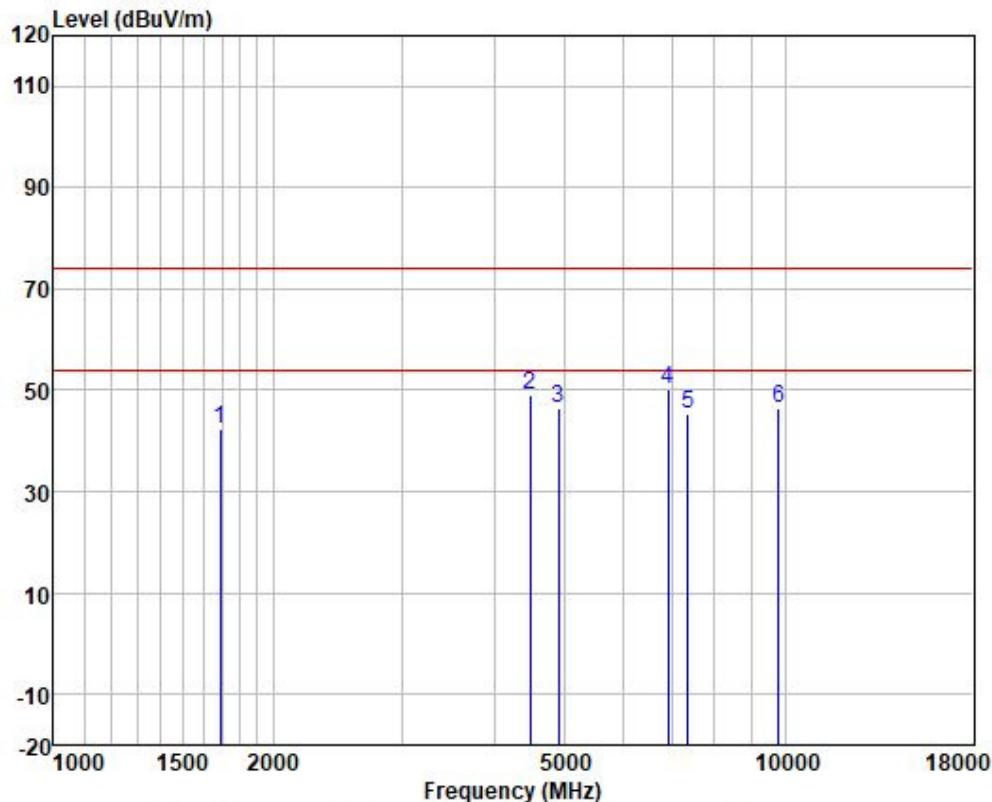
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t (86-20) 82155555 sgs.china@sgs.com

Test Mode: 05; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



Freq MHz	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Limit Level	Line Level	Over Limit	Pol/Phase	Remark
	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1 1692.231	51.60	25.09	3.17	37.40	42.46	74.00	-31.54	HORIZONTAL	peak
2 4482.150	45.71	34.12	5.80	36.63	49.00	74.00	-25.00	HORIZONTAL	peak
3 4904.000	43.28	34.15	5.85	36.68	46.60	74.00	-27.40	HORIZONTAL	peak
4 6914.763	44.49	34.97	7.48	36.88	50.06	74.00	-23.94	HORIZONTAL	peak
5 7356.000	38.75	36.12	7.56	36.95	45.48	74.00	-28.52	HORIZONTAL	peak
6 9808.000	36.20	38.86	8.19	36.81	46.44	74.00	-27.56	HORIZONTAL	peak

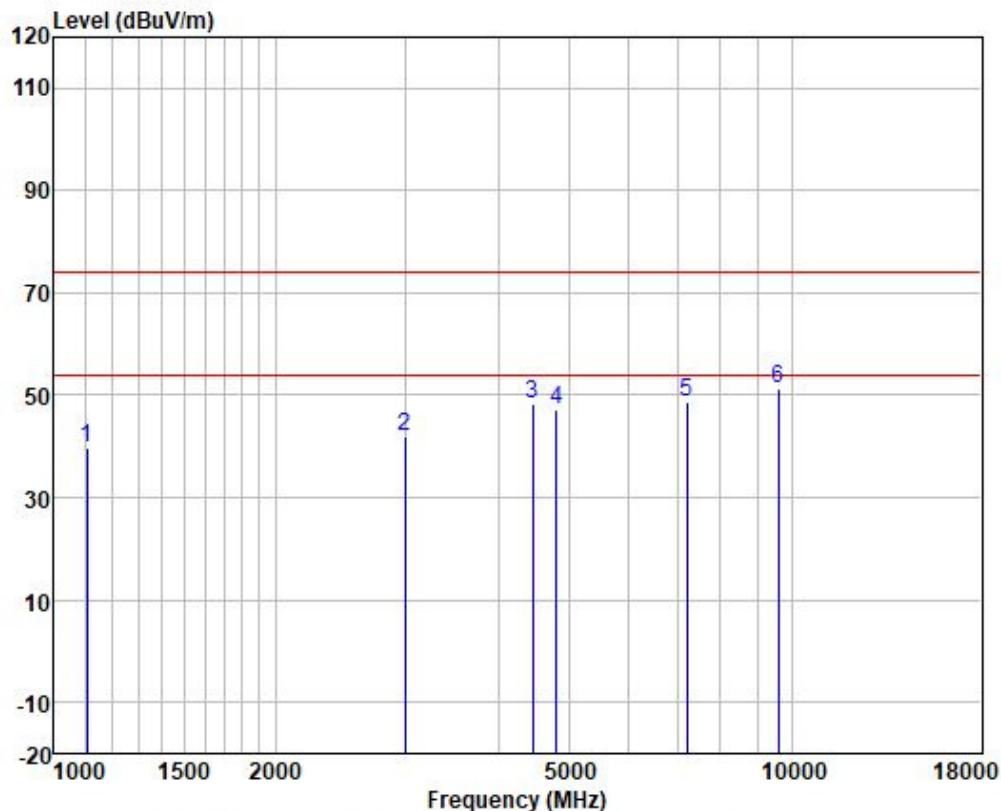
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t (86-20) 82155555 sgs.china@sgs.com

Test Mode: 07; Polarity: Vertical; Modulation:GFSK; Channel:Low

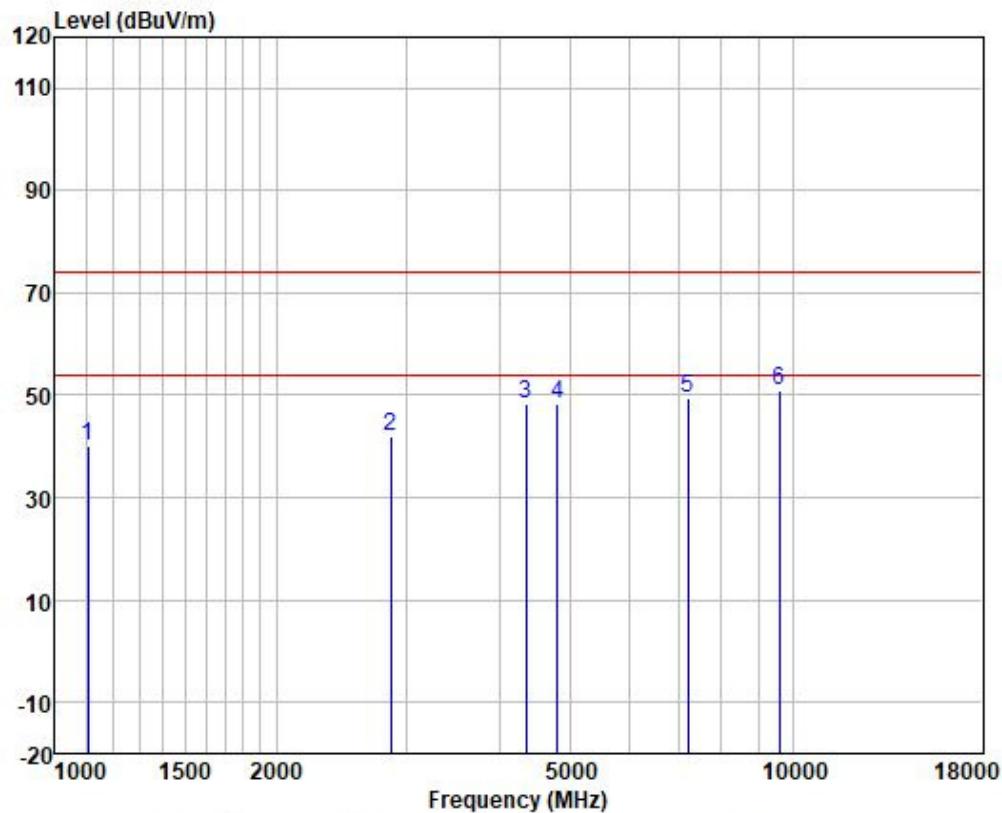


Freq	Read	Antenna	Cable	Preamp	Limit	Over	Over	Over	Remark
	Level	Factor	Loss	Factor					
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	dB	
1	1109.660	52.33	22.71	2.49	37.67	39.86	74.00	-34.14	VERTICAL peak
2	2990.531	46.31	28.67	4.05	36.95	42.08	74.00	-31.92	VERTICAL peak
3	4456.315	45.20	34.00	5.80	36.63	48.37	74.00	-25.63	VERTICAL peak
4	4804.000	44.01	34.16	5.85	36.66	47.36	74.00	-26.64	VERTICAL peak
5	7206.000	42.53	35.63	7.53	36.93	48.76	74.00	-25.24	VERTICAL peak
6	9608.000	41.42	38.68	8.10	36.82	51.38	74.00	-22.62	VERTICAL peak

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Test Mode: 07; Polarity: Horizontal; Modulation:GFSK; Channel:Low



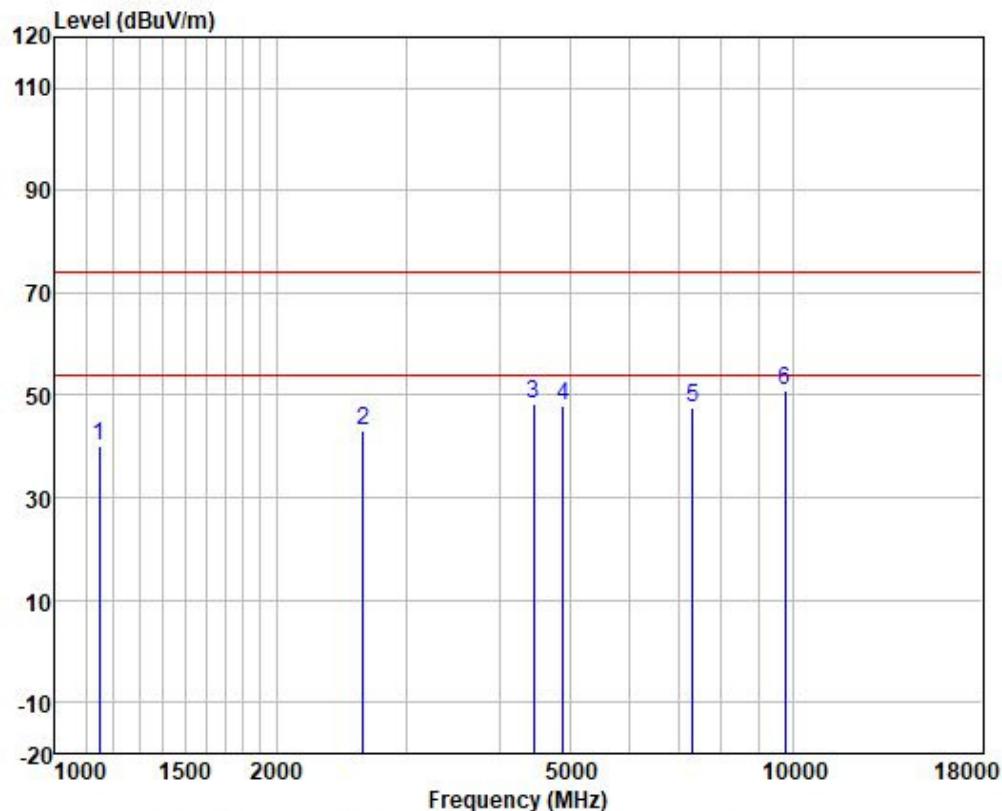
Freq	Read	Antenna	Cable	Preamp	Limit	Over	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1109.660	52.54	22.71	2.49	37.67	40.07	74.00	-33.93	HORIZONTAL peak
2	2855.380	46.53	28.53	4.01	37.04	42.03	74.00	-31.97	HORIZONTAL peak
3	4354.454	45.69	33.43	5.78	36.62	48.28	74.00	-25.72	HORIZONTAL peak
4	4804.000	45.05	34.16	5.85	36.66	48.40	74.00	-25.60	HORIZONTAL peak
5	7206.000	43.05	35.63	7.53	36.93	49.28	74.00	-24.72	HORIZONTAL peak
6	9608.000	41.08	38.68	8.10	36.82	51.04	74.00	-22.96	HORIZONTAL peak

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Test Mode: 07; Polarity: Vertical; Modulation:GFSK; Channel:middle

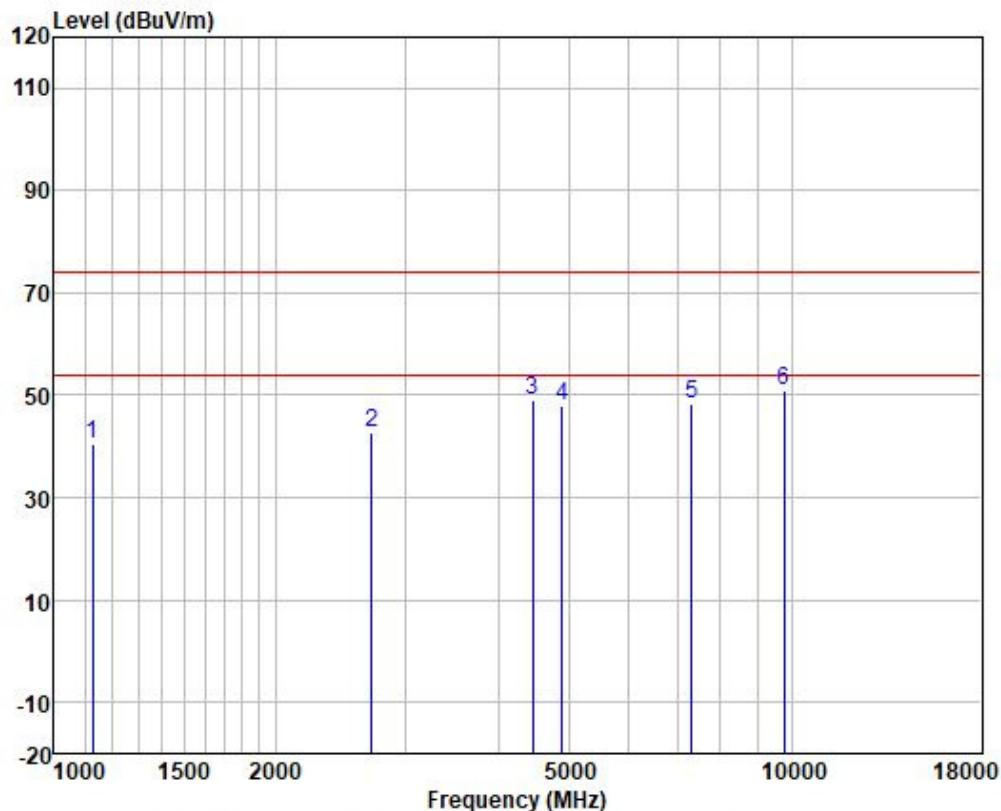


Freq	Read	Antenna	Cable	Preamp	Limit	Over	Over	Pol/Phase	Remark
	Level	Factor	Loss	Factor					
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1148.823	52.25	22.86	2.51	37.66	39.96	74.00	-34.04	VERTICAL peak
2	2618.218	48.41	28.01	3.88	37.15	43.15	74.00	-30.85	VERTICAL peak
3	4456.315	45.04	34.00	5.80	36.63	48.21	74.00	-25.79	VERTICAL peak
4	4880.000	44.49	34.15	5.85	36.67	47.82	74.00	-26.18	VERTICAL peak
5	7320.000	40.80	36.07	7.55	36.95	47.47	74.00	-26.53	VERTICAL peak
6	9760.000	40.81	38.81	8.17	36.81	50.98	74.00	-23.02	VERTICAL peak

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Test Mode: 07; Polarity: Horizontal; Modulation:GFSK; Channel:middle



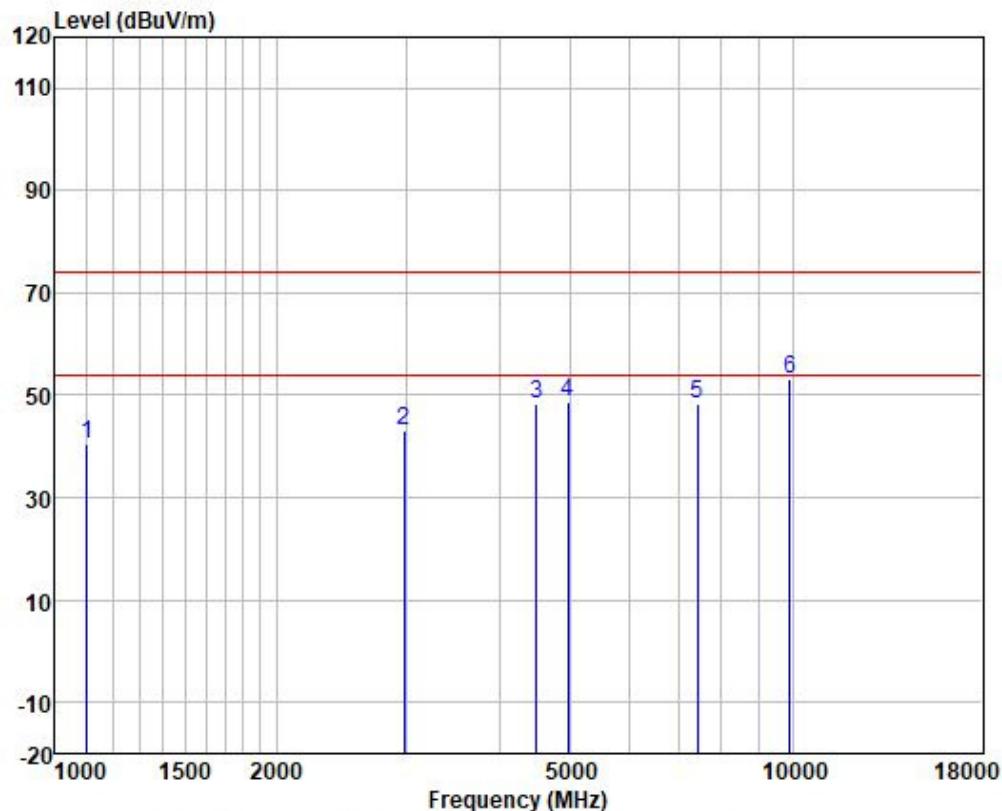
Freq MHz	Read Antenna Level dBuV	Antenna Factor	Cable Loss dB	Preamp Factor dB	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Over Limit Pol/Phase	Remark
	MHz	dB/m		dB	dBuV/m	dBuV/m			
1 1129.072	52.82	22.78	2.50	37.67	40.43	74.00	-33.57	HORIZONTAL	peak
2 2694.998	47.81	28.16	3.93	37.12	42.78	74.00	-31.22	HORIZONTAL	peak
3 4456.315	45.99	34.00	5.80	36.63	49.16	74.00	-24.84	HORIZONTAL	peak
4 4880.000	44.60	34.15	5.85	36.67	47.93	74.00	-26.07	HORIZONTAL	peak
5 7320.000	41.49	36.07	7.55	36.95	48.16	74.00	-25.84	HORIZONTAL	peak
6 9760.000	40.68	38.81	8.17	36.81	50.85	74.00	-23.15	HORIZONTAL	peak

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Test Mode: 07; Polarity: Vertical; Modulation:GFSK; Channel:High



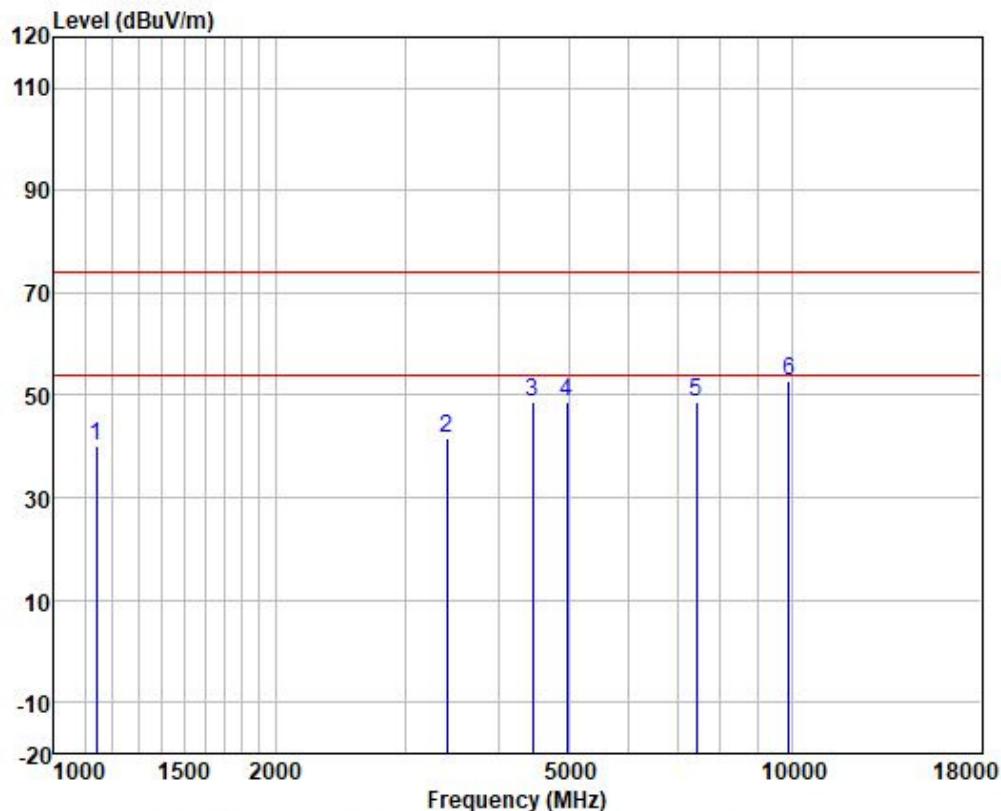
Freq	Read	Antenna	Cable	Preamp	Limit	Over	Over	Over	Remark
	Freq	Level	Factor	Loss					
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	dB	
1	1103.264	52.89	22.69	2.49	37.67	40.40	74.00	-33.60	VERTICAL peak
2	2973.293	47.22	28.66	4.04	36.97	42.95	74.00	-31.05	VERTICAL peak
3	4495.125	44.84	34.17	5.81	36.63	48.19	74.00	-25.81	VERTICAL peak
4	4960.000	45.40	34.15	5.86	36.69	48.72	74.00	-25.28	VERTICAL peak
5	7440.000	41.53	36.33	7.58	36.96	48.48	74.00	-25.52	VERTICAL peak
6	9920.000	42.76	38.95	8.23	36.80	53.14	74.00	-20.86	VERTICAL peak

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Test Mode: 07; Polarity: Horizontal; Modulation:GFSK; Channel:High



Freq	ReadAntenna	Cable	Preamp	Limit		Over	Pol/Phase	Remark
				Level	Factor			
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1142.201	52.47	22.83	2.51	37.66	40.15	74.00	-33.85 HORIZONTAL peak
2	3405.929	44.78	28.99	4.67	36.74	41.70	74.00	-32.30 HORIZONTAL Peak
3	4456.315	45.58	34.00	5.80	36.63	48.75	74.00	-25.25 HORIZONTAL peak
4	4960.000	45.19	34.15	5.86	36.69	48.51	74.00	-25.49 HORIZONTAL peak
5	7440.000	41.63	36.33	7.58	36.96	48.58	74.00	-25.42 HORIZONTAL peak
6	9920.000	42.60	38.95	8.23	36.80	52.98	74.00	-21.02 HORIZONTAL peak

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## 7.5 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 $\geq 50$ hopping channels
	0.25 for $25 \leq$ hopping channels $< 50$
	1 for digital modulation
2400-2483.5	1 for $\geq 75$ 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

### 7.5.1 E.U.T. Operation

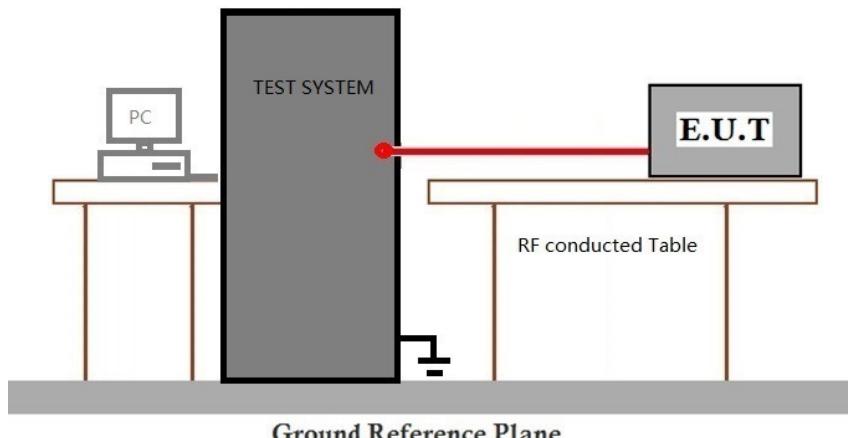
Operating Environment:

Temperature: 21.1 °C      Humidity: 53.0 % RH      Atmospheric Pressure: 1003 mbar

### 7.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	05	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), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	07	TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation.

### 7.5.3 Test Setup Diagram



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**7.5.4 Measurement Procedure and Data**

Note: Since the verify power the same operating range bandwidth and smaller power can be covered by the higher power.

Please Refer to Appendix for Details



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## 7.6 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:  $\geq 500$  kHz

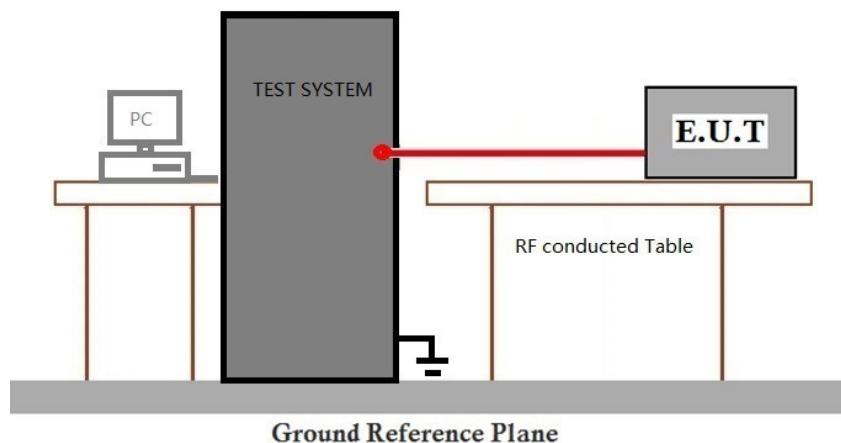
### 7.6.1 E.U.T. Operation

Operating Environment:  
Temperature: 21.1 °C      Humidity: 53.0 % RH      Atmospheric Pressure: 1003 mbar

### 7.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	05	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), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	07	TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation.

### 7.6.3 Test Setup Diagram



### 7.6.4 Measurement Procedure and Data

Please Refer to Appendix for Details



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## 7.7 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

### 7.7.1 E.U.T. Operation

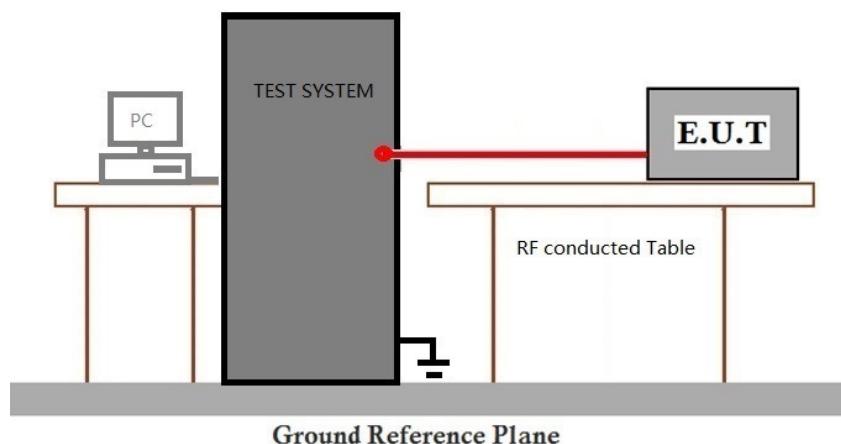
Operating Environment:

Temperature: 21.1 °C Humidity: 53.0 % RH Atmospheric Pressure: 1003 mbar

### 7.7.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	05	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), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	07	TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation.

### 7.7.3 Test Setup Diagram



### 7.7.4 Measurement Procedure and Data

Please Refer to Appendix for Details



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## 7.8 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)).

### 7.8.1 E.U.T. Operation

Operating Environment:

Temperature: 21.1 °C      Humidity: 53.0 % RH      Atmospheric Pressure: 1003 mbar

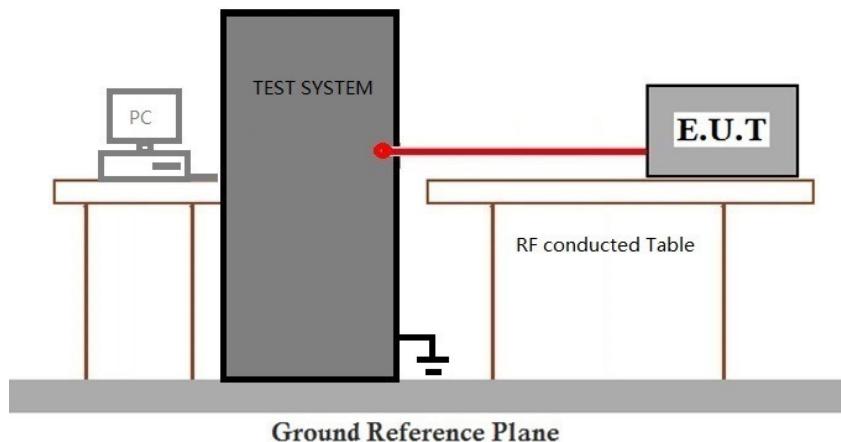
### 7.8.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	05	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), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	07	TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation.

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**7.8.3 Test Setup Diagram****7.8.4 Measurement Procedure and Data**

Please Refer to Appendix for Details

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## 7.9 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)).

### 7.9.1 E.U.T. Operation

Operating Environment:

Temperature: 21.1 °C Humidity: 53.0 % RH Atmospheric Pressure: 1003 mbar

### 7.9.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	05	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), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.
Final test	07	TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation.

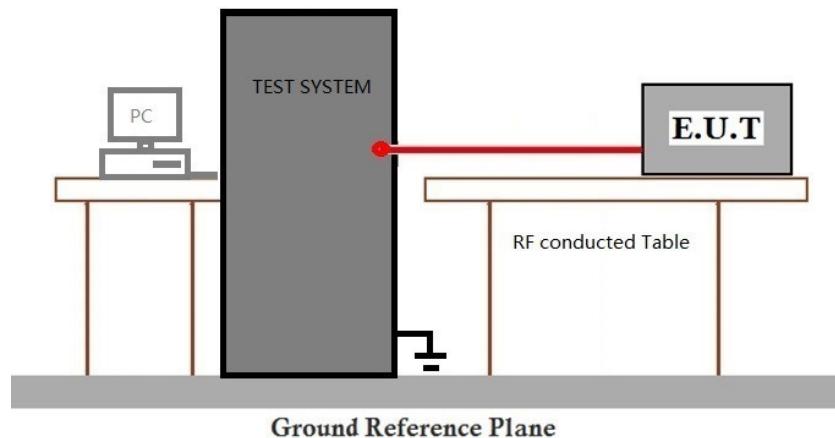
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**7.9.3 Test Setup Diagram****7.9.4 Measurement Procedure and Data**

Please Refer to Appendix for Details

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## 8 Test Setup Photo

Refer to Appendix - Test Setup Photo for GZCR240600064503



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## 9 EUT Constructional Details (EUT Photos)

Refer to External and Internal Photos for GZCR2406000645HS



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