



FCC TEST REPORT

FOR

Guangzhou BDE Technology Inc.

BDE Multi-Protocol Sub-1GHz Wireless Module Based on CC1312R

Test Model: BDE-RFM206

Additional Model No.: BDE-RFM206-IN

Prepared for : Guangzhou BDE Technology Inc.
Address : B2-403, Chuangyi Building, 162 Science Avenue, Huangpu District, Guangzhou 510663, China

Prepared by : Shenzhen LCS Compliance Testing Laboratory Ltd.
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Date of receipt of test sample : June 03, 2026
Number of tested samples : 2
Sample No. : A260528004-1, A260528004-2
Serial number : Prototype
Date of Test : June 03, 2026 ~ September 08, 2026
Date of Report : September 09, 2026



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**FCC TEST REPORT
FCC CFR 47 PART 15 C (15.247)****Report Reference No. : LCSA06016005EA****Date of Issue..... : September 09, 2026****Testing Laboratory Name..... : Shenzhen LCS Compliance Testing Laboratory Ltd.****Address..... : 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei,
Shajing Street, Baoan District, Shenzhen, 518000, China****Testing Location/ Procedure..... : Full application of Harmonised standards ■
Partial application of Harmonised standards □
Other standard testing method □****Applicant's Name..... : Guangzhou BDE Technology Inc.****Address..... : B2-403, Chuangyi Building, 162 Science Avenue, Huangpu District,
Guangzhou 510663, China****Test Specification****Standard..... : FCC CFR 47 PART 15 C (15.247)****Test Report Form No..... : TRF-4-E-148 A/0****TRF Originator..... : Shenzhen LCS Compliance Testing Laboratory Ltd.****Master TRF..... : Dated 2011-03****Shenzhen LCS Compliance Testing Laboratory Ltd. All rights reserved.**

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**Test Item Description..... : BDE Multi-Protocol Sub-1GHz Wireless Module Based on
CC1312R****Trade Mark..... : N/A****Test Model..... : BDE-RFM206****Ratings..... : Please Refer to Page 6****Result : Positive****Compiled by:**

Diamond Lu/ Administrator

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**FCC -- TEST REPORT**

Test Report No. : LCSA06016005EA	<u>September 09, 2026</u> Date of issue
---	--

Test Model.....	: BDE-RFM206
EUT.....	: BDE Multi-Protocol Sub-1GHz Wireless Module Based on CC1312R
Applicant.....	: Guangzhou BDE Technology Inc.
Address.....	: B2-403, Chuangyi Building, 162 Science Avenue, Huangpu District, Guangzhou 510663, China
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Factory.....	: Guangzhou BDE Technology Inc.
Address.....	: B2-403, Chuangyi Building, 162 Science Avenue, Huangpu District, Guangzhou 510663, China
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Fax.....	: /

Test Result	Positive
--------------------	-----------------

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.



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Revision History

Report Version	Issue Date	Revision Content	Revised By
000	September 09, 2026	Initial Issue	---



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1. GENERAL INFORMATION

1.1 Description of Device (EUT)

EUT : BDE Multi-Protocol Sub-1GHz Wireless Module Based on CC1312R

Test Model : BDE-RFM206

Additional Model No. : BDE-RFM206-IN

Model Declaration : See model list

Ratings : DC 3.3V

Hardware Version : V1.0

Software Version : V1.0

Frequency Range : 50kbps, 100kbps: 902.2MHz ~ 927.8MHz
150kbps, 200kbps: 902.4MHz ~ 927.6MHz

Equipment Type : FHSS

Channel Number : 129 Channels (50kbps, 100kbps)
64 Channels (150kbps, 200kbps)

Modulation Type : 2-GFSK

Antenna Description : PCB Antenna, -7.08dBi(Max.)

Note: For a more detailed antenna description, please refer to the antenna specifications or the antenna report provided by the customer.

Model list:

Model Name	FCC ID	Part Number	Flash	ROM	Antenna Options	Operating Temperature(°C)
BDE-RFM206	2ABRU-RFM206	BDE-RFM206	352KB	256KB	PCB Antenna	-40~85
		BDE-RFM206-IN				-40~105

Identities and differences:

The above models have same PCB board and structure, The differences between the above models mainly lie in the operating temperature.



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1.2 Support equipment List

Manufacturer	Description	Model	Serial Number	Certificate
Lenovo	ADAPTER for Notebook	ADP-90DD B	36001941	FCC

Note: The Notebook is supplied by lab and only use tested.

1.3 External I/O Cable

I/O Port Description	Quantity	Cable
--	--	--

1.4 Description of Test Facility

NVLAP Accreditation Code is 600167-0.

FCC Designation Number is CN5024.

CAB identifier is CN0071.

CNAS Registration Number is L4595.

Test Firm Registration Number: 254912.

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.10:2013 and CISPR 16-1-4:2010 SVSWR requirement for radiated emission above 1GHz.

1.5 Statement of the Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the LCS quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.



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1.6 Measurement Uncertainty

Test Item	Frequency Range	Uncertainty	Note
Radiation Uncertainty	9KHz~30MHz	±3.10dB	(1)
	30MHz~200MHz	±2.96dB	(1)
	200MHz~1000MHz	±3.10dB	(1)
	1GHz~26.5GHz	±3.80dB	(1)
	26.5GHz~40GHz	±3.90dB	(1)
Conduction Uncertainty	150kHz~30MHz	±1.63dB	(1)
Power disturbance	30MHz~300MHz	±1.60dB	(1)
Output power	1GHz~40GHz	±0.57dB	(1)
Power Spectral Density	1GHz~40GHz	±1.2dB	(1)
Occupied Channel Bandwidth	1GHz~40GHz	±5%	(1)
Conducted RF Spurious Emission	9kHz~40GHz	±1.80dB	(1)
Emissions in Restricted Bands	1GHz~40GHz	±2.47dB	(1)
Frequency Stability	1GHz~40GHz	±25Hz	(1)
Dwell time	1GHz~40GHz	2.3%	(1)

(1). This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

1.7 Description of Test Modes

The EUT works in the X-axis, Y-axis, Z-axis. The following operating modes were applied for the related test items. All test modes were tested, only the result of the worst case was recorded in the report.

AC conducted emission pre-test at both at AC 120V/60Hz and AC 240V/50Hz modes, recorded worst case.

AC conducted emission pre-test at both at power adapter and power from PC modes, recorded worst case.

Worst-case mode and channel used for 150 KHz-30 MHz power line conducted emissions was determined to be TX (Middle Channel).

Worst-case mode and channel used for 9 KHz-1000 MHz radiated emissions was determined to be TX (Middle Channel).

With the consideration of the identities and differences list above, BDE-RFM206 is fully tested, at radiated emission test item, we choose BDE-RFM206-IN for differences test, and only recorded worst case in the report(model: BDE-RFM206).





Test configuration parameter:

Mode	Modulation	Power Level Setting	Data Rate	Duty Cycle (%)
50kbps	2-GFSK	Default	Default	100
100kbps	2-GFSK	Default	Default	100
150kbps	2-GFSK	Default	Default	100
200kbps	2-GFSK	12 for lowest Channel; Default for Middle Channel and Highest Channel	Default	100

Channel list:

Wi-SUN Mode #1b, 50kbps&Wi-SUN Mode #2a, 100kbps					
channel number	frequency (MHz)	channel number	frequency (MHz)	channel number	frequency (MHz)
0	902.2	43	910.8	86	919.4
1	902.4	44	911	87	919.6
2	902.6	45	911.2	88	919.8
3	902.8	46	911.4	89	920
4	903	47	911.6	90	920.2
5	903.2	48	911.8	91	920.4
6	903.4	49	912	92	920.6
7	903.6	50	912.2	93	920.8
8	903.8	51	912.4	94	921
9	904	52	912.6	95	921.2
10	904.2	53	912.8	96	921.4
11	904.4	54	913	97	921.6
12	904.6	55	913.2	98	921.8
13	904.8	56	913.4	99	922
14	905	57	913.6	100	922.2
15	905.2	58	913.8	101	922.4
16	905.4	59	914	102	922.6
17	905.6	60	914.2	103	922.8
18	905.8	61	914.4	104	923
19	906	62	914.6	105	923.2
20	906.2	63	914.8	106	923.4
21	906.4	64	915	107	923.6
22	906.6	65	915.2	108	923.8
23	906.8	66	915.4	109	924
24	907	67	915.6	110	924.2
25	907.2	68	915.8	111	924.4
26	907.4	69	916	112	924.6
27	907.6	70	916.2	113	924.8
28	907.8	71	916.4	114	925



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29	908	72	916.6	115	925.2
30	908.2	73	916.8	116	925.4
31	908.4	74	917	117	925.6
32	908.6	75	917.2	118	925.8
33	908.8	76	917.4	119	926
34	909	77	917.6	120	926.2
35	909.2	78	917.8	121	926.4
36	909.4	79	918	122	926.6
37	909.6	80	918.2	123	926.8
38	909.8	81	918.4	124	927
39	910	82	918.6	125	927.2
40	910.2	83	918.8	126	927.4
41	910.4	84	919	127	927.6
42	910.6	85	919.2	128	927.8

Note: The black bold channels were selected for 50kbps and 100kbps test.

Wi-SUN Mode #1b, 150kbps&Wi-SUN Mode #2a, 200kbps					
channel number	frequency (MHz)	channel number	frequency (MHz)	channel number	frequency (MHz)
0	902.4	22	911.2	44	920
1	902.8	23	911.6	45	920.4
2	903.2	24	912	46	920.8
3	903.6	25	912.4	47	921.2
4	904	26	912.8	48	921.6
5	904.4	27	913.2	49	922
6	904.8	28	913.6	50	922.4
7	905.2	29	914	51	922.8
8	905.6	30	914.4	52	923.2
9	906	31	914.8	53	923.6
10	906.4	32	915.2	54	924
11	906.8	33	915.6	55	924.4
12	907.2	34	916	56	924.8
13	907.6	35	916.4	57	925.2
14	908	36	916.8	58	925.6
15	908.4	37	917.2	59	926
16	908.8	38	917.6	60	926.4
17	909.2	39	918	61	926.8
18	909.6	40	918.4	62	927.2
19	910	41	918.8	63	927.6
20	910.4	42	919.2	/	/
21	910.8	43	919.6	/	/

Note: The black bold channels were selected for 150kbps and 200kbps test.



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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2020, FCC CFR PART 15C 15.205, 15.207, 15.209 and 15.247.

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

The EUT was operated in the normal operating mode for Hopping Numbers and Dwell Time test and a continuous transmits mode for other tests.

According to its specifications, the EUT must comply with the requirements of the Section 15.205, 15.207, 15.209, 15.247 under the FCC Rules Part 15 Subpart C.

2.3 General Test Procedures

2.3.1 Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 6.1.1 of ANSI C63.10-2020 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using Quasi-peak and average detector modes.

2.3.2 Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane below 1GHz and 1.5 m above ground plane above 1GHz. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 6.4 of ANSI C63.10-2020.

2.4. Test Sample

The application provides 2 samples to meet requirement;

Sample Number	Description
Sample 1(A260528004-1)	Engineer sample – continuous transmit
Sample 2(A260528004-2)	Normal sample – Intermittent transmit





3. SYSTEM TEST CONFIGURATION

3.1 Justification

The system was configured for testing in a continuous transmits condition.

3.2 EUT Exercise Software

The system was configured for testing in a continuous transmits condition and change test channels by software provided by applicant. Power Settings Default.

3.3 Special Accessories

N/A

3.4 Block Diagram/Schematics

Please refer to the related document.

3.5 Equipment Modifications

Shenzhen LCS Compliance Testing Laboratory Ltd. has not done any modification on the EUT.

3.6 Test Setup

Please refer to the test setup photo.



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4. SUMMARY OF TEST RESULTS

Applied Standard: FCC Part 15 Subpart C				
FCC Rules	Description of Test	Test Sample	Result	Remark
§15.247(a)(1)(i)	20dB Bandwidth	Sample 1	Compliant	Appendix A.1
§15.247(b)(2)	Maximum Peak Conducted Output Power	Sample 1	Compliant	Appendix A.2
§15.247(a)(1)	Frequency Separation	Sample 1	Compliant	Appendix A.3
§15.247(a)(1)(i)	Time Of Occupancy (Dwell Time)	Sample 1	Compliant	Appendix A.4
§15.247(a)(1)(i)	Number Of Hopping Frequency	Sample 1	Compliant	Appendix A.5
§15.209(a)	Radiated Spurious Emissions	Sample 1 Sample 2	Compliant	Note 1
§15.247(d)	Band Edges Measurements and Conducted Spurious Emissions	Sample 1	Compliant	Appendix A.6 Appendix A.7
§15.205	Emissions at Restricted Band	Sample 1	Compliant	Note 1
§15.207(a)	AC Mains Conducted Emissions	Sample 1	Compliant	Note 1
§15.203	Antenna Requirements	Sample 1	Compliant	Note 1

Remark:

1. Note 1 – Test results inside test report;



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5. SUMMARY OF TEST EQUIPMENT

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	Power Meter	R&S	NRVS	100444	2026-05-21	2027-05-20
2	Power Sensor	R&S	NRP-Z81	100458	2026-05-21	2027-05-20
3	Power Sensor	R&S	U2021	10057	2026-05-21	2027-05-20
4	Test Software	MWRFTtest	MTS 8310	/	N/A	N/A
5	RF Control Unit	MWRFTtest	MW100-RFCB	/	2025-11-07	2026-11-06
6	MXA Signal Analyzer	Agilent	N9020A	MY53300304	2026-04-21	2027-04-20
7	DC Power Supply	Agilent	E3642A	N/A	2025-09-27	2026-09-26
8	EMI Test Software	Farad	EZ-EMC	Ver. EMC-CON 3A1.1+	N/A	N/A
9	3m Semi Anechoic Chamber	Maorui	966	/	2023-10-12	2026-10-11
10	Positioning Controller	Max-Full	MF7802BS	MF780208586	N/A	N/A
11	Active Loop Antenna	SCHWARZBECK	FMZB 1519B	00005	2024-07-13	2027-07-12
12	By-log Antenna	SCHWARZBECK	VULB9163	9163-470	2024-08-03	2027-08-02
13	Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1925	2024-07-13	2027-07-12
14	Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	791	2024-07-13	2027-07-12
15	Broadband Preamplifier	SCHWARZBECK	BBV9719	9719-025	2024-07-30	2027-07-29
16	EMI Test Receiver	R&S	ESR3	101181	2026-05-06	2027-05-05
17	RS SPECTRUM ANALYZER	R&S	FSP40	100503	2026-04-21	2027-04-20
18	Low-frequency amplifier	SchwarzZBECK	BBV9745	00253	2025-09-27	2026-09-26
19	High-frequency amplifier	JS Denki Pte	PA0118-43	JSPA21009	2025-09-27	2026-09-26
20	6dB Attenuator	/	100W/6dB	1172040	2026-04-21	2027-04-20
21	3dB Attenuator	/	2N-3dB	/	2025-09-28	2026-09-27
22	EMI Test Receiver	R&S	ESPI	101940	2026-04-21	2027-04-20
23	Artificial Mains	R&S	ENV216	101479	2026-04-21	2027-04-20
24	Pulse Limiter	R&S	ESH3-Z2	102750-NB	2026-05-06	2027-05-05
25	EMI Test Software	Farad	EZ-EMC	Ver. EMC-CON 3A1.1+	N/A	N/A
26	Antenna Mast	Max-Full	MFA-515BSN	1308572	N/A	N/A



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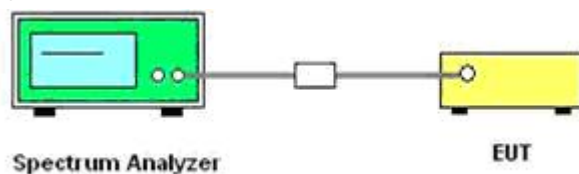
6. MEASUREMENT RESULTS

6.1. Frequency Separation and 20 dB Bandwidth

6.1.1 Limit

1. According to § 15.247(a)(1), Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.
2. According to §15.247(a)(1)(i), The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

6.1.2 Block Diagram of Test Setup



6.1.3 Test Procedure

Frequency separation test procedure :

- 1). Place the EUT on the table and set it in transmitting mode.
- 2). Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Spectrum Analyzer.
- 3). Set center frequency of Spectrum Analyzer = middle of hopping channel.
- 4). Set the Spectrum Analyzer as RBW = 30 kHz, VBW = 100 kHz, Span = wide enough to capture the peaks of two adjacent channels, Sweep = auto.
- 5). Max hold, mark 2 peaks of hopping channel and record the 2 peaks frequency.

20dB bandwidth test procedure :

- 1). Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel.
- 2). RBW $\geq 1\%$ of the 20 dB bandwidth, VBW $\geq$ RBW.
- 3). Detector function = peak.
- 4). Trace = max hold.

6.1.4 Test Results

6.1.4.1 20dB Bandwidth

PASS

Please refer to Appendix A.1

Remark:

1. Test results including cable loss

6.1.4.2 Frequency Separation

PASS

Please refer to Appendix A.3



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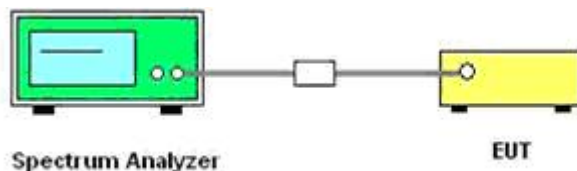
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6.2. Maximum Peak Conducted Output Power

6.2.1 Block Diagram of Test Setup



6.2.2 Limit

According to §15.247(b)(2), For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under paragraph (a)(1)(i) of this section.

6.2.3 Test Procedure

The transmitter output is connected to the spectrum.

6.2.4. Test Procedures

- 1) Span: Approximately five times the 20 dB bandwidth, centered on a hopping channel.
- 2) RBW > 20 dB bandwidth of the emission being measured.
- 3) VBW $\geq$ RBW.
- 4) Sweep: Auto.
- 5) Detector function: Peak.
- 6) Trace: Max hold.

6.2.5 Test Results

PASS

Please refer to Appendix A.2

Remark:

1. Test results including cable loss



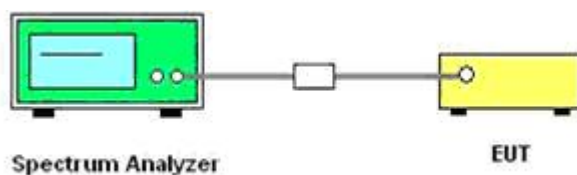


6.3. Time of Occupancy (Dwell Time)

6.3.1 Limit

According to §15.247(a)(1)(i), For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period.

6.3.2 Block Diagram of Test Setup



6.3.3 Test Procedure

- 1). Place the EUT on the table and set it in transmitting mode.
- 2). Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Spectrum Analyzer.
- 3). Set center frequency of Spectrum Analyzer = operating frequency.
- 4). Set the Spectrum Analyzer as RBW=100kHz, VBW=300kHz, Span = 0Hz, Sweep = auto.
- 5). Repeat above procedures until all frequency measured was complete.

6.3.4 Test Results

The Dwell Time=Burst Width*Total Hops.

PASS

Please refer to Appendix A.4

Remark:

1. Test results including cable loss



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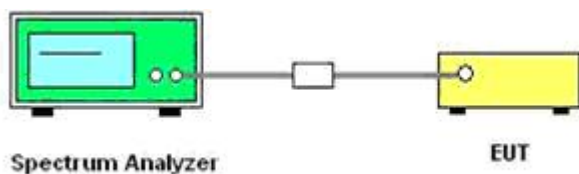


6.4. Number of Hopping Frequency

6.4.1 Limit

According to §15.247(a)(1)(i), For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies.

6.4.2 Block Diagram of Test Setup



6.4.3 Test Procedure

- 1). Place the EUT on the table and set it in transmitting mode.
- 2). Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Spectrum Analyzer.
- 3). Set Spectrum Analyzer Start=900MHz, Stop = 930MHz, Sweep = auto.
- 4). Set the Spectrum Analyzer as RBW=10KHz, VBW=300KHz.
- 5). Max hold, view and count how many channel in the band.

6.4.4 Test Results

PASS

Please refer to Appendix A.5

Remark:

1. Test results including cable loss



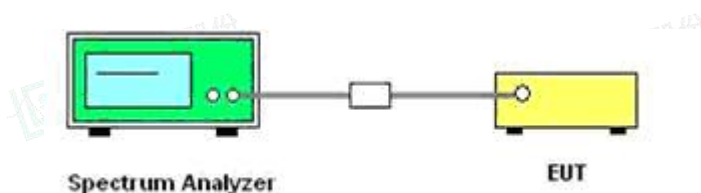


6.5. Band Edges Measurements and Conducted Spurious Emissions Test

6.5.1 Limit

According to §15.247(d), 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.

6.5.2 Block Diagram of Test Setup



6.5.3 Test Procedure

Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 100 KHz. The video bandwidth is set to 300 KHz.

Measurements are made over the 30 MHz to 10GHz range with the transmitter set to the lowest, middle, and highest channels

6.5.4 Test Results of Conducted Spurious Emissions

No non-compliance noted. Only record the worst test result in this report. The test data refer to the following page.

PASS

Please refer to Appendix A.6 for Band Edges Measurements.

Please refer to Appendix A.7 for Conducted Spurious Emission.

Remark:

1. Test results including cable loss





6.6. Radiated Emission

6.6.1. Standard Applicable

According to §15.247(d), radiated emission outside the frequency band attenuation below the general limits specified in FCC section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC section 15.205(a), must also comply with the radiated emission limits specified in FCC section 15.209(a).

According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequencies (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

1. For Above 1000MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.

2. For above 1000MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK)

15.205 (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(12)
13.36-13.41			





6.6.2. Measuring Instruments and Setting

Please refer to of equipment list in this report. The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10 th carrier harmonic
RB / VB (Emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 1/T kHz for Average
RB / VB (Emission in non-restricted band)	1MHz / 1MHz for Peak, 1 MHz / 1/T kHz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB/VB 200Hz/1KHz for QP/AVG
Start ~ Stop Frequency	150kHz~30MHz / RB/VB 9kHz/30KHz for QP/AVG
Start ~ Stop Frequency	30MHz~1000MHz / RB/VB 120kHz/1MHz for QP

6.6.3. Test Procedures

1) Sequence of testing 9 kHz to 30 MHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 0.8 m height is used.
- If the EUT is a floor standing device, it is placed on the ground.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions.
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

Premeasurement:

- The turntable rotates from 0° to 315° using 45° steps.
- The antenna height is 1.0 meter.
- At each turntable position the analyzer sweeps with peak detection to find the maximum of all emissions

Final measurement:

- Identified emissions during the premeasurement the software maximizes by rotating the turntable position (0° to 360°) and by rotating the elevation axes (0° to 360°).
- The final measurement will be done in the position (turntable and elevation) causing the highest emissions with QPK detector.
- The final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to





the limit and limit will be recorded. Also a plot with the graph of the premeasurement and the limit will be stored.

2) Sequence of testing 30 MHz to 1 GHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a table with 0.8 m height is used, which is placed on the ground plane.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

Premeasurement:

- The turntable rotates from 0° to 315° using 45° steps.
- The antenna is polarized vertical and horizontal.
- The antenna height changes from 1 to 4 meter.
- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

Final measurement:

- The final measurement will be performed with minimum the six highest peaks.
- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position ($\pm 45^\circ$) and antenna movement between 1 and 4 meter.
- The final measurement will be done with QP detector with an EMI receiver.
- The final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.

3) Sequence of testing 1 GHz to 18 GHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 3 meter.





--- The EUT was set into operation.

Premeasurement:

--- The turntable rotates from 0° to 315° using 45° steps.

--- The antenna is polarized vertical and horizontal.

--- The antenna height scan range is 1 meter to 4 meter.

--- At each turntable position and antenna polarization the analyzer sweeps with peak detection to find the maximum of all emissions.

Final measurement:

--- The final measurement will be performed with minimum the six highest peaks.

--- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position ($\pm 45^\circ$) and antenna movement between 1 and 4 meter. This procedure is repeated for both antenna polarizations.

--- The final measurement will be done in the position (turntable, EUT-table and antenna polarization) causing the highest emissions with Peak and Average detector.

--- The final levels, frequency, measuring time, bandwidth, turntable position, EUT-table position, antenna polarization, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.



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4) Sequence of testing above 18 GHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 1 meter.
- The EUT was set into operation.

Premeasurement:

- The antenna is moved spherical over the EUT in different polarizations of the antenna.

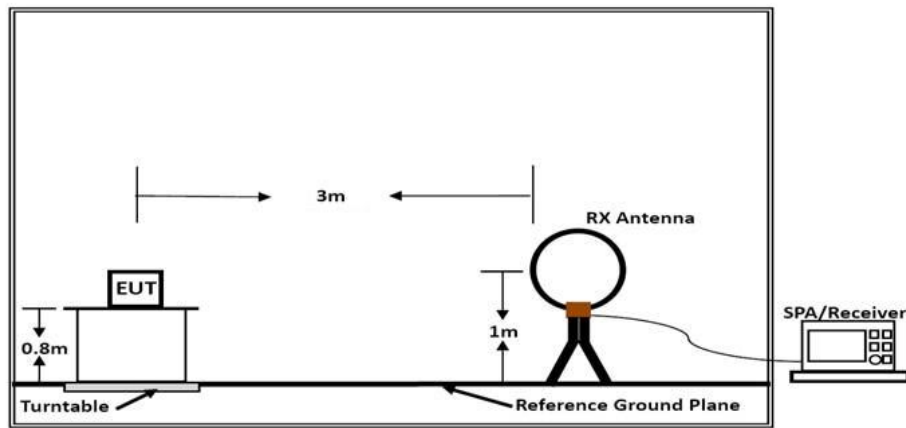
Final measurement:

- The final measurement will be performed at the position and antenna orientation for all detected emissions that were found during the premeasurements with Peak and Average detector.
- The final levels, frequency, measuring time, bandwidth, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement and the limit will be stored.

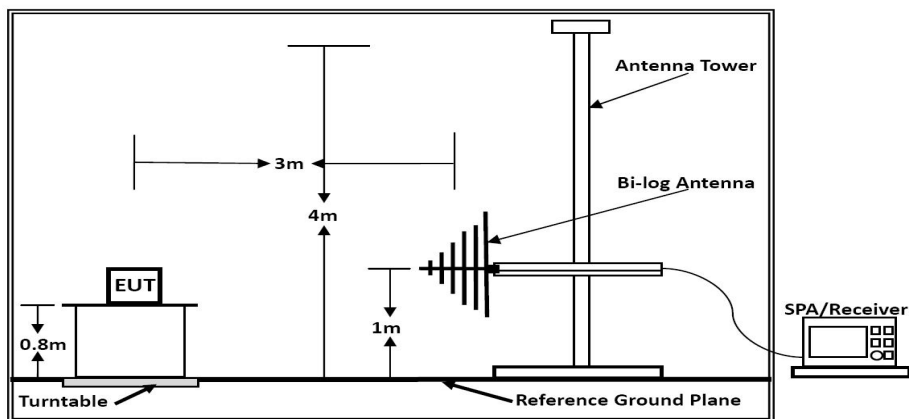




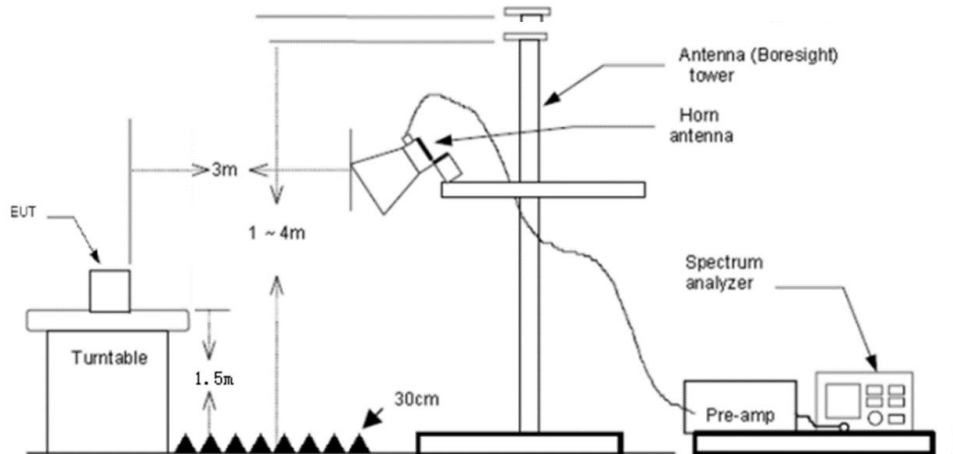
6.6.4. Test Setup Layout



Below 30MHz



Below 1GHz



Above 10 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade from 3m to 1.5m.



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6.6.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

6.6.6. Results of Radiated Emissions (9 KHz~30MHz)

Temperature	23.8℃	Humidity	52.1%
Test Engineer	Faith Li	Configurations	TX

Freq. (MHz)	Level (dBuV)	Over Limit (dB)	Over Limit (dBuV)	Remark
-	-	-	-	See Note

Note:

The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.

Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor.

6.6.7. Results of Radiated Emissions (30 MHz~1000 MHz)

Temperature	23.8℃	Humidity	52.1%
Test Engineer	Faith Li	Configurations	TX

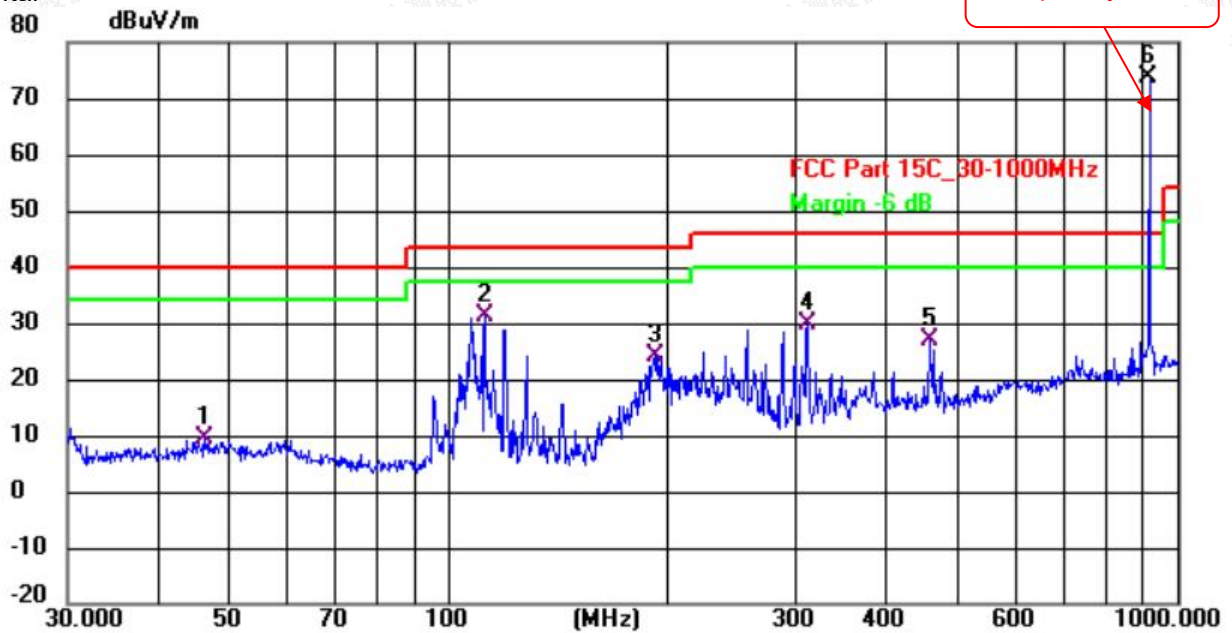
PASS.

Only record the worst test result in this report.

The test data please refer to following page.



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50kbps
Horizontal

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector
1		46.1779	26.95	-17.66	9.29	40.00	-30.71	QP
2		112.1303	50.20	-19.00	31.20	43.50	-12.30	QP
3		191.7450	44.48	-20.54	23.94	43.50	-19.56	QP
4		311.0865	45.76	-16.10	29.66	46.00	-16.34	QP
5		457.5072	39.42	-12.62	26.80	46.00	-19.20	QP
6	*	915.0000	79.94	-6.05	73.89	46.00	27.89	peak



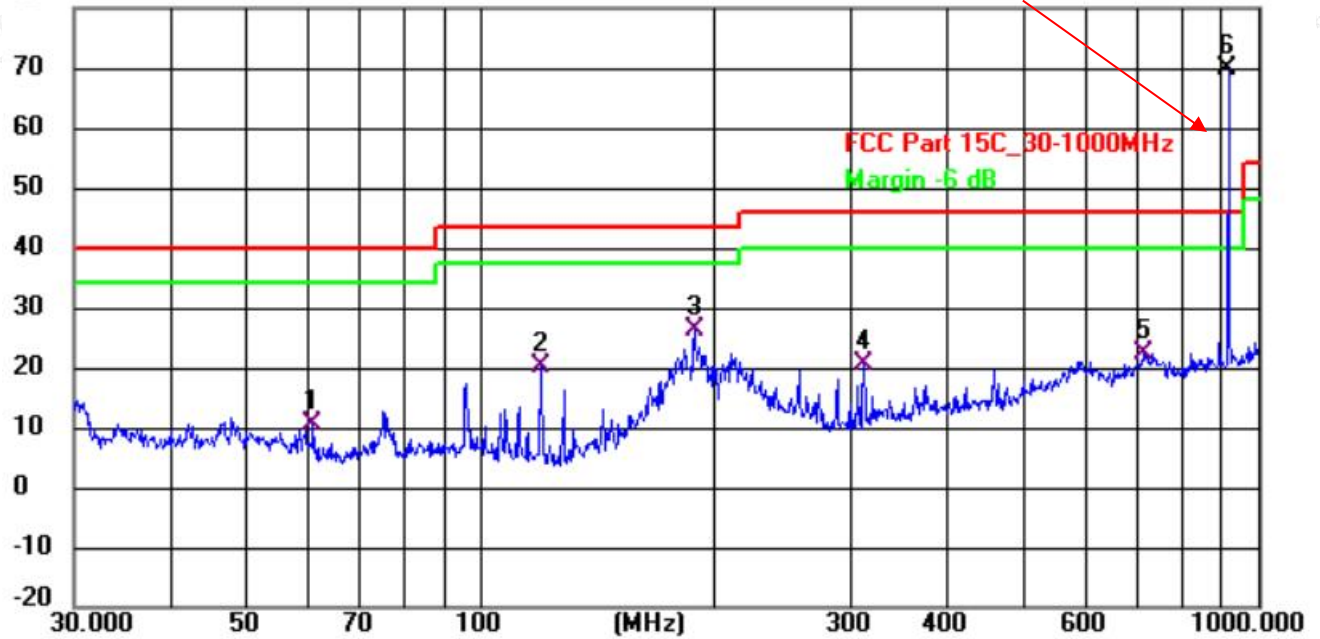


Vertical

80

dBuV/m

Frequency Point



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	
		MHz	Level	Factor	ment			Detector
			dBuV	dB/m	dBuV/m	dBuV/m	dB	
1		60.9175	30.71	-20.19	10.52	40.00	-29.48	QP
2		119.4360	41.47	-21.13	20.34	43.50	-23.16	QP
3		188.4125	45.73	-19.43	26.30	43.50	-17.20	QP
4		311.0866	36.13	-15.61	20.52	46.00	-25.48	QP
5		711.6734	32.12	-9.71	22.41	46.00	-23.59	QP
6	*	915.0000	76.33	-6.59	69.74	46.00	23.74	peak



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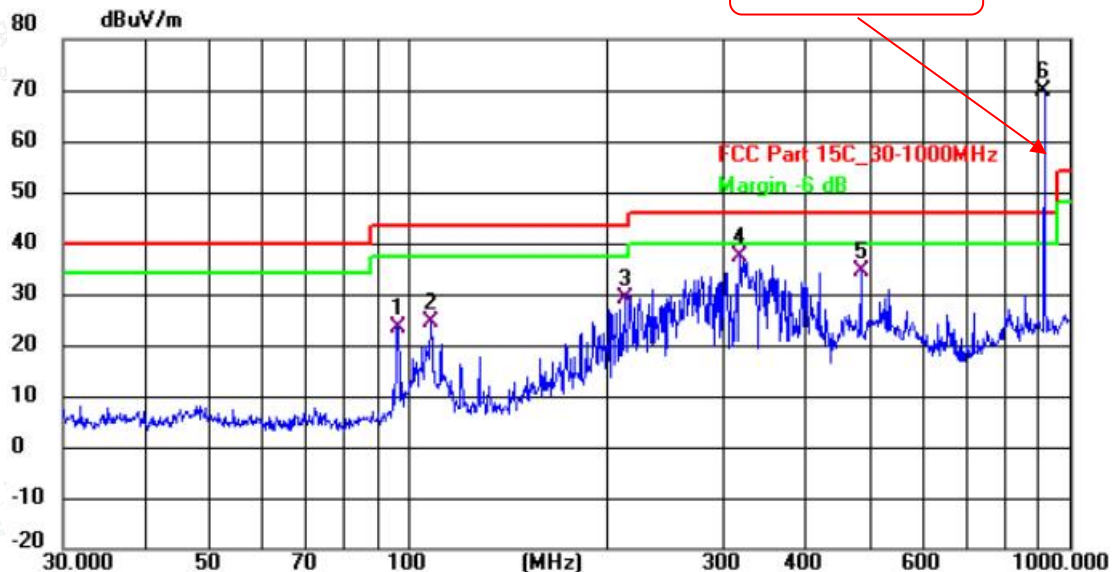
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100kbps
Horizontal

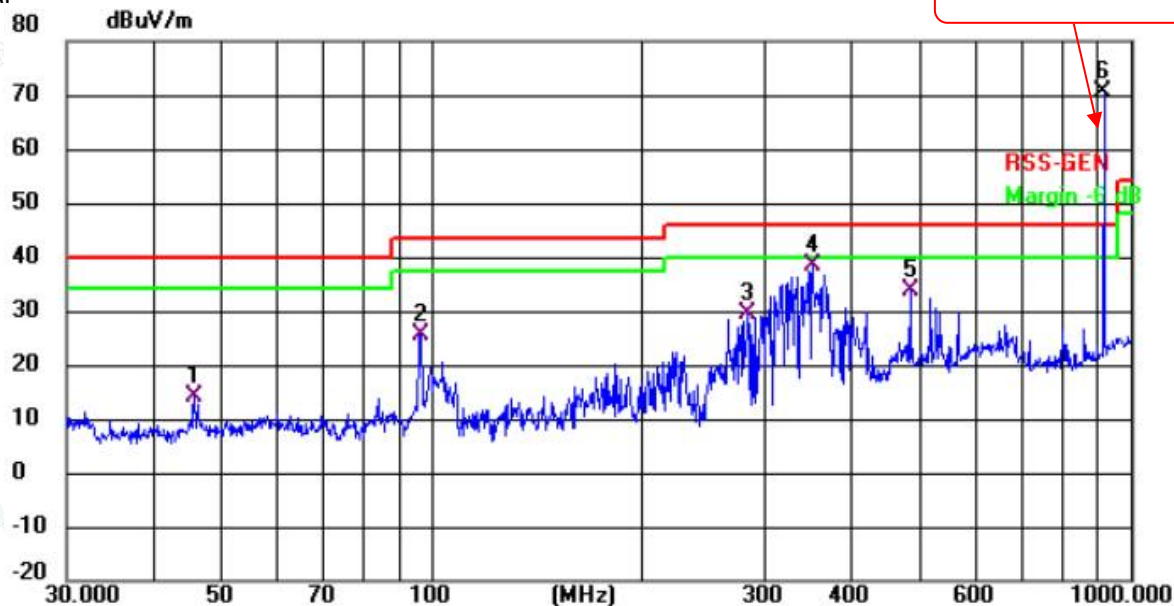


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	Detector
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1		96.4361	42.96	-19.55	23.41	43.50	-20.09	QP
2		107.8877	43.11	-18.66	24.45	43.50	-19.05	QP
3		212.2694	48.24	-19.14	29.10	43.50	-14.40	QP
4		317.7010	53.17	-15.97	37.20	46.00	-8.80	QP
5		483.9094	46.99	-12.37	34.62	46.00	-11.38	QP
6	*	915.0000	75.81	-6.05	69.76	46.00	23.76	peak



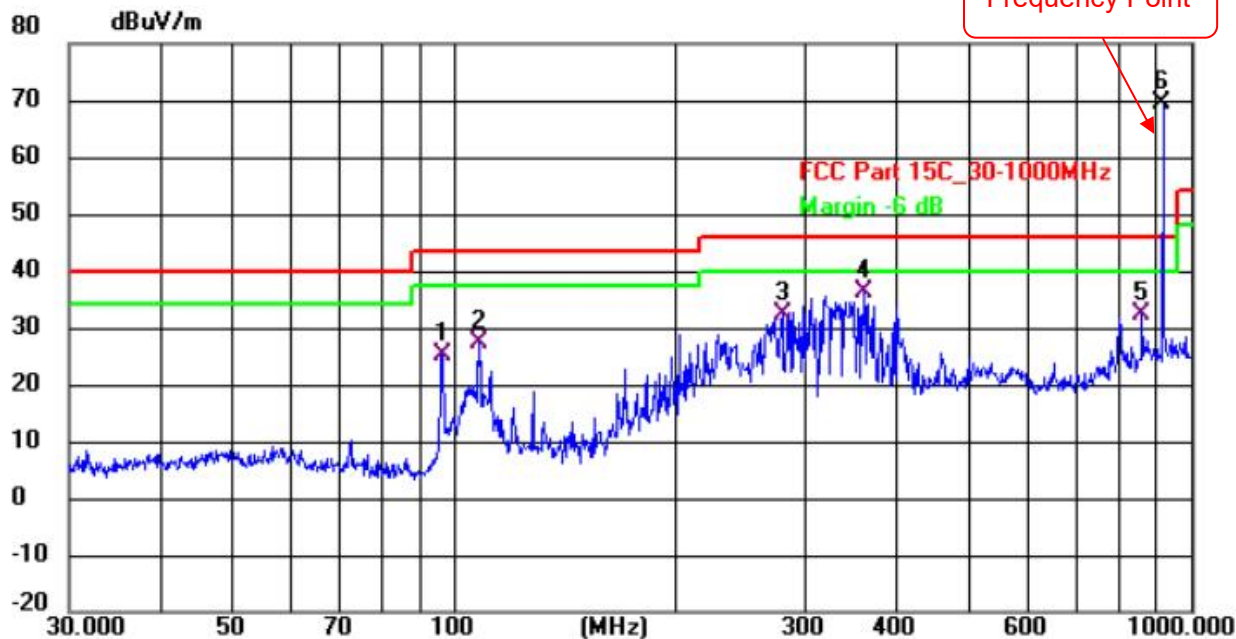


Vertical



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	
		MHz	Level	Factor	ment			Detector
			dBuV	dB/m	dBuV/m	dBuV/m	dB	
1		44.5868	29.75	-18.14	11.61	40.00	-28.39	QP
2		96.0985	47.10	-19.77	27.33	43.50	-16.17	QP
3		256.5210	41.76	-16.38	25.38	46.00	-20.62	QP
4		348.0274	53.76	-15.19	38.57	46.00	-7.43	QP
5		566.6221	37.54	-10.44	27.10	46.00	-18.90	QP
6	*	915.0000	76.53	-6.59	69.94	46.00	23.94	peak



150kbps
Horizontal

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector
1		96.4360	44.72	-19.55	25.17	43.50	-18.33	QP
2		107.8876	45.88	-18.66	27.22	43.50	-16.28	QP
3		279.0436	49.36	-17.01	32.35	46.00	-13.65	QP
4		360.4476	50.20	-14.10	36.10	46.00	-9.90	QP
5		857.0245	39.03	-6.87	32.16	46.00	-13.84	QP
6	*	915.2000	75.35	-6.05	69.30	46.00	23.30	peak

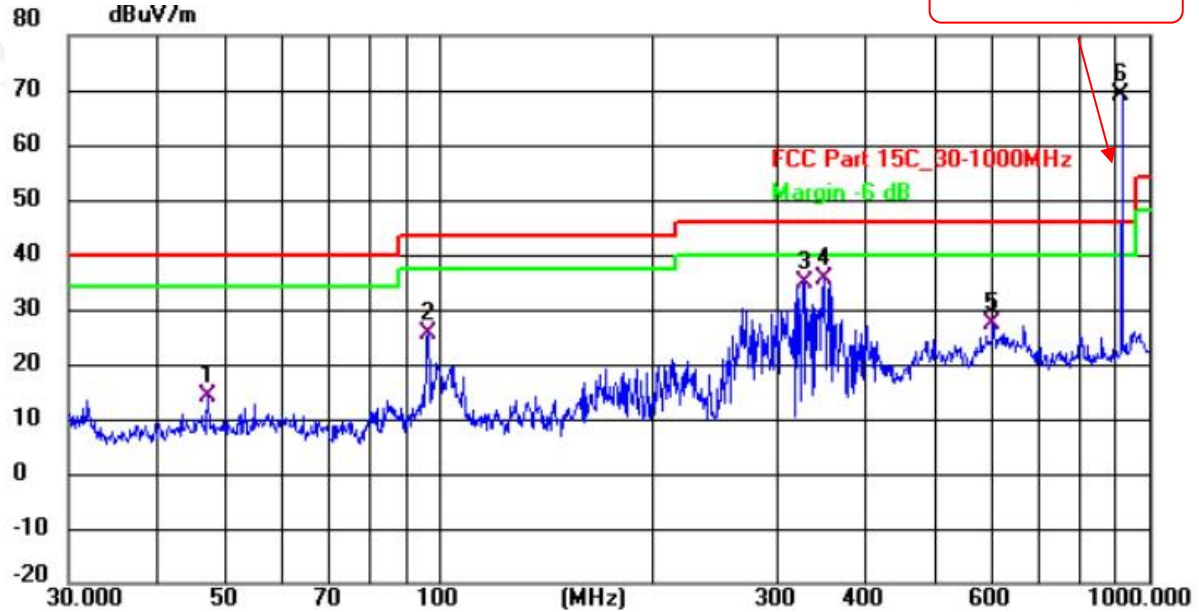


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Vertical

Frequency Point



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	
		MHz	Level	Factor	ment			Detector
			dBuV	dB/m	dBuV/m	dBuV/m	dB	
1		47.1597	32.24	-18.16	14.08	40.00	-25.92	QP
2		96.4360	45.27	-19.75	25.52	43.50	-17.98	QP
3		326.7395	49.74	-14.77	34.97	46.00	-11.03	QP
4		348.0274	50.73	-15.19	35.54	46.00	-10.46	QP
5		601.4265	37.16	-9.66	27.50	46.00	-18.50	QP
6	*	915.2000	75.84	-6.59	69.25	46.00	23.25	peak

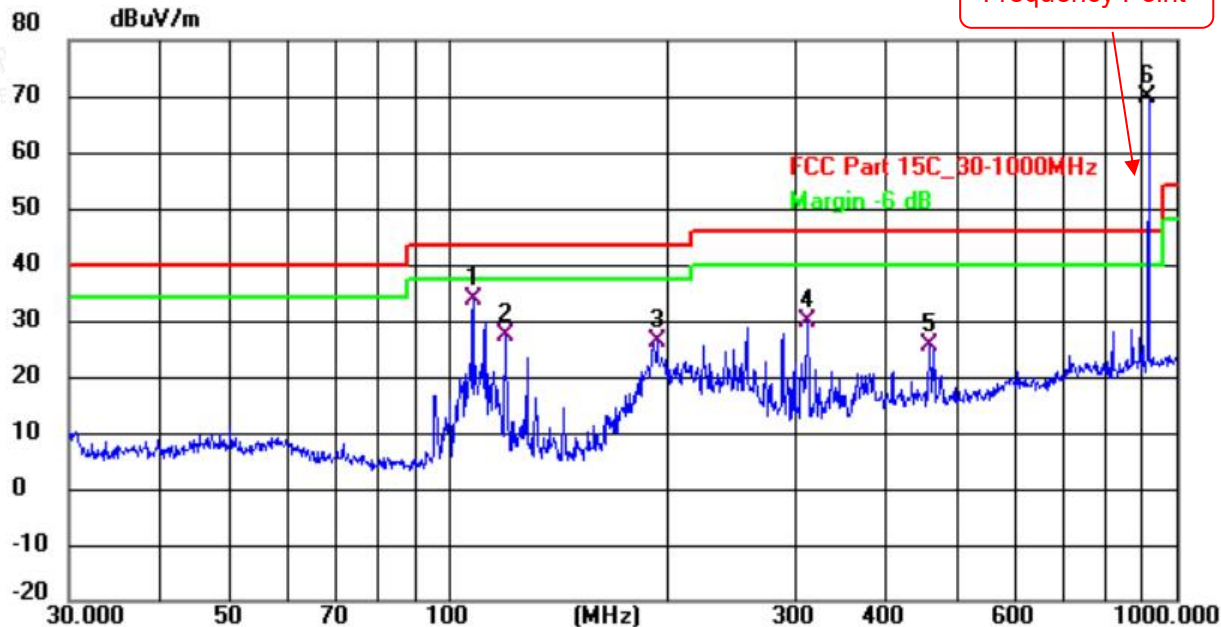


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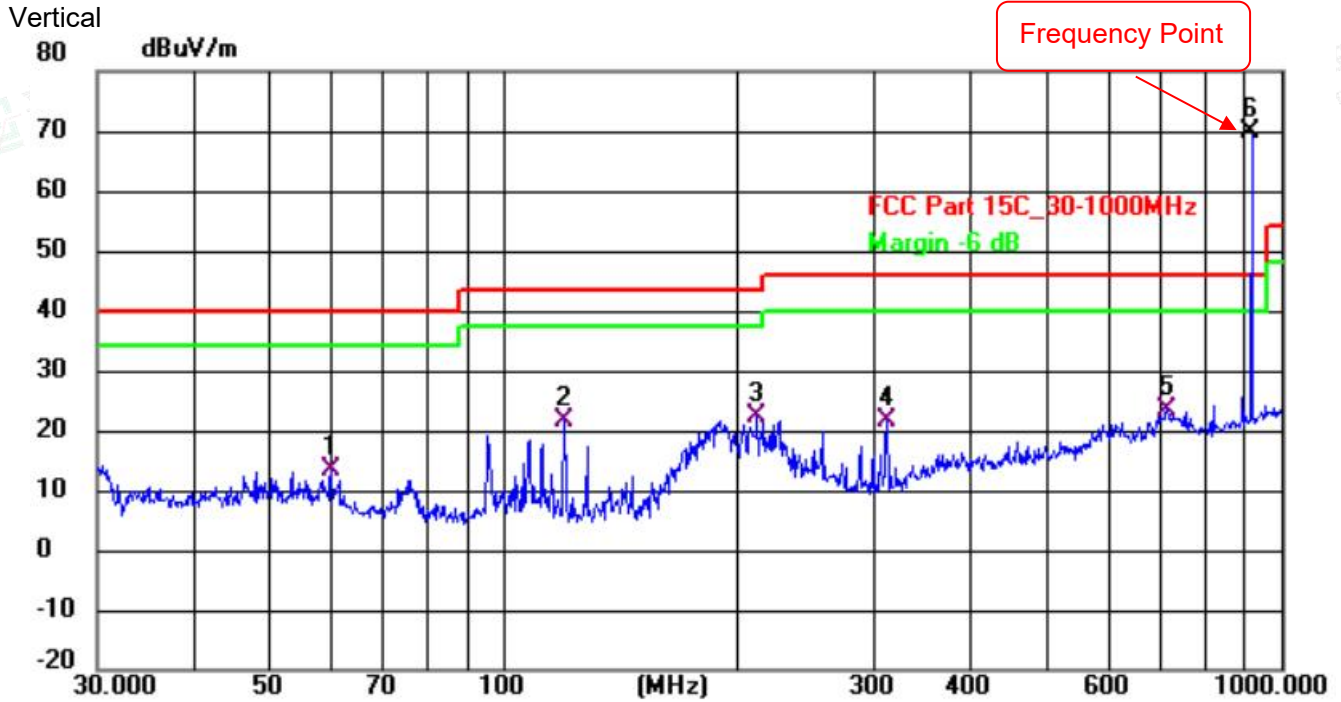
Scan code to check authenticity

200kbps
Horizontal

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	
		MHz	Level	Factor	ment			Detector
			dBuV	dB/m	dBuV/m	dBuV/m	dB	
1		107.8876	52.47	-18.66	33.81	43.50	-9.69	QP
2		119.4360	47.63	-20.28	27.35	43.50	-16.15	QP
3		193.0944	46.75	-20.37	26.38	43.50	-17.12	QP
4		311.0865	45.91	-16.10	29.81	46.00	-16.19	QP
5		457.5072	38.01	-12.62	25.39	46.00	-20.61	QP
6	*	915.2000	75.92	-6.05	69.87	46.00	23.87	peak



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No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	
		MHz	Level	Factor	ment			
			dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		59.8588	33.59	-20.09	13.50	40.00	-26.50	QP
2		119.4360	42.72	-21.13	21.59	43.50	-21.91	QP
3		211.5263	40.44	-18.05	22.39	43.50	-21.11	QP
4		311.0865	37.07	-15.61	21.46	46.00	-24.54	QP
5		711.6734	32.94	-9.71	23.23	46.00	-22.77	QP
6	*	915.2000	76.53	-6.59	69.94	46.00	23.94	peak

Note:

- 1). Pre-scan all modes and recorded the worst case results in this report (Middle Channel).
- 2). Emission level (dBuV/m) = $20 \log$ Emission level (uV/m).
- 3). Level = Reading + Factor, Margin = Level-Limit, Factor = Antenna Factor + Cable Loss - Preamp Factor.





6.6.8. Results of Radiated Emissions (1 GHz~ 10GHz)

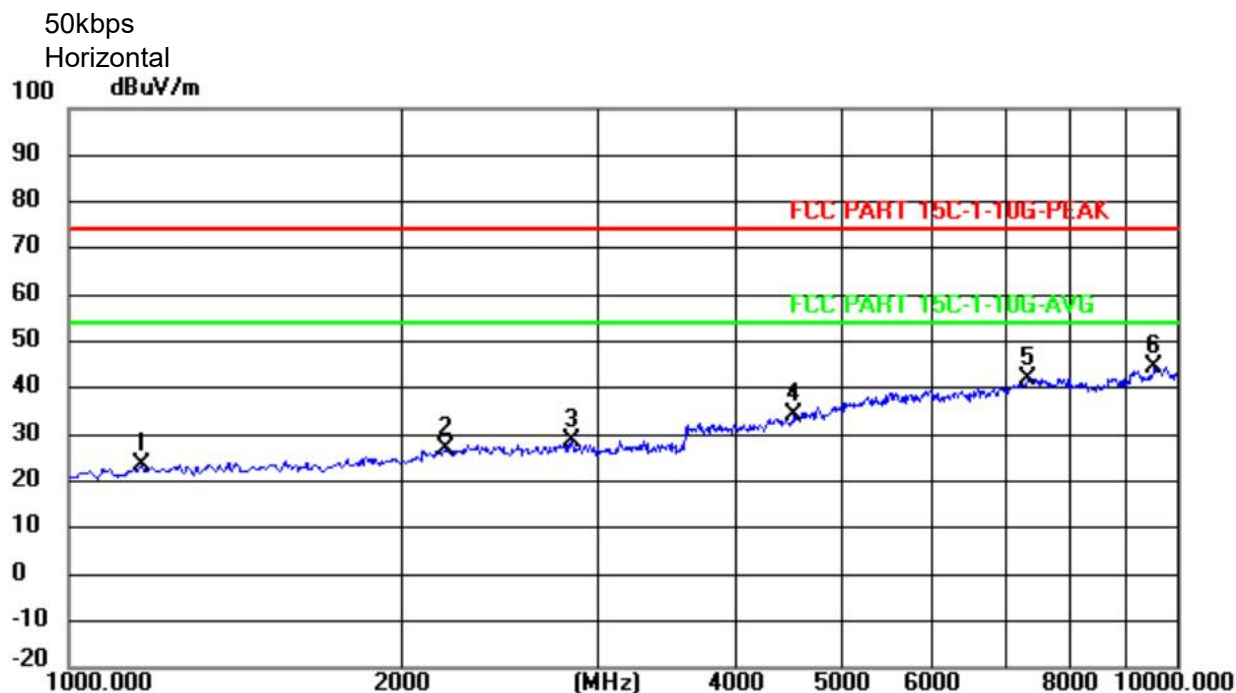
Note: All the modes have been tested and recorded worst mode in the report.

Temperature	23.8℃	Humidity	52.1%
Test Engineer	Faith Li	Configurations	TX

PASS.

Only record the worst test result in this report.

The test data please refer to following page.



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
1		1162.0000	36.11	-12.51	23.60	74.00	-50.40	peak	
2		2188.0000	36.21	-9.44	26.77	74.00	-47.23	peak	
3		2845.0000	36.59	-8.14	28.45	74.00	-45.55	peak	
4		4528.0000	38.35	-4.28	34.07	74.00	-39.93	peak	
5		7345.0000	39.56	2.54	42.10	74.00	-31.90	peak	
6	*	9550.0000	38.75	5.83	44.58	74.00	-29.42	peak	



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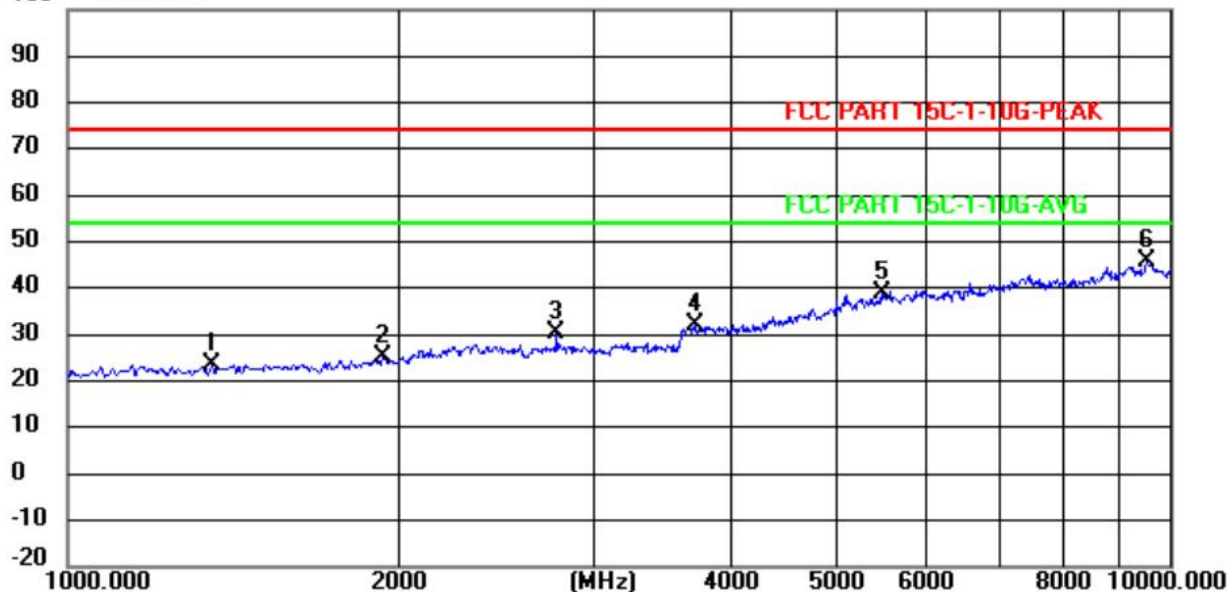
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Vertical

100 dBuV/m



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin		
		MHz	Level	Factor	ment			Detector	Comment
			dBuV	dB/m	dBuV/m	dBuV/m	dB		
1		1351.0000	35.97	-12.45	23.52	74.00	-50.48	peak	
2		1936.0000	36.63	-11.54	25.09	74.00	-48.91	peak	
3		2782.0000	38.22	-8.05	30.17	74.00	-43.83	peak	
4		3709.0000	38.52	-6.49	32.03	74.00	-41.97	peak	
5		5491.0000	40.58	-1.53	39.05	74.00	-34.95	peak	
6	*	9559.0000	39.92	5.81	45.73	74.00	-28.27	peak	

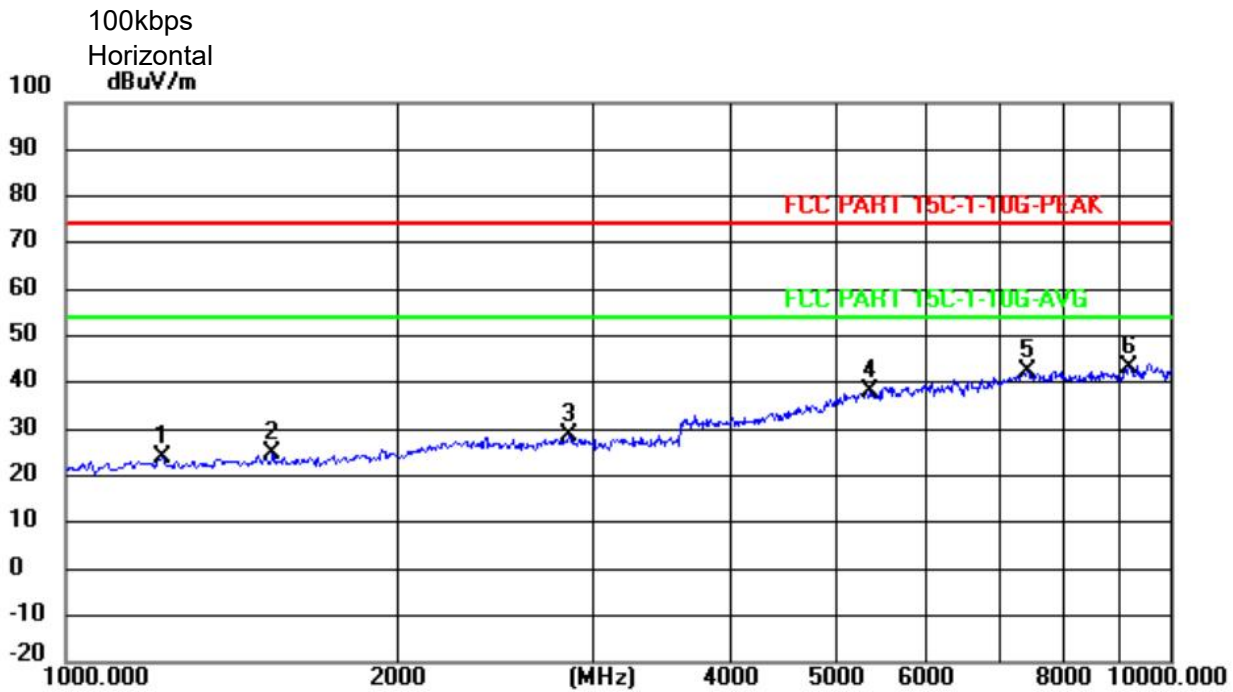


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No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		1225.0000	36.70	-12.62	24.08	74.00	-49.92	peak	
2		1540.0000	37.01	-12.18	24.83	74.00	-49.17	peak	
3		2863.0000	36.92	-8.24	28.68	74.00	-45.32	peak	
4		5365.0000	39.96	-1.76	38.20	74.00	-35.80	peak	
5		7444.0000	39.72	2.67	42.39	74.00	-31.61	peak	
6	*	9199.0000	37.63	5.45	43.08	74.00	-30.92	peak	

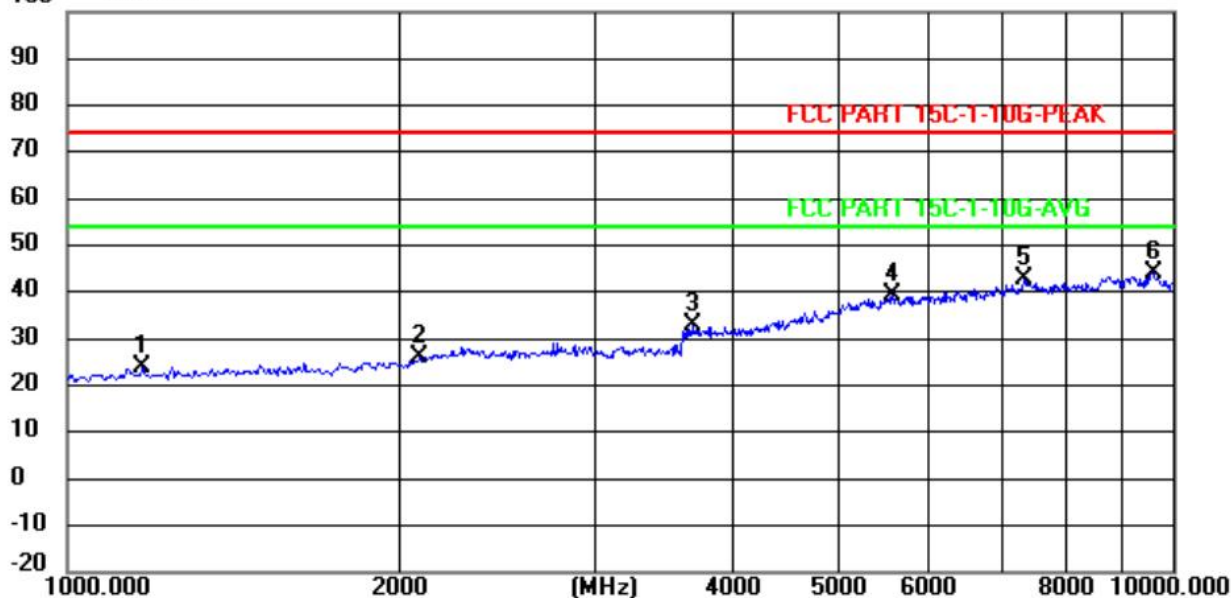




Vertical

100

dBuV/m



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		1171.0000	36.58	-12.52	24.06	74.00	-49.94	peak	
2		2089.0000	36.03	-10.16	25.87	74.00	-48.13	peak	
3		3673.0000	39.51	-6.75	32.76	74.00	-41.24	peak	
4		5590.0000	40.84	-1.35	39.49	74.00	-34.51	peak	
5		7354.0000	40.05	2.65	42.70	74.00	-31.30	peak	
6	*	9613.0000	38.38	5.73	44.11	74.00	-29.89	peak	

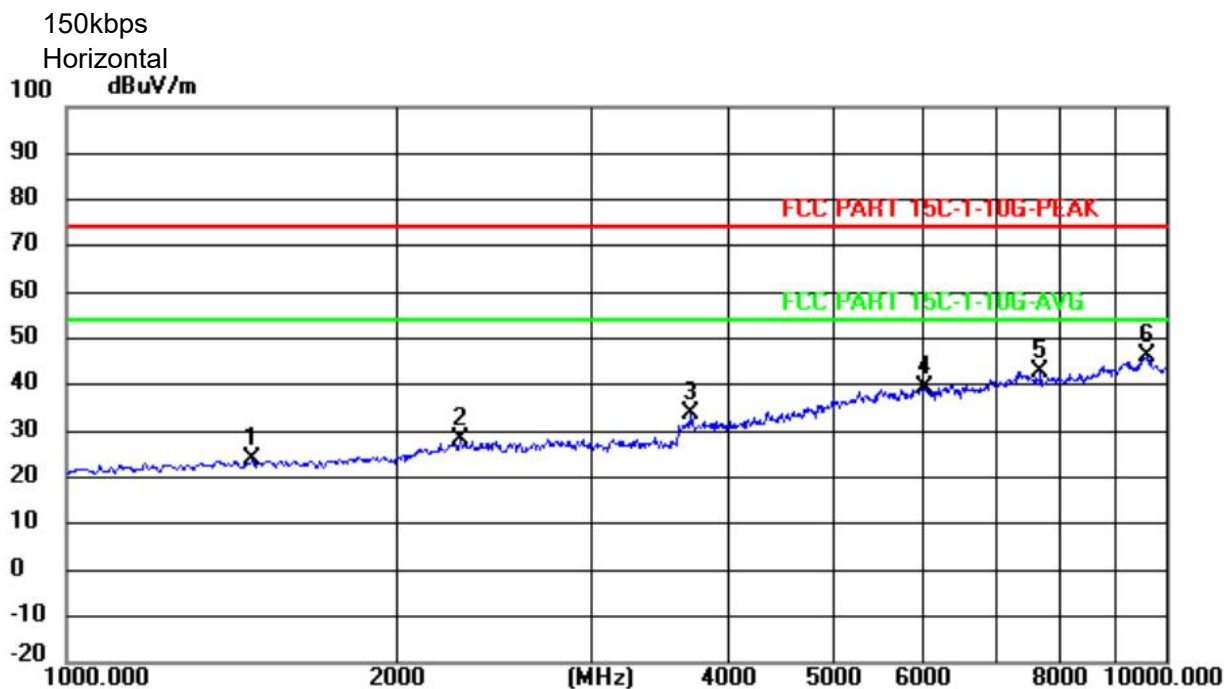


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No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		1477.0000	36.08	-12.34	23.74	74.00	-50.26	peak	
2		2287.0000	36.73	-8.68	28.05	74.00	-45.95	peak	
3		3700.0000	40.13	-6.43	33.70	74.00	-40.30	peak	
4		6031.0000	41.02	-1.71	39.31	74.00	-34.69	peak	
5		7705.0000	40.87	2.02	42.89	74.00	-31.11	peak	
6	*	9631.0000	40.55	5.75	46.30	74.00	-27.70	peak	



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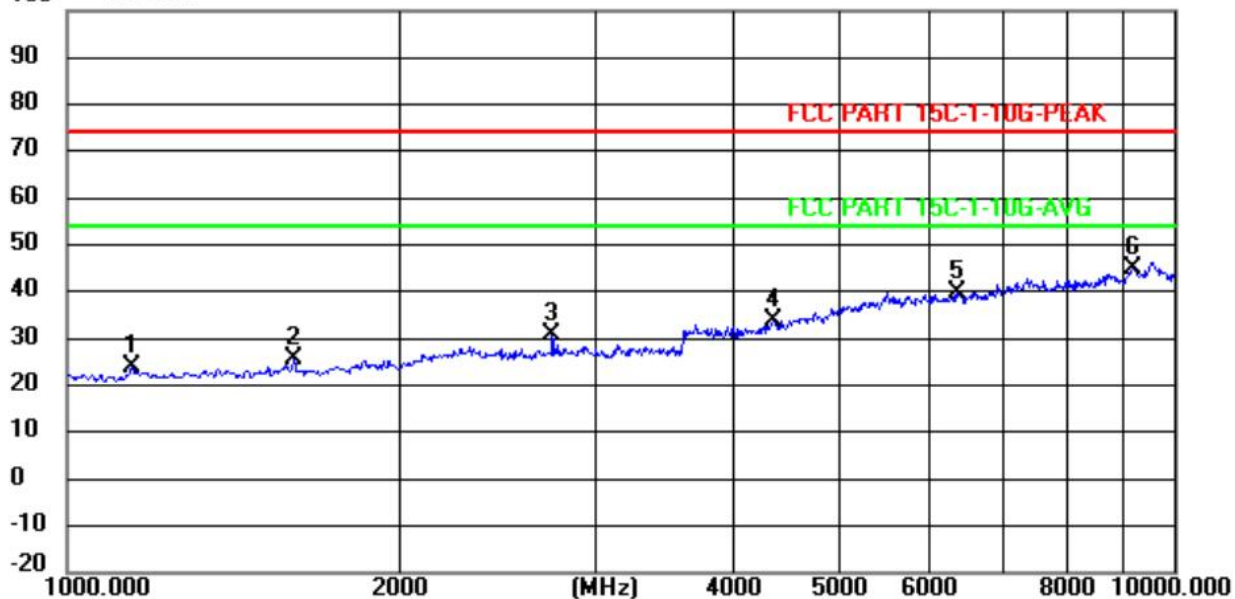
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Vertical

dBuV/m



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		1144.0000	36.39	-12.56	23.83	74.00	-50.17	peak	
2		1603.0000	38.00	-12.20	25.80	74.00	-48.20	peak	
3		2746.0000	39.26	-8.31	30.95	74.00	-43.05	peak	
4		4348.0000	38.58	-4.60	33.98	74.00	-40.02	peak	
5		6373.0000	40.31	-0.36	39.95	74.00	-34.05	peak	
6	*	9190.0000	39.46	5.35	44.81	74.00	-29.19	peak	

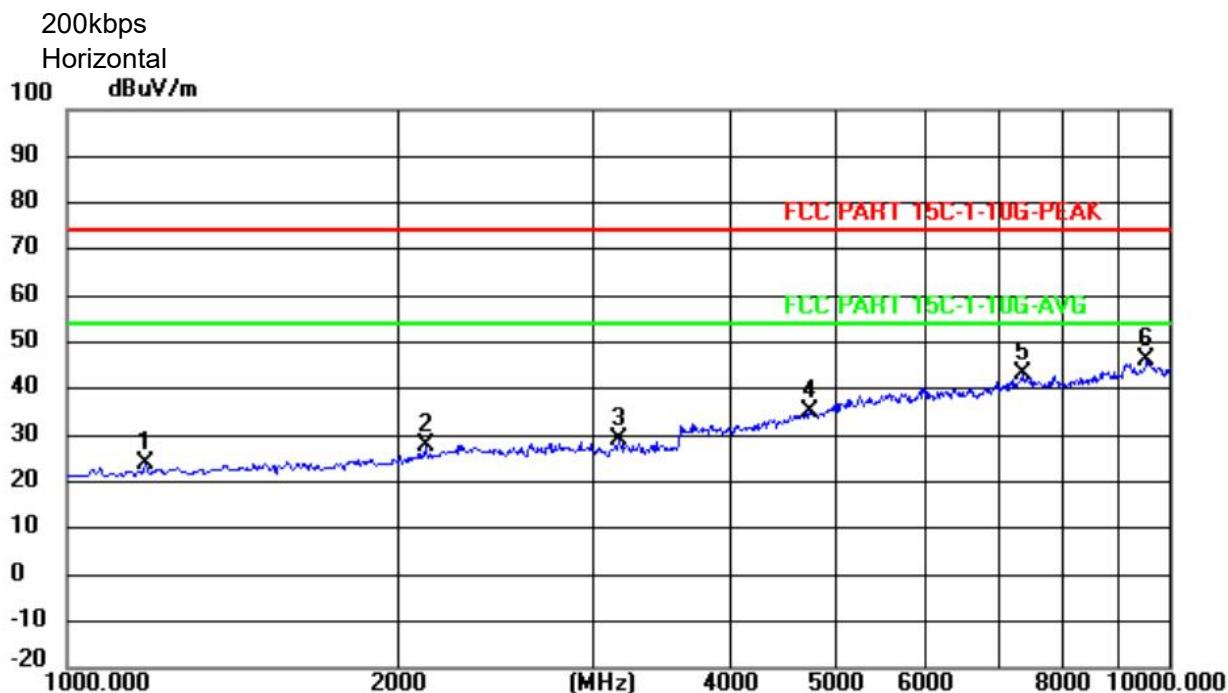


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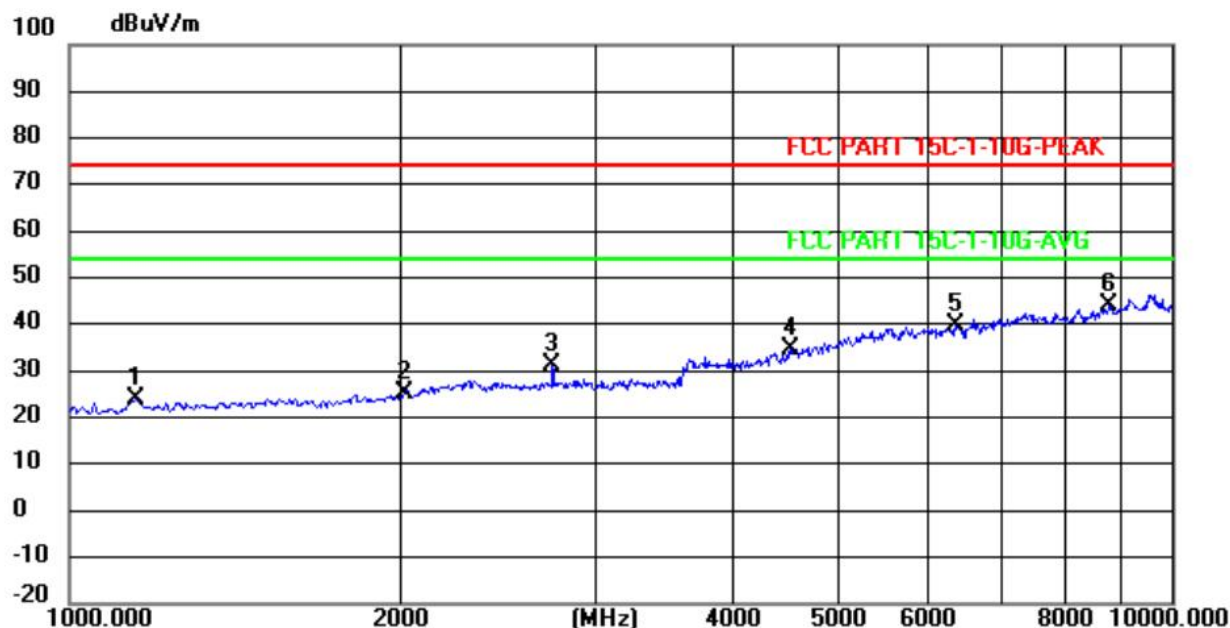


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		1180.0000	36.47	-12.54	23.93	74.00	-50.07	peak	
2		2116.0000	37.63	-9.98	27.65	74.00	-46.35	peak	
3		3169.0000	36.64	-7.51	29.13	74.00	-44.87	peak	
4		4735.0000	38.47	-3.59	34.88	74.00	-39.12	peak	
5		7381.0000	40.59	2.50	43.09	74.00	-30.91	peak	
6	*	9559.0000	40.38	5.81	46.19	74.00	-27.81	peak	





Vertical



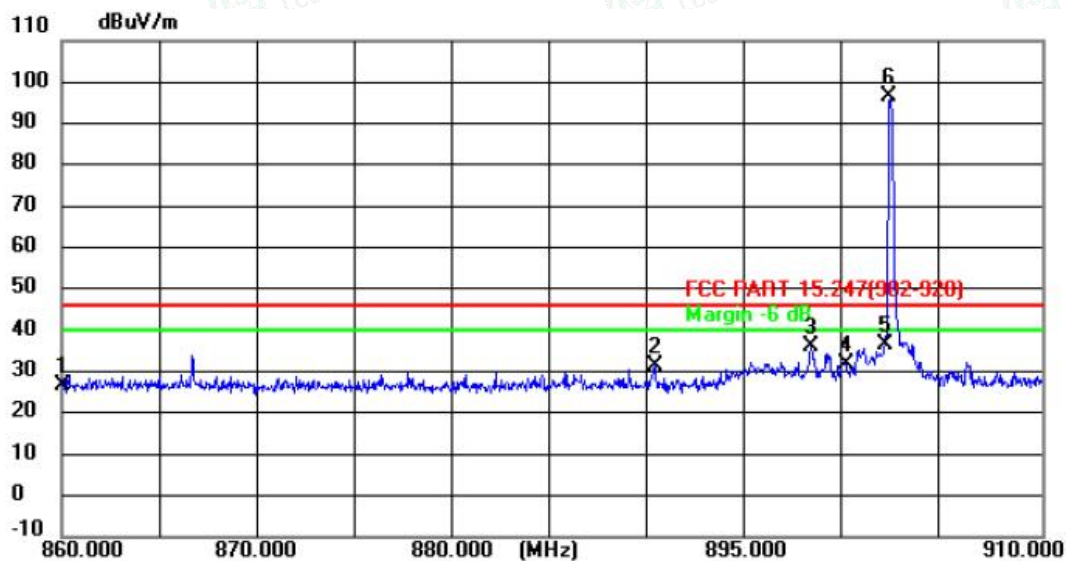
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		1153.0000	36.57	-12.50	24.07	74.00	-49.93	peak	
2		2018.3663	36.57	-11.22	25.35	74.00	-48.65	peak	
3		2746.0000	39.56	-8.31	31.25	74.00	-42.75	peak	
4		4519.0000	38.99	-4.32	34.67	74.00	-39.33	peak	
5		6391.0000	39.79	0.11	39.90	74.00	-34.10	peak	
6	*	8803.0000	39.04	5.07	44.11	74.00	-29.89	peak	

Notes:

- 1). Measuring frequencies from 9 KHz~10th harmonic (ex. 10GHz), at least have 20dB margin found between lowest internal used/generated frequency to 30 MHz.
- 2). Radiated emissions measured in frequency range from 9 KHz~10th harmonic (ex. 10GHz) were made with an instrument using Peak detector mode.
- 3). The average measurement was not performed when the peak measured data under the limit of average detection.
- 4). Measured Level = Reading Level + Factor, Margin = Measured Level – Limit, Factor = Antenna Factor + Cable Loss - Preamp Factor
- 5). Pre-scan all modes and recorded the worst case results in this report (Middle Channel).



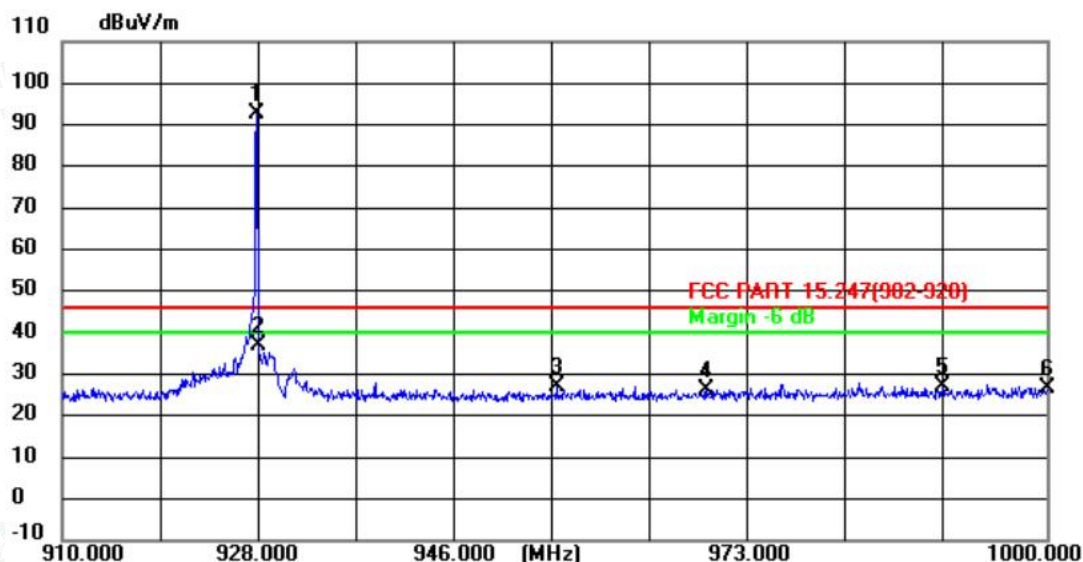
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**Restricted bands:**50kbps
Horizontal

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector
1		860.0000	33.41	-6.87	26.54	46.00	-19.46	QP
2		890.2500	37.68	-6.50	31.18	46.00	-14.82	QP
3		898.2500	42.45	-6.29	36.16	46.00	-9.84	QP
4		900.0000	38.19	-6.25	31.94	46.00	-14.06	QP
5		902.0000	42.77	-6.22	36.55	46.00	-9.45	QP
6	*	902.2000	102.72	-6.22	96.50	46.00	50.50	peak

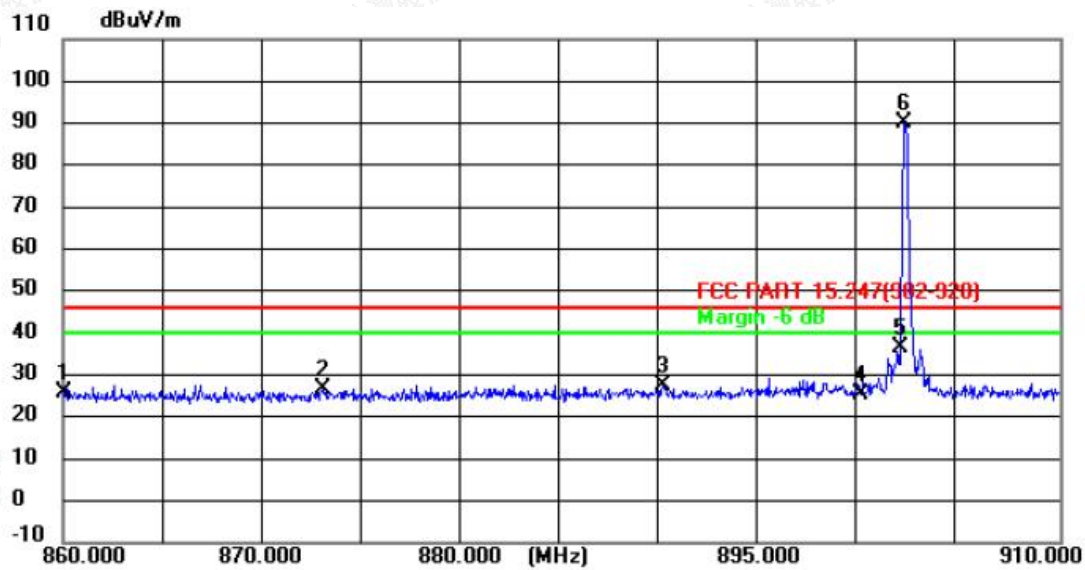


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No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector
1	*	927.8000	98.44	-5.83	92.61	46.00	46.61	peak
2		928.0000	42.62	-5.83	36.79	46.00	-9.21	QP
3		955.1800	32.19	-5.17	27.02	46.00	-18.98	QP
4		968.9500	31.53	-5.12	26.41	46.00	-19.59	QP
5		990.5500	32.00	-5.05	26.95	46.00	-19.05	QP
6		1000.0000	31.84	-5.02	26.82	46.00	-19.18	QP

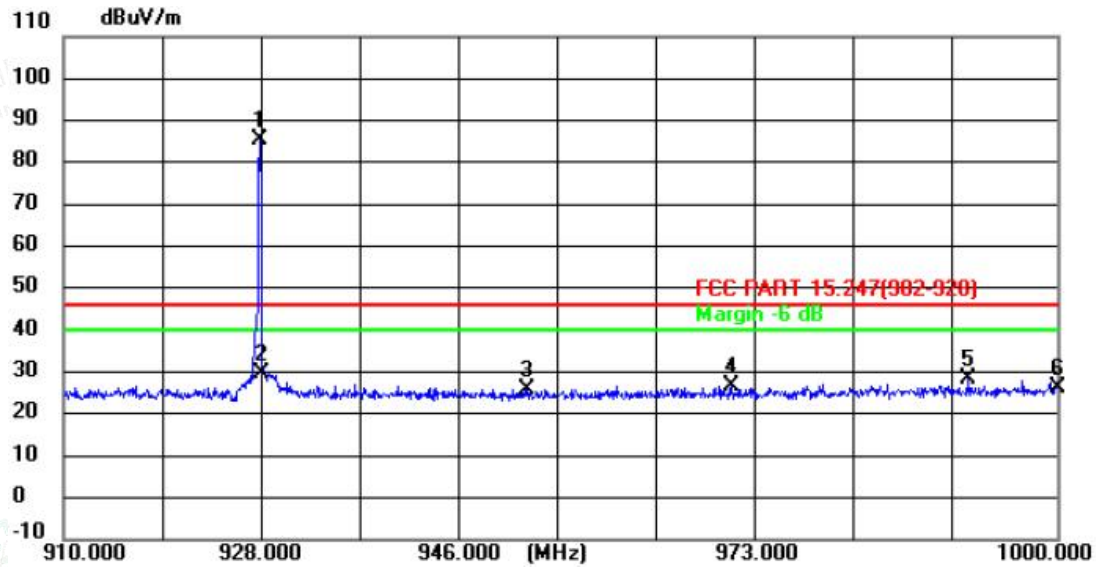


50kbps
Vertical

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector
1		860.0000	33.30	-7.51	25.79	46.00	-20.21	QP
2		873.0000	34.04	-7.32	26.72	46.00	-19.28	QP
3		890.1000	34.54	-7.03	27.51	46.00	-18.49	QP
4		900.0000	32.14	-6.85	25.29	46.00	-20.71	QP
5		902.0000	43.35	-6.82	36.53	46.00	-9.47	QP
6	*	902.2000	97.04	-6.81	90.23	46.00	44.23	peak

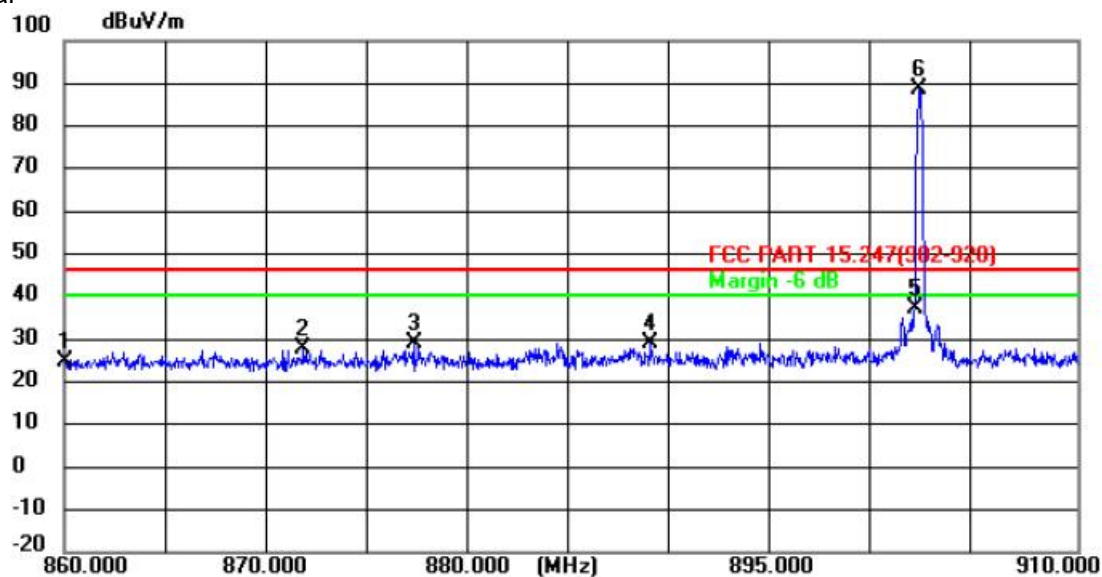


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No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	
		MHz	Level	Factor	ment			Detector
			dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	*	927.8000	91.70	-6.43	85.27	46.00	39.27	peak
2		928.0000	35.99	-6.44	29.55	46.00	-16.45	QP
3		951.9400	32.50	-6.56	25.94	46.00	-20.06	QP
4		970.4800	32.66	-6.23	26.43	46.00	-19.57	QP
5		991.9900	34.11	-5.73	28.38	46.00	-17.62	QP
6		1000.0000	31.79	-5.52	26.27	46.00	-19.73	QP

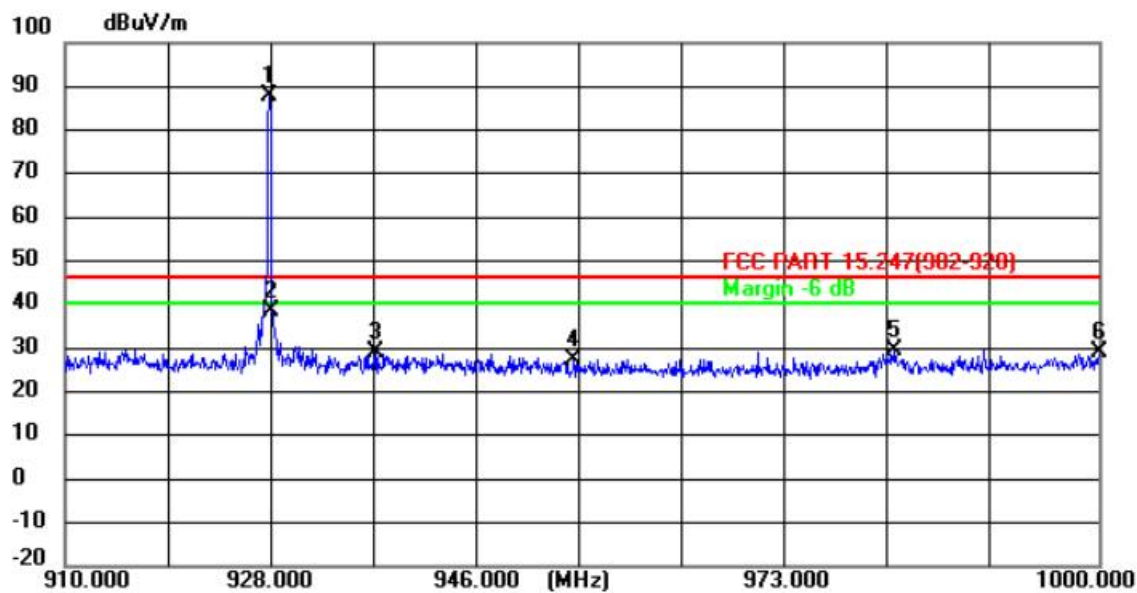


100kbps
Horizontal

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	
		MHz	Level	Factor	ment			Detector
			dBuV	dB/m	dBuV/m	dBuV/m	dB	
1		860.0000	31.60	-6.87	24.73	46.00	-21.27	QP
2		871.8000	34.72	-6.90	27.82	46.00	-18.18	QP
3		877.2500	35.86	-6.85	29.01	46.00	-16.99	QP
4		888.9500	35.49	-6.54	28.95	46.00	-17.05	QP
5		902.0000	43.60	-6.22	37.38	46.00	-8.62	QP
6	*	902.2000	94.68	-6.22	88.46	46.00	42.46	peak

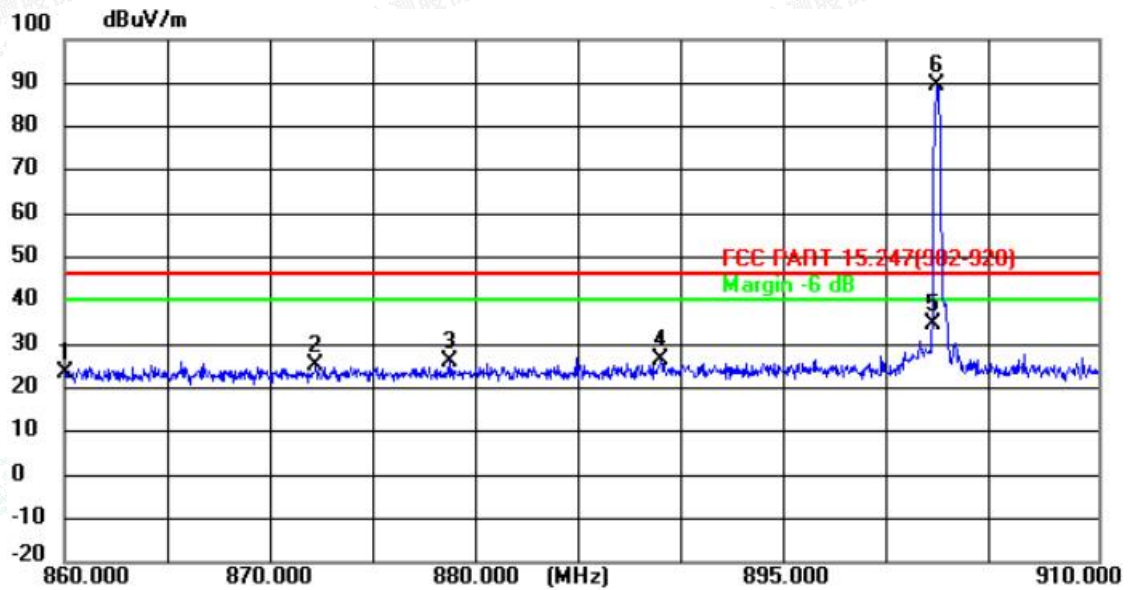


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No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector
1	*	927.8000	93.80	-5.83	87.97	46.00	41.97	QP
2		928.0000	44.20	-5.83	38.37	46.00	-7.63	QP
3		937.0900	34.70	-5.57	29.13	46.00	-16.87	QP
4		954.2800	32.53	-5.17	27.36	46.00	-18.64	QP
5		982.2700	34.43	-5.08	29.35	46.00	-16.65	QP
6		1000.0000	34.03	-5.02	29.01	46.00	-16.99	peak

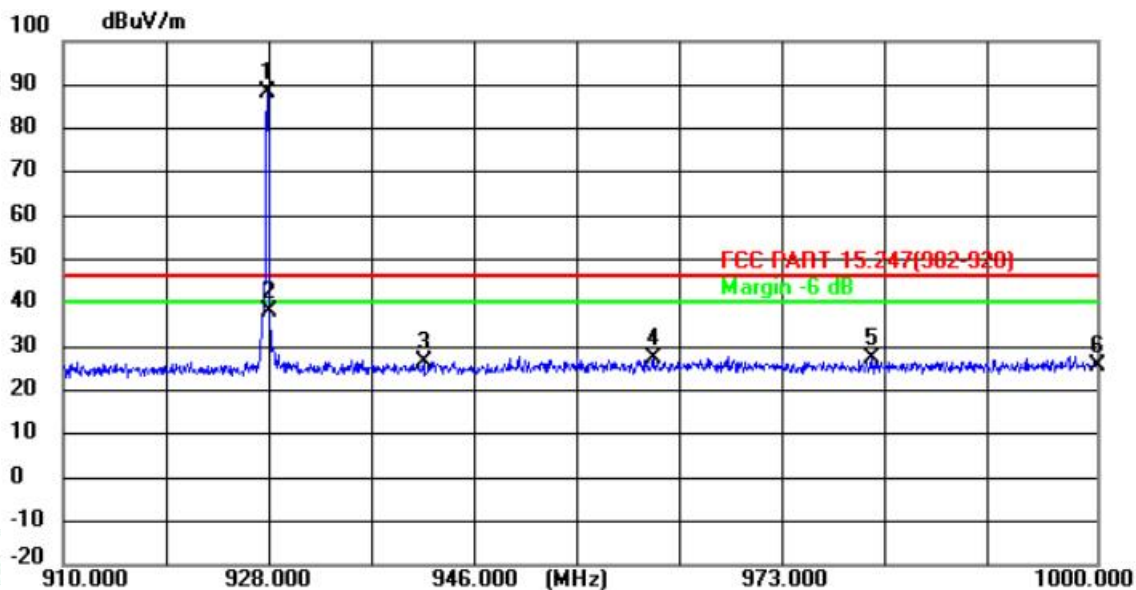


100kbps
Vertical

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	
		MHz	Level	Factor	ment			Detector
			dBuV	dB/m	dBuV/m	dBuV/m	dB	
1		860.0000	31.17	-7.51	23.66	46.00	-22.34	QP
2		872.1500	32.40	-7.34	25.06	46.00	-20.94	QP
3		878.6000	33.31	-7.23	26.08	46.00	-19.92	QP
4		888.8500	33.35	-7.05	26.30	46.00	-19.70	QP
5		902.0000	41.42	-6.82	34.60	46.00	-11.40	QP
6	*	902.2000	96.40	-6.81	89.59	46.00	43.59	peak

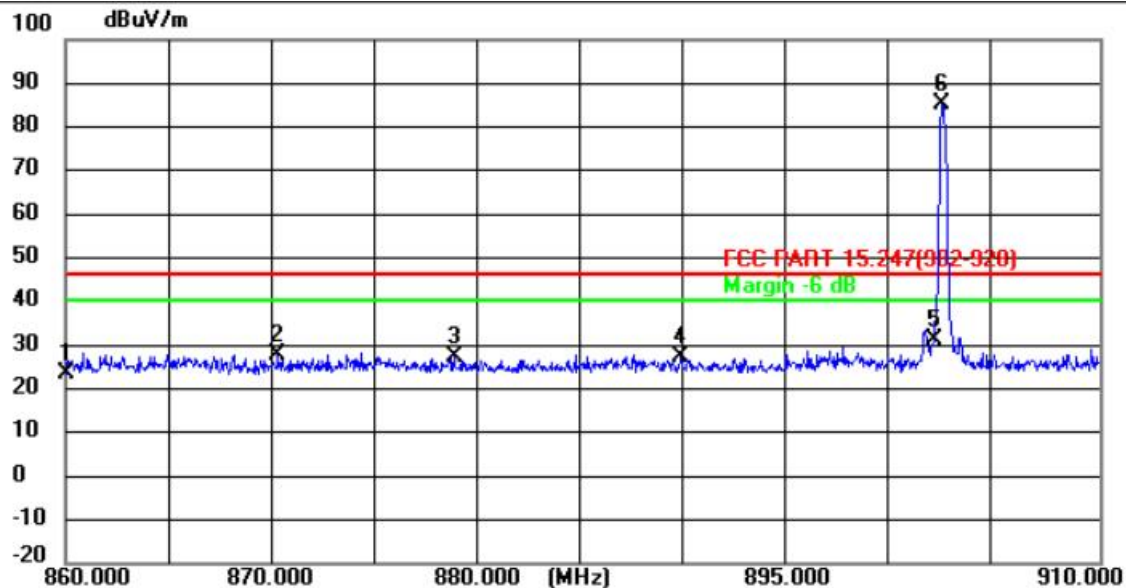


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No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	
		MHz	Level	Factor	ment			Detector
			dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	*	927.8000	94.69	-6.43	88.26	46.00	42.26	QP
2		928.0000	44.42	-6.44	37.98	46.00	-8.02	QP
3		941.4100	33.02	-6.53	26.49	46.00	-19.51	QP
4		961.3900	33.58	-6.39	27.19	46.00	-18.81	QP
5		980.3800	33.54	-6.01	27.53	46.00	-18.47	QP
6		1000.0000	31.37	-5.52	25.85	46.00	-20.15	peak

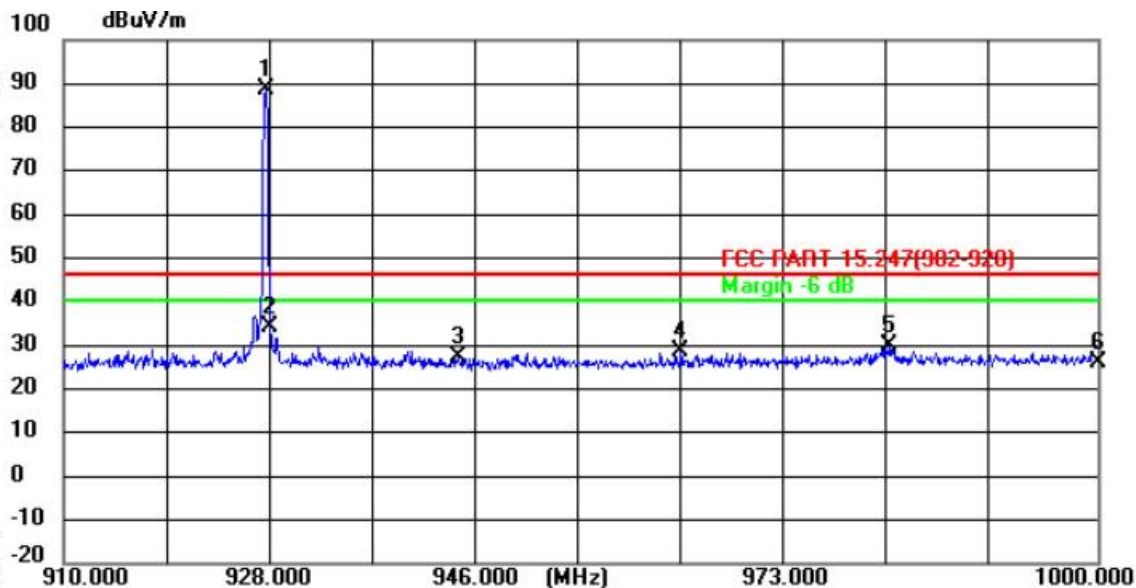


150kbps
Horizontal

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector
1		860.0000	30.48	-6.87	23.61	46.00	-22.39	QP
2		870.2500	34.74	-6.89	27.85	46.00	-18.15	QP
3		878.8000	34.09	-6.80	27.29	46.00	-18.71	QP
4		889.7500	33.69	-6.52	27.17	46.00	-18.83	QP
5		902.0000	37.62	-6.22	31.40	46.00	-14.60	QP
6	*	902.4000	91.37	-6.22	85.15	46.00	39.15	peak

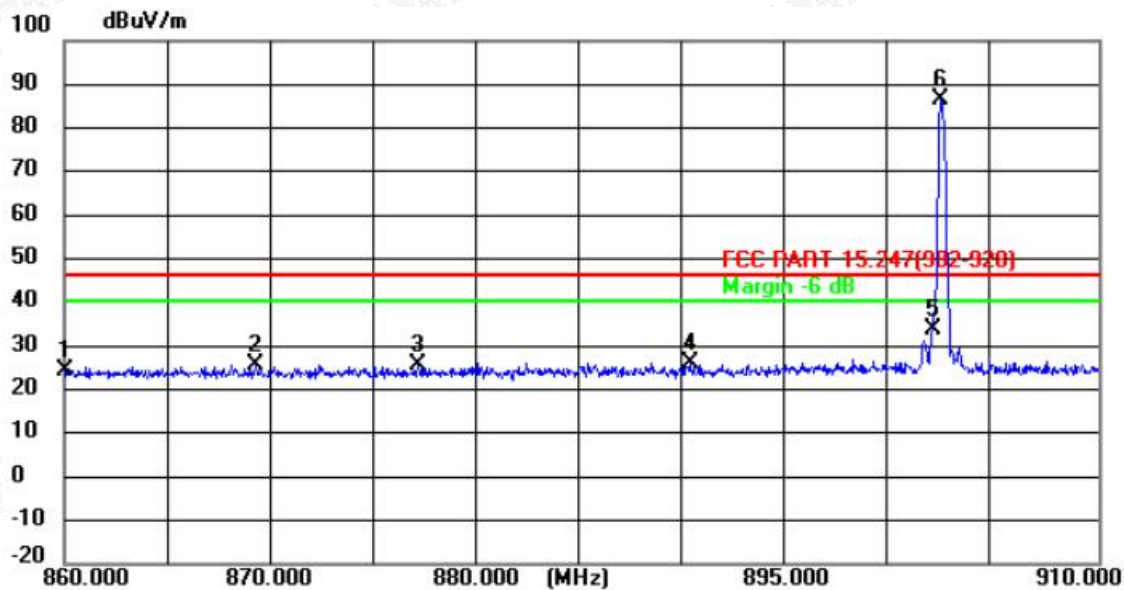


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No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	
		MHz	Level	Factor	ment			Detector
			dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	*	927.6000	94.51	-5.84	88.67	46.00	42.67	QP
2		928.0000	40.20	-5.83	34.37	46.00	-11.63	QP
3		944.3800	32.67	-5.35	27.32	46.00	-18.68	QP
4		963.7300	33.75	-5.14	28.61	46.00	-17.39	QP
5		981.9100	34.88	-5.08	29.80	46.00	-16.20	QP
6		1000.0000	31.14	-5.02	26.12	46.00	-19.88	peak

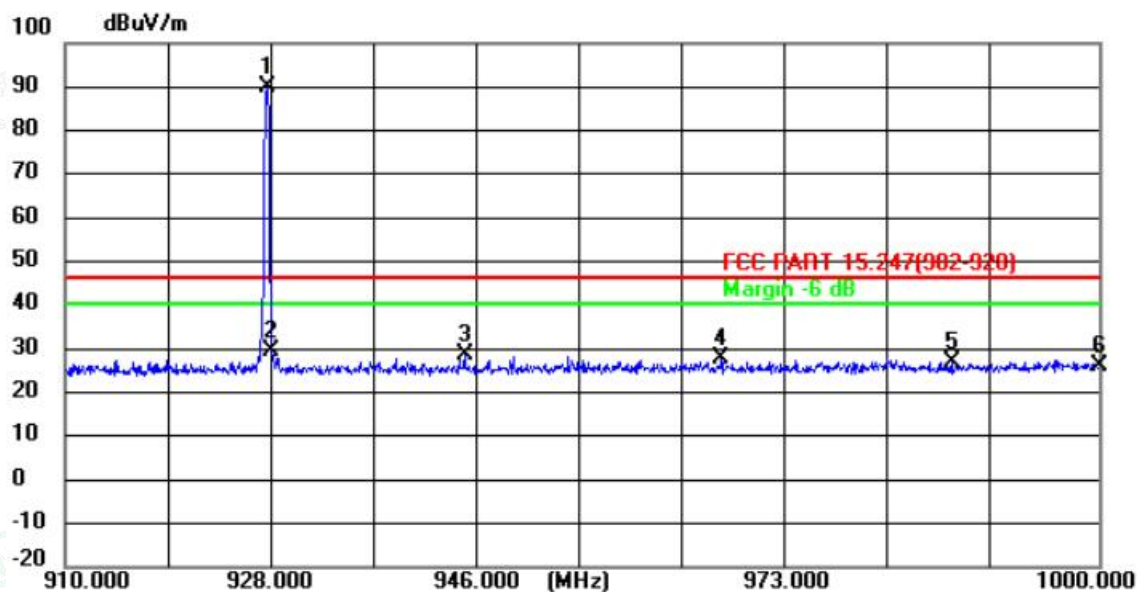


150kbps
Vertical

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	
		MHz	Level	Factor	ment			Detector
			dBuV	dB/m	dBuV/m	dBuV/m	dB	
1		860.0000	31.99	-7.51	24.48	46.00	-21.52	QP
2		869.2500	33.04	-7.38	25.66	46.00	-20.34	QP
3		877.1000	32.86	-7.27	25.59	46.00	-20.41	QP
4		890.2500	33.23	-7.03	26.20	46.00	-19.80	QP
5		902.0000	40.62	-6.82	33.80	46.00	-12.20	QP
6	*	902.4000	93.37	-6.81	86.56	46.00	40.56	peak



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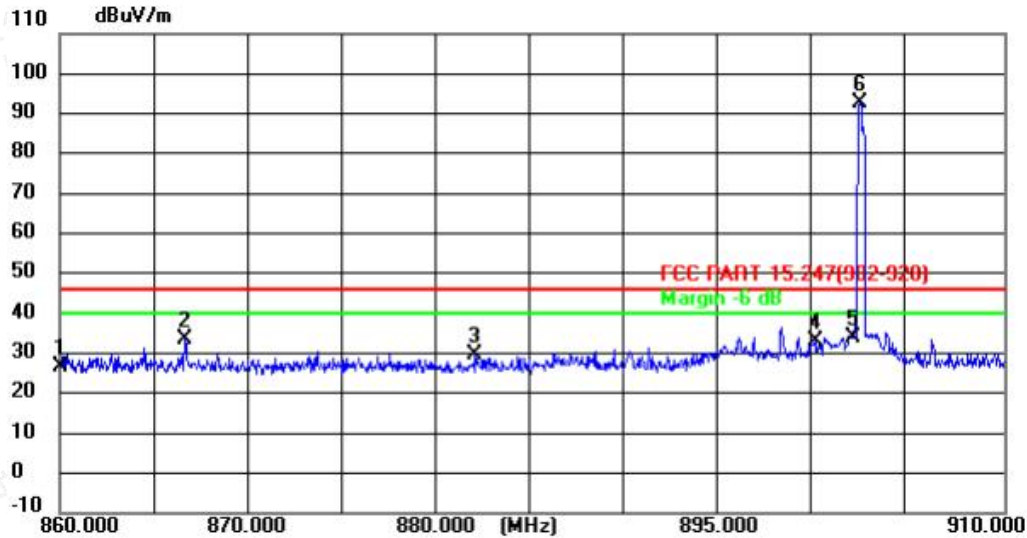


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	*	927.6000	96.34	-6.43	89.91	46.00	43.91	QP
2		928.0000	35.85	-6.44	29.41	46.00	-16.59	QP
3		944.8300	34.98	-6.55	28.43	46.00	-17.57	QP
4		967.1500	33.95	-6.29	27.66	46.00	-18.34	QP
5		987.2200	32.96	-5.85	27.11	46.00	-18.89	QP
6		1000.0000	31.66	-5.52	26.14	46.00	-19.86	peak





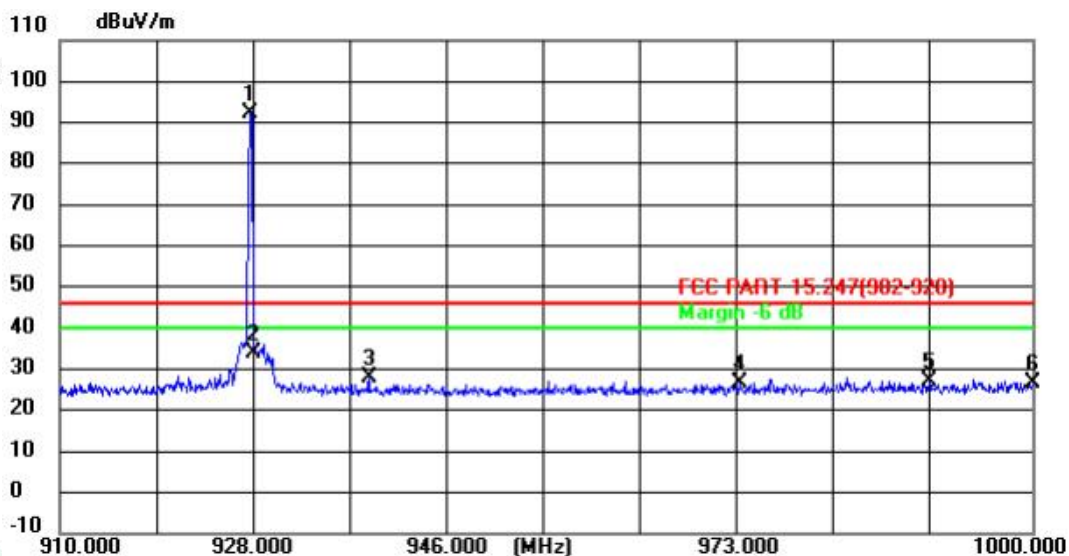
200kbps
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector
1		860.0000	33.42	-6.87	26.55	46.00	-19.45	QP
2		866.6500	40.18	-6.89	33.29	46.00	-12.71	QP
3		882.0000	36.36	-6.72	29.64	46.00	-16.36	QP
4		900.0000	39.34	-6.25	33.09	46.00	-12.91	QP
5		902.0000	40.35	-6.22	34.13	46.00	-11.87	QP
6	*	902.4000	98.97	-6.22	92.75	46.00	46.75	peak

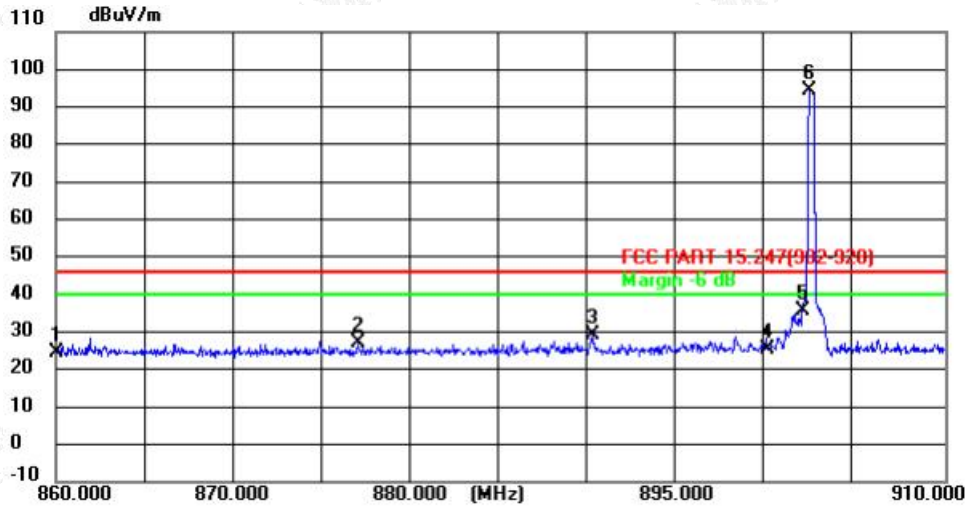


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No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	
		MHz	Level	Factor	ment			Detector
			dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	*	927.6000	98.07	-5.84	92.23	46.00	46.23	peak
2		928.0000	39.62	-5.83	33.79	46.00	-12.21	QP
3		938.6200	33.51	-5.51	28.00	46.00	-18.00	QP
4		972.9100	31.81	-5.11	26.70	46.00	-19.30	QP
5		990.5500	32.00	-5.05	26.95	46.00	-19.05	QP
6		1000.0000	31.84	-5.02	26.82	46.00	-19.18	QP



200kbps
Vertical

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector
1		860.0000	31.81	-7.51	24.30	46.00	-21.70	QP
2		877.0000	34.23	-7.27	26.96	46.00	-19.04	QP
3		890.1500	36.40	-7.03	29.37	46.00	-16.63	QP
4		900.0000	32.05	-6.85	25.20	46.00	-20.80	QP
5		902.0000	42.58	-6.82	35.76	46.00	-10.24	QP
6	*	902.4000	101.30	-6.81	94.49	46.00	48.49	peak





No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector
1	*	927.6000	94.63	-6.43	88.20	46.00	42.20	peak
2		928.0000	33.99	-6.44	27.55	46.00	-18.45	QP
3		951.9400	32.50	-6.56	25.94	46.00	-20.06	QP
4		965.6200	32.59	-6.31	26.28	46.00	-19.72	QP
5		991.9900	34.11	-5.73	28.38	46.00	-17.62	QP
6		1000.0000	31.79	-5.52	26.27	46.00	-19.73	QP

Notes:

- 1). The average measurement was not performed when the peak measured data under the limit of average detection.
- 2). $\text{Measured Level} = \text{Reading Level} + \text{Factor}$, $\text{Margin} = \text{Measured Level} - \text{Limit}$, $\text{Factor} = \text{Antenna Factor} + \text{Cable Loss} - \text{Preamp Factor}$
- 3). Pre-scan all rates and recorded the worst case results in this report





6.7. AC Power Line Conducted Emissions

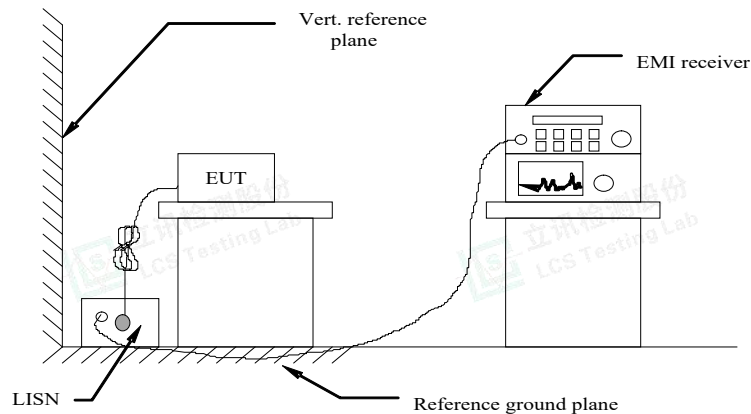
6.7.1 Standard Applicable

According to §15.207 (a): For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range is listed as follows:

Frequency Range (MHz)	Limits (dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

* Decreasing linearly with the logarithm of the frequency

6.7.2 Block Diagram of Test Setup



6.7.3 Disturbance Calculation

The AC mains conducted disturbance is calculated by adding the 10dB Pulse Limiter and Cable Factor and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$\text{CD (dBuV)} = \text{RA (dBuV)} + \text{PL (dB)} + \text{CL (dB)}$$

Where CD = Conducted Disturbance	CL = Cable Attenuation Factor (Cable Loss)
RA = Reading Amplitude	PL = 10 dB Pulse Limiter Factor

6.7.4 Test Results

Temperature	22.5°C	Humidity	53.7%
Test Engineer	Faith Li	Configurations	TX

PASS.

Only record the worst test result in this report.

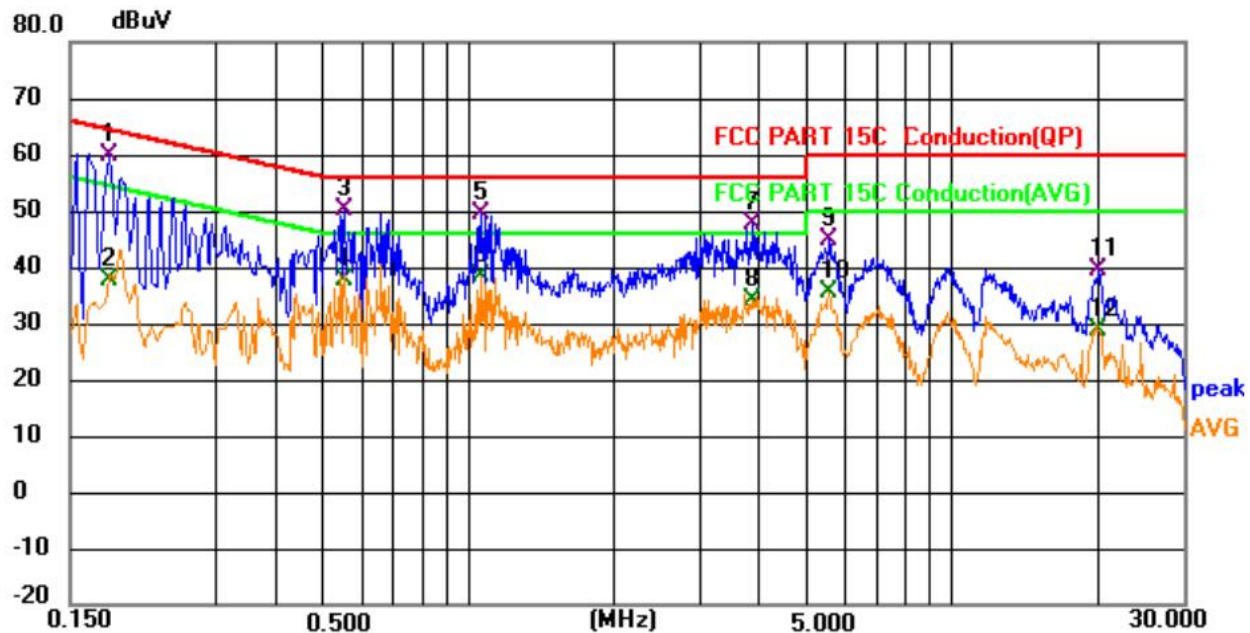
The test data please refer to following page.



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Line



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		MHz	Level	Factor	ment			Detector	Comment
			dBuV	dB	dBuV	dBuV	dB		
1	*	0.181	39.47	20.33	59.80	64.44	-4.64	QP	
2		0.181	17.31	20.33	37.64	54.44	-16.80	AVG	
3		0.555	29.93	20.19	50.12	56.00	-5.88	QP	
4		0.555	17.47	20.19	37.66	46.00	-8.34	AVG	
5		1.068	29.92	19.62	49.54	56.00	-6.46	QP	
6		1.068	18.60	19.62	38.22	46.00	-7.78	AVG	
7		3.858	28.01	19.76	47.77	56.00	-8.23	QP	
8		3.858	14.31	19.76	34.07	46.00	-11.93	AVG	
9		5.568	25.38	19.60	44.98	60.00	-15.02	QP	
10		5.568	16.08	19.60	35.68	50.00	-14.32	AVG	
11		20.152	20.01	19.53	39.54	60.00	-20.46	QP	
12		20.152	9.08	19.53	28.61	50.00	-21.39	AVG	



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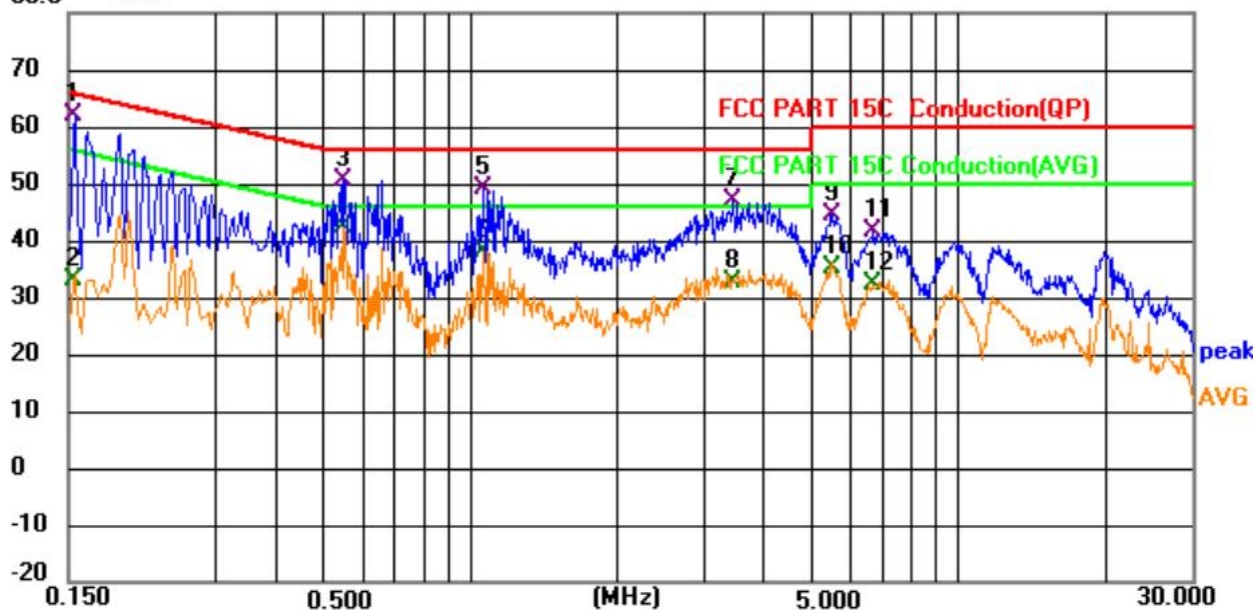
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Neutral

80.0 dBuV



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.154	41.53	20.27	61.80	65.79	-3.99	QP	
2		0.154	12.89	20.27	33.16	55.79	-22.63	AVG	
3		0.550	30.53	20.18	50.71	56.00	-5.29	QP	
4	*	0.550	22.17	20.18	42.35	46.00	-3.65	AVG	
5		1.068	29.44	19.63	49.07	56.00	-6.93	QP	
6		1.068	18.28	19.63	37.91	46.00	-8.09	AVG	
7		3.471	27.16	19.80	46.96	56.00	-9.04	QP	
8		3.471	12.80	19.80	32.60	46.00	-13.40	AVG	
9		5.510	24.92	19.67	44.59	60.00	-15.41	QP	
10		5.510	15.63	19.67	35.30	50.00	-14.70	AVG	
11		6.666	21.54	19.92	41.46	60.00	-18.54	QP	
12		6.666	12.40	19.92	32.32	50.00	-17.68	AVG	

***Note: 1).Pre-scan all modes and recorded the worst case results in this report (150kbps-Middle Channel)

2). Measurement = Reading + Correct Factor, Margin = Measurement – Limit,

Correct Factor=Lisn Factor+Cable Factor+Insertion loss of Pulse Limiter.



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6.8. Pseudorandom Frequency Hopping Sequence

6.8.1 Standard Applicable

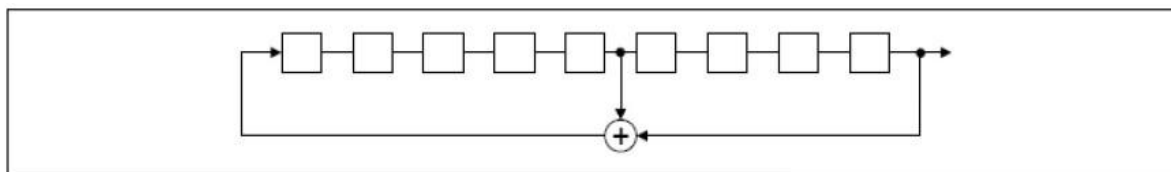
For 47 CFR Part 15C sections 15.247 (a) (1) requirement:

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hop-ping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hop-ping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

6.8.2 EUT Pseudorandom Frequency Hopping Sequence Requirement

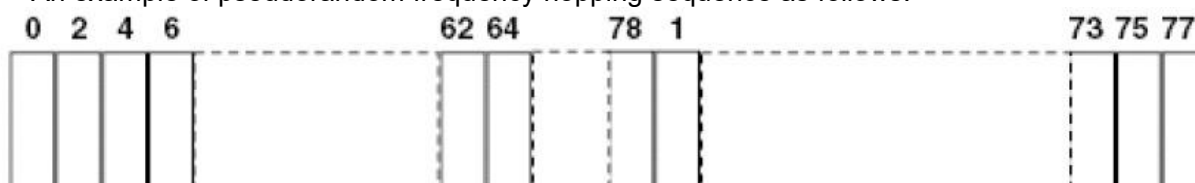
The pseudorandom frequency hopping sequence may be generated in a nine-stage shift register whose 5th first stage. The sequence begins with the first one of 9 consecutive ones, for example: the shift register is initialized with nine ones.

- Number of shift register stages:9
- Length of pseudo-random sequence:29-1=511 bits
- Longest sequence of zeros:8(non-inverted signal)



Linear Feedback Shift Register for Generation of the PRBS sequence

An example of pseudorandom frequency hopping sequence as follows:



Each frequency used equally one the average by each transmitter.

The system receiver have input bandwidths that match the hopping channel bandwidths of their corresponding transmitter and shift frequencies in synchronization with the transmitted signals.





6.9. Antenna Requirement

6.9.1 Standard Applicable

According to antenna requirement of §15.203.

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 shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be re-placed by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

And according to §15.247(4)(1), system operating in the 2400-2483.5MHz bands that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

6.9.2 Antenna Connected Construction

6.9.2.1. Standard Applicable

According to § 15.203 , 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.

6.9.2.2. Antenna Connector Construction

The directional gains of antenna used for transmitting is -7.08dBi(Max), and the antenna is an PCB antenna no consideration of replacement. Please see EUT photo for details.

6.9.2.3. Results: Compliance.





7. TEST SETUP PHOTOGRAPHS OF EUT

Please refer to separated files for Test Setup Photos of the EUT.

8. EXTERIOR PHOTOGRAPHS OF THE EUT

Please refer to separated files for External Photos of the EUT.

9. INTERIOR PHOTOGRAPHS OF THE EUT

Please refer to separated files for Internal Photos of the EUT.

-----THE END OF TEST REPORT-----



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