

# TEST REPORT

**Applicant:** SHENZHEN GIEC DIGITAL CO., LTD

**Address of Applicant:** 1st&3rd Building, No.26 Puzai Road, Pingdi, Longgang District, Shenzhen, China

**Manufacturer/Factory:** SHENZHEN GIEC DIGITAL CO., LTD

**Address of Manufacturer/Factory:** 1st&3rd Building, No.26 Puzai Road, Pingdi, Longgang District, Shenzhen, China

**Equipment Under Test (EUT)**

Product Name: Hubitat Elevation Hub

Model No.: Model C-8

**FCC ID:** 2AHYK-2212C8

**Applicable standards:** FCC CFR Title 47 Part 15 Subpart C Section 15.249

**Date of sample receipt:** November 15, 2022

**Date of Test:** November 16, 2022-December 20, 2022

**Date of report issued:** December 20, 2022

**Test Result :** PASS \*

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

Authorized Signature:



**Robinson Luo**

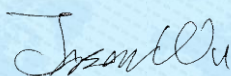
**Laboratory Manager**

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## 2 Version

Version No.	Date	Description
00	December 20, 2022	Original

Prepared By:

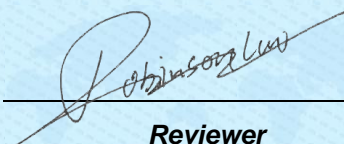


Date:

December 20, 2022

Project Engineer

Check By:



Date:

December 20, 2022

Reviewer

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## 4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	Pass
Field strength of the fundamental signal	15.249 (a)	Pass
Spurious emissions	15.249 (a) (d)/15.209	Pass
Band edge	15.249 (d)/15.205	Pass
20dB Occupied Bandwidth	15.215 (c)	Pass

*Pass: The EUT complies with the essential requirements in the standard.*

*Remark: Test according to ANSI C63.10:2013*

### 4.1 Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	9kHz-30MHz	3.1dB	(1)
Radiated Emission	30MHz-200MHz	3.8039dB	(1)
Radiated Emission	200MHz-1GHz	3.9679dB	(1)
Radiated Emission	1GHz-18GHz	4.29dB	(1)
Radiated Emission	18GHz-40GHz	3.30dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	3.44dB	(1)

Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.

## 5 General Information

### 5.1 General Description of EUT

Product Name:	Hubitat Elevation Hub
Model No.:	Model C-8
Test sample(s) ID:	GTS202211000133-1
Sample(s) Status:	Engineer sample
S/ N:	C-8112200001
Operation Frequency:	908.4MHz, 908.42MHz, 916MHz
Modulation type:	FSK: 908.4MHz, 908.42MHz GFSK: 916MHz
Antenna Type:	External Antenna
Antenna gain:	0.84dBi
Power supply:	TRAVEL CHARGER Model: TPA-46B050100UU Input: AC100-240v 50/60Hz 0.15A Output:DC5.0V 1.1A 5.0W

## 5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode.
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### Per-test mode.

We have verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:

#### 908.4MHz:

Axis	X	Y	Z
Field Strength(dBuV/m)	91.86	92.22	91.05

#### 908.42MHz:

Axis	X	Y	Z
Field Strength(dBuV/m)	89.96	90.79	89.31

#### 916MHz:

Axis	X	Y	Z
Field Strength(dBuV/m)	91.75	92.12	91.18

## 5.3 Description of Support Units

None.
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## 5.4 Test Facility

<p>The test facility is recognized, certified, or accredited by the following organizations:</p> <ul style="list-style-type: none"> <li>● <b>FCC —Registration No.: 381383</b> Designation Number: CN5029 Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files.</li> <li>● <b>IC —Registration No.: 9079A</b> CAB identifier: CN0091 The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.</li> <li>● <b>NVLAP (LAB CODE:600179-0)</b> Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).</li> </ul>
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## 5.5 Test Location

All tests were performed at:
<p>Global United Technology Services Co., Ltd. No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102 Tel: 0755-27798480 Fax: 0755-27798960</p>

## 5.6 Additional Instructions

Test Software	Special test command provided by manufacturer
Power level setup	Default

## 6 Test Instruments list

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July 02, 2020	July 01, 2025
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	April 22, 2022	April 21, 2023
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9168	GTS640	March 21, 2022	March 20, 2023
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June 12, 2022	June 11, 2023
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June 23, 2022	June 22, 2023
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	April 22, 2022	April 21, 2023
9	Coaxial Cable	GTS	N/A	GTS211	April 22, 2022	April 21, 2023
10	Coaxial cable	GTS	N/A	GTS210	April 22, 2022	April 21, 2023
11	Coaxial Cable	GTS	N/A	GTS212	April 22, 2022	April 21, 2023
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	April 22, 2022	April 21, 2023
13	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 23, 2022	June 22, 2023
14	Band filter	Amindeon	82346	GTS219	June 23, 2022	June 22, 2023
15	Power Meter	Anritsu	ML2495A	GTS540	June 23, 2022	June 22, 2023
16	Power Sensor	Anritsu	MA2411B	GTS541	June 23, 2022	June 22, 2023
17	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	April 22, 2022	April 21, 2023
18	Splitter	Agilent	11636B	GTS237	June 23, 2022	June 22, 2023
19	Loop Antenna	ZHINAN	ZN30900A	GTS534	Nov. 29, 2022	Nov. 28, 2023
20	Broadband Preamplifier	SCHWARZBECK	BBV9718	GTS535	April 22, 2022	April 21, 2023
21	Breitband hornantenna	SCHWARZBECK	BBHA 9170	GTS579	Oct. 16, 2022	Oct. 15, 2023
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 16, 2022	Oct. 15, 2023
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 16, 2022	Oct. 15, 2023
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June 23, 2022	June 22, 2023
25	Amplifier(1GHz-26.5GHz)	HP	8449B	GTS601	April 22, 2022	April 21, 2023

Conducted Emission						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May 14, 2022	May 13, 2025
2	EMI Test Receiver	R&S	ESCI 7	GTS552	April 24, 2022	April 23, 2023
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June 23, 2022	June 22, 2023
4	ENV216 2-L-V-NETZNACHB.DE	ROHDE&SCHWARZ	ENV216	GTS226	April 22, 2022	April 21, 2023
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	JINCHUANG	GSP-8A	GTS639	April 28, 2022	April 27, 2023
8	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	April 15, 2022	April 14, 2023
9	ISN	SCHWARZBECK	NTFM 8158	GTS565	April 22, 2022	April 21, 2023
10	High voltage probe	SCHWARZBECK	TK9420	GTS537	April 22, 2022	April 21, 2023

RF Conducted Test:						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	April 22, 2022	April 21, 2023
2	EMI Test Receiver	R&S	ESCI 7	GTS552	April 22, 2022	April 21, 2023
3	Spectrum Analyzer	Agilent	E4440A	GTS536	April 22, 2022	April 21, 2023
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	April 22, 2022	April 21, 2023
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	April 22, 2022	April 21, 2023
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	April 22, 2022	April 21, 2023
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	April 22, 2022	April 21, 2023
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	April 22, 2022	April 21, 2023

General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	April 25, 2022	April 24, 2023
2	Barometer	KUMAO	SF132	GTS647	July 26, 2022	July 25, 2023

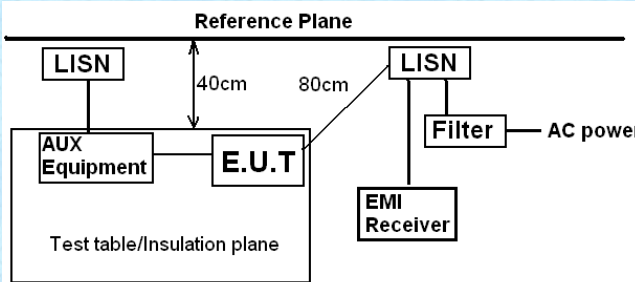


## 7 Test results and Measurement Data

### 7.1 Antenna requirement:

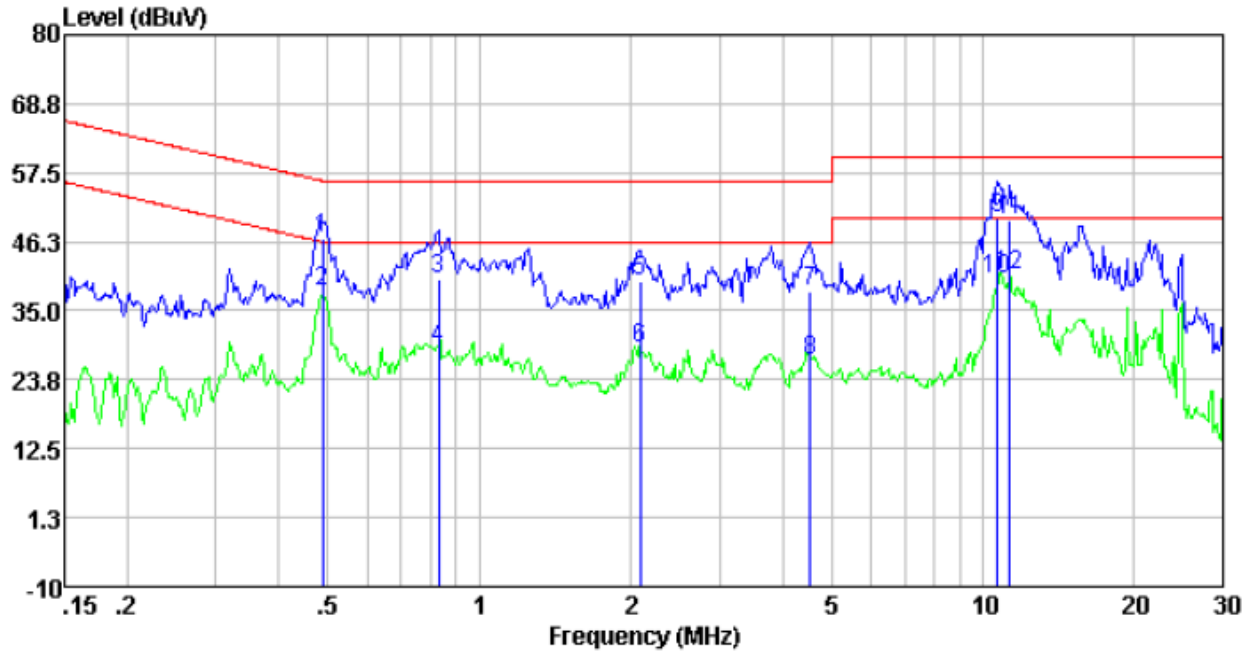
<b>Standard requirement:</b>	FCC Part15 C Section 15.203
<b>15.203 requirement:</b> An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses 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.	
<b>EUT Antenna:</b>	
The antenna is External antenna, reference to the appendix II for details.	

## 7.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207						
Test Method:	ANSI C63.10:2013						
Test Frequency Range:	150KHz to 30MHz						
Class / Severity:	Class B						
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto						
Limit:	Frequency range (MHz)	Limit (dBuV)					
		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.							
Test setup:	 <p><i>Remark</i>  E.U.T: Equipment Under Test  LISN: Line Impedance Stabilization Network  Test table height=0.8m</p>						
Test procedure:	<ol style="list-style-type: none"> <li>1. The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.</li> <li>2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).</li> <li>3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2013 on conducted measurement.</li> </ol>						
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1 012mbar	
Test Instruments:	Refer to section 6.0 for details						
Test mode:	Refer to section 5.2 for details						
Test voltage:	AC 120V/60Hz						
Test results:	Pass						

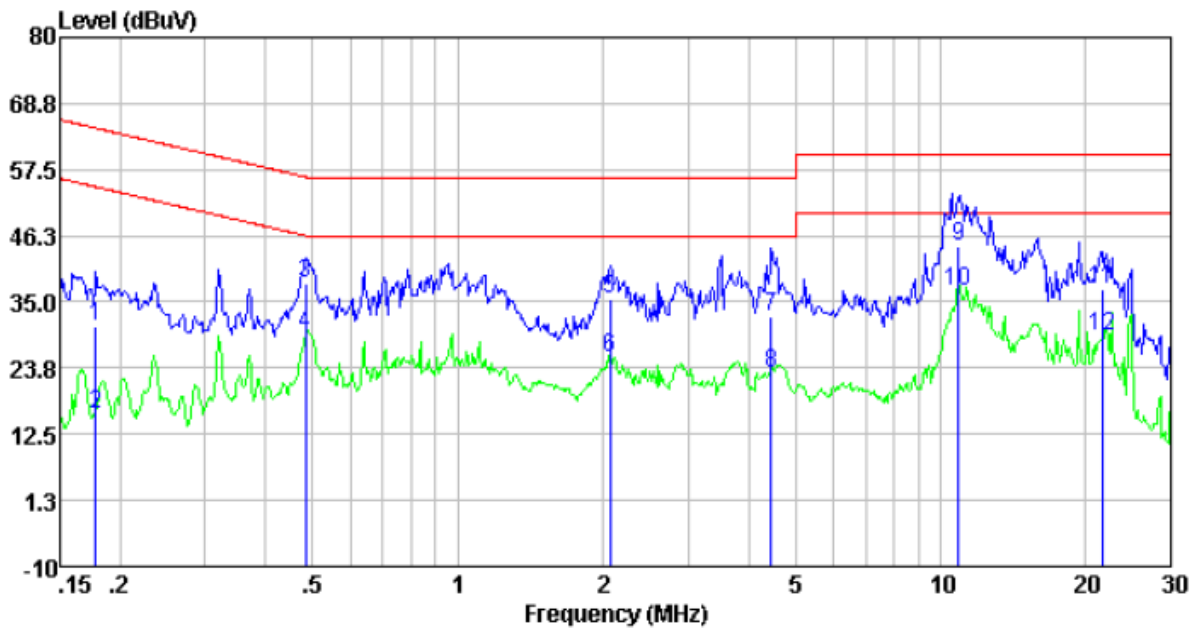
**Measurement data:**

Test mode:	Transmitting mode	Phase Polarity:	Line
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Freq	Reading level	LISN/ISN factor	Cable loss	Level	Limit level	Over limit	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.49	36.75	9.96	0.01	46.72	56.19	-9.47	QP
0.49	28.13	9.96	0.01	38.10	46.19	-8.09	Average
0.83	30.26	9.96	0.03	40.25	56.00	-15.75	QP
0.83	19.02	9.96	0.03	29.01	46.00	-16.99	Average
2.09	29.93	9.83	0.05	39.81	56.00	-16.19	QP
2.09	18.91	9.83	0.05	28.79	46.00	-17.21	Average
4.55	28.32	9.76	0.06	38.14	56.00	-17.86	QP
4.55	17.07	9.76	0.06	26.89	46.00	-19.11	Average
10.68	40.26	9.58	0.12	49.96	60.00	-10.04	QP
10.68	30.52	9.58	0.12	40.22	50.00	-9.78	Average
11.32	39.98	9.56	0.13	49.67	60.00	-10.33	QP
11.32	31.21	9.56	0.13	40.90	50.00	-9.10	Average

Test mode:	Transmitting mode	Phase Polarity:	Neutral
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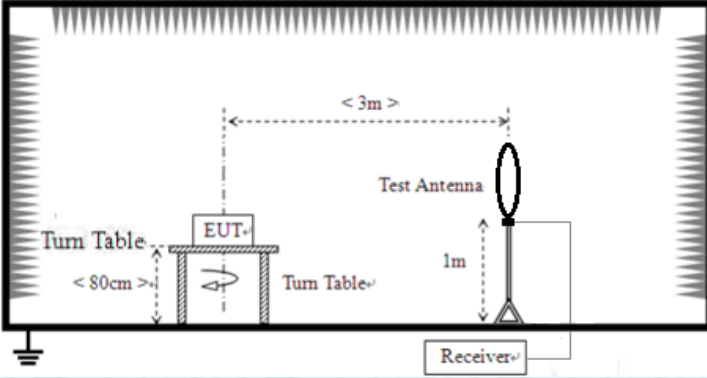


Freq	Reading level	LISN/ISN factor	Cable loss	Level	Limit level	Over limit	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.18	20.70	10.10	0.01	30.81	64.59	-33.78	QP
0.18	5.91	10.10	0.01	16.02	54.59	-38.57	Average
0.48	28.13	9.96	0.01	38.10	56.27	-18.17	QP
0.48	19.54	9.96	0.01	29.51	46.27	-16.76	Average
2.07	25.52	9.84	0.04	35.40	56.00	-20.60	QP
2.07	15.71	9.84	0.04	25.59	46.00	-20.41	Average
4.45	23.38	9.11	0.06	32.55	56.00	-23.45	QP
4.45	13.80	9.11	0.06	22.97	46.00	-23.03	Average
10.90	34.66	9.58	0.12	44.36	60.00	-15.64	QP
10.90	26.97	9.58	0.12	36.67	50.00	-13.33	Average
21.60	27.50	9.42	0.19	37.11	60.00	-22.89	QP
21.60	19.69	9.42	0.19	29.30	50.00	-20.70	Average

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Receiver Read level + LISN Factor + Cable Loss
4. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.

## 7.3 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209				
Test Method:	ANSI C63.10:2013				
Test Frequency Range:	9kHz to 10GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Value
	9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
	150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
Peak		1MHz	10Hz	Average	
Limit: (Field strength of the fundamental signal)	Frequency	Limit (dBuV/m @3m)		Remark	
	902-928MHz	94.00		QP Value	
Limit: (Spurious Emissions)	Frequency	Limit (uV/m)	Value	Measurement Distance	
	0.009MHz-0.490MHz	2400/F(KHz)	PK/QP/AV	300m	
	0.490MHz-1.705MHz	24000/F(KHz)	QP	300m	
	1.705MHz-30MHz	30	QP	30m	
	30MHz-88MHz	100	QP	3m	
	88MHz-216MHz	150	QP		
	216MHz-960MHz	200	QP		
	960MHz-1GHz	500	QP		
	Above 1GHz	500	Average		
5000		Peak			
Limit: (band edge)	Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.				
Test setup:	Below 30MHz				
					
Below 1GHz					

	<p>Above 1GHz</p>						
<p>Test Procedure:</p>	<ol style="list-style-type: none"> <li>1. The EUT was placed on the top of a rotating table (0.8m for below 1GHz and 1.5 meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.</li> <li>2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</li> <li>3. 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.</li> <li>4. 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 and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.</li> <li>5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li> <li>6. 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.</li> </ol>						
<p>Test environment:</p>	<table border="1"> <tr> <td>Temp.:</td> <td>25 °C</td> <td>Humid.:</td> <td>52%</td> <td>Press.:</td> <td>1 012mbar</td> </tr> </table>	Temp.:	25 °C	Humid.:	52%	Press.:	1 012mbar
Temp.:	25 °C	Humid.:	52%	Press.:	1 012mbar		
<p>Test Instruments:</p>	<p>Refer to section 6.0 for details</p>						
<p>Test mode:</p>	<p>Refer to section 5.2 for details</p>						

Test voltage:	AC 120V/60Hz
Test results:	Pass

**Measurement data:**

■ **9 kHz ~ 30 MHz**

The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.

## 7.3.1 Field Strength of The Fundamental Signal and spurious emissions

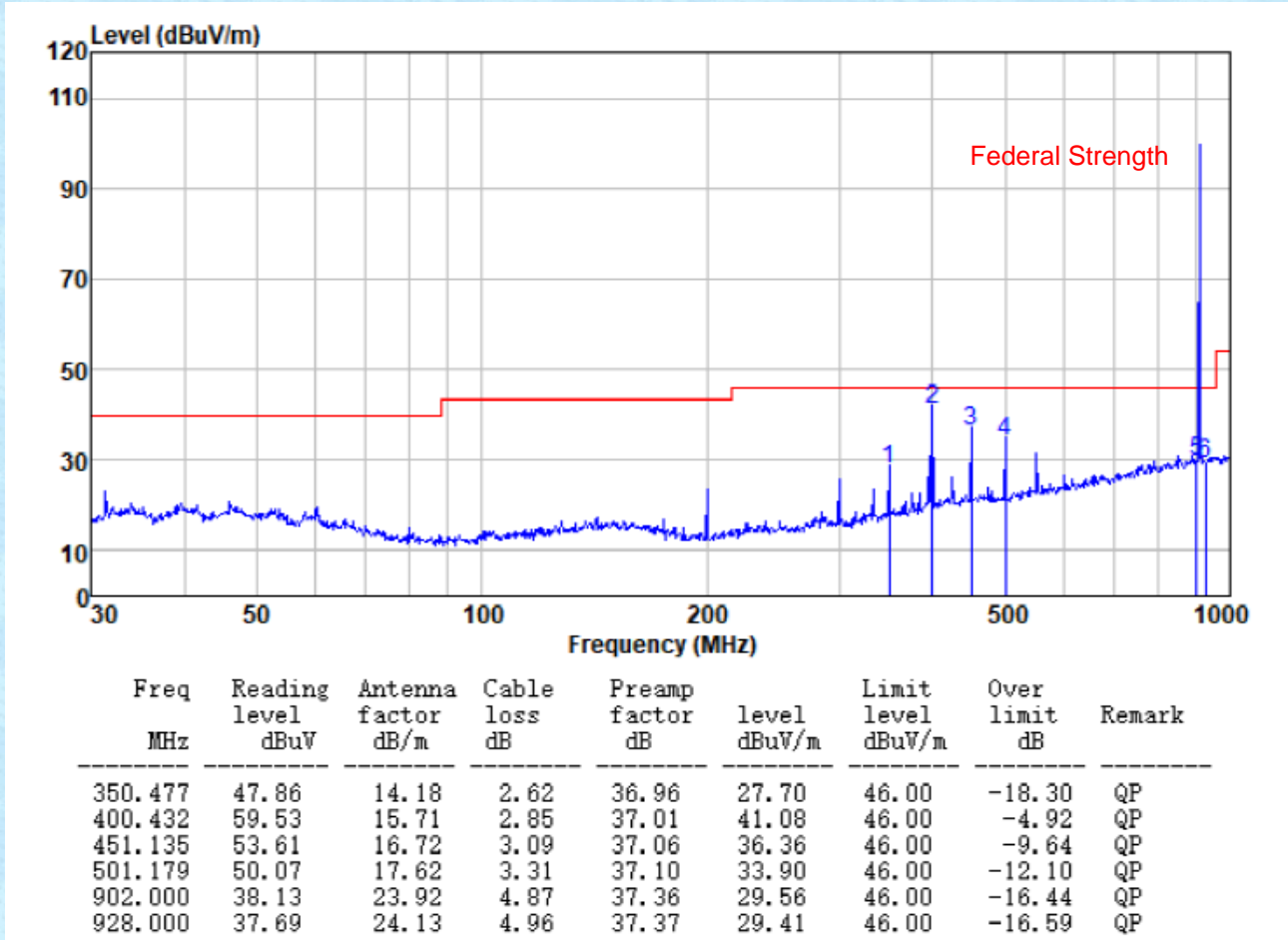
QP value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
908.4	100.72	23.98	4.88	37.36	92.22	94.00	-1.78	Vertical
908.4	99.09	23.98	4.88	37.36	90.59	94.00	-3.41	Horizontal
908.42	97.04	24.03	4.91	37.36	88.62	94.00	-5.38	Vertical
908.42	99.21	24.03	4.91	37.36	90.79	94.00	-3.21	Horizontal
916.00	95.13	24.09	4.93	37.37	86.78	94.00	-7.22	Vertical
916.00	100.47	24.09	4.93	37.37	92.12	94.00	-1.88	Horizontal

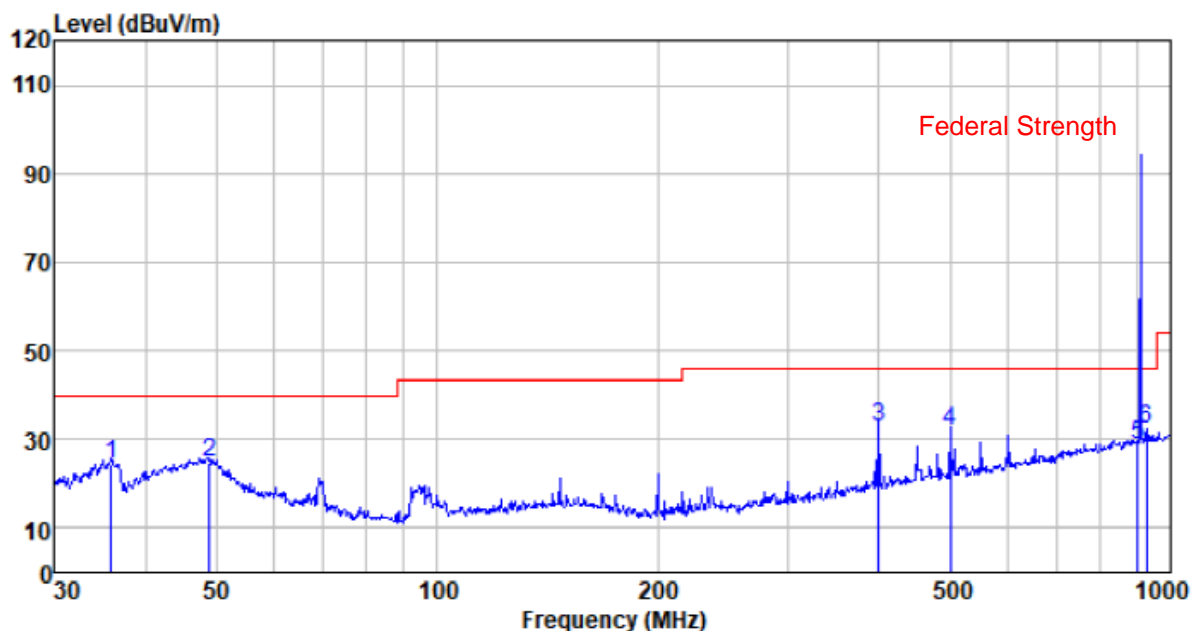


■ 30MHz-1GHz

Test mode:	Transmitting mode (908.4MHz)	Antenna Polarity:	Horizontal
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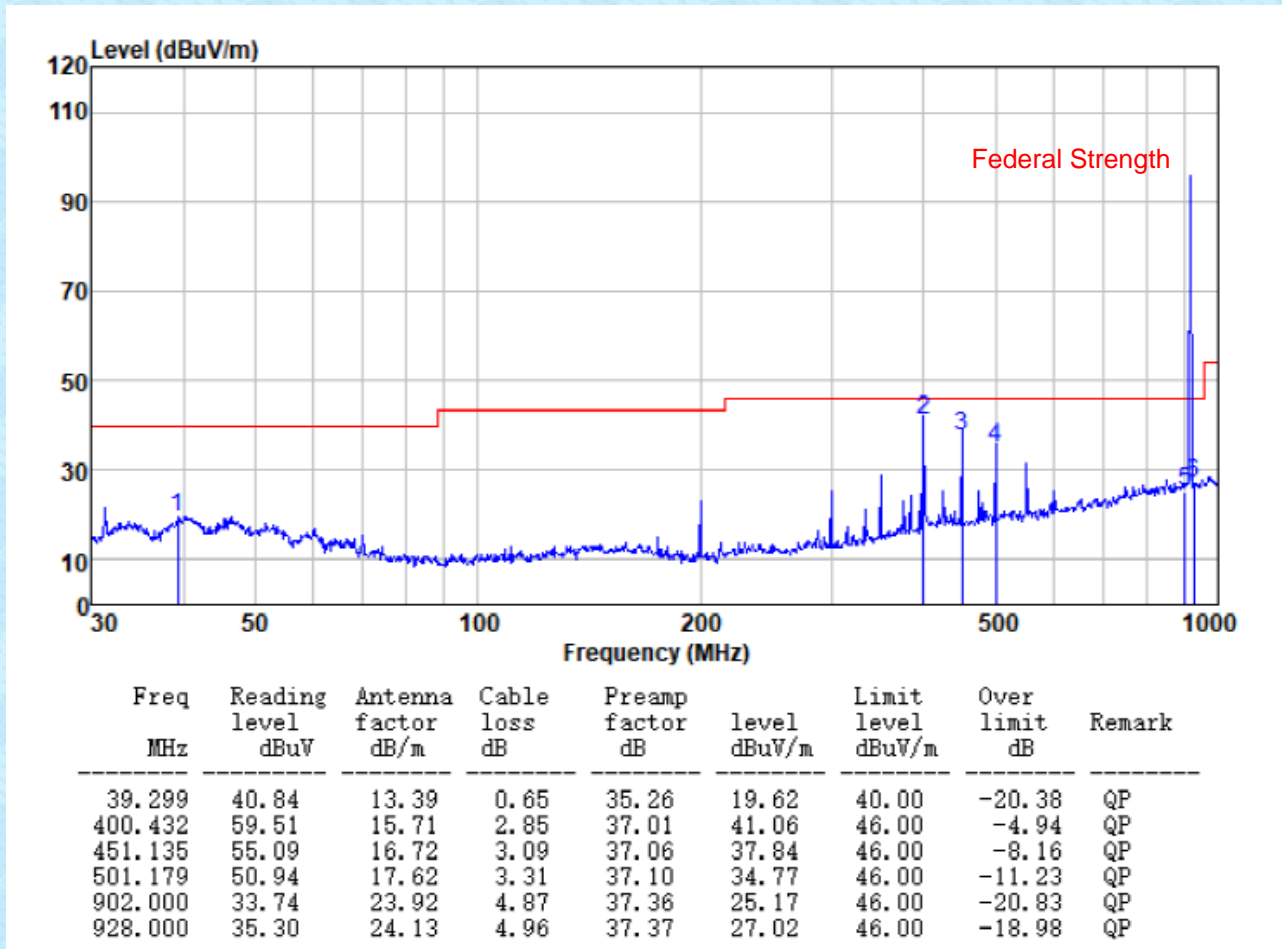


Test mode:	Transmitting mode (908.4MHz)	Antenna Polarity:	Vertical
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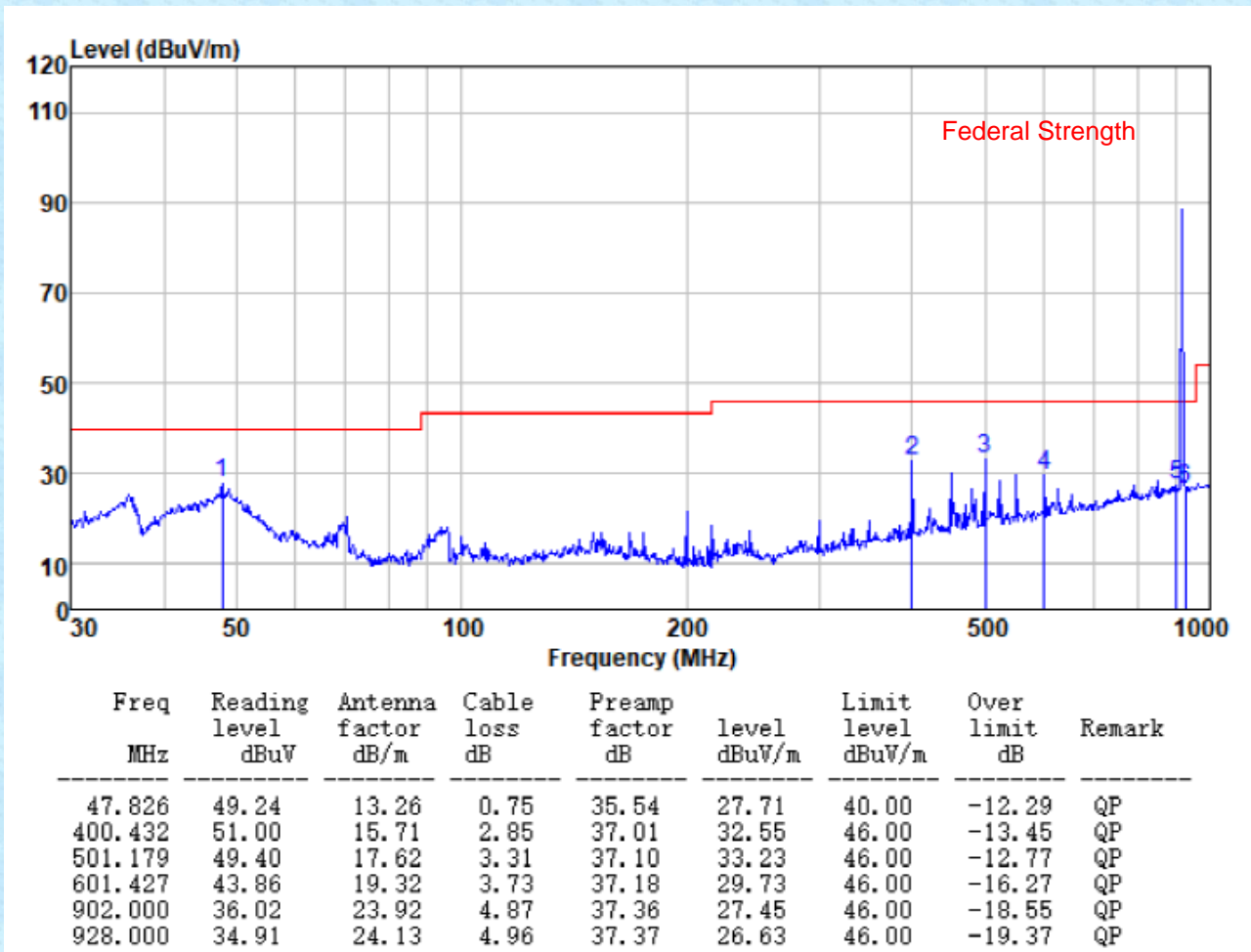


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
35.875	46.07	12.85	0.62	35.07	24.47	40.00	-15.53	QP
48.843	46.32	13.23	0.76	35.57	24.74	40.00	-15.26	QP
400.432	51.33	15.71	2.85	37.01	32.88	46.00	-13.12	QP
501.179	47.83	17.62	3.31	37.10	31.66	46.00	-14.34	QP
902.000	37.29	23.92	4.87	37.36	28.72	46.00	-17.28	QP
928.000	40.50	24.13	4.96	37.37	32.22	46.00	-13.78	QP

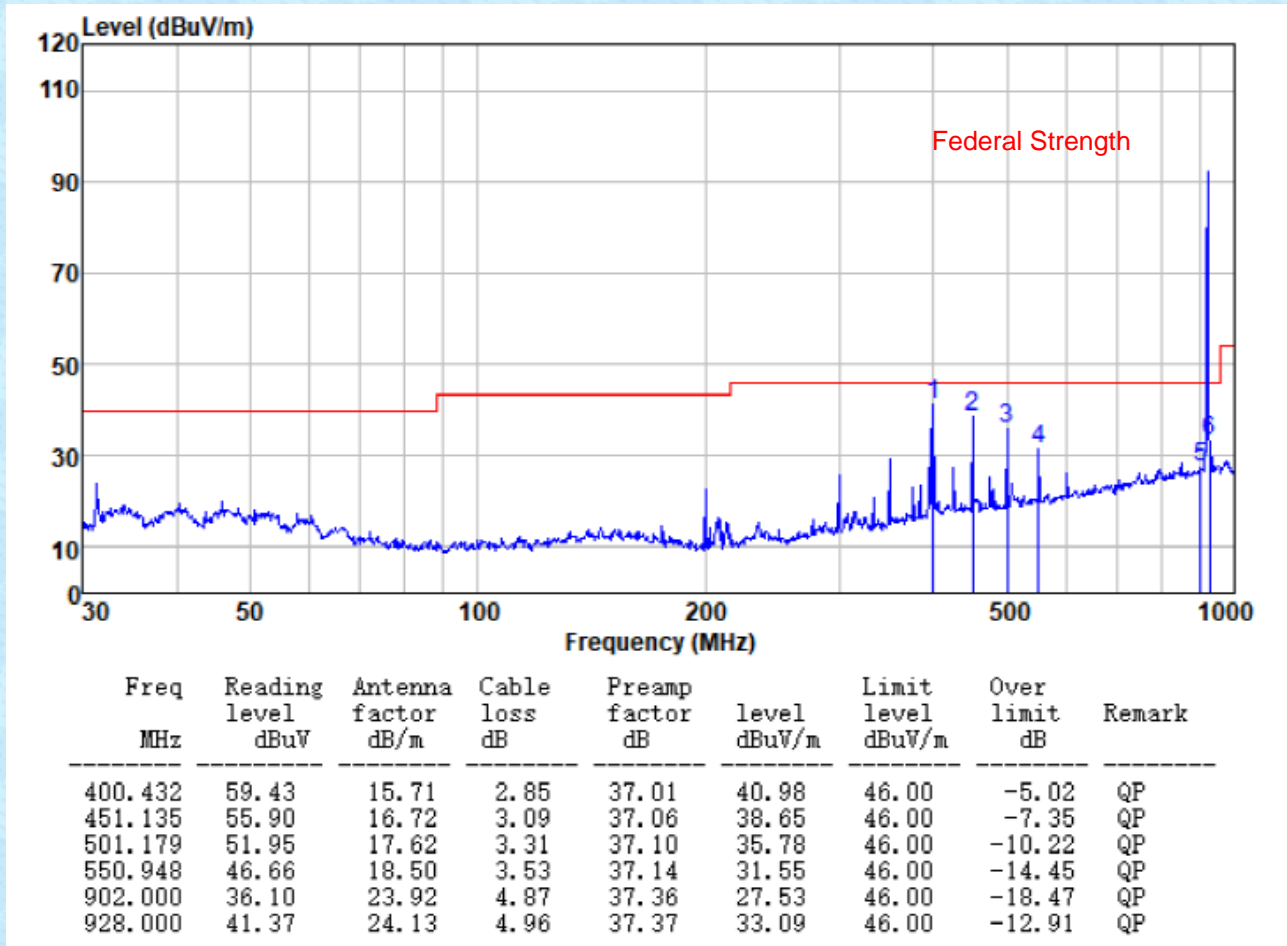
Test mode:	Transmitting mode (908.42MHz)	Antenna Polarity:	Horizontal
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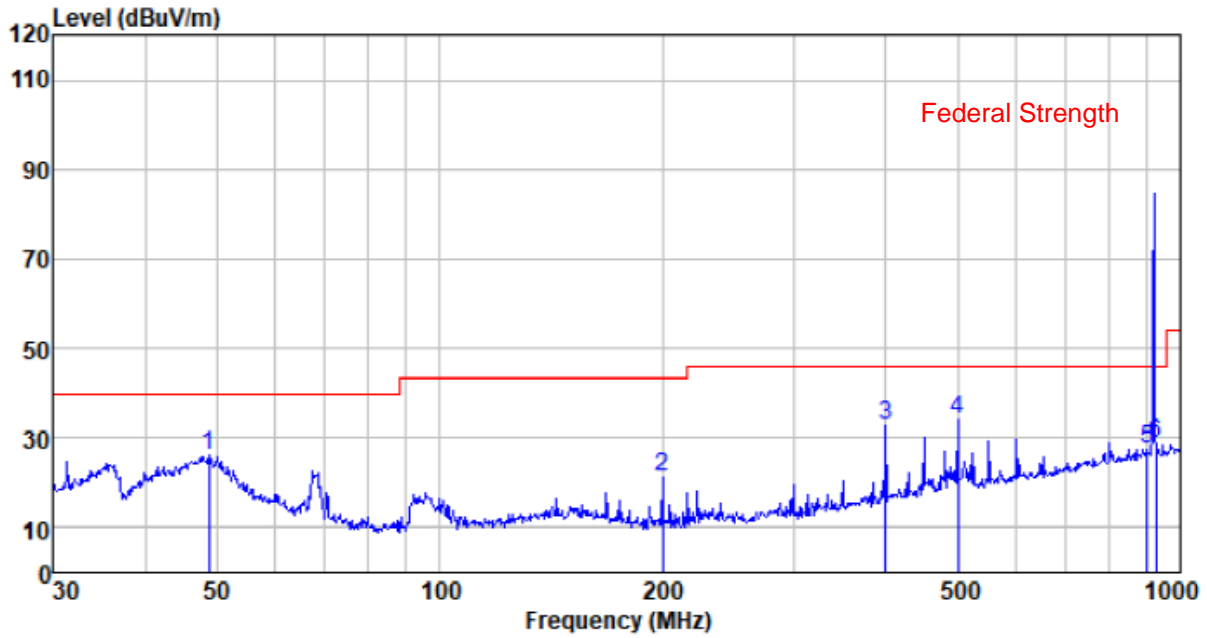
Test mode:	Transmitting mode (908.42MHz)	Antenna Polarity:	Vertical
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Test mode:	Transmitting mode (916MHz)	Antenna Polarity:	Horizontal
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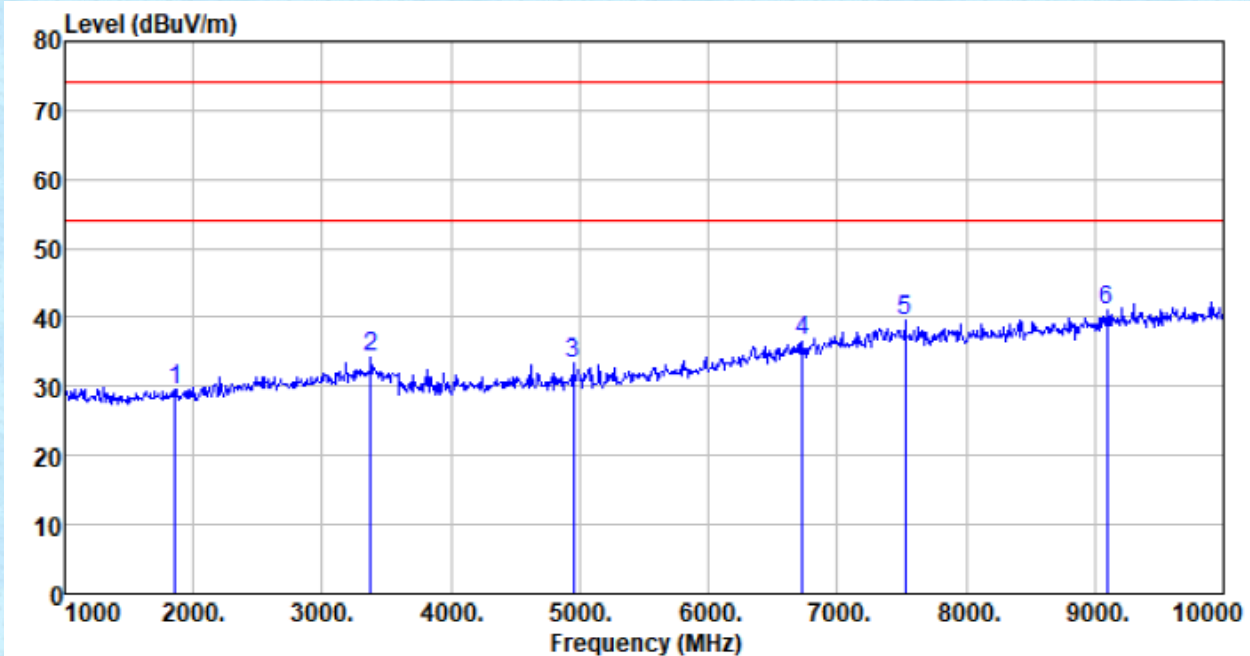
Test mode:	Transmitting mode (916MHz)	Antenna Polarity:	Vertical
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Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
48.672	47.54	13.24	0.76	35.56	25.98	40.00	-14.02	QP
199.986	46.71	9.20	1.84	36.60	21.15	43.50	-22.35	QP
400.432	51.26	15.71	2.85	37.01	32.81	46.00	-13.19	QP
501.179	50.32	17.62	3.31	37.10	34.15	46.00	-11.85	QP
902.000	35.91	23.92	4.87	37.36	27.34	46.00	-18.66	QP
928.000	37.22	24.13	4.96	37.37	28.94	46.00	-17.06	QP

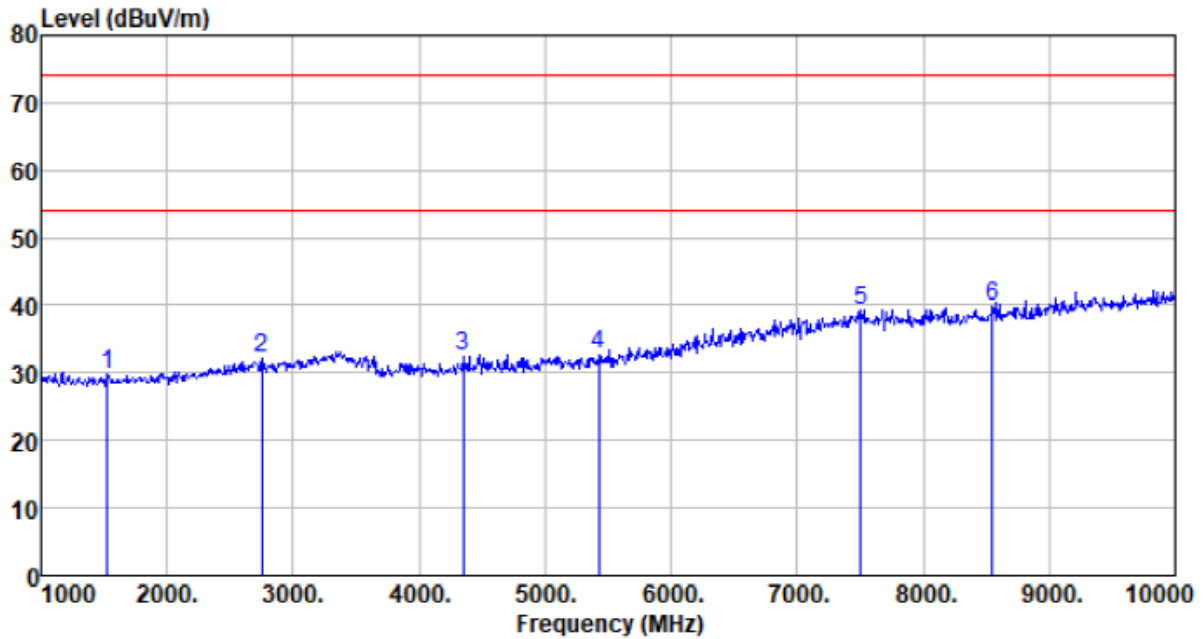
■ Above 1GHz

Test mode:	Transmitting mode (908.4MHz)	Antenna Polarity:	Horizontal
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Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
1855.000	36.37	25.89	2.49	35.14	29.61	74.00	-44.39	Peak
3376.000	37.10	28.40	3.64	34.86	34.28	74.00	-39.72	Peak
4951.000	32.53	31.41	4.77	35.25	33.46	74.00	-40.54	Peak
6733.000	29.92	35.02	6.00	34.36	36.58	74.00	-37.42	Peak
7525.000	30.50	36.83	6.82	34.58	39.57	74.00	-34.43	Peak
9091.000	29.77	37.56	7.64	33.90	41.07	74.00	-32.93	Peak

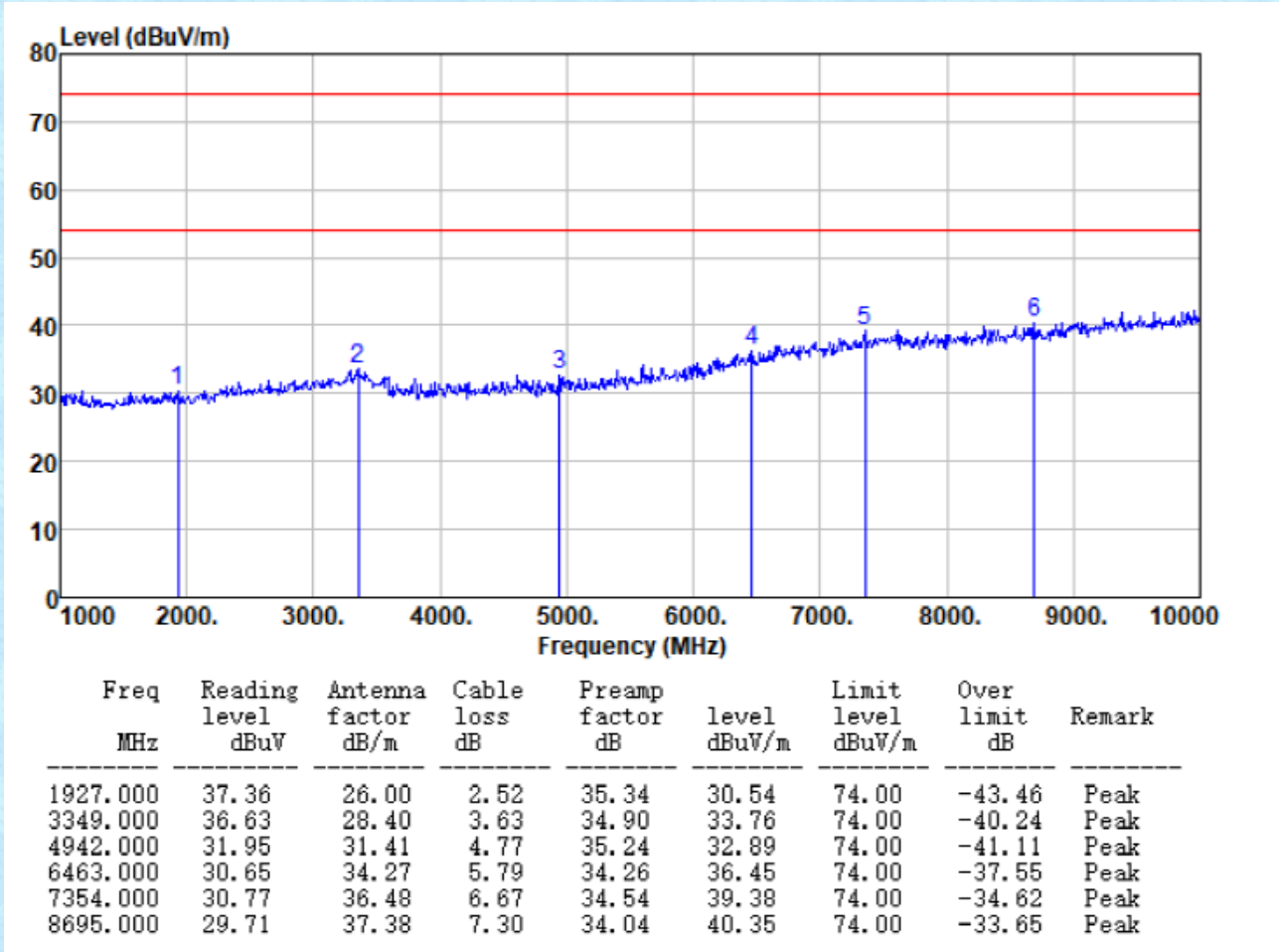
Test mode:	Transmitting mode (908.4MHz)	Antenna Polarity:	Vertical
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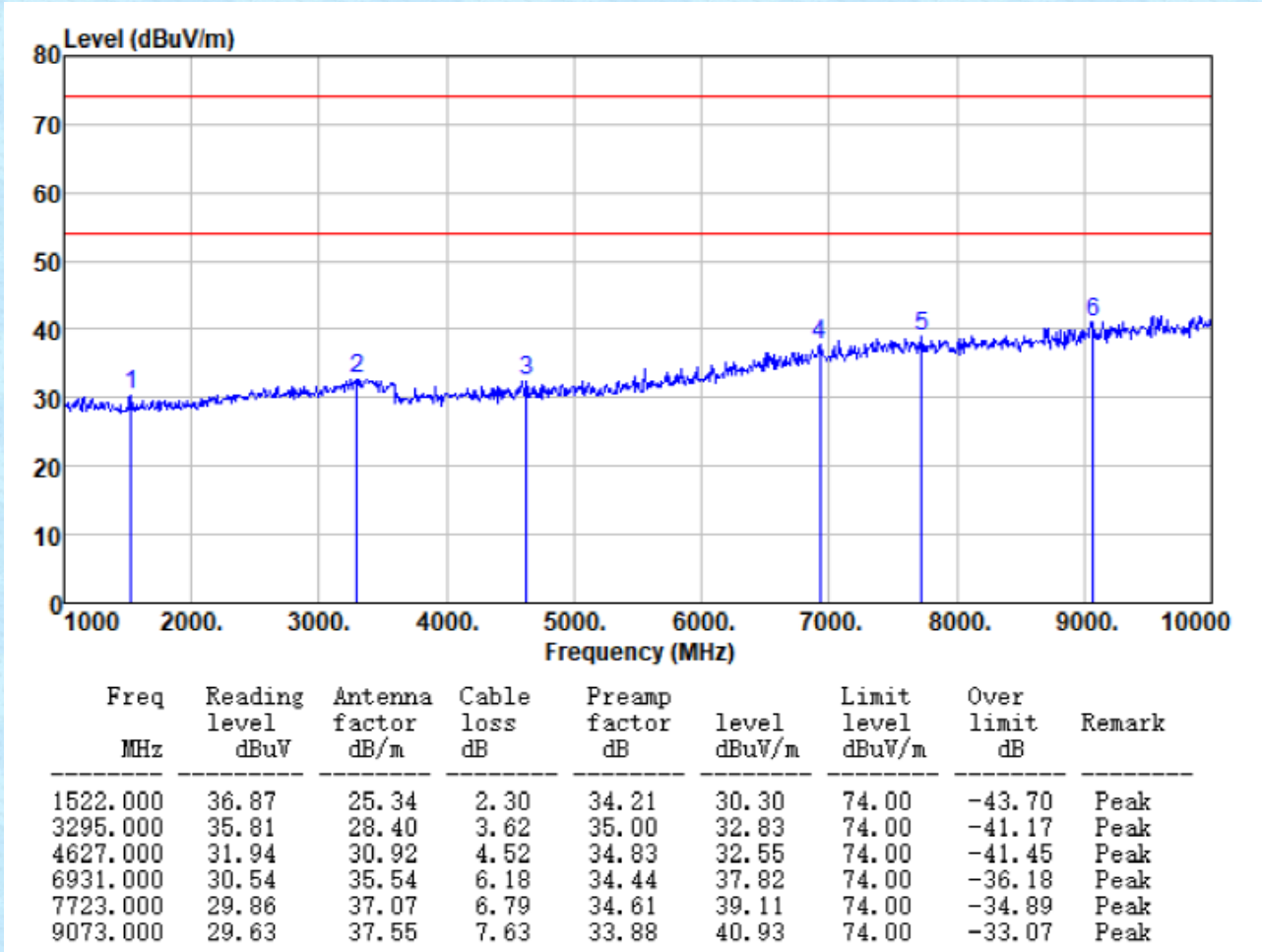
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
1522.000	36.34	25.34	2.30	34.21	29.77	74.00	-44.23	Peak
2755.000	35.91	28.08	3.18	35.05	32.12	74.00	-41.88	Peak
4348.000	32.41	30.43	4.26	34.67	32.43	74.00	-41.57	Peak
5428.000	31.58	31.67	5.16	35.66	32.75	74.00	-41.25	Peak
7507.000	30.29	36.80	6.83	34.57	39.35	74.00	-34.65	Peak
8551.000	29.54	37.32	7.17	34.17	39.86	74.00	-34.14	Peak



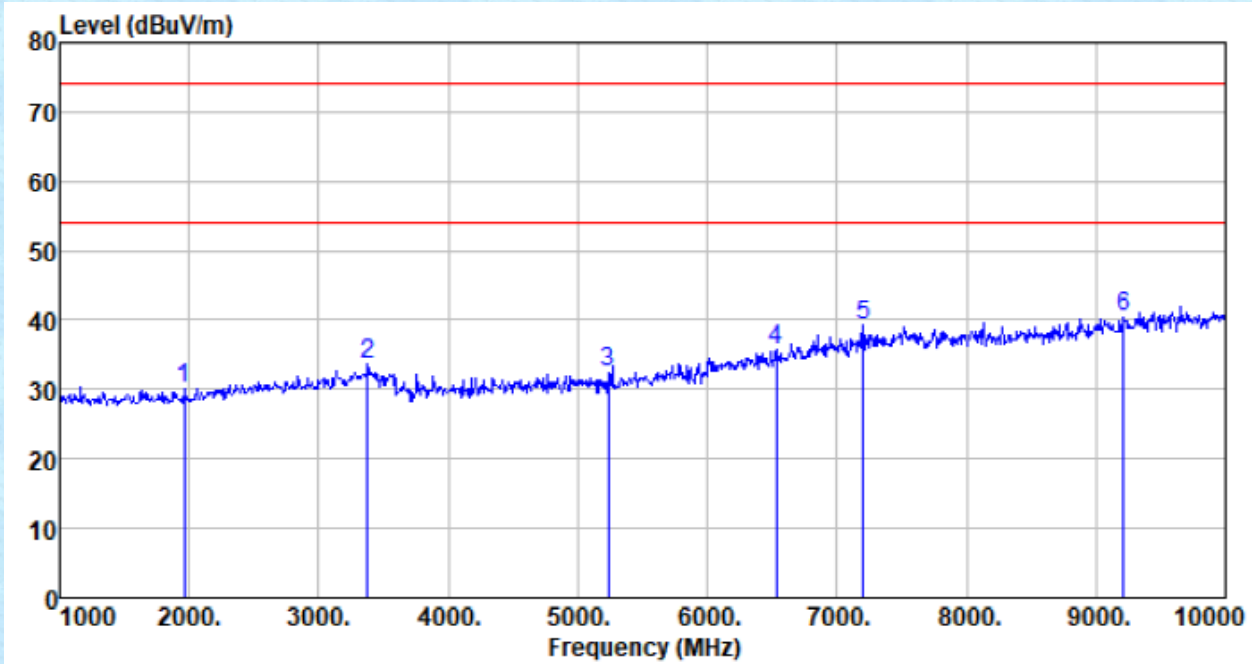
Test mode:	Transmitting mode (908.42MHz)	Antenna Polarity:	Horizontal
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Test mode:	Transmitting mode (908.42MHz)	Antenna Polarity:	Vertical
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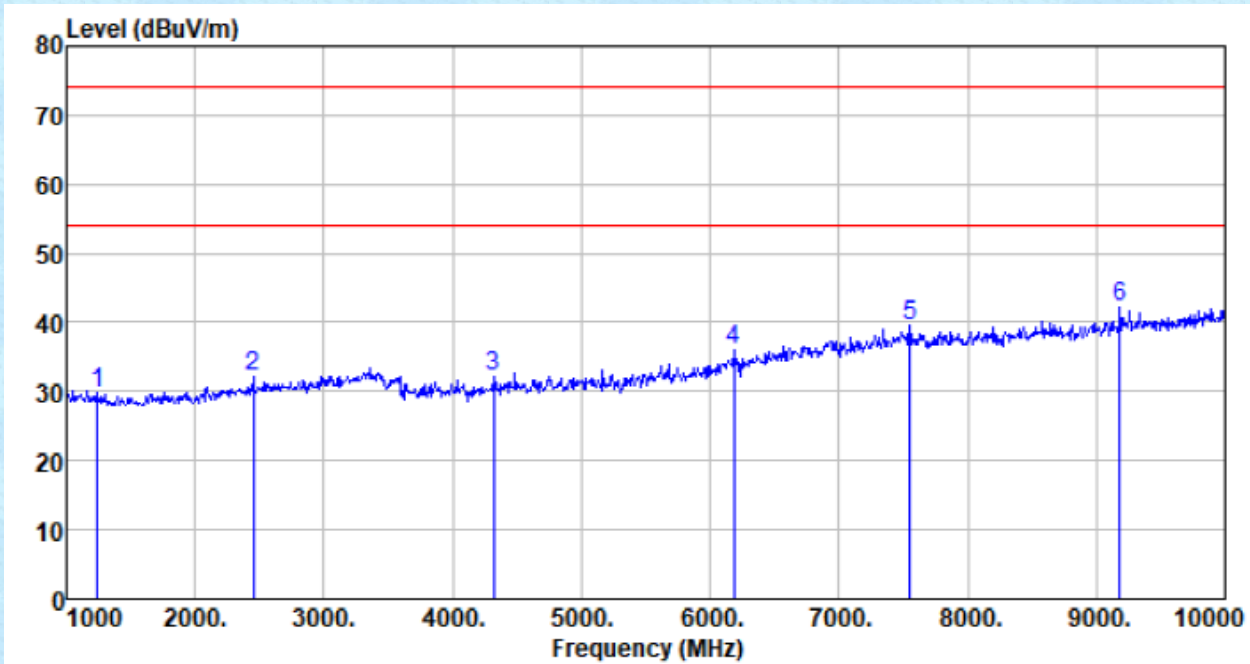


Test mode:	Transmitting mode (916MHz)	Antenna Polarity:	Horizontal
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Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
1963.000	37.01	26.04	2.53	35.44	30.14	74.00	-43.86	Peak
3376.000	36.54	28.40	3.64	34.86	33.72	74.00	-40.28	Peak
5239.000	31.42	31.60	5.02	35.51	32.53	74.00	-41.47	Peak
6535.000	29.61	34.45	5.84	34.28	35.62	74.00	-38.38	Peak
7201.000	31.16	36.16	6.48	34.51	39.29	74.00	-34.71	Peak
9217.000	29.32	37.63	7.72	34.09	40.58	74.00	-33.42	Peak

Test mode:	Transmitting mode (916MHz)	Antenna Polarity:	Vertical
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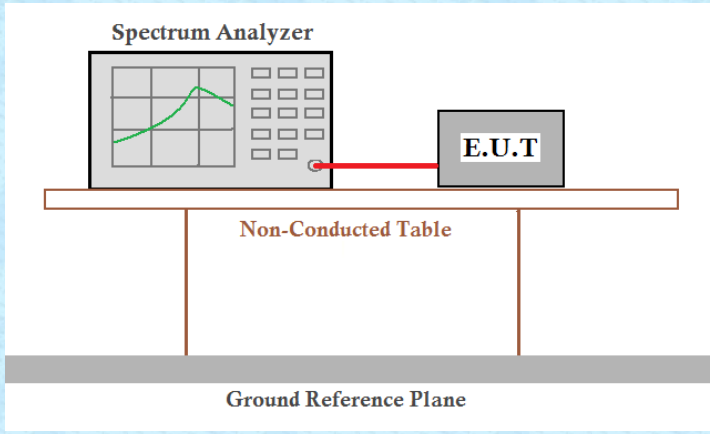


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
1243.000	37.72	24.88	2.16	34.89	29.87	74.00	-44.13	Peak
2449.000	36.32	27.55	2.96	34.67	32.16	74.00	-41.84	Peak
4321.000	32.38	30.39	4.20	34.67	32.30	74.00	-41.70	Peak
6184.000	31.16	33.24	5.68	34.14	35.94	74.00	-38.06	Peak
7552.000	30.38	36.85	6.82	34.58	39.47	74.00	-34.53	Peak
9181.000	31.03	37.61	7.70	34.03	42.31	74.00	-31.69	Peak

**Remark:**

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*

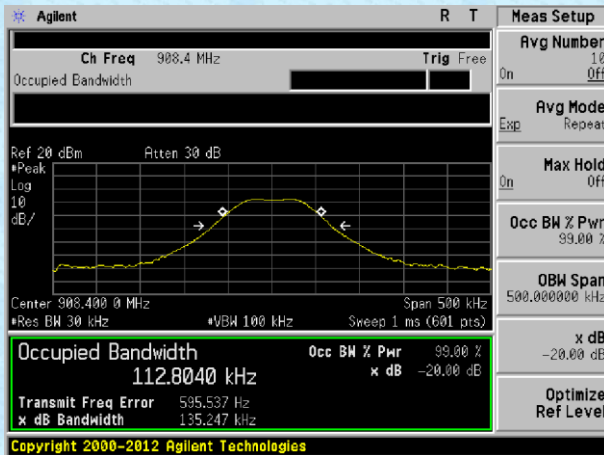
## 7.4 20dB Occupy Bandwidth

Test Requirement:	FCC Part15 C Section 15.249/15.215
Test Method:	ANSI C63.10:2013
Limit:	Operation Frequency range 902MHz~928MHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

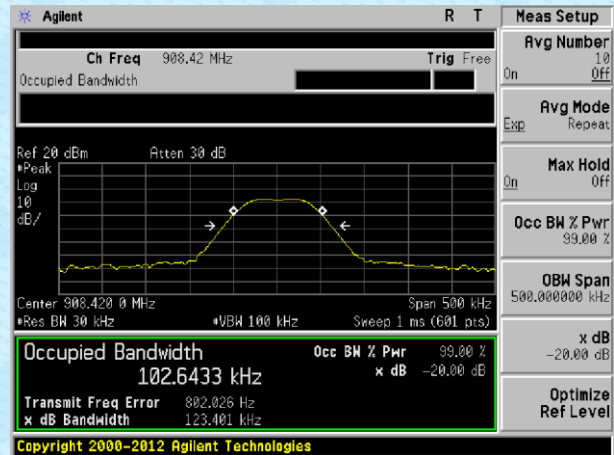
### Measurement Data

Operation Frequency	20dB bandwidth(kHz)	Result
908.4MHz	135.247	Pass
908.42MHz	123.401	Pass
916MHz	173.147	Pass

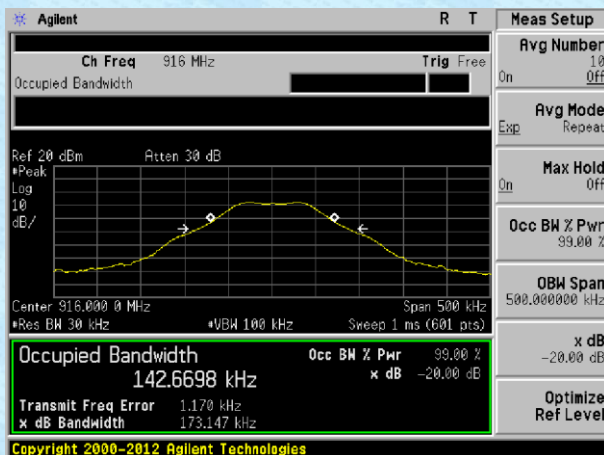
Test plot as follows:



908.4MHz



908.42MHz



916MHz

## **8 Test Setup Photo**

Reference to the **appendix I** for details.

## **9 EUT Constructional Details**

Reference to the **appendix II** for details.

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