TEST REPORT

Applicant:	Radiolink Electronic Limited
Address of Applicant:	3/F,Building 2, Fuguo industrial park, Kaifeng Road, Meilin, Shenzhen, Guangdong China
Manufacturer/Factory:	Radiolink Electronic Limited
Address of Manufacturer/Factory:	3/F,Building 2, Fuguo industrial park, Kaifeng Road, Meilin, Shenzhen, Guangdong China
Equipment Under Test (EUT)	
Product Name:	Radio Control
Model No.:	RC6GS, RC4GS, RC4GS V2 with R6FG Receiver, RC6GS V2 with R7FG Receiver
Trade Mark:	Radiolink
FCC ID:	U2BRL039RC6GS
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.247
Date of sample receipt:	September 15, 2021
Date of Test:	September 16-22, 2021
Date of report issued:	September 22, 2021
Test Result :	PASS *

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

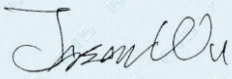
Authorized Signature:

Robinson Luo
Laboratory Manager

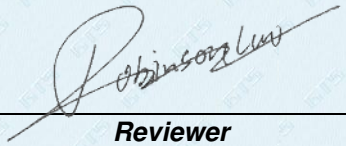
This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

2 Version

Version No.	Date	Description
00	*September 22, 2021*	*Original*

Prepared By:  ***Date:*** *September 22, 2021*

Project Engineer

Check By:  ***Date:*** *September 22, 2021*

Reviewer

3 Contents

Page

1 COVER PAGE 1

2 VERSION 2

3 CONTENTS 3

4 TEST SUMMARY 4

5 GENERAL INFORMATION 5

5.1 GENERAL DESCRIPTION OF EUT 5
5.2 TEST MODE 7
5.3 DESCRIPTION OF SUPPORT UNITS 7
5.4 DEVIATION FROM STANDARDS 7
5.5 ABNORMALITIES FROM STANDARD CONDITIONS 7
5.6 TEST FACILITY 7
5.7 TEST LOCATION 7
5.8 ADDITIONAL INSTRUCTIONS 7

6 TEST INSTRUMENTS LIST 8

7 TEST RESULTS AND MEASUREMENT DATA 9

7.1 ANTENNA REQUIREMENT 9
7.2 SPURIOUS EMISSION 11
7.2.1 Radiated Emission Method 11

8 TEST SETUP PHOTO 19

9 EUT CONSTRUCTIONAL DETAILS 19

4 Test Summary

Test Item	Section in CFR 47	Result
Antenna Requirement	15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	15.207	N/A
Conducted Peak Output Power	15.247 (b)(1)	N/A
20dB Occupied Bandwidth	15.247 (a)(1)	N/A
Carrier Frequencies Separation	15.247 (a)(1)	N/A
Hopping Channel Number	15.247 (a)(1)(iii)	N/A
Dwell Time	15.247 (a)(1)(iii)	N/A
Radiated Emission	15.205/15.209	Pass
Band Edge	15.247(d)	N/A

Remarks:

1. *Pass: The EUT complies with the essential requirements in the standard.*
2. *Test according to ANSI C63.10:2013*

Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
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:	Radio Control
Model No.:	RC6GS, RC4GS, RC4GS V2 with R6FG Receiver, RC6GS V2 with R7FG Receiver
Test Model No.:	RC6GS V2
Remark: The product models RC4GS, RC6GS are identical in the same PCB layout, interior structure and electrical circuits, the only difference is the model name for commercial purpose.Model stickers are changed from RC4GS and RC6GS to RC4GS V2 and RC6GS V2, Appearance changes:The plastic parts of the trigger changed the design, the handle was changed from coarse to finer, 1 button changed position, 1 button added, and screw hole added.	
Test sample(s) ID:	GTSL202109000128-1
Sample(s) Status:	Engineer sample
Serial No.:	1070514132 RC6GSV2
Operation Frequency:	2408MHz~2477.6MHz
Channel numbers:	59
Channel separation:	1.2MHz
Modulation type:	GFSK
Antenna Type:	Integral antenna
Antenna gain:	2.0dBi(declared by Applicant)
Power supply:	4.8~15.0V DC, 4*AA or 2S-4S Lithium battery for Transmitter 4.8~10.0V DC

Operation Frequency each of channel					
Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2408.0MHz	21	2432.0MHz	41	2456.0MHz
2	2409.2MHz	22	2433.2MHz	42	2457.2MHz
3	2410.4MHz	23	2434.4MHz	43	2458.4MHz
4	2411.6MHz	24	2435.6MHz	44	2459.6MHz
5	2412.8MHz	25	2436.8MHz	45	2460.8MHz
6	2414.0MHz	26	2438.0MHz	46	2462.0MHz
7	2415.2MHz	27	2439.2MHz	47	2463.2MHz
8	2416.4MHZ	28	2440.4MHz	48	2464.4MHz
9	2417.6MHz	29	2441.6MHz	49	2465.6MHz
10	2418.8MHz	30	2442.8MHz	50	2466.8MHz
11	2420.0MHz	31	2444.0MHz	51	2468.0MHz
12	2421.2MHz	32	2445.2MHz	52	2469.2MHz
13	2422.4MHz	33	2446.4MHz	53	2470.4MHz
14	2423.6MHz	34	2447.6MHz	54	2471.6MHz
15	2424.8MHz	35	2448.8MHz	55	2472.8MHz
16	2426.0MHz	36	2450.00MHz	56	2474.0MHz
17	2427.2MHz	37	2451.2MHz	57	2475.2MHz
18	2428.4MHz	38	2452.4MHz	58	2476.4MHz
19	2429.6MHz	39	2453.6MHz	59	2477.6MHz
20	2430.8MHz	40	2454.8MHz		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The lowest channel	2408.0MHz
The middle channel	2441.6MHz
The Highest channel	2477.6MHz

5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode.
Remark: During the test, the duty cycle >98%, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.	

5.3 Description of Support Units

None.

5.4 Deviation from Standards

None.

5.5 Abnormalities from Standard Conditions

None.

5.6 Test Facility

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

● **FCC—Registration No.: 381383**

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.

● **IC —Registration No.: 9079A**

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

● **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

5.7 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.
Address: 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

5.8 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	June. 24 2021	June. 23 2022
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 24 2021	June. 23 2022
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 24 2021	June. 23 2022
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 24 2021	June. 23 2022
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 24 2021	June. 23 2022
9	Coaxial Cable	GTS	N/A	GTS211	June. 24 2021	June. 23 2022
10	Coaxial cable	GTS	N/A	GTS210	June. 24 2021	June. 23 2022
11	Coaxial Cable	GTS	N/A	GTS212	June. 24 2021	June. 23 2022
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 24 2021	June. 23 2022
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 24 2021	June. 23 2022
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 24 2021	June. 23 2022
15	Band filter	Amindeon	82346	GTS219	June. 24 2021	June. 23 2022
16	Power Meter	Anritsu	ML2495A	GTS540	June. 24 2021	June. 23 2022
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 24 2021	June. 23 2022
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 24 2021	June. 23 2022
19	Splitter	Agilent	11636B	GTS237	June. 24 2021	June. 23 2022
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 24 2021	June. 23 2022
21	Breitband hornantenne	SCHWARZBECK	BBHA 9170	GTS579	Oct. 18 2020	Oct. 17 2021
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 18 2020	Oct. 17 2021
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 18 2020	Oct. 17 2021
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June. 24 2021	June. 23 2022

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	June. 24 2021	June. 23 2022
2	Barometer	ChangChun	DYM3	GTS255	June. 24 2021	June. 23 2022

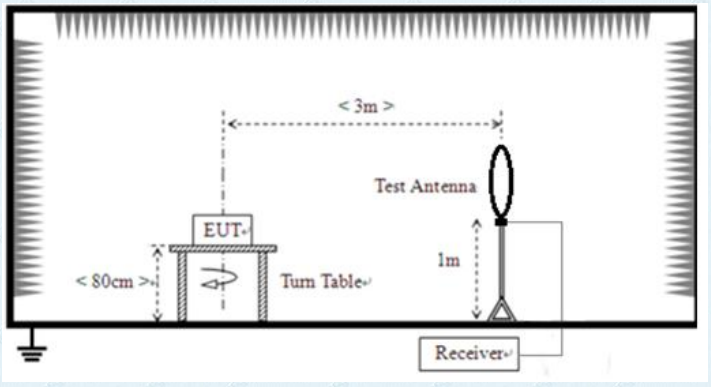
7 Test results and Measurement Data

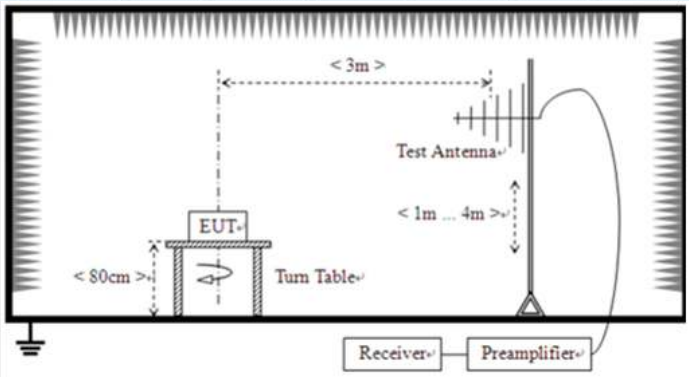
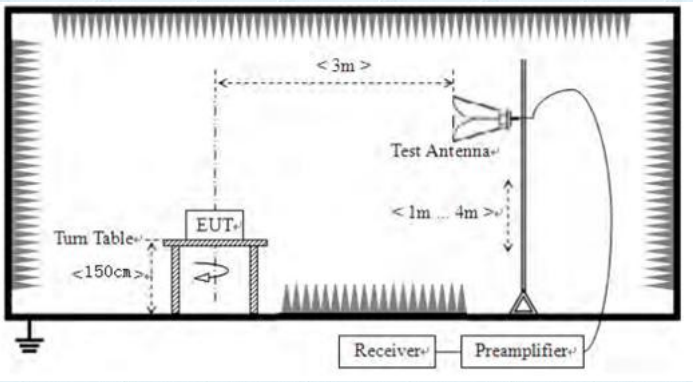
7.1 Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203 /247(c)
15.203 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(c) (1)(i) requirement:** (i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.	
E.U.T Antenna:	
The antenna is integral antenna, the best case gain of the is 2dBi, reference to the appendix II for details	

7.2 Spurious Emission

7.2.1 Radiated Emission Method

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013</td></tr>
<tr><td>Test Frequency Range:</td><td>9kHz to 25GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Value</th></tr>
<tr><td>9KHz-150KHz</td><td>Quasi-peak</td><td>200Hz</td><td>600Hz</td><td>Quasi-peak</td></tr>
<tr><td>150KHz-30MHz</td><td>Quasi-peak</td><td>9KHz</td><td>30KHz</td><td>Quasi-peak</td></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120KHz</td><td>300KHz</td><td>Quasi-peak</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak</td></tr>
<tr><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th>Frequency</th><th>Limit (uV/m)</th><th>Value</th><th>Measurement Distance</th></tr>
<tr><td>0.009MHz-0.490MHz</td><td>2400/F(KHz)</td><td>QP</td><td>300m</td></tr>
<tr><td>0.490MHz-1.705MHz</td><td>24000/F(KHz)</td><td>QP</td><td>30m</td></tr>
<tr><td>1.705MHz-30MHz</td><td>30</td><td>QP</td><td>30m</td></tr>
<tr><td>30MHz-88MHz</td><td>100</td><td>QP</td><td rowspan="7">3m</td></tr>
<tr><td>88MHz-216MHz</td><td>150</td><td>QP</td></tr>
<tr><td>216MHz-960MHz</td><td>200</td><td>QP</td></tr>
<tr><td>960MHz-1GHz</td><td>500</td><td>QP</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>500</td><td>Average</td></tr>
<tr><td>5000</td><td>Peak</td></tr>
</table>
</td></tr>
<tr><td>Test setup:</td><td>For radiated emissions from 9kHz to 30MHz

</td></tr>
</table>

	For radiated emissions from 30MHz to1GHz  For radiated emissions above 1GHz 
Test Procedure:	1. The EUT was placed on the top of a rotating table (0.8m for below 1G and 1.5m for above 1G) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 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. 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. 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. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 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.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details

Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar
Test results:	Pass					

Measurement data:

Remark:

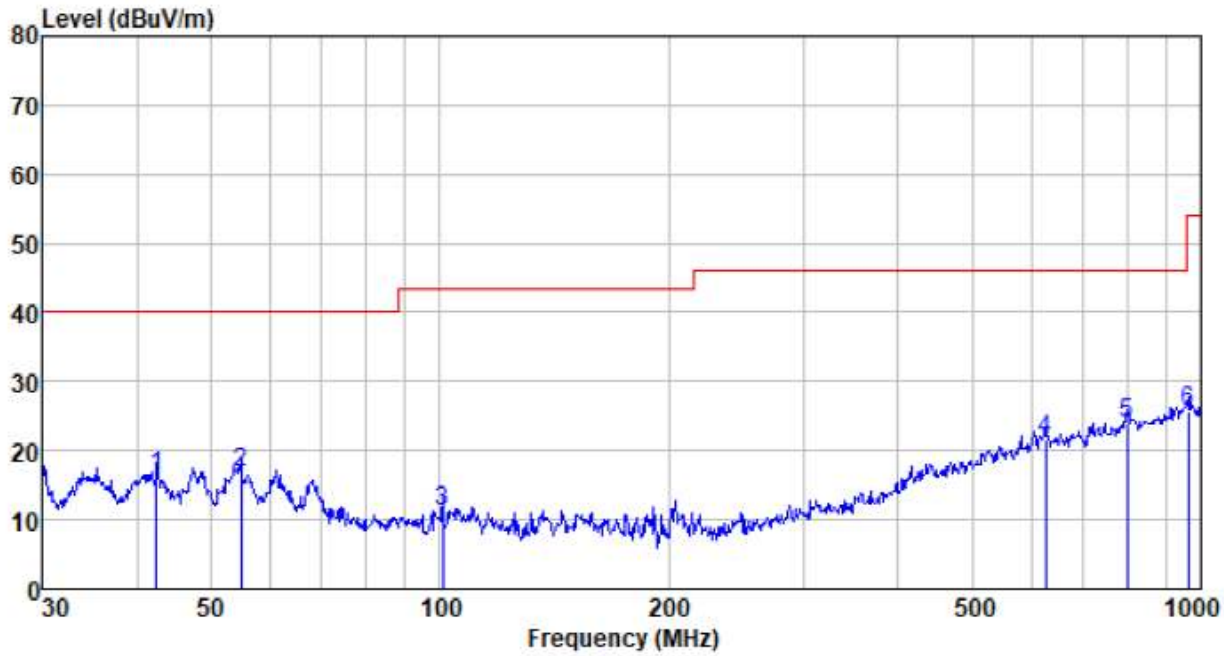
1. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.
2. The measured filed strength at frequencies below 30MHz are lower than the limit over 30dB. So the data isn't reported.

■ **9kHz~30MHz**

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.

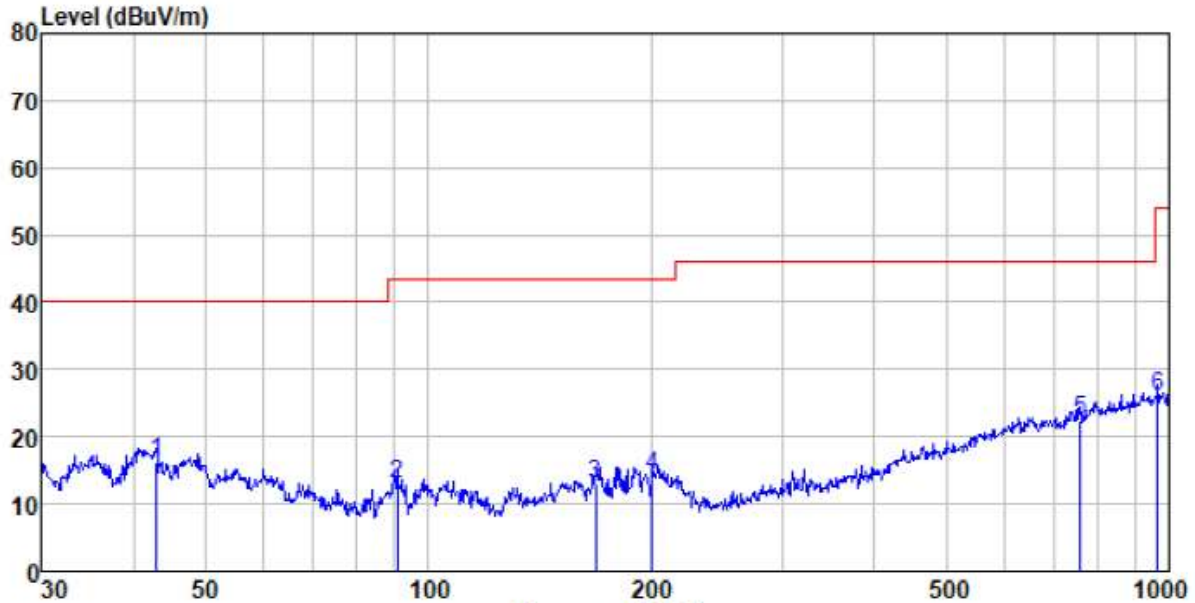
■ **Below 1GHz**

Test channel:	Lowest	Polarization:	Horizontal



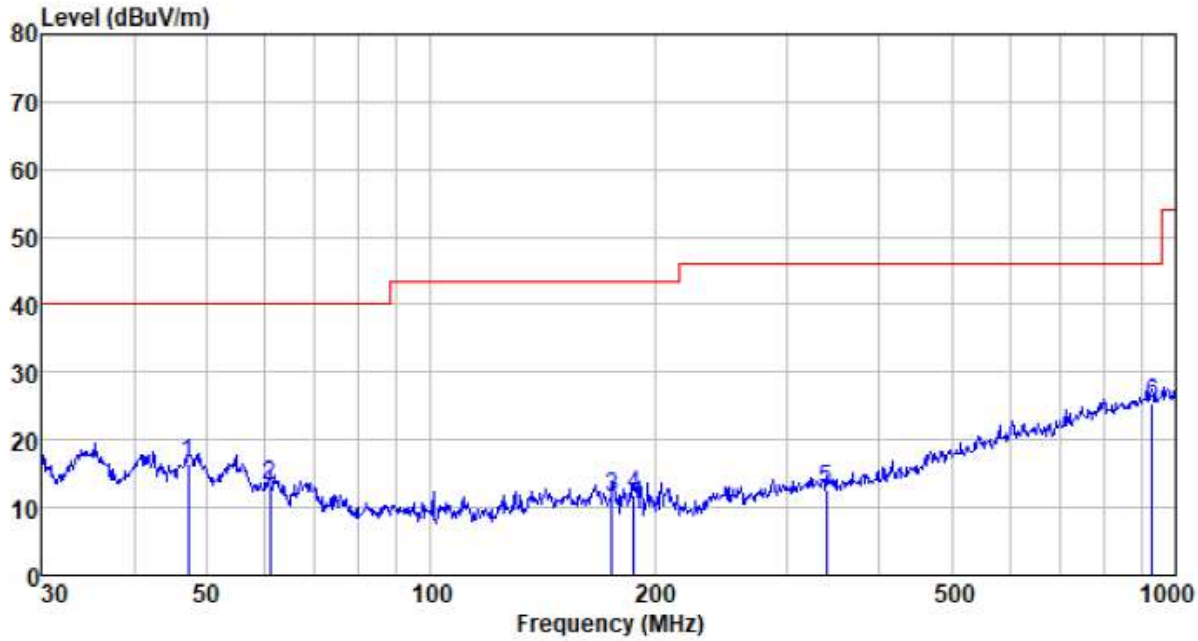
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
42.451	38.18	13.11	0.69	35.80	16.18	40.00	-23.82	QP
54.835	39.65	12.57	0.82	36.25	16.79	40.00	-23.21	QP
100.934	37.70	9.19	1.20	36.73	11.36	43.50	-32.14	QP
625.078	35.52	19.71	3.82	37.56	21.49	46.00	-24.51	QP
798.980	34.88	22.23	4.45	37.62	23.94	46.00	-22.06	QP
962.162	34.13	23.98	5.09	37.54	25.66	54.00	-28.34	QP

Test channel:	Lowest	Polarization:	Vertical



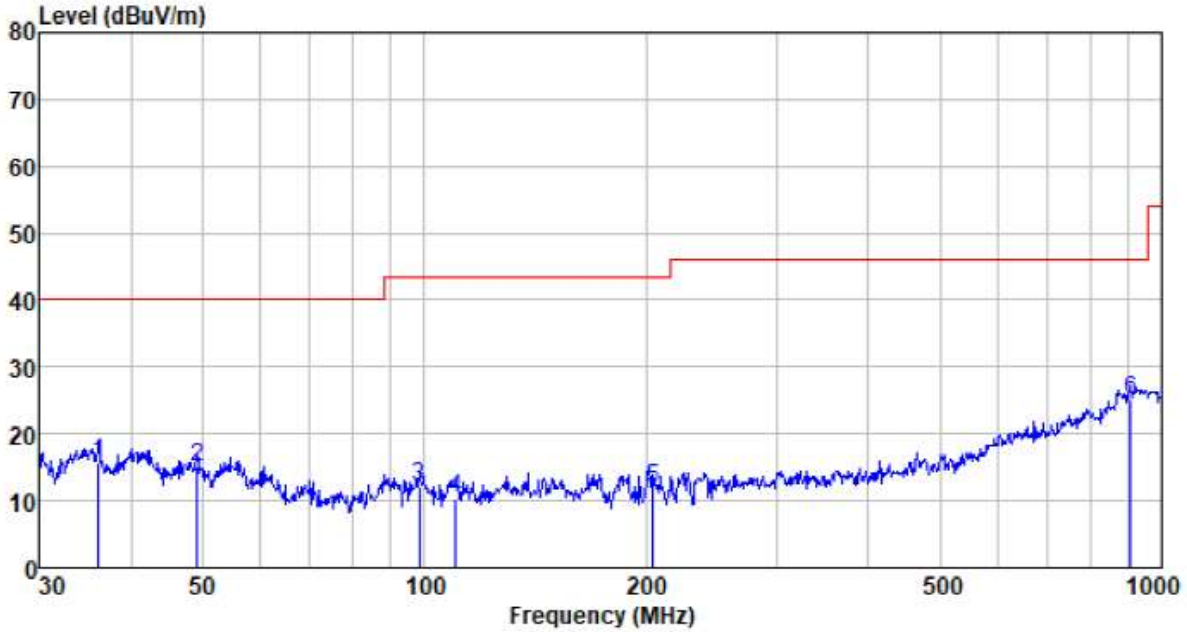
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
42.900	38.27	13.09	0.69	35.83	16.22	40.00	-23.78	QP
90.855	39.96	8.50	1.12	36.65	12.93	43.50	-30.57	QP
168.414	36.03	12.50	1.68	37.18	13.03	43.50	-30.47	QP
200.688	40.31	9.21	1.84	37.33	14.03	43.50	-29.47	QP
758.041	34.11	21.66	4.31	37.62	22.46	46.00	-23.54	QP
965.542	34.31	23.99	5.09	37.54	25.85	54.00	-28.15	QP

Test channel:	Middle	Polarization:	Horizontal



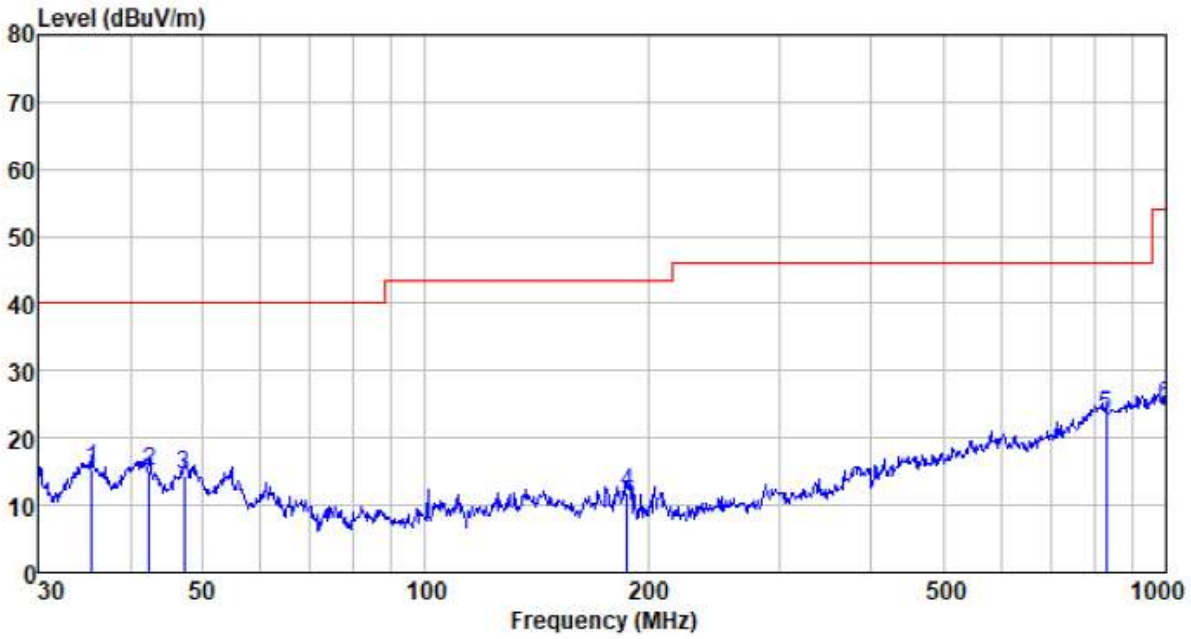
Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
47.326	38.76	13.00	0.74	36.05	16.45	40.00	-23.55	QP
60.918	36.55	12.15	0.87	36.33	13.24	40.00	-26.76	QP
175.037	35.44	11.70	1.72	37.21	11.65	43.50	-31.85	QP
187.096	37.04	10.16	1.78	37.27	11.71	43.50	-31.79	QP
339.589	34.25	13.37	2.57	37.46	12.73	46.00	-33.27	QP
929.008	34.44	23.55	4.96	37.57	25.38	46.00	-20.62	QP

Test channel:	Middle	Polarization:	Vertical



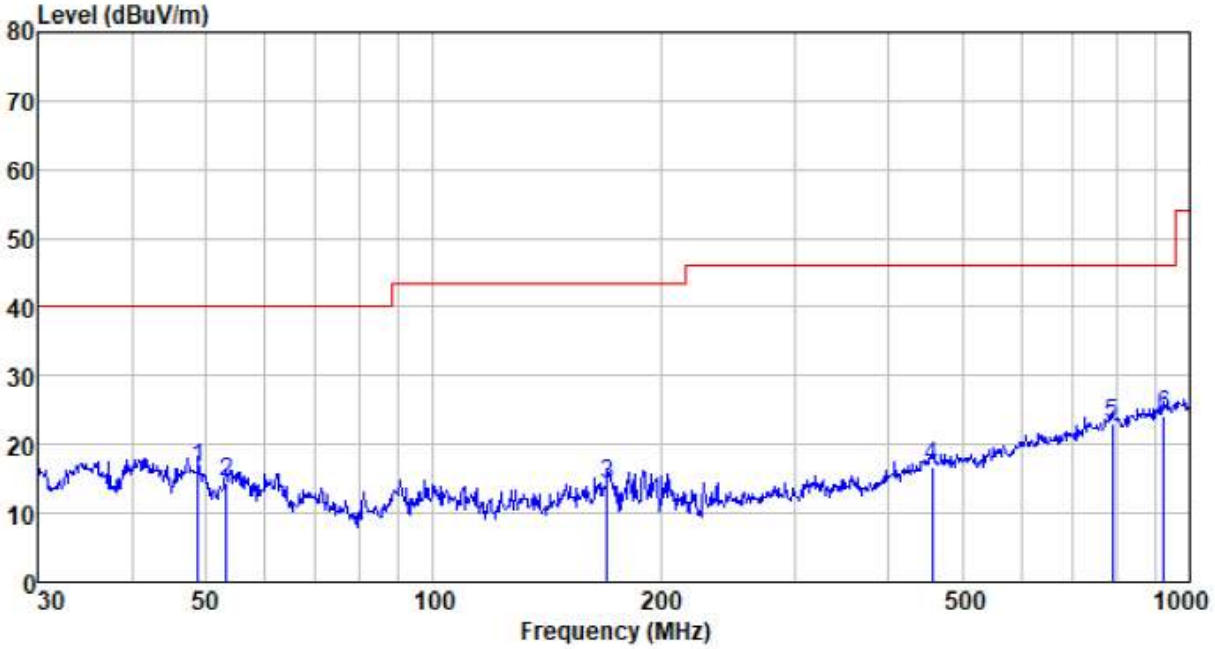
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
36.127	37.88	12.67	0.62	35.43	15.74	40.00	-24.26	QP
49.187	37.31	13.03	0.76	36.14	14.96	40.00	-25.04	QP
98.487	38.72	9.01	1.18	36.71	12.20	43.50	-31.30	QP
110.182	35.95	10.00	1.28	36.81	10.42	43.50	-33.08	QP
204.238	38.11	9.12	1.86	37.33	11.76	43.50	-31.74	QP
906.482	34.67	23.08	4.88	37.59	25.04	46.00	-20.96	QP

Test channel:	Highest	Polarization:	Horizontal



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
35.499	37.55	12.58	0.61	35.39	15.35	40.00	-24.65	QP
42.451	37.18	13.11	0.69	35.80	15.18	40.00	-24.82	QP
47.326	36.76	13.00	0.74	36.05	14.45	40.00	-25.55	QP
187.096	37.04	10.16	1.78	37.27	11.71	43.50	-31.79	QP
830.400	33.91	22.45	4.58	37.61	23.33	46.00	-22.67	QP
1000.000	33.22	24.00	5.22	37.51	24.93	54.00	-29.07	QP

Test channel:	Highest	Polarization:	Vertical



Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
48.843	38.75	13.02	0.76	36.13	16.40	40.00	-23.60	QP
53.318	37.12	12.71	0.80	36.23	14.40	40.00	-25.60	QP
169.599	37.33	12.46	1.69	37.18	14.30	43.50	-29.20	QP
455.906	35.19	16.08	3.11	37.51	16.87	46.00	-29.13	QP
790.619	34.00	22.11	4.42	37.62	22.91	46.00	-23.09	QP
925.756	33.29	23.48	4.95	37.58	24.14	46.00	-21.86	QP

8 Test Setup Photo

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

9 EUT Constructional Details

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

------End------