

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: Receiver

Model No.: R9DS, R12DS, R12DSM, R6DS, R6DSM

Applicable standards: FCC CFR Title 47 Part 15 Subpart B

Date of sample receipt: July 20, 2016

Date of Test: July 21-22, 2016

Date of report issue: November 10, 2021

Test Result : PASS *

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

Authorized Signature:



Robinson Luo

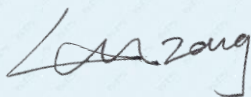
Laboratory Manager

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

| Report No. | Version No. | Date | Description |
|--------------------|-------------|-------------------|---|
| GTS201607000174E01 | 00 | July 25, 2016 | Original |
| GTS202111000085F01 | 01 | November 10, 2021 | Change product name; Add model number. |
| | | | |
| | | | |
| | | | |

Prepared By:

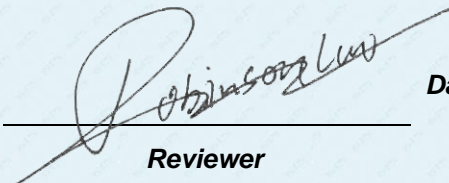


Date:

November 10, 2021

Project Engineer

Check By:



Date:

November 10, 2021

Reviewer

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4 Test Summary

| Test Item | Test Requirement | Test Method | Class / Severity | Result |
|----------------------|------------------|-------------|------------------|--------|
| Conducted Emission | FCC Part15.107 | ANSI C63.4 | Class B | N/A |
| Radiated Emissions # | FCC Part15.109 | ANSI C63.4 | Class B | PASS |

Remark:

1. Pass: The EUT complies with the essential requirements in the standard.
2. N/A: Not applicable.
3. # Refer to FCC Part 15.33 (b)(1) conditional testing procedure :

| The highest frequency generated or used in the EUT | Test frequency range of Radiated emission |
|--|--|
| <108MHz | 30MHz ~ 1GHz |
| 108MHz ~ 500MHz | 30MHz ~ 2GHz |
| 500MHz ~ 1GHz | 30MHz ~ 5GHz |
| >1GHz | 30MHz ~ 5th harmonic of the highest frequency or 40 GHz, whichever is lower. |

The highest frequency of the internal sources of the EUT is more than 108MHz.

5 General Information

5.1 General Description of EUT

| | |
|--|----------------------------------|
| Product Name: | Receiver |
| Model No.: | R9DS, R12DS, R12DSM, R6DS, R6DSM |
| Test Model No: | R9DS |
| <i>Remark: All above models are identical in the same PCB layout, interior structure and electrical circuits. The difference is model name for commercial purpose.</i> | |
| Power Supply: | DC 6.0V |

5.2 Test mode

| | |
|----------------|----------------------------------|
| Test mode: | |
| Operation mode | Keep the EUT in Operation status |

5.3 Test Facility

| |
|--|
| <p>The test facility is recognized, certified, or accredited by the following organizations:</p> <ul style="list-style-type: none"> ● 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). |
|--|

5.4 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 |

5.5 Description of Support Units

| |
|------|
| None |
|------|

5.6 Deviation from Standards

| |
|-------|
| None. |
|-------|

5.7 Abnormalities from Standard Conditions

| |
|-------|
| None. |
|-------|

5.8 Other Information Requested by the Customer

| |
|-------|
| None. |
|-------|

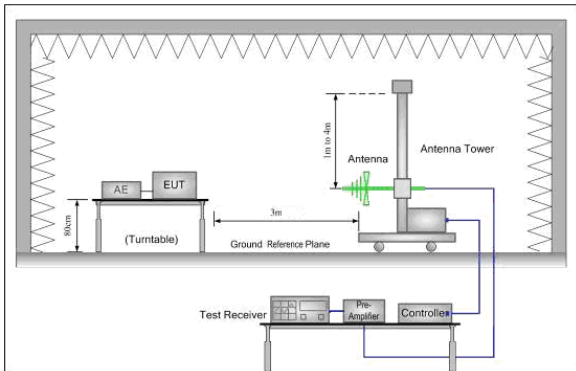
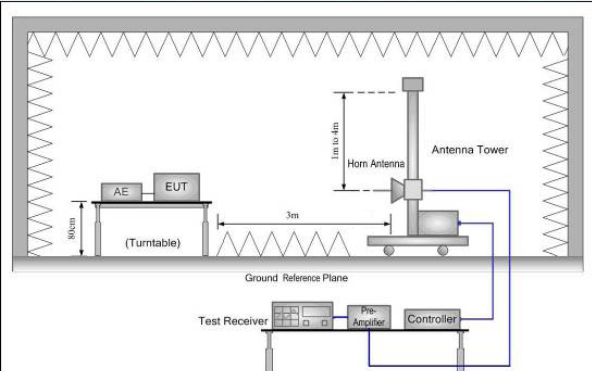
6 Test Instruments list

| 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 | 9.0(L)*6.0(W)*6.0(H) | GTS250 | July. 03 2015 | July. 02 2020 |
| 2 | Control Room | ZhongYu Electron | 6.2(L)*2.5(W)*2.4(H) | GTS251 | N/A | N/A |
| 3 | ESU EMI Test Receiver | R&S | ESU26 | GTS203 | June. 29 2016 | June. 28 2017 |
| 4 | BiConiLog Antenna | SCHWARZBECK | VULB9163 | GTS214 | June. 29 2016 | June. 28 2017 |
| 5 | Double-ridged horn antenna | SCHWARZBECK | 9120D | GTS208 | June. 29 2016 | June. 28 2017 |
| 6 | RF Amplifier | HP | 8347A | GTS204 | June. 29 2016 | June. 28 2017 |
| 7 | Broadband Preamplifier | SCHWARZBECK | BBV9718 | GTS535 | June. 29 2016 | June. 28 2017 |
| 8 | EMI Test Software | AUDIX | E3 | N/A | N/A | N/A |
| 9 | Coaxial cable | GTS | N/A | GTS210 | N/A | N/A |
| 10 | Coaxial Cable | GTS | N/A | GTS211 | N/A | N/A |
| 11 | Thermo meter | N/A | N/A | GTS256 | June. 29 2016 | June. 28 2017 |

| General used equipment: | | | | | | |
|-------------------------|----------------|--------------|-----------|---------------|---------------------|-------------------------|
| Item | Test Equipment | Manufacturer | Model No. | Inventory No. | Cal.Date (mm-dd-yy) | Cal.Due date (mm-dd-yy) |
| 1 | Barometer | ChangChun | DYM3 | GTS257 | June. 29 2016 | June. 28 2017 |

7 Test Results and Measurement Data

7.1 Radiated Emission

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------|--|------------|--------|------------|--|-----------|--------------------|-------|-------------|-------|------------|--------------|--------|------------|---------------|------------|------------|-------------|-------|------------|------------|-------|---------|---------|------|
| Test Requirement: | FCC Part15 B Section 15.109 | | | | | | | | | | | | | | | | | | | | | | | | |
| Test Method: | ANSI C63.4:2014 | | | | | | | | | | | | | | | | | | | | | | | | |
| Test Frequency Range: | 30MHz to 6GHz | | | | | | | | | | | | | | | | | | | | | | | | |
| Test site: | Measurement Distance: 3m (Semi-Anechoic Chamber) | | | | | | | | | | | | | | | | | | | | | | | | |
| Receiver setup: | <table><tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Value</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>Average</td><td>1MHz</td><td>3MHz</td><td>Average</td></tr></table> | | | | | Frequency | Detector | RBW | VBW | Value | 30MHz-1GHz | Quasi-peak | 120kHz | 300kHz | Quasi-peak | Above 1GHz | Peak | 1MHz | 3MHz | Peak | Average | 1MHz | 3MHz | Average | |
| Frequency | Detector | RBW | VBW | Value | | | | | | | | | | | | | | | | | | | | | |
| 30MHz-1GHz | Quasi-peak | 120kHz | 300kHz | Quasi-peak | | | | | | | | | | | | | | | | | | | | | |
| Above 1GHz | Peak | 1MHz | 3MHz | Peak | | | | | | | | | | | | | | | | | | | | | |
| | Average | 1MHz | 3MHz | Average | | | | | | | | | | | | | | | | | | | | | |
| Limit: | <table><tr><td>Frequency</td><td>Limit (dBμV/m @3m)</td><td>Value</td></tr><tr><td>30MHz-88MHz</td><td>40.00</td><td>Quasi-peak</td></tr><tr><td>88MHz-216MHz</td><td>43.50</td><td>Quasi-peak</td></tr><tr><td>216MHz-960MHz</td><td>46.00</td><td>Quasi-peak</td></tr><tr><td>960MHz-1GHz</td><td>54.00</td><td>Quasi-peak</td></tr><tr><td rowspan="2">Above 1GHz</td><td>54.00</td><td>Average</td></tr><tr><td>74.00</td><td>Peak</td></tr></table> | | | | | Frequency | Limit (dBμV/m @3m) | Value | 30MHz-88MHz | 40.00 | Quasi-peak | 88MHz-216MHz | 43.50 | Quasi-peak | 216MHz-960MHz | 46.00 | Quasi-peak | 960MHz-1GHz | 54.00 | Quasi-peak | Above 1GHz | 54.00 | Average | 74.00 | Peak |
| Frequency | Limit (dBμV/m @3m) | Value | | | | | | | | | | | | | | | | | | | | | | | |
| 30MHz-88MHz | 40.00 | Quasi-peak | | | | | | | | | | | | | | | | | | | | | | | |
| 88MHz-216MHz | 43.50 | Quasi-peak | | | | | | | | | | | | | | | | | | | | | | | |
| 216MHz-960MHz | 46.00 | Quasi-peak | | | | | | | | | | | | | | | | | | | | | | | |
| 960MHz-1GHz | 54.00 | Quasi-peak | | | | | | | | | | | | | | | | | | | | | | | |
| Above 1GHz | 54.00 | Average | | | | | | | | | | | | | | | | | | | | | | | |
| | 74.00 | Peak | | | | | | | | | | | | | | | | | | | | | | | |
| Test setup: | <div>Below 1GHz</div> <div></div> <div>Above 1GHz</div> <div></div> | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | |
|---------------------|---|-------|---------|-----|---------|-----------|
| Test Procedure: | <ol style="list-style-type: none"> 1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. 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 rotatable 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 environment: | Temp.: | 25 °C | Humid.: | 52% | Press.: | 1 012mbar |
| Measurement Record: | Uncertainty: 3.8039dB (30MHz-200MHz) 3.9679dB (200MHz-1GHz) 4.29dB (1GHz-18GHz) | | | | | |
| Test Instruments: | Refer to section 6 for details | | | | | |
| Test mode: | Refer to section 5.2 for details | | | | | |
| Test results: | Pass | | | | | |

Note:

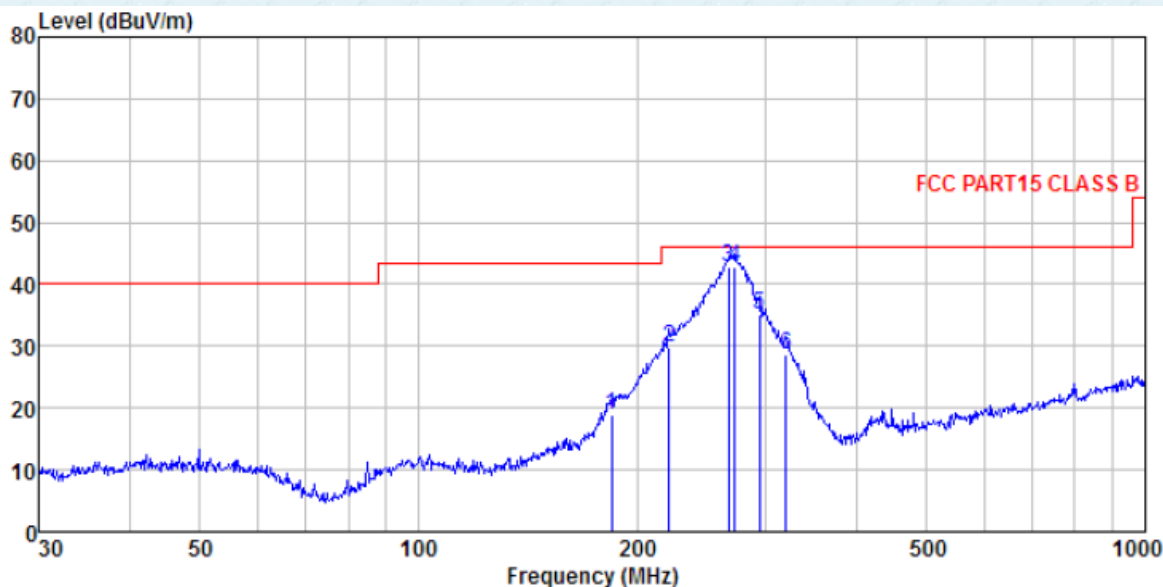
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

$$\text{Final Test Level} = \text{Receiver Reading} + \text{Antenna Factor} + \text{Cable Factor} - \text{Preamplifier Factor}$$

Measurement Data

Below 1G

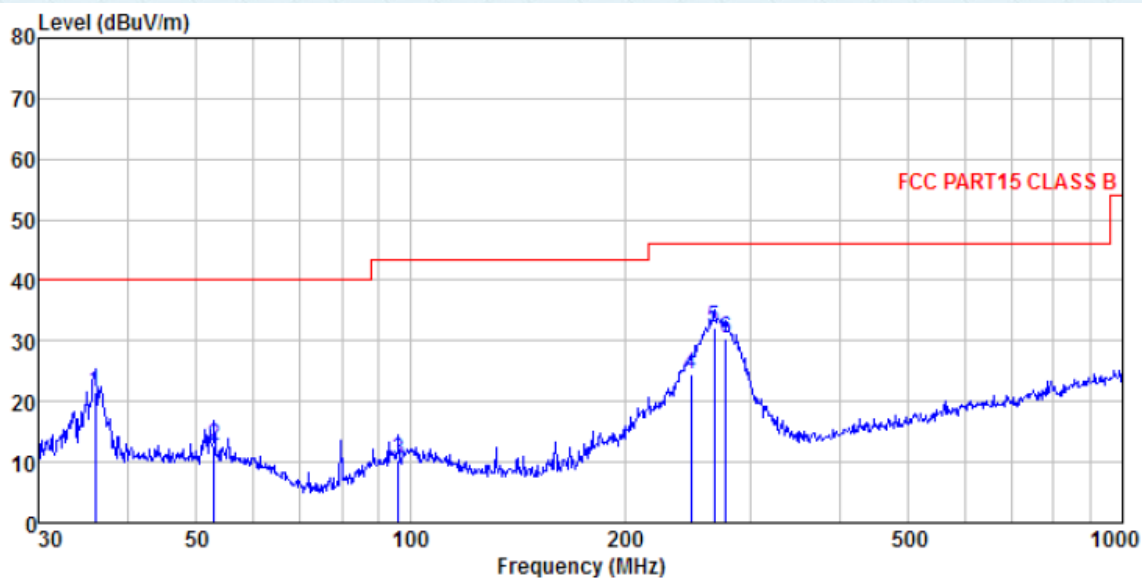
| | | | |
|------------|----------------|-------------------|------------|
| Test mode: | Operation mode | Antenna Polarity: | Horizontal |
|------------|----------------|-------------------|------------|



Site : 3m chamber
 Condition : FCC PART15 CLASS B 3m VULB9163-2013M HORIZONTAL
 Job No. : 0174
 Test Mode : Operation mode
 Test Engineer: Ben

| | Freq | Read Level | Antenna Factor | Cable Loss | Preamplifier | Level | Limit | Over Limit | Remark |
|---|---------|------------|----------------|------------|--------------|--------|--------|------------|--------|
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 184.490 | 34.37 | 12.08 | 1.76 | 29.26 | 18.95 | 43.50 | -24.55 | QP |
| 2 | 221.392 | 43.93 | 13.25 | 1.97 | 29.40 | 29.75 | 46.00 | -16.25 | QP |
| 3 | 266.609 | 55.99 | 14.26 | 2.21 | 29.77 | 42.69 | 46.00 | -3.31 | QP |
| 4 | 272.278 | 55.97 | 14.46 | 2.24 | 29.81 | 42.86 | 46.00 | -3.14 | QP |
| 5 | 294.114 | 47.82 | 14.95 | 2.33 | 29.97 | 35.13 | 46.00 | -10.87 | QP |
| 6 | 319.937 | 40.80 | 15.33 | 2.47 | 29.88 | 28.72 | 46.00 | -17.28 | QP |

| | | | |
|------------|----------------|-------------------|----------|
| Test mode: | Operation mode | Antenna Polarity: | Vertical |
|------------|----------------|-------------------|----------|

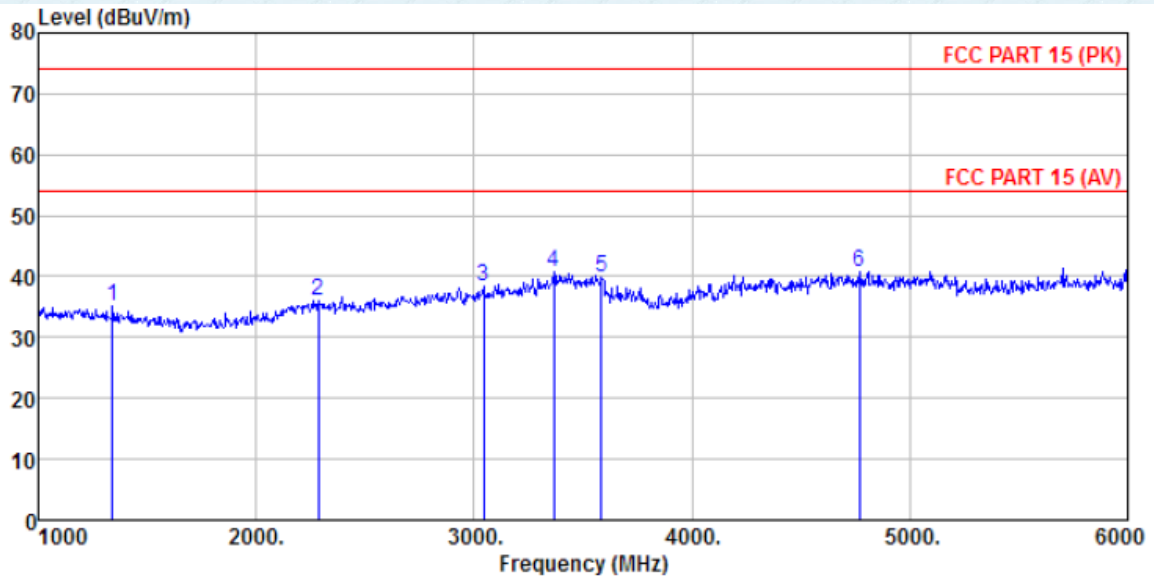


Site : 3m chamber
 Condition : FCC PART15 CLASS B 3m VULB9163-2013M VERTICAL
 Job No. : 0174
 Test Mode : Operation mode
 Test Engineer: Ben

| | Freq | ReadAntenna | Cable Preamp | | Limit | Over | | |
|---|---------|-------------|--------------|-------|-------|--------|--------|-----------|
| | Level | Factor | Loss Factor | Level | Line | Limit | Remark | |
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB |
| 1 | 36.001 | 36.34 | 14.58 | 0.62 | 30.06 | 21.48 | 40.00 | -18.52 QP |
| 2 | 52.945 | 26.91 | 15.11 | 0.80 | 29.98 | 12.84 | 40.00 | -27.16 QP |
| 3 | 96.099 | 24.08 | 14.90 | 1.16 | 29.72 | 10.42 | 43.50 | -33.08 QP |
| 4 | 247.682 | 37.98 | 14.07 | 2.11 | 29.63 | 24.53 | 46.00 | -21.47 QP |
| 5 | 266.609 | 45.55 | 14.26 | 2.21 | 29.77 | 32.25 | 46.00 | -13.75 QP |
| 6 | 277.094 | 43.30 | 14.59 | 2.25 | 29.84 | 30.30 | 46.00 | -15.70 QP |

Above 1G

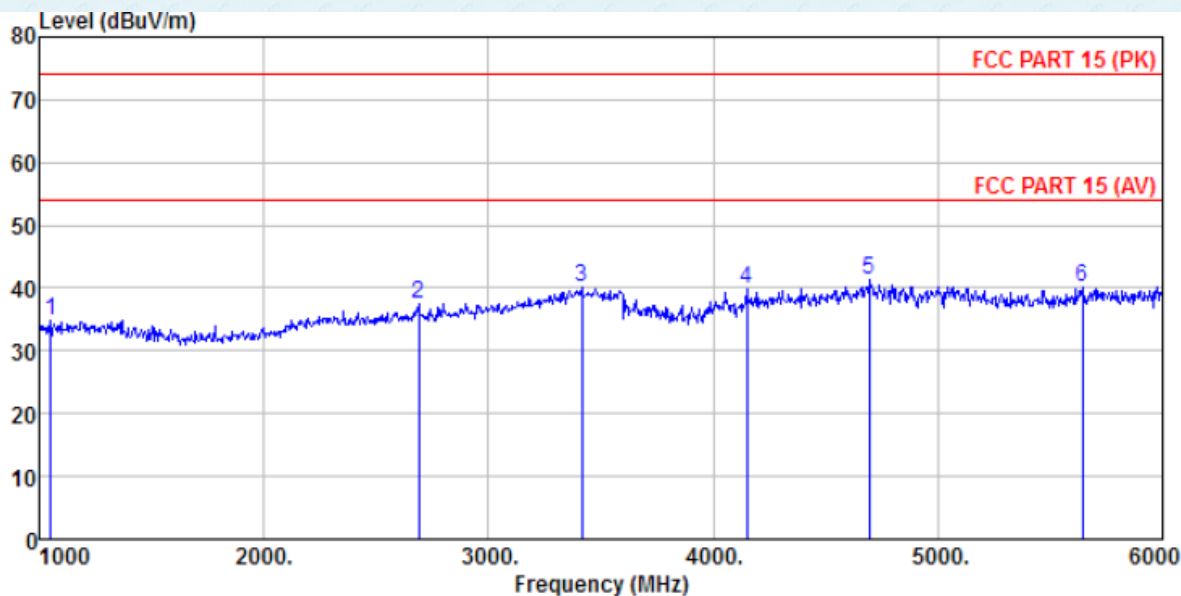
| | | | |
|------------|----------------|-------------------|------------|
| Test mode: | Operation mode | Antenna Polarity: | Horizontal |
|------------|----------------|-------------------|------------|



Site : 3m chamber
 Condition : FCC PART 15 (PK) 3m BBHA9120D ANT(>1GHZ) HORIZONTAL
 Job No. : 0174
 Test Mode : Operation mode
 Test Engineer: Sky

| | Read | Antenna | Cable | Preamp | | Limit | Over | |
|------|----------|---------|-------|--------|--------|--------|-------|-------------|
| Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 1340.000 | 38.26 | 25.69 | 4.57 | 33.33 | 35.19 | 74.00 | -38.81 Peak |
| 2 | 2285.000 | 36.96 | 27.99 | 5.28 | 34.13 | 36.10 | 74.00 | -37.90 Peak |
| 3 | 3045.000 | 36.90 | 28.65 | 6.02 | 33.28 | 38.29 | 74.00 | -35.71 Peak |
| 4 | 3365.000 | 38.31 | 28.51 | 6.70 | 32.91 | 40.61 | 74.00 | -33.39 Peak |
| 5 | 3585.000 | 36.35 | 29.12 | 7.13 | 32.66 | 39.94 | 74.00 | -34.06 Peak |
| 6 | 4770.000 | 32.56 | 31.73 | 8.58 | 32.07 | 40.80 | 74.00 | -33.20 Peak |

| | | | |
|------------|----------------|-------------------|----------|
| Test mode: | Operation mode | Antenna Polarity: | Vertical |
|------------|----------------|-------------------|----------|



Site : 3m chamber
 Condition : FCC PART 15 (PK) 3m BBHA9120D ANT(>1GHZ) VERTICAL
 Job No. : 0174
 Test Mode : Operation mode
 Test Engineer: Sky

| Engineer: Sky | ReadAntenna | Cable Preamp | | Limit | Over | |
|---------------|--------------|--------------|-------|-------|--------|-------------------|
| Freq | Level Factor | Loss Factor | Level | Line | Limit | Remark |
| ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m |
| 1050.000 | 38.58 | 24.62 | 4.34 | 32.84 | 34.70 | 74.00 -39.30 Peak |
| 2690.000 | 37.25 | 28.12 | 5.66 | 33.68 | 37.35 | 74.00 -36.65 Peak |
| 3415.000 | 37.44 | 28.67 | 6.80 | 32.85 | 40.06 | 74.00 -33.94 Peak |
| 4150.000 | 33.67 | 30.06 | 8.01 | 32.01 | 39.73 | 74.00 -34.27 Peak |
| 4695.000 | 33.19 | 31.65 | 8.51 | 32.03 | 41.32 | 74.00 -32.68 Peak |
| 5645.000 | 30.52 | 32.36 | 9.72 | 32.35 | 40.25 | 74.00 -33.75 Peak |

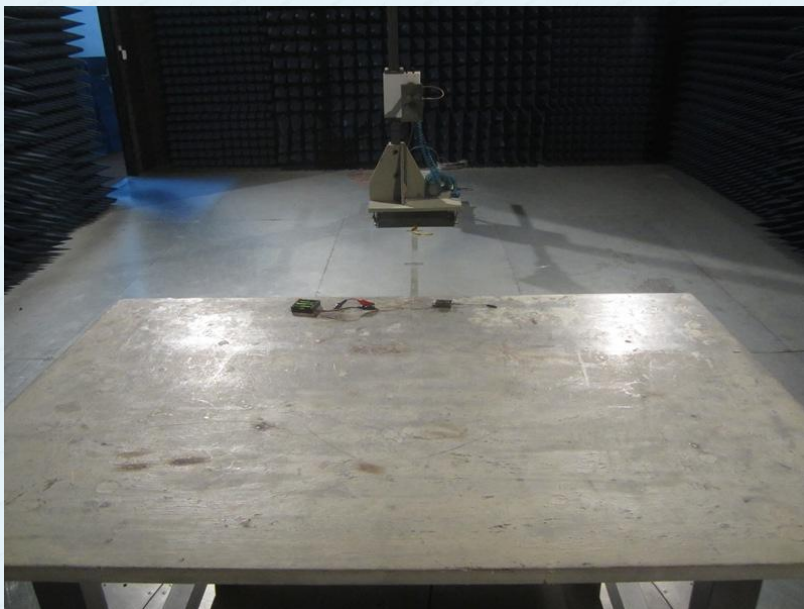
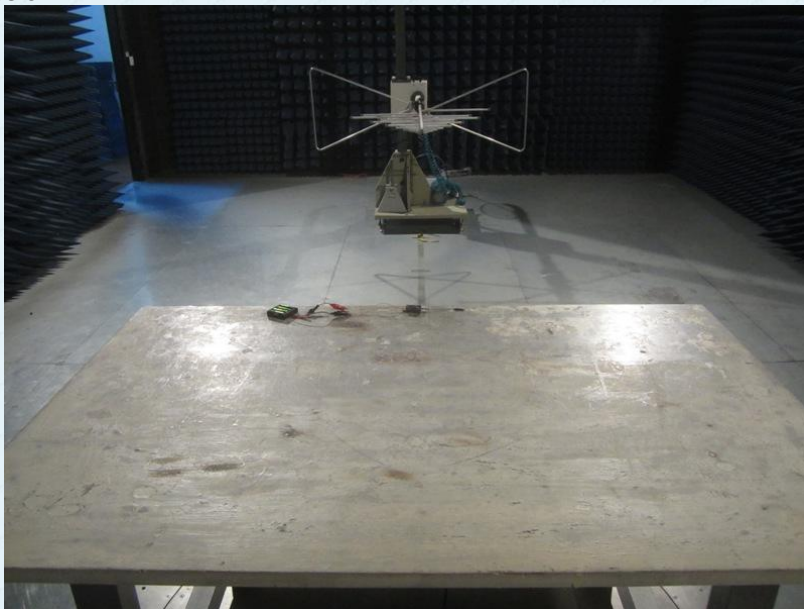
Note:

The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

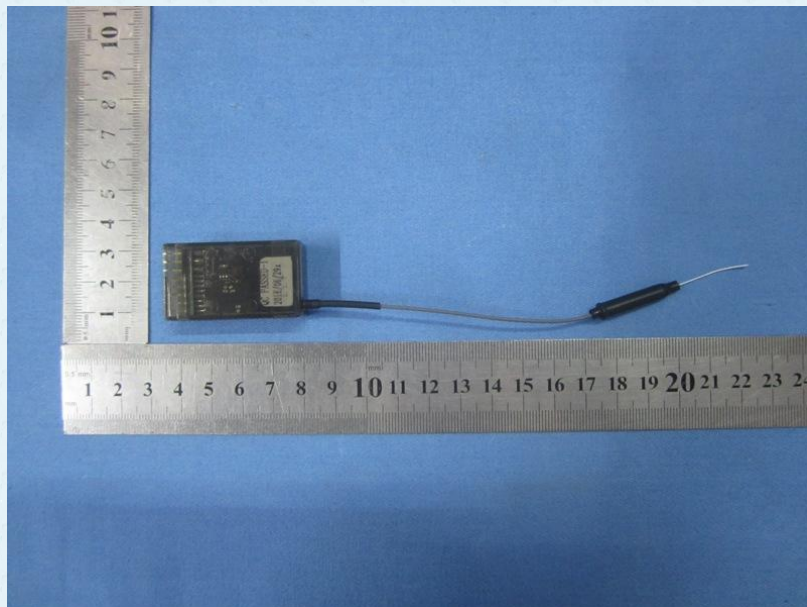
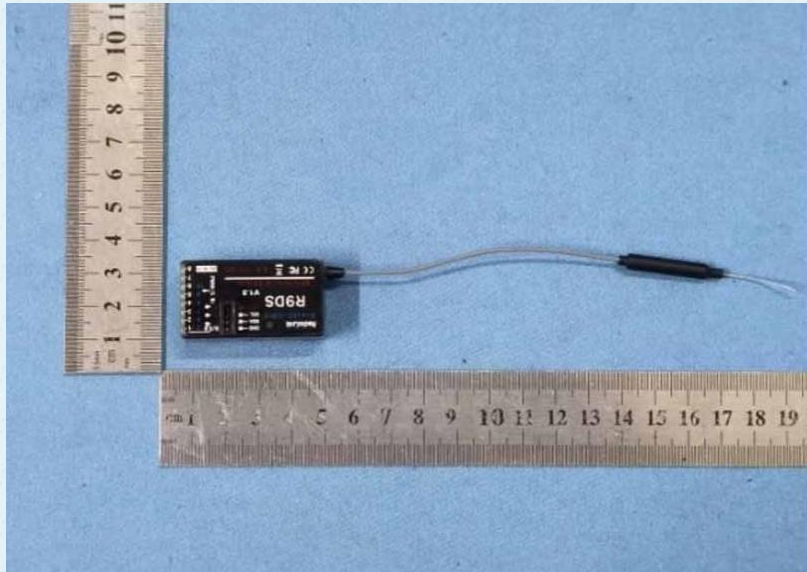
Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

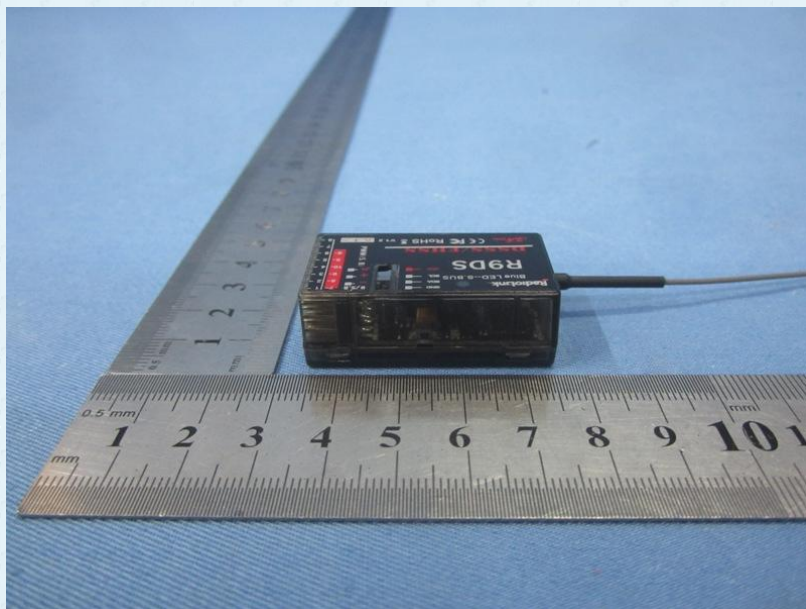
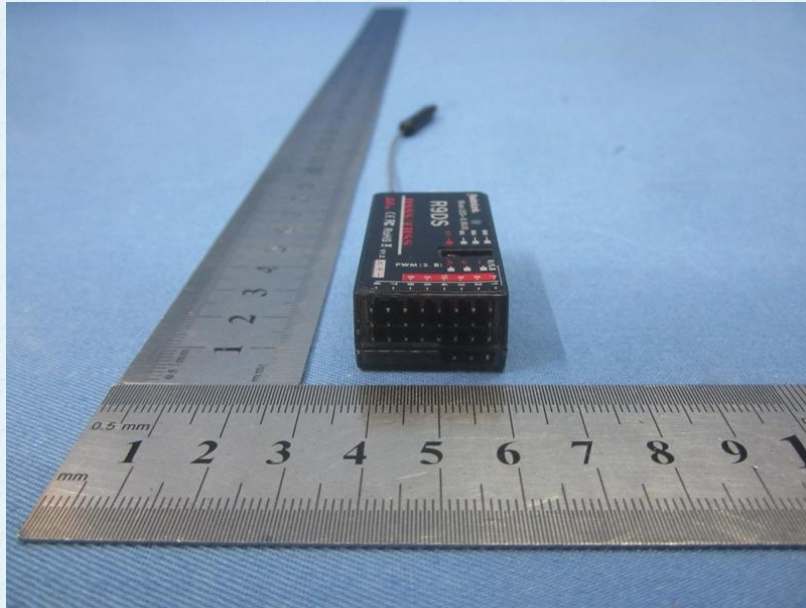
8 Test Setup Photo

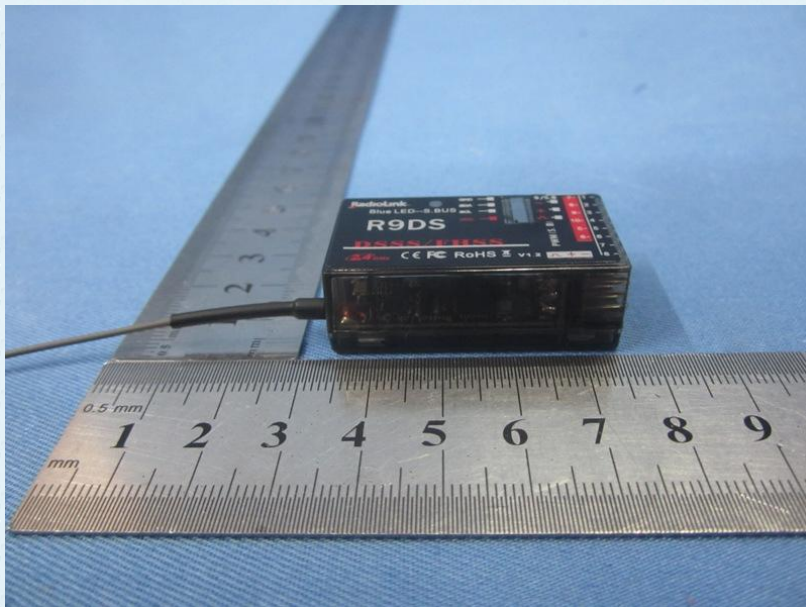
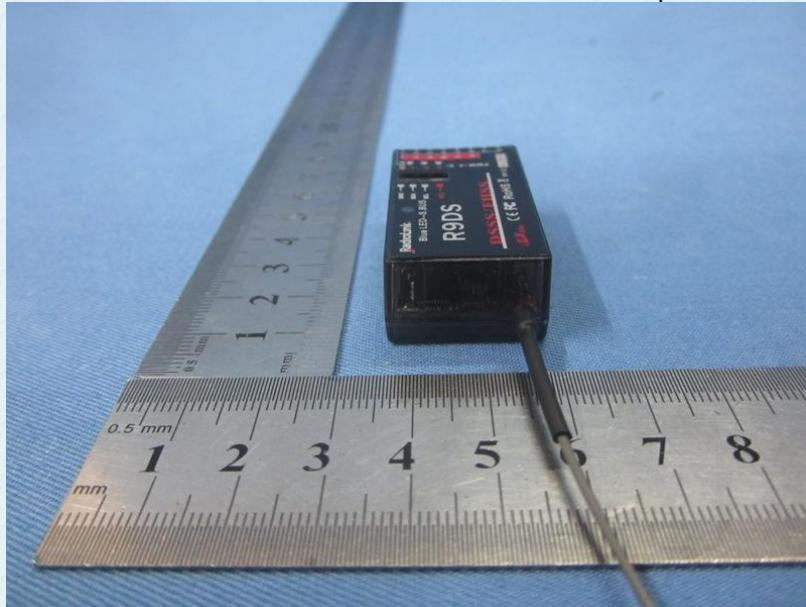
Radiated Emission

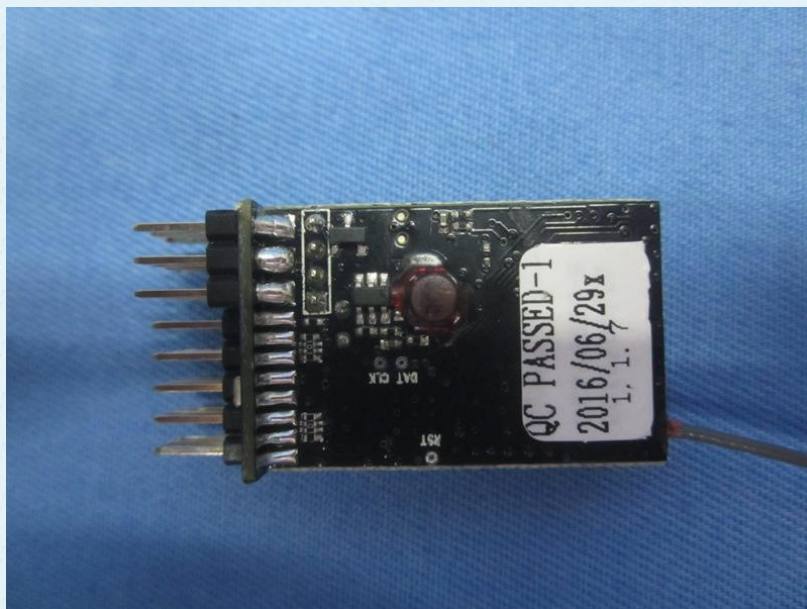
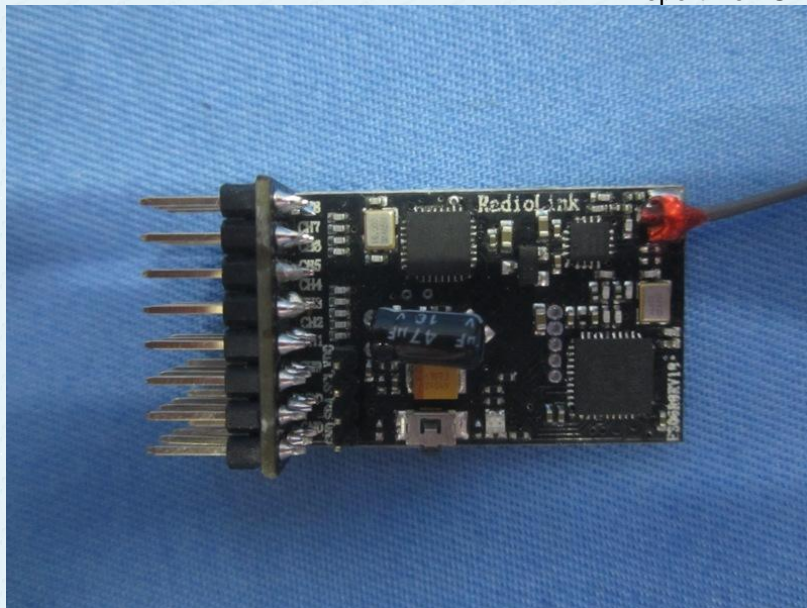


9 EUT Constructional Details











-----End-----