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# FCC REPORT

| | |
|---|---|
| **Application No. :** | SZEM1108002808RF |
| **Applicant:** | ONUR INC. |
| **Product Name:** | R/C HELICOPTER |
| **Operation Frequency:** | 27.145MHz |
| **FCC ID:** | VKXAYHAN-U |
| **Standards:** | FCC PART 15, SUBPART C: 2010 Section 15.227 |
| **Date of Receipt:** | 2011-08-08 |
| **Date of Test:** | 2011-08-08 to 2011-08-09 |
| **Date of Issue:** | 2011-08-16 |
| **Test Result :** | **PASS *** |

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

Authorized Signature:

Jack Zhang
EMC Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.
If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.
The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

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# 3 Test Summary

| Test Item | Section in CFR 47 | Result |
|---|---|---|
| Radiated Emission (25MHz to 1GHz) | Section 15.227 | Pass |
| Occupied Bandwidth | Section 15.215 | Pass |

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

*Fail: The EUT does not comply with the essential requirements in the standard.*

# 4 General Information

## 4.1 Client Information

| | |
|---|---|
| Applicant: | ONUR INC. |
| Address of Applicant: | 10651 HARWIN DR#730 HOUSTON TX77036 USA |

## 4.2 General Description of E.U.T.

| | |
|---|---|
| Product Name: | R/C HELICOPTER |
| Model No.: | UJ369 UJ257 UJ365 UJ366 UJ367 UJ368 UJ370 UJ371 UJ372 UJ373 UJ374 UJ375 UJ377 UJ378 UJ379 UJ380 UJ381 UJ889 UJ722<br>Only the item UJ369 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for all above items.only the different on color of appearance, packaging and model number. |
| Operation Frequency: | 27.145MHz |
| Power supply: | 6.0V DC (4*1.5V"AA"Size Batteries) |

## 4.3 E.U.T. Environment and test modes

| | |
|---|---|
| **Operating Environment:** | |
| Temperature: | 24.0 °C |
| Humidity: | 52 % RH |
| Atmospheric Pressure: | 1004 mbar |
| **Test mode:** | |
| Transmitting mode: | Keep the EUT in transmitting mode. |

## 4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch E&E Lab

No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China 518057

Telephone: +86 (0) 755 2601 2053 Fax: +86 (0) 755 2671 0594

No tests were sub-contracted.

## 4.5 Other Information Requested by the Customer

None.

## 4.6 Test Facility

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

- **CNAS (No. CNAS L2929)**
  CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.
- **VCCI**
  The 3m Semi-anechoic chamber and Shielded Room (7.5m x 4.0m x 3.0m) of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2197 and C-2383 respectively.
  Date of Registration: September 29, 2008. Valid until September 28, 2011.
- **FCC – Registration No.: 556682**
  SGS-CSTC Standards Technical 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 our files. Registration 556682, March 16, 2011
- **Industry Canada (IC)**
  The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1.

## 4.7 Test Instruments List

| RE in Chamber | | | | | | |
|---|---|---|---|---|---|---|
| **Item** | **Test Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal.Date (yyyy-mm-dd)** | **Cal.Due date (yyyy-mm-dd)** |
| 1 | 3m Semi-Anechoic Chamber | ETS-LINDGREN | N/A | SEL0017 | 2011-06-10 | 2012-06-10 |
| 2 | EMI Test Receiver | Rohde & Schwarz | ESIB26 | SEL0023 | 2011-05-26 | 2012-05-26 |
| 3 | EMI Test software | AUDIX | E3 | SEL0050 | N/A | N/A |
| 4 | Coaxial cable | SGS | N/A | SEL0028 | 2011-05-29 | 2012-05-29 |
| 5 | BiConiLog Antenna (26-3000MHz) | ETS-LINDGREN | 3142C | SEL0015 | 2010-11-09 | 2011-11-09 |
| 6 | Double-ridged horn (1-18GHz) | ETS-LINDGREN | 3117 | SEL0006 | 2010-11-09 | 2011-11-09 |
| 7 | Pre-amplifier (0.1-1300MHz) | Agilent Technologies | 8447D | SEL0053 | 2011-05-26 | 2012-05-26 |
| 8 | Active Loop Antenna | Beijing Daze | ZN30900A | SEL0097 | 2010-11-09 | 2011-11-09 |

| RF conducted | | | | | | |
|---|---|---|---|---|---|---|
| **Item** | **Test Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal.Date (yyyy-mm-dd)** | **Cal.Due date (yyyy-mm-dd)** |
| 1 | Spectrum Analyzer | Rohde & Schwarz | FSP 30 | SEL0154 | 2010-10-27 | 2011-10-27 |
| 2 | Coaxial cable | SGS | N/A | SEL0028 | 2011-05-29 | 2012-05-29 |

# 5 Test Result & Measurement Data

## 5.1 Antenna requirment

| | |
|---|---|
| **Standard requirement:** | FCC Part15 C Section 15.203 |

*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.*

## 5.2 Radiated Emissions

| | |
|---|---|
| **Test Requirement:** | FCC Part15 C Section 15.227 |
| **Test Method:** | ANSI C63.10: 2009 |
| **Measurement Distance:** | 3m (Semi-Anechoic Chamber) |
| **Requirements:** | Carrier Power will not exceed 80dBuV/m at 3m (Average). |
| | Out of band emissions shall not exceed: |
| | 40.0 dBμV/m between 30MHz & 88MHz |
| | 43.5 dBμV/m between 88MHz & 216MHz |
| | 46.0 dBμV/m between 216MHz & 960MHz |
| | 54.0 dBμV/m between 960MHz & 1000MHz |
| **Detector:** | 25MHz to 30MHz RBW=9KHz VBW=30KHz<br>30MHz to 1000MHz RBW=100KHz VBW=300KHz<br>Above 1000MHz RBW=1MHz VBW=3MHz |
| **Test Procedure:** | 1. The EUT is placed on a turntable, which is 0.8m above ground plane.<br>2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.<br>3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions.<br>4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.<br>5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.<br>6. Repeat above procedures until the measurements for all frequencies are complete. |
| **Test Result:** | The unit does meet the FCC Part 15 C Section 15.227 requirements. |

**27.145MHz Mode**
Test Procedure: For testing performed with the loop antenna, testing was performed in accordance to ANSI C63.10: 2009, section 8.2.1. The center of the loop was positioned 1 m above the ground and positioned with its plane vertical at the specified distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane.

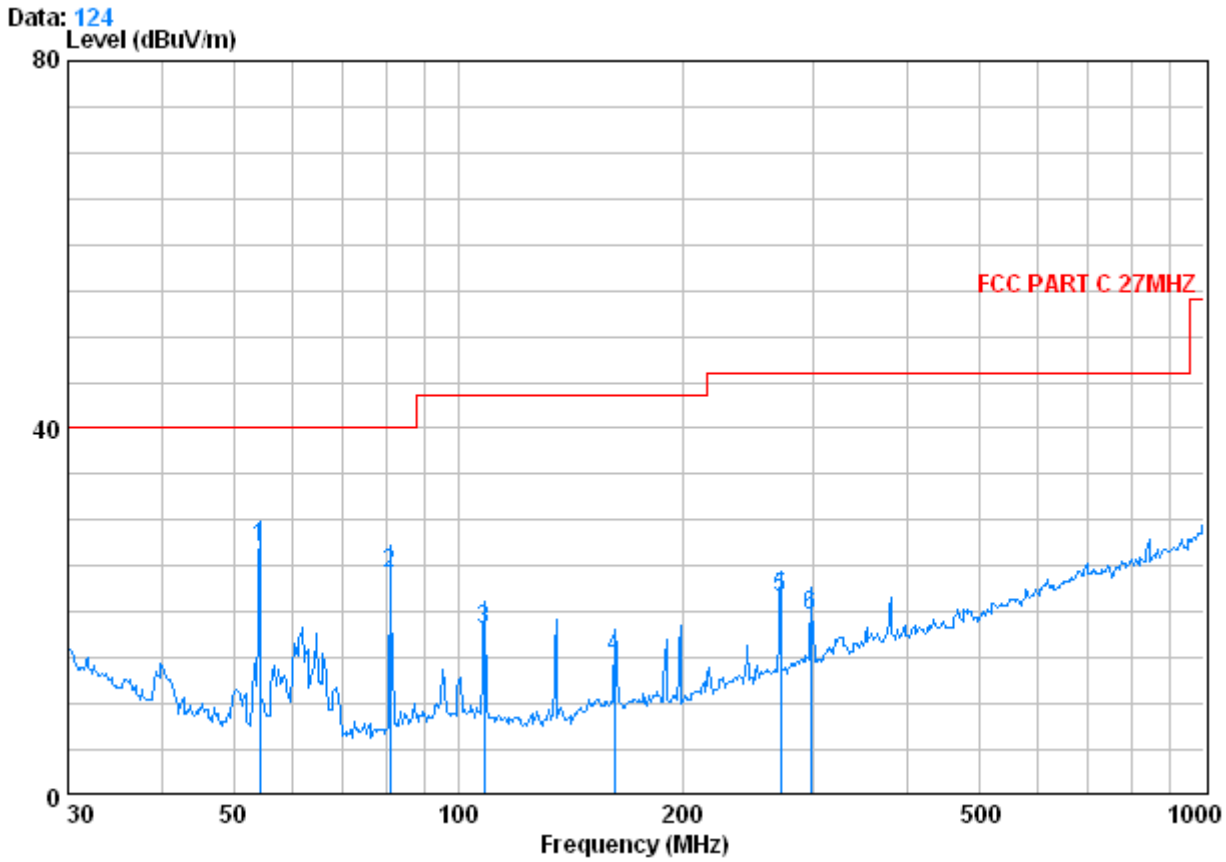
**Intentional emission**

| Test Frequency (MHz) | Peak (dBμV/m) | | Limits (dBμV/m) | Margin (dB) | |
|---|---|---|---|---|---|
| | Vertical | Horizontal | | Vertical | Horizontal |
| 27.145 | 78.56 | 65.90 | 100.00 | 21.44 | 34.10 |

| Test Frequency (MHz) | Average (dBμV/m) | | Limits (dBμV/m) | Margin (dB) | |
|---|---|---|---|---|---|
| | Vertical | Horizontal | | Vertical | Horizontal |
| 27.145 | 70.06 | 62.07 | 80.00 | 09.94 | 17.93 |

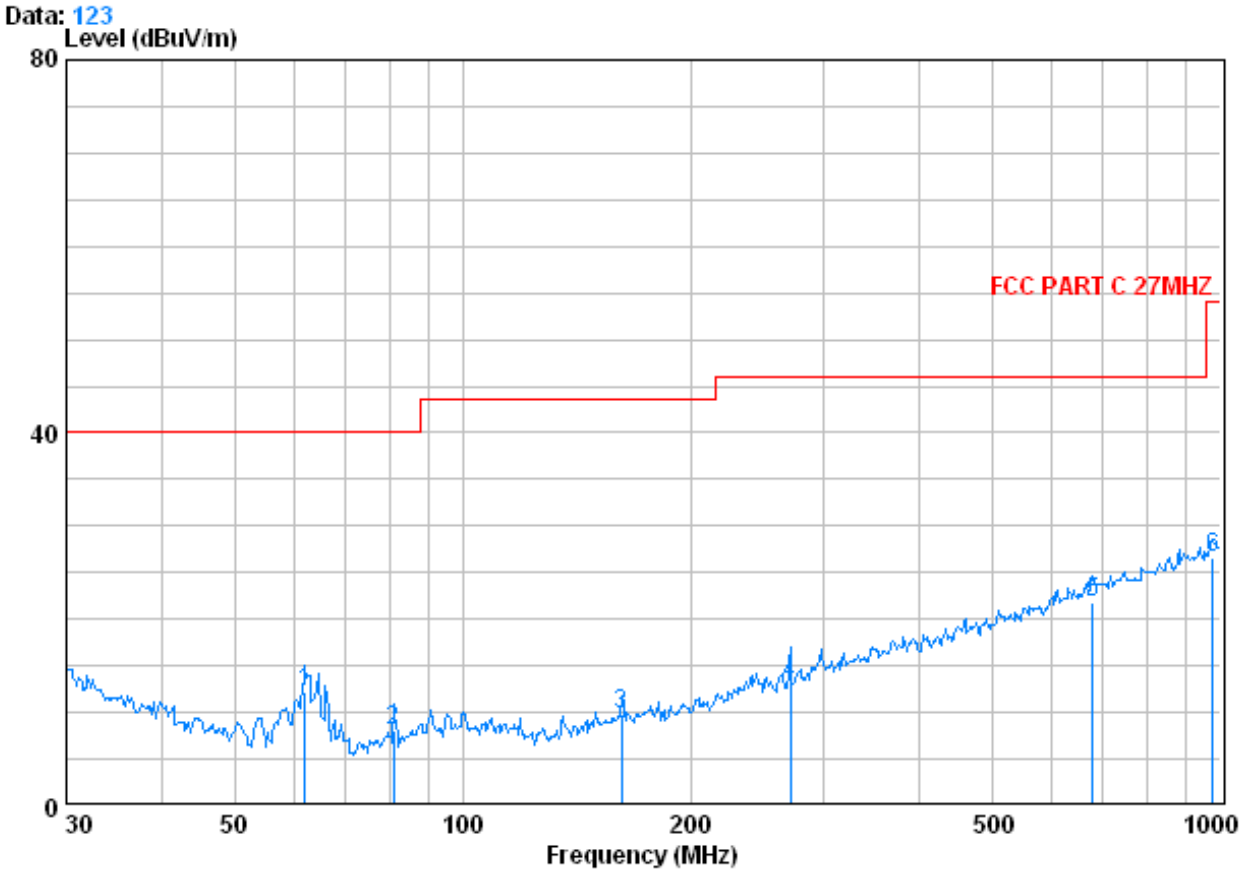
**Other emissions （QP）**

**Vertical**




| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) |
|---|---|---|---|---|---|---|---|
| 54.247 | 0.80 | 7.64 | 27.28 | 45.77 | 26.93 | 40.00 | -13.07 |
| 81.096 | 1.10 | 7.82 | 27.23 | 42.45 | 24.14 | 40.00 | -15.86 |
| 108.533 | 1.23 | 8.68 | 27.14 | 35.28 | 18.05 | 43.50 | -25.45 |
| 162.250 | 1.34 | 9.58 | 26.85 | 30.96 | 15.03 | 43.50 | -28.47 |
| 270.939 | 1.77 | 12.72 | 26.47 | 33.49 | 21.51 | 46.00 | -24.49 |

**Horizontal**




| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) |
|---|---|---|---|---|---|---|---|
| 61.951 | 0.80 | 7.14 | 27.26 | 31.46 | 12.14 | 40.00 | -27.86 |
| 81.096 | 1.10 | 7.82 | 27.23 | 26.31 | 8.00 | 40.00 | -32.00 |
| 162.250 | 1.34 | 9.58 | 26.85 | 25.63 | 9.70 | 43.50 | -33.80 |
| 270.939 | 1.77 | 12.72 | 26.47 | 24.99 | 13.01 | 46.00 | -32.99 |
| 678.865 | 2.86 | 21.44 | 27.44 | 24.87 | 21.73 | 46.00 | -24.27 |

Remark:
According to 15.35 (b) When average radiated emission measurements are specified in the regulations, including emission measurements below 1000 MHz, there is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit for the frequency being investigated unless a different peak emission limit is otherwise specified in the rules, e.g., see Section 15.255.

## 5.3 Occupied Bandwidth

| | |
|---|---|
| **Test Requirement:** | FCC Part 15 C Section 15.215 (C) |
| **Test Method:** | ANSI C63.10: 2009 |
| **Frequency range:** | Operation within the band 26.960 – 27.280 MHz |
| **Requirements:** | Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the 20 dB bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation. |
| **Method of measurement:** | The useful radiated emission from the EUT was detected by the spectrum analyser with peak detector. The vertical Scale is set to 10dB per division. The horizontal scale is set to 34KHz per division. |
| **Test Result:** | The unit does meet the FCC Part 15 C Section 15.215 requirements. |

The graph as below: represents the emissions take for this device.