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Report No.: SZEMO080803740RFF
Page: 1 of 13
FCC ID: VHND7206

TEST REPORT

Application No. : SZEMO080803740RF
Applicant : Youngo Limited
Manufacture/ Factory : SHENZHEN POWERWONDER ELECTRONICS CO., LTD
FCC ID : VHND7206
Fundamental Frequency : 303.875MHz
Equipment under Test (EUT):
Name : Remote Control
Model : DC7206
Standards : FCC PART 15, SUBPART C : 2007 (Section 15.231)
Date of Receipt : 01 August 2008
Date of Test : 01 to 20 August 2008
Date of Issue : 20 August 2008

| | |
|----------------------|---------------|
| Test Result : | PASS * |
|----------------------|---------------|

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

Authorized Signature:

Robinson Lo
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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2 Test Summary

| Test | Test Requirement | Standard Paragraph | Result |
|---|--------------------|--------------------|--------|
| Radiated Emission (30MHz to 5000MHz) | FCC PART 15 : 2007 | Section 15.231 | PASS |
| Occupied Bandwidth | FCC PART 15 : 2007 | Section 15.215 | PASS |
| Dwell Time | FCC PART 15 : 2007 | Section 15.231 | PASS |
| Conducted Emission (150KHz to 30MHz) | FCC PART 15: 2007 | Section 15.207 | N/A* |

Remark:

N/A: The EUT was supplies by batteries.

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4 General Information

4.1 Client Information

Applicant: Youngo Limited
Address of Applicant: The Youth Industrial Administration Park Chen Jiang Huizhou City
Guangdong Province P. R. C
Manufacture/ Factory: SHENZHEN POWERWONDER ELECTRONICS CO., LTD
Address of Manufacture: 30 Area No. 3, YanXing Bldg, 2/ F West, HI-Tech Industrial Park,
NanShan District, Shenzhen, GuangDong, China

4.2 Details of E.U.T.

Product Name: Remote Control
Model: DC7206
Power Supply: 6.0V DC (2 *3.0V "CR2032" Size New Batteries) for Tx.

4.3 Description of Support Units

The EUT was tested as an independent unit: a 303.875MHz radio transmitter.

4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory, No.198 Kezhu Road,
Science Town Economic& Technology Development District Guangzhou, China 510663

Tel: +86 20 82155555

Fax: +86 20 82075059

No tests were sub-contracted.

4.5 Other Information Requested by the Customer

None.

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4.6 Test Facility

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

- **NVLAP – Lab Code: 200611-0**
SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is recognized under the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0. Effective through December 31, 2006.
- **ACA**
SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our NVLAP accreditation.
- **VCCI**
The 3m Semi-anechoic chamber and Shielded Room (11.5m x 4m x 4m) of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-1599 and C-1706 respectively.
Date of Registration: June 01, 2005. Valid until February 22, 2008
- **SGS UK (Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**
Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.
- **CNAL – LAB Code: L0141**
SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAL/AC01:2002 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:1999 General Requirements) for the Competence of Testing Laboratories.
- **FCC – Registration No.: 282399**
SGS-CSTC Standards Technical Services Co., Ltd., 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 282399, May 31, 2002. With the above and NVLAP's accreditation, SGS-CSTC is an authorised test laboratory for the DoC process.
- **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.: 5169.

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5 Test Results

5.1 Test Instruments

| R&TTE RE in Chamber | | | | | | |
|---------------------|--------------------------------|-----------------|-----------|---------------|---------------------|-------------------------|
| Item | Test Equipment | Manufacturer | Model No. | Inventory No. | Cal.Date (dd-mm-yy) | Cal.Due date (dd-mm-yy) |
| 1 | 3m Semi-Anechoic Chamber | ETS-LINDGREN | N/A | SEL0017 | 16-06-2007 | 15-06-2009 |
| 2 | EMI Test Receiver | Rohde & Schwarz | ESIB26 | SEL0023 | 12-12-2007 | 11-12-2008 |
| 3 | EMI Test software | AUDIX | E3 | SEL0050 | N/A | N/A |
| 4 | Coaxial cable | SGS | N/A | SEL0028 | 18-06-2008 | 17-06-2009 |
| 5 | Coaxial cable | SGS | N/A | SEL0027 | 18-06-2008 | 17-06-2009 |
| 6 | BiConiLog Antenna (26-3000MHz) | ETS-LINDGREN | 3142C | SEL0014 | 12-08-2008 | 11-08-2009 |
| 7 | EMI Test Receiver | Rohde & Schwarz | ESCI | SEL0022 | 18-06-2008 | 17-06-2009 |
| 8 | Active Loop Antenna | Beijing Daze | ZN30900A | SEL0097 | 15-06-2008 | 14-06-2009 |

5.2 E.U.T. Operation

Operating Environment:

Temperature: 24.0 °C
Humidity: 50 % RH
Atmospheric Pressure: 1006 mbar

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5.3 Test Procedure & Measurement Data

5.3.1 Radiated Emissions

Test Requirement: FCC Part15 C
Test Method: ANSI C63.4
Measurement Distance: 3m (Semi-Anechoic Chamber and OATS)
Frequency range 30 MHz – 5.0GHz for transmitting mode.
Below 1GHz RBW=120kHz VBW=300KHz
Above 1GHz RBW=1MHz VBW=3MHz
Receive antenna scan height 1 m - 4 m, polarization Vertical/Horizontal

Requirements:

Table with 3 columns: Fundamental Frequency MHz, Field Strength of Fundamental (dBµV/m @ 3m), and Field Strength of Harmonics and Spurious Emissions (dBµV/m @ 3m). Rows include frequency bands like 40.66 to 40.70, 70 to 130, 130 to 174, 174 to 260, 260 to 470, and 470 and above.

Where F is the frequency in MHz, the formulas for calculating the maximum permitted fundamental field strengths are as follows: for the band 130-174 MHz, uV/m at 3 meters = 56.81818(F) - 6136.3636; for the band 260-470 MHz, uV/m at 3 meters = 41.6667(F) - 7083.3333. The maximum permitted unwanted emission level is 20 dB below the maximum permitted fundamental level.

The fundamental frequency of the EUT is 303.875MHz

The limit for field strength Average dBuV/m for the fundamental frequency= 74.93dBuV/m.

No fundamental is allowed in the restricted bands.

The limit for average field strength dBuV/m for the harmonics and spurious frequencies = 54.93dBuV/m. Spurious in the restricted bands must be less than 54.0 dBuV/m or 15.209.

Test Procedure:

- 1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7 The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.



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

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

An initial pre-scan was performed in the 3m chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by Bilog antenna with 2 orthogonal polarities.

The following test results were performed on the EUT:

1. Fundamental emission

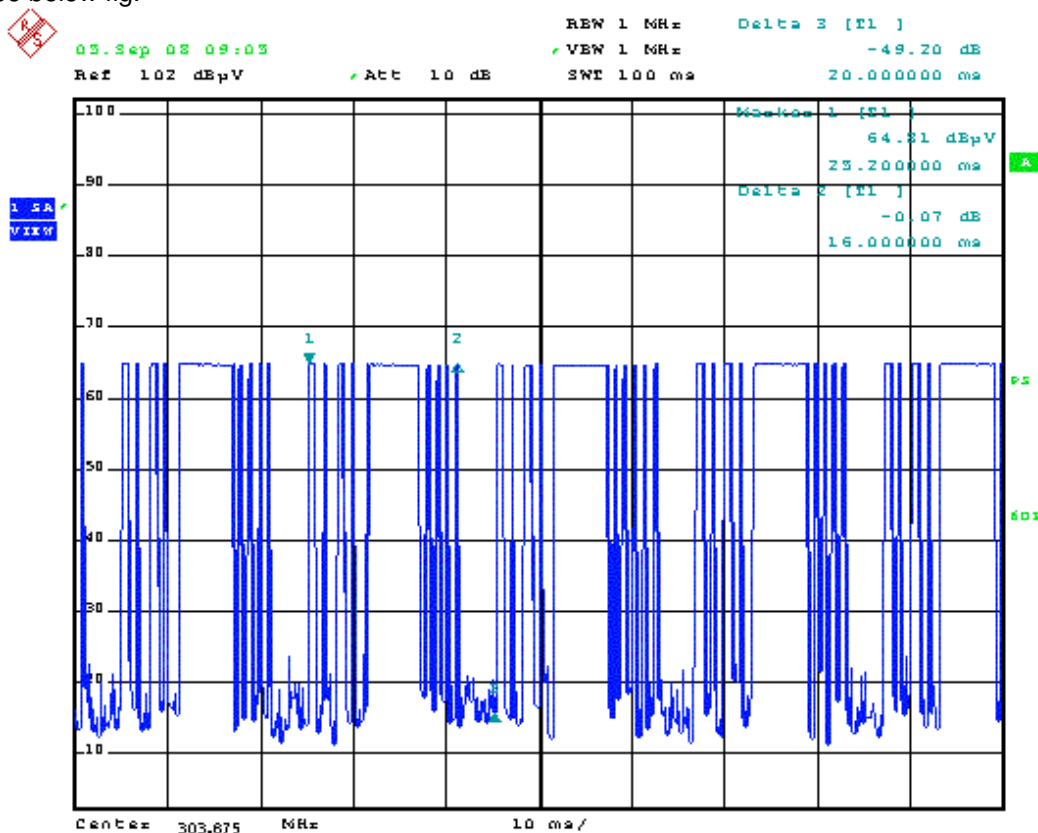
| Test Frequency (MHz) | Peak (dBµV/m) | | Limits (dBµV/m) | Margin (dB) | |
|----------------------|---------------|------------|-----------------|-------------|------------|
| | Vertical | Horizontal | | Vertical | Horizontal |
| 303.875 | 43.9 | 55.5 | 94.93 | 51.03 | 39.43 |
| Test Frequency (MHz) | AV (dBµV/m) | | Limits (dBµV/m) | Margin (dB) | |
| | Vertical | Horizontal | | Vertical | Horizontal |
| 303.875 | 41.62 | 52.17 | 74.93 | 33.31 | 22.76 |

Duty Cycle Calculation

Calculation according to RF burst Para 15.35(c)

$$20\log^*(16 \times 5 \text{ msec} / 100 \text{ msec}) = -1.64 \text{ dB}$$

See below fig.



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Average data=Peak data + Duty cycle

Test rang 30MHz- 1GHz (Horizontal)

Table with 9 columns: 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), Remark. Rows include frequencies like 82.38, 229.82, 248.25, 303.875, 607.15, 885.54.

Test rang 30MHz- 1GHz (Vertical)

Table with 9 columns: 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), Remark. Rows include frequencies like 40.67, 63.95, 70.74, 141.55, 227.88, 303.875, 607.15.

Test rang above 1GHz (Vertical)

Table with 9 columns: 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), Remark. Rows include frequencies 1212, 1516, 1820, 2729.

Test rang above 1GHz (Horizontal)

Table with 9 columns: 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), Remark. Rows include frequencies 1212, 1821, 2123, 2426.

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According to the standards used, Where limits are specified by agencies for both average and peak (or quasi-peak) detection ,if the peak (or quasi-peak) measured value complies with the average limit , it is unnecessary to perform an average measurement.

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.

TEST RESULTS: The unit does meet the FCC Part 15 C Section 15.231 requirements.

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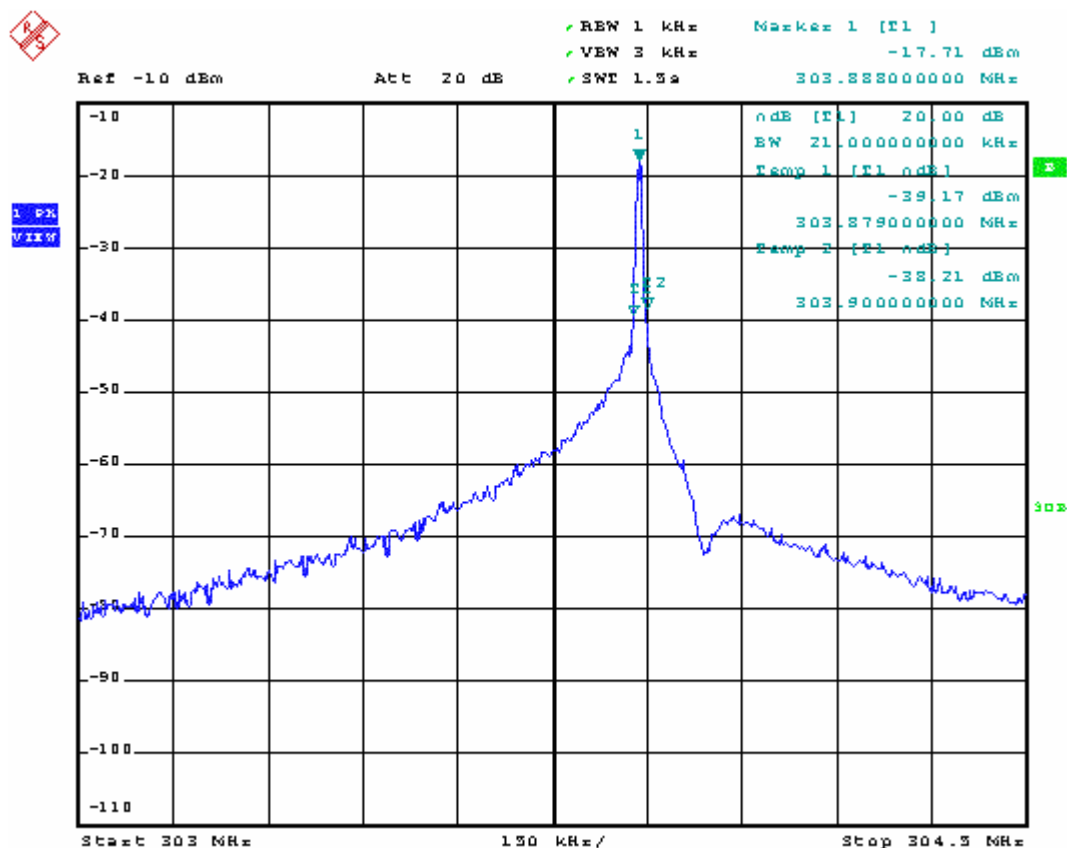


5.3.2 Occupied Bandwidth

Test Requirement: FCC Part15 C
 Test Method: ANSI C63.4 section 13 & FCC Part 2.1049
 Requirements: 15.231 (c3) The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

Method of measurement: A small sample of the transmitter output was fed into the Spectrum Analyzer and the attached plot was taken. The vertical is set to 10dB per division. The horizontal scale is set to 150KHz per division.

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



The results: The unit does meet the FCC Part 15C Section 15.231 requirements.

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4.3.5 Dwell Time:

Test Requirement: FCC Part15 C
Test Method: FCC Part15 C Section 15.231.
Requirements:

1. Regulation 15.231 (a) The provisions of this Section are restricted to periodic operation within the band 40.66 40.70 MHz and above 70 MHz. Except as shown in paragraph (e) of this Section, the intentional radiator is restricted to the transmission of a control signal such as those used with alarm systems, door openers, remote switches, etc. Radio control of toys is not permitted. Continuous transmissions, such as voice or video, and data transmissions are not permitted. The prohibition against data transmissions does not preclude the use of recognition codes. Those codes are used to identify the sensor that is activated or to identify the particular component as being part of the system.

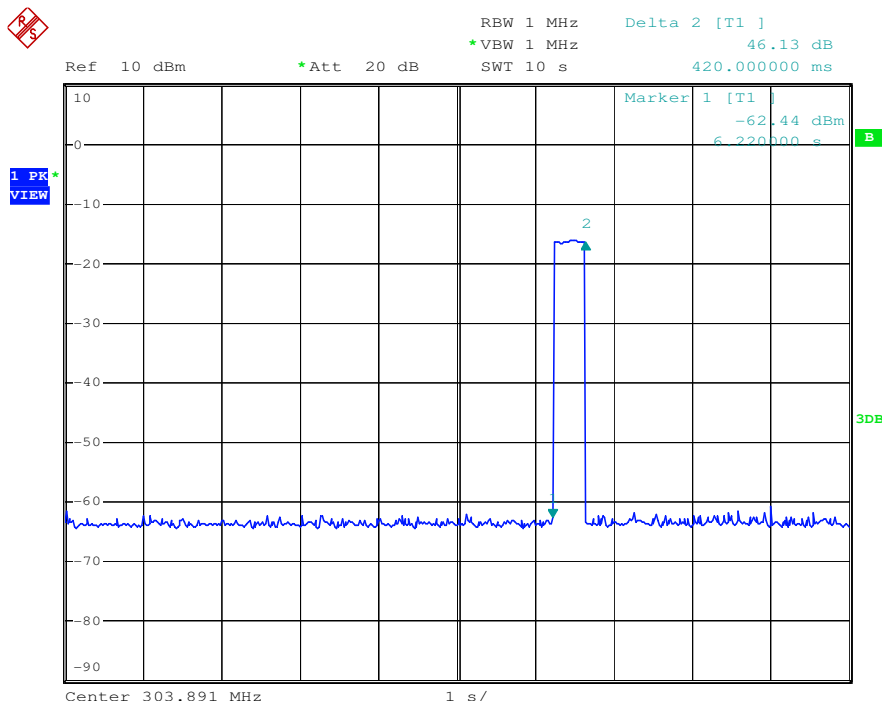
Result:

The EUT is similar as a remote switch.
The EUT meets the requirements of this section.

2. Regulation 15.231 (a1) A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

Result:

Transmitter ceases immediately after being released.
Please refer to the duration of the each transmission as below:



Date: 29.JUL.2008 21:22:34

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The results: The unit does meet the FCC Part 15C Section 15.231 requirements.

3. Regulation 15.231 (a2) A transmitter activated automatically shall cease transmission within 5 seconds after activation.

Result:

The EUT does not have automatic transmission.

4. Regulation 15.231 (a3) Periodic transmissions at regular predetermined intervals are not permitted. However, polling or supervision transmissions to determine system integrity of transmitters used in security or safety applications are allowed if the periodic rate of transmission does not exceed one transmission of not more than one second duration per hour for each transmitter.

Result:

The EUT does not employ periodic transmission.

5. Regulation 15.231 (a4) Intentional radiators which are employed for radio control purposes during emergencies involving fire, security, and safety of life, when activated to signal an alarm, may operate during the pendency of the alarm condition.

Result:

This section is not applicable to the EUT.