

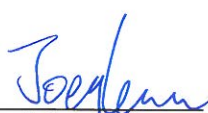
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|--|---|---|--|
| Prüfbericht - Nr.: 14031034 001 | | Seite 1 von 9 Page 1 of 9 | |
| <i>Test Report No.:</i> | | | |
| Auftraggeber: <i>Client:</i> | SHANTOU CHENGHAI WEILI TOYS CO., LTD No.2 Fengxin Road Industrial Area Chenghai, Shantou Guangdong P.R.China | | |
| Gegenstand der Prüfung: <i>Test Item:</i> | Short Range Device - Radio Control Toy Transmitter (2.4GHz) | | |
| Bezeichnung: <i>Identification:</i> | Please refer to "Models" on page 5 | Serien-Nr.: <i>Serial No.:</i> | Engineering sample |
| Wareneingangs-Nr.: <i>Receipt No.:</i> | 00120907105-001 | Eingangsdatum: <i>Date of Receipt:</i> | 07.09.2012 |
| Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of test item at delivery:</i> | Test sample(s) is/are not damaged and suitable for testing. | | |
| Prüfört: <i>Testing Location:</i> | Shenzhen Emtek Co., Ltd. Bldg. 69, Majialong Industry Zone, Nanshan District, ShenZhen, Guangdong, 518052 P.R. China | | |
| Prüfgrundlage: <i>Test Specification:</i> | FCC Part 15 Subpart C ANSI C63.4-2003 CISPR 22:1997 | | |
| Prüfergebnis: <i>Test Results:</i> | Das vorstehend beschriebene Gerät wurde geprüft und entspricht oben genannter Prüfgrundlage. The above mentioned product was tested and passed . | | |
| Prüflaboratorium: <i>Testing Laboratory:</i> | TÜV Rheinland Hong Kong Ltd. 8 - 10/F., Goldin Financial Global Square, 7 Wang Tai Road, Kowloon Bay, Kowloon, Hong Kong | | |
| geprüft/ tested by: | | kontrolliert/ reviewed by: | |
| 11.10.2012 | Joey Leung Test Engineer |  | 11.10.2012 |
| | | | Sharon Li Section Manager |
| Datum <i>Date</i> | Name/Stellung <i>Name/Position</i> | Unterschrift <i>Signature</i> | Datum <i>Date</i> |
| | | | Name/Stellung <i>Name/Position</i> |
| | | | Unterschrift <i>Signature</i> |
| Sonstiges: Other Aspects | FCCID: O85WL201205003 | | |
| Abkürzungen: | P(ass) = entspricht Prüfgrundlage F(ail) = entspricht nicht Prüfgrundlage N/A = nicht anwendbar N/T = nicht getestet | Abbreviations: | P(ass) = passed F(ail) = failed N/A = not applicable N/T = not tested |
| Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugswise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.</i> | | | |

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Product information

Manufacturers declarations

| | Transmitter |
|---|--------------------------|
| Operating frequency range | 2405 - 2475 MHz |
| Type of modulation | GFSK |
| Number of channels | 16 |
| Type of antenna | Integral |
| Power level | fix |
| Connection to public utility power line | No |
| Nominal voltage | V_{nor} : 9.0 V |

Product function and intended use

The equipment under test (EUT) is a radio control toy transmitter operating at 2.4GHz. It transmits on one of the 16 channel only and channel number was decided during frequency binding procedure with associated receiver. The transmitter is powered by batteries only.

FCCID: O85WL201205003

| Models | Product description |
|--|------------------------------|
| V911, V929, V939, V949, V959, V969, V979, V989, V999, V202, V212, V222, V232, V242, V252, V262, V272, V282, V292, V303, V313, V323, V333, V343, V353, V363, V373, V383, V393, V606, V616, V626, V636, V646, V656, V666, V676, V686, V696 | Radio Control Toy Helicopter |

Submitted documents

- Circuit Diagram
- Block Diagram
- Bill of material
- User manual
- Rating Label

List of Test and Measurement Instruments

Shenzhen EMTEK Co., Ltd. (Registration number: 709623)

| Equipment | Manufacturer | Type | S/N | Due Date |
|-------------------|-----------------|------------|-------------|--------------|
| EMI Test Receiver | Rohde & Schwarz | ESU26 | LR114196 | May 29, 2013 |
| Pre-Amplifier | HP | 8447D | 2944A07999 | May 29, 2013 |
| Bilog Antenna | Schwarzbeck | VULB9163 | 142 | May 29, 2013 |
| Loop Antenna | ARA | PLA-1030/B | 1029 | May 29, 2013 |
| Horn Antenna | Schwarzbeck | BBHA 9170 | BBHA9170399 | May 29, 2013 |
| Horn Antenna | Schwarzbeck | BBHA 9120 | D143 | May 29, 2013 |
| Cable | Schwarzbeck | AK9513 | ACRX1 | May 29, 2013 |
| Cable | Rosenberger | N/A | FP2RX2 | May 29, 2013 |
| Cable | Schwarzbeck | AK9513 | CRPX1 | May 29, 2013 |
| Cable | Schwarzbeck | AK9513 | CRRX2 | May 29, 2013 |

| Subclause 15.215 (c) – 20 dB Bandwidth | | Pass | | |
|---|--|-------------|-------------------|-------------|
| Requirement: | The intentional radiators must be designed to ensure that the 20dB bandwidth of the emission, is contained within the frequency band designated in the rule section under which the equipment is operated. | | | |
| Test Specification | : ANSI C63.4 – 2003 | | | |
| Mode of operation | : Tx mode | | | |
| Port of testing | : Enclosure | | | |
| RBW/VBW | : 100 kHz / 300 kHz for f < 1 GHz 1 MHz / 3 MHz for f > 1 GHz | | | |
| Supply voltage | : 9.0VDC, 6x1.5V AA size new battery | | | |
| Temperature | : 23°C | | | |
| Humidity | : 50% | | | |
| Results: | For test protocols refer to Appendix 1, page 2-3. | | | |
| Frequency (MHz) | 20 dB left (MHz) | Limit (MHz) | 20 dB right (MHz) | Limit (MHz) |
| 2405 | 2402.880 | > 2400 | 2406.490 | < 2483.5 |
| 2440 | 2437.970 | > 2400 | 2440.290 | < 2483.5 |
| 2475 | 2474.110 | > 2400 | 2475.840 | < 2483.5 |

| Subclause 15.249 (a) – Radiated Emission (Fundamental and Harmonics) | | Pass | | |
|---|---|-------------------------|--|--|
| Test Specification | : ANSI C63.4 – 2003 | | | |
| Mode of operation | : Tx mode | | | |
| Port of testing | : Enclosure | | | |
| RBW/VBW | : 100 kHz / 300 kHz for f < 1 GHz 1 MHz / 3 MHz for f > 1 GHz | | | |
| Supply voltage | : 9.0VDC, 6x1.5V AA size new battery | | | |
| Temperature | : 23°C | | | |
| Humidity | : 50% | | | |
| Requirement: | The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following limit. | | | |
| Results: | PASS | | | |
| Fundamental Frequency 2405MHz | | Vertical Polarization | | |
| Freq MHz | Level dBuV/m | Limit/ Detector dBuV/m | | |
| 2405.423 | 67.05 | 114.0 / P | | |
| 2405.423 | 64.61 | 94.0 / A | | |
| Fundamental Frequency 2405MHz | | Horizontal Polarization | | |
| Freq MHz | Level dBuV/m | Limit/ Detector dBuV/m | | |
| 2405.423 | 70.54 | 114.0 / P | | |
| 2405.423 | 68.45 | 94.0 / A | | |

| Harmonics 2405MHz | | Vertical Polarization | |
|-------------------------------|--------------|-------------------------|--|
| Freq MHz | Level dBuV/m | Limit/ Detector dBuV/m | |
| 4811.103 | 53.95 | 74.0 / P | |
| 4811.103 | 37.80 | 54.0 / A | |
| 7214.538 | 56.12 | 74.0 / P | |
| 7214.538 | 39.50 | 54.0 / A | |
| Harmonics 2405MHz | | Horizontal Polarization | |
| Freq MHz | Level dBuV/m | Limit/ Detector dBuV/m | |
| 4811.103 | 55.37 | 74.0 / P | |
| 4811.103 | 38.11 | 54.0 / A | |
| 7214.538 | 53.78 | 74.0 / P | |
| 7214.538 | 44.23 | 54.0 / A | |
| Fundamental Frequency 2440MHz | | Vertical Polarization | |
| Freq MHz | Level dBuV/m | Limit/ Detector dBuV/m | |
| 2440.667 | 66.20 | 114.0 / P | |
| 2440.667 | 63.65 | 94.0 / A | |
| Fundamental Frequency 2440MHz | | Horizontal Polarization | |
| Freq MHz | Level dBuV/m | Limit/ Detector dBuV/m | |
| 2440.667 | 67.60 | 114.0 / P | |
| 2440.667 | 65.45 | 94.0 / A | |
| Harmonics 2440MHz | | Vertical Polarization | |
| Freq MHz | Level dBuV/m | Limit/ Detector dBuV/m | |
| 4879.590 | 49.06 | 74.0 / P | |
| 4879.590 | 35.96 | 54.0 / A | |
| Harmonics 2440MHz | | Horizontal Polarization | |
| Freq MHz | Level dBuV/m | Limit/ Detector dBuV/m | |
| 4879.590 | 54.13 | 74.0 / P | |
| 4879.590 | 38.02 | 54.0 / A | |
| Fundamental Frequency 2475MHz | | Vertical Polarization | |
| Freq MHz | Level dBuV/m | Limit/ Detector dBuV/m | |
| 2475.154 | 68.32 | 114.0 / P | |
| 2475.154 | 65.85 | 94.0 / A | |
| Fundamental Frequency 2475MHz | | Horizontal Polarization | |
| Freq MHz | Level dBuV/m | Limit/ Detector dBuV/m | |
| 2475.154 | 72.18 | 114.0 / P | |
| 2475.154 | 70.39 | 94.0 / A | |

| Harmonics 2475MHz | | Vertical Polarization | |
|-------------------|--------------|-------------------------|--|
| Freq MHz | Level dBuV/m | Limit/ Detector dBuV/m | |
| 4950.320 | 50.63 | 74.0 / P | |
| 4950.320 | 36.21 | 54.0 / A | |
| Harmonics 2475MHz | | Horizontal Polarization | |
| Freq MHz | Level dBuV/m | Limit/ Detector dBuV/m | |
| 4950.320 | 53.66 | 74.0 / P | |
| 4950.320 | 36.21 | 54.0 / A | |

| Subclause 15.249 (d) – Spurious Radiated Emissions | | Pass |
|--|--------------|-------------------------|
| Test Specification : ANSI C63.4 - 2003 Mode of operation : Tx mode Port of testing : Enclosure Detector : Peak RBW/VBW : 100 kHz / 300 kHz for f < 1 GHz 1 MHz / 3 MHz for f > 1 GHz Supply voltage : 9.0VDC, 6x1.5V AA size new battery Temperature : 23°C Humidity : 50% | | |
| Requirement: Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation. | | |
| Results: All three transmit frequency modes comply with the field strength within the restricted bands. There is no spurious found below 30MHz. | | |
| Tx frequency 2405MHz | | Vertical Polarization |
| Freq MHz | Level dBuV/m | Limit/ Detector dBuV/m |
| No peak found | --- | 74.0 / P |
| No peak found | --- | 54.0 / A |
| Tx frequency 2405MHz | | Horizontal Polarization |
| Freq MHz | Level dBuV/m | Limit/ Detector dBuV/m |
| No peak found | --- | 74.0 / P |
| No peak found | --- | 54.0 / A |
| Tx frequency 2440MHz | | Vertical Polarization |
| Freq MHz | Level dBuV/m | Limit/ Detector dBuV/m |
| No peak found | --- | 74.0 / P |
| No peak found | --- | 54.0 / A |
| Tx frequency 2440MHz | | Horizontal Polarization |
| Freq MHz | Level dBuV/m | Limit/ Detector dBuV/m |
| No peak found | --- | 74.0 / P |

| | | |
|--|---------------------|-------------------------------|
| No peak found | --- | 54.0 / A |
| Tx frequency 2475MHz Vertical Polarization | | |
| Freq MHz | Level dBuV/m | Limit/ Detector dBuV/m |
| No peak found | --- | 74.0 / P |
| No peak found | --- | 54.0 / A |
| Tx frequency 2475MHz Horizontal Polarization | | |
| Freq MHz | Level dBuV/m | Limit/ Detector dBuV/m |
| No peak found | --- | 74.0 / P |
| No peak found | --- | 54.0 / A |