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FEDERAL COMMUNICATIONS COMMISSION

Registration number: 556682

Report No.: SZEMO10030158302

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1 Cover Page

FCC REPORT

Application No. : SZEMO100301583RF
Applicant: TEEMWAY INDUSTRIAL LTD
Applicant Address: RM1202, 12/F, HANJIANG BLDG, NO.118,
CHANGPING EAST ROAD, SHANTOU, GD.
Product Name: R/C VEHICLE SERIES
Operation Frequency: 49.680MHz
FCC ID: X9KTEEMWAY0049
Standards: FCC PART 15, SUBPART C Section 15.235: 2008
Date of Receipt 24 March 2010
Date of Test 24 to 26 March 2010
Date of Issue 28 March 2010

Test Result :	PASS *
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* 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 Item	Section in CFR 47	Result
Radiated Emission (30MHz to 1GHz)	Section 15.235	Passed
Occupied Bandwidth	Section 15.235	Passed

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

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

Item No: TRP1040 3378A, TRP0532, S009, TRP0877, S022, TRP1113, 9006, TRP1126, 9053, TRP1136, 3309, TRP1059, 911, TRP0975, 3376, TRP1148, S032, TRP1147, S031, TRC5000, TRB1000, TRM1000, TRO1000, TRD1000, TRT1000, TRC5002, TRB1002, TRM1002, TRO1002, TRD1002, TRT1002, TRP2000, TRP2002, TRP2004, TRP2006, TRP2008, TRP2010, TRP2012, TRP2014, TRP2016, TRP2018, TRP2020, TRP2022, TRP2024, TRP2026, TRP2028, TRP2030, TRP2032, TRP2034

Only the Item in the picture 5.3 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above items.



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4 General Information

4.1 General Description of E.U.T.

Product Name:	R/C VEHICLE SERIES
Trade Name:	N/A
Item No.:	TRP1040 3378A, TRP0532, S009, TRP0877, S022, TRP1113, 9006, TRP1126, 9053, TRP1136, 3309, TRP1059, 911, TRP0975, 3376, TRP1148, S032, TRP1147, S031, TRC5000, TRB1000, TRM1000, TRO1000, TRD1000, TRT1000, TRC5002, TRB1002, TRM1002, TRO1002, TRD1002, TRT1002, TRP2000, TRP2002, TRP2004, TRP2006, TRP2008, TRP2010, TRP2012, TRP2014, TRP2016, TRP2018, TRP2020, TRP2022, TRP2024, TRP2026, TRP2028, TRP2030, TRP2032, TRP2034
Operation Frequency:	49.86MHz
Power supply:	DC9.0V(6*1.5V"AA"Size Batteries)
Power Cord:	N/A-

4.2 E.U.T. Environment and test modes

Operating Environment:	
Temperature:	24.0 °C
Humidity:	52 % RH
Atmospheric Pressure:	1008 mbar
Test mode:	
Normal operation mode:	
Transmitting mode:	Keep the EUT in transmitting mode with modulation.



4.3 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.

4.4 Other Information Requested by the Customer

None.

4.5 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, June 27, 2008.

- **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.

**4.6 Test Instruments List**

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	16-06-2009	16-06-2010
2	EMI Test Receiver	Rohde & Schwarz	ESIB26	SEL0023	19-03-2010	19-03-2011
3	EMI Test software	AUDIX	E3	SEL0050	N/A	N/A
4	Coaxial cable	SGS	N/A	SEL0028	18-06-2009	18-06-2010
5	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEL0015	05-11-2009	05-11-2010
6	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEL0053	23-06-2009	23-06-2010
7	Double-ridged horn (1-18GHz)	ETS-LINDGREN	3117	SEL0006	10-11-2009	10-11-2010
8	Horn Antenna (18-26GHz)	ETS-LINDGREN	3160	SEL0076	10-11-2009	10-11-2010
9	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	SEL0080	13-07-2009	13-07-2010
10	Band filter	Amindeon	82346	SEL0094	23-06-2009	23-06-2010
11	Active Loop Antenna	Beijing Daze	ZN30900A	SEL0097	12-08-2009	12-08-2010



5 Test Result & Measurement Data

5.1 Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203
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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 15.235
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Test Method:	ANSI C63.4: 2003
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Measurement Distance:	3m (Semi-Anechoic Chamber)
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Requirements:	Carrier frequency will not exceed 80dBuV/m AT 3m.
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	Out of band emissions shall not exceed:
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	40.0 dB μ V/m between 30MHz & 88MHz
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	43.5 dB μ V/m between 88MHz & 216MHz
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	46.0 dB μ V/m between 216MHz & 960MHz
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	54.0 dB μ V/m above 960MHz
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Detector:	30MHz to 1000MHz RBW=100KHz VBW=300KHz Above 1000MHz RBW=1MHz VBW=3MHz
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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 moved from 1m to 4m to find out the maximum 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.
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Intentional emission

Test Frequency (MHz)	Peak (dB μ V/m)		Limits (dB μ V/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
49.860	82.04	63.61	100.0	17.96	36.39

Test Frequency (MHz)	Average (dB μ V/m)		Limits (dB μ V/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
49.860	75.38	58.39	80.0	4.62	21.61

Other emissions

Vertical

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dB μ V)	Level (dB μ V/m)	Limit Line (dB μ V/m)	Over Limit (dB)
98.87	1.19	9.06	27.40	57.27	40.12	43.5	-3.38
148.34	1.32	8.86	27.08	55.31	38.41	43.5	-5.09
229.82	1.57	11.64	26.72	51.89	38.38	46	-7.62
448.07	2.40	16.84	27.46	46.37	38.15	46	-7.85
758.47	3.08	21.80	27.08	42.25	40.05	46	-5.95

Horizontal

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dB μ V)	Level (dB μ V/m)	Limit Line (dB μ V/m)	Over Limit (dB)
98.87	1.19	9.06	27.40	51.32	34.17	43.5	-9.33
148.34	1.32	8.86	27.08	50.13	33.23	43.5	-10.27
229.82	1.57	11.64	26.72	44.09	30.58	46	-15.42
448.07	2.40	16.84	27.46	38.27	30.05	46	-15.95
758.47	3.08	21.80	27.08	35.87	33.67	46	-12.33

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.

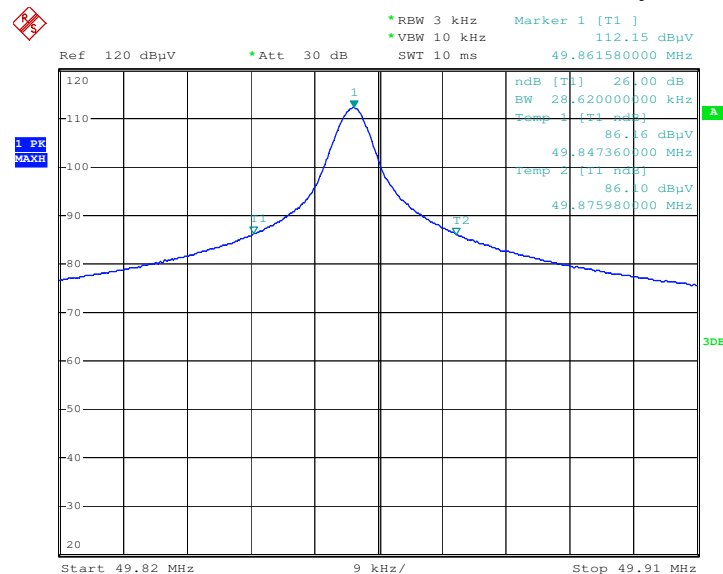
Test Results: The unit does meet the FCC Part 15 C Section 15.235 requirements.

5.3 Occupied Bandwidth

Test Requirement:	FCC Part15 C Section 15.235
Test Method:	ANSI C63.4: 2003
Frequency range:	Operation within the band 49.82 – 49.90 MHz
Requirements:	The field strength of any emissions appearing between the band edges and up to 10 kHz above and below the band edges shall be attenuated at least 26 dB below the level of the un-modulated carrier or to the general limits in Section 15.209, whichever permits the higher emission levels. The field strength of any emissions removed by more than 10 kHz from the band edges shall not exceed the general radiated emission limits in Section 15.209
Method of measurement:	The useful radiated emission from the EUT was detected by the spectrum analyzer with peak detector. The vertical Scale is set to –10dB per division. The horizontal scale is set to 10KHz per division.

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

The results: The unit does meet the FCC Part 15 C Section 15.235 requirements.



Date: 30.MAR.2010 14:22:16