



Produkte
Products

Prüfbericht - Nr.: 14022823 002 <i>Test Report No.:</i>			Seite 1 von 9 <i>Page 1 of 9</i>		
Auftraggeber: <i>Client:</i>		Apple Toys Development Co. Ltd. Room 515-516, 5/F., Block A Peninsula Centre 67 Mody Road T.S.T. East, Kowloon, Hong Kong			
Gegenstand der Prüfung: <i>Test Item:</i>		Superregenerative Receiver			
Bezeichnung: <i>Identification:</i>	9023 Please see "Models" on page 5 for details	Serien-Nr.: <i>Serial No.:</i>	Engineering sample		
Wareneingangs-Nr.: <i>Receipt No.:</i>	00100304097-002	Eingangsdatum: <i>Date of Receipt:</i>	04.03.2010		
Prüfört: <i>Testing Location:</i>	TÜV Rheinland Hong Kong Ltd. 8/F, Niche Centre, 14 Wang Tai Road, Kowloon Bay, Kowloon, Hong Kong TÜV Rheinland (Guangdong) Ltd. EMC Laboratory Guangzhou Auto Market, Yuan Gang Section of Guangshan Road, Guangzhou 510650, P.R.China				
Prüfgrundlage: <i>Test Specification:</i>	FCC Part 15, Subpart B				
Prüfergebnis: <i>Test Result:</i>	Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n). <i>The test item passed the test specification(s).</i>				
Prüflaboratorium: <i>Testing Laboratory:</i>	TÜV Rheinland Hong Kong Ltd. 9th Floor, Emperor International Square, 7 Wang Tai Road, Kowloon Bay, Kowloon, Hong Kong				
geprüft / tested by:			kontrolliert / reviewed by:		
22.03.2010 Datum <i>Date</i>	Mika Chan Name/Stellung <i>Name/Position</i>	 Unterschrift <i>Signature</i>	22.03.2010 Datum <i>Date</i>	Hugo Wan Name/Stellung <i>Name/Position</i>	 Unterschrift <i>Signature</i>
Sonstiges / Other Aspects: FCCID: W89-RC-TOYS-49R					
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
<p>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</p> <p><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></p>					

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Test Summary

Conducted Disturbance on AC power line

Result: Pass

Spurious Radiated Emissions

Result: Pass

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List of Test and Measurement Instruments

TÜV Rheinland (Guangdong) Ltd. (Registration number: 833845)

Kind of Equipment	Manufacturer	Type	S/N	Cal Due Date
FSP30 Spectrum Analyzer	Rohde & Schwarz	FSP30	100286	16-Mar-11
EMI Test Receiver	Rohde & Schwarz	ESCI	100216	16-Mar-11
Trilog-Broadband Antenna	Schwarzbeck	VULB9168	209	21-Aug-11
Trilog-Broadband Antenna	Schwarzbeck	VULB9168	210	16-Mar-11
Double-Ridged Waveguide Horn Antenna	Rohde & Schwarz	HF 906	100385	24-Aug-11
Band Reject Filter	Micro-Tronics	BRM50702	023	16-Mar-11
Pre-Amplifier	MITEQ	AFS42-00101800-25-S-42	1101599	16-Mar-11
Double-Ridged Waveguide Horn Antenna	Rohde & Schwarz	HF 906	100407	16-Mar-11
Horn Antenna	EMCO	3160-09	21642	26-Jun-14
Pre-Amplifier	MITEQ	AFS33-18002650-30-8P-44	1108282	16-Mar-11
Horn Antenna	EMCO	3160-09	21645	24-Aug-14
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100111	16-Mar-11
Triple-Loop Antenna	Rohde & Schwarz	HM020	100021	16-Mar-11
SAC	Albatross Projects GmbH	N/A	9460000.9	#REF!

General Product Information

Product Function and Intended Use

The equipment under test (EUT) is a RC toy car operating at 49.86MHz. The EUT moves forward, backward, left and right according to the command of the associate transmitter.

FCCID: W89-RC-TOYS-49R

Models	Product description
606, 607, 608, 608B, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 0188, 0189, 8030, 8031, 8032, 8033, 8034, 8035, 8036, 8037, 8038, 8039, 8040, 8300, 8301, 8302, 8303, 8304, 8305, 8306, 8307, 8308, 8309, 8310, 8311, 8312, 8313, 8314, 8315, 8316, 8317, 8318, 8319, 8320, 8321, 8322, 8323, 8324, 8325, 8326, 8327, 8328, 9008, 9015, 9016, 9023, 9024, 9025, 9026, 9027, 9027N, 9028, 9038, 9048, 9069, 9069T, 9078, 9079, 9080, 9081, 9082, 9083, 9084, 9085, 9119, 9218, 9219, 9220, 9221, 9222, 9222N, 9223, 9224, 9225, 9226, 9227, 9228, 9238, 9338, 9481, 9491, 9501, 2201, 2211, 648G, 3392, 3393, 3881, 604, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 635, 636, 637, 638, 639, 640, 649, 652, 661, 662, 663, 664, 692, 6425, 6410, 6411, 6412, 6413, 6414, 6415, 6416, 6417, 6418, 6419, 6420, 6421, 6422, 6423, 6424, 4000, 4003, 4010, 4016, 4018, 4020, A3043, A3044, A3045, A3046, A3047, A3048, A3049, A3050, A3051, A3052, A3053, A3054, A3055, A3056, A3057, A3058, A3059, A3060	Radio Control Toy Car

Ratings and System Details

	Receiver
Frequency range	: 49.86MHz
Number of channels	: 1
Type of antenna	: Fixed External Antenna
Power supply	: 7.5VDC, 5 x AA size batteries
Ports	: none
Protection Class	: III

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Independent Operation Modes

The basic operation modes are:

- Power: On and Off
- Motor movement: left and right, forward and backward.

For further information refer to User Manual

Submitted Documents

The submitted documents are listed as follow:

- Circuit diagram
- Block diagram
- User manual
- Label artwork

Related Submittal(s) Grants

This is a single application for certification of the Receiver.

Test Set-up and Operation Mode

Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

Test Operation and Test Software

Test operation should refer to test methodology.

- There was no special software to exercise the device.

Special Accessories and Auxiliary Equipment

The product has been tested together with the following additional accessories:

- none

Countermeasures to achieve EMC Compliance

- none

Test Methodology

Radiated Emission

The radiated emission measurements were performed according to the procedures in ANSI C63.4-2003.

The equipment under test (EUT) was placed at the middle of the 80 cm height turntable, and the turntable is 3 meters far from the measuring antenna. During the testing, the EUT was operated standalone and arranged for maximum emissions. The EUT was tested in three orthogonal planes.

The investigation is performed with the EUT rotated 360 °, the antenna height scanned between 1m and 4m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations. Repeat the measurement steps until the maximum emissions were obtained.

All radiated tests were performed at an antenna to EUT with 3 meters distance, unless stated otherwise in particular parts of this test report.

Field Strength Calculation

The field strength at 3 m was established by adding the meter reading of the spectrum analyzer to the factors associated with antenna correction factor, cable loss, preamplifiers and filter attenuation.

The equation is expressed as follow:

$$FS = R + AF + CF + FA - PA$$

Where FS = Field Strength in dBuV/m at 3 meters.
R = Reading of Spectrum Analyzer in dBuV.
AF = Antenna Factor in dB.
CF = Cable Attenuation Factor in dB.
FA = Filter Attenuation Factor in dB.
PA = Preamplifier Factor in dB.

FA and PA are only be used for the measuring frequency above 1 GHz.