

Produkte
Products

Prüfbericht - Nr.: 14019291 001		Seite 1 von 9 Page 1 of 9	
<i>Test Report No.:</i>			
Auftraggeber: <i>Client:</i>	Zaptoys International Limited Unit 1105, 11/F, Tower II South Seas Centre T.S.T. East, Kowloon Hong Kong		
Gegenstand der Prüfung: <i>Test Item:</i>	Superregenerative Receiver		
Bezeichnung: <i>Identification:</i>	9608	Serien-Nr.: <i>Serial No.:</i>	Engineering sample
Wareneingangs-Nr.: <i>Receipt No.:</i>	080714008	Eingangsdatum: <i>Date of Receipt:</i>	14.07.2008
Prüfört: <i>Testing Location:</i>	TÜV Rheinland Hong Kong Ltd. 9th Floor, Oriental News Building, 7 Wang Tai Road, Kowloon Bay, Kowloon, Hong Kong Hong Kong Productivity Council HKPC Building, 78 Tat Chee Avenue, Kowloon, Hong Kong		
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, Oriental News Building, 7 Wang Tai Road, Kowloon Bay, Kowloon, Hong Kong		
geprüft / tested by:		kontrolliert / reviewed by:	
29.07.2008	Hugo Wan Project Manager	29.07.2008	Thomas Berns Manager
<i>Datum</i> <i>Date</i>	<i>Name/Stellung</i> <i>Name/Position</i>	<i>Datum</i> <i>Date</i>	<i>Name/Stellung</i> <i>Name/Position</i>
	<i>Unterschrift</i> <i>Signature</i>		<i>Unterschrift</i> <i>Signature</i>
Sonstiges / Other Aspects:			
FCCID: NEX-9608-49RX			
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 auszugsweise 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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Test Summary

Spurious Radiated Emissions

Result: Pass

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List of Test and Measurement Instruments

Hong Kong Productivity Council (Registration number: 90656)

Kind of Equipment	Manufacturer	Type	S/N	Cal Due Date
Semi-anechoic Chamber	Frankonia	Nil	Nil	28 Mar 09
Test Receiver	Rohde & Schwarz	ESU26	100050	06 Aug 08
Biconical Antenna	Rohde & Schwarz	HK116	841489/016	08 Mar 09
Log.-Periodic Antenna	Rohde & Schwarz	HL223	841516/020	28 Feb 09
Horn Antenna	EMCO	3115	9002-3351	27 Feb 10
Coaxial Cable 50ohm	Rosenberger	RTK081-05S-05S-10m	LA2-001-10M / 002	15 May 09

General Product Information

Product Function and Intended Use

The equipment under test (EUT) is a RC toy car receiver operating at 49.86 MHz. It can be controlled by the associated transmitter for forward, backward, left and right movement.

FCCID: NEX-9608-49RX

Model	Product description
9608	Radio Control Toy

Ratings and System Details

	Receiver
Frequency range	: 49.86MHz
Number of channels	: 1
Type of antenna	: Fixed External Antenna
Power supply	: 4.5V, 3 x AA size batteries
Ports	: none

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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.

Test Results

Spurious Radiated Emissions

Section 15.109

RESULT:
Pass

Test Specification : FCC Part 15 Section 15.109
 Test Method : ANSI 63.4-2003
 Measurement Location : Semi Anechoic Chamber
 Measurement Distance : 3m
 Detector Function : Quasi Peak
 Measurement BW : 120 kHz
 Supply Voltage : DC 9V
 Measuring Frequency Range : 30-1000MHz
 Mode of operation : Standby

Polarization: Vertical

Frequency (MHz)	Field strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Delta to Limit (dB)
46.020	32.5	40.0	-7.5

Polarization: Horizontal

Frequency (MHz)	Field strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Delta to Limit (dB)
46.016	27.2	40.0	-12.8

Remark: There is no spurious emission found between lowest oscillating frequency to 30 MHz.

Limit
Section 15.109

The field strength of radiated emissions from unintentional radiators at a distance of 3 meters:

Frequency (MHz)	Field strength (μV/m)	Field strength (dBμV/m)	Measurement distance (m)
30-88	100	$20 \cdot \log(100) = 40.0$	3
88-216	150	$20 \cdot \log(150) = 43.5$	3
216-960	200	$20 \cdot \log(200) = 46.0$	3
Above 960	500	$20 \cdot \log(500) = 54.0$	3