TÜVRheinland®

Produkte
Products

Prüfbericht - Nr.: *Test Report No.:*	**14044887 002**	**Seite 1 von 8** *Page 1 of 8*
Auftraggeber: *Client:*	**FENGQI TOY FACTORY CHENGHAI DISTRICT SHANTOU CITY GUANGDONG CHINA**	
Gegenstand der Prüfung: *Test Item:*	**Short Range Device - Receiver (49.86MHz)**	
Bezeichnung: *Identification:*	**Please refer to "Models" on page 4**	**Serien-Nr.:** *Serial No.:* **Engineering sample**
Wareneingangs-Nr.: *Receipt No.:*	**A000385517-001**	**Eingangsdatum:** *Date of Receipt:* **29.06.2016**
Zustand des Prüfgegenstandes bei Anlieferung: *Condition of test item at delivery:*	Test samples are not damaged and suitable for testing.	
Prüfort: *Testing Location:*	**Global United Technology Services Co., Ltd.** 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, China	
Prüfgrundlage: *Test Specification:*	**FCC Part 15 Subpart B** **ANSI C63.4-2014**	
Prüfergebnis: *Test Results:*	**Das vorstehend beschriebene Gerät wurde geprüft und entspricht oben genannter Prüfgrundlage.** The above mentioned product was tested and **passed**.	
Prüflaboratorium: *Testing Laboratory:*	**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:*		
14.07.2016	Benny Lau Senior Project Manager		14.07.2016	Sharon Li Department Manager	
Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*	**Datum** *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*

Sonstiges: Other Aspects	**FCC ID: 2AIU4789** **This report superseded the report 14044887 001. As per client's request, the applicant's address is changed.**

Abkürzungen:				*Abbreviations:*			
P(ass)	=	*entspricht Prüfgrundlage*		*P(ass)*	=	*passed*	
F(ail)	=	*entspricht nicht Prüfgrundlage*		*F(ail)*	=	*failed*	
N/A	=	*nicht anwendbar*		*N/A*	=	*not applicable*	
N/T	=	*nicht getestet*		*N/T*	=	*not tested*	

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Product information

Manufacturers declarations

	Receiver
Equipment Class	Class B
Type of equipment	stand alone radio device
Connection to public utility power line	Yes
Nominal voltage	V_{nor}: 1.2VDC
Independent Operation Modes	Receiving mode

Product function and intended use

The equipment under test (EUT) is super-regenerative receiver operating at 49.86MHz. And is it powered by 1.2Vdc (1 x 1.2V rechargeable battery). The applicant declares that the models below is identical except the model number and packaging.

Models	Product description
MRCC-24-2823,9801,9802,9803,9805,9806,9807,9808, 9809,9810,9811,9812,9813,9814,9815,9816,9817,9818, 9819,9820,9821,9822,9823,9824,9825,9826,9827,9828, 9829,9830,9831,9832,9833,9834,9835,9836,9837,9838, 9839,9840,9841,9842,9843,9844,9845,9846,9847,9848, 9849,9850,9851,9852,9853,9854,9855,9856,9857,9858, 9859,9860,9861,9862,9863,9864,9865,9866,9867,9868, 9869,9870,9871,9872,9873,9874,9875,9876,9877,9878, 9879,9880,9881,9882,9883,9884,9885,9886,9887,9888, 9889,9890,9891,9892,9893,9894,9895,9896,9897,9803A, 9816A	RC toy car

Submitted documents

Circuit Diagram
Block Diagram
Bill of material
User manual
Label

Independent Operation Modes

The basic operation modes are:

- Receiving mode.

For further information refer to User Manual

Related Submittal(s) Grants

This is a single application for certification of the receiver. The FCC ID of the corresponding transmitter is 2AIU4123456

Remark

The test results in this test report are only relevant to the tested sample and does not involve any assessment in the production

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.

- No testing software is provided by the applicant.

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 C63.4-2014.

For measurement below 1GHz - the equipment under test (EUT) was placed at the middle of the 80 cm height turntable. For measurement above 1GHz - the EUT was placed at the middle of the 1.5 m height turntable and RF absorbing material was placed on ground plane between turntable and 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:

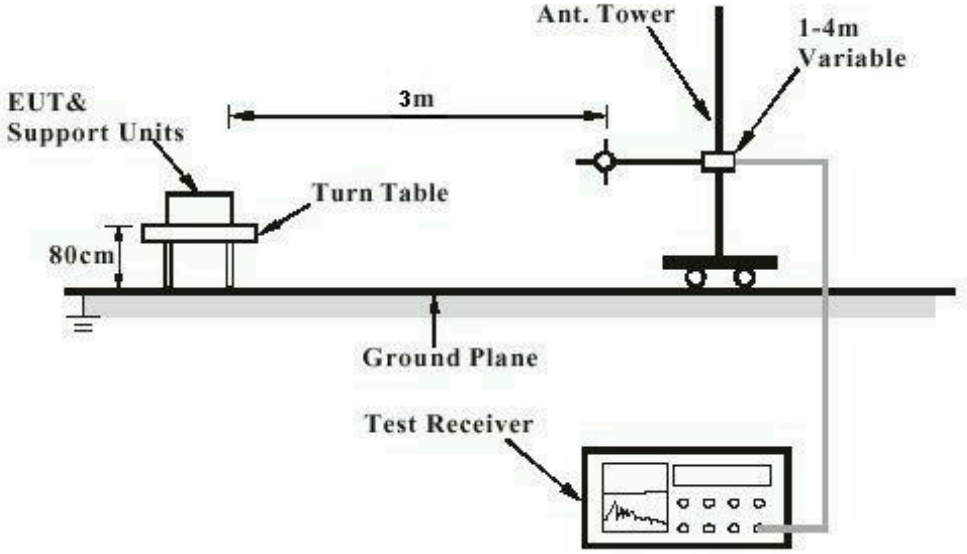
FS = R + AF + CF + FA – PA

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.

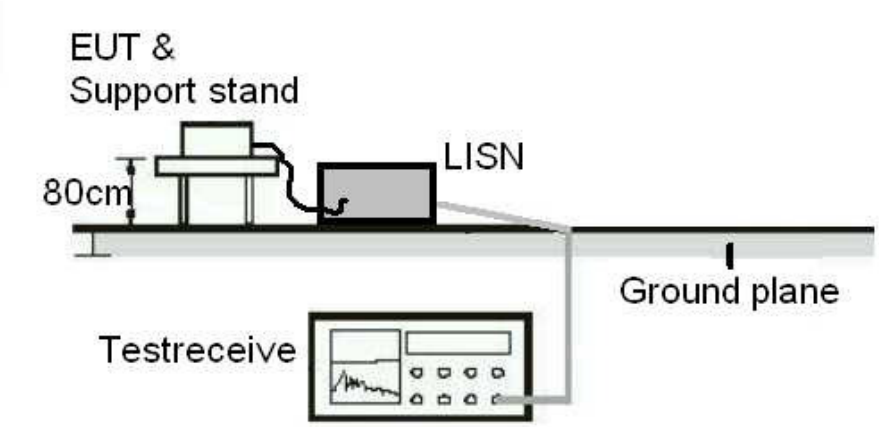
Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test



Note: Measurements above 1 GHz are done with a table height of 1.5m. In addition, there is RF absorbing material on the floor of the test site for above 1GHz measurement.

Diagram of Measurement Equipment Configuration for Mains Conduction Measurement (if applicable)



List of Test and Measurement Instruments

Global United Technology Services Co., Ltd. (FCC Registration number: 600491)

Radiated Emission

Equipment	Manufacturer	Type	Cal. Date	Due Date
3m Semi- Anechoic Chamber	ZhongYu Electron	9.0(L)*6.0(W)* 6.0(H)	July. 03 2015	July. 02 2020
Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	N/A	N/A
ESU EMI Test Receiver	R&S	ESU26	June. 29 2016	June. 28 2017
Loop Antenna	Zhinan	ZN30900A	June. 29 2016	June. 28 2017
BiConiLog Antenna	SCHWARZBECK	VULB9163	June. 29 2016	June. 28 2017
Double-ridged horn antenna	SCHWARZBECK	9120D	June. 29 2016	June. 28 2017
Horn Antenna	ETS-LINDGREN	3160-09	June. 29 2016	June. 28 2017
RF Amplifier	HP	8347A	June. 29 2016	June. 28 2017
RF Amplifier	HP	8349B	June. 29 2016	June. 28 2017
Broadband Preamplifier	SCHWARZBECK	BBV9718	June. 29 2016	June. 28 2017
EMI Test Software	AUDIX	E3	N/A	N/A
Coaxial cable	GTS	N/A	N/A	N/A
Coaxial Cable	GTS	N/A	N/A	N/A
Thermo meter	N/A	N/A	June. 29 2016	June. 28 2017

Results FCC Part 15 – Subpart B

FCC 15.109 – Radiated Emissions			**Pass**
Test Specification : ANSI C63.4 – 2014 Mode of operation : Receiving mode Port of testing : Enclosure Detector : Peak RBW/VBW : 120 kHz for f < 1 GHz Supply voltage : 1.2VDC Temperature : 23ºC Humidity : 50%			
FCC Requirement: 15.109(a)			
Results: Pass			
Vertical Polarization			
Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**	
No peak found	---	40.0 / QP	
No peak found	---	43.5 / QP	
No peak found	---	46.0 / QP	
Horizontal Polarization			
Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**	
No peak found	---	40.0 / QP	
No peak found	---	43.5 / QP	
No peak found	---	46.0 / QP	