

Produkte
 Products


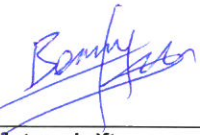
Prüfbericht - Nr.: 14040278 001		Seite 1 von 10 Page 1 of 10	
<i>Test Report No.:</i>			
Auftraggeber: <i>Client:</i>	Stadlbauer Marketing + Vertrieb Ges.M.B.H Rennbahnallee 1 5412 Puch Salzburg Austria		
Gegenstand der Prüfung: <i>Test Item:</i>	Short Range Device - Radio Control Toy Transmitter (2.4GHz)		
Bezeichnung: <i>Identification:</i>	Please refer to "Models" on page 3	Serien-Nr.: <i>Serial No.:</i>	Engineering sample
Wareneingangs-Nr.: <i>Receipt No.:</i>	A000224351-008	Eingangsdatum: <i>Date of Receipt:</i>	07.07.2015
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of test item at delivery:</i>	Test samples received are not damaged and suitable for testing.		
Prüfört: <i>Testing Location:</i>	TÜV Rheinland Hong Kong Ltd. 8/F, First Group Centre, 14 Wang Tai Road, Kowloon Bay, Kowloon, Hong Kong Global United Technology Services Co., Ltd. 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, China		
Prüfgrundlage: <i>Test Specification:</i>	FCC Part 15 Subpart C ANSI C63.4-2009		
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:		
29.07.2015 Datum <i>Date</i>	Joey Leung Project Engineer Name/Stellung <i>Name/Position</i>	 Unterschrift <i>Signature</i>	29.07.2015 Datum <i>Date</i>
			Benny Lau Senior Project Manager Name/Stellung <i>Name/Position</i>
			 Unterschrift <i>Signature</i>
Sonstiges: <i>Other Aspects</i>	FCCID: YFA370900042		
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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Product information

Manufacturers declarations

	Transmitter
Operating frequency range	2405 - 2481 MHz
Type of modulation	GFSK
Number of channels	12
Type of antenna	PCB Antenna
Power level	fix
Connection to public utility power line	No
Nominal voltage	3.0 V

Product function and intended use

The equipment under test (EUT) is a radio control toy transmitter operating at 2.4GHz. It is powered by battery only.

FCCID: YFA370900042

Models	Product description
900042, 370900042	Radio Controlled Toy Transmitter

Submitted documents

Circuit Diagram
 Block Diagram
 Bill of material
 User manual
 Rating Label

Special accessories and auxiliary equipment

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

Nil

Independent Operation Modes

The basic operation mode is transmitting control signal for the RC toy Car.

For further information refer to User Manual

Related Submittal(s) Grants

This is a single application for certification of the transmitter.

List of Test and Measurement Instruments

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

Radiated Emission

Equipment	Manufacturer	Type	S/N	Cal. interval	Last cal.
3m Semi- Anechoic Chamber	ZhongYu Electron	9.0(L)*6.0(W)* 6.0(H)	---	2 year	05 Apr 2015
Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	---	N/A	N/A
ESU EMI Test Receiver	R&S	ESU26	---	1 year	08 Jun 2015
Loop Antenna	Zhinan	ZN30900A	---	1 year	08 Jun 2015
Bi-log Hybrid Antenna	SCHWARZBECK	VULB9163	---	1 year	09 Mar 2015
Double-ridged horn antenna	SCHWARZBECK	9120D	---	1 year	09 Mar 2015
RF Amplifier	HP	8347A	---	1 year	08 Jun 2015
RF Amplifier	HP	8349B	---	1 year	08 Jun 2015
EMI Test Software	AUDIX	E3	---	1 year	N/A
Coaxial cable	GTS	N/A	---	1 year	08 Jun 2015
Coaxial Cable	GTS	N/A	---	1 year	08 Jun 2015
Thermo meter	N/A	N/A	---	1 year	08 Jun 2015

TÜV Rheinland Hong Kong Ltd.

Radio Test

Equipment	Manufacturer	Type	S/N	Cal. interval	Last cal.
Spectrum Analyzer	Rohde & Schwarz	FSP30	100007	1 year	12 Jan 2015

Results FCC Part 15 – Subpart C

Subclause 15.207 – Disturbance Voltage on AC Mains	N/A
There is no AC power input or output ports on the EUT.	

Subclause 15.205 – Restricted bands – Spurious Emissions – Band edge	Pass	
Test Specification : ANSI C63.4 – 2009 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 : 3.0VDC, 2 x 1.5V AAA size new battery Temperature : 23°C Humidity : 50%		
Requirement:	Radiated emissions which fall in the restricted bands, as defined in 15.205 (a), must also comply with the radiated emission limits specified in 15.209(a).	
Results:	PASS	
Tx frequency 2405MHz Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2400.000	39.20	74.0 / P
2400.000	27.51	54.0 / A
Tx frequency 2405MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2400.000	37.83	74.0 / P
2400.000	27.53	54.0 / A
Tx frequency 2481MHz Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2483.500	43.87	74.0 / P
2483.500	28.96	54.0 / A
Tx frequency 2481MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2483.500	43.68	74.0 / P
2483.500	28.77	54.0 / A

Subclause 15.215 (c) – 20 dB Bandwidth		Pass		
Test Specification : ANSI C63.4 – 2009 Mode of operation : Tx mode Port of testing : Enclosure RBW/VBW : 100 kHz / 300 kHz Supply voltage : 3.0VDC, 2 x 1.5V AAA size new battery Temperature : 23°C Humidity : 50%				
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.				
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	2404.390	> 2400	2406.790	< 2483.5
2449	2447.390	> 2400	2449.720	< 2483.5
2481	2478.730	> 2400	2481.820	< 2483.5

Subclause 15.249 (a) – Field Strength of Fundamental and Harmonics		Pass		
Test Specification : ANSI C63.4 – 2009 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 : 3.0VDC, 2 x 1.5V AAA 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		
2405.106	76.62	114.0 / P		
2405.106	68.17	94.0 / A		
Fundamental Frequency 2405MHz		Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m		
2405.106	74.36	114.0 / P		
2405.106	70.12	94.0 / A		
Harmonics 2405MHz		Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m		
4809.700	57.73	74.0 / P		

4809.700	48.92	54.0 / A
7215.000	49.46	74.0 / P
7215.000	36.78	54.0 / A
Harmonics 2405MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4809.700	56.99	74.0 / P
4809.700	46.89	54.0 / A
7215.000	51.73	74.0 / P
7215.000	41.69	54.0 / A
Fundamental Frequency 2449MHz Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2449.046	77.50	114.0 / P
2449.046	70.94	94.0 / A
Fundamental Frequency 2449MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2449.046	77.61	114.0 / P
2449.046	71.24	94.0 / A
Harmonics 2449MHz Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4900.000	56.21	74.0 / P
4900.000	50.34	54.0 / A
7350.000	50.64	74.0 / P
7350.000	42.42	54.0 / A
Harmonics 2449MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4900.000	54.55	74.0 / P
4900.000	47.82	54.0 / A
7350.000	50.69	74.0 / P
7350.000	42.75	54.0 / A
Fundamental Frequency 2481MHz Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2481.040	76.94	114.0 / P
2481.040	70.01	94.0 / A
Fundamental Frequency 2481MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2481.040	77.27	114.0 / P
2481.040	70.34	94.0 / A
Harmonics 2481MHz Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m

4961.000	55.96	74.0 / P
4961.000	48.45	54.0 / A
7443.000	50.00	74.0 / P
7443.000	40.60	54.0 / A
Harmonics 2481MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4961.000	56.09	74.0 / P
4961.000	47.58	54.0 / A
7443.000	48.53	74.0 / P
7443.000	40.13	54.0 / A

Subclause 15.249 (d) – Emissions radiated outside of the specified frequency bands Pass

Test Specification : ANSI C63.4 - 2009
 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 : 3.0VDC, 2 x 1.5V AAA 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 2449MHz 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 2449MHz 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 2481MHz 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 2481MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
No peak found	---	74.0 / P
No peak found	---	54.0 / A