

Produkte
Products
Prüfbericht - Nr.: 14041214 001
Test Report No.:
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Auftraggeber: Stadlbauer Marketing + Vertrieb Ges.M.B.H
Client: Rennbahndallee 1
 5412 Puch
 Salzburg
 Austria

Gegenstand der Prüfung: Short Range Device - Radio Control Toy Transmitter (2.4GHz)
Test Item:

Bezeichnung: Please refer to "Models" on **Serien-Nr.:** Engineering sample
Identification: page 3 *Serial No.:*

Wareneingangs-Nr.: A000250025-010 **Eingangsdatum:** 02.09.2015
Receipt No.: *Date of Receipt:*

Zustand des Prüfgegenstandes bei Anlieferung: Test sample received is not damaged and
Condition of test item at delivery: suitable for testing.

Prüfört: TÜV Rheinland Hong Kong Ltd.
Testing Location: 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: FCC Part 15 Subpart C
Test Specification: ANSI C63.10-2013

Prüfergebnis: Das vorstehend beschriebene Gerät wurde geprüft und entspricht oben
Test Results: genannter Prüfgrundlage.
 The above mentioned product was tested and **passed**.

Prüflaboratorium: TÜV Rheinland Hong Kong Ltd.
Testing Laboratory: 8 - 10/F., Goldin Financial Global Square, 7 Wang Tai Road, Kowloon Bay,
 Kowloon, Hong Kong

geprüft/ tested by:
kontrolliert/ reviewed by:

23.10.2015 Joey Leung
 Datum Name/Stellung
 Date Name/Position


 Unterschrift
 Signature

23.10.2015 Benny Lau
 Datum Name/Stellung
 Date Name/Position


 Unterschrift
 Signature

Sonstiges: FCCID: YFA370401004
Other Aspects

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.
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.

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Product information

Manufacturers declarations

	Transmitter
Operating frequency range	2405 - 2475 MHz
Type of modulation	GFSK
Number of channels	7
Type of antenna	Integral Antenna
Power level	fix
Connection to public utility power line	No
Nominal voltage	6.0 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.

EUT is intended for controlling the movement of associate receiver.

FCCID: YFA370401004

Models	Product description
401004, 370401004	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 boat.

For further information refer to User Manual

Related Submittal(s) Grants

This is a single application for certification of the transmitter.

Remarks

Due to the client declaration of equivalence, the model 401004 was randomly selected as a representative for testing.

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 15.203 – Antenna Information		Pass
Requirement:	No antenna other than that furnished by the responsible party shall be used with the device	
Results:	a) Antenna type: Perminently attached wire antenna b) Manufacturer and model no: N.A. c) Gain with reference to an isotropic radiator: 0 dBi	
Verdict:	Pass	

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

Subclause 15.215 (c) – 20 dB Bandwidth		Pass		
Test Specification : ANSI C63.10 – 2013 Mode of operation : Tx mode Port of testing : Enclosure RBW/VBW : 100 kHz / 300 kHz Supply voltage : 6.0VDC, 4 x 1.5V AA 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	2404.660	> 2400	2407.240	< 2483.5
2435	2434.690	> 2400	2437.110	< 2483.5
2475	2474.250	> 2400	2475.900	< 2483.5

Subclause 15.249 (a) – Field Strength of Fundamental and Harmonics			Pass
Test Specification : ANSI C63.10 – 2013 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 : 6.0VDC, 4 x 1.5V AA 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	
2405.500	90.86	114.0 / P	
2405.500	73.84	94.0 / A	
Fundamental Frequency 2405MHz		Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2405.500	85.16	114.0 / P	
2405.500	68.13	94.0 / A	
Harmonics 2405MHz		Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
4810.080	56.99	74.0 / P	
4810.080	36.28	54.0 / A	
7215.050	52.22	74.0 / P	
7215.050	37.04	54.0 / A	
Harmonics 2405MHz		Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
4810.080	54.78	74.0 / P	
4810.080	37.07	54.0 / A	
7215.050	54.73	74.0 / P	
7215.050	36.55	54.0 / A	
Fundamental Frequency 2435MHz		Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2435.080	90.80	114.0 / P	
2435.080	72.75	94.0 / A	
Fundamental Frequency 2435MHz		Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2435.080	84.62	114.0 / P	

2435.080	67.57	94.0 / A
Harmonics 2435MHz Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4870.590	56.47	74.0 / P
4870.590	37.86	54.0 / A
7305.070	54.53	74.0 / P
7305.070	35.71	54.0 / A
Harmonics 2435MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4870.590	53.74	74.0 / P
4870.590	38.12	54.0 / A
7305.070	53.62	74.0 / P
7305.070	37.79	54.0 / A
Fundamental Frequency 2475MHz Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2475.105	90.29	114.0 / P
2475.105	72.36	94.0 / A
Fundamental Frequency 2475MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2475.105	85.33	114.0 / P
2475.105	68.40	94.0 / A
Harmonics 2475MHz Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4950.440	56.12	74.0 / P
4950.440	36.59	54.0 / A
7425.260	52.73	74.0 / P
7425.260	38.28	54.0 / A
Harmonics 2475MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4950.440	53.24	74.0 / P
4950.440	36.71	54.0 / A
7425.260	48.93	74.0 / P
7425.260	37.48	54.0 / A

Subclause 15.249 (d) – Emissions radiated outside of the specified frequency bands Pass		
Test Specification : ANSI C63.10 - 2013 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 : 6.0VDC, 4 x 1.5V AA 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
2400.000	52.76	74.0 / P
2400.000	37.72	54.0 / A
Tx frequency 2405MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2400.000	47.83	74.0 / P
2400.000	33.79	54.0 / A
Tx frequency 2435MHz 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 2435MHz 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 2475MHz Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2483.500	45.86	74.0 / P
2483.500	24.95	54.0 / A
Tx frequency 2475MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2483.500	41.06	74.0 / P
2483.500	26.15	54.0 / A