

Produkte
Products

Prüfbericht - Nr.: 14039644 001		Seite 1 von 9 Page 1 of 9	
<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>	A000199776-001	Eingangsdatum: <i>Date of Receipt:</i>	15.05.2015
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of test item at delivery:</i>		Test sample is not damaged and suitable for testing.	
Prüfort: <i>Testing Location:</i>	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:	
17.07.2015	Benny Lau	17.07.2015	Sharon Li
	Senior Project Manager		Department Manager
Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>	Unterschrift <i>Signature</i>
Sonstiges: Other Aspects		FCCID: YFA370900026	
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>			

Table of Content

	Page
Cover Page	1
Table of Content	2
Product information.....	3
Manufacturers declarations	3
Product function and intended use	3
Submitted documents.....	3
Special accessories and auxiliary equipment	3
Independent Operation Modes	4
Related Submittal(s) Grants	4
Remarks	4
List of Test and Measurement Instruments.....	5
Results FCC Part 15 – Subpart C	6
Subclause 15.203 – Antenna Requirement	Pass 6
Subclause 15.207 – Disturbance Voltage on AC Mains.....	N/A 6
Subclause 15.215 (c) – 20 dB Bandwidth.....	Pass 6
Subclause 15.249 (a) – Field Strength of Fundamental and Harmonics.....	Pass 7
Subclause 15.249 (d), 15.205 – Out Of Band Radiated Emission	Pass 9
Appendix 1 – Test Results.....	3 pages
Appendix 2 – Test Setup Photos.....	4 pages
Appendix 3 – Photo documentation.....	4 pages
Appendix 4 – Product documentation.....	14 pages
Appendix 5 – RF Exposure Information.....	2 pages

Product information

Manufacturers declarations

	Transmitter
Operating frequency range	2406 - 2473 MHz
Type of modulation	GFSK
Number of channels	68
Type of antenna	Wire Antenna
Power level	fix
Connection to public utility power line	No
Nominal voltage	V _{nom} : 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: YFA370900026

Models	Product description
900026, 900041, 370900026, 370900041	Radio Controlled Toy Transmitter

Submitted documents

Circuit Diagram
Block Diagram
Bill of material
User manual
Rating Label
Declaration of Equivalence

Special accessories and auxiliary equipment

- Nil

Independent Operation Modes

The basic operation modes are 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.

Remarks

Due to the client declaration of equivalence, the model 370900026 was randomly selected as a representative for testing.

List of Test and Measurement Instruments

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

Equipment	Manufacturer	Type	Cal.Date	Cal.Due date
3m Semi- Anechoic Chamber	ZhongYu Electron	9.0(L)*6.0(W)* 6.0(H)	April 5 2015	April 4 2017
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 8 2015	June 7 2016
Loop Antenna	Zhinan	ZN30900A	June 8 2015	June 7 2016
Bi-log Hybrid Antenna	SCHWARZBECK	VULB9163	Mar. 08 2015	Mar. 08 2016
Double-ridged horn antenna	SCHWARZBECK	9120D	Mar. 08 2015	Mar. 08 2016
RF Amplifier	HP	8347A	Mar. 08 2015	Mar. 08 2016
RF Amplifier	HP	8349B	June 8 2015	June 7 2016
EMI Test Software	AUDIX	E3	June 8 2015	June 7 2016
Coaxial cable	GTS	N/A	N/A	N/A
Coaxial Cable	GTS	N/A	June 8 2015	June 7 2016
Thermo meter	N/A	N/A	June 8 2015	June 7 2016
Spectrum Analyzer	Rohde & Schwarz	FSP30	Jan 12 2015	Jan. 12 2017

Results FCC Part 15 – Subpart C

Subclause 15.203 – Antenna Requirement		Pass
FCC Requirement: No antenna other than that furnished by the responsible party shall be used with the device		
Results:	Antenna type:	Fixed Integral wire antenna
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 C63.4 – 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)
2406	2406.080	> 2400	2407.170	< 2483.5
2440	2439.070	> 2400	2440.260	< 2483.5
2473	2471.790	> 2400	2474.180	< 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 Frequency range : 9kHz – 25GHz 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 2406MHz		Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2406.500	75.97	114.0 / PK	
2406.500	57.94	94.0 / AV	
Fundamental Frequency 2406MHz		Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2406.500	85.24	114.0 / PK	
2406.500	66.21	94.0 / AV	
Harmonics 2406MHz		Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
4813.000	55.35	74.0 / PK	
4813.000	37.66	54.0 / AV	
7219.500	55.17	74.0 / PK	
7219.500	35.99	54.0 / AV	
Harmonics 2406MHz		Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
4813.000	61.21	74.0 / PK	
4813.000	37.52	54.0 / AV	
7219.500	59.64	74.0 / PK	
7219.500	37.46	54.0 / AV	
Fundamental Frequency 2440MHz		Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2439.700	75.27	114.0 / PK	
2439.700	59.22	94.0 / AV	

Fundamental Frequency 2440MHz		Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2439.700	84.35	114.0 / PK	
2439.700	65.31	94.0 / AV	
Harmonics 2440MHz		Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
4879.400	55.17	74.0 / PK	
4879.400	38.55	54.0 / AV	
7319.100	55.28	74.0 / PK	
7319.100	38.13	54.0 / AV	
Harmonics 2440MHz		Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
4879.400	59.46	74.0 / PK	
4879.400	37.84	54.0 / AV	
7319.100	58.94	74.0 / PK	
7319.100	38.14	54.0 / AV	
Fundamental Frequency 2473MHz		Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2473.500	75.72	114.0 / PK	
2473.500	60.79	94.0 / AV	
Fundamental Frequency 2473MHz		Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2473.500	84.93	114.0 / PK	
2473.500	64.98	94.0 / AV	
Harmonics 2473MHz		Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
4947.000	55.32	74.0 / PK	
4947.000	38.96	54.0 / AV	
7420.500	54.81	74.0 / PK	
7420.500	40.80	54.0 / AV	
Harmonics 2473MHz		Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
4947.000	58.89	74.0 / PK	
4947.000	39.36	54.0 / AV	
7420.500	55.56	74.0 / PK	
7420.500	41.09	54.0 / AV	

Subclause 15.249 (d), 15.205 – Out Of Band Radiated Emission			Pass
Test Specification : ANSI C63.4 – 2009 Mode of operation : Tx mode Port of testing : Enclosure Detector : Peak Frequency range : 9kHz – 25GHz RBW/VBW : 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 limit of section 15.209. There is no spurious found below 30MHz.	
Tx frequency 2406MHz Vertical Polarization			
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2400.000	35.72	74.0 / PK	
2400.000	23.68	54.0 / AV	
Tx frequency 2406MHz Horizontal Polarization			
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2400.000	34.01	74.0 / PK	
2400.000	23.97	54.0 / AV	
Tx frequency 2440MHz Vertical Polarization			
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
No peak found	---	74.0 / PK	
No peak found	---	54.0 / AV	
Tx frequency 2440MHz Horizontal Polarization			
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
No peak found	---	74.0 / PK	
No peak found	---	54.0 / AV	
Tx frequency 2473MHz Vertical Polarization			
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2483.500	33.22	74.0 / PK	
2483.500	23.31	54.0 / AV	
Tx frequency 2473MHz Horizontal Polarization			
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2483.500	34.55	74.0 / PK	
2483.500	23.64	54.0 / AV	