



Prüfbericht - Nr.: 14028673 001		Seite 1 von 9	
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Auftraggeber: <i>Client:</i>	Stadlbauer Marketing + Vertrieb Ges.m.b.H Rennbahn Allee 1 5412 Puch, Salzburg Austria		
Gegenstand der Prüfung: <i>Test Item:</i>	Short Range Device - Radio Control Toys 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>	00120105022-001	Eingangsdatum: <i>Date of Receipt:</i>	05.01.2012
Prüfart: <i>Testing Location:</i>	TÜV Rheinland Hong Kong Ltd. 8/F., First Group Centre, 14 Wang Tai Road, Kowloon Bay, Kowloon, Hong Kong Shenzhen Emtex Co., Ltd. Bldg. 69, Majialong Industry Zone, Nanshan District, ShenZhen, Guangdong, 518052 P.R. China		
Prüfgrundlage: <i>Test Specification:</i>	FCC Part 15 Subpart C ANSI C63.4-2003 CISPR 22:1997		
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:		
12.03.2012	Mika Chan Senior Project Engineer	12.03.2012	Thomas Berns Manager
<i>Date</i>	<i>Name/Position</i>	<i>Date</i>	<i>Name/Position</i>
			
	<i>Unterschrift</i> <i>Signature</i>		<i>Unterschrift</i> <i>Signature</i>
Sonstiges: <i>Other Aspects</i>	FCCID: YFA401002		
Abkürzungen:	<i>P(ass)</i> = entspricht Prüfgrundlage <i>F(ail)</i> = entspricht nicht Prüfgrundlage <i>N/A</i> = nicht anwendbar <i>N/T</i> = nicht getestet	Abbreviations:	<i>P(ass)</i> = passed <i>F(ail)</i> = failed <i>N/A</i> = not applicable <i>N/T</i> = 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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Product information

Manufacturers declarations

	Transmitter
Operating frequency range	2410 - 2450 MHz
Type of modulation	FSK
Number of channels	36
Type of antenna	Integral
Length of antenna	17.5 cm
Power level	fix
Connection to public utility power line	No
Nominal voltage	V_{nor} : 6.0 V

FCCID: YFA401002

Model	Product description
501003, 501004, 501005, 501006, 501007, 501008, 501009, 5010010, 5010011, 5010012, 5010013, 5010014, 5010015	Radio Control Toy Helicopter

Submitted documents

Circuit Diagram
 Block Diagram
 Bill of material
 User manual
 Rating Label

List of Test and Measurement Instruments

Shenzhen EMTEK Co., Ltd. (Registration number: 709623)

Equipment used	Manufacturer	Model No.	S/N	Due Date
3m Fully anechoic chamber	TDK	9m*6m*6m	EE001	25-Mar-2012
EMI Test Receiver	Rohde & Schwarz	ESU26	LR114196	29-May-2012
Pre-Amplifier	HP	8447D	2944A07999	29-May-2012
Bilog Antenna	Schwarzbeck	VULB9163	142	29-May-2012
Loop Antenna	ARA	PLA-1030/B	1029	29-May-2012
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170399	29-May-2012
Horn Antenna	Schwarzbeck	BBHA 9120	D143	29-May-2012
Cable	Schwarzbeck	AK9513	ACRX1	29-May-2012
Cable	Rosenberger	N/A	FP2RX2	29-May-2012
Cable	Schwarzbeck	AK9513	CRPX1	29-May-2012
Cable	Schwarzbeck	AK9513	CRRX2	29-May-2012

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 – Band edge compliance of radiated emissions	Pass
Test Specification : ANSI C63.4 – 2003 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, 4x1.5V AA 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:	There is no peak found in the restricted bands. For test protocols refer to Appendix 1, page 4-7.

Subclause 15.215 (c) – 20 dB Bandwidth	Pass			
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.			
Test Specification : ANSI C63.4 – 2003 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, 4x1.5V AA size new battery Temperature : 23°C Humidity : 50%				
Results:	For test protocols refer to Appendix 1, page 1-3.			
Frequency (MHz)	20 dB left (MHz)	Limit (MHz)	20 dB right (MHz)	Limit (MHz)
2410	2409.772	> 2400	2409.856	< 2483.5
2430	2429.770	> 2400	2429.854	< 2483.5
2450	2449.772	> 2400	2449.856	< 2483.5

Subclause 15.249 (a) – Radiated Emission (Fundamental and Harmonics)		Pass
Test Specification : ANSI C63.4 – 2003 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, 4x1.5V 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 2410MHz		Vertical Polarization
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2410.000	62.94	94.0 / A
2410.000	80.94	114.0 / P
Fundamental Frequency 2410MHz		Horizontal Polarization
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2410.000	62.74	94.0 / A
2410.000	80.74	114.0 / P
Harmonics 2410MHz		Vertical Polarization
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4820.000	36.58	54.0 / A
4820.000	54.58	74.0 / P
7238.782	35.01	54.0 / A
7238.782	53.01	74.0 / P
9935.897	40.51	54.0 / A
9935.897	57.71	74.0 / P
Harmonics 2410MHz		Horizontal Polarization
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4820.000	34.68	54.0 / A
4820.000	52.68	74.0 / P
7538.462	34.55	54.0 / A
7538.462	52.55	74.0 / P
Fundamental Frequency 2430MHz		Vertical Polarization
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2430.000	65.45	94.0 / A
2430.000	83.45	114.0 / P

Fundamental Frequency 2430MHz		Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2430.000	66.05	94.0 / A	
2430.000	84.05	114.0 / P	
Harmonics 2430MHz		Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
4860.000	37.13	54.0 / A	
4860.000	55.13	74.0 / P	
8001.602	34.86	54.0 / A	
8001.602	52.83	74.0 / P	
9935.897	39.01	54.0 / A	
9935.897	57.02	74.0 / P	
Harmonics 2430MHz		Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
4860.000	35.83	54.0 / A	
4860.000	53.77	74.0 / P	
7238.782	33.91	54.0 / A	
7238.782	51.78	74.0 / P	
9935.897	39.41	54.0 / A	
9935.897	57.48	74.0 / P	
Fundamental Frequency 2450MHz		Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2450.000	67.76	94.0 / A	
2450.000	85.76	114.0 / P	
Fundamental Frequency 2450MHz		Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2450.000	69.06	94.0 / A	
2450.000	86.96	114.0 / P	
Harmonics 2450MHz		Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
4900.000	38.08	54.0 / A	
4900.000	56.10	74.0 / P	
8001.603	35.26	54.0 / A	
8001.603	53.21	74.0 / P	
9799.679	40.04	54.0 / A	
9799.679	57.83	74.0 / P	
Harmonics 2450MHz		Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
4900.000	37.08	54.0 / A	
4900.000	55.08	74.0 / P	

7783.654	35.09	54.0 / A
7783.654	53.06	74.0 / P

Subclause 15.249 (d) – Spurious Radiated Emissions		Pass
Test Specification : ANSI C63.4 - 2003 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, 4x1.5V 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 2410MHz		Vertical Polarization
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
710.86	26.20	46.0 / QP
12060.89	39.86	54.0 / A
12060.89	57.85	74.0 / P
14649.03	43.02	54.0 / A
14649.03	61.25	74.0 / P
18426.28	35.16	54.0 / A
18426.28	52.43	74.0 / P
Tx frequency 2410MHz		Horizontal Polarization
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
852.3237	27.38	46.0 / QP
10044.87	39.77	54.0 / A
10044.87	57.79	74.0 / P
14540.06	42.74	54.0 / A
14540.06	60.72	74.0 / P
17182.69	42.36	54.0 / A
17182.69	60.34	74.0 / P
24876.60	36.05	54.0 / A
24876.60	53.48	74.0 / P
Tx frequency 2430MHz		Vertical Polarization
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
727.96	26.28	46.0 / QP
12142.62	39.14	54.0 / A
12142.62	57.13	74.0 / P

15003.20	42.83	54.0 / A
15003.20	60.80	74.0 / P
23025.64	34.63	54.0 / A
23025.64	52.61	74.0 / P
Tx frequency 2430MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
833.67	26.88	46.0 / QP
14485.57	43.56	54.0 / A
14485.57	61.51	74.0 / P
16501.60	41.77	54.0 / A
16501.60	59.69	74.0 / P
24820.51	36.69	54.0 / A
24820.51	54.67	74.0 / P
Tx frequency 2450MHz Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
713.97	25.84	46.0 / QP
14431.09	43.77	54.0 / A
14431.09	61.75	74.0 / P
17182.69	43.06	54.0 / A
17182.69	61.02	74.0 / P
24439.10	36.05	54.0 / A
24439.10	53.72	74.0 / P
Tx frequency 2450MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
878.75	26.39	46.0 / QP
14649.03	43.02	54.0 / A
14649.03	60.95	74.0 / P
17182.69	42.06	54.0 / A
17182.69	60.03	74.0 / P
23171.47	35.37	54.0 / A
23171.47	53.16	74.0 / P