Prüfbericht - Nr.: *Test Report No.:*	**14033147 001**	**Seite 1 von 8** *Page 1 of 8*
Auftraggeber: *Client:*	**Stadlbauer Marketing + Vertrieb GmbH** **Rennbahn Allee1** **5412 Puch, Salzburg** **Austria**	
Gegenstand der Prüfung: *Test Item:*	**Short Range Device - Radio Control Toy Transmitter (2.4GHz)**	
Bezeichnung: *Identification:*	**900024**	**Serien-Nr.:** *Serial No.:* **Engineering sample**
Wareneingangs-Nr.: *Receipt No.:*	**00130702333-001**	**Eingangsdatum:** *Date of Receipt:* **02.07.2013**
Zustand des Prüfgegenstandes bei Anlieferung: *Condition of test item at delivery:*	Test sample(s) is/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 C** **ANSI C63.4-2009** **CISPR 22:2003**	
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:*

25.09.2013	Mika Chan Project Manager	
Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*

kontrolliert/ *reviewed by:*

25.09.2013	Sharon Li Section Manager	
Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*

Sonstiges: **FCCID: YFA900024**
Other Aspects

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

	Transmitter
Operating frequency range	2410 - 2475 MHz
Type of modulation	FSK modulation
Number of channels	34
Channel Frequency (MHz)	2410, 2411, 2413, 2415, 2417, 2419, 2421, 2423, 2425, 2427, 2429, 2431, 2433, 2435, 2437, 2439, 2441, 2443, 2445, 2447, 2449, 2451, 2453, 2455, 2457, 2459, 2461, 2463, 2465, 2467, 2469, 2471, 2473, 2475
Type of antenna	Integral
Power level	fix
Connection to public utility power line	No
Nominal voltage	V_{nor}: 9.0 V

Product function and intended use

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

Submitted documents

Circuit Diagram
Block Diagram
Bill of material
User manual
Label Artwork

Special accessories and auxiliary equipment

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

Nil

List of Test and Measurement Instruments

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

Equipment	Manufacturer	Type	S/N	Cal Due Date
3m Semi- Anechoic Chamber	ZhongYu Electron	9.0(L)*6.0(W)* 6.0(H)	--	05 Apr 2015
Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	--	N/A
ESU EMI Test Receiver	R&S	ESU26	--	28 Jun 2014
Loop Antenna	Zhinan	ZN30900A	--	28 Jun 2014
Bi-log Hybrid Antenna	SCHWARZBECK	VULB9163	--	17 Mar 2014
Double-ridged horn antenna	SCHWARZBECK	9120D	--	17 Mar 2014
Horn Antenna	ETS-LINDGREN	3160-09	--	17 Mar 2014
RF Amplifier	HP	8347A	--	28 Jun 2014
RF Amplifier	HP	8349B	--	28 Jun 2014
EMI Test Software	AUDIX	E3	--	N/A
Coaxial cable	GTS	N/A	--	28 Jun 2014
Coaxial Cable	GTS	N/A	--	28 Jun 2014
Thermo meter	N/A	N/A	--	30 Jun 2014

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 Next to The Band Edge	**Pass**
Test Specification : ANSI C63.4 – 2003 Mode of operation : Tx mode Port of testing : Enclosure Detector : Peak RBW/VBW : 1 MHz / 3 MHz Supply voltage : 9.0VDC, 6F22 size new battery Temperature : 23ºC Humidity : 50%	
Requirement : Radiated emissions which fall in the restricted bans, 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 Supply voltage : 9.0VDC, 6F22 size new battery Temperature : 23ºC Humidity : 50%	
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)**
2410	2408.894	> 2400	2411.148	< 2483.5
2443	2441.824	> 2400	2444.232	< 2483.5
2475	2473.880	> 2400	2476.204	< 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 : 9.0VDC, 6F22 size new battery
Temperature : 23ºC
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	95.79	114.0 / P
2410.000	72.61	94.0 / A

Fundamental Frequency 2410MHz Horizontal Polarization

Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2410.000	101.37	114.0 / P
2410.000	75.84	94.0 / A

Harmonics 2410MHz Vertical Polarization

Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4820.000	57.52	74.0 / P
4820.000	41.17	54.0 / A

Harmonics 2410MHz Horizontal Polarization

Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4820.000	54.38	74.0 / P
4820.000	38.98	54.0 / A

Fundamental Frequency 2443MHz Vertical Polarization

Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2443.000	98.55	114.0 / P
2443.000	70.58	94.0 / A

Fundamental Frequency 2443MHz Horizontal Polarization

Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2443.000	103.35	114.0 / P
2443.000	78.79	94.0 / A

Harmonics 2443MHz	Vertical Polarization	
Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**
4886.000	58.42	74.0 / P
4886.000	40.80	54.0 / A
Harmonics 2443MHz	Horizontal Polarization	
Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**
4886.000	54.48	74.0 / P
4886.000	39.31	54.0 / A
Fundamental Frequency 2475MHz	Vertical Polarization	
Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**
2475.000	99.22	114.0 / P
2475.000	70.79	94.0 / A
Fundamental Frequency 2475MHz	Horizontal Polarization	
Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**
2475.000	103.58	114.0 / P
2475.000	75.89	94.0 / A
Harmonics 2475MHz	Vertical Polarization	
Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**
4950.000	58.20	74.0 / P
4950.000	40.94	54.0 / A
Harmonics 2475MHz	Horizontal Polarization	
Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**
4950.000	57.15	74.0 / P
4950.000	41.07	54.0 / A

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 : 9.0VDC, 6F22 size new battery
Temperature : 23ºC
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**
441.743	26.06	46.0 / QP

Tx frequency 2410MHz Horizontal Polarization

Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**
406.088	24.44	46.0 / QP

Tx frequency 2443MHz Vertical Polarization

Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**
618.537	29.18	46.0 / QP

Tx frequency 2443MHz Horizontal Polarization

Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**
524.554	27.01	46.0 / QP

Tx frequency 2475MHz Vertical Polarization

Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**
526.397	27.54	46.0 / QP

Tx frequency 2475MHz Horizontal Polarization

Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**
582.743	28.33	46.0 / QP