

Produkte
Products



Prüfbericht - Nr.: 14024590 001 <i>Test Report No.:</i>		Seite 1 von 8 <i>Page 1 of 8</i>	
Auftraggeber: <i>Client:</i>		Stadlbauer Marketing + Vertrieb Gesellschaft m.b.H. A-5027 Salzburg Magazinstrasse 4 Austria	
Gegenstand der Prüfung: Short Range Device - Radio Control Toys Transmitter (2.4GHz) <i>Test Item:</i>			
Bezeichnung: <i>Identification:</i>		Serien-Nr.: <i>Serial No.:</i>	
900006		Engineering sample	
Wareneingangs-Nr.: <i>Receipt No.:</i>		Eingangsdatum: <i>Date of Receipt:</i>	
00100721072-003		21.07.2010	
Prüfört: <i>Testing Location:</i>		Hong Kong Productivity Council HKPC Building, 78 Tat Chee Avenue, Kowloon, Hong Kong	
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. 9-10/F., Emperor International Square, 7 Wang Tai Road, Kowloon Bay, Kowloon, Hong Kong	
geprüft/ tested by:		kontrolliert/ reviewed by:	
18.08.2010 Sharon Li Project Manager 		18.08.2010 Thomas Berns Manager 	
Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>
Sonstiges: Other Aspects		FCCID: YFA900006	
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

	Transceiver
Operating frequency range	2410 - 2481 MHz
Type of modulation	FSK
Number of channels	64
Type of antenna	Integral
Power level	fix
Connection to public utility power line	No
Nominal voltage	V_{nor} : 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 batteries only.

Submitted documents

- Circuit Diagram
- Block Diagram
- Bill of material
- User manual
- Rating Label

List of Test and Measurement Instruments

	Equipment used	Manufacturer	Model No.	S/N	Due Date
<input checked="" type="checkbox"/>	Semi-anechoic Chamber	Albatross Projects GmbH	Nil	9460000.9	16-Mar-11
<input checked="" type="checkbox"/>	EMI Test Receiver	R & S	ESCI	100216	16-Mar-11
<input checked="" type="checkbox"/>	Trilog-Broadband Antenna	Schwarzbeck	VULB9168	209	21-Aug-11
<input checked="" type="checkbox"/>	Double-Ridged Waveguide Horn Antenna	R & S	HF 906	100407	16-Mar-11
<input checked="" type="checkbox"/>	Pre-Amplifier	MITEQ	AFS42-00101800-25S-42	1101599	16-Mar-11
<input checked="" type="checkbox"/>	Pre-Amplifier	MITEQ	AFS42-00101800-25S-44	1108282	16-Mar-11
<input checked="" type="checkbox"/>	Band Reject Filter	Micro-Tronics	BRM50702	023	16-Mar-11
<input checked="" type="checkbox"/>	Horn Antenna	EMCO	3160-09	21642	26-Jun-14
<input checked="" type="checkbox"/>	FSP 30 Spectrum Analyser	R & S	FSP 30	100286	16-Mar-11
<input checked="" type="checkbox"/>	EMI Test Receiver	R & S	ESCS 30	100316	16-Mar-11
<input checked="" type="checkbox"/>	Artificial Mains Network	R & S	ESH3-Z5	100114	16-Mar-11
<input checked="" type="checkbox"/>	Pulse Limiter	R & S	ESH3-Z2	100701	16-Mar-11
<input checked="" type="checkbox"/>	Loop Antenna	R & S	HFH2-Z2	9107-2651	16-Mar-11

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 : internal batteries has been activated 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 : internal batteries has been activated 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	2409.900	> 2400	2410.152	< 2483.5
2450	2449.850	> 2400	2450.264	< 2483.5
2481	2480.888	> 2400	2481.122	< 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 : internal batteries has been activated 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
2409.952	64.27	114.0 / P
2410.000	58.45	94.0 / A
Fundamental Frequency 2410MHz		Horizontal Polarization
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2409.968	59.16	114.0 / P
2409.952	54.40	94.0 / A
Harmonics 2410MHz		Vertical Polarization
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4820.000	50.97	74.0 / P
4819.920	44.59	54.0 / A
Harmonics 2410MHz		Horizontal Polarization
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4820.128	53.51	74.0 / P
4820.016	47.73	54.0 / A

Fundamental Frequency 2450MHz		Vertical Polarization
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2450.000	76.40	114.0 / P
2449.968	69.13	94.0 / A
Fundamental Frequency 2450MHz		Horizontal Polarization
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2450.000	68.69	114.0 / P
2450.128	62.62	94.0 / A
Harmonics 2450MHz		Vertical Polarization
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4899.888	51.66	74.0 / P
4899.920	45.51	54.0 / A
Harmonics 2450MHz		Horizontal Polarization
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4899.888	49.79	74.0 / P
4899.904	42.38	54.0 / A
Fundamental Frequency 2481MHz		Vertical Polarization
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2480.913	74.62	114.0 / P
2480.978	67.69	94.0 / A
Fundamental Frequency 2481MHz		Horizontal Polarization
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2481.026	67.40	114.0 / P
2480.817	60.93	94.0 / A
Harmonics 2481MHz		Vertical Polarization
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4962.003	54.40	74.0 / P
4961.859	49.00	54.0 / A
Harmonics 2481MHz		Horizontal Polarization
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4961.683	49.80	74.0 / P
4961.987	41.57	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 : internal batteries has been activated 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.		
Result 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
no peak found	---	74.0 / P
no peak found	---	54.0 / A
Tx frequency 2410MHz 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 2450MHz 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 2450MHz 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