

Produkte
Products

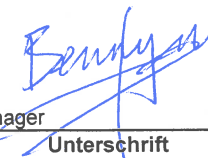
Prüfbericht - Nr.: 14041234 001		Seite 1 von 9	
<i>Test Report No.:</i>		<i>Page 1 of 9</i>	
Auftraggeber: <i>Client:</i>		geobra Brandstätter Stiftung & Co. KG Brandstätterstr. 2 - 10 90513 ZIRNDORF Germany	
Gegenstand der Prüfung: <i>Test Item:</i>		Short Range Device - Toy Remote Controller (2.4GHz)	
Bezeichnung: <i>Identification:</i>	6914TX	Serien-Nr.: <i>Serial No.:</i>	Engineering sample
Wareneingangs-Nr.: <i>Receipt No.:</i>	A000234990-001	Eingangsdatum: <i>Date of Receipt:</i>	30.07.2015
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 C63.4-2013		
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:	
24.11.2015 Datum Date Benny Lau Senior Project Manager Name/Stellung Name/Position  Unterschrift Signature		24.11.2015 Datum Date Sharon Li Department Manager Name/Stellung Name/Position  Unterschrift Signature	
Sonstiges: Other Aspects		FCCID: N2T30822164	
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>			

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Product information

Manufacturers declarations

	Transmitter
Operating frequency range	2403 - 2475MHz
Type of modulation	GFSK
Number of channels	3
Type of antenna	Wire Antenna
Power level	fix
Connection to public utility power line	No
Nominal voltage	V _{nom} : 9.0 V

Product function and intended use

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

FCCID: N2T30822164

Models	Product description
6914TX	Radio Controlled Toy Transmitter

Submitted documents

Circuit Diagram
Block Diagram
Bill of material
User manual
Rating Label

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

Nil

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 C63.10 – 2013 Mode of operation : Tx mode Port of testing : Enclosure RBW/VBW : 100 kHz / 300 kHz Supply voltage : 9.0VDC, 6F22 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)
2403	2402.360	> 2400	2404.480	< 2483.5
2440	2439.460	> 2400	2441.460	< 2483.5
2475	2474.020	> 2400	2475.700	< 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 Frequency range : 9kHz – 25GHz 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 : 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 2403MHz		Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2403.125	91.73	114.0 / PK	
2403.125	70.71	94.0 / AV	
Fundamental Frequency 2403MHz		Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2403.125	85.15	114.0 / PK	
2403.125	63.13	94.0 / AV	
Harmonics 2403MHz		Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
4806.080	55.73	74.0 / PK	
4806.080	37.02	54.0 / AV	
7209.895	61.49	74.0 / PK	
7209.895	38.28	54.0 / AV	
Harmonics 2403MHz		Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
4806.080	54.94	74.0 / PK	
4806.080	38.22	54.0 / AV	
7209.895	62.07	74.0 / PK	
7209.895	36.48	54.0 / AV	
Fundamental Frequency 2440MHz		Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2440.158	92.43	114.0 / PK	
2440.158	70.39	94.0 / AV	

Fundamental Frequency 2440MHz		Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2440.158	85.22	114.0 / PK	
2440.158	63.18	94.0 / AV	
Harmonics 2440MHz		Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
4880.760	56.28	74.0 / PK	
4880.760	37.66	54.0 / AV	
7320.240	61.81	74.0 / PK	
7320.240	40.01	54.0 / AV	
Harmonics 2440MHz		Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
4880.760	55.23	74.0 / PK	
4880.760	38.61	54.0 / AV	
7320.240	62.91	74.0 / PK	
7320.240	40.11	54.0 / AV	
Fundamental Frequency 2475MHz		Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2475.025	92.28	114.0 / PK	
2475.025	70.34	94.0 / AV	
Fundamental Frequency 2475MHz		Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2475.025	84.72	114.0 / PK	
2475.025	63.79	94.0 / AV	
Harmonics 2475MHz		Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
4950.440	56.11	74.0 / PK	
4950.440	37.58	54.0 / AV	
7425.260	61.88	74.0 / PK	
7425.260	41.43	54.0 / AV	
Harmonics 2475MHz		Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
4950.440	55.27	74.0 / PK	
4950.440	38.74	54.0 / AV	
7425.260	61.50	74.0 / PK	
7425.260	41.04	54.0 / AV	

Subclause 15.249 (d), 15.205 – Out Of Band Radiated Emission		Pass
Test Specification : ANSI C63.10 – 2013 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 : 9.0VDC, 6F22 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 2403MHz Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2400.000	57.82	74.0 / PK
2400.000	33.87	54.0 / AV
Tx frequency 2403MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2400.000	48.84	74.0 / PK
2400.000	30.83	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 2475MHz Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2483.500	48.59	74.0 / PK
2483.500	28.56	54.0 / AV
Tx frequency 2475MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2483.500	42.51	74.0 / PK
2483.500	26.67	54.0 / AV