

Produkte  
Products

**Prüfbericht - Nr.: 14032419 001**

Test Report No.:

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**Auftraggeber:** New Sunny Toys Industrial CO., Ltd  
*Client:* Fengxin 2nd. Rd.  
Chenghai, Shantou city  
Guangdong  
China

**Gegenstand der Prüfung:** Short Range Device - Radio Control Toy Transmitter (2.4GHz)  
*Test Item:*

**Bezeichnung:** Please refer to "Models" on  
*Identification:* page 5  
**Serien-Nr.:** Engineering sample  
*Serial No.:*

**Wareneingangs-Nr.:** 00130409127-001  
*Receipt No.:* 00130409127-002  
00130409127-003  
**Eingangsdatum:** 09.04.2013  
*Date of Receipt:*

**Zustand des Prüfgegenstandes bei Anlieferung:** Test sample(s) is/are not damaged and  
*Condition of test item at delivery:* suitable for testing.

**Prüfört:** Shenzhen Emtex Co., Ltd.  
*Testing Location:* Bldg. 69, Majialong Industry Zone, Nanshan District, ShenZhen, Guangdong,  
518052 P.R. China

**Prüfgrundlage:** FCC Part 15 Subpart C  
*Test Specification:* ANSI C63.4-2003

**Prüfergebnis:** Das vorstehend beschriebene Gerät wurde geprüft und entspricht oben  
*Test Results:* genannter Prüfgrundlage.  
The above mentioned product was tested and **passed**.

**Prüflaboratorium:** TÜV Rheinland Hong Kong Ltd.  
*Testing Laboratory:* 8 - 10/F., Goldin Financial Global Square, 7 Wang Tai Road, Kowloon Bay,  
Kowloon, Hong Kong

<b>geprüft/ tested by:</b>			<b>kontrolliert/ reviewed by:</b>		
15.04.2013	Joey Leung Test Engineer		15.04.2013	Sharon Li Section Manager	
<b>Datum</b> <i>Date</i>	<b>Name/Stellung</b> <i>Name/Position</i>	<b>Unterschrift</b> <i>Signature</i>	<b>Datum</b> <i>Date</i>	<b>Name/Stellung</b> <i>Name/Position</i>	<b>Unterschrift</b> <i>Signature</i>

**Sonstiges:** FCCID: T9DLT718AAA  
*Other Aspects*

<b>Abkürzungen:</b>	P(ass) = entspricht Prüfgrundlage	<b>Abbreviations:</b>	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	

**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.**  
*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.*

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## Product information

### Manufacturers declarations

	Transmitter
Operating frequency range	2405 - 2475 MHz
Type of modulation	GFSK
Number of channels	16
Type of antenna	Integral
Power level	fix
Connection to public utility power line	No
Nominal voltage	V <sub>nom</sub> : 9.0 V

### Product function and intended use

The equipment under test (EUT) is a radio control toy transmitter operating at 2.4GHz. It transmits on one of the 16 channels only and channel number was decided during frequency binding procedure with associated receiver. The transmitter is powered by batteries only.

### FCCID: T9DLT718AAA

Models	Product description
LT-718, LT-713, LT-714, LT-715, LT-716, LT-719, LT-722, LT-723, LT-725, LT-726, LT-727, LT-728, LT-729	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	Manufacturer	Type	S/N	Due Date
EMI Test Receiver	Rohde & Schwarz	ESU26	LR114196	May 29, 2013
Pre-Amplifier	HP	8447D	2944A07999	May 29, 2013
Bilog Antenna	Schwarzbeck	VULB9163	142	May 29, 2013
Loop Antenna	ARA	PLA-1030/B	1029	May 29, 2013
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170399	May 29, 2013
Horn Antenna	Schwarzbeck	BBHA 9120	D143	May 29, 2013
Cable	Schwarzbeck	AK9513	ACRX1	May 29, 2013
Cable	Rosenberger	N/A	FP2RX2	May 29, 2013
Cable	Schwarzbeck	AK9513	CRPX1	May 29, 2013
Cable	Schwarzbeck	AK9513	CRRX2	May 29, 2013
Spectrum Analyzer	Rohde & Schwarz	FSP30	100007	Sept 16, 2013

## Results FCC Part 15 – Subpart C

<b>Subclause 15.207 – Disturbance Voltage on AC Mains</b>	<b>N/A</b>
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 : 9.0VDC, 6x1.5V AA size new battery Temperature : 23°C 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: For test protocols refer to Appendix 1, page 4-7.		
Tx frequency 2405MHz 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 2405MHz 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 2475MHz 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 2475MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
No peak found	---	74.0 / P
No peak found	---	54.0 / A

<b>Subclause 15.215 (c) – 20 dB Bandwidth</b>		<b>Pass</b>		
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 : 9.0VDC, 6x1.5V AA size new battery				
Temperature : 23°C				
Humidity : 50%				
<b>Results:</b>		For test protocols refer to Appendix 1, page 2-3.		
Frequency (MHz)	20 dB left (MHz)	Limit (MHz)	20 dB right (MHz)	Limit (MHz)
2405	2402.348	> 2400	2405.668	< 2483.5
2455	2452.760	> 2400	2455.736	< 2483.5
2475	2472.726	> 2400	2475.716	< 2483.5

<b>Subclause 15.249 (a) – Radiated Emission (Fundamental and Harmonics)</b>		<b>Pass</b>	
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, 6x1.5V 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.	
<b>Results:</b>		PASS	
Fundamental Frequency 2405MHz		Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2405.423	69.39	114.0 / P	
2405.423	53.43	94.0 / A	
Fundamental Frequency 2405MHz		Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2405.423	65.27	114.0 / P	
2405.423	51.62	94.0 / A	

Harmonics 2405MHz			Vertical Polarization		
<b>Freq MHz</b>	<b>Level dBuV/m</b>	<b>Limit/ Detector dBuV/m</b>	<b>Freq MHz</b>	<b>Level dBuV/m</b>	<b>Limit/ Detector dBuV/m</b>
4810.102	51.47	74.0 / P	4810.102	36.01	54.0 / A
7215.538	52.18	74.0 / P	7215.538	35.13	54.0 / A
Harmonics 2405MHz			Horizontal Polarization		
<b>Freq MHz</b>	<b>Level dBuV/m</b>	<b>Limit/ Detector dBuV/m</b>	<b>Freq MHz</b>	<b>Level dBuV/m</b>	<b>Limit/ Detector dBuV/m</b>
4810.102	50.91	74.0 / P	4810.102	32.30	54.0 / A
Fundamental Frequency 2455MHz			Vertical Polarization		
<b>Freq MHz</b>	<b>Level dBuV/m</b>	<b>Limit/ Detector dBuV/m</b>	<b>Freq MHz</b>	<b>Level dBuV/m</b>	<b>Limit/ Detector dBuV/m</b>
2455.910	64.49	114.0 / P	2455.910	50.22	94.0 / A
Fundamental Frequency 2455MHz			Horizontal Polarization		
<b>Freq MHz</b>	<b>Level dBuV/m</b>	<b>Limit/ Detector dBuV/m</b>	<b>Freq MHz</b>	<b>Level dBuV/m</b>	<b>Limit/ Detector dBuV/m</b>
2455.910	64.16	114.0 / P	2455.910	48.61	94.0 / A
Harmonics 2455MHz			Vertical Polarization		
<b>Freq MHz</b>	<b>Level dBuV/m</b>	<b>Limit/ Detector dBuV/m</b>	<b>Freq MHz</b>	<b>Level dBuV/m</b>	<b>Limit/ Detector dBuV/m</b>
4910.833	49.70	74.0 / P	4910.833	33.76	54.0 / A
Harmonics 2455MHz			Horizontal Polarization		
<b>Freq MHz</b>	<b>Level dBuV/m</b>	<b>Limit/ Detector dBuV/m</b>	<b>Freq MHz</b>	<b>Level dBuV/m</b>	<b>Limit/ Detector dBuV/m</b>
4910.833	52.60	74.0 / P	4910.833	35.97	54.0 / A
Fundamental Frequency 2475MHz			Vertical Polarization		
<b>Freq MHz</b>	<b>Level dBuV/m</b>	<b>Limit/ Detector dBuV/m</b>	<b>Freq MHz</b>	<b>Level dBuV/m</b>	<b>Limit/ Detector dBuV/m</b>
2475.154	62.28	114.0 / P	2475.154	46.93	94.0 / A

Fundamental Frequency 2475MHz		Horizontal Polarization
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2475.154	64.31	114.0 / P
2475.154	49.52	94.0 / A
Harmonics 2475MHz		Vertical Polarization
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4950.320	47.72	74.0 / P
4950.320	30.65	54.0 / A
Harmonics 2475MHz		Horizontal Polarization
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4950.320	48.93	74.0 / P
4950.320	32.25	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, 6x1.5V 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.		
<b>Results:</b> All three transmit frequency modes comply with the field strength within the restricted bands. There is no spurious found below 30MHz.		
Tx frequency 2405MHz		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 2405MHz		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 2455MHz			Vertical Polarization		
	<b>Freq MHz</b>			<b>Level dBuV/m</b>	<b>Limit/ Detector dBuV/m</b>
	No peak found			---	74.0 / P
	No peak found			---	54.0 / A
Tx frequency 2455MHz			Horizontal Polarization		
	<b>Freq MHz</b>			<b>Level dBuV/m</b>	<b>Limit/ Detector dBuV/m</b>
	No peak found			---	74.0 / P
	No peak found			---	54.0 / A
Tx frequency 2475MHz			Vertical Polarization		
	<b>Freq MHz</b>			<b>Level dBuV/m</b>	<b>Limit/ Detector dBuV/m</b>
	No peak found			---	74.0 / P
	No peak found			---	54.0 / A
Tx frequency 2475MHz			Horizontal Polarization		
	<b>Freq MHz</b>			<b>Level dBuV/m</b>	<b>Limit/ Detector dBuV/m</b>
	No peak found			---	74.0 / P
	No peak found			---	54.0 / A