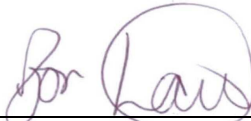


TEST REPORT No.: (5215)120-0387

TEST REPORT

To:	SUNNY DAYS ENTERTAINMENT, LLC	To:	-
Attn:	Melvin Wells	Attn:	-
Address:	PO Box 80644 Simpsonville, SC 29680	Address:	-
Fax:	--	Fax:	-
E-mail:	--	E-mail:	-
Folder No.:	--		
Factory Name:	SHANTOU CHENGHAI XIANXIN PLASTIC TOYS FACTORY		
Location:	--		
Product:	Commando Series – Walkie Talkies MODEL: 10513		
		Sample No:	(5215)120-0387
		Test Date(s):	May 05, 2015 to June 16, 2015
		Test Requested:	FCC Part 15 – 2012
		Test Method:	ANSI C63.4 – 2009
		FCC ID:	2AE6B10513JESM
The results given in this report are related to the tested specimen of the described electrical apparatus. CONCLUSION: The submitted sample was found to <u>COMPLY</u> with requirement of FCC Part 15 Subpart C.			
Authorized Signature:			
			
Reviewed by: Keith Yeung		Approved by: Steven Tsang	
Date: July 02, 2015		Date: July 02, 2015	



TEST REPORT No.: (5215)120-0387

Test Result Summary

EMISSION TEST			
Test requirement: FCC Part 15 – 2012			
Test Condition	Test Method	Test Result	
		Pass	Failed
Radiated Emission Test, 9kHz to 1GHz	ANSI C63.4	☒	☐
Frequency range of Fundamental Emission	ANSI C63.4	☒	☐
26dB Bandwidth of Fundamental Emission	ANSI C63.4	☒	☐
Duty Cycle Correction During 100mesc	ANSI C63.4	☒	☐

Report Revision & Sample Re-submit History:

Sample first submission date: May 04, 2015

Sample second submission date: June 15, 2015



TEST REPORT No.: (5215)120-0387

Test Laboratory & Test Instruments List

Radiated and Conducted emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2009. An Open Area Test Site and Full Anechoic Chamber (FCC Listed Site, Registration No. 642151) are set up for investigation and located at:

BUREAU VERITAS HONG KONG LIMITED, EMC CENTRE

No. 2106-2107, 21/F., Westin Centre,
26 Hung To Road,
Kwun Tong, Kowloon,
Hong Kong

Test Instrument List

Radiated Emission

EQUIPMENT	MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATION DUE
EMI TEST RECEIVER	R&S	ESCI	100379	03-FEB-2016
SIGNAL ANALYZER 40GHZ	R&S	FSV 40	100977	13-MAY-2016
LOOP ANTENNA	ETS-LINDGREN	6502	00102266	27-SEP-2015
BILOG ANTENNA	SCHAFFNER	CBL6112D	25229	02-FEB-2016
OPEN AREA TEST SITE	BVCPS	N/A	N/A	18-JUN-2016
ANECHOIC CHAMBER	ALBATROSS	M-CDC	80374004499B	03-FEB-2016
COAXIAL CABLE	SUHNER	RG214	N/A	22-DEC-2015

Remarks: -

N/A: Not Applicable or Not Available

Measurement Uncertainty

Measurement	Frequency	Uncertainty
Radiated emissions	9kHz to 30MHz	4.2dB
	30MHz to 1GHz	5.0dB
	1GHz to 18GHz	4.9dB
	18GHz to 40GHz	4.8dB

The measurement instrumentation uncertainty would be taking into consideration on each of the test result

TEST REPORT No.: (5215)120-0387

Equipment Under Test [EUT]

Description of Sample:

Model Name: Commando Walkie Talkies
Model Number: 10513
Additional Model Name: --
Additional Model Number: --
Additional Model information: --
Rating: Transmitter / Receiver: 9Vd.c. ("6F22" size battery x 1)

Description of EUT Operation:

The Equipment Under Test (EUT) is a SUNNY DAYS ENTERTAINMENT, LLC of Radio Control toy. The transmitter is 1 switch and 1 button and operating at 49.86MHz. The EUT continues to transmit while sticks are being pushed or pulled, Modulation by IC, and type is amplitude modulation.

The transmitter has different control:

1. Left button – push to talk
2. Switch – control ON / OFF

Antenna Requirement (Section 15.203)

The EUT is use of a permanently antenna. The antenna consists of 11.6cm long metal spring covered with rubber. The antenna is not replaceable or user serviceable. The requirement of S15.203 are met. There are no deviations or exceptions to the specifications.

Photo of Antenna



TEST REPORT No.: (5215)120-0387

Test Results

Radiated Emissions (Fundamental)

Test Requirement: FCC Part 15 Section 15.235
 Test Method: ANSI C63.4
 Test Date(s): 2015-06-16
 Temperature: 25.0 °C
 Humidity: 54.0 %
 Atmospheric Pressure: 100.6 kPa
 Mode of Operation: Transmission mode
 Tested Voltage: 9Vd.c. ("6F22" size battery x 1)

Test Method:

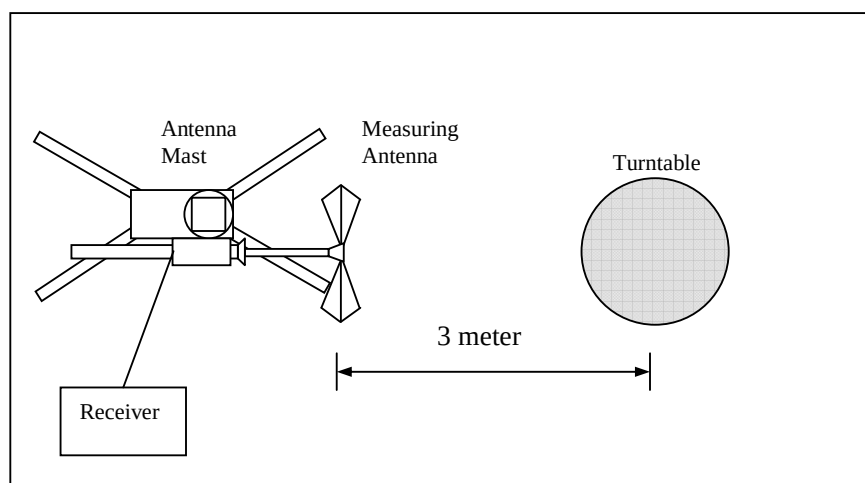
Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2009.

The equipment under test (EUT) was placed on a non-conductive turntable with dimensions of 1.5m x 1m and 0.8m high above the ground. 3m from the EUT, a broadband antenna mounting on the mast received the signal strength. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, For battery operated equipment, the equipment tests shall be perform using new battery. The turntable was rotated to maximize the emission level. The antenna was then moving along the mast from 1m up to 4m until no more higher value was found. Both horizontal and vertical polarization of the antenna were placed and investigated.

For below 30MHz, a loop antenna with its vertical plane is place 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1m above the ground.

Location: The Roof, Westin Centre, 26 Hung To Road, Kwun Tong, Kowloon, Hong Kong

Test Setup: Open Area Test Site





TEST REPORT No.: (5215)120-0387

Limits for Field Strength of Fundamental Emissions [FCC 47CFR 15.235]:

Frequency Range of Fundamental [MHz]	Field Strength of Fundamental Emission [Peak] [$\mu\text{V/m}$]	Field Strength of Fundamental Emission [Average] [$\mu\text{V/m}$]
49.82 – 49.90	100,000 (100 dB $\mu\text{V/m}$)	10,000 (80 dB $\mu\text{V/m}$)

Measurement Data

Test Result of (Transmission mode): PASS

Detection mode: Peak

Frequency (MHz)	Polarity (H/V) and degree	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dB $\mu\text{V/m}$)	Limit at 3m (dB $\mu\text{V/m}$)	Margin (dB)
49.86	H	9.2	47.3	100.0	-52.7
49.86	V	9.2	66.8	100.0	-33.2

Detection mode: Average

Frequency (MHz)	Polarity (H/V) and degree	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dB $\mu\text{V/m}$)	Limit at 3m (dB $\mu\text{V/m}$)	Margin (dB)
49.86	H	9.2	46.9	80.0	-33.1
49.86	V	9.2	66.4	80.0	-13.6

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 100KHz
VBW = 300KHz



TEST REPORT No.: (5215)120-0387

Radiated Emissions (9kHz – 1GHz)

Test Requirement: FCC Part 15 Section 15.209
Test Method: ANSI C63.4
Test Date(s): 2015-06-16
Temperature: 25.0 °C
Humidity: 54.0 %
Atmospheric Pressure: 100.6 kPa
Mode of Operation: Transmission mode
Tested Voltage: 9Vd.c. ("6F22" size battery x 1)

Limits for Radiated Emissions [FCC 47 CFR 15.209]:

Frequency Range [MHz]	Quasi-Peak Limits [μV/m]	Measurement Distance m
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above960	500	3

Measurement Data

Test Result of (Transmission mode): PASS

Detection mode: Quasi-Peak

Frequency	Polarity (H/V)	Field Strength	Limit	Margin (dB)
Emissions detected are more than 20 dB below the limit line(s) in 9kHz to 30MHz				



TEST REPORT No.: (5215)120-0387

Measurement Data

Test Result of (Transmission mode): **PASS**

Detection mode: **Quasi-Peak**

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
99.72	H	12.3	27.7	43.5	-15.8
149.58	H	11.9	29.5	43.5	-14.0
199.44	H	10.8	28.3	43.5	-15.2
249.30	H	14.2	27.9	46.0	-18.1
299.16	H	15.0	35.1	46.0	-10.9
349.02	H	16.5	33.5	46.0	-12.5
398.88	H	17.3	35.2	46.0	-10.8
448.74	H	18.0	29.8	46.0	-16.2
498.60	H	19.8	34.2	46.0	-11.8
548.46	H	21.0	37.6	46.0	-8.4
598.32	H	20.8	28.0	46.0	-15.8
648.18	H	20.6	31.0	46.0	-15.0
698.04	H	21.1	36.1	46.0	-9.9
749.90	H	22.4	40.2	46.0	-5.8
797.76	H	22.2	37.5	46.0	-8.5

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 120KHz
VBW = 120KHz



TEST REPORT No.: (5215)120-0387

Measurement Data

Test Result of (Transmission mode): **PASS**

Detection mode: **Quasi-Peak**

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
99.72	V	11.1	25.6	43.5	-17.9
149.58	V	12.3	28.4	43.5	-15.1
199.44	V	12.2	25.6	43.5	-17.9
249.30	V	13.7	24.8	46.0	-21.2
299.16	V	14.6	27.6	46.0	-18.4
349.02	V	15.3	29.7	46.0	-16.3
398.88	V	17.3	35.5	46.0	-10.5
448.74	V	17.9	29.3	46.0	-16.7
498.60	V	18.7	36.2	46.0	-9.8
548.46	V	20.4	39.5	46.0	-6.5
698.04	V	21.1	37.8	46.0	-8.2
749.90	V	22.4	40.4	46.0	-5.6
797.76	V	22.2	39.6	46.0	-6.4

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 120KHz
VBW = 120KHz

TEST REPORT No.: (5215)120-0387

Test Results

Radiated Emissions (30MHz – 1GHz)

Test Requirement: FCC Part 15 Section 15.109
Test Method: ANSI C63.4
Test Date(s): 2015-06-16
Temperature: 25.0 °C
Humidity: 54.0 %
Atmospheric Pressure: 100.6 kPa
Mode of Operation: Receiver mode
Tested Voltage: 9Vd.c. ("6F22" size battery x 1)

Test Method:

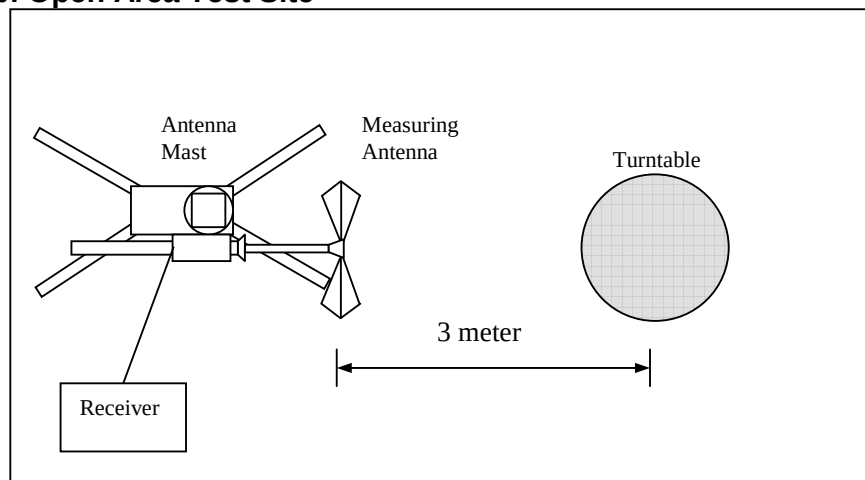
Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2009.

The equipment under test (EUT) was placed on a non-conductive turntable with dimensions of 1.5m x 1m and 0.8m high above the ground. 3m from the EUT, a broadband antenna mounting on the mast received the signal strength. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables. For battery operated equipment, the equipment tests shall be performed using new battery. The turntable was rotated to maximize the emission level. The antenna was then moving along the mast from 1m up to 4m until no more higher value was found. Both horizontal and vertical polarization of the antenna were placed and investigated.

For below 30MHz, a loop antenna with its vertical plane is placed 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1m above the ground.

Location: The Roof, Westin Centre, 26 Hung To Road, Kwun Tong, Kowloon, Hong Kong

Test Setup: Open Area Test Site



TEST REPORT No.: (5215)120-0387

Limits for Radiated Emission: FCC Part 15.109

Frequency Range [MHz]	Limits [dBμV/m @ 3m]
30-88	40.0
88-216	43.5
216-960	46.0
Above 960	54.0

Measurement Data

Test Result of (Receiver mode): PASS

Detection mode: Quasi-Peak

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
46.40	H	34.2	40.0	-5.8
92.80	H	20.6	43.5	-22.9
139.20	H	23.4	43.5	-20.1
185.60	H	21.5	43.5	-22.0
232.00	H	22.8	46.0	-23.2
278.40	H	24.6	46.0	-21.4

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
46.40	V	36.3	40.0	-3.7
92.80	V	21.0	43.5	-22.5
139.20	V	23.5	43.5	-20.0
185.60	V	21.7	43.5	-21.8
232.00	V	22.9	46.0	-23.1
278.40	V	24.5	46.0	-21.5

Note: Field Strength includes Antenna Factor and Cable Loss.

The measurement instrumentation uncertainty would be taking into consideration on each of the test result

During the test shall be used to radiate an unmodulated CW signal to a superregenerative receiver at its operating frequency in order to "cohere" or to resolve the individual components of the characteristic broadband emissions from such a receiver. The level of the signal may need to be increased for this to occur.



TEST REPORT No.: (5215)120-0387

26dB Bandwidth of Fundamental Emission

Test Requirement: FCC 47 CFR 15.235
Test Method: ANSI C63.4
Test Date(s): 2015-05-05
Temperature: 23.0 °C
Humidity: 75.0 %
Atmospheric Pressure: 100.2 kPa
Mode of Operation: Transmission mode
Tested Voltage: 9Vd.c. ("6F22" size battery x 1)

Test Method:

The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

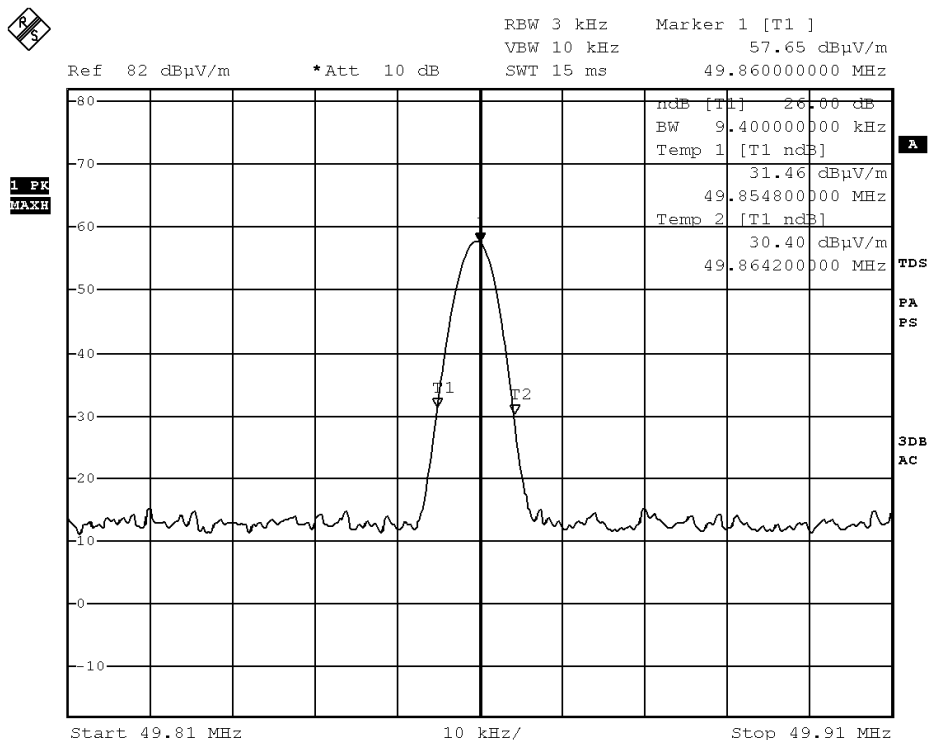
Limits for 26dB Bandwidth of Fundamental Emission:

Frequency [MHz]	26dB Bandwidth [KHz]	Limits [MHz]
49.86	9.4	within 49.82-49.90

TEST REPORT No.: (5215)120-0387

Measurement Data

Test Result of 26dB Bandwidth of Fundamental Emission: PASS



TEST REPORT No.: (5215)120-0387

Photographs of EUT

Front View of the product



Rear View of the product



Top View of the product



Bottom View of the product



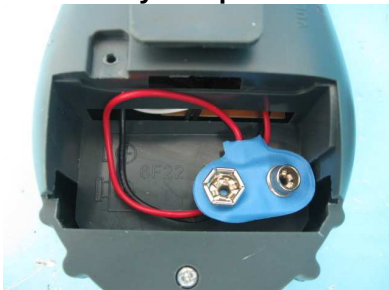
Side View of the product



Side View of the product



Battery compartment



Battery Cover



TEST REPORT No.: (5215)120-0387

Photographs of EUT

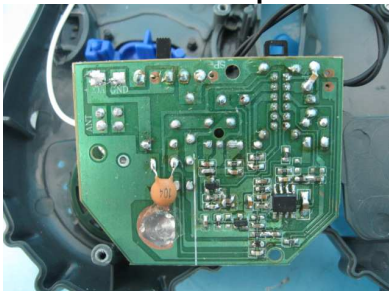
Internal View of the product



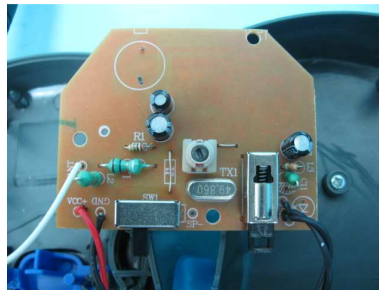
Internal View of the product



Inner Circuit Top View



Inner Circuit Bottom View



Antenna



TEST REPORT No.: (5215)120-0387

Measurement of Radiated Emission Test Set Up



******* End of Report *******