TEST REPORT No: (5217)146-0513

TEST REPORT

To:	**JUST PLAY (H.K.) LTD.**	To:	-
Attn:	Candice Leung, David Yip	Attn:	-
Address:	10th Floor, Mirror Tower, No.61 Mody Road, Tsim Sha Tsui East, Kowloon, Hong Kong	Address:	-
Fax:	(852)2164 3100	Fax:	-
E-mail:	cleung@justplayproducts.com / dyip@justplayproducts.com / testreport@justplayproducts.com	E-mail:	-
Folder No.:	--		

Factory name:	**FOSHAN CITY NAN HAI DISTRICT XIN HE MEI TOS FACTORY**
Location:	--
Product:	PJ Masks RC Cat-Car Model No.: 24901

Sample No:	(5217)146-0513
Date of Receipt:	June 05, 2017
Test date:	June 10, 2017 to July 12, 2017
Test Requested:	FCC Part 15 - 2015
Test Method:	ANSI C63.10 - 2013
FCC ID:	2AAIB2490000

The results given in this report are related to the tested specimen of the described electrical apparatus.

CONCLUSION: The submitted sample was found to COMPLY with requirement of FCC Part 15 Subpart C.

Authorized Signature:

Reviewed by: Kinko Wong	Approved by: Law Man Kit
Date: July 12, 2017	Date: July 12, 2017

BUREAU VERITAS HONG KONG LIMITED – Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
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TEST REPORT No: (5217)146-0513

Test Result Summary

EMISSION TEST			
Test requirement: FCC Part 15 - 2015			
Test Condition	Test Method	Test Result	
		Pass	Failed
Radiated Emission Test, 9kHz to 24GHz	ANSI C63.10	☒	☐
Frequency range of Fundamental Emission	ANSI C63.10	☒	☐
26dB Bandwidth of Fundamental Emission	ANSI C63.10	☒	☐
Duty Cycle Correction During 100msec	ANSI C63.10	☒	☐

Report Revision & Sample Re-submit History:

Sample first submission date: June 05, 2017
Sample second submission date: July 10, 2017
Sample third submission date: July 12, 2017

BUREAU VERITAS HONG KONG LIMITED – Kowloon Bay Office
1/F Pacific Trade Centre,
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TEST REPORT No: (5217)146-0513

Location of the test laboratory

Radiated and Conducted emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.10 – 2013. An Open Area Test Site and Full Anechoic Chamber 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

List of measuring equipment

Radiated Emission

EQUIPMENT	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DATE	CAL. DUE DATE
EMI TEST RECEIVER	R&S	ESCI	100379	22-FEB-2017	21-FEB-2018
SIGNAL ANALYZER 40GHZ	R&S	FSV 40	100977	16-AUG-2016	15-AUG-2017
BILOG ANTENNA	SCHAFFNER	CBL6112D	25229	27-FEB-2016	26-FEB-2018
OPEN AREA TEST SITE	BVCPS	N/A	N/A	17-JUN-2017	16-JUN-2018
ANECHOIC CHAMBER	ALBATROSS	M-CDC	80374004499B	10-MAY-2017	09-MAY-2018
BICONICAL ANTENNA	R&S	HK116	100179	14-APR-2016	13-APR-2018
LOG-PERIODIC DIPOLE ARRAY ANTENNA	R&S	HL223	832369/001	07-APR-2016	06-APR-2018
LOOP ANTENNA	ETS-LINDGREN	6502	00102266	06-NOV-2015	05-NOV-2017
HORN ANTENNA (1-18GHZ)	SCHWARZBECK	BBHA9120D	9120D-692	05-NOV-2016	04-NOV-2018
HORN ANTENNA (7.5 – 18GHZ)	SCHWARZBECK	HWRD 750	00015	17-JUNE-2016	16-JUNE-2018
WIDEBAND HORN ANTENNA	STEATITE	QWH-SL-18-40-K-SG	12688	03-SEP-2015	02-SEP-2017
COAXIAL CABLE	SUHNER	N/A	N/A	06-JAN-2017	05-JAN-2018
COAXIAL CABLE	HUBER + SUHNER	RG214	N/A	04-OCT-2016	03-OCT-2017

Measurement Uncertainty

MEASUREMENT	FREQUENCY	UNCERTAINTY
Radiated emissions	9kHz to 30MHz	4.2dB
	30MHz to 200MHz	4.5dB
	200MHZ to 1GHz	5.6dB
	1GHz to 18GHz	4.7dB
	18GHz to 40GHz	5.2dB

Remarks:-

N/A : Not Applicable or Not Available
The measurement instrumentation uncertainty would be taking into consideration on each of the test result

TEST REPORT No: (5217)146-0513

Equipment Under Test [EUT]

Description of Sample:

Model Name:	PJ Masks RC Cat-Car
Model Number:	24901
Additional Model Name:	--
Additional Model Number:	--
Additional Model information:	--
Rating:	3Vd.c. (“AA” size battery x 2)

BUREAU VERITAS HONG KONG LIMITED – Kowloon Bay Office
1/F Pacific Trade Centre,
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Description of EUT Operation:

The Equipment Under Test (EUT) is a **JUST PLAY (H.K.) LTD.** of Remote Control Transceiver. It is 2 buttons and 1 switch transceiver and operating at 2404MHz to 2478MHz. The lowest, middle and highest frequencies were tested and the results are shown in the report. The EUT transmit while corresponding remote controller sticks are being pushed or pulled, Modulation by IC, and type is GFSK.

There are total 75 channels and below is the frequency list :

ch	freq	ch	freq	ch	freq	ch	freq	ch	freq	ch	freq	ch	freq	ch	freq
1	2404	**11**	2414	**21**	2424	**31**	2434	**41**	2444	**51**	2454	**61**	2464	**71**	2474
2	2405	**12**	2415	**22**	2425	**32**	2435	**42**	2445	**52**	2455	**62**	2465	**72**	2475
3	2406	**13**	2416	**23**	2426	**33**	2436	**43**	2446	**53**	2456	**63**	2466	**73**	2476
4	2407	**14**	2417	**24**	2427	**34**	2437	**44**	2447	**54**	2457	**64**	2467	**74**	2477
5	2408	**15**	2418	**25**	2428	**35**	2438	**45**	2448	**55**	2458	**65**	2468	**75**	2478
6	2409	**16**	2419	**26**	2429	**36**	2439	**46**	2449	**56**	2459	**66**	2469		
7	2410	**17**	2420	**27**	2430	**37**	2440	**47**	2450	**57**	2460	**67**	2470		
8	2411	**18**	2421	**28**	2431	**38**	2441	**48**	2451	**58**	2461	**68**	2471		
9	2412	**19**	2422	**29**	2432	**39**	2442	**49**	2452	**59**	2462	**69**	2472		
10	2413	**20**	2423	**30**	2433	**40**	2443	**50**	2453	**60**	2463	**70**	2473		

The transmitter has different control:

1. Left button -- control counter clockwise
2. Right button – control forward
3. Switch – On/Off control

Antenna Requirement (Section 15.203)

The EUT is use of a permanently antenna. It is soldered on the PCB. The antenna consists of 3.3cm long wire The antenna is not replaceable or user serviceable. The requirements of S15.203 are met. There are no deviations or exceptions to the specifications.

Photo of Antenna

BUREAU VERITAS HONG KONG LIMITED – Kowloon Bay Office
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Test Results

Radiated Emissions (Fundamental)

Test Requirement:	FCC Part 15 Section 15.249
Test Method:	ANSI C63.10
Test Date(s):	2017-07-12
Temperature:	31.0 °C
Humidity:	68.0 %
Atmospheric Pressure:	99.5 kPa
Mode of Operation:	Transmission mode
Tested Voltage:	3Vd.c. (“AA” size battery x 2)

Test Procedure:

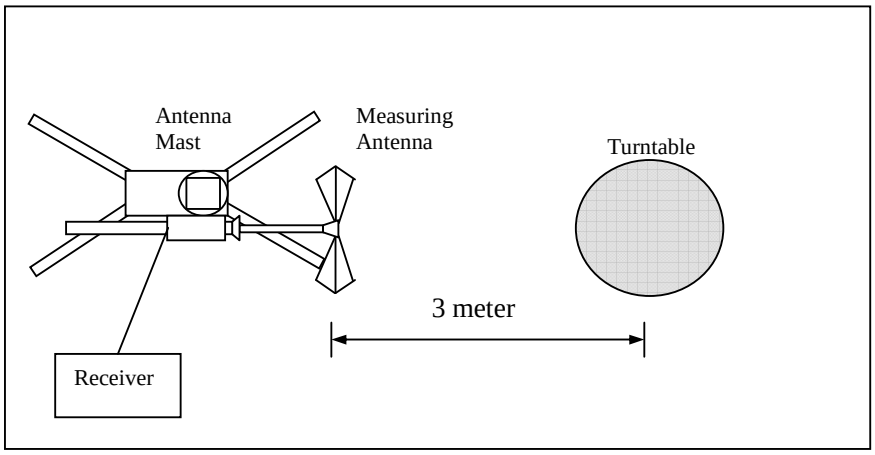
Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.10 – 2013.

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 for measurement frequency below 1GHz and 1.5m high above the ground for measurement frequency above 1GHz. 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



BUREAU VERITAS HONG KONG LIMITED – Kowloon Bay Office
1/F Pacific Trade Centre,
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Limits for Field Strength of Fundamental Emissions [FCC 47CFR 15.249]:

Frequency Range of Fundamental [MHz]	Field Strength of Fundamental Emission (Average) [mV/m]	Field Strength of Harmonics Emission (Average) [μV/m]
2400-2483.5	50	500

Measurement Data

Test Result of (Transmission mode, Lowest frequency): PASS

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBμV/m)	Limit at 3m – Peak (dBμV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBμV/m)	Limit at 3m – Average (dBμV/m)	Margin - Average (dB)
2404.00	H	-4.8	-15.9	88.1	114.0	-25.9	**72.2	94.0	-21.8
2404.00	V	-4.8	-15.9	85.9	114.0	-28.1	**70.0	94.0	-24.0

Test Result of (Transmission mode, Middle frequency): PASS

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBμV/m)	Limit at 3m – Peak (dBμV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBμV/m)	Limit at 3m – Average (dBμV/m)	Margin - Average (dB)
2441.00	H	-4.8	-15.9	89.5	114.0	-24.5	**73.6	94.0	-20.4
2441.00	V	-4.8	-15.9	88.1	114.0	-25.9	**72.2	94.0	-21.8

Test Result of (Transmission mode, Highest frequency): PASS

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBμV/m)	Limit at 3m – Peak (dBμV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBμV/m)	Limit at 3m – Average (dBμV/m)	Margin - Average (dB)
2478.00	H	-4.8	-15.9	88.8	114.0	-25.2	**72.9	94.0	-21.1
2478.00	V	-4.8	-15.9	88.1	114.0	-25.9	**72.2	94.0	-21.8

For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.
**Duty Cycle Correction = 20Log(0.16) = -15.9dB.

Note: Field Strength includes Antenna Factor and Cable Loss.
Receiver setting: RBW = 1MHz
VBW = 1MHz

BUREAU VERITAS HONG KONG LIMITED – Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
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Radiated Emissions (Spurious Emission)

Test Requirement:	FCC Part 15 Section 15.249
Test Method:	ANSI C63.10
Test Date(s):	2017-07-12
Temperature:	31.0 °C
Humidity:	68.0 %
Atmospheric Pressure:	99.5 kPa
Mode of Operation:	Transmission mode
Tested Voltage:	3Vd.c. (“AA” size battery x 2)

Measurement Data

Test Result of (Transmission mode, Lowest frequency): PASS

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBµV/m)	Limit at 3m – Peak (dBµV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBµV/m)	Limit at 3m – Average (dBµV/m)	Margin - Average (dB)
4808.00	H	4.8	-15.9	59.0	74.0	-15.0	**43.1	54.0	-10.9
7212.00	H	12.4	-15.9	64.5	74.0	-9.5	**48.6	54.0	-5.4
9616.00	H	13.5	-15.9	51.3	74.0	-22.7	**35.4	54.0	-18.6
12020.00	H	19.6	-15.9	53.2	74.0	-20.8	**37.3	54.0	-16.7
14424.00	H	25.8	-15.9	52.2	74.0	-21.8	**36.3	54.0	-17.7
16828.00	H	21.2	-15.9	53.1	74.0	-20.9	**37.2	54.0	-16.8
19232.00	H	46.7	-15.9	55.6	74.0	-18.4	**39.7	54.0	-14.3
21636.00	H	46.9	-15.9	55.8	74.0	-18.2	**39.9	54.0	-14.1
24040.00	H	48.0	-15.9	55.7	74.0	-18.3	**39.8	54.0	-14.2
26444.00	H	48.5	-15.9	56.3	74.0	-17.7	**40.4	54.0	-13.6

For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.
**Duty Cycle Correction = 20Log(0.16) = -15.9dB.

Note: Field Strength includes Antenna Factor and Cable Loss.
Receiver setting: RBW = 1MHz
VBW = 1MHz

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TEST REPORT No: (5217)146-0513

Measurement Data

Test Result of (Transmission mode, Lowest frequency): PASS

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBµV/m)	Limit at 3m – Peak (dBµV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBµV/m)	Limit at 3m – Average (dBµV/m)	Margin - Average (dB)
4808.00	V	4.8	-15.9	60.4	74.0	-13.6	**44.5	54.0	-9.5
7212.00	V	12.4	-15.9	61.3	74.0	-12.7	**45.4	54.0	-8.6
9616.00	V	13.5	-15.9	53.1	74.0	-20.9	**37.2	54.0	-16.8
12020.00	V	19.6	-15.9	53.1	74.0	-20.9	**37.2	54.0	-16.8
14424.00	V	25.8	-15.9	51.4	74.0	-22.6	**35.5	54.0	-18.5
16828.00	V	21.2	-15.9	52.3	74.0	-21.7	**36.4	54.0	-17.6
19232.00	V	46.7	-15.9	55.0	74.0	-19.0	**39.1	54.0	-14.9
21636.00	V	46.9	-15.9	55.2	74.0	-18.8	**39.3	54.0	-14.7
24040.00	V	48.0	-15.9	54.7	74.0	-19.3	**38.8	54.0	-15.2
26444.00	V	48.5	-15.9	56.6	74.0	-17.4	**40.7	54.0	-13.3

For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.
**Duty Cycle Correction = 20Log(0.16) = -15.9dB.

Note: Field Strength includes Antenna Factor and Cable Loss.
Receiver setting: RBW = 1MHz
VBW = 1MHz

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TEST REPORT No: (5217)146-0513

Measurement Data

Test Result of (Transmission mode, Middle frequency): PASS

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBµV/m)	Limit at 3m – Peak (dBµV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBµV/m)	Limit at 3m – Average (dBµV/m)	Margin - Average (dB)
4882.00	H	4.8	-15.9	57.8	74.0	-16.2	**41.9	54.0	-12.1
7323.00	H	12.4	-15.9	61.8	74.0	-12.2	**45.9	54.0	-8.1
9764.00	H	13.8	-15.9	50.8	74.0	-23.2	**34.9	54.0	-19.1
12205.00	H	19.5	-15.9	54.2	74.0	-19.8	**38.3	54.0	-15.7
14646.00	H	26.5	-15.9	54.5	74.0	-19.5	**38.6	54.0	-15.4
17087.00	H	23.1	-15.9	54.8	74.0	-19.2	**38.9	54.0	-15.1
19528.00	H	46.7	-15.9	56.6	74.0	-17.4	**40.7	54.0	-13.3
21969.00	H	47.3	-15.9	55.5	74.0	-18.5	**39.6	54.0	-14.4
24410.00	H	48.2	-15.9	55.7	74.0	-18.3	**39.8	54.0	-14.2
26851.00	H	48.5	-15.9	56.0	74.0	-18.0	**40.1	54.0	-13.9

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBµV/m)	Limit at 3m – Peak (dBµV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBµV/m)	Limit at 3m – Average (dBµV/m)	Margin - Average (dB)
4882.00	V	4.8	-15.9	58.8	74.0	-15.2	**42.9	54.0	-11.1
7323.00	V	12.4	-15.9	59.7	74.0	-14.3	**43.8	54.0	-10.2
9764.00	V	13.8	-15.9	52.8	74.0	-21.2	**36.9	54.0	-17.1
12205.00	V	19.5	-15.9	52.9	74.0	-21.1	**37.0	54.0	-17.0
14646.00	V	26.5	-15.9	53.4	74.0	-20.6	**37.5	54.0	-16.5
17087.00	V	23.1	-15.9	54.7	74.0	-19.3	**38.8	54.0	-15.2
19528.00	V	46.7	-15.9	54.3	74.0	-19.7	**38.4	54.0	-15.6
21969.00	V	47.3	-15.9	54.4	74.0	-19.6	**38.5	54.0	-15.5
24410.00	V	48.2	-15.9	54.6	74.0	-19.4	**38.7	54.0	-15.3
26851.00	V	48.5	-15.9	56.2	74.0	-17.8	**40.3	54.0	-13.7

For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.
**Duty Cycle Correction = 20Log(0.16) = -15.9dB.

Note: Field Strength includes Antenna Factor and Cable Loss.
Receiver setting: RBW = 1MHz
VBW = 1MHz

BUREAU VERITAS HONG KONG LIMITED – Kowloon Bay Office
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Measurement Data

Test Result of (Transmission mode, Highest frequency): PASS

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBµV/m)	Limit at 3m – Peak (dBµV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBµV/m)	Limit at 3m – Average (dBµV/m)	Margin - Average (dB)
4956.00	H	4.9	-15.9	58.7	74.0	-15.3	**42.8	54.0	-11.2
7434.00	H	12.6	-15.9	63.7	74.0	-10.3	**47.8	54.0	-6.2
9912.00	H	13.9	-15.9	51.0	74.0	-23.0	**35.1	54.0	-18.9
12390.00	H	19.2	-15.9	51.9	74.0	-22.1	**36.0	54.0	-18.0
14868.00	H	25.9	-15.9	53.7	74.0	-20.3	**37.8	54.0	-16.2
17346.00	H	24.5	-15.9	55.6	74.0	-18.4	**39.7	54.0	-14.3
19824.00	H	46.8	-15.9	56.3	74.0	-17.7	**40.4	54.0	-13.6
22302.00	H	47.3	-15.9	54.7	74.0	-19.3	**38.8	54.0	-15.2
24780.00	H	48.2	-15.9	56.8	74.0	-17.2	**40.9	54.0	-13.1
27258.00	H	48.7	-15.9	56.4	74.0	-17.6	**40.5	54.0	-13.5

For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.
**Duty Cycle Correction = 20Log(0.16) = -15.9dB.

Note: Field Strength includes Antenna Factor and Cable Loss.
Receiver setting: RBW = 1MHz
VBW = 1MHz

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Measurement Data
Test Result of (Transmission mode, Highest frequency): PASS

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBµV/m)	Limit at 3m – Peak (dBµV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBµV/m)	Limit at 3m – Average (dBµV/m)	Margin - Average (dB)
4956.00	V	4.9	-15.9	57.0	74.0	-17.0	**41.1	54.0	-12.9
7434.00	V	12.6	-15.9	60.4	74.0	-13.6	**44.5	54.0	-9.5
9912.00	V	13.9	-15.9	51.8	74.0	-22.2	**35.9	54.0	-18.1
12390.00	V	19.2	-15.9	52.3	74.0	-21.7	**36.4	54.0	-17.6
14868.00	V	25.9	-15.9	53.1	74.0	-20.9	**37.2	54.0	-16.8
17346.00	V	24.5	-15.9	56.0	74.0	-18.0	**40.1	54.0	-13.9
19824.00	V	46.8	-15.9	56.7	74.0	-17.3	**40.8	54.0	-13.2
22302.00	V	47.3	-15.9	54.3	74.0	-19.7	**38.4	54.0	-15.6
24780.00	V	48.2	-15.9	55.8	74.0	-18.2	**39.9	54.0	-14.1
27258.00	V	48.7	-15.9	55.4	74.0	-18.6	**39.5	54.0	-14.5

For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.
**Duty Cycle Correction = 20Log(0.16) = -15.9dB.

Note: Field Strength includes Antenna Factor and Cable Loss.
Receiver setting: RBW = 1MHz
VBW = 1MHz

BUREAU VERITAS HONG KONG LIMITED – Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com

TEST REPORT No: (5217)146-0513

Radiated Emissions (9kHz – 2.4GHz)

Test Requirement:	FCC Part 15 Section 15.209
Test Method:	ANSI C63.10
Test Date(s):	2017-07-03
Temperature:	31.0 °C
Humidity:	72.0 %
Atmospheric Pressure:	99.6 kPa
Mode of Operation:	On mode
Tested Voltage:	3Vd.c. (“AA” size battery x 2)

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 (On 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				

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 200Hz
VBW = 200Hz

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Measurement Data

Test Result of (On mode): PASS

Detection mode: Quasi-Peak

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
42.52	H	26.7	40.0	-13.3
73.16	H	20.4	40.0	-19.6
197.28	H	21.2	43.5	-22.3
237.50	H	21.4	46.0	-24.6
306.62	H	23.5	46.0	-22.5
422.48	H	25.0	46.0	-21.0

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
42.52	V	26.8	40.0	-13.2
73.16	V	20.1	40.0	-19.9
197.28	V	20.7	43.5	-22.8
237.50	V	21.8	46.0	-24.2
306.62	V	23.6	46.0	-22.4
422.48	V	25.3	46.0	-20.7

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 120KHz
VBW = 120KHz

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TEST REPORT No: (5217)146-0513

Frequency range of Fundamental Emission

Test Requirement:	FCC 47 CFR 15.249
Test Method:	ANSI C63.10 Clause 6.10
Test Date(s):	2017-06-10
Temperature:	31.0 °C
Humidity:	72.0 %
Atmospheric Pressure:	99.6 kPa
Mode of Operation:	Transmission mode
Tested Voltage:	4.5Vd.c. (“AA” size battery x 3)

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 Frequency range of Fundamental Emission:

Frequency [MHz]	FCC Limits [MHz]
2401.90 – 2479.62	2400 – 2483.5

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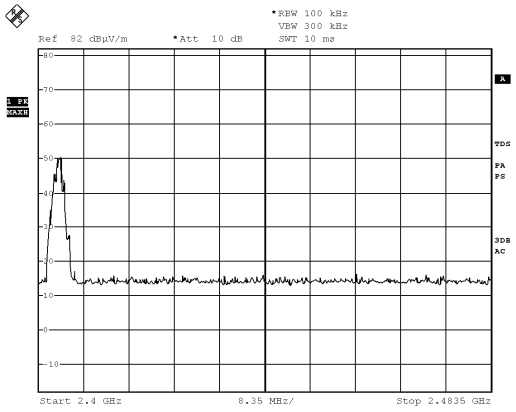
TEST REPORT No: (5217)146-0513

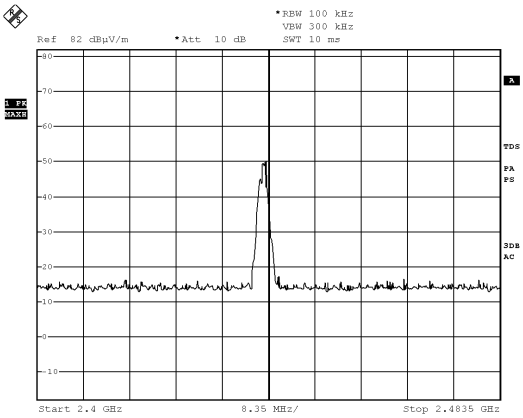
Measurement Data:

Test Result of Frequency Range of Fundamental Emission: PASS

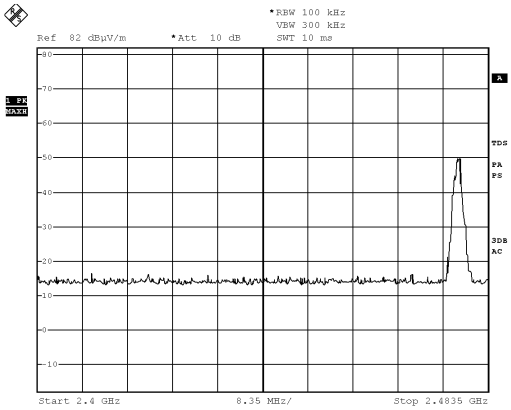
Lowest Frequency – 2404.00MHz



Middle Frequency – 2441.00MHz



Highest Frequency – 2478.00MHz



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2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
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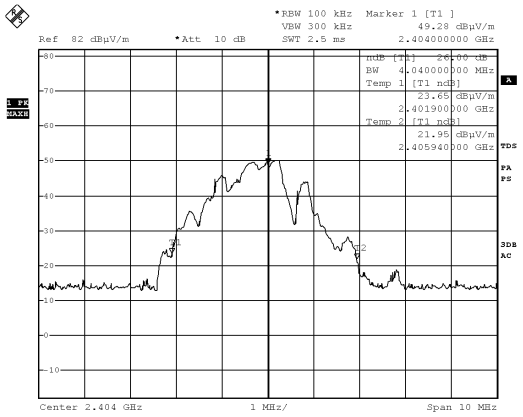
TEST REPORT No: (5217)146-0513

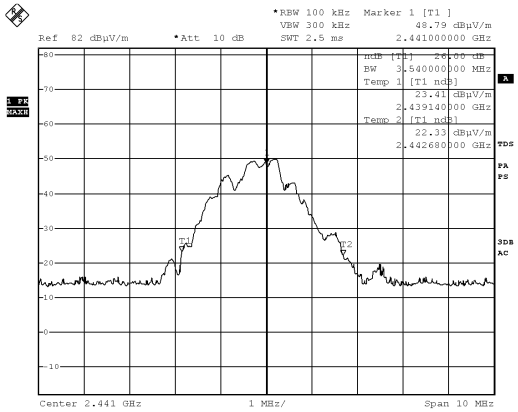
Measurement Data:

Test Result of 26dB Bandwidth of Fundamental Emission: PASS

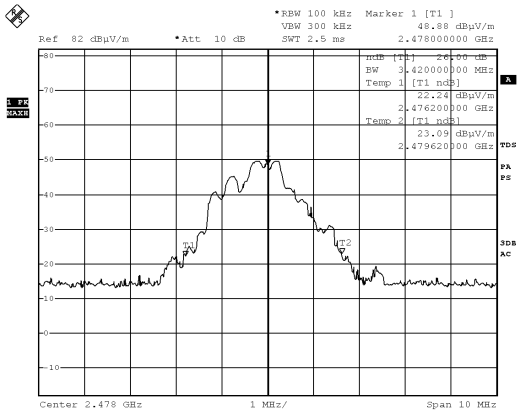
Lowest Frequency – 2404.00MHz



Middle Frequency – 2441.00MHz



Highest Frequency – 2478.00MHz



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Duty Cycle Correction During 100msec:

Each function key sends a different series of characters, but each packet period (100msec) never exceeds a series of 16 (1msec) pulses. Assuming any combination of short or long pulses may be obtained due to encoding the worst case transmit duty cycle would be considered 16*1 per 100msec = 16% duty cycle.

Remarks:

Duty Cycle Correction = 20Log(0.16) = -15.9dB

The following figures [Figure A] show the characteristics of the pulse train for one of these functions.

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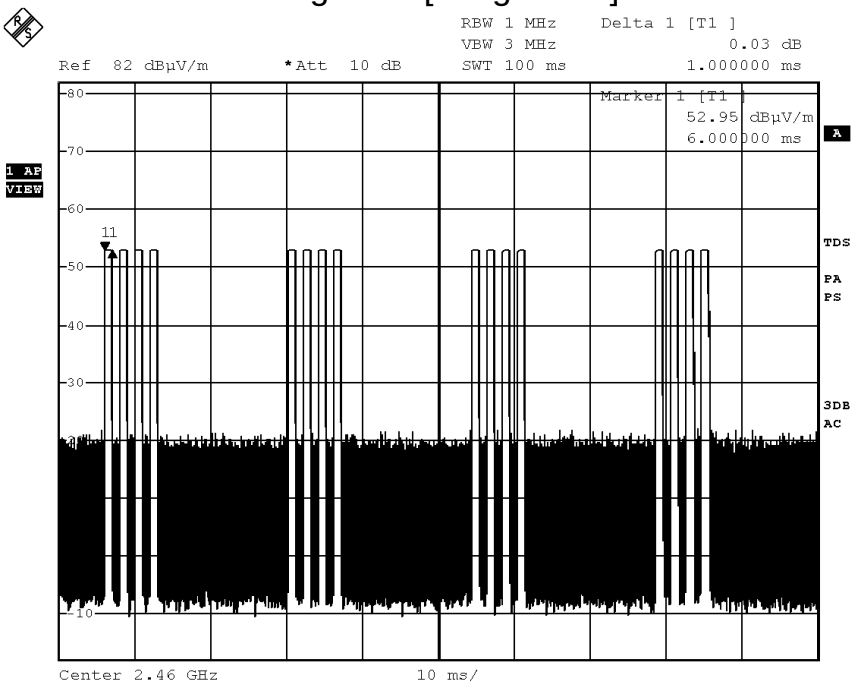
TEST REPORT No: (5217)146-0513

Measurement Data :

Figure A [Long Pulse]



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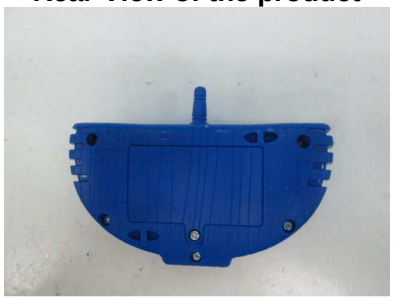
Photographs of EUT

Front View of the product

Rear View of the product



Top View of the product

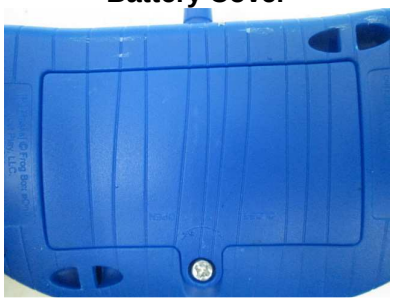
Bottom View of the product

Side View of the product

Side View of the product

Battery compartment

Battery Cover



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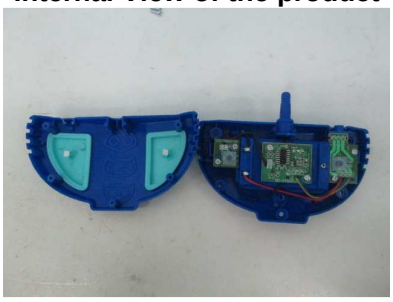
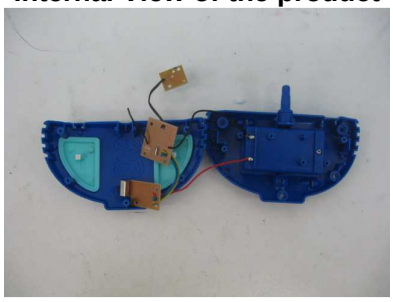
Photographs of EUT

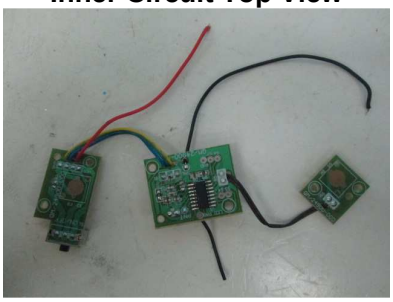
Internal View of the product



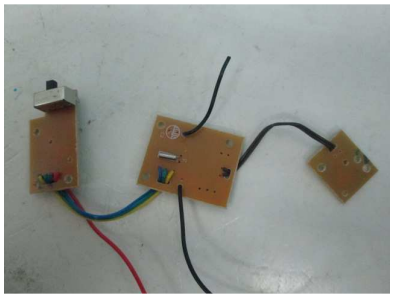
Internal View of the product



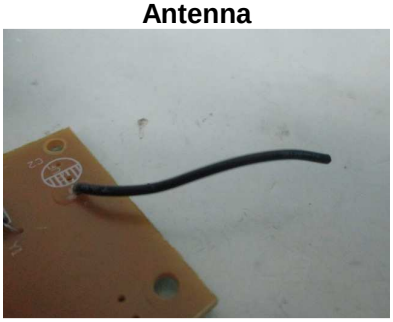
Inner Circuit Top View



Inner Circuit Bottom View



Antenna



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2 Kai Hing Road, Kowloon Bay,
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Measurement of Radiated Emission Test Set Up

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

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1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
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