








**TEST REPORT No: (5215)042-1026**

## TEST REPORT

To:	<b>NEW BRIGHT INDUSTRIAL CO., LTD.</b>	To:	-						
Attn:	Eric Kwok	Attn:	-						
Address:	9/F., NEW BRIGHT BUILDING, 11 SHEUNG YUET ROAD, KOWLOON BAY, KOWLOON, HONG KONG.	Address:	-						
Fax:	852 2795 3665	Fax:	-						
E-mail:	<a href="mailto:vpeng01@newbright.com">vpeng01@newbright.com</a> / <a href="mailto:chkwok01@newbright.com">chkwok01@newbright.com</a>	E-mail:	-						
Folder No.:	NBT-15FE084MTHS-B-B								
Factory name:	<b>NEW BRIGHT INDUSTRIAL CO., LTD.</b>								
Location:	9/F., NEW BRIGHT BUILDING, 11 SHEUNG YUET ROAD, KOWLOON BAY, KOWLOON, HONG KONG.								
Product:	TOY Transmitter & Receiver Model No.: GF32UM								
		Sample No:	HK150309/031						
		Test date:	February 16, 2015 to March 05, 2015						
		Test Requested:	FCC Part 15 - 2012						
		Test Method:	ANSI C63.4 - 2009						
		FCC ID:	G6DGF32UM						
<p><b>The results given in this report are related to the tested specimen of the described electrical apparatus.</b></p> <p><b>CONCLUSION: The submitted sample was found to <u>COMPLY</u> with requirement of FCC Part 15 Subpart C.</b></p> <p>Authorized Signature:</p> <table border="1"> <tr> <td>  </td> <td>  </td> </tr> <tr> <td>Reviewed by: Keith Yeung</td> <td>Approved by: Steven Tsang</td> </tr> <tr> <td>Date: March 10, 2015</td> <td>Date: March 10, 2015</td> </tr> </table>						Reviewed by: Keith Yeung	Approved by: Steven Tsang	Date: March 10, 2015	Date: March 10, 2015
									
Reviewed by: Keith Yeung	Approved by: Steven Tsang								
Date: March 10, 2015	Date: March 10, 2015								



**TEST REPORT No: (5215)042-1026**  
**Test Result Summary**

EMISSION TEST			
Test requirement: FCC Part 15 - 2012			
Test Condition	Test Method	Test Result	
		Pass	Failed
Radiated Emission Test, 9kHz to 40GHz	ANSI C63.4	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Frequency range of Fundamental Emission	ANSI C63.4	<input checked="" type="checkbox"/>	<input type="checkbox"/>
26dB Bandwidth of Fundamental Emission	ANSI C63.4	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Duty Cycle Correction During 100msec	ANSI C63.4	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Report Revision & Sample Re-submit History:**

Sample first submission date: February 10, 2015

Sample second submission date: March 04, 2015



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### Location of the test laboratory

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

### List of measuring equipment

#### Radiated Emission

EQUIPMENT	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CALIBRATION	CALIBRATION DUE
EMI TEST RECEIVER	R&S	ESCI	100379	21-JAN-2015	20-JAN-2016
SPECTRUM ANALYZER	R&S	R3127	111000909	27-MAR-2014	26-MAR-2015
LOOP ANTENNA	ETS LINDGREN	6502	00102266	28-SEP-2014	27-SEP-2015
BILOG ANTENNA	SCHAFFNER	CBL6112D	25229	02-JAN-2015	02-JAN-2016
HORN ANTENNA	SCHWARZBECK	BBHA9120D	9120D-692	27-DEC-2014	26-DEC-2015
OPEN AREA TEST SITE	BVCPS	N/A	N/A	07-JUL-2014	06-JUL-2015
ANECHOIC CHAMBER	ALBATROSS	M-CDC	80374004499B	04-FEB-2015	03-FEB-2016
COAXIAL CABLE	HUBER + SUHNER	RG223	N/A	23-DEC-2014	22-DEC-2015
COAXIAL CABLE	HUBER + SUHNER	RG214	N/A	23-DEC-2014	22-DEC-2015
Signal Analyzer 40GHz	Rohde & Schwarz	FSV 40	100977	13-MAY-2014	12-MAY-2015
Wideband Horn Antenna 18 to 40GHz	STEATITE	QWH-SL-18-40-K-SG	12688	02-SEP-2014	01-SEP-2015
High frequency RF cable	Rohde & Schwarz	N/A	N/A	15-SEP-2014	14-SEP-2015

#### Remarks:-

N/A : Not Applicable or Not Available

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



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### Equipment Under Test [EUT]

#### Description of Sample:

Model Name: TOY Transmitter & Receiver  
Model Number: GF32UM  
Additional Model Name: --  
Additional Model Number: --  
Additional Model information: --  
Rating: 3.2Vd.c. ("rechargeable battery" x 1)

#### Description of Adaptor

Adaptor : --  
Model : --  
Input : --  
Input power line cable : --  
Output : --  
Output power line cable : --

#### Description of EUT Operation:

The Equipment Under Test (EUT) is a **NEW BRIGHT INDUSTRIAL CO., LTD.** of Remote Control Transceiver. It is a 1 switch transceiver and operating at 2406MHz to 2472MHz. 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 67 channels and below is the frequency list :

ch.no	freq.	ch.no	freq.	ch.no	freq.	ch.no	freq.	ch.no	freq.	ch.no	freq.	ch.no	freq.
1	2406	11	2416	21	2426	31	2436	41	2446	51	2456	61	2466
2	2407	12	2417	22	2427	32	2437	42	2447	52	2457	62	2467
3	2408	13	2418	23	2428	33	2438	43	2448	53	2458	63	2468
4	2409	14	2419	24	2429	34	2439	44	2449	54	2459	64	2469
5	2410	15	2420	25	2430	35	2440	45	2450	55	2460	65	2470
6	2411	16	2421	26	2431	36	2441	46	2451	56	2461	66	2471
7	2412	17	2422	27	2432	37	2442	47	2452	57	2462	67	2472
8	2413	18	2423	28	2433	38	2443	48	2453	58	2463		
9	2414	19	2424	29	2434	39	2444	49	2454	59	2464		
10	2415	20	2425	30	2435	40	2445	50	2455	60	2465		

The transmitter has different control:

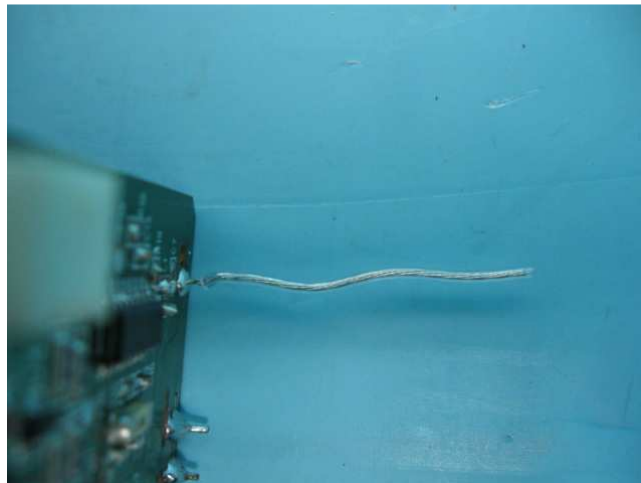
1. ON/OFF Switch – power control

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**Antenna Requirement (Section 15.203)**

The EUT is use of a permanently antenna. It is soldered on the PCB. The antenna consists of 3.4cm 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**



## TEST REPORT No: (5215)042-1026

### Test Results

#### Radiated Emissions (Fundamental)

Test Requirement: FCC Part 15 Section 15.249  
Test Method: ANSI C63.4  
Test Date(s): 2015-03-05  
Temperature: 20.0 °C  
Humidity: 65.0 %  
Atmospheric Pressure: 100.2 kPa  
Mode of Operation: Transmission mode  
Tested Voltage: 3.2Vd.c. ("rechargeable battery" x 1)

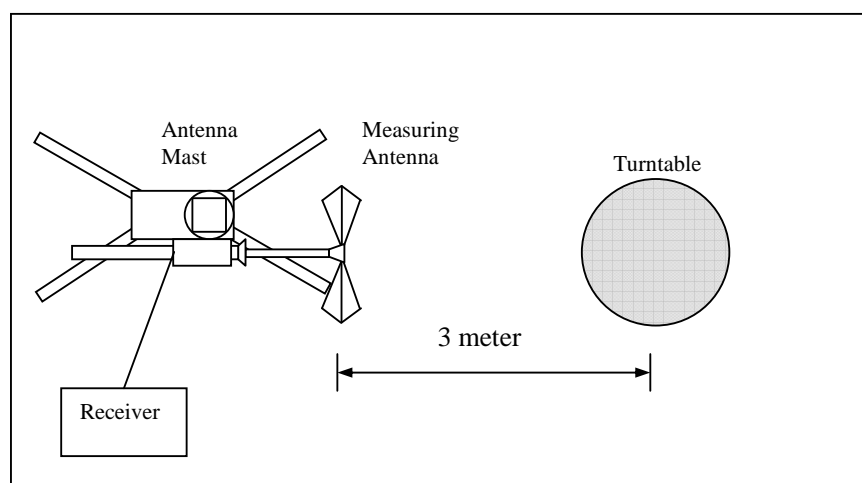
#### Test Procedure:

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.

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

#### Test Setup: Open Area Test Site



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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)
2406.00	H	0.0	-20.0	83.5	114.0	-30.5	**63.5	94.0	-30.5
2406.00	V	0.0	-20.0	87.8	114.0	-26.2	**67.8	94.0	-26.2

#### 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)
2443.00	H	0.0	-20.0	84.9	114.0	-29.1	**64.9	94.0	-29.1
2443.00	V	0.0	-20.0	86.9	114.0	-27.1	**66.9	94.0	-27.1

#### 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)
2472.00	H	0.0	-20.0	85.2	114.0	-28.8	**65.2	94.0	-28.8
2472.00	V	0.0	-20.0	86.5	114.0	-27.5	**66.5	94.0	-27.5

# For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.

\*\*Duty Cycle Correction =  $20\log(0.08) = -21.9\text{dB}$ .

\*\*Therefore, -20dB is taken.

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz  
VBW = 1MHz



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### Radiated Emissions (Spurious Emission)

Test Requirement: FCC Part 15 Section 15.249  
 Test Method: ANSI C63.4  
 Test Date(s): 2015-03-05  
 Temperature: 20.0 °C  
 Humidity: 65.0 %  
 Atmospheric Pressure: 100.2 kPa  
 Mode of Operation: Transmission mode  
 Tested Voltage: 3.2Vd.c. ("rechargeable battery" x 1)

### 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)
4812.00	H	5.9	-20.0	63.1	74.0	-10.9	**43.1	54.0	-10.9
7218.00	H	12.7	-20.0	69.5	74.0	-4.5	**49.5	54.0	-4.5
9624.00	H	16.4	-20.0	59.8	74.0	-14.2	**39.8	54.0	-14.2
12030.00	H	18.4	-20.0	53.5	74.0	-20.5	**33.5	54.0	-20.5
14436.00	H	23.2	-20.0	60.1	74.0	-13.9	**40.1	54.0	-13.9
16842.00	H	22.0	-20.0	61.6	74.0	-12.4	**41.6	54.0	-12.4
19248.00	H	46.3	-20.0	61.5	74.0	-12.5	**41.5	54.0	-12.5
21654.00	H	47.1	-20.0	61.4	74.0	-12.6	**41.4	54.0	-12.6
24060.00	H	47.5	-20.0	60.6	74.0	-13.4	**40.6	54.0	-13.4
26466.00	H	48.5	-20.0	62.3	74.0	-11.7	**42.3	54.0	-11.7

# For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.

\*\*Duty Cycle Correction =  $20\log(0.08) = -21.9\text{dB}$ .

\*\*Therefore, -20dB is taken.

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz  
VBW = 1MHz





## TEST REPORT No: (5215)042-1026

### 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)
4812.00	V	5.9	-20.0	63.6	74.0	-10.4	**43.6	54.0	-10.4
7218.00	V	12.7	-20.0	68.9	74.0	-5.1	**48.9	54.0	-5.1
9624.00	V	16.4	-20.0	61.2	74.0	-12.8	**41.2	54.0	-12.8
12030.00	V	18.4	-20.0	56.2	74.0	-17.8	**36.2	54.0	-17.8
14436.00	V	23.2	-20.0	62.7	74.0	-11.3	**42.7	54.0	-11.3
16842.00	V	22.0	-20.0	63.0	74.0	-11.0	**43.0	54.0	-11.0
19248.00	V	46.3	-20.0	61.8	74.0	-12.2	**41.8	54.0	-12.2
21654.00	V	47.1	-20.0	61.7	74.0	-12.3	**41.7	54.0	-12.3
24060.00	V	47.5	-20.0	62.0	74.0	-12.0	**42.0	54.0	-12.0
26466.00	V	48.5	-20.0	61.5	74.0	-12.5	**41.5	54.0	-12.5

# For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.

\*\*Duty Cycle Correction =  $20\log(0.08) = -21.9\text{dB}$ .

\*\*Therefore, -20dB is taken.

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz  
VBW = 1MHz

## TEST REPORT No: (5215)042-1026

### 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)
4886.00	H	5.9	-20.0	60.5	74.0	-13.5	**40.5	54.0	-13.5
7329.00	H	12.7	-20.0	69.2	74.0	-4.8	**49.2	54.0	-4.8
9772.00	H	16.4	-20.0	58.9	74.0	-15.1	**38.9	54.0	-15.1
12215.00	H	18.6	-20.0	56.7	74.0	-17.3	**36.7	54.0	-17.3
14658.00	H	25.0	-20.0	62.1	74.0	-11.9	**42.1	54.0	-11.9
17101.00	H	27.2	-20.0	62.0	74.0	-12.0	**42.0	54.0	-12.0
19544.00	H	46.5	-20.0	62.9	74.0	-11.1	**42.9	54.0	-11.1
21987.00	H	46.9	-20.0	61.3	74.0	-12.7	**41.3	54.0	-12.7
24430.00	H	48.0	-20.0	61.6	74.0	-12.4	**41.6	54.0	-12.4
26873.00	H	48.3	-20.0	61.7	74.0	-12.3	**41.7	54.0	-12.3

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)
4886.00	V	5.9	-20.0	59.8	74.0	-14.2	**39.8	54.0	-14.2
7329.00	V	12.7	-20.0	67.4	74.0	-6.6	**47.4	54.0	-6.6
9772.00	V	16.4	-20.0	59.5	74.0	-14.5	**39.5	54.0	-14.5
12215.00	V	18.6	-20.0	56.6	74.0	-17.4	**36.6	54.0	-17.4
14658.00	V	25.0	-20.0	61.4	74.0	-12.6	**41.4	54.0	-12.6
17101.00	V	27.2	-20.0	61.9	74.0	-12.1	**41.9	54.0	-12.1
19544.00	V	46.5	-20.0	62.5	74.0	-11.5	**42.5	54.0	-11.5
21987.00	V	46.9	-20.0	61.4	74.0	-12.6	**41.4	54.0	-12.6
24430.00	V	48.0	-20.0	60.8	74.0	-13.2	**40.8	54.0	-13.2
26873.00	V	48.3	-20.0	62.0	74.0	-12.0	**42.0	54.0	-12.0

# For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.

\*\*Duty Cycle Correction =  $20\log(0.08) = -21.9\text{dB}$ .

\*\*Therefore, -20dB is taken.

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz  
VBW = 1MHz

## TEST REPORT No: (5215)042-1026

### 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)
4944.00	H	5.9	-20.0	58.7	74.0	-15.3	**38.7	54.0	-15.3
7416.00	H	13.3	-20.0	68.5	74.0	-5.5	**48.5	54.0	-5.5
9888.00	H	16.4	-20.0	60.2	74.0	-13.8	**40.2	54.0	-13.8
12360.00	H	18.6	-20.0	55.1	74.0	-18.9	**35.1	54.0	-18.9
14832.00	H	25.0	-20.0	60.9	74.0	-13.1	**40.9	54.0	-13.1
17304.00	H	27.2	-20.0	62.5	74.0	-11.5	**42.5	54.0	-11.5
19776.00	H	46.6	-20.0	63.0	74.0	-11.0	**43.0	54.0	-11.0
22248.00	H	47.0	-20.0	62.0	74.0	-12.0	**42.0	54.0	-12.0
24720.00	H	48.1	-20.0	62.7	74.0	-11.3	**42.7	54.0	-11.3
27192.00	H	48.5	-20.0	62.4	74.0	-11.6	**42.4	54.0	-11.6

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)
4944.00	V	5.9	-20.0	59.5	74.0	-14.5	**39.5	54.0	-14.5
7416.00	V	13.3	-20.0	66.4	74.0	-7.6	**46.4	54.0	-7.6
9888.00	V	16.4	-20.0	61.5	74.0	-12.5	**41.5	54.0	-12.5
12360.00	V	18.6	-20.0	56.7	74.0	-17.3	**36.7	54.0	-17.3
14832.00	V	25.0	-20.0	61.2	74.0	-12.8	**41.2	54.0	-12.8
17304.00	V	27.2	-20.0	62.3	74.0	-11.7	**42.3	54.0	-11.7
19776.00	V	46.6	-20.0	62.6	74.0	-11.4	**42.6	54.0	-11.4
22248.00	V	47.0	-20.0	61.5	74.0	-12.5	**41.5	54.0	-12.5
24720.00	V	48.1	-20.0	60.9	74.0	-13.1	**40.9	54.0	-13.1
27192.00	V	48.5	-20.0	61.8	74.0	-12.2	**41.8	54.0	-12.2

# For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.

\*\*Duty Cycle Correction =  $20\log(0.08) = -21.9\text{dB}$ .

\*\*Therefore, -20dB is taken.

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz  
VBW = 1MHz



## TEST REPORT No: (5215)042-1026

### Radiated Emissions (9kHz – 40GHz)

Test Requirement: FCC Part 15 Section 15.209  
Test Method: ANSI C63.4  
Test Date(s): 2015-02-16  
Temperature: 20.0 °C  
Humidity: 68.0 %  
Atmospheric Pressure: 100.9 kPa  
Mode of Operation: On mode  
Tested Voltage: 3.2Vd.c. ("rechargeable 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 (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



# TEST REPORT No: (5215)042-1026

## 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)
142.64	H	23.9	43.5	-19.6
210.48	H	22.7	43.5	-20.8
289.48	H	25.4	46.0	-20.6
418.68	H	28.0	46.0	-18.0
558.36	H	33.6	46.0	-12.4
722.84	H	32.5	46.0	-13.5

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
142.64	V	23.7	43.5	-19.8
210.48	V	22.8	43.5	-20.7
289.48	V	25.1	46.0	-20.9
418.68	V	27.6	46.0	-18.4
558.36	V	33.1	46.0	-12.9
722.84	V	32.0	46.0	-14.0

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 120KHz  
VBW = 120KHz



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### Frequency range of Fundamental Emission

Test Requirement: FCC 47 CFR 15.249  
Test Method: ANSI C63.4:2009 (Section 13.1.7)  
Test Date(s): 2015-02-16  
Temperature: 20.0 °C  
Humidity: 68.0 %  
Atmospheric Pressure: 100.9 kPa  
Mode of Operation: Transmission mode  
Tested Voltage: 3.2Vd.c. ("rechargeable 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 Frequency range of Fundamental Emission:

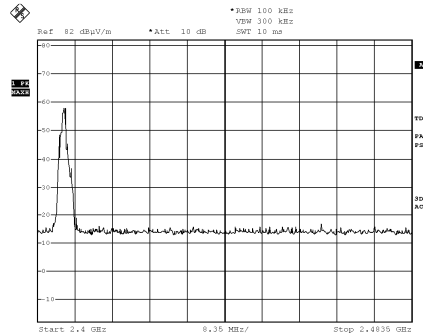
Frequency [MHz]	FCC Limits [MHz]
2404.48 – 2473.22	2400.00 – 2483.50

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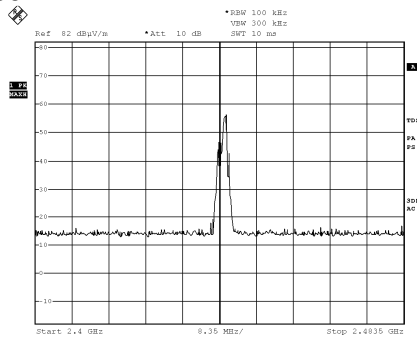
**Measurement Data :**

**Test Result of Frequency Range of Fundamental Emission: PASS**

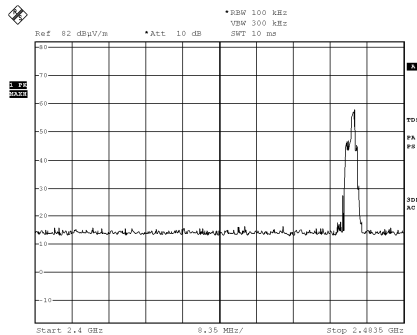
**Lowest Frequency – 2406.00MHz**



**Middle Frequency – 2443.00MHz**



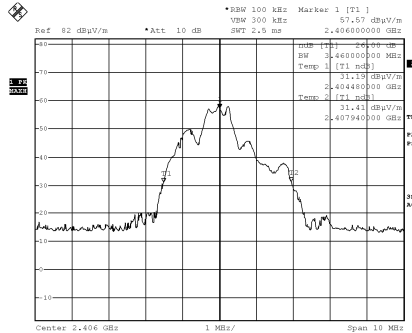
**Highest Frequency – 2472.00MHz**



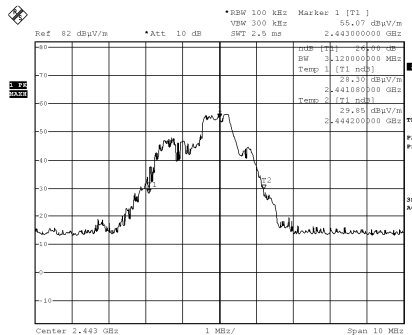
**TEST REPORT No: (5215)042-1026**  
**Measurement Data :**

**Test Result of 26dB Bandwidth of Fundamental Emission: PASS**

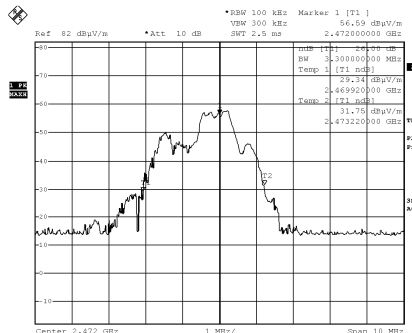
**Lowest Frequency – 2406.00MHz**



**Middle Frequency – 2443.00MHz**



**Highest Frequency – 2472.00MHz**







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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 4 pulses (2msec). Assuming any combination of short and long pulses maybe obtained due to encoding the worst case transmit duty cycle would be considered  $\frac{2}{100} \times 100\% = 2\%$  per 100msec = 2% duty cycle.

Remarks:

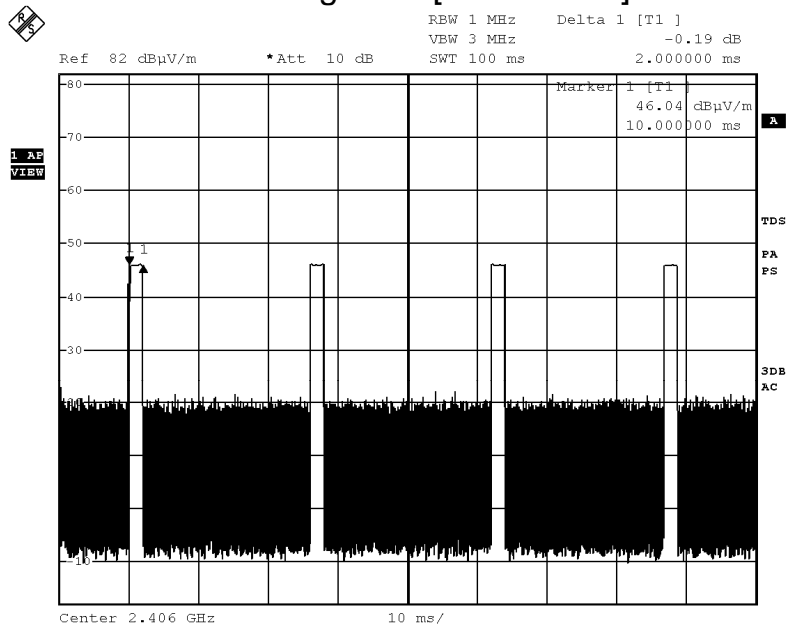
Duty Cycle Correction =  $20\log(0.02) = -29.9\text{dB}$   
Therefore, -30dB is taken

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

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### Measurement Data :

Figure A [Pulse Train]



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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**



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**Photographs of EUT**

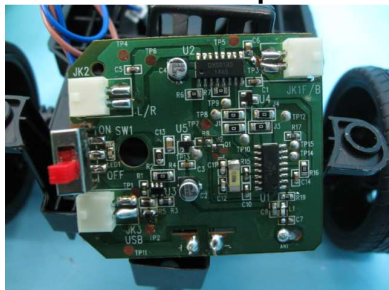
**Internal View of the product**



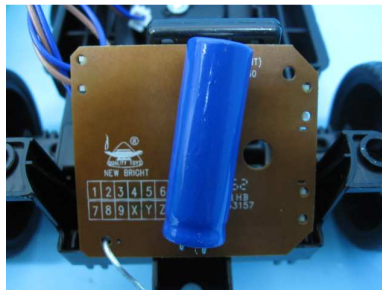
**Internal View of the product**



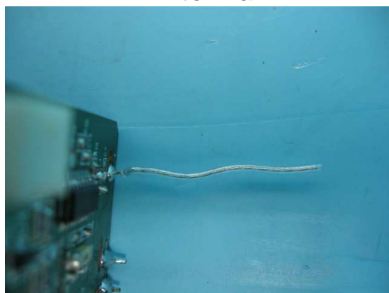
**Inner Circuit Top View**



**Inner Circuit Bottom View**



**Antenna**



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**Measurement of Radiated Emission Test Set Up**



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