

# **TEST REPORT**

To:	NEW BRIGHT INDUSTRIAL CO., LTD	To:	-	
Attn:	Eric Kwok	Attn:	-	
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Folder No.:	NBT-17	JU221MTHS-B-A		
Factory name:		INDUSTRIAL CO., LTI		
Location:	9/F., NEW BRIGHT BUILDING, 11 SHEUNG	KONG.	OON BAY, KOWLOON, HONG	
Product:		OY Receiver el No.: GF7AA		
		Sample No:	HK170621/022	
		Date of Receipt:	June 21, 2017	
-		Test date:	July 12, 2017	
1 str		Test Requested: FCC Part 15 - 2		
	· · · · · · · · · · · · · · · · · · ·	Test Method:	ANSI C63.10 - 2013	
		F00 ID:		
		FCC ID:	G6DGF7AA	
The results	given in this report are related to the tested			
	given in this report are related to the tested The submitted sample was found to <u>COMF</u>	specimen of the desc	ribed electrical apparatus.	
	-	specimen of the desc PLY with requirement o	ribed electrical apparatus.	
	The submitted sample was found to <u>COMF</u>	specimen of the desc PLY with requirement o	ribed electrical apparatus.	
	The submitted sample was found to <u>COMF</u> Authorized Sig	specimen of the desc PLY with requirement o	ribed electrical apparatus.	

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 Result Summary**

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

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

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#### Location of the test laboratory

Radiated and Conducted emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.10 – 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 Er	mission		
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
<b>BICONICAL ANTENNA</b>	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
	9kHz to 30MHz	4.2dB
	30MHz to 200MHz	4.5dB
Radiated emissions	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

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# Equipment Under Test [EUT]Description of Sample:Model Name:TOY ReceiverModel Number:GF7AAAdditional Model Name:--Additional Model Number:--Additional Model information:--Rating:7.5Vd.c. ("AA" size battery x 5)



#### **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 2410MHz to 2473MHz. The lowest, middle and highest frequencies were tested and the results are shown in the report. The EUT transmit while buttons is being pressed or sticks are being pushed or pulled, Modulation by IC, and type is GFSK.

	There are total 64	channels and	below is the	frequency list :
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ch.no	freq.												
1	2410	11	2420	21	2430	31	2440	41	2450	51	2460	61	2470
2	2411	12	2421	22	2431	32	2441	42	2451	52	2461	62	2471
3	2412	13	2422	23	2432	33	2442	43	2452	53	2462	63	2472
4	2413	14	2423	24	2433	34	2443	44	2453	54	2463	64	2473
5	2414	15	2424	25	2434	35	2444	45	2454	55	2464		
6	2415	16	2425	26	2435	36	2445	46	2455	56	2465		
7	2416	17	2426	27	2436	37	2446	47	2456	57	2466		
8	2417	18	2427	28	2437	38	2447	48	2457	58	2467		
9	2418	19	2428	29	2438	39	2448	49	2458	59	2468		
10	2419	20	2429	30	2439	40	2449	50	2459	60	2469		

The transmitter has different control:

1. Switch - control on / off

#### 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





# **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:	32.0 °C
Humidity:	71.0 %
Atmospheric Pressure:	99.1 kPa
Mode of Operation:	Transmission mode
Tested Voltage:	7.5Vd.c. ("AA" size battery x 5)

#### **Test Procedure:**

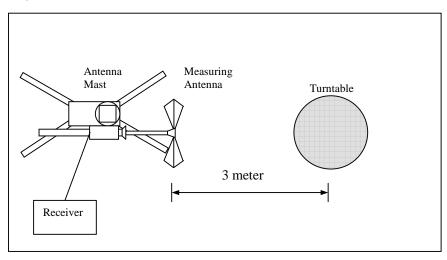
Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.10 - 2013.

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



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This report is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. Our report is limited to the test samples identified herein. The results set forth in this report are not necessarily indicative or representative of the statistical quality or characteristical quality or the statistical quality or the statistical quality or the statistical quality or the statemative or the statistical quality or the statemative of this report to request additional testing of the samples or to notify us of any errors or omissions relating to our report, provided, however, such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.



#### Limits for Field Strength of Fundamental Emissions [FCC 47CFR 15.249]:

Frec	uency Range of	Field Strength of	Field Strength of
F	undamental	Fundamental Emission	Harmonics Emission
		(Average)	(Average)
	[MHz]	[mV/m]	[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)
2410.00	Н	-4.8	-26.3	69.1	114.0	-44.9	**42.8	94.0	-51.2
2410.00	V	-4.8	-26.3	72.4	114.0	-41.6	**46.1	94.0	-47.9

# 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)
2442.00	Н	-4.8	-26.3	69.9	114.0	-44.1	**43.6	94.0	-50.4
2442.00	V	-4.8	-26.3	72.4	114.0	-41.6	**46.1	94.0	-47.9

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

Frequ (MH	,	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)
2473	3.00	Н	-4.8	-26.3	69.3	114.0	-44.7	**43.0	94.0	-51.0
2473	3.00	Н	-4.8	-26.3	73.3	114.0	-40.7	**47.0	94.0	-47.0

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

\*\*Duty Cycle Correction = 20Log(0.048) = -26.3dB.

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 C63.10
Test Date(s):	2017-06-14
Temperature:	29.0 °C
Humidity:	72.0 %
Atmospheric Pressure:	99.5 kPa
Mode of Operation:	Transmission mode
Tested Voltage:	7.5Vd.c. ("AA" size battery x 5)

#### **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)
4820.00	Н	4.8	-26.3	55.8	74.0	-18.2	**29.5	54.0	-24.5
7230.00	Н	12.4	-26.3	47.7	74.0	-26.3	**21.4	54.0	-32.6
9640.00	Н	13.5	-26.3	46.8	74.0	-27.2	**20.5	54.0	-33.5
12050.00	Н	19.6	-26.3	51.3	74.0	-22.7	**25.0	54.0	-29.0
14460.00	Н	25.8	-26.3	52.5	74.0	-21.5	**26.2	54.0	-27.8
16870.00	Н	21.2	-26.3	53.3	74.0	-20.7	**27.0	54.0	-27.0
19280.00	Н	46.7	-26.3	53.5	74.0	-20.5	**27.2	54.0	-26.8
21690.00	Н	46.9	-26.3	53.8	74.0	-20.2	**27.5	54.0	-26.5
24100.00	Н	48.0	-26.3	54.2	74.0	-19.8	**27.9	54.0	-26.1
26510.00	Н	48.5	-26.3	54.5	74.0	-19.5	**28.2	54.0	-25.8

# 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(0.048) = -26.3dB.

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



#### **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)
4820.00	V	4.8	-26.3	54.6	74.0	-19.4	**28.3	54.0	-25.7
7230.00	V	12.4	-26.3	46.6	74.0	-27.4	**20.3	54.0	-33.7
9640.00	V	13.5	-26.3	45.4	74.0	-28.6	**19.1	54.0	-34.9
12050.00	V	19.6	-26.3	52.0	74.0	-22.0	**25.7	54.0	-28.3
14460.00	V	25.8	-26.3	51.8	74.0	-22.2	**25.5	54.0	-28.5
16870.00	V	21.2	-26.3	53.6	74.0	-20.4	**27.3	54.0	-26.7
19280.00	V	46.7	-26.3	54.2	74.0	-19.8	**27.9	54.0	-26.1
21690.00	V	46.9	-26.3	53.6	74.0	-20.4	**27.3	54.0	-26.7
24100.00	V	48.0	-26.3	55.0	74.0	-19.0	**28.7	54.0	-25.3
26510.00	V	48.5	-26.3	54.9	74.0	-19.1	**28.6	54.0	-25.4

# 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(0.048) = -26.3dB.

Note: Field Strength includes Antenna Factor and Cable Loss. Receiver setting:

RBW = 1MHz

VBW = 1MHz



#### **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)
4884.00	Н	4.8	-26.3	54.6	74.0	-19.4	**28.3	54.0	-25.7
7326.00	Н	12.4	-26.3	45.6	74.0	-28.4	**19.3	54.0	-34.7
9768.00	Н	13.8	-26.3	46.7	74.0	-27.3	**20.4	54.0	-33.6
12210.00	Н	19.5	-26.3	52.1	74.0	-21.9	**25.8	54.0	-28.2
14652.00	Н	26.5	-26.3	52.4	74.0	-21.6	**26.1	54.0	-27.9
17094.00	Н	23.1	-26.3	54.0	74.0	-20.0	**27.7	54.0	-26.3
19536.00	Н	46.7	-26.3	53.8	74.0	-20.2	**27.5	54.0	-26.5
21978.00	Н	47.3	-26.3	54.6	74.0	-19.4	**28.3	54.0	-25.7
24420.00	Н	48.2	-26.3	55.0	74.0	-19.0	**28.7	54.0	-25.3
26862.00	Н	48.5	-26.3	55.2	74.0	-18.8	**28.9	54.0	-25.1

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)
4884.00	V	4.8	-26.3	52.4	74.0	-21.6	**26.1	54.0	-27.9
7326.00	V	12.4	-26.3	46.0	74.0	-28.0	**19.7	54.0	-34.3
9768.00	V	13.8	-26.3	47.6	74.0	-26.4	**21.3	54.0	-32.7
12210.00	V	19.5	-26.3	52.8	74.0	-21.2	**26.5	54.0	-27.5
14652.00	V	26.5	-26.3	53.3	74.0	-20.7	**27.0	54.0	-27.0
17094.00	V	23.1	-26.3	55.1	74.0	-18.9	**28.8	54.0	-25.2
19536.00	V	46.7	-26.3	54.0	74.0	-20.0	**27.7	54.0	-26.3
21978.00	V	47.3	-26.3	53.9	74.0	-20.1	**27.6	54.0	-26.4
24420.00	V	48.2	-26.3	54.7	74.0	-19.3	**28.4	54.0	-25.6
26862.00	V	48.5	-26.3	55.0	74.0	-19.0	**28.7	54.0	-25.3

# 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(0.048) = -26.3dB.

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 Field Antenna Field Limit at Limit at Duty-Factor & Strength Margin -Strength Margin -Frequency Polarity cycle 3m – 3m – Cable at 3m -Peak at 3m -Average (MHz) (H/V) correction Peak Average Loss Peak (dB) Average (dB) (dB) (dBµV/m) (dBµV/m) (dB/m) (dBµV/m) (dBµV/m) \*\*26.4 4946.00 Н 4.9 -26.352.7 74.0 -21.3 54.0 -27.6 7419.00 Н 12.6 -26.3 46.6 74.0 -27.4 \*\*20.3 54.0 -33.7 \*\*21.4 9892.00 Н 13.9 47.7 74.0 54.0 -32.6 -26.3 -26.3 12365.00 Н 19.2 -26.3 52.4 74.0 -21.6 \*\*26.1 54.0 -27.9 14838.00 Н 25.9 -26.3 53.1 74.0 -20.9 \*\*26.8 54.0 -27.2 \*\*29.2 24.5 74.0 17311.00 Н -26.355.5 -18.5 54.0 -24.8 19784.00 Н 46.8 -26.354.5 74.0 -19.5\*\*28.2 54.0 -25.8 \*\*27.9 22257.00 Н 47.3 -26.354.2 74.0 -19.8 54.0 -26.124730.00 48.2 -26.3 55.6 74.0 -18.4 \*\*29.3 54.0 -24.7 Н Н 27203.00 48.7 -26.3 55.1 74.0 -18.9 \*\*28.8 54.0 -25.2

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

\*\*Duty Cycle Correction = 20Log(0.048) = -26.3dB.

Note: Field Strength includes Antenna Factor and Cable Loss. Receiver setting:

RBW = 1MHz VBW

1MHz =



#### Antenna Field Field Duty-Limit at Limit at Strength Strength Factor & Margin -Margin -Frequency Polarity cycle 3m – 3m – Cable at 3m -Peak at 3m -Average (MHz) (H/V)Peak Average correction Loss Peak (dB) Average (dB) (dB) (dB<sub>µ</sub>V/m) (dBuV/m) (dB/m) (dBµV/m) (dBµV/m) 4946.00 V 4.9 -26.353.0 74.0 -21.0 \*\*26.7 54.0 -27.3 7419.00 ٧ 12.6 -26.3 45.0 74.0 -29.0 \*\*18.7 54.0 -35.3 9892.00 V 13.9 -26.3 46.4 74.0 -27.6 \*\*20.1 54.0 -33.9 \*\*25.2 V 19.2 -26.3 74.0 -22.5 12365.00 51.5 54.0 -28.8 14838.00 V 74.0 25.9 -26.352.9 -21.1\*\*26.6 54.0 -27.4 \*\*29.0 17311.00 V 24.5 -26.355.3 74.0 -18.7 54.0 -25.0V \*\*27.3 19784.00 46.8 -26.3 53.6 74.0 -20.4 54.0 -26.722257.00 V 47.3 54.0 74.0 -20.0 \*\*27.7 -26.354.0 -26.3\*\*27.8 V 74.0 24730.00 48.2 -26.3 54.1 -19.9 54.0 -26.2 V 48.7 74.0 \*\*27.6 27203.00 -26.353.9 -20.1 54.0 -26.4

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

# 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(0.048) = -26.3dB.

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

VBW = 1MHz



# Radiated Emissions (30MHz - 2.4GHz)

Test Requirement:	FCC Part 15 Section 15.209
Test Method:	ANSI C63.10
Test Date(s):	2017-07-12
Temperature:	32.0 °C
Humidity:	71.0 %
Atmospheric Pressure:	99.1 kPa
Mode of Operation:	On mode
Tested Voltage:	7.5Vd.c. ("AA" size battery x 5)

#### Limits for Radiated Emissions [FCC 47 CFR 15.209]:

Frequency Range	Quasi-Peak Limits	Measurement Distance
[MHz]	[µV/m]	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



#### **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)
42.38	Н	26.0	40.0	-14.0
165.22	Н	21.7	43.5	-21.8
256.16	Н	22.0	46.0	-24.0
328.32	Н	24.5	46.0	-21.5
370.40	Н	25.8	46.0	-20.2
420.12	Н	27.0	46.0	-19.0

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
42.38	V	25.7	40.0	-14.3
165.22	V	21.9	43.5	-21.6
256.16	V	22.4	46.0	-23.6
328.32	V	24.1	46.0	-21.9
370.40	V	25.5	46.0	-20.5
420.12	V	27.2	46.0	-18.8

Note: Field Strength includes Antenna Factor and Cable Loss.

RBW = 120KHz Receiver setting:

VBW = 120KHz



### **Frequency range of Fundamental Emission**

Test Requirement:	FCC 47 CFR 15.249
Test Method:	ANSI C63.10 Clause 6.10
Test Date(s):	2017-07-12
Temperature:	32.0 °C
Humidity:	71.0 %
Atmospheric Pressure:	99.1 kPa
Mode of Operation:	Transmission mode
Tested Voltage:	7.5Vd.c. ("AA" size battery x 5)

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:

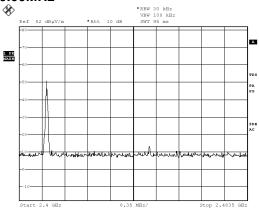
Frequency	FCC Limits		
[MHz]	[MHz]		
2409.42 - 2473.70	2400 - 2483.5		



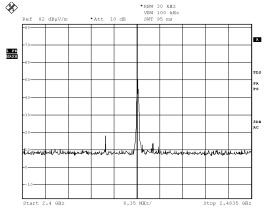
Measurement Data:

# Test Result of Frequency Range of Fundamental Emission: PASS

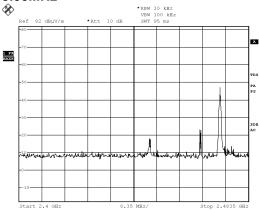
Lowest Frequency – 2410.00MHz



Middle Frequency – 2442.00MHz



# Highest Frequency – 2473.00MHz



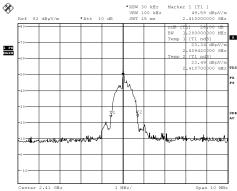
BUREAU VERITAS HONG KONG LIMITED – Kowloon Bay Office 1/F Pacific Trade Centre, 2 Kai Hing Road, Kowloon Bay, Kowloon,HONG KONG Tel: +852 2331 0888 Fax: +852 2331 0889 www.cps.bureauveritas.com



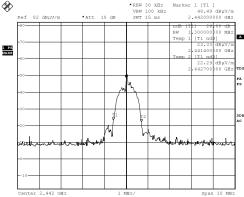
**Measurement Data:** 

Test Result of 26dB Bandwidth of Fundamental Emission: PASS

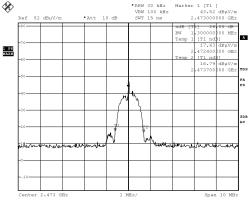
Lowest Frequency – 2410.00MHz



Middle Frequency – 2442.00MHz



#### Highest Frequency – 2473.00MHz



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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 12 (0.4msec) pulses. Assuming any combination of short or long pulses may be obtained due to encoding the worst case transmit duty cycle would be considered 12 x (0.4msec) per 100msec = 4.8% duty cycle. Figure A to B show the characteristics of the pulse train for one of these functions

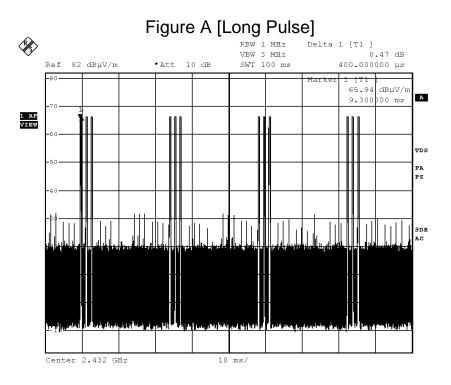
Remarks:

Duty Cycle Correction = 20Log(0.048) = -26.3dB

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



#### **Measurement Data :**





#### Photographs of EUT

#### Front View of the product



#### Top View of the product



# Side View of the product



#### **Battery compartment**



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#### **Rear View of the product**



#### **Bottom View of the product**



#### Side View of the product



#### **Battery Cover**





#### Photographs of EUT

Internal View of the product



Inner Circuit Top View



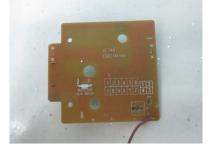
#### Antenna

Anteima

Internal View of the product



#### **Inner Circuit Bottom View**







Measurement of Radiated Emission Test Set Up

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