



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AW0041257(8) Date : July 20, 2018

Application No. : LW019175(1)

Applicant : Kidztech Toys Manufacturing Limited  
Room 1201, 12/F., Inter-Continental Plaza,  
94 Granville Road, Tsim Sha Tsui East,  
Kowloon, Hong Kong

Sample Description : One(1) item of submitted sample stated to be:

Sample Description	Model No.
1/12 R/C Mini Ducati Rider	84470, 844701824G

Radio Frequency : 2410 – 2475MHz

Rating : 2 x 1.5V AAA size batteries

No. of submitted sample : One (1) set (s)

Sample registration No. : RW020015-001(9)

Date Received : 25 Jun 2018.

Test Period : 26 Jun 2018 to 19 July 2018

Test Requested : FCC 47CFR Part 15 Certification  
ISED Certification for License-exempt Device

Test Method : 47 CFR Part 15 (10-1-17 Edition)  
ANSI C63.10 – 2013  
ANSI C63.4 – 2014  
RSS-210 Issue 9  
RSS-Gen Issue 4

Test Result : See attached sheet(s) from page 2 to 20.

Conclusion : The submitted sample was found to comply with requirement of FCC 47CFR Part 15 Subpart C, section 15.249 and ISED Canada Radio Standard Specification.

Remark : Model: 844701824G is identical to model: 84470 and only difference in model number for Canada version and US version respectively. Model 84470 is selected as representative model for testing.

For and on behalf of  
CMA Industrial Development Foundation Limited

Authorized Signature : \_\_\_\_\_

Page 1 of 20

Mr. WONG Lap-pong, Andrew  
Manager  
Electrical Division

FCC ID: OTM-8447018-24GTX  
IC: 20978-844701824G

This document is issued subject to the latest CMA Testing General Terms and Conditions of Testing and Inspection Services, available on request or accessible at website [www.cmatesting.org](http://www.cmatesting.org).  
This document shall not be reproduced except in full or with written approval by CMA Testing.

CMA Industrial Development Foundation Limited

Room 1302, Yan Hing Centre, 9-13 Wong Chuk Yeung St., Fo Tan, Shatin, N.T., Hong Kong.

Tel : (852) 2698 8198 Fax : (852) 2695 4177 E-mail : [info@cmatesting.org](mailto:info@cmatesting.org) Web Site : <http://www.cmatesting.org>



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AW0041257(8)

Date : July 20, 2018

### Table of Contents

1	General Information .....	3
1.1	General Description .....	3
1.2	Location of the test site .....	4
1.3	List of measuring equipment.....	5
1.4	Measurement Uncertainty .....	6
1.5	Test Summary .....	6
2	Description of the radiated emission test .....	7
2.1	Test Procedure .....	7
2.2	Test Setup .....	8
2.3	Test Result .....	10
3.1	Test Procedure .....	14
3.2	Test Result .....	14
3.3	Test Setup .....	14
3.4	Graph and Table of Conducted Emission Measurement Data .....	14
4	Supplementary document.....	15
4.1	Bandwidth .....	15
5	Appendices .....	16

FCC ID: OTM-8447018-24GTX  
IC: 20978-844701824G

Page 2 of 20

This document is issued subject to the latest CMA Testing General Terms and Conditions of Testing and Inspection Services, available on request or accessible at website [www.cmatesting.org](http://www.cmatesting.org).  
This document shall not be reproduced except in full or with written approval by CMA Testing.

CMA Industrial Development Foundation Limited

Room 1302, Yan Hing Centre, 9-13 Wong Chuk Yeung St., Fo Tan, Shatin, N.T., Hong Kong.

Tel : (852) 2698 8198 Fax : (852) 2695 4177 E-mail : [info@cmatesting.org](mailto:info@cmatesting.org) Web Site : <http://www.cmatesting.org>



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AW0041257(8)

Date : July 20, 2018

### 1 General Information

#### 1.1 General Description

The 12MHz crystal oscillator drives the base of IC final amplifier. The modulation provided by IC U1. The output of U1 has the matching network consisting C2 and L1 that limit the harmonic content and effect the proper coupling of the antenna to the output stage. 0.0dBi wire antenna is used.

#### Antenna, Ground and Power Source:

The antenna consists of an Internal wired integral antenna. There is no external ground connection. The ground is only that of the printed circuit board. Electric current is supplied by two 1.5V AAA primary batteries.

#### Operation Descriptions:

The Equipment Under Test (EUT) is a portable 2.4GHz Pure Transmitter (Receiver function is disable), The transmitter is a remote control system. The transmission signal is frequency hopping with channel frequency range 2410.0-2475.0MHz during normal use with channel spacing 1MHz, and total 66 channels. The EUT was set to fixed frequency test mode by application. The EUT is powered by two 1.5V AAA batteries, After switching on the EUT, the car can be controlled to move forward, backward, turning left/right direction.

The transmitter has one control wheel and one control lever to control the left and right turn and forward and backward movement respectively. The EUT continues to transmit while Power on. Modulation by IC with GFSK (FHSS - Frequency Hopping Spread Spectrum) modulation.

Page 3 of 20

FCC ID: OTM-8447018-24GTX

IC: 20978-844701824G



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AW0041257(8)

Date : July 20, 2018

### 1.2 Location of the test site

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2014. A Semi-Anechoic Chamber Testing Site is set up for investigation and located at:

Ground Floor, Yan Hing Centre,  
9 – 13 Wong Chuk Yeung Street,  
Fo Tan, Shatin,  
New Territories,  
Hong Kong.

Conducted emissions measurements are investigated and also taken pursuant to the procedures of ANSI C63.4 – 2014. A shielded room is located at :

Ground Floor, Yan Hing Centre,  
9 – 13 Wong Chuk Yeung Street,  
Fo Tan, Shatin,  
New Territories,  
Hong Kong.

FCC Accredited Lab (Designation Number: HK0004)  
ISED Wireless Test Site (ISED Assigned Code: 4093A)

FCC ID: OTM-8447018-24GTX  
IC: 20978-844701824G

Page 4 of 20



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AW0041257(8)

Date : July 20, 2018

### 1.3 List of measuring equipment

Equipment	Manufacturer	Model No.	Serial No.	Calibration Due Date	Calibration Period
EMI Test Receiver	Rohde & Schwarz	ESCS30	100001	01 Feb 2019	1 Year
EMI Test Receiver	Rohde & Schwarz	ESCI	100152	07 Dec 2018	1 Year
Spectrum Analyzer	Rohde & Schwarz	FSV40	100964	08 Feb 2019	1 Year
Broadband Antenna	Schaffner	CBL6112B	2692	28 Mar 2020	2 Years
Loop Antenna	EMCO	6502	00056620	25 Jan 2020	2 Years
Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-531	21 Dec 2018	2 Years
Broadband Pre-Amplifier	Schwarzbeck	BBV 9718	9718-119	21 Dec 2018	2 Years
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA917 0442	02 Aug 2018	2 Years
Broadband Pre-Amplifier	Schwarzbeck	BBV 9719	9719-010	02 Aug 2018	2 Years
Coaxial Cable	Schaffner	RG 213/U	N/A	17 May 2019	1 Year
Coaxial Cable	Suhner	RG 214/U	N/A	17 May 2019	1 Year
Coaxial Cable	Suhner	Sucoflex_104	N/A	21 Dec 2018	1 Year
LISN	Rohde & Schwarz	ENV216	101323	16 Jan 2019	1 Year
Coaxial Cable	Tyco Electronics	RG 58C/U	N/A	24 Oct 2018	1 Year

Page 5 of 20

FCC ID: OTM-8447018-24GTX

IC: 20978-844701824G

This document is issued subject to the latest CMA Testing General Terms and Conditions of Testing and Inspection Services, available on request or accessible at website [www.cmatesting.org](http://www.cmatesting.org). This document shall not be reproduced except in full or with written approval by CMA Testing.

CMA Industrial Development Foundation Limited

Room 1302, Yan Hing Centre, 9-13 Wong Chuk Yeung St., Fo Tan, Shatin, N.T., Hong Kong.

Tel : (852) 2698 8198 Fax : (852) 2695 4177 E-mail : [info@cmatesting.org](mailto:info@cmatesting.org) Web Site : <http://www.cmatesting.org>



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AW0041257(8)

Date : July 20, 2018

### 1.4 Measurement Uncertainty

The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor  $k=2$ , providing a level of confidence of approximately 95%.

#### Radiated emissions

Frequency	Uncertainty ( $U_{lab}$ )
30MHz ~ 200MHz (Horizontal)	4.59dB
30MHz ~ 200MHz (Vertical)	4.49dB
200MHz ~1000MHz (Horizontal)	4.94dB
200MHz ~1000MHz (Vertical)	4.97dB
1GHz ~ 6GHz	4.52dB

### 1.5 Test Summary

TEST ITEM	FCC REFERANCE	RSS REFERENCE	RESULT
Fundamental and harmonic emission	15.249(a)	RSS-210, Annex B.10(a)	Comply
Out-band emission	15.249(d)	RSS-210, Annex B.10(6)	Comply
Peak Limit	15.249(e)	RSS-Gen, 8.1	Comply
Bandwidth	15.215(c)	RSS-Gen, 6.7	Comply

Page 6 of 20

FCC ID: OTM-8447018-24GTX  
IC: 20978-844701824G



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AW0041257(8)

Date : July 20, 2018

### 2 Description of the radiated emission test

#### 2.1 Test Procedure

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

A non-conductive turntable with dimensions of 1.5m x 0.4m x 0.8m (L x W x H) placed above the reference ground plane. The equipment under test (EUT) was placed at 0.8m height for below 1GHz measurement and 1.5m height for above 1GHz measurement. The test distance is 3m between EUT and receiving antenna. A broadband antenna mounting on the mast received the signal strength. The turntable was rotated to maximize the emission level. The antenna was 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. Additional absorbing material will be placed between the EUT and receiving antenna for above 1GHz measurement.

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 1 m above the ground.

The device was rotated through three orthogonal axes to determine which attitude and configuration produce the highest emission during measurement.

FCC ID: OTM-8447018-24GTX  
IC: 20978-844701824G

Page 7 of 20



# CMA Testing and Certification Laboratories

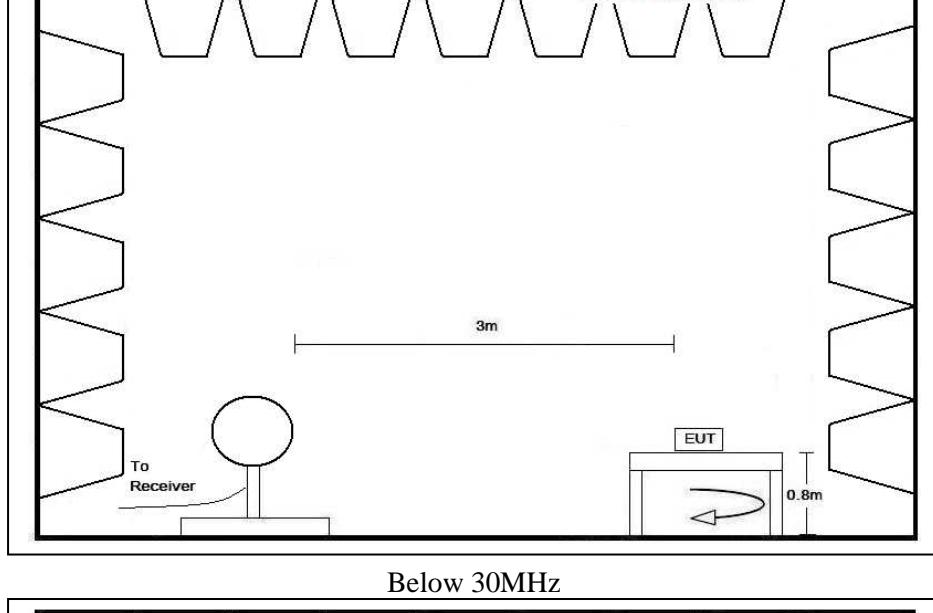
廠商會檢定中心

## TEST REPORT

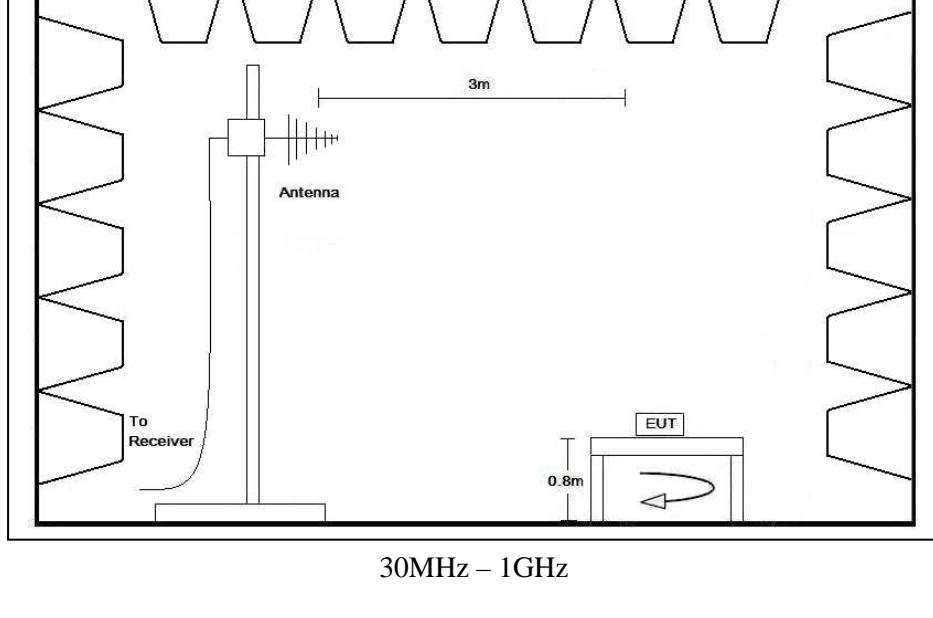
Report No. : AW0041257(8)

Date : July 20, 2018

### 2.2 Test Setup



Below 30MHz



30MHz - 1GHz

Page 8 of 20

FCC ID: OTM-8447018-24GTX

IC: 20978-844701824G

This document is issued subject to the latest CMA Testing General Terms and Conditions of Testing and Inspection Services, available on request or accessible at website [www.cmatesting.org](http://www.cmatesting.org). This document shall not be reproduced except in full or with written approval by CMA Testing.

CMA Industrial Development Foundation Limited

Room 1302, Yan Hing Centre, 9-13 Wong Chuk Yeung St., Fo Tan, Shatin, N.T., Hong Kong.

Tel : (852) 2698 8198 Fax : (852) 2695 4177 E-mail : [info@cmatesting.org](mailto:info@cmatesting.org) Web Site : <http://www.cmatesting.org>



# CMA Testing and Certification Laboratories

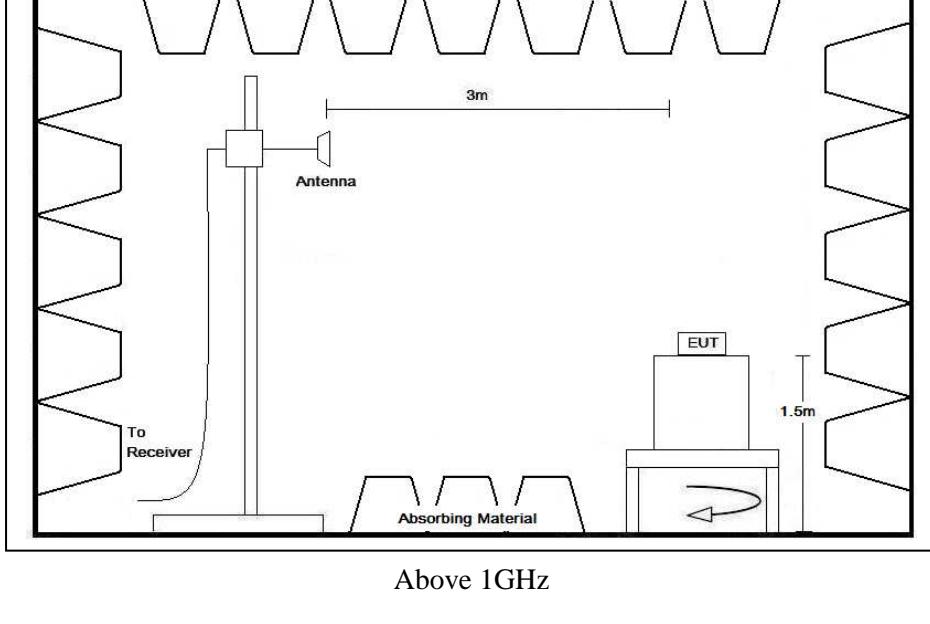
廠商會檢定中心

## TEST REPORT

Report No. : AW0041257(8)

Date : July 20, 2018

### 2.2 Test Setup



Above 1GHz

FCC ID: OTM-8447018-24GTX  
IC: 20978-844701824G

Page 9 of 20

This document is issued subject to the latest CMA Testing General Terms and Conditions of Testing and Inspection Services, available on request or accessible at website [www.cmatesting.org](http://www.cmatesting.org). This document shall not be reproduced except in full or with written approval by CMA Testing.

CMA Industrial Development Foundation Limited

Room 1302, Yan Hing Centre, 9-13 Wong Chuk Yeung St., Fo Tan, Shatin, N.T., Hong Kong.

Tel : (852) 2698 8198 Fax : (852) 2695 4177 E-mail : [info@cmatesting.org](mailto:info@cmatesting.org) Web Site : <http://www.cmatesting.org>



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AW0041257(8)

Date : July 20, 2018

### 2.3 Test Result

Peak Detector data was measured unless otherwise stated.

The radiated emissions are measured from 9kHz to 26GHz (the tenth harmonics)

The worst case configuration is shown on the worst case configuration of test setup photo.

The frequencies from fundamental up to tenth harmonics were investigated, and emissions more 20dB below limit were not reported. Thus, those highest emissions were presented in next pages.

The EUT has been tested in Transmission mode.

It was found that the EUT meet the FCC and RSS requirement.

FCC ID: OTM-8447018-24GTX  
IC: 20978-844701824G

Page 10 of 20



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AW0041257(8)

Date : July 20, 2018

### 2.4 Radiated Emission Measurement Data

#### Radiated emission

Environmental conditions:

Parameter	Recorded value
Ambient temperature:	24.3 °C
Relative humidity:	65.2 %

Channel: 2410MHz

Polarization	Frequency (MHz)	Reading at 3m (dB $\mu$ V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)	Detector Type
V	2410.229	98.8	-4.7	94.1	114.0	-19.9	Peak
V	2409.911	79.7	-4.7	75.0	94.0	-19.0	Average
H	2410.198	101.2	-4.7	96.5	114.0	-17.5	Peak
H	2409.993	82.1	-4.7	77.4	94.0	-16.6	Average
H	2400.000	58.8	-4.7	54.1	74.0	-19.9	Peak
H	2400.000	26.2	-4.7	21.5	54.0	-32.5	Average
V	4819.577	52.8	2.3	55.1	74.0	-18.9	Peak
V	4820.133	27.0	2.3	29.3	54.0	-24.7	Average
V	7230.777	50.1	9.6	59.7	74.0	-14.3	Peak
V	7230.091	24.0	9.6	33.6	54.0	-20.4	Average

Remark:

Page 11 of 20

FCC ID: OTM-8447018-24GTX

IC: 20978-844701824G



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AW0041257(8)

Date : July 20, 2018

Channel: 2440 MHz

Polarization	Frequency (MHz)	Reading at 3m (dB $\mu$ V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)	Detector Type
V	2440.757	99.6	-4.7	94.9	114.0	-19.1	Peak
V	2440.099	80.5	-4.7	75.8	94.0	-18.2	Average
H	2439.878	100.8	-4.7	96.1	114.0	-17.9	Peak
H	2440.018	81.7	-4.7	77.0	94.0	-17.0	Average
V	4879.536	52.2	2.3	54.5	74.0	-19.5	Peak
V	4879.841	26.3	2.3	28.6	54.0	-25.4	Average
V	7320.757	51.2	9.6	60.8	74.0	-13.2	Peak
V	7319.878	24.9	9.6	34.5	54.0	-19.5	Average

Remark:

Page 12 of 20

FCC ID: OTM-8447018-24GTX  
IC: 20978-844701824G

This document is issued subject to the latest CMA Testing General Terms and Conditions of Testing and Inspection Services, available on request or accessible at website [www.cmatesting.org](http://www.cmatesting.org). This document shall not be reproduced except in full or with written approval by CMA Testing.

CMA Industrial Development Foundation Limited

Room 1302, Yan Hing Centre, 9-13 Wong Chuk Yeung St., Fo Tan, Shatin, N.T., Hong Kong.

Tel : (852) 2698 8198 Fax : (852) 2695 4177 E-mail : [info@cmatesting.org](mailto:info@cmatesting.org) Web Site : <http://www.cmatesting.org>



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AW0041257(8)

Date : July 20, 2018

Channel: 2475MHz

Polarization	Frequency (MHz)	Reading at 3m (dB $\mu$ V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)	Detector Type
V	2475.343	100.7	-4.7	96.0	114.0	-18.0	Peak
V	2475.091	81.6	-4.7	76.9	94.0	-17.1	Average
H	2475.135	100.1	-4.7	95.4	114.0	-18.6	Peak
H	2474.760	81.0	-4.7	76.3	94.0	-17.7	Average
V	2483.500	53.5	-4.7	48.8	54.0	-5.2	Peak
V	4950.558	53.6	2.8	56.4	74.0	-17.6	Peak
V	4950.166	26.5	2.8	29.3	54.0	-24.7	Average
V	7425.838	52.7	9.6	62.3	74.0	-11.7	Peak
V	7424.719	25.1	9.6	34.7	54.0	-19.3	Average

Remark: 1) The peak value of emission 2483.5MHz is below the average limit, so no average measurement is performed.

FCC ID: OTM-8447018-24GTX  
IC: 20978-844701824G

Page 13 of 20



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AW0041257(8)

Date : July 20, 2018

### 3 Description of the Line-conducted Test

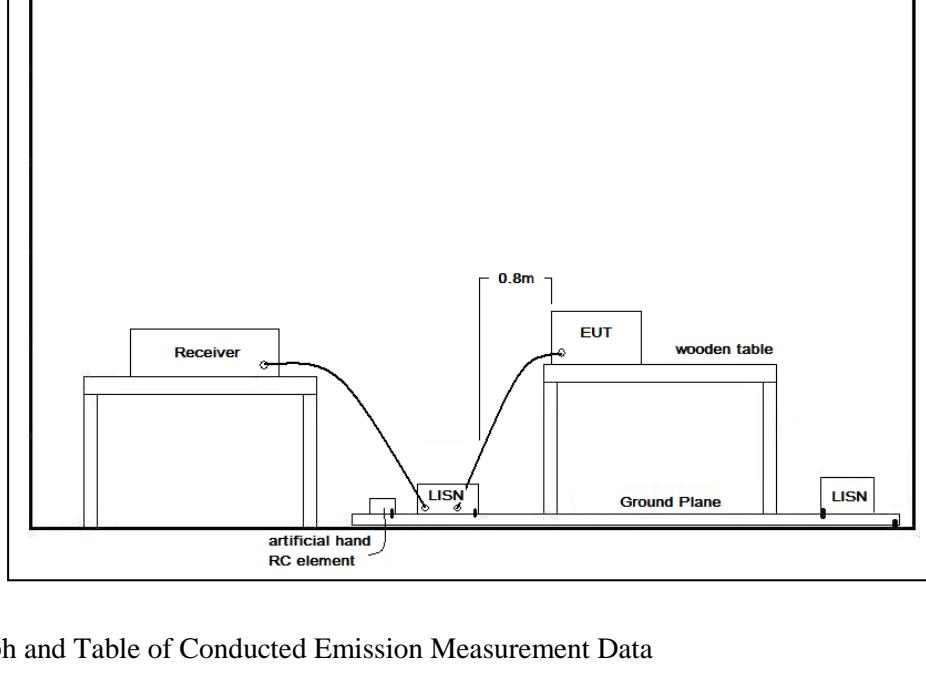
#### 3.1 Test Procedure

Conducted emissions measurements are investigated and also taken pursuant to the procedures of ANSI C63.10 – 2013. The EUT was setup as described in the procedures, and both lines were measured.

#### 3.2 Test Result

No measurement is required as the EUT is a battery-operated product.

#### 3.3 Test Setup



#### 3.4 Graph and Table of Conducted Emission Measurement Data

Not Applicable

FCC ID: OTM-8447018-24GTX

IC: 20978-844701824G

Page 14 of 20



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AW0041257(8)

Date : July 20, 2018

### 4 Supplementary document

The following document were submitted by applicant, and for electronic filing, the document are saved with the following filenames:

Document	Filename
ID Label/Location	Label Artwork and Location.pdf
Block Diagram	Block Diagram.pdf
Schematic Diagram	Schematic.pdf
Users Manual	User Manual.pdf
Operational Description	Operation Description.pdf

#### 4.1 Bandwidth

Appendices A1 and A2 show the fundamental emission is confined in the specified band. 20dB bandwidth is 5.32MHz and 99% bandwidth is 5.12MHz. Both bandwidth fall in the band of 2400 – 2483.5MHz. It also shows that the EUT met the requirement of FCC Part 15.215(c) and RSS-GEN.

FCC ID: OTM-8447018-24GTX  
IC: 20978-844701824G

Page 15 of 20



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AW0041257(8)

Date : July 20, 2018

### 5 Appendices

A1.	20dB Bandwidth Plot	2	page(s)
A2.	99% Bandwidth Plot	2	Page(s)

FCC ID: OTM-8447018-24GTX  
IC: 20978-844701824G

Page 16 of 20

This document is issued subject to the latest CMA Testing General Terms and Conditions of Testing and Inspection Services, available on request or accessible at website [www.cmatesting.org](http://www.cmatesting.org).  
This document shall not be reproduced except in full or with written approval by CMA Testing.

CMA Industrial Development Foundation Limited

Room 1302, Yan Hing Centre, 9-13 Wong Chuk Yeung St., Fo Tan, Shatin, N.T., Hong Kong.

Tel : (852) 2698 8198 Fax : (852) 2695 4177 E-mail : [info@cmatesting.org](mailto:info@cmatesting.org) Web Site : <http://www.cmatesting.org>



# CMA Testing and Certification Laboratories

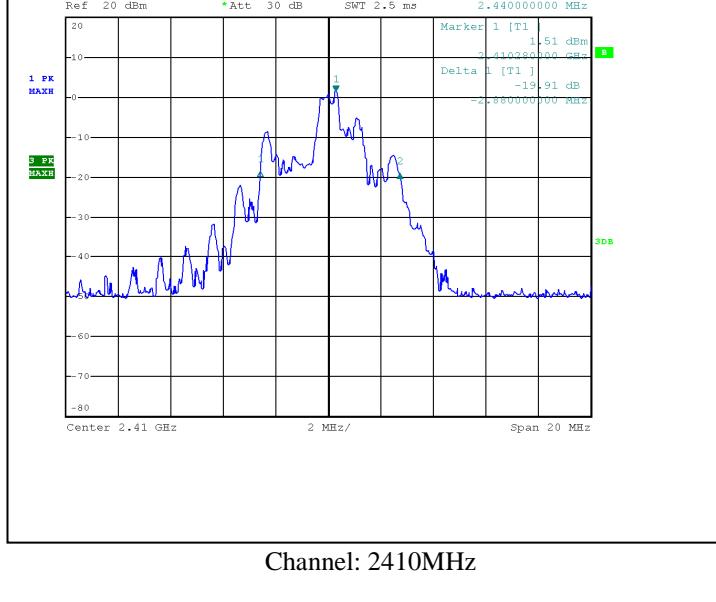
廠商會檢定中心

## TEST REPORT

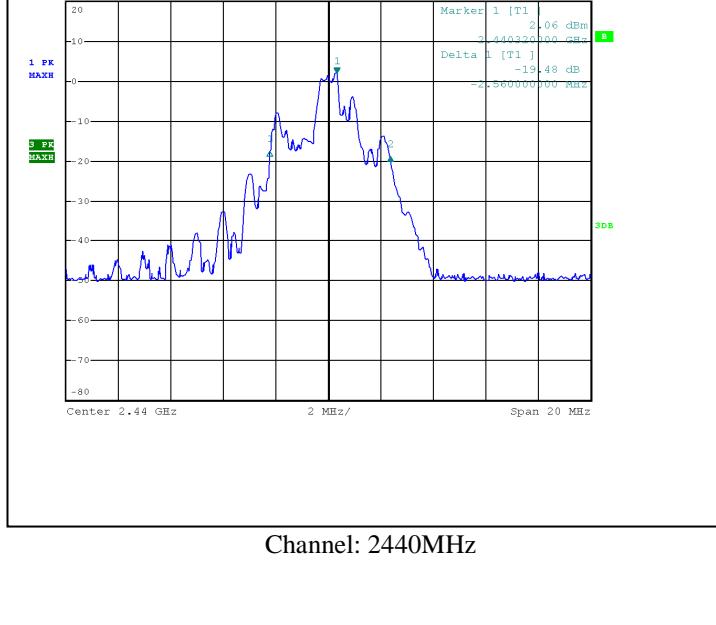
Report No. : AW0041257(8)

Date : July 20, 2018

### A1. 20dB Bandwidth Plot



Channel: 2410MHz



Channel: 2440MHz

Page 17 of 20

FCC ID: OTM-8447018-24GTX

IC: 20978-844701824G

This document is issued subject to the latest CMA Testing General Terms and Conditions of Testing and Inspection Services, available on request or accessible at website [www.cmatesting.org](http://www.cmatesting.org). This document shall not be reproduced except in full or with written approval by CMA Testing.

CMA Industrial Development Foundation Limited

Room 1302, Yan Hing Centre, 9-13 Wong Chuk Yeung St., Fo Tan, Shatin, N.T., Hong Kong.

Tel : (852) 2698 8198 Fax : (852) 2695 4177 E-mail : [info@cmatesting.org](mailto:info@cmatesting.org) Web Site : <http://www.cmatesting.org>



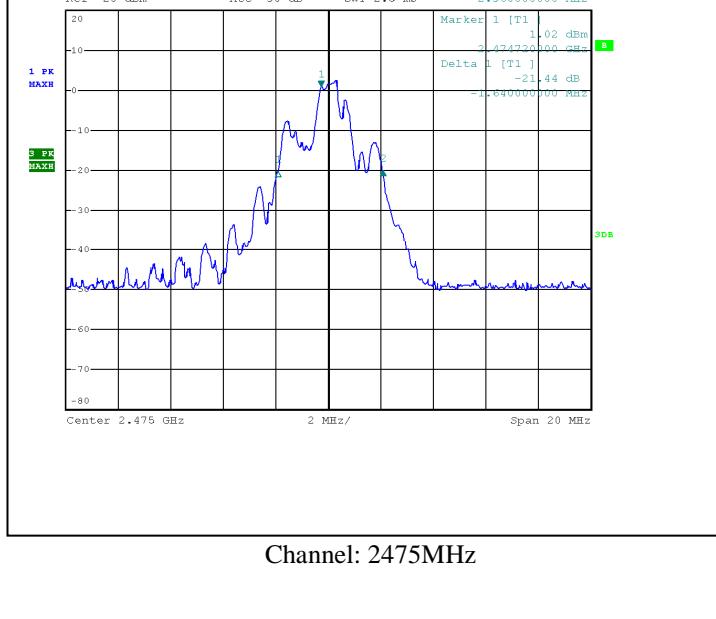
# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AW0041257(8)

Date : July 20, 2018



Channel: 2475MHz

FCC ID: OTM-8447018-24GTX  
IC: 20978-844701824G

Page 18 of 20

This document is issued subject to the latest CMA Testing General Terms and Conditions of Testing and Inspection Services, available on request or accessible at website [www.cmatesting.org](http://www.cmatesting.org).  
This document shall not be reproduced except in full or with written approval by CMA Testing.

CMA Industrial Development Foundation Limited

Room 1302, Yan Hing Centre, 9-13 Wong Chuk Yeung St., Fo Tan, Shatin, N.T., Hong Kong.

Tel : (852) 2698 8198 Fax : (852) 2695 4177 E-mail : [info@cmatesting.org](mailto:info@cmatesting.org) Web Site : <http://www.cmatesting.org>



# CMA Testing and Certification Laboratories

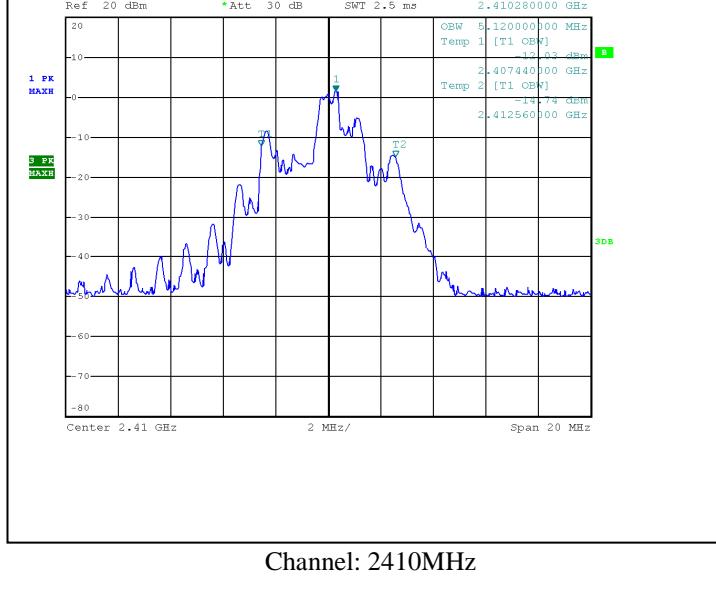
廠商會檢定中心

## TEST REPORT

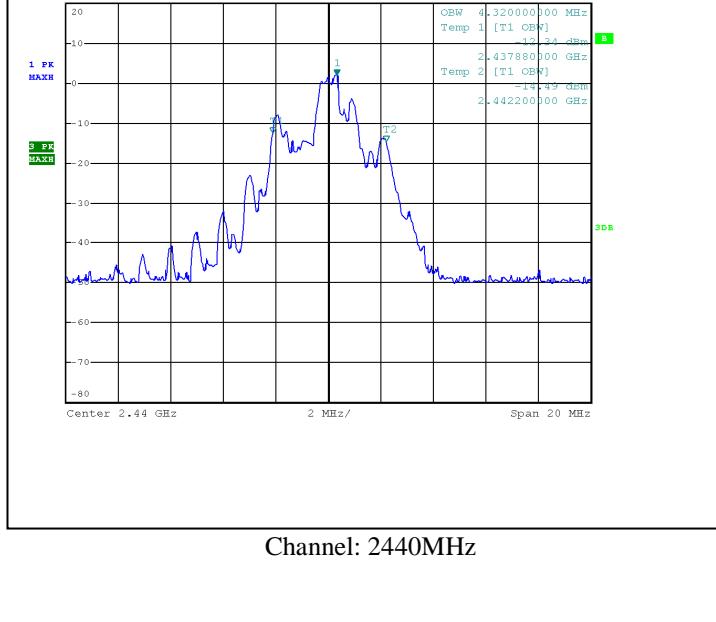
Report No. : AW0041257(8)

Date : July 20, 2018

### A2. 99% Bandwidth Plot



Channel: 2410MHz



Channel: 2440MHz

Page 19 of 20

FCC ID: OTM-8447018-24GTX

IC: 20978-844701824G

This document is issued subject to the latest CMA Testing General Terms and Conditions of Testing and Inspection Services, available on request or accessible at website [www.cmatesting.org](http://www.cmatesting.org). This document shall not be reproduced except in full or with written approval by CMA Testing.

CMA Industrial Development Foundation Limited

Room 1302, Yan Hing Centre, 9-13 Wong Chuk Yeung St., Fo Tan, Shatin, N.T., Hong Kong.

Tel : (852) 2698 8198 Fax : (852) 2695 4177 E-mail : [info@cmatesting.org](mailto:info@cmatesting.org) Web Site : <http://www.cmatesting.org>



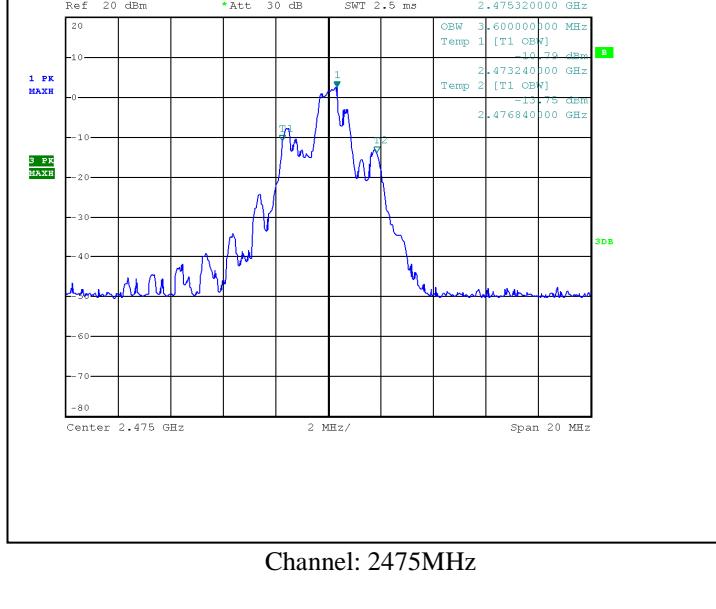
# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AW0041257(8)

Date : July 20, 2018



Channel: 2475MHz

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

FCC ID: OTM-8447018-24GTX  
IC: 20978-844701824G

Page 20 of 20