



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8) Date : 29 May 2015

Application No. : LT015146(6)

Applicant : Asian Express Holdings Limited
4F-4, No.669 Jingping Rd., Zhonghe City, TaiPei county 235
Taiwan R.O.C, Taiwan

Client : Asian Express Holdings Limited
Rm804 Sino Centre, 582-592 Nathan Road,
Mongkok, Kowloon, Hong Kong.

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

Sample Description	Model No.
ATOM 1 Micro Done	PL-1390 / PL-1391 / PL-1392 / PL-1393 / PL-1394 / PL-1395 / PL-1396 / PL-1397 / PL-1398 / PL-1399 / AT-2930 / AT-2931 / AT-2932 / AT-2934 / AT-2935 / AT-2936

Sample registration No. : RT025254-001
Radio Frequency : 2405MHz – 2475 MHz Transceiver
Radio Frequency : 2 x 1.5V AAA size batteries
No. of submitted sample : Six (6) set(s)

Date Received : 15 Apr 2015, 14 May 2015 and 27 May 2015
Test Period : 04 Apr 2015 to 29 May 2015.
Test Requested : FCC Part 15 Certificate,
Industry Canada Interference Causing Equipment Standard RSS-210

Test Method : 47 CFR Part 15 (10-1-12 Edition), ANSI C63.4 – 2009
Industry Canada RSS-Gen Issue 3

Test Engineer : Mr. LEUNG Shu-kan, Ken

Test Result : See attached sheet(s) from page 2 to 42.

Conclusion : The submitted sample was found to comply with requirement of FCC Part 15
Subpart B and C and Industry Canada RSS-210 Issue 8.

For and on behalf of
CMA Industrial Development Foundation Limited

Authorized Signature : _____


Mr. WONG Lap-pong, Andrew
Manager
Electrical Division

Page 1 of 42

FCC ID: VLE2930-R
IC: 10819B-2930R



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8) Date : 29 May 2015

Remark : All sixteen models are the same in circuitry and components; and therefore model PL-1390 was chosen to be the representative of the test sample. The difference between the tested model and the declared model(s) is/are the Model no. and Color

Page 2 of 42

FCC ID: VLE2930-R
IC: 10819B-2930R

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.cmatcl.com.
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@cmatcl.com Web Site: <http://www.cmatcl.com>



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

Table of Contents

1	General Information	4
1.1	General Description	4
1.2	Location of the test site	5
1.3	List of measuring equipment.....	6
1.4	Support equipment.....	6
1.5	Measurement Uncertainty.....	7
2	Description of the radiated emission test	8
2.1	Test Procedure	8
2.2	Test Result	9
2.3	Radiated Emission Measurement Data	10
3	Description of the Line-conducted Test	14
3.1	Test Procedure	14
3.2	Test Result	14
3.3	Graph and Table of Conducted Emission Measurement Data	14
4	Photograph	15
4.1	Photographs of the Test Setup for Radiated Emission and Conducted Emission.....	15
4.2	Photographs of the External and Internal Configurations of the EUT.....	15
5	Supplementary document.....	16
5.1	Bandwidth.....	16
6	Appendices.....	17



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

1 General Information

1.1 General Description

The equipment under test (EUT) is a drone for Atom 1 Micro Drone. The EUT is power by 3.7V rechargeable battery. It operates at 2402MHz – 2475MHz. When it switches on and received radio signal, it will take the corresponding action.

The brief circuit description is listed as follows:

- | | |
|------------------|--|
| - U3 | and its associated circuit act as 2.4GHz RF module |
| - U1 | and its associated circuit act as MCU |
| - Y1 | and its associated circuit act as oscillator |
| - M1, M2, M31 M4 | and its associated circuit act as motor |
| - U2 | and its associated circuit act as power regulator |



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

1.2 Location of the test site

FCC Registered Test Site Number: 552221

Industry Canada Registered Test Site Number: 4093A

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2009. 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 – 2009. A shielded room is located at :

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



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

1.3 List of measuring equipment

Equipment	Manufacturer	Model No.	Serial No.	Calibration Due Date	Calibration Period
EMI Test Receiver	R&S	ESCI	100152	28 Aug 2015	1Year
Spectrum Analyzer	R&S	FSV40	100628	02 Feb 2016	1Year
Broadband Antenna	Schaffner	CBL6112B	2718	19 Feb 2016	2Years
Loop Antenna	EMCO	6502	00056620	28 Oct 2015	2Years
Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-531	24 Nov 2016	2Years
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170442	24 Nov 2016	2Years
Broadband Pre-Amplifier	Schwarzbeck	BBV 9718	9718-119	18 Jun 2015	2Years
Broadband Pre-Amplifier	Schwarzbeck	BBV 9719	9719-010	17 Jun 2015	2Years
LISN	R&S	ENV216	101232	13 Nov 2015	1Year
Coaxial Cable	Schaffner	RG 213/U	N/A	19 Feb 2016	1Years
Coaxial Cable	Suhner	RG 214/U	N/A	19 Feb 2016	1Years
Coaxial Cable	Suhner	Sucoflex_104	N/A	24 Nov 2016	2Years

1.4 Support equipment

Adaptor: A1299 (Supplied by CMA)



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

1.5 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)	4.63dB
30MHz ~ 200MHz (Vertical)	4.65dB
200MHz ~ 1000MHz (Horizontal)	4.45dB
200MHz ~ 1000MHz (Vertical)	4.41dB

Conducted emissions

Frequency	Uncertainty (U_{lab})
150kHz~30MHz	2.47dB



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

2 Description of the radiated emission test

2.1 Test Procedure

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 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. The turntable was rotated to maximize the emission level. The antenna was then moving along the mast from 1m up to 4m until no more higher value was found. Both horizontal and vertical polarization of the antenna were placed and investigated.

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

For 30MHz to 1GHz, broadband antenna with its vertical and horizontal plane is placed 3m from the EUT and rotated about its vertical and horizontal axis for maximum response at each azimuth about the EUT. And the reference point of antenna shall be 1 m above the ground.

For above 1GHz, horn antenna with its vertical and horizontal plane is placed 3m from the EUT and rotated about its vertical and horizontal axis for maximum response at each azimuth about the EUT. Preamplifier and High Pass filter was used for measurements. The reference point of antenna shall be 1 m above the ground.

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



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

2.2 Test Result

Subpart C and RSS-210

Peak Detector data were measured unless otherwise stated.

“#” means emissions appear within the restricted bands shall follow the requirement of RSS-Gen Table 3.

The frequencies from fundamental up to that tenth harmonics were investigated, and emissions more 20dB below limit were not reported. Thus, those highest emissions were presented in next page (section 2.3).

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

Subpart B RSS-Gen:

The emissions meet the requirement of section 15.109 and section 4.10 are based on measurements employing the CISPR quasi-peak detector below 1000MHz and average detector for frequencies above 1000MHz.

“#” means emissions appear within the restricted bands shall follow the requirement of RSS-Gen Table 3.

The frequencies from 30MHz to 1000MHz were investigated, and emissions more 20dB below limit were not reported. Thus, those highest emissions were presented in next page (section 2.3).

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



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

2.3 Radiated Emission Measurement Data

Radiated emission

pursuant to

the requirement of FCC Part 15 subpart C

Environmental conditions:

Parameter	Recorded value	
Ambient temperature:	25	° C
Relative humidity:	70	%

Measurement: Peak RBW: 1MHz VBW: 3MHz Operation Mode: Transmission

Testing frequency range: 9kHz to 25GHz

Channel	Frequency (MHz)	Polarity (H/V)	Reading at 3m (dBμV)	Transducer Factor (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
Low	2401.884	H	78.7	- 4.1	74.6	114.0	- 39.4
	#4803.709	H	44.0	3.8	47.8	74.0	- 26.2
	#4803.769	V	43.3	3.8	47.1	74.0	- 26.9
Middle	2432.906	H	70.1	- 4.1	66.0	114.0	- 48.0
	#4865.873	V	43.5	3.8	47.3	74.0	- 26.7
	#4865.893	H	45.6	3.8	49.4	74.0	- 24.6
High	2474.931	H	82.9	- 4.3	78.6	114.0	- 35.4
	#4949.727	V	42.6	4.1	46.7	74.0	- 27.3
	#4949.896	H	46.0	4.1	50.1	74.0	- 23.9

Remark: Other emissions more than 20dB below the limit are not reported.

Peak measurement values are lower than average limit, therefore average measurement is not necessary



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

2.3 Radiated Emission Measurement Data (Con't)

Radiated emission

pursuant to

the requirement of FCC Part 15 subpart C

Environmental conditions:

Parameter	Recorded value	
Ambient temperature:	25	° C
Relative humidity:	70	%

Detector: Quasi-peak

RBW: 120kHz

VBW: 300kHz

Testing frequency range: 9kHz to 25GHz

Operation mode: Transmission

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dBμV)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
67.422	H	9.3	7.8	17.1	40.0	- 22.9
102.759	H	9.5	12.6	22.1	43.5	- 21.4
140.268	H	10.4	13.2	23.6	43.5	- 19.9
180.253	H	9.6	11.3	20.9	43.5	- 22.6
217.806	H	10.1	11.3	21.4	46.0	-24.6
#254.771	H	10.0	15.1	25.1	46.0	- 20.9
291.215	H	10.7	15.1	25.8	46.0	- 20.2

Remark: Other emissions more than 20dB below the limit are not reported.



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

2.3 Radiated Emission Measurement Data (Con't)

Radiated emission

pursuant to

the requirement of FCC Part 15 subpart B

Environmental conditions:

Parameter	Recorded value	
Ambient temperature:	25	° C
Relative humidity:	70	%

Detector: Quasi-peak

RBW: 120kHz

VBW: 300kHz

Testing frequency range: 9kHz to 25GHz

Operation mode: Receiving

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dBμV)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
70.508	H	9.1	8.0	17.1	40.0	- 22.9
86.738	H	9.3	9.7	19.0	40.0	- 21.0
#128.753	H	9.5	14.4	23.9	43.5	- 19.6
176.568	H	9.0	11.9	20.9	43.5	- 22.6
216.575	H	9.8	11.8	21.6	46.0	- 24.4
#272.111	H	10.1	15.4	25.5	46.0	- 20.5
334.854	H	10.6	16.8	27.4	46.0	- 18.6

Remark: Other emissions more than 20dB below the limit are not reported.



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

2.3 Radiated Emission Measurement Data (Con't)

Radiated emission

pursuant to

the requirement of FCC Part 15 subpart B

Environmental conditions:

Parameter	Recorded value	
Ambient temperature:	25	° C
Relative humidity:	70	%

Detector: Quasi-peak

RBW: 120kHz

VBW: 300kHz

Testing frequency range: 9kHz to 25GHz

Operation mode: Charging

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dBμV)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
68.640	H	9.7	7.8	17.5	40.0	- 22.5
98.725	H	9.6	12.2	21.8	43.5	- 21.7
140.005	H	9.7	13.2	22.9	43.5	- 20.6
181.225	H	9.7	11.3	21.0	43.5	- 22.5
216.886	H	9.6	11.3	20.9	46.0	- 25.1
#257.192	H	10.0	15.1	25.1	46.0	- 20.9
306.731	H	9.4	16.5	25.9	46.0	- 20.1

Remark: Other emissions more than 20dB below the limit are not reported.



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

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 C63.4 – 2009. The EUT was setup as described in the procedures, and both lines were measured.

3.2 Test Result

The EUT connected to adaptor for charging

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

3.3 Graph and Table of Conducted Emission Measurement Data

For electronic filing, the document is saved with filename TestRpt2.pdf.



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

4 Photograph

4.1 Photographs of the Test Setup for Radiated Emission and Conducted Emission

For electronic filing, the photos are saved with filename VLE2930-R TSup.pdf and 10819B-2930R TSup.pdf.

4.2 Photographs of the External and Internal Configurations of the EUT

For electronic filing, the photos are saved with filename VLE2930-R ExPho.pdf, 10819B-2930R ExPho.pdf, VLE2930-R InPho.pdf and 10819B-2930R InPho.pdf.



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

5 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	LabelSmp.jpg
Block Diagram	BlkDia.pdf
Schematic Diagram	Schem.pdf
Users Manual	UserMan.pdf
Operational Description	OpDes.pdf

5.1 Bandwidth

The plot saved in TestRpt3.pdf shows the fundamental emission is confined in the specified band. It shows the 20dB bandwidth met the 15.215 requirement for frequency band 2400 to 2483.5 MHz.

The plot saved in TestRpt4.pdf shows the band edge is fulfil 15.209 and RSS-210 A2.9 requirement.



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

6 Appendices

A1	Photos of the set-up of Radiated Emissions	4	pages
A2	Photos of the set-up of Conducted Emissions	2	pages
A3	Photos of External Configurations	3	pages
A4	Photos of Internal Configurations	2	pages
A5	ID Label/Location	2	pages
A6	Conducted Emission Measurement Data	6	pages
A7	Band Edge	2	pages
A8	20dB Bandwidth Plot	2	pages
A9	99% Bandwidth Plot	2	pages



CMA Testing and Certification Laboratories

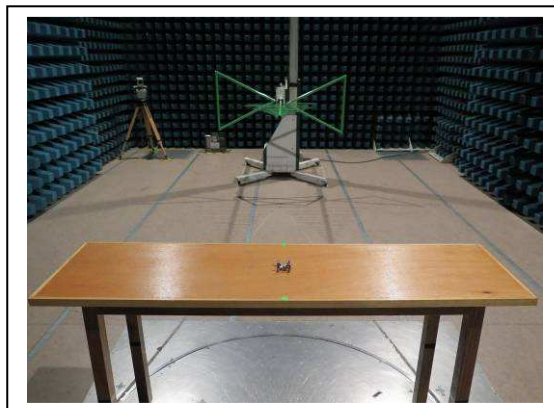
廠商會檢定中心

TEST REPORT

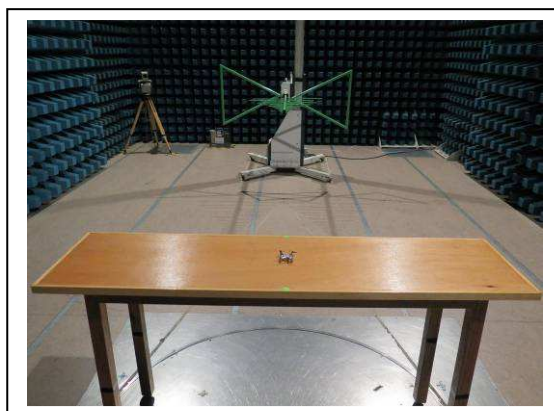
Report No. : AT0031843(8)

Date : 29 May 2015

A1. Photos of the set-up of Radiated Emissions



(Front view, 30MHz – 1GHz)



(Back view, 30MHz – 1GHz)

Tested by:

Mr. LEUNG Shu-kan, Ken

Reviewed by:

Mr. WONG Lap-pong, Andrew



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

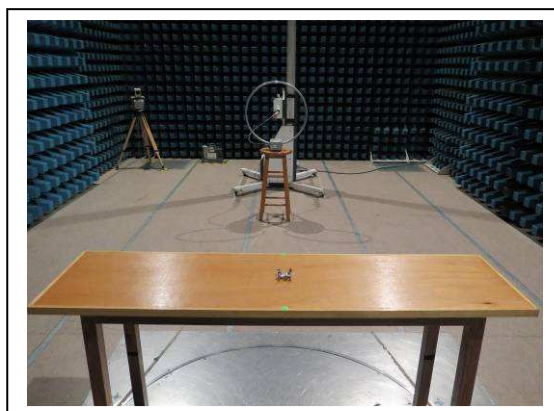
Report No. : AT0031843(8)

Date : 29 May 2015

A1. Photos of the set-up of Radiated Emissions



(Front view, 9kHz – 30MHz)



(Back view, 9kHz – 30MHz)

Tested by:

Mr. LEUNG Shu-kan, Ken

Reviewed by:

Mr. WONG Lap-pong, Andrew



CMA Testing and Certification Laboratories

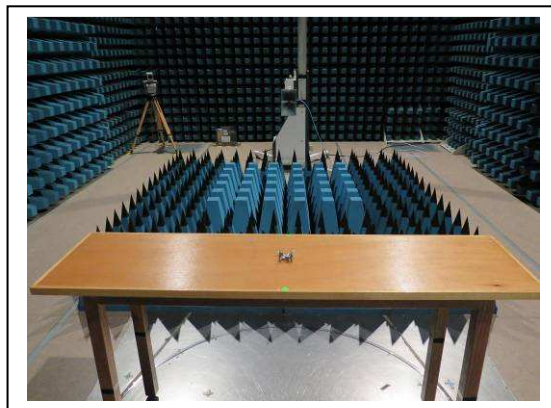
廠商會檢定中心

TEST REPORT

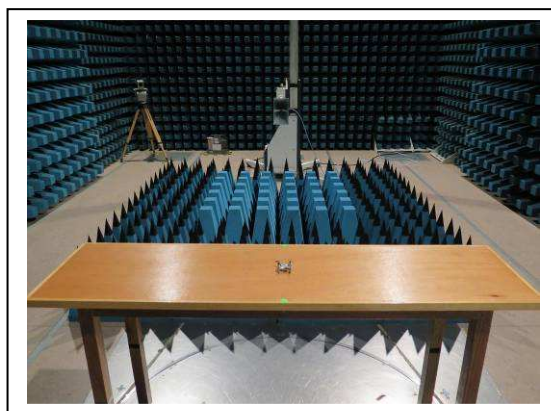
Report No. : AT0031843(8)

Date : 29 May 2015

A1. Photos of the set-up of Radiated Emissions



(Front view, 1GHz – 25GHz)



(Back view, above 1GHz – 25GHz)

Tested by:

Mr. LEUNG Shu-kan, Ken

Reviewed by:

Mr. WONG Lap-pong, Andrew



CMA Testing and Certification Laboratories

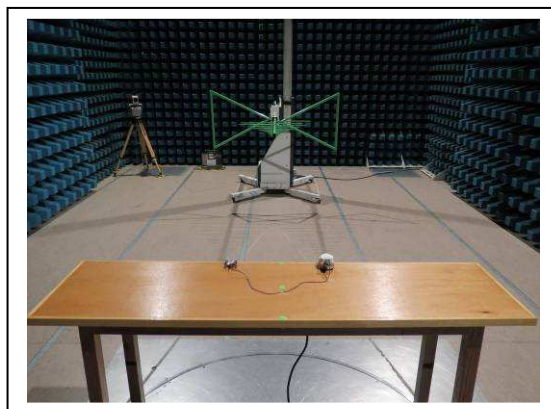
廠商會檢定中心

TEST REPORT

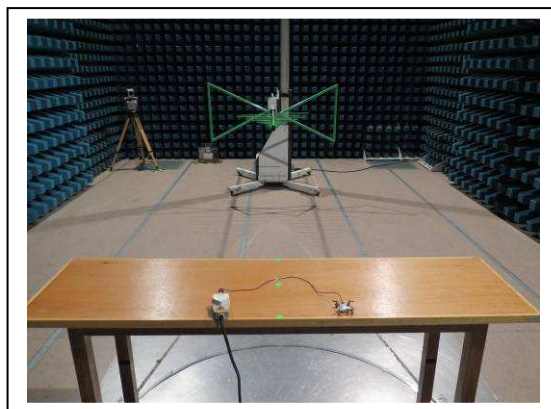
Report No. : AT0031843(8)

Date : 29 May 2015

A1. Photos of the set-up of Radiated Emissions



(Front view, Charging)



(Back view, charging)

Tested by:

Mr. LEUNG Shu-kan, Ken

Reviewed by:

Mr. WONG Lap-pong, Andrew



CMA Testing and Certification Laboratories

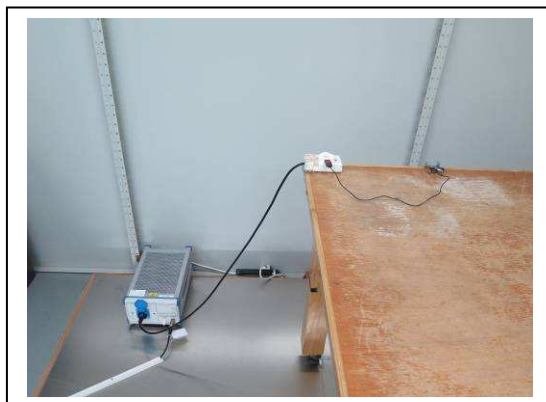
廠商會檢定中心

TEST REPORT

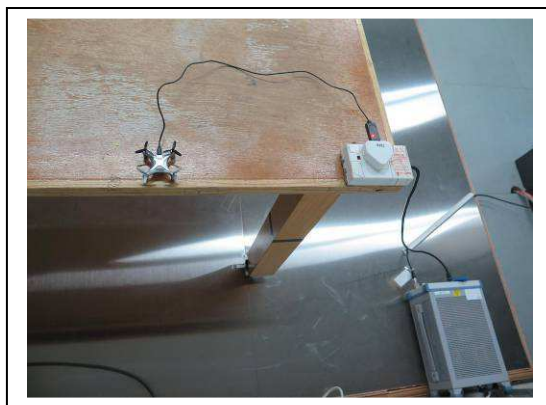
Report No. : AT0031843(8)

Date : 29 May 2015

A2. Photos of the set-up of Conducted Emission



(front view)



(rear view)

Tested by:

Mr. LEUNG Shu-kan, Ken

Reviewed by:

Mr. WONG Lap-pong, Andrew

FCC ID: VLE2930-R
IC: 10819B-2930R

Page 22 of 42

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.cmatcl.com.
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@cmatcl.com Web Site: <http://www.cmatcl.com>



CMA Testing and Certification Laboratories

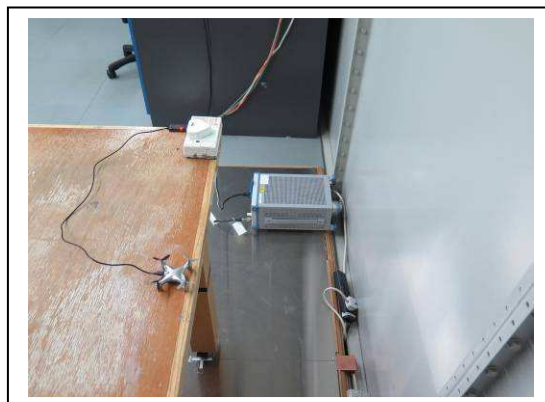
廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

A2. Photos of the set-up of Conducted Emission



(side view)

Tested by:

Mr. LEUNG Shu-kan, Ken

Reviewed by:

Mr. WONG Lap-pong, Andrew



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

A3 Photos of External Configurations



(External Configuration 1)



(External Configuration 2)

Tested by:

Mr. LEUNG Shu-kan, Ken

Reviewed by:

Mr. WONG Lap-pong, Andrew



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

A3 Photos of External Configurations



(External Configuration 3)



(External Configuration 4)

Tested by:

Mr. LEUNG Shu-kan, Ken

Reviewed by:

Mr. WONG Lap-pong, Andrew



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

A3 Photos of External Configurations



(External Configuration 5)

Tested by:

Mr. LEUNG Shu-kan, Ken

Reviewed by:

Mr. WONG Lap-pong, Andrew



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

A4. Photos of Internal Configurations



Internal Configuration 1



Internal Configuration 2

Tested by:

Mr. LEUNG Shu-kan, Ken

Reviewed by:

Mr. WONG Lap-pong, Andrew

FCC ID: VLE2930-R
IC: 10819B-2930R

Page 27 of 42

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.cmatcl.com.
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@cmatcl.com Web Site: <http://www.cmatcl.com>



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

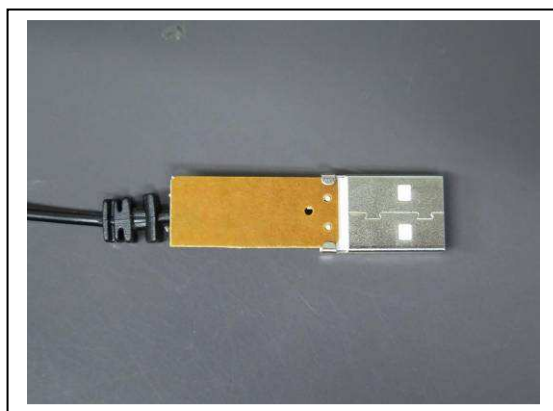
Report No. : AT0031843(8)

Date : 29 May 2015

A4. Photos of Internal Configurations



Internal Configuration 3



Internal Configuration 4

Tested by:

Mr. LEUNG Shu-kan, Ken

Reviewed by:

Mr. WONG Lap-pong, Andrew

FCC ID: VLE2930-R

IC: 10819B-2930R

Page 28 of 42

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.cmatcl.com.
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@cmatcl.com Web Site: <http://www.cmatcl.com>



CMA Testing and Certification Laboratories

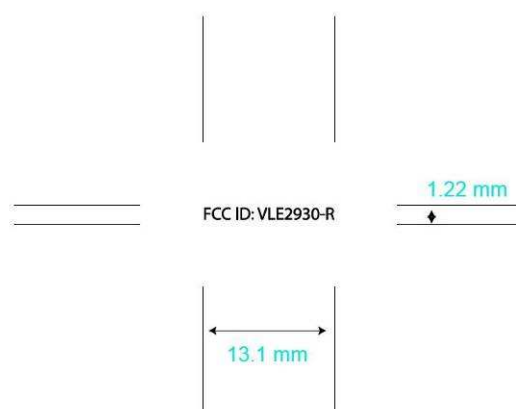
廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

A5. ID Label / Location



ID Label 1

Tested by:

Mr. LEUNG Shu-kan, Ken

Reviewed by:

Mr. WONG Lap-pong, Andrew

FCC ID: VLE2930-R
IC: 10819B-2930R

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.cmatcl.com.
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@cmatcl.com Web Site: <http://www.cmatcl.com>



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

A5. ID Label / Location



ID Label 2

Tested by:

Mr. LEUNG Shu-kan, Ken

Reviewed by:

Mr. WONG Lap-pong, Andrew



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

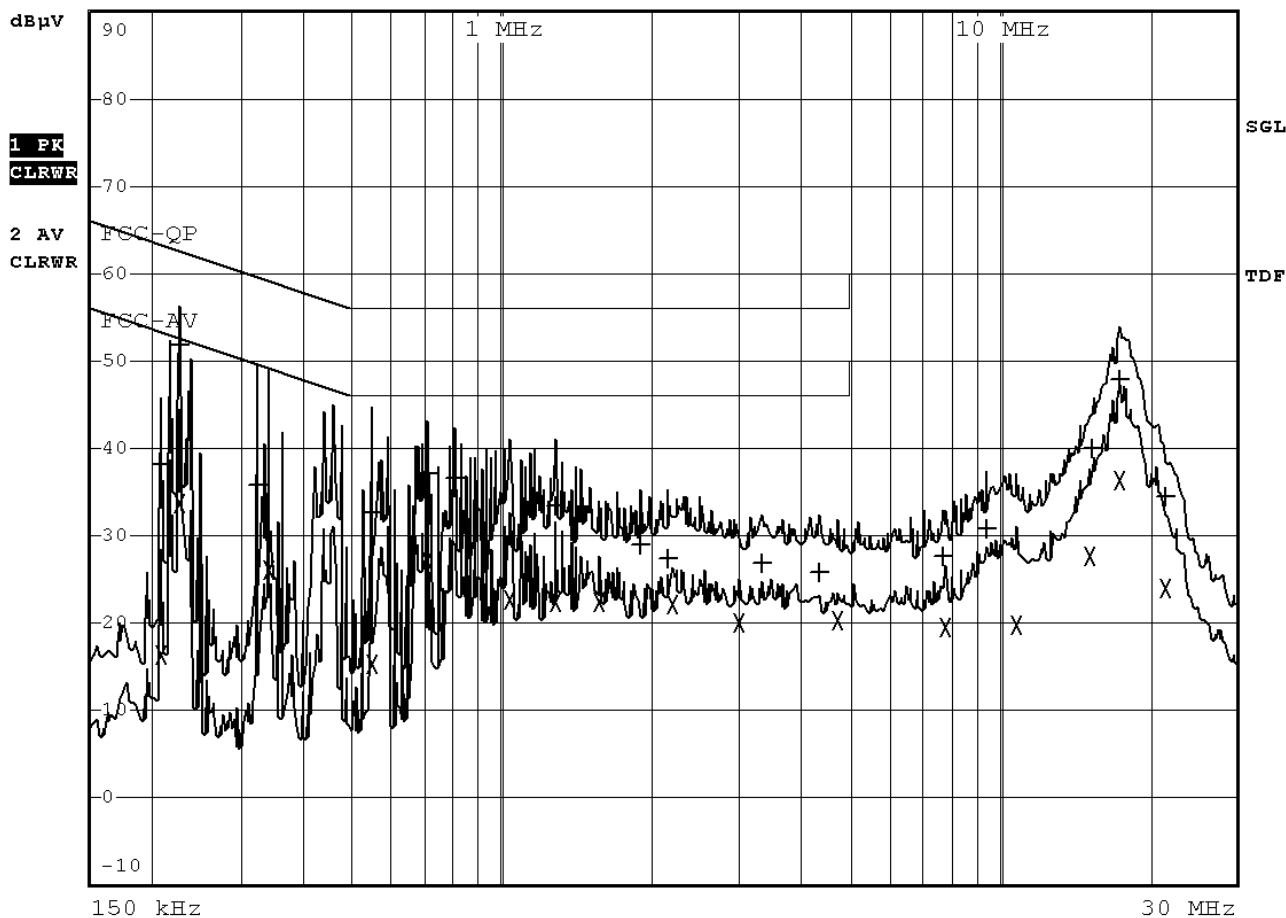
A6. Conducted Emission Measurement Date



RBW 9 kHz

MT 1 s

Att 10 dB AUTO PREAMP OFF



Tested by:

Mr. LEUNG Shu-kan, Ken

Reviewed by:

Mr. WONG Lap-pong, Andrew



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

A6. Conducted Emission Measurement Date

EDIT PEAK LIST (Final Measurement Results)				
Trace1:	FCC-QP			
Trace2:	FCC-AV			
Trace3:	---			
TRACE	FREQUENCY	LEVEL dBμV		DELTA LIMIT dB
1 Quasi Peak	208.5 kHz	38.03	L1 gnd	-25.22
2 Average	208.5 kHz	16.33	L1 gnd	-36.92
1 Quasi Peak	226.5 kHz	51.81	L1 gnd	-10.76
2 Average	226.5 kHz	33.81	L1 gnd	-18.76
1 Quasi Peak	325.5 kHz	35.68	L1 gnd	-23.88
2 Average	343.5 kHz	26.14	L1 gnd	-22.97
1 Quasi Peak	549.5 kHz	32.68	L1 gnd	-23.31
2 Average	549.5 kHz	15.36	L1 gnd	-30.64
1 Quasi Peak	707 kHz	37.02	L1 gnd	-18.97
2 Average	707 kHz	27.17	L1 gnd	-18.82
1 Quasi Peak	806 kHz	36.61	L1 gnd	-19.38
2 Average	1.0355 MHz	22.56	L1 gnd	-23.43
1 Quasi Peak	1.283 MHz	33.52	N gnd	-22.47
2 Average	1.283 MHz	22.49	L1 gnd	-23.50
2 Average	1.571 MHz	22.34	L1 gnd	-23.65
1 Quasi Peak	1.895 MHz	28.85	L1 gnd	-27.14
1 Quasi Peak	2.1605 MHz	27.47	L1 gnd	-28.53
2 Average	2.21 MHz	22.07	L1 gnd	-23.92
2 Average	3.002 MHz	20.15	L1 gnd	-25.84
1 Quasi Peak	3.353 MHz	26.90	L1 gnd	-29.09

Tested by:

Mr. LEUNG Shu-kan, Ken

Reviewed by:

Mr. WONG Lap-pong, Andrew



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

A6 Conducted Emission Measurement Date

EDIT PEAK LIST (Final Measurement Results)				
Trace1:	FCC-QP			
Trace2:	FCC-AV			
Trace3:	---			
TRACE	FREQUENCY	LEVEL dBμV		DELTA LIMIT dB
1 Quasi Peak	4.334 MHz	25.72	L1 gnd	-30.28
2 Average	4.748 MHz	20.34	L1 gnd	-25.65
1 Quasi Peak	7.7135 MHz	27.60	L1 gnd	-32.39
2 Average	7.817 MHz	19.61	L1 gnd	-30.38
1 Quasi Peak	9.401 MHz	30.80	L1 gnd	-29.19
2 Average	10.787 MHz	19.84	N gnd	-30.15
2 Average	15.2555 MHz	27.74	L1 gnd	-22.25
1 Quasi Peak	15.3365 MHz	40.11	L1 gnd	-19.88
1 Quasi Peak	17.483 MHz	47.88	L1 gnd	-12.11
2 Average	17.483 MHz	36.35	L1 gnd	-13.64
1 Quasi Peak	21.551 MHz	34.46	L1 gnd	-25.53
2 Average	21.614 MHz	23.98	L1 gnd	-26.01

Tested by:

Mr. LEUNG Shu-kan, Ken

Reviewed by:

Mr. WONG Lap-pong, Andrew



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

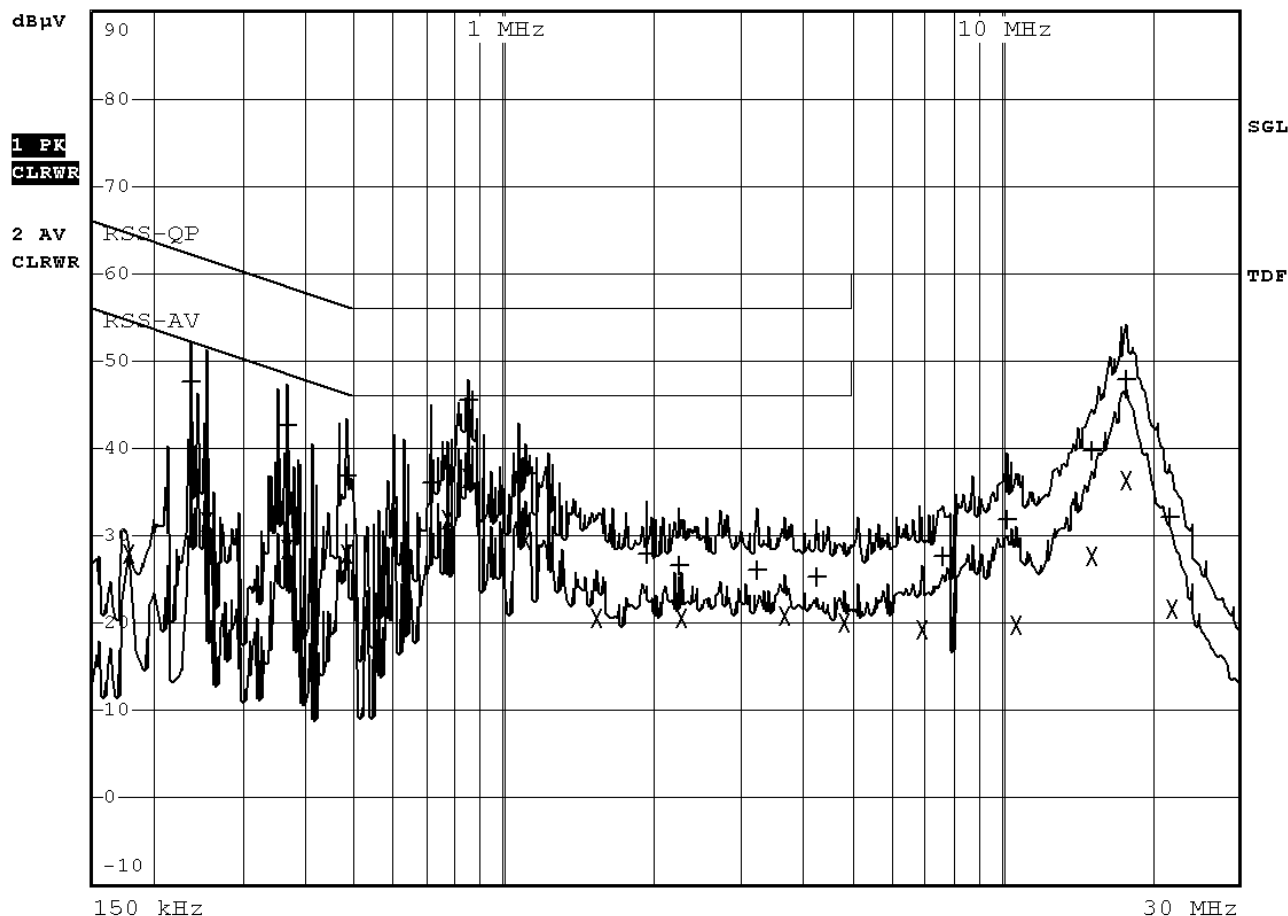
A6. Conducted Emission Measurement Date



RBW 9 kHz

MT 1 s

Att 10 dB AUTO PREAMP OFF



Tested by:

Mr. LEUNG Shu-kan, Ken

Reviewed by:

Mr. WONG Lap-pong, Andrew



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

A6. Conducted Emission Measurement Date

EDIT PEAK LIST (Final Measurement Results)				
Trace1:	RSS-QP			
Trace2:	RSS-AV			
Trace3:	---			
TRACE	FREQUENCY	LEVEL dBμV		DELTA LIMIT dB
2 Average	177 kHz	27.79	N gnd	-26.83
1 Quasi Peak	235.5 kHz	47.53	L1 gnd	-14.72
2 Average	253.5 kHz	31.66	L1 gnd	-19.97
1 Quasi Peak	370.5 kHz	42.54	L1 gnd	-15.94
2 Average	370.5 kHz	28.45	L1 gnd	-20.03
1 Quasi Peak	487.5 kHz	36.88	L1 gnd	-19.32
2 Average	487.5 kHz	27.85	L1 gnd	-18.35
1 Quasi Peak	716 kHz	36.11	L1 gnd	-19.88
2 Average	770 kHz	31.81	L1 gnd	-14.18
1 Quasi Peak	846.5 kHz	45.52	N gnd	-10.48
2 Average	846.5 kHz	36.62	L1 gnd	-9.37
1 Quasi Peak	1.1075 MHz	37.08	L1 gnd	-18.91
2 Average	1.1075 MHz	29.62	L1 gnd	-16.37
2 Average	1.5395 MHz	20.53	L1 gnd	-25.46
1 Quasi Peak	1.9535 MHz	27.85	L1 gnd	-28.14
1 Quasi Peak	2.2595 MHz	26.72	L1 gnd	-29.27
2 Average	2.2775 MHz	20.65	L1 gnd	-25.34
1 Quasi Peak	3.245 MHz	26.16	L1 gnd	-29.83
2 Average	3.6905 MHz	20.71	L1 gnd	-25.28
1 Quasi Peak	4.2755 MHz	25.33	L1 gnd	-30.66

Tested by:

Mr. LEUNG Shu-kan, Ken

Reviewed by:

Mr. WONG Lap-pong, Andrew



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

A6 Conducted Emission Measurement Date

EDIT PEAK LIST (Final Measurement Results)				
Trace1:	RSS-QP			
Trace2:	RSS-AV			
Trace3:	---			
TRACE	FREQUENCY	LEVEL dB μ V		DELTA LIMIT dB
2 Average	4.856 MHz	19.98	L1 gnd	-26.01
2 Average	6.926 MHz	19.17	N gnd	-30.82
1 Quasi Peak	7.655 MHz	27.56	L1 gnd	-32.43
1 Quasi Peak	10.3325 MHz	31.82	L1 gnd	-28.17
2 Average	10.697 MHz	19.89	N gnd	-30.10
1 Quasi Peak	15.287 MHz	39.62	L1 gnd	-20.37
2 Average	15.287 MHz	27.54	L1 gnd	-22.45
2 Average	17.888 MHz	36.21	L1 gnd	-13.78
1 Quasi Peak	17.9285 MHz	47.88	L1 gnd	-12.11
1 Quasi Peak	21.9065 MHz	32.06	L1 gnd	-27.93
2 Average	22.1315 MHz	21.68	L1 gnd	-28.31

Tested by:

Mr. LEUNG Shu-kan, Ken

Reviewed by:

Mr. WONG Lap-pong, Andrew



CMA Testing and Certification Laboratories

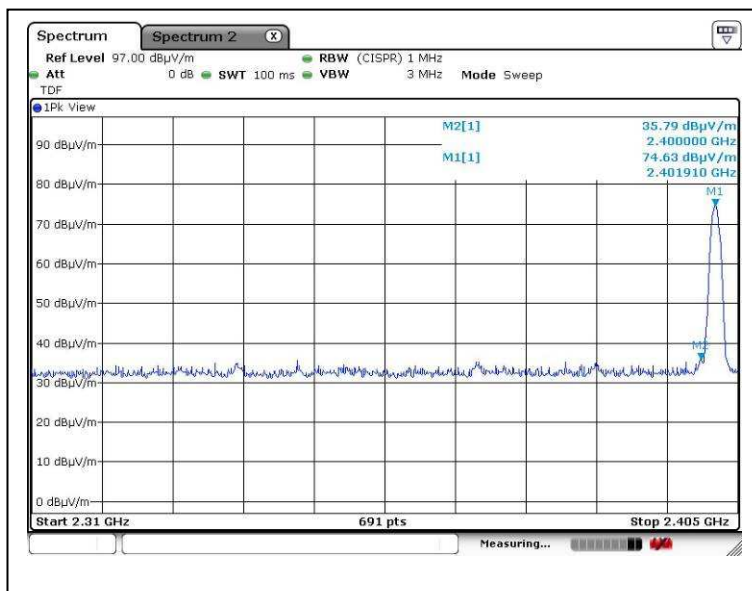
廠商會檢定中心

TEST REPORT

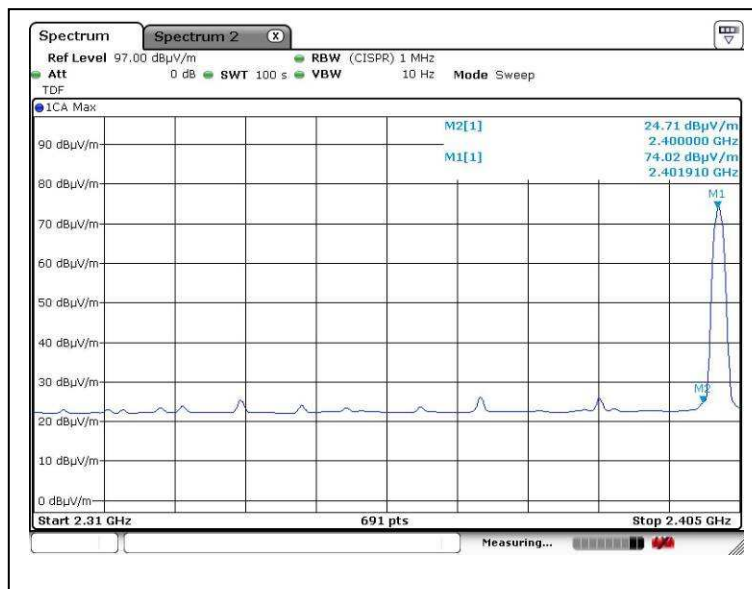
Report No. : AT0031843(8)

Date : 29 May 2015

A7. Band Edge



Lower edge (Peak measurement)



Lower edge (Average measurement)

Tested by:

Mr. LEUNG Shu-kan, Ken

Reviewed by:

Mr. WONG Lap-pong, Andrew

FCC ID: VLE2930-R
IC: 10819B-2930R



CMA Testing and Certification Laboratories

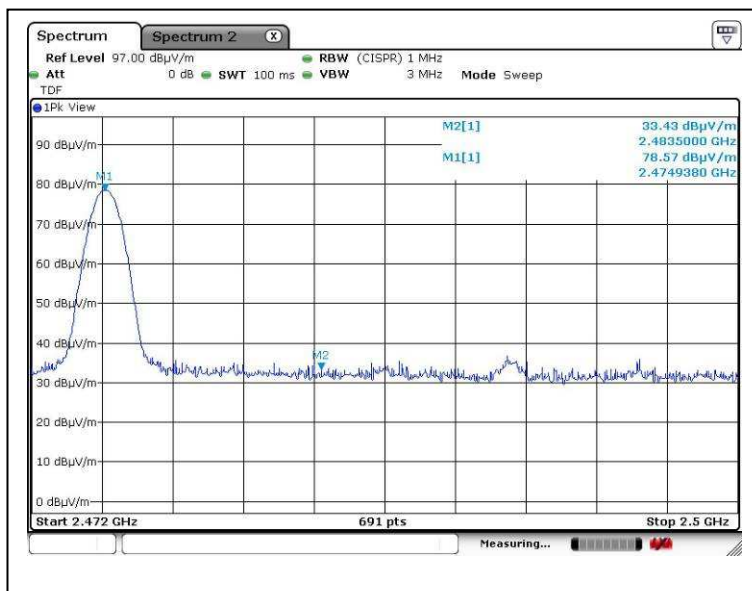
廠商會檢定中心

TEST REPORT

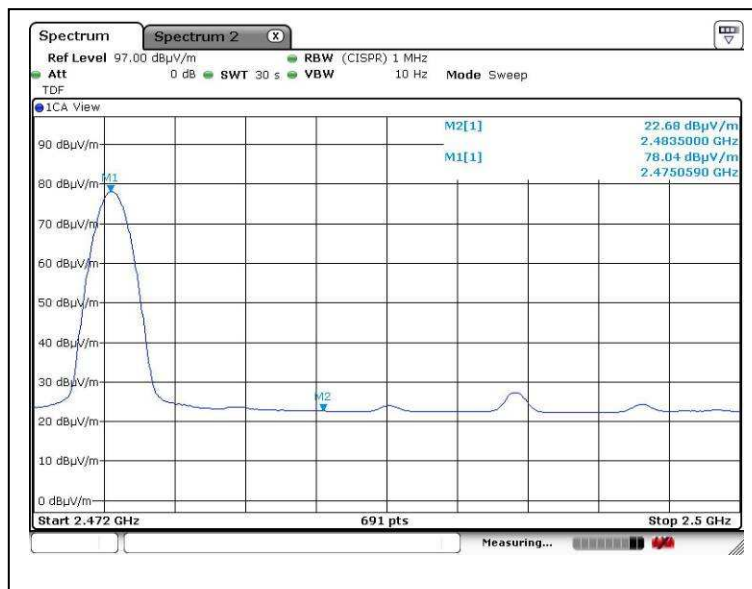
Report No. : AT0031843(8)

Date : 29 May 2015

A7. Band Edge



Higher edge (Peak measurement)



Higher edge (Average measurement)

Tested by:

Mr. LEUNG Shu-kan, Ken

Reviewed by:

Mr. WONG Lap-pong, Andrew

FCC ID: VLE2930-R
IC: 10819B-2930R

Page 38 of 42

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.cmatcl.com.
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@cmatcl.com Web Site: <http://www.cmatcl.com>



CMA Testing and Certification Laboratories

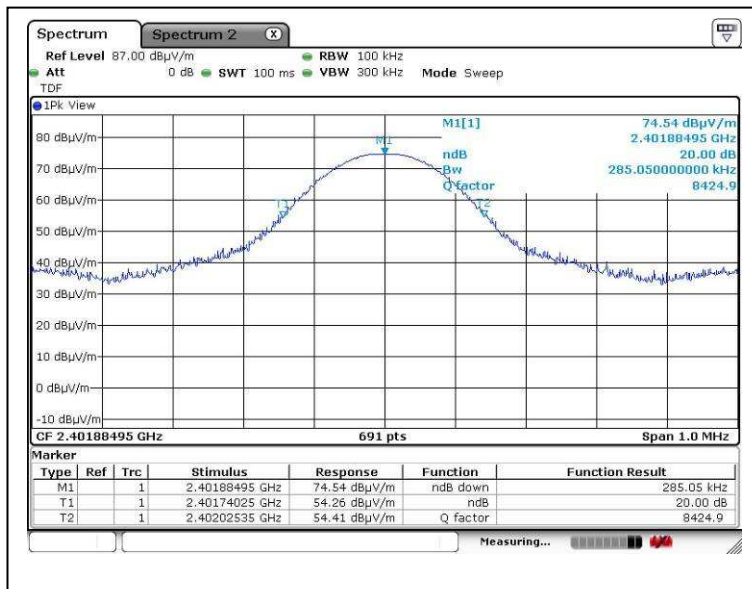
廠商會檢定中心

TEST REPORT

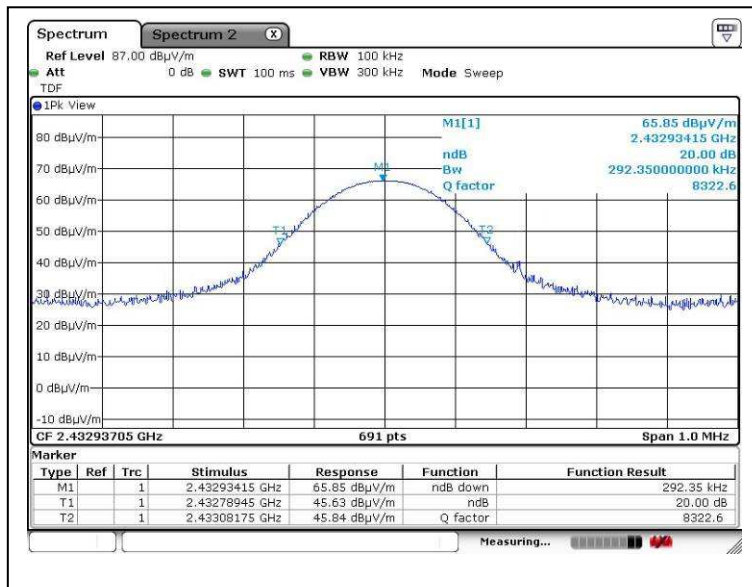
Report No. : AT0031843(8)

Date : 29 May 2015

A8. 20dB Bandwidth Plot



Bandwidth 1 (2402MHz)



Bandwidth 2 (2433MHz)

Tested by:

Mr. LEUNG Shu-kan, Ken

Reviewed by:

Mr. WONG Lap-pong, Andrew



CMA Testing and Certification Laboratories

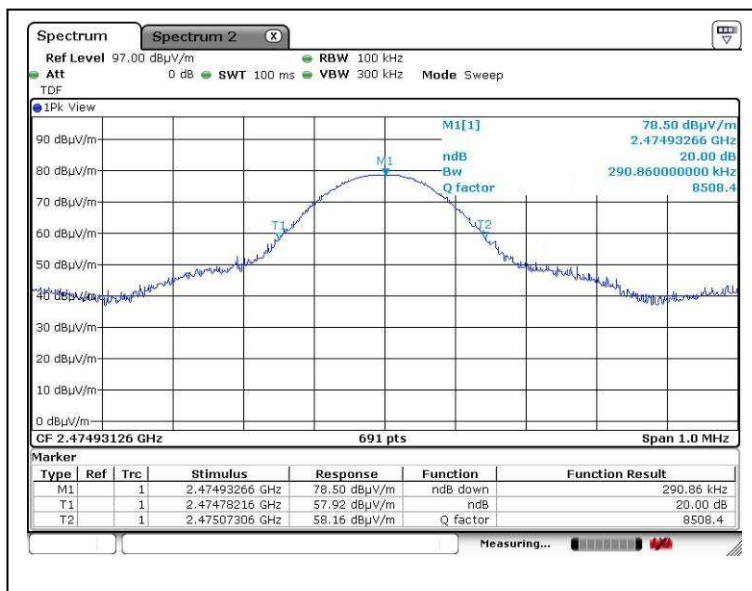
廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

A8. 20dB Bandwidth Plot



Bandwidth 3 (2475MHz)

Tested by:

Mr. LEUNG Shu-kan, Ken

Reviewed by:

Mr. WONG Lap-pong, Andrew

FCC ID: VLE2930-R
IC: 10819B-2930R

Page 40 of 42

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.cmatcl.com.
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@cmatcl.com Web Site: <http://www.cmatcl.com>



CMA Testing and Certification Laboratories

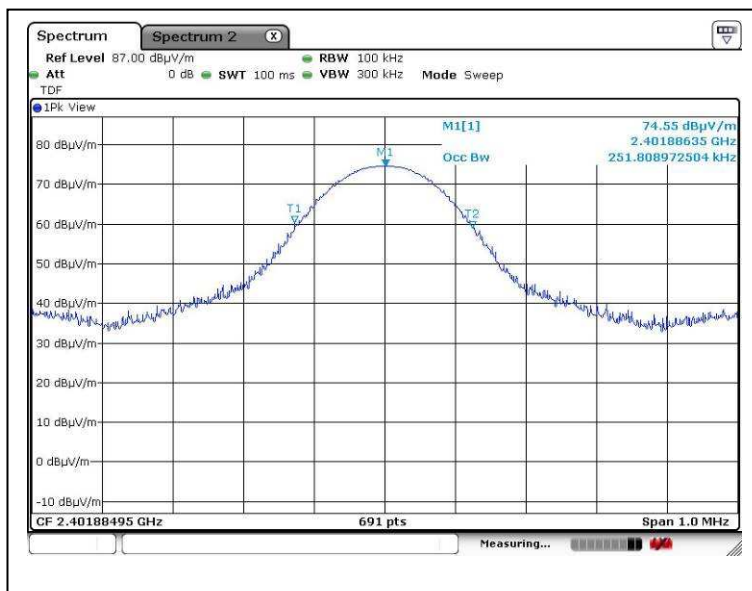
廠商會檢定中心

TEST REPORT

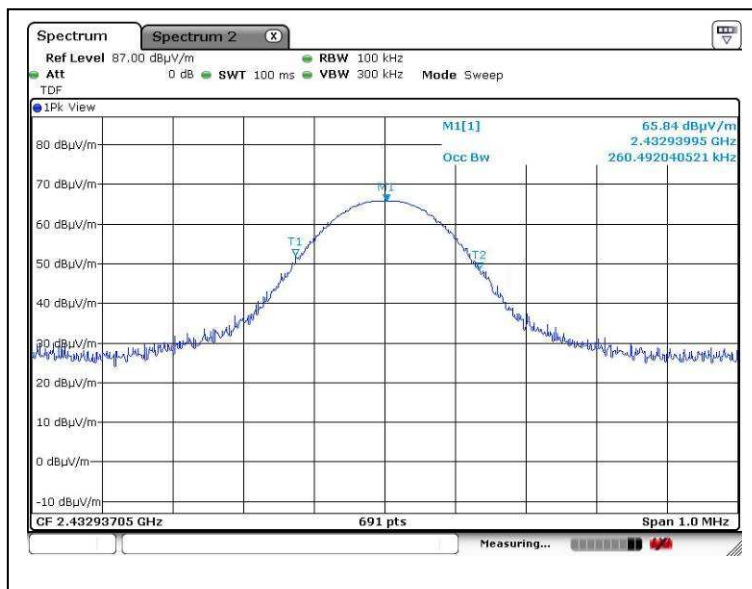
Report No. : AT0031843(8)

Date : 29 May 2015

A9. 99% Bandwidth Plot



Bandwidth 1 (2402MHz)



Bandwidth 2 (2433MHz)

Tested by:

Mr. LEUNG Shu-kan, Ken

Reviewed by:

Mr. WONG Lap-pong, Andrew



CMA Testing and Certification Laboratories

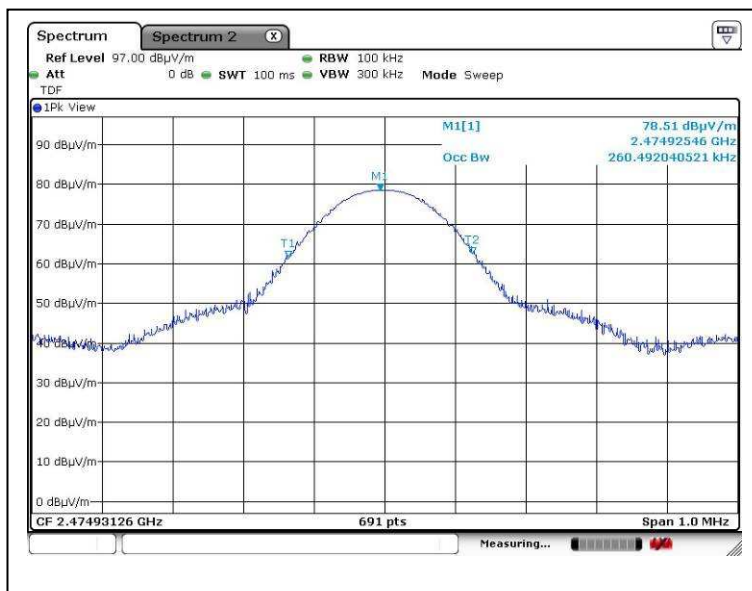
廠商會檢定中心

TEST REPORT

Report No. : AT0031843(8)

Date : 29 May 2015

A9. 99% Bandwidth Plot



Bandwidth 3 (2475MHz)

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

Tested by:

Mr. LEUNG Shu-kan, Ken

Reviewed by:

Mr. WONG Lap-pong, Andrew