



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AV0020398(0) Date : 17 May 2017

Application No. : LV010810(0)

Applicant : LICC Manufacturing Co (Far East) Limited  
B7, 18F Kong Nam Ind Bldg 603 Castle Peak Road  
Tsuen Wan NT  
Hong Kong

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

| Description       | Model      |
|-------------------|------------|
| i-Lasso Presenter | G202, R201 |

Sample registration No. : RV019180-001

Radio Frequency : 2409.65MHz – 2465.68MHz Transceiver

Rating : 2 x 1.5V AAA size batteries

No. of submitted sample : Four (4) set (s)

Date Received : 13 Apr 2017.

Test Period : 18 Apr 2017 to 24 Apr 2017.

Test Requested : FCC Part 15 Certification, FCC Part 15 Verification Procedure

Test Method : 47 CFR Part 15 (10-1-15 Edition)  
ANSI C63.4 – 2014, ANSI C63.10 – 2013

Test Engineer : Mr. Yau Kwok Pun, Stanley

Test Result : See attached sheet(s) from page 2 to 46.

Conclusion : The submitted sample was found to comply with requirement of FCC Part 15  
Subpart B and C.

Remark : All two models are the same in circuitry and components; and therefore model  
R201 was chosen to be the representative of the test sample. The difference(s)  
between the tested model and the declared model(s) is/are model no., color and  
sample description.

For and on behalf of  
CMA Industrial Development Foundation Limited

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

Mr. WONG Lap-pong, Andrew  
Manager  
Electrical Division

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FCC ID: CWHPTT200M



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### 1 General Information

#### 1.1 General Description

The equipment under test (EUT) is a laser presenter. The EUT is power by 2 x 1.5V AAA size batteries. It operates at 2409.65 – 2465.68MHz with GFSK modulation and oscillated by a 12MHz crystal. When pressed the buttons, it will take the corresponding action such as slide forward, backward, laser pointer and vibration.

The brief circuit description is listed as follows:

- |                   |                                                       |
|-------------------|-------------------------------------------------------|
| - U4, Y1, ANTENNA | and its associated circuit act as RF module.          |
| - U2              | and its associated circuit act as MCU.                |
| - U1              | and its associated circuit act as step up regulator.  |
| - S1, S2, S3, SW1 | and its associated circuit act as buttons and switch. |
| - JP1             | and its associated circuit act as laser diode.        |
| - JP2             | and its associated circuit act as motor.              |



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### 1.2 Location of the test site

FCC Registered Test Site Number: 416666

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.10 – 2013. 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 C63.10 – 2013. A shielded room is located at :

Ground Floor, Yan Hing Centre,  
9 – 13 Wong Chuk Yeung Street,  
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### 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 2018          | 1Year              |
| EMI Test Receiver                                | Rohde & Schwarz  | ESCI         | 100152      | 16 Nov 2017          | 1Year              |
| Spectrum Analyzer                                | Rohde & Schwarz  | FSV40        | 101190      | 12 May 2017          | 1Year              |
| Spectrum Analyzer                                | Rohde & Schwarz  | FSP30        | 100628      | 28 Mar 2018          | 1Year              |
| Broadband Antenna                                | Schaffner        | CBL6112B     | 2692        | 29 Mar 2018          | 2Years             |
| Loop Antenna                                     | EMCO             | 6502         | 00056620    | 25 Jan 2018          | 2Years             |
| Horn Antenna                                     | Schwarzbeck      | BBHA 9120D   | 9120D-531   | 21 Dec 2017          | 2Years             |
| Broadband Pre-Amplifier                          | Schwarzbeck      | BBV 9718     | 9718-119    | 21 Dec 2017          | 2Years             |
| Horn Antenna                                     | Schwarzbeck      | BBHA 9170    | BBHA9170442 | 02 Aug 2017          | 2Years             |
| Broadband Pre-Amplifier                          | Schwarzbeck      | BBV 9719     | 9719-010    | 02 Aug 2017          | 2Years             |
| Coaxial Cable                                    | Schaffner        | RG 213/U     | N/A         | 18 May 2017          | 1Year              |
| Coaxial Cable                                    | Suhner           | RG 214/U     | N/A         | 18 May 2017          | 1Year              |
| Coaxial Cable                                    | Suhner           | Sucoflex_104 | N/A         | 21 Dec 2017          | 1Year              |
| LISN                                             | Rohde & Schwarz  | ENV216       | 101323      | 10 Nov 2017          | 1Year              |
| Coaxial Cable                                    | Tyco Electronics | RG 58C/U     | N/A         | 29 Oct 2017          | 1Year              |
| <b>Rohde &amp; Schwarz TS8997 Testing System</b> |                  |              |             |                      |                    |
| Spectrum Analyzer                                | Rohde & Schwarz  | FSV 40       | 101190      | 12 May 2017          | 1Year              |
| Vector Generator                                 | Rohde & Schwarz  | SMBV100A     | 262024      | 04 May 2017          | 1Year              |
| Generator                                        | Rohde & Schwarz  | SMB100A      | 103230      | 24 May 2017          | 1Year              |
| OSP                                              | Rohde & Schwarz  | OSP          | OSP120 V02  | 06 Jun 2017          | 1Year              |



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### 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)   | 4.83dB                    |
| 30MHz ~ 200MHz (Vertical)     | 4.84dB                    |
| 200MHz ~ 1000MHz (Horizontal) | 4.87dB                    |
| 200MHz ~ 1000MHz (Vertical)   | 5.94dB                    |
| 1GHz ~ 6GHz                   | 4.41dB                    |
| 6GHz ~ 18GHz                  | 4.64dB                    |

#### Line-conducted emissions

| Frequency    | Uncertainty ( $U_{lab}$ ) |
|--------------|---------------------------|
| 150kHz~30MHz | 2.64dB                    |



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### 2 Description of the emission test

#### 2.1 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 0.4m and 0.8m high above the ground for below 1GHz measurement and 1.5m high above the ground for above 1GHz measurement. 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.

The EUT will connect to TS 8997 testing system for direct conducted measurement.



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### 2.2 Conducted Emission Measurement Data

Environmental conditions:

| Parameter            | Recorded value |     |
|----------------------|----------------|-----|
| Ambient temperature: | 24             | ° C |
| Relative humidity:   | 62             | %   |

#### Summary

| Test                            | Frequency (MHz) | Result |
|---------------------------------|-----------------|--------|
| RF output power                 | 2409.65         | PASS   |
| Power Spectral Density          | 2409.65         | PASS   |
| Minimum Emission Bandwidth 6 dB | 2409.65         | PASS   |
| Band Edge low                   | 2409.65         | PASS   |
| Tx Spurious Emission            | 2409.65         | PASS   |
| Rx Spurious Emission            | 2409.65         | PASS   |
| RF output power                 | 2436.69         | PASS   |
| Power Spectral Density          | 2436.69         | PASS   |
| Minimum Emission Bandwidth 6 dB | 2436.69         | PASS   |
| Tx Spurious Emission            | 2436.69         | PASS   |
| Rx Spurious Emission            | 2436.69         | PASS   |
| RF output power                 | 2465.68         | PASS   |
| Power Spectral Density          | 2465.68         | PASS   |
| Minimum Emission Bandwidth 6 dB | 2465.68         | PASS   |
| Band Edge high                  | 2465.68         | PASS   |
| Tx Spurious Emission            | 2465.68         | PASS   |
| Rx Spurious Emission            | 2465.68         | PASS   |





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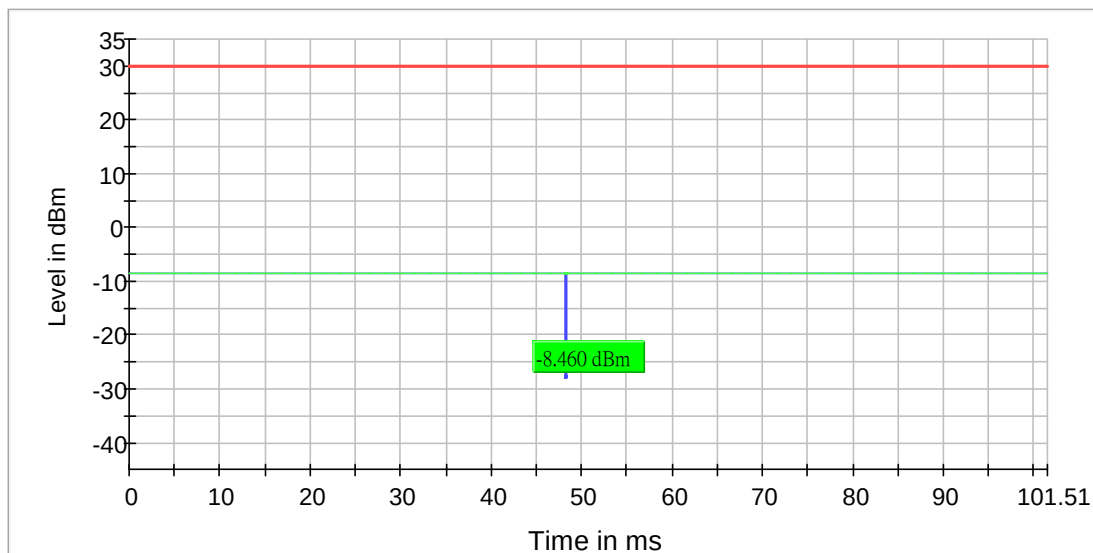
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### RF output power (2409.65 MHz)

Test according to FCC title 47 part 15 §15.247(b), ANSI C63.10. The test produces based on ANSI C63.10 clauses 11.9.2.3 method AVGPM-G.

### Result

| DUT Frequency (MHz) | Gated EIRP (dBm) | Limit Max (dBm) | Duty Cycle (%) | Result |
|---------------------|------------------|-----------------|----------------|--------|
| 2409.650000         | -8.5             | 30.0            | 10.393         | PASS   |





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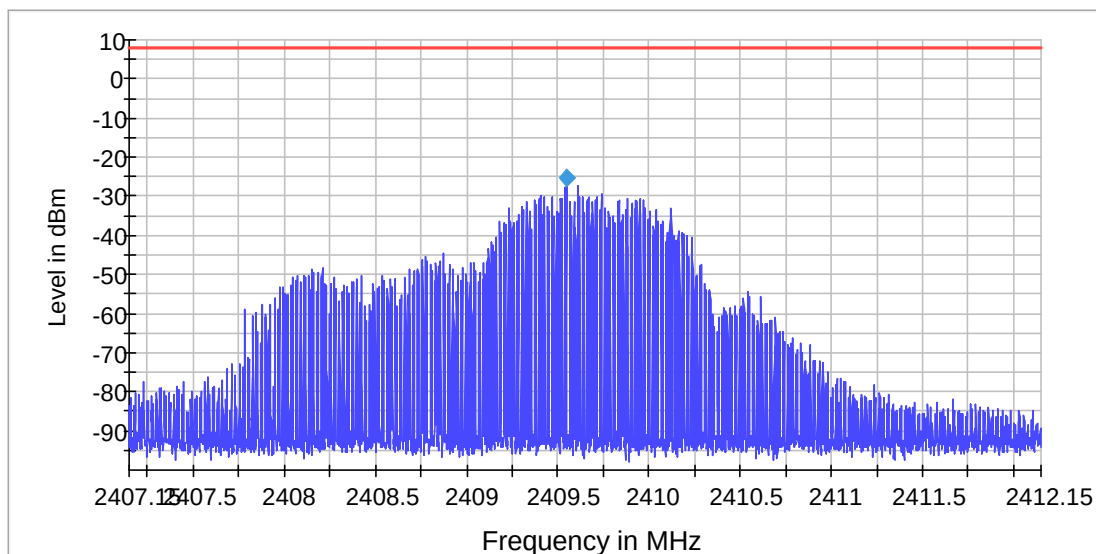
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### Power Spectral Density (2409.65 MHz)

#### Result

| DUT Frequency (MHz) | Frequency (MHz) | PSD (dBm) | Limit Max (dBm) | Result |
|---------------------|-----------------|-----------|-----------------|--------|
| 2409.650000         | 2409.547271     | -25.109   | 8.0             | PASS   |



#### Measurement

| Setting         | Instrument Value | Target Value |
|-----------------|------------------|--------------|
| Start Frequency | 2.40715 GHz      | 2.40715 GHz  |
| Stop Frequency  | 2.41215 GHz      | 2.41215 GHz  |
| Span            | 5.000 MHz        | 5.000 MHz    |
| RBW             | 3.000 kHz        | <= 3.000 kHz |
| VBW             | 10.000 kHz       | >= 9.000 kHz |
| SweepPoints     | 3333             | ~ 3333       |
| SweepTime       | 3.340 s          | 3.333 s      |
| Reference Level | -10.000 dBm      | -10.000 dBm  |
| Attenuation     | 10.000 dB        | AUTO         |
| Detector        | RMS              | RMS          |
| SweepCount      | 1                | 1            |
| Filter          | 3 dB             | 3 dB         |
| Trace Mode      | Max Hold         | Max Hold     |
| SweepType       | Sweep            | AUTO         |
| Preamp          | off              | off          |
| Stablemode      | Trace            | Trace        |
| Stablevalue     | 0.30             | 0.30         |
| Run             | 3 / max. 150     | max. 150     |
| Stable          | 3 / 3            | 3            |



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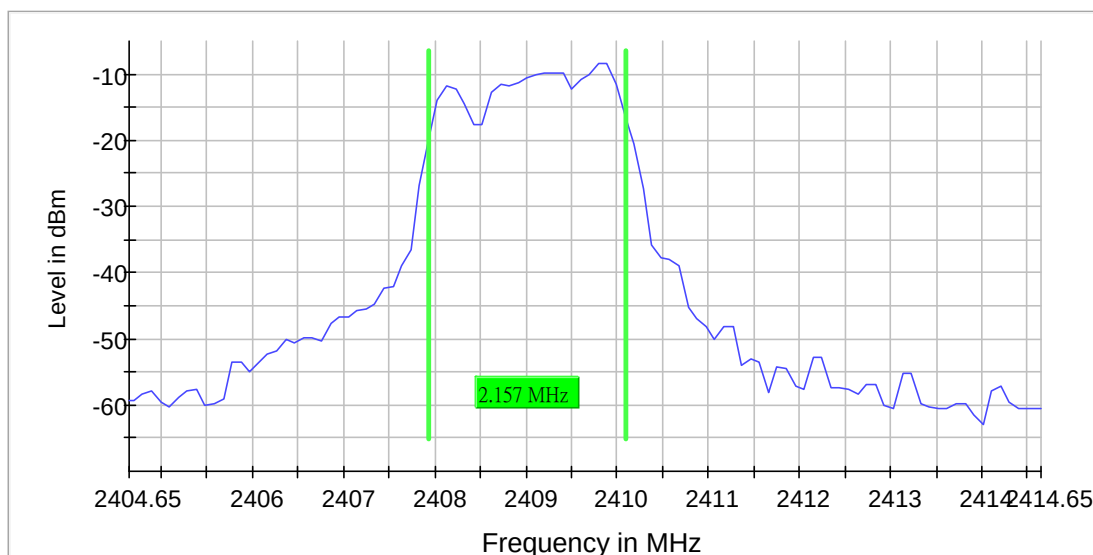
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### Minimum Emission Bandwidth 6 dB (2409.65 MHz)

Test according to FCC title 47 part 15 §15.247(a), ANSI C63.10.

#### 6 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) | Max Level (dBm) | Result |
|---------------------|-----------------|-----------------|-----------------|----------------------|-----------------------|-----------------|--------|
| 2409.650000         | 2.156862        | 0.500000        | ---             | 2407.934314          | 2410.091176           | -8.4            | PASS   |





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### Measurement

| Setting         | Instrument Value | Target Value  |
|-----------------|------------------|---------------|
| Start Frequency | 2.40465 GHz      | 2.40465 GHz   |
| Stop Frequency  | 2.41465 GHz      | 2.41465 GHz   |
| Span            | 10.000 MHz       | 10.000 MHz    |
| RBW             | 100.000 kHz      | ~ 100.000 kHz |
| VBW             | 300.000 kHz      | ~ 300.000 kHz |
| SweepPoints     | 101              | ~ 100         |
| SweepTime       | 37.924 $\mu$ s   | AUTO          |
| Reference Level | -10.000 dBm      | -10.000 dBm   |
| Attenuation     | 10.000 dB        | AUTO          |
| Detector        | MaxPeak          | MaxPeak       |
| SweepCount      | 100              | 100           |
| Filter          | 3 dB             | 3 dB          |
| Trace Mode      | Max Hold         | Max Hold      |
| SweepType       | FFT              | AUTO          |
| Preamp          | off              | off           |
| Stablemode      | Trace            | Trace         |
| Stablevalue     | 0.30             | 0.30          |
| Run             | 136 / max. 150   | max. 150      |
| Stable          | 15 / 15          | 15            |





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### Band Edge low (2409.65 MHz)

Test according to FCC title 47 part 15 §15.247(d), ANSI C63.10.

### Result

| DUT<br>Frequency<br>(MHz) | Result |
|---------------------------|--------|
| 2409.650000               | PASS   |

### Inband Peak

| Frequency<br>(MHz) | Level<br>(dBm) |
|--------------------|----------------|
| 2409.369390        | -17.6          |

### Measurements

| Frequency<br>(MHz) | Level<br>(dBm) | Margin<br>(dB) | Limit<br>(dBm) | Result |
|--------------------|----------------|----------------|----------------|--------|
| 2397.476402        | -65.5          | 28.0           | -37.6          | PASS   |
| 2397.526374        | -65.8          | 28.2           | -37.6          | PASS   |
| 2397.426430        | -66.2          | 28.6           | -37.6          | PASS   |
| 2397.676291        | -66.6          | 29.0           | -37.6          | PASS   |
| 2397.576346        | -66.8          | 29.2           | -37.6          | PASS   |
| 2397.626319        | -67.4          | 29.8           | -37.6          | PASS   |
| 2397.376458        | -69.4          | 31.8           | -37.6          | PASS   |
| 2361.596335        | -71.1          | 33.5           | -37.6          | PASS   |
| 2361.696280        | -71.3          | 33.7           | -37.6          | PASS   |
| 2361.646308        | -71.3          | 33.7           | -37.6          | PASS   |
| 2385.533037        | -71.6          | 34.0           | -37.6          | PASS   |
| 2385.383120        | -71.8          | 34.2           | -37.6          | PASS   |
| 2349.503054        | -72.0          | 34.4           | -37.6          | PASS   |
| 2385.433093        | -72.0          | 34.4           | -37.6          | PASS   |
| 2361.796224        | -72.1          | 34.5           | -37.6          | PASS   |



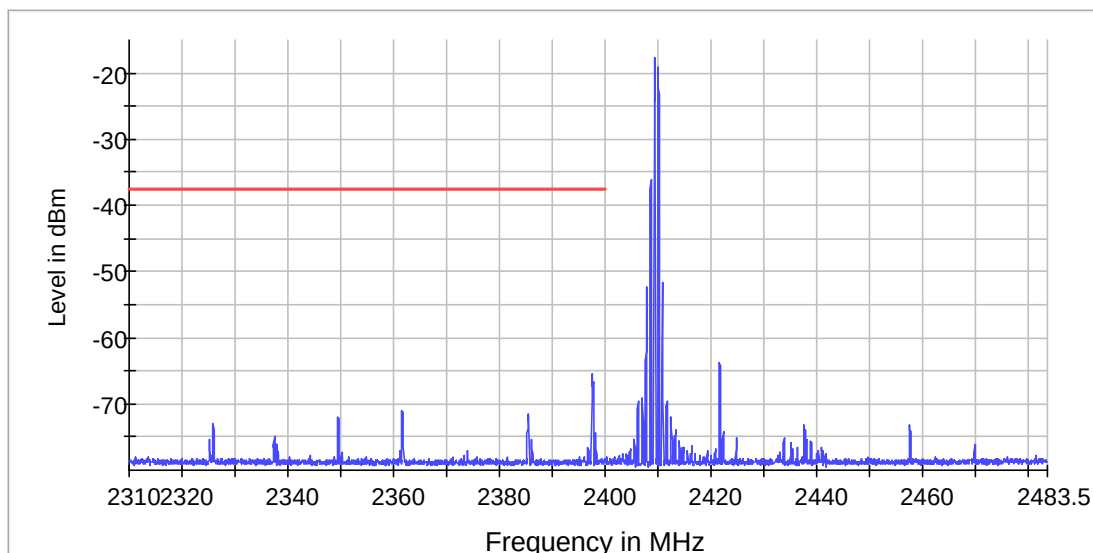
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### Measurement 1

| Setting         | Instrument Value | Target Value   |
|-----------------|------------------|----------------|
| RBW             | 100.000 kHz      | <= 100.000 kHz |
| VBW             | 300.000 kHz      | >= 300.000 kHz |
| SweepPoints     | 1670             | ~ 1670         |
| SweepTime       | 1.670 s          | 1.670 s        |
| Reference Level | -10.000 dBm      | -10.000 dBm    |
| Attenuation     | 10.000 dB        | AUTO           |
| Detector        | RMS              | RMS            |
| SweepCount      | 3                | 3              |
| Filter          | 3 dB             | 3 dB           |
| Trace Mode      | Max Hold         | Max Hold       |
| SweepType       | Sweep            | AUTO           |
| Preamp          | off              | off            |
| Stablemode      | Trace            | Trace          |
| Stablevalue     | 0.30             | 0.30           |
| Run             | 3 / max. 15      | max. 15        |
| Stable          | 3 / 3            | 3              |

### Measurement 2

| Setting         | Instrument Value | Target Value   |
|-----------------|------------------|----------------|
| RBW             | 100.000 kHz      | <= 100.000 kHz |
| VBW             | 300.000 kHz      | >= 300.000 kHz |
| SweepPoints     | 1800             | ~ 1800         |
| SweepTime       | 1.800 s          | 1.800 s        |
| Reference Level | -10.000 dBm      | -10.000 dBm    |
| Attenuation     | 10.000 dB        | AUTO           |
| Detector        | RMS              | RMS            |
| SweepCount      | 3                | 3              |
| Filter          | 3 dB             | 3 dB           |
| Trace Mode      | Max Hold         | Max Hold       |
| SweepType       | Sweep            | AUTO           |
| Preamp          | off              | off            |
| Stablemode      | Trace            | Trace          |
| Stablevalue     | 0.30             | 0.30           |
| Run             | 3 / max. 15      | max. 15        |
| Stable          | 3 / 3            | 3              |



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### Tx Spurious Emission (2409.65 MHz)

Test according to FCC title 47 part 15 §15.247(d), ANSI C63.10.

#### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 2409.650000         | PASS   |

#### Final measurements

| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| 4818.491504     | -39.7                       | -50.6       | -41.2       | 9.4         | PASS   |

#### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 4818.491504     | -39.7       | -1.5        | -41.2       |
| 4818.991449     | -39.7       | -1.5        | -41.2       |
| 4819.991338     | -39.7       | -1.5        | -41.2       |
| 4819.491394     | -39.7       | -1.5        | -41.2       |
| 4820.491283     | -40.4       | -0.9        | -41.2       |
| 4817.991560     | -43.2       | 2.0         | -41.2       |
| 4820.991228     | -48.6       | 7.4         | -41.2       |
| 7230.063746     | -41.4       | 8.4         | -33.0       |
| 7228.282607     | -41.4       | 8.5         | -33.0       |
| 7228.876320     | -41.9       | 9.0         | -33.0       |
| 7227.688894     | -42.0       | 9.1         | -33.0       |
| 7230.657459     | -42.1       | 9.1         | -33.0       |
| 7229.470033     | -42.5       | 9.5         | -33.0       |
| 7227.095182     | -43.2       | 10.3        | -33.0       |
| 4817.491615     | -53.3       | 12.1        | -41.2       |

#### Measurement Settings

| Start Frequency (MHz) | Stop Frequency (MHz) | Pre Measurement | Final Measurement |
|-----------------------|----------------------|-----------------|-------------------|
| 30.000000             | 1000.000000          | 1               | 1                 |
| 1000.000000           | 2400.000000          | 2               | 2                 |
| 2400.000000           | 2483.500000          | 2               | 2                 |
| 2483.500000           | 7000.000000          | 2               | 2                 |
| 7000.000000           | 26000.000000         | 2               | 2                 |





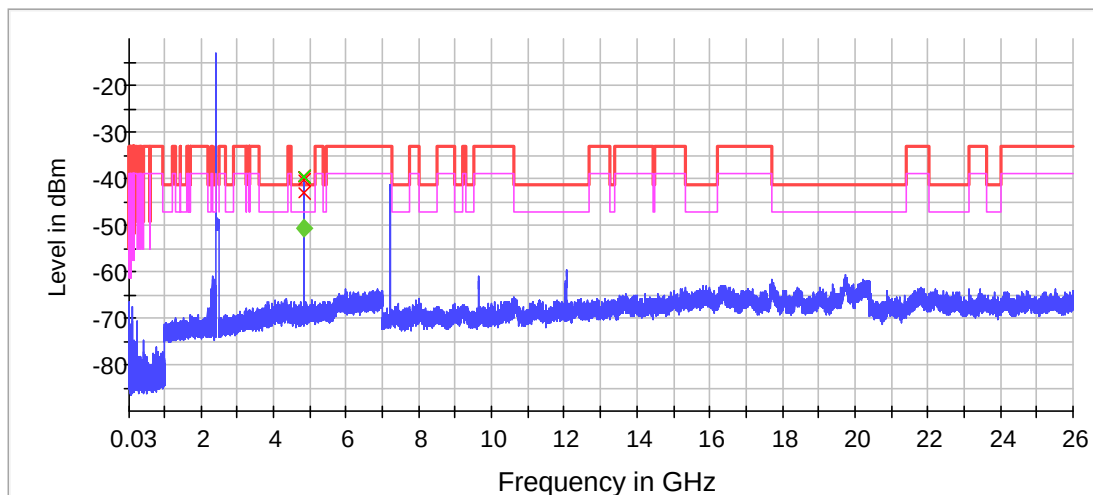
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× Limit [limit.Result:1]      × Sum Level [trace.Result:1]  
◆ Threshold [limit 2.Result:1]      ◆ Critical [Over Limit.Result:1]



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### Pre Measurement 1

| Setting         | Instrument Value | Target Value   |
|-----------------|------------------|----------------|
| RBW             | 100.000 kHz      | <= 100.000 kHz |
| VBW             | 300.000 kHz      | >= 300.000 kHz |
| SweepPoints     | 19400            | ~ 19400        |
| SweepTime       | 19.400 ms        | AUTO           |
| Reference Level | -30.000 dBm      | -30.000 dBm    |
| Attenuation     | 0.000 dB         | AUTO           |
| Detector        | MaxPeak          | MaxPeak        |
| SweepCount      | 30               | 30             |
| Filter          | 3 dB             | 3 dB           |
| Trace Mode      | Max Hold         | Max Hold       |
| SweepType       | Sweep            | AUTO           |
| Preamp          | off              | off            |
| Stablemode      | Trace            | Trace          |
| Stablevalue     | 0.30             | 0.30           |
| Run             | 3 / max. 150     | max. 150       |
| Stable          | 3 / 3            | 3              |

### Pre Measurement 2

| Setting         | Instrument Value | Target Value |
|-----------------|------------------|--------------|
| RBW             | 1.000 MHz        | <= 1.000 MHz |
| VBW             | 3.000 MHz        | >= 3.000 MHz |
| SweepPoints     | 2800             | ~ 2800       |
| SweepTime       | 2.800 ms         | AUTO         |
| Reference Level | -30.000 dBm      | -30.000 dBm  |
| Attenuation     | 0.000 dB         | AUTO         |
| Detector        | MaxPeak          | MaxPeak      |
| SweepCount      | 30               | 30           |
| Filter          | 3 dB             | 3 dB         |
| Trace Mode      | Max Hold         | Max Hold     |
| SweepType       | Sweep            | AUTO         |
| Preamp          | off              | off          |
| Stablemode      | Trace            | Trace        |
| Stablevalue     | 0.30             | 0.30         |
| Run             | 3 / max. 150     | max. 150     |
| Stable          | 3 / 3            | 3            |



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Date : 17 May 2017

### Final Measurement 2

| Setting         | Instrument Value | Target Value |
|-----------------|------------------|--------------|
| Span            | ZeroSpan         | ZeroSpan     |
| RBW             | 1.000 MHz        | ~ 1.000 MHz  |
| VBW             | 3.000 MHz        | ~ 3.000 MHz  |
| SweepPoints     | 10001            | ~ 10001      |
| SweepTime       | 1.000 s          | 1.000 s      |
| Reference Level | -10.000 dBm      | -10.000 dBm  |
| Attenuation     | 0.000 dB         | 0.000 dB     |
| Detector        | RMS              | RMS          |
| SweepCount      | 1                | 1            |
| Filter          | 3 dB             | 3 dB         |
| Trace Mode      | Clear Write      | Clear Write  |
| SweepType       | Sweep            | AUTO         |
| Preamp          | off              | off          |



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AV0020398(0)

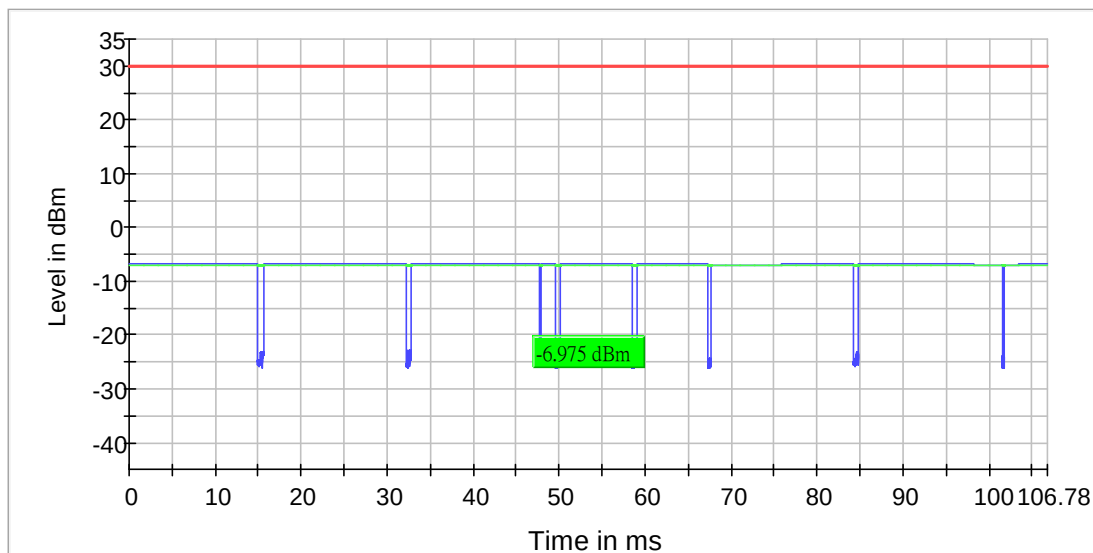
Date : 17 May 2017

### RF output power (2435.69 MHz)

Test according to FCC title 47 part 15 §15.247(b), ANSI C63.10. The test produces based on ANSI C63.10 clauses 11.9.2.3 method AVGPM-G.

### Result

| DUT Frequency (MHz) | Gated EIRP (dBm) | Limit Max (dBm) | Duty Cycle (%) | Result |
|---------------------|------------------|-----------------|----------------|--------|
| 2435.690000         | -7.0             | 30.0            | 10.761         | PASS   |







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## TEST REPORT

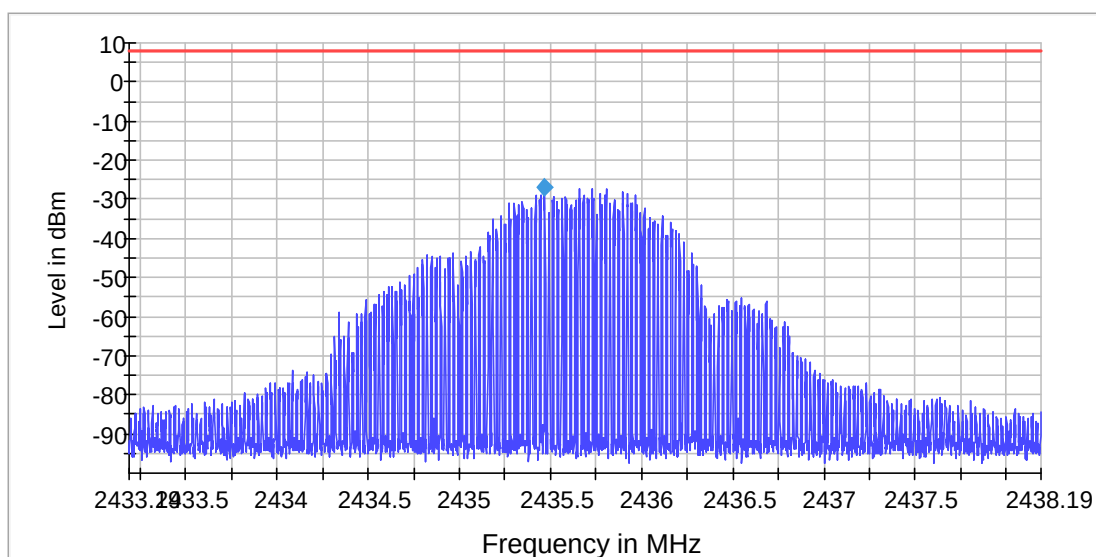
Report No. : AV0020398(0)

Date : 17 May 2017

### Power Spectral Density (2435.69 MHz)

#### Result

| DUT Frequency (MHz) | Frequency (MHz) | PSD (dBm) | Limit Max (dBm) | Result |
|---------------------|-----------------|-----------|-----------------|--------|
| 2435.690000         | 2435.468794     | -27.081   | 8.0             | PASS   |



#### Measurement

| Setting         | Instrument Value | Target Value |
|-----------------|------------------|--------------|
| Start Frequency | 2.43319 GHz      | 2.43319 GHz  |
| Stop Frequency  | 2.43819 GHz      | 2.43819 GHz  |
| Span            | 5.000 MHz        | 5.000 MHz    |
| RBW             | 3.000 kHz        | <= 3.000 kHz |
| VBW             | 10.000 kHz       | >= 9.000 kHz |
| SweepPoints     | 3333             | ~ 3333       |
| SweepTime       | 3.340 s          | 3.333 s      |
| Reference Level | -10.000 dBm      | -10.000 dBm  |
| Attenuation     | 10.000 dB        | AUTO         |
| Detector        | RMS              | RMS          |
| SweepCount      | 1                | 1            |
| Filter          | 3 dB             | 3 dB         |
| Trace Mode      | Max Hold         | Max Hold     |
| SweepType       | Sweep            | AUTO         |
| Preamp          | off              | off          |
| Stablemode      | Trace            | Trace        |
| Stablevalue     | 0.30             | 0.30         |
| Run             | 3 / max. 150     | max. 150     |
| Stable          | 3 / 3            | 3            |



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## TEST REPORT

Report No. : AV0020398(0)

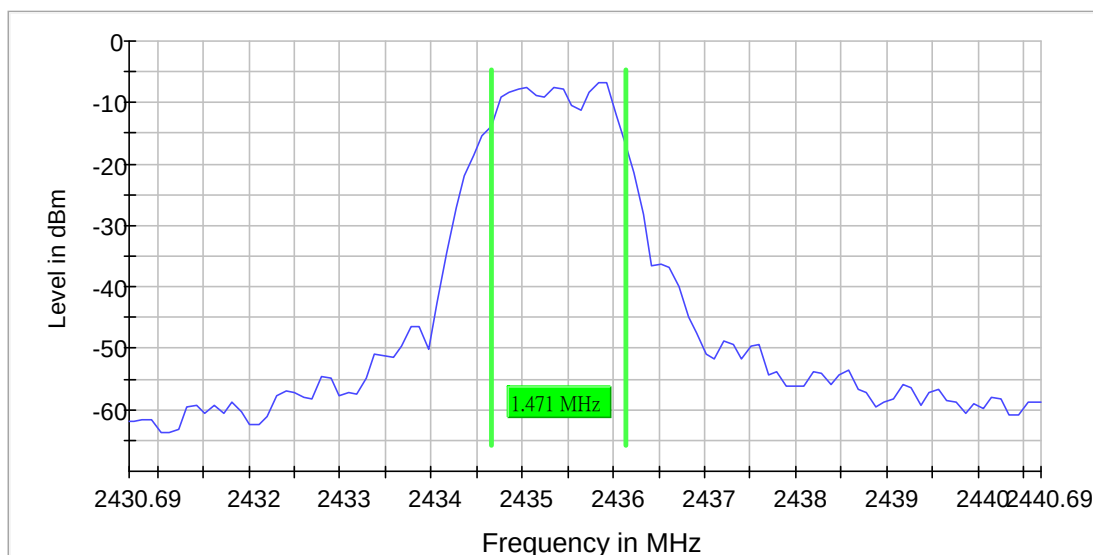
Date : 17 May 2017

### Minimum Emission Bandwidth 6 dB (2435.69 MHz)

Test according to FCC title 47 part 15 §15.247(a), ANSI C63.10.

#### 6 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) | Max Level (dBm) | Result |
|---------------------|-----------------|-----------------|-----------------|----------------------|-----------------------|-----------------|--------|
| 2435.690000         | 1.470588        | 0.500000        | ---             | 2434.660588          | 2436.131176           | -6.7            | PASS   |





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## TEST REPORT

Report No. : AV0020398(0)

Date : 17 May 2017

### Measurement

| Setting         | Instrument Value | Target Value  |
|-----------------|------------------|---------------|
| Start Frequency | 2.43069 GHz      | 2.43069 GHz   |
| Stop Frequency  | 2.44069 GHz      | 2.44069 GHz   |
| Span            | 10.000 MHz       | 10.000 MHz    |
| RBW             | 100.000 kHz      | ~ 100.000 kHz |
| VBW             | 300.000 kHz      | ~ 300.000 kHz |
| SweepPoints     | 101              | ~ 100         |
| SweepTime       | 37.924 $\mu$ s   | AUTO          |
| Reference Level | -10.000 dBm      | -10.000 dBm   |
| Attenuation     | 10.000 dB        | AUTO          |
| Detector        | MaxPeak          | MaxPeak       |
| SweepCount      | 100              | 100           |
| Filter          | 3 dB             | 3 dB          |
| Trace Mode      | Max Hold         | Max Hold      |
| SweepType       | FFT              | AUTO          |
| Preamp          | off              | off           |
| Stablemode      | Trace            | Trace         |
| Stablevalue     | 0.30             | 0.30          |
| Run             | 61 / max. 150    | max. 150      |
| Stable          | 15 / 15          | 15            |



# CMA Testing and Certification Laboratories

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## TEST REPORT

Report No. : AV0020398(0)

Date : 17 May 2017

### Tx Spurious Emission (2435.69 MHz)

Test according to FCC title 47 part 15 §15.247(d), ANSI C63.10.

### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 2435.690000         | PASS   |

### Final measurements

| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| 4870.985693     | -43.3                       | -55.7       | -41.2       | 14.5        | PASS   |
| 7306.058996     | -41.7                       | -55.6       | -41.2       | 14.4        | PASS   |

### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 7306.058996     | -41.7       | 0.5         | -41.2       |
| 7306.652709     | -41.7       | 0.5         | -41.2       |
| 7307.840135     | -41.8       | 0.5         | -41.2       |
| 7308.433848     | -41.9       | 0.6         | -41.2       |
| 7307.246422     | -42.5       | 1.3         | -41.2       |
| 4870.985693     | -43.3       | 2.0         | -41.2       |
| 4870.485748     | -43.3       | 2.1         | -41.2       |
| 4871.985582     | -43.5       | 2.3         | -41.2       |
| 7305.465283     | -43.6       | 2.4         | -41.2       |
| 4871.485638     | -43.9       | 2.6         | -41.2       |
| 4872.485527     | -44.8       | 3.6         | -41.2       |
| 4869.985804     | -46.9       | 5.7         | -41.2       |
| 7309.027561     | -49.0       | 7.7         | -41.2       |
| 4872.985472     | -50.2       | 9.0         | -41.2       |
| 4869.485859     | -55.7       | 14.5        | -41.2       |

### Measurement Settings

| Start Frequency (MHz) | Stop Frequency (MHz) | Pre Measurement | Final Measurement |
|-----------------------|----------------------|-----------------|-------------------|
| 30.000000             | 1000.000000          | 1               | 1                 |
| 1000.000000           | 2400.000000          | 2               | 2                 |
| 2400.000000           | 2483.500000          | 2               | 2                 |
| 2483.500000           | 7000.000000          | 2               | 2                 |
| 7000.000000           | 26000.000000         | 2               | 2                 |





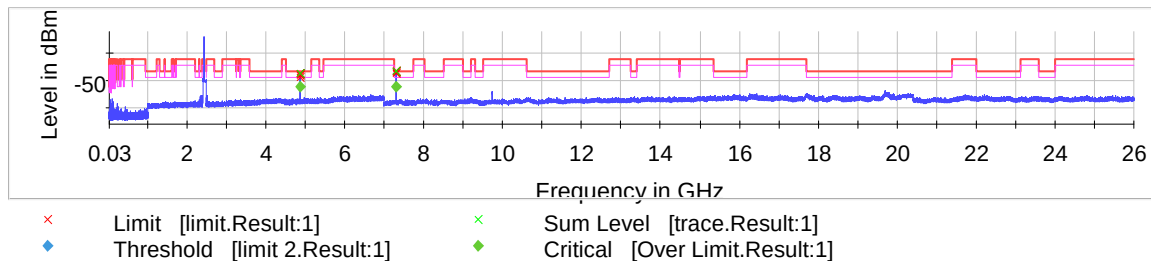
# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AV0020398(0)

Date : 17 May 2017



### Pre Measurement 1

| Setting         | Instrument Value | Target Value   |
|-----------------|------------------|----------------|
| RBW             | 100.000 kHz      | <= 100.000 kHz |
| VBW             | 300.000 kHz      | >= 300.000 kHz |
| SweepPoints     | 19400            | ~ 19400        |
| SweepTime       | 19.400 ms        | AUTO           |
| Reference Level | -30.000 dBm      | -30.000 dBm    |
| Attenuation     | 0.000 dB         | AUTO           |
| Detector        | MaxPeak          | MaxPeak        |
| SweepCount      | 30               | 30             |
| Filter          | 3 dB             | 3 dB           |
| Trace Mode      | Max Hold         | Max Hold       |
| SweepType       | Sweep            | AUTO           |
| Preamp          | off              | off            |
| Stablemode      | Trace            | Trace          |
| Stablevalue     | 0.30             | 0.30           |
| Run             | 3 / max. 150     | max. 150       |
| Stable          | 3 / 3            | 3              |

### Pre Measurement 2

| Setting         | Instrument Value | Target Value |
|-----------------|------------------|--------------|
| RBW             | 1.000 MHz        | <= 1.000 MHz |
| VBW             | 3.000 MHz        | >= 3.000 MHz |
| SweepPoints     | 2800             | ~ 2800       |
| SweepTime       | 2.800 ms         | AUTO         |
| Reference Level | -30.000 dBm      | -30.000 dBm  |
| Attenuation     | 0.000 dB         | AUTO         |
| Detector        | MaxPeak          | MaxPeak      |
| SweepCount      | 30               | 30           |
| Filter          | 3 dB             | 3 dB         |
| Trace Mode      | Max Hold         | Max Hold     |
| SweepType       | Sweep            | AUTO         |
| Preamp          | off              | off          |
| Stablemode      | Trace            | Trace        |
| Stablevalue     | 0.30             | 0.30         |
| Run             | 3 / max. 150     | max. 150     |
| Stable          | 3 / 3            | 3            |



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## TEST REPORT

Report No. : AV0020398(0)

Date : 17 May 2017

### Final Measurement 2

| Setting         | Instrument Value | Target Value |
|-----------------|------------------|--------------|
| Span            | ZeroSpan         | ZeroSpan     |
| RBW             | 1.000 MHz        | ~ 1.000 MHz  |
| VBW             | 3.000 MHz        | ~ 3.000 MHz  |
| SweepPoints     | 10001            | ~ 10001      |
| SweepTime       | 1.000 s          | 1.000 s      |
| Reference Level | -10.000 dBm      | -10.000 dBm  |
| Attenuation     | 0.000 dB         | 0.000 dB     |
| Detector        | RMS              | RMS          |
| SweepCount      | 1                | 1            |
| Filter          | 3 dB             | 3 dB         |
| Trace Mode      | Clear Write      | Clear Write  |
| SweepType       | Sweep            | AUTO         |
| Preamp          | off              | off          |



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## TEST REPORT

Report No. : AV0020398(0)

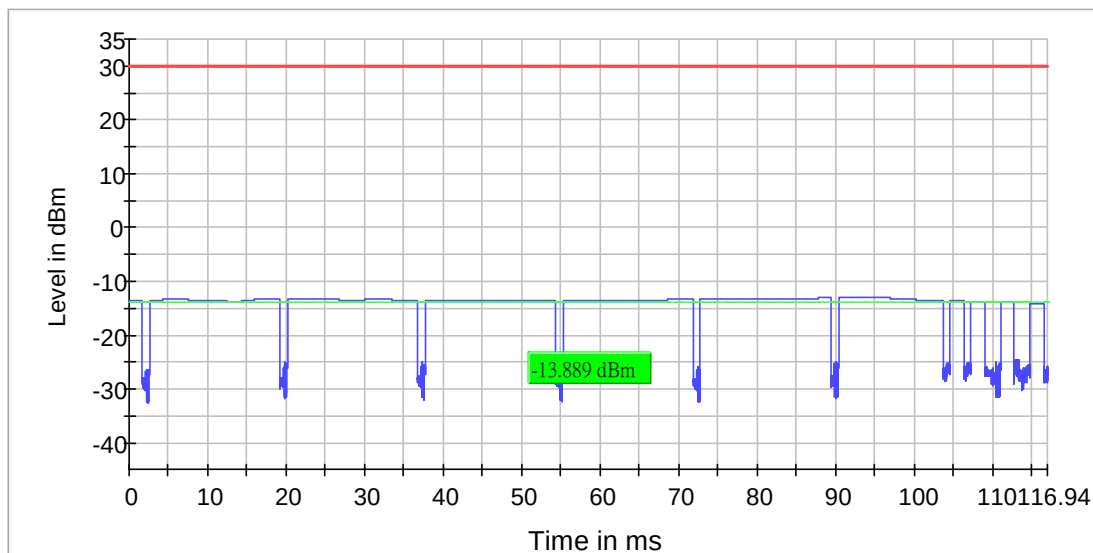
Date : 17 May 2017

### RF output power (2465.68 MHz)

Test according to FCC title 47 part 15 §15.247(b), ANSI C63.10. The test produces based on ANSI C63.10 clauses 11.9.2.3 method AVGPM-G.

### Result

| DUT Frequency (MHz) | Gated EIRP (dBm) | Limit Max (dBm) | Duty Cycle (%) | Result |
|---------------------|------------------|-----------------|----------------|--------|
| 2465.680000         | -13.9            | 30.0            | 11.709         | PASS   |





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## TEST REPORT

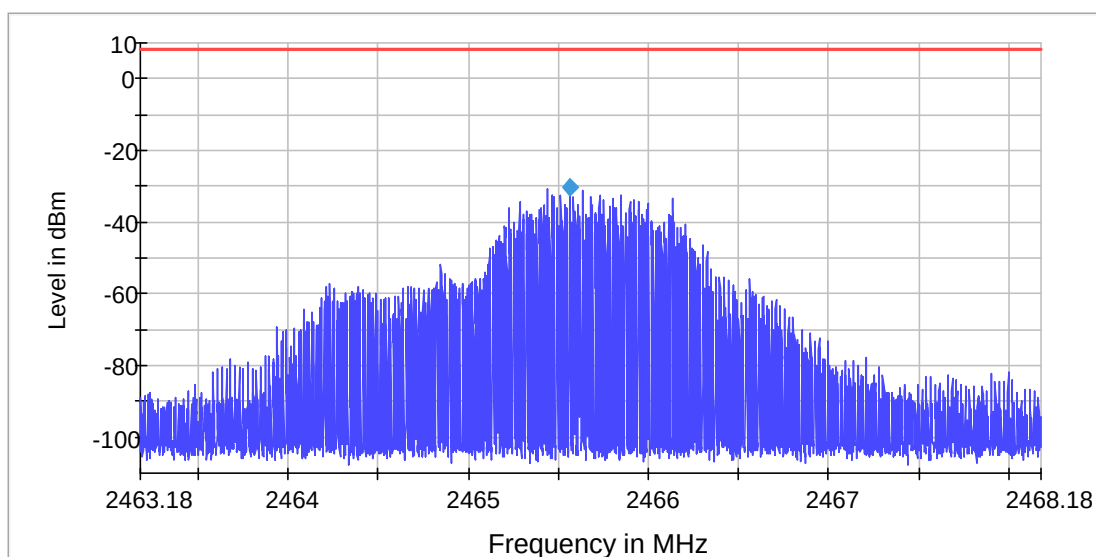
Report No. : AV0020398(0)

Date : 17 May 2017

### Power Spectral Density (2465.68 MHz)

#### Result

| DUT Frequency (MHz) | Frequency (MHz) | PSD (dBm) | Limit Max (dBm) | Result |
|---------------------|-----------------|-----------|-----------------|--------|
| 2465.680000         | 2465.562274     | -30.081   | 8.0             | PASS   |



#### Measurement

| Setting         | Instrument Value | Target Value |
|-----------------|------------------|--------------|
| Start Frequency | 2.46318 GHz      | 2.46318 GHz  |
| Stop Frequency  | 2.46818 GHz      | 2.46818 GHz  |
| Span            | 5.000 MHz        | 5.000 MHz    |
| RBW             | 3.000 kHz        | <= 3.000 kHz |
| VBW             | 10.000 kHz       | >= 9.000 kHz |
| SweepPoints     | 3333             | ~ 3333       |
| SweepTime       | 3.340 s          | 3.333 s      |
| Reference Level | -20.000 dBm      | -20.000 dBm  |
| Attenuation     | 0.000 dB         | AUTO         |
| Detector        | RMS              | RMS          |
| SweepCount      | 1                | 1            |
| Filter          | 3 dB             | 3 dB         |
| Trace Mode      | Max Hold         | Max Hold     |
| SweepType       | Sweep            | AUTO         |
| Preamp          | off              | off          |
| Stablemode      | Trace            | Trace        |
| Stablevalue     | 0.30             | 0.30         |
| Run             | 3 / max. 150     | max. 150     |
| Stable          | 3 / 3            | 3            |





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## TEST REPORT

Report No. : AV0020398(0)

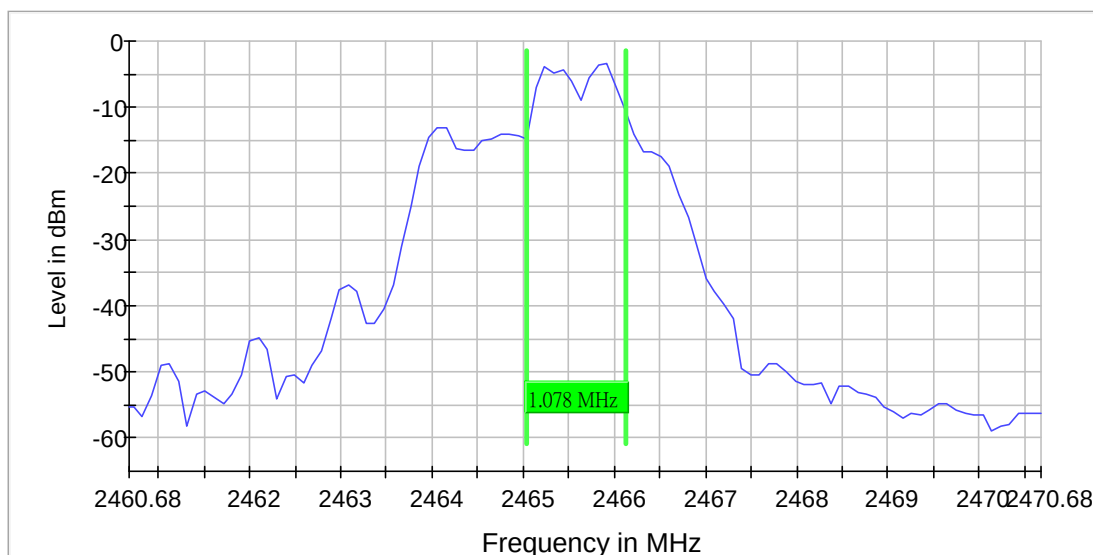
Date : 17 May 2017

### Minimum Emission Bandwidth 6 dB (2465.68 MHz)

Test according to FCC title 47 part 15 §15.247(a), ANSI C63.10.

#### 6 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) | Max Level (dBm) | Result |
|---------------------|-----------------|-----------------|-----------------|----------------------|-----------------------|-----------------|--------|
| 2465.680000         | 1.078431        | 0.500000        | ---             | 2465.042745          | 2466.121176           | -3.5            | PASS   |





# CMA Testing and Certification Laboratories

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## TEST REPORT

Report No. : AV0020398(0)

Date : 17 May 2017

### Measurement

| Setting         | Instrument Value | Target Value  |
|-----------------|------------------|---------------|
| Start Frequency | 2.46068 GHz      | 2.46068 GHz   |
| Stop Frequency  | 2.47068 GHz      | 2.47068 GHz   |
| Span            | 10.000 MHz       | 10.000 MHz    |
| RBW             | 100.000 kHz      | ~ 100.000 kHz |
| VBW             | 300.000 kHz      | ~ 300.000 kHz |
| SweepPoints     | 101              | ~ 100         |
| SweepTime       | 37.924 $\mu$ s   | AUTO          |
| Reference Level | -20.000 dBm      | -20.000 dBm   |
| Attenuation     | 0.000 dB         | AUTO          |
| Detector        | MaxPeak          | MaxPeak       |
| SweepCount      | 100              | 100           |
| Filter          | 3 dB             | 3 dB          |
| Trace Mode      | Max Hold         | Max Hold      |
| SweepType       | FFT              | AUTO          |
| Preamp          | off              | off           |
| Stablemode      | Trace            | Trace         |
| Stablevalue     | 0.30             | 0.30          |
| Run             | 86 / max. 150    | max. 150      |
| Stable          | 15 / 15          | 15            |



# CMA Testing and Certification Laboratories

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## TEST REPORT

Report No. : AV0020398(0)

Date : 17 May 2017

### Band Edge high (2465.68 MHz)

Test according to FCC title 47 part 15 §15.247(d), ANSI C63.10.

#### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 2465.680000         | PASS   |

#### Inband Peak

| Frequency (MHz) | Level (dBm) |
|-----------------|-------------|
| 2465.385847     | -12.4       |

#### Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) | Result |
|-----------------|-------------|-------------|-------------|--------|
| 2489.407100     | -70.6       | 38.2        | -32.4       | PASS   |
| 2489.506798     | -70.8       | 38.4        | -32.4       | PASS   |
| 2489.307402     | -71.0       | 38.6        | -32.4       | PASS   |
| 2489.855740     | -71.0       | 38.6        | -32.4       | PASS   |
| 2489.606495     | -71.0       | 38.6        | -32.4       | PASS   |
| 2489.805891     | -71.1       | 38.8        | -32.4       | PASS   |
| 2489.656344     | -71.5       | 39.1        | -32.4       | PASS   |
| 2489.257553     | -73.7       | 41.3        | -32.4       | PASS   |
| 2490.055136     | -73.9       | 41.5        | -32.4       | PASS   |
| 2489.456949     | -74.0       | 41.7        | -32.4       | PASS   |
| 2489.905589     | -74.6       | 42.2        | -32.4       | PASS   |
| 2489.706193     | -75.6       | 43.2        | -32.4       | PASS   |
| 2490.154834     | -75.6       | 43.2        | -32.4       | PASS   |
| 2484.721299     | -76.0       | 43.6        | -32.4       | PASS   |
| 2490.104985     | -76.3       | 44.0        | -32.4       | PASS   |



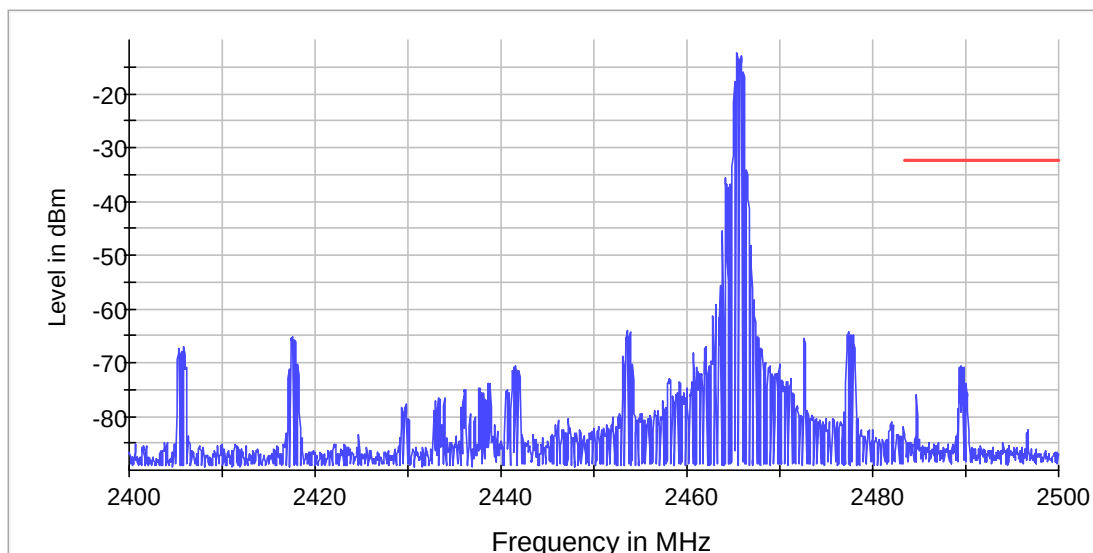
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Date : 17 May 2017







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Report No. : AV0020398(0)

Date : 17 May 2017

### Measurement 1

| Setting         | Instrument Value | Target Value   |
|-----------------|------------------|----------------|
| RBW             | 100.000 kHz      | <= 100.000 kHz |
| VBW             | 300.000 kHz      | >= 300.000 kHz |
| SweepPoints     | 1670             | ~ 1670         |
| SweepTime       | 1.670 s          | 1.670 s        |
| Reference Level | -20.000 dBm      | -20.000 dBm    |
| Attenuation     | 0.000 dB         | AUTO           |
| Detector        | RMS              | RMS            |
| SweepCount      | 3                | 3              |
| Filter          | 3 dB             | 3 dB           |
| Trace Mode      | Max Hold         | Max Hold       |
| SweepType       | Sweep            | AUTO           |
| Preamp          | off              | off            |
| Stablemode      | Trace            | Trace          |
| Stablevalue     | 0.30             | 0.30           |
| Run             | 3 / max. 15      | max. 15        |
| Stable          | 3 / 3            | 3              |

### Measurement 2

| Setting         | Instrument Value | Target Value   |
|-----------------|------------------|----------------|
| RBW             | 100.000 kHz      | <= 100.000 kHz |
| VBW             | 300.000 kHz      | >= 300.000 kHz |
| SweepPoints     | 330              | ~ 330          |
| SweepTime       | 330.000 ms       | 330.000 ms     |
| Reference Level | -20.000 dBm      | -20.000 dBm    |
| Attenuation     | 0.000 dB         | AUTO           |
| Detector        | RMS              | RMS            |
| SweepCount      | 3                | 3              |
| Filter          | 3 dB             | 3 dB           |
| Trace Mode      | Max Hold         | Max Hold       |
| SweepType       | Sweep            | AUTO           |
| Preamp          | off              | off            |
| Stablemode      | Trace            | Trace          |
| Stablevalue     | 0.30             | 0.30           |
| Run             | 3 / max. 15      | max. 15        |
| Stable          | 3 / 3            | 3              |



# CMA Testing and Certification Laboratories

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## TEST REPORT

Report No. : AV0020398(0)

Date : 17 May 2017

### Tx Spurious Emission (2465.68 MHz)

Test according to FCC title 47 part 15 §15.247(d), ANSI C63.10.

#### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 2465.680000         | PASS   |

#### Final measurements

| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| 4930.979051     | -33.9                       | -46.8       | -41.2       | 5.5         | PASS   |
| 7398.084495     | -45.6                       | -60.3       | -41.2       | 19.0        | PASS   |

#### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 4930.979051     | -33.9       | -7.3        | -41.2       |
| 4930.479107     | -33.9       | -7.3        | -41.2       |
| 4931.978941     | -34.1       | -7.1        | -41.2       |
| 4932.478885     | -34.2       | -7.0        | -41.2       |
| 4931.478996     | -34.4       | -6.9        | -41.2       |
| 4929.979162     | -36.3       | -5.0        | -41.2       |
| 4932.978830     | -36.9       | -4.3        | -41.2       |
| 4929.479217     | -45.2       | 4.0         | -41.2       |
| 7398.084495     | -45.6       | 4.4         | -41.2       |
| 7398.678208     | -45.6       | 4.4         | -41.2       |
| 7395.709643     | -45.7       | 4.4         | -41.2       |
| 7396.303356     | -45.7       | 4.5         | -41.2       |
| 7397.490782     | -45.9       | 4.7         | -41.2       |
| 7396.897069     | -46.7       | 5.4         | -41.2       |
| 4933.478775     | -48.3       | 7.1         | -41.2       |

#### Measurement Settings

| Start Frequency (MHz) | Stop Frequency (MHz) | Pre Measurement | Final Measurement |
|-----------------------|----------------------|-----------------|-------------------|
| 30.000000             | 1000.000000          | 1               | 1                 |
| 1000.000000           | 2400.000000          | 2               | 2                 |
| 2400.000000           | 2483.500000          | 2               | 2                 |
| 2483.500000           | 7000.000000          | 2               | 2                 |
| 7000.000000           | 26000.000000         | 2               | 2                 |



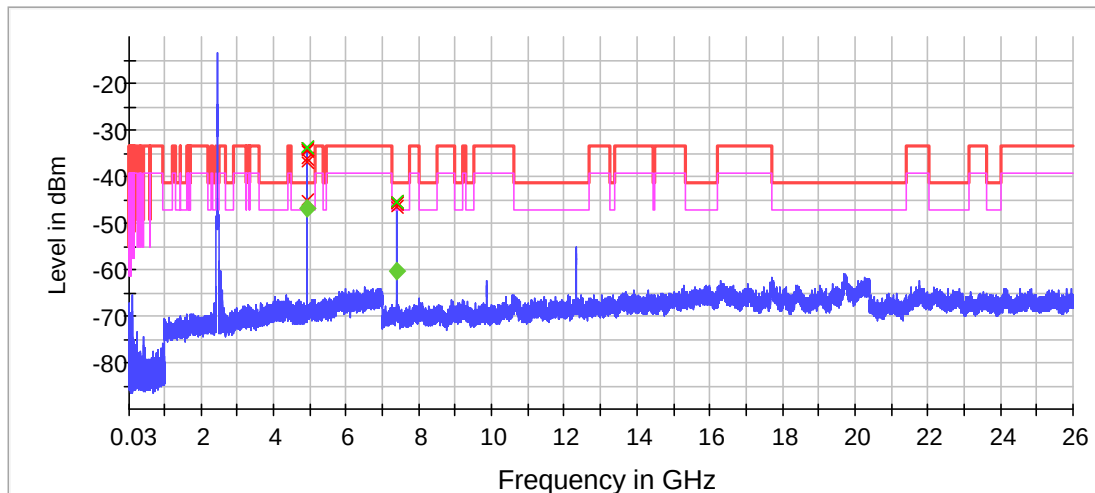
# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AV0020398(0)

Date : 17 May 2017



× Limit [limit.Result:1]      × Sum Level [trace.Result:1]  
◆ Threshold [limit 2.Result:1]      ◆ Critical [Over Limit.Result:1]



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AV0020398(0)

Date : 17 May 2017

### Pre Measurement 1

| Setting         | Instrument Value | Target Value   |
|-----------------|------------------|----------------|
| RBW             | 100.000 kHz      | <= 100.000 kHz |
| VBW             | 300.000 kHz      | >= 300.000 kHz |
| SweepPoints     | 19400            | ~ 19400        |
| SweepTime       | 19.400 ms        | AUTO           |
| Reference Level | -30.000 dBm      | -30.000 dBm    |
| Attenuation     | 0.000 dB         | AUTO           |
| Detector        | MaxPeak          | MaxPeak        |
| SweepCount      | 30               | 30             |
| Filter          | 3 dB             | 3 dB           |
| Trace Mode      | Max Hold         | Max Hold       |
| SweepType       | Sweep            | AUTO           |
| Preamp          | off              | off            |
| Stablemode      | Trace            | Trace          |
| Stablevalue     | 0.30             | 0.30           |
| Run             | 3 / max. 150     | max. 150       |
| Stable          | 3 / 3            | 3              |

### Pre Measurement 2

| Setting         | Instrument Value | Target Value |
|-----------------|------------------|--------------|
| RBW             | 1.000 MHz        | <= 1.000 MHz |
| VBW             | 3.000 MHz        | >= 3.000 MHz |
| SweepPoints     | 2800             | ~ 2800       |
| SweepTime       | 2.800 ms         | AUTO         |
| Reference Level | -30.000 dBm      | -30.000 dBm  |
| Attenuation     | 0.000 dB         | AUTO         |
| Detector        | MaxPeak          | MaxPeak      |
| SweepCount      | 30               | 30           |
| Filter          | 3 dB             | 3 dB         |
| Trace Mode      | Max Hold         | Max Hold     |
| SweepType       | Sweep            | AUTO         |
| Preamp          | off              | off          |
| Stablemode      | Trace            | Trace        |
| Stablevalue     | 0.30             | 0.30         |
| Run             | 3 / max. 150     | max. 150     |
| Stable          | 3 / 3            | 3            |





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### Final Measurement 2

| Setting         | Instrument Value | Target Value |
|-----------------|------------------|--------------|
| Span            | ZeroSpan         | ZeroSpan     |
| RBW             | 1.000 MHz        | ~ 1.000 MHz  |
| VBW             | 3.000 MHz        | ~ 3.000 MHz  |
| SweepPoints     | 10001            | ~ 10001      |
| SweepTime       | 1.000 s          | 1.000 s      |
| Reference Level | -10.000 dBm      | -10.000 dBm  |
| Attenuation     | 0.000 dB         | 0.000 dB     |
| Detector        | RMS              | RMS          |
| SweepCount      | 1                | 1            |
| Filter          | 3 dB             | 3 dB         |
| Trace Mode      | Clear Write      | Clear Write  |
| SweepType       | Sweep            | AUTO         |
| Preamp          | off              | off          |



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### 2.3 Radiated Emission Measurement Data

Environmental conditions:

| Parameter            | Recorded value |    |
|----------------------|----------------|----|
| Ambient temperature: | 23             | °C |
| Relative humidity:   | 60             | %  |

Testing frequency range: 9kHz to 26GHz Mode: Transmission (i-Lasso Presenter)

Measurement: Quasi-peak (9kHz – 1GHz), Peak and Average (above 1GHz)

RBW: 9kHz (below 30MHz), 120kHz (30MHz – 1GHz), 1MHz (above 1GHz)

VBW: 30kHz (below 30MHz), 300kHz (30MHz – 1GHz), 3MHz (above 1GHz, Peak measurement), 10Hz (above 1GHz, Average measurement)

| 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) | Measurement (Peak/Average) |
|---------|-----------------|----------------|----------------------|--------------------------|-------------------------------|----------------------|-------------|----------------------------|
| Lower   | 2408.968        | V              | 95.5                 | -4.2                     | 91.3                          | -                    | -           | Peak                       |
| Lower   | 2408.968        | V              | 34.3                 | -4.2                     | 30.1                          | -                    | -           | Average                    |
| Lower   | 2409.783        | H              | 92.5                 | -4.2                     | 88.3                          | -                    | -           | Peak                       |
| Lower   | 2409.783        | H              | 33.8                 | -4.2                     | 29.6                          | -                    | -           | Average                    |
| Lower   | 4818.735        | H              | 62.7                 | 3.1                      | 65.8                          | 74.0                 | -8.2        | Peak                       |
| Lower   | 4818.735        | H              | 26.7                 | 3.1                      | 29.8                          | 54.0                 | -24.2       | Average                    |
| Lower   | 4818.962        | V              | 58.5                 | 3.1                      | 61.6                          | 74.0                 | -12.4       | Peak                       |
| Lower   | 4818.962        | V              | 26.0                 | 3.1                      | 29.1                          | 54.0                 | -24.9       | Average                    |
| Lower   | 7227.716        | H              | 58.1                 | 10.8                     | 68.9                          | 74.0                 | -5.1        | Peak                       |
| Lower   | 7227.716        | H              | 24.0                 | 10.8                     | 34.8                          | 54.0                 | -19.2       | Average                    |
| Lower   | 7228.073        | V              | 57.8                 | 10.8                     | 68.6                          | 74.0                 | -5.4        | Peak                       |
| Lower   | 7228.073        | V              | 24.4                 | 10.8                     | 35.2                          | 54.0                 | -18.8       | Average                    |

Remark:

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

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

For electronic filing, the RE spectrum graphs are saved with filename CWHPTT200M\_REGraph.pdf.



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| 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) | Measurement (Peak/Average) |
|---------|-----------------|----------------|----------------------|--------------------------|-------------------------------|----------------------|-------------|----------------------------|
| Middle  | 2435.201        | H              | 95.9                 | -4.2                     | 91.7                          | -                    | -           | Peak                       |
| Middle  | 2435.201        | H              | 34.3                 | -4.2                     | 30.1                          | -                    | -           | Average                    |
| Middle  | 2435.211        | V              | 94.7                 | -4.2                     | 90.5                          | -                    | -           | Peak                       |
| Middle  | 2435.211        | V              | 34.2                 | -4.2                     | 30.0                          | -                    | -           | Average                    |
| Middle  | 4870.683        | H              | 63.5                 | 3.1                      | 66.6                          | 74.0                 | -7.4        | Peak                       |
| Middle  | 4870.683        | H              | 27.2                 | 3.1                      | 30.3                          | 54.0                 | -23.7       | Average                    |
| Middle  | 4870.769        | V              | 60.6                 | 3.1                      | 63.7                          | 74.0                 | -10.3       | Peak                       |
| Middle  | 4870.769        | V              | 26.4                 | 3.1                      | 29.5                          | 54.0                 | -24.5       | Average                    |
| Middle  | 7306.050        | V              | 57.6                 | 10.8                     | 68.4                          | 74.0                 | -5.6        | Peak                       |
| Middle  | 7306.050        | V              | 24.8                 | 10.8                     | 35.6                          | 54.0                 | -18.4       | Average                    |
| Middle  | 7307.681        | H              | 59.9                 | 10.8                     | 70.7                          | 74.0                 | -3.3        | Peak                       |
| Middle  | 7307.681        | H              | 25.2                 | 10.8                     | 36.0                          | 54.0                 | -18.0       | Average                    |

Remark:

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

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

For electronic filing, the RE spectrum graphs are saved with filename CWHPTT200M\_REGraph.pdf.



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| 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) | Measurement (Peak/Average) |
|---------|-----------------|----------------|----------------------|--------------------------|-------------------------------|----------------------|-------------|----------------------------|
| Higher  | 2465.107        | H              | 94.0                 | -4.3                     | 89.7                          | -                    | -           | Peak                       |
| Higher  | 2465.107        | H              | 34.4                 | -4.3                     | 30.1                          | -                    | -           | Average                    |
| Higher  | 2465.257        | V              | 96.1                 | -4.3                     | 91.8                          | -                    | -           | Peak                       |
| Higher  | 2465.257        | V              | 34.7                 | -4.3                     | 30.4                          | -                    | -           | Average                    |
| Higher  | 4930.679        | H              | 60.9                 | 3.2                      | 64.1                          | 74.0                 | -9.9        | Peak                       |
| Higher  | 4930.679        | H              | 26.0                 | 3.2                      | 29.2                          | 54.0                 | -24.8       | Average                    |
| Higher  | 4930.947        | V              | 58.7                 | 3.2                      | 61.9                          | 74.0                 | -12.1       | Peak                       |
| Higher  | 4930.947        | V              | 25.7                 | 3.2                      | 28.9                          | 54.0                 | -25.1       | Average                    |
| Higher  | 7396.116        | V              | 52.8                 | 12.8                     | 65.6                          | 74.0                 | -8.4        | Peak                       |
| Higher  | 7396.116        | V              | 22.6                 | 12.8                     | 35.4                          | 54.0                 | -18.6       | Average                    |
| Higher  | 7396.374        | H              | 56.6                 | 12.8                     | 69.4                          | 74.0                 | -4.6        | Peak                       |
| Higher  | 7396.374        | H              | 23.1                 | 12.8                     | 35.9                          | 54.0                 | -18.1       | Average                    |

Remark:

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

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

For electronic filing, the RE spectrum graphs are saved with filename CWHPTT200M\_REGraph.pdf.





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## TEST REPORT

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### 2.3 Radiated Emission Measurement Data (cont'd)

Environmental conditions:

| Parameter            | Recorded value |     |
|----------------------|----------------|-----|
| Ambient temperature: | 23             | ° C |
| Relative humidity:   | 60             | %   |

Testing frequency range: 9kHz to 26GHz Mode: Receiving

Measurement: Quasi-peak (9kHz – 1GHz), Peak (above 1GHz)

RBW: 9kHz (below 30MHz), 120KHz (30MHz – 1GHz), 1MHz (above 1GHz)

VBW: 30kHz (below 30MHz), 300kHz (30MHz – 1GHz), 3MHz (above 1GHz)

| Frequency<br>(MHz) | Polarity<br>(H/V) | Reading<br>at 3m<br>(dBμV) | Transducer<br>Factor<br>(dB/m) | Field Strength<br>at 3m<br>(dBμV/m) | Limit at 3m<br>(dBμV/m) | Margin<br>(dB) |
|--------------------|-------------------|----------------------------|--------------------------------|-------------------------------------|-------------------------|----------------|
| -                  | -                 | -                          | -                              | -                                   | -                       | -              |

Remark:

No specified emission found.

For electronic filing, the RE spectrum graphs are saved with filename CWHPTT200M\_REGraph.pdf.



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### 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.



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### **4 Photograph**

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

For electronic filing, the photos are saved with filename CWHPTT200M\_TSup.pdf.

#### **4.2 Photographs of the External and Internal Configurations of the EUT**

For electronic filing, the photos are saved with filename CWHPTT200M\_ExPho.pdf and CWHPTT200M\_InPho.pdf.

#### **4.3 Antenna requirement**

Appendices A2 shows the antenna is permanently attached and cannot be changed. Therefore it fulfils the section 15.203 requirement.



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### 5 Appendices

A1 Photos of External Configurations

A2 Antenna Requirement

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Tested by:

Mr. Yau Kwok Pun, Stanley

Reviewed by:

Mr. WONG Lap-pong, Andrew





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### A1 Photos of External Configurations



Tested by:

*Stanley*

Mr. Yau Kwok Pun, Stanley

Reviewed by:

*PR.*

Mr. WONG Lap-pong, Andrew

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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](mailto:info@cmatcl.com) Web Site: <http://www.cmatcl.com>



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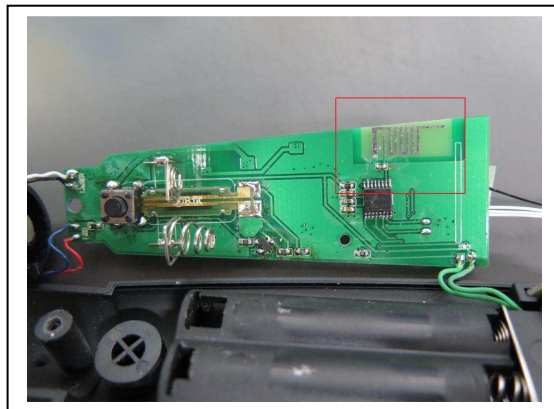
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### A2 Antenna Requirement



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

Tested by:

*Stanley*

Mr. Yau Kwok Pun, Stanley

Reviewed by:

*PR.*

Mr. WONG Lap-pong, Andrew

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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](mailto:info@cmatcl.com) Web Site: <http://www.cmatcl.com>