



# FCC RF Test Report

**APPLICANT** : Mobile Devices Ingénierie  
**EQUIPMENT** : Telematics embedded system  
**BRAND NAME** : Mobile Devices Ingenierie  
**MODEL NAME** : C4MAX  
**MARKETING NAME** : C4Max-E V2  
**FCC ID** : A6GC4MAX-E  
**STANDARD** : FCC Part 15 Subpart C §15.247  
**CLASSIFICATION** : (DTS) Digital Transmission System

This is a data re-used report which is only valid together with the original test report. The product was received on Dec. 14, 2017 and testing was completed on Dec. 27, 2017. We, Sporton International (Shenzhen) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International (Shenzhen) Inc., the test report shall not be reproduced except in full.

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Approved by: Eric Shih / Manager



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## REVISION HISTORY

| REPORT NO.   | VERSION | DESCRIPTION             | ISSUED DATE   |
|--------------|---------|-------------------------|---------------|
| FR533103-03C | Rev. 01 | Initial issue of report | Jan. 04, 2018 |
|              |         |                         |               |
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## SUMMARY OF TEST RESULT

| Report Section | FCC Rule  | Description                                        | Limit                 | Result | Remark                             |
|----------------|-----------|----------------------------------------------------|-----------------------|--------|------------------------------------|
| 3.1            | 15.247(d) | Radiated Band Edges and Radiated Spurious Emission | 15.209(a) & 15.247(d) | Pass   | Under limit 9.55 dB at 749.740 MHz |

# 1 General Description

## 1.1 Applicant

Mobile Devices Ingénierie

100 Avenue de Stalingrad 94800 Villejuif FRANCE

## 1.2 Manufacturer

Mobile Devices Ingénierie

100 Avenue de Stalingrad 94800 Villejuif FRANCE

## 1.3 Product Feature of Equipment Under Test

| Product Feature                 |                                                                          |
|---------------------------------|--------------------------------------------------------------------------|
| Equipment                       | Telematics embedded system                                               |
| Brand Name                      | Mobile Devices Ingenierie                                                |
| Model Name                      | C4MAX                                                                    |
| Marketing Name                  | C4Max-E V2                                                               |
| FCC ID                          | A6GC4MAX-E                                                               |
| EUT supports Radios application | WLAN2.4GHz 802.11b/g/n HT20/HT40<br>Bluetooth v3.0+EDR/Bluetooth v4.0 LE |
| HW Version                      | SAP00383                                                                 |
| SW Version                      | V1944                                                                    |
| EUT Stage                       | Production Unit                                                          |

**Remark:** The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

## 1.4 Product Specification of Equipment Under Test

| Standards-related Product Specification |                                                                                        |
|-----------------------------------------|----------------------------------------------------------------------------------------|
| Tx/Rx Channel Frequency Range           | 2412 MHz ~ 2462 MHz                                                                    |
| Antenna Type                            | Chip Antenna                                                                           |
| Type of Modulation                      | 802.11b : DSSS (DBPSK / DQPSK / CCK)<br>802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) |

## 1.5 Modification of EUT

No modifications are made to the EUT during all test items.



## **1.6 Re-use of Measured Data**

### **1.6.1 Introduction Section**

This application re-uses data collected on a similar device. The subject device of this application (Model: C4MAX, FCC ID: A6GC4MAX-E) is electrically identical to the reference device (Model: C4Max-3GNA-E, FCC ID: A6GC4MAX-3GNA) for the portions of the circuitry corresponding to the data being re-used, as treated by KDB Publication 178919 D01.

### **1.6.2 Difference Section**

For details concerning the similarity with respect to component placement, mechanical/electrical design etc., please refer to the Product Equality Declaration.

The re-used RF data includes the following bands provided in Appendix D (Sporton RF Report No. FR533103-01C for the reference device Model: C4Max-3GNA-E, FCC ID: A6GC4MAX-3GNA):

### **1.6.3 Spot Check Verification Data Section**

In order to confirm hardware similarity of the subject device with the reference device, spot check measurements were performed on the subject device for radiated spurious emission as appendix A, the test result were consistent with FCC ID: A6GC4MAX-3GNA.

Assertions concerning the similarity of these devices are based on representations by the applicant. The applicant accepts full responsibility for the validity of the similarity claim, and for the determination that verification test data are sufficient to support it.

### **1.6.4 Reference detail Section:**

| Equipment Class | Reference FCC ID | Folder Test           | Report Title/Section |
|-----------------|------------------|-----------------------|----------------------|
| DSS             | A6GC4MAX-3GNA    | Part15C(FR533103-01A) | All applicable       |
| DTS (BLE)       | A6GC4MAX-3GNA    | Part15C(FR533103-01B) | All applicable       |
| DTS (WLAN)      | A6GC4MAX-3GNA    | Part15C(FR533103-01C) | All applicable       |



## 1.7 Testing Location

Sporton International (Shenzhen) Inc. is accredited to ISO 17025 by National Voluntary Laboratory Accreditation Program (NVLAP code: 600156-0) and the FCC designation No. is CN5019.

|                           |                                                                                                                                                                          |                                       |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| <b>Test Site</b>          | Sporton International (Shenzhen) Inc.                                                                                                                                    |                                       |
| <b>Test Site Location</b> | No. 3 Bldg the third floor of south, Shahe River west, Fengzeyuan Warehouse,<br>Nanshan District Shenzhen City Guangdong Province 518055 China<br>TEL: +86-755-3320-2398 |                                       |
| <b>Test Site No.</b>      | <b>Sporton Site No.</b>                                                                                                                                                  | <b>FCC Test Firm Registration No.</b> |
|                           | 03CH03-SZ                                                                                                                                                                | 577730                                |

**Note:** The test site complies with ANSI C63.4 2014 requirement.

## 1.8 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC Part 15 Subpart C §15.247
- ♦ FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v04
- ♦ ANSI C63.10-2013

### **Remark:**

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.



## **2 Test Configuration of Equipment Under Test**

### **2.1 Carrier Frequency and Channel**

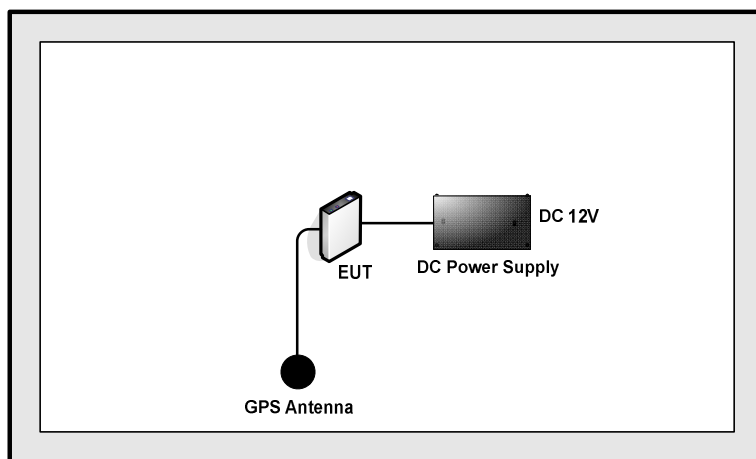
| <b>Frequency Band</b> | <b>Channel</b> | <b>Freq.<br/>(MHz)</b> | <b>Channel</b> | <b>Freq.<br/>(MHz)</b> |
|-----------------------|----------------|------------------------|----------------|------------------------|
| 2400-2483.5 MHz       | 1              | 2412                   | 7              | 2442                   |
|                       | 2              | 2417                   | 8              | 2447                   |
|                       | 3              | 2422                   | 9              | 2452                   |
|                       | 4              | 2427                   | 10             | 2457                   |
|                       | 5              | 2432                   | 11             | 2462                   |
|                       | 6              | 2437                   | -              | -                      |

## 2.2 Test Mode

Final test mode of conducted test items and radiated spurious emissions are considering the modulation and worse data rates as below table.

| Modulation | Data Rate |
|------------|-----------|
| 802.11b    | 1 Mbps    |

## 2.3 Connection Diagram of Test System





## 2.4 Support Unit used in test configuration and system

| Item | Equipment       | Trade Name | Model Name | FCC ID  | Data Cable | Power Cord |
|------|-----------------|------------|------------|---------|------------|------------|
| 1.   | DC Power Supply | Solite     | 36B20L     | Fcc DoC | N/A        | N/A        |
| 2.   | GPS Antenna     | N/A        | N/A        | N/A     | N/A        | N/A        |

## 2.5 EUT Operation Test Setup

For WLAN RF test items, an engineering test program was provided and enabled to make EUT continuously transmit/receive.

### 3 Test Result

#### 3.1 Radiated Band Edges and Spurious Emission Measurement

##### 3.1.1 Limit of Radiated band edge and Spurious Emission Measurement

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the limits as below.

| Frequency<br>(MHz) | Field Strength<br>(microvolts/meter) | Measurement Distance<br>(meters) |
|--------------------|--------------------------------------|----------------------------------|
| 0.009 – 0.490      | 2400/F(kHz)                          | 300                              |
| 0.490 – 1.705      | 24000/F(kHz)                         | 30                               |
| 1.705 – 30.0       | 30                                   | 30                               |
| 30 – 88            | 100                                  | 3                                |
| 88 – 216           | 150                                  | 3                                |
| 216 - 960          | 200                                  | 3                                |
| Above 960          | 500                                  | 3                                |

##### 3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

### 3.1.3 Test Procedures

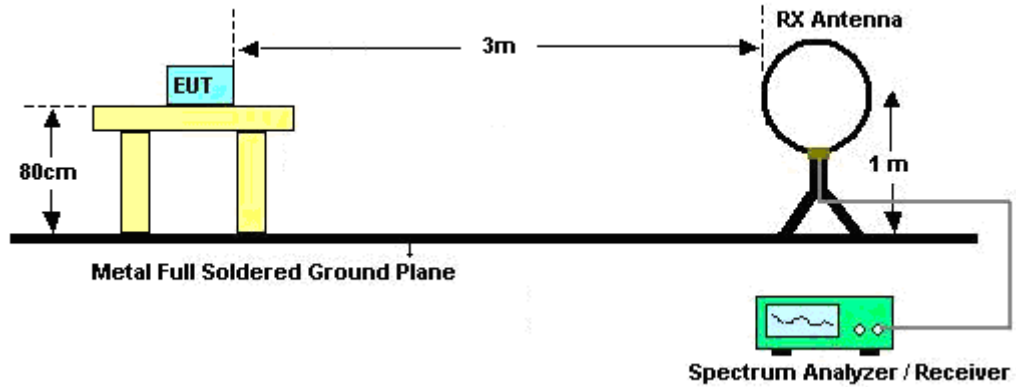
1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v04.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
7. Use the following spectrum analyzer settings:
  - (1) Span shall wide enough to fully capture the emission being measured;
  - (2) Set RBW=100 kHz for  $f < 1$  GHz; VBW  $\geq$  RBW; Sweep = auto; Detector function = peak; Trace = max hold;
  - (3) Set RBW = 1 MHz, VBW= 3MHz for  $f \geq 1$  GHz for peak measurement.

For average measurement:

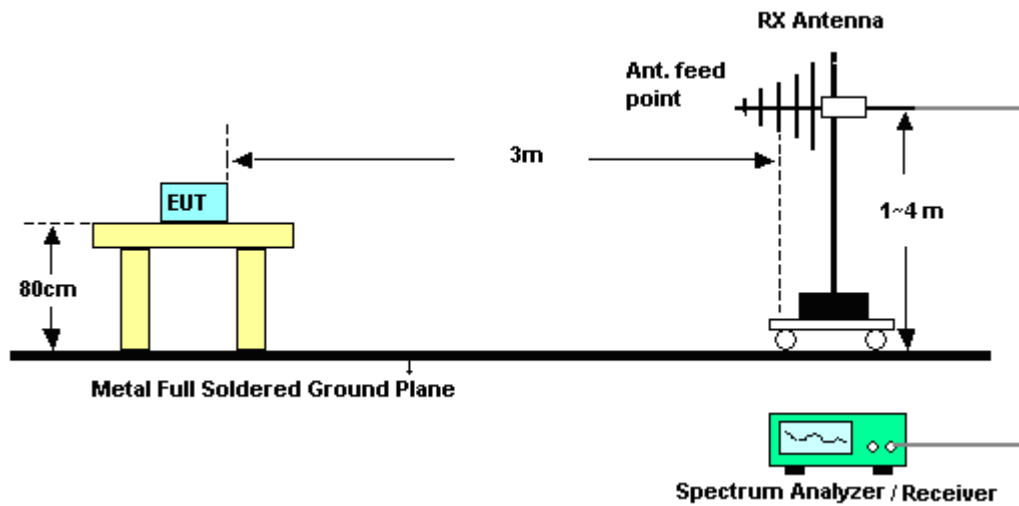
    - VBW = 10 Hz, when duty cycle is no less than 98 percent.
    - VBW  $\geq 1/T$ , when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

### 3.1.4 Test Setup

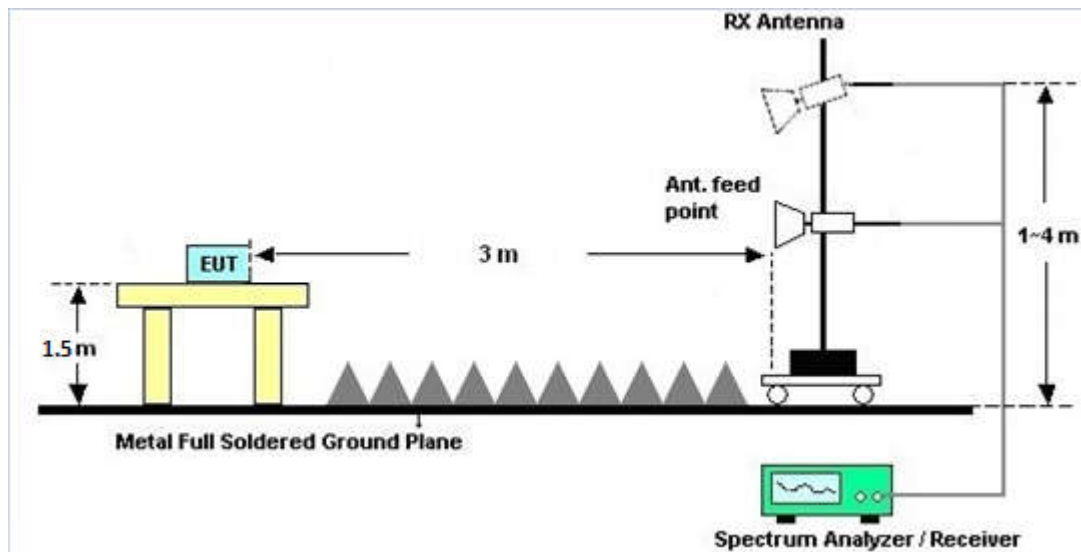
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



### 3.1.5 Test Results of Radiated Spurious Emissions (9kHz ~ 30MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

### 3.1.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix A.

### 3.1.7 Duty Cycle

Please refer to Appendix B.

### 3.1.8 Test Result of Radiated Spurious Emission (30MHz ~ 10<sup>th</sup> Harmonic)

Please refer to Appendix A.



## 4 List of Measuring Equipment

| Instrument                | Manufacturer         | Model No.                    | Serial No.       | Characteristics    | Calibration Date | Test Date     | Due Date      | Remark                   |
|---------------------------|----------------------|------------------------------|------------------|--------------------|------------------|---------------|---------------|--------------------------|
| EMI Test Receiver&SA      | KEYSIGHT             | N9038A                       | MY544500<br>83   | 20Hz~8.4GHz        | Apr. 20, 2017    | Dec. 27, 2017 | Apr. 19, 2018 | Radiation<br>(03CH03-SZ) |
| EXA Spectrum Analyzer     | KEYSIGHT             | N9010A                       | MY551502<br>46   | 10Hz~44GHz;        | Apr. 20, 2017    | Dec. 27, 2017 | Apr. 19, 2018 | Radiation<br>(03CH03-SZ) |
| Loop Antenna              | R&S                  | HFH2-Z2                      | 100354           | 9kHz~30MHz         | May 14, 2017     | Dec. 27, 2017 | May 13, 2018  | Radiation<br>(03CH03-SZ) |
| Bilog Antenna             | TeseQ                | CBL6112D                     | 35408            | 30MHz-2GHz         | May 14, 2017     | Dec. 27, 2017 | May 13, 2018  | Radiation<br>(03CH03-SZ) |
| Double Ridge Horn Antenna | SCHWARZBECK          | BBHA9120D                    | 9120D-135<br>5   | 1GHz~18GHz         | Jul. 09.2017     | Dec. 27, 2017 | Jul. 08, 2018 | Radiation<br>(03CH03-SZ) |
| HF Amplifier              | MITEQ                | TTA1840-35-HG                | 1871923          | 18GHz~40GHz        | Jul. 18. 2017    | Dec. 27, 2017 | Jul. 17.2018  | Radiation<br>(03CH03-SZ) |
| SHF-EHF Horn              | com-power            | AH-840                       | 101071           | 18Ghz-40GHz        | Jun. 16, 2017    | Dec. 27, 2017 | Jun. 15, 2018 | Radiation<br>(03CH03-SZ) |
| Amplifier                 | Burgeon              | BPA-530                      | 102210           | 0.01Hz<br>~3000MHz | Oct. 19, 2017    | Dec. 27, 2017 | Oct. 18, 2018 | Radiation<br>(03CH03-SZ) |
| HF Amplifier              | MITEQ                | AMF-7D-0010<br>1800-30-10P-R | 1943528          | 1GHz~18GHz         | Oct. 19, 2017    | Dec. 27, 2017 | Oct. 18, 2018 | Radiation<br>(03CH03-SZ) |
| Amplifier                 | Agilent Technologies | 83017A                       | MY395013<br>02   | 500MHz~26.5G<br>Hz | Jan. 06, 2017    | Dec. 27, 2017 | Jan. 05, 2018 | Radiation<br>(03CH03-SZ) |
| AC Power Source           | Chroma               | 61601                        | 616010001<br>985 | N/A                | NCR              | Dec. 27, 2017 | NCR           | Radiation<br>(03CH03-SZ) |
| Turn Table                | EM                   | EM1000                       | N/A              | 0~360 degree       | NCR              | Dec. 27, 2017 | NCR           | Radiation<br>(03CH03-SZ) |
| Antenna Mast              | EM                   | EM1000                       | N/A              | 1 m~4 m            | NCR              | Dec. 27, 2017 | NCR           | Radiation<br>(03CH03-SZ) |

NCR: No Calibration Required



## 5 Uncertainty of Evaluation

### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

|                                                                            |       |
|----------------------------------------------------------------------------|-------|
| Measuring Uncertainty for a Level of Confidence<br>of 95% ( $U = 2Uc(y)$ ) | 5.1dB |
|----------------------------------------------------------------------------|-------|

### Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

|                                                                            |       |
|----------------------------------------------------------------------------|-------|
| Measuring Uncertainty for a Level of Confidence<br>of 95% ( $U = 2Uc(y)$ ) | 5.0dB |
|----------------------------------------------------------------------------|-------|

### Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

|                                                                            |       |
|----------------------------------------------------------------------------|-------|
| Measuring Uncertainty for a Level of Confidence<br>of 95% ( $U = 2Uc(y)$ ) | 5.0dB |
|----------------------------------------------------------------------------|-------|



## Appendix A. Radiated Spurious Emission

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

| WIFI                        | Note                                                                                        | Frequency | Level      | Over   | Limit      | Read     | Antenna  | Cable  | Preamp | Ant    | Table   | Peak  | Pol.  |
|-----------------------------|---------------------------------------------------------------------------------------------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|-------|-------|
| Ant.                        |                                                                                             |           |            | Limit  | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.  |       |
| 1                           |                                                                                             | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | (P/A) | (H/V) |
| 802.11b<br>CH 11<br>2462MHz | *                                                                                           | 2462      | 78.1       | -      | -          | 79.72    | 27.41    | 5.12   | 34.15  | 151    | 10      | P     | H     |
|                             | *                                                                                           | 2462      | 72.71      | -      | -          | 74.33    | 27.41    | 5.12   | 34.15  | 151    | 10      | A     | H     |
|                             |                                                                                             | 2495.72   | 41.66      | -32.34 | 74         | 43.08    | 27.5     | 5.19   | 34.11  | 151    | 10      | P     | H     |
|                             |                                                                                             | 2489.16   | 29.88      | -24.12 | 54         | 31.32    | 27.5     | 5.19   | 34.13  | 151    | 10      | A     | H     |
|                             | *                                                                                           | 2462      | 81.55      | -      | -          | 83.17    | 27.41    | 5.12   | 34.15  | 102    | 180     | P     | V     |
|                             | *                                                                                           | 2462      | 75.76      | -      | -          | 77.38    | 27.41    | 5.12   | 34.15  | 102    | 180     | A     | V     |
|                             |                                                                                             | 2489.2    | 41.82      | -32.18 | 74         | 43.26    | 27.5     | 5.19   | 34.13  | 102    | 180     | P     | V     |
|                             |                                                                                             | 2488.56   | 29.89      | -24.11 | 54         | 31.33    | 27.5     | 5.19   | 34.13  | 102    | 180     | A     | V     |
| Remark                      | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |           |            |        |            |          |          |        |        |        |         |       |       |

**2.4GHz 2400~2483.5MHz****WIFI 802.11b (Harmonic @ 3m)**

| WIFI<br>Ant.<br>1           | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Over<br>Limit<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Cable<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|-----------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------|-----------------------------|---------------------------|-------------------------------|-------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11b<br>CH 11<br>2462MHz |                                                                                             | 4924                 | 45.1                | -28.9                   | 74                          | 62.96                     | 31.83                         | 8.64                    | 58.33                      | 251                  | 0                       | P                       | H               |
|                             |                                                                                             | 7386                 | 44.84               | -29.16                  | 74                          | 58.27                     | 35.81                         | 10.2                    | 59.44                      | 145                  | 274                     | P                       | H               |
|                             |                                                                                             | 4924                 | 47.24               | -26.76                  | 74                          | 65.1                      | 31.83                         | 8.64                    | 58.33                      | 251                  | 0                       | P                       | V               |
|                             |                                                                                             | 7386                 | 45.62               | -28.38                  | 74                          | 59.05                     | 35.81                         | 10.2                    | 59.44                      | 145                  | 274                     | P                       | V               |
| Remark                      | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                           |                               |                         |                            |                      |                         |                         |                 |



## Emission below 1GHz

## 2.4GHz WIFI 802.11b (LF)

| WIFI                    | Note                                                                       | Frequency | Level      | Over   | Limit      | Read     | Antenna  | Cable  | Preamp | Ant    | Table   | Peak    | Pol.    |
|-------------------------|----------------------------------------------------------------------------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|---------|---------|
| Ant.                    |                                                                            |           |            | Limit  | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.    |         |
| 1                       |                                                                            | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | ( P/A ) | ( H/V ) |
| 2.4GHz<br>802.11b<br>LF |                                                                            | 30        | 25.91      | -14.09 | 40         | 31.25    | 26.7     | 0.56   | 32.6   | -      | -       | P       | H       |
|                         |                                                                            | 163.86    | 21.49      | -22.01 | 43.5       | 34.9     | 17.2     | 1.33   | 31.94  | -      | -       | P       | H       |
|                         |                                                                            | 283.17    | 28.32      | -17.68 | 46         | 39.86    | 18.73    | 1.77   | 32.04  | -      | -       | P       | H       |
|                         |                                                                            | 418       | 27.43      | -18.57 | 46         | 31.41    | 25.6     | 2.17   | 31.75  | -      | -       | P       | H       |
|                         |                                                                            | 749.74    | 36.45      | -9.55  | 46         | 37.97    | 27.3     | 2.98   | 31.8   | 200    | 0       | P       | H       |
|                         |                                                                            | 989.33    | 33.63      | -20.37 | 54         | 31.31    | 30.19    | 3.46   | 31.33  | -      | -       | P       | H       |
|                         |                                                                            | 30        | 27.34      | -12.66 | 40         | 32.68    | 26.7     | 0.56   | 32.6   | -      | -       | P       | V       |
|                         |                                                                            | 159.01    | 21.6       | -21.9  | 43.5       | 34.91    | 17.41    | 1.32   | 32.04  | -      | -       | P       | V       |
|                         |                                                                            | 308.39    | 25.17      | -20.83 | 46         | 35.97    | 19.33    | 1.85   | 31.98  | -      | -       | P       | V       |
|                         |                                                                            | 425.76    | 28.26      | -17.74 | 46         | 32.34    | 25.43    | 2.19   | 31.7   | -      | -       | P       | V       |
|                         |                                                                            | 749.74    | 35.92      | -10.08 | 46         | 37.44    | 27.3     | 2.98   | 31.8   | 165    | 200     | P       | V       |
|                         |                                                                            | 974.78    | 33.75      | -20.25 | 54         | 31.66    | 29.9     | 3.43   | 31.24  | -      | -       | P       | V       |
| Remark                  | 1. No other spurious found.<br>2. All results are PASS against limit line. |           |            |        |            |          |          |        |        |        |         |         |         |



**Note symbol**

|     |                                                                                                                                                          |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| *   | <b>Fundamental Frequency</b> which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency. |
| !   | Test result is <b>over limit</b> line.                                                                                                                   |
| P/A | <b>P</b> eak or <b>A</b> verage                                                                                                                          |
| H/V | <b>H</b> orizontal or <b>V</b> ertical                                                                                                                   |



A calculation example for radiated spurious emission is shown as below:

| WIFI    | Note | Frequency | Level      | Over   | Limit      | Read     | Antenna  | Cable  | Preamp | Ant    | Table   | Peak    | Pol.    |
|---------|------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|---------|---------|
| Ant.    |      |           |            | Limit  | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.    |         |
| 1       |      | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | ( P/A ) | ( H/V ) |
| 802.11b |      | 2390      | 55.45      | -18.55 | 74         | 54.51    | 32.22    | 4.58   | 35.86  | 103    | 308     | P       | H       |
| CH 01   |      |           |            |        |            |          |          |        |        |        |         |         |         |
| 2412MHz |      | 2390      | 43.54      | -10.46 | 54         | 42.6     | 32.22    | 4.58   | 35.86  | 103    | 308     | A       | H       |

1. Level(dBμV/m) =

Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

2. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

**For Peak Limit @ 2390MHz:**

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

**For Average Limit @ 2390MHz:**

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

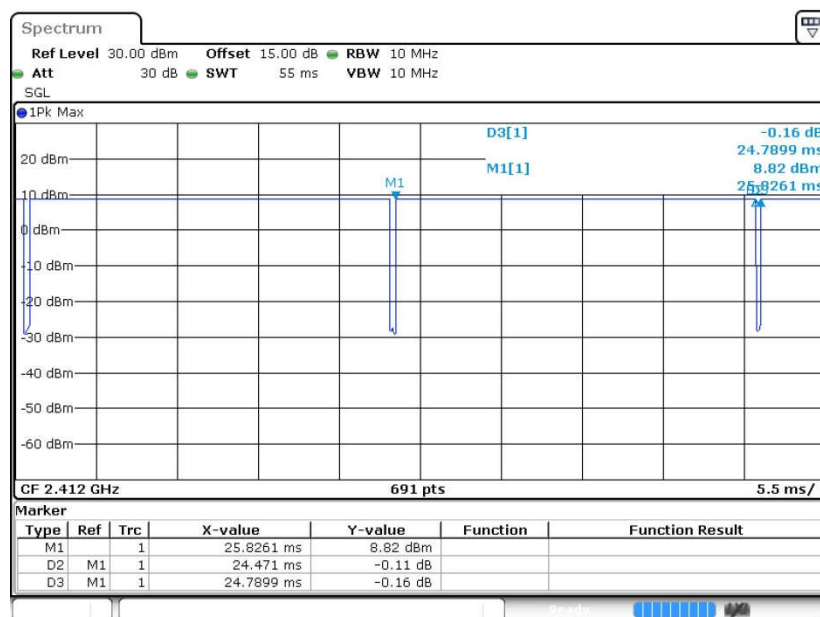
= -10.46(dB)

**Both peak and average measured complies with the limit line, so test result is “PASS”.**

## Appendix B. Duty Cycle Plots

| Band    | Duty Cycle(%) | T(ms) | 1/T(kHz) | VBW Setting |
|---------|---------------|-------|----------|-------------|
| 802.11b | 98.71         | -     | -        | 10Hz        |

### 802.11b





## **Appendix D. Reference Report**

Please refer to Sporton report number FR533103-01C which is issued separately.