

## FCC Test Report

### (Co-Located)

**Report No.:** RF161004D09E-2

**FCC ID:** HFS-C401U

**Test Model:** C401U

**Received Date:** Jan. 12, 2018

**Test Date:** Mar. 07 ~ Mar. 08, 2018

**Issued Date:** Mar. 08, 2018

**Applicant:** QUANTA COMPUTER INC.

**Address:** 188, WEN HUA 2ND RD., GUISHAN DIST., TAO YUAN CITY 33377,  
TAIWAN

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

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R.O.C.

**Test Location:** No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City  
33383, TAIWAN (R.O.C.)

**FCC Registration/  
Designation Number:** 788550 / TW0003



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### Release Control Record

| Issue No.      | Description      | Date Issued   |
|----------------|------------------|---------------|
| RF161004D09E-2 | Original release | Mar. 08, 2018 |

## 1 Certificate of Conformity

**Product:** Clover Flex

**Brand:** clover

**Test Model:** C401U

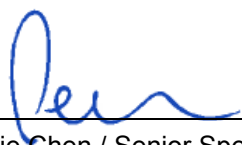
**Sample Status:** Engineering sample

**Applicant:** QUANTA COMPUTER INC.

**Test Date:** Mar. 07 ~ Mar. 08, 2018

**Standards:** 47 CFR FCC Part 15, Subpart C (Section 15.247)  
47 CFR FCC Part 15, Subpart E (Section 15.407)  
47 CFR FCC Part 15, Subpart C (Section 15.225)  
47 CFR FCC Part 15, Subpart C (Section 15.215)  
FCC Part 24, Subpart E  
FCC Part 27, Subpart L, H  
ANSI 63.26-2015  
ANSI C63.10-2013

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

**Prepared by :**  , **Date:** Mar. 08, 2018  
Pettie Chen / Senior Specialist

**Approved by :**  , **Date:** Mar. 08, 2018  
Bruce Chen / Project Engineer

## 2 Summary of Test Results

| Applied Standard                                            | 47 CFR FCC Part 15, Subpart C (Section 15.247)<br>47 CFR FCC Part 15, Subpart E (Section 15.407)<br>47 CFR FCC Part 15, Subpart C (Section 15.225)<br>47 CFR FCC Part 15, Subpart C (Section 15.215)<br>FCC Part 24, Subpart E<br>FCC Part 27, Subpart L, H<br>ANSI 63.26-2015<br>ANSI C63.10-2013 |        |                                                                                |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------|
| FCC Clause                                                  | Test Item                                                                                                                                                                                                                                                                                          | Result | Remarks                                                                        |
| 15.205 / 15.209 / 15.247(d) / 15.407(b) / (1/2/3/4(i/ii)/6) | Radiated Emissions                                                                                                                                                                                                                                                                                 | Pass   | Meet the requirement of limit. Minimum passing margin is -0.9dB at 2390.0MHz.  |
| 15.225 (a)                                                  | The field strength of any emissions within the band 13.553-13.567 MHz                                                                                                                                                                                                                              | Pass   | Meet the requirement of limit. Minimum passing margin is -43.00dB at 13.56MHz. |
| 15.225 (d)                                                  | The field strength of any emissions appearing outside of the 13.110-14.010 MHz band                                                                                                                                                                                                                | Pass   | Meet the requirement of limit. Minimum passing margin is -26.20dB at 3.56MHz.  |
| 2.1053 / 24.238                                             | Radiated Spurious Emissions                                                                                                                                                                                                                                                                        | Pass   | Meet the requirement of limit. Minimum passing margin is -9.6dB at 1880.00MHz. |
| 2.1051 / 27.53(c) / 27.53(h)                                | Radiated Spurious Emissions                                                                                                                                                                                                                                                                        | Pass   | Meet the requirement of limit. Minimum passing margin is -6.6dB at 1747.50MHz. |

### 2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

| Measurement                    | Frequency        | Expanded Uncertainty (k=2) (±) |
|--------------------------------|------------------|--------------------------------|
| Radiated Emissions up to 1 GHz | 30MHz ~ 200MHz   | 3.86 dB                        |
|                                | 200MHz ~ 1000MHz | 3.87 dB                        |
| Radiated Emissions above 1 GHz | 1GHz ~ 18GHz     | 2.29 dB                        |
|                                | 18GHz ~ 40GHz    | 2.29 dB                        |

### 2.2 Modification Record

There were no modifications required for compliance.

### 3 General Information

#### 3.1 General Description of EUT

|                       |                                      |                                                                                                                                      |
|-----------------------|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Product               | Clover Flex                          |                                                                                                                                      |
| Brand                 | clover                               |                                                                                                                                      |
| Test Model            | C401U                                |                                                                                                                                      |
| HVIN                  | C401ULTE                             |                                                                                                                                      |
| Status of EUT         | Engineering sample                   |                                                                                                                                      |
| Power Supply Rating   | 7.6 Vdc (Battery)<br>12Vdc (Adapter) |                                                                                                                                      |
| Modulation Type       | WLAN                                 | CCK, DQPSK, DBPSK for DSSS<br>64QAM, 16QAM, QPSK, BPSK for OFDM                                                                      |
|                       | Bluetooth EDR                        | GFSK, $\pi/4$ -DQPSK, 8DPSK                                                                                                          |
|                       | Bluetooth LE                         | GFSK                                                                                                                                 |
|                       | NFC                                  | ASK                                                                                                                                  |
|                       | LTE                                  | QPSK, 16QAM                                                                                                                          |
| Modulation Technology | WLAN                                 | DSSS, OFDM                                                                                                                           |
| Transfer Rate         | WLAN                                 | 802.11b: 11/5.5/2/1Mbps<br>802.11a/g: 54/48/36/24/18/12/9/6Mbps<br>802.11n (2.4GHz): up to 72.2Mbps<br>802.11n (5GHz): up to 150Mbps |
|                       | Bluetooth EDR                        | 1/2/3Mbps                                                                                                                            |
|                       | Bluetooth LE                         | 1Mbps                                                                                                                                |
| Operating Frequency   | WLAN                                 | 2.4GHz: 2412 ~ 2462MHz<br>5.0GHz: 5180 ~ 5240MHz, 5745 ~ 5825MHz                                                                     |
|                       | Bluetooth EDR                        | 2402 ~ 2480MHz                                                                                                                       |
|                       | Bluetooth LE                         | 2402 ~ 2480MHz                                                                                                                       |
|                       | NFC                                  | 13.56MHz                                                                                                                             |

|                     |                                                                                     |                                                                                                                                                                                                                    |                          |                       |
|---------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------------|
| Operating Frequency | LTE                                                                                 | LTE Band 2                                                                                                                                                                                                         | Channel Bandwidth 1.4MHz | 1850.7MHz ~ 1909.3MHz |
|                     |                                                                                     |                                                                                                                                                                                                                    | Channel Bandwidth 3MHz   | 1851.5MHz ~ 1908.5MHz |
|                     |                                                                                     |                                                                                                                                                                                                                    | Channel Bandwidth 5MHz   | 1852.5MHz ~ 1907.5MHz |
|                     |                                                                                     |                                                                                                                                                                                                                    | Channel Bandwidth 10MHz  | 1855.0MHz ~ 1905.0MHz |
|                     |                                                                                     |                                                                                                                                                                                                                    | Channel Bandwidth 15MHz  | 1857.5MHz ~ 1902.5MHz |
|                     |                                                                                     |                                                                                                                                                                                                                    | Channel Bandwidth 20MHz  | 1860.0MHz ~ 1900.0MHz |
|                     |                                                                                     | LTE Band 4                                                                                                                                                                                                         | Channel Bandwidth 1.4MHz | 1710.7MHz ~ 1754.3MHz |
|                     |                                                                                     |                                                                                                                                                                                                                    | Channel Bandwidth 3MHz   | 1711.5MHz ~ 1753.5MHz |
|                     |                                                                                     |                                                                                                                                                                                                                    | Channel Bandwidth 5MHz   | 1712.5MHz ~ 1752.5MHz |
|                     |                                                                                     |                                                                                                                                                                                                                    | Channel Bandwidth 10MHz  | 1715.0MHz ~ 1750.0MHz |
|                     |                                                                                     |                                                                                                                                                                                                                    | Channel Bandwidth 15MHz  | 1717.5MHz ~ 1747.5MHz |
|                     |                                                                                     |                                                                                                                                                                                                                    | Channel Bandwidth 20MHz  | 1720.0MHz ~ 1745.0MHz |
|                     |                                                                                     | LTE Band 12                                                                                                                                                                                                        | Channel Bandwidth 1.4MHz | 699.7MHz ~ 715.3MHz   |
|                     |                                                                                     |                                                                                                                                                                                                                    | Channel Bandwidth 3MHz   | 700.5MHz ~ 714.5MHz   |
|                     |                                                                                     |                                                                                                                                                                                                                    | Channel Bandwidth 5MHz   | 701.5MHz ~ 713.5MHz   |
|                     |                                                                                     |                                                                                                                                                                                                                    | Channel Bandwidth 10MHz  | 704.0MHz ~ 711.0MHz   |
| Number of Channel   | WLAN                                                                                | 2412 ~ 2462MHz:<br>11 for 802.11b, 802.11g, 802.11n (HT20)<br>5180 ~ 5240MHz:<br>4 for 802.11a, 802.11n (HT20)<br>2 for 802.11n (HT40)<br>5745 ~ 5825MHz:<br>5 for 802.11a, 802.11n (HT20)<br>2 for 802.11n (HT40) |                          |                       |
|                     |                                                                                     | Bluetooth EDR                                                                                                                                                                                                      | 79                       |                       |
|                     |                                                                                     | Bluetooth LE                                                                                                                                                                                                       | 40                       |                       |
|                     |                                                                                     | NFC                                                                                                                                                                                                                | 1                        |                       |
| Output Power        | WLAN                                                                                | 2412 ~ 2462MHz: 83.946mW<br>5180 ~ 5240MHz: 39.537mW<br>5745 ~ 5825MHz: 38.459mW                                                                                                                                   |                          |                       |
|                     | Bluetooth EDR                                                                       | 8.356mW                                                                                                                                                                                                            |                          |                       |
|                     | Bluetooth LE                                                                        | 2.239mW                                                                                                                                                                                                            |                          |                       |
| Antenna Type        | Refer to note                                                                       |                                                                                                                                                                                                                    |                          |                       |
| Antenna Connector   | Refer to note                                                                       |                                                                                                                                                                                                                    |                          |                       |
| Accessory Device    | Charging Dock (Brand: Clover, Model: K400)<br>Microhub (Brand: Clover, Model: H400) |                                                                                                                                                                                                                    |                          |                       |
| Data Cable Supplied | 0.8m shielded Type-C cable without core                                             |                                                                                                                                                                                                                    |                          |                       |

Note:

1. The EUT provides 1 completed transmitter and 1 receiver.

| Modulation Mode | TX Function |
|-----------------|-------------|
| 802.11b         | 1TX         |
| 802.11g         | 1TX         |
| 802.11a         | 1TX         |
| 802.11n (HT20)  | 1TX         |
| 802.11n (HT40)  | 1TX         |

2. The EUT consumes power from the following battery and adapter.

| Battery |                       |
|---------|-----------------------|
| Brand   | LG Chem, Ltd.         |
| Model   | MPPCLOYJ4             |
| Rating  | 7.6Vdc, 2170mAh (Typ) |

| Adapter      |                                      |
|--------------|--------------------------------------|
| Brand        | clover                               |
| Model        | FSP040-RHBN2 A                       |
| Input Power  | 100-240Vac~, 1.5A, 50-60Hz           |
| Output Power | 12.0Vdc / 3.33A                      |
| Power Line   | 1.2m shielded DC cable with one core |

3. The EUT uses following antennas.

| WLAN & Bluetooth |           |                    |       |       |       |
|------------------|-----------|--------------------|-------|-------|-------|
| Ant. Type        | Connector | Antenna Gain (dBi) |       |       |       |
|                  |           | Frequency (GHz)    |       |       |       |
|                  |           | 2.4                | 5.150 | 5.470 | 5.850 |
| PIFA             | NA        | -2.5               | 4.0   | 4.4   | 3.4   |

| NFC       |              |
|-----------|--------------|
| Ant. Type | Loop Antenna |

| Antenna          | Vendor       | Antenna Type | Antenna Connector | Frequency Range (MHz) | Antenna Gain (dBi) |
|------------------|--------------|--------------|-------------------|-----------------------|--------------------|
| Antenna 1 (Main) | Amphenol     | PIFA         | NA                | LTE Band 2            | -2.05              |
|                  |              |              |                   | LTE Band 4            | -3.58              |
|                  |              |              |                   | LTE Band 12           | -4.49              |
| Antenna 1 (Aux.) | Amphenol     | PIFA         | IPEX MHF4         | LTE Band 2            | Rx only            |
|                  |              |              |                   | LTE Band 4            | Rx only            |
|                  |              |              |                   | LTE Band 12           | Rx only            |
| Antenna 2 (Main) | Luxshare-ICT | PIFA         | NA                | LTE Band 2            | -1.8               |
|                  |              |              |                   | LTE Band 4            | -2.7               |
|                  |              |              |                   | LTE Band 12           | -2.2               |
| Antenna 2 (Aux.) | Luxshare-ICT | PIFA         | IPEX MHF4         | LTE Band 2            | Rx only            |
|                  |              |              |                   | LTE Band 4            | Rx only            |
|                  |              |              |                   | LTE Band 12           | Rx only            |

\*Antenna 2 was the worst for the final test.

\*\*Antennas of WLAN 2.4GHz Band & WWAN are different.

4. 2.4GHz and 5GHz technology cannot transmit at same time.
5. Spurious emission of the simultaneous operation (WLAN+WWAN+NFC or BT+WWAN+NFC) has been evaluated and no non-compliance was found.

### 3.2 Description of Test Modes

For WLAN:

For 2.4GHz

11 channels are provided for 802.11b, 802.11g and 802.11n (HT20):

| Channel | Frequency | Channel | Frequency |
|---------|-----------|---------|-----------|
| 1       | 2412MHz   | 7       | 2442MHz   |
| 2       | 2417MHz   | 8       | 2447MHz   |
| 3       | 2422MHz   | 9       | 2452MHz   |
| 4       | 2427MHz   | 10      | 2457MHz   |
| 5       | 2432MHz   | 11      | 2462MHz   |
| 6       | 2437MHz   |         |           |

For 5180 ~ 5240MHz

4 channels are provided for 802.11a, 802.11n (HT20):

| Channel | Frequency | Channel | Frequency |
|---------|-----------|---------|-----------|
| 36      | 5180 MHz  | 44      | 5220 MHz  |
| 40      | 5200 MHz  | 48      | 5240 MHz  |

2 channels are provided for 802.11n (HT40):

| Channel | Frequency | Channel | Frequency |
|---------|-----------|---------|-----------|
| 38      | 5190 MHz  | 46      | 5230 MHz  |

For 5745 ~ 5825MHz:

5 channels are provided for 802.11a, 802.11n (HT20):

| Channel | Frequency | Channel | Frequency |
|---------|-----------|---------|-----------|
| 149     | 5745MHz   | 161     | 5805MHz   |
| 153     | 5765MHz   | 165     | 5825MHz   |
| 157     | 5785MHz   |         |           |

2 channels are provided for 802.11n (HT40):

| Channel | Frequency | Channel | Frequency |
|---------|-----------|---------|-----------|
| 151     | 5755MHz   | 159     | 5795MHz   |

#### For Bluetooth EDR:

79 channels are provided to this EUT:

| Channel | Freq. (MHz) | Channel | Freq. (MHz) | Channel | Freq. (MHz) | Channel | Freq. (MHz) |
|---------|-------------|---------|-------------|---------|-------------|---------|-------------|
| 0       | 2402        | 20      | 2422        | 40      | 2442        | 60      | 2462        |
| 1       | 2403        | 21      | 2423        | 41      | 2443        | 61      | 2463        |
| 2       | 2404        | 22      | 2424        | 42      | 2444        | 62      | 2464        |
| 3       | 2405        | 23      | 2425        | 43      | 2445        | 63      | 2465        |
| 4       | 2406        | 24      | 2426        | 44      | 2446        | 64      | 2466        |
| 5       | 2407        | 25      | 2427        | 45      | 2447        | 65      | 2467        |
| 6       | 2408        | 26      | 2428        | 46      | 2448        | 66      | 2468        |
| 7       | 2409        | 27      | 2429        | 47      | 2449        | 67      | 2469        |
| 8       | 2410        | 28      | 2430        | 48      | 2450        | 68      | 2470        |
| 9       | 2411        | 29      | 2431        | 49      | 2451        | 69      | 2471        |
| 10      | 2412        | 30      | 2432        | 50      | 2452        | 70      | 2472        |
| 11      | 2413        | 31      | 2433        | 51      | 2453        | 71      | 2473        |
| 12      | 2414        | 32      | 2434        | 52      | 2454        | 72      | 2474        |
| 13      | 2415        | 33      | 2435        | 53      | 2455        | 73      | 2475        |
| 14      | 2416        | 34      | 2436        | 54      | 2456        | 74      | 2476        |
| 15      | 2417        | 35      | 2437        | 55      | 2457        | 75      | 2477        |
| 16      | 2418        | 36      | 2438        | 56      | 2458        | 76      | 2478        |
| 17      | 2419        | 37      | 2439        | 57      | 2459        | 77      | 2479        |
| 18      | 2420        | 38      | 2440        | 58      | 2460        | 78      | 2480        |
| 19      | 2421        | 39      | 2441        | 59      | 2461        |         |             |

#### For Bluetooth LE:

40 channels are provided to this EUT:

| Channel | Freq. (MHz) | Channel | Freq. (MHz) | Channel | Freq. (MHz) | Channel | Freq. (MHz) |
|---------|-------------|---------|-------------|---------|-------------|---------|-------------|
| 0       | 2402        | 10      | 2422        | 20      | 2442        | 30      | 2462        |
| 1       | 2404        | 11      | 2424        | 21      | 2444        | 31      | 2464        |
| 2       | 2406        | 12      | 2426        | 22      | 2446        | 32      | 2466        |
| 3       | 2408        | 13      | 2428        | 23      | 2448        | 33      | 2468        |
| 4       | 2410        | 14      | 2430        | 24      | 2450        | 34      | 2470        |
| 5       | 2412        | 15      | 2432        | 25      | 2452        | 35      | 2472        |
| 6       | 2414        | 16      | 2434        | 26      | 2454        | 36      | 2474        |
| 7       | 2416        | 17      | 2436        | 27      | 2456        | 37      | 2476        |
| 8       | 2418        | 18      | 2438        | 28      | 2458        | 38      | 2478        |
| 9       | 2420        | 19      | 2440        | 29      | 2460        | 39      | 2480        |

#### For NFC

1 channel is provided to this EUT

| Channel | Freq. (MHz) |
|---------|-------------|
| 1       | 13.56       |

### 3.2.1 Test Mode Applicability and Tested Channel Detail

| EUT CONFIGURE MODE | APPLICABLE TO |       | DESCRIPTION |
|--------------------|---------------|-------|-------------|
|                    | RE $\geq$ 1G  | RE<1G |             |
| -                  | √             | √     | -           |

Where **RE $\geq$ 1G**: Radiated Emission above 1GHz & Bandedge Measurement **RE<1G**: Radiated Emission below 1GHz

Note: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.

#### **Radiated Emission Test (Above 1GHz):**

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

- ☒ Following channel(s) was (were) selected for the final test as listed below.

| EUT CONFIGURE MODE | MODE                                    | FREQ. RANGE (MHz)           | AVAILABLE CHANNEL       | TESTED CHANNEL  | MODULATION TECHNOLOGY |
|--------------------|-----------------------------------------|-----------------------------|-------------------------|-----------------|-----------------------|
| -                  | 802.11g +<br>LTE Band 2 +<br>NFC        | 2412 ~ 2462                 | 1 to 11                 | 1 + 18900 + 1   | BPSK                  |
|                    |                                         | 1857.5 ~ 1902.5             | 18675 to 19125          |                 | BPSK                  |
|                    |                                         | 13.56                       | 1                       |                 | ASK                   |
| -                  | 802.11g +<br>LTE Band 4 +<br>NFC        | 2412 ~ 2462                 | 1 to 11                 | 1 + 20325 + 1   | BPSK                  |
|                    |                                         | 1717.5 ~ 1747.5             | 20025 to 20325          |                 | BPSK                  |
|                    |                                         | 13.56                       | 1                       |                 | ASK                   |
| -                  | 802.11n (HT20) +<br>LTE Band 2 +<br>NFC | 5180 ~ 5240,<br>5745 ~ 5825 | 36 to 48,<br>149 to 165 | 157 + 18900 + 1 | BPSK                  |
|                    |                                         | 1857.5 ~ 1902.5             | 18675 to 19125          |                 | BPSK                  |
|                    |                                         | 13.56                       | 1                       |                 | ASK                   |
| -                  | 802.11n (HT20) +<br>LTE Band 4 +<br>NFC | 5180 ~ 5240,<br>5745 ~ 5825 | 36 to 48,<br>149 to 165 | 157 + 20325 + 1 | BPSK                  |
|                    |                                         | 1717.5 ~ 1747.5             | 20025 to 20325          |                 | BPSK                  |
|                    |                                         | 13.56                       | 1                       |                 | ASK                   |
| -                  | BT EDR +<br>LTE Band 2 +<br>NFC         | 2402 ~ 2480                 | 0 to 78                 | 39 + 18900 + 1  | GFSK                  |
|                    |                                         | 1857.5 ~ 1902.5             | 18675 to 19125          |                 | BPSK                  |
|                    |                                         | 13.56                       | 1                       |                 | ASK                   |
| -                  | BT EDR +<br>LTE Band 4 +<br>NFC         | 2402 ~ 2480                 | 0 to 78                 | 39 + 20325 + 1  | GFSK                  |
|                    |                                         | 1717.5 ~ 1747.5             | 20025 to 20325          |                 | BPSK                  |
|                    |                                         | 13.56                       | 1                       |                 | ASK                   |

### **Radiated Emission Test (Below 1GHz):**

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

| EUT CONFIGURE MODE | MODE                                    | FREQ. RANGE (MHz)           | AVAILABLE CHANNEL       | TESTED CHANNEL  | MODULATION TECHNOLOGY |
|--------------------|-----------------------------------------|-----------------------------|-------------------------|-----------------|-----------------------|
| -                  | 802.11g +<br>LTE Band 2 +<br>NFC        | 2412 ~ 2462                 | 1 to 11                 | 1 + 18900 + 1   | BPSK                  |
|                    |                                         | 1857.5 ~ 1902.5             | 18675 to 19125          |                 | BPSK                  |
|                    |                                         | 13.56                       | 1                       |                 | ASK                   |
| -                  | 802.11g +<br>LTE Band 4 +<br>NFC        | 2412 ~ 2462                 | 1 to 11                 | 1 + 20325 + 1   | BPSK                  |
|                    |                                         | 1717.5 ~ 1747.5             | 20025 to 20325          |                 | BPSK                  |
|                    |                                         | 13.56                       | 1                       |                 | ASK                   |
| -                  | 802.11n (HT20) +<br>LTE Band 2 +<br>NFC | 5180 ~ 5240,<br>5745 ~ 5825 | 36 to 48,<br>149 to 165 | 157 + 18900 + 1 | BPSK                  |
|                    |                                         | 1857.5 ~ 1902.5             | 18675 to 19125          |                 | BPSK                  |
|                    |                                         | 13.56                       | 1                       |                 | ASK                   |
| -                  | 802.11n (HT20) +<br>LTE Band 4 +<br>NFC | 5180 ~ 5240,<br>5745 ~ 5825 | 36 to 48,<br>149 to 165 | 157 + 20325 + 1 | BPSK                  |
|                    |                                         | 1717.5 ~ 1747.5             | 20025 to 20325          |                 | BPSK                  |
|                    |                                         | 13.56                       | 1                       |                 | ASK                   |
| -                  | BT EDR +<br>LTE Band 2 +<br>NFC         | 2402 ~ 2480                 | 0 to 78                 | 39 + 18900 + 1  | GFSK                  |
|                    |                                         | 1857.5 ~ 1902.5             | 18675 to 19125          |                 | BPSK                  |
|                    |                                         | 13.56                       | 1                       |                 | ASK                   |
| -                  | BT EDR +<br>LTE Band 4 +<br>NFC         | 2402 ~ 2480                 | 0 to 78                 | 39 + 20325 + 1  | GFSK                  |
|                    |                                         | 1717.5 ~ 1747.5             | 20025 to 20325          |                 | BPSK                  |
|                    |                                         | 13.56                       | 1                       |                 | ASK                   |

### **Test Condition:**

| APPLICABLE TO         | ENVIRONMENTAL CONDITIONS | INPUT POWER  | TESTED BY                 |
|-----------------------|--------------------------|--------------|---------------------------|
| RE <sub>≥</sub> 1G    | 20deg. C, 66%RH          | 120Vac, 60Hz | Luis Lee                  |
| RE <sub>&lt;</sub> 1G | 22deg. C, 69%RH          | 120Vac, 60Hz | Jones Chang<br>Adair Peng |

### 3.3 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

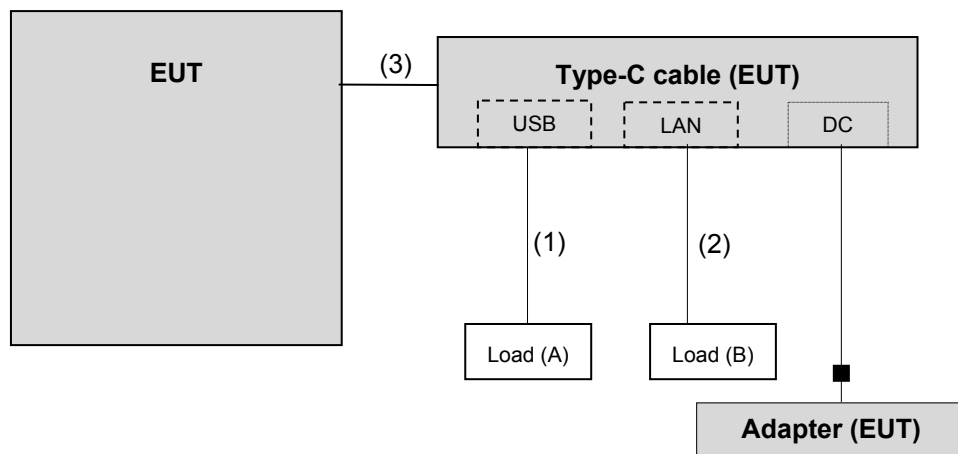
| ID | Product                              | Brand | Model No. | Serial No. | FCC ID | Remarks |
|----|--------------------------------------|-------|-----------|------------|--------|---------|
| A. | Load                                 | N/A   | N/A       | N/A        | N/A    | -       |
| B. | Load                                 | N/A   | N/A       | N/A        | N/A    | -       |
| C. | Universal Radio Communication Tester | R&S   | CMU200    | 123112     | NA     | -       |

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item C acted as a communication partner to transfer data.

| ID | Descriptions | Qty. | Length (m) | Shielding (Yes/No) | Cores (Qty.) | Remarks          |
|----|--------------|------|------------|--------------------|--------------|------------------|
| 1. | USB cable    | 1    | 1.8        | N                  | 0            | -                |
| 2. | LAN cable    | 1    | 1.8        | N                  | 0            | -                |
| 3. | Type-C cable | 1    | 0.8        | Y                  | 0            | Accessory of EUT |

#### 3.3.1 Configuration of System under Test



Remote site



### **3.4 General Description of Applied Standards**

The EUT is a RF Product. According to the specification of the EUT declared by the manufacturer, it must comply with the requirements of the following standards:

**47 CFR FCC Part 15, Subpart C (Section 15.247)**  
**47 CFR FCC Part 15, Subpart E (Section 15.407)**  
**47 CFR FCC Part 15, Subpart C (Section 15.225)**  
**47 CFR FCC Part 15, Subpart C (Section 15.215)**  
**FCC Part 24, Subpart E**  
**FCC Part 27, Subpart L, H**  
ANSI 63.26-2015  
ANSI C63.10-2013

All test items have been performed and recorded as per the above standards.

## 4 Test Types and Results

### 4.1 Radiated Emission and Bandedge Measurement

#### 4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power:

| Frequencies (MHz) | Field Strength (microvolts/meter) | Measurement Distance (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                             |

**NOTE:**

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

**Limits of unwanted emission out of the restricted bands**

| Applicable To                                                                                    |                                     |                  | Limit                                                                                                                               |                                                                                                                                         |
|--------------------------------------------------------------------------------------------------|-------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| 789033 D02 General UNII Test Procedure<br>New Rules v02r01                                       |                                     |                  | Field Strength at 3m                                                                                                                |                                                                                                                                         |
|                                                                                                  |                                     |                  | PK:74 (dBµV/m)                                                                                                                      | AV:54 (dBµV/m)                                                                                                                          |
| Frequency Band                                                                                   | Applicable To                       |                  | EIRP Limit                                                                                                                          | Equivalent Field Strength at 3m                                                                                                         |
| 5150~5250 MHz                                                                                    | 15.407(b)(1)                        |                  | PK:-27 (dBm/MHz)                                                                                                                    | PK:68.2(dBµV/m)                                                                                                                         |
| 5250~5350 MHz                                                                                    | 15.407(b)(2)                        |                  |                                                                                                                                     |                                                                                                                                         |
| 5470~5725 MHz                                                                                    | 15.407(b)(3)                        |                  |                                                                                                                                     |                                                                                                                                         |
| 5725~5850 MHz                                                                                    | <input checked="" type="checkbox"/> | 15.407(b)(4)(i)  | PK:-27 (dBm/MHz) <sup>*1</sup><br>PK:10 (dBm/MHz) <sup>*2</sup><br>PK:15.6 (dBm/MHz) <sup>*3</sup><br>PK:27 (dBm/MHz) <sup>*4</sup> | PK: 68.2(dBµV/m) <sup>*1</sup><br>PK:105.2 (dBµV/m) <sup>*2</sup><br>PK: 110.8(dBµV/m) <sup>*3</sup><br>PK:122.2 (dBµV/m) <sup>*4</sup> |
|                                                                                                  | <input type="checkbox"/>            | 15.407(b)(4)(ii) | Emission limits in section 15.247(d)                                                                                                |                                                                                                                                         |
| <sup>*1</sup> beyond 75 MHz or more above of the band edge.                                      |                                     |                  | <sup>*2</sup> below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.                                                |                                                                                                                                         |
| <sup>*3</sup> below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above. |                                     |                  | <sup>*4</sup> from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.                |                                                                                                                                         |

**Note:** The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3} \text{ } \mu\text{V/m, where P is the eirp (Watts).}$$

#### 4.1.2 Test Instruments

| Description & Manufacturer                          | Model No.                             | Serial No.                      | Cal. Date     | Cal. Due      |
|-----------------------------------------------------|---------------------------------------|---------------------------------|---------------|---------------|
| Test Receiver<br>ROHDE & SCHWARZ                    | ESIB7                                 | 100187                          | May 02, 2017  | May 01, 2018  |
| Spectrum Analyzer<br>ROHDE & SCHWARZ                | FSP40                                 | 100041                          | Dec. 12, 2017 | Dec. 11, 2018 |
| BILOG Antenna<br>SCHWARZBECK                        | VULB9168                              | 9168-171                        | Dec. 11, 2017 | Dec. 10, 2018 |
| HORN Antenna<br>SCHWARZBECK                         | 9120D                                 | 209                             | Dec. 13, 2017 | Dec. 12, 2018 |
| HORN Antenna<br>SCHWARZBECK                         | BBHA 9170                             | BBHA9170241                     | Dec. 01, 2017 | Nov. 30, 2018 |
| Preamplifier<br>Agilent<br>(Below 1GHz)             | 8447D                                 | 2944A10738                      | Aug. 21, 2017 | Aug. 20, 2018 |
| Preamplifier<br>Agilent<br>(Above 1GHz)             | 8449B                                 | 3008A02465                      | Apr. 05, 2017 | Apr. 04, 2018 |
| RF signal cable<br>HUBER+SUHNER                     | SUCOFLEX 104                          | Cable-CH3-03 (223653/4)         | Aug. 21, 2017 | Aug. 20, 2018 |
| RF signal cable<br>HUBER+SUHNER&<br>EMCI            | SUCOFLEX<br>104&EMC104-SM-S<br>M-8000 | Cable-CH3-03<br>(309224+170907) | Sep.11, 2017  | Sep. 10, 2018 |
| Software<br>BV ADT                                  | ADT_Radiated_<br>V7.6.15.9.4          | NA                              | NA            | NA            |
| Antenna Tower<br>inn-co GmbH                        | MA 4000                               | 013303                          | NA            | NA            |
| Antenna Tower Controller<br>BV ADT                  | AT100                                 | AT93021702                      | NA            | NA            |
| Turn Table<br>BV ADT                                | TT100                                 | TT93021702                      | NA            | NA            |
| Turn Table Controller<br>BV ADT                     | SC100                                 | SC93021702                      | NA            | NA            |
| 26GHz ~ 40GHz Amplifier<br>Agilent                  | 8449B                                 | 3008A1960                       | Aug. 08, 2017 | Aug. 07, 2018 |
| WIT Standard<br>Temperature And Humidity<br>Chamber | TH-4S-C                               | W981030                         | Jun. 07, 2017 | Jun. 06, 2018 |

- Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 3.
3. The horn antenna and preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Designation Number is TW0003. The number will be varied with the Lab location and scope as attached.
5. The IC Site Registration No. is IC 7450F-3.

#### 4.1.3 Test Procedures

##### For Radiated emission below 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. Both X and Y axes of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

##### NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

##### For Radiated emission above 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

##### Note:

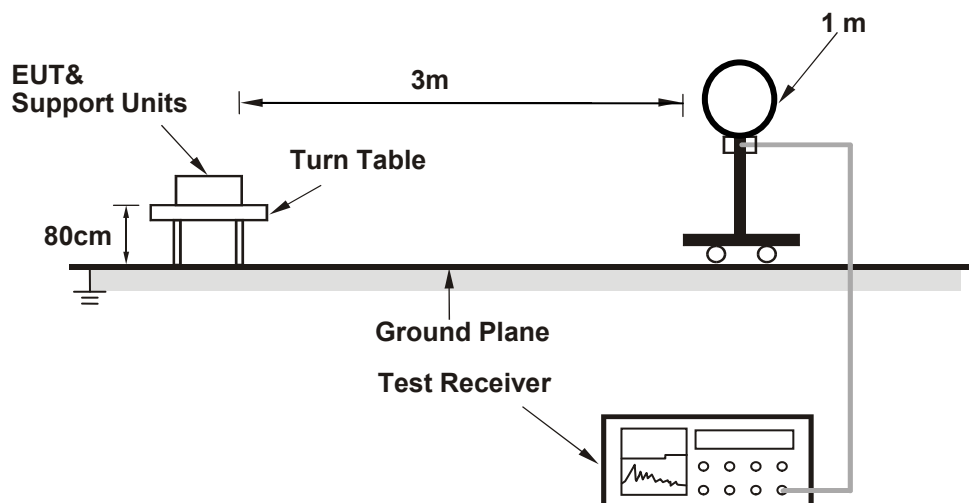
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is  $\geq 1/T$  (Duty cycle < 98%) or 10Hz (Duty cycle  $\geq 98\%$ ) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

#### 4.1.4 Deviation from Test Standard

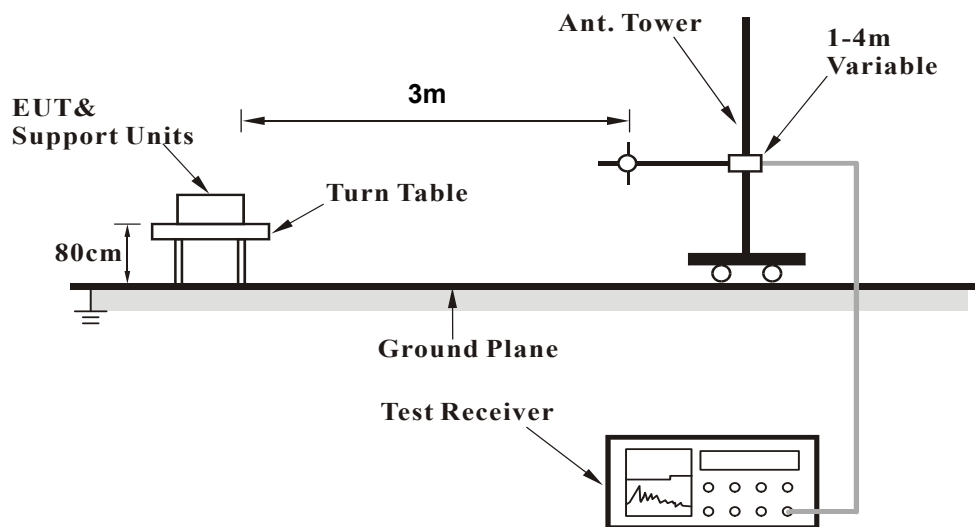
No deviation.

#### 4.1.5 Test Setup

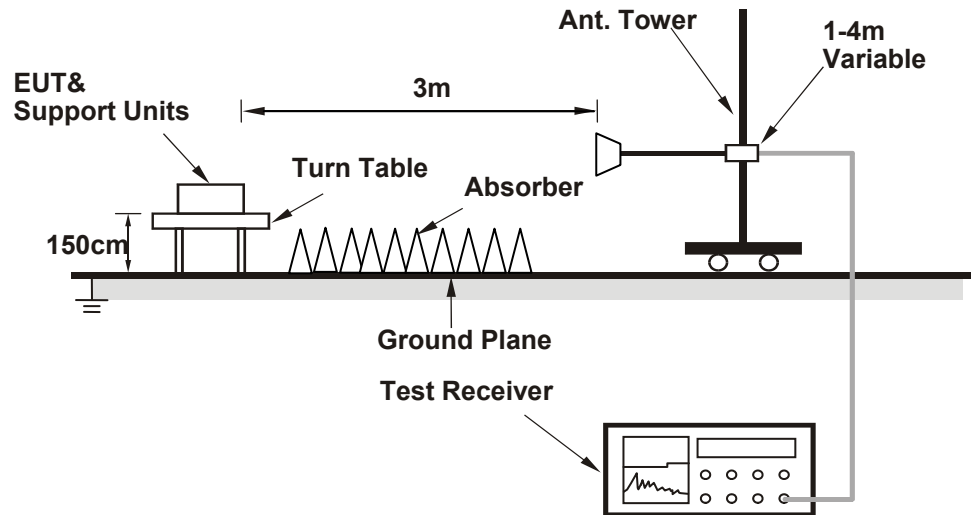
##### For Radiated emission below 30MHz



##### For Radiated emission 30MHz to 1GHz



## For Radiated emission above 1GHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

### 4.1.6 EUT Operating Conditions

Set the EUT under transmission condition continuously at specific channel frequency.

#### 4.1.7 Test Results

Above 1GHz Data:

802.11g + LTE Band 2 + NFC

| CHANNEL         | CH 1 + CH 18900 + CH 1 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|-----------------|------------------------|-------------------|---------------------------|
| FREQUENCY RANGE | 1GHz ~ 40GHz           |                   |                           |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                |                               |                   |                |                          |                            |                        |                                |
|-----------------------------------------------------|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| NO.                                                 | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
| 1                                                   | 2390.00        | 69.4 PK                       | 74.0              | -4.6           | 1.62 H                   | 340                        | 36.0                   | 33.4                           |
| 2                                                   | <b>2390.00</b> | <b>53.1 AV</b>                | <b>54.0</b>       | <b>-0.9</b>    | <b>1.62 H</b>            | <b>340</b>                 | <b>19.7</b>            | <b>33.4</b>                    |
| 3                                                   | *2412.00       | 100.3 PK                      |                   |                | 1.84 H                   | 293                        | 66.9                   | 33.4                           |
| 4                                                   | *2412.00       | 89.4 AV                       |                   |                | 1.84 H                   | 293                        | 56.0                   | 33.4                           |
| 5                                                   | 4824.00        | 46.5 PK                       | 74.0              | -27.5          | 1.64 H                   | 188                        | 42.9                   | 3.6                            |
| 6                                                   | 4824.00        | 33.8 AV                       | 54.0              | -20.2          | 1.64 H                   | 188                        | 30.2                   | 3.6                            |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                |                               |                   |                |                          |                            |                        |                                |
| NO.                                                 | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
| 1                                                   | 2390.00        | 66.3 PK                       | 74.0              | -7.7           | 1.99 V                   | 48                         | 32.9                   | 33.4                           |
| 2                                                   | 2390.00        | 48.6 AV                       | 54.0              | -5.4           | 1.99 V                   | 48                         | 15.2                   | 33.4                           |
| 3                                                   | *2412.00       | 97.2 PK                       |                   |                | 1.94 V                   | 263                        | 63.8                   | 33.4                           |
| 4                                                   | *2412.00       | 86.7 AV                       |                   |                | 1.94 V                   | 263                        | 53.3                   | 33.4                           |
| 5                                                   | 4824.00        | 46.4 PK                       | 74.0              | -27.6          | 1.75 V                   | 339                        | 42.8                   | 3.6                            |
| 6                                                   | 4824.00        | 33.3 AV                       | 54.0              | -20.7          | 1.75 V                   | 339                        | 29.7                   | 3.6                            |

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

|                                                     |             |                        |                       |                        |            |             |             |
|-----------------------------------------------------|-------------|------------------------|-----------------------|------------------------|------------|-------------|-------------|
| CHANNEL                                             |             | CH 1 + CH 18900 + CH 1 |                       |                        |            |             |             |
| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm)          | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1880.00     | -19.8                  | 19.5                  | 1.1                    | 20.6       | 33.0        | -12.4       |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm)          | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1880.00     | -16.5                  | 21.9                  | 1.1                    | 23.0       | 33.0        | -10.0       |

|                                                     |             |                        |                       |                        |            |             |             |
|-----------------------------------------------------|-------------|------------------------|-----------------------|------------------------|------------|-------------|-------------|
| CHANNEL                                             |             | CH 1 + CH 18900 + CH 1 |                       |                        |            |             |             |
| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm)          | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3760.00     | -47.2                  | -41.4                 | 7.1                    | -34.3      | -13.0       | -21.3       |
| 2                                                   | 5640.00     | -57.2                  | -44.9                 | 6.7                    | -38.2      | -13.0       | -25.2       |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm)          | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3760.00     | -58.7                  | -52.8                 | 7.1                    | -45.7      | -13.0       | -32.7       |
| 2                                                   | 5640.00     | -52.2                  | -41.9                 | 6.7                    | -35.2      | -13.0       | -22.2       |

| CHANNEL                                                    |                | CH 1 + CH 18900 + CH 1        |                   |                |                          |                            |                        |                                |
|------------------------------------------------------------|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| Antenna Polarity & Test Distance: Loop Antenna Open At 3m  |                |                               |                   |                |                          |                            |                        |                                |
| No.                                                        | Freq.<br>(MHz) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Antenna<br>Height<br>(m) | Table<br>Angle<br>(Degree) | Raw<br>Value<br>(dBuV) | Correction<br>Factor<br>(dB/m) |
| 1                                                          | 13.56          | 80.90                         | 124.00            | -43.10         | 1.00                     | 357                        | 60.40                  | 20.5                           |
| Antenna Polarity & Test Distance: Loop Antenna Close At 3m |                |                               |                   |                |                          |                            |                        |                                |
| No.                                                        | Freq.<br>(MHz) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Antenna<br>Height<br>(m) | Table<br>Angle<br>(Degree) | Raw<br>Value<br>(dBuV) | Correction<br>Factor<br>(dB/m) |
| 1                                                          | 13.56          | 77.70                         | 124.00            | -46.30         | 1.00                     | 251                        | 57.2                   | 20.5                           |

| Antenna Polarity & Test Distance: Loop Antenna Open At 3m  |                |                               |                   |                |                          |                            |                        |                                |
|------------------------------------------------------------|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| No.                                                        | Freq.<br>(MHz) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Antenna<br>Height<br>(m) | Table<br>Angle<br>(Degree) | Raw<br>Value<br>(dBuV) | Correction<br>Factor<br>(dB/m) |
| 1                                                          | 3.74           | 37.4                          | 69.5              | -32.1          | 1.00                     | 316                        | 17.0                   | 20.4                           |
| 2                                                          | 4.40           | 37.2                          | 69.5              | -32.3          | 1.00                     | 315                        | 16.7                   | 20.5                           |
| 3                                                          | 10.05          | 33.2                          | 69.5              | -36.3          | 1.00                     | 216                        | 12.7                   | 20.5                           |
| 4                                                          | 15.58          | 34.8                          | 69.5              | -34.7          | 1.00                     | 223                        | 14.2                   | 20.6                           |
| 5                                                          | 21.23          | 34.7                          | 69.5              | -34.8          | 1.00                     | 294                        | 14.3                   | 20.4                           |
| 6                                                          | 25.07          | 33.4                          | 69.5              | -36.1          | 1.00                     | 178                        | 12.8                   | 20.6                           |
| Antenna Polarity & Test Distance: Loop Antenna Close At 3m |                |                               |                   |                |                          |                            |                        |                                |
| No.                                                        | Freq.<br>(MHz) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Antenna<br>Height<br>(m) | Table<br>Angle<br>(Degree) | Raw<br>Value<br>(dBuV) | Correction<br>Factor<br>(dB/m) |
| 1                                                          | 3.56           | 42.2                          | 69.5              | -27.3          | 1.00                     | 127                        | 21.8                   | 20.4                           |
| 2                                                          | 4.40           | 39.1                          | 69.5              | -30.4          | 1.00                     | 177                        | 18.6                   | 20.5                           |
| 3                                                          | 8.78           | 32.9                          | 69.5              | -36.6          | 1.00                     | 207                        | 12.5                   | 20.4                           |
| 4                                                          | 15.46          | 36.0                          | 69.5              | -33.5          | 1.00                     | 32                         | 15.5                   | 20.5                           |
| 5                                                          | 17.44          | 36.4                          | 69.5              | -33.1          | 1.00                     | 41                         | 15.9                   | 20.5                           |
| 6                                                          | 22.13          | 36.2                          | 69.5              | -33.3          | 1.00                     | 186                        | 15.7                   | 20.5                           |

# 802.11g + LTE Band 4 + NFC

|                 |                        |                   |                           |
|-----------------|------------------------|-------------------|---------------------------|
| CHANNEL         | CH 1 + CH 20325 + CH 1 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
| FREQUENCY RANGE | 1GHz ~ 40GHz           |                   |                           |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                |                               |                   |                |                          |                            |                        |                                |
|-----------------------------------------------------|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| NO.                                                 | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
| 1                                                   | 2390.00        | 69.1 PK                       | 74.0              | -4.9           | 1.64 H                   | 342                        | 35.7                   | 33.4                           |
| 2                                                   | 2390.00        | 53.0 AV                       | 54.0              | -1.0           | 1.64 H                   | 342                        | 19.6                   | 33.4                           |
| 3                                                   | *2412.00       | 100.4 PK                      |                   |                | 1.69 H                   | 291                        | 67.0                   | 33.4                           |
| 4                                                   | *2412.00       | 89.9 AV                       |                   |                | 1.69 H                   | 291                        | 56.5                   | 33.4                           |
| 5                                                   | 4824.00        | 47.2 PK                       | 74.0              | -26.8          | 1.85 H                   | 215                        | 43.6                   | 3.6                            |
| 6                                                   | 4824.00        | 34.8 AV                       | 54.0              | -19.2          | 1.85 H                   | 215                        | 31.2                   | 3.6                            |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                |                               |                   |                |                          |                            |                        |                                |
| NO.                                                 | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
| 1                                                   | 2390.00        | 67.1 PK                       | 74.0              | -6.9           | 2.00 V                   | 39                         | 33.7                   | 33.4                           |
| 2                                                   | 2390.00        | 49.4 AV                       | 54.0              | -4.6           | 2.00 V                   | 39                         | 16.0                   | 33.4                           |
| 3                                                   | *2412.00       | 97.8 PK                       |                   |                | 2.17 V                   | 284                        | 64.4                   | 33.4                           |
| 4                                                   | *2412.00       | 87.5 AV                       |                   |                | 2.17 V                   | 284                        | 54.1                   | 33.4                           |
| 5                                                   | 4824.00        | 47.0 PK                       | 74.0              | -27.0          | 1.51 V                   | 339                        | 43.4                   | 3.6                            |
| 6                                                   | 4824.00        | 33.5 AV                       | 54.0              | -20.5          | 1.51 V                   | 339                        | 29.9                   | 3.6                            |

## Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

|                                                     |             |                        |                       |                        |            |             |             |
|-----------------------------------------------------|-------------|------------------------|-----------------------|------------------------|------------|-------------|-------------|
| CHANNEL                                             |             | CH 1 + CH 20325 + CH 1 |                       |                        |            |             |             |
| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm)          | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1747.50     | -17.8                  | 19.8                  | 1.1                    | 20.9       | 30.0        | -9.1        |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm)          | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1747.50     | -16.2                  | 22.1                  | 1.1                    | 23.2       | 30.0        | -6.8        |

|                                                     |             |                        |                       |                        |            |             |             |
|-----------------------------------------------------|-------------|------------------------|-----------------------|------------------------|------------|-------------|-------------|
| CHANNEL                                             |             | CH 1 + CH 20325 + CH 1 |                       |                        |            |             |             |
| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm)          | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3495.00     | -57.9                  | -55.4                 | 7.2                    | -48.2      | -13.0       | -35.2       |
| 2                                                   | 5242.50     | -63.0                  | -53.7                 | 6.6                    | -47.1      | -13.0       | -34.1       |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm)          | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3495.00     | -56.8                  | -54.2                 | 7.2                    | -47.0      | -13.0       | -34.0       |
| 2                                                   | 5242.50     | -60.9                  | -52.6                 | 6.6                    | -46.0      | -13.0       | -33.0       |

Remarks:

1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

| CHANNEL                                                    |                | CH 1 + CH 20325 + CH 1        |                   |                |                          |                            |                        |                                |
|------------------------------------------------------------|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| Antenna Polarity & Test Distance: Loop Antenna Open At 3m  |                |                               |                   |                |                          |                            |                        |                                |
| No.                                                        | Freq.<br>(MHz) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Antenna<br>Height<br>(m) | Table<br>Angle<br>(Degree) | Raw<br>Value<br>(dBuV) | Correction<br>Factor<br>(dB/m) |
| 1                                                          | 13.56          | 80.70                         | 124.00            | -43.30         | 1.00                     | 351                        | 60.20                  | 20.50                          |
| Antenna Polarity & Test Distance: Loop Antenna Close At 3m |                |                               |                   |                |                          |                            |                        |                                |
| No.                                                        | Freq.<br>(MHz) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Antenna<br>Height<br>(m) | Table<br>Angle<br>(Degree) | Raw<br>Value<br>(dBuV) | Correction<br>Factor<br>(dB/m) |
| 1                                                          | 13.56          | 77.50                         | 124.00            | -46.50         | 1.00                     | 261                        | 57.0                   | 20.5                           |

| Antenna Polarity & Test Distance: Loop Antenna Open At 3m  |                |                               |                   |                |                          |                            |                        |                                |
|------------------------------------------------------------|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| No.                                                        | Freq.<br>(MHz) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Antenna<br>Height<br>(m) | Table<br>Angle<br>(Degree) | Raw<br>Value<br>(dBuV) | Correction<br>Factor<br>(dB/m) |
| 1                                                          | 3.56           | 41.8                          | 69.5              | -27.7          | 1.00                     | 88                         | 21.4                   | 20.4                           |
| 2                                                          | 4.40           | 38.9                          | 69.5              | -30.6          | 1.00                     | 221                        | 18.4                   | 20.5                           |
| 3                                                          | 12.57          | 34.5                          | 69.5              | -35.0          | 1.00                     | 338                        | 14.0                   | 20.5                           |
| 4                                                          | 17.26          | 34.6                          | 69.5              | -34.9          | 1.00                     | 19                         | 14.0                   | 20.6                           |
| 5                                                          | 21.10          | 34.6                          | 69.5              | -34.9          | 1.00                     | 176                        | 14.2                   | 20.4                           |
| 6                                                          | 26.15          | 32.0                          | 69.5              | -37.5          | 1.00                     | 251                        | 11.3                   | 20.7                           |
| Antenna Polarity & Test Distance: Loop Antenna Close At 3m |                |                               |                   |                |                          |                            |                        |                                |
| No.                                                        | Freq.<br>(MHz) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Antenna<br>Height<br>(m) | Table<br>Angle<br>(Degree) | Raw<br>Value<br>(dBuV) | Correction<br>Factor<br>(dB/m) |
| <b>1</b>                                                   | <b>3.56</b>    | <b>43.3</b>                   | <b>69.5</b>       | <b>-26.2</b>   | <b>1.00</b>              | <b>33</b>                  | <b>22.9</b>            | <b>20.4</b>                    |
| 2                                                          | 4.46           | 39.1                          | 69.5              | -30.4          | 1.00                     | 73                         | 18.6                   | 20.5                           |
| 3                                                          | 8.96           | 33.9                          | 69.5              | -35.6          | 1.00                     | 11                         | 13.5                   | 20.4                           |
| 4                                                          | 15.34          | 35.2                          | 69.5              | -34.3          | 1.00                     | 232                        | 14.7                   | 20.5                           |
| 5                                                          | 17.44          | 37.0                          | 69.5              | -32.5          | 1.00                     | 299                        | 16.5                   | 20.5                           |
| 6                                                          | 25.07          | 35.4                          | 69.5              | -34.1          | 1.00                     | 275                        | 14.8                   | 20.6                           |

# 802.11n (HT20) + LTE Band 2 + NFC

|                 |                          |                   |                           |
|-----------------|--------------------------|-------------------|---------------------------|
| CHANNEL         | CH 157 + CH 18900 + CH 1 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
| FREQUENCY RANGE | 1GHz ~ 40GHz             |                   |                           |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | #5613.60    | 56.3 PK                 | 68.2           | -11.9       | 1.37 H             | 251                  | 52.8             | 3.5                      |
| 2                                                   | *5785.00    | 111.6 PK                |                |             | 1.37 H             | 251                  | 69.2             | 42.4                     |
| 3                                                   | *5785.00    | 100.5 AV                |                |             | 1.37 H             | 251                  | 58.1             | 42.4                     |
| 4                                                   | #5935.20    | 57.3 PK                 | 68.2           | -10.9       | 1.37 H             | 251                  | 52.8             | 4.5                      |
| 5                                                   | 11570.00    | 62.5 PK                 | 74.0           | -11.5       | 2.85 H             | 302                  | 46.5             | 16.0                     |
| 6                                                   | 11570.00    | 48.5 AV                 | 54.0           | -5.5        | 2.85 H             | 302                  | 32.5             | 16.0                     |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | #5623.20    | 58.9 PK                 | 68.2           | -9.3        | 2.11 V             | 94                   | 55.4             | 3.5                      |
| 2                                                   | *5785.00    | 101.9 PK                |                |             | 2.11 V             | 94                   | 59.5             | 42.4                     |
| 3                                                   | *5785.00    | 89.9 AV                 |                |             | 2.11 V             | 94                   | 47.5             | 42.4                     |
| 4                                                   | #5936.80    | 58.8 PK                 | 68.2           | -9.4        | 2.11 V             | 94                   | 54.3             | 4.5                      |
| 5                                                   | 11570.00    | 62.8 PK                 | 74.0           | -11.2       | 2.28 V             | 195                  | 46.8             | 16.0                     |
| 6                                                   | 11570.00    | 49.8 AV                 | 54.0           | -4.2        | 2.28 V             | 195                  | 33.8             | 16.0                     |

## Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

|                                                     |             |                          |                       |                        |            |             |             |
|-----------------------------------------------------|-------------|--------------------------|-----------------------|------------------------|------------|-------------|-------------|
| CHANNEL                                             |             | CH 157 + CH 18900 + CH 1 |                       |                        |            |             |             |
| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                          |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm)            | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1880.00     | -19.9                    | 19.4                  | 1.1                    | 20.5       | 33.0        | -12.5       |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                          |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm)            | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1880.00     | -16.1                    | 22.3                  | 1.1                    | 23.4       | 33.0        | -9.6        |

|                                                     |             |                          |                       |                        |            |             |             |
|-----------------------------------------------------|-------------|--------------------------|-----------------------|------------------------|------------|-------------|-------------|
| CHANNEL                                             |             | CH 157 + CH 18900 + CH 1 |                       |                        |            |             |             |
| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                          |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm)            | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3760.00     | -48.1                    | -42.3                 | 7.1                    | -35.2      | -13.0       | -22.2       |
| 2                                                   | 5640.00     | -57.3                    | -45.0                 | 6.7                    | -38.3      | -13.0       | -25.3       |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                          |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm)            | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3760.00     | -58.6                    | -52.7                 | 7.1                    | -45.6      | -13.0       | -32.6       |
| 2                                                   | 5640.00     | -51.1                    | -40.8                 | 6.7                    | -34.1      | -13.0       | -21.1       |

| CHANNEL                                                    |                | CH 157 + CH 18900 + CH 1      |                   |                |                          |                            |                        |                                |
|------------------------------------------------------------|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| Antenna Polarity & Test Distance: Loop Antenna Open At 3m  |                |                               |                   |                |                          |                            |                        |                                |
| No.                                                        | Freq.<br>(MHz) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Antenna<br>Height<br>(m) | Table<br>Angle<br>(Degree) | Raw<br>Value<br>(dBuV) | Correction<br>Factor<br>(dB/m) |
| 1                                                          | 13.56          | 81.00                         | 124.00            | -43.00         | 1.00                     | 349                        | 60.50                  | 20.50                          |
| Antenna Polarity & Test Distance: Loop Antenna Close At 3m |                |                               |                   |                |                          |                            |                        |                                |
| No.                                                        | Freq.<br>(MHz) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Antenna<br>Height<br>(m) | Table<br>Angle<br>(Degree) | Raw<br>Value<br>(dBuV) | Correction<br>Factor<br>(dB/m) |
| 1                                                          | 13.56          | 77.90                         | 124.00            | -46.10         | 1.00                     | 259                        | 57.40                  | 20.50                          |

| Antenna Polarity & Test Distance: Loop Antenna Open At 3m  |                |                               |                   |                |                          |                            |                        |                                |
|------------------------------------------------------------|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| No.                                                        | Freq.<br>(MHz) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Antenna<br>Height<br>(m) | Table<br>Angle<br>(Degree) | Raw<br>Value<br>(dBuV) | Correction<br>Factor<br>(dB/m) |
| 1                                                          | 3.56           | 41.5                          | 69.5              | -28.0          | 1.00                     | 161                        | 21.1                   | 20.4                           |
| 2                                                          | 4.40           | 39.0                          | 69.5              | -30.5          | 1.00                     | 349                        | 18.5                   | 20.5                           |
| 3                                                          | 9.08           | 33.5                          | 69.5              | -36.0          | 1.00                     | 216                        | 13.1                   | 20.4                           |
| 4                                                          | 14.97          | 34.5                          | 69.5              | -35.0          | 1.00                     | 296                        | 14.0                   | 20.5                           |
| 5                                                          | 17.44          | 34.7                          | 69.5              | -34.8          | 1.00                     | 247                        | 14.2                   | 20.5                           |
| 6                                                          | 22.13          | 35.0                          | 69.5              | -34.5          | 1.00                     | 156                        | 14.5                   | 20.5                           |
| Antenna Polarity & Test Distance: Loop Antenna Close At 3m |                |                               |                   |                |                          |                            |                        |                                |
| No.                                                        | Freq.<br>(MHz) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Antenna<br>Height<br>(m) | Table<br>Angle<br>(Degree) | Raw<br>Value<br>(dBuV) | Correction<br>Factor<br>(dB/m) |
| 1                                                          | 3.56           | 42.6                          | 69.5              | -26.9          | 1.00                     | 293                        | 22.2                   | 20.4                           |
| 2                                                          | 4.40           | 39.3                          | 69.5              | -30.2          | 1.00                     | 160                        | 18.8                   | 20.5                           |
| 3                                                          | 9.32           | 34.1                          | 69.5              | -35.4          | 1.00                     | 59                         | 13.7                   | 20.4                           |
| 4                                                          | 17.62          | 35.6                          | 69.5              | -33.9          | 1.00                     | 33                         | 15.1                   | 20.5                           |
| 5                                                          | 22.13          | 35.9                          | 69.5              | -33.6          | 1.00                     | 352                        | 15.4                   | 20.5                           |
| 6                                                          | 25.07          | 35.6                          | 69.5              | -33.9          | 1.00                     | 129                        | 15.0                   | 20.6                           |

# 802.11n (HT20) + LTE Band 4 + NFC

|                 |                          |                   |                           |
|-----------------|--------------------------|-------------------|---------------------------|
| CHANNEL         | CH 157 + CH 20325 + CH 1 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
| FREQUENCY RANGE | 1GHz ~ 40GHz             |                   |                           |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                |                               |                   |                |                          |                            |                        |                                |
|-----------------------------------------------------|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| NO.                                                 | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
| 1                                                   | #5644.80       | 56.0 PK                       | 68.2              | -12.2          | 1.26 H                   | 269                        | 52.6                   | 3.4                            |
| 2                                                   | *5785.00       | 111.1 PK                      |                   |                | 1.26 H                   | 269                        | 68.7                   | 42.4                           |
| 3                                                   | *5785.00       | 100.1 AV                      |                   |                | 1.26 H                   | 269                        | 57.7                   | 42.4                           |
| 4                                                   | #5985.60       | 57.6 PK                       | 68.2              | -10.6          | 1.26 H                   | 269                        | 53.0                   | 4.6                            |
| 5                                                   | 11570.00       | 61.7 PK                       | 74.0              | -12.3          | 2.38 H                   | 274                        | 45.7                   | 16.0                           |
| 6                                                   | 11570.00       | 48.6 AV                       | 54.0              | -5.4           | 2.38 H                   | 274                        | 32.6                   | 16.0                           |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                |                               |                   |                |                          |                            |                        |                                |
| NO.                                                 | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
| 1                                                   | #5642.40       | 55.6 PK                       | 68.2              | -12.6          | 2.16 V                   | 59                         | 52.2                   | 3.4                            |
| 2                                                   | *5785.00       | 101.4 PK                      |                   |                | 2.16 V                   | 59                         | 59.0                   | 42.4                           |
| 3                                                   | *5785.00       | 89.6 AV                       |                   |                | 2.16 V                   | 59                         | 47.2                   | 42.4                           |
| 4                                                   | #5949.60       | 57.5 PK                       | 68.2              | -10.7          | 2.16 V                   | 59                         | 52.9                   | 4.6                            |
| 5                                                   | 11570.00       | 62.5 PK                       | 74.0              | -11.5          | 2.01 V                   | 182                        | 46.5                   | 16.0                           |
| 6                                                   | 11570.00       | 49.3 AV                       | 54.0              | -4.7           | 2.01 V                   | 182                        | 33.3                   | 16.0                           |

## Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

|                                                     |             |                          |                       |                        |            |             |             |
|-----------------------------------------------------|-------------|--------------------------|-----------------------|------------------------|------------|-------------|-------------|
| CHANNEL                                             |             | CH 157 + CH 20325 + CH 1 |                       |                        |            |             |             |
| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                          |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm)            | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1747.50     | -18.4                    | 19.2                  | 1.1                    | 20.3       | 30.0        | -9.7        |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                          |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm)            | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1747.50     | -16.0                    | 22.3                  | 1.1                    | 23.4       | 30.0        | -6.6        |

|                                                     |             |                          |                       |                        |            |             |             |
|-----------------------------------------------------|-------------|--------------------------|-----------------------|------------------------|------------|-------------|-------------|
| CHANNEL                                             |             | CH 157 + CH 20325 + CH 1 |                       |                        |            |             |             |
| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                          |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm)            | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3495.00     | -58.0                    | -53.4                 | 7.2                    | -46.2      | -13.0       | -33.2       |
| 2                                                   | 5242.50     | -68.3                    | -56.9                 | 6.6                    | -50.3      | -13.0       | -37.3       |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                          |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm)            | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3495.00     | -62.4                    | -57.7                 | 7.2                    | -50.5      | -13.0       | -37.5       |
| 2                                                   | 5242.50     | -58.4                    | -48.0                 | 6.6                    | -41.4      | -13.0       | -28.4       |

Remarks:

1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

|                                                            |                |                               |                   |                |                          |                            |                        |                                |
|------------------------------------------------------------|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| CHANNEL                                                    |                | CH 157 + CH 20325 + CH 1      |                   |                |                          |                            |                        |                                |
| Antenna Polarity & Test Distance: Loop Antenna Open At 3m  |                |                               |                   |                |                          |                            |                        |                                |
| No.                                                        | Freq.<br>(MHz) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Antenna<br>Height<br>(m) | Table<br>Angle<br>(Degree) | Raw<br>Value<br>(dBuV) | Correction<br>Factor<br>(dB/m) |
| 1                                                          | 13.56          | 80.80                         | 124.00            | -43.20         | 1.00                     | 355                        | 60.30                  | 20.50                          |
| Antenna Polarity & Test Distance: Loop Antenna Close At 3m |                |                               |                   |                |                          |                            |                        |                                |
| No.                                                        | Freq.<br>(MHz) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Antenna<br>Height<br>(m) | Table<br>Angle<br>(Degree) | Raw<br>Value<br>(dBuV) | Correction<br>Factor<br>(dB/m) |
| 1                                                          | 13.56          | 78.00                         | 124.00            | -46.00         | 1.00                     | 263                        | 57.50                  | 20.50                          |

| Antenna Polarity & Test Distance: Loop Antenna Open At 3m  |                |                               |                   |                |                          |                            |                        |                                |
|------------------------------------------------------------|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| No.                                                        | Freq.<br>(MHz) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Antenna<br>Height<br>(m) | Table<br>Angle<br>(Degree) | Raw<br>Value<br>(dBuV) | Correction<br>Factor<br>(dB/m) |
| 1                                                          | 3.56           | 41.1                          | 69.5              | -28.4          | 1.00                     | 211                        | 20.7                   | 20.4                           |
| 2                                                          | 4.40           | 38.7                          | 69.5              | -30.8          | 1.00                     | 82                         | 18.2                   | 20.5                           |
| 3                                                          | 13.11          | 33.2                          | 69.5              | -36.3          | 1.00                     | 239                        | 12.7                   | 20.5                           |
| 4                                                          | 17.44          | 35.6                          | 69.5              | -33.9          | 1.00                     | 9                          | 15.1                   | 20.5                           |
| 5                                                          | 21.23          | 33.8                          | 69.5              | -35.7          | 1.00                     | 234                        | 13.4                   | 20.4                           |
| 6                                                          | 25.07          | 32.8                          | 69.5              | -36.7          | 1.00                     | 13                         | 12.2                   | 20.6                           |
| Antenna Polarity & Test Distance: Loop Antenna Close At 3m |                |                               |                   |                |                          |                            |                        |                                |
| No.                                                        | Freq.<br>(MHz) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Antenna<br>Height<br>(m) | Table<br>Angle<br>(Degree) | Raw<br>Value<br>(dBuV) | Correction<br>Factor<br>(dB/m) |
| 1                                                          | 3.56           | 42.1                          | 69.5              | -27.4          | 1.00                     | 17                         | 21.7                   | 20.4                           |
| 2                                                          | 4.40           | 39.4                          | 69.5              | -30.1          | 1.00                     | 73                         | 18.9                   | 20.5                           |
| 3                                                          | 11.13          | 33.1                          | 69.5              | -36.4          | 1.00                     | 5                          | 12.6                   | 20.5                           |
| 4                                                          | 17.44          | 35.2                          | 69.5              | -34.3          | 1.00                     | 216                        | 14.7                   | 20.5                           |
| 5                                                          | 22.13          | 37.1                          | 69.5              | -32.4          | 1.00                     | 29                         | 16.6                   | 20.5                           |
| 6                                                          | 25.07          | 34.8                          | 69.5              | -34.7          | 1.00                     | 62                         | 14.2                   | 20.6                           |

# BT EDR + LTE Band 2 + NFC

|                 |                         |                   |                           |
|-----------------|-------------------------|-------------------|---------------------------|
| CHANNEL         | CH 39 + CH 18900 + CH 1 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
| FREQUENCY RANGE | 1GHz ~ 40GHz            |                   |                           |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *2441.00    | 99.2 PK                 |                |             | 2.44 H             | 105                  | 67.9             | 31.3                     |
| 2                                                   | *2441.00    | 69.1 AV                 |                |             | 2.44 H             | 105                  | 37.8             | 31.3                     |
| 3                                                   | 4882.00     | 49.4 PK                 | 74.0           | -24.6       | 1.16 H             | 222                  | 44.8             | 4.6                      |
| 4                                                   | 4882.00     | 19.3 AV                 | 54.0           | -34.7       | 1.16 H             | 222                  | 14.7             | 4.6                      |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *2441.00    | 97.8 PK                 |                |             | 1.00 V             | 177                  | 66.5             | 31.3                     |
| 2                                                   | *2441.00    | 67.7 AV                 |                |             | 1.00 V             | 177                  | 36.4             | 31.3                     |
| 3                                                   | 4882.00     | 49.5 PK                 | 74.0           | -24.5       | 1.14 V             | 108                  | 44.9             | 4.6                      |
| 4                                                   | 4882.00     | 19.4 AV                 | 54.0           | -34.6       | 1.14 V             | 108                  | 14.8             | 4.6                      |

## Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

|                                                     |             |                         |                       |                        |            |             |             |
|-----------------------------------------------------|-------------|-------------------------|-----------------------|------------------------|------------|-------------|-------------|
| CHANNEL                                             |             | CH 39 + CH 18900 + CH 1 |                       |                        |            |             |             |
| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                         |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm)           | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1880.00     | -19.6                   | 19.7                  | 1.1                    | 20.8       | 33.0        | -12.2       |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                         |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm)           | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1880.00     | -16.3                   | 22.1                  | 1.1                    | 23.2       | 33.0        | -9.8        |

|                                                     |             |                         |                       |                        |            |             |             |
|-----------------------------------------------------|-------------|-------------------------|-----------------------|------------------------|------------|-------------|-------------|
| CHANNEL                                             |             | CH 39 + CH 18900 + CH 1 |                       |                        |            |             |             |
| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                         |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm)           | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3760.00     | -48.0                   | -42.2                 | 7.1                    | -35.1      | -13.0       | -22.1       |
| 2                                                   | 5640.00     | -57.0                   | -44.7                 | 6.7                    | -38.0      | -13.0       | -25.0       |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                         |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm)           | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3760.00     | -59.0                   | -53.1                 | 7.1                    | -46.0      | -13.0       | -33.0       |
| 2                                                   | 5640.00     | -52.1                   | -41.8                 | 6.7                    | -35.1      | -13.0       | -22.1       |

| CHANNEL                                                    |                | CH 39 + CH 18900 + CH 1       |                   |                |                          |                            |                        |                                |
|------------------------------------------------------------|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| Antenna Polarity & Test Distance: Loop Antenna Open At 3m  |                |                               |                   |                |                          |                            |                        |                                |
| No.                                                        | Freq.<br>(MHz) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Antenna<br>Height<br>(m) | Table<br>Angle<br>(Degree) | Raw<br>Value<br>(dBuV) | Correction<br>Factor<br>(dB/m) |
| 1                                                          | 13.56          | 80.60                         | 124.00            | -43.40         | 1.00                     | 352                        | 60.10                  | 20.50                          |
| Antenna Polarity & Test Distance: Loop Antenna Close At 3m |                |                               |                   |                |                          |                            |                        |                                |
| No.                                                        | Freq.<br>(MHz) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Antenna<br>Height<br>(m) | Table<br>Angle<br>(Degree) | Raw<br>Value<br>(dBuV) | Correction<br>Factor<br>(dB/m) |
| 1                                                          | 13.56          | 77.50                         | 124.00            | -46.50         | 1.00                     | 267                        | 57.00                  | 20.50                          |

| Antenna Polarity & Test Distance: Loop Antenna Open At 3m  |                |                               |                   |                |                          |                            |                        |                                |
|------------------------------------------------------------|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| No.                                                        | Freq.<br>(MHz) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Antenna<br>Height<br>(m) | Table<br>Angle<br>(Degree) | Raw<br>Value<br>(dBuV) | Correction<br>Factor<br>(dB/m) |
| 1                                                          | 3.56           | 41.8                          | 69.5              | -27.7          | 1.00                     | 135                        | 21.4                   | 20.4                           |
| 2                                                          | 4.46           | 36.6                          | 69.5              | -32.9          | 1.00                     | 16                         | 16.1                   | 20.5                           |
| 3                                                          | 11.19          | 33.0                          | 69.5              | -36.5          | 1.00                     | 166                        | 12.5                   | 20.5                           |
| 4                                                          | 17.56          | 35.2                          | 69.5              | -34.3          | 1.00                     | 329                        | 14.7                   | 20.5                           |
| 5                                                          | 21.16          | 36.0                          | 69.5              | -33.5          | 1.00                     | 72                         | 15.6                   | 20.4                           |
| 6                                                          | 26.45          | 32.5                          | 69.5              | -37.0          | 1.00                     | 178                        | 11.8                   | 20.7                           |
| Antenna Polarity & Test Distance: Loop Antenna Close At 3m |                |                               |                   |                |                          |                            |                        |                                |
| No.                                                        | Freq.<br>(MHz) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Antenna<br>Height<br>(m) | Table<br>Angle<br>(Degree) | Raw<br>Value<br>(dBuV) | Correction<br>Factor<br>(dB/m) |
| 1                                                          | 3.56           | 42.2                          | 69.5              | -27.3          | 1.00                     | 168                        | 21.8                   | 20.4                           |
| 2                                                          | 4.40           | 39.6                          | 69.5              | -29.9          | 1.00                     | 14                         | 19.1                   | 20.5                           |
| 3                                                          | 9.20           | 33.5                          | 69.5              | -36.0          | 1.00                     | 232                        | 13.1                   | 20.4                           |
| 4                                                          | 17.44          | 36.5                          | 69.5              | -33.0          | 1.00                     | 23                         | 16.0                   | 20.5                           |
| 5                                                          | 22.13          | 35.8                          | 69.5              | -33.7          | 1.00                     | 311                        | 15.3                   | 20.5                           |
| 6                                                          | 25.07          | 35.3                          | 69.5              | -34.2          | 1.00                     | 210                        | 14.7                   | 20.6                           |

# BT EDR + LTE Band 4 + NFC

|                 |                         |                   |                           |
|-----------------|-------------------------|-------------------|---------------------------|
| CHANNEL         | CH 39 + CH 20325 + CH 1 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
| FREQUENCY RANGE | 1GHz ~ 40GHz            |                   |                           |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *2441.00    | 98.9 PK                 |                |             | 2.36 H             | 118                  | 67.6             | 31.3                     |
| 2                                                   | *2441.00    | 68.8 AV                 |                |             | 2.36 H             | 118                  | 37.5             | 31.3                     |
| 3                                                   | 4882.00     | 49.0 PK                 | 74.0           | -25.0       | 1.10 H             | 211                  | 44.4             | 4.6                      |
| 4                                                   | 4882.00     | 18.9 AV                 | 54.0           | -35.1       | 1.10 H             | 211                  | 14.3             | 4.6                      |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *2441.00    | 97.6 PK                 |                |             | 1.01 V             | 160                  | 66.3             | 31.3                     |
| 2                                                   | *2441.00    | 67.5 AV                 |                |             | 1.01 V             | 160                  | 36.2             | 31.3                     |
| 3                                                   | 4882.00     | 49.9 PK                 | 74.0           | -24.1       | 1.09 V             | 130                  | 45.3             | 4.6                      |
| 4                                                   | 4882.00     | 19.8 AV                 | 54.0           | -34.2       | 1.09 V             | 130                  | 15.2             | 4.6                      |

## Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

|                                                     |             |                         |                       |                        |            |             |             |
|-----------------------------------------------------|-------------|-------------------------|-----------------------|------------------------|------------|-------------|-------------|
| CHANNEL                                             |             | CH 39 + CH 20325 + CH 1 |                       |                        |            |             |             |
| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                         |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm)           | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1747.50     | -17.9                   | 19.7                  | 1.1                    | 20.8       | 30.0        | -9.2        |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                         |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm)           | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1747.50     | -16.3                   | 22.0                  | 1.1                    | 23.1       | 30.0        | -6.9        |

|                                                     |             |                         |                       |                        |            |             |             |
|-----------------------------------------------------|-------------|-------------------------|-----------------------|------------------------|------------|-------------|-------------|
| CHANNEL                                             |             | CH 39 + CH 20325 + CH 1 |                       |                        |            |             |             |
| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                         |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm)           | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3495.00     | -50.7                   | -46.1                 | 7.2                    | -38.9      | -13.0       | -25.9       |
| 2                                                   | 5242.50     | -60.1                   | -48.7                 | 6.6                    | -42.1      | -13.0       | -29.1       |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                         |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm)           | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3495.00     | -61.6                   | -56.9                 | 7.2                    | -49.7      | -13.0       | -36.7       |
| 2                                                   | 5242.50     | -56.2                   | -45.8                 | 6.6                    | -39.2      | -13.0       | -26.2       |

Remarks:

1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

| CHANNEL                                                    |                | CH 39 + CH 20325 + CH 1       |                   |                |                          |                            |                        |                                |
|------------------------------------------------------------|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| Antenna Polarity & Test Distance: Loop Antenna Open At 3m  |                |                               |                   |                |                          |                            |                        |                                |
| No.                                                        | Freq.<br>(MHz) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Antenna<br>Height<br>(m) | Table<br>Angle<br>(Degree) | Raw<br>Value<br>(dBuV) | Correction<br>Factor<br>(dB/m) |
| 1                                                          | 13.56          | 80.30                         | 124.00            | -43.70         | 1.00                     | 356                        | 59.8                   | 20.5                           |
| Antenna Polarity & Test Distance: Loop Antenna Close At 3m |                |                               |                   |                |                          |                            |                        |                                |
| No.                                                        | Freq.<br>(MHz) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Antenna<br>Height<br>(m) | Table<br>Angle<br>(Degree) | Raw<br>Value<br>(dBuV) | Correction<br>Factor<br>(dB/m) |
| 1                                                          | 13.56          | 77.80                         | 124.00            | -46.20         | 1.00                     | 253                        | 57.3                   | 20.5                           |

| Antenna Polarity & Test Distance: Loop Antenna Open At 3m  |                |                               |                   |                |                          |                            |                        |                                |
|------------------------------------------------------------|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| No.                                                        | Freq.<br>(MHz) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Antenna<br>Height<br>(m) | Table<br>Angle<br>(Degree) | Raw<br>Value<br>(dBuV) | Correction<br>Factor<br>(dB/m) |
| 1                                                          | 3.56           | 41.4                          | 69.5              | -28.1          | 1.00                     | 229                        | 21.0                   | 20.4                           |
| 2                                                          | 4.40           | 39.2                          | 69.5              | -30.3          | 1.00                     | 10                         | 18.7                   | 20.5                           |
| 3                                                          | 8.18           | 32.8                          | 69.5              | -36.7          | 1.00                     | 131                        | 12.4                   | 20.4                           |
| 4                                                          | 15.21          | 33.7                          | 69.5              | -35.8          | 1.00                     | 10                         | 13.2                   | 20.5                           |
| 5                                                          | 17.44          | 35.6                          | 69.5              | -33.9          | 1.00                     | 159                        | 15.1                   | 20.5                           |
| 6                                                          | 21.16          | 35.1                          | 69.5              | -34.4          | 1.00                     | 44                         | 14.7                   | 20.4                           |
| Antenna Polarity & Test Distance: Loop Antenna Close At 3m |                |                               |                   |                |                          |                            |                        |                                |
| No.                                                        | Freq.<br>(MHz) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Antenna<br>Height<br>(m) | Table<br>Angle<br>(Degree) | Raw<br>Value<br>(dBuV) | Correction<br>Factor<br>(dB/m) |
| 1                                                          | 3.56           | 42.4                          | 69.5              | -27.1          | 1.00                     | 1                          | 22.0                   | 20.4                           |
| 2                                                          | 4.40           | 39.6                          | 69.5              | -29.9          | 1.00                     | 73                         | 19.1                   | 20.5                           |
| 3                                                          | 9.93           | 33.2                          | 69.5              | -36.3          | 1.00                     | 296                        | 12.7                   | 20.5                           |
| 4                                                          | 17.44          | 37.2                          | 69.5              | -32.3          | 1.00                     | 273                        | 16.7                   | 20.5                           |
| 5                                                          | 22.13          | 36.7                          | 69.5              | -32.8          | 1.00                     | 210                        | 16.2                   | 20.5                           |
| 6                                                          | 25.07          | 35.8                          | 69.5              | -33.7          | 1.00                     | 309                        | 15.2                   | 20.6                           |

Below 1GHz data

802.11g + LTE Band 2 + NFC

|                 |                        |                      |                 |
|-----------------|------------------------|----------------------|-----------------|
| CHANNEL         | CH 1 + CH 18900 + CH 1 | DETECTOR<br>FUNCTION | Quasi-Peak (QP) |
| FREQUENCY RANGE | 30MHz ~ 1GHz           |                      |                 |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                |                               |                   |                |                          |                            |                        |                                |
|-----------------------------------------------------|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| NO.                                                 | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
| 1                                                   | 57.12          | 24.7 QP                       | 40.0              | -15.3          | 2.00 H                   | 340                        | 39.1                   | -14.4                          |
| 2                                                   | 158.22         | 18.8 QP                       | 43.5              | -24.7          | 1.50 H                   | 234                        | 32.6                   | -13.8                          |
| 3                                                   | 241.83         | 21.4 QP                       | 46.0              | -24.6          | 1.50 H                   | 119                        | 36.3                   | -14.9                          |
| 4                                                   | 405.15         | 22.0 QP                       | 46.0              | -24.0          | 1.00 H                   | 77                         | 33.1                   | -11.1                          |
| 5                                                   | 747.34         | 28.6 QP                       | 46.0              | -17.4          | 1.00 H                   | 162                        | 33.4                   | -4.8                           |
| 6                                                   | 935.94         | 35.8 QP                       | 46.0              | -10.2          | 1.50 H                   | 236                        | 37.9                   | -2.1                           |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                |                               |                   |                |                          |                            |                        |                                |
| NO.                                                 | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
| 1                                                   | 30.90          | 26.2 QP                       | 40.0              | -13.8          | 2.00 V                   | 19                         | 42.2                   | -16.0                          |
| 2                                                   | 160.17         | 18.1 QP                       | 43.5              | -25.4          | 1.00 V                   | 313                        | 31.9                   | -13.8                          |
| 3                                                   | 241.83         | 19.9 QP                       | 46.0              | -26.1          | 1.00 V                   | 311                        | 34.8                   | -14.9                          |
| 4                                                   | 512.08         | 23.7 QP                       | 46.0              | -22.3          | 1.00 V                   | 7                          | 32.8                   | -9.1                           |
| 5                                                   | 729.84         | 30.3 QP                       | 46.0              | -15.7          | 1.00 V                   | 5                          | 35.5                   | -5.2                           |
| 6                                                   | 935.94         | 37.0 QP                       | 46.0              | -9.0           | 1.00 V                   | 145                        | 39.1                   | -2.1                           |

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

|         |                        |                 |              |
|---------|------------------------|-----------------|--------------|
| CHANNEL | CH 1 + CH 18900 + CH 1 | FREQUENCY RANGE | 30MHz ~ 1GHz |
|---------|------------------------|-----------------|--------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |               |                       |                        |            |             |             |
|-----------------------------------------------------|-------------|---------------|-----------------------|------------------------|------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 160.24      | -62.3         | -68.5                 | 0.5                    | -68.0      | -13.0       | -55.0       |
| 2                                                   | 239.94      | -59.4         | -71.7                 | 5.4                    | -66.3      | -13.0       | -53.3       |
| 3                                                   | 403.23      | -67.4         | -73.0                 | 5.2                    | -67.8      | -13.0       | -54.8       |
| 4                                                   | 556.79      | -65.6         | -69.4                 | 4.7                    | -64.7      | -13.0       | -51.7       |
| 5                                                   | 729.80      | -57.0         | -58.2                 | 4.9                    | -53.3      | -13.0       | -40.3       |
| 6                                                   | 935.85      | -58.6         | -53.8                 | 3.9                    | -49.9      | -13.0       | -36.9       |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |               |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 90.26       | -49.0         | -56.3                 | 1.1                    | -55.2      | -13.0       | -42.2       |
| 2                                                   | 243.83      | -63.4         | -69.1                 | 5.5                    | -63.6      | -13.0       | -50.6       |
| 3                                                   | 556.79      | -66.1         | -68.8                 | 4.7                    | -64.1      | -13.0       | -51.1       |
| 4                                                   | 640.38      | -67.3         | -65.7                 | 4.7                    | -61.0      | -13.0       | -48.0       |
| 5                                                   | 727.86      | -66.0         | -64.0                 | 4.9                    | -59.1      | -13.0       | -46.1       |
| 6                                                   | 935.85      | -59.4         | -53.7                 | 3.9                    | -49.8      | -13.0       | -36.8       |

Remarks:

1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

# 802.11g + LTE Band 4 + NFC

|                 |                        |                   |                 |
|-----------------|------------------------|-------------------|-----------------|
| CHANNEL         | CH 1 + CH 20325 + CH 1 | DETECTOR FUNCTION | Quasi-Peak (QP) |
| FREQUENCY RANGE | 30MHz ~ 1GHz           |                   |                 |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | 57.12       | 24.9 QP                 | 40.0           | -15.1       | 1.50 H             | 136                  | 39.3             | -14.4                    |
| 2                                                   | 78.51       | 25.4 QP                 | 40.0           | -14.6       | 1.00 H             | 6                    | 43.2             | -17.8                    |
| 3                                                   | 160.17      | 18.5 QP                 | 43.5           | -25.0       | 1.00 H             | 6                    | 32.3             | -13.8                    |
| 4                                                   | 241.83      | 22.0 QP                 | 46.0           | -24.0       | 1.50 H             | 253                  | 36.9             | -14.9                    |
| 5                                                   | 729.84      | 30.2 QP                 | 46.0           | -15.8       | 2.00 H             | 191                  | 35.4             | -5.2                     |
| 6                                                   | 935.94      | 36.5 QP                 | 46.0           | -9.5        | 1.50 H             | 66                   | 38.6             | -2.1                     |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | 30.90       | 33.2 QP                 | 40.0           | -6.8        | 1.00 V             | 117                  | 49.2             | -16.0                    |
| 2                                                   | 78.51       | 36.7 QP                 | 40.0           | -3.3        | 1.00 V             | 115                  | 54.5             | -17.8                    |
| 3                                                   | 109.62      | 27.4 QP                 | 43.5           | -16.1       | 1.00 V             | 67                   | 44.7             | -17.3                    |
| 4                                                   | 158.22      | 19.5 QP                 | 43.5           | -24.0       | 1.00 V             | 83                   | 33.3             | -13.8                    |
| 5                                                   | 747.34      | 30.2 QP                 | 46.0           | -15.8       | 1.00 V             | 36                   | 35.0             | -4.8                     |
| 6                                                   | 935.94      | 34.4 QP                 | 46.0           | -11.6       | 2.00 V             | 256                  | 36.5             | -2.1                     |

## Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

|         |                        |                 |              |
|---------|------------------------|-----------------|--------------|
| CHANNEL | CH 1 + CH 20325 + CH 1 | FREQUENCY RANGE | 30MHz ~ 1GHz |
|---------|------------------------|-----------------|--------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |               |                       |                        |            |             |             |
|-----------------------------------------------------|-------------|---------------|-----------------------|------------------------|------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 239.94      | -58.0         | -70.3                 | 5.4                    | -64.9      | -13.0       | -51.9       |
| 2                                                   | 409.06      | -67.5         | -73.0                 | 5.2                    | -67.8      | -13.0       | -54.8       |
| 3                                                   | 480.98      | -66.5         | -71.6                 | 5.0                    | -66.6      | -13.0       | -53.6       |
| 4                                                   | 558.74      | -65.5         | -69.3                 | 4.7                    | -64.6      | -13.0       | -51.6       |
| 5                                                   | 722.02      | -59.7         | -61.0                 | 5.0                    | -56.0      | -13.0       | -43.0       |
| 6                                                   | 937.80      | -57.2         | -52.4                 | 3.9                    | -48.5      | -13.0       | -35.5       |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |               |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 127.19      | -57.5         | -63.3                 | 0.0                    | -63.3      | -13.0       | -50.3       |
| 2                                                   | 239.94      | -63.7         | -70.1                 | 5.4                    | -64.7      | -13.0       | -51.7       |
| 3                                                   | 636.49      | -67.2         | -65.7                 | 4.7                    | -61.0      | -13.0       | -48.0       |
| 4                                                   | 739.52      | -64.2         | -62.0                 | 4.8                    | -57.2      | -13.0       | -44.2       |
| 5                                                   | 877.54      | -66.3         | -62.0                 | 3.9                    | -58.1      | -13.0       | -45.1       |
| 6                                                   | 935.85      | -59.4         | -53.7                 | 3.9                    | -49.8      | -13.0       | -36.8       |

Remarks:

1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

# 802.11n (HT20) + LTE Band 2 + NFC

|                 |                          |                   |                 |
|-----------------|--------------------------|-------------------|-----------------|
| CHANNEL         | CH 157 + CH 18900 + CH 1 | DETECTOR FUNCTION | Quasi-Peak (QP) |
| FREQUENCY RANGE | 30MHz ~ 1GHz             |                   |                 |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | 57.12       | 25.1 QP                 | 40.0           | -14.9       | 2.00 H             | 60                   | 39.5             | -14.4                    |
| 2                                                   | 70.73       | 21.6 QP                 | 40.0           | -18.4       | 1.49 H             | 351                  | 37.8             | -16.2                    |
| 3                                                   | 162.11      | 19.2 QP                 | 43.5           | -24.3       | 1.00 H             | 5                    | 33.1             | -13.9                    |
| 4                                                   | 241.83      | 21.1 QP                 | 46.0           | -24.9       | 1.49 H             | 327                  | 36.0             | -14.9                    |
| 5                                                   | 729.84      | 26.7 QP                 | 46.0           | -19.3       | 1.49 H             | 63                   | 31.9             | -5.2                     |
| 6                                                   | 935.94      | 36.7 QP                 | 46.0           | -9.3        | 1.49 H             | 139                  | 38.8             | -2.1                     |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | 39.62       | 24.7 QP                 | 40.0           | -15.3       | 1.50 V             | 218                  | 39.7             | -15.0                    |
| 2                                                   | 74.62       | 23.3 QP                 | 40.0           | -16.7       | 1.00 V             | 154                  | 40.1             | -16.8                    |
| 3                                                   | 160.17      | 18.7 QP                 | 43.5           | -24.8       | 1.00 V             | 245                  | 32.5             | -13.8                    |
| 4                                                   | 241.83      | 23.6 QP                 | 46.0           | -22.4       | 2.00 V             | 191                  | 38.5             | -14.9                    |
| 5                                                   | 512.08      | 23.4 QP                 | 46.0           | -22.6       | 1.00 V             | 36                   | 32.5             | -9.1                     |
| 6                                                   | 937.88      | 35.9 QP                 | 46.0           | -10.1       | 1.00 V             | 265                  | 37.9             | -2.0                     |

## Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

|         |                          |                 |              |
|---------|--------------------------|-----------------|--------------|
| CHANNEL | CH 157 + CH 18900 + CH 1 | FREQUENCY RANGE | 30MHz ~ 1GHz |
|---------|--------------------------|-----------------|--------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |               |                       |                        |            |             |             |
|-----------------------------------------------------|-------------|---------------|-----------------------|------------------------|------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 239.94      | -59.2         | -71.5                 | 5.4                    | -66.1      | -13.0       | -53.1       |
| 2                                                   | 401.28      | -66.7         | -72.3                 | 5.2                    | -67.1      | -13.0       | -54.1       |
| 3                                                   | 556.79      | -67.0         | -70.8                 | 4.7                    | -66.1      | -13.0       | -53.1       |
| 4                                                   | 723.97      | -59.5         | -60.6                 | 4.9                    | -55.7      | -13.0       | -42.7       |
| 5                                                   | 747.29      | -64.3         | -64.8                 | 4.7                    | -60.1      | -13.0       | -47.1       |
| 6                                                   | 937.80      | -59.5         | -54.7                 | 3.9                    | -50.8      | -13.0       | -37.8       |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |               |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 111.64      | -55.2         | -63.2                 | 0.4                    | -62.8      | -13.0       | -49.8       |
| 2                                                   | 239.94      | -62.8         | -69.2                 | 5.4                    | -63.8      | -13.0       | -50.8       |
| 3                                                   | 560.68      | -66.1         | -68.7                 | 4.7                    | -64.0      | -13.0       | -51.0       |
| 4                                                   | 644.27      | -67.0         | -65.5                 | 4.8                    | -60.7      | -13.0       | -47.7       |
| 5                                                   | 741.46      | -60.6         | -58.4                 | 4.8                    | -53.6      | -13.0       | -40.6       |
| 6                                                   | 935.85      | -56.3         | -50.6                 | 3.9                    | -46.7      | -13.0       | -33.7       |

Remarks:

1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

# 802.11n (HT20) + LTE Band 4 + NFC

|                 |                          |                   |                 |
|-----------------|--------------------------|-------------------|-----------------|
| CHANNEL         | CH 157 + CH 20325 + CH 1 | DETECTOR FUNCTION | Quasi-Peak (QP) |
| FREQUENCY RANGE | 30MHz ~ 1GHz             |                   |                 |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | 57.12       | 24.7 QP                 | 40.0           | -15.3       | 2.01 H             | 6                    | 39.1             | -14.4                    |
| 2                                                   | 160.17      | 30.2 QP                 | 43.5           | -13.3       | 1.01 H             | 26                   | 44.0             | -13.8                    |
| 3                                                   | 241.83      | 21.3 QP                 | 46.0           | -24.7       | 1.01 H             | 143                  | 36.2             | -14.9                    |
| 4                                                   | 512.08      | 23.0 QP                 | 46.0           | -23.0       | 1.50 H             | 208                  | 32.1             | -9.1                     |
| 5                                                   | 747.34      | 32.4 QP                 | 46.0           | -13.6       | 1.01 H             | 6                    | 37.2             | -4.8                     |
| 6                                                   | 937.88      | 36.9 QP                 | 46.0           | -9.1        | 1.01 H             | 26                   | 38.9             | -2.0                     |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | 37.68       | 29.8 QP                 | 40.0           | -10.2       | 2.00 V             | 164                  | 45.1             | -15.3                    |
| 2                                                   | 72.67       | 27.1 QP                 | 40.0           | -12.9       | 1.00 V             | 245                  | 43.6             | -16.5                    |
| 3                                                   | 158.22      | 18.7 QP                 | 43.5           | -24.8       | 1.00 V             | 199                  | 32.5             | -13.8                    |
| 4                                                   | 241.83      | 20.3 QP                 | 46.0           | -25.7       | 1.00 V             | 125                  | 35.2             | -14.9                    |
| 5                                                   | 747.34      | 32.2 QP                 | 46.0           | -13.8       | 1.00 V             | 303                  | 37.0             | -4.8                     |
| 6                                                   | 937.88      | 35.3 QP                 | 46.0           | -10.7       | 1.00 V             | 234                  | 37.3             | -2.0                     |

## Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

|         |                          |                 |              |
|---------|--------------------------|-----------------|--------------|
| CHANNEL | CH 157 + CH 20325 + CH 1 | FREQUENCY RANGE | 30MHz ~ 1GHz |
|---------|--------------------------|-----------------|--------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |               |                       |                        |            |             |             |
|-----------------------------------------------------|-------------|---------------|-----------------------|------------------------|------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 80.54       | -62.3         | -66.7                 | -1.5                   | -68.2      | -13.0       | -55.2       |
| 2                                                   | 239.94      | -58.9         | -71.2                 | 5.4                    | -65.8      | -13.0       | -52.8       |
| 3                                                   | 405.17      | -67.4         | -73.0                 | 5.2                    | -67.8      | -13.0       | -54.8       |
| 4                                                   | 558.74      | -66.1         | -69.9                 | 4.7                    | -65.2      | -13.0       | -52.2       |
| 5                                                   | 722.02      | -59.5         | -60.8                 | 5.0                    | -55.8      | -13.0       | -42.8       |
| 6                                                   | 937.80      | -59.2         | -54.4                 | 3.9                    | -50.5      | -13.0       | -37.5       |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |               |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 158.30      | -63.2         | -65.5                 | 0.3                    | -65.2      | -13.0       | -52.2       |
| 2                                                   | 239.94      | -63.6         | -70.0                 | 5.4                    | -64.6      | -13.0       | -51.6       |
| 3                                                   | 558.74      | -64.9         | -67.6                 | 4.7                    | -62.9      | -13.0       | -49.9       |
| 4                                                   | 636.49      | -66.9         | -65.4                 | 4.7                    | -60.7      | -13.0       | -47.7       |
| 5                                                   | 747.29      | -64.7         | -62.1                 | 4.7                    | -57.4      | -13.0       | -44.4       |
| 6                                                   | 937.80      | -58.1         | -52.4                 | 3.9                    | -48.5      | -13.0       | -35.5       |

Remarks:

1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

# BT EDR + LTE Band 2 + NFC

|                 |                         |                   |                 |
|-----------------|-------------------------|-------------------|-----------------|
| CHANNEL         | CH 39 + CH 18900 + CH 1 | DETECTOR FUNCTION | Quasi-Peak (QP) |
| FREQUENCY RANGE | 30MHz ~ 1GHz            |                   |                 |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | 57.12       | 24.7 QP                 | 40.0           | -15.3       | 1.49 H             | 3                    | 39.1             | -14.4                    |
| 2                                                   | 158.22      | 18.9 QP                 | 43.5           | -24.6       | 1.49 H             | 5                    | 32.7             | -13.8                    |
| 3                                                   | 241.83      | 22.9 QP                 | 46.0           | -23.1       | 2.00 H             | 272                  | 37.8             | -14.9                    |
| 4                                                   | 389.59      | 28.7 QP                 | 46.0           | -17.3       | 1.49 H             | 5                    | 40.1             | -11.4                    |
| 5                                                   | 729.84      | 37.5 QP                 | 46.0           | -8.5        | 1.49 H             | 5                    | 42.7             | -5.2                     |
| 6                                                   | 935.94      | 35.3 QP                 | 46.0           | -10.7       | 1.49 H             | 81                   | 37.4             | -2.1                     |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | 30.90       | 29.6 QP                 | 40.0           | -10.4       | 2.00 V             | 146                  | 45.6             | -16.0                    |
| 2                                                   | 76.56       | 33.6 QP                 | 40.0           | -6.4        | 1.00 V             | 173                  | 50.9             | -17.3                    |
| 3                                                   | 96.01       | 23.0 QP                 | 43.5           | -20.5       | 1.00 V             | 107                  | 41.9             | -18.9                    |
| 4                                                   | 241.83      | 19.9 QP                 | 46.0           | -26.1       | 1.00 V             | 226                  | 34.8             | -14.9                    |
| 5                                                   | 729.84      | 39.4 QP                 | 46.0           | -6.6        | 1.50 V             | 160                  | 44.6             | -5.2                     |
| 6                                                   | 937.88      | 35.4 QP                 | 46.0           | -10.6       | 1.00 V             | 95                   | 37.4             | -2.0                     |

## Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

|         |                         |                 |              |
|---------|-------------------------|-----------------|--------------|
| CHANNEL | CH 39 + CH 18900 + CH 1 | FREQUENCY RANGE | 30MHz ~ 1GHz |
|---------|-------------------------|-----------------|--------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |               |                       |                        |            |             |             |
|-----------------------------------------------------|-------------|---------------|-----------------------|------------------------|------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 239.94      | -57.6         | -69.9                 | 5.4                    | -64.5      | -13.0       | -51.5       |
| 2                                                   | 405.17      | -67.1         | -72.7                 | 5.2                    | -67.5      | -13.0       | -54.5       |
| 3                                                   | 482.93      | -66.2         | -71.4                 | 5.0                    | -66.4      | -13.0       | -53.4       |
| 4                                                   | 564.57      | -66.5         | -70.0                 | 4.5                    | -65.5      | -13.0       | -52.5       |
| 5                                                   | 720.08      | -59.9         | -61.2                 | 5.0                    | -56.2      | -13.0       | -43.2       |
| 6                                                   | 937.80      | -58.5         | -53.7                 | 3.9                    | -49.8      | -13.0       | -36.8       |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |               |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 185.51      | -61.9         | -68.6                 | 3.6                    | -65.0      | -13.0       | -52.0       |
| 2                                                   | 243.83      | -64.0         | -69.7                 | 5.5                    | -64.2      | -13.0       | -51.2       |
| 3                                                   | 640.38      | -68.4         | -66.8                 | 4.7                    | -62.1      | -13.0       | -49.1       |
| 4                                                   | 720.08      | -66.7         | -64.8                 | 5.0                    | -59.8      | -13.0       | -46.8       |
| 5                                                   | 803.67      | -68.4         | -64.2                 | 4.0                    | -60.2      | -13.0       | -47.2       |
| 6                                                   | 937.80      | -56.7         | -51.0                 | 3.9                    | -47.1      | -13.0       | -34.1       |

Remarks:

1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

BT EDR + LTE Band 4 + NFC

|                 |                         |                   |                 |
|-----------------|-------------------------|-------------------|-----------------|
| CHANNEL         | CH 39 + CH 20325 + CH 1 | DETECTOR FUNCTION | Quasi-Peak (QP) |
| FREQUENCY RANGE | 30MHz ~ 1GHz            |                   |                 |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | 30.90       | 29.6 QP                 | 40.0           | -10.4       | 1.00 H             | 235                  | 45.6             | -16.0                    |
| 2                                                   | 57.12       | 27.7 QP                 | 40.0           | -12.3       | 1.99 H             | 317                  | 42.1             | -14.4                    |
| 3                                                   | 278.77      | 28.6 QP                 | 46.0           | -17.4       | 1.99 H             | 278                  | 41.8             | -13.2                    |
| 4                                                   | 729.84      | 36.4 QP                 | 46.0           | -9.6        | 1.99 H             | 128                  | 41.6             | -5.2                     |
| 5                                                   | 916.50      | 40.3 QP                 | 46.0           | -5.7        | 1.49 H             | 170                  | 42.4             | -2.1                     |
| 6                                                   | 935.94      | 37.2 QP                 | 46.0           | -8.8        | 1.49 H             | 16                   | 39.3             | -2.1                     |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | 30.90       | 30.6 QP                 | 40.0           | -9.4        | 1.00 V             | 167                  | 46.6             | -16.0                    |
| 2                                                   | 78.51       | 24.6 QP                 | 40.0           | -15.4       | 1.49 V             | 181                  | 42.4             | -17.8                    |
| 3                                                   | 160.17      | 19.1 QP                 | 43.5           | -24.4       | 1.49 V             | 115                  | 32.9             | -13.8                    |
| 4                                                   | 241.83      | 21.2 QP                 | 46.0           | -24.8       | 1.49 V             | 311                  | 36.1             | -14.9                    |
| 5                                                   | 729.84      | 34.9 QP                 | 46.0           | -11.1       | 1.00 V             | 5                    | 40.1             | -5.2                     |
| 6                                                   | 937.88      | 37.5 QP                 | 46.0           | -8.5        | 1.99 V             | 10                   | 39.5             | -2.0                     |

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

|         |                         |                 |              |
|---------|-------------------------|-----------------|--------------|
| CHANNEL | CH 39 + CH 20325 + CH 1 | FREQUENCY RANGE | 30MHz ~ 1GHz |
|---------|-------------------------|-----------------|--------------|

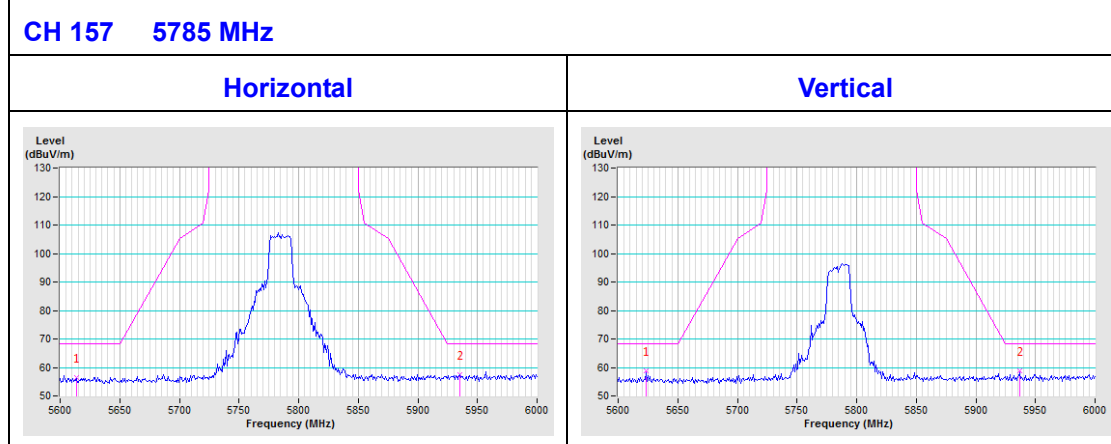
| Antenna Polarity & Test Distance: Horizontal at 3 M |             |               |                       |                        |            |             |             |
|-----------------------------------------------------|-------------|---------------|-----------------------|------------------------|------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 158.30      | -63.8         | -69.2                 | 0.3                    | -68.9      | -13.0       | -55.9       |
| 2                                                   | 241.88      | -60.2         | -72.4                 | 5.5                    | -66.9      | -13.0       | -53.9       |
| 3                                                   | 405.17      | -66.9         | -72.5                 | 5.2                    | -67.3      | -13.0       | -54.3       |
| 4                                                   | 558.74      | -65.8         | -69.6                 | 4.7                    | -64.9      | -13.0       | -51.9       |
| 5                                                   | 729.80      | -57.6         | -58.8                 | 4.9                    | -53.9      | -13.0       | -40.9       |
| 6                                                   | 937.80      | -58.5         | -53.7                 | 3.9                    | -49.8      | -13.0       | -36.8       |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |               |                       |                        |            |             |             |
| No.                                                 | Freq. (MHz) | Reading (dBm) | S.G Power Value (dBm) | Correction Factor (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 160.24      | -61.7         | -64.5                 | 0.5                    | -64.0      | -13.0       | -51.0       |
| 2                                                   | 241.88      | -63.8         | -69.8                 | 5.5                    | -64.3      | -13.0       | -51.3       |
| 3                                                   | 302.14      | -63.7         | -67.6                 | 5.1                    | -62.5      | -13.0       | -49.5       |
| 4                                                   | 642.32      | -67.7         | -66.1                 | 4.7                    | -61.4      | -13.0       | -48.4       |
| 5                                                   | 722.02      | -66.8         | -64.9                 | 5.0                    | -59.9      | -13.0       | -46.9       |
| 6                                                   | 939.74      | -57.6         | -51.9                 | 3.9                    | -48.0      | -13.0       | -35.0       |

Remarks:

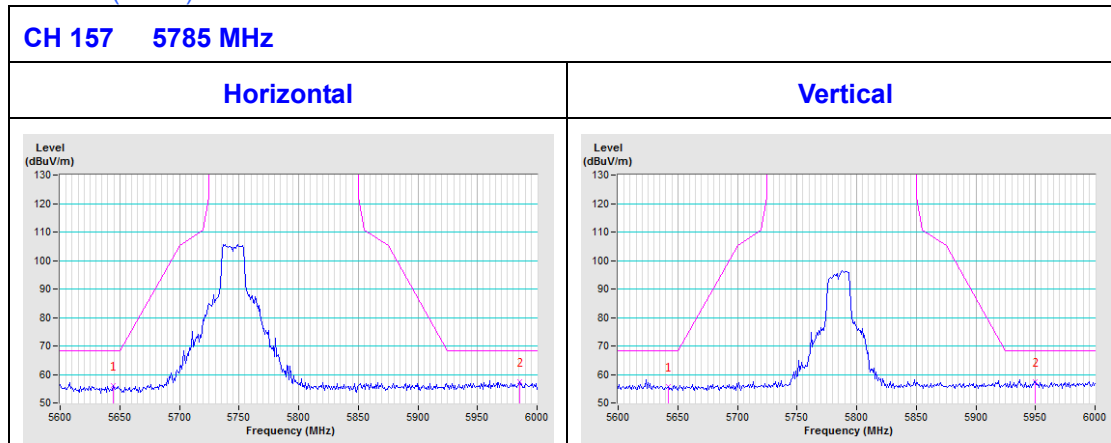
1. Output Power (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

## Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)

802.11n (HT20) + LTE Band 2 + NFC



802.11n (HT20) + LTE Band 4 + NFC



## 5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

## Appendix – Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

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The address and road map of all our labs can be found in our web site also.

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