

## FCC Test Report

### (Co-Located)

**Report No.:** RFBDKX-WTW-P23090081-8  
**FCC ID:** 2ATIO5  
**Product:** Home IOT Gateway  
**Brand:** Level  
**Model No.:** H5  
**Series Model:** H2  
**Received Date:** 2023/9/25  
**Test Date:** 2023/11/24 ~ 2023/12/1  
**Issued Date:** 2023/12/8

**Applicant:** Level Home Inc.

**Address:** 935 Main Street, Redwood City, California 94063, United States of America

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch  
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**Lab Address:** No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

**Test Location:** No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

**FCC Registration /**  
**Designation Number:** 198487 / TW2021



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### Release Control Record

| Issue No.              | Description      | Date Issued |
|------------------------|------------------|-------------|
| RFBDKX-WTW-P23090081-8 | Original release | 2023/12/8   |

## 1 Certificate of Conformity

**Product:** Home IOT Gateway  
**Brand:** Level  
**Test Model:** H5  
**Series Model:** H2  
**Sample Status:** Engineering sample  
**Applicant:** Level Home Inc.  
**Test Date:** 2023/11/24 ~ 2023/12/1  
**Standard:** 47 CFR FCC Part 15, Subpart C (Section 15.247)  
47 CFR FCC Part 15, Subpart C (Section 15.249)  
**Measurement procedure:** ANSI C63.10-2013  
KDB 558074 D01 15.247 Meas Guidance v05r02

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 :** Annie Chang, **Date:** 2023/12/8  
Annie Chang / Senior Specialist

**Approved by :** Jeremy Lin, **Date:** 2023/12/8  
Jeremy Lin / 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 C (Section 15.249) |        |                                                                                   |
|-------------------------------|--------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|
| Clause                        | Test Item                                                                                        | Result | Remarks                                                                           |
| 15.205<br>15.209<br>15.247(d) | Radiated Spurious Emissions below 1 GHz                                                          | Pass   | Meet the requirement of limit.<br>Minimum passing margin is -1.5dB at 308.00MHz.  |
| 15.209                        |                                                                                                  |        |                                                                                   |
| 15.249(a)                     |                                                                                                  |        |                                                                                   |
| 15.249(d)                     |                                                                                                  |        |                                                                                   |
| 15.205<br>15.209<br>15.247(d) | Radiated Spurious Emissions above 1 GHz                                                          | Pass   | Meet the requirement of limit.<br>Minimum passing margin is -0.1dB at 2718.00MHz. |
| 15.209                        |                                                                                                  |        |                                                                                   |
| 15.249(a)                     |                                                                                                  |        |                                                                                   |
| 15.249(d)                     |                                                                                                  |        |                                                                                   |
| 15.249(e)                     |                                                                                                  |        |                                                                                   |

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

### 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                             | Specification   | Expanded Uncertainty (k=2)<br>(±) |
|-----------------------------------------|-----------------|-----------------------------------|
| Radiated Spurious Emissions below 1 GHz | 9 kHz ~ 30 MHz  | 2.38 dB                           |
|                                         | 30 MHz ~ 1 GHz  | 5.7 dB                            |
| Radiated Spurious Emissions above 1 GHz | 1 GHz ~ 6 GHz   | 4.83 dB                           |
|                                         | 6 GHz ~ 18 GHz  | 5.37 dB                           |
|                                         | 18 GHz ~ 40 GHz | 5.24 dB                           |

The other instruments specified are routine verified to remain within the calibrated levels, no measurement uncertainty is required to be calculated.

### 2.2 Modification Record

There were no modifications required for compliance.

### 3 General Information

#### 3.1 General Description of EUT

|                     |                                          |             |                                                                 |
|---------------------|------------------------------------------|-------------|-----------------------------------------------------------------|
| Product             | Home IOT Gateway                         |             |                                                                 |
| Brand               | Level                                    |             |                                                                 |
| Test Model          | H5                                       |             |                                                                 |
| Series Model        | H2                                       |             |                                                                 |
| Model Difference    | Refer to Note as below                   |             |                                                                 |
| Status of EUT       | Engineering sample                       |             |                                                                 |
| Power Supply Rating | 3.6Vdc from battery or 5Vdc from Adapter |             |                                                                 |
| Modulation Type     | Radio 2                                  | Z-Wave      | 2FSK (908.4 MHz)<br>2FSK (908.42 MHz)<br>2GFSK (916 MHz)        |
|                     |                                          | Thread 900M | O-QPSK                                                          |
|                     | Radio 3                                  | Thread      | O-QPSK                                                          |
|                     |                                          | Zigbee      | O-QPSK                                                          |
|                     |                                          | BTLE        | GFSK                                                            |
|                     | Radio 4                                  | WLAN        | CCK, DQPSK, DBPSK for DSSS<br>64QAM, 16QAM, QPSK, BPSK for OFDM |
|                     |                                          | BTLE        | GFSK                                                            |
| Transfer Rate       | Radio 2                                  | Z-Wave      | 40kb/s (908.4 MHz)<br>9.6kb/s (908.42 MHz)<br>100kb/s (916 MHz) |
|                     |                                          | Thread 900M | 100kb/s                                                         |
|                     | Radio 3                                  | Thread      | 250kb/s                                                         |
|                     |                                          | Zigbee      | 250kb/s                                                         |
|                     |                                          | BTLE        | 125k, 500k, 1M, 2M                                              |
|                     | Radio 4                                  | WLAN        | Up to 72.2 Mbps                                                 |
|                     |                                          | BTLE        | Up to 1 Mbps                                                    |
| Operating Frequency | Radio 1                                  | WWAN        | WCDMA Band 4: 1712.4 MHz ~ 1752.6 MHz                           |
|                     | Radio 2                                  | Z-Wave      | 908.4 MHz ~ 916 MHz                                             |
|                     |                                          | Thread 900M | 906 MHz ~ 924 MHz                                               |
|                     | Radio 3                                  | Thread      | 2.405 GHz ~ 2.475 GHz                                           |
|                     |                                          | Zigbee      | 2.405 GHz ~ 2.475 GHz                                           |
|                     |                                          | BTLE        | 2.402 GHz ~ 2.48 GHz                                            |
|                     | Radio 4                                  | WLAN        | 2.412 GHz ~ 2.462 GHz                                           |
|                     |                                          | BTLE        | 2.402 GHz ~ 2.48 GHz                                            |
| Number of Channel   | Radio 2                                  | Z-Wave      | 3                                                               |
|                     |                                          | Thread 900M | 19                                                              |
|                     | Radio 3                                  | Thread      | 15                                                              |
|                     |                                          | Zigbee      | 15                                                              |
|                     |                                          | BTLE        | 40                                                              |
|                     | Radio 4                                  | WLAN        | 802.11b, 802.11g, 802.11n (HT20):11                             |
|                     |                                          | BTLE        | 40                                                              |

|                               |         |             |                                    |
|-------------------------------|---------|-------------|------------------------------------|
| Max. EIRP Power               | Radio 1 | WWAN        | WCDMA Band 4: 459.198mW (26.62dBm) |
| Output Power                  | Radio 2 | Thread 900M | 21.677 mW (13.36 dBm)              |
|                               | Radio 3 | Thread      | 66.069 mW (18.2 dBm)               |
|                               |         | Zigbee      | 65.917 mW (18.19 dBm)              |
|                               |         | BTLE        | 14.06 mW (11.48 dBm)               |
|                               | Radio 4 | WLAN        | 312.608 mW (24.95 dBm)             |
|                               |         | BTLE        | 7.621 mW (8.82 dBm)                |
| Field Strength Of Fundamental | Radio 2 | Z-Wave      | 92.3 dBuV/m at 3 meters            |

Note:

1. All models are listed as below.

| RF Radio List | Radio ID    | Technology List       | H5          | H2 |
|---------------|-------------|-----------------------|-------------|----|
| 1             | LTE         | WWAN<br>(LTE + WCDMA) | V           | V  |
| 2             | Z-Wave      | Z-Wave                | V           | X  |
|               | Thread 900M | Thread 900M           | V(Optional) | V  |
| 3             | Thread      | Thread                | V(Optional) | V  |
|               | Zigbee      | Zigbee                | V           | X  |
|               | BLE         | BTLE                  | V           | V  |
| 4             | WiFi        | WLAN(2.4G)            | V           | X  |
|               | BLE-SOM     | BLE                   | V           | V  |

2. There are WWAN, WLAN (2.4 GHz), Bluetooth LE, Zigbee, Thread, Z-Wave technology used for the EUT.

3. Simultaneously transmission condition.

| Condition | Technology |             |         |         |
|-----------|------------|-------------|---------|---------|
|           | Radio 1    | Radio 2     | Radio 3 | Radio 4 |
| 1         | WWAN       | Z-Wave      | Zigbee  | BTLE    |
| 2         | WWAN       | Z-Wave      | Thread  | BTLE    |
| 3         | WWAN       | Z-Wave      | BTLE    | BTLE    |
| 4         | WWAN       | Thread 900M | Zigbee  | BTLE    |
| 5         | WWAN       | Thread 900M | Thread  | BTLE    |
| 6         | WWAN       | Thread 900M | BTLE    | BTLE    |
| 7         | -          | Z-Wave      | Zigbee  | WLAN    |
| 8         | -          | Z-Wave      | Thread  | WLAN    |
| 9         | -          | Z-Wave      | BTLE    | WLAN    |
| 10        | -          | Thread 900M | Zigbee  | WLAN    |
| 11        | -          | Thread 900M | Thread  | WLAN    |
| 12        | -          | Thread 900M | BTLE    | WLAN    |

4. The EUT uses following accessories.

| Item       | Brand   | Model      | Specification                                                                                                          |
|------------|---------|------------|------------------------------------------------------------------------------------------------------------------------|
| AC Adapter | CUI INC | SWH15-5B-N | AC Input : 100-240Vac 50/60Hz 0.5A Max<br>DC Output : 5.0Vdc 3.0A<br>DC Output Cable : Non-shielded without core, 1.8m |
| LAN Cable  | -       | -          | Non-shielded without core, 1.0m                                                                                        |

5. More information of WWAN module (Radio 1) refer to report no.: RFBDKX-WTW-P23090081.

6. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

### 3.2 Antenna Description of EUT

1. The antenna information is listed as below.

#### Radio 1: WWAN

|                      |       |       |       |       |       |      |      |       |       |      |      |      |       |       |
|----------------------|-------|-------|-------|-------|-------|------|------|-------|-------|------|------|------|-------|-------|
| Antenna Type         |       |       |       | PIFA  |       |      |      |       |       |      |      |      |       |       |
| Antenna Connector    |       |       |       | NA    |       |      |      |       |       |      |      |      |       |       |
| Frequency (MHz)      | 700   | 750   | 800   | 850   | 900   | 1700 | 1750 | 1800  | 1850  | 1900 | 1950 | 2000 | 2100  | 2150  |
| Main Ant. Gain (dBi) | -3.21 | -1.48 | -0.66 | -3.22 | -3.95 | 3.87 | 3.77 | 4.08  | 3.38  | 2.76 | 1.67 | 0.72 | 0.51  | -0.43 |
| Aux. Ant. Gain (dBi) | 0.12  | 0.93  | 0.05  | -0.42 | -3.05 | 0.13 | 0.44 | -0.47 | -0.72 | 1.88 | 2.45 | 2.49 | -0.99 | -2.50 |

\* Main Antenna was for the final tests.

#### Radio 2: Z-Wave & Thread 900M

| Antenna Type | Gain (dBi) | Connector Type |
|--------------|------------|----------------|
| PIFA         | -0.4       | None           |

#### Radio 3: Thread, Zigbee & BTLE

| Antenna Type | Gain (dBi) | Connector Type |
|--------------|------------|----------------|
| PIFA         | 4.06       | None           |

#### Radio 4: WLAN & BTLE

| Antenna Type | Gain (dBi) | Connector Type |
|--------------|------------|----------------|
| PIFA         | 2.27       | I-PEX          |

\* Detail antenna specification please refer to antenna datasheet and/or antenna measurement report.

2. The EUT incorporates a SISO function:

#### Radio 4: WLAN

| Modulation Mode | TX & RX Configuration |     |
|-----------------|-----------------------|-----|
| 802.11b         | 1TX                   | 1RX |
| 802.11g         | 1TX                   | 1RX |
| 802.11n (HT20)  | 1TX                   | 1RX |

### 3.3 Description of Test Modes

#### For Radio 2:

3 channels are provided for Z-Wave:

| Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---------|-----------------|---------|-----------------|
| 0       | 908.4           | 2       | 916             |
| 1       | 908.42          |         |                 |

19 channels are provided for Thread 900M:

| Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---------|-----------------|---------|-----------------|
| 0       | 906             | 10      | 916             |
| 1       | 907             | 11      | 917             |
| 2       | 908             | 12      | 918             |
| 3       | 909             | 13      | 919             |
| 4       | 910             | 14      | 920             |
| 5       | 911             | 15      | 921             |
| 6       | 912             | 16      | 922             |
| 7       | 913             | 17      | 923             |
| 8       | 914             | 18      | 924             |
| 9       | 915             |         |                 |

### For Radio 3:

15 channels are provided for Thread & Zigbee:

| Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---------|-----------------|---------|-----------------|
| 11      | 2405            | 19      | 2445            |
| 12      | 2410            | 20      | 2450            |
| 13      | 2415            | 21      | 2455            |
| 14      | 2420            | 22      | 2460            |
| 15      | 2425            | 23      | 2465            |
| 16      | 2430            | 24      | 2470            |
| 17      | 2435            | 25      | 2475            |
| 18      | 2440            |         |                 |

40 channels are provided for BTLE:

| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (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 Radio 4:

11 channels are provided for WLAN:

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

40 channels are provided for BTLE:

| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (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            |

### 3.3.1 Test Mode Applicability and Tested Channel Detail

| EUT Configure Mode | Applicable To |       | Description  |             |         |          |
|--------------------|---------------|-------|--------------|-------------|---------|----------|
|                    | RE $\geq$ 1G  | RE<1G | Radio 1      | Radio 2     | Radio 3 | Radio 4  |
| A                  | √             | √     | WCDMA Band 4 | Z-Wave      | Zigbee  | BT LE-1M |
| B                  | √             | √     | WCDMA Band 4 | Z-Wave      | Thread  | BT LE-1M |
| C                  | √             | √     | WCDMA Band 4 | Z-Wave      | BTLE-1M | BTLE-1M  |
| D                  | √             | √     | WCDMA Band 4 | Thread 900M | Zigbee  | BTLE-1M  |
| E                  | √             | √     | WCDMA Band 4 | Thread 900M | Thread  | BTLE-1M  |
| F                  | √             | √     | WCDMA Band 4 | Thread 900M | BTLE-1M | BTLE-1M  |
| G                  | √             | √     | -            | Z-Wave      | Zigbee  | 802.11g  |
| H                  | √             | √     | -            | Z-Wave      | Thread  | 802.11g  |
| I                  | √             | √     | -            | Z-Wave      | BTLE-1M | 802.11g  |
| J                  | √             | √     | -            | Thread 900M | Zigbee  | 802.11g  |
| K                  | √             | √     | -            | Thread 900M | Thread  | 802.11g  |
| L                  | √             | √     | -            | Thread 900M | BTLE-1M | 802.11g  |

Where **RE $\geq$ 1G**: Radiated Emission above 1GHz

**RE<1G**: Radiated Emission below 1GHz

#### **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 | Radio | Mode         | Tested Channel   | Modulation | Data Rate |
|--------------------|-------|--------------|------------------|------------|-----------|
| A                  | 1     | WCDMA Band 4 | 1413 (1732.6MHz) | -          | -         |
|                    | 2     | Z-Wave       | 0                | 2FSK       | 40kb/s    |
|                    | 3     | Zigbee       | 25               | O-QPSK     | 250kb/s   |
|                    | 4     | BTLE-1M      | 0                | GFSK       | 1Mb/s     |
| B                  | 1     | WCDMA Band 4 | 1413 (1732.6MHz) | -          | -         |
|                    | 2     | Z-Wave       | 0                | 2FSK       | 40kb/s    |
|                    | 3     | Thread       | 25               | O-QPSK     | 250kb/s   |
|                    | 4     | BTLE-1M      | 0                | GFSK       | 1Mb/s     |
| C                  | 1     | WCDMA Band 4 | 1413 (1732.6MHz) | -          | -         |
|                    | 2     | Z-Wave       | 0                | 2FSK       | 40kb/s    |
|                    | 3     | BTLE-1M      | 39               | GFSK       | 1Mb/s     |
|                    | 4     | BTLE-1M      | 0                | GFSK       | 1Mb/s     |
| D                  | 1     | WCDMA Band 4 | 1413 (1732.6MHz) | -          | -         |
|                    | 2     | Thread 900M  | 0                | O-QPSK     | 100kb/s   |
|                    | 3     | Zigbee       | 25               | O-QPSK     | 250kb/s   |
|                    | 4     | BTLE-1M      | 0                | GFSK       | 1Mb/s     |
| E                  | 1     | WCDMA Band 4 | 1413 (1732.6MHz) | -          | -         |
|                    | 2     | Thread 900M  | 0                | O-QPSK     | 100kb/s   |
|                    | 3     | Thread       | 25               | O-QPSK     | 250kb/s   |
|                    | 4     | BTLE-1M      | 0                | GFSK       | 1Mb/s     |
| F                  | 1     | WCDMA Band 4 | 1413 (1732.6MHz) | -          | -         |
|                    | 2     | Thread 900M  | 0                | O-QPSK     | 100kb/s   |
|                    | 3     | BTLE-1M      | 39               | GFSK       | 1Mb/s     |
|                    | 4     | BTLE-1M      | 0                | GFSK       | 1Mb/s     |

|   |   |             |    |        |         |
|---|---|-------------|----|--------|---------|
| G | 2 | Z-Wave      | 0  | 2FSK   | 40kb/s  |
|   | 3 | Zigbee      | 25 | O-QPSK | 250kb/s |
|   | 4 | 802.11g     | 1  | BPSK   | 6Mb/s   |
| H | 2 | Z-Wave      | 0  | 2FSK   | 40kb/s  |
|   | 3 | Thread      | 25 | O-QPSK | 250kb/s |
|   | 4 | 802.11g     | 1  | BPSK   | 6Mb/s   |
| I | 2 | Z-Wave      | 0  | 2FSK   | 40kb/s  |
|   | 3 | BTLE-1M     | 39 | GFSK   | 1Mb/s   |
|   | 4 | 802.11g     | 1  | BPSK   | 6Mb/s   |
| J | 2 | Thread 900M | 0  | O-QPSK | 100kb/s |
|   | 3 | Zigbee      | 25 | O-QPSK | 250kb/s |
|   | 4 | 802.11g     | 1  | BPSK   | 6Mb/s   |
| K | 2 | Thread 900M | 0  | O-QPSK | 100kb/s |
|   | 3 | Thread      | 25 | O-QPSK | 250kb/s |
|   | 4 | 802.11g     | 1  | BPSK   | 6Mb/s   |
| L | 2 | Thread 900M | 0  | O-QPSK | 100kb/s |
|   | 3 | BTLE-1M     | 39 | GFSK   | 1Mb/s   |
|   | 4 | 802.11g     | 1  | BPSK   | 6Mb/s   |

#### **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 | Radio | Mode         | Tested Channel   | Modulation | Data Rate |
|--------------------|-------|--------------|------------------|------------|-----------|
| A                  | 1     | WCDMA Band 4 | 1413 (1732.6MHz) | -          | -         |
|                    | 2     | Z-Wave       | 0                | 2FSK       | 40kb/s    |
|                    | 3     | Zigbee       | 25               | O-QPSK     | 250kb/s   |
|                    | 4     | BTLE-1M      | 0                | GFSK       | 1Mb/s     |
| B                  | 1     | WCDMA Band 4 | 1413 (1732.6MHz) | -          | -         |
|                    | 2     | Z-Wave       | 0                | 2FSK       | 40kb/s    |
|                    | 3     | Thread       | 25               | O-QPSK     | 250kb/s   |
|                    | 4     | BTLE-1M      | 0                | GFSK       | 1Mb/s     |
| C                  | 1     | WCDMA Band 4 | 1413 (1732.6MHz) | -          | -         |
|                    | 2     | Z-Wave       | 0                | 2FSK       | 40kb/s    |
|                    | 3     | BTLE-1M      | 39               | GFSK       | 1Mb/s     |
|                    | 4     | BTLE-1M      | 0                | GFSK       | 1Mb/s     |
| D                  | 1     | WCDMA Band 4 | 1413 (1732.6MHz) | -          | -         |
|                    | 2     | Thread 900M  | 0                | O-QPSK     | 100kb/s   |
|                    | 3     | Zigbee       | 25               | O-QPSK     | 250kb/s   |
|                    | 4     | BTLE-1M      | 0                | GFSK       | 1Mb/s     |
| E                  | 1     | WCDMA Band 4 | 1413 (1732.6MHz) | -          | -         |
|                    | 2     | Thread 900M  | 0                | O-QPSK     | 100kb/s   |
|                    | 3     | Thread       | 25               | O-QPSK     | 250kb/s   |
|                    | 4     | BTLE-1M      | 0                | GFSK       | 1Mb/s     |
| F                  | 1     | WCDMA Band 4 | 1413 (1732.6MHz) | -          | -         |
|                    | 2     | Thread 900M  | 0                | O-QPSK     | 100kb/s   |
|                    | 3     | BTLE-1M      | 39               | GFSK       | 1Mb/s     |
|                    | 4     | BTLE-1M      | 0                | GFSK       | 1Mb/s     |

|   |   |             |    |        |         |
|---|---|-------------|----|--------|---------|
| G | 2 | Z-Wave      | 0  | 2FSK   | 40kb/s  |
|   | 3 | Zigbee      | 25 | O-QPSK | 250kb/s |
|   | 4 | 802.11g     | 1  | BPSK   | 6Mb/s   |
| H | 2 | Z-Wave      | 0  | 2FSK   | 40kb/s  |
|   | 3 | Thread      | 25 | O-QPSK | 250kb/s |
|   | 4 | 802.11g     | 1  | BPSK   | 6Mb/s   |
| I | 2 | Z-Wave      | 0  | 2FSK   | 40kb/s  |
|   | 3 | BTLE-1M     | 39 | GFSK   | 1Mb/s   |
|   | 4 | 802.11g     | 1  | BPSK   | 6Mb/s   |
| J | 2 | Thread 900M | 0  | O-QPSK | 100kb/s |
|   | 3 | Zigbee      | 25 | O-QPSK | 250kb/s |
|   | 4 | 802.11g     | 1  | BPSK   | 6Mb/s   |
| K | 2 | Thread 900M | 0  | O-QPSK | 100kb/s |
|   | 3 | Thread      | 25 | O-QPSK | 250kb/s |
|   | 4 | 802.11g     | 1  | BPSK   | 6Mb/s   |
| L | 2 | Thread 900M | 0  | O-QPSK | 100kb/s |
|   | 3 | BTLE-1M     | 39 | GFSK   | 1Mb/s   |
|   | 4 | 802.11g     | 1  | BPSK   | 6Mb/s   |

**Test Condition:**

| Applicable To | Environmental Conditions | Input Power  | Tested By |
|---------------|--------------------------|--------------|-----------|
| RE>1G         | 25deg. C, 62%RH          | 120Vac, 60Hz | Jed Wu    |
| RE<1G         | 25deg. C, 62%RH          | 120Vac, 60Hz | Jed Wu    |

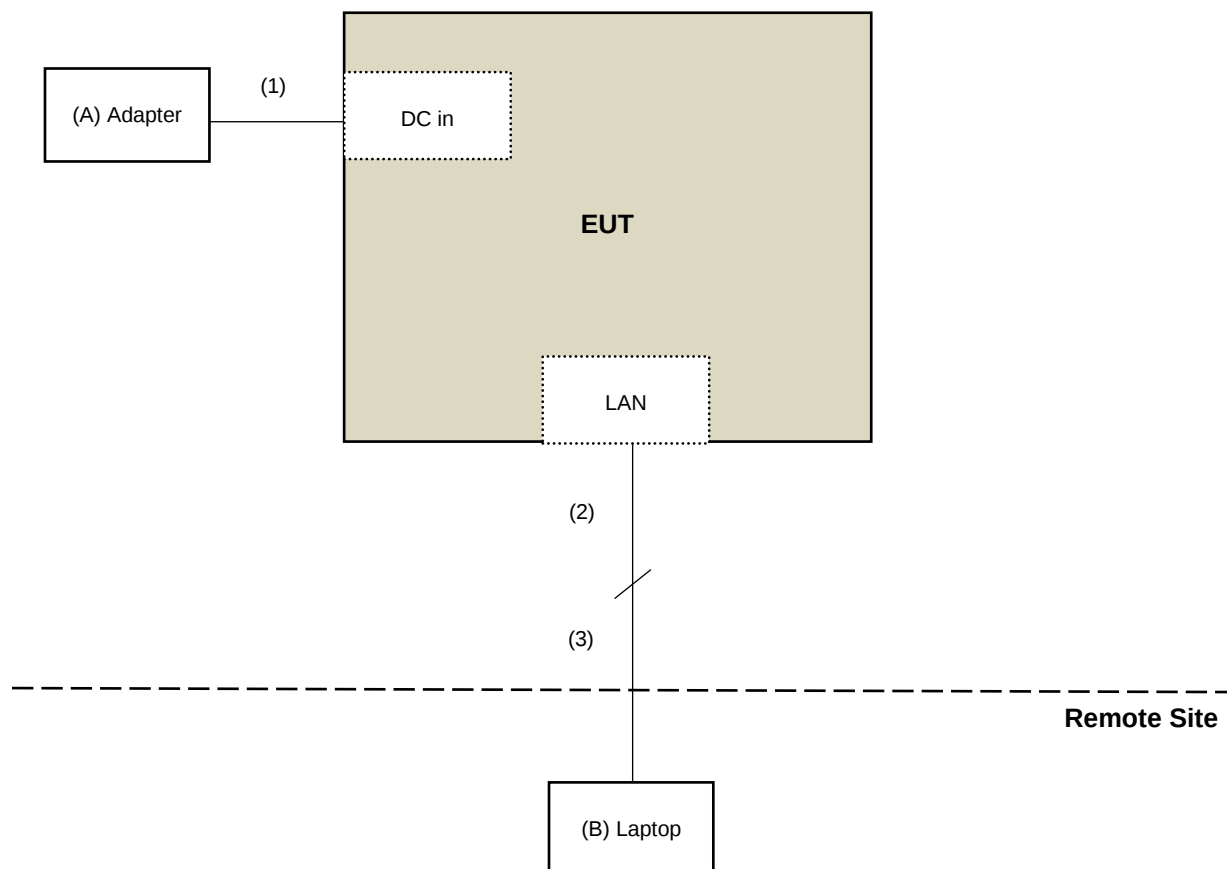
### 3.4 Description of Support Units

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  | Adapter | CUI INC | SWH15-5B-N | N/A        | N/A    | Supplied by applicant |
| B  | Laptop  | Lenovo  | 81A4       | YD02TWDP   | N/A    | Provided by Lab       |

| ID | Cable Descriptions | Qty. | Length (m) | Shielding (Yes/No) | Cores (Qty.) | Remarks               |
|----|--------------------|------|------------|--------------------|--------------|-----------------------|
| 1  | DC cable           | 1    | 1.8        | N                  | 0            | Supplied by applicant |
| 2  | LAN cable          | 1    | 1          | N                  | 0            | Supplied by applicant |
| 3  | LAN cable          | 1    | 10         | N                  | 0            | Provided by Lab       |

#### 3.4.1 Configuration of System under Test



### 3.5 General Description of Applied Standards

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards and references:

**Test Standard:**

**FCC Part 15, Subpart C (15.247)**

**FCC Part 15, Subpart C (15.249)**

**ANSI C63.10-2013**

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

**References Test Guidance:**

**KDB 558074 D01 15.247 Meas Guidance v05r02**

All test items have been performed as a reference to the above KDB test guidance.

## 4 Test Types and Results

### 4.1 Radiated Emissions below 1 GHz

#### 4.1.1 Limits

#### Radio 2: For Z-Wave

The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following

| Fundamental Frequency | Field Strength of Fundamental (millivolts/meter) | Field Strength of Harmonics (microvolts/meter) |
|-----------------------|--------------------------------------------------|------------------------------------------------|
| 902 ~ 928 MHz         | 50                                               | 500                                            |

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits as below table, whichever is the lesser attenuation

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

| 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                             |

Notes:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).

#### Radio 2: For Thread 900M ; Radio 3: For Thread, Zigbee, BTLE ; Radio 4: WLAN, BTLE

Radiated emissions up to 1 GHz which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20 dB 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                             |

Notes:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).

#### 4.1.2 Test Instruments

| Description<br>Manufacturer                  | Model No.        | Serial No.   | Calibrated<br>Date | Calibrated<br>Until |
|----------------------------------------------|------------------|--------------|--------------------|---------------------|
| Bi_Log Antenna<br>Schwarzbeck                | VULB 9168        | 137          | 2023/10/13         | 2024/10/12          |
| Coupling / Decoupling Network<br>Schwarzbeck | CDNE-M2          | 00097        | 2023/5/25          | 2024/5/24           |
|                                              | CDNE-M3          | 00091        | 2023/5/25          | 2024/5/24           |
| Loop Antenna<br>EMCI                         | LPA600           | 270          | 2023/9/4           | 2024/9/3            |
| MXE EMI Receiver<br>Agilent                  | N9038A           | MY51210129   | 2023/3/24          | 2024/3/23           |
|                                              |                  | MY51210137   | 2023/6/5           | 2024/6/4            |
| Preamplifier<br>EMCI                         | EMC001340        | 980269       | 2023/6/27          | 2024/6/26           |
| Preamplifier<br>HP                           | 8447D            | 2432A03504   | 2023/2/16          | 2024/2/15           |
| RF Coaxial Cable<br>Pacific                  | 8D-FB            | Cable-CH6-02 | 2023/6/27          | 2024/6/26           |
| Signal Analyzer<br>R&S                       | FSV40            | 101544       | 2023/5/9           | 2024/5/8            |
| Software<br>BVADT                            | Radiated_V8.7.08 | N/A          | N/A                | N/A                 |
| Tower<br>ADT                                 | AT100            | 0306         | N/A                | N/A                 |
| Turn Table<br>ADT                            | TT100            | 0306         | N/A                | N/A                 |

#### Notes:

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 Linkou 966 Chamber 6 (CH 6).
3. Tested Date: 2023/11/30

#### 4.1.3 Test Procedure

##### For Radiated emission below 30 MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters 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. Parallel, perpendicular, and ground-parallel orientations 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, except for the frequency band (9 kHz to 90 kHz and 110 kHz to 490 kHz) set to average detect function and peak detect function.

##### Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 200 Hz at frequency below 150 kHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9 kHz or 10 kHz at frequency (150 kHz to 30 MHz).
3. All modes of operation were investigated and the worst-case emissions are reported.

##### For Radiated emission above 30 MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters 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.

##### Notes:

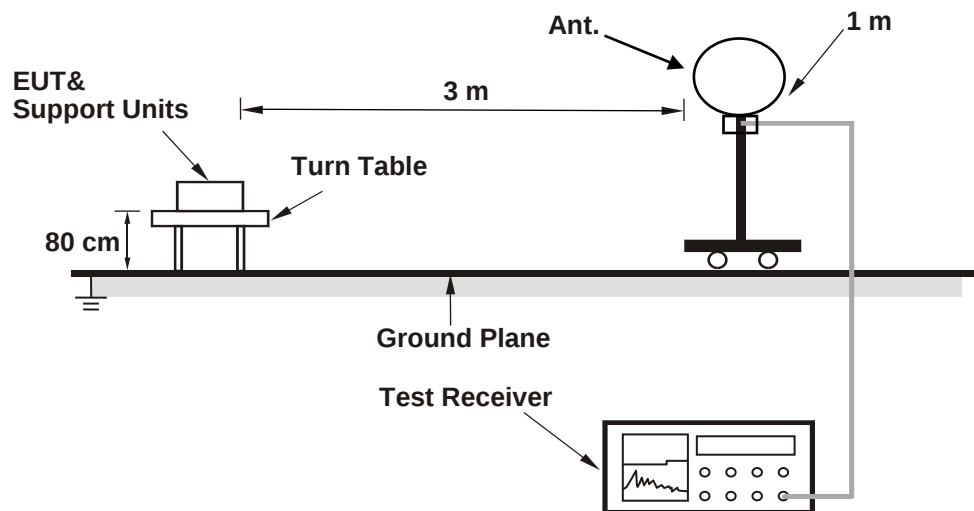
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2. All modes of operation were investigated and the worst-case emissions are reported.

#### 4.1.4 Deviation from Test Standard

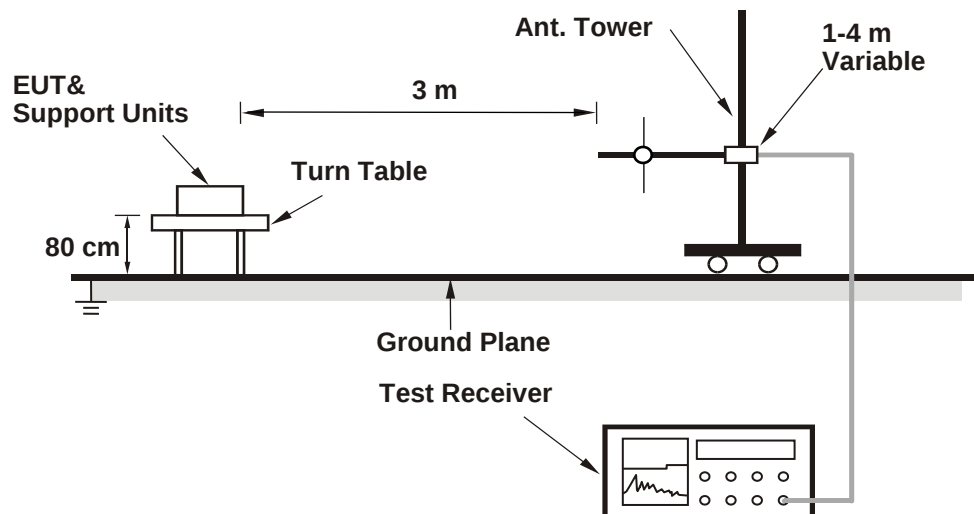
No deviation.

#### 4.1.5 Test Setup

##### For Radiated emission below 30 MHz



##### For Radiated emission above 30 MHz



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

#### 4.1.6 EUT Operating Condition

Controlling software (teraterm v4.8) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

#### 4.1.7 Test Results

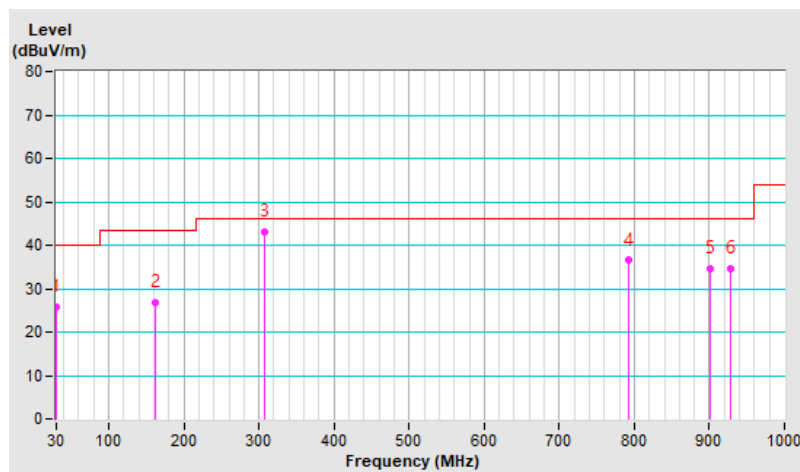
##### Mode A

|                 |                |                               |                               |
|-----------------|----------------|-------------------------------|-------------------------------|
| RF Mode         | WCDMA Band 4   | Channel                       | CH 1413 : 1732.6MHz           |
|                 | Z-Wave         |                               | CH 0 : 908.4MHz               |
|                 | Zigbee         |                               | CH 25 : 2475MHz               |
|                 | BTLE-1M        |                               | CH 0 : 2402MHz                |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 30.58           | 25.9 QP                 | 40.0           | -14.1       | 1.23 H             | 282                  | 36.8             | -10.9                    |
| 2                                                    | 161.34          | 26.8 QP                 | 43.5           | -16.7       | 1.58 H             | 280                  | 35.2             | -8.4                     |
| 3                                                    | 308.00          | 43.1 QP                 | 46.0           | -2.9        | 1.67 H             | 155                  | 49.1             | -6.0                     |
| 4                                                    | 792.03          | 36.5 QP                 | 46.0           | -9.5        | 1.49 H             | 213                  | 32.1             | 4.4                      |
| 5                                                    | 902.00          | 34.5 QP                 | 46.0           | -11.5       | 1.88 H             | 198                  | 28.2             | 6.3                      |
| 6                                                    | 928.00          | 34.6 QP                 | 46.0           | -11.4       | 1.74 H             | 360                  | 27.7             | 6.9                      |

##### 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

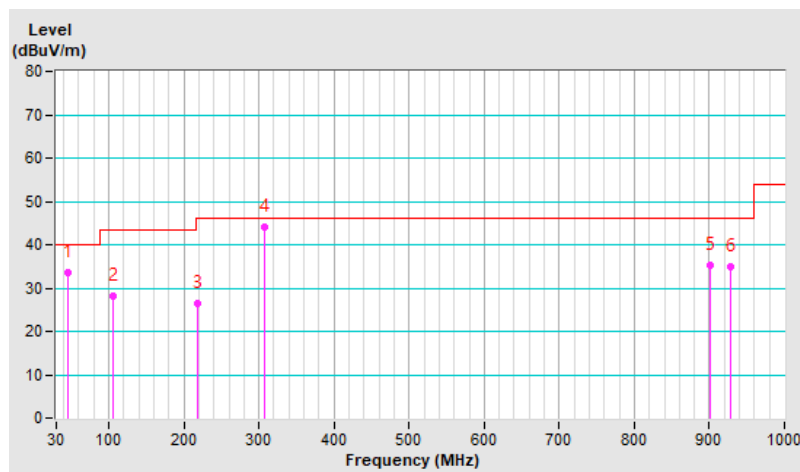


|                 |                |                               |                               |
|-----------------|----------------|-------------------------------|-------------------------------|
| RF Mode         | WCDMA Band 4   | Channel                       | CH 1413 : 1732.6MHz           |
|                 | Z-Wave         |                               | CH 0 : 908.4MHz               |
|                 | Zigbee         |                               | CH 25 : 2475MHz               |
|                 | BTLE-1M        |                               | CH 0 : 2402MHz                |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |

| Antenna Polarity & Test Distance : Vertical at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|----------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                 | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                  | 45.28           | 33.5 QP                 | 40.0           | -6.5        | 1.58 V             | 211                  | 42.6             | -9.1                     |
| 2                                                  | 105.56          | 28.1 QP                 | 43.5           | -15.4       | 1.73 V             | 301                  | 40.6             | -12.5                    |
| 3                                                  | 217.50          | 26.4 QP                 | 46.0           | -19.6       | 1.98 V             | 324                  | 36.9             | -10.5                    |
| 4                                                  | 308.00          | 44.1 QP                 | 46.0           | -1.9        | 1.24 V             | 258                  | 50.1             | -6.0                     |
| 5                                                  | 902.00          | 35.4 QP                 | 46.0           | -10.6       | 1.46 V             | 79                   | 29.1             | 6.3                      |
| 6                                                  | 928.00          | 35.0 QP                 | 46.0           | -11.0       | 1.52 V             | 317                  | 28.1             | 6.9                      |

#### 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



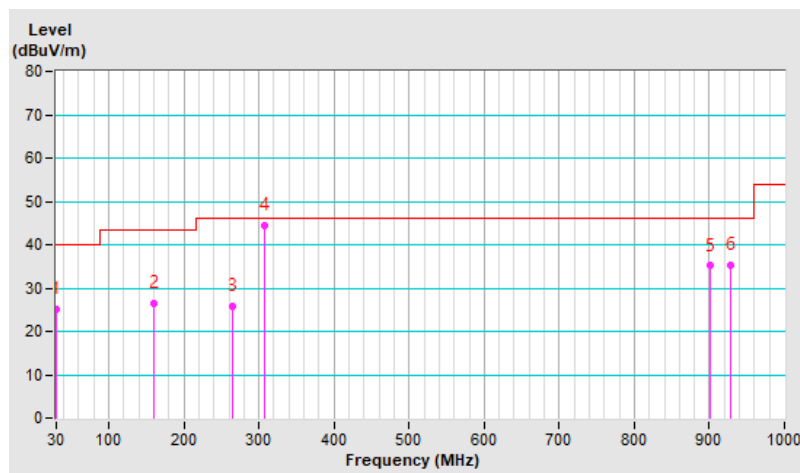
## Mode B

|                 |                |                               |                               |
|-----------------|----------------|-------------------------------|-------------------------------|
| RF Mode         | WCDMA Band 4   | Channel                       | CH 1413 : 1732.6MHz           |
|                 | Z-Wave         |                               | CH 0 : 908.4MHz               |
|                 | Thread         |                               | CH 25 : 2475MHz               |
|                 | BTLE-1M        |                               | CH 0 : 2402MHz                |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 30.58           | 25.1 QP                 | 40.0           | -14.9       | 1.58 H             | 183                  | 36.0             | -10.9                    |
| 2                                                    | 159.98          | 26.6 QP                 | 43.5           | -16.9       | 1.69 H             | 269                  | 34.9             | -8.3                     |
| 3                                                    | 264.01          | 25.9 QP                 | 46.0           | -20.1       | 1.47 H             | 140                  | 33.7             | -7.8                     |
| 4                                                    | 308.00          | 44.4 QP                 | 46.0           | -1.6        | 1.72 H             | 243                  | 50.4             | -6.0                     |
| 5                                                    | 902.00          | 35.1 QP                 | 46.0           | -10.9       | 1.83 H             | 2                    | 28.8             | 6.3                      |
| 6                                                    | 928.00          | 35.2 QP                 | 46.0           | -10.8       | 1.91 H             | 266                  | 28.3             | 6.9                      |

### 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

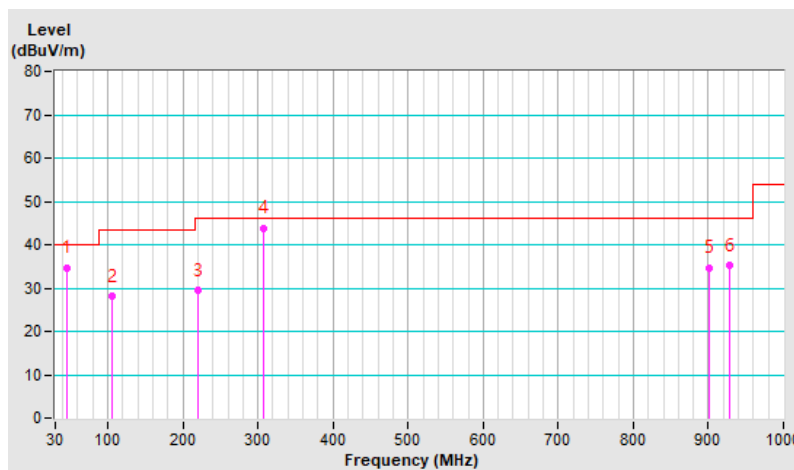


|                 |                |                               |                               |
|-----------------|----------------|-------------------------------|-------------------------------|
| RF Mode         | WCDMA Band 4   | Channel                       | CH 1413 : 1732.6MHz           |
|                 | Z-Wave         |                               | CH 0 : 908.4MHz               |
|                 | Thread         |                               | CH 25 : 2475MHz               |
|                 | BTLE-1M        |                               | CH 0 : 2402MHz                |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |

| Antenna Polarity & Test Distance : Vertical at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|----------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                 | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                  | 44.74           | 34.6 QP                 | 40.0           | -5.4        | 1.27 V             | 49                   | 43.8             | -9.2                     |
| 2                                                  | 104.93          | 28.0 QP                 | 43.5           | -15.5       | 1.36 V             | 306                  | 40.5             | -12.5                    |
| 3                                                  | 220.02          | 29.4 QP                 | 46.0           | -16.6       | 1.49 V             | 303                  | 40.0             | -10.6                    |
| 4                                                  | 308.00          | 43.8 QP                 | 46.0           | -2.2        | 1.87 V             | 260                  | 49.8             | -6.0                     |
| 5                                                  | 902.00          | 34.5 QP                 | 46.0           | -11.5       | 1.54 V             | 56                   | 28.2             | 6.3                      |
| 6                                                  | 928.00          | 35.1 QP                 | 46.0           | -10.9       | 1.02 V             | 351                  | 28.2             | 6.9                      |

#### 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



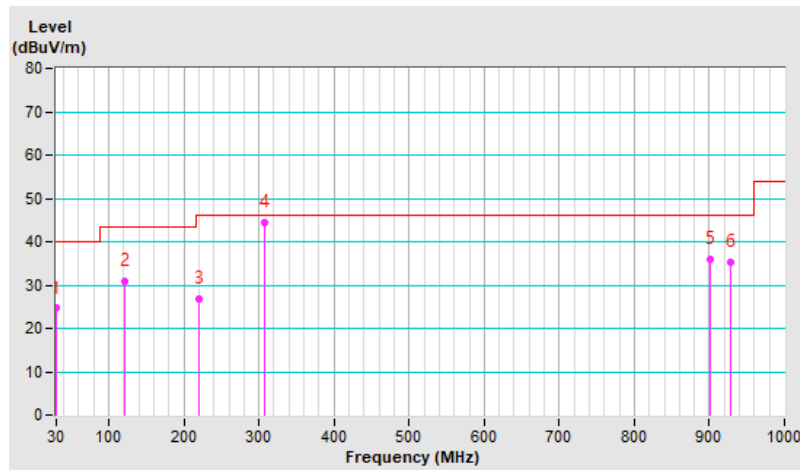
## Mode C

|                 |                |                               |                               |
|-----------------|----------------|-------------------------------|-------------------------------|
| RF Mode         | WCDMA Band 4   | Channel                       | CH 1413 : 1732.6MHz           |
|                 | Z-Wave         |                               | CH 0 : 908.4MHz               |
|                 | BTLE-1M        |                               | CH 39 : 2480MHz               |
|                 | BTLE-1M        |                               | CH 0 : 2402MHz                |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 30.58           | 24.6 QP                 | 40.0           | -15.4       | 1.38 H             | 112                  | 35.5             | -10.9                    |
| 2                                                    | 121.13          | 31.0 QP                 | 43.5           | -12.5       | 1.24 H             | 326                  | 41.9             | -10.9                    |
| 3                                                    | 219.97          | 26.7 QP                 | 46.0           | -19.3       | 1.75 H             | 264                  | 37.3             | -10.6                    |
| 4                                                    | 308.00          | 44.5 QP                 | 46.0           | -1.5        | 1.68 H             | 153                  | 50.5             | -6.0                     |
| 5                                                    | 902.00          | 36.0 QP                 | 46.0           | -10.0       | 1.94 H             | 141                  | 29.7             | 6.3                      |
| 6                                                    | 928.00          | 35.4 QP                 | 46.0           | -10.6       | 1.28 H             | 161                  | 28.5             | 6.9                      |

### 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

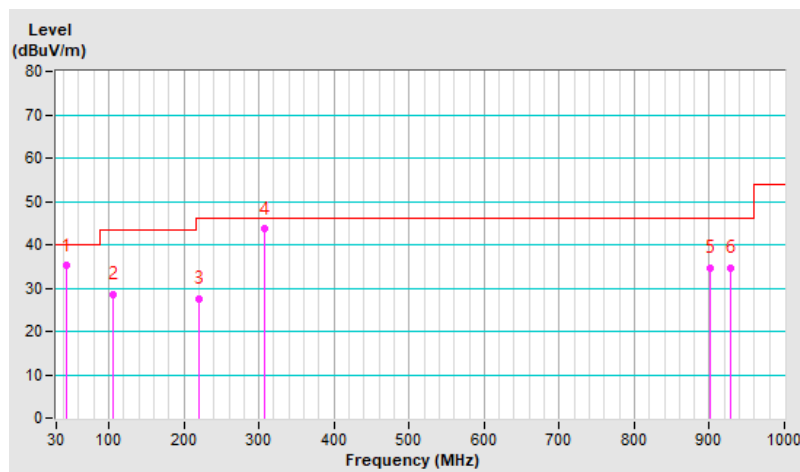


|                 |                |                               |                               |
|-----------------|----------------|-------------------------------|-------------------------------|
| RF Mode         | WCDMA Band 4   | Channel                       | CH 1413 : 1732.6MHz           |
|                 | Z-Wave         |                               | CH 0 : 908.4MHz               |
|                 | BTLE-1M        |                               | CH 39 : 2480MHz               |
|                 | BTLE-1M        |                               | CH 0 : 2402MHz                |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |

| Antenna Polarity & Test Distance : Vertical at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|----------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                 | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                  | 44.50           | 35.1 QP                 | 40.0           | -4.9        | 1.22 V             | 195                  | 44.3             | -9.2                     |
| 2                                                  | 106.48          | 28.5 QP                 | 43.5           | -15.0       | 1.35 V             | 288                  | 40.8             | -12.3                    |
| 3                                                  | 220.02          | 27.6 QP                 | 46.0           | -18.4       | 1.02 V             | 351                  | 38.2             | -10.6                    |
| 4                                                  | 308.00          | 43.6 QP                 | 46.0           | -2.4        | 1.69 V             | 254                  | 49.6             | -6.0                     |
| 5                                                  | 902.00          | 34.5 QP                 | 46.0           | -11.5       | 1.86 V             | 326                  | 28.2             | 6.3                      |
| 6                                                  | 928.00          | 34.6 QP                 | 46.0           | -11.4       | 1.75 V             | 322                  | 27.7             | 6.9                      |

#### 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



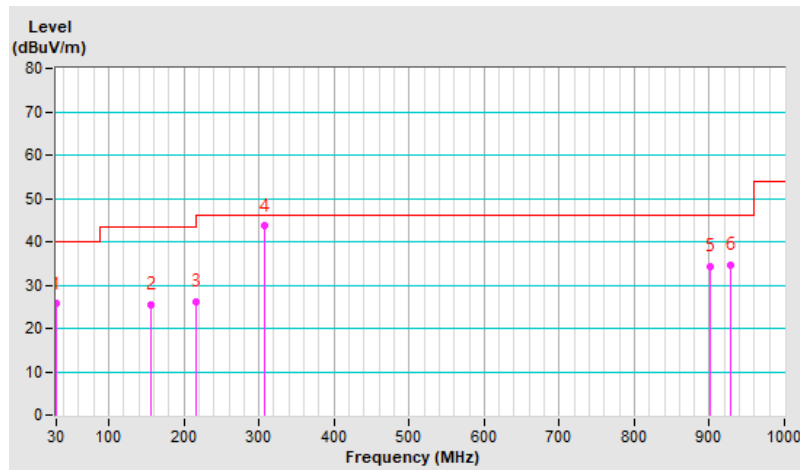
## Mode D

|                 |                |                               |                               |
|-----------------|----------------|-------------------------------|-------------------------------|
| RF Mode         | WCDMA Band 4   | Channel                       | CH 1413 : 1732.6MHz           |
|                 | Thread 900M    |                               | CH 0 : 906MHz                 |
|                 | Zigbee         |                               | CH 25 : 2475MHz               |
|                 | BTLE-1M        |                               | CH 0 : 2402MHz                |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 30.58           | 25.6 QP                 | 40.0           | -14.4       | 1.89 H             | 130                  | 36.5             | -10.9                    |
| 2                                                    | 156.44          | 25.4 QP                 | 43.5           | -18.1       | 1.26 H             | 285                  | 33.7             | -8.3                     |
| 3                                                    | 215.37          | 26.2 QP                 | 43.5           | -17.3       | 1.34 H             | 278                  | 36.9             | -10.7                    |
| 4                                                    | 308.00          | 43.6 QP                 | 46.0           | -2.4        | 1.57 H             | 140                  | 49.6             | -6.0                     |
| 5                                                    | 902.00          | 34.4 QP                 | 46.0           | -11.6       | 1.24 H             | 316                  | 28.1             | 6.3                      |
| 6                                                    | 928.00          | 34.7 QP                 | 46.0           | -11.3       | 1.11 H             | 142                  | 27.8             | 6.9                      |

### 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

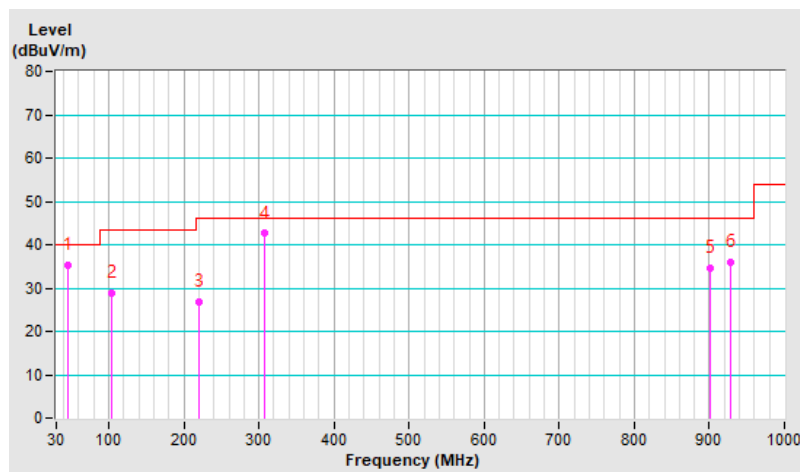


|                 |                |                               |                               |
|-----------------|----------------|-------------------------------|-------------------------------|
| RF Mode         | WCDMA Band 4   | Channel                       | CH 1413 : 1732.6MHz           |
|                 | Thread 900M    |                               | CH 0 : 906MHz                 |
|                 | Zigbee         |                               | CH 25 : 2475MHz               |
|                 | BTLE-1M        |                               | CH 0 : 2402MHz                |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |

| Antenna Polarity & Test Distance : Vertical at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|----------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                 | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                  | 45.08           | 35.4 QP                 | 40.0           | -4.6        | 1.86 V             | 328                  | 44.5             | -9.1                     |
| 2                                                  | 103.62          | 28.8 QP                 | 43.5           | -14.7       | 1.73 V             | 313                  | 41.5             | -12.7                    |
| 3                                                  | 219.97          | 26.9 QP                 | 46.0           | -19.1       | 1.87 V             | 0                    | 37.5             | -10.6                    |
| 4                                                  | 308.00          | 42.6 QP                 | 46.0           | -3.4        | 1.46 V             | 256                  | 48.6             | -6.0                     |
| 5                                                  | 902.00          | 34.5 QP                 | 46.0           | -11.5       | 1.95 V             | 134                  | 28.2             | 6.3                      |
| 6                                                  | 928.00          | 36.0 QP                 | 46.0           | -10.0       | 1.23 V             | 192                  | 29.1             | 6.9                      |

#### 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



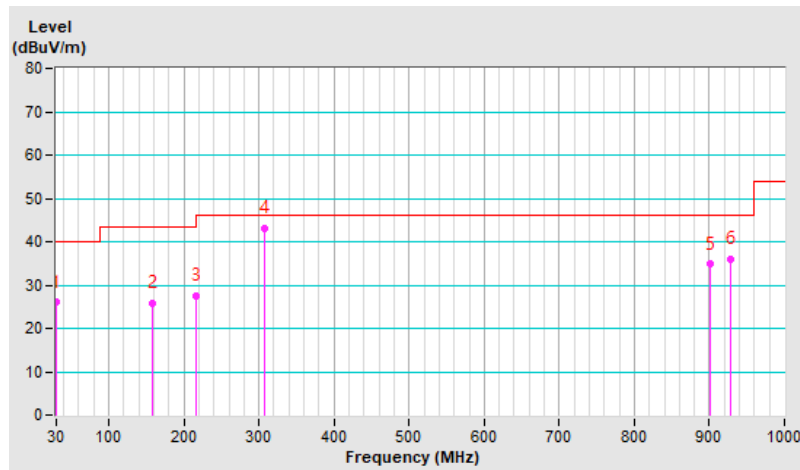
## Mode E

|                 |                |                               |                               |
|-----------------|----------------|-------------------------------|-------------------------------|
| RF Mode         | WCDMA Band 4   | Channel                       | CH 1413 : 1732.6MHz           |
|                 | Thread 900M    |                               | CH 0 : 906MHz                 |
|                 | Thread         |                               | CH 25 : 2475MHz               |
|                 | BTLE-1M        |                               | CH 0 : 2402MHz                |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 30.58           | 26.0 QP                 | 40.0           | -14.0       | 1.56 H             | 226                  | 36.9             | -10.9                    |
| 2                                                    | 158.48          | 25.8 QP                 | 43.5           | -17.7       | 1.23 H             | 240                  | 34.1             | -8.3                     |
| 3                                                    | 216.63          | 27.6 QP                 | 46.0           | -18.4       | 1.89 H             | 267                  | 38.3             | -10.7                    |
| 4                                                    | 308.00          | 43.2 QP                 | 46.0           | -2.8        | 1.42 H             | 243                  | 49.2             | -6.0                     |
| 5                                                    | 902.00          | 34.8 QP                 | 46.0           | -11.2       | 1.72 H             | 6                    | 28.5             | 6.3                      |
| 6                                                    | 928.00          | 36.1 QP                 | 46.0           | -9.9        | 1.35 H             | 262                  | 29.2             | 6.9                      |

### 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

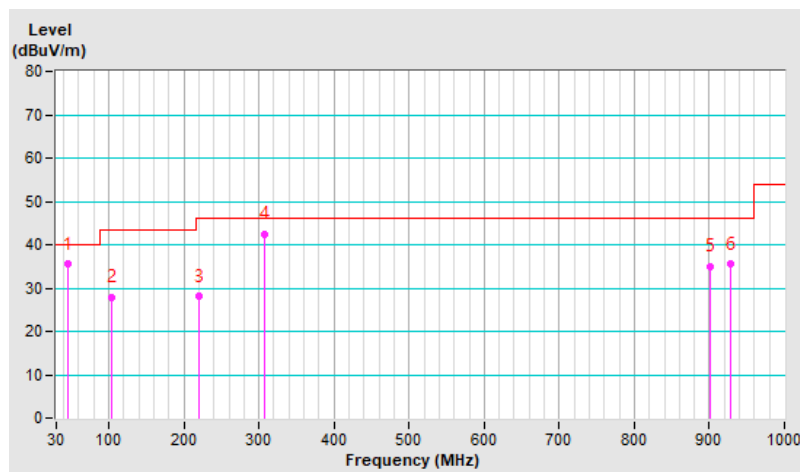


|                 |                |                               |                               |
|-----------------|----------------|-------------------------------|-------------------------------|
| RF Mode         | WCDMA Band 4   | Channel                       | CH 1413 : 1732.6MHz           |
|                 | Thread 900M    |                               | CH 0 : 906MHz                 |
|                 | Thread         |                               | CH 25 : 2475MHz               |
|                 | BTLE-1M        |                               | CH 0 : 2402MHz                |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |

| Antenna Polarity & Test Distance : Vertical at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|----------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                 | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                  | 45.08           | 35.5 QP                 | 40.0           | -4.5        | 1.28 V             | 235                  | 44.6             | -9.1                     |
| 2                                                  | 103.14          | 27.8 QP                 | 43.5           | -15.7       | 1.38 V             | 276                  | 40.6             | -12.8                    |
| 3                                                  | 220.02          | 28.0 QP                 | 46.0           | -18.0       | 1.97 V             | 156                  | 38.6             | -10.6                    |
| 4                                                  | 308.00          | 42.5 QP                 | 46.0           | -3.5        | 1.83 V             | 138                  | 48.5             | -6.0                     |
| 5                                                  | 902.00          | 34.9 QP                 | 46.0           | -11.1       | 1.67 V             | 358                  | 28.6             | 6.3                      |
| 6                                                  | 928.00          | 35.5 QP                 | 46.0           | -10.5       | 1.28 V             | 279                  | 28.6             | 6.9                      |

#### 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



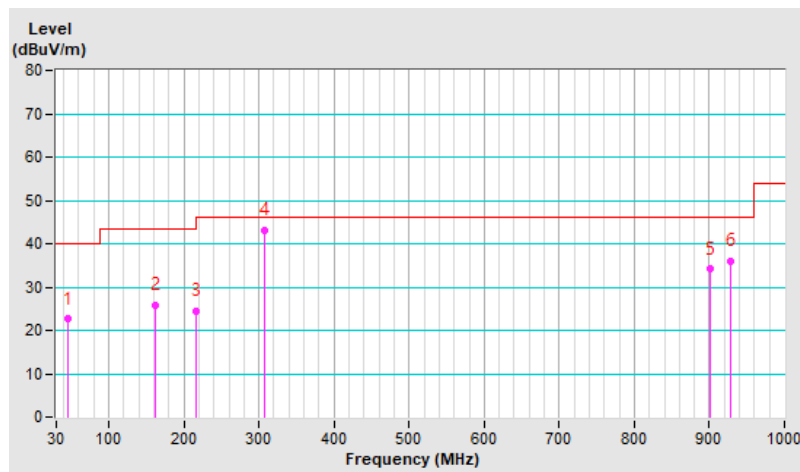
## Mode F

|                 |                |                               |                               |
|-----------------|----------------|-------------------------------|-------------------------------|
| RF Mode         | WCDMA Band 4   | Channel                       | CH 1413 : 1732.6MHz           |
|                 | Thread 900M    |                               | CH 0 : 906MHz                 |
|                 | BTLE-1M        |                               | CH 39 : 2480MHz               |
|                 | BTLE-1M        |                               | CH 0 : 2402MHz                |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 45.22           | 22.6 QP                 | 40.0           | -17.4       | 1.21 H             | 65                   | 31.7             | -9.1                     |
| 2                                                    | 161.02          | 25.7 QP                 | 43.5           | -17.8       | 1.23 H             | 208                  | 34.1             | -8.4                     |
| 3                                                    | 216.55          | 24.5 QP                 | 46.0           | -21.5       | 1.57 H             | 259                  | 35.2             | -10.7                    |
| 4                                                    | 308.00          | 43.2 QP                 | 46.0           | -2.8        | 1.42 H             | 243                  | 49.2             | -6.0                     |
| 5                                                    | 902.00          | 34.1 QP                 | 46.0           | -11.9       | 1.00 H             | 301                  | 27.8             | 6.3                      |
| 6                                                    | 928.00          | 35.9 QP                 | 46.0           | -10.1       | 1.00 H             | 262                  | 29.0             | 6.9                      |

### 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

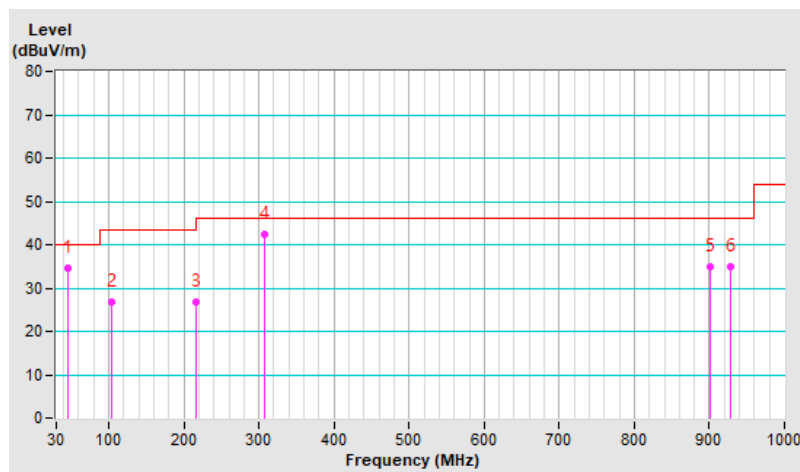


|                 |                |                               |                               |
|-----------------|----------------|-------------------------------|-------------------------------|
| RF Mode         | WCDMA Band 4   | Channel                       | CH 1413 : 1732.6MHz           |
|                 | Thread 900M    |                               | CH 0 : 906MHz                 |
|                 | BTLE-1M        |                               | CH 39 : 2480MHz               |
|                 | BTLE-1M        |                               | CH 0 : 2402MHz                |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |

| Antenna Polarity & Test Distance : Vertical at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|----------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                 | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                  | 45.00           | 34.7 QP                 | 40.0           | -5.3        | 1.35 V             | 224                  | 43.8             | -9.1                     |
| 2                                                  | 103.25          | 26.8 QP                 | 43.5           | -16.7       | 1.45 V             | 271                  | 39.6             | -12.8                    |
| 3                                                  | 215.66          | 26.9 QP                 | 43.5           | -16.6       | 1.57 V             | 226                  | 37.6             | -10.7                    |
| 4                                                  | 308.00          | 42.5 QP                 | 46.0           | -3.5        | 1.83 V             | 138                  | 48.5             | -6.0                     |
| 5                                                  | 902.00          | 35.0 QP                 | 46.0           | -11.0       | 1.67 V             | 358                  | 28.7             | 6.3                      |
| 6                                                  | 928.00          | 35.0 QP                 | 46.0           | -11.0       | 1.02 V             | 279                  | 28.1             | 6.9                      |

#### 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



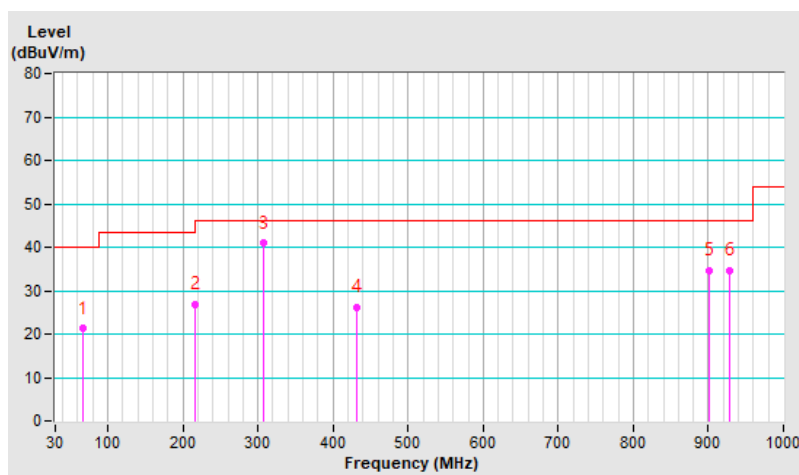
## Mode G

|                 |                |                               |                               |
|-----------------|----------------|-------------------------------|-------------------------------|
| RF Mode         | Z-Wave         | Channel                       | CH 0 : 908.4MHz               |
|                 | Zigbee         |                               | CH 25 : 2475MHz               |
|                 | 802.11g        |                               | CH 1 : 2412MHz                |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 66.42           | 21.2 QP                 | 40.0           | -18.8       | 1.28 H             | 152                  | 31.4             | -10.2                    |
| 2                                                    | 216.29          | 26.9 QP                 | 46.0           | -19.1       | 1.18 H             | 290                  | 37.6             | -10.7                    |
| 3                                                    | 308.00          | 40.9 QP                 | 46.0           | -5.1        | 1.52 H             | 144                  | 46.9             | -6.0                     |
| 4                                                    | 432.02          | 26.1 QP                 | 46.0           | -19.9       | 1.27 H             | 158                  | 29.4             | -3.3                     |
| 5                                                    | 902.00          | 34.5 QP                 | 46.0           | -11.5       | 1.57 H             | 221                  | 28.2             | 6.3                      |
| 6                                                    | 928.00          | 34.6 QP                 | 46.0           | -11.4       | 1.74 H             | 360                  | 27.7             | 6.9                      |

### 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

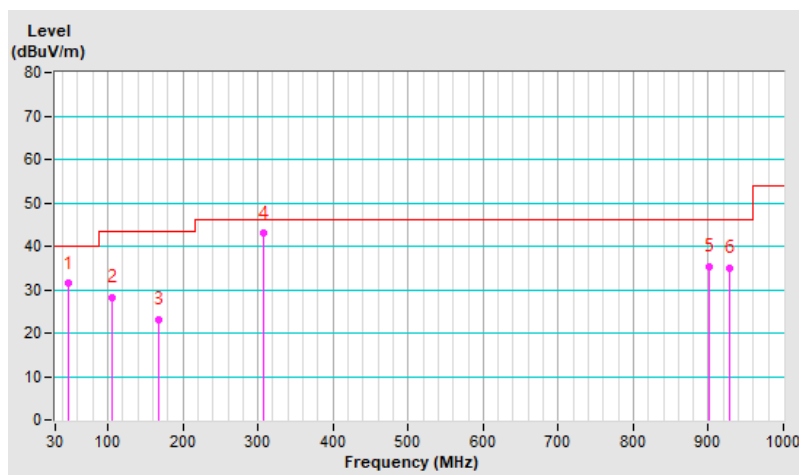


|                 |                |                               |                               |
|-----------------|----------------|-------------------------------|-------------------------------|
| RF Mode         | Z-Wave         | Channel                       | CH 0 : 908.4MHz               |
|                 | Zigbee         |                               | CH 25 : 2475MHz               |
|                 | 802.11g        |                               | CH 1 : 2412MHz                |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |

| Antenna Polarity & Test Distance : Vertical at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|----------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                 | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                  | 48.28           | 31.4 QP                 | 40.0           | -8.6        | 1.35 V             | 53                   | 40.4             | -9.0                     |
| 2                                                  | 105.56          | 28.1 QP                 | 43.5           | -15.4       | 1.18 V             | 301                  | 40.6             | -12.5                    |
| 3                                                  | 168.03          | 23.2 QP                 | 43.5           | -20.3       | 1.64 V             | 134                  | 31.8             | -8.6                     |
| 4                                                  | 308.00          | 42.9 QP                 | 46.0           | -3.1        | 1.36 V             | 251                  | 48.9             | -6.0                     |
| 5                                                  | 902.00          | 35.4 QP                 | 46.0           | -10.6       | 1.05 V             | 79                   | 29.1             | 6.3                      |
| 6                                                  | 928.00          | 35.0 QP                 | 46.0           | -11.0       | 1.10 V             | 218                  | 28.1             | 6.9                      |

#### 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



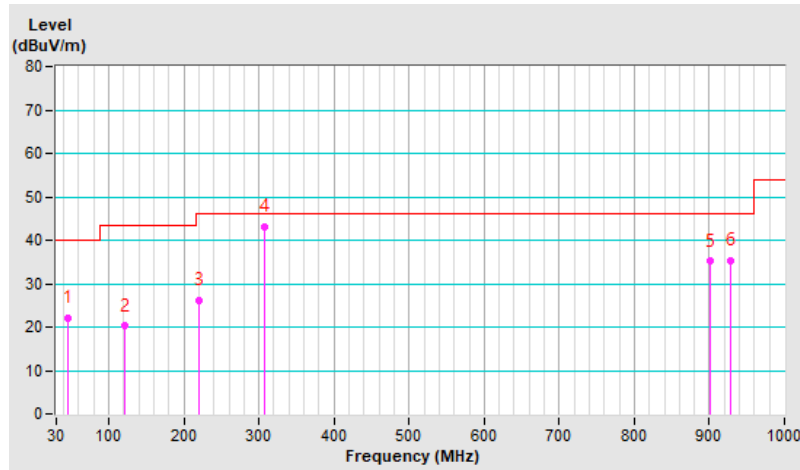
# Mode H

|                 |                |                               |                               |
|-----------------|----------------|-------------------------------|-------------------------------|
| RF Mode         | Z-Wave         | Channel                       | CH 0 : 908.4MHz               |
|                 | Thread         |                               | CH 25 : 2475MHz               |
|                 | 802.11g        |                               | CH 1 : 2412MHz                |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 45.08           | 22.1 QP                 | 40.0           | -17.9       | 1.28 H             | 99                   | 31.2             | -9.1                     |
| 2                                                    | 120.99          | 20.2 QP                 | 43.5           | -23.3       | 1.68 H             | 100                  | 31.1             | -10.9                    |
| 3                                                    | 220.02          | 26.2 QP                 | 46.0           | -19.8       | 1.51 H             | 273                  | 36.8             | -10.6                    |
| 4                                                    | 308.00          | 43.2 QP                 | 46.0           | -2.8        | 1.15 H             | 254                  | 49.2             | -6.0                     |
| 5                                                    | 902.00          | 35.1 QP                 | 46.0           | -10.9       | 1.83 H             | 321                  | 28.8             | 6.3                      |
| 6                                                    | 928.00          | 35.2 QP                 | 46.0           | -10.8       | 2.51 H             | 244                  | 28.3             | 6.9                      |

## 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

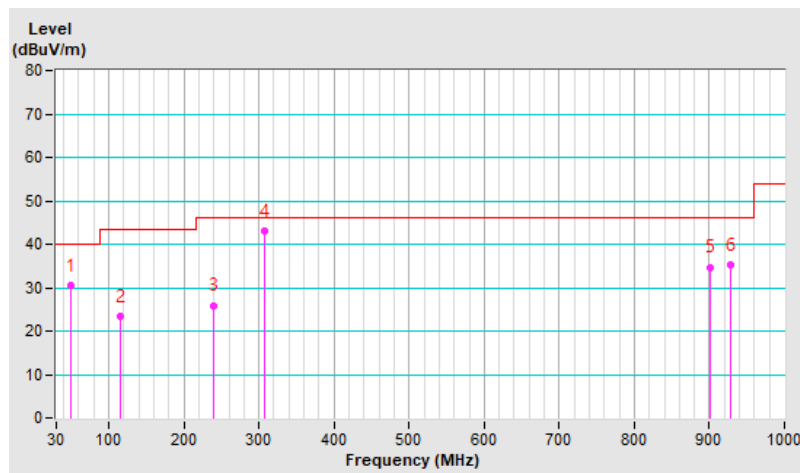


|                 |                |                               |                               |
|-----------------|----------------|-------------------------------|-------------------------------|
| RF Mode         | Z-Wave         | Channel                       | CH 0 : 908.4MHz               |
|                 | Thread         |                               | CH 25 : 2475MHz               |
|                 | 802.11g        |                               | CH 1 : 2412MHz                |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |

| Antenna Polarity & Test Distance : Vertical at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|----------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                 | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                  | 49.98           | 30.4 QP                 | 40.0           | -9.6        | 1.27 V             | 110                  | 39.4             | -9.0                     |
| 2                                                  | 115.17          | 23.3 QP                 | 43.5           | -20.2       | 1.36 V             | 332                  | 34.8             | -11.5                    |
| 3                                                  | 240.20          | 25.7 QP                 | 46.0           | -20.3       | 1.57 V             | 118                  | 34.8             | -9.1                     |
| 4                                                  | 308.00          | 42.9 QP                 | 46.0           | -3.1        | 1.87 V             | 251                  | 48.9             | -6.0                     |
| 5                                                  | 902.00          | 34.5 QP                 | 46.0           | -11.5       | 1.03 V             | 56                   | 28.2             | 6.3                      |
| 6                                                  | 928.00          | 35.1 QP                 | 46.0           | -10.9       | 1.15 V             | 259                  | 28.2             | 6.9                      |

#### 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



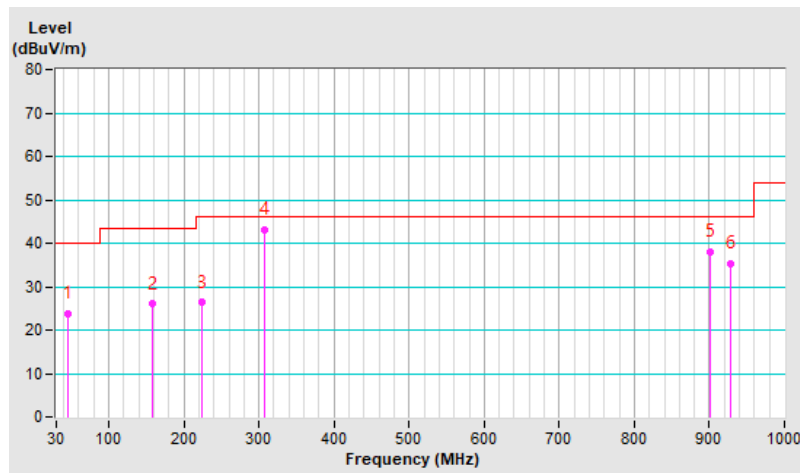
# Mode I

|                 |                |                               |                               |
|-----------------|----------------|-------------------------------|-------------------------------|
| RF Mode         | Z-Wave         | Channel                       | CH 0 : 908.4MHz               |
|                 | BTLE-1M        |                               | CH 39 : 2480MHz               |
|                 | 802.11g        |                               | CH 1 : 2412MHz                |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 45.42           | 23.7 QP                 | 40.0           | -16.3       | 1.35 H             | 180                  | 32.8             | -9.1                     |
| 2                                                    | 157.99          | 26.0 QP                 | 43.5           | -17.5       | 1.16 H             | 275                  | 34.3             | -8.3                     |
| 3                                                    | 223.32          | 26.3 QP                 | 46.0           | -19.7       | 1.09 H             | 278                  | 37.0             | -10.7                    |
| 4                                                    | 308.00          | 43.2 QP                 | 46.0           | -2.8        | 1.68 H             | 225                  | 49.2             | -6.0                     |
| 5                                                    | 902.00          | 37.9 QP                 | 46.0           | -8.1        | 1.94 H             | 152                  | 31.6             | 6.3                      |
| 6                                                    | 928.00          | 35.4 QP                 | 46.0           | -10.6       | 1.05 H             | 161                  | 28.5             | 6.9                      |

## 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

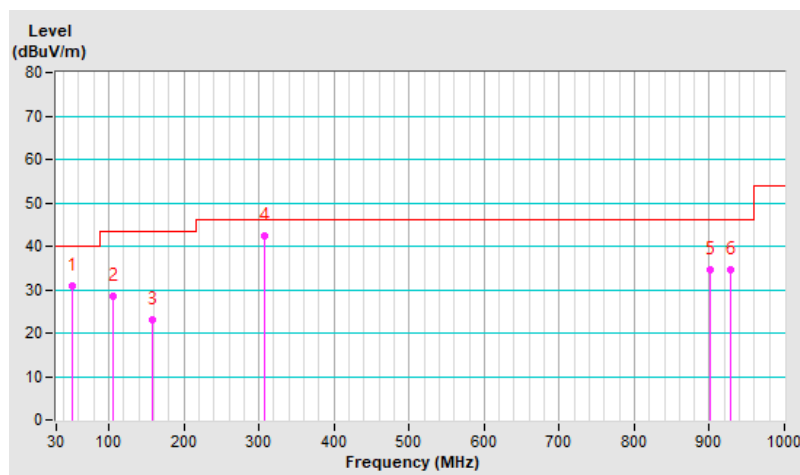


|                 |                |                               |                               |
|-----------------|----------------|-------------------------------|-------------------------------|
| RF Mode         | Z-Wave         | Channel                       | CH 0 : 908.4MHz               |
|                 | BTLE-1M        |                               | CH 39 : 2480MHz               |
|                 | 802.11g        |                               | CH 1 : 2412MHz                |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |

| Antenna Polarity & Test Distance : Vertical at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|----------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                 | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                  | 52.12           | 31.0 QP                 | 40.0           | -9.0        | 1.32 V             | 18                   | 40.0             | -9.0                     |
| 2                                                  | 106.48          | 28.5 QP                 | 43.5           | -15.0       | 1.15 V             | 288                  | 40.8             | -12.3                    |
| 3                                                  | 158.28          | 23.0 QP                 | 43.5           | -20.5       | 1.48 V             | 360                  | 31.3             | -8.3                     |
| 4                                                  | 308.00          | 42.5 QP                 | 46.0           | -3.5        | 1.21 V             | 254                  | 48.5             | -6.0                     |
| 5                                                  | 902.00          | 34.5 QP                 | 46.0           | -11.5       | 1.86 V             | 225                  | 28.2             | 6.3                      |
| 6                                                  | 928.00          | 34.6 QP                 | 46.0           | -11.4       | 1.04 V             | 322                  | 27.7             | 6.9                      |

#### 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



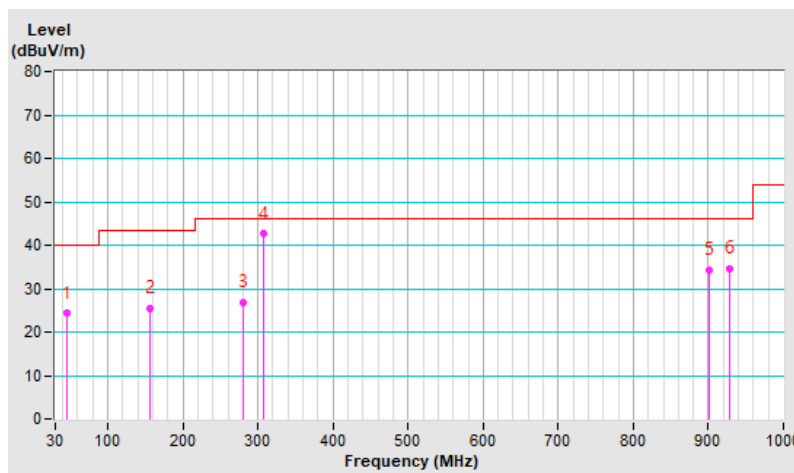
## Mode J

|                 |                |                               |                               |
|-----------------|----------------|-------------------------------|-------------------------------|
| RF Mode         | Thread 900M    | Channel                       | CH 0 : 906MHz                 |
|                 | Zigbee         |                               | CH 25 : 2475MHz               |
|                 | 802.11g        |                               | CH 1 : 2412MHz                |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 45.08           | 24.3 QP                 | 40.0           | -15.7       | 1.15 H             | 360                  | 33.4             | -9.1                     |
| 2                                                    | 156.44          | 25.4 QP                 | 43.5           | -18.1       | 1.27 H             | 285                  | 33.7             | -8.3                     |
| 3                                                    | 280.41          | 26.8 QP                 | 46.0           | -19.2       | 1.31 H             | 149                  | 33.7             | -6.9                     |
| 4                                                    | 308.00          | 42.6 QP                 | 46.0           | -3.4        | 1.57 H             | 221                  | 48.6             | -6.0                     |
| 5                                                    | 902.00          | 34.4 QP                 | 46.0           | -11.6       | 2.05 H             | 316                  | 28.1             | 6.3                      |
| 6                                                    | 928.00          | 34.7 QP                 | 46.0           | -11.3       | 1.11 H             | 111                  | 27.8             | 6.9                      |

### 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

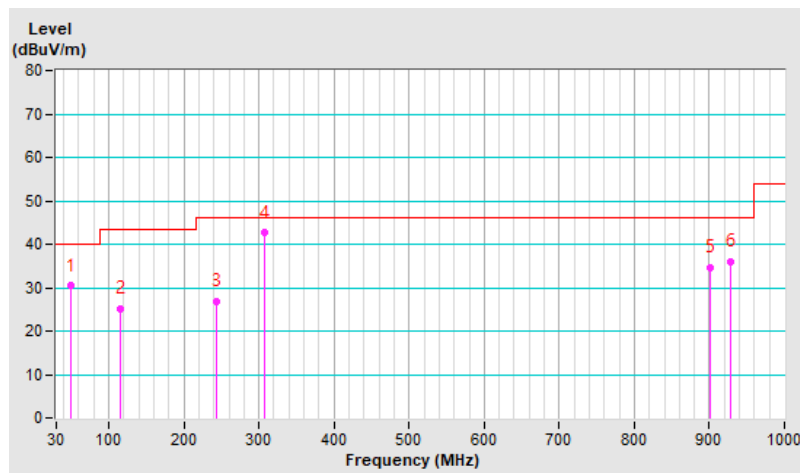


|                 |                |                               |                               |
|-----------------|----------------|-------------------------------|-------------------------------|
| RF Mode         | Thread 900M    | Channel                       | CH 0 : 906MHz                 |
|                 | Zigbee         |                               | CH 25 : 2475MHz               |
|                 | 802.11g        |                               | CH 1 : 2412MHz                |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |

| Antenna Polarity & Test Distance : Vertical at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|----------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                 | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                  | 50.32           | 30.4 QP                 | 40.0           | -9.6        | 1.36 V             | 360                  | 39.4             | -9.0                     |
| 2                                                  | 115.46          | 25.1 QP                 | 43.5           | -18.4       | 1.42 V             | 201                  | 36.6             | -11.5                    |
| 3                                                  | 244.18          | 26.9 QP                 | 46.0           | -19.1       | 1.18 V             | 55                   | 35.7             | -8.8                     |
| 4                                                  | 308.00          | 42.6 QP                 | 46.0           | -3.4        | 1.51 V             | 224                  | 48.6             | -6.0                     |
| 5                                                  | 902.00          | 34.5 QP                 | 46.0           | -11.5       | 1.64 V             | 134                  | 28.2             | 6.3                      |
| 6                                                  | 928.00          | 36.0 QP                 | 46.0           | -10.0       | 1.23 V             | 201                  | 29.1             | 6.9                      |

#### 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



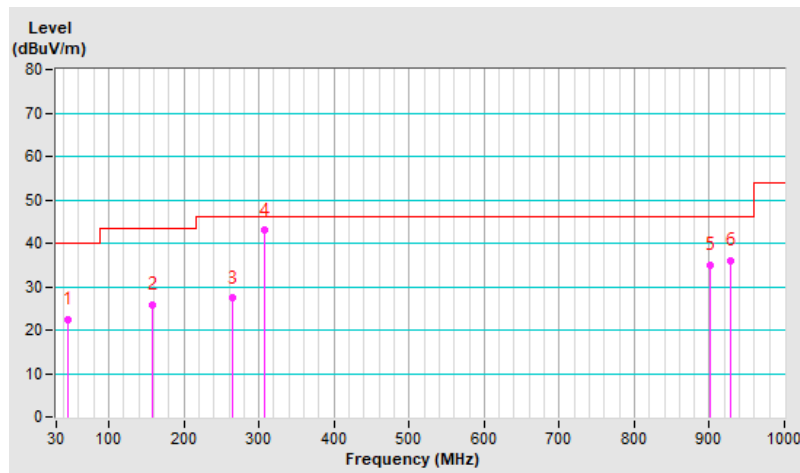
# Mode K

|                 |                |                               |                               |
|-----------------|----------------|-------------------------------|-------------------------------|
| RF Mode         | Thread 900M    | Channel                       | CH 0 : 906MHz                 |
|                 | Thread         |                               | CH 25 : 2475MHz               |
|                 | 802.11g        |                               | CH 1 : 2412MHz                |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 44.84           | 22.5 QP                 | 40.0           | -17.5       | 1.16 H             | 65                   | 31.7             | -9.2                     |
| 2                                                    | 158.48          | 25.8 QP                 | 43.5           | -17.7       | 1.28 H             | 240                  | 34.1             | -8.3                     |
| 3                                                    | 263.96          | 27.3 QP                 | 46.0           | -18.7       | 1.35 H             | 152                  | 35.1             | -7.8                     |
| 4                                                    | 308.00          | 42.9 QP                 | 46.0           | -3.1        | 1.42 H             | 221                  | 48.9             | -6.0                     |
| 5                                                    | 902.00          | 34.9 QP                 | 46.0           | -11.1       | 1.72 H             | 6                    | 28.6             | 6.3                      |
| 6                                                    | 928.00          | 35.9 QP                 | 46.0           | -10.1       | 1.35 H             | 262                  | 29.0             | 6.9                      |

## 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

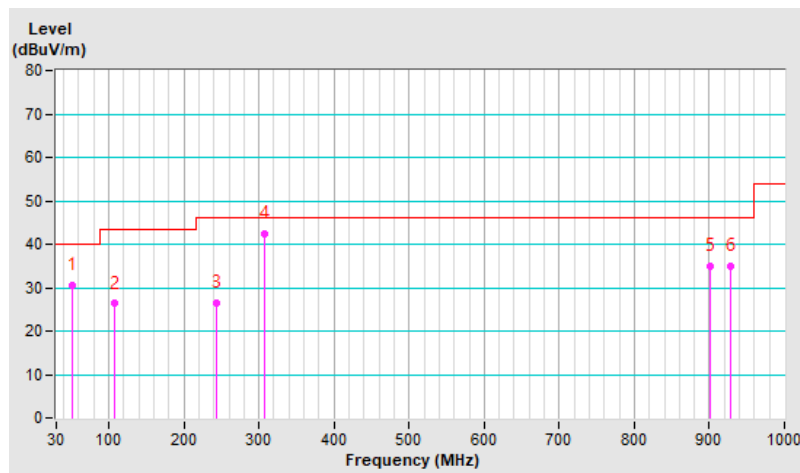


|                 |                |                               |                               |
|-----------------|----------------|-------------------------------|-------------------------------|
| RF Mode         | Thread 900M    | Channel                       | CH 0 : 906MHz                 |
|                 | Thread         |                               | CH 25 : 2475MHz               |
|                 | 802.11g        |                               | CH 1 : 2412MHz                |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |

| Antenna Polarity & Test Distance : Vertical at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|----------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                 | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                  | 51.87           | 30.6 QP                 | 40.0           | -9.4        | 1.24 V             | 127                  | 39.6             | -9.0                     |
| 2                                                  | 108.52          | 26.3 QP                 | 43.5           | -17.2       | 1.16 V             | 251                  | 38.3             | -12.0                    |
| 3                                                  | 244.08          | 26.5 QP                 | 46.0           | -19.5       | 1.27 V             | 302                  | 35.3             | -8.8                     |
| 4                                                  | 308.00          | 42.5 QP                 | 46.0           | -3.5        | 2.21 V             | 138                  | 48.5             | -6.0                     |
| 5                                                  | 902.00          | 35.0 QP                 | 46.0           | -11.0       | 1.67 V             | 225                  | 28.7             | 6.3                      |
| 6                                                  | 928.00          | 35.0 QP                 | 46.0           | -11.0       | 1.36 V             | 301                  | 28.1             | 6.9                      |

#### 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



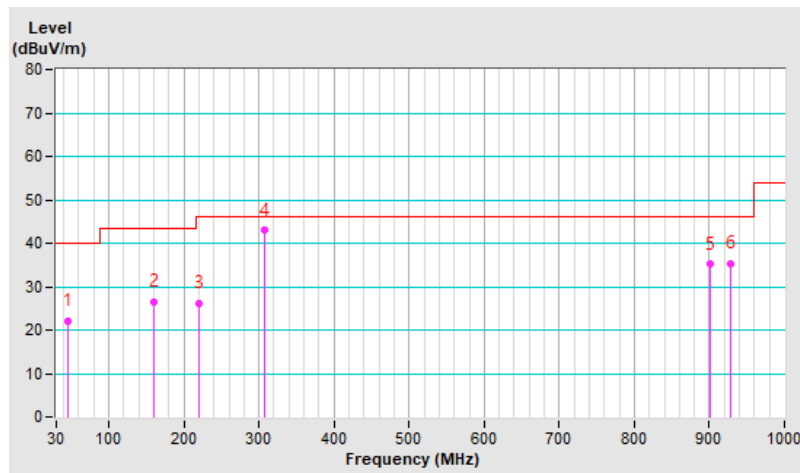
Mode L

|                 |                |                               |                               |
|-----------------|----------------|-------------------------------|-------------------------------|
| RF Mode         | Thread 900M    | Channel                       | CH 0 : 906MHz                 |
|                 | BTLE-1M        |                               | CH 39 : 2480MHz               |
|                 | 802.11g        |                               | CH 1 : 2412MHz                |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 45.08           | 22.1 QP                 | 40.0           | -17.9       | 1.11 H             | 79                   | 31.2             | -9.1                     |
| 2                                                    | 159.98          | 26.6 QP                 | 43.5           | -16.9       | 1.24 H             | 269                  | 34.9             | -8.3                     |
| 3                                                    | 220.02          | 26.2 QP                 | 46.0           | -19.8       | 1.32 H             | 273                  | 36.8             | -10.6                    |
| 4                                                    | 308.00          | 42.9 QP                 | 46.0           | -3.1        | 1.53 H             | 251                  | 48.9             | -6.0                     |
| 5                                                    | 902.00          | 35.1 QP                 | 46.0           | -10.9       | 1.83 H             | 55                   | 28.8             | 6.3                      |
| 6                                                    | 928.00          | 35.2 QP                 | 46.0           | -10.8       | 1.91 H             | 211                  | 28.3             | 6.9                      |

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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

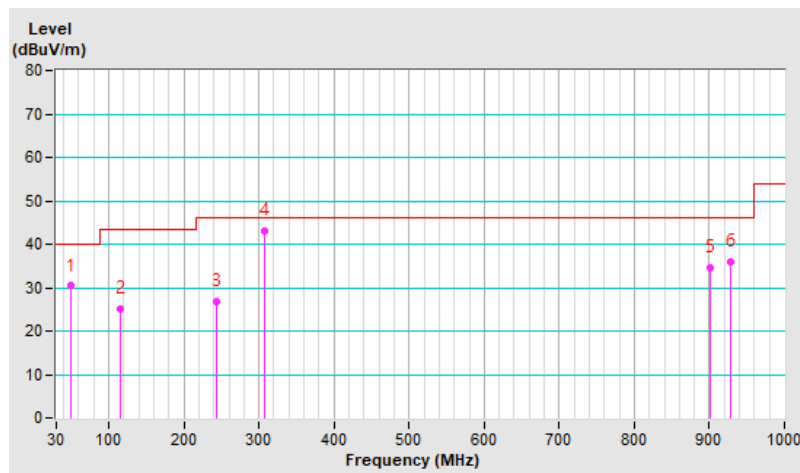


|                 |                |                               |                               |
|-----------------|----------------|-------------------------------|-------------------------------|
| RF Mode         | Thread 900M    | Channel                       | CH 0 : 906MHz                 |
|                 | BTLE-1M        |                               | CH 39 : 2480MHz               |
|                 | 802.11g        |                               | CH 1 : 2412MHz                |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |

| Antenna Polarity & Test Distance : Vertical at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|----------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                 | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                  | 50.32           | 30.4 QP                 | 40.0           | -9.6        | 1.25 V             | 360                  | 39.4             | -9.0                     |
| 2                                                  | 115.46          | 25.1 QP                 | 43.5           | -18.4       | 1.24 V             | 201                  | 36.6             | -11.5                    |
| 3                                                  | 244.18          | 26.9 QP                 | 46.0           | -19.1       | 1.32 V             | 55                   | 35.7             | -8.8                     |
| 4                                                  | 308.00          | 43.1 QP                 | 46.0           | -2.9        | 1.46 V             | 251                  | 49.1             | -6.0                     |
| 5                                                  | 902.00          | 34.5 QP                 | 46.0           | -11.5       | 1.15 V             | 251                  | 28.2             | 6.3                      |
| 6                                                  | 928.00          | 36.0 QP                 | 46.0           | -10.0       | 1.22 V             | 105                  | 29.1             | 6.9                      |

#### 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



## 4.2 Radiated Emissions above 1 GHz

### 4.2.1 Limits

#### Radio 2: For Z-Wave

The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following

| Fundamental Frequency | Field Strength of Fundamental (millivolts/meter) | Field Strength of Harmonics (microvolts/meter) |
|-----------------------|--------------------------------------------------|------------------------------------------------|
| 902 ~ 928 MHz         | 50                                               | 500                                            |

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits as below table, whichever is the lesser attenuation

| Frequencies (MHz) | Field Strength (microvolts/meter) | Measurement Distance (meters) |
|-------------------|-----------------------------------|-------------------------------|
| Above 960         | 500                               | 3                             |

#### Notes:

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 1000 MHz, 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 20 dB under any condition of modulation.

#### Radio 2: For Thread 900M ; Radio 3: For Thread, Zigbee, BTLE ; Radio 4: WLAN, BTLE

Radiated emissions above 1 GHz which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20 dB below the highest level of the desired power:

| Frequencies (MHz) | Field Strength (microvolts/meter) | Measurement Distance (meters) |
|-------------------|-----------------------------------|-------------------------------|
| Above 960         | 500                               | 3                             |

#### Notes:

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 1000 MHz, 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 20 dB under any condition of modulation.

#### 4.2.2 Test Instruments

| Description<br>Manufacturer           | Model No.           | Serial No.   | Calibrated<br>Date | Calibrated<br>Until |
|---------------------------------------|---------------------|--------------|--------------------|---------------------|
| Band Pass Filter<br>Micro-Tronics     | BRM17690            | 005          | 2023/5/25          | 2024/5/24           |
| Boresight antenna tower fixture<br>BV | BAF-02              | 6            | N/A                | N/A                 |
| High Pass Filter<br>Wainwright        | WHK 3.1/18G-10SS    | SN 8         | 2023/5/25          | 2024/5/24           |
| Horn Antenna<br>EMCO                  | 3115                | 00028257     | 2023/11/12         | 2024/11/11          |
| Horn Antenna<br>ETS-Lindgren          | 3117-PA             | 00215857     | 2023/11/12         | 2024/11/11          |
| Horn Antenna<br>Schwarzbeck           | BBHA 9170           | 212          | 2023/10/16         | 2024/10/15          |
|                                       |                     | BBHA9170241  | 2023/10/16         | 2024/10/15          |
| MXE EMI Receiver<br>Agilent           | N9038A              | MY51210129   | 2023/3/24          | 2024/3/23           |
|                                       |                     | MY51210137   | 2023/6/5           | 2024/6/4            |
| Notch Filter<br>Micro-Tronics         | BRC50703-01         | 010          | 2023/5/25          | 2024/5/24           |
| Preamplifier<br>EMCI                  | EMC0126545          | 980076       | 2023/2/16          | 2024/2/15           |
|                                       | EMC184045B          | 980175       | 2023/9/2           | 2024/9/1            |
|                                       |                     | 980235       | 2023/2/16          | 2024/2/15           |
| Preamplifier<br>HP                    | 8449B               | 3008A01201   | 2023/2/16          | 2024/2/15           |
| RF Coaxial Cable<br>EMCI              | EMC102-KM-KM-1000   | 200310       | 2023/3/12          | 2024/3/11           |
|                                       | EMC104              | 190801       | 2023/9/13          | 2024/9/12           |
|                                       |                     | 190804       | 2023/9/13          | 2024/9/12           |
| RF Coaxial Cable<br>HUBER+SUHNER      | SF-104              | Cable-CH6-01 | 2023/9/13          | 2024/9/12           |
| Signal Analyzer<br>R&S                | FSV40               | 101042       | 2023/9/5           | 2024/9/4            |
|                                       |                     | 101544       | 2023/5/9           | 2024/5/8            |
| Software<br>BVADT                     | Radiated_V7.7.1.1.1 | N/A          | N/A                | N/A                 |
| Tower<br>ADT                          | AT100               | 0306         | N/A                | N/A                 |
| Turn Table<br>ADT                     | TT100               | 0306         | N/A                | N/A                 |

#### Notes:

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 Linkou 966 Chamber 6 (CH 6).
3. Tested Date: 2023/11/24 ~ 2023/12/1

#### 4.2.3 Test Procedures

- The EUT was placed on the top of a rotating table 1.5 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- 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.
- The test-receiver system was set to peak and average detects 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.

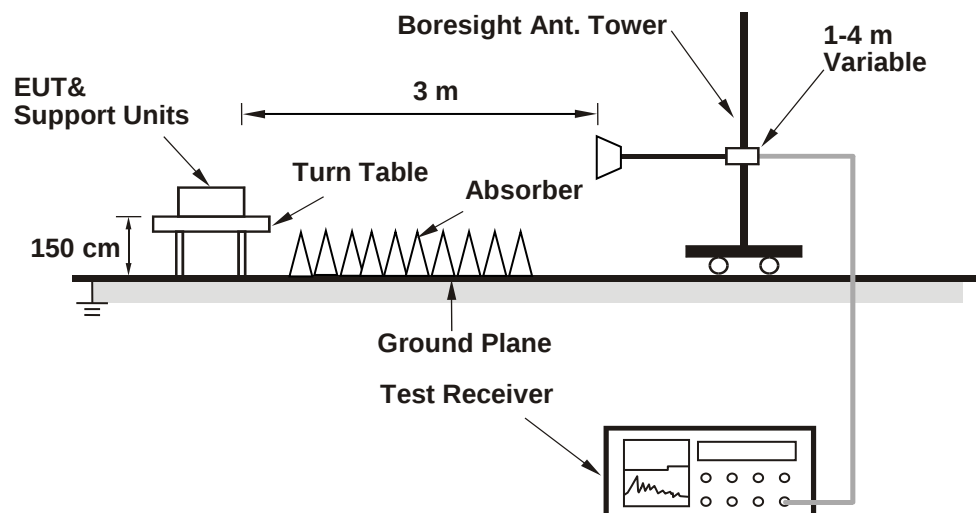
#### Notes:

- The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) and Average detection (AV) at frequency above 1 GHz.
- According to ANSI C63.10 section 6.6.4 and 4.1.4.2.2. For fundamental and harmonic signal measurement, according to ANSI C63.10 section 7.5, the average value = peak value + duty cycle correction factor. For duty cycle correction factor values, see the Test Signal Duty Cycle section in this report.
- All modes of operation were investigated and the worst-case emissions are reported.

#### 4.2.4 Deviation From Test Standard

No deviation.

#### 4.2.5 Test Setup



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

#### 4.2.6 EUT Operating Condition

Same as item 4.1.6.

#### 4.2.7 Test Results

##### Mode A

|                 |                |         |                     |
|-----------------|----------------|---------|---------------------|
| RF Mode         | WCDMA Band 4   | Channel | CH 1413 : 1732.6MHz |
|                 | Z-Wave         |         | CH 0 : 908.4MHz     |
|                 | Zigbee         |         | CH 25 : 2475MHz     |
|                 | BTLE-1M        |         | CH 0 : 2402MHz      |
| Frequency Range | 1 GHz ~ 25 GHz |         |                     |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 1155.10         | 46.1 PK                 | 74.0           | -27.9       | 1.36 H             | 285                  | 54.2             | -8.1                     |
| 2                                                    | 1155.10         | 35.0 AV                 | 54.0           | -19.0       | 1.36 H             | 285                  | 43.1             | -8.1                     |
| 3                                                    | 2390.00         | 55.6 PK                 | 74.0           | -18.4       | 1.45 H             | 322                  | 56.8             | -1.2                     |
| 4                                                    | 2390.00         | 46.9 AV                 | 54.0           | -7.1        | 1.45 H             | 322                  | 48.1             | -1.2                     |
| 5                                                    | 2483.50         | 65.6 PK                 | 74.0           | -8.4        | 1.45 H             | 322                  | 66.6             | -1.0                     |
| 6                                                    | 2483.50         | 50.2 AV                 | 54.0           | -3.8        | 1.45 H             | 322                  | 51.2             | -1.0                     |
| 7                                                    | 2725.20         | 44.0 PK                 | 74.0           | -30.0       | 1.38 H             | 291                  | 44.0             | 0.0                      |
| 8                                                    | 2725.20         | 35.9 AV                 | 54.0           | -18.1       | 1.38 H             | 291                  | 35.9             | 0.0                      |
| 9                                                    | 4804.00         | 47.9 PK                 | 74.0           | -26.1       | 1.76 H             | 295                  | 39.9             | 8.0                      |
| 10                                                   | 4804.00         | 37.4 AV                 | 54.0           | -16.6       | 1.76 H             | 295                  | 29.4             | 8.0                      |
| 11                                                   | 4950.00         | 54.3 PK                 | 74.0           | -19.7       | 2.97 H             | 346                  | 46.4             | 7.9                      |
| 12                                                   | 4950.00         | 46.2 AV                 | 54.0           | -7.8        | 2.97 H             | 346                  | 38.3             | 7.9                      |
| 13                                                   | 7425.00         | 56.8 PK                 | 74.0           | -17.2       | 1.00 H             | 49                   | 44.3             | 12.5                     |
| 14                                                   | 7425.00         | 47.1 AV                 | 54.0           | -6.9        | 1.00 H             | 49                   | 34.6             | 12.5                     |
| Antenna Polarity & Test Distance : Vertical at 3 m   |                 |                         |                |             |                    |                      |                  |                          |
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 1155.10         | 43.8 PK                 | 74.0           | -30.2       | 1.68 V             | 95                   | 51.9             | -8.1                     |
| 2                                                    | 1155.10         | 33.5 AV                 | 54.0           | -20.5       | 1.68 V             | 95                   | 41.6             | -8.1                     |
| 3                                                    | 2390.00         | 53.9 PK                 | 74.0           | -20.1       | 1.51 V             | 66                   | 55.1             | -1.2                     |
| 4                                                    | 2390.00         | 44.2 AV                 | 54.0           | -9.8        | 1.51 V             | 66                   | 45.4             | -1.2                     |
| 5                                                    | 2483.50         | 61.7 PK                 | 74.0           | -12.3       | 1.51 V             | 66                   | 62.7             | -1.0                     |
| 6                                                    | 2483.50         | 47.8 AV                 | 54.0           | -6.2        | 1.51 V             | 66                   | 48.8             | -1.0                     |
| 7                                                    | 2725.20         | 42.9 PK                 | 74.0           | -31.1       | 1.24 V             | 135                  | 42.9             | 0.0                      |
| 8                                                    | 2725.20         | 34.8 AV                 | 54.0           | -19.2       | 1.24 V             | 135                  | 34.8             | 0.0                      |
| 9                                                    | 4804.00         | 47.4 PK                 | 74.0           | -26.6       | 2.45 V             | 132                  | 39.4             | 8.0                      |
| 10                                                   | 4804.00         | 37.5 AV                 | 54.0           | -16.5       | 2.45 V             | 132                  | 29.5             | 8.0                      |
| 11                                                   | 4950.00         | 56.2 PK                 | 74.0           | -17.8       | 2.61 V             | 307                  | 48.3             | 7.9                      |
| 12                                                   | 4950.00         | 49.2 AV                 | 54.0           | -4.8        | 2.61 V             | 307                  | 41.3             | 7.9                      |
| 13                                                   | 7425.00         | 60.3 PK                 | 74.0           | -13.7       | 2.52 V             | 286                  | 47.8             | 12.5                     |
| 14                                                   | 7425.00         | 53.3 AV                 | 54.0           | -0.7        | 2.52 V             | 286                  | 40.8             | 12.5                     |

##### 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

## Mode B

|                 |                |         |                     |
|-----------------|----------------|---------|---------------------|
| RF Mode         | WCDMA Band 4   | Channel | CH 1413 : 1732.6MHz |
|                 | Z-Wave         |         | CH 0 : 908.4MHz     |
|                 | Thread         |         | CH 25 : 2475MHz     |
|                 | BTLE-1M        |         | CH 0 : 2402MHz      |
| Frequency Range | 1 GHz ~ 25 GHz |         |                     |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 1155.10         | 46.4 PK                 | 74.0           | -27.6       | 1.32 H             | 189                  | 54.5             | -8.1                     |
| 2                                                    | 1155.10         | 35.3 AV                 | 54.0           | -18.7       | 1.32 H             | 189                  | 43.4             | -8.1                     |
| 3                                                    | 2390.00         | 53.6 PK                 | 74.0           | -20.4       | 1.48 H             | 346                  | 54.8             | -1.2                     |
| 4                                                    | 2390.00         | 43.4 AV                 | 54.0           | -10.6       | 1.48 H             | 346                  | 44.6             | -1.2                     |
| 5                                                    | 2483.50         | 69.4 PK                 | 74.0           | -4.6        | 2.21 H             | 235                  | 70.4             | -1.0                     |
| 6                                                    | 2483.50         | 51.3 AV                 | 54.0           | -2.7        | 2.21 H             | 235                  | 52.3             | -1.0                     |
| 7                                                    | 2725.20         | 43.9 PK                 | 74.0           | -30.1       | 1.41 H             | 128                  | 43.9             | 0.0                      |
| 8                                                    | 2725.20         | 35.8 AV                 | 54.0           | -18.2       | 1.41 H             | 128                  | 35.8             | 0.0                      |
| 9                                                    | 4804.00         | 48.4 PK                 | 74.0           | -25.6       | 1.77 H             | 323                  | 40.4             | 8.0                      |
| 10                                                   | 4804.00         | 38.5 AV                 | 54.0           | -15.5       | 1.77 H             | 323                  | 30.5             | 8.0                      |
| 11                                                   | 4950.00         | 56.0 PK                 | 74.0           | -18.0       | 1.42 H             | 152                  | 48.1             | 7.9                      |
| 12                                                   | 4950.00         | 43.3 AV                 | 54.0           | -10.7       | 1.42 H             | 152                  | 35.4             | 7.9                      |
| 13                                                   | 7425.00         | 57.4 PK                 | 74.0           | -16.6       | 1.73 H             | 288                  | 44.9             | 12.5                     |
| 14                                                   | 7425.00         | 45.8 AV                 | 54.0           | -8.2        | 1.73 H             | 288                  | 33.3             | 12.5                     |
| Antenna Polarity & Test Distance : Vertical at 3 m   |                 |                         |                |             |                    |                      |                  |                          |
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 1155.10         | 44.1 PK                 | 74.0           | -29.9       | 2.28 V             | 194                  | 52.2             | -8.1                     |
| 2                                                    | 1155.10         | 33.8 AV                 | 54.0           | -20.2       | 2.28 V             | 194                  | 41.9             | -8.1                     |
| 3                                                    | 2390.00         | 53.2 PK                 | 74.0           | -20.8       | 2.86 V             | 43                   | 54.4             | -1.2                     |
| 4                                                    | 2390.00         | 42.8 AV                 | 54.0           | -11.2       | 2.86 V             | 43                   | 44.0             | -1.2                     |
| 5                                                    | 2483.50         | 67.0 PK                 | 74.0           | -7.0        | 3.05 V             | 238                  | 68.0             | -1.0                     |
| 6                                                    | 2483.50         | 48.7 AV                 | 54.0           | -5.3        | 3.05 V             | 238                  | 49.7             | -1.0                     |
| 7                                                    | 2725.20         | 42.8 PK                 | 74.0           | -31.2       | 1.64 V             | 138                  | 42.8             | 0.0                      |
| 8                                                    | 2725.20         | 34.7 AV                 | 54.0           | -19.3       | 1.64 V             | 138                  | 34.7             | 0.0                      |
| 9                                                    | 4804.00         | 47.9 PK                 | 74.0           | -26.1       | 2.53 V             | 142                  | 39.9             | 8.0                      |
| 10                                                   | 4804.00         | 38.0 AV                 | 54.0           | -16.0       | 2.53 V             | 142                  | 30.0             | 8.0                      |
| 11                                                   | 4950.00         | 55.6 PK                 | 74.0           | -18.4       | 1.93 V             | 123                  | 47.7             | 7.9                      |
| 12                                                   | 4950.00         | 44.2 AV                 | 54.0           | -9.8        | 1.93 V             | 123                  | 36.3             | 7.9                      |
| 13                                                   | 7425.00         | 60.3 PK                 | 74.0           | -13.7       | 2.33 V             | 211                  | 47.8             | 12.5                     |
| 14                                                   | 7425.00         | 49.3 AV                 | 54.0           | -4.7        | 2.33 V             | 211                  | 36.8             | 12.5                     |

### 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

# Mode C

|                 |                |         |                     |
|-----------------|----------------|---------|---------------------|
| RF Mode         | WCDMA Band 4   | Channel | CH 1413 : 1732.6MHz |
|                 | Z-Wave         |         | CH 0 : 908.4MHz     |
|                 | BTLE-1M        |         | CH 39 : 2480MHz     |
|                 | BTLE-1M        |         | CH 0 : 2402MHz      |
| Frequency Range | 1 GHz ~ 25 GHz |         |                     |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 1155.10         | 46.6 PK                 | 74.0           | -27.4       | 1.28 H             | 178                  | 54.7             | -8.1                     |
| 2                                                    | 1155.10         | 35.5 AV                 | 54.0           | -18.5       | 1.28 H             | 178                  | 43.6             | -8.1                     |
| 3                                                    | 2390.00         | 52.8 PK                 | 74.0           | -21.2       | 3.05 H             | 32                   | 54.0             | -1.2                     |
| 4                                                    | 2390.00         | 42.4 AV                 | 54.0           | -11.6       | 3.05 H             | 32                   | 43.6             | -1.2                     |
| 5                                                    | 2483.50         | 62.0 PK                 | 74.0           | -12.0       | 1.08 H             | 210                  | 63.0             | -1.0                     |
| 6                                                    | 2483.50         | 48.5 AV                 | 54.0           | -5.5        | 1.08 H             | 210                  | 49.5             | -1.0                     |
| 7                                                    | 2725.20         | 44.1 PK                 | 74.0           | -29.9       | 1.26 H             | 114                  | 44.1             | 0.0                      |
| 8                                                    | 2725.20         | 36.0 AV                 | 54.0           | -18.0       | 1.26 H             | 114                  | 36.0             | 0.0                      |
| 9                                                    | 4804.00         | 48.0 PK                 | 74.0           | -26.0       | 1.52 H             | 313                  | 40.0             | 8.0                      |
| 10                                                   | 4804.00         | 38.1 AV                 | 54.0           | -15.9       | 1.52 H             | 313                  | 30.1             | 8.0                      |
| 11                                                   | 4960.00         | 56.8 PK                 | 74.0           | -17.2       | 2.56 H             | 111                  | 48.9             | 7.9                      |
| 12                                                   | 4960.00         | 50.1 AV                 | 54.0           | -3.9        | 2.56 H             | 111                  | 42.2             | 7.9                      |
| Antenna Polarity & Test Distance : Vertical at 3 m   |                 |                         |                |             |                    |                      |                  |                          |
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 1155.10         | 44.3 PK                 | 74.0           | -29.7       | 2.03 V             | 254                  | 52.4             | -8.1                     |
| 2                                                    | 1155.10         | 34.0 AV                 | 54.0           | -20.0       | 2.03 V             | 254                  | 42.1             | -8.1                     |
| 3                                                    | 2390.00         | 52.8 PK                 | 74.0           | -21.2       | 2.74 V             | 58                   | 54.0             | -1.2                     |
| 4                                                    | 2390.00         | 42.4 AV                 | 54.0           | -11.6       | 2.74 V             | 58                   | 43.6             | -1.2                     |
| 5                                                    | 2483.50         | 62.0 PK                 | 74.0           | -12.0       | 1.10 V             | 237                  | 63.0             | -1.0                     |
| 6                                                    | 2483.50         | 48.5 AV                 | 54.0           | -5.5        | 1.10 V             | 237                  | 49.5             | -1.0                     |
| 7                                                    | 2725.20         | 43.0 PK                 | 74.0           | -31.0       | 1.66 V             | 124                  | 43.0             | 0.0                      |
| 8                                                    | 2725.20         | 34.9 AV                 | 54.0           | -19.1       | 1.66 V             | 124                  | 34.9             | 0.0                      |
| 9                                                    | 4804.00         | 47.5 PK                 | 74.0           | -26.5       | 2.55 V             | 163                  | 39.5             | 8.0                      |
| 10                                                   | 4804.00         | 37.6 AV                 | 54.0           | -16.4       | 2.55 V             | 163                  | 29.6             | 8.0                      |
| 11                                                   | 4960.00         | 56.8 PK                 | 74.0           | -17.2       | 2.53 V             | 114                  | 48.9             | 7.9                      |
| 12                                                   | 4960.00         | 50.1 AV                 | 54.0           | -3.9        | 2.53 V             | 114                  | 42.2             | 7.9                      |

## 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

## Mode D

|                 |                |         |                     |
|-----------------|----------------|---------|---------------------|
| RF Mode         | WCDMA Band 4   | Channel | CH 1413 : 1732.6MHz |
|                 | Thread 900M    |         | CH 0 : 906MHz       |
|                 | Zigbee         |         | CH 25 : 2475MHz     |
|                 | BTLE-1M        |         | CH 0 : 2402MHz      |
| Frequency Range | 1 GHz ~ 25 GHz |         |                     |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 1155.10         | 46.8 PK                 | 74.0           | -27.2       | 1.86 H             | 125                  | 54.9             | -8.1                     |
| 2                                                    | 1155.10         | 35.7 AV                 | 54.0           | -18.3       | 1.86 H             | 125                  | 43.8             | -8.1                     |
| 3                                                    | 2390.00         | 53.5 PK                 | 74.0           | -20.5       | 1.40 H             | 325                  | 54.7             | -1.2                     |
| 4                                                    | 2390.00         | 43.3 AV                 | 54.0           | -10.7       | 1.40 H             | 325                  | 44.5             | -1.2                     |
| 5                                                    | 2483.50         | 69.2 PK                 | 74.0           | -4.8        | 2.17 H             | 325                  | 70.2             | -1.0                     |
| 6                                                    | 2483.50         | 51.4 AV                 | 54.0           | -2.6        | 2.17 H             | 325                  | 52.4             | -1.0                     |
| 7                                                    | 2718.00         | 57.6 PK                 | 74.0           | -16.4       | 2.86 H             | 254                  | 57.6             | 0.0                      |
| 8                                                    | 2718.00         | 53.4 AV                 | 54.0           | -0.6        | 2.86 H             | 254                  | 53.4             | 0.0                      |
| 9                                                    | 4804.00         | 48.3 PK                 | 74.0           | -25.7       | 1.44 H             | 279                  | 40.3             | 8.0                      |
| 10                                                   | 4804.00         | 38.4 AV                 | 54.0           | -15.6       | 1.44 H             | 279                  | 30.4             | 8.0                      |
| 11                                                   | 4950.00         | 56.1 PK                 | 74.0           | -17.9       | 1.61 H             | 179                  | 48.2             | 7.9                      |
| 12                                                   | 4950.00         | 43.4 AV                 | 54.0           | -10.6       | 1.61 H             | 179                  | 35.5             | 7.9                      |
| 13                                                   | 7425.00         | 57.7 PK                 | 74.0           | -16.3       | 1.77 H             | 263                  | 45.2             | 12.5                     |
| 14                                                   | 7425.00         | 46.0 AV                 | 54.0           | -8.0        | 1.77 H             | 263                  | 33.5             | 12.5                     |

| Antenna Polarity & Test Distance : Vertical at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|----------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                 | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                  | 1155.10         | 44.5 PK                 | 74.0           | -29.5       | 2.58 V             | 124                  | 52.6             | -8.1                     |
| 2                                                  | 1155.10         | 34.2 AV                 | 54.0           | -19.8       | 2.58 V             | 124                  | 42.3             | -8.1                     |
| 3                                                  | 2390.00         | 53.1 PK                 | 74.0           | -20.9       | 2.99 V             | 20                   | 54.3             | -1.2                     |
| 4                                                  | 2390.00         | 42.7 AV                 | 54.0           | -11.3       | 2.99 V             | 20                   | 43.9             | -1.2                     |
| 5                                                  | 2483.50         | 67.2 PK                 | 74.0           | -6.8        | 3.58 V             | 295                  | 68.2             | -1.0                     |
| 6                                                  | 2483.50         | 49.0 AV                 | 54.0           | -5.0        | 3.58 V             | 295                  | 50.0             | -1.0                     |
| 7                                                  | 2718.00         | 58.0 PK                 | 74.0           | -16.0       | 2.99 V             | 143                  | 58.0             | 0.0                      |
| 8                                                  | 2718.00         | 53.9 AV                 | 54.0           | -0.1        | 2.99 V             | 143                  | 53.9             | 0.0                      |
| 9                                                  | 4804.00         | 47.8 PK                 | 74.0           | -26.2       | 2.30 V             | 161                  | 39.8             | 8.0                      |
| 10                                                 | 4804.00         | 37.9 AV                 | 54.0           | -16.1       | 2.30 V             | 161                  | 29.9             | 8.0                      |
| 11                                                 | 4950.00         | 55.7 PK                 | 74.0           | -18.3       | 2.16 V             | 134                  | 47.8             | 7.9                      |
| 12                                                 | 4950.00         | 44.3 AV                 | 54.0           | -9.7        | 2.16 V             | 134                  | 36.4             | 7.9                      |
| 13                                                 | 7425.00         | 60.4 PK                 | 74.0           | -13.6       | 2.66 V             | 291                  | 47.9             | 12.5                     |
| 14                                                 | 7425.00         | 49.5 AV                 | 54.0           | -4.5        | 2.66 V             | 291                  | 37.0             | 12.5                     |

### 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

## Mode E

|                 |                |         |                     |
|-----------------|----------------|---------|---------------------|
| RF Mode         | WCDMA Band 4   | Channel | CH 1413 : 1732.6MHz |
|                 | Thread 900M    |         | CH 0 : 906MHz       |
|                 | Thread         |         | CH 25 : 2475MHz     |
|                 | BTLE-1M        |         | CH 0 : 2402MHz      |
| Frequency Range | 1 GHz ~ 25 GHz |         |                     |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 1155.10         | 47.0 PK                 | 74.0           | -27.0       | 1.35 H             | 147                  | 55.1             | -8.1                     |
| 2                                                    | 1155.10         | 35.9 AV                 | 54.0           | -18.1       | 1.35 H             | 147                  | 44.0             | -8.1                     |
| 3                                                    | 2390.00         | 53.4 PK                 | 74.0           | -20.6       | 1.50 H             | 343                  | 54.6             | -1.2                     |
| 4                                                    | 2390.00         | 43.2 AV                 | 54.0           | -10.8       | 1.50 H             | 343                  | 44.4             | -1.2                     |
| 5                                                    | 2483.50         | 68.9 PK                 | 74.0           | -5.1        | 2.38 H             | 257                  | 69.9             | -1.0                     |
| 6                                                    | 2483.50         | 51.1 AV                 | 54.0           | -2.9        | 2.38 H             | 257                  | 52.1             | -1.0                     |
| 7                                                    | 2718.00         | 57.6 PK                 | 74.0           | -16.4       | 2.81 H             | 255                  | 57.6             | 0.0                      |
| 8                                                    | 2718.00         | 53.4 AV                 | 54.0           | -0.6        | 2.81 H             | 255                  | 53.4             | 0.0                      |
| 9                                                    | 4804.00         | 48.2 PK                 | 74.0           | -25.8       | 1.69 H             | 295                  | 40.2             | 8.0                      |
| 10                                                   | 4804.00         | 38.3 AV                 | 54.0           | -15.7       | 1.69 H             | 295                  | 30.3             | 8.0                      |
| 11                                                   | 4950.00         | 55.8 PK                 | 74.0           | -18.2       | 1.68 H             | 200                  | 47.9             | 7.9                      |
| 12                                                   | 4950.00         | 43.1 AV                 | 54.0           | -10.9       | 1.68 H             | 200                  | 35.2             | 7.9                      |
| 13                                                   | 7425.00         | 57.2 PK                 | 74.0           | -16.8       | 1.81 H             | 239                  | 44.7             | 12.5                     |
| 14                                                   | 7425.00         | 45.6 AV                 | 54.0           | -8.4        | 1.81 H             | 239                  | 33.1             | 12.5                     |
| Antenna Polarity & Test Distance : Vertical at 3 m   |                 |                         |                |             |                    |                      |                  |                          |
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 1155.10         | 44.7 PK                 | 74.0           | -29.3       | 1.88 V             | 233                  | 52.8             | -8.1                     |
| 2                                                    | 1155.10         | 34.4 AV                 | 54.0           | -19.6       | 1.88 V             | 233                  | 42.5             | -8.1                     |
| 3                                                    | 2390.00         | 53.0 PK                 | 74.0           | -21.0       | 2.97 V             | 18                   | 54.2             | -1.2                     |
| 4                                                    | 2390.00         | 42.6 AV                 | 54.0           | -11.4       | 2.97 V             | 18                   | 43.8             | -1.2                     |
| 5                                                    | 2483.50         | 66.8 PK                 | 74.0           | -7.2        | 3.52 V             | 296                  | 67.8             | -1.0                     |
| 6                                                    | 2483.50         | 48.5 AV                 | 54.0           | -5.5        | 3.52 V             | 296                  | 49.5             | -1.0                     |
| 7                                                    | 2718.00         | 58.0 PK                 | 74.0           | -16.0       | 2.98 V             | 177                  | 58.0             | 0.0                      |
| 8                                                    | 2718.00         | 53.9 AV                 | 54.0           | -0.1        | 2.98 V             | 177                  | 53.9             | 0.0                      |
| 9                                                    | 4804.00         | 47.7 PK                 | 74.0           | -26.3       | 2.51 V             | 160                  | 39.7             | 8.0                      |
| 10                                                   | 4804.00         | 37.8 AV                 | 54.0           | -16.2       | 2.51 V             | 160                  | 29.8             | 8.0                      |
| 11                                                   | 4950.00         | 55.4 PK                 | 74.0           | -18.6       | 2.29 V             | 137                  | 47.5             | 7.9                      |
| 12                                                   | 4950.00         | 44.0 AV                 | 54.0           | -10.0       | 2.29 V             | 137                  | 36.1             | 7.9                      |
| 13                                                   | 7425.00         | 60.1 PK                 | 74.0           | -13.9       | 2.89 V             | 263                  | 47.6             | 12.5                     |
| 14                                                   | 7425.00         | 49.1 AV                 | 54.0           | -4.9        | 2.89 V             | 263                  | 36.6             | 12.5                     |

### 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

## Mode F

|                 |                |         |                     |
|-----------------|----------------|---------|---------------------|
| RF Mode         | WCDMA Band 4   | Channel | CH 1413 : 1732.6MHz |
|                 | Thread 900M    |         | CH 0 : 906MHz       |
|                 | BTLE-1M        |         | CH 39 : 2480MHz     |
|                 | BTLE-1M        |         | CH 0 : 2402MHz      |
| Frequency Range | 1 GHz ~ 25 GHz |         |                     |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 1155.10         | 46.5 PK                 | 74.0           | -27.5       | 1.22 H             | 158                  | 54.6             | -8.1                     |
| 2                                                    | 1155.10         | 35.4 AV                 | 54.0           | -18.6       | 1.22 H             | 158                  | 43.5             | -8.1                     |
| 3                                                    | 2390.00         | 53.1 PK                 | 74.0           | -20.9       | 1.57 H             | 323                  | 54.3             | -1.2                     |
| 4                                                    | 2390.00         | 42.9 AV                 | 54.0           | -11.1       | 1.57 H             | 323                  | 44.1             | -1.2                     |
| 5                                                    | 2483.50         | 61.9 PK                 | 74.0           | -12.1       | 1.09 H             | 235                  | 62.9             | -1.0                     |
| 6                                                    | 2483.50         | 48.4 AV                 | 54.0           | -5.6        | 1.09 H             | 235                  | 49.4             | -1.0                     |
| 7                                                    | 2718.00         | 57.5 PK                 | 74.0           | -16.5       | 3.10 H             | 299                  | 57.5             | 0.0                      |
| 8                                                    | 2718.00         | 53.3 AV                 | 54.0           | -0.7        | 3.10 H             | 299                  | 53.3             | 0.0                      |
| 9                                                    | 4804.00         | 47.9 PK                 | 74.0           | -26.1       | 1.72 H             | 291                  | 39.9             | 8.0                      |
| 10                                                   | 4804.00         | 38.0 AV                 | 54.0           | -16.0       | 1.72 H             | 291                  | 30.0             | 8.0                      |
| 11                                                   | 4960.00         | 56.7 PK                 | 74.0           | -17.3       | 2.72 H             | 110                  | 48.8             | 7.9                      |
| 12                                                   | 4960.00         | 50.0 AV                 | 54.0           | -4.0        | 2.72 H             | 110                  | 42.1             | 7.9                      |
| Antenna Polarity & Test Distance : Vertical at 3 m   |                 |                         |                |             |                    |                      |                  |                          |
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 1155.10         | 44.2 PK                 | 74.0           | -29.8       | 2.13 V             | 122                  | 52.3             | -8.1                     |
| 2                                                    | 1155.10         | 33.9 AV                 | 54.0           | -20.1       | 2.13 V             | 122                  | 42.0             | -8.1                     |
| 3                                                    | 2390.00         | 52.7 PK                 | 74.0           | -21.3       | 2.82 V             | 35                   | 53.9             | -1.2                     |
| 4                                                    | 2390.00         | 42.3 AV                 | 54.0           | -11.7       | 2.82 V             | 35                   | 43.5             | -1.2                     |
| 5                                                    | 2483.50         | 58.1 PK                 | 74.0           | -15.9       | 1.26 V             | 137                  | 59.1             | -1.0                     |
| 6                                                    | 2483.50         | 44.7 AV                 | 54.0           | -9.3        | 1.26 V             | 137                  | 45.7             | -1.0                     |
| 7                                                    | 2718.00         | 57.9 PK                 | 74.0           | -16.1       | 3.40 V             | 172                  | 57.9             | 0.0                      |
| 8                                                    | 2718.00         | 53.8 AV                 | 54.0           | -0.2        | 3.40 V             | 172                  | 53.8             | 0.0                      |
| 9                                                    | 4804.00         | 47.4 PK                 | 74.0           | -26.6       | 2.48 V             | 169                  | 39.4             | 8.0                      |
| 10                                                   | 4804.00         | 37.5 AV                 | 54.0           | -16.5       | 2.48 V             | 169                  | 29.5             | 8.0                      |
| 11                                                   | 4960.00         | 57.5 PK                 | 74.0           | -16.5       | 3.63 V             | 89                   | 49.6             | 7.9                      |
| 12                                                   | 4960.00         | 52.1 AV                 | 54.0           | -1.9        | 3.63 V             | 89                   | 44.2             | 7.9                      |

### 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

## Mode G

|                 |                |         |                 |
|-----------------|----------------|---------|-----------------|
| RF Mode         | Z-Wave         | Channel | CH 0 : 908.4MHz |
|                 | Zigbee         |         | CH 25 : 2475MHz |
|                 | 802.11g        |         | CH 1 : 2412MHz  |
| Frequency Range | 1 GHz ~ 25 GHz |         |                 |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 2390.00         | 73.5 PK                 | 74.0           | -0.5        | 1.85 H             | 306                  | 74.7             | -1.2                     |
| 2                                                    | 2390.00         | 47.8 AV                 | 54.0           | -6.2        | 1.85 H             | 306                  | 49.0             | -1.2                     |
| 3                                                    | 2483.50         | 70.3 PK                 | 74.0           | -3.7        | 1.92 H             | 283                  | 71.3             | -1.0                     |
| 4                                                    | 2483.50         | 52.1 AV                 | 54.0           | -1.9        | 1.92 H             | 283                  | 53.1             | -1.0                     |
| 5                                                    | 2725.20         | 44.7 PK                 | 74.0           | -29.3       | 1.35 H             | 258                  | 44.7             | 0.0                      |
| 6                                                    | 2725.20         | 36.6 AV                 | 54.0           | -17.4       | 1.35 H             | 258                  | 36.6             | 0.0                      |
| 7                                                    | 4824.00         | 51.5 PK                 | 74.0           | -22.5       | 2.33 H             | 154                  | 43.5             | 8.0                      |
| 8                                                    | 4824.00         | 38.4 AV                 | 54.0           | -15.6       | 2.33 H             | 154                  | 30.4             | 8.0                      |
| 9                                                    | 4950.00         | 57.0 PK                 | 74.0           | -17.0       | 1.47 H             | 192                  | 49.1             | 7.9                      |
| 10                                                   | 4950.00         | 45.4 AV                 | 54.0           | -8.6        | 1.47 H             | 192                  | 37.5             | 7.9                      |
| 11                                                   | 7425.00         | 58.8 PK                 | 74.0           | -15.2       | 1.78 H             | 266                  | 46.3             | 12.5                     |
| 12                                                   | 7425.00         | 47.4 AV                 | 54.0           | -6.6        | 1.78 H             | 266                  | 34.9             | 12.5                     |

| Antenna Polarity & Test Distance : Vertical at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|----------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                 | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                  | 2390.00         | 72.4 PK                 | 74.0           | -1.6        | 2.64 V             | 301                  | 73.6             | -1.2                     |
| 2                                                  | 2390.00         | 45.4 AV                 | 54.0           | -8.6        | 2.64 V             | 301                  | 46.6             | -1.2                     |
| 3                                                  | 2483.50         | 68.4 PK                 | 74.0           | -5.6        | 2.99 V             | 257                  | 69.4             | -1.0                     |
| 4                                                  | 2483.50         | 50.6 AV                 | 54.0           | -3.4        | 2.99 V             | 257                  | 51.6             | -1.0                     |
| 5                                                  | 2725.20         | 43.6 PK                 | 74.0           | -30.4       | 1.14 V             | 161                  | 43.6             | 0.0                      |
| 6                                                  | 2725.20         | 35.5 AV                 | 54.0           | -18.5       | 1.14 V             | 161                  | 35.5             | 0.0                      |
| 7                                                  | 4824.00         | 50.3 PK                 | 74.0           | -23.7       | 1.98 V             | 236                  | 42.3             | 8.0                      |
| 8                                                  | 4824.00         | 37.4 AV                 | 54.0           | -16.6       | 1.98 V             | 236                  | 29.4             | 8.0                      |
| 9                                                  | 4950.00         | 56.4 PK                 | 74.0           | -17.6       | 2.35 V             | 132                  | 48.5             | 7.9                      |
| 10                                                 | 4950.00         | 44.7 AV                 | 54.0           | -9.3        | 2.35 V             | 132                  | 36.8             | 7.9                      |
| 11                                                 | 7425.00         | 62.0 PK                 | 74.0           | -12.0       | 2.87 V             | 311                  | 49.5             | 12.5                     |
| 12                                                 | 7425.00         | 51.3 AV                 | 54.0           | -2.7        | 2.87 V             | 311                  | 38.8             | 12.5                     |

### 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

# Mode H

|                 |                |         |                 |
|-----------------|----------------|---------|-----------------|
| RF Mode         | Z-Wave         | Channel | CH 0 : 908.4MHz |
|                 | Thread         |         | CH 25 : 2475MHz |
|                 | 802.11g        |         | CH 1 : 2412MHz  |
| Frequency Range | 1 GHz ~ 25 GHz |         |                 |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 2390.00         | 73.6 PK                 | 74.0           | -0.4        | 1.44 H             | 300                  | 74.8             | -1.2                     |
| 2                                                    | 2390.00         | 47.9 AV                 | 54.0           | -6.1        | 1.44 H             | 300                  | 49.1             | -1.2                     |
| 3                                                    | 2483.50         | 69.2 PK                 | 74.0           | -4.8        | 1.95 H             | 249                  | 70.2             | -1.0                     |
| 4                                                    | 2483.50         | 51.3 AV                 | 54.0           | -2.7        | 1.95 H             | 249                  | 52.3             | -1.0                     |
| 5                                                    | 2725.20         | 44.5 PK                 | 74.0           | -29.5       | 1.11 H             | 259                  | 44.5             | 0.0                      |
| 6                                                    | 2725.20         | 36.4 AV                 | 54.0           | -17.6       | 1.11 H             | 259                  | 36.4             | 0.0                      |
| 7                                                    | 4824.00         | 50.8 PK                 | 74.0           | -23.2       | 2.73 H             | 186                  | 42.8             | 8.0                      |
| 8                                                    | 4824.00         | 37.7 AV                 | 54.0           | -16.3       | 2.73 H             | 186                  | 29.7             | 8.0                      |
| 9                                                    | 4950.00         | 56.5 PK                 | 74.0           | -17.5       | 1.68 H             | 171                  | 48.6             | 7.9                      |
| 10                                                   | 4950.00         | 43.8 AV                 | 54.0           | -10.2       | 1.68 H             | 171                  | 35.9             | 7.9                      |
| 11                                                   | 7425.00         | 57.8 PK                 | 74.0           | -16.2       | 1.82 H             | 238                  | 45.3             | 12.5                     |
| 12                                                   | 7425.00         | 46.2 AV                 | 54.0           | -7.8        | 1.82 H             | 238                  | 33.7             | 12.5                     |

| Antenna Polarity & Test Distance : Vertical at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|----------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                 | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                  | 2390.00         | 72.5 PK                 | 74.0           | -1.5        | 2.38 V             | 243                  | 73.7             | -1.2                     |
| 2                                                  | 2390.00         | 45.5 AV                 | 54.0           | -8.5        | 2.38 V             | 243                  | 46.7             | -1.2                     |
| 3                                                  | 2483.50         | 67.5 PK                 | 74.0           | -6.5        | 3.16 V             | 253                  | 68.5             | -1.0                     |
| 4                                                  | 2483.50         | 49.2 AV                 | 54.0           | -4.8        | 3.16 V             | 253                  | 50.2             | -1.0                     |
| 5                                                  | 2725.20         | 43.4 PK                 | 74.0           | -30.6       | 1.24 V             | 158                  | 43.4             | 0.0                      |
| 6                                                  | 2725.20         | 35.3 AV                 | 54.0           | -18.7       | 1.24 V             | 158                  | 35.3             | 0.0                      |
| 7                                                  | 4824.00         | 49.7 PK                 | 74.0           | -24.3       | 2.28 V             | 231                  | 41.7             | 8.0                      |
| 8                                                  | 4824.00         | 36.8 AV                 | 54.0           | -17.2       | 2.28 V             | 231                  | 28.8             | 8.0                      |
| 9                                                  | 4950.00         | 56.2 PK                 | 74.0           | -17.8       | 2.01 V             | 124                  | 48.3             | 7.9                      |
| 10                                                 | 4950.00         | 44.8 AV                 | 54.0           | -9.2        | 2.01 V             | 124                  | 36.9             | 7.9                      |
| 11                                                 | 7425.00         | 60.7 PK                 | 74.0           | -13.3       | 2.68 V             | 230                  | 48.2             | 12.5                     |
| 12                                                 | 7425.00         | 49.7 AV                 | 54.0           | -4.3        | 2.68 V             | 230                  | 37.2             | 12.5                     |

## 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

# Mode I

|                 |                |         |                 |
|-----------------|----------------|---------|-----------------|
| RF Mode         | Z-Wave         | Channel | CH 0 : 908.4MHz |
|                 | BTLE-1M        |         | CH 39 : 2480MHz |
|                 | 802.11g        |         | CH 1 : 2412MHz  |
| Frequency Range | 1 GHz ~ 25 GHz |         |                 |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 2390.00         | 73.5 PK                 | 74.0           | -0.5        | 1.49 H             | 352                  | 74.7             | -1.2                     |
| 2                                                    | 2390.00         | 47.8 AV                 | 54.0           | -6.2        | 1.49 H             | 352                  | 49.0             | -1.2                     |
| 3                                                    | 2483.50         | 63.7 PK                 | 74.0           | -10.3       | 1.13 H             | 235                  | 64.7             | -1.0                     |
| 4                                                    | 2483.50         | 50.2 AV                 | 54.0           | -3.8        | 1.13 H             | 235                  | 51.2             | -1.0                     |
| 5                                                    | 2725.20         | 44.4 PK                 | 74.0           | -29.6       | 1.42 H             | 236                  | 44.4             | 0.0                      |
| 6                                                    | 2725.20         | 36.3 AV                 | 54.0           | -17.7       | 1.42 H             | 236                  | 36.3             | 0.0                      |
| 7                                                    | 4824.00         | 51.6 PK                 | 74.0           | -22.4       | 2.88 H             | 158                  | 43.6             | 8.0                      |
| 8                                                    | 4824.00         | 38.5 AV                 | 54.0           | -15.5       | 2.88 H             | 158                  | 30.5             | 8.0                      |
| 9                                                    | 4960.00         | 58.5 PK                 | 74.0           | -15.5       | 2.54 H             | 123                  | 50.6             | 7.9                      |
| 10                                                   | 4960.00         | 51.8 AV                 | 54.0           | -2.2        | 2.54 H             | 123                  | 43.9             | 7.9                      |

| Antenna Polarity & Test Distance : Vertical at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|----------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                 | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                  | 2390.00         | 73.3 PK                 | 74.0           | -0.7        | 2.61 V             | 302                  | 74.5             | -1.2                     |
| 2                                                  | 2390.00         | 46.3 AV                 | 54.0           | -7.7        | 2.61 V             | 302                  | 47.5             | -1.2                     |
| 3                                                  | 2483.50         | 59.9 PK                 | 74.0           | -14.1       | 1.35 V             | 142                  | 60.9             | -1.0                     |
| 4                                                  | 2483.50         | 46.5 AV                 | 54.0           | -7.5        | 1.35 V             | 142                  | 47.5             | -1.0                     |
| 5                                                  | 2725.20         | 43.3 PK                 | 74.0           | -30.7       | 1.27 V             | 159                  | 43.3             | 0.0                      |
| 6                                                  | 2725.20         | 35.2 AV                 | 54.0           | -18.8       | 1.27 V             | 159                  | 35.2             | 0.0                      |
| 7                                                  | 4824.00         | 50.5 PK                 | 74.0           | -23.5       | 1.94 V             | 231                  | 42.5             | 8.0                      |
| 8                                                  | 4824.00         | 37.6 AV                 | 54.0           | -16.4       | 1.94 V             | 231                  | 29.6             | 8.0                      |
| 9                                                  | 4960.00         | 58.3 PK                 | 74.0           | -15.7       | 3.36 V             | 88                   | 50.4             | 7.9                      |
| 10                                                 | 4960.00         | 52.9 AV                 | 54.0           | -1.1        | 3.36 V             | 88                   | 45.0             | 7.9                      |

## 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

# Mode J

|                 |                |         |                 |
|-----------------|----------------|---------|-----------------|
| RF Mode         | Thread 900M    | Channel | CH 0 : 906MHz   |
|                 | Zigbee         |         | CH 25 : 2475MHz |
|                 | 802.11g        |         | CH 1 : 2412MHz  |
| Frequency Range | 1 GHz ~ 25 GHz |         |                 |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 2390.00         | 73.6 PK                 | 74.0           | -0.4        | 1.71 H             | 318                  | 74.8             | -1.2                     |
| 2                                                    | 2390.00         | 47.9 AV                 | 54.0           | -6.1        | 1.71 H             | 318                  | 49.1             | -1.2                     |
| 3                                                    | 2483.50         | 69.3 PK                 | 74.0           | -4.7        | 1.95 H             | 316                  | 70.3             | -1.0                     |
| 4                                                    | 2483.50         | 51.5 AV                 | 54.0           | -2.5        | 1.95 H             | 316                  | 52.5             | -1.0                     |
| 5                                                    | 2718.00         | 57.7 PK                 | 74.0           | -16.3       | 2.86 H             | 271                  | 57.7             | 0.0                      |
| 6                                                    | 2718.00         | 53.5 AV                 | 54.0           | -0.5        | 2.86 H             | 271                  | 53.5             | 0.0                      |
| 7                                                    | 4824.00         | 50.8 PK                 | 74.0           | -23.2       | 2.54 H             | 163                  | 42.8             | 8.0                      |
| 8                                                    | 4824.00         | 37.7 AV                 | 54.0           | -16.3       | 2.54 H             | 163                  | 29.7             | 8.0                      |
| 9                                                    | 4950.00         | 56.3 PK                 | 74.0           | -17.7       | 1.63 H             | 190                  | 48.4             | 7.9                      |
| 10                                                   | 4950.00         | 43.6 AV                 | 54.0           | -10.4       | 1.63 H             | 190                  | 35.7             | 7.9                      |
| 11                                                   | 7425.00         | 57.7 PK                 | 74.0           | -16.3       | 1.48 H             | 239                  | 45.2             | 12.5                     |
| 12                                                   | 7425.00         | 46.0 AV                 | 54.0           | -8.0        | 1.48 H             | 239                  | 33.5             | 12.5                     |

| Antenna Polarity & Test Distance : Vertical at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|----------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                 | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                  | 2390.00         | 72.5 PK                 | 74.0           | -1.5        | 2.55 V             | 306                  | 73.7             | -1.2                     |
| 2                                                  | 2390.00         | 45.5 AV                 | 54.0           | -8.5        | 2.55 V             | 306                  | 46.7             | -1.2                     |
| 3                                                  | 2483.50         | 67.3 PK                 | 74.0           | -6.7        | 3.03 V             | 258                  | 68.3             | -1.0                     |
| 4                                                  | 2483.50         | 49.1 AV                 | 54.0           | -4.9        | 3.03 V             | 258                  | 50.1             | -1.0                     |
| 5                                                  | 2718.00         | 58.0 PK                 | 74.0           | -16.0       | 2.89 V             | 187                  | 58.0             | 0.0                      |
| 6                                                  | 2718.00         | 53.9 AV                 | 54.0           | -0.1        | 2.89 V             | 187                  | 53.9             | 0.0                      |
| 7                                                  | 4824.00         | 49.7 PK                 | 74.0           | -24.3       | 1.99 V             | 228                  | 41.7             | 8.0                      |
| 8                                                  | 4824.00         | 36.8 AV                 | 54.0           | -17.2       | 1.99 V             | 228                  | 28.8             | 8.0                      |
| 9                                                  | 4950.00         | 55.9 PK                 | 74.0           | -18.1       | 2.17 V             | 124                  | 48.0             | 7.9                      |
| 10                                                 | 4950.00         | 43.5 AV                 | 54.0           | -10.5       | 2.17 V             | 124                  | 35.6             | 7.9                      |
| 11                                                 | 7425.00         | 60.4 PK                 | 74.0           | -13.6       | 2.45 V             | 263                  | 47.9             | 12.5                     |
| 12                                                 | 7425.00         | 49.5 AV                 | 54.0           | -4.5        | 2.45 V             | 263                  | 37.0             | 12.5                     |

## 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

# Mode K

|                 |                |         |                 |
|-----------------|----------------|---------|-----------------|
| RF Mode         | Thread 900M    | Channel | CH 0 : 906MHz   |
|                 | Thread         |         | CH 25 : 2475MHz |
|                 | 802.11g        |         | CH 1 : 2412MHz  |
| Frequency Range | 1 GHz ~ 25 GHz |         |                 |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 2390.00         | 73.5 PK                 | 74.0           | -0.5        | 1.10 H             | 45                   | 74.7             | -1.2                     |
| 2                                                    | 2390.00         | 47.8 AV                 | 54.0           | -6.2        | 1.10 H             | 45                   | 49.0             | -1.2                     |
| 3                                                    | 2483.50         | 68.5 PK                 | 74.0           | -5.5        | 1.90 H             | 28                   | 69.5             | -1.0                     |
| 4                                                    | 2483.50         | 50.7 AV                 | 54.0           | -3.3        | 1.90 H             | 28                   | 51.7             | -1.0                     |
| 5                                                    | 2718.00         | 57.6 PK                 | 74.0           | -16.4       | 2.86 H             | 279                  | 57.6             | 0.0                      |
| 6                                                    | 2718.00         | 53.4 AV                 | 54.0           | -0.6        | 2.86 H             | 279                  | 53.4             | 0.0                      |
| 7                                                    | 4824.00         | 49.7 PK                 | 74.0           | -24.3       | 2.82 H             | 194                  | 41.7             | 8.0                      |
| 8                                                    | 4824.00         | 36.6 AV                 | 54.0           | -17.4       | 2.82 H             | 194                  | 28.6             | 8.0                      |
| 9                                                    | 4950.00         | 55.5 PK                 | 74.0           | -18.5       | 1.94 H             | 217                  | 47.6             | 7.9                      |
| 10                                                   | 4950.00         | 42.8 AV                 | 54.0           | -11.2       | 1.94 H             | 217                  | 34.9             | 7.9                      |
| 11                                                   | 7425.00         | 56.7 PK                 | 74.0           | -17.3       | 1.03 H             | 39                   | 44.2             | 12.5                     |
| 12                                                   | 7425.00         | 45.1 AV                 | 54.0           | -8.9        | 1.03 H             | 39                   | 32.6             | 12.5                     |

| Antenna Polarity & Test Distance : Vertical at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|----------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                 | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                  | 2390.00         | 72.4 PK                 | 74.0           | -1.6        | 2.56 V             | 260                  | 73.6             | -1.2                     |
| 2                                                  | 2390.00         | 45.4 AV                 | 54.0           | -8.6        | 2.56 V             | 260                  | 46.6             | -1.2                     |
| 3                                                  | 2483.50         | 66.4 PK                 | 74.0           | -7.6        | 3.15 V             | 280                  | 67.4             | -1.0                     |
| 4                                                  | 2483.50         | 48.1 AV                 | 54.0           | -5.9        | 3.15 V             | 280                  | 49.1             | -1.0                     |
| 5                                                  | 2718.00         | 58.0 PK                 | 74.0           | -16.0       | 3.09 V             | 188                  | 58.0             | 0.0                      |
| 6                                                  | 2718.00         | 53.9 AV                 | 54.0           | -0.1        | 3.09 V             | 188                  | 53.9             | 0.0                      |
| 7                                                  | 4824.00         | 48.6 PK                 | 74.0           | -25.4       | 2.35 V             | 278                  | 40.6             | 8.0                      |
| 8                                                  | 4824.00         | 35.7 AV                 | 54.0           | -18.3       | 2.35 V             | 278                  | 27.7             | 8.0                      |
| 9                                                  | 4950.00         | 55.1 PK                 | 74.0           | -18.9       | 1.94 V             | 127                  | 47.2             | 7.9                      |
| 10                                                 | 4950.00         | 43.8 AV                 | 54.0           | -10.2       | 1.94 V             | 127                  | 35.9             | 7.9                      |
| 11                                                 | 7425.00         | 59.6 PK                 | 74.0           | -14.4       | 2.38 V             | 215                  | 47.1             | 12.5                     |
| 12                                                 | 7425.00         | 48.6 AV                 | 54.0           | -5.4        | 2.38 V             | 215                  | 36.1             | 12.5                     |

## 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

# Mode L

|                 |                |         |                 |
|-----------------|----------------|---------|-----------------|
| RF Mode         | Thread 900M    | Channel | CH 0 : 906MHz   |
|                 | BTLE-1M        |         | CH 39 : 2480MHz |
|                 | 802.11g        |         | CH 1 : 2412MHz  |
| Frequency Range | 1 GHz ~ 25 GHz |         |                 |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 2390.00         | 73.6 PK                 | 74.0           | -0.4        | 1.60 H             | 323                  | 74.8             | -1.2                     |
| 2                                                    | 2390.00         | 47.9 AV                 | 54.0           | -6.1        | 1.60 H             | 323                  | 49.1             | -1.2                     |
| 3                                                    | 2483.50         | 61.9 PK                 | 74.0           | -12.1       | 2.55 H             | 21                   | 62.9             | -1.0                     |
| 4                                                    | 2483.50         | 48.4 AV                 | 54.0           | -5.6        | 2.55 H             | 21                   | 49.4             | -1.0                     |
| 5                                                    | 2718.00         | 57.6 PK                 | 74.0           | -16.4       | 3.45 H             | 199                  | 57.6             | 0.0                      |
| 6                                                    | 2718.00         | 53.3 AV                 | 54.0           | -0.7        | 3.45 H             | 199                  | 53.3             | 0.0                      |
| 7                                                    | 4824.00         | 49.8 PK                 | 74.0           | -24.2       | 2.55 H             | 166                  | 41.8             | 8.0                      |
| 8                                                    | 4824.00         | 36.7 AV                 | 54.0           | -17.3       | 2.55 H             | 166                  | 28.7             | 8.0                      |
| 9                                                    | 4960.00         | 56.7 PK                 | 74.0           | -17.3       | 3.60 H             | 318                  | 48.8             | 7.9                      |
| 10                                                   | 4960.00         | 50.0 AV                 | 54.0           | -4.0        | 3.60 H             | 318                  | 42.1             | 7.9                      |

| Antenna Polarity & Test Distance : Vertical at 3 m |                 |                         |                |             |                    |                      |                  |                          |
|----------------------------------------------------|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                 | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                  | 2390.00         | 72.5 PK                 | 74.0           | -1.5        | 3.03 V             | 23                   | 73.7             | -1.2                     |
| 2                                                  | 2390.00         | 45.5 AV                 | 54.0           | -8.5        | 3.03 V             | 23                   | 46.7             | -1.2                     |
| 3                                                  | 2483.50         | 61.9 PK                 | 74.0           | -12.1       | 3.25 V             | 267                  | 62.9             | -1.0                     |
| 4                                                  | 2483.50         | 48.4 AV                 | 54.0           | -5.6        | 3.25 V             | 267                  | 49.4             | -1.0                     |
| 5                                                  | 2718.00         | 57.9 PK                 | 74.0           | -16.1       | 1.65 V             | 161                  | 57.9             | 0.0                      |
| 6                                                  | 2718.00         | 53.8 AV                 | 54.0           | -0.2        | 1.65 V             | 161                  | 53.8             | 0.0                      |
| 7                                                  | 4824.00         | 48.7 PK                 | 74.0           | -25.3       | 2.58 V             | 293                  | 40.7             | 8.0                      |
| 8                                                  | 4824.00         | 35.8 AV                 | 54.0           | -18.2       | 2.58 V             | 293                  | 27.8             | 8.0                      |
| 9                                                  | 4960.00         | 57.5 PK                 | 74.0           | -16.5       | 2.80 V             | 120                  | 49.6             | 7.9                      |
| 10                                                 | 4960.00         | 52.1 AV                 | 54.0           | -1.9        | 2.80 V             | 120                  | 44.2             | 7.9                      |

## 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) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

## 5 Construction Photos of EUT.

Please refer to the attached file (Test Setup Photo)

## Appendix – Information of 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 FCC recognized accredited test firms and accredited 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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