

**Above 1GHz****RADIATED EMISSION TEST**

LOW CH1 (802.11b Mode)/2412

Horizontal:

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 4824                                                                                                          | 52.95         | -3.64  | 49.31          | 74       | -24.69 | peak          |
| 4824                                                                                                          | 42.59         | -3.64  | 38.95          | 54       | -15.05 | AVG           |
| 7236                                                                                                          | 50.79         | -0.95  | 49.84          | 74       | -24.16 | peak          |
| 7236                                                                                                          | 40.24         | -0.95  | 39.29          | 54       | -14.71 | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |

Vertical:

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 4824                                                                                                          | 56.15         | -3.64  | 52.51          | 74       | -21.49 | peak          |
| 4824                                                                                                          | 42.98         | -3.64  | 39.34          | 54       | -14.66 | AVG           |
| 7236                                                                                                          | 53.24         | -0.95  | 52.29          | 74       | -21.71 | peak          |
| 7236                                                                                                          | 40.76         | -0.82  | 39.94          | 54       | -14.06 | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |



MID CH6 (802.11b Mode)/2437

Horizontal:

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 4874                                                                                                          | 52.74         | -3.51  | 49.23          | 74       | -24.77 | peak          |
| 4874                                                                                                          | 43.17         | -3.51  | 39.66          | 54       | -14.34 | AVG           |
| 7311                                                                                                          | 50.99         | -0.82  | 50.17          | 74       | -23.83 | peak          |
| 7311                                                                                                          | 42.19         | -0.82  | 41.37          | 54       | -12.63 | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |

Vertical:

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 4874                                                                                                          | 54.91         | -3.51  | 51.4           | 74       | -22.6  | peak          |
| 4874                                                                                                          | 42.16         | -3.51  | 38.65          | 54       | -15.35 | AVG           |
| 7311                                                                                                          | 52.61         | -0.82  | 51.79          | 74       | -22.21 | peak          |
| 7311                                                                                                          | 40.37         | -0.82  | 39.55          | 54       | -14.45 | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |



HIGH CH11 (802.11b Mode)/2462

Horizontal:

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 4924                                                                                                          | 55.28         | -3.43  | 51.85          | 74       | -22.15 | peak          |
| 4924                                                                                                          | 44.61         | -3.43  | 41.18          | 54       | -12.82 | AVG           |
| 7386                                                                                                          | 53.73         | -0.75  | 52.98          | 74       | -21.02 | peak          |
| 7386                                                                                                          | 41.37         | -0.75  | 40.62          | 54       | -13.38 | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |

Vertical:

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 4924                                                                                                          | 55.12         | -3.43  | 51.69          | 74       | -22.31 | peak          |
| 4924                                                                                                          | 46.54         | -3.43  | 43.11          | 54       | -10.89 | AVG           |
| 7386                                                                                                          | 51.46         | -0.75  | 50.71          | 74       | -23.29 | peak          |
| 7386                                                                                                          | 43.17         | -0.75  | 42.42          | 54       | -11.58 | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |

Remark:

(1) Measuring frequencies from 1 GHz to the 25 GHz.

(2) "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency.

(3) \* denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.

(4) The emissions are attenuated more than 20dB below the permissible limits are not record in the report.

(5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.

(6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) &lt;93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) &lt;54 dBuV/m(AV Limit), the Average Detected not need to completed.

(7) All modes of operation were investigated and the worst-case emissions of ANT.1 are reported.



## LOW CH1 (802.11g Mode)/2412

Horizontal:

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 4824                                                                                                          | 54.13         | -3.64  | 50.49          | 74       | -23.51 | peak          |
| 4824                                                                                                          | 42.14         | -3.64  | 38.5           | 54       | -15.5  | AVG           |
| 7236                                                                                                          | 52.74         | -0.95  | 51.79          | 74       | -22.21 | peak          |
| 7236                                                                                                          | 39.05         | -0.95  | 38.1           | 54       | -15.9  | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |

Vertical:

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 4824                                                                                                          | 54.16         | -3.64  | 50.52          | 74       | -23.48 | peak          |
| 4824                                                                                                          | 42.85         | -3.64  | 39.21          | 54       | -14.79 | AVG           |
| 7236                                                                                                          | 51.34         | -0.95  | 50.39          | 74       | -23.61 | peak          |
| 7236                                                                                                          | 40.57         | -0.95  | 39.62          | 54       | -14.38 | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |



MID CH6 (802.11g Mode)/2437

Horizontal:

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 4874                                                                                                          | 53.39         | -3.51  | 49.88          | 74       | -24.12 | peak          |
| 4874                                                                                                          | 45.12         | -3.51  | 41.61          | 54       | -12.39 | AVG           |
| 7311                                                                                                          | 50.75         | -0.82  | 49.93          | 74       | -24.07 | peak          |
| 7311                                                                                                          | 42.16         | -0.82  | 41.34          | 54       | -12.66 | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |

Vertical:

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 4874                                                                                                          | 54.26         | -3.51  | 50.75          | 74       | -23.25 | peak          |
| 4874                                                                                                          | 43.56         | -3.51  | 40.05          | 54       | -13.95 | AVG           |
| 7311                                                                                                          | 50.23         | -0.82  | 49.41          | 74       | -24.59 | peak          |
| 7311                                                                                                          | 42.26         | -0.82  | 41.44          | 54       | -12.56 | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |



HIGH CH11 (802.11g Mode)/2462

Horizontal:

| Frequency<br>(MHz) | Meter Reading<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector<br>Type |
|--------------------|-------------------------|----------------|----------------------------|--------------------|----------------|------------------|
| 4924               | 54.73                   | -3.43          | 51.3                       | 74                 | -22.7          | peak             |
| 4924               | 44.37                   | -3.43          | 40.94                      | 54                 | -13.06         | AVG              |
| 7386               | 52.12                   | -0.75          | 51.37                      | 74                 | -22.63         | peak             |
| 7386               | 41.64                   | -0.75          | 40.89                      | 54                 | -13.11         | AVG              |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit.

Vertical:

| Frequency<br>(MHz) | Meter Reading<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector<br>Type |
|--------------------|-------------------------|----------------|----------------------------|--------------------|----------------|------------------|
| 4924               | 54.03                   | -3.43          | 50.6                       | 74                 | -23.4          | peak             |
| 4924               | 43.58                   | -3.43          | 40.15                      | 54                 | -13.85         | AVG              |
| 7386               | 51.02                   | -0.75          | 50.27                      | 74                 | -23.73         | peak             |
| 7386               | 41.88                   | -0.75          | 41.13                      | 54                 | -12.87         | AVG              |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit.

Remark:

- (1) Measuring frequencies from 1 GHz to the 25 GHz.
- (2) "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency.
- (3) \* denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (4) The emissions are attenuated more than 20dB below the permissible limits are not record in the report
- (5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
- (6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.
- (7) All modes of operation were investigated and the worst-case emissions of ANT.1 are reported.



LOW CH1 (802.11n/HT20 Mode)/2412

Horizontal:

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 4824                                                                                                          | 53.15         | -3.64  | 49.51          | 74       | -24.49 | peak          |
| 4824                                                                                                          | 44.16         | -3.64  | 40.52          | 54       | -13.48 | AVG           |
| 7236                                                                                                          | 52.43         | -0.95  | 51.48          | 74       | -22.52 | peak          |
| 7236                                                                                                          | 40.29         | -0.95  | 39.34          | 54       | -14.66 | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |

Vertical:

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 4824                                                                                                          | 54.85         | -3.64  | 51.21          | 74       | -22.79 | peak          |
| 4824                                                                                                          | 42.16         | -3.64  | 38.52          | 54       | -15.48 | AVG           |
| 7236                                                                                                          | 53.28         | -0.95  | 52.33          | 74       | -21.67 | peak          |
| 7236                                                                                                          | 40.13         | -0.95  | 39.18          | 54       | -14.82 | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |



MID CH6 (802.11n/HT20 Mode)/2437

Horizontal:

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 4874.00                                                                                                       | 54.68         | -3.51  | 51.17          | 74.00    | -22.83 | peak          |
| 4874.00                                                                                                       | 45.19         | -3.51  | 41.68          | 54.00    | -12.32 | AVG           |
| 7311.00                                                                                                       | 52.93         | -0.82  | 52.11          | 74.00    | -21.89 | peak          |
| 7311.00                                                                                                       | 40.32         | -0.82  | 39.50          | 54.00    | -14.50 | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |

Vertical:

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 4874.00                                                                                                       | 53.73         | -3.51  | 50.22          | 74.00    | -23.78 | peak          |
| 4874.00                                                                                                       | 41.48         | -3.51  | 37.97          | 54.00    | -16.03 | AVG           |
| 7311.00                                                                                                       | 51.09         | -0.82  | 50.27          | 74.00    | -23.73 | peak          |
| 7311.00                                                                                                       | 39.68         | -0.82  | 38.86          | 54.00    | -15.14 | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |



HIGH CH11 (802.11n/HT20 Mode)/2462

Horizontal:

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 4924                                                                                                          | 52.37         | -3.43  | 48.94          | 74       | -25.06 | peak          |
| 4924                                                                                                          | 43.76         | -3.43  | 40.33          | 54       | -13.67 | AVG           |
| 7386                                                                                                          | 51.44         | -0.75  | 50.69          | 74       | -23.31 | peak          |
| 7386                                                                                                          | 42.11         | -0.75  | 41.36          | 54       | -12.64 | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |

Vertical:

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 4924                                                                                                          | 55.29         | -3.43  | 51.86          | 74       | -22.14 | peak          |
| 4924                                                                                                          | 43.49         | -3.43  | 40.06          | 54       | -13.94 | AVG           |
| 7386                                                                                                          | 52.14         | -0.75  | 51.39          | 74       | -22.61 | peak          |
| 7386                                                                                                          | 42.16         | -0.75  | 41.41          | 54       | -12.59 | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |



LOW CH3 (802.11n/HT40 Mode)/2422

Horizontal:

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 4844                                                                                                          | 53.83         | -3.63  | 50.2           | 74       | -23.8  | peak          |
| 4844                                                                                                          | 43.35         | -3.63  | 39.72          | 54       | -14.28 | AVG           |
| 7266                                                                                                          | 52.08         | -0.94  | 51.14          | 74       | -22.86 | peak          |
| 7266                                                                                                          | 41.58         | -0.94  | 40.64          | 54       | -13.36 | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |

Vertical:

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 4844                                                                                                          | 53.08         | -3.63  | 49.45          | 74       | -24.55 | peak          |
| 4844                                                                                                          | 45.36         | -3.63  | 41.73          | 54       | -12.27 | AVG           |
| 7266                                                                                                          | 52.17         | -0.94  | 51.23          | 74       | -22.77 | peak          |
| 7266                                                                                                          | 43.08         | -0.94  | 42.14          | 54       | -11.86 | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |



MID CH6 (802.11n/HT40 Mode)/2437

Horizontal:

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 4874                                                                                                          | 54.04         | -3.51  | 50.53          | 74       | -23.47 | peak          |
| 4874                                                                                                          | 45.18         | -3.51  | 41.67          | 54       | -12.33 | AVG           |
| 7311                                                                                                          | 52.04         | -0.82  | 51.22          | 74       | -22.78 | peak          |
| 7311                                                                                                          | 42.07         | -0.82  | 41.25          | 54       | -12.75 | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |

Vertical:

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 4874                                                                                                          | 53.41         | -3.51  | 49.9           | 74       | -24.1  | peak          |
| 4874                                                                                                          | 44.48         | -3.51  | 40.97          | 54       | -13.03 | AVG           |
| 7311                                                                                                          | 50.13         | -0.82  | 49.31          | 74       | -24.69 | peak          |
| 7311                                                                                                          | 41.72         | -0.82  | 40.9           | 54       | -13.1  | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |



HIGH CH9 (802.11n/HT40 Mode)/2452

Horizontal:

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 4904                                                                                                          | 54.32         | -3.43  | 50.89          | 74       | -23.11 | peak          |
| 4904                                                                                                          | 44.78         | -3.43  | 41.35          | 54       | -12.65 | AVG           |
| 7356                                                                                                          | 52.49         | -0.75  | 51.74          | 74       | -22.26 | peak          |
| 7356                                                                                                          | 43.12         | -0.75  | 42.37          | 54       | -11.63 | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |

Vertical:

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 4904                                                                                                          | 54.16         | -3.43  | 50.73          | 74       | -23.27 | peak          |
| 4904                                                                                                          | 44.93         | -3.43  | 41.5           | 54       | -12.5  | AVG           |
| 7356                                                                                                          | 50.97         | -0.75  | 50.22          | 74       | -23.78 | peak          |
| 7356                                                                                                          | 42.55         | -0.75  | 41.8           | 54       | -12.2  | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |

Remark:

- (1) Measuring frequencies from 1 GHz to the 25 GHz.
- (2) "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency.
- (3) \* denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (4) The emissions are attenuated more than 20dB below the permissible limits are not record in the report.
- (5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
- (6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.
- (7) All modes of operation were investigated and the worst-case emissions of MIMO are reported.

**Test Result of Radiated Spurious at Band edges**

All modes of operation were investigated and the worst-case of MIMO are reported.

Operation Mode:

802.11b Mode TX CH Low (2412MHz)

**Horizontal**

| Frequency<br>(MHz)                                                                                            | Meter Reading<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector Type |
|---------------------------------------------------------------------------------------------------------------|-------------------------|----------------|----------------------------|--------------------|----------------|---------------|
| 2310                                                                                                          | 55.23                   | -5.81          | 49.42                      | 74                 | -24.58         |               |
| 2310                                                                                                          | /                       | -5.81          | /                          | 54                 | /              | AVG           |
| 2390                                                                                                          | 54.18                   | -5.84          | 48.34                      | 74                 | -25.66         | peak          |
| 2390                                                                                                          | /                       | -5.84          | /                          | 54                 | /              | AVG           |
| 2400                                                                                                          | 51.66                   | -5.84          | 45.82                      | 74                 | -28.18         | peak          |
| 2400                                                                                                          | /                       | -5.84          | /                          | 54                 | /              | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |                         |                |                            |                    |                |               |

**Vertical:**

| Frequency<br>(MHz)                                                                                            | Meter Reading<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector Type |
|---------------------------------------------------------------------------------------------------------------|-------------------------|----------------|----------------------------|--------------------|----------------|---------------|
| 2310                                                                                                          | 54.26                   | -5.81          | 48.45                      | 74                 | -25.55         |               |
| 2310                                                                                                          | /                       | -5.81          | /                          | 54                 | /              | AVG           |
| 2390                                                                                                          | 53.75                   | -5.84          | 47.91                      | 74                 | -26.09         | peak          |
| 2390                                                                                                          | /                       | -5.84          | /                          | 54                 | /              | AVG           |
| 2400                                                                                                          | 50.29                   | -5.84          | 44.45                      | 74                 | -29.55         | peak          |
| 2400                                                                                                          | /                       | -5.84          | /                          | 54                 | /              | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |                         |                |                            |                    |                |               |



Operation Mode: TX CH High (2462MHz)

Horizontal

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 2483.50                                                                                                       | 54.22         | -5.65  | 48.57          | 74       | -25.43 | peak          |
| 2483.50                                                                                                       | /             | -5.65  | /              | 54       | /      | AVG           |
| 2500.00                                                                                                       | 51.69         | -5.65  | 46.04          | 74       | -27.96 | peak          |
| 2500.00                                                                                                       | /             | -5.65  | /              | 54       | /      | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |

Vertical:

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 2483.50                                                                                                       | 55.32         | -5.65  | 49.67          | 74       | -24.33 | peak          |
| 2483.50                                                                                                       | /             | -5.65  | /              | 54       | /      | AVG           |
| 2500.00                                                                                                       | 53.17         | -5.65  | 47.52          | 74       | -26.48 | peak          |
| 2500.00                                                                                                       | /             | -5.65  | /              | 54       | /      | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |
| Remark: All the other emissions not reported were too low to read and deemed to comply with FCC limit.        |               |        |                |          |        |               |



Operation Mode: 802.11g Mode TX CH Low (2412MHz)

## Horizontal

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 2310                                                                                                          | 54.06         | -5.81  | 48.25          | 74       | -25.75 | peak          |
| 2310                                                                                                          | /             | -5.81  | /              | 54       | /      | AVG           |
| 2390                                                                                                          | 52.27         | -5.84  | 46.43          | 74       | -27.57 | peak          |
| 2390                                                                                                          | /             | -5.84  | /              | 54       | /      | AVG           |
| 2400                                                                                                          | 51.66         | -5.84  | 45.82          | 74       | -28.18 | peak          |
| 2400                                                                                                          | /             | -5.84  | /              | 54       | /      | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |

## Vertical:

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 2310                                                                                                          | 55.49         | -5.81  | 49.68          | 74       | -24.32 | peak          |
| 2310                                                                                                          | /             | -5.81  | /              | 54       | /      | AVG           |
| 2390                                                                                                          | 54.62         | -5.84  | 48.78          | 74       | -25.22 | peak          |
| 2390                                                                                                          | /             | -5.84  | /              | 54       | /      | AVG           |
| 2400                                                                                                          | 52.71         | -5.84  | 46.87          | 74       | -27.13 | peak          |
| 2400                                                                                                          | /             | -5.84  | /              | 54       | /      | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |



Operation Mode: TX CH High (2462MHz)

Horizontal

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 2483.50                                                                                                       | 54.26         | -5.65  | 48.61          | 74       | -25.39 | peak          |
| 2483.50                                                                                                       | /             | -5.65  | /              | 54       | /      | AVG           |
| 2500.00                                                                                                       | 52.77         | -5.65  | 47.12          | 74       | -26.88 | peak          |
| 2500.00                                                                                                       | /             | -5.65  | /              | 54       | /      | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |

Vertical:

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 2483.50                                                                                                       | 53.08         | -5.65  | 47.43          | 74       | -26.57 | peak          |
| 2483.50                                                                                                       | /             | -5.65  | /              | 54       | /      | AVG           |
| 2500.00                                                                                                       | 51.46         | -5.65  | 45.81          | 74       | -28.19 | peak          |
| 2500.00                                                                                                       | /             | -5.65  | /              | 54       | /      | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |
| Remark: All the other emissions not reported were too low to read and deemed to comply with FCC limit.        |               |        |                |          |        |               |



Operation Mode: 802.11n/HT20 Mode TX CH Low (2412MHz)

Horizontal

| Frequency<br>(MHz) | Meter Reading<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector Type |
|--------------------|-------------------------|----------------|----------------------------|--------------------|----------------|---------------|
| 2310               | 55.29                   | -5.81          | 49.48                      | 74                 | -24.52         | peak          |
| 2310               | /                       | -5.81          | /                          | 54                 | /              | AVG           |
| 2390               | 54.13                   | -5.84          | 48.29                      | 74                 | -25.71         | peak          |
| 2390               | /                       | -5.84          | /                          | 54                 | /              | AVG           |
| 2400               | 51.27                   | -5.84          | 45.43                      | 74                 | -28.57         | peak          |
| 2400               | /                       | -5.84          | /                          | 54                 | /              | AVG           |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit.

Vertical:

| Frequency<br>(MHz) | Meter Reading<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector Type |
|--------------------|-------------------------|----------------|----------------------------|--------------------|----------------|---------------|
| 2310               | 56.34                   | -5.81          | 50.53                      | 74                 | -23.47         | peak          |
| 2310               | /                       | -5.81          | /                          | 54                 | /              | AVG           |
| 2390               | 55.29                   | -5.84          | 49.45                      | 74                 | -24.55         | peak          |
| 2390               | /                       | -5.84          | /                          | 54                 | /              | AVG           |
| 2400               | 52.12                   | -5.84          | 46.28                      | 74                 | -27.72         | peak          |
| 2400               | /                       | -5.84          | /                          | 54                 | /              | AVG           |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit.



Operation Mode: TX CH High (2462MHz)

Horizontal

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 2483.50                                                                                                       | 53.21         | -5.65  | 47.56          | 74       | -26.44 | peak          |
| 2483.50                                                                                                       | /             | -5.65  | /              | 54       | /      | AVG           |
| 2500.00                                                                                                       | 50.69         | -5.65  | 45.04          | 74       | -28.96 | peak          |
| 2500.00                                                                                                       | /             | -5.65  | /              | 54       | /      | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |

Vertical:

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 2483.50                                                                                                       | 54.12         | -5.65  | 48.47          | 74       | -25.53 | peak          |
| 2483.50                                                                                                       | /             | -5.65  | /              | 54       | /      | AVG           |
| 2500.00                                                                                                       | 52.08         | -5.65  | 46.43          | 74       | -27.57 | peak          |
| 2500.00                                                                                                       | /             | -5.65  | /              | 54       | /      | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |
| Remark: All the other emissions not reported were too low to read and deemed to comply with FCC limit.        |               |        |                |          |        |               |



Operation Mode: 802.11n/HT40 Mode TX CH Low (2422MHz)

Horizontal

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 2310                                                                                                          | 57.12         | -5.81  | 51.31          | 74       | -22.69 | peak          |
| 2310                                                                                                          | /             | -5.81  | /              | 54       | /      | AVG           |
| 2390                                                                                                          | 56.33         | -5.84  | 50.49          | 74       | -23.51 | peak          |
| 2390                                                                                                          | /             | -5.84  | /              | 54       | /      | AVG           |
| 2400                                                                                                          | 54.08         | -5.84  | 48.24          | 74       | -25.76 | peak          |
| 2400                                                                                                          | /             | -5.84  | /              | 54       | /      | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |

Vertical:

| Frequency                                                                                                     | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)                                                                                                         | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 2310                                                                                                          | 55.27         | -5.81  | 49.46          | 74       | -24.54 | peak          |
| 2310                                                                                                          | /             | -5.81  | /              | 54       | /      | AVG           |
| 2390                                                                                                          | 53.69         | -5.84  | 47.85          | 74       | -26.15 | peak          |
| 2390                                                                                                          | /             | -5.84  | /              | 54       | /      | AVG           |
| 2400                                                                                                          | 52.27         | -5.84  | 46.43          | 74       | -27.57 | peak          |
| 2400                                                                                                          | /             | -5.84  | /              | 54       | /      | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |               |        |                |          |        |               |



Operation Mode: TX CH High (2452MHz)

Horizontal

| Frequency<br>(MHz)                                                                                            | Meter Reading<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector Type |
|---------------------------------------------------------------------------------------------------------------|-------------------------|----------------|----------------------------|--------------------|----------------|---------------|
| 2483.50                                                                                                       | 54.72                   | -5.65          | 49.07                      | 74                 | -24.93         |               |
| 2483.50                                                                                                       | /                       | -5.65          | /                          | 54                 | /              | AVG           |
| 2500.00                                                                                                       | 53.16                   | -5.65          | 47.51                      | 74                 | -26.49         | peak          |
| 2500.00                                                                                                       | /                       | -5.65          | /                          | 54                 | /              | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |                         |                |                            |                    |                |               |

Vertical:

| Frequency<br>(MHz)                                                                                            | Meter Reading<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector Type |
|---------------------------------------------------------------------------------------------------------------|-------------------------|----------------|----------------------------|--------------------|----------------|---------------|
| 2483.50                                                                                                       | 55.08                   | -5.65          | 49.43                      | 74                 | -24.57         |               |
| 2483.50                                                                                                       | /                       | -5.65          | /                          | 54                 | /              | AVG           |
| 2500.00                                                                                                       | 53.19                   | -5.65          | 47.54                      | 74                 | -26.46         | peak          |
| 2500.00                                                                                                       | /                       | -5.65          | /                          | 54                 | /              | AVG           |
| Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier; Level = Reading + Factor; Margin = Level-Limit. |                         |                |                            |                    |                |               |
| Remark: All the other emissions not reported were too low to read and deemed to comply with FCC limit.        |                         |                |                            |                    |                |               |

Remark:

1. If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.
2. In restricted bands of operation, the spurious emissions below the permissible value more than 20dB.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



## 4.7. Antenna Requirement

### Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247, if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

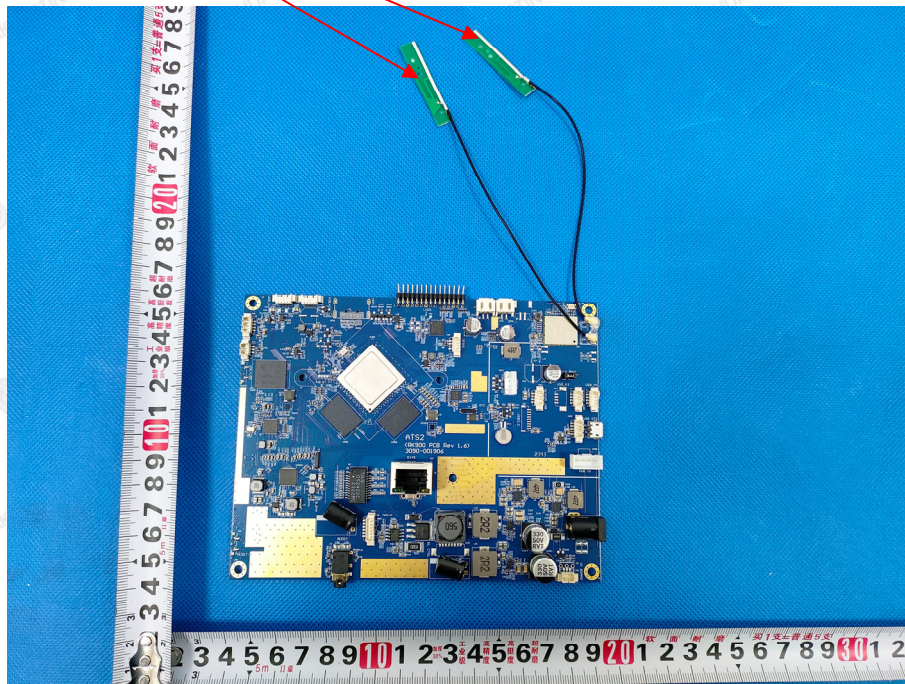
### Refer to statement below for compliance.

The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

### Antenna Connected Construction

The antenna used in this product is a Internal Antenna, need professional installation. It conforms to the standard requirements. and the best case gain of the antenna is Antenna port 1:3dBi and Antenna port 2:3dBi.

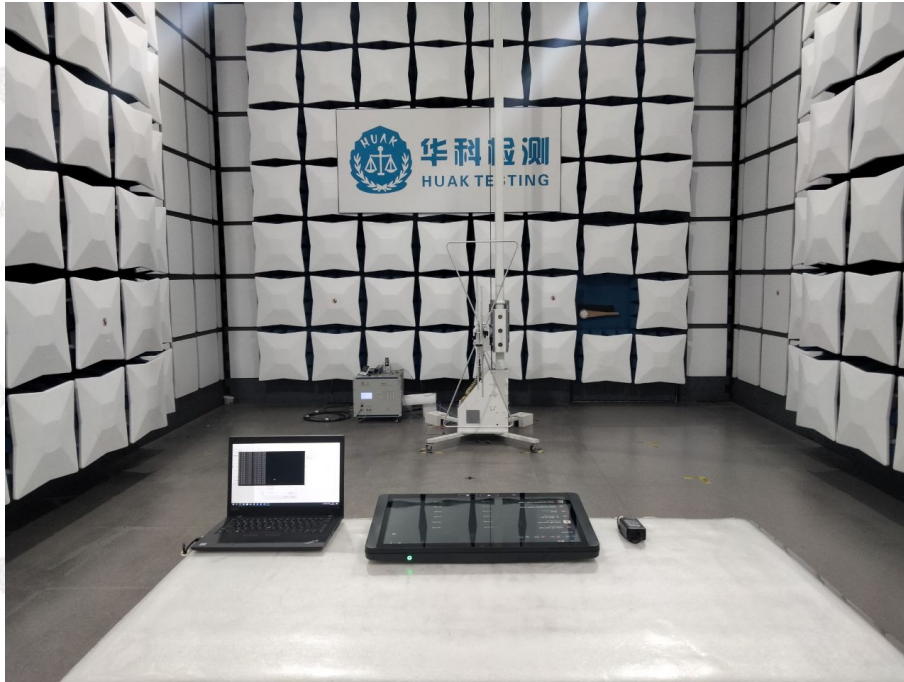
### Antenna





## 5. Photograph of Test

### Radiated Emission



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAKE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

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## Conducted Emission





## 6. Photos of the EUT

Reference to the report: ANNEX A of external photos and ANNEX B of internal photos

-----End of test report-----