



## Appendix A. Radiated Spurious Emission

|                 |              |                     |         |
|-----------------|--------------|---------------------|---------|
| Test Engineer : | Derreck Chen | Temperature :       | 23~25°C |
|                 |              | Relative Humidity : | 48~51%  |

15C 2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

| WIFI                        | Note | Frequency | Level      | Over   | Limit      | Read     | Antenna  | Cable  | Preamp | Ant    | Table   | Peak    | Pol.    |
|-----------------------------|------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|---------|---------|
| Ant.                        |      |           |            | Limit  | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.    |         |
| 1                           |      | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | ( P/A ) | ( H/V ) |
| 802.11b<br>CH 01<br>2412MHz |      | 2383.89   | 58.42      | -15.58 | 74         | 52.78    | 32.16    | 7.75   | 34.27  | 100    | 0       | P       | H       |
|                             |      | 2335.92   | 45.69      | -8.31  | 54         | 40.2     | 32.11    | 7.6    | 34.22  | 100    | 0       | A       | H       |
|                             | *    | 2412      | 58.82      | -      | -          | 53.17    | 32.2     | 7.75   | 34.3   | 100    | 0       | P       | H       |
|                             | *    | 2412      | 45.97      | -      | -          | 40.32    | 32.2     | 7.75   | 34.3   | 100    | 0       | A       | H       |
|                             |      |           |            |        |            |          |          |        |        |        |         |         | H       |
|                             |      |           |            |        |            |          |          |        |        |        |         |         | H       |
|                             |      | 2330.25   | 57.87      | -16.13 | 74         | 52.4     | 32.09    | 7.6    | 34.22  | 100    | 0       | P       | V       |
|                             |      | 2342.4    | 45.7       | -8.3   | 54         | 40.16    | 32.11    | 7.68   | 34.25  | 100    | 0       | A       | V       |
|                             | *    | 2412      | 58.52      | -      | -          | 52.87    | 32.2     | 7.75   | 34.3   | 100    | 0       | P       | V       |
|                             | *    | 2412      | 45.78      | -      | -          | 40.13    | 32.2     | 7.75   | 34.3   | 100    | 0       | A       | V       |
|                             |      |           |            |        |            |          |          |        |        |        |         |         | V       |
|                             |      |           |            |        |            |          |          |        |        |        |         |         | V       |
| 802.11b<br>CH 06<br>2437MHz |      | 2371.56   | 58.08      | -15.92 | 74         | 52.51    | 32.16    | 7.68   | 34.27  | 100    | 0       | P       | H       |
|                             |      | 2320.98   | 45.72      | -8.28  | 54         | 40.25    | 32.09    | 7.6    | 34.22  | 100    | 0       | A       | H       |
|                             | *    | 2437      | 59.25      | -      | -          | 53.53    | 32.24    | 7.83   | 34.35  | 100    | 0       | P       | H       |
|                             | *    | 2437      | 46.11      | -      | -          | 40.39    | 32.24    | 7.83   | 34.35  | 100    | 0       | A       | H       |
|                             |      | 2484.36   | 58.19      | -15.81 | 74         | 52.43    | 32.28    | 7.91   | 34.43  | 100    | 0       | P       | H       |
|                             |      | 2484.76   | 45.73      | -8.27  | 54         | 39.97    | 32.28    | 7.91   | 34.43  | 100    | 0       | A       | H       |
|                             |      | 2353.83   | 58.2       | -15.8  | 74         | 52.64    | 32.13    | 7.68   | 34.25  | 100    | 0       | P       | V       |
|                             |      | 2318.28   | 45.85      | -8.15  | 54         | 40.38    | 32.09    | 7.6    | 34.22  | 100    | 0       | A       | V       |
|                             | *    | 2437      | 59.15      | -      | -          | 53.43    | 32.24    | 7.83   | 34.35  | 100    | 0       | P       | V       |
|                             | *    | 2437      | 45.85      | -      | -          | 40.13    | 32.24    | 7.83   | 34.35  | 100    | 0       | A       | V       |
|                             |      | 2486.8    | 58.54      | -15.46 | 74         | 52.78    | 32.28    | 7.91   | 34.43  | 100    | 0       | P       | V       |
|                             |      | 2492.36   | 45.9       | -8.1   | 54         | 40.17    | 32.3     | 7.91   | 34.48  | 100    | 0       | A       | V       |



| WIFI                        | Note                                                                                        | Frequency | Level      | Over   | Limit      | Read     | Antenna  | Cable  | Preamp | Ant    | Table   | Peak  | Pol.  |
|-----------------------------|---------------------------------------------------------------------------------------------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|-------|-------|
| Ant.                        |                                                                                             |           |            | Limit  | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.  |       |
| 1                           |                                                                                             | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | (P/A) | (H/V) |
| 802.11b<br>CH 11<br>2462MHz | *                                                                                           | 2462      | 58.95      | -      | -          | 53.17    | 32.26    | 7.91   | 34.39  | 100    | 0       | P     | H     |
|                             | *                                                                                           | 2462      | 45.87      | -      | -          | 40.09    | 32.26    | 7.91   | 34.39  | 100    | 0       | A     | H     |
|                             |                                                                                             | 2492.32   | 58.07      | -15.93 | 74         | 52.34    | 32.3     | 7.91   | 34.48  | 100    | 0       | P     | H     |
|                             |                                                                                             | 2486.88   | 46.01      | -7.99  | 54         | 40.25    | 32.28    | 7.91   | 34.43  | 100    | 0       | A     | H     |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |       | H     |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |       | H     |
|                             | *                                                                                           | 2462      | 58.81      | -      | -          | 53.03    | 32.26    | 7.91   | 34.39  | 100    | 0       | P     | V     |
|                             | *                                                                                           | 2462      | 45.84      | -      | -          | 40.06    | 32.26    | 7.91   | 34.39  | 100    | 0       | A     | V     |
|                             |                                                                                             | 2498.92   | 58.18      | -15.82 | 74         | 52.45    | 32.3     | 7.91   | 34.48  | 100    | 0       | P     | V     |
|                             |                                                                                             | 2499.04   | 45.77      | -8.23  | 54         | 40.04    | 32.3     | 7.91   | 34.48  | 100    | 0       | A     | V     |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |       | V     |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |       | V     |
| Remark                      | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |           |            |        |            |          |          |        |        |        |         |       |       |



## 15C 2.4GHz 2400~2483.5MHz

## WIFI 802.11b (Harmonic @ 3m)

| WIFI                        | Note                                                                                        | Frequency | Level      | Over   | Limit      | Read     | Antenna  | Cable  | Preamp | Ant    | Table   | Peak    | Pol.    |
|-----------------------------|---------------------------------------------------------------------------------------------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|---------|---------|
| Ant.                        |                                                                                             |           |            | Limit  | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.    |         |
| 1                           |                                                                                             | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | ( P/A ) | ( H/V ) |
| 802.11b<br>CH 01<br>2412MHz |                                                                                             | 4824      | 40.79      | -33.21 | 74         | 54.3     | 34.26    | 11.16  | 58.93  | 100    | 0       | P       | H       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | H       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | H       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | H       |
|                             |                                                                                             | 4824      | 40.59      | -33.41 | 74         | 54.1     | 34.26    | 11.16  | 58.93  | 100    | 0       | P       | V       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | V       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | V       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | V       |
| 802.11b<br>CH 06<br>2437MHz |                                                                                             | 4872      | 40.75      | -33.25 | 74         | 54.07    | 34.3     | 11.21  | 58.83  | 100    | 0       | P       | H       |
|                             |                                                                                             | 7311      | 43.39      | -30.61 | 74         | 50.44    | 35.6     | 15.08  | 57.73  | 100    | 0       | P       | H       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | H       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | H       |
|                             |                                                                                             | 4872      | 41.43      | -32.57 | 74         | 54.75    | 34.3     | 11.21  | 58.83  | 100    | 0       | P       | V       |
|                             |                                                                                             | 7311      | 42.63      | -31.37 | 74         | 49.68    | 35.6     | 15.08  | 57.73  | 100    | 0       | P       | V       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | V       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | V       |
| 802.11b<br>CH 11<br>2462MHz |                                                                                             | 4926      | 41.19      | -32.81 | 74         | 54.31    | 34.34    | 11.27  | 58.73  | 100    | 0       | P       | H       |
|                             |                                                                                             | 7386      | 42.99      | -31.01 | 74         | 50.05    | 35.6     | 15.14  | 57.8   | 100    | 0       | P       | H       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | H       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | H       |
|                             |                                                                                             | 4926      | 40.55      | -33.45 | 74         | 53.67    | 34.34    | 11.27  | 58.73  | 100    | 0       | P       | V       |
|                             |                                                                                             | 7386      | 42.73      | -31.27 | 74         | 49.79    | 35.6     | 15.14  | 57.8   | 100    | 0       | P       | V       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | V       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | V       |
| Remark                      | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |           |            |        |            |          |          |        |        |        |         |         |         |



**15C 2.4GHz 2400~2483.5MHz**  
**WIFI 802.11g (Band Edge @ 3m)**

| WIFI                                 | Note | Frequency | Level      | Over   | Limit      | Read     | Antenna  | Cable  | Preamp | Ant    | Table   | Peak  | Pol.  |
|--------------------------------------|------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|-------|-------|
| Ant.                                 |      |           |            | Limit  | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.  |       |
| 1                                    |      | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | (P/A) | (H/V) |
| <b>802.11g<br/>CH 01<br/>2412MHz</b> |      | 2370.48   | 58.55      | -15.45 | 74         | 52.98    | 32.16    | 7.68   | 34.27  | 100    | 0       | P     | H     |
|                                      |      | 2366.16   | 45.89      | -8.11  | 54         | 40.35    | 32.13    | 7.68   | 34.27  | 100    | 0       | A     | H     |
|                                      | *    | 2412      | 58.76      | -15.24 | -          | -        | 32.2     | 7.75   | 34.3   | 100    | 0       | P     | H     |
|                                      | *    | 2412      | 45.83      | -8.17  | -          | -        | 32.2     | 7.75   | 34.3   | 100    | 0       | A     | H     |
|                                      |      |           |            |        |            |          |          |        |        |        |         |       | H     |
|                                      |      |           |            |        |            |          |          |        |        |        |         |       | H     |
|                                      |      | 2376.33   | 58.55      | -15.45 | 74         | 52.98    | 32.16    | 7.68   | 34.27  | 100    | 0       | P     | V     |
|                                      |      | 2368.95   | 45.67      | -8.33  | 54         | 40.1     | 32.16    | 7.68   | 34.27  | 100    | 0       | A     | V     |
|                                      | *    | 2412      | 58.92      | -15.08 | -          | -        | 32.2     | 7.75   | 34.3   | 100    | 0       | P     | V     |
|                                      | *    | 2412      | 45.83      | -8.17  | -          | -        | 32.2     | 7.75   | 34.3   | 100    | 0       | A     | V     |
|                                      |      |           |            |        |            |          |          |        |        |        |         |       | V     |
|                                      |      |           |            |        |            |          |          |        |        |        |         |       | V     |
| <b>802.11g<br/>CH 06<br/>2437MHz</b> |      | 2388.03   | 58.5       | -15.5  | 74         | 52.84    | 32.18    | 7.75   | 34.27  | 100    | 0       | P     | H     |
|                                      |      | 2340.15   | 45.71      | -8.29  | 54         | 40.17    | 32.11    | 7.68   | 34.25  | 100    | 0       | A     | H     |
|                                      | *    | 2437      | 59.21      | -14.79 | -          | -        | 32.24    | 7.83   | 34.35  | 100    | 0       | P     | H     |
|                                      | *    | 2437      | 45.87      | -8.13  | -          | -        | 32.24    | 7.83   | 34.35  | 100    | 0       | A     | H     |
|                                      |      | 2489      | 58.64      | -15.36 | 74         | 52.86    | 32.3     | 7.91   | 34.43  | 100    | 0       | P     | H     |
|                                      |      | 2488.88   | 45.68      | -8.32  | 54         | 39.9     | 32.3     | 7.91   | 34.43  | 100    | 0       | A     | H     |
|                                      |      | 2313.06   | 58.04      | -15.96 | 74         | 52.56    | 32.07    | 7.6    | 34.19  | 100    | 0       | P     | V     |
|                                      |      | 2334.39   | 45.69      | -8.31  | 54         | 40.22    | 32.09    | 7.6    | 34.22  | 100    | 0       | A     | V     |
|                                      | *    | 2437      | 58.58      | -15.42 | -          | -        | 32.24    | 7.83   | 34.35  | 100    | 0       | P     | V     |
|                                      | *    | 2437      | 45.86      | -8.14  | -          | -        | 32.24    | 7.83   | 34.35  | 100    | 0       | A     | V     |
|                                      |      | 2488.8    | 58.16      | -15.84 | 74         | 52.38    | 32.3     | 7.91   | 34.43  | 100    | 0       | P     | V     |
|                                      |      | 2496.32   | 45.9       | -8.1   | 54         | 40.17    | 32.3     | 7.91   | 34.48  | 100    | 0       | A     | V     |



| WIFI                        | Note                                                                                        | Frequency | Level      | Over   | Limit      | Read     | Antenna  | Cable  | Preamp | Ant    | Table   | Peak  | Pol.  |
|-----------------------------|---------------------------------------------------------------------------------------------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|-------|-------|
| Ant.                        |                                                                                             |           |            | Limit  | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.  |       |
| 1                           |                                                                                             | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | (P/A) | (H/V) |
| 802.11g<br>CH 11<br>2462MHz | *                                                                                           | 2462      | 58.47      | -      | -          | 52.69    | 32.26    | 7.91   | 34.39  | 100    | 0       | P     | H     |
|                             | *                                                                                           | 2462      | 45.95      | -      | -          | 40.17    | 32.26    | 7.91   | 34.39  | 100    | 0       | A     | H     |
|                             |                                                                                             | 2488.72   | 58.42      | -15.58 | 74         | 52.64    | 32.3     | 7.91   | 34.43  | 100    | 0       | P     | H     |
|                             |                                                                                             | 2491.36   | 45.89      | -8.11  | 54         | 40.11    | 32.3     | 7.91   | 34.43  | 100    | 0       | A     | H     |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |       | H     |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |       | H     |
|                             | *                                                                                           | 2462      | 58.75      | -      | -          | 52.97    | 32.26    | 7.91   | 34.39  | 100    | 0       | P     | V     |
|                             | *                                                                                           | 2462      | 45.89      | -      | -          | 40.11    | 32.26    | 7.91   | 34.39  | 100    | 0       | A     | V     |
|                             |                                                                                             | 2485.36   | 58         | -16    | 74         | 52.24    | 32.28    | 7.91   | 34.43  | 100    | 0       | P     | V     |
|                             |                                                                                             | 2494.84   | 45.88      | -8.12  | 54         | 40.15    | 32.3     | 7.91   | 34.48  | 100    | 0       | A     | V     |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |       | V     |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |       | V     |
| Remark                      | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |           |            |        |            |          |          |        |        |        |         |       |       |



## 15C 2.4GHz 2400~2483.5MHz

## WIFI 802.11g (Harmonic @ 3m)

| WIFI                        | Note                                                                                        | Frequency | Level      | Over   | Limit      | Read     | Antenna  | Cable  | Preamp | Ant    | Table   | Peak    | Pol.    |
|-----------------------------|---------------------------------------------------------------------------------------------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|---------|---------|
| Ant.                        |                                                                                             |           |            | Limit  | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.    |         |
| 1                           |                                                                                             | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | ( P/A ) | ( H/V ) |
| 802.11g<br>CH 01<br>2412MHz |                                                                                             | 4824      | 40.56      | -33.44 | 74         | 54.07    | 34.26    | 11.16  | 58.93  | 100    | 0       | P       | H       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | H       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | H       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | H       |
|                             |                                                                                             | 4824      | 40.43      | -33.57 | 74         | 53.94    | 34.26    | 11.16  | 58.93  | 100    | 0       | P       | V       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | V       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | V       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | V       |
| 802.11g<br>CH 06<br>2437MHz |                                                                                             | 4873      | 40.61      | -33.39 | 74         | 53.93    | 34.3     | 11.21  | 58.83  | 100    | 0       | P       | H       |
|                             |                                                                                             | 7311      | 42.96      | -31.04 | 74         | 50.01    | 35.6     | 15.08  | 57.73  | 100    | 0       | P       | H       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | H       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | H       |
|                             |                                                                                             | 4873      | 41.36      | -32.64 | 74         | 54.68    | 34.3     | 11.21  | 58.83  | 100    | 0       | P       | V       |
|                             |                                                                                             | 7311      | 42.37      | -31.63 | 74         | 49.42    | 35.6     | 15.08  | 57.73  | 100    | 0       | P       | V       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | V       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | V       |
| 802.11g<br>CH 11<br>2462MHz |                                                                                             | 4924      | 41.09      | -32.91 | 74         | 54.21    | 34.34    | 11.27  | 58.73  | 100    | 0       | P       | H       |
|                             |                                                                                             | 7386      | 42.71      | -31.29 | 74         | 49.77    | 35.6     | 15.14  | 57.8   | 100    | 0       | P       | H       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | H       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | H       |
|                             |                                                                                             | 4925      | 40.41      | -33.59 | 74         | 53.53    | 34.34    | 11.27  | 58.73  | 100    | 0       | P       | V       |
|                             |                                                                                             | 7386      | 42.63      | -31.37 | 74         | 49.69    | 35.6     | 15.14  | 57.8   | 100    | 0       | P       | V       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | V       |
|                             |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | V       |
| Remark                      | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |           |            |        |            |          |          |        |        |        |         |         |         |



## 15C 2.4GHz 2400~2483.5MHz

## WIFI 802.11n HT40 (Band Edge @ 3m)

| WIFI                                | Note | Frequency | Level      | Over   | Limit      | Read     | Antenna  | Cable  | Preamp | Ant    | Table   | Peak  | Pol.  |
|-------------------------------------|------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|-------|-------|
| Ant.                                |      |           |            | Limit  | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.  |       |
| 1                                   |      | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | (P/A) | (H/V) |
| 802.11n<br>HT40<br>CH 03<br>2422MHz |      | 2342.13   | 57.96      | -16.04 | 74         | 52.42    | 32.11    | 7.68   | 34.25  | 100    | 0       | P     | H     |
|                                     |      | 2352.48   | 46.42      | -7.58  | 54         | 40.86    | 32.13    | 7.68   | 34.25  | 100    | 0       | A     | H     |
|                                     | *    | 2422      | 58.28      | -      | -          | 52.58    | 32.22    | 7.83   | 34.35  | 100    | 0       | P     | H     |
|                                     | *    | 2422      | 46.4       | -      | -          | 40.7     | 32.22    | 7.83   | 34.35  | 100    | 0       | A     | H     |
|                                     |      | 2488.12   | 57.81      | -16.19 | 74         | 52.03    | 32.3     | 7.91   | 34.43  | 100    | 0       | P     | H     |
|                                     |      | 2490.84   | 46.17      | -7.83  | 54         | 40.39    | 32.3     | 7.91   | 34.43  | 100    | 0       | A     | H     |
|                                     |      | 2355.81   | 58.72      | -15.28 | 74         | 53.16    | 32.13    | 7.68   | 34.25  | 100    | 0       | P     | V     |
|                                     |      | 2354.01   | 46.35      | -7.65  | 54         | 40.79    | 32.13    | 7.68   | 34.25  | 100    | 0       | A     | V     |
|                                     | *    | 2422      | 58.91      | -      | -          | 53.21    | 32.22    | 7.83   | 34.35  | 100    | 0       | P     | V     |
|                                     | *    | 2422      | 46.71      | -      | -          | 41.01    | 32.22    | 7.83   | 34.35  | 100    | 0       | A     | V     |
|                                     |      | 2490.36   | 57.88      | -16.12 | 74         | 52.1     | 32.3     | 7.91   | 34.43  | 100    | 0       | P     | V     |
|                                     |      | 2492      | 46.33      | -7.67  | 54         | 40.6     | 32.3     | 7.91   | 34.48  | 100    | 0       | A     | V     |
| 802.11n<br>HT40<br>CH 06<br>2437MHz |      | 2311.53   | 58.69      | -15.31 | 74         | 53.21    | 32.07    | 7.6    | 34.19  | 100    | 0       | P     | H     |
|                                     |      | 2329.53   | 46.24      | -7.76  | 54         | 40.77    | 32.09    | 7.6    | 34.22  | 100    | 0       | A     | H     |
|                                     | *    | 2437      | 58.7       | -      | -          | 52.98    | 32.24    | 7.83   | 34.35  | 100    | 0       | P     | H     |
|                                     | *    | 2437      | 46.25      | -      | -          | 40.53    | 32.24    | 7.83   | 34.35  | 100    | 0       | A     | H     |
|                                     |      | 2484      | 58.73      | -15.27 | 74         | 52.97    | 32.28    | 7.91   | 34.43  | 100    | 0       | P     | H     |
|                                     |      | 2487.2    | 46.57      | -7.43  | 54         | 40.81    | 32.28    | 7.91   | 34.43  | 100    | 0       | A     | H     |
|                                     |      | 2369.04   | 58.53      | -15.47 | 74         | 52.96    | 32.16    | 7.68   | 34.27  | 100    | 0       | P     | V     |
|                                     |      | 2341.95   | 46.33      | -7.67  | 54         | 40.79    | 32.11    | 7.68   | 34.25  | 100    | 0       | A     | V     |
|                                     | *    | 2437      | 58.22      | -      | -          | 52.5     | 32.24    | 7.83   | 34.35  | 100    | 0       | P     | V     |
|                                     | *    | 2437      | 46.61      | -      | -          | 40.89    | 32.24    | 7.83   | 34.35  | 100    | 0       | A     | V     |
|                                     |      | 2484.12   | 58.31      | -15.69 | 74         | 52.55    | 32.28    | 7.91   | 34.43  | 100    | 0       | P     | V     |
|                                     |      | 2499.68   | 46.24      | -7.76  | 54         | 40.51    | 32.3     | 7.91   | 34.48  | 100    | 0       | A     | V     |



| WIFI                                | Note                                                                                        | Frequency | Level      | Over   | Limit      | Read     | Antenna  | Cable  | Preamp | Ant    | Table   | Peak  | Pol.  |
|-------------------------------------|---------------------------------------------------------------------------------------------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|-------|-------|
| Ant.                                |                                                                                             |           |            | Limit  | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.  |       |
| 1                                   |                                                                                             | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | (P/A) | (H/V) |
| 802.11n<br>HT40<br>CH 09<br>2452MHz |                                                                                             | 2386.59   | 58.94      | -15.06 | 74         | 53.28    | 32.18    | 7.75   | 34.27  | 100    | 0       | P     | H     |
|                                     |                                                                                             | 2347.44   | 46.29      | -7.71  | 54         | 40.75    | 32.11    | 7.68   | 34.25  | 100    | 0       | A     | H     |
|                                     | *                                                                                           | 2452      | 58.64      | -      | -          | 52.96    | 32.24    | 7.83   | 34.39  | 100    | 0       | P     | H     |
|                                     | *                                                                                           | 2452      | 46.66      | -      | -          | 40.98    | 32.24    | 7.83   | 34.39  | 100    | 0       | A     | H     |
|                                     |                                                                                             | 2494.28   | 58.32      | -15.68 | 74         | 52.59    | 32.3     | 7.91   | 34.48  | 100    | 0       | P     | H     |
|                                     |                                                                                             | 2488.04   | 46.47      | -7.53  | 54         | 40.69    | 32.3     | 7.91   | 34.43  | 100    | 0       | A     | H     |
|                                     |                                                                                             | 2341.23   | 58.96      | -15.04 | 74         | 53.42    | 32.11    | 7.68   | 34.25  | 100    | 0       | P     | V     |
|                                     |                                                                                             | 2311.8    | 46.12      | -7.88  | 54         | 40.64    | 32.07    | 7.6    | 34.19  | 100    | 0       | A     | V     |
|                                     | *                                                                                           | 2452.021  | 56.71      | -      | -          | 51.03    | 32.24    | 7.83   | 34.39  | 100    | 0       | P     | V     |
|                                     | *                                                                                           | 2452.021  | 45.54      | -      | -          | 39.86    | 32.24    | 7.83   | 34.39  | 100    | 0       | A     | V     |
|                                     |                                                                                             | 2484.88   | 59.26      | -14.74 | 74         | 53.5     | 32.28    | 7.91   | 34.43  | 100    | 0       | P     | V     |
|                                     |                                                                                             | 2489.36   | 46.32      | -7.68  | 54         | 40.54    | 32.3     | 7.91   | 34.43  | 100    | 0       | A     | V     |
| Remark                              | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |           |            |        |            |          |          |        |        |        |         |       |       |





## 15C 2.4GHz 2400~2483.5MHz

## WIFI 802.11n HT40 (Harmonic @ 3m)

| WIFI                                | Note                                                                                        | Frequency | Level      | Over   | Limit      | Read     | Antenna  | Cable  | Preamp | Ant    | Table   | Peak    | Pol.    |
|-------------------------------------|---------------------------------------------------------------------------------------------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|---------|---------|
| Ant.                                |                                                                                             |           |            | Limit  | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.    |         |
| 1                                   |                                                                                             | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | ( P/A ) | ( H/V ) |
| 802.11n<br>HT40<br>CH 03<br>2422MHz |                                                                                             | 4842      | 40.35      | -33.65 | 74         | 53.8     | 34.28    | 11.16  | 58.89  | 100    | 0       | P       | H       |
|                                     |                                                                                             | 7266      | 43.3       | -30.7  | 74         | 50.33    | 35.6     | 15.06  | 57.69  | 100    | 0       | P       | H       |
|                                     |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | H       |
|                                     |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | H       |
|                                     |                                                                                             | 4842      | 40.72      | -33.28 | 74         | 54.17    | 34.28    | 11.16  | 58.89  | 100    | 0       | P       | V       |
|                                     |                                                                                             | 7266      | 44.43      | -29.57 | 74         | 51.46    | 35.6     | 15.06  | 57.69  | 100    | 0       | P       | V       |
|                                     |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | V       |
|                                     |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | V       |
| 802.11n<br>HT40<br>CH 06<br>2437MHz |                                                                                             | 4872      | 40.54      | -33.46 | 74         | 53.86    | 34.3     | 11.21  | 58.83  | 100    | 0       | P       | H       |
|                                     |                                                                                             | 7311      | 43.16      | -30.84 | 74         | 50.21    | 35.6     | 15.08  | 57.73  | 100    | 0       | P       | H       |
|                                     |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | H       |
|                                     |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | H       |
|                                     |                                                                                             | 4872      | 41.27      | -32.73 | 74         | 54.59    | 34.3     | 11.21  | 58.83  | 100    | 0       | P       | V       |
|                                     |                                                                                             | 7311      | 42.39      | -31.61 | 74         | 49.44    | 35.6     | 15.08  | 57.73  | 100    | 0       | P       | V       |
|                                     |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | V       |
|                                     |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | V       |
| 802.11n<br>HT40<br>CH 09<br>2452MHz |                                                                                             | 4902      | 41.11      | -32.89 | 74         | 54.27    | 34.33    | 11.27  | 58.76  | 100    | 0       | P       | H       |
|                                     |                                                                                             | 7356      | 46.37      | -27.63 | 74         | 53.43    | 35.6     | 15.11  | 57.77  | 100    | 0       | P       | H       |
|                                     |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | H       |
|                                     |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | H       |
|                                     |                                                                                             | 4902      | 41.46      | -32.54 | 74         | 54.62    | 34.33    | 11.27  | 58.76  | 100    | 0       | P       | V       |
|                                     |                                                                                             | 7356      | 43.4       | -30.6  | 74         | 50.46    | 35.6     | 15.11  | 57.77  | 100    | 0       | P       | V       |
|                                     |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | V       |
|                                     |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | V       |
| Remark                              | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |           |            |        |            |          |          |        |        |        |         |         |         |

## 15C Emission below 1GHz

**2.4GHz WIFI 802.11n HT40 (LF)**

| WIFI                            | Note                                                                       | Frequency | Level      | Over   | Limit      | Read   | Antenna  | Cable  | Preamp | Ant    | Table   | Peak  | Pol.  |   |
|---------------------------------|----------------------------------------------------------------------------|-----------|------------|--------|------------|--------|----------|--------|--------|--------|---------|-------|-------|---|
| Ant.                            |                                                                            |           |            | Limit  | Line       | Level  | Factor   | Loss   | Factor | Pos    | Pos     | Avg.  |       |   |
| 1                               |                                                                            | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | (dBμV) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | (P/A) | (H/V) |   |
| 2.4GHz<br>802.11n<br>HT40<br>LF |                                                                            | 96.96     | 16.91      | -26.59 | 43.5       | 36.27  | 9.68     | 2.06   | 31.1   |        |         | P     | H     |   |
|                                 |                                                                            | 148.8     | 23.7       | -19.8  | 43.5       | 41.11  | 11.08    | 2.61   | 31.1   |        |         | P     | H     |   |
|                                 |                                                                            | 257.34    | 21.35      | -24.65 | 46         | 35.87  | 13.52    | 2.96   | 31     |        |         | P     | H     |   |
|                                 |                                                                            | 349.7     | 17.18      | -28.82 | 46         | 30.44  | 14.4     | 3.39   | 31.05  |        |         | P     | H     |   |
|                                 |                                                                            | 559.7     | 21.99      | -24.01 | 46         | 28.74  | 20       | 4.01   | 30.76  |        |         | P     | H     |   |
|                                 |                                                                            | 941.9     | 26.65      | -19.35 | 46         | 27.77  | 24.32    | 4.94   | 30.38  | 257    | 12      | P     | H     |   |
|                                 |                                                                            |           |            |        |            |        |          |        |        |        |         |       | H     |   |
|                                 |                                                                            |           |            |        |            |        |          |        |        |        |         |       | H     |   |
|                                 |                                                                            |           |            |        |            |        |          |        |        |        |         |       | H     |   |
|                                 |                                                                            |           |            |        |            |        |          |        |        |        |         |       | H     |   |
|                                 |                                                                            |           |            |        |            |        |          |        |        |        |         |       | H     |   |
|                                 |                                                                            |           |            |        |            |        |          |        |        |        |         |       | H     |   |
|                                 |                                                                            |           |            |        |            |        |          |        |        |        |         |       | H     |   |
|                                 |                                                                            | 65.1      | 10         | -30    | 40         | 33.14  | 6        | 2.06   | 31.2   |        |         |       | P     | V |
|                                 |                                                                            | 154.47    | 12.42      | -31.08 | 43.5       | 30.24  | 10.72    | 2.61   | 31.15  |        |         |       | P     | V |
|                                 |                                                                            | 259.23    | 18.39      | -27.61 | 46         | 32.59  | 13.84    | 2.96   | 31     |        |         |       | P     | V |
|                                 |                                                                            | 419       | 18.92      | -27.08 | 46         | 29.55  | 16.65    | 3.52   | 30.8   |        |         |       | P     | V |
|                                 |                                                                            | 618.5     | 23.25      | -22.75 | 46         | 29.56  | 20.17    | 4.08   | 30.56  |        |         |       | P     | V |
|                                 |                                                                            | 892.2     | 29.82      | -16.18 | 46         | 32.52  | 22.96    | 4.66   | 30.32  | 145    | 228     |       | P     | V |
|                                 |                                                                            |           |            |        |            |        |          |        |        |        |         |       |       | V |
|                                 |                                                                            |           |            |        |            |        |          |        |        |        |         |       |       | V |
|                                 |                                                                            |           |            |        |            |        |          |        |        |        |         |       |       | V |
|                                 |                                                                            |           |            |        |            |        |          |        |        |        |         |       |       | V |
|                                 |                                                                            |           |            |        |            |        |          |        |        |        |         |       | V     |   |
|                                 |                                                                            |           |            |        |            |        |          |        |        |        |         |       | V     |   |
| Remark                          | 1. No other spurious found.<br>2. All results are PASS against limit line. |           |            |        |            |        |          |        |        |        |         |       |       |   |

**Note symbol**

|     |                                                                                                                                                                        |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| *   | <b>Fundamental Frequency</b> which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency per 15.209(c). |
| !   | Test result is <b>over limit</b> line.                                                                                                                                 |
| P/A | <b>Peak</b> or <b>Average</b>                                                                                                                                          |
| H/V | <b>Horizontal</b> or <b>Vertical</b>                                                                                                                                   |



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

| WIFI    | Note | Frequency | Level      | Over   | Limit      | Read     | Antenna  | Cable  | Preamp | Ant    | Table   | Peak    | Pol.    |
|---------|------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|---------|---------|
| Ant.    |      |           |            | Limit  | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.    |         |
| 1+2     |      | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | ( P/A ) | ( H/V ) |
| 802.11b |      | 2390      | 55.45      | -18.55 | 74         | 54.51    | 32.22    | 4.58   | 35.86  | 103    | 308     | P       | H       |
| CH 01   |      |           |            |        |            |          |          |        |        |        |         |         |         |
| 2412MHz |      | 2390      | 43.54      | -10.46 | 54         | 42.6     | 32.22    | 4.58   | 35.86  | 103    | 308     | A       | H       |

1. Level(dBμV/m) =

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

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

**For Peak Limit @ 2390MHz:**

1. Level(dBμV/m)

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

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

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

**For Average Limit @ 2390MHz:**

1. Level(dBμV/m)

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

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

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

= -10.46(dB)

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



**15C 2.4GHz 2400~2483.5MHz**  
**WIFI 802.11n HT20 (Band Edge @ 3m)**

| WIFI                                | Note | Frequency | Level      | Over   | Limit      | Read     | Antenna  | Cable  | Preamp | Ant    | Table   | Peak  | Pol.  |
|-------------------------------------|------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|-------|-------|
| Ant.                                |      |           |            | Limit  | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.  |       |
| 1+2                                 |      | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | (P/A) | (H/V) |
| 802.11n<br>HT20<br>CH 01<br>2412MHz |      | 2344.02   | 58.52      | -15.48 | 74         | 52.98    | 32.11    | 7.68   | 34.25  | 100    | 0       | P     | H     |
|                                     |      | 2339.88   | 46.41      | -7.59  | 54         | 40.95    | 32.11    | 7.6    | 34.25  | 100    | 0       | A     | H     |
|                                     | *    | 2412.024  | 56.28      | -      | -          | 50.63    | 32.2     | 7.75   | 34.3   | 100    | 0       | P     | H     |
|                                     | *    | 2412.024  | 45.5       | -      | -          | 39.85    | 32.2     | 7.75   | 34.3   | 100    | 0       | A     | H     |
|                                     |      |           |            |        |            |          |          |        |        |        |         |       | H     |
|                                     |      |           |            |        |            |          |          |        |        |        |         |       | H     |
|                                     |      | 2348.79   | 59.11      | -14.89 | 74         | 53.57    | 32.11    | 7.68   | 34.25  | 100    | 0       | P     | V     |
|                                     |      | 2376.96   | 46.38      | -7.62  | 54         | 40.81    | 32.16    | 7.68   | 34.27  | 100    | 0       | A     | V     |
|                                     | *    | 2412.024  | 55.78      | -      | -          | 50.13    | 32.2     | 7.75   | 34.3   | 100    | 0       | P     | V     |
|                                     | *    | 2412.024  | 45.62      | -      | -          | 39.97    | 32.2     | 7.75   | 34.3   | 100    | 0       | A     | V     |
|                                     |      |           |            |        |            |          |          |        |        |        |         |       | V     |
|                                     |      |           |            |        |            |          |          |        |        |        |         |       | V     |
| 802.11n<br>HT20<br>CH 06<br>2437MHz |      | 2350.05   | 58.29      | -15.71 | 74         | 52.75    | 32.11    | 7.68   | 34.25  | 100    | 0       | P     | H     |
|                                     |      | 2322.96   | 46.32      | -7.68  | 54         | 40.85    | 32.09    | 7.6    | 34.22  | 100    | 0       | A     | H     |
|                                     | *    | 2437      | 56.5       | -      | -          | 50.78    | 32.24    | 7.83   | 34.35  | 100    | 0       | P     | H     |
|                                     | *    | 2437      | 45.49      | -      | -          | 39.77    | 32.24    | 7.83   | 34.35  | 100    | 0       | A     | H     |
|                                     |      | 2488.76   | 58.45      | -15.55 | 74         | 52.67    | 32.3     | 7.91   | 34.43  | 100    | 0       | P     | H     |
|                                     |      | 2488.96   | 46.36      | -7.64  | 54         | 40.58    | 32.3     | 7.91   | 34.43  | 100    | 0       | A     | H     |
|                                     |      | 2369.13   | 58.71      | -15.29 | 74         | 53.14    | 32.16    | 7.68   | 34.27  | 100    | 0       | P     | V     |
|                                     |      | 2368.41   | 46.36      | -7.64  | 54         | 40.82    | 32.13    | 7.68   | 34.27  | 100    | 0       | A     | V     |
|                                     | *    | 2437      | 56.62      | -      | -          | 50.9     | 32.24    | 7.83   | 34.35  | 100    | 0       | P     | V     |
|                                     | *    | 2437      | 45.38      | -      | -          | 39.66    | 32.24    | 7.83   | 34.35  | 100    | 0       | A     | V     |
|                                     |      | 2499.24   | 58.73      | -15.27 | 74         | 53       | 32.3     | 7.91   | 34.48  | 100    | 0       | P     | V     |
|                                     |      | 2498.92   | 46.29      | -7.71  | 54         | 40.56    | 32.3     | 7.91   | 34.48  | 100    | 0       | A     | V     |



| WIFI                                | Note                                                         | Frequency | Level      | Over   | Limit      | Read     | Antenna  | Cable  | Preamp | Ant    | Table   | Peak  | Pol.  |
|-------------------------------------|--------------------------------------------------------------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|-------|-------|
| Ant.                                |                                                              |           |            | Limit  | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.  |       |
| 1+2                                 |                                                              | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | (P/A) | (H/V) |
| 802.11n<br>HT20<br>CH 11<br>2462MHz | *                                                            | 2462.041  | 56.42      | -      | -          | 50.64    | 32.26    | 7.91   | 34.39  | 100    | 0       | P     | H     |
|                                     | *                                                            | 2462.041  | 45.73      | -      | -          | 39.95    | 32.26    | 7.91   | 34.39  | 100    | 0       | A     | H     |
|                                     |                                                              | 2484.04   | 58.86      | -15.14 | 74         | 53.1     | 32.28    | 7.91   | 34.43  | 100    | 0       | P     | H     |
|                                     |                                                              | 2485.56   | 46.21      | -7.79  | 54         | 40.45    | 32.28    | 7.91   | 34.43  | 100    | 0       | A     | H     |
|                                     |                                                              |           |            |        |            |          |          |        |        |        |         |       | H     |
|                                     |                                                              |           |            |        |            |          |          |        |        |        |         |       | H     |
|                                     | *                                                            | 2462.041  | 56.32      | -      | -          | 50.54    | 32.26    | 7.91   | 34.39  | 100    | 0       | P     | V     |
|                                     | *                                                            | 2462.041  | 45.64      | -      | -          | 39.86    | 32.26    | 7.91   | 34.39  | 100    | 0       | A     | V     |
|                                     |                                                              | 2494.8    | 58.22      | -15.78 | 74         | 52.49    | 32.3     | 7.91   | 34.48  | 100    | 0       | P     | V     |
|                                     |                                                              | 2484.28   | 46.48      | -7.52  | 54         | 40.72    | 32.28    | 7.91   | 34.43  | 100    | 0       | A     | V     |
|                                     |                                                              |           |            |        |            |          |          |        |        |        |         |       | V     |
|                                     |                                                              |           |            |        |            |          |          |        |        |        |         |       | V     |
| Remark                              | 1. No other spurious found.                                  |           |            |        |            |          |          |        |        |        |         |       |       |
|                                     | 2. All results are PASS against Peak and Average limit line. |           |            |        |            |          |          |        |        |        |         |       |       |



## 15C 2.4GHz 2400~2483.5MHz

## WIFI 802.11n HT20 (Harmonic @ 3m)

| WIFI                                | Note                                                                                        | Frequency | Level      | Over   | Limit      | Read     | Antenna  | Cable  | Preamp | Ant    | Table   | Peak    | Pol.    |
|-------------------------------------|---------------------------------------------------------------------------------------------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|---------|---------|
| Ant.                                |                                                                                             |           |            | Limit  | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.    |         |
| 1+2                                 |                                                                                             | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | ( P/A ) | ( H/V ) |
| 802.11n<br>HT20<br>CH 01<br>2412MHz |                                                                                             | 4824      | 40.63      | -33.37 | 74         | 54.14    | 34.26    | 11.16  | 58.93  | 100    | 0       | P       | H       |
|                                     |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | H       |
|                                     |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | H       |
|                                     |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | H       |
|                                     |                                                                                             | 4824      | 40.39      | -33.61 | 74         | 53.9     | 34.26    | 11.16  | 58.93  | 100    | 0       | P       | V       |
|                                     |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | V       |
|                                     |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | V       |
|                                     |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | V       |
| 802.11n<br>HT20<br>CH 06<br>2437MHz |                                                                                             | 4872      | 40.52      | -33.48 | 74         | 53.84    | 34.3     | 11.21  | 58.83  | 100    | 0       | P       | H       |
|                                     |                                                                                             | 7311      | 43.25      | -30.75 | 74         | 50.3     | 35.6     | 15.08  | 57.73  | 100    | 0       | P       | H       |
|                                     |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | H       |
|                                     |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | H       |
|                                     |                                                                                             | 4872      | 41.35      | -32.65 | 74         | 54.67    | 34.3     | 11.21  | 58.83  | 100    | 0       | P       | V       |
|                                     |                                                                                             | 7311      | 42.51      | -31.49 | 74         | 49.56    | 35.6     | 15.08  | 57.73  | 100    | 0       | P       | V       |
|                                     |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | V       |
|                                     |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | V       |
| 802.11n<br>HT20<br>CH 11<br>2462MHz |                                                                                             | 4926      | 41.24      | -32.76 | 74         | 54.36    | 34.34    | 11.27  | 58.73  | 100    | 0       | P       | H       |
|                                     |                                                                                             | 7386      | 43.18      | -30.82 | 74         | 50.24    | 35.6     | 15.14  | 57.8   | 100    | 0       | P       | H       |
|                                     |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | H       |
|                                     |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | H       |
|                                     |                                                                                             | 4926      | 40.84      | -33.16 | 74         | 53.96    | 34.34    | 11.27  | 58.73  | 100    | 0       | P       | V       |
|                                     |                                                                                             | 7386      | 42.87      | -31.13 | 74         | 49.93    | 35.6     | 15.14  | 57.8   | 100    | 0       | P       | V       |
|                                     |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | V       |
|                                     |                                                                                             |           |            |        |            |          |          |        |        |        |         |         | V       |
| Remark                              | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |           |            |        |            |          |          |        |        |        |         |         |         |



## 15C Emission below 1GHz

## 2.4GHz WIFI 802.11n HT20 (LF)

| WIFI                            | Note                                                                       | Frequency | Level      | Over   | Limit      | Read   | Antenna  | Cable  | Preamp | Ant    | Table   | Peak  | Pol.  |
|---------------------------------|----------------------------------------------------------------------------|-----------|------------|--------|------------|--------|----------|--------|--------|--------|---------|-------|-------|
| Ant.                            |                                                                            |           |            | Limit  | Line       | Level  | Factor   | Loss   | Factor | Pos    | Pos     | Avg.  |       |
| 1+2                             |                                                                            | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | (dBμV) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | (P/A) | (H/V) |
| 2.4GHz<br>802.11n<br>HT20<br>LF |                                                                            | 40.53     | 28.36      | -11.64 | 40         | 44.49  | 13.3     | 1.77   | 31.2   | 135    | 111     | P     | H     |
|                                 |                                                                            | 141.24    | 22.67      | -20.83 | 43.5       | 39.66  | 11.5     | 2.61   | 31.1   |        |         | P     | H     |
|                                 |                                                                            | 298.92    | 32.85      | -13.15 | 46         | 47.51  | 13.19    | 3.16   | 31.01  |        |         | P     | H     |
|                                 |                                                                            | 377       | 29.38      | -16.62 | 46         | 41.96  | 15.04    | 3.39   | 31.01  |        |         | P     | H     |
|                                 |                                                                            | 420.4     | 25.93      | -20.07 | 46         | 36.4   | 16.7     | 3.63   | 30.8   |        |         | P     | H     |
|                                 |                                                                            | 967.1     | 29.74      | -24.26 | 54         | 30.36  | 24.77    | 4.94   | 30.33  |        |         | P     | H     |
|                                 |                                                                            |           |            |        |            |        |          |        |        |        |         |       | H     |
|                                 |                                                                            |           |            |        |            |        |          |        |        |        |         |       | H     |
|                                 |                                                                            |           |            |        |            |        |          |        |        |        |         |       | H     |
|                                 |                                                                            |           |            |        |            |        |          |        |        |        |         |       | H     |
|                                 |                                                                            |           |            |        |            |        |          |        |        |        |         |       | H     |
|                                 |                                                                            |           |            |        |            |        |          |        |        |        |         |       | H     |
|                                 |                                                                            | 40.8      | 26.97      | -13.03 | 40         | 43.1   | 13.3     | 1.77   | 31.2   | 100    | 244     | P     | V     |
|                                 |                                                                            | 119.91    | 20.22      | -23.28 | 43.5       | 37.54  | 11.4     | 2.38   | 31.1   |        |         | P     | V     |
|                                 |                                                                            | 298.92    | 29         | -17    | 46         | 43.66  | 13.19    | 3.16   | 31.01  |        |         | P     | V     |
|                                 |                                                                            | 324.5     | 26.09      | -19.91 | 46         | 40.21  | 13.6     | 3.28   | 31     |        |         | P     | V     |
|                                 |                                                                            | 540.8     | 29.28      | -16.72 | 46         | 37.31  | 18.72    | 4.01   | 30.76  |        |         | P     | V     |
|                                 |                                                                            | 647.2     | 28.85      | -17.15 | 46         | 34.74  | 20.4     | 4.22   | 30.51  |        |         | P     | V     |
|                                 |                                                                            |           |            |        |            |        |          |        |        |        |         |       | V     |
|                                 |                                                                            |           |            |        |            |        |          |        |        |        |         |       | V     |
|                                 |                                                                            |           |            |        |            |        |          |        |        |        |         |       | V     |
|                                 |                                                                            |           |            |        |            |        |          |        |        |        |         |       | V     |
|                                 |                                                                            |           |            |        |            |        |          |        |        |        |         |       | V     |
|                                 |                                                                            |           |            |        |            |        |          |        |        |        |         |       | V     |
|                                 |                                                                            |           |            |        |            |        |          |        |        |        |         |       | V     |
| Remark                          | 1. No other spurious found.<br>2. All results are PASS against limit line. |           |            |        |            |        |          |        |        |        |         |       |       |



**Note symbol**

|     |                                                                                                                                                                        |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| *   | <b>Fundamental Frequency</b> which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency per 15.209(c). |
| !   | Test result is <b>over limit</b> line.                                                                                                                                 |
| P/A | <b>Peak</b> or <b>Average</b>                                                                                                                                          |
| H/V | <b>Horizontal</b> or <b>Vertical</b>                                                                                                                                   |



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

| WIFI    | Note | Frequency | Level      | Over   | Limit      | Read     | Antenna  | Cable  | Preamp | Ant    | Table   | Peak    | Pol.    |
|---------|------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|---------|---------|
| Ant.    |      |           |            | Limit  | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.    |         |
| 1+2     |      | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | ( P/A ) | ( H/V ) |
| 802.11b |      | 2390      | 55.45      | -18.55 | 74         | 54.51    | 32.22    | 4.58   | 35.86  | 103    | 308     | P       | H       |
| CH 01   |      |           |            |        |            |          |          |        |        |        |         |         |         |
| 2412MHz |      | 2390      | 43.54      | -10.46 | 54         | 42.6     | 32.22    | 4.58   | 35.86  | 103    | 308     | A       | H       |

1. Level(dBμV/m) =

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

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

**For Peak Limit @ 2390MHz:**

1. Level(dBμV/m)

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

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

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

**For Average Limit @ 2390MHz:**

1. Level(dBμV/m)

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

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

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

= -10.46(dB)

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