

# Appendix A:Test Data

## QCN5024

| Duty cycle    |                 |              |                  |                |                  |                       |
|---------------|-----------------|--------------|------------------|----------------|------------------|-----------------------|
| Band          | Frequency (MHz) | On time (ms) | On+off time (ms) | Duty cycle (%) | Duty Factor (dB) | 1/T Minimun VBW (kHz) |
| 802.11b       | 2412            | 0.654        | 0.892            | 73.318         | 1.348            | 1.529                 |
| 802.11g       | 2412            | 1.395        | 1.510            | 92.384         | 0.344            | 0.717                 |
| 802.11ax HE20 | 2412            | 5.480        | 5.740            | 95.470         | 0.201            | 0.182                 |
| 802.11ax HE40 | 2422            | 5.480        | 5.720            | 95.804         | 0.186            | 0.182                 |

| 2.4 GHz Band  |                |      |           |                                |       |       |       |                 |
|---------------|----------------|------|-----------|--------------------------------|-------|-------|-------|-----------------|
| Mod.          | Freq.<br>(MHz) |      | Data Rate | RF power setting<br>in Test SW |       |       |       | Test SW Version |
|               |                |      |           | Ant-0                          | Ant-1 | Ant-2 | Ant-3 |                 |
| 802.11b       | 2412           |      | 1M        | 19.00                          | 19.00 | 19.00 | 19.00 | QSPR 5.0-00188  |
| 802.11b       | 2437           |      | 1M        | 19.00                          | 19.00 | 19.00 | 19.00 |                 |
| 802.11b       | 2462           |      | 1M        | 19.00                          | 19.00 | 19.00 | 19.00 |                 |
| 802.11g       | 2412           |      | 6M        | 16.00                          | 16.00 | 16.00 | 16.00 |                 |
| 802.11g       | 2437           |      | 6M        | 20.00                          | 20.00 | 20.00 | 20.00 |                 |
| 802.11g       | 2462           |      | 6M        | 15.00                          | 15.00 | 15.00 | 15.00 |                 |
| 802.11n HT20  | 2412           |      | 26M       | 15.50                          | 15.50 | 15.50 | 15.50 |                 |
| 802.11n HT20  | 2437           |      | 26M       | 19.50                          | 19.50 | 19.50 | 19.50 |                 |
| 802.11n HT20  | 2462           |      | 26M       | 14.00                          | 14.00 | 14.00 | 14.00 |                 |
| 802.11n HT40  | 2422           |      | 54M       | 14.00                          | 14.00 | 14.00 | 14.00 |                 |
| 802.11n HT40  | 2437           |      | 54M       | 15.50                          | 15.50 | 15.50 | 15.50 |                 |
| 802.11n HT40  | 2452           |      | 54M       | 14.00                          | 14.00 | 14.00 | 14.00 |                 |
| 802.11n VHT20 | 2412           |      | 26M       | 15.50                          | 15.50 | 15.50 | 15.50 |                 |
| 802.11n VHT20 | 2437           |      | 26M       | 19.50                          | 19.50 | 19.50 | 19.50 |                 |
| 802.11n VHT20 | 2462           |      | 26M       | 14.00                          | 14.00 | 14.00 | 14.00 |                 |
| 802.11n VHT40 | 2422           |      | 54M       | 14.00                          | 14.00 | 14.00 | 14.00 |                 |
| 802.11n VHT40 | 2437           |      | 54M       | 15.50                          | 15.50 | 15.50 | 15.50 |                 |
| 802.11n VHT40 | 2452           |      | 54M       | 14.00                          | 14.00 | 14.00 | 14.00 |                 |
| Mod.          | Freq.<br>(MHz) | RU   | Data Rate | RF power setting<br>in Test SW |       |       |       |                 |
|               |                |      |           | Ant-0                          | Ant-1 | Ant-2 | Ant-3 |                 |
| 802.11ax HE20 | 2412           | Full | MCS0      | 15.50                          | 15.50 | 15.50 | 15.50 |                 |
| 802.11ax HE20 | 2437           | Full | MCS0      | 19.50                          | 19.50 | 19.50 | 19.50 |                 |
| 802.11ax HE20 | 2462           | Full | MCS0      | 14.00                          | 14.00 | 14.00 | 14.00 |                 |
| 802.11ax HE40 | 2422           | Full | MCS0      | 14.00                          | 14.00 | 14.00 | 14.00 |                 |
| 802.11ax HE40 | 2437           | Full | MCS0      | 15.50                          | 15.50 | 15.50 | 15.50 |                 |
| 802.11ax HE40 | 2452           | Full | MCS0      | 14.00                          | 14.00 | 14.00 | 14.00 |                 |

| 2.4 GHz Band  |    |                |              |                                    |       |       |       |       |                                     |       |       |       |     |                                      |       |       |       |       |
|---------------|----|----------------|--------------|------------------------------------|-------|-------|-------|-------|-------------------------------------|-------|-------|-------|-----|--------------------------------------|-------|-------|-------|-------|
| Mod.          | CH | Freq.<br>(MHz) | Data<br>Rate | Avg<br>Conducted<br>Power<br>(dBm) |       |       |       |       | Peak<br>Conducted<br>Power<br>(dBm) |       |       |       |     | Conducted<br>Power<br>Limit<br>(dBm) |       |       |       |       |
|               |    |                |              | Ant-0                              | Ant-1 | Ant-2 | Ant-3 | SUM   | Ant-0                               | Ant-1 | Ant-2 | Ant-3 | SUM | Ant-0                                | Ant-1 | Ant-2 | Ant-3 | SUM   |
| 802.11b       | 1  | 2412           | 1M           | 19.95                              | 20.24 | 19.52 | 20.01 | 25.96 | -                                   | -     | -     | -     | -   | 30.00                                | 30.00 | 30.00 | 30.00 | 30.00 |
| 802.11b       | 6  | 2437           | 1M           | 19.58                              | 19.90 | 19.52 | 19.75 | 25.71 | -                                   | -     | -     | -     | -   | 30.00                                | 30.00 | 30.00 | 30.00 | 30.00 |
| 802.11b       | 11 | 2462           | 1M           | 19.70                              | 20.01 | 20.12 | 19.82 | 25.94 | -                                   | -     | -     | -     | -   | 30.00                                | 30.00 | 30.00 | 30.00 | 30.00 |
| 802.11g       | 1  | 2412           | 6M           | 16.92                              | 17.05 | 16.76 | 16.95 | 22.94 | -                                   | -     | -     | -     | -   | 30.00                                | 30.00 | 30.00 | 30.00 | 30.00 |
| 802.11g       | 6  | 2437           | 6M           | 20.41                              | 20.42 | 20.32 | 20.37 | 26.40 | -                                   | -     | -     | -     | -   | 30.00                                | 30.00 | 30.00 | 30.00 | 30.00 |
| 802.11g       | 11 | 2462           | 6M           | 15.98                              | 16.01 | 15.92 | 16.00 | 22.00 | -                                   | -     | -     | -     | -   | 30.00                                | 30.00 | 30.00 | 30.00 | 30.00 |
| 802.11n HT20  | 1  | 2412           | 26M          | 16.25                              | 16.38 | 16.27 | 16.30 | 22.32 | -                                   | -     | -     | -     | -   | 30.00                                | 30.00 | 30.00 | 30.00 | 30.00 |
| 802.11n HT20  | 6  | 2437           | 26M          | 19.77                              | 20.01 | 19.86 | 19.95 | 25.92 | -                                   | -     | -     | -     | -   | 30.00                                | 30.00 | 30.00 | 30.00 | 30.00 |
| 802.11n HT20  | 11 | 2462           | 26M          | 14.71                              | 14.81 | 14.70 | 14.87 | 20.79 | -                                   | -     | -     | -     | -   | 30.00                                | 30.00 | 30.00 | 30.00 | 30.00 |
| 802.11n HT40  | 3  | 2422           | 54M          | 14.81                              | 14.92 | 14.87 | 14.96 | 20.91 | -                                   | -     | -     | -     | -   | 30.00                                | 30.00 | 30.00 | 30.00 | 30.00 |
| 802.11n HT40  | 6  | 2437           | 54M          | 16.30                              | 16.23 | 16.32 | 16.28 | 22.30 | -                                   | -     | -     | -     | -   | 30.00                                | 30.00 | 30.00 | 30.00 | 30.00 |
| 802.11n HT40  | 9  | 2452           | 54M          | 14.83                              | 14.90 | 14.92 | 14.93 | 20.92 | -                                   | -     | -     | -     | -   | 30.00                                | 30.00 | 30.00 | 30.00 | 30.00 |
| 802.11n VHT20 | 1  | 2412           | 26M          | 16.31                              | 16.46 | 16.38 | 16.38 | 22.40 | -                                   | -     | -     | -     | -   | 30.00                                | 30.00 | 30.00 | 30.00 | 30.00 |
| 802.11n VHT20 | 6  | 2437           | 26M          | 19.88                              | 20.12 | 19.95 | 20.01 | 26.01 | -                                   | -     | -     | -     | -   | 30.00                                | 30.00 | 30.00 | 30.00 | 30.00 |
| 802.11n VHT20 | 11 | 2462           | 26M          | 14.79                              | 14.94 | 14.79 | 14.96 | 20.89 | -                                   | -     | -     | -     | -   | 30.00                                | 30.00 | 30.00 | 30.00 | 30.00 |
| 802.11n VHT40 | 3  | 2422           | 54M          | 14.92                              | 15.03 | 14.97 | 15.03 | 21.01 | -                                   | -     | -     | -     | -   | 30.00                                | 30.00 | 30.00 | 30.00 | 30.00 |
| 802.11n VHT40 | 6  | 2437           | 54M          | 16.37                              | 16.30 | 16.41 | 16.37 | 22.38 | -                                   | -     | -     | -     | -   | 30.00                                | 30.00 | 30.00 | 30.00 | 30.00 |
| 802.11n VHT40 | 9  | 2452           | 54M          | 14.90                              | 14.97 | 15.03 | 15.00 | 21.00 | -                                   | -     | -     | -     | -   | 30.00                                | 30.00 | 30.00 | 30.00 | 30.00 |

| Mod.          | CH | Freq.<br>(MHz) | RU   | Data<br>Rate | Avg<br>Conducted<br>Power<br>(dBm) |       |       |       |       | Peak<br>Conducted<br>Power<br>(dBm) |       |       |       |     | Conducted<br>Power<br>Limit<br>(dBm) |       |       |       |       |
|---------------|----|----------------|------|--------------|------------------------------------|-------|-------|-------|-------|-------------------------------------|-------|-------|-------|-----|--------------------------------------|-------|-------|-------|-------|
|               |    |                |      |              | Ant-0                              | Ant-1 | Ant-2 | Ant-3 | SUM   | Ant-0                               | Ant-1 | Ant-2 | Ant-3 | SUM | Ant-0                                | Ant-1 | Ant-2 | Ant-3 | SUM   |
| 802.11ax HE20 | 1  | 2412           | Full | MCS0         | 16.37                              | 16.60 | 16.43 | 16.43 | 22.48 | -                                   | -     | -     | -     | -   | 30.00                                | 30.00 | 30.00 | 30.00 | 30.00 |
| 802.11ax HE20 | 6  | 2437           | Full | MCS0         | 19.93                              | 20.20 | 20.03 | 20.06 | 26.08 | -                                   | -     | -     | -     | -   | 30.00                                | 30.00 | 30.00 | 30.00 | 30.00 |
| 802.11ax HE20 | 11 | 2462           | Full | MCS0         | 14.87                              | 15.03 | 14.86 | 15.02 | 20.97 | -                                   | -     | -     | -     | -   | 30.00                                | 30.00 | 30.00 | 30.00 | 30.00 |
| 802.11ax HE40 | 3  | 2422           | Full | MCS0         | 15.03                              | 15.10 | 15.05 | 15.10 | 21.09 | -                                   | -     | -     | -     | -   | 30.00                                | 30.00 | 30.00 | 30.00 | 30.00 |
| 802.11ax HE40 | 6  | 2437           | Full | MCS0         | 16.48                              | 16.41 | 16.50 | 16.43 | 22.48 | -                                   | -     | -     | -     | -   | 30.00                                | 30.00 | 30.00 | 30.00 | 30.00 |
| 802.11ax HE40 | 9  | 2452           | Full | MCS0         | 14.98                              | 15.03 | 15.11 | 15.09 | 21.07 | -                                   | -     | -     | -     | -   | 30.00                                | 30.00 | 30.00 | 30.00 | 30.00 |

| 6 dB Bandwidth |                |                         |       |       |       |                                         |
|----------------|----------------|-------------------------|-------|-------|-------|-----------------------------------------|
| Mod.           | Freq.<br>(MHz) | 6 dB Bandwidth<br>(kHz) |       |       |       | 6 dB<br>Bandwidth<br>Min.Limit<br>(kHz) |
|                |                | Ant-0                   | Ant-1 | Ant-2 | Ant-3 |                                         |
| 802.11b        | 2412           | 8092                    | 8075  | 8052  | 8065  | ≥ 500                                   |
| 802.11b        | 2437           | 8077                    | 7620  | 8092  | 8089  | ≥ 500                                   |
| 802.11b        | 2462           | 8078                    | 8094  | 8092  | 8092  | ≥ 500                                   |
| 802.11g        | 2412           | 16360                   | 16320 | 16330 | 16380 | ≥ 500                                   |
| 802.11g        | 2437           | 16350                   | 16020 | 15800 | 16340 | ≥ 500                                   |
| 802.11g        | 2462           | 16370                   | 16380 | 16380 | 16350 | ≥ 500                                   |
| 802.11ax HE20  | 2412           | 18940                   | 19030 | 18970 | 18950 | ≥ 500                                   |
| 802.11ax HE20  | 2437           | 18740                   | 19010 | 18950 | 18940 | ≥ 500                                   |
| 802.11ax HE20  | 2462           | 18670                   | 19040 | 18940 | 18870 | ≥ 500                                   |
| 802.11ax HE40  | 2422           | 37850                   | 37860 | 38010 | 37800 | ≥ 500                                   |
| 802.11ax HE40  | 2437           | 37980                   | 37800 | 38070 | 37910 | ≥ 500                                   |
| 802.11ax HE40  | 2452           | 37920                   | 37950 | 37990 | 37900 | ≥ 500                                   |

| 99 % Occupied BW |                |                           |        |        |        |
|------------------|----------------|---------------------------|--------|--------|--------|
| Mod.             | Freq.<br>(MHz) | 99 % Occupied BW<br>(MHz) |        |        |        |
|                  |                | Ant-0                     | Ant-1  | Ant-2  | Ant-3  |
| 802.11b          | 2412           | 12.869                    | 12.965 | 12.904 | 12.869 |
| 802.11b          | 2437           | 13.047                    | 12.997 | 12.945 | 12.913 |
| 802.11b          | 2462           | 13.090                    | 13.040 | 13.061 | 12.960 |
| 802.11g          | 2412           | 16.495                    | 16.382 | 16.393 | 16.437 |
| 802.11g          | 2437           | 17.107                    | 17.017 | 16.976 | 17.122 |
| 802.11g          | 2462           | 16.523                    | 16.455 | 16.464 | 16.424 |
| 802.11ax HE20    | 2412           | 18.921                    | 18.993 | 18.968 | 18.931 |
| 802.11ax HE20    | 2437           | 19.122                    | 19.268 | 19.216 | 19.168 |
| 802.11ax HE20    | 2462           | 18.862                    | 18.998 | 18.946 | 18.917 |
| 802.11ax HE40    | 2422           | 37.897                    | 37.831 | 37.939 | 37.837 |
| 802.11ax HE40    | 2437           | 37.866                    | 37.887 | 37.959 | 37.910 |
| 802.11ax HE40    | 2452           | 37.900                    | 37.813 | 37.910 | 37.914 |

Maximum Power Spectral Density Measurement

| Mod.          | Freq.<br>(MHz) | Measurement<br>(dBm/3 kHz) |        |        |        |       | Max.Limit<br>(dBm/ 3 kHz) |       |       |       |      |
|---------------|----------------|----------------------------|--------|--------|--------|-------|---------------------------|-------|-------|-------|------|
|               |                | Ant-0                      | Ant-1  | Ant-2  | Ant-3  | SUM   | Ant-0                     | Ant-1 | Ant-2 | Ant-3 | SUM  |
| 802.11b       | 2412           | -2.61                      | -2.53  | -2.71  | -2.79  | 3.36  | 8.00                      | 8.00  | 8.00  | 8.00  | 3.74 |
| 802.11b       | 2437           | -2.67                      | -2.69  | -2.75  | -2.78  | 3.30  | 8.00                      | 8.00  | 8.00  | 8.00  | 3.74 |
| 802.11b       | 2462           | -2.53                      | -2.71  | -2.47  | -2.72  | 3.41  | 8.00                      | 8.00  | 8.00  | 8.00  | 3.74 |
| 802.11g       | 2412           | -9.49                      | -9.39  | -9.57  | -9.27  | -3.41 | 8.00                      | 8.00  | 8.00  | 8.00  | 3.74 |
| 802.11g       | 2437           | -5.33                      | -5.10  | -5.48  | -5.59  | 0.65  | 8.00                      | 8.00  | 8.00  | 8.00  | 3.74 |
| 802.11g       | 2462           | -10.45                     | -10.34 | -10.37 | -10.06 | -4.28 | 8.00                      | 8.00  | 8.00  | 8.00  | 3.74 |
| 802.11ax HE20 | 2412           | -9.21                      | -10.02 | -9.56  | -10.12 | -3.69 | 8.00                      | 8.00  | 8.00  | 8.00  | 3.74 |
| 802.11ax HE20 | 2437           | -6.12                      | -6.51  | -4.49  | -5.38  | 0.47  | 8.00                      | 8.00  | 8.00  | 8.00  | 3.74 |
| 802.11ax HE20 | 2462           | -11.45                     | -11.37 | -9.27  | -11.29 | -4.72 | 8.00                      | 8.00  | 8.00  | 8.00  | 3.74 |
| 802.11ax HE40 | 2422           | -13.34                     | -13.24 | -13.19 | -13.32 | -7.25 | 8.00                      | 8.00  | 8.00  | 8.00  | 3.74 |
| 802.11ax HE40 | 2437           | -11.14                     | -11.98 | -11.60 | -11.60 | -5.55 | 8.00                      | 8.00  | 8.00  | 8.00  | 3.74 |
| 802.11ax HE40 | 2452           | -13.25                     | -13.56 | -13.20 | -12.41 | -7.06 | 8.00                      | 8.00  | 8.00  | 8.00  | 3.74 |

QCN5024\_Beamforming on

| 2.4 GHz Band  |                |      |           |                                |       |       |       |                 |
|---------------|----------------|------|-----------|--------------------------------|-------|-------|-------|-----------------|
| Mod.          | Freq.<br>(MHz) |      | Data Rate | RF power setting<br>in Test SW |       |       |       | Test SW Version |
|               |                |      |           | Ant-0                          | Ant-1 | Ant-2 | Ant-3 |                 |
| 802.11n HT20  | 2412           |      | 26M       | 9.00                           | 9.00  | 9.00  | 9.00  | QSPR 5.0-00188  |
| 802.11n HT20  | 2437           |      | 26M       | 13.00                          | 13.00 | 13.00 | 13.00 |                 |
| 802.11n HT20  | 2462           |      | 26M       | 8.00                           | 8.00  | 8.00  | 8.00  |                 |
| 802.11n HT40  | 2422           |      | 54M       | 8.00                           | 8.00  | 8.00  | 8.00  |                 |
| 802.11n HT40  | 2437           |      | 54M       | 9.50                           | 9.50  | 9.50  | 9.50  |                 |
| 802.11n HT40  | 2452           |      | 54M       | 8.00                           | 8.00  | 8.00  | 8.00  |                 |
| 802.11n VHT20 | 2412           |      | 26M       | 9.00                           | 9.00  | 9.00  | 9.00  |                 |
| 802.11n VHT20 | 2437           |      | 26M       | 13.00                          | 13.00 | 13.00 | 13.00 |                 |
| 802.11n VHT20 | 2462           |      | 26M       | 8.00                           | 8.00  | 8.00  | 8.00  |                 |
| 802.11n VHT40 | 2422           |      | 54M       | 8.00                           | 8.00  | 8.00  | 8.00  |                 |
| 802.11n VHT40 | 2437           |      | 54M       | 9.50                           | 9.50  | 9.50  | 9.50  |                 |
| 802.11n VHT40 | 2452           |      | 54M       | 8.00                           | 8.00  | 8.00  | 8.00  |                 |
| Mod.          | Freq.<br>(MHz) | RU   | Data Rate | RF power setting<br>in Test SW |       |       |       |                 |
|               |                |      |           | Ant-0                          | Ant-1 | Ant-2 | Ant-3 |                 |
| 802.11ax HE20 | 2412           | Full | MCS0      | 9.00                           | 9.00  | 9.00  | 9.00  |                 |
| 802.11ax HE20 | 2437           | Full | MCS0      | 13.00                          | 13.00 | 13.00 | 13.00 |                 |
| 802.11ax HE20 | 2462           | Full | MCS0      | 8.00                           | 8.00  | 8.00  | 8.00  |                 |
| 802.11ax HE40 | 2422           | Full | MCS0      | 8.00                           | 8.00  | 8.00  | 8.00  |                 |
| 802.11ax HE40 | 2437           | Full | MCS0      | 9.50                           | 9.50  | 9.50  | 9.50  |                 |
| 802.11ax HE40 | 2452           | Full | MCS0      | 8.00                           | 8.00  | 8.00  | 8.00  |                 |

| 2.4 GHz Band  |    |                |              |                                    |       |       |       |       |                                     |       |       |       |     |                                      |       |       |       |       |
|---------------|----|----------------|--------------|------------------------------------|-------|-------|-------|-------|-------------------------------------|-------|-------|-------|-----|--------------------------------------|-------|-------|-------|-------|
| Mod.          | CH | Freq.<br>(MHz) | Data<br>Rate | Avg<br>Conducted<br>Power<br>(dBm) |       |       |       |       | Peak<br>Conducted<br>Power<br>(dBm) |       |       |       |     | Conducted<br>Power<br>Limit<br>(dBm) |       |       |       |       |
|               |    |                |              | Ant-0                              | Ant-1 | Ant-2 | Ant-3 | SUM   | Ant-0                               | Ant-1 | Ant-2 | Ant-3 | SUM | Ant-0                                | Ant-1 | Ant-2 | Ant-3 | SUM   |
| 802.11n HT20  | 1  | 2412           | 26M          | 9.77                               | 9.83  | 9.76  | 9.70  | 15.79 | -                                   | -     | -     | -     | -   | 25.74                                | 25.74 | 25.74 | 25.74 | 25.74 |
| 802.11n HT20  | 6  | 2437           | 26M          | 13.96                              | 13.81 | 13.61 | 13.79 | 19.81 | -                                   | -     | -     | -     | -   | 25.74                                | 25.74 | 25.74 | 25.74 | 25.74 |
| 802.11n HT20  | 11 | 2462           | 26M          | 8.49                               | 8.64  | 8.54  | 8.57  | 14.58 | -                                   | -     | -     | -     | -   | 25.74                                | 25.74 | 25.74 | 25.74 | 25.74 |
| 802.11n HT40  | 3  | 2422           | 54M          | 8.67                               | 8.67  | 8.67  | 8.74  | 14.71 | -                                   | -     | -     | -     | -   | 25.74                                | 25.74 | 25.74 | 25.74 | 25.74 |
| 802.11n HT40  | 6  | 2437           | 54M          | 10.17                              | 10.02 | 10.14 | 10.17 | 16.15 | -                                   | -     | -     | -     | -   | 25.74                                | 25.74 | 25.74 | 25.74 | 25.74 |
| 802.11n HT40  | 9  | 2452           | 54M          | 8.54                               | 8.58  | 8.74  | 8.69  | 14.66 | -                                   | -     | -     | -     | -   | 25.74                                | 25.74 | 25.74 | 25.74 | 25.74 |
| 802.11n VHT20 | 1  | 2412           | 26M          | 9.88                               | 9.99  | 9.89  | 9.80  | 15.91 | -                                   | -     | -     | -     | -   | 25.74                                | 25.74 | 25.74 | 25.74 | 25.74 |
| 802.11n VHT20 | 6  | 2437           | 26M          | 14.11                              | 13.93 | 13.79 | 13.87 | 19.95 | -                                   | -     | -     | -     | -   | 25.74                                | 25.74 | 25.74 | 25.74 | 25.74 |
| 802.11n VHT20 | 11 | 2462           | 26M          | 8.57                               | 8.81  | 8.67  | 8.70  | 14.71 | -                                   | -     | -     | -     | -   | 25.74                                | 25.74 | 25.74 | 25.74 | 25.74 |
| 802.11n VHT40 | 3  | 2422           | 54M          | 8.79                               | 8.84  | 8.84  | 8.89  | 14.86 | -                                   | -     | -     | -     | -   | 25.74                                | 25.74 | 25.74 | 25.74 | 25.74 |
| 802.11n VHT40 | 6  | 2437           | 54M          | 10.28                              | 10.14 | 10.29 | 10.24 | 16.26 | -                                   | -     | -     | -     | -   | 25.74                                | 25.74 | 25.74 | 25.74 | 25.74 |
| 802.11n VHT40 | 9  | 2452           | 54M          | 8.67                               | 8.69  | 8.89  | 8.87  | 14.80 | -                                   | -     | -     | -     | -   | 25.74                                | 25.74 | 25.74 | 25.74 | 25.74 |

| Mod.          | CH | Freq.<br>(MHz) | RU   | Data<br>Rate | Avg<br>Conducted<br>Power<br>(dBm) |       |       |       |       | Peak<br>Conducted<br>Power<br>(dBm) |       |       |       |     | Conducted<br>Power<br>Limit<br>(dBm) |       |       |       |       |
|---------------|----|----------------|------|--------------|------------------------------------|-------|-------|-------|-------|-------------------------------------|-------|-------|-------|-----|--------------------------------------|-------|-------|-------|-------|
|               |    |                |      |              | Ant-0                              | Ant-1 | Ant-2 | Ant-3 | SUM   | Ant-0                               | Ant-1 | Ant-2 | Ant-3 | SUM | Ant-0                                | Ant-1 | Ant-2 | Ant-3 | SUM   |
| 802.11ax HE20 | 1  | 2412           | Full | MCS0         | 9.98                               | 10.12 | 10.03 | 9.92  | 16.03 | -                                   | -     | -     | -     | -   | 25.74                                | 25.74 | 25.74 | 25.74 | 25.74 |
| 802.11ax HE20 | 6  | 2437           | Full | MCS0         | 14.28                              | 14.10 | 13.90 | 13.96 | 20.08 | -                                   | -     | -     | -     | -   | 25.74                                | 25.74 | 25.74 | 25.74 | 25.74 |
| 802.11ax HE20 | 11 | 2462           | Full | MCS0         | 8.68                               | 8.93  | 8.81  | 8.87  | 14.84 | -                                   | -     | -     | -     | -   | 25.74                                | 25.74 | 25.74 | 25.74 | 25.74 |
| 802.11ax HE40 | 3  | 2422           | Full | MCS0         | 8.92                               | 8.93  | 8.95  | 9.00  | 14.97 | -                                   | -     | -     | -     | -   | 25.74                                | 25.74 | 25.74 | 25.74 | 25.74 |
| 802.11ax HE40 | 6  | 2437           | Full | MCS0         | 10.41                              | 10.28 | 10.44 | 10.37 | 16.40 | -                                   | -     | -     | -     | -   | 25.74                                | 25.74 | 25.74 | 25.74 | 25.74 |
| 802.11ax HE40 | 9  | 2452           | Full | MCS0         | 8.80                               | 8.82  | 9.03  | 9.02  | 14.94 | -                                   | -     | -     | -     | -   | 25.74                                | 25.74 | 25.74 | 25.74 | 25.74 |



# QCA9889

| Duty cycle    |                 |              |                  |                |                  |                       |
|---------------|-----------------|--------------|------------------|----------------|------------------|-----------------------|
| Band          | Frequency (MHz) | On time (ms) | On+off time (ms) | Duty cycle (%) | Duty Factor (dB) | 1/T Minimun VBW (kHz) |
| 802.11b       | 2412            | 12.270       | 12.330           | 99.513         | 0.021            | 0.010                 |
| 802.11g       | 2412            | 2.040        | 2.180            | 93.578         | 0.288            | 0.490                 |
| 802.11n VHT20 | 2412            | 1.905        | 2.045            | 93.154         | 0.308            | 0.525                 |
| 802.11n VHT40 | 2422            | 0.948        | 1.092            | 86.813         | 0.614            | 1.055                 |

| 2.4 GHz Band  |                |           |                                |       |       |       |                 |
|---------------|----------------|-----------|--------------------------------|-------|-------|-------|-----------------|
| Mod.          | Freq.<br>(MHz) | Data Rate | RF power setting<br>in Test SW |       |       |       | Test SW Version |
|               |                |           | Ant-0                          | Ant-1 | Ant-2 | Ant-3 |                 |
| 802.11b       | 2412           | 1M        | 14.50                          | -     | -     | -     | QSPR 5.0-00188  |
| 802.11b       | 2437           | 1M        | 16.50                          | -     | -     | -     |                 |
| 802.11b       | 2462           | 1M        | 16.50                          | -     | -     | -     |                 |
| 802.11g       | 2412           | 6M        | 12.00                          | -     | -     | -     |                 |
| 802.11g       | 2437           | 6M        | 20.00                          | -     | -     | -     |                 |
| 802.11g       | 2462           | 6M        | 16.50                          | -     | -     | -     |                 |
| 802.11n HT20  | 2412           | 6.5M      | 11.00                          | -     | -     | -     |                 |
| 802.11n HT20  | 2437           | 6.5M      | 20.50                          | -     | -     | -     |                 |
| 802.11n HT20  | 2462           | 6.5M      | 16.50                          | -     | -     | -     |                 |
| 802.11n HT40  | 2422           | 13.5M     | 7.00                           | -     | -     | -     |                 |
| 802.11n HT40  | 2437           | 13.5M     | 14.00                          | -     | -     | -     |                 |
| 802.11n HT40  | 2452           | 13.5M     | 7.50                           | -     | -     | -     |                 |
| 802.11n VHT20 | 2412           | 6.5M      | 11.00                          | -     | -     | -     |                 |
| 802.11n VHT20 | 2437           | 6.5M      | 20.50                          | -     | -     | -     |                 |
| 802.11n VHT20 | 2462           | 6.5M      | 16.50                          | -     | -     | -     |                 |
| 802.11n VHT40 | 2422           | 13.5M     | 7.00                           | -     | -     | -     |                 |
| 802.11n VHT40 | 2437           | 13.5M     | 14.00                          | -     | -     | -     |                 |
| 802.11n VHT40 | 2452           | 13.5M     | 7.50                           | -     | -     | -     |                 |

| 2.4 GHz Band  |    |                |              |                                    |       |       |       |     |                                     |       |       |       |     |                                      |       |       |       |     |
|---------------|----|----------------|--------------|------------------------------------|-------|-------|-------|-----|-------------------------------------|-------|-------|-------|-----|--------------------------------------|-------|-------|-------|-----|
| Mod.          | CH | Freq.<br>(MHz) | Data<br>Rate | Avg<br>Conducted<br>Power<br>(dBm) |       |       |       |     | Peak<br>Conducted<br>Power<br>(dBm) |       |       |       |     | Conducted<br>Power<br>Limit<br>(dBm) |       |       |       |     |
|               |    |                |              | Ant-0                              | Ant-1 | Ant-2 | Ant-3 | SUM | Ant-0                               | Ant-1 | Ant-2 | Ant-3 | SUM | Ant-0                                | Ant-1 | Ant-2 | Ant-3 | SUM |
| 802.11b       | 1  | 2412           | 1M           | 15.78                              | -     | -     | -     | -   | 18.73                               | -     | -     | -     | -   | 30.00                                | -     | -     | -     | -   |
| 802.11b       | 6  | 2437           | 1M           | 17.00                              | -     | -     | -     | -   | 19.77                               | -     | -     | -     | -   | 30.00                                | -     | -     | -     | -   |
| 802.11b       | 11 | 2462           | 1M           | 16.90                              | -     | -     | -     | -   | 19.69                               | -     | -     | -     | -   | 30.00                                | -     | -     | -     | -   |
| 802.11g       | 1  | 2412           | 6M           | 13.31                              | -     | -     | -     | -   | 17.53                               | -     | -     | -     | -   | 30.00                                | -     | -     | -     | -   |
| 802.11g       | 6  | 2437           | 6M           | 19.27                              | -     | -     | -     | -   | 22.21                               | -     | -     | -     | -   | 30.00                                | -     | -     | -     | -   |
| 802.11g       | 11 | 2462           | 6M           | 16.61                              | -     | -     | -     | -   | 20.22                               | -     | -     | -     | -   | 30.00                                | -     | -     | -     | -   |
| 802.11n HT20  | 1  | 2412           | 6.5M         | 12.26                              | -     | -     | -     | -   | 16.72                               | -     | -     | -     | -   | 30.00                                | -     | -     | -     | -   |
| 802.11n HT20  | 6  | 2437           | 6.5M         | 19.40                              | -     | -     | -     | -   | 22.36                               | -     | -     | -     | -   | 30.00                                | -     | -     | -     | -   |
| 802.11n HT20  | 11 | 2462           | 6.5M         | 16.41                              | -     | -     | -     | -   | 20.12                               | -     | -     | -     | -   | 30.00                                | -     | -     | -     | -   |
| 802.11n HT40  | 3  | 2422           | 13.5M        | 7.83                               | -     | -     | -     | -   | 13.27                               | -     | -     | -     | -   | 30.00                                | -     | -     | -     | -   |
| 802.11n HT40  | 6  | 2437           | 13.5M        | 14.08                              | -     | -     | -     | -   | 18.51                               | -     | -     | -     | -   | 30.00                                | -     | -     | -     | -   |
| 802.11n HT40  | 9  | 2452           | 13.5M        | 7.86                               | -     | -     | -     | -   | 13.36                               | -     | -     | -     | -   | 30.00                                | -     | -     | -     | -   |
| 802.11n VHT20 | 1  | 2412           | 6.5M         | 12.31                              | -     | -     | -     | -   | 16.78                               | -     | -     | -     | -   | 30.00                                | -     | -     | -     | -   |
| 802.11n VHT20 | 6  | 2437           | 6.5M         | 19.46                              | -     | -     | -     | -   | 22.42                               | -     | -     | -     | -   | 30.00                                | -     | -     | -     | -   |
| 802.11n VHT20 | 11 | 2462           | 6.5M         | 16.50                              | -     | -     | -     | -   | 20.19                               | -     | -     | -     | -   | 30.00                                | -     | -     | -     | -   |
| 802.11n VHT40 | 3  | 2422           | 13.5M        | 7.90                               | -     | -     | -     | -   | 13.39                               | -     | -     | -     | -   | 30.00                                | -     | -     | -     | -   |
| 802.11n VHT40 | 6  | 2437           | 13.5M        | 14.17                              | -     | -     | -     | -   | 18.59                               | -     | -     | -     | -   | 30.00                                | -     | -     | -     | -   |
| 802.11n VHT40 | 9  | 2452           | 13.5M        | 7.93                               | -     | -     | -     | -   | 13.45                               | -     | -     | -     | -   | 30.00                                | -     | -     | -     | -   |

| 6 dB Bandwidth |                |                         |       |       |       |                                         |
|----------------|----------------|-------------------------|-------|-------|-------|-----------------------------------------|
| Mod.           | Freq.<br>(MHz) | 6 dB Bandwidth<br>(kHz) |       |       |       | 6 dB<br>Bandwidth<br>Min.Limit<br>(kHz) |
|                |                | Ant-0                   | Ant-1 | Ant-2 | Ant-3 |                                         |
| 802.11b        | 2412           | 7119                    | -     | -     | -     | $\geq 500$                              |
| 802.11b        | 2437           | 7120                    | -     | -     | -     | $\geq 500$                              |
| 802.11b        | 2462           | 7123                    | -     | -     | -     | $\geq 500$                              |
| 802.11g        | 2412           | 16360                   | -     | -     | -     | $\geq 500$                              |
| 802.11g        | 2437           | 16380                   | -     | -     | -     | $\geq 500$                              |
| 802.11g        | 2462           | 16360                   | -     | -     | -     | $\geq 500$                              |
| 802.11n VHT20  | 2412           | 17540                   | -     | -     | -     | $\geq 500$                              |
| 802.11n VHT20  | 2437           | 17570                   | -     | -     | -     | $\geq 500$                              |
| 802.11n VHT20  | 2462           | 17570                   | -     | -     | -     | $\geq 500$                              |
| 802.11n VHT40  | 2422           | 35570                   | -     | -     | -     | $\geq 500$                              |
| 802.11n VHT40  | 2437           | 35390                   | -     | -     | -     | $\geq 500$                              |
| 802.11n VHT40  | 2452           | 36110                   | -     | -     | -     | $\geq 500$                              |

| 99 % Occupied BW |                |                           |       |       |       |
|------------------|----------------|---------------------------|-------|-------|-------|
| Mod.             | Freq.<br>(MHz) | 99 % Occupied BW<br>(MHz) |       |       |       |
|                  |                | Ant-0                     | Ant-1 | Ant-2 | Ant-3 |
| 802.11b          | 2412           | 12.463                    | -     | -     | -     |
| 802.11b          | 2437           | 12.788                    | -     | -     | -     |
| 802.11b          | 2462           | 12.657                    | -     | -     | -     |
| 802.11g          | 2412           | 17.142                    | -     | -     | -     |
| 802.11g          | 2437           | 24.502                    | -     | -     | -     |
| 802.11g          | 2462           | 18.684                    | -     | -     | -     |
| 802.11n VHT20    | 2412           | 18.113                    | -     | -     | -     |
| 802.11n VHT20    | 2437           | 25.904                    | -     | -     | -     |
| 802.11n VHT20    | 2462           | 19.220                    | -     | -     | -     |
| 802.11n VHT40    | 2422           | 37.123                    | -     | -     | -     |
| 802.11n VHT40    | 2437           | 37.569                    | -     | -     | -     |
| 802.11n VHT40    | 2452           | 37.366                    | -     | -     | -     |

## Maximum Power Spectral Density Measurement

| Mod.          | Freq.<br>(MHz) | Measurement<br>(dBm/3 kHz) |       |       |       |     | Max.Limit<br>(dBm/ 3 kHz) |       |       |       |      |
|---------------|----------------|----------------------------|-------|-------|-------|-----|---------------------------|-------|-------|-------|------|
|               |                | Ant-0                      | Ant-1 | Ant-2 | Ant-3 | SUM | Ant-0                     | Ant-1 | Ant-2 | Ant-3 | SUM  |
| 802.11b       | 2412           | -5.99                      | -     | -     | -     |     | 8.00                      | -     | -     | -     | 8.00 |
| 802.11b       | 2437           | -5.81                      | -     | -     | -     |     | 8.00                      | -     | -     | -     | 8.00 |
| 802.11b       | 2462           | -3.83                      | -     | -     | -     |     | 8.00                      | -     | -     | -     | 8.00 |
| 802.11g       | 2412           | -11.32                     | -     | -     | -     |     | 8.00                      | -     | -     | -     | 8.00 |
| 802.11g       | 2437           | -6.45                      | -     | -     | -     |     | 8.00                      | -     | -     | -     | 8.00 |
| 802.11g       | 2462           | -7.61                      | -     | -     | -     |     | 8.00                      | -     | -     | -     | 8.00 |
| 802.11n VHT20 | 2412           | -12.80                     | -     | -     | -     |     | 8.00                      | -     | -     | -     | 8.00 |
| 802.11n VHT20 | 2437           | -6.45                      | -     | -     | -     |     | 8.00                      | -     | -     | -     | 8.00 |
| 802.11n VHT20 | 2462           | -9.17                      | -     | -     | -     |     | 8.00                      | -     | -     | -     | 8.00 |
| 802.11n VHT40 | 2422           | -19.75                     | -     | -     | -     |     | 8.00                      | -     | -     | -     | 8.00 |
| 802.11n VHT40 | 2437           | -12.09                     | -     | -     | -     |     | 8.00                      | -     | -     | -     | 8.00 |
| 802.11n VHT40 | 2452           | -19.55                     | -     | -     | -     |     | 8.00                      | -     | -     | -     | 8.00 |