



| Channel         |       |    |    | 20800  | 21100 | 21400  | Tune-up<br>limit<br>(dBm) | MPR<br>(dB) |
|-----------------|-------|----|----|--------|-------|--------|---------------------------|-------------|
| Frequency (MHz) |       |    |    | 2505   | 2535  | 2565   |                           |             |
| 10              | QPSK  | 1  | 0  | 22.31  | 22.35 | 22.44  | 23                        | 0           |
| 10              | QPSK  | 1  | 25 | 22.43  | 22.50 | 22.59  |                           |             |
| 10              | QPSK  | 1  | 49 | 22.28  | 22.42 | 22.54  |                           |             |
| 10              | QPSK  | 25 | 0  | 21.31  | 21.49 | 21.66  | 22                        | 1           |
| 10              | QPSK  | 25 | 12 | 21.44  | 21.49 | 21.64  |                           |             |
| 10              | QPSK  | 25 | 25 | 21.50  | 21.54 | 21.58  |                           |             |
| 10              | QPSK  | 50 | 0  | 21.41  | 21.53 | 21.66  |                           |             |
| 10              | 16QAM | 1  | 0  | 21.52  | 21.63 | 21.67  | 22                        | 1           |
| 10              | 16QAM | 1  | 25 | 21.65  | 21.76 | 21.88  |                           |             |
| 10              | 16QAM | 1  | 49 | 21.51  | 21.66 | 21.73  |                           |             |
| 10              | 16QAM | 25 | 0  | 20.38  | 20.54 | 20.68  | 21                        | 2           |
| 10              | 16QAM | 25 | 12 | 20.49  | 20.56 | 20.64  |                           |             |
| 10              | 16QAM | 25 | 25 | 20.54  | 20.59 | 20.60  |                           |             |
| 10              | 16QAM | 50 | 0  | 20.45  | 20.59 | 20.65  |                           |             |
| 10              | 64QAM | 1  | 0  | 21.46  | 21.50 | 21.56  | 22                        | 1           |
| 10              | 64QAM | 1  | 25 | 21.53  | 21.62 | 21.80  |                           |             |
| 10              | 64QAM | 1  | 49 | 21.43  | 21.54 | 21.66  |                           |             |
| 10              | 64QAM | 25 | 0  | 20.35  | 20.54 | 20.68  | 21                        | 2           |
| 10              | 64QAM | 25 | 12 | 20.46  | 20.57 | 20.66  |                           |             |
| 10              | 64QAM | 25 | 25 | 20.54  | 20.58 | 20.57  |                           |             |
| 10              | 64QAM | 50 | 0  | 20.44  | 20.56 | 20.64  |                           |             |
| Channel         |       |    |    | 20775  | 21100 | 21425  | Tune-up<br>limit<br>(dBm) | MPR<br>(dB) |
| Frequency (MHz) |       |    |    | 2502.5 | 2535  | 2567.5 |                           |             |
| 5               | QPSK  | 1  | 0  | 22.22  | 22.28 | 22.38  | 23                        | 0           |
| 5               | QPSK  | 1  | 12 | 22.51  | 22.57 | 22.56  |                           |             |
| 5               | QPSK  | 1  | 24 | 22.22  | 22.31 | 22.46  |                           |             |
| 5               | QPSK  | 12 | 0  | 21.35  | 21.45 | 21.66  | 22                        | 1           |
| 5               | QPSK  | 12 | 7  | 21.45  | 21.53 | 21.69  |                           |             |
| 5               | QPSK  | 12 | 13 | 21.47  | 21.50 | 21.65  |                           |             |
| 5               | QPSK  | 25 | 0  | 21.41  | 21.49 | 21.67  |                           |             |
| 5               | 16QAM | 1  | 0  | 21.47  | 21.60 | 21.69  | 22                        | 1           |
| 5               | 16QAM | 1  | 12 | 21.73  | 21.84 | 21.94  |                           |             |
| 5               | 16QAM | 1  | 24 | 21.48  | 21.60 | 21.67  |                           |             |
| 5               | 16QAM | 12 | 0  | 20.42  | 20.52 | 20.66  | 21                        | 2           |
| 5               | 16QAM | 12 | 7  | 20.48  | 20.57 | 20.68  |                           |             |
| 5               | 16QAM | 12 | 13 | 20.53  | 20.58 | 20.65  |                           |             |
| 5               | 16QAM | 25 | 0  | 20.46  | 20.53 | 20.67  |                           |             |
| 5               | 64QAM | 1  | 0  | 21.37  | 21.47 | 21.61  | 22                        | 1           |
| 5               | 64QAM | 1  | 12 | 21.65  | 21.77 | 21.88  |                           |             |
| 5               | 64QAM | 1  | 24 | 21.35  | 21.51 | 21.60  |                           |             |
| 5               | 64QAM | 12 | 0  | 20.39  | 20.47 | 20.65  | 21                        | 2           |
| 5               | 64QAM | 12 | 7  | 20.47  | 20.55 | 20.68  |                           |             |
| 5               | 64QAM | 12 | 13 | 20.49  | 20.54 | 20.63  |                           |             |
| 5               | 64QAM | 25 | 0  | 20.46  | 20.54 | 20.68  |                           |             |

**<LTE Band 12>**

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up<br>limit<br>(dBm) | MPR<br>(dB) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|---------------------------|-------------|
| Channel         |            |         |           | 23060                    | 23095                       | 23130                     |                           |             |
| Frequency (MHz) |            |         |           | 704                      | 707.5                       | 711                       |                           |             |
| 10              | QPSK       | 1       | 0         | 22.26                    | 22.22                       | 22.24                     | 23                        | 0           |
| 10              | QPSK       | 1       | 25        | 22.46                    | 22.37                       | 22.36                     |                           |             |
| 10              | QPSK       | 1       | 49        | 22.31                    | 22.33                       | 22.35                     |                           |             |
| 10              | QPSK       | 25      | 0         | 21.19                    | 21.35                       | 21.47                     | 22                        | 1           |
| 10              | QPSK       | 25      | 12        | 21.36                    | 21.30                       | 21.40                     |                           |             |
| 10              | QPSK       | 25      | 25        | 21.37                    | 21.37                       | 21.48                     |                           |             |
| 10              | QPSK       | 50      | 0         | 21.31                    | 21.41                       | 21.51                     | 22                        | 1           |
| 10              | 16QAM      | 1       | 0         | 21.46                    | 21.42                       | 21.41                     |                           |             |
| 10              | 16QAM      | 1       | 25        | 21.56                    | 21.57                       | 21.56                     |                           |             |
| 10              | 16QAM      | 1       | 49        | 21.50                    | 21.56                       | 21.49                     | 21                        | 2           |
| 10              | 16QAM      | 25      | 0         | 20.14                    | 20.32                       | 20.43                     |                           |             |
| 10              | 16QAM      | 25      | 12        | 20.30                    | 20.36                       | 20.35                     |                           |             |
| 10              | 16QAM      | 25      | 25        | 20.32                    | 20.35                       | 20.44                     | 21                        | 2           |
| 10              | 16QAM      | 50      | 0         | 20.27                    | 20.37                       | 20.48                     |                           |             |
| 10              | 64QAM      | 1       | 0         | 21.36                    | 21.31                       | 21.34                     |                           |             |
| 10              | 64QAM      | 1       | 25        | 21.50                    | 21.47                       | 21.46                     | 22                        | 1           |
| 10              | 64QAM      | 1       | 49        | 21.42                    | 21.45                       | 21.40                     |                           |             |
| 10              | 64QAM      | 25      | 0         | 20.12                    | 20.31                       | 20.42                     |                           |             |
| 10              | 64QAM      | 25      | 12        | 20.33                    | 20.34                       | 20.34                     | 21                        | 2           |
| 10              | 64QAM      | 25      | 25        | 20.34                    | 20.34                       | 20.43                     |                           |             |
| 10              | 64QAM      | 50      | 0         | 20.27                    | 20.35                       | 20.46                     |                           |             |
| Channel         |            |         |           | 23035                    | 23095                       | 23155                     |                           |             |
| Frequency (MHz) |            |         |           | 701.5                    | 707.5                       | 713.5                     |                           |             |
| 5               | QPSK       | 1       | 0         | 22.21                    | 22.13                       | 22.12                     | 23                        | 0           |
| 5               | QPSK       | 1       | 12        | 22.45                    | 22.43                       | 22.40                     |                           |             |
| 5               | QPSK       | 1       | 24        | 22.20                    | 22.21                       | 22.16                     |                           |             |
| 5               | QPSK       | 12      | 0         | 21.21                    | 21.32                       | 21.22                     | 22                        | 1           |
| 5               | QPSK       | 12      | 7         | 21.36                    | 21.36                       | 21.34                     |                           |             |
| 5               | QPSK       | 12      | 13        | 21.40                    | 21.28                       | 21.33                     |                           |             |
| 5               | QPSK       | 25      | 0         | 21.34                    | 21.31                       | 21.30                     | 22                        | 1           |
| 5               | 16QAM      | 1       | 0         | 21.44                    | 21.35                       | 21.34                     |                           |             |
| 5               | 16QAM      | 1       | 12        | 21.67                    | 21.58                       | 21.62                     |                           |             |
| 5               | 16QAM      | 1       | 24        | 21.40                    | 21.41                       | 21.33                     | 21                        | 2           |
| 5               | 16QAM      | 12      | 0         | 20.16                    | 20.28                       | 20.18                     |                           |             |
| 5               | 16QAM      | 12      | 7         | 20.31                    | 20.29                       | 20.28                     |                           |             |
| 5               | 16QAM      | 12      | 13        | 20.38                    | 20.26                       | 20.27                     | 22                        | 1           |
| 5               | 16QAM      | 25      | 0         | 20.30                    | 20.28                       | 20.27                     |                           |             |
| 5               | 64QAM      | 1       | 0         | 21.34                    | 21.22                       | 21.24                     |                           |             |
| 5               | 64QAM      | 1       | 12        | 21.62                    | 21.51                       | 21.51                     | 21                        | 2           |
| 5               | 64QAM      | 1       | 24        | 21.32                    | 21.27                       | 21.26                     |                           |             |
| 5               | 64QAM      | 12      | 0         | 20.13                    | 20.25                       | 20.16                     |                           |             |
| 5               | 64QAM      | 12      | 7         | 20.29                    | 20.28                       | 20.27                     | 21                        | 2           |
| 5               | 64QAM      | 12      | 13        | 20.35                    | 20.24                       | 20.26                     |                           |             |
| 5               | 64QAM      | 25      | 0         | 20.31                    | 20.27                       | 20.26                     |                           |             |



| Channel         |       |    |    | 23025 | 23095 | 23165 | Tune-up<br>limit<br>(dBm) | MPR<br>(dB) |
|-----------------|-------|----|----|-------|-------|-------|---------------------------|-------------|
| Frequency (MHz) |       |    |    | 700.5 | 707.5 | 714.5 |                           |             |
| 3               | QPSK  | 1  | 0  | 22.28 | 22.24 | 22.19 | 23                        | 0           |
| 3               | QPSK  | 1  | 8  | 22.26 | 22.21 | 22.23 |                           |             |
| 3               | QPSK  | 1  | 14 | 22.29 | 22.23 | 22.24 |                           |             |
| 3               | QPSK  | 8  | 0  | 21.29 | 21.29 | 21.27 | 22                        | 1           |
| 3               | QPSK  | 8  | 4  | 21.34 | 21.30 | 21.35 |                           |             |
| 3               | QPSK  | 8  | 7  | 21.33 | 21.27 | 21.28 |                           |             |
| 3               | QPSK  | 15 | 0  | 21.32 | 21.29 | 21.27 |                           |             |
| 3               | 16QAM | 1  | 0  | 21.45 | 21.36 | 21.34 | 22                        | 1           |
| 3               | 16QAM | 1  | 8  | 21.47 | 21.39 | 21.36 |                           |             |
| 3               | 16QAM | 1  | 14 | 21.48 | 21.40 | 21.39 |                           |             |
| 3               | 16QAM | 8  | 0  | 20.31 | 20.31 | 20.28 | 21                        | 2           |
| 3               | 16QAM | 8  | 4  | 20.38 | 20.33 | 20.32 |                           |             |
| 3               | 16QAM | 8  | 7  | 20.38 | 20.31 | 20.28 |                           |             |
| 3               | 16QAM | 15 | 0  | 20.30 | 20.25 | 20.22 |                           |             |
| 3               | 64QAM | 1  | 0  | 21.40 | 21.32 | 21.30 | 22                        | 1           |
| 3               | 64QAM | 1  | 8  | 21.39 | 21.36 | 21.31 |                           |             |
| 3               | 64QAM | 1  | 14 | 21.39 | 21.34 | 21.32 |                           |             |
| 3               | 64QAM | 8  | 0  | 20.28 | 20.28 | 20.22 | 21                        | 2           |
| 3               | 64QAM | 8  | 4  | 20.33 | 20.27 | 20.29 |                           |             |
| 3               | 64QAM | 8  | 7  | 20.31 | 20.26 | 20.25 |                           |             |
| 3               | 64QAM | 15 | 0  | 20.25 | 20.24 | 20.21 |                           |             |
| Channel         |       |    |    | 23017 | 23095 | 23173 | Tune-up<br>limit<br>(dBm) | MPR<br>(dB) |
| Frequency (MHz) |       |    |    | 699.7 | 707.5 | 715.3 |                           |             |
| 1.4             | QPSK  | 1  | 0  | 22.26 | 22.18 | 22.19 | 23                        | 0           |
| 1.4             | QPSK  | 1  | 3  | 22.36 | 22.29 | 22.34 |                           |             |
| 1.4             | QPSK  | 1  | 5  | 22.23 | 22.21 | 22.20 |                           |             |
| 1.4             | QPSK  | 3  | 0  | 22.34 | 22.29 | 22.32 |                           |             |
| 1.4             | QPSK  | 3  | 1  | 22.40 | 22.35 | 22.38 |                           |             |
| 1.4             | QPSK  | 3  | 3  | 22.36 | 22.30 | 22.32 |                           |             |
| 1.4             | QPSK  | 6  | 0  | 21.37 | 21.33 | 21.35 | 22                        | 1           |
| 1.4             | 16QAM | 1  | 0  | 21.43 | 21.36 | 21.36 | 22                        | 1           |
| 1.4             | 16QAM | 1  | 3  | 21.52 | 21.48 | 21.47 |                           |             |
| 1.4             | 16QAM | 1  | 5  | 21.44 | 21.37 | 21.36 |                           |             |
| 1.4             | 16QAM | 3  | 0  | 21.28 | 21.25 | 21.21 |                           |             |
| 1.4             | 16QAM | 3  | 1  | 21.33 | 21.28 | 21.31 |                           |             |
| 1.4             | 16QAM | 3  | 3  | 21.27 | 21.21 | 21.23 |                           |             |
| 1.4             | 16QAM | 6  | 0  | 20.41 | 20.35 | 20.38 | 21                        | 2           |
| 1.4             | 64QAM | 1  | 0  | 21.35 | 21.32 | 21.25 | 22                        | 1           |
| 1.4             | 64QAM | 1  | 3  | 21.43 | 21.39 | 21.41 |                           |             |
| 1.4             | 64QAM | 1  | 5  | 21.34 | 21.31 | 21.26 |                           |             |
| 1.4             | 64QAM | 3  | 0  | 21.32 | 21.28 | 21.26 |                           |             |
| 1.4             | 64QAM | 3  | 1  | 21.36 | 21.31 | 21.32 |                           |             |
| 1.4             | 64QAM | 3  | 3  | 21.29 | 21.27 | 21.24 |                           |             |
| 1.4             | 64QAM | 6  | 0  | 20.34 | 20.27 | 20.30 | 21                        | 2           |

**<LTE Band 13>**

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|----------|
| Channel         |            |         |           | 23230                 |                          |                        |                     |          |
| Frequency (MHz) |            |         |           | 782                   |                          |                        |                     |          |
| 10              | QPSK       | 1       | 0         |                       | 22.31                    |                        | 23                  | 0        |
| 10              | QPSK       | 1       | 25        |                       | 22.43                    |                        |                     |          |
| 10              | QPSK       | 1       | 49        |                       | 22.31                    |                        |                     |          |
| 10              | QPSK       | 25      | 0         |                       | 21.49                    |                        | 22                  | 1        |
| 10              | QPSK       | 25      | 12        |                       | 21.47                    |                        |                     |          |
| 10              | QPSK       | 25      | 25        |                       | 21.50                    |                        |                     |          |
| 10              | QPSK       | 50      | 0         |                       | 21.52                    |                        | 22                  | 1        |
| 10              | 16QAM      | 1       | 0         |                       | 21.65                    |                        |                     |          |
| 10              | 16QAM      | 1       | 25        |                       | 21.79                    |                        |                     |          |
| 10              | 16QAM      | 1       | 49        |                       | 21.70                    |                        | 21                  | 2        |
| 10              | 16QAM      | 25      | 0         |                       | 20.49                    |                        |                     |          |
| 10              | 16QAM      | 25      | 12        |                       | 20.50                    |                        |                     |          |
| 10              | 16QAM      | 25      | 25        |                       | 20.52                    |                        | 21                  | 2        |
| 10              | 16QAM      | 50      | 0         |                       | 20.54                    |                        |                     |          |
| 10              | 64QAM      | 1       | 0         |                       | 21.56                    |                        |                     |          |
| 10              | 64QAM      | 1       | 25        |                       | 21.68                    |                        | 22                  | 1        |
| 10              | 64QAM      | 1       | 49        |                       | 21.56                    |                        |                     |          |
| 10              | 64QAM      | 25      | 0         |                       | 20.47                    |                        |                     |          |
| 10              | 64QAM      | 25      | 12        |                       | 20.51                    |                        | 21                  | 2        |
| 10              | 64QAM      | 25      | 25        |                       | 20.51                    |                        |                     |          |
| 10              | 64QAM      | 50      | 0         |                       | 20.49                    |                        |                     |          |
| Channel         |            |         |           | 23205                 | 23230                    | 23255                  | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) |            |         |           | 779.5                 | 782                      | 784.5                  |                     |          |
| 5               | QPSK       | 1       | 0         | 22.24                 | 22.20                    | 22.20                  | 23                  | 0        |
| 5               | QPSK       | 1       | 12        | 22.45                 | 22.47                    | 22.47                  |                     |          |
| 5               | QPSK       | 1       | 24        | 22.26                 | 22.20                    | 22.15                  |                     |          |
| 5               | QPSK       | 12      | 0         | 21.29                 | 21.49                    | 21.39                  | 22                  | 1        |
| 5               | QPSK       | 12      | 7         | 21.43                 | 21.48                    | 21.45                  |                     |          |
| 5               | QPSK       | 12      | 13        | 21.36                 | 21.42                    | 21.47                  |                     |          |
| 5               | QPSK       | 25      | 0         | 21.28                 | 21.47                    | 21.43                  | 22                  | 1        |
| 5               | 16QAM      | 1       | 0         | 21.59                 | 21.53                    | 21.60                  |                     |          |
| 5               | 16QAM      | 1       | 12        | 21.76                 | 21.83                    | 21.88                  |                     |          |
| 5               | 16QAM      | 1       | 24        | 21.63                 | 21.62                    | 21.52                  | 21                  | 2        |
| 5               | 16QAM      | 12      | 0         | 20.30                 | 20.48                    | 20.39                  |                     |          |
| 5               | 16QAM      | 12      | 7         | 20.42                 | 20.49                    | 20.47                  |                     |          |
| 5               | 16QAM      | 12      | 13        | 20.36                 | 20.42                    | 20.46                  | 21                  | 2        |
| 5               | 16QAM      | 25      | 0         | 20.30                 | 20.49                    | 20.47                  |                     |          |
| 5               | 64QAM      | 1       | 0         | 21.46                 | 21.46                    | 21.45                  |                     |          |
| 5               | 64QAM      | 1       | 12        | 21.64                 | 21.74                    | 21.73                  | 22                  | 1        |
| 5               | 64QAM      | 1       | 24        | 21.48                 | 21.49                    | 21.42                  |                     |          |
| 5               | 64QAM      | 12      | 0         | 20.26                 | 20.47                    | 20.37                  |                     |          |
| 5               | 64QAM      | 12      | 7         | 20.40                 | 20.47                    | 20.44                  | 21                  | 2        |
| 5               | 64QAM      | 12      | 13        | 20.37                 | 20.39                    | 20.43                  |                     |          |
| 5               | 64QAM      | 25      | 0         | 20.29                 | 20.48                    | 20.45                  |                     |          |

**<LTE Band 17>**

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|----------|
| Channel         |            |         |           | 23780                 | 23790                    | 23800                  |                     |          |
| Frequency (MHz) |            |         |           | 709                   | 710                      | 711                    |                     |          |
| 10              | QPSK       | 1       | 0         | 22.12                 | 22.19                    | 22.23                  | 23                  | 0        |
| 10              | QPSK       | 1       | 25        | 22.34                 | 22.35                    | 22.41                  |                     |          |
| 10              | QPSK       | 1       | 49        | 22.25                 | 22.23                    | 22.26                  |                     |          |
| 10              | QPSK       | 25      | 0         | 21.40                 | 21.45                    | 21.44                  | 22                  | 1        |
| 10              | QPSK       | 25      | 12        | 21.39                 | 21.36                    | 21.39                  |                     |          |
| 10              | QPSK       | 25      | 25        | 21.44                 | 21.46                    | 21.44                  |                     |          |
| 10              | QPSK       | 50      | 0         | 21.44                 | 21.44                    | 21.46                  | 22                  | 1        |
| 10              | 16QAM      | 1       | 0         | 21.36                 | 21.42                    | 21.44                  |                     |          |
| 10              | 16QAM      | 1       | 25        | 21.53                 | 21.59                    | 21.61                  |                     |          |
| 10              | 16QAM      | 1       | 49        | 21.45                 | 21.41                    | 21.42                  | 21                  | 2        |
| 10              | 16QAM      | 25      | 0         | 20.36                 | 20.41                    | 20.38                  |                     |          |
| 10              | 16QAM      | 25      | 12        | 20.34                 | 20.32                    | 20.37                  |                     |          |
| 10              | 16QAM      | 25      | 25        | 20.39                 | 20.43                    | 20.41                  | 21                  | 2        |
| 10              | 16QAM      | 50      | 0         | 20.41                 | 20.41                    | 20.43                  |                     |          |
| 10              | 64QAM      | 1       | 0         | 21.22                 | 21.31                    | 21.34                  |                     |          |
| 10              | 64QAM      | 1       | 25        | 21.45                 | 21.51                    | 21.48                  | 22                  | 1        |
| 10              | 64QAM      | 1       | 49        | 21.34                 | 21.34                    | 21.36                  |                     |          |
| 10              | 64QAM      | 25      | 0         | 20.36                 | 20.40                    | 20.39                  |                     |          |
| 10              | 64QAM      | 25      | 12        | 20.32                 | 20.34                    | 20.35                  | 21                  | 2        |
| 10              | 64QAM      | 25      | 25        | 20.39                 | 20.42                    | 20.39                  |                     |          |
| 10              | 64QAM      | 50      | 0         | 20.38                 | 20.41                    | 20.40                  |                     |          |
| Channel         |            |         |           | 23755                 | 23790                    | 23825                  |                     |          |
| Frequency (MHz) |            |         |           | 706.5                 | 710                      | 713.5                  |                     |          |
| 5               | QPSK       | 1       | 0         | 22.06                 | 22.14                    | 22.08                  | 23                  | 0        |
| 5               | QPSK       | 1       | 12        | 22.37                 | 22.40                    | 22.34                  |                     |          |
| 5               | QPSK       | 1       | 24        | 22.15                 | 22.12                    | 22.08                  |                     |          |
| 5               | QPSK       | 12      | 0         | 21.24                 | 21.30                    | 21.18                  | 22                  | 1        |
| 5               | QPSK       | 12      | 7         | 21.34                 | 21.33                    | 21.29                  |                     |          |
| 5               | QPSK       | 12      | 13        | 21.33                 | 21.34                    | 21.27                  |                     |          |
| 5               | QPSK       | 25      | 0         | 21.29                 | 21.36                    | 21.24                  | 22                  | 1        |
| 5               | 16QAM      | 1       | 0         | 21.30                 | 21.33                    | 21.30                  |                     |          |
| 5               | 16QAM      | 1       | 12        | 21.60                 | 21.63                    | 21.56                  |                     |          |
| 5               | 16QAM      | 1       | 24        | 21.36                 | 21.32                    | 21.26                  | 21                  | 2        |
| 5               | 16QAM      | 12      | 0         | 20.20                 | 20.25                    | 20.15                  |                     |          |
| 5               | 16QAM      | 12      | 7         | 20.28                 | 20.27                    | 20.24                  |                     |          |
| 5               | 16QAM      | 12      | 13        | 20.26                 | 20.29                    | 20.20                  | 22                  | 1        |
| 5               | 16QAM      | 25      | 0         | 20.24                 | 20.33                    | 20.19                  |                     |          |
| 5               | 64QAM      | 1       | 0         | 21.17                 | 21.25                    | 21.20                  |                     |          |
| 5               | 64QAM      | 1       | 12        | 21.51                 | 21.58                    | 21.51                  | 21                  | 2        |
| 5               | 64QAM      | 1       | 24        | 21.28                 | 21.26                    | 21.16                  |                     |          |
| 5               | 64QAM      | 12      | 0         | 20.17                 | 20.24                    | 20.11                  |                     |          |
| 5               | 64QAM      | 12      | 7         | 20.27                 | 20.27                    | 20.22                  | 21                  | 2        |
| 5               | 64QAM      | 12      | 13        | 20.25                 | 20.29                    | 20.20                  |                     |          |
| 5               | 64QAM      | 25      | 0         | 20.25                 | 20.31                    | 20.16                  |                     |          |



**<LTE Band 66>**

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|----------|
| Channel         |            |         |           | 132072                | 132322                   | 132572                 |                     |          |
| Frequency (MHz) |            |         |           | 1720                  | 1745                     | 1770                   |                     |          |
| 20              | QPSK       | 1       | 0         | 21.31                 | 21.38                    | 21.33                  | 22                  | 0        |
| 20              | QPSK       | 1       | 49        | 21.68                 | 21.71                    | 21.60                  |                     |          |
| 20              | QPSK       | 1       | 99        | 21.29                 | 21.26                    | 21.15                  |                     |          |
| 20              | QPSK       | 50      | 0         | 20.53                 | 20.65                    | 20.69                  | 21                  | 1        |
| 20              | QPSK       | 50      | 24        | 20.66                 | 20.70                    | 20.65                  |                     |          |
| 20              | QPSK       | 50      | 50        | 20.55                 | 20.64                    | 20.58                  |                     |          |
| 20              | QPSK       | 100     | 0         | 20.53                 | 20.69                    | 20.60                  | 21                  | 1        |
| 20              | 16QAM      | 1       | 0         | 20.62                 | 20.72                    | 20.60                  |                     |          |
| 20              | 16QAM      | 1       | 49        | 20.95                 | 21.00                    | 20.88                  |                     |          |
| 20              | 16QAM      | 1       | 99        | 20.62                 | 20.57                    | 20.40                  | 20                  | 2        |
| 20              | 16QAM      | 50      | 0         | 19.53                 | 19.67                    | 19.66                  |                     |          |
| 20              | 16QAM      | 50      | 24        | 19.65                 | 19.70                    | 19.65                  |                     |          |
| 20              | 16QAM      | 50      | 50        | 19.57                 | 19.75                    | 19.59                  | 20                  | 2        |
| 20              | 16QAM      | 100     | 0         | 19.54                 | 19.70                    | 19.60                  |                     |          |
| 20              | 64QAM      | 1       | 0         | 20.52                 | 20.61                    | 20.54                  | 21                  | 1        |
| 20              | 64QAM      | 1       | 49        | 20.89                 | 20.90                    | 20.79                  |                     |          |
| 20              | 64QAM      | 1       | 99        | 20.51                 | 20.46                    | 20.26                  |                     |          |
| 20              | 64QAM      | 50      | 0         | 19.55                 | 19.65                    | 19.66                  | 20                  | 2        |
| 20              | 64QAM      | 50      | 24        | 19.66                 | 19.69                    | 19.64                  |                     |          |
| 20              | 64QAM      | 50      | 50        | 19.57                 | 19.74                    | 19.57                  |                     |          |
| 20              | 64QAM      | 100     | 0         | 19.54                 | 19.69                    | 19.61                  |                     |          |
| Channel         |            |         |           | 132047                | 132322                   | 132597                 |                     |          |
| Frequency (MHz) |            |         |           | 1717.5                | 1745                     | 1772.5                 |                     |          |
| 15              | QPSK       | 1       | 0         | 21.43                 | 21.38                    | 21.35                  | 22                  | 0        |
| 15              | QPSK       | 1       | 37        | 21.54                 | 21.59                    | 21.52                  |                     |          |
| 15              | QPSK       | 1       | 74        | 21.26                 | 21.30                    | 21.21                  |                     |          |
| 15              | QPSK       | 36      | 0         | 20.40                 | 20.52                    | 20.50                  | 21                  | 1        |
| 15              | QPSK       | 36      | 20        | 20.47                 | 20.54                    | 20.48                  |                     |          |
| 15              | QPSK       | 36      | 39        | 20.47                 | 20.55                    | 20.43                  |                     |          |
| 15              | QPSK       | 75      | 0         | 20.43                 | 20.53                    | 20.47                  | 21                  | 1        |
| 15              | 16QAM      | 1       | 0         | 20.60                 | 20.72                    | 20.60                  |                     |          |
| 15              | 16QAM      | 1       | 37        | 20.78                 | 20.88                    | 20.73                  |                     |          |
| 15              | 16QAM      | 1       | 74        | 20.59                 | 20.63                    | 20.38                  | 20                  | 2        |
| 15              | 16QAM      | 36      | 0         | 19.41                 | 19.52                    | 19.47                  |                     |          |
| 15              | 16QAM      | 36      | 20        | 19.48                 | 19.53                    | 19.44                  |                     |          |
| 15              | 16QAM      | 36      | 39        | 19.46                 | 19.51                    | 19.39                  | 21                  | 1        |
| 15              | 16QAM      | 75      | 0         | 19.47                 | 19.54                    | 19.43                  |                     |          |
| 15              | 64QAM      | 1       | 0         | 20.48                 | 20.64                    | 20.52                  |                     |          |
| 15              | 64QAM      | 1       | 37        | 20.70                 | 20.76                    | 20.63                  | 20                  | 2        |
| 15              | 64QAM      | 1       | 74        | 20.47                 | 20.49                    | 20.29                  |                     |          |
| 15              | 64QAM      | 36      | 0         | 19.40                 | 19.52                    | 19.46                  |                     |          |
| 15              | 64QAM      | 36      | 20        | 19.48                 | 19.50                    | 19.43                  | 20                  | 2        |
| 15              | 64QAM      | 36      | 39        | 19.47                 | 19.52                    | 19.38                  |                     |          |
| 15              | 64QAM      | 75      | 0         | 19.45                 | 19.50                    | 19.44                  |                     |          |



| Channel         |       |    |    | 132022 | 132322 | 132622 | Tune-up<br>limit<br>(dBm) | MPR<br>(dB) |
|-----------------|-------|----|----|--------|--------|--------|---------------------------|-------------|
| Frequency (MHz) |       |    |    | 1715   | 1745   | 1775   |                           |             |
| 10              | QPSK  | 1  | 0  | 21.56  | 21.43  | 21.33  | 22                        | 0           |
| 10              | QPSK  | 1  | 25 | 21.45  | 21.53  | 21.40  |                           |             |
| 10              | QPSK  | 1  | 49 | 21.35  | 21.36  | 21.21  |                           |             |
| 10              | QPSK  | 25 | 0  | 20.40  | 20.47  | 20.45  | 21                        | 1           |
| 10              | QPSK  | 25 | 12 | 20.43  | 20.48  | 20.41  |                           |             |
| 10              | QPSK  | 25 | 25 | 20.50  | 20.53  | 20.38  |                           |             |
| 10              | QPSK  | 50 | 0  | 20.50  | 20.51  | 20.43  |                           |             |
| 10              | 16QAM | 1  | 0  | 20.63  | 20.70  | 20.53  | 21                        | 1           |
| 10              | 16QAM | 1  | 25 | 20.73  | 20.78  | 20.62  |                           |             |
| 10              | 16QAM | 1  | 49 | 20.64  | 20.63  | 20.39  |                           |             |
| 10              | 16QAM | 25 | 0  | 19.42  | 19.49  | 19.41  | 20                        | 2           |
| 10              | 16QAM | 25 | 12 | 19.48  | 19.50  | 19.37  |                           |             |
| 10              | 16QAM | 25 | 25 | 19.54  | 19.52  | 19.32  |                           |             |
| 10              | 16QAM | 50 | 0  | 19.50  | 19.52  | 19.36  |                           |             |
| 10              | 64QAM | 1  | 0  | 20.51  | 20.60  | 20.46  | 21                        | 1           |
| 10              | 64QAM | 1  | 25 | 20.65  | 20.67  | 20.62  |                           |             |
| 10              | 64QAM | 1  | 49 | 20.56  | 20.53  | 20.40  |                           |             |
| 10              | 64QAM | 25 | 0  | 19.44  | 19.48  | 19.52  | 20                        | 2           |
| 10              | 64QAM | 25 | 12 | 19.49  | 19.49  | 19.47  |                           |             |
| 10              | 64QAM | 25 | 25 | 19.55  | 19.53  | 19.43  |                           |             |
| 10              | 64QAM | 50 | 0  | 19.48  | 19.51  | 19.48  |                           |             |
| Channel         |       |    |    | 131997 | 132322 | 132647 | Tune-up<br>limit<br>(dBm) | MPR<br>(dB) |
| Frequency (MHz) |       |    |    | 1712.5 | 1745   | 1777.5 |                           |             |
| 5               | QPSK  | 1  | 0  | 21.32  | 21.32  | 21.24  | 22                        | 0           |
| 5               | QPSK  | 1  | 12 | 21.56  | 21.57  | 21.55  |                           |             |
| 5               | QPSK  | 1  | 24 | 21.25  | 21.28  | 21.19  |                           |             |
| 5               | QPSK  | 12 | 0  | 20.38  | 20.45  | 20.42  | 21                        | 1           |
| 5               | QPSK  | 12 | 7  | 20.46  | 20.53  | 20.46  |                           |             |
| 5               | QPSK  | 12 | 13 | 20.51  | 20.54  | 20.41  |                           |             |
| 5               | QPSK  | 25 | 0  | 20.42  | 20.48  | 20.42  |                           |             |
| 5               | 16QAM | 1  | 0  | 20.49  | 20.61  | 20.48  | 21                        | 1           |
| 5               | 16QAM | 1  | 12 | 20.84  | 20.87  | 20.70  |                           |             |
| 5               | 16QAM | 1  | 24 | 20.53  | 20.60  | 20.40  |                           |             |
| 5               | 16QAM | 12 | 0  | 19.40  | 19.46  | 19.40  | 20                        | 2           |
| 5               | 16QAM | 12 | 7  | 19.49  | 19.52  | 19.42  |                           |             |
| 5               | 16QAM | 12 | 13 | 19.50  | 19.52  | 19.40  |                           |             |
| 5               | 16QAM | 25 | 0  | 19.46  | 19.51  | 19.40  |                           |             |
| 5               | 64QAM | 1  | 0  | 20.33  | 20.28  | 20.05  | 21                        | 1           |
| 5               | 64QAM | 1  | 12 | 20.38  | 20.28  | 20.06  |                           |             |
| 5               | 64QAM | 1  | 24 | 20.36  | 20.25  | 20.02  |                           |             |
| 5               | 64QAM | 12 | 0  | 19.28  | 19.19  | 19.00  | 20                        | 2           |
| 5               | 64QAM | 12 | 7  | 19.30  | 19.21  | 19.01  |                           |             |
| 5               | 64QAM | 12 | 13 | 19.28  | 19.17  | 18.97  |                           |             |
| 5               | 64QAM | 25 | 0  | 19.22  | 19.14  | 18.97  |                           |             |



| Channel         |       |    |    | 131987 | 132322 | 132657 | Tune-up<br>limit<br>(dBm) | MPR<br>(dB) |
|-----------------|-------|----|----|--------|--------|--------|---------------------------|-------------|
| Frequency (MHz) |       |    |    | 1711.5 | 1745   | 1778.5 |                           |             |
| 3               | QPSK  | 1  | 0  | 21.32  | 21.41  | 21.32  | 22                        | 0           |
| 3               | QPSK  | 1  | 8  | 21.38  | 21.42  | 21.34  |                           |             |
| 3               | QPSK  | 1  | 14 | 21.38  | 21.42  | 21.31  |                           |             |
| 3               | QPSK  | 8  | 0  | 20.39  | 20.47  | 20.41  | 21                        | 1           |
| 3               | QPSK  | 8  | 4  | 20.44  | 20.50  | 20.42  |                           |             |
| 3               | QPSK  | 8  | 7  | 20.39  | 20.48  | 20.38  |                           |             |
| 3               | QPSK  | 15 | 0  | 20.43  | 20.46  | 20.41  |                           |             |
| 3               | 16QAM | 1  | 0  | 20.58  | 20.71  | 20.53  | 21                        | 1           |
| 3               | 16QAM | 1  | 8  | 20.64  | 20.69  | 20.50  |                           |             |
| 3               | 16QAM | 1  | 14 | 20.64  | 20.69  | 20.50  |                           |             |
| 3               | 16QAM | 8  | 0  | 19.48  | 19.57  | 19.45  | 20                        | 2           |
| 3               | 16QAM | 8  | 4  | 19.53  | 19.59  | 19.46  |                           |             |
| 3               | 16QAM | 8  | 7  | 19.47  | 19.55  | 19.40  |                           |             |
| 3               | 16QAM | 15 | 0  | 19.42  | 19.49  | 19.40  |                           |             |
| 3               | 64QAM | 1  | 0  | 20.23  | 20.22  | 20.02  | 21                        | 1           |
| 3               | 64QAM | 1  | 8  | 20.52  | 20.43  | 20.22  |                           |             |
| 3               | 64QAM | 1  | 14 | 20.21  | 20.17  | 19.91  |                           |             |
| 3               | 64QAM | 8  | 0  | 19.22  | 19.15  | 19.00  | 20                        | 2           |
| 3               | 64QAM | 8  | 4  | 19.32  | 19.20  | 19.03  |                           |             |
| 3               | 64QAM | 8  | 7  | 19.30  | 19.18  | 18.99  |                           |             |
| 3               | 64QAM | 15 | 0  | 19.29  | 19.18  | 19.01  |                           |             |
| Channel         |       |    |    | 131979 | 132322 | 132665 | Tune-up<br>limit<br>(dBm) | MPR<br>(dB) |
| Frequency (MHz) |       |    |    | 1710.7 | 1745   | 1779.3 |                           |             |
| 1.4             | QPSK  | 1  | 0  | 21.41  | 21.35  | 21.29  | 22                        | 0           |
| 1.4             | QPSK  | 1  | 3  | 21.40  | 21.47  | 21.41  |                           |             |
| 1.4             | QPSK  | 1  | 5  | 21.30  | 21.35  | 21.30  |                           |             |
| 1.4             | QPSK  | 3  | 0  | 21.38  | 21.47  | 21.42  |                           |             |
| 1.4             | QPSK  | 3  | 1  | 21.46  | 21.51  | 21.49  |                           |             |
| 1.4             | QPSK  | 3  | 3  | 21.40  | 21.48  | 21.42  |                           |             |
| 1.4             | QPSK  | 6  | 0  | 20.42  | 20.50  | 20.45  | 21                        | 1           |
| 1.4             | 16QAM | 1  | 0  | 20.56  | 20.69  | 20.52  | 21                        | 1           |
| 1.4             | 16QAM | 1  | 3  | 20.68  | 20.80  | 20.59  |                           |             |
| 1.4             | 16QAM | 1  | 5  | 20.58  | 20.71  | 20.46  |                           |             |
| 1.4             | 16QAM | 3  | 0  | 20.38  | 20.49  | 20.34  |                           |             |
| 1.4             | 16QAM | 3  | 1  | 20.42  | 20.55  | 20.39  |                           |             |
| 1.4             | 16QAM | 3  | 3  | 20.35  | 20.47  | 20.29  |                           |             |
| 1.4             | 16QAM | 6  | 0  | 19.54  | 19.61  | 19.50  | 20                        | 2           |
| 1.4             | 64QAM | 1  | 0  | 20.50  | 20.61  | 20.44  | 21                        | 1           |
| 1.4             | 64QAM | 1  | 3  | 20.58  | 20.68  | 20.46  |                           |             |
| 1.4             | 64QAM | 1  | 5  | 20.48  | 20.55  | 20.44  |                           |             |
| 1.4             | 64QAM | 3  | 0  | 20.44  | 20.54  | 20.38  |                           |             |
| 1.4             | 64QAM | 3  | 1  | 20.51  | 20.59  | 20.44  |                           |             |
| 1.4             | 64QAM | 3  | 3  | 20.44  | 20.53  | 20.38  |                           |             |
| 1.4             | 64QAM | 6  | 0  | 19.47  | 19.52  | 19.43  | 20                        | 2           |



**<Reduced Power Mode>**
**<LTE Band 4>**

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up<br>limit<br>(dBm) | MPR<br>(dB) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|---------------------------|-------------|
| Channel         |            |         |           | 20050                    | 20175                       | 20300                     | 21                        | 0           |
| Frequency (MHz) |            |         |           | 1720                     | 1732.5                      | 1745                      |                           |             |
| 20              | QPSK       | 1       | 0         | 20.06                    | 19.99                       | 19.99                     |                           |             |
| 20              | QPSK       | 1       | 49        | 20.46                    | 20.35                       | 20.34                     | 20                        | 1           |
| 20              | QPSK       | 1       | 99        | 19.94                    | 19.90                       | 19.85                     |                           |             |
| 20              | QPSK       | 50      | 0         | 19.24                    | 19.44                       | 19.34                     |                           |             |
| 20              | QPSK       | 50      | 24        | 19.37                    | 19.34                       | 19.31                     | 20                        | 1           |
| 20              | QPSK       | 50      | 50        | 19.29                    | 19.20                       | 19.39                     |                           |             |
| 20              | QPSK       | 100     | 0         | 19.29                    | 19.33                       | 19.37                     |                           |             |
| 20              | 16QAM      | 1       | 0         | 19.44                    | 19.40                       | 19.39                     | 20                        | 1           |
| 20              | 16QAM      | 1       | 49        | 19.81                    | 19.76                       | 19.70                     |                           |             |
| 20              | 16QAM      | 1       | 99        | 19.33                    | 19.26                       | 19.22                     |                           |             |
| 20              | 16QAM      | 50      | 0         | 18.28                    | 18.47                       | 18.38                     | 19                        | 2           |
| 20              | 16QAM      | 50      | 24        | 18.38                    | 18.37                       | 18.34                     |                           |             |
| 20              | 16QAM      | 50      | 50        | 18.32                    | 18.23                       | 18.43                     |                           |             |
| 20              | 16QAM      | 100     | 0         | 18.31                    | 18.37                       | 18.40                     | 20                        | 1           |
| 20              | 64QAM      | 1       | 0         | 19.32                    | 19.27                       | 19.24                     |                           |             |
| 20              | 64QAM      | 1       | 49        | 19.65                    | 19.60                       | 19.54                     |                           |             |
| 20              | 64QAM      | 1       | 99        | 19.17                    | 19.14                       | 19.06                     | 19                        | 2           |
| 20              | 64QAM      | 50      | 0         | 18.28                    | 18.45                       | 18.34                     |                           |             |
| 20              | 64QAM      | 50      | 24        | 18.37                    | 18.34                       | 18.34                     |                           |             |
| 20              | 64QAM      | 50      | 50        | 18.28                    | 18.21                       | 18.40                     | 19                        | 2           |
| 20              | 64QAM      | 100     | 0         | 18.33                    | 18.37                       | 18.42                     |                           |             |
| Channel         |            |         |           | 20025                    | 20175                       | 20325                     | 21                        | 0           |
| Frequency (MHz) |            |         |           | 1717.5                   | 1732.5                      | 1747.5                    |                           |             |
| 15              | QPSK       | 1       | 0         | 20.25                    | 20.21                       | 20.19                     |                           |             |
| 15              | QPSK       | 1       | 37        | 20.44                    | 20.40                       | 20.40                     | 20                        | 1           |
| 15              | QPSK       | 1       | 74        | 20.15                    | 20.09                       | 20.04                     |                           |             |
| 15              | QPSK       | 36      | 0         | 19.35                    | 19.40                       | 19.31                     |                           |             |
| 15              | QPSK       | 36      | 20        | 19.39                    | 19.35                       | 19.32                     | 20                        | 1           |
| 15              | QPSK       | 36      | 39        | 19.39                    | 19.26                       | 19.33                     |                           |             |
| 15              | QPSK       | 75      | 0         | 19.37                    | 19.32                       | 19.33                     |                           |             |
| 15              | 16QAM      | 1       | 0         | 19.64                    | 19.60                       | 19.60                     | 20                        | 1           |
| 15              | 16QAM      | 1       | 37        | 19.89                    | 19.75                       | 19.73                     |                           |             |
| 15              | 16QAM      | 1       | 74        | 19.54                    | 19.46                       | 19.40                     |                           |             |
| 15              | 16QAM      | 36      | 0         | 18.35                    | 18.40                       | 18.32                     | 19                        | 2           |
| 15              | 16QAM      | 36      | 20        | 18.40                    | 18.35                       | 18.32                     |                           |             |
| 15              | 16QAM      | 36      | 39        | 18.35                    | 18.26                       | 18.34                     |                           |             |
| 15              | 16QAM      | 75      | 0         | 18.37                    | 18.36                       | 18.35                     | 20                        | 1           |
| 15              | 64QAM      | 1       | 0         | 19.52                    | 19.44                       | 19.42                     |                           |             |
| 15              | 64QAM      | 1       | 37        | 19.75                    | 19.62                       | 19.57                     |                           |             |
| 15              | 64QAM      | 1       | 74        | 19.41                    | 19.33                       | 19.27                     | 19                        | 2           |
| 15              | 64QAM      | 36      | 0         | 18.37                    | 18.39                       | 18.30                     |                           |             |
| 15              | 64QAM      | 36      | 20        | 18.37                    | 18.36                       | 18.32                     |                           |             |
| 15              | 64QAM      | 36      | 39        | 18.38                    | 18.25                       | 18.34                     | 19                        | 2           |
| 15              | 64QAM      | 75      | 0         | 18.37                    | 18.35                       | 18.33                     |                           |             |



| Channel         |       |    |    | 20000  | 20175  | 20350  | Tune-up<br>limit<br>(dBm) | MPR<br>(dB) |
|-----------------|-------|----|----|--------|--------|--------|---------------------------|-------------|
| Frequency (MHz) |       |    |    | 1715   | 1732.5 | 1750   |                           |             |
| 10              | QPSK  | 1  | 0  | 20.30  | 20.28  | 20.25  | 21                        | 0           |
| 10              | QPSK  | 1  | 25 | 20.45  | 20.36  | 20.30  |                           |             |
| 10              | QPSK  | 1  | 49 | 20.25  | 20.19  | 20.12  |                           |             |
| 10              | QPSK  | 25 | 0  | 19.37  | 19.45  | 19.28  | 20                        | 1           |
| 10              | QPSK  | 25 | 12 | 19.40  | 19.35  | 19.32  |                           |             |
| 10              | QPSK  | 25 | 25 | 19.46  | 19.29  | 19.36  |                           |             |
| 10              | QPSK  | 50 | 0  | 19.43  | 19.35  | 19.33  |                           |             |
| 10              | 16QAM | 1  | 0  | 19.67  | 19.65  | 19.60  | 20                        | 1           |
| 10              | 16QAM | 1  | 25 | 19.80  | 19.72  | 19.69  |                           |             |
| 10              | 16QAM | 1  | 49 | 19.65  | 19.57  | 19.50  |                           |             |
| 10              | 16QAM | 25 | 0  | 18.44  | 18.48  | 18.29  | 19                        | 2           |
| 10              | 16QAM | 25 | 12 | 18.45  | 18.37  | 18.33  |                           |             |
| 10              | 16QAM | 25 | 25 | 18.50  | 18.32  | 18.41  |                           |             |
| 10              | 16QAM | 50 | 0  | 18.46  | 18.38  | 18.37  |                           |             |
| 10              | 64QAM | 1  | 0  | 19.56  | 19.50  | 19.47  | 20                        | 1           |
| 10              | 64QAM | 1  | 25 | 19.64  | 19.57  | 19.53  |                           |             |
| 10              | 64QAM | 1  | 49 | 19.51  | 19.38  | 19.38  |                           |             |
| 10              | 64QAM | 25 | 0  | 18.41  | 18.48  | 18.31  | 19                        | 2           |
| 10              | 64QAM | 25 | 12 | 18.43  | 18.35  | 18.31  |                           |             |
| 10              | 64QAM | 25 | 25 | 18.50  | 18.32  | 18.40  |                           |             |
| 10              | 64QAM | 50 | 0  | 18.45  | 18.38  | 18.36  |                           |             |
| Channel         |       |    |    | 19975  | 20175  | 20375  | Tune-up<br>limit<br>(dBm) | MPR<br>(dB) |
| Frequency (MHz) |       |    |    | 1712.5 | 1732.5 | 1752.5 |                           |             |
| 5               | QPSK  | 1  | 0  | 20.20  | 20.15  | 20.09  | 21                        | 0           |
| 5               | QPSK  | 1  | 12 | 20.45  | 20.36  | 20.33  |                           |             |
| 5               | QPSK  | 1  | 24 | 20.16  | 20.12  | 20.05  |                           |             |
| 5               | QPSK  | 12 | 0  | 19.33  | 19.32  | 19.16  | 20                        | 1           |
| 5               | QPSK  | 12 | 7  | 19.39  | 19.32  | 19.28  |                           |             |
| 5               | QPSK  | 12 | 13 | 19.39  | 19.30  | 19.25  |                           |             |
| 5               | QPSK  | 25 | 0  | 19.35  | 19.28  | 19.21  |                           |             |
| 5               | 16QAM | 1  | 0  | 19.57  | 19.55  | 19.45  | 20                        | 1           |
| 5               | 16QAM | 1  | 12 | 19.75  | 19.73  | 19.67  |                           |             |
| 5               | 16QAM | 1  | 24 | 19.57  | 19.49  | 19.42  |                           |             |
| 5               | 16QAM | 12 | 0  | 18.35  | 18.33  | 18.18  | 19                        | 2           |
| 5               | 16QAM | 12 | 7  | 18.43  | 18.35  | 18.28  |                           |             |
| 5               | 16QAM | 12 | 13 | 18.42  | 18.31  | 18.26  |                           |             |
| 5               | 16QAM | 25 | 0  | 18.39  | 18.31  | 18.21  |                           |             |
| 5               | 64QAM | 1  | 0  | 19.47  | 19.38  | 19.32  | 20                        | 1           |
| 5               | 64QAM | 1  | 12 | 19.68  | 19.59  | 19.52  |                           |             |
| 5               | 64QAM | 1  | 24 | 19.41  | 19.37  | 19.29  |                           |             |
| 5               | 64QAM | 12 | 0  | 18.30  | 18.30  | 18.13  | 19                        | 2           |
| 5               | 64QAM | 12 | 7  | 18.39  | 18.32  | 18.24  |                           |             |
| 5               | 64QAM | 12 | 13 | 18.39  | 18.28  | 18.23  |                           |             |
| 5               | 64QAM | 25 | 0  | 18.39  | 18.30  | 18.22  |                           |             |



| Channel         |       |    |    | 19965  | 20175  | 20385  | Tune-up<br>limit<br>(dBm) | MPR<br>(dB) |
|-----------------|-------|----|----|--------|--------|--------|---------------------------|-------------|
| Frequency (MHz) |       |    |    | 1711.5 | 1732.5 | 1753.5 |                           |             |
| 3               | QPSK  | 1  | 0  | 20.26  | 20.23  | 20.18  | 21                        | 0           |
| 3               | QPSK  | 1  | 8  | 20.27  | 20.24  | 20.14  |                           |             |
| 3               | QPSK  | 1  | 14 | 20.28  | 20.19  | 20.13  |                           |             |
| 3               | QPSK  | 8  | 0  | 19.35  | 19.29  | 19.18  | 20                        | 1           |
| 3               | QPSK  | 8  | 4  | 19.37  | 19.29  | 19.24  |                           |             |
| 3               | QPSK  | 8  | 7  | 19.34  | 19.26  | 19.22  |                           |             |
| 3               | QPSK  | 15 | 0  | 19.30  | 19.26  | 19.18  |                           |             |
| 3               | 16QAM | 1  | 0  | 19.61  | 19.60  | 19.51  | 20                        | 1           |
| 3               | 16QAM | 1  | 8  | 19.62  | 19.61  | 19.53  |                           |             |
| 3               | 16QAM | 1  | 14 | 19.62  | 19.60  | 19.44  |                           |             |
| 3               | 16QAM | 8  | 0  | 18.44  | 18.36  | 18.30  | 19                        | 2           |
| 3               | 16QAM | 8  | 4  | 18.44  | 18.37  | 18.33  |                           |             |
| 3               | 16QAM | 8  | 7  | 18.43  | 18.34  | 18.30  |                           |             |
| 3               | 16QAM | 15 | 0  | 18.36  | 18.28  | 18.23  |                           |             |
| 3               | 64QAM | 1  | 0  | 19.47  | 19.49  | 19.40  | 20                        | 1           |
| 3               | 64QAM | 1  | 8  | 19.51  | 19.49  | 19.38  |                           |             |
| 3               | 64QAM | 1  | 14 | 19.47  | 19.47  | 19.36  |                           |             |
| 3               | 64QAM | 8  | 0  | 18.38  | 18.31  | 18.24  | 19                        | 2           |
| 3               | 64QAM | 8  | 4  | 18.41  | 18.33  | 18.26  |                           |             |
| 3               | 64QAM | 8  | 7  | 18.38  | 18.31  | 18.24  |                           |             |
| 3               | 64QAM | 15 | 0  | 18.33  | 18.26  | 18.19  |                           |             |
| Channel         |       |    |    | 19957  | 20175  | 20393  | Tune-up<br>limit<br>(dBm) | MPR<br>(dB) |
| Frequency (MHz) |       |    |    | 1710.7 | 1732.5 | 1754.3 |                           |             |
| 1.4             | QPSK  | 1  | 0  | 20.20  | 20.17  | 20.10  | 21                        | 0           |
| 1.4             | QPSK  | 1  | 3  | 20.31  | 20.29  | 20.18  |                           |             |
| 1.4             | QPSK  | 1  | 5  | 20.22  | 20.18  | 20.11  |                           |             |
| 1.4             | QPSK  | 3  | 0  | 20.32  | 20.27  | 20.19  |                           |             |
| 1.4             | QPSK  | 3  | 1  | 20.36  | 20.32  | 20.24  |                           |             |
| 1.4             | QPSK  | 3  | 3  | 20.34  | 20.27  | 20.20  |                           |             |
| 1.4             | QPSK  | 6  | 0  | 19.34  | 19.28  | 19.22  | 20                        | 1           |
| 1.4             | 16QAM | 1  | 0  | 19.60  | 19.58  | 19.48  | 20                        | 1           |
| 1.4             | 16QAM | 1  | 3  | 19.71  | 19.67  | 19.58  |                           |             |
| 1.4             | 16QAM | 1  | 5  | 19.63  | 19.56  | 19.46  |                           |             |
| 1.4             | 16QAM | 3  | 0  | 19.36  | 19.34  | 19.24  |                           |             |
| 1.4             | 16QAM | 3  | 1  | 19.40  | 19.40  | 19.28  |                           |             |
| 1.4             | 16QAM | 3  | 3  | 19.35  | 19.30  | 19.22  |                           |             |
| 1.4             | 16QAM | 6  | 0  | 18.46  | 18.38  | 18.31  | 19                        | 2           |
| 1.4             | 64QAM | 1  | 0  | 19.42  | 19.38  | 19.34  | 20                        | 1           |
| 1.4             | 64QAM | 1  | 3  | 19.62  | 19.51  | 19.35  |                           |             |
| 1.4             | 64QAM | 1  | 5  | 19.43  | 19.39  | 19.32  |                           |             |
| 1.4             | 64QAM | 3  | 0  | 19.38  | 19.37  | 19.27  |                           |             |
| 1.4             | 64QAM | 3  | 1  | 19.43  | 19.38  | 19.29  |                           |             |
| 1.4             | 64QAM | 3  | 3  | 19.44  | 19.33  | 19.30  |                           |             |
| 1.4             | 64QAM | 6  | 0  | 18.37  | 18.27  | 18.23  | 19                        | 2           |



**<LTE Band 7>**

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|----------|
| Channel         |            |         |           | 20850                 | 21100                    | 21350                  |                     |          |
| Frequency (MHz) |            |         |           | 2510                  | 2535                     | 2560                   |                     |          |
| 20              | QPSK       | 1       | 0         | 20.99                 | 20.95                    | 20.99                  | 21.5                | 0        |
| 20              | QPSK       | 1       | 49        | 21.32                 | 21.40                    | 21.45                  |                     |          |
| 20              | QPSK       | 1       | 99        | 21.08                 | 21.04                    | 21.25                  |                     |          |
| 20              | QPSK       | 50      | 0         | 20.02                 | 20.26                    | 20.28                  | 20.5                | 1        |
| 20              | QPSK       | 50      | 24        | 20.33                 | 20.35                    | 20.40                  |                     |          |
| 20              | QPSK       | 50      | 50        | 20.35                 | 20.38                    | 20.26                  |                     |          |
| 20              | QPSK       | 100     | 0         | 20.22                 | 20.25                    | 20.30                  | 21.5                | 0        |
| 20              | 16QAM      | 1       | 0         | 20.58                 | 20.64                    | 20.20                  |                     |          |
| 20              | 16QAM      | 1       | 49        | 20.84                 | 20.62                    | 20.60                  |                     |          |
| 20              | 16QAM      | 1       | 99        | 20.66                 | 20.62                    | 20.41                  | 20.5                | 1        |
| 20              | 16QAM      | 50      | 0         | 19.10                 | 19.35                    | 19.33                  |                     |          |
| 20              | 16QAM      | 50      | 24        | 19.39                 | 19.41                    | 19.45                  |                     |          |
| 20              | 16QAM      | 50      | 50        | 19.40                 | 19.48                    | 19.30                  | 21.5                | 0        |
| 20              | 16QAM      | 100     | 0         | 19.28                 | 19.47                    | 19.40                  |                     |          |
| 20              | 64QAM      | 1       | 0         | 20.45                 | 20.46                    | 20.50                  |                     |          |
| 20              | 64QAM      | 1       | 49        | 21.01                 | 20.98                    | 20.48                  | 20.5                | 1        |
| 20              | 64QAM      | 1       | 99        | 20.62                 | 20.66                    | 20.29                  |                     |          |
| 20              | 64QAM      | 50      | 0         | 19.07                 | 19.39                    | 19.35                  |                     |          |
| 20              | 64QAM      | 50      | 24        | 19.41                 | 19.43                    | 19.38                  | 21.5                | 0        |
| 20              | 64QAM      | 50      | 50        | 19.30                 | 19.47                    | 19.19                  |                     |          |
| 20              | 64QAM      | 100     | 0         | 19.29                 | 19.38                    | 19.36                  |                     |          |
| Channel         |            |         |           | 20825                 | 21100                    | 21375                  |                     |          |
| Frequency (MHz) |            |         |           | 2507.5                | 2535                     | 2562.5                 |                     |          |
| 15              | QPSK       | 1       | 0         | 21.18                 | 21.20                    | 21.26                  | 21.5                | 0        |
| 15              | QPSK       | 1       | 37        | 21.45                 | 21.41                    | 21.44                  |                     |          |
| 15              | QPSK       | 1       | 74        | 21.18                 | 21.29                    | 21.38                  |                     |          |
| 15              | QPSK       | 36      | 0         | 20.40                 | 20.37                    | 20.42                  | 20.5                | 1        |
| 15              | QPSK       | 36      | 20        | 20.27                 | 20.43                    | 20.45                  |                     |          |
| 15              | QPSK       | 36      | 39        | 20.38                 | 20.47                    | 20.33                  |                     |          |
| 15              | QPSK       | 75      | 0         | 20.31                 | 20.42                    | 20.36                  | 21.5                | 0        |
| 15              | 16QAM      | 1       | 0         | 20.44                 | 20.35                    | 20.47                  |                     |          |
| 15              | 16QAM      | 1       | 37        | 20.75                 | 20.84                    | 21.14                  |                     |          |
| 15              | 16QAM      | 1       | 74        | 20.34                 | 20.52                    | 20.90                  | 20.5                | 1        |
| 15              | 16QAM      | 36      | 0         | 19.20                 | 19.33                    | 19.54                  |                     |          |
| 15              | 16QAM      | 36      | 20        | 19.34                 | 19.37                    | 19.47                  |                     |          |
| 15              | 16QAM      | 36      | 39        | 19.41                 | 19.41                    | 19.38                  | 21.5                | 0        |
| 15              | 16QAM      | 75      | 0         | 19.35                 | 19.50                    | 19.45                  |                     |          |
| 15              | 64QAM      | 1       | 0         | 20.04                 | 20.01                    | 20.48                  |                     |          |
| 15              | 64QAM      | 1       | 37        | 20.41                 | 20.91                    | 20.62                  | 20.5                | 1        |
| 15              | 64QAM      | 1       | 74        | 20.01                 | 20.51                    | 20.34                  |                     |          |
| 15              | 64QAM      | 36      | 0         | 19.18                 | 19.42                    | 19.42                  |                     |          |
| 15              | 64QAM      | 36      | 20        | 19.29                 | 19.38                    | 19.55                  | 21.5                | 0        |
| 15              | 64QAM      | 36      | 39        | 19.31                 | 19.50                    | 19.46                  |                     |          |
| 15              | 64QAM      | 75      | 0         | 19.39                 | 19.38                    | 19.44                  |                     |          |



| Channel         |       |    |    | 20800  | 21100 | 21400  | Tune-up<br>limit<br>(dBm) | MPR<br>(dB) |
|-----------------|-------|----|----|--------|-------|--------|---------------------------|-------------|
| Frequency (MHz) |       |    |    | 2505   | 2535  | 2565   |                           |             |
| 10              | QPSK  | 1  | 0  | 21.22  | 21.32 | 21.37  | 21.5                      | 0           |
| 10              | QPSK  | 1  | 25 | 21.39  | 21.44 | 21.47  |                           |             |
| 10              | QPSK  | 1  | 49 | 21.27  | 21.40 | 21.48  |                           |             |
| 10              | QPSK  | 25 | 0  | 20.30  | 20.37 | 20.44  | 20.5                      | 1           |
| 10              | QPSK  | 25 | 12 | 20.40  | 20.40 | 20.45  |                           |             |
| 10              | QPSK  | 25 | 25 | 20.36  | 20.44 | 20.46  |                           |             |
| 10              | QPSK  | 50 | 0  | 20.40  | 20.48 | 20.46  |                           |             |
| 10              | 16QAM | 1  | 0  | 20.77  | 20.85 | 20.57  | 21.5                      | 0           |
| 10              | 16QAM | 1  | 25 | 20.86  | 20.95 | 20.77  |                           |             |
| 10              | 16QAM | 1  | 49 | 20.64  | 20.48 | 20.63  |                           |             |
| 10              | 16QAM | 25 | 0  | 19.22  | 19.22 | 19.59  | 20.5                      | 1           |
| 10              | 16QAM | 25 | 12 | 19.32  | 19.39 | 19.56  |                           |             |
| 10              | 16QAM | 25 | 25 | 19.38  | 19.48 | 19.59  |                           |             |
| 10              | 16QAM | 50 | 0  | 19.35  | 19.50 | 19.49  |                           |             |
| 10              | 64QAM | 1  | 0  | 20.80  | 20.50 | 20.56  | 21.5                      | 0           |
| 10              | 64QAM | 1  | 25 | 20.78  | 20.86 | 21.06  |                           |             |
| 10              | 64QAM | 1  | 49 | 20.76  | 20.81 | 20.87  |                           |             |
| 10              | 64QAM | 25 | 0  | 19.30  | 19.44 | 19.57  | 20.5                      | 1           |
| 10              | 64QAM | 25 | 12 | 19.46  | 19.45 | 19.51  |                           |             |
| 10              | 64QAM | 25 | 25 | 19.36  | 19.51 | 19.61  |                           |             |
| 10              | 64QAM | 50 | 0  | 19.39  | 19.44 | 19.35  |                           |             |
| Channel         |       |    |    | 20775  | 21100 | 21425  | Tune-up<br>limit<br>(dBm) | MPR<br>(dB) |
| Frequency (MHz) |       |    |    | 2502.5 | 2535  | 2567.5 |                           |             |
| 5               | QPSK  | 1  | 0  | 21.25  | 21.21 | 21.26  | 21.5                      | 0           |
| 5               | QPSK  | 1  | 12 | 21.39  | 21.43 | 21.50  |                           |             |
| 5               | QPSK  | 1  | 24 | 21.11  | 21.15 | 21.41  |                           |             |
| 5               | QPSK  | 12 | 0  | 20.35  | 20.30 | 20.44  | 20.5                      | 1           |
| 5               | QPSK  | 12 | 7  | 20.38  | 20.30 | 20.41  |                           |             |
| 5               | QPSK  | 12 | 13 | 20.36  | 20.36 | 20.43  |                           |             |
| 5               | QPSK  | 25 | 0  | 20.38  | 20.39 | 20.48  |                           |             |
| 5               | 16QAM | 1  | 0  | 20.34  | 20.39 | 20.44  | 21.5                      | 0           |
| 5               | 16QAM | 1  | 12 | 20.47  | 20.53 | 20.53  |                           |             |
| 5               | 16QAM | 1  | 24 | 20.07  | 20.31 | 20.50  |                           |             |
| 5               | 16QAM | 12 | 0  | 19.37  | 19.40 | 19.53  | 20.5                      | 1           |
| 5               | 16QAM | 12 | 7  | 19.39  | 19.44 | 19.41  |                           |             |
| 5               | 16QAM | 12 | 13 | 19.40  | 19.44 | 19.43  |                           |             |
| 5               | 16QAM | 25 | 0  | 19.44  | 19.26 | 19.56  |                           |             |
| 5               | 64QAM | 1  | 0  | 20.37  | 20.44 | 20.43  | 21.5                      | 0           |
| 5               | 64QAM | 1  | 12 | 20.85  | 20.72 | 20.61  |                           |             |
| 5               | 64QAM | 1  | 24 | 20.27  | 20.47 | 20.54  |                           |             |
| 5               | 64QAM | 12 | 0  | 19.31  | 19.38 | 19.51  | 20.5                      | 1           |
| 5               | 64QAM | 12 | 7  | 19.37  | 19.39 | 19.41  |                           |             |
| 5               | 64QAM | 12 | 13 | 19.39  | 19.30 | 19.44  |                           |             |
| 5               | 64QAM | 25 | 0  | 19.37  | 19.43 | 19.48  |                           |             |

**<LTE Band 66>**

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|----------|
| Channel         |            |         |           | 132072                | 132322                   | 132572                 |                     |          |
| Frequency (MHz) |            |         |           | 1720                  | 1745                     | 1770                   |                     |          |
| 20              | QPSK       | 1       | 0         | 20.20                 | 20.26                    | 20.14                  | 21                  | 0        |
| 20              | QPSK       | 1       | 49        | 20.50                 | 20.65                    | 20.42                  |                     |          |
| 20              | QPSK       | 1       | 99        | 20.03                 | 19.96                    | 19.88                  |                     |          |
| 20              | QPSK       | 50      | 0         | 19.39                 | 19.49                    | 19.49                  | 20                  | 1        |
| 20              | QPSK       | 50      | 24        | 19.50                 | 19.52                    | 19.42                  |                     |          |
| 20              | QPSK       | 50      | 50        | 19.38                 | 19.51                    | 19.32                  |                     |          |
| 20              | QPSK       | 100     | 0         | 19.37                 | 19.48                    | 19.37                  |                     |          |
| 20              | 16QAM      | 1       | 0         | 19.47                 | 19.54                    | 19.40                  | 20                  | 1        |
| 20              | 16QAM      | 1       | 49        | 19.80                 | 19.77                    | 19.61                  |                     |          |
| 20              | 16QAM      | 1       | 99        | 19.37                 | 19.27                    | 19.06                  |                     |          |
| 20              | 16QAM      | 50      | 0         | 18.39                 | 18.53                    | 18.44                  | 19                  | 2        |
| 20              | 16QAM      | 50      | 24        | 18.49                 | 18.49                    | 18.40                  |                     |          |
| 20              | 16QAM      | 50      | 50        | 18.40                 | 18.49                    | 18.29                  |                     |          |
| 20              | 16QAM      | 100     | 0         | 18.38                 | 18.49                    | 18.34                  |                     |          |
| 20              | 64QAM      | 1       | 0         | 19.38                 | 19.44                    | 19.31                  | 20                  | 1        |
| 20              | 64QAM      | 1       | 49        | 19.69                 | 19.65                    | 19.54                  |                     |          |
| 20              | 64QAM      | 1       | 99        | 19.25                 | 19.16                    | 18.99                  |                     |          |
| 20              | 64QAM      | 50      | 0         | 18.37                 | 18.50                    | 18.44                  | 19                  | 2        |
| 20              | 64QAM      | 50      | 24        | 18.48                 | 18.47                    | 18.37                  |                     |          |
| 20              | 64QAM      | 50      | 50        | 18.41                 | 18.49                    | 18.27                  |                     |          |
| 20              | 64QAM      | 100     | 0         | 18.39                 | 18.49                    | 18.35                  |                     |          |
| Channel         |            |         |           | 132047                | 132322                   | 132597                 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) |            |         |           | 1717.5                | 1745                     | 1772.5                 |                     |          |
| 15              | QPSK       | 1       | 0         | 20.38                 | 20.39                    | 20.30                  | 21                  | 0        |
| 15              | QPSK       | 1       | 37        | 20.57                 | 20.51                    | 20.46                  |                     |          |
| 15              | QPSK       | 1       | 74        | 20.25                 | 20.22                    | 20.09                  |                     |          |
| 15              | QPSK       | 36      | 0         | 19.50                 | 19.52                    | 19.46                  | 20                  | 1        |
| 15              | QPSK       | 36      | 20        | 19.50                 | 19.50                    | 19.40                  |                     |          |
| 15              | QPSK       | 36      | 39        | 19.49                 | 19.48                    | 19.33                  |                     |          |
| 15              | QPSK       | 75      | 0         | 19.49                 | 19.50                    | 19.40                  |                     |          |
| 15              | 16QAM      | 1       | 0         | 19.66                 | 19.71                    | 19.55                  | 20                  | 1        |
| 15              | 16QAM      | 1       | 37        | 19.82                 | 19.77                    | 19.70                  |                     |          |
| 15              | 16QAM      | 1       | 74        | 19.59                 | 19.49                    | 19.27                  |                     |          |
| 15              | 16QAM      | 36      | 0         | 18.46                 | 18.50                    | 18.40                  | 19                  | 2        |
| 15              | 16QAM      | 36      | 20        | 18.51                 | 18.48                    | 18.36                  |                     |          |
| 15              | 16QAM      | 36      | 39        | 18.48                 | 18.45                    | 18.27                  |                     |          |
| 15              | 16QAM      | 75      | 0         | 18.49                 | 18.50                    | 18.38                  |                     |          |
| 15              | 64QAM      | 1       | 0         | 19.56                 | 19.58                    | 19.43                  | 20                  | 1        |
| 15              | 64QAM      | 1       | 37        | 19.78                 | 19.70                    | 19.55                  |                     |          |
| 15              | 64QAM      | 1       | 74        | 19.42                 | 19.38                    | 19.14                  |                     |          |
| 15              | 64QAM      | 36      | 0         | 18.45                 | 18.50                    | 18.40                  | 19                  | 2        |
| 15              | 64QAM      | 36      | 20        | 18.50                 | 18.48                    | 18.35                  |                     |          |
| 15              | 64QAM      | 36      | 39        | 18.45                 | 18.45                    | 18.27                  |                     |          |
| 15              | 64QAM      | 75      | 0         | 18.48                 | 18.48                    | 18.36                  |                     |          |



| Channel         |       |    |    | 132022 | 132322 | 132622 | Tune-up<br>limit<br>(dBm) | MPR<br>(dB) |
|-----------------|-------|----|----|--------|--------|--------|---------------------------|-------------|
| Frequency (MHz) |       |    |    | 1715   | 1745   | 1775   |                           |             |
| 10              | QPSK  | 1  | 0  | 20.45  | 20.46  | 20.32  | 21                        | 0           |
| 10              | QPSK  | 1  | 25 | 20.52  | 20.48  | 20.39  |                           |             |
| 10              | QPSK  | 1  | 49 | 20.39  | 20.33  | 20.18  |                           |             |
| 10              | QPSK  | 25 | 0  | 19.49  | 19.51  | 19.46  | 20                        | 1           |
| 10              | QPSK  | 25 | 12 | 19.54  | 19.51  | 19.41  |                           |             |
| 10              | QPSK  | 25 | 25 | 19.56  | 19.53  | 19.36  |                           |             |
| 10              | QPSK  | 50 | 0  | 19.57  | 19.53  | 19.44  |                           |             |
| 10              | 16QAM | 1  | 0  | 19.68  | 19.76  | 19.56  | 20                        | 1           |
| 10              | 16QAM | 1  | 25 | 19.80  | 19.80  | 19.61  |                           |             |
| 10              | 16QAM | 1  | 49 | 19.69  | 19.60  | 19.35  |                           |             |
| 10              | 16QAM | 25 | 0  | 18.51  | 18.54  | 18.44  | 19                        | 2           |
| 10              | 16QAM | 25 | 12 | 18.54  | 18.51  | 18.38  |                           |             |
| 10              | 16QAM | 25 | 25 | 18.56  | 18.54  | 18.34  |                           |             |
| 10              | 16QAM | 50 | 0  | 18.56  | 18.53  | 18.41  |                           |             |
| 10              | 64QAM | 1  | 0  | 19.60  | 19.61  | 19.45  | 20                        | 1           |
| 10              | 64QAM | 1  | 25 | 19.71  | 19.68  | 19.50  |                           |             |
| 10              | 64QAM | 1  | 49 | 19.56  | 19.49  | 19.28  |                           |             |
| 10              | 64QAM | 25 | 0  | 18.51  | 18.52  | 18.45  | 19                        | 2           |
| 10              | 64QAM | 25 | 12 | 18.52  | 18.50  | 18.38  |                           |             |
| 10              | 64QAM | 25 | 25 | 18.58  | 18.53  | 18.35  |                           |             |
| 10              | 64QAM | 50 | 0  | 18.56  | 18.53  | 18.40  |                           |             |
| Channel         |       |    |    | 131997 | 132322 | 132647 | Tune-up<br>limit<br>(dBm) | MPR<br>(dB) |
| Frequency (MHz) |       |    |    | 1712.5 | 1745   | 1777.5 |                           |             |
| 5               | QPSK  | 1  | 0  | 20.30  | 20.33  | 20.19  | 21                        | 0           |
| 5               | QPSK  | 1  | 12 | 20.64  | 20.55  | 20.43  |                           |             |
| 5               | QPSK  | 1  | 24 | 20.27  | 20.26  | 20.12  |                           |             |
| 5               | QPSK  | 12 | 0  | 19.49  | 19.47  | 19.38  | 20                        | 1           |
| 5               | QPSK  | 12 | 7  | 19.53  | 19.51  | 19.37  |                           |             |
| 5               | QPSK  | 12 | 13 | 19.53  | 19.48  | 19.33  |                           |             |
| 5               | QPSK  | 25 | 0  | 19.49  | 19.46  | 19.36  |                           |             |
| 5               | 16QAM | 1  | 0  | 19.59  | 19.60  | 19.40  | 20                        | 1           |
| 5               | 16QAM | 1  | 12 | 19.88  | 19.89  | 19.61  |                           |             |
| 5               | 16QAM | 1  | 24 | 19.53  | 19.54  | 19.31  |                           |             |
| 5               | 16QAM | 12 | 0  | 18.49  | 18.46  | 18.32  | 19                        | 2           |
| 5               | 16QAM | 12 | 7  | 18.53  | 18.52  | 18.36  |                           |             |
| 5               | 16QAM | 12 | 13 | 18.55  | 18.49  | 18.30  |                           |             |
| 5               | 16QAM | 25 | 0  | 18.54  | 18.49  | 18.30  |                           |             |
| 5               | 64QAM | 1  | 0  | 19.49  | 19.51  | 19.28  | 20                        | 1           |
| 5               | 64QAM | 1  | 12 | 19.79  | 19.75  | 19.54  |                           |             |
| 5               | 64QAM | 1  | 24 | 19.45  | 19.44  | 19.18  |                           |             |
| 5               | 64QAM | 12 | 0  | 18.45  | 18.45  | 18.31  | 19                        | 2           |
| 5               | 64QAM | 12 | 7  | 18.52  | 18.48  | 18.33  |                           |             |
| 5               | 64QAM | 12 | 13 | 18.53  | 18.47  | 18.30  |                           |             |
| 5               | 64QAM | 25 | 0  | 18.51  | 18.49  | 18.33  |                           |             |



| Channel         |       |    |    | 131987 | 132322 | 132657 | Tune-up<br>limit<br>(dBm) | MPR<br>(dB) |
|-----------------|-------|----|----|--------|--------|--------|---------------------------|-------------|
| Frequency (MHz) |       |    |    | 1711.5 | 1745   | 1778.5 |                           |             |
| 3               | QPSK  | 1  | 0  | 20.42  | 20.41  | 20.26  | 21                        | 0           |
| 3               | QPSK  | 1  | 8  | 20.45  | 20.43  | 20.27  |                           |             |
| 3               | QPSK  | 1  | 14 | 20.44  | 20.39  | 20.24  |                           |             |
| 3               | QPSK  | 8  | 0  | 19.49  | 19.47  | 19.33  | 20                        | 1           |
| 3               | QPSK  | 8  | 4  | 19.50  | 19.50  | 19.36  |                           |             |
| 3               | QPSK  | 8  | 7  | 19.47  | 19.46  | 19.30  |                           |             |
| 3               | QPSK  | 15 | 0  | 19.50  | 19.46  | 19.35  |                           |             |
| 3               | 16QAM | 1  | 0  | 19.67  | 19.73  | 19.48  | 20                        | 1           |
| 3               | 16QAM | 1  | 8  | 19.69  | 19.71  | 19.48  |                           |             |
| 3               | 16QAM | 1  | 14 | 19.75  | 19.68  | 19.40  |                           |             |
| 3               | 16QAM | 8  | 0  | 18.55  | 18.53  | 18.36  | 19                        | 2           |
| 3               | 16QAM | 8  | 4  | 18.56  | 18.57  | 18.38  |                           |             |
| 3               | 16QAM | 8  | 7  | 18.56  | 18.53  | 18.34  |                           |             |
| 3               | 16QAM | 15 | 0  | 18.51  | 18.48  | 18.32  |                           |             |
| 3               | 64QAM | 1  | 0  | 19.60  | 19.60  | 19.37  | 20                        | 1           |
| 3               | 64QAM | 1  | 8  | 19.62  | 19.62  | 19.36  |                           |             |
| 3               | 64QAM | 1  | 14 | 19.62  | 19.60  | 19.34  |                           |             |
| 3               | 64QAM | 8  | 0  | 18.51  | 18.49  | 18.33  | 19                        | 2           |
| 3               | 64QAM | 8  | 4  | 18.52  | 18.51  | 18.35  |                           |             |
| 3               | 64QAM | 8  | 7  | 18.51  | 18.49  | 18.29  |                           |             |
| 3               | 64QAM | 15 | 0  | 18.47  | 18.46  | 18.29  |                           |             |
| Channel         |       |    |    | 131979 | 132322 | 132665 | Tune-up<br>limit<br>(dBm) | MPR<br>(dB) |
| Frequency (MHz) |       |    |    | 1710.7 | 1745   | 1779.3 |                           |             |
| 1.4             | QPSK  | 1  | 0  | 20.35  | 20.37  | 20.22  | 21                        | 0           |
| 1.4             | QPSK  | 1  | 3  | 20.47  | 20.51  | 20.39  |                           |             |
| 1.4             | QPSK  | 1  | 5  | 20.36  | 20.39  | 20.25  |                           |             |
| 1.4             | QPSK  | 3  | 0  | 20.46  | 20.50  | 20.38  |                           |             |
| 1.4             | QPSK  | 3  | 1  | 20.48  | 20.55  | 20.41  |                           |             |
| 1.4             | QPSK  | 3  | 3  | 20.45  | 20.49  | 20.37  |                           |             |
| 1.4             | QPSK  | 6  | 0  | 19.51  | 19.53  | 19.40  | 20                        | 1           |
| 1.4             | 16QAM | 1  | 0  | 19.61  | 19.68  | 19.44  | 20                        | 1           |
| 1.4             | 16QAM | 1  | 3  | 19.76  | 19.79  | 19.54  |                           |             |
| 1.4             | 16QAM | 1  | 5  | 19.62  | 19.65  | 19.41  |                           |             |
| 1.4             | 16QAM | 3  | 0  | 19.44  | 19.50  | 19.27  |                           |             |
| 1.4             | 16QAM | 3  | 1  | 19.51  | 19.54  | 19.33  |                           |             |
| 1.4             | 16QAM | 3  | 3  | 19.45  | 19.48  | 19.26  |                           |             |
| 1.4             | 16QAM | 6  | 0  | 18.59  | 18.63  | 18.42  | 19                        | 2           |
| 1.4             | 64QAM | 1  | 0  | 19.53  | 19.60  | 19.33  | 20                        | 1           |
| 1.4             | 64QAM | 1  | 3  | 19.61  | 19.65  | 19.44  |                           |             |
| 1.4             | 64QAM | 1  | 5  | 19.54  | 19.54  | 19.35  |                           |             |
| 1.4             | 64QAM | 3  | 0  | 19.52  | 19.54  | 19.35  |                           |             |
| 1.4             | 64QAM | 3  | 1  | 19.57  | 19.61  | 19.38  |                           |             |
| 1.4             | 64QAM | 3  | 3  | 19.54  | 19.50  | 19.33  |                           |             |
| 1.4             | 64QAM | 6  | 0  | 18.54  | 18.54  | 18.36  | 19                        | 2           |



### <TDD LTE SAR Measurement>

TDD LTE configuration setup for SAR measurement

SAR was tested with a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by 3GPP.

- 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations
- "special subframe S" contains both uplink and downlink transmissions, it has been taken into consideration to determine the transmission duty factor according to the worst case uplink and downlink cyclic prefix requirements for UpPTS
- Establishing connections with base station simulators ensure a consistent means for testing SAR and recommended for evaluating SAR. The Anritsu MT8820C (firmware: #22.52#004) was used for LTE output power measurements and SAR testing.

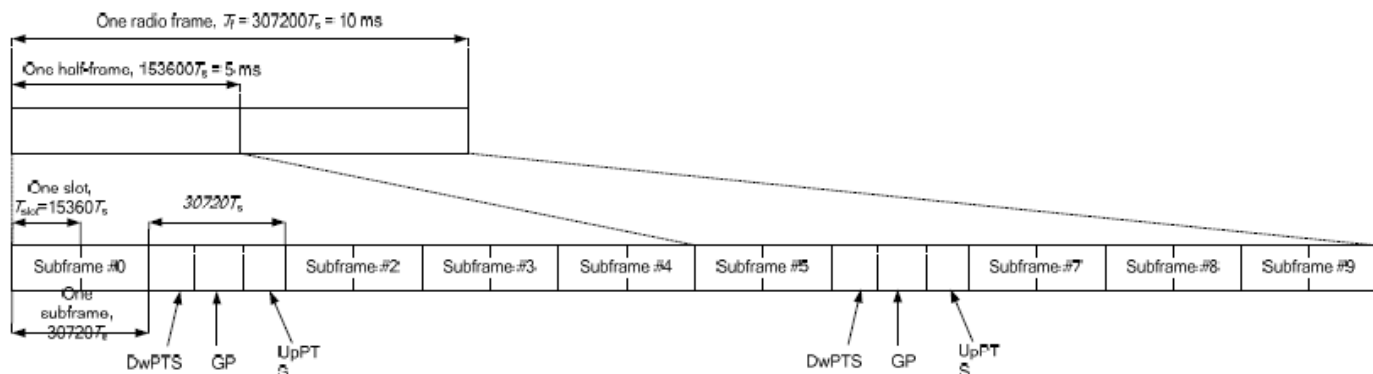


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

Table 4.2-2: Uplink-downlink configurations.

| Uplink-downlink configuration | Downlink-to-Uplink Switch-point periodicity | Subframe number |   |   |   |   |   |   |   |   |   |
|-------------------------------|---|-----------------|---|---|---|---|---|---|---|---|---|
|                               |   | 0               | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0                             | 5 ms  | D               | S | U | U | U | D | S | U | U | U |
| 1                             | 5 ms  | D               | S | U | U | D | D | S | U | U | D |
| 2                             | 5 ms  | D               | S | U | D | D | D | S | U | D | D |
| 3                             | 10 ms                                       | D               | S | U | U | U | D | D | D | D | D |
| 4                             | 10 ms                                       | D               | S | U | U | D | D | D | D | D | D |
| 5                             | 10 ms                                       | D               | S | U | D | D | D | D | D | D | D |
| 6                             | 5 ms  | D               | S | U | U | U | D | S | U | U | D |

Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).

| Special subframe configuration | Normal cyclic prefix in downlink |                                |                                  | Extended cyclic prefix in downlink |                                |                                  |
|--------------------------------|----------------------------------|--------------------------------|----------------------------------|------------------------------------|--------------------------------|----------------------------------|
|                                | DwPTS                            | UpPTS                          |                                  | DwPTS                              | UpPTS                          |                                  |
|                                |                                  | Normal cyclic prefix in uplink | Extended cyclic prefix in uplink |                                    | Normal cyclic prefix in uplink | Extended cyclic prefix in uplink |
| 0                              | $6592 \cdot T_s$                 | $2192 \cdot T_s$               | $2560 \cdot T_s$                 | $7680 \cdot T_s$                   | $2192 \cdot T_s$               | $2560 \cdot T_s$                 |
| 1                              | $19760 \cdot T_s$                |                                |                                  | $20480 \cdot T_s$                  |                                |                                  |
| 2                              | $21952 \cdot T_s$                |                                |                                  | $23040 \cdot T_s$                  |                                |                                  |
| 3                              | $24144 \cdot T_s$                |                                |                                  | $25600 \cdot T_s$                  |                                |                                  |
| 4                              | $26336 \cdot T_s$                | $4384 \cdot T_s$               | $5120 \cdot T_s$                 | $7680 \cdot T_s$                   | $4384 \cdot T_s$               | $5120 \cdot T_s$                 |
| 5                              | $6592 \cdot T_s$                 |                                |                                  | $20480 \cdot T_s$                  |                                |                                  |
| 6                              | $19760 \cdot T_s$                |                                |                                  | $23040 \cdot T_s$                  |                                |                                  |
| 7                              | $21952 \cdot T_s$                |                                |                                  | $12800 \cdot T_s$                  | -                              | -                                |
| 8                              | $24144 \cdot T_s$                |                                |                                  | -                                  |                                |                                  |
| 9                              | $13168 \cdot T_s$                |                                |                                  | -                                  |                                |                                  |

| Special subframe (30720·T <sub>s</sub> ): Normal cyclic prefix in downlink (UpPTS) |                                |                                |                                  |
|--|--------------------------------|--------------------------------|----------------------------------|
|  | Special subframe configuration | Normal cyclic prefix in uplink | Extended cyclic prefix in uplink |
| Uplink duty factor in one special subframe   | 0~4                            | 7.13%                          | 8.33%                            |
|  | 5~9                            | 14.3%                          | 16.7%                            |

| Special subframe(30720·T <sub>s</sub> ): Extended cyclic prefix in downlink (UpPTS) |                                |                                |                                  |
|---|--------------------------------|--------------------------------|----------------------------------|
|   | Special subframe configuration | Normal cyclic prefix in uplink | Extended cyclic prefix in uplink |
| Uplink duty factor in one special subframe  | 0~3                            | 7.13%                          | 8.33%                            |
|   | 4~7                            | 14.3%                          | 16.7%                            |

The highest duty factor is resulted from:

- Uplink-downlink configuration: 0. In a half-frame consisted of 5 subframes, uplink operation is in 3 uplink subframes and 1 special subframe.
- special subframe configuration: 5-9 for normal cyclic prefix in downlink, 4-7 for extended cyclic prefix in downlink
- for special subframe with extended cyclic prefix in uplink, the total uplink duty factor in one half-frame is:  
 $(3+0.167)/5 = 63.3\%$
- for special subframe with normal cyclic prefix in uplink, the total uplink duty factor in one half-frame is:  
 $(3+0.143)/5 = 62.9\%$
- For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix  $63.3\%/62.9\% = 1.006$  is applied to scale-up the measured SAR result. The scaled TDD LTE SAR = measured SAR (W/kg)\* Tune-up Scaling Factor\* scaling factor for extended cyclic prefix.



**<Full Power Mode>**

**<LTE Band 38>**

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up<br>limit<br>(dBm) | MPR<br>(dB) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|---------------------------|-------------|
| Channel         |            |         |           | 37850                    | 38000                       | 38150                     | 23.5                      | 0           |
| Frequency (MHz) |            |         |           | 2580                     | 2595                        | 2610                      |                           |             |
| 20              | QPSK       | 1       | 0         | 22.37                    | 22.17                       | 22.42                     |                           |             |
| 20              | QPSK       | 1       | 49        | 22.84                    | 22.83                       | 22.90                     | 22.5                      | 1           |
| 20              | QPSK       | 1       | 99        | 22.43                    | 22.52                       | 22.45                     |                           |             |
| 20              | QPSK       | 50      | 0         | 21.84                    | 21.80                       | 21.79                     |                           |             |
| 20              | QPSK       | 50      | 24        | 21.82                    | 21.72                       | 21.74                     | 22.5                      | 1           |
| 20              | QPSK       | 50      | 50        | 21.73                    | 21.50                       | 21.73                     |                           |             |
| 20              | QPSK       | 100     | 0         | 21.75                    | 21.82                       | 21.79                     |                           |             |
| 20              | 16QAM      | 1       | 0         | 21.53                    | 21.51                       | 21.57                     | 22.5                      | 1           |
| 20              | 16QAM      | 1       | 49        | 21.98                    | 22.02                       | 21.95                     |                           |             |
| 20              | 16QAM      | 1       | 99        | 21.60                    | 21.64                       | 21.56                     |                           |             |
| 20              | 16QAM      | 50      | 0         | 20.90                    | 20.83                       | 20.79                     | 21.5                      | 2           |
| 20              | 16QAM      | 50      | 24        | 20.87                    | 20.88                       | 20.87                     |                           |             |
| 20              | 16QAM      | 50      | 50        | 20.81                    | 20.93                       | 20.90                     |                           |             |
| 20              | 16QAM      | 100     | 0         | 20.83                    | 20.84                       | 20.83                     | 22.5                      | 1           |
| 20              | 64QAM      | 1       | 0         | 21.25                    | 21.23                       | 21.31                     |                           |             |
| 20              | 64QAM      | 1       | 49        | 21.71                    | 21.77                       | 21.73                     |                           |             |
| 20              | 64QAM      | 1       | 99        | 21.33                    | 21.38                       | 21.32                     | 21.5                      | 2           |
| 20              | 64QAM      | 50      | 0         | 20.84                    | 20.78                       | 20.72                     |                           |             |
| 20              | 64QAM      | 50      | 24        | 20.81                    | 20.83                       | 20.80                     |                           |             |
| 20              | 64QAM      | 50      | 50        | 20.75                    | 20.86                       | 20.85                     | 20.88                     |             |
| 20              | 64QAM      | 100     | 0         | 20.89                    | 20.86                       | 20.88                     |                           |             |
| Channel         |            |         |           | 37825                    | 38000                       | 38175                     | 23.5                      | 0           |
| Frequency (MHz) |            |         |           | 2577.5                   | 2595                        | 2612.5                    |                           |             |
| 15              | QPSK       | 1       | 0         | 22.53                    | 22.54                       | 22.64                     |                           |             |
| 15              | QPSK       | 1       | 37        | 22.75                    | 22.77                       | 22.77                     | 22.5                      | 1           |
| 15              | QPSK       | 1       | 74        | 22.57                    | 22.65                       | 22.62                     |                           |             |
| 15              | QPSK       | 36      | 0         | 21.74                    | 21.74                       | 21.73                     |                           |             |
| 15              | QPSK       | 36      | 20        | 21.73                    | 21.80                       | 21.82                     | 22.5                      | 1           |
| 15              | QPSK       | 36      | 39        | 21.68                    | 21.81                       | 21.89                     |                           |             |
| 15              | QPSK       | 75      | 0         | 21.73                    | 21.79                       | 21.77                     |                           |             |
| 15              | 16QAM      | 1       | 0         | 21.65                    | 21.68                       | 21.74                     | 22.5                      | 1           |
| 15              | 16QAM      | 1       | 37        | 21.90                    | 21.91                       | 21.87                     |                           |             |
| 15              | 16QAM      | 1       | 74        | 21.69                    | 21.79                       | 21.73                     |                           |             |
| 15              | 16QAM      | 36      | 0         | 20.70                    | 20.68                       | 20.68                     | 21.5                      | 2           |
| 15              | 16QAM      | 36      | 20        | 20.66                    | 20.78                       | 20.75                     |                           |             |
| 15              | 16QAM      | 36      | 39        | 20.65                    | 20.77                       | 20.80                     |                           |             |
| 15              | 16QAM      | 75      | 0         | 20.75                    | 20.85                       | 20.82                     | 22.5                      | 1           |
| 15              | 64QAM      | 1       | 0         | 21.38                    | 21.42                       | 21.52                     |                           |             |
| 15              | 64QAM      | 1       | 37        | 21.62                    | 21.67                       | 21.64                     |                           |             |
| 15              | 64QAM      | 1       | 74        | 21.45                    | 21.56                       | 21.47                     | 21.5                      | 2           |
| 15              | 64QAM      | 36      | 0         | 20.74                    | 20.75                       | 20.73                     |                           |             |
| 15              | 64QAM      | 36      | 20        | 20.73                    | 20.80                       | 20.82                     |                           |             |
| 15              | 64QAM      | 36      | 39        | 20.70                    | 20.84                       | 20.86                     | 20.84                     |             |
| 15              | 64QAM      | 75      | 0         | 20.73                    | 20.82                       | 20.84                     |                           |             |



| Channel         |       |    |    | 37800  | 38000 | 38200  | Tune-up<br>limit<br>(dBm) | MPR<br>(dB) |
|-----------------|-------|----|----|--------|-------|--------|---------------------------|-------------|
| Frequency (MHz) |       |    |    | 2575   | 2595  | 2615   |                           |             |
| 10              | QPSK  | 1  | 0  | 22.65  | 22.70 | 22.76  | 23.5                      | 0           |
| 10              | QPSK  | 1  | 25 | 22.75  | 22.81 | 22.89  |                           |             |
| 10              | QPSK  | 1  | 49 | 22.68  | 22.77 | 22.78  |                           |             |
| 10              | QPSK  | 25 | 0  | 21.78  | 21.84 | 21.82  | 22.5                      | 1           |
| 10              | QPSK  | 25 | 12 | 21.79  | 21.84 | 21.85  |                           |             |
| 10              | QPSK  | 25 | 25 | 21.78  | 21.89 | 21.92  |                           |             |
| 10              | QPSK  | 50 | 0  | 21.82  | 21.88 | 21.84  |                           |             |
| 10              | 16QAM | 1  | 0  | 21.78  | 21.81 | 21.86  | 22.5                      | 1           |
| 10              | 16QAM | 1  | 25 | 21.87  | 21.92 | 21.97  |                           |             |
| 10              | 16QAM | 1  | 49 | 21.82  | 21.88 | 21.88  |                           |             |
| 10              | 16QAM | 25 | 0  | 20.82  | 20.93 | 20.82  | 21.5                      | 2           |
| 10              | 16QAM | 25 | 12 | 20.80  | 20.87 | 20.86  |                           |             |
| 10              | 16QAM | 25 | 25 | 20.78  | 20.87 | 20.93  |                           |             |
| 10              | 16QAM | 50 | 0  | 20.92  | 20.97 | 20.90  |                           |             |
| 10              | 64QAM | 1  | 0  | 21.47  | 21.56 | 21.62  | 22.5                      | 1           |
| 10              | 64QAM | 1  | 25 | 21.58  | 21.69 | 21.72  |                           |             |
| 10              | 64QAM | 1  | 49 | 21.56  | 21.64 | 21.62  |                           |             |
| 10              | 64QAM | 25 | 0  | 20.78  | 20.89 | 20.79  | 21.5                      | 2           |
| 10              | 64QAM | 25 | 12 | 20.74  | 20.86 | 20.82  |                           |             |
| 10              | 64QAM | 25 | 25 | 20.77  | 20.87 | 20.88  |                           |             |
| 10              | 64QAM | 50 | 0  | 20.85  | 20.89 | 20.86  |                           |             |
| Channel         |       |    |    | 37775  | 38000 | 38225  | Tune-up<br>limit<br>(dBm) | MPR<br>(dB) |
| Frequency (MHz) |       |    |    | 2572.5 | 2595  | 2617.5 |                           |             |
| 5               | QPSK  | 1  | 0  | 22.52  | 22.57 | 22.60  | 23.5                      | 0           |
| 5               | QPSK  | 1  | 12 | 22.74  | 22.86 | 22.85  |                           |             |
| 5               | QPSK  | 1  | 24 | 22.53  | 22.63 | 22.65  |                           |             |
| 5               | QPSK  | 12 | 0  | 21.71  | 21.81 | 21.77  | 22.5                      | 1           |
| 5               | QPSK  | 12 | 7  | 21.77  | 21.85 | 21.86  |                           |             |
| 5               | QPSK  | 12 | 13 | 21.74  | 21.87 | 21.83  |                           |             |
| 5               | QPSK  | 25 | 0  | 21.67  | 21.83 | 21.78  |                           |             |
| 5               | 16QAM | 1  | 0  | 21.70  | 21.77 | 21.78  | 22.5                      | 1           |
| 5               | 16QAM | 1  | 12 | 21.90  | 22.01 | 21.94  |                           |             |
| 5               | 16QAM | 1  | 24 | 21.69  | 21.80 | 21.79  |                           |             |
| 5               | 16QAM | 12 | 0  | 20.68  | 20.75 | 20.74  | 21.5                      | 2           |
| 5               | 16QAM | 12 | 7  | 20.70  | 20.84 | 20.87  |                           |             |
| 5               | 16QAM | 12 | 13 | 20.72  | 20.85 | 20.80  |                           |             |
| 5               | 16QAM | 25 | 0  | 20.75  | 20.84 | 20.78  |                           |             |
| 5               | 64QAM | 1  | 0  | 21.43  | 21.51 | 21.53  | 22.5                      | 1           |
| 5               | 64QAM | 1  | 12 | 21.64  | 21.74 | 21.70  |                           |             |
| 5               | 64QAM | 1  | 24 | 21.45  | 21.57 | 21.53  |                           |             |
| 5               | 64QAM | 12 | 0  | 20.67  | 20.73 | 20.72  | 21.5                      | 2           |
| 5               | 64QAM | 12 | 7  | 20.73  | 20.81 | 20.80  |                           |             |
| 5               | 64QAM | 12 | 13 | 20.71  | 20.84 | 20.79  |                           |             |
| 5               | 64QAM | 25 | 0  | 20.70  | 20.82 | 20.74  |                           |             |

**<WLAN Conducted Power>****General Note:**

1. Per KDB 248227 D01v02r02, SAR test reduction is determined according to 802.11 transmission mode configurations and certain exposure conditions with multiple test positions. In the 2.4 GHz band, separate SAR procedures are applied to DSSS and OFDM configurations to simplify DSSS test requirements. For OFDM, in both 2.4 and 5 GHz bands, an initial test configuration must be determined for each standalone and aggregated frequency band, according to the transmission mode configuration with the highest maximum output power specified for production units to perform SAR measurements. If the same highest maximum output power applies to different combinations of channel bandwidths, modulations and data rates, additional procedures are applied to determine which test configurations require SAR measurement. When applicable, an initial test position may be applied to reduce the number of SAR measurements required for next to the ear, UMPC mini-tablet or hotspot mode configurations with multiple test positions.
2. For 2.4 GHz 802.11b DSSS, either the initial test position procedure for multiple exposure test positions or the DSSS procedure for fixed exposure position is applied; these are mutually exclusive. For 2.4 GHz and 5 GHz OFDM configurations, the initial test configuration is applied to measure SAR using either the initial test position procedure for multiple exposure test position configurations or the initial test configuration procedures for fixed exposure test conditions. Based on the reported SAR of the measured configurations and maximum output power of the transmission mode configurations that are not included in the initial test configuration, the subsequent test configuration and initial test position procedures are applied to determine if SAR measurements are required for the remaining OFDM transmission configurations. In general, the number of test channels that require SAR measurement is minimized based on maximum output power measured for the test sample(s).
3. For OFDM transmission configurations in the 2.4 GHz and 5 GHz bands, When the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel for each frequency band.
4. DSSS and OFDM configurations are considered separately according to the required SAR procedures. SAR is measured in the initial test position using the 802.11 transmission mode configuration required by the DSSS procedure or initial test configuration and subsequent test configuration(s) according to the OFDM procedures.<sup>18</sup> The initial test position procedure is described in the following:
  - a. When the reported SAR of the initial test position is  $\leq 0.4$  W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and 802.11 transmission mode combinations within the frequency band or aggregated band.
  - b. When the reported SAR of the test position is  $> 0.4$  W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is  $\leq 0.8$  W/kg or all required test position are tested.
  - c. For all positions/configurations, when the reported SAR is  $> 0.8$  W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is  $\leq 1.2$  W/kg or all required channels are tested.

**<2.4GHz WLAN ANT>**

| 2.4GHz WLAN | Mode              | Channel | Frequency (MHz) | Average power (dBm) | Tune-Up Limit | Duty Cycle % |
|-------------|-------------------|---------|-----------------|---------------------|---------------|--------------|
|             | 802.11b 1Mbps     | 1       | 2412            | 17.89               | 18.50         | 100.00       |
|             |                   | 6       | 2437            | 18.07               | 18.50         |              |
|             |                   | 11      | 2462            | 18.03               | 18.50         |              |
|             | 802.11g 6Mbps     | 1       | 2412            | 15.21               | 15.50         | 96.67        |
|             |                   | 6       | 2437            | 15.25               | 15.50         |              |
|             |                   | 11      | 2462            | 15.06               | 15.50         |              |
|             | 802.11n-HT20 MCS0 | 1       | 2412            | 14.02               | 14.50         | 95.86        |
|             |                   | 6       | 2437            | 14.30               | 14.50         |              |
|             |                   | 11      | 2462            | 14.13               | 14.50         |              |

**<2.4GHz Bluetooth>**
**General Note:**

1. For 2.4GHz Bluetooth SAR testing was selected 1Mbps, due to its highest average power.
2. The Bluetooth duty cycle is 75.99 %, according to 2016 Oct. TCB workshop for Bluetooth SAR scaling need further consideration and the theoretical duty cycle is 83.3%, therefore the actual duty cycle will be scaled up to the theoretical value of Bluetooth reported SAR calculation.

| Mode                | Channel | Frequency (MHz) | Average power (dBm) |
|---------------------|---------|-----------------|---------------------|
|                     |         |                 | 1Mbps               |
| BR/EDR              | CH 00   | 2402            | 5.60                |
|                     | CH 39   | 2441            | 6.41                |
|                     | CH 78   | 2480            | 5.85                |
| Tune-up limit (dBm) |         |                 | 7.00                |

| Mode                | Channel | Frequency (MHz) | Average power (dBm) |
|---------------------|---------|-----------------|---------------------|
|                     |         |                 | GFSK                |
| LE                  | CH 00   | 2402            | -2.92               |
|                     | CH 19   | 2440            | -1.81               |
|                     | CH 39   | 2480            | -2.57               |
| Tune-up limit (dBm) |         |                 | -1.00               |

### 13. Bluetooth Exclusions Applied

| Mode Band        | Max Average power(dBm) |              |
|------------------|------------------------|--------------|
|                  | Bluetooth BR/EDR       | Bluetooth LE |
| 2.4GHz Bluetooth | 7.00                   | -1.00        |

**Note:**

Per KDB 447498 D01v06, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 50 mm are determined by:

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for}$$

1-g SAR and ≤ 7.5 for 10-g extremity SAR

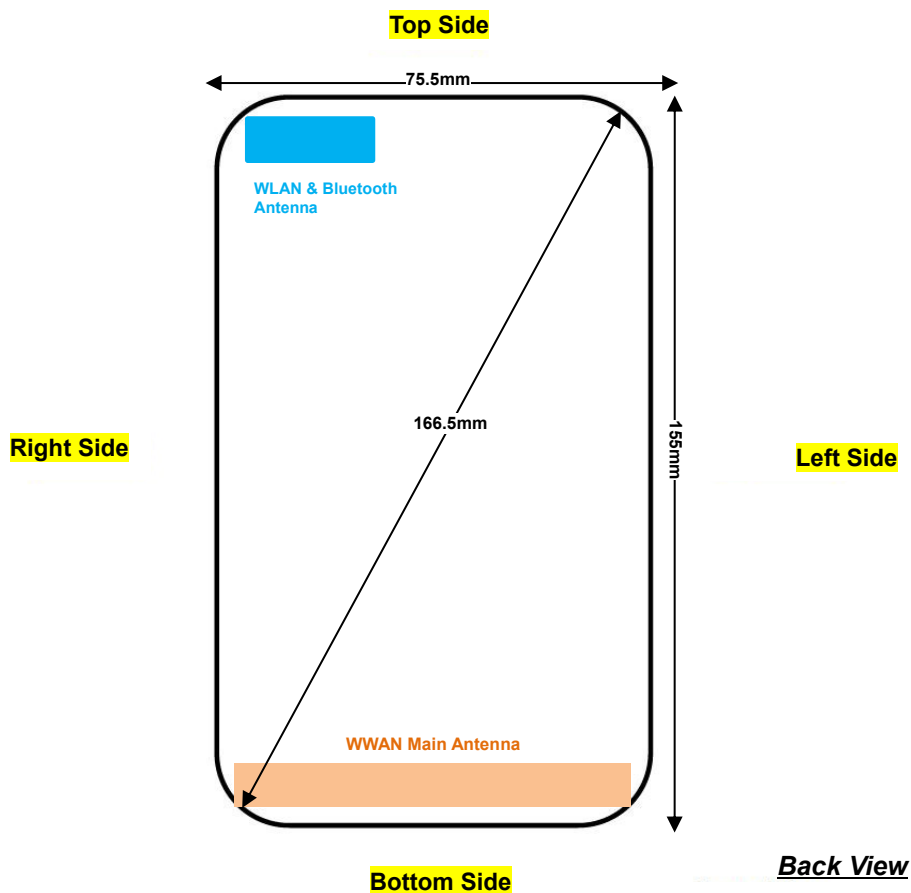
- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

| Bluetooth Max Power (dBm) | Separation Distance (mm) | Frequency (GHz) | Exclusion Thresholds |
|---------------------------|--------------------------|-----------------|----------------------|
| 7.00                      | 10                       | 2.48            | 0.8                  |

**Note:** Per KDB 447498 D01v06, a distance of 10 mm is applied to determine SAR test exclusion. The test exclusion threshold is 0.8 which is ≤ 3, SAR testing is not required.



## 14. Antenna Location



| Distance of the Antenna to the EUT surface/edge |        |        |          |             |            |           |
|---|--------|--------|----------|-------------|------------|-----------|
| Antennas  | Back   | Front  | Top Side | Bottom Side | Right Side | Left Side |
| WWAN Main                                       | ≤ 25mm | ≤ 25mm | >25mm    | ≤ 25mm      | ≤ 25mm     | ≤ 25mm    |
| Bluetooth & WLAN                                | ≤ 25mm | ≤ 25mm | ≤ 25mm   | >25mm       | ≤ 25mm     | >25mm     |

| Positions for SAR tests; Hotspot mode |      |       |          |             |            |           |
|---------------------------------------|------|-------|----------|-------------|------------|-----------|
| Antennas                              | Back | Front | Top Side | Bottom Side | Right Side | Left Side |
| WWAN Main                             | Yes  | Yes   | No       | Yes         | Yes        | Yes       |
| Bluetooth & WLAN                      | Yes  | Yes   | Yes      | No          | Yes        | No        |

### General Note:

Referring to KDB 941225 D06 v02r01, when the overall device length and width are  $\geq 9\text{cm} \times 5\text{cm}$ , the test distance is 10 mm. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25mm from that surface or edge.

## 15. SAR Test Results

### General Note:

- Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
  - Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
  - For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
  - For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)\*Tune-up Scaling Factor
  - For WLAN/Bluetooth: Reported SAR(W/kg)= Measured SAR(W/kg)\* Duty Cycle scaling factor \* Tune-up scaling factor
  - For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result.  
The Reported TDD LTE SAR = measured SAR (W/kg)\* Tune-up Scaling Factor\* scaling factor for extended cyclic prefix.
- Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
  - ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
  - ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
  - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
- Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥ 0.8W/kg for 1g SAR and 2.0W/Kg for 10g SAR.
- When hotspot mode is enabled, power reduction will be activated to limit the maximum power of WCDMA B4 and LTE B4 / B7.
- Per KDB 648474 D04v01r03, when the reported SAR for a body-worn accessory measured without a headset connected to the handset is ≤ 1.2 W/kg, SAR testing with a headset connected to the handset is not required.
- Per KDB648474 D04v01r03, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg, however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold. For this device, WWAN transmitter scaled to reduced power mode for product specific 10g SAR is higher than 1.2W/kg of WCDMA B4, and LTE B4 / B7, therefore product specific SAR is necessary.

### GSM Note:

- Per KDB 941225 D01v03r01, for SAR test reduction for GSM / GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested. Therefore, the GPRS (4Tx slots) for GSM850/GSM1900 is considered as the primary mode.
- Other configurations of GSM / GPRS / EDGE are considered as secondary modes. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode, SAR measurement is not required for the secondary mode.

### WCDMA Note:

- Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".
- Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA / HSPA+ is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA / HSPA+ to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA / HSPA+, and according to the following RF output power, the output power results of the secondary modes (HSDPA / HSUPA / DC-HSDPA / HSPA+) are less than ¼ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA / HSPA+.

**LTE Note:**

1. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
2. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
3. Per KDB 941225 D05v02r05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are  $\leq 0.8$  W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is  $> 1.45$  W/kg, the remaining required test channels must also be tested.
4. Per KDB 941225 D05v02r05, 16QAM/64QAM output power for each RB allocation configuration is  $>$  not  $\frac{1}{2}$  dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is  $\leq 1.45$  W/kg; Per KDB 941225 D05v02r05, 16QAM/64QAM SAR testing is not required.
5. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is  $>$  not  $\frac{1}{2}$  dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is  $\leq 1.45$  W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
6. For LTE B4 / B5 / B12 / B17 / B38 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
7. LTE B17 / B4 SAR test was covered by B12 / B66; according to TCB workshop, SAR test for overlapping LTE bands can be reduced if
  - a. The maximum output power, including tolerance, for the smaller band is  $\leq$  the larger band to qualify for the SAR test exclusion.
  - b. The channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band.

**WLAN Note:**

1. Per KDB 248227 D01v02r02, for 2.4GHz 802.11g/n SAR testing is not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is  $\leq 1.2$  W/kg.
2. When the reported SAR of the test position is  $> 0.4$  W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is  $\leq 0.8$  W/kg or all required test position are tested.
3. For all positions / configurations, when the reported SAR is  $> 0.8$  W/kg, SAR is measured for these test positions / configurations on the subsequent next highest measured output power channel(s) until the reported SAR is  $\leq 1.2$  W/kg or all required channels are tested.
4. During SAR testing the WLAN transmission was verified using a spectrum analyzer.



## 15.1 Head SAR

### <GSM SAR>

| Plot No. | Battery | Band    | Mode              | Test Position | Power Reduction | Ch. | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) |
|----------|---------|---------|-------------------|---------------|-----------------|-----|-------------|---------------------|---------------------|------------------------|------------------|------------------------|------------------------|
|          | 1       | GSM850  | GPRS (4 Tx slots) | Right Cheek   | Full            | 189 | 836.4       | 29.02               | 29.50               | 1.117                  | -0.04            | 0.286                  | 0.319                  |
|          | 1       | GSM850  | GPRS (4 Tx slots) | Right Tilted  | Full            | 189 | 836.4       | 29.02               | 29.50               | 1.117                  | -0.08            | 0.092                  | 0.103                  |
|          | 1       | GSM850  | GPRS (4 Tx slots) | Left Cheek    | Full            | 189 | 836.4       | 29.02               | 29.50               | 1.117                  | -0.02            | 0.124                  | 0.138                  |
|          | 1       | GSM850  | GPRS (4 Tx slots) | Left Tilted   | Full            | 189 | 836.4       | 29.02               | 29.50               | 1.117                  | -0.01            | 0.082                  | 0.092                  |
|          | 1       | GSM850  | GPRS (4 Tx slots) | Right Cheek   | Full            | 128 | 824.2       | 29.01               | 29.50               | 1.119                  | -0.03            | 0.259                  | 0.290                  |
| 01       | 1       | GSM850  | GPRS (4 Tx slots) | Right Cheek   | Full            | 251 | 848.8       | 28.99               | 29.50               | 1.125                  | -0.08            | 0.287                  | 0.323                  |
|          | 2       | GSM850  | GPRS (4 Tx slots) | Right Cheek   | Full            | 251 | 848.8       | 28.99               | 29.50               | 1.125                  | -0.01            | 0.239                  | 0.269                  |
|          | 1       | GSM1900 | GPRS (4 Tx slots) | Right Cheek   | Full            | 661 | 1880        | 26.45               | 27.00               | 1.135                  | 0.05             | 0.094                  | 0.107                  |
|          | 1       | GSM1900 | GPRS (4 Tx slots) | Right Tilted  | Full            | 661 | 1880        | 26.45               | 27.00               | 1.135                  | 0.01             | 0.054                  | 0.061                  |
|          | 1       | GSM1900 | GPRS (4 Tx slots) | Left Cheek    | Full            | 661 | 1880        | 26.45               | 27.00               | 1.135                  | 0.03             | 0.119                  | 0.135                  |
|          | 1       | GSM1900 | GPRS (4 Tx slots) | Left Tilted   | Full            | 661 | 1880        | 26.45               | 27.00               | 1.135                  | 0.13             | 0.074                  | 0.084                  |
| 02       | 1       | GSM1900 | GPRS (4 Tx slots) | Left Cheek    | Full            | 512 | 1850.2      | 26.43               | 27.00               | 1.140                  | 0.02             | 0.146                  | 0.166                  |
|          | 2       | GSM1900 | GPRS (4 Tx slots) | Left Cheek    | Full            | 512 | 1850.2      | 26.43               | 27.00               | 1.140                  | 0.01             | 0.122                  | 0.139                  |
|          | 1       | GSM1900 | GPRS (4 Tx slots) | Left Cheek    | Full            | 810 | 1909.8      | 26.34               | 27.00               | 1.164                  | 0.15             | 0.114                  | 0.133                  |

### <WCDMA SAR>

| Plot No. | Battery | Band          | Mode         | Test Position | Power Reduction | Ch.  | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) |
|----------|---------|---------------|--------------|---------------|-----------------|------|-------------|---------------------|---------------------|------------------------|------------------|------------------------|------------------------|
|          | 1       | WCDMA Band V  | RMC 12.2Kbps | Right Cheek   | Full            | 4132 | 826.4       | 23.36               | 24.00               | 1.159                  | 0.02             | 0.150                  | 0.174                  |
|          | 1       | WCDMA Band V  | RMC 12.2Kbps | Right Tilted  | Full            | 4132 | 826.4       | 23.36               | 24.00               | 1.159                  | -0.06            | 0.099                  | 0.114                  |
| 03       | 1       | WCDMA Band V  | RMC 12.2Kbps | Left Cheek    | Full            | 4132 | 826.4       | 23.36               | 24.00               | 1.159                  | -0.01            | 0.160                  | 0.185                  |
|          | 2       | WCDMA Band V  | RMC 12.2Kbps | Left Cheek    | Full            | 4132 | 826.4       | 23.36               | 24.00               | 1.159                  | 0.03             | 0.145                  | 0.168                  |
|          | 1       | WCDMA Band V  | RMC 12.2Kbps | Left Tilted   | Full            | 4132 | 826.4       | 23.36               | 24.00               | 1.159                  | -0.09            | 0.093                  | 0.107                  |
|          | 1       | WCDMA Band V  | RMC 12.2Kbps | Left Cheek    | Full            | 4182 | 836.4       | 23.32               | 24.00               | 1.169                  | -0.09            | 0.128                  | 0.150                  |
|          | 1       | WCDMA Band V  | RMC 12.2Kbps | Left Cheek    | Full            | 4233 | 846.6       | 23.32               | 24.00               | 1.169                  | -0.09            | 0.125                  | 0.146                  |
|          | 1       | WCDMA Band IV | RMC 12.2Kbps | Right Cheek   | Full            | 1413 | 1732.6      | 22.56               | 23.00               | 1.107                  | -0.01            | 0.082                  | 0.091                  |
|          | 1       | WCDMA Band IV | RMC 12.2Kbps | Right Tilted  | Full            | 1413 | 1732.6      | 22.56               | 23.00               | 1.107                  | 0.02             | 0.047                  | 0.052                  |
|          | 1       | WCDMA Band IV | RMC 12.2Kbps | Left Cheek    | Full            | 1413 | 1732.6      | 22.56               | 23.00               | 1.107                  | 0.01             | 0.061                  | 0.067                  |
|          | 1       | WCDMA Band IV | RMC 12.2Kbps | Left Tilted   | Full            | 1413 | 1732.6      | 22.56               | 23.00               | 1.107                  | 0.09             | 0.056                  | 0.062                  |
|          | 1       | WCDMA Band IV | RMC 12.2Kbps | Right Cheek   | Full            | 1312 | 1712.4      | 22.51               | 23.00               | 1.119                  | 0.02             | 0.082                  | 0.092                  |
| 04       | 2       | WCDMA Band IV | RMC 12.2Kbps | Right Cheek   | Full            | 1312 | 1712.4      | 22.51               | 23.00               | 1.119                  | -0.03            | 0.085                  | 0.096                  |
|          | 1       | WCDMA Band IV | RMC 12.2Kbps | Right Cheek   | Full            | 1513 | 1752.6      | 22.52               | 23.00               | 1.117                  | 0.03             | 0.067                  | 0.075                  |
|          | 1       | WCDMA Band II | RMC 12.2Kbps | Right Cheek   | Full            | 9538 | 1907.6      | 23.38               | 24.00               | 1.153                  | 0.01             | 0.139                  | 0.160                  |
|          | 1       | WCDMA Band II | RMC 12.2Kbps | Right Tilted  | Full            | 9538 | 1907.6      | 23.38               | 24.00               | 1.153                  | -0.06            | 0.058                  | 0.067                  |
| 05       | 1       | WCDMA Band II | RMC 12.2Kbps | Left Cheek    | Full            | 9538 | 1907.6      | 23.38               | 24.00               | 1.153                  | 0.07             | 0.150                  | 0.173                  |
|          | 2       | WCDMA Band II | RMC 12.2Kbps | Left Cheek    | Full            | 9538 | 1907.6      | 23.38               | 24.00               | 1.153                  | 0.1              | 0.143                  | 0.165                  |
|          | 1       | WCDMA Band II | RMC 12.2Kbps | Left Tilted   | Full            | 9538 | 1907.6      | 23.38               | 24.00               | 1.153                  | 0.05             | 0.085                  | 0.098                  |
|          | 1       | WCDMA Band II | RMC 12.2Kbps | Left Cheek    | Full            | 9262 | 1852.4      | 23.36               | 24.00               | 1.159                  | 0.02             | 0.076                  | 0.088                  |
|          | 1       | WCDMA Band II | RMC 12.2Kbps | Left Cheek    | Full            | 9400 | 1880        | 23.32               | 24.00               | 1.169                  | 0.08             | 0.118                  | 0.138                  |



**<FDD LTE SAR>**

| Plot No. | Battery | Band        | BW (MHz) | Modulation | RB Size | RB Offset | Test Position | Power Reduction | Ch.    | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) |
|----------|---------|-------------|----------|------------|---------|-----------|---------------|-----------------|--------|-------------|---------------------|---------------------|------------------------|------------------|------------------------|------------------------|
| 06       | 1       | LTE Band 12 | 10M      | QPSK       | 1       | 25        | Right Cheek   | Full            | 23095  | 707.5       | 22.37               | 23.00               | 1.156                  | -0.01            | 0.134                  | <b>0.155</b>           |
|          | 2       | LTE Band 12 | 10M      | QPSK       | 1       | 25        | Right Cheek   | Full            | 23095  | 707.5       | 22.37               | 23.00               | 1.156                  | 0.01             | 0.101                  | 0.117                  |
|          | 1       | LTE Band 12 | 10M      | QPSK       | 25      | 25        | Right Cheek   | Full            | 23095  | 707.5       | 21.37               | 22.00               | 1.156                  | 0.01             | 0.078                  | 0.090                  |
|          | 1       | LTE Band 12 | 10M      | QPSK       | 1       | 25        | Right Tilted  | Full            | 23095  | 707.5       | 22.37               | 23.00               | 1.156                  | 0.1              | 0.058                  | 0.067                  |
|          | 1       | LTE Band 12 | 10M      | QPSK       | 25      | 25        | Right Tilted  | Full            | 23095  | 707.5       | 21.37               | 22.00               | 1.156                  | -0.17            | 0.054                  | 0.063                  |
|          | 1       | LTE Band 12 | 10M      | QPSK       | 1       | 25        | Left Cheek    | Full            | 23095  | 707.5       | 22.37               | 23.00               | 1.156                  | 0.09             | 0.091                  | 0.105                  |
|          | 1       | LTE Band 12 | 10M      | QPSK       | 25      | 25        | Left Cheek    | Full            | 23095  | 707.5       | 21.37               | 22.00               | 1.156                  | 0.03             | 0.070                  | 0.081                  |
|          | 1       | LTE Band 12 | 10M      | QPSK       | 1       | 25        | Left Tilted   | Full            | 23095  | 707.5       | 22.37               | 23.00               | 1.156                  | -0.08            | 0.085                  | 0.098                  |
|          | 1       | LTE Band 12 | 10M      | QPSK       | 25      | 25        | Left Tilted   | Full            | 23095  | 707.5       | 21.37               | 22.00               | 1.156                  | 0.01             | 0.066                  | 0.077                  |
| 07       | 1       | LTE Band 13 | 10M      | QPSK       | 1       | 25        | Right Cheek   | Full            | 23230  | 782         | 22.43               | 23.00               | 1.140                  | 0.02             | 0.132                  | <b>0.151</b>           |
|          | 2       | LTE Band 13 | 10M      | QPSK       | 1       | 25        | Right Cheek   | Full            | 23230  | 782         | 22.43               | 23.00               | 1.140                  | 0.02             | 0.125                  | 0.143                  |
|          | 1       | LTE Band 13 | 10M      | QPSK       | 25      | 25        | Right Cheek   | Full            | 23230  | 782         | 21.50               | 22.00               | 1.122                  | 0.05             | 0.060                  | 0.067                  |
|          | 1       | LTE Band 13 | 10M      | QPSK       | 1       | 25        | Right Tilted  | Full            | 23230  | 782         | 22.43               | 23.00               | 1.140                  | 0.12             | 0.044                  | 0.050                  |
|          | 1       | LTE Band 13 | 10M      | QPSK       | 25      | 25        | Right Tilted  | Full            | 23230  | 782         | 21.50               | 22.00               | 1.122                  | 0.06             | 0.035                  | 0.039                  |
|          | 1       | LTE Band 13 | 10M      | QPSK       | 1       | 25        | Left Cheek    | Full            | 23230  | 782         | 22.43               | 23.00               | 1.140                  | -0.01            | 0.069                  | 0.079                  |
|          | 1       | LTE Band 13 | 10M      | QPSK       | 25      | 25        | Left Cheek    | Full            | 23230  | 782         | 21.50               | 22.00               | 1.122                  | -0.12            | 0.057                  | 0.064                  |
|          | 1       | LTE Band 13 | 10M      | QPSK       | 1       | 25        | Left Tilted   | Full            | 23230  | 782         | 22.43               | 23.00               | 1.140                  | -0.1             | 0.082                  | 0.094                  |
|          | 1       | LTE Band 13 | 10M      | QPSK       | 25      | 25        | Left Tilted   | Full            | 23230  | 782         | 21.50               | 22.00               | 1.122                  | 0.01             | 0.063                  | 0.071                  |
| 08       | 1       | LTE Band 5  | 10M      | QPSK       | 1       | 25        | Right Cheek   | Full            | 20525  | 836.5       | 22.24               | 23.00               | 1.191                  | -0.06            | 0.151                  | <b>0.180</b>           |
|          | 2       | LTE Band 5  | 10M      | QPSK       | 1       | 25        | Right Cheek   | Full            | 20525  | 836.5       | 22.24               | 23.00               | 1.191                  | 0.05             | 0.115                  | 0.137                  |
|          | 1       | LTE Band 5  | 10M      | QPSK       | 25      | 25        | Right Cheek   | Full            | 20525  | 836.5       | 21.30               | 22.00               | 1.175                  | -0.03            | 0.060                  | 0.070                  |
|          | 1       | LTE Band 5  | 10M      | QPSK       | 1       | 25        | Right Tilted  | Full            | 20525  | 836.5       | 22.24               | 23.00               | 1.191                  | 0.03             | 0.041                  | 0.049                  |
|          | 1       | LTE Band 5  | 10M      | QPSK       | 25      | 25        | Right Tilted  | Full            | 20525  | 836.5       | 21.30               | 22.00               | 1.175                  | 0.07             | 0.033                  | 0.039                  |
|          | 1       | LTE Band 5  | 10M      | QPSK       | 1       | 25        | Left Cheek    | Full            | 20525  | 836.5       | 22.24               | 23.00               | 1.191                  | -0.17            | 0.074                  | 0.088                  |
|          | 1       | LTE Band 5  | 10M      | QPSK       | 25      | 25        | Left Cheek    | Full            | 20525  | 836.5       | 21.30               | 22.00               | 1.175                  | -0.14            | 0.056                  | 0.066                  |
|          | 1       | LTE Band 5  | 10M      | QPSK       | 1       | 25        | Left Tilted   | Full            | 20525  | 836.5       | 22.24               | 23.00               | 1.191                  | -0.06            | 0.084                  | 0.099                  |
|          | 1       | LTE Band 5  | 10M      | QPSK       | 25      | 25        | Left Tilted   | Full            | 20525  | 836.5       | 21.30               | 22.00               | 1.175                  | -0.07            | 0.060                  | 0.071                  |
| 09       | 1       | LTE Band 66 | 20M      | QPSK       | 1       | 49        | Right Cheek   | Full            | 132322 | 1745        | 21.71               | 22.00               | 1.069                  | -0.02            | 0.116                  | <b>0.124</b>           |
|          | 2       | LTE Band 66 | 20M      | QPSK       | 1       | 49        | Right Cheek   | Full            | 132322 | 1745        | 21.71               | 22.00               | 1.069                  | -0.09            | 0.113                  | 0.121                  |
|          | 1       | LTE Band 66 | 20M      | QPSK       | 50      | 24        | Right Cheek   | Full            | 132322 | 1745        | 20.70               | 21.00               | 1.072                  | 0.04             | 0.092                  | 0.099                  |
|          | 1       | LTE Band 66 | 20M      | QPSK       | 1       | 49        | Right Tilted  | Full            | 132322 | 1745        | 21.71               | 22.00               | 1.069                  | 0.11             | 0.049                  | 0.052                  |
|          | 1       | LTE Band 66 | 20M      | QPSK       | 50      | 24        | Right Tilted  | Full            | 132322 | 1745        | 20.70               | 21.00               | 1.072                  | 0.16             | 0.040                  | 0.043                  |
|          | 1       | LTE Band 66 | 20M      | QPSK       | 1       | 49        | Left Cheek    | Full            | 132322 | 1745        | 21.71               | 22.00               | 1.069                  | -0.01            | 0.089                  | 0.096                  |
|          | 1       | LTE Band 66 | 20M      | QPSK       | 50      | 24        | Left Cheek    | Full            | 132322 | 1745        | 20.70               | 21.00               | 1.072                  | -0.01            | 0.069                  | 0.073                  |
|          | 1       | LTE Band 66 | 20M      | QPSK       | 1       | 49        | Left Tilted   | Full            | 132322 | 1745        | 21.71               | 22.00               | 1.069                  | 0.04             | 0.072                  | 0.076                  |
|          | 1       | LTE Band 66 | 20M      | QPSK       | 50      | 24        | Left Tilted   | Full            | 132322 | 1745        | 20.70               | 21.00               | 1.072                  | 0.05             | 0.056                  | 0.060                  |
|          | 1       | LTE Band 66 | 20M      | QPSK       | 1       | 49        | Right Cheek   | Full            | 132072 | 1720        | 21.68               | 22.00               | 1.076                  | 0.05             | 0.093                  | 0.100                  |
|          | 1       | LTE Band 66 | 20M      | QPSK       | 1       | 49        | Right Cheek   | Full            | 132572 | 1770        | 21.60               | 22.00               | 1.096                  | 0.01             | 0.103                  | 0.113                  |