# Appendix A

# Transmitter Output Power

## According to FCC Part 2.1046 & FCC Part 27.50(c)

## According to IC RSS-Gen,§4.8 & RSS-130,§4.4

## Conducted Power of Transmitter

Table 1   Measurement Results (LTE) BAND 17

| TM1 & TM2 RF Output Power(Conducted)      BAND 17 | | | | |
|---|---|---|---|---|
| | TN/VN | | | |
| Test Mode | Modulation | RB | Measured (dBm) | Limit (dBm ) |
| Channel (B) 5MHz(BW) | QPSK | 1RB#0 | 23.84 | 34.8 |
| | | 1RB#max | 23.58 | 34.8 |
| | | 12RB#6 | 22.76 | 34.8 |
| | | Full | 22.53 | 34.8 |
| | 16QAM | 1RB#0 | 22.86 | 34.8 |
| | | 1RB#max | 22.72 | 34.8 |
| | | 12RB#6 | 21.75 | 34.8 |
| | | Full | 21.49 | 34.8 |
| Channel (B) 10MHz(BW) | QPSK | 1RB#0 | 23.68 | 34.8 |
| | | 1RB#max | 23.45 | 34.8 |
| | | 25RB#13 | 22.54 | 34.8 |
| | | Full | 22.42 | 34.8 |
| | 16QAM | 1RB#0 | 22.86 | 34.8 |
| | | 1RB#max | 22.62 | 34.8 |
| | | 25RB#13 | 21.47 | 34.8 |
| | | Full | 21.34 | 34.8 |
| Channel (M) 5MHz(BW) | QPSK | 1RB#0 | 23.57 | 34.8 |
| | | 1RB#max | 23.78 | 34.8 |
| | | 12RB#6 | 22.73 | 34.8 |
| | | Full | 22.54 | 34.8 |
| | 16QAM | 1RB#0 | 22.73 | 34.8 |
| | | 1RB#max | 22.80 | 34.8 |
| | | 12RB#6 | 21.66 | 34.8 |
| | | Full | 21.47 | 34.8 |
| Channel (M) 10MHz(BW) | QPSK | 1RB#0 | 23.67 | 34.8 |
| | | 1RB#max | 23.73 | 34.8 |
| | | 25RB#13 | 22.52 | 34.8 |
| | | Full | 22.40 | 34.8 |
| | 16QAM | 1RB#0 | 22.82 | 34.8 |
| | | 1RB#max | 22.87 | 34.8 |
| | | 25RB#13 | 21.48 | 34.8 |
| | | Full | 21.31 | 34.8 |

| Channel (T) 5MHz(BW) | QPSK | 1RB#0 | 23.57 | 34.8 |
| | | 1RB#max | 23.69 | 34.8 |
| | | 12RB#6 | 22.65 | 34.8 |
| | | Full | 22.50 | 34.8 |
| | 16QAM | 1RB#0 | 22.75 | 34.8 |
| | | 1RB#max | 22.78 | 34.8 |
| | | 12RB#6 | 21.74 | 34.8 |
| | | Full | 21.48 | 34.8 |
| Channel (T) 10MHz(BW) | QPSK | 1RB#0 | 23.70 | 34.8 |
| | | 1RB#max | 23.74 | 34.8 |
| | | 25RB#13 | 22.58 | 34.8 |
| | | Full | 22.45 | 34.8 |
| | 16QAM | 1RB#0 | 22.83 | 34.8 |
| | | 1RB#max | 22.87 | 34.8 |
| | | 25RB#13 | 21.51 | 34.8 |
| | | Full | 21.30 | 34.8 |

Note: RBW > emission bandwidth, VBW > 3 x RBW.

# Peak-to-Average Ratio

Table 2   Measurement Results (LTE) BAND 17

| Peak-to-Average Ratio | | | | |
|---|---|---|---|---|
| Test Mode | TN/VN | | | |
| | Modulation | RB | Measured (dB) | Limit (dB) |
| Channel (B) 5MHz(BW) | QPSK | 1RB#0 | 5.32 | 13 |
| | | 1RB#max | 5.25 | 13 |
| | | 12RB#6 | 5.16 | 13 |
| | | Full | 5.35 | 13 |
| | 16QAM | 1RB#0 | 6.05 | 13 |
| | | 1RB#max | 6.08 | 13 |
| | | 12RB#6 | 6.13 | 13 |
| | | Full | 6.28 | 13 |
| Channel (B) 10MHz(BW) | QPSK | 1RB#0 | 5.22 | 13 |
| | | 1RB#max | 5.26 | 13 |
| | | 25RB#13 | 5.32 | 13 |
| | | Full | 5.18 | 13 |
| | 16QAM | 1RB#0 | 6.25 | 13 |
| | | 1RB#max | 6.38 | 13 |
| | | 25RB#13 | 6.14 | 13 |
| | | Full | 6.18 | 13 |
| Channel (M) 5MHz(BW) | QPSK | 1RB#0 | 5.35 | 13 |
| | | 1RB#max | 5.27 | 13 |
| | | 12RB#6 | 5.16 | 13 |
| | | Full | 5.31 | 13 |
| | 16QAM | 1RB#0 | 6.07 | 13 |
| | | 1RB#max | 6.06 | 13 |
| | | 12RB#6 | 6.17 | 13 |
| | | Full | 6.28 | 13 |
| Channel (M) 10MHz(BW) | QPSK | 1RB#0 | 5.23 | 13 |
| | | 1RB#max | 5.27 | 13 |
| | | 25RB#13 | 5.39 | 13 |
| | | Full | 5.11 | 13 |
| | 16QAM | 1RB#0 | 6.25 | 13 |
| | | 1RB#max | 6.37 | 13 |
| | | 25RB#13 | 6.16 | 13 |

| | | Full | 6.19 | 13 |
|---|---|---|---|---|
| Channel (T) 5MHz(BW) | QPSK | 1RB#0 | 5.32 | 13 |
| | | 1RB#max | 5.34 | 13 |
| | | 12RB#6 | 5.37 | 13 |
| | | Full | 5.23 | 13 |
| | 16QAM | 1RB#0 | 6.24 | 13 |
| | | 1RB#max | 6.38 | 13 |
| | | 12RB#6 | 6.11 | 13 |
| | | Full | 6.16 | 13 |
| Channel (T) 10MHz(BW) | QPSK | 1RB#0 | 5.28 | 13 |
| | | 1RB#max | 5.27 | 13 |
| | | 25RB#13 | 5.34 | 13 |
| | | Full | 5.13 | 13 |
| | 16QAM | 1RB#0 | 6.27 | 13 |
| | | 1RB#max | 6.33 | 13 |
| | | 25RB#13 | 6.11 | 13 |
| | | Full | 6.13 | 13 |

# Effective Radiated Power of Transmitter (ERP)

Table 3   Substitution Results (LTE) BAND 17

| Test Mode | | | Meas. Level [dBm] | Substitution Antenna Type | SGP[dBm] | Substitution Gain [dbd] | Cable Loss [dB] | Substitution Level (ERP) [dBm] | FCC limit [dBm] | Result |
|---|---|---|---|---|---|---|---|---|---|---|
| Channel | Modulation | RB | | | | | | | | |
| Channel (B) 5MHz(BW) | QPSK | 1 RB/#0 | 20.69 | Horn Ant. | 23.90 | -2.75 | 0.6 | 20.55 | 34.8 | Pass |
| | | 1 RB/#max | 20.43 | Horn Ant. | 23.64 | -2.75 | 0.6 | 20.29 | 34.8 | Pass |
| | | 12 RB/#6 | 19.61 | Horn Ant. | 22.82 | -2.75 | 0.6 | 19.47 | 34.8 | Pass |
| | | Full | 19.38 | Horn Ant. | 22.59 | -2.75 | 0.6 | 19.24 | 34.8 | Pass |
| | 16QAM | 1 RB/#0 | 19.71 | Horn Ant. | 22.92 | -2.75 | 0.6 | 19.57 | 34.8 | Pass |
| | | 1 RB/#max | 19.57 | Horn Ant. | 22.78 | -2.75 | 0.6 | 19.43 | 34.8 | Pass |
| | | 12 RB/#6 | 18.60 | Horn Ant. | 21.81 | -2.75 | 0.6 | 18.46 | 34.8 | Pass |
| | | Full | 18.34 | Horn Ant. | 21.55 | -2.75 | 0.6 | 18.20 | 34.8 | Pass |
| Channel (B) 10MHz(BW) | QPSK | 1 RB/#0 | 20.53 | Horn Ant. | 23.74 | -2.75 | 0.6 | 20.39 | 34.8 | Pass |
| | | 1 RB/#max | 20.30 | Horn Ant. | 23.51 | -2.75 | 0.6 | 20.16 | 34.8 | Pass |
| | | 25 RB/#13 | 19.39 | Horn Ant. | 22.60 | -2.75 | 0.6 | 19.25 | 34.8 | Pass |
| | | Full | 19.27 | Horn Ant. | 22.48 | -2.75 | 0.6 | 19.13 | 34.8 | Pass |
| | 16QAM | 1 RB/#0 | 19.71 | Horn Ant. | 22.92 | -2.75 | 0.6 | 19.57 | 34.8 | Pass |
| | | 1 RB/#max | 19.47 | Horn Ant. | 22.68 | -2.75 | 0.6 | 19.33 | 34.8 | Pass |
| | | 25 RB/#13 | 18.32 | Horn Ant. | 21.53 | -2.75 | 0.6 | 18.18 | 34.8 | Pass |
| | | Full | 18.19 | Horn Ant. | 21.40 | -2.75 | 0.6 | 18.05 | 34.8 | Pass |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Channel (M) 5MHz(BW) | QPSK | 1 RB/#0 | 20.42 | Horn Ant. | 23.75 | -2.87 | 0.6 | 20.28 | 34.8 | Pass |
| | | 1 RB/#max | 20.63 | Horn Ant. | 23.96 | -2.87 | 0.6 | 20.49 | 34.8 | Pass |
| | | 12 RB/#6 | 19.58 | Horn Ant. | 22.91 | -2.87 | 0.6 | 19.44 | 34.8 | Pass |
| | | Full | 19.39 | Horn Ant. | 22.72 | -2.87 | 0.6 | 19.25 | 34.8 | Pass |
| | 16QAM | 1 RB/#0 | 19.58 | Horn Ant. | 22.91 | -2.87 | 0.6 | 19.44 | 34.8 | Pass |
| | | 1 RB/#max | 19.65 | Horn Ant. | 22.98 | -2.87 | 0.6 | 19.51 | 34.8 | Pass |
| | | 12 RB/#6 | 18.51 | Horn Ant. | 21.84 | -2.87 | 0.6 | 18.37 | 34.8 | Pass |
| | | Full | 18.32 | Horn Ant. | 21.65 | -2.87 | 0.6 | 18.18 | 34.8 | Pass |
| Channel (M) 10MHz(BW) | QPSK | 1 RB/#0 | 20.52 | Horn Ant. | 23.85 | -2.87 | 0.6 | 20.38 | 34.8 | Pass |
| | | 1 RB/#max | 20.58 | Horn Ant. | 23.91 | -2.87 | 0.6 | 20.44 | 34.8 | Pass |
| | | 25 RB/#13 | 19.37 | Horn Ant. | 22.70 | -2.87 | 0.6 | 19.23 | 34.8 | Pass |
| | | Full | 19.25 | Horn Ant. | 22.58 | -2.87 | 0.6 | 19.11 | 34.8 | Pass |
| | 16QAM | 1 RB/#0 | 19.67 | Horn Ant. | 23.00 | -2.87 | 0.6 | 19.53 | 34.8 | Pass |
| | | 1 RB/#max | 19.72 | Horn Ant. | 23.05 | -2.87 | 0.6 | 19.58 | 34.8 | Pass |
| | | 25 RB/#13 | 18.33 | Horn Ant. | 21.66 | -2.87 | 0.6 | 18.19 | 34.8 | Pass |
| | | Full | 18.16 | Horn Ant. | 21.49 | -2.87 | 0.6 | 18.02 | 34.8 | Pass |
| Channel (T) 5MHz(BW) | QPSK | 1 RB/#0 | 20.42 | Horn Ant. | 23.73 | -2.85 | 0.6 | 20.28 | 34.8 | Pass |
| | | 1 RB/#max | 20.54 | Horn Ant. | 23.85 | -2.85 | 0.6 | 20.40 | 34.8 | Pass |
| | | 12 RB/#6 | 19.50 | Horn Ant. | 22.81 | -2.85 | 0.6 | 19.36 | 34.8 | Pass |
| | | Full | 19.35 | Horn Ant. | 22.66 | -2.85 | 0.6 | 19.21 | 34.8 | Pass |

|  |  | 1 RB/#0 | 19.60 | Horn Ant. | 22.91 | -2.85 | 0.6 | 19.46 | 34.8 | Pass |
|  | 16QAM | 1 RB/#max | 19.63 | Horn Ant. | 22.94 | -2.85 | 0.6 | 19.49 | 34.8 | Pass |
|  |  | 12 RB/#6 | 18.59 | Horn Ant. | 21.90 | -2.85 | 0.6 | 18.45 | 34.8 | Pass |
|  |  | Full | 18.33 | Horn Ant. | 21.64 | -2.85 | 0.6 | 18.19 | 34.8 | Pass |
| Channel (T) 10MHz(BW) | QPSK | 1 RB/#0 | 20.55 | Horn Ant. | 23.86 | -2.85 | 0.6 | 20.41 | 34.8 | Pass |
|  |  | 1 RB/#max | 20.59 | Horn Ant. | 23.90 | -2.85 | 0.6 | 20.45 | 34.8 | Pass |
|  |  | 25 RB/#13 | 19.43 | Horn Ant. | 22.74 | -2.85 | 0.6 | 19.29 | 34.8 | Pass |
|  |  | Full | 19.30 | Horn Ant. | 22.61 | -2.85 | 0.6 | 19.16 | 34.8 | Pass |
|  | 16QAM | 1 RB/#0 | 19.68 | Horn Ant. | 22.99 | -2.85 | 0.6 | 19.54 | 34.8 | Pass |
|  |  | 1 RB/#max | 19.72 | Horn Ant. | 23.03 | -2.85 | 0.6 | 19.58 | 34.8 | Pass |
|  |  | 25 RB/#13 | 18.36 | Horn Ant. | 21.67 | -2.85 | 0.6 | 18.22 | 34.8 | Pass |
|  |  | Full | 18.15 | Horn Ant. | 21.46 | -2.85 | 0.6 | 18.01 | 34.8 | Pass |

Note1: a, For getting the ERP (Efficient Radiated Power) in substitution method, the following formula should be taken to calculate it,

ERP [dBm] = SGP [dBm] – Cable Loss [dB] + Gain [dbd]

b, SGP=Signal Generator Level

Note2: RBW > emission bandwidth, VBW > 3 x RBW.
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