

Sensor off

| Band          | Mode               | Target Power (dBm) | Tolerance (dB) |
|---------------|--------------------|--------------------|----------------|
| WCDMA Band II | RMC 12.2K          | 23.00              | +/- 1dB        |
|               | RMC 64K            | 23.00              | +/- 1dB        |
|               | RMC 144K           | 23.00              | +/- 1dB        |
|               | RMC 384K           | 23.00              | +/- 1dB        |
|               | HSDPA Subtest-1    | 22.00              | +/- 1dB        |
|               | HSDPA Subtest-2    | 22.00              | +/- 1dB        |
|               | HSDPA Subtest-3    | 21.50              | +/- 1dB        |
|               | HSDPA Subtest-4    | 21.50              | +/- 1dB        |
|               | HSUPA Subtest-1    | 22.00              | +/- 1dB        |
|               | HSUPA Subtest-2    | 21.50              | +/- 1dB        |
|               | HSUPA Subtest-3    | 21.00              | +/- 1dB        |
|               | HSUPA Subtest-4    | 22.00              | +/- 1dB        |
|               | HSUPA Subtest-5    | 22.00              | +/- 1dB        |
|               | DC-HSDPA Subtest-1 | 22.00              | +/- 1dB        |
|               | DC-HSDPA Subtest-2 | 22.00              | +/- 1dB        |
|               | DC-HSDPA Subtest-3 | 21.50              | +/- 1dB        |
|               | DC-HSDPA Subtest-4 | 21.50              | +/- 1dB        |
| WCDMA Band IV | RMC 12.2K          | 23.00              | +/- 1dB        |
|               | RMC 64K            | 23.00              | +/- 1dB        |
|               | RMC 144K           | 23.00              | +/- 1dB        |
|               | RMC 384K           | 23.00              | +/- 1dB        |
|               | HSDPA Subtest-1    | 22.00              | +/- 1dB        |
|               | HSDPA Subtest-2    | 22.00              | +/- 1dB        |
|               | HSDPA Subtest-3    | 21.50              | +/- 1dB        |
|               | HSDPA Subtest-4    | 21.50              | +/- 1dB        |
|               | HSUPA Subtest-1    | 22.00              | +/- 1dB        |
|               | HSUPA Subtest-2    | 21.50              | +/- 1dB        |
|               | HSUPA Subtest-3    | 21.00              | +/- 1dB        |
|               | HSUPA Subtest-4    | 22.00              | +/- 1dB        |
|               | HSUPA Subtest-5    | 22.00              | +/- 1dB        |
|               | DC-HSDPA Subtest-1 | 22.00              | +/- 1dB        |
|               | DC-HSDPA Subtest-2 | 22.00              | +/- 1dB        |
|               | DC-HSDPA Subtest-3 | 21.50              | +/- 1dB        |
|               | DC-HSDPA Subtest-4 | 21.50              | +/- 1dB        |
| WCDMA Band V  | RMC 12.2K          | 23.00              | +/- 1dB        |
|               | RMC 64K            | 23.00              | +/- 1dB        |
|               | RMC 144K           | 23.00              | +/- 1dB        |
|               | RMC 384K           | 23.00              | +/- 1dB        |
|               | HSDPA Subtest-1    | 22.00              | +/- 1dB        |
|               | HSDPA Subtest-2    | 22.00              | +/- 1dB        |
|               | HSDPA Subtest-3    | 21.50              | +/- 1dB        |
|               | HSDPA Subtest-4    | 21.50              | +/- 1dB        |
|               | HSUPA Subtest-1    | 22.00              | +/- 1dB        |
|               | HSUPA Subtest-2    | 21.50              | +/- 1dB        |
|               | HSUPA Subtest-3    | 21.00              | +/- 1dB        |
|               | HSUPA Subtest-4    | 22.00              | +/- 1dB        |
|               | HSUPA Subtest-5    | 22.00              | +/- 1dB        |
|               | DC-HSDPA Subtest-1 | 22.00              | +/- 1dB        |
|               | DC-HSDPA Subtest-2 | 22.00              | +/- 1dB        |
|               | DC-HSDPA Subtest-3 | 21.50              | +/- 1dB        |
|               | DC-HSDPA Subtest-4 | 21.50              | +/- 1dB        |

| Band        | Modulation | RB Size |     |     |      |      |      | Target Power (dBm) | Tolerance (dB) |
|-------------|------------|---------|-----|-----|------|------|------|--------------------|----------------|
|             |            | 1.4M    | 3M  | 5M  | 10M  | 15M  | 20M  |                    |                |
| LTE Band 2  | QPSK       | 1       | 1   | 1   | 1    | 1    | 1    | 23.00              | +/- 1dB        |
|             |            | ≤ 5     | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | 23.00              | +/- 1dB        |
|             |            | > 5     | > 4 | > 8 | > 12 | > 16 | > 18 | 22.00              | +/- 1dB        |
|             | 16QAM      | 1       | 1   | 1   | 1    | 1    | 1    | 22.00              | +/- 1dB        |
|             |            | ≤ 5     | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | 22.00              | +/- 1dB        |
|             |            | > 5     | > 4 | > 8 | > 12 | > 16 | > 18 | 21.00              | +/- 1dB        |
| LTE Band 4  | QPSK       | 1       | 1   | 1   | 1    | 1    | 1    | 23.00              | +/- 1dB        |
|             |            | ≤ 5     | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | 23.00              | +/- 1dB        |
|             |            | > 5     | > 4 | > 8 | > 12 | > 16 | > 18 | 22.00              | +/- 1dB        |
|             | 16QAM      | 1       | 1   | 1   | 1    | 1    | 1    | 22.00              | +/- 1dB        |
|             |            | ≤ 5     | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | 22.00              | +/- 1dB        |
|             |            | > 5     | > 4 | > 8 | > 12 | > 16 | > 18 | 21.00              | +/- 1dB        |
| LTE Band 5  | QPSK       | 1       | 1   | 1   | 1    | -    | -    | 23.00              | +/- 1dB        |
|             |            | ≤ 5     | ≤ 4 | ≤ 8 | ≤ 12 | -    | -    | 23.00              | +/- 1dB        |
|             |            | > 5     | > 4 | > 8 | > 12 | -    | -    | 22.00              | +/- 1dB        |
|             | 16QAM      | 1       | 1   | 1   | 1    | -    | -    | 22.00              | +/- 1dB        |
|             |            | ≤ 5     | ≤ 4 | ≤ 8 | ≤ 12 | -    | -    | 22.00              | +/- 1dB        |
|             |            | > 5     | > 4 | > 8 | > 12 | -    | -    | 21.00              | +/- 1dB        |
| LTE Band 7  | QPSK       | -       | -   | 1   | 1    | 1    | 1    | 22.00              | +/- 1dB        |
|             |            | -       | -   | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | 22.00              | +/- 1dB        |
|             |            | -       | -   | > 8 | > 12 | > 16 | > 18 | 21.00              | +/- 1dB        |
|             | 16QAM      | -       | -   | 1   | 1    | 1    | 1    | 21.00              | +/- 1dB        |
|             |            | -       | -   | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | 21.00              | +/- 1dB        |
|             |            | -       | -   | > 8 | > 12 | > 16 | > 18 | 20.00              | +/- 1dB        |
| LTE Band 12 | QPSK       | 1       | 1   | 1   | 1    | -    | -    | 23.00              | +/- 1dB        |
|             |            | ≤ 5     | ≤ 4 | ≤ 8 | ≤ 12 | -    | -    | 23.00              | +/- 1dB        |
|             |            | > 5     | > 4 | > 8 | > 12 | -    | -    | 22.00              | +/- 1dB        |
|             | 16QAM      | 1       | 1   | 1   | 1    | -    | -    | 22.00              | +/- 1dB        |
|             |            | ≤ 5     | ≤ 4 | ≤ 8 | ≤ 12 | -    | -    | 22.00              | +/- 1dB        |
|             |            | > 5     | > 4 | > 8 | > 12 | -    | -    | 21.00              | +/- 1dB        |
| LTE Band 13 | QPSK       | -       | -   | 1   | 1    | -    | -    | 23.00              | +/- 1dB        |
|             |            | -       | -   | ≤ 8 | ≤ 12 | -    | -    | 23.00              | +/- 1dB        |
|             |            | -       | -   | > 8 | > 12 | -    | -    | 22.00              | +/- 1dB        |
|             | 16QAM      | -       | -   | 1   | 1    | -    | -    | 22.00              | +/- 1dB        |
|             |            | -       | -   | ≤ 8 | ≤ 12 | -    | -    | 22.00              | +/- 1dB        |
|             |            | -       | -   | > 8 | > 12 | -    | -    | 21.00              | +/- 1dB        |
| LTE Band 25 | QPSK       | 1       | 1   | 1   | 1    | 1    | 1    | 23.00              | +/- 1dB        |
|             |            | ≤ 5     | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | 23.00              | +/- 1dB        |
|             |            | > 5     | > 4 | > 8 | > 12 | > 16 | > 18 | 22.00              | +/- 1dB        |
|             | 16QAM      | 1       | 1   | 1   | 1    | 1    | 1    | 22.00              | +/- 1dB        |
|             |            | ≤ 5     | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | 22.00              | +/- 1dB        |
|             |            | > 5     | > 4 | > 8 | > 12 | > 16 | > 18 | 21.00              | +/- 1dB        |
|             | QPSK       | 1       | 1   | 1   | 1    | 1    | -    | 23.00              | +/- 1dB        |

|                |       |          |          |          |           |           |           |       |         |
|----------------|-------|----------|----------|----------|-----------|-----------|-----------|-------|---------|
| LTE Band<br>26 |       | $\leq 5$ | $\leq 4$ | $\leq 8$ | $\leq 12$ | $\leq 16$ | -         | 23.00 | +/- 1dB |
|                |       | $> 5$    | $> 4$    | $> 8$    | $> 12$    | $> 16$    | -         | 22.00 | +/- 1dB |
|                | 16QAM | 1        | 1        | 1        | 1         | 1         | -         | 22.00 | +/- 1dB |
|                |       | $\leq 5$ | $\leq 4$ | $\leq 8$ | $\leq 12$ | $\leq 16$ | -         | 22.00 | +/- 1dB |
|                |       | $> 5$    | $> 4$    | $> 8$    | $> 12$    | $> 16$    | -         | 21.00 | +/- 1dB |
| LTE Band<br>41 | QPSK  | -        | -        | 1        | 1         | 1         | 1         | 22.00 | +/- 1dB |
|                |       | -        | -        | $\leq 8$ | $\leq 12$ | $\leq 16$ | $\leq 18$ | 22.00 | +/- 1dB |
|                |       | -        | -        | $> 8$    | $> 12$    | $> 16$    | $> 18$    | 21.00 | +/- 1dB |
|                | 16QAM | -        | -        | 1        | 1         | 1         | 1         | 21.00 | +/- 1dB |
|                |       | -        | -        | $\leq 8$ | $\leq 12$ | $\leq 16$ | $\leq 18$ | 21.00 | +/- 1dB |
|                |       | -        | -        | $> 8$    | $> 12$    | $> 16$    | $> 18$    | 20.00 | +/- 1dB |

## Sensor On

| Band          | Mode               | Target Power (dBm) | Tolerance (dB) |
|---------------|--------------------|--------------------|----------------|
| WCDMA Band II | RMC 12.2K          | 15.00              | +/- 1dB        |
|               | RMC 64K            | 15.00              | +/- 1dB        |
|               | RMC 144K           | 15.00              | +/- 1dB        |
|               | RMC 384K           | 15.00              | +/- 1dB        |
|               | HSDPA Subtest-1    | 14.00              | +/- 1dB        |
|               | HSDPA Subtest-2    | 14.00              | +/- 1dB        |
|               | HSDPA Subtest-3    | 13.50              | +/- 1dB        |
|               | HSDPA Subtest-4    | 13.50              | +/- 1dB        |
|               | HSUPA Subtest-1    | 14.00              | +/- 1dB        |
|               | HSUPA Subtest-2    | 13.50              | +/- 1dB        |
|               | HSUPA Subtest-3    | 13.00              | +/- 1dB        |
|               | HSUPA Subtest-4    | 14.00              | +/- 1dB        |
|               | HSUPA Subtest-5    | 14.00              | +/- 1dB        |
|               | DC-HSDPA Subtest-1 | 14.00              | +/- 1dB        |
|               | DC-HSDPA Subtest-2 | 14.00              | +/- 1dB        |
|               | DC-HSDPA Subtest-3 | 13.50              | +/- 1dB        |
|               | DC-HSDPA Subtest-4 | 13.50              | +/- 1dB        |
| WCDMA Band IV | RMC 12.2K          | 15.00              | +/- 1dB        |
|               | RMC 64K            | 15.00              | +/- 1dB        |
|               | RMC 144K           | 15.00              | +/- 1dB        |
|               | RMC 384K           | 15.00              | +/- 1dB        |
|               | HSDPA Subtest-1    | 14.00              | +/- 1dB        |
|               | HSDPA Subtest-2    | 14.00              | +/- 1dB        |
|               | HSDPA Subtest-3    | 13.50              | +/- 1dB        |
|               | HSDPA Subtest-4    | 13.50              | +/- 1dB        |
|               | HSUPA Subtest-1    | 14.00              | +/- 1dB        |
|               | HSUPA Subtest-2    | 13.50              | +/- 1dB        |
|               | HSUPA Subtest-3    | 13.00              | +/- 1dB        |
|               | HSUPA Subtest-4    | 14.00              | +/- 1dB        |
|               | HSUPA Subtest-5    | 14.00              | +/- 1dB        |
|               | DC-HSDPA Subtest-1 | 14.00              | +/- 1dB        |
|               | DC-HSDPA Subtest-2 | 14.00              | +/- 1dB        |
|               | DC-HSDPA Subtest-3 | 13.50              | +/- 1dB        |
|               | DC-HSDPA Subtest-4 | 13.50              | +/- 1dB        |
| WCDMA Band V  | RMC 12.2K          | 19.00              | +/- 1dB        |
|               | RMC 64K            | 19.00              | +/- 1dB        |
|               | RMC 144K           | 19.00              | +/- 1dB        |
|               | RMC 384K           | 19.00              | +/- 1dB        |
|               | HSDPA Subtest-1    | 18.00              | +/- 1dB        |
|               | HSDPA Subtest-2    | 18.00              | +/- 1dB        |
|               | HSDPA Subtest-3    | 17.50              | +/- 1dB        |
|               | HSDPA Subtest-4    | 17.50              | +/- 1dB        |
|               | HSUPA Subtest-1    | 18.00              | +/- 1dB        |
|               | HSUPA Subtest-2    | 17.50              | +/- 1dB        |
|               | HSUPA Subtest-3    | 17.00              | +/- 1dB        |
|               | HSUPA Subtest-4    | 18.00              | +/- 1dB        |
|               | HSUPA Subtest-5    | 18.00              | +/- 1dB        |
|               | DC-HSDPA Subtest-1 | 18.00              | +/- 1dB        |
|               | DC-HSDPA Subtest-2 | 18.00              | +/- 1dB        |
|               | DC-HSDPA Subtest-3 | 17.50              | +/- 1dB        |
|               | DC-HSDPA Subtest-4 | 17.50              | +/- 1dB        |

| Band        | Modulation | RB Size |     |     |      |      |      | Target Power (dBm) | Tolerance (dB) |
|-------------|------------|---------|-----|-----|------|------|------|--------------------|----------------|
|             |            | 1.4M    | 3M  | 5M  | 10M  | 15M  | 20M  |                    |                |
| LTE Band 2  | QPSK       | 1       | 1   | 1   | 1    | 1    | 1    | 17.00              | +/- 1dB        |
|             |            | ≤ 5     | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | 17.00              | +/- 1dB        |
|             |            | > 5     | > 4 | > 8 | > 12 | > 16 | > 18 | 17.00              | +/- 1dB        |
|             | 16QAM      | 1       | 1   | 1   | 1    | 1    | 1    | 17.00              | +/- 1dB        |
|             |            | ≤ 5     | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | 17.00              | +/- 1dB        |
|             |            | > 5     | > 4 | > 8 | > 12 | > 16 | > 18 | 17.00              | +/- 1dB        |
| LTE Band 4  | QPSK       | 1       | 1   | 1   | 1    | 1    | 1    | 15.00              | +/- 1dB        |
|             |            | ≤ 5     | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | 15.00              | +/- 1dB        |
|             |            | > 5     | > 4 | > 8 | > 12 | > 16 | > 18 | 15.00              | +/- 1dB        |
|             | 16QAM      | 1       | 1   | 1   | 1    | 1    | 1    | 15.00              | +/- 1dB        |
|             |            | ≤ 5     | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | 15.00              | +/- 1dB        |
|             |            | > 5     | > 4 | > 8 | > 12 | > 16 | > 18 | 15.00              | +/- 1dB        |
| LTE Band 5  | QPSK       | 1       | 1   | 1   | 1    | -    | -    | 19.00              | +/- 1dB        |
|             |            | ≤ 5     | ≤ 4 | ≤ 8 | ≤ 12 | -    | -    | 19.00              | +/- 1dB        |
|             |            | > 5     | > 4 | > 8 | > 12 | -    | -    | 19.00              | +/- 1dB        |
|             | 16QAM      | 1       | 1   | 1   | 1    | -    | -    | 19.00              | +/- 1dB        |
|             |            | ≤ 5     | ≤ 4 | ≤ 8 | ≤ 12 | -    | -    | 19.00              | +/- 1dB        |
|             |            | > 5     | > 4 | > 8 | > 12 | -    | -    | 19.00              | +/- 1dB        |
| LTE Band 7  | QPSK       | -       | -   | 1   | 1    | 1    | 1    | 14.00              | +/- 1dB        |
|             |            | -       | -   | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | 14.00              | +/- 1dB        |
|             |            | -       | -   | > 8 | > 12 | > 16 | > 18 | 14.00              | +/- 1dB        |
|             | 16QAM      | -       | -   | 1   | 1    | 1    | 1    | 14.00              | +/- 1dB        |
|             |            | -       | -   | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | 14.00              | +/- 1dB        |
|             |            | -       | -   | > 8 | > 12 | > 16 | > 18 | 14.00              | +/- 1dB        |
| LTE Band 12 | QPSK       | 1       | 1   | 1   | 1    | -    | -    | 19.00              | +/- 1dB        |
|             |            | ≤ 5     | ≤ 4 | ≤ 8 | ≤ 12 | -    | -    | 19.00              | +/- 1dB        |
|             |            | > 5     | > 4 | > 8 | > 12 | -    | -    | 19.00              | +/- 1dB        |
|             | 16QAM      | 1       | 1   | 1   | 1    | -    | -    | 19.00              | +/- 1dB        |
|             |            | ≤ 5     | ≤ 4 | ≤ 8 | ≤ 12 | -    | -    | 19.00              | +/- 1dB        |
|             |            | > 5     | > 4 | > 8 | > 12 | -    | -    | 19.00              | +/- 1dB        |
| LTE Band 13 | QPSK       | -       | -   | 1   | 1    | -    | -    | 17.00              | +/- 1dB        |
|             |            | -       | -   | ≤ 8 | ≤ 12 | -    | -    | 17.00              | +/- 1dB        |
|             |            | -       | -   | > 8 | > 12 | -    | -    | 17.00              | +/- 1dB        |
|             | 16QAM      | -       | -   | 1   | 1    | -    | -    | 17.00              | +/- 1dB        |
|             |            | -       | -   | ≤ 8 | ≤ 12 | -    | -    | 17.00              | +/- 1dB        |
|             |            | -       | -   | > 8 | > 12 | -    | -    | 17.00              | +/- 1dB        |
| LTE Band 25 | QPSK       | 1       | 1   | 1   | 1    | 1    | 1    | 17.00              | +/- 1dB        |
|             |            | ≤ 5     | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | 17.00              | +/- 1dB        |
|             |            | > 5     | > 4 | > 8 | > 12 | > 16 | > 18 | 17.00              | +/- 1dB        |
|             | 16QAM      | 1       | 1   | 1   | 1    | 1    | 1    | 17.00              | +/- 1dB        |
|             |            | ≤ 5     | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | 17.00              | +/- 1dB        |
|             |            | > 5     | > 4 | > 8 | > 12 | > 16 | > 18 | 17.00              | +/- 1dB        |
|             | QPSK       | 1       | 1   | 1   | 1    | 1    | -    | 19.00              | +/- 1dB        |

|                |       |          |          |          |           |           |           |       |         |
|----------------|-------|----------|----------|----------|-----------|-----------|-----------|-------|---------|
| LTE Band<br>26 |       | $\leq 5$ | $\leq 4$ | $\leq 8$ | $\leq 12$ | $\leq 16$ | -         | 19.00 | +/- 1dB |
|                |       | $> 5$    | $> 4$    | $> 8$    | $> 12$    | $> 16$    | -         | 19.00 | +/- 1dB |
|                | 16QAM | 1        | 1        | 1        | 1         | 1         | -         | 19.00 | +/- 1dB |
|                |       | $\leq 5$ | $\leq 4$ | $\leq 8$ | $\leq 12$ | $\leq 16$ | -         | 19.00 | +/- 1dB |
|                |       | $> 5$    | $> 4$    | $> 8$    | $> 12$    | $> 16$    | -         | 19.00 | +/- 1dB |
| LTE Band<br>41 | QPSK  | -        | -        | 1        | 1         | 1         | 1         | 16.00 | +/- 1dB |
|                |       | -        | -        | $\leq 8$ | $\leq 12$ | $\leq 16$ | $\leq 18$ | 16.00 | +/- 1dB |
|                |       | -        | -        | $> 8$    | $> 12$    | $> 16$    | $> 18$    | 16.00 | +/- 1dB |
|                | 16QAM | -        | -        | 1        | 1         | 1         | 1         | 16.00 | +/- 1dB |
|                |       | -        | -        | $\leq 8$ | $\leq 12$ | $\leq 16$ | $\leq 18$ | 16.00 | +/- 1dB |
|                |       | -        | -        | $> 8$    | $> 12$    | $> 16$    | $> 18$    | 16.00 | +/- 1dB |

## **Tune Up Procedure**

1. RX Gain Calibration
  - a. Put DUT in test mode
  - b. Put DUT in BCH mode
  - c. Put DUT in selected channel band
  - d. Total gain chain calibration at center ARFCN
  - e. Frequency Ripple calibration
  - f. Complete RX\_AGC Gain table
  
2. TX Power Calibration
  - a. Put DUT in test mode
  - b. Put DUT in BCH mode
  - c. Put DUT in selected channel band
  - d. Total gain chain calibration at center ARFCN
  - e. Frequency Ripple calibration
  - f. Complete TX\_APC Gain table
  
3. AFC calibration
  - a. Put DUT in test mode
  - b. Put DUT in selected channel mode
  - c. Calibration AFC at center ARFCN
  - d. Complete AFC result table