

## **Hall effect sensor verification**

This device has implemented 2 different power operation using Hall effect sensor. So Hall effect sensor was verified according to guide of APPENDIX TXSENS in KDB 388624 D02. This process must be followed to determine the lid angle where a power reduction occurs, by taking power measurements at each step, as indicated in the step listed here below:

- Step1. From the lid in closed mode (0 degrees), open the screen in 10 degree steps until open mode is obtained.
- Step2. Lower the screen by 5 degrees increments to verify that the “closed mode” is triggered.
- Step3. From the position of the previous step, open the screen in 1 degree increments until open mode is triggered again.
- Step4. Continue opening the screen in 1 degree increments until at least 5 degrees past where “open mode” was obtained, then continue opening the screen in 10 degree steps until the device switches to open mode.
- Step5. Reverse the previous procedure to go from open mode back down to closed mode.

**Test results (Close mode to Open mode)**

| Techs                           | Antenna | DUT Angles(degess)          |       |       |       |       |       |                  |       |       |       |       |       |        |
|---------------------------------|---------|-----------------------------|-------|-------|-------|-------|-------|------------------|-------|-------|-------|-------|-------|--------|
|                                 |         | 0-4                         | 5     | 6     | 7     | 8     | 9     | 10               | 11    | 12    | 13    | 14    | 15    | 25-180 |
|                                 |         | DSI1 (Close mode)           |       |       |       |       |       | DSI0 (Open mode) |       |       |       |       |       |        |
|                                 |         | Measured output power (dBm) |       |       |       |       |       |                  |       |       |       |       |       |        |
| LTE Band 25(2)                  | B       | 19.05                       | 19.04 | 19.07 | 19.01 | 19.00 | 19.06 | 18.03            | 18.01 | 18.07 | 18.06 | 18.09 | 18.09 | 18.03  |
| LTE Band 30                     | B       | 17.96                       | 17.97 | 17.94 | 17.92 | 17.89 | 17.86 | 16.42            | 16.35 | 16.39 | 16.36 | 16.28 | 16.33 | 16.27  |
| LTE Band 30                     | E       | 20.63                       | 20.72 | 20.64 | 20.69 | 20.73 | 20.70 | 18.78            | 18.66 | 18.69 | 18.63 | 18.68 | 18.65 | 18.58  |
| LTE Band 41(38)                 | B       | 20.45                       | 20.38 | 20.42 | 20.39 | 20.47 | 20.48 | 17.36            | 17.33 | 17.28 | 17.30 | 17.35 | 17.21 | 17.16  |
| NR Band n25(2)                  | B       | 19.21                       | 19.24 | 19.14 | 19.22 | 19.14 | 19.14 | 18.24            | 18.26 | 18.34 | 18.30 | 18.23 | 18.24 | 18.29  |
| NR Band n30                     | B       | 18.75                       | 18.66 | 18.73 | 18.65 | 18.77 | 18.70 | 16.47            | 16.47 | 16.38 | 16.39 | 16.36 | 16.44 | 16.36  |
| NR Band n30                     | E       | 20.42                       | 20.47 | 20.57 | 20.51 | 20.55 | 20.48 | 19.07            | 18.96 | 18.95 | 19.04 | 18.97 | 18.95 | 18.92  |
| NR Band n48                     | E       | 17.56                       | 17.52 | 17.59 | 17.56 | 17.46 | 17.54 | 16.55            | 16.45 | 16.47 | 16.54 | 16.44 | 16.41 | 16.36  |
| NR Band n41<br>switching -Main- | B       | 18.72                       | 18.75 | 18.63 | 18.63 | 18.69 | 18.71 | 17.07            | 17.02 | 17.07 | 17.01 | 16.95 | 16.96 | 16.94  |

**Test results (Open mode to Close mode)**

| Techs                           | Antenna | DUT Angles(degess)          |       |       |       |       |       |       |                   |       |       |       |       |       |  |
|---------------------------------|---------|-----------------------------|-------|-------|-------|-------|-------|-------|-------------------|-------|-------|-------|-------|-------|--|
|                                 |         | 30~180                      | 20    | 10    | 9     | 8     | 7     | 6     | 5                 | 4     | 3     | 2     | 1     | 0     |  |
|                                 |         | DSI0 (Open mode)            |       |       |       |       |       |       | DSI1 (Close mode) |       |       |       |       |       |  |
|                                 |         | Measured output power (dBm) |       |       |       |       |       |       |                   |       |       |       |       |       |  |
| LTE Band 25(2)                  | B       | 18.10                       | 18.08 | 18.01 | 18.05 | 18.11 | 18.04 | 18.09 | 19.09             | 19.05 | 19.07 | 19.06 | 19.09 | 19.09 |  |
| LTE Band 30                     | B       | 16.34                       | 16.41 | 16.42 | 16.44 | 16.39 | 16.33 | 16.47 | 17.97             | 18.11 | 18.01 | 18.03 | 18.04 | 18.00 |  |
| LTE Band 30                     | E       | 18.75                       | 18.74 | 18.78 | 18.77 | 18.76 | 18.81 | 18.77 | 20.72             | 20.77 | 20.75 | 20.68 | 20.73 | 20.65 |  |
| LTE Band 41(38)                 | B       | 17.36                       | 17.29 | 17.36 | 17.38 | 17.48 | 17.35 | 17.41 | 20.46             | 20.40 | 20.41 | 20.50 | 20.41 | 20.33 |  |
| NR Band n25(2)                  | B       | 18.32                       | 18.31 | 18.29 | 18.26 | 18.31 | 18.32 | 18.28 | 19.23             | 19.25 | 19.25 | 19.32 | 19.28 | 19.33 |  |
| NR Band n30                     | B       | 16.49                       | 16.45 | 16.47 | 16.53 | 16.54 | 16.48 | 16.53 | 18.78             | 18.88 | 18.89 | 18.86 | 18.74 | 18.73 |  |
| NR Band n30                     | E       | 19.01                       | 19.02 | 19.07 | 19.06 | 19.00 | 18.93 | 18.99 | 20.55             | 20.63 | 20.62 | 20.58 | 20.68 | 20.64 |  |
| NR Band n48                     | E       | 16.50                       | 16.55 | 16.55 | 16.59 | 16.59 | 16.67 | 16.55 | 17.60             | 17.59 | 17.56 | 17.65 | 17.59 | 17.55 |  |
| NR Band n41<br>switching -Main- | B       | 17.08                       | 17.04 | 17.07 | 17.11 | 17.06 | 17.17 | 17.03 | 18.76             | 18.85 | 18.74 | 18.84 | 18.88 | 18.82 |  |

**Conclusion**

| DUT Configuration | SAR test | Operate power mode |
|-------------------|----------|--------------------|
| Folder Close      | Body SAR | DSI 1              |
| Folder Open       | Body SAR | DSI 0              |

**Notes:**

According to Hall effect sensor verification results, Body SAR test were performed by applying DSI 1 power to Folder Close and DSI 0 power to Folder Open.