

APPENDIX G: POWER REDUCTION VERIFICATION

Per the May 2017 TCBC Workshop Notes, demonstration of proper functioning of the power reduction mechanisms is required to support the corresponding SAR configurations.

G.1 Power Verification Procedure

The power verification was performed according to the following procedure:

1. A base station simulator was used to establish a conducted RF connection and the output power was monitored. The power measurements were confirmed to be within expected tolerances for all states before and after a power reduction mechanism was triggered.
2. Step 1 was repeated for all relevant modes and frequency bands for the mechanism being investigated.
3. Steps 1 and 2 were repeated for all individual power reduction mechanisms and combinations thereof. For the combination cases, one mechanism was switched to a 'triggered' state at a time; powers were confirmed to be within tolerances after each additional mechanism was activated.

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G.2 Main Antenna Verification Summary

Table G-1
Power Measurement Verification for Main Antenna

Mode/Band	On Table	On Body	On Table	In Hand
	Measured Power (dBm)			
LTE Band 71	23.82	21.87	23.81	21.85
LTE Band 12	24.21	21.12	24.15	21.14
LTE Band 17	24.24	21.28	24.27	21.20
LTE Band 13	23.89	20.87	23.85	20.86
LTE Band 5	23.80	20.75	23.75	20.76
LTE Band 4	24.04	18.08	24.07	18.05
LTE Band 66	23.81	17.81	23.83	17.88
LTE Band 2	23.76	18.81	23.75	18.78
LTE Band 25	23.82	18.91	23.84	18.84
LTE Band 41	23.82	18.91	23.81	18.89
LTE Band 48	23.94	19.14	23.93	19.14
NR FDD Band n71	24.13	23.17	24.13	23.17
NR FDD Band n5	24.05	21.02	24.05	21.02
NR FDD Band n66	24.33	18.21	24.33	18.21
NR FDD Band n2	23.76	18.71	23.76	18.71
NR TDD Band n41 PC3	24.07	18.79	24.07	18.79
NR TDD Band n41 PC2	25.44	18.67	25.44	18.67
NR TDD Band n77 PC3	24.55	16.93	24.55	16.93
NR TDD Band n77 PC2	26.17	17.20	26.17	17.20

Table G-2
Power Measurement Verification for Sub Antenna

Mode/Band	On Table	On Body	On Table	In Hand
	Measured Power (dBm)			
NR TDD Band n77 PC3	23.48	17.01	23.48	17.01
NR TDD Band n77 PC2	24.83	16.95	24.83	16.95

The device supports manufacturer's proprietary mechanism which can detect the motion of the device and then configure the DSI during portable use scenarios. Details of this mechanism can be found in the Operational Description. When the device is being used near the user, the device will detect motion and reduce the time-averaged output power of the main antenna. The motion detection operation was verified for two test cases, on-body and held in hand to represent conservative use cases for a handset devices, including head and body-worn scenarios. The verification results are above. For the purposes of this evaluation, the Reserve_power_margin (Qualcomm Smart Transmit EFS entry) was set to 0dB, so that the EUT transmits continuously at Plimit for DSI=3 when the mechanism was triggered."

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