

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. The verification process was divided into two parts: (1) evaluation of output power levels for individual or multiple triggering mechanisms and (2) evaluation of the triggering distances for proximity-based sensors.

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.

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)	Measured Power (dBm)	Measured Power (dBm)	Measured Power (dBm)
LTE Band 13	23.60	21.73	23.62	21.86
LTE Band 5	24.10	22.05	23.96	22.13
LTE Band 4	23.86	19.21	23.70	19.45
LTE Band 66	23.47	19.37	23.50	19.46
LTE Band 2	23.63	18.75	23.68	18.87
LTE Band 25	23.82	18.89	23.80	19.01
LTE Band 48	23.55	19.47	23.52	19.55
LTE Band 41	23.64	18.67	23.68	18.75
NR FDD Band n71	24.12	23.16	24.12	23.16
NR FDD Band n5	24.35	23.55	24.35	23.55
NR FDD Band n66	24.22	19.42	24.22	19.42
NR FDD Band n2	24.04	19.20	24.04	19.20


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Test Dates: 08/30/21 - 10/03/21	DUT Type: Portable Handset			APPENDIX G: Page 1 of 2

Table G-2
Power Measurement Verification for Sub Antenna

Mode/Band	On Table	On Body	On Table	In Hand
	Measured Power (dBm)	Measured Power (dBm)	Measured Power (dBm)	Measured Power (dBm)
LTE Band 5	22.99	21.09	22.99	21.01
LTE Band 13	22.82	21.10	22.98	21.07
NR FDD Band n5	23.45	21.51	23.45	21.51

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 P_{limit} for DSI=3 when the mechanism was triggered.

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