# 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.

See the original filing for all other operations that were not evaluated in this permissive change.

## 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. For licensed modes, the device state index as displayed on the device UI was recorded before and after the 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.

## G.2 Main Antenna Verification Summary

**Table G-1**
**Power Measurement Verification for Licensed Modes**

| Mechanism(s) | | Mode/Band | Conducted Power (dBm) | | |
|---|---|---|---|---|---|
| 1st | 2nd | | Un-triggered (Max) | Mechanism #1 (Reduced) | Mechanism #2 (Reduced) |
| Hotspot On | | GPRS 1900 | 0 | 3 | |
| Grip | | GPRS 1900 | 0 | 1 | |
| Hotspot On | Grip | GPRS 1900 | 0 | 3 | 3 |
| Grip | Hotspot On | GPRS 1900 | 0 | 1 | 3 |
| Hotspot On | | UMTS 1900 | 0 | 3 | |
| Grip | | UMTS 1900 | 0 | 1 | |
| Hotspot On | Grip | UMTS 1900 | 0 | 3 | 3 |
| Grip | Hotspot On | UMTS 1900 | 0 | 1 | 3 |
| Hotspot On | | LTE Band 41 | 0 | 3 | |
| Grip | | LTE Band 41 | 0 | 1 | |
| Hotspot On | Grip | LTE Band 41 | 0 | 3 | 3 |
| Grip | Hotspot On | LTE Band 41 | 0 | 1 | 3 |
| Hotspot On | | LTE Band 41 PC2 | 0 | 3 | |
| Grip | | LTE Band 41 PC2 | 0 | 1 | |
| Hotspot On | Grip | LTE Band 41 PC2 | 0 | 3 | 3 |
| Grip | Hotspot On | LTE Band 41 PC2 | 0 | 1 | 3 |
| Hotspot On | | NR FDD Band n25 | 0 | 3 | |
| Grip | | NR FDD Band n25 | 0 | 1 | |
| Hotspot On | Grip | NR FDD Band n25 | 0 | 3 | 3 |
| Grip | Hotspot On | NR FDD Band n25 | 0 | 1 | 3 |
| Hotspot On | | NR FDD Band n2 | 0 | 3 | |
| Grip | | NR FDD Band n2 | 0 | 1 | |
| Hotspot On | Grip | NR FDD Band n2 | 0 | 3 | 3 |
| Grip | Hotspot On | NR FDD Band n2 | 0 | 1 | 3 |
| Held-to-Ear | | NR TDD Band n41 Ant J | 0 | 2 | |
| Hotspot On | | NR TDD Band n41 Ant J | 0 | 3 | |
| Hotspot On | Held-to-Ear | NR TDD Band n41 Ant J | 0 | 3 | 2 |
| Held-to-Ear | Hotspot On | NR TDD Band n41 Ant J | 0 | 2 | 2 |
| Hotspot On | | NR TDD Band n41 Ant B | 0 | 3 | |
| Held-to-Ear | | NR TDD Band n41 Ant E | 0 | 2 | |
| Hotspot On | | NR TDD Band n41 Ant E | 0 | 3 | |
| Hotspot On | Held-to-Ear | NR TDD Band n41 Ant E | 0 | 3 | 2 |
| Held-to-Ear | Hotspot On | NR TDD Band n41 Ant E | 0 | 2 | 2 |
| Hotspot On | | NR TDD Band n41 Ant D | 0 | 3 | |
| Held-to-Ear | | NR TDD Band n77 DoD Ant F | 0 | 2 | |
| Hotspot On | | NR TDD Band n77 DoD Ant F | 0 | 3 | |
| Hotspot On | Held-to-Ear | NR TDD Band n77 DoD Ant F | 0 | 3 | 2 |
| Held-to-Ear | Hotspot On | NR TDD Band n77 DoD Ant F | 0 | 2 | 2 |
| Hotspot On | | NR TDD Band n77 DoD Ant C | 0 | 3 | |
| Held-to-Ear | | NR TDD Band n77 DoD Ant L | 0 | 2 | |
| Hotspot On | | NR TDD Band n77 DoD Ant L | 0 | 3 | |
| Hotspot On | Held-to-Ear | NR TDD Band n77 DoD Ant L | 0 | 3 | 2 |
| Held-to-Ear | Hotspot On | NR TDD Band n77 DoD Ant L | 0 | 2 | 2 |
| Hotspot On | | NR TDD Band n77 DoD Ant D | 0 | 3 | |
| Held-to-Ear | | NR TDD Band n77 C-Band Ant F | 0 | 2 | |
| Hotspot On | | NR TDD Band n77 C-Band Ant F | 0 | 3 | |
| Hotspot On | Held-to-Ear | NR TDD Band n77 C-Band Ant F | 0 | 3 | 2 |
| Held-to-Ear | Hotspot On | NR TDD Band n77 C-Band Ant F | 0 | 2 | 2 |
| Hotspot On | | NR TDD Band n77 C-Band Ant C | 0 | 3 | |
| Held-to-Ear | | NR TDD Band n77 C-Band Ant L | 0 | 2 | |
| Hotspot On | | NR TDD Band n77 C-Band Ant L | 0 | 3 | |
| Hotspot On | Held-to-Ear | NR TDD Band n77 C-Band Ant L | 0 | 3 | 2 |
| Held-to-Ear | Hotspot On | NR TDD Band n77 C-Band Ant L | 0 | 2 | 2 |
| Hotspot On | | NR TDD Band n77 C-Band Ant D | 0 | 3 | |

*Note: This device uses different Device State Indices (DSI) to configure different time averaged power levels based on certain exposure scenarios. For this device in the open configuration, DSI = 1 represents the case when the grip sensor is active, DSI = 2 represents the case where the device is held to ear, and DSI = 3 represents the case when hotspot mode is active. DSI = 0 is configured when the device cannot detect the use condition.