Appendix E. Power reduction mechanism verification

1. Power verification introduction

- This device supports the manufacturer's proprietary power reduction mechanisms for cellular. Further details of the specific mechanisms for the power reduction mechanism can be found in the Operational Description
- Demonstration of proper functioning of the detection and triggering mechanisms to support the corresponding RF exposure conditions, the verification plan consists of measuring the power levels of the cellular at each wireless technology under different operating conditions related to the power reduction mechanisms.
- This device incorporates the WWAN TAS algorithm feature and through under varying Tx power transmission scenarios in real-time to maintain the time-averaged Tx power compliant with RF exposure requirement. In this power validation purpose is to demonstrate of proper functioning of the detection and triggering mechanisms to support the corresponding RF exposure conditions. In order to avoid real-time TX power varying may affect monitor output power related to the power reduction mechanisms, therefore WWAN real-time TX power varying was disabled and keep in static output power for power reduction mechanism validation.

2. Power verification procedure

- The verification is through a base station simulator is used to establish a conducted RF connection and record output power under different operating conditions related to the power reduction mechanisms.
- Verification of Hotspot power reduction is via establish data connection and enable hotspot feature to record output power under hotspot power state.

3. Test setup for measuring power

Figure 1

4. Verification output Power Results

Exposure condition		Output Power for data connection			
Hotspot Status		OFF		ON	
Power state		Body/Limb		Hotspot	
Wireless Technology	Antenna	Measured (dBm)	Max. Tune-up (dBm)	Measured (dBm)	Max. Tune-up (dBm) Hotspot
LTE Band 26/5	Ant 0	23.61	24.7	23.95	25
LTE Band 7	Ant 1	19.43	20.6	21.88	23
LTE Band 48	Ant 6	22.62	23.8	21.11	22.2
FR1 n26/n5	Ant 0	23.61	24.9	23.87	25
FR1 n66	Ant 1	20.81	22	24.22	25.5
FR1 n77/78_HPUE	Ant 3	22.2	23.4	19.56	20.6
FR1 n48	Ant 4	20.15	21.3	18.33	19.5
FR1 n48	Ant 5	19.48	20.7	17.22	18.4
FR1 n77/78	Ant 6	20.78	21.9	18.36	19.6