

APPENDIX F: 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 included the evaluation of output power levels for individual or multiple triggering mechanisms.

F.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 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. The radio state index or device state index as displayed on the device UI was recorded before and after the mechanism was triggered.

F.2 Main Antenna Verification Summary

- Low band refers to: GSM850, UMTS B5, LTE B5/12/13/17/26, NR n5/12/26; Mid band refers to: GSM1900, UMTS B2/4, LTE B2/4/25/66, NR n2/25/66; High band refers to: LTE B41, NR n41; Ultra High Band refers to: NR n77
- This device uses different Radio State Indices (RSI) to configure different time averaged power levels based on certain exposure scenarios. For this device RSI = 1 represents the case where the device is held to ear. RSI = 0 is configured when the device cannot detect the use conditions

Table F-1
Power Measurement Verification for WWAN Antennas

Mechanism(s)	Mode/Band	Radio State Index (RSI)	
		Free Space	Mechanism #1
Held-to-Ear	Low Band Ant A	0	1
Held-to-Ear	Low Band Ant E	0	1
Held-to-Ear	Mid Band Ant A	0	1
Held-to-Ear	Mid Band Ant F	0	1
Held-to-Ear	High Band Ant B	0	1
Held-to-Ear	High Band Ant F	0	1
Held-to-Ear	Ultra High Band Ant F	0	1

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DUT Type: Portable Handset		APPENDIX F: Page 1 of 2

F.3 WIFI Verification Summary

This device uses different Device State Indices (DSI) to configure different time averaged power levels based on certain exposure scenarios. For this device DSI = 1 represents the case where the device is held to ear. DSI = 0 is configured when the device cannot detect the use conditions.

Table F-2
Power Measurement Verification WIFI

Mode/Band	Device State Index (DSI)	
	Free Space	Head
2.4 GHz WLAN Ant G	0	1
5 GHz WLAN Ant G	0	1
6 GHz WLAN Ant G	0	1
2.4 GHz WLAN Ant I	0	1
5 GHz WLAN Ant E	0	1
6 GHz WLAN Ant E	0	1

*Note: MIMO WIFI modes were not evaluated due to equipment limitations.

Table F-3
Power Measurement Verification Bluetooth

Mode/Band	Conducted Power (dBm)		Target Power (dBm)	
	Un-triggered (Max)	Mechanism #1 RCV Active (Reduced)	Free Space	Mechanism #1 RCV Active (Reduced)
Bluetooth Ant G	15.40	11.55	15.0	12.0
Bluetooth LE Ant G	16.31	12.32	16.0	13.0
Bluetooth Ant I	14.75	11.13	15.0	12.0
Bluetooth LE Ant I	15.06	11.42	16.0	13.0

FCC ID A3LSMS942B	RF EXPOSURE PART 1 TEST REPORT	Approved by: Technical Manager
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