

Appendix H. – Power reduction verification

Per the May 2017 TCBC Workshop notes, demonstration of proper functioning of the power reduction mechanism is required to support the corresponding SAR Configurations.

A Base station simulator was used to establish a conducted RF connection and output power was monitored. The power measurements were confirmed to be within expected tolerance for all DSI, before and after a power reduction mechanism was triggered. 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

1. Power Reduction Verification for Main ANT

This device uses different Radio SAR Index [DSI] to configure different time averaged power levels based on certain exposure scenarios. For this device DSI = 1 is configured when receiver mode on Head SAR configuration. And DSI = 0 is configured when the device is not activated RCV-ON[Non-Head]

Table 1.1 Power Reduction Verification for Antenna MAIN1

Mechanism		Band	Device state Index (DSI)		
Mechanism 1st	Mechanism 2nd		FREE	1st	2nd
RCV ON	Hotspot On	GSM 850	0	1	0
RCV ON	Hotspot On	GSM 1900	0	1	0
RCV ON	Hotspot On	UMTS Band 2	0	1	0
RCV ON	Hotspot On	UMTS Band 4	0	1	0
RCV ON	Hotspot On	UMTS Band 5	0	1	0
RCV ON	Hotspot On	LTE Band 2	0	1	0
RCV ON	Hotspot On	LTE Band 4	0	1	0
RCV ON	Hotspot On	LTE Band 5	0	1	0
RCV ON	Hotspot On	LTE Band 12	0	1	0
RCV ON	Hotspot On	LTE Band 13	0	1	0
RCV ON	Hotspot On	LTE Band 14	0	1	0
RCV ON	Hotspot On	LTE Band 25	0	1	0
RCV ON	Hotspot On	LTE Band 26	0	1	0
RCV ON	Hotspot On	LTE Band 30	0	1	0
RCV ON	Hotspot On	LTE Band 66	0	1	0
RCV ON	Hotspot On	LTE Band 71	0	1	0
RCV ON	Hotspot On	NR Band n2	0	1	0
RCV ON	Hotspot On	NR Band n5	0	1	0
RCV ON	Hotspot On	NR Band n12	0	1	0
RCV ON	Hotspot On	NR Band n14	0	1	0
RCV ON	Hotspot On	NR Band n25	0	1	0
RCV ON	Hotspot On	NR Band n26	0	1	0
RCV ON	Hotspot On	NR Band n30	0	1	0
RCV ON	Hotspot On	NR Band n66	0	1	0
RCV ON	Hotspot On	NR Band n70	0	1	0
RCV ON	Hotspot On	NR Band n71	0	1	0

Table 1.2 Power Reduction Verification for Antenna MAIN2

Mechanism		Band	Device state Index (DSI)		
Mechanism 1st	Mechanism 2nd		FREE	1st	2nd
RCV ON	Hotspot On	LTE Band 7	0	1	0
RCV ON	Hotspot On	LTE Band 38	0	1	0
RCV ON	Hotspot On	LTE Band 41 PC3	0	1	0
RCV ON	Hotspot On	NR Band n7	0	1	0
RCV ON	Hotspot On	NR Band n38	0	1	0
RCV ON	Hotspot On	NR Band n41 PC2	0	1	0

Table 1.3 Power Reduction Verification for Antenna SUB1

Mechanism		Band	Device state Index (DSI)		
Mechanism 1st	Mechanism 2nd		FREE	1st	2nd
RCV ON	Hotspot On	GSM 850 Voice	0	1	0
RCV ON	Hotspot On	UMTS Band 5	0	1	0
RCV ON	Hotspot On	LTE Band 5	0	1	0
RCV ON	Hotspot On	LTE Band 12	0	1	0
RCV ON	Hotspot On	LTE Band 13	0	1	0
RCV ON	Hotspot On	LTE Band 14	0	1	0
RCV ON	Hotspot On	LTE Band 26	0	1	0
RCV ON	Hotspot On	LTE Band 71	0	1	0
RCV ON	Hotspot On	NR Band n5	0	1	0
RCV ON	Hotspot On	NR Band n12	0	1	0
RCV ON	Hotspot On	NR Band n14	0	1	0
RCV ON	Hotspot On	NR Band n26	0	1	0
RCV ON	Hotspot On	NR Band n71	0	1	0

Table 1.4 Power Reduction Verification for Antenna SUB2

Mechanism		Band	Device state Index (DSI)		
Mechanism 1st	Mechanism 2nd		FREE	1st	2nd
RCV ON	Hotspot On	LTE Band 2	0	1	0
RCV ON	Hotspot On	LTE Band 4	0	1	0
RCV ON	Hotspot On	LTE Band 7	0	1	0
RCV ON	Hotspot On	LTE Band 25	0	1	0
RCV ON	Hotspot On	LTE Band 30	0	1	0
RCV ON	Hotspot On	LTE Band 38	0	1	0
RCV ON	Hotspot On	LTE Band 41	0	1	0
RCV ON	Hotspot On	LTE Band 48	0	1	0
RCV ON	Hotspot On	LTE Band 66	0	1	0
RCV ON	Hotspot On	NR Band n2	0	1	0
RCV ON	Hotspot On	NR Band n7	0	1	0
RCV ON	Hotspot On	NR Band n25	0	1	0
RCV ON	Hotspot On	NR Band n30	0	1	0
RCV ON	Hotspot On	NR Band n38	0	1	0
RCV ON	Hotspot On	NR Band n41	0	1	0
RCV ON	Hotspot On	NR Band n48	0	1	0
RCV ON	Hotspot On	NR Band n66	0	1	0
RCV ON	Hotspot On	NR Band n70	0	1	0
RCV ON	Hotspot On	NR Band n77	0	1	0
RCV ON	Hotspot On	NR Band n78	0	1	0

2. Power Reduction Verification for WLAN/BT ANT

This device uses different Device State Index [DSI] to configure different time averaged power levels based on certain exposure scenarios. For this device DSI = 1 is configured when receiver mode on Head SAR configuration. DSI = 0 is configured when the device is not activated [Non-Head].

Mechanism 1st	WLAN Ant 1 Band	DSI	
		FREE	1st
RCV ON	802.11b	0	1
RCV ON	802.11g	0	1
RCV ON	802.11n	0	1
RCV ON	802.11ac(2.4GHz)	0	1
RCV ON	802.11ax(2.4GHz)	0	1
RCV ON	802.11be(2.4GHz)	0	1
RCV ON	802.11a(5 GHz)	0	1
RCV ON	802.11n(5 GHz,20MHz)	0	1
RCV ON	802.11n(5 GHz,40MHz)	0	1
RCV ON	802.11ac(5 GHz,20MHz)	0	1
RCV ON	802.11ac(5 GHz,40MHz)	0	1
RCV ON	802.11ac(5 GHz,80MHz)	0	1
RCV ON	802.11ac(5 GHz,160MHz)	0	1
RCV ON	802.11ax(5 GHz,20MHz)	0	1
RCV ON	802.11ax(5 GHz,40MHz)	0	1
RCV ON	802.11ax(5 GHz,80MHz)	0	1
RCV ON	802.11ax(5 GHz,160MHz)	0	1
RCV ON	802.11be(5 GHz,20MHz)	0	1
RCV ON	802.11be(5 GHz,40MHz)	0	1
RCV ON	802.11be(5 GHz,80MHz)	0	1
RCV ON	802.11be(5 GHz,160MHz)	0	1
RCV ON	802.11ax(6 GHz,20MHz)	0	1
RCV ON	802.11ax(6 GHz,40MHz)	0	1
RCV ON	802.11ax(6 GHz,80MHz)	0	1
RCV ON	802.11ax(6 GHz,160MHz)	0	1
RCV ON	802.11a(6 GHz,20MHz)	0	1
RCV ON	802.11be(6 GHz,20MHz)	0	1
RCV ON	802.11be(6 GHz,40MHz)	0	1
RCV ON	802.11be(6 GHz,80MHz)	0	1
RCV ON	802.11be(6 GHz,160MHz)	0	1
RCV ON	802.11be(6 GHz,320MHz)	0	1

Mechanism	WLAN Ant 2 Band	DSI	
1st		FREE	1st
RCV ON	802.11b	0	1
RCV ON	802.11g	0	1
RCV ON	802.11n	0	1
RCV ON	802.11ac(2.4GHz)	0	1
RCV ON	802.11ax(2.4GHz)	0	1
RCV ON	802.11be(2.4GHz)	0	1
RCV ON	802.11a(5 GHz)	0	1
RCV ON	802.11n(5 GHz,20MHz)	0	1
RCV ON	802.11n(5 GHz,40MHz)	0	1
RCV ON	802.11ac(5 GHz,20MHz)	0	1
RCV ON	802.11ac(5 GHz,40MHz)	0	1
RCV ON	802.11ac(5 GHz,80MHz)	0	1
RCV ON	802.11ac(5 GHz,160MHz)	0	1
RCV ON	802.11ax(5 GHz,20MHz)	0	1
RCV ON	802.11ax(5 GHz,40MHz)	0	1
RCV ON	802.11ax(5 GHz,80MHz)	0	1
RCV ON	802.11ax(5 GHz,160MHz)	0	1
RCV ON	802.11be(5 GHz,20MHz)	0	1
RCV ON	802.11be(5 GHz,40MHz)	0	1
RCV ON	802.11be(5 GHz,80MHz)	0	1
RCV ON	802.11be(5 GHz,160MHz)	0	1
RCV ON	802.11ax(6 GHz,20MHz)	0	1
RCV ON	802.11ax(6 GHz,40MHz)	0	1
RCV ON	802.11ax(6 GHz,80MHz)	0	1
RCV ON	802.11ax(6 GHz,160MHz)	0	1
RCV ON	802.11a(6 GHz,20MHz)	0	1
RCV ON	802.11be(6 GHz,20MHz)	0	1
RCV ON	802.11be(6 GHz,40MHz)	0	1
RCV ON	802.11be(6 GHz,80MHz)	0	1
RCV ON	802.11be(6 GHz,160MHz)	0	1
RCV ON	802.11be(6 GHz,320MHz)	0	1

Mechanism	Band	DSI	
Mechanism 1st		FREE	1st
RCV ON	BT ANT1	0	1
RCV ON	BT ANT2	0	1