

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 RSI. 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 utilizes a power reduction mechanism for some wireless modes under RSI(Radio SAR Index).

For this device RSI = 0 is configured when non head mode. RSI = 1 is configured when head mode.

Table 1.1 Power Reduction Verification for Antenna A

Mechanism		Band	RSI	
1st	2nd		1st	2nd
RCV ON	Hotspot On	GSM 850 Voice	1	0
Hotspot On	RCV ON	GSM 850 Voice	0	1
RCV ON	Hotspot On	GSM 850 1Tx	1	0
Hotspot On	RCV ON	GSM 850 1Tx	0	1
RCV ON	Hotspot On	GSM 850 2Tx	1	0
Hotspot On	RCV ON	GSM 850 2Tx	0	1
RCV ON	Hotspot On	GSM 850 3Tx	1	0
Hotspot On	RCV ON	GSM 850 3Tx	0	1
RCV ON	Hotspot On	GSM 850 4Tx	1	0
Hotspot On	RCV ON	GSM 850 4Tx	0	1
RCV ON	Hotspot On	UMTS Band 5	1	0
Hotspot On	RCV ON	UMTS Band 5	0	1
RCV ON	Hotspot On	LTE Band 5	1	0
Hotspot On	RCV ON	LTE Band 5	0	1
RCV ON	Hotspot On	LTE Band 12	1	0
Hotspot On	RCV ON	LTE Band 12	0	1
RCV ON	Hotspot On	LTE Band 13	1	0
Hotspot On	RCV ON	LTE Band 13	0	1
RCV ON	Hotspot On	LTE Band 14	1	0
Hotspot On	RCV ON	LTE Band 14	0	1
RCV ON	Hotspot On	LTE Band 26	1	0
Hotspot On	RCV ON	LTE Band 26	0	1
RCV ON	Hotspot On	LTE Band 30	1	0
Hotspot On	RCV ON	LTE Band 30	0	1
RCV ON	Hotspot On	LTE Band 71	1	0
Hotspot On	RCV ON	LTE Band 71	0	1
RCV ON	Hotspot On	NR Band n5	1	0
Hotspot On	RCV ON	NR Band n5	0	1
RCV ON	Hotspot On	NR Band n71	1	0
Hotspot On	RCV ON	NR Band n71	0	1

Table 1.2 Power Reduction Verification for Antenna B

Mechanism		Band	RSI	
1st	2nd		1st	2nd
RCV ON	Hotspot On	GSM 1900 Voice	1	0
Hotspot On	RCV ON	GSM 1900 Voice	0	1
RCV ON	Hotspot On	GSM 1900 1Tx	1	0
Hotspot On	RCV ON	GSM 1900 1Tx	0	1
RCV ON	Hotspot On	GSM 1900 2Tx	1	0
Hotspot On	RCV ON	GSM 1900 2Tx	0	1
RCV ON	Hotspot On	GSM 1900 3Tx	1	0
Hotspot On	RCV ON	GSM 1900 3Tx	0	1
RCV ON	Hotspot On	GSM 1900 4Tx	1	0
Hotspot On	RCV ON	GSM 1900 4Tx	0	1
RCV ON	Hotspot On	UMTS Band 2	1	0
Hotspot On	RCV ON	UMTS Band 2	0	1
RCV ON	Hotspot On	UMTS Band 4	1	0
Hotspot On	RCV ON	UMTS Band 4	0	1
RCV ON	Hotspot On	LTE Band 2	1	0
Hotspot On	RCV ON	LTE Band 2	0	1
RCV ON	Hotspot On	LTE Band 4	1	0
Hotspot On	RCV ON	LTE Band 4	0	1
RCV ON	Hotspot On	LTE Band 7	1	0
Hotspot On	RCV ON	LTE Band 7	0	1
RCV ON	Hotspot On	LTE Band 25	1	0
Hotspot On	RCV ON	LTE Band 25	0	1
RCV ON	Hotspot On	LTE Band 30	1	0
Hotspot On	RCV ON	LTE Band 30	0	1
RCV ON	Hotspot On	LTE Band 38	1	0
Hotspot On	RCV ON	LTE Band 38	0	1
RCV ON	Hotspot On	LTE Band 41	1	0
Hotspot On	RCV ON	LTE Band 41	0	1
RCV ON	Hotspot On	LTE Band 66	1	0
Hotspot On	RCV ON	LTE Band 66	0	1
RCV ON	Hotspot On	NR Band n2	1	0
Hotspot On	RCV ON	NR Band n2	0	1
RCV ON	Hotspot On	NR Band n25	1	0
Hotspot On	RCV ON	NR Band n25	0	1
RCV ON	Hotspot On	NR Band n30	1	0
Hotspot On	RCV ON	NR Band n30	0	1
RCV ON	Hotspot On	NR Band n41	1	0
Hotspot On	RCV ON	NR Band n41	0	1
RCV ON	Hotspot On	NR Band n66	1	0
Hotspot On	RCV ON	NR Band n66	0	1
RCV ON	Hotspot On	NR Band n70	1	0
Hotspot On	RCV ON	NR Band n70	0	1
RCV ON	Hotspot On	NR Band n48 SRS2	1	0
Hotspot On	RCV ON	NR Band n48 SRS2	0	1
RCV ON	Hotspot On	NR Band n77 SRS2	1	0
Hotspot On	RCV ON	NR Band n77 SRS2	0	1
RCV ON	Hotspot On	NR Band n78 SRS2	1	0
Hotspot On	RCV ON	NR Band n78 SRS2	0	1

Table 1.3 Power Reduction Verification for Antenna F

Mechanism		Band	RSI	
1st	2nd		1st	2nd
RCV ON	Hotspot On	LTE Band 2	1	0
Hotspot On	RCV ON	LTE Band 2	0	1
RCV ON	Hotspot On	LTE Band 4	1	0
Hotspot On	RCV ON	LTE Band 4	0	1
RCV ON	Hotspot On	LTE Band 7	1	0
Hotspot On	RCV ON	LTE Band 7	0	1
RCV ON	Hotspot On	LTE Band 25	1	0
Hotspot On	RCV ON	LTE Band 25	0	1
RCV ON	Hotspot On	LTE Band 30	1	0
Hotspot On	RCV ON	LTE Band 30	0	1
RCV ON	Hotspot On	LTE Band 66	1	0
Hotspot On	RCV ON	LTE Band 66	0	1
RCV ON	Hotspot On	NR Band n2	1	0
Hotspot On	RCV ON	NR Band n2	0	1
RCV ON	Hotspot On	NR Band n25	1	0
Hotspot On	RCV ON	NR Band n25	0	1
RCV ON	Hotspot On	NR Band n30	1	0
Hotspot On	RCV ON	NR Band n30	0	1
RCV ON	Hotspot On	NR Band n66	1	0
Hotspot On	RCV ON	NR Band n66	0	1
RCV ON	Hotspot On	NR Band n70	1	0
Hotspot On	RCV ON	NR Band n70	0	1
RCV ON	Hotspot On	NR Band n48 SRS3	1	0
Hotspot On	RCV ON	NR Band n48 SRS3	0	1
RCV ON	Hotspot On	NR Band n77 SRS3	1	0
Hotspot On	RCV ON	NR Band n77 SRS3	0	1
RCV ON	Hotspot On	NR Band n78 SRS3	1	0
Hotspot On	RCV ON	NR Band n78 SRS3	0	1

Table 1.4 Power Reduction Verification for Antenna G

Mechanism		Band	RSI	
1st	2nd		1st	2nd
RCV ON	Hotspot On	LTE Band 48	1	0
Hotspot On	RCV ON	LTE Band 48	0	1
RCV ON	Hotspot On	NR Band n48	1	0
Hotspot On	RCV ON	NR Band n48	0	1
RCV ON	Hotspot On	NR Band n77	1	0
Hotspot On	RCV ON	NR Band n77	0	1
RCV ON	Hotspot On	NR Band n78	1	0
Hotspot On	RCV ON	NR Band n78	0	1

Table 1.5 Power Reduction Verification for Antenna K

Mechanism		Band	RSI	
1st	2nd		1st	2nd
RCV ON	Hotspot On	NR Band n48 SRS3	1	0
Hotspot On	RCV ON	NR Band n48 SRS3	0	1
RCV ON	Hotspot On	NR Band n77 SRS3	1	0
Hotspot On	RCV ON	NR Band n77 SRS3	0	1
RCV ON	Hotspot On	NR Band n78 SRS3	1	0
Hotspot On	RCV ON	NR Band n78 SRS3	0	1

Table 1.6 Power Reduction Verification for Antenna L

Mechanism		Band	RSI	
1st	2nd		1st	2nd
RCV ON	Hotspot On	NR Band n48 SRS4	1	0
Hotspot On	RCV ON	NR Band n48 SRS4	0	1
RCV ON	Hotspot On	NR Band n77 SRS4	1	0
Hotspot On	RCV ON	NR Band n77 SRS4	0	1
RCV ON	Hotspot On	NR Band n78 SRS4	1	0
Hotspot On	RCV ON	NR Band n78 SRS4	0	1

2. Power Reduction Verification for WLAN/BT ANT

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

Mechanism		WLAN Band	RSI	
1st	2nd		1st	2nd
RCV ON	RCV OFF	802.11b	1	0
RCV ON	RCV OFF	802.11g	1	0
RCV ON	RCV OFF	802.11n	1	0
RCV ON	RCV OFF	802.11ax	1	0
RCV ON	RCV OFF	802.11a(5 GHz)	1	0
RCV ON	RCV OFF	802.11n(5 GHz,20MHz)	1	0
RCV ON	RCV OFF	802.11n(5 GHz,40MHz)	1	0
RCV ON	RCV OFF	802.11ac(5 GHz,20MHz)	1	0
RCV ON	RCV OFF	802.11ac(5 GHz,40MHz)	1	0
RCV ON	RCV OFF	802.11ac(5 GHz,80MHz)	1	0
RCV ON	RCV OFF	802.11ax(5 GHz,20MHz)	1	0
RCV ON	RCV OFF	802.11ax(5 GHz,40MHz)	1	0
RCV ON	RCV OFF	802.11ax(5 GHz,80MHz)	1	0