

Appendix G: Power Reduction Verification

G.1. Procedures

According to 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 includes evaluation of device state index (DSI) for individual or multiple triggering mechanisms.

This device supports manufacturer's proprietary mechanism which can detect motion of the device and then configure the DSI with different time averaged power levels based on certain exposure scenarios. Details of this mechanism can be found in the Operational Description. When the device is being used near the user, the device will detect motion and reduce the time-averaged output power of the antenna, by configuring the DSI in the device to DSI=3. When no motion is detected, DSI=0 is configured by the device. For this device DSI = 3 represents the case when in "on-body" or extremity conditions. DSI = 0 is configured when the device cannot detect the use condition.

The power verification was performed using a base station simulator to establish a conducted RF connection for relevant modes and frequency bands. The DSI as displayed on the DUT was recorded before and after the mechanism was triggered. The motion detection operation was verified using a "on-body" use case, where only minimal movement was applied, in order to represent a conservative verification scenario

G.2. Power Reduction Verification Result

Table G-1

		No Motion	Motion
Band/Mode	TARGET DSI	0	3
	Antenna	Device State Index (DSI)	
2.4 GHz WLAN	Chain 1	0	3
2.4 GHz WLAN	Chain 2	0	3
5 GHz WLAN	Chain 1	0	3
5 GHz WLAN	Chain 2	0	3
6 GHz WLAN	Chain 1	0	3
6 GHz WLAN	Chain 2	0	3

Table G-2

KEYBOARD ANGLE PRV (Opening)		
Angle (°)	Device State Index (DSI)	Angle (°) range per manufacturer
50	0	210
60	0	
70	0	
80	0	
90	0	
100	0	
110	0	
120	0	
130	0	
140	0	
150	0	
160	0	
170	0	
180	0	
190	0	
200	0	
201	0	
202	0	
203	0	
204	0	
205	0	
206	0	
207	0	
208	0	
209	3	
210	3	
211	3	
212	3	
213	3	
214	3	
215	3	
216	3	
217	3	
218	3	
219	3	
220	3	
230	3	
240	3	
250	3	
260	3	
270	3	
280	3	
290	3	
300	3	
310	3	
320	3	
330	3	
340	3	
350	3	
360	3	

Table G-3

KEYBOARD ANGLE PRV (Closing)		
Angle (°)	Device State Index (DSI)	Angle (°) range per manufacturer
50	0	210
60	0	
70	0	
80	0	
90	0	
100	0	
110	0	
120	0	
130	0	
140	0	
150	0	
160	0	
170	0	
180	0	
190	0	
200	0	
201	0	
202	0	
203	0	
204	0	
205	0	
206	0	
207	0	
208	0	
209	0	
210	0	
211	0	
212	0	
213	3	
214	3	
215	3	
216	3	
217	3	
218	3	
219	3	
220	3	
230	3	
240	3	
250	3	
260	3	
270	3	
280	3	
290	3	
300	3	
310	3	
320	3	
330	3	
340	3	
350	3	
360	3	

Table G-4

		Conducted Power (dBm)	
Band/Mode	Antenna	WLAN OFF	WLAN ON
2.4 GHz Bluetooth BR	Chain 1	17.89	16.29
2.4 GHz Bluetooth BR	Chain 2	18.13	15.44