Model Name: A3289
Date: 8/7/2024

J. POWER REDUCTION VERIFICATION

This device supports power reduction for the cellular, Wi-Fi and Bluetooth transmitters. Power reduction is based on the RCVR status to determine head exposure (RCVR active indicating the earpiece is being used for audio) or body exposure (RCVR is off). There are additional power reduction mechanisms for the Wi-Fi and Bluetooth transmitters based on the operating state of the cellular and (for Bluetooth) Wi-Fi transmitters. Details of these mechanisms can be found in the Operational Description**.**

The verification plan consists of measuring the power levels of the Bluetooth and Wi-Fi transmitters under different operating conditions to demonstrate that all three mechanisms (RCVR, cellular on/off and Wi-Fi on/off) trigger power reduction.

A. Verification of power reduction levels for Wi-Fi was performed with RCVR on and off and with cellular transmitter on and off.

B. Verification of power reduction levels for Bluetooth was performed with different combinations of RCVR on and off, cellular transmitter on and off and Wi-Fi transmitter on and off.

For testing purposes, the device was loaded with a power table[1] for each transmitter that had different power settings for each of the operating states. The target / expected power level and measured power levels are detailed in the following tables and clearly show that mechanisms operate as expected.

RLAN: Based on the utilization ratio, a power control algorithm will allow the active WLAN to increase power until the utilization ratio approaches the limit. The algorithm will then disable the power increase until the utilization ratio decreases. A predictive power control feature further ensures regulatory compliance by disabling all transmitters if there are any scenarios where aggregate maximum WLAN transmissions over the next 1-second interval could cause the utilization ratio to exceed the regulatory limit.

Appendix J: Power Reduction Validation

Model Name: A3289
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Table 1 –Power Reduction and Cellular State validation for Wi-Fi

Power Reduction	Head (RCVR = ON)		Body (RCVR = OFF)	
Cellular State	ON	OFF	ON	OFF
2.4 GHz 802.11b SISO	E: 13.75	E: 17.75	E: 15	E: 19
	M: 13.73	M: 16.67	M: 14.17	M: 17.78
All measured power values (M) were within the expected tolerances of the target/expected power levels (E) programmed into the power table for the Head versus Body and Cellular ON/OFF states. Mechanism of power reduction and Cellular state was verified.				

Table 2 –Body Reduction and Cellular State validation for Bluetooth

Power Reduction	Head (RCVR = ON)				Body (RCVR = OFF)			
Cellular State	ON		OFF		ON		OFF	
5GHz Wi-Fi state	ON	OFF	ON	OFF	ON	OFF	ON	OFF
Expected power condition	P_{Low} Mode A BT Table P_1	P_{High} Mode A BT Table P_0	P_{High} mode A BT Table P_9	$P_{standalone}$ Mode A BT Table P_8	P_{Low} Mode B BT Table P_3	P_{High} Mode B BT Table P_2	P_{High} Mode B BT Table P_{11}	$P_{Standalone}$ Mode B BT Table P_{10}
Power (dBm)	E:8	E:14	E:14	E:18	E:9	E:15	E:15	E:18
	M: 8.02	M: 14.08	M: 13.95	M: 17.81	M: 9.08	M: 14.98	M: 14.89	M: 17.78
Bluetooth transmitter set for hopping channel in BDR mode. All measured power values (M) were within the expected tolerances of the target/expected power levels (E) programmed into the power table for the Head versus Body, Cellular ON/OFF and Wi-Fi ON/OFF states. Mechanism of power reduction and Cellular state and Wi-Fi state were verified.								

The power tables used for the mechanism validation may not match the production power tables detailed in the main SAR report because production power levels are not established at the time these measurements were made.

Table 3 –Test Equipment used for Verification

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Wideband Radio Communication Tester	R&S	CMX500	102505-My	5/16/2025
Power Meter	R&S	NRP2	105006-fm	8/16/2024
Power Sensor	R&S	NRP-Z81	103775-jk	8/16/2024