4.3.4. Conducted Power of WLAN

The measuring conducted average power is shown as below.

Band	Mode	Channel	Frequency (MHz)	Average Power (dBm)
2.4GHz	802.11b	1	2412	13.39
		6	2437	13.21
		11	2462	13.28
		12	2467	13.27
		13	2472	13.43
	802.11g	1	2412	13.15
		6	2437	13.21
		11	2462	13.03
		12	2467	12.98
		13	2472	12.86
	802.11n-HT20	1	2412	12.78
		6	2437	12.82
		11	2462	12.76
		12	2467	12.73
		13	2472	12.84
	802.11n-HT40	3	2422	11.81
		6	2437	11.65
		9	2452	11.91
		10	2457	11.82
		11	2462	11.85

Mode	Band	Channel	Frequency (MHz)	Average Power (dBm)
802.11a	U-NII-1	36	5180	10.85
		44	5220	11.07
		48	5240	11.04
	U-NII-2A	52	5260	11.12
		60	5300	11.28
		64	5320	11.35
	U-NII-2C	100	5500	11.76
		120	5600	12.15
		140	5700	12.41
		144	5720	12.39
	U-NII-3	149	5745	12.66
		157	5785	12.68
		165	5825	12.62

Mode	Band	Channel	Frequency (MHz)	Average Power (dBm)
802.11n-HT20	U-NII-1	36	5180	9.78
		44	5220	9.88
		48	5240	9.83
	U-NII-2A	52	5260	9.87
		60	5300	10.08
		64	5320	10.05
	U-NII-2C	100	5500	10.61
		120	5600	11.12
		140	5700	11.14
		144	5720	11.22
	U-NII-3	149	5745	11.39
		157	5785	11.43
		165	5825	11.49

Mode	Band	Channel	Frequency (MHz)	Average Power (dBm)
802.11n-HT40	U-NII-1	38	5190	9.72
		46	5230	9.65
	U-NII-2A	54	5270	9.78
		62	5310	9.86
	U-NII-2C	102	5510	10.53
		118	5590	10.82
		134	5670	11.07
		142	5710	11.16
	U-NII-3	151	5755	11.22
		159	5795	11.39

Mode	Band	Channel	Frequency (MHz)	Average Power (dBm)
802.11ac-VHT20	U-NII-1	36	5180	9.71
		44	5220	9.74
		48	5240	9.97
	U-NII-2A	52	5260	10.04
		60	5300	10.03
		64	5320	10.05
	U-NII-2C	100	5500	10.58
		120	5600	11.03
		140	5700	11.12
		144	5720	11.37
	U-NII-3	149	5745	11.48
		157	5785	11.45
		165	5825	11.53

Mode	Band	Channel	Frequency (MHz)	Average Power (dBm)
802.11ac-VHT40	U-NII-1	38	5190	9.61
		46	5230	9.76
	U-NII-2A	54	5270	9.89
		62	5310	9.93
	U-NII-2C	102	5510	10.44
		118	5590	10.82
		134	5670	11.05
		142	5710	11.18
	U-NII-3	151	5755	11.15
		159	5795	11.19

Mode	Band	Channel	Frequency (MHz)	Average Power (dBm)
802.11ac-VHT80	U-NII-1	42	5210	9.08
	U-NII-2A	58	5290	9.43
	U-NII-2C	106	5530	10.11
		122	5610	10.46
		138	5690	10.57
	U-NII-3	155	5775	10.75

4.3.5. Conducted Power of BT

Mode	Modulation	Channel	Frequency (MHz)	Average Power (dBm)
BR + EDR	GFSK	0	2402	4.75
		39	2441	5.23
		78	2480	**5.41**
	π/4-DQPSK	0	2402	1.65
		39	2441	2.31
		78	2480	2.70
	8-DPSK	0	2402	1.66
		39	2441	2.31
		78	2480	2.68

Mode	Modulation	Channel	Frequency (MHz)	Average Power (dBm)
LE	GFSK	0	2402	-3.06
		19	2440	-2.45
		39	2480	-2.00
2LE	GFSK	0	2402	-4.81
		19	2440	-4.18
		39	2480	-3.73
LE Code (S=2)	GFSK	0	2402	-2.44
		19	2440	-1.87
		39	2480	-1.56
LE Code (S=8)	GFSK	0	2402	-2.16
		19	2440	-1.61
		39	2480	**-0.93**

4.4. SAR TESTING RESULTS

4.4.1. SAR Test Reduction Considerations

KDB 447498 D01 General RF Exposure Guidance

Testing of other required channels within the operating mode of a frequency band is not required when the reported SAR for the mid-band or highest output power channel is:

a) ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
b) ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
c) ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

KDB 941225 D01 3G SAR Procedures

a) GSM SAR Test Reduction

SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested. The GMSK EDGE configurations are grouped with GPRS and considered with respect to time-averaged maximum output power to determine compliance. The 3G SAR test reduction procedure is applied to 8-PSK EDGE with GMSK GPRS/EDGE as the primary mode.

b) 3G SAR Test Reduction Procedure

The mode tested for SAR is referred to as the primary mode. The equivalent modes considered for SAR test reduction are denoted as secondary modes. Both primary and secondary modes must be in the same frequency band. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ 1/4 dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

KDB 941225 D05 SAR for LTE Devices

a) QPSK with 1 RB and 50% RB allocation

Start with the largest channel bandwidth and measure SAR, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.

b) QPSK with 100% RB allocation

SAR is not required when the highest maximum output power for 100% RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.

c) Higher order modulations

SAR is required only when the highest maximum output power for the configuration in the higher order modulation is > 1/2 dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

d) Others channel bandwidth

SAR is required when the highest maximum output power of the smaller channel bandwidth is > 1/2 dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.

KDB 941225 D06 Hot Spot SAR

Hotspot mode SAR is measured for all edges and surfaces of the device with a transmitting antenna located within 25 mm from that surface or edge.

Antenna	Front Face	Rear Face	Left Side	Right Side	Top Side	Bottom Side
WWAN Ant. 1 (Main)	Yes	Yes	Yes	N/A	N/A	Yes
WWAN Ant. 2 (DIV)	Yes	Yes	N/A	Yes	Yes	N/A
WLAN / BT	Yes	Yes	N/A	Yes	Yes	N/A

KDB 248227 D01 Wi-Fi SAR

a) For handsets operating next to ear, hotspot mode or mini-tablet configurations, the initial test position procedures were applied. The test position with the highest extrapolated peak SAR will be used as the initial test position. When the reported SAR of initial test position is <= 0.4 W/kg, SAR testing for remaining test positions is not required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is <= 0.8 W/kg or all test positions are measured.

b) For WLAN 2.4 GHz, the highest measured maximum output power channel for DSSS was selected for SAR measurement. When the reported SAR is <= 0.8 W/kg, no further SAR testing is required. Otherwise, SAR is evaluated at the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel. For OFDM modes (802.11g/n), SAR is not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and it is <= 1.2 W/kg.

c) For WLAN 5 GHz, the initial test configuration was selected according to the transmission mode with the highest maximum output power. When the reported SAR of initial test configuration is > 0.8 W/kg, SAR is required for the subsequent highest measured output power channel until the reported SAR result is <= 1.2 W/kg or all required channels are measured. For other transmission modes, SAR is not required when the highest reported SAR for initial test configuration is adjusted by the ratio of subsequent test configuration to initial test configuration specified maximum output power and it is <= 1.2 W/kg.

d) For WLAN MIMO mode, the power-based standalone SAR test exclusion or the sum of SAR provision in KDB 447498 to determine simultaneous transmission SAR test exclusion should be applied. Otherwise, SAR for MIMO mode will be measured with all applicable antennas transmitting simultaneously at the specified maximum output power of MIMO operation.

4.4.2. SAR Results for Head Exposure Condition

Plot No.	Band	Mode	Test Position	Channel	RB#	RB Offset	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaling Factor	Scaled SAR-1g (W/kg)	P-Sensor	Note
	GSM 850	GPRS10	Right Cheek	190	-	-	32.0	31.49	0.01	0.246	1.12	0.277	--	--
	GSM 850	GPRS10	Right Tilted	190	-	-	32.0	31.49	0.16	0.293	1.12	0.330	--	--
1	GSM 850	GPRS10	Left Cheek	190	-	-	32.0	31.49	-0.04	0.667	1.12	**0.750**	--	--
	GSM 850	GPRS10	Left Tilted	190	-	-	32.0	31.49	-0.03	0.331	1.12	0.372	--	--
2	PCS 1900	GPRS10	Right Cheek	810	-	-	24.0	23.71	0.03	0.877	1.07	**0.938**	on	--
	PCS 1900	GPRS10	Right Cheek	810	-	-	24.0	23.71	0.02	0.872	1.07	0.932	on	REPEAT
	PCS 1900	GPRS10	Right Tilted	810	-	-	24.0	23.71	-0.01	0.46	1.07	0.492	on	--
	PCS 1900	GPRS10	Left Cheek	810	-	-	24.0	23.71	0.09	0.473	1.07	0.506	on	--
	PCS 1900	GPRS10	Left Tilted	810	-	-	24.0	23.71	0.02	0.215	1.07	0.230	on	--
	PCS 1900	GPRS10	Right Cheek	512	-	-	24.0	23.23	-0.02	0.672	1.19	0.802	on	--
	PCS 1900	GPRS10	Right Cheek	661	-	-	24.0	23.66	-0.14	0.752	1.08	0.813	on	--
	WCDMA Band II	RMC12.2K	Right Cheek	9262	-	-	17.5	16.78	0.07	0.71	1.18	0.838	on	--
	WCDMA Band II	RMC12.2K	Right Tilted	9262	-	-	17.5	16.78	0.01	0.39	1.18	0.460	on	--
	WCDMA Band II	RMC12.2K	Left Cheek	9262	-	-	17.5	16.78	-0.14	0.342	1.18	0.404	on	--
	WCDMA Band II	RMC12.2K	Left Tilted	9262	-	-	17.5	16.78	0.05	0.171	1.18	0.202	on	--
	WCDMA Band II	RMC12.2K	Right Cheek	9400	-	-	17.5	16.74	-0.03	0.721	1.19	0.859	on	--
3	WCDMA Band II	RMC12.2K	Right Cheek	9538	-	-	17.5	16.50	-0.02	0.752	1.26	**0.947**	on	--
4	WCDMA Band IV	RMC12.2K	Right Cheek	1312	-	-	17.0	16.45	-0.13	0.525	1.14	**0.596**	on	--
	WCDMA Band IV	RMC12.2K	Right Tilted	1312	-	-	17.0	16.45	0.09	0.322	1.14	0.365	on	--
	WCDMA Band IV	RMC12.2K	Left Cheek	1312	-	-	17.0	16.45	0.02	0.305	1.14	0.346	on	--
	WCDMA Band IV	RMC12.2K	Left Tilted	1312	-	-	17.0	16.45	-0.01	0.154	1.14	0.175	on	--
	WCDMA Band V	RMC12.2K	Right Cheek	4132	-	-	22.5	22.10	-0.06	0.143	1.10	0.157	on	--
	WCDMA Band V	RMC12.2K	Right Tilted	4132	-	-	22.5	22.10	-0.07	0.0983	1.10	0.108	on	--
5	WCDMA Band V	RMC12.2K	Left Cheek	4132	-	-	22.5	22.10	-0.19	0.241	1.10	**0.264**	on	--
	WCDMA Band V	RMC12.2K	Left Tilted	4132	-	-	22.5	22.10	0.02	0.116	1.10	0.127	on	--

Plot No.	Band	Mode	Test Position	Channel	RB#	RB Offset	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaling Factor	Scaled SAR-1g (W/kg)	P-Sensor	Note
	LTE Band 2	QPSK20M	Right Cheek	18900	1	50	17.5	17.12	0.04	0.692	1.09	0.755	on	--
	LTE Band 2	QPSK20M	Right Tilted	18900	1	50	17.5	17.12	0.05	0.358	1.09	0.391	on	--
	LTE Band 2	QPSK20M	Left Cheek	18900	1	50	17.5	17.12	0.09	0.351	1.09	0.383	on	--
	LTE Band 2	QPSK20M	Left Tilted	18900	1	50	17.5	17.12	0.05	0.302	1.09	0.330	on	--
	LTE Band 2	QPSK20M	Right Cheek	18700	50	25	17.0	16.73	-0.08	0.64	1.06	0.681	on	--
	LTE Band 2	QPSK20M	Right Tilted	18700	50	25	17.0	16.73	0.03	0.35	1.06	0.372	on	--
	LTE Band 2	QPSK20M	Left Cheek	18700	50	25	17.0	16.73	0.00	0.34	1.06	0.362	on	--
	LTE Band 2	QPSK20M	Left Tilted	18700	50	25	17.0	16.73	-0.04	0.298	1.06	0.317	on	--
6	LTE Band 2	QPSK20M	Right Cheek	18700	1	50	17.5	16.54	0.04	0.694	1.25	**0.866**	on	--
	LTE Band 2	QPSK20M	Right Cheek	19100	1	50	17.5	16.75	0.04	0.688	1.19	0.818	on	--
	LTE Band 5	QPSK10M	Right Cheek	20450	1	25	22.5	22.04	0.09	0.192	1.11	0.213	--	--
	LTE Band 5	QPSK10M	Right Tilted	20450	1	25	22.5	22.04	-0.04	0.0999	1.11	0.111	--	--
7	LTE Band 5	QPSK10M	Left Cheek	20450	1	25	22.5	22.04	-0.10	0.232	1.11	**0.258**	--	--
	LTE Band 5	QPSK10M	Left Tilted	20450	1	25	22.5	22.04	0.02	0.107	1.11	0.119	--	--
	LTE Band 5	QPSK10M	Right Cheek	20450	25	0	21.5	20.90	0.03	0.139	1.15	0.160	--	--
	LTE Band 5	QPSK10M	Right Tilted	20450	25	0	21.5	20.90	0.12	0.0757	1.15	0.087	--	--
	LTE Band 5	QPSK10M	Left Cheek	20450	25	0	21.5	20.90	0.05	0.174	1.15	0.200	--	--
	LTE Band 5	QPSK10M	Left Tilted	20450	25	0	21.5	20.90	0.15	0.0807	1.15	0.093	--	--
	LTE Band 12	QPSK10M	Right Cheek	23095	1	25	23.0	22.27	0.06	0.147	1.18	0.174	--	--
	LTE Band 12	QPSK10M	Right Tilted	23095	1	25	23.0	22.27	0.03	0.0789	1.18	0.093	--	--
8	LTE Band 12	QPSK10M	Left Cheek	23095	1	25	23.0	22.27	0.05	0.166	1.18	**0.196**	--	--
	LTE Band 12	QPSK10M	Left Tilted	23095	1	25	23.0	22.27	-0.01	0.0983	1.18	0.116	--	--
	LTE Band 12	QPSK10M	Right Cheek	23130	25	0	21.5	21.11	0.03	0.097	1.09	0.106	--	--
	LTE Band 12	QPSK10M	Right Tilted	23130	25	0	21.5	21.11	0.03	0.0631	1.09	0.069	--	--
	LTE Band 12	QPSK10M	Left Cheek	23130	25	0	21.5	21.11	-0.03	0.127	1.09	0.139	--	--
	LTE Band 12	QPSK10M	Left Tilted	23130	25	0	21.5	21.11	-0.04	0.0736	1.09	0.081	--	--

Plot No.	Band	Mode	Test Position	Channel	RB#	RB Offset	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaling Factor	Scaled SAR-1g (W/kg)	P-Sensor	Note
9	LTE Band 30	QPSK10M	Right Cheek	27710	1	25	17.0	16.73	0.13	0.53	1.06	**0.564**	on	--
	LTE Band 30	QPSK10M	Right Tilted	27710	1	25	17.0	16.73	0.13	0.418	1.06	0.445	on	--
	LTE Band 30	QPSK10M	Left Cheek	27710	1	25	17.0	16.73	0.03	0.316	1.06	0.336	on	--
	LTE Band 30	QPSK10M	Left Tilted	27710	1	25	17.0	16.73	-0.06	0.308	1.06	0.328	on	--
	LTE Band 30	QPSK10M	Right Cheek	27710	25	12	17.0	16.63	0.07	0.516	1.09	0.562	on	--
	LTE Band 30	QPSK10M	Right Tilted	27710	25	12	17.0	16.63	-0.09	0.402	1.09	0.438	on	--
	LTE Band 30	QPSK10M	Left Cheek	27710	25	12	17.0	16.63	0.02	0.312	1.09	0.340	on	--
	LTE Band 30	QPSK10M	Left Tilted	27710	25	12	17.0	16.63	-0.05	0.304	1.09	0.331	on	--
10	LTE Band 66	QPSK20M	Right Cheek	132322	1	50	17.5	16.90	0.04	0.5	1.15	**0.574**	on	--
	LTE Band 66	QPSK20M	Right Tilted	132322	1	50	17.5	16.90	0.02	0.332	1.15	0.381	on	--
	LTE Band 66	QPSK20M	Left Cheek	132322	1	50	17.5	16.90	-0.11	0.295	1.15	0.339	on	--
	LTE Band 66	QPSK20M	Left Tilted	132322	1	50	17.5	16.90	-0.02	0.324	1.15	0.372	on	--
	LTE Band 66	QPSK20M	Right Cheek	132072	50	25	17.0	16.50	0.00	0.463	1.12	0.519	on	--
	LTE Band 66	QPSK20M	Right Tilted	132072	50	25	17.0	16.50	0.08	0.32	1.12	0.359	on	--
	LTE Band 66	QPSK20M	Left Cheek	132072	50	25	17.0	16.50	0.03	0.302	1.12	0.339	on	--
	LTE Band 66	QPSK20M	Left Tilted	132072	50	25	17.0	16.50	0.10	0.337	1.12	0.378	on	--

Plot No.	Band	Mode	Test Position	Channel	Duty Cycle	Duty Cycle Scaling Factor	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaling Factor	Scaled SAR-1g (W/kg)	P-Sensor	Note
	2.4GHz ISM	Bluetooth_DH5	Right Cheek	78	76%	1.32	6.0	5.41	0.15	0.0689	1.15	0.104	--	--
	2.4GHz ISM	Bluetooth_DH5	Right Tilted	78	76%	1.32	6.0	5.41	-0.12	0.087	1.15	0.131	--	--
11	2.4GHz ISM	Bluetooth_DH5	Left Cheek	78	76%	1.32	6.0	5.41	0.03	0.14	1.15	**0.211**	--	--
	2.4GHz ISM	Bluetooth_DH5	Left Tilted	78	76%	1.32	6.0	5.41	-0.02	0.135	1.15	0.203	--	--
	2.4GHz ISM	IEEE 802.11b	Right Cheek	13	100%	1.00	14.0	13.43	0.13	0.24	1.14	0.274	--	--
	2.4GHz ISM	IEEE 802.11b	Right Tilted	13	100%	1.00	14.0	13.43	0.08	0.317	1.14	0.361	--	--
	2.4GHz ISM	IEEE 802.11b	Left Cheek	13	100%	1.00	14.0	13.43	-0.15	0.586	1.14	0.668	--	--
12	2.4GHz ISM	IEEE 802.11b	Left Tilted	13	100%	1.00	14.0	13.43	0.18	0.609	1.14	**0.694**	--	--

Plot No.	Band	Mode	Test Position	Channel	Duty Cycle	Duty Cycle Scaling Factor	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaling Factor	Scaled SAR-1g (W/kg)	P-Sensor	Note
	U-NII-1	IEEE 802.11a	Right Cheek	44	96.18%	1.04	11.5	11.07	-0.03	0.268	1.10	0.308	--	--
13	U-NII-1	IEEE 802.11a	Right Tilted	44	96.18%	1.04	11.5	11.07	-0.03	0.307	1.10	**0.352**	--	--
	U-NII-1	IEEE 802.11a	Left Cheek	44	96.18%	1.04	11.5	11.07	0.13	0.233	1.10	0.267	--	--
	U-NII-1	IEEE 802.11a	Left Tilted	44	96.18%	1.04	11.5	11.07	-0.11	0.213	1.10	0.245	--	--
	U-NII-2A	IEEE 802.11a	Right Cheek	64	96.18%	1.04	12.0	11.35	-0.02	0.313	1.16	0.378	--	--
14	U-NII-2A	IEEE 802.11a	Right Tilted	64	96.18%	1.04	12.0	11.35	-0.05	0.371	1.16	**0.448**	--	--
	U-NII-2A	IEEE 802.11a	Left Cheek	64	96.18%	1.04	12.0	11.35	-0.06	0.249	1.16	0.301	--	--
	U-NII-2A	IEEE 802.11a	Left Tilted	64	96.18%	1.04	12.0	11.35	-0.08	0.266	1.16	0.321	--	--
15	U-NII-2C	IEEE 802.11a	Right Cheek	140	96.18%	1.04	13.0	12.41	-0.05	0.483	1.15	**0.575**	--	--
	U-NII-2C	IEEE 802.11a	Right Tilted	140	96.18%	1.04	13.0	12.41	-0.11	0.456	1.15	0.543	--	--
	U-NII-2C	IEEE 802.11a	Left Cheek	140	96.18%	1.04	13.0	12.41	-0.02	0.288	1.15	0.343	--	--
	U-NII-2C	IEEE 802.11a	Left Tilted	140	96.18%	1.04	13.0	12.41	-0.07	0.348	1.15	0.414	--	--
	U-NII-3	IEEE 802.11a	Right Cheek	157	96.18%	1.04	13.5	12.68	-0.02	0.467	1.21	0.586	--	--
16	U-NII-3	IEEE 802.11a	Right Tilted	157	96.18%	1.04	13.5	12.68	0.01	0.5	1.21	**0.628**	--	--
	U-NII-3	IEEE 802.11a	Left Cheek	157	96.18%	1.04	13.5	12.68	-0.07	0.335	1.21	0.421	--	--
	U-NII-3	IEEE 802.11a	Left Tilted	157	96.18%	1.04	13.5	12.68	-0.03	0.397	1.21	0.499	--	--

4.4.3. SAR Results for Body-worn Exposure Condition (Separation Distance is 1.0 cm)

Plot No.	Band	Mode	Test Position	Channel	RB#	RB Offset	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaling Factor	Scaled SAR-1g (W/kg)	P-Sensor	Note
17	GSM 850	GPRS10	Front Face	190	-	-	32.0	31.49	-0.10	0.509	1.12	**0.572**	--	--
	GSM 850	GPRS10	Rear Face	190	-	-	32.0	31.49	-0.14	0.493	1.12	0.554	--	--
	PCS 1900	GPRS10	Front Face	810	-	-	28.0	27.67	-0.05	0.418	1.08	0.451	--	--
18	PCS 1900	GPRS10	Rear Face	810	-	-	28.0	27.67	-0.12	0.579	1.08	**0.625**	--	--
	WCDMA Band II	RMC12.2K	Front Face	9262	-	-	22.5	21.79	-0.04	0.326	1.18	0.384	--	--
19	WCDMA Band II	RMC12.2K	Rear Face	9262	-	-	22.5	21.79	-0.03	0.639	1.18	**0.752**	--	--
	WCDMA Band IV	RMC12.2K	Front Face	1312	-	-	21.5	21.16	0.07	0.491	1.08	0.531	--	--
20	WCDMA Band IV	RMC12.2K	Rear Face	1312	-	-	21.5	21.16	-0.06	0.627	1.08	**0.678**	--	--
	WCDMA Band V	RMC12.2K	Front Face	4132	-	-	22.5	22.10	-0.05	0.222	1.10	0.243	--	--
21	WCDMA Band V	RMC12.2K	Rear Face	4132	-	-	22.5	22.10	-0.16	0.306	1.10	**0.336**	--	--
	LTE Band 2	QPSK20M	Front Face	18700	1	50	22.5	22.11	0.15	0.344	1.09	0.376	--	--
22	LTE Band 2	QPSK20M	Rear Face	18700	1	50	22.5	22.11	-0.06	0.598	1.09	**0.654**	--	--
	LTE Band 2	QPSK20M	Front Face	18700	50	25	21.5	20.83	-0.03	0.333	1.17	0.389	--	--
	LTE Band 2	QPSK20M	Rear Face	18700	50	25	21.5	20.83	-0.02	0.477	1.17	0.557	--	--
	LTE Band 5	QPSK10M	Front Face	20450	1	25	22.5	22.04	-0.02	0.186	1.11	0.207	--	--
23	LTE Band 5	QPSK10M	Rear Face	20450	1	25	22.5	22.04	-0.03	0.272	1.11	**0.302**	--	--
	LTE Band 5	QPSK10M	Front Face	20450	25	0	21.5	20.90	-0.05	0.133	1.15	0.153	--	--
	LTE Band 5	QPSK10M	Rear Face	20450	25	0	21.5	20.90	-0.03	0.209	1.15	0.240	--	--
	LTE Band 12	QPSK10M	Front Face	23095	1	25	23.0	22.27	-0.08	0.192	1.18	0.227	--	--
24	LTE Band 12	QPSK10M	Rear Face	23095	1	25	23.0	22.27	0.05	0.237	1.18	**0.280**	--	--
	LTE Band 12	QPSK10M	Front Face	23130	25	0	21.5	21.11	0.08	0.141	1.09	0.154	--	--
	LTE Band 12	QPSK10M	Rear Face	23130	25	0	21.5	21.11	-0.06	0.185	1.09	0.202	--	--
	LTE Band 30	QPSK5M	Front Face	27735	1	13	22.0	21.43	0.08	0.407	1.14	0.464	--	--
25	LTE Band 30	QPSK5M	Rear Face	27735	1	13	22.0	21.43	0.01	0.447	1.14	**0.510**	--	--

Plot No.	Band	Mode	Test Position	Channel	RB#	RB Offset	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaling Factor	Scaled SAR-1g (W/kg)	P-Sensor	Note
	LTE Band 30	QPSK5M	Front Face	27735	12	7	21.0	20.41	-0.05	0.321	1.15	0.368	--	--
	LTE Band 30	QPSK5M	Rear Face	27735	12	7	21.0	20.41	-0.01	0.285	1.15	0.326	--	--
	LTE Band 30	QPSK10M	Front Face	27710	1	25	21.5	21.09	0.00	0.37	1.10	0.407	--	--
	LTE Band 30	QPSK10M	Rear Face	27710	1	25	21.5	21.09	-0.11	0.345	1.10	0.379	--	--
	LTE Band 30	QPSK10M	Front Face	27710	25	12	20.5	19.85	-0.07	0.348	1.16	0.404	--	--
	LTE Band 30	QPSK10M	Rear Face	27710	25	12	20.5	19.85	0.04	0.142	1.16	0.165	--	--
	LTE Band 66	QPSK20M	Front Face	132572	1	50	22.0	21.49	-0.11	0.47	1.12	0.529	--	--
26	LTE Band 66	QPSK20M	Rear Face	132572	1	50	22.0	21.49	-0.05	0.641	1.12	**0.721**	--	--
	LTE Band 66	QPSK20M	Front Face	132572	50	0	21.0	20.32	0.09	0.365	1.17	0.427	--	--
	LTE Band 66	QPSK20M	Rear Face	132572	50	0	21.0	20.32	-0.06	0.539	1.17	0.630	--	--

Plot No.	Band	Mode	Test Position	Channel	Duty Cycle	Duty Cycle Scaling Factor	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaling Factor	Scaled SAR-1g (W/kg)	P-Sensor	Note
	2.4GHz ISM	Bluetooth_DH5	Front Face	78	76%	1.32	6.0	5.41	0.03	0.0311	1.15	0.047	--	--
27	2.4GHz ISM	Bluetooth_DH5	Rear Face	78	76%	1.32	6.0	5.41	-0.11	0.0406	1.15	**0.061**	--	--
	2.4GHz ISM	IEEE 802.11b	Front Face	13	100%	1.00	14.0	13.43	-0.17	0.145	1.14	0.165	--	--
28	2.4GHz ISM	IEEE 802.11b	Rear Face	13	100%	1.00	14.0	13.43	0.08	0.155	1.14	**0.177**	--	--
	U-NII-1	IEEE 802.11a	Front Face	44	96.18%	1.04	11.5	11.07	-0.10	0.0405	1.10	0.046	--	--
29	U-NII-1	IEEE 802.11a	Rear Face	44	96.18%	1.04	11.5	11.07	-0.10	0.0418	1.10	**0.048**	--	--
	U-NII-2A	IEEE 802.11a	Front Face	64	96.18%	1.04	12.0	11.35	0.16	0.0448	1.16	0.054	--	--
30	U-NII-2A	IEEE 802.11a	Rear Face	64	96.18%	1.04	12.0	11.35	-0.05	0.0653	1.16	**0.079**	--	--
	U-NII-2C	IEEE 802.11a	Front Face	140	96.18%	1.04	13.0	12.41	-0.10	0.0855	1.15	0.102	--	--
31	U-NII-2C	IEEE 802.11a	Rear Face	140	96.18%	1.04	13.0	12.41	-0.10	0.263	1.15	**0.313**	--	--
	U-NII-3	IEEE 802.11a	Front Face	157	96.18%	1.04	13.5	12.68	-0.10	0.0965	1.21	0.121	--	--
32	U-NII-3	IEEE 802.11a	Rear Face	157	96.18%	1.04	13.5	12.68	0.09	0.129	1.21	**0.162**	--	--

4.4.4. SAR Results for Hotspot Exposure Condition (Separation Distance is 1.0 cm)

Plot No.	Band	Mode	Test Position	Channel	RB#	RB Offset	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaling Factor	Scaled SAR-1g (W/kg)	P-Sensor	Note
	GSM 850	GPRS10	Front Face	190	-	-	32.0	31.49	-0.10	0.509	1.12	0.572	--	--
	GSM 850	GPRS10	Rear Face	190	-	-	32.0	31.49	-0.14	0.493	1.12	0.554	--	--
33	GSM 850	GPRS10	Left Side	190	-	-	32.0	31.49	-0.03	0.547	1.12	**0.615**	--	--
	GSM 850	GPRS10	Bottom Side	190	-	-	32.0	31.49	-0.08	0.361	1.12	0.406	--	--
	PCS 1900	GPRS10	Front Face	810	-	-	28.0	27.67	-0.05	0.418	1.08	0.451	--	--
18	PCS 1900	GPRS10	Rear Face	810	-	-	28.0	27.67	-0.12	0.579	1.08	**0.625**	--	--
	PCS 1900	GPRS10	Left Side	810	-	-	28.0	27.67	0.02	0.354	1.08	0.382	--	--
	PCS 1900	GPRS10	Top Side	810	-	-	28.0	27.67	0.05	0.248	1.08	0.268	--	--
	WCDMA Band II	RMC12.2K	Front Face	9262	-	-	22.5	21.79	-0.04	0.326	1.18	0.384	--	--
19	WCDMA Band II	RMC12.2K	Rear Face	9262	-	-	22.5	21.79	-0.03	0.639	1.18	**0.752**	--	--
	WCDMA Band II	RMC12.2K	Left Side	9262	-	-	22.5	21.79	-0.08	0.297	1.18	0.350	--	--
	WCDMA Band II	RMC12.2K	Top Side	9262	-	-	22.5	21.79	-0.01	0.219	1.18	0.258	--	--
	WCDMA Band IV	RMC12.2K	Front Face	1312	-	-	21.5	21.16	0.07	0.491	1.08	0.531	--	--
20	WCDMA Band IV	RMC12.2K	Rear Face	1312	-	-	21.5	21.16	-0.06	0.627	1.08	**0.678**	--	--
	WCDMA Band IV	RMC12.2K	Left Side	1312	-	-	21.5	21.16	-0.03	0.271	1.08	0.293	--	--
	WCDMA Band IV	RMC12.2K	Top Side	1312	-	-	21.5	21.16	0.03	0.179	1.08	0.194	--	--
	WCDMA Band V	RMC12.2K	Front Face	4132	-	-	22.5	22.10	-0.05	0.222	1.10	0.243	--	--
21	WCDMA Band V	RMC12.2K	Rear Face	4132	-	-	22.5	22.10	-0.16	0.306	1.10	**0.336**	--	--
	WCDMA Band V	RMC12.2K	Left Side	4132	-	-	22.5	22.10	0.09	0.167	1.10	0.183	--	--
	WCDMA Band V	RMC12.2K	Bottom Side	4132	-	-	22.5	22.10	0.09	0.116	1.10	0.127	--	--

Plot No.	Band	Mode	Test Position	Channel	RB#	RB Offset	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaling Factor	Scaled SAR-1g (W/kg)	P-Sensor	Note
	LTE Band 2	QPSK20M	Front Face	18700	1	50	22.5	22.11	0.15	0.344	1.09	0.376	--	--
22	LTE Band 2	QPSK20M	Rear Face	18700	1	50	22.5	22.11	-0.06	0.598	1.09	**0.654**	--	--
	LTE Band 2	QPSK20M	Left Side	18700	1	50	22.5	22.11	0.08	0.285	1.09	0.312	--	--
	LTE Band 2	QPSK20M	Top Side	18700	1	50	22.5	22.11	0.05	0.237	1.09	0.259	--	--
	LTE Band 2	QPSK20M	Front Face	18700	50	25	21.5	20.83	-0.03	0.333	1.17	0.389	--	--
	LTE Band 2	QPSK20M	Rear Face	18700	50	25	21.5	20.83	-0.02	0.477	1.17	0.557	--	--
	LTE Band 2	QPSK20M	Left Side	18700	50	25	21.5	20.83	-0.01	0.218	1.17	0.254	--	--
	LTE Band 2	QPSK20M	Top Side	18700	50	25	21.5	20.83	-0.06	0.185	1.17	0.216	--	--
	LTE Band 5	QPSK10M	Front Face	20450	1	25	22.5	22.04	-0.02	0.186	1.11	0.207	--	--
23	LTE Band 5	QPSK10M	Rear Face	20450	1	25	22.5	22.04	-0.03	0.272	1.11	**0.302**	--	--
	LTE Band 5	QPSK10M	Left Side	20450	1	25	22.5	22.04	-0.09	0.163	1.11	0.181	--	--
	LTE Band 5	QPSK10M	Bottom Side	20450	1	25	22.5	22.04	-0.07	0.119	1.11	0.132	--	--
	LTE Band 5	QPSK10M	Front Face	20450	25	0	21.5	20.90	-0.05	0.133	1.15	0.153	--	--
	LTE Band 5	QPSK10M	Rear Face	20450	25	0	21.5	20.90	-0.03	0.209	1.15	0.240	--	--
	LTE Band 5	QPSK10M	Left Side	20450	25	0	21.5	20.90	-0.04	0.121	1.15	0.139	--	--
	LTE Band 5	QPSK10M	Bottom Side	20450	25	0	21.5	20.90	-0.09	0.086	1.15	0.099	--	--
	LTE Band 12	QPSK10M	Front Face	23095	1	25	23.0	22.27	-0.08	0.192	1.18	0.227	--	--
	LTE Band 12	QPSK10M	Rear Face	23095	1	25	23.0	22.27	0.05	0.237	1.18	0.280	--	--
34	LTE Band 12	QPSK10M	Left Side	23095	1	25	23.0	22.27	0.05	0.259	1.18	**0.306**	--	--
	LTE Band 12	QPSK10M	Bottom Side	23095	1	25	23.0	22.27	-0.04	0.055	1.18	0.065	--	--
	LTE Band 12	QPSK10M	Front Face	23130	25	0	21.5	21.11	0.08	0.141	1.09	0.154	--	--
	LTE Band 12	QPSK10M	Rear Face	23130	25	0	21.5	21.11	-0.06	0.185	1.09	0.202	--	--
	LTE Band 12	QPSK10M	Left Side	23130	25	0	21.5	21.11	0.06	0.196	1.09	0.214	--	--
	LTE Band 12	QPSK10M	Bottom Side	23130	25	0	21.5	21.11	0.07	0.043	1.09	0.047	--	--

Plot No.	Band	Mode	Test Position	Channel	RB#	RB Offset	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaling Factor	Scaled SAR-1g (W/kg)	P-Sensor	Note
	LTE Band 30	QPSK5M	Front Face	27735	1	13	22.0	21.43	0.08	0.407	1.14	0.464	--	--
25	LTE Band 30	QPSK5M	Rear Face	27735	1	13	22.0	21.43	0.01	0.447	1.14	**0.510**	--	--
	LTE Band 30	QPSK5M	Left Side	27735	1	13	22.0	21.43	0.02	0.294	1.14	0.335	--	--
	LTE Band 30	QPSK5M	Top Side	27735	1	13	22.0	21.43	0.04	0.171	1.14	0.195	--	--
	LTE Band 30	QPSK5M	Front Face	27735	12	7	21.0	20.41	-0.05	0.321	1.15	0.368	--	--
	LTE Band 30	QPSK5M	Rear Face	27735	12	7	21.0	20.41	-0.01	0.285	1.15	0.326	--	--
	LTE Band 30	QPSK5M	Left Side	27735	12	7	21.0	20.41	-0.01	0.257	1.15	0.294	--	--
	LTE Band 30	QPSK5M	Top Side	27735	12	7	21.0	20.41	-0.10	0.135	1.15	0.155	--	--
	LTE Band 30	QPSK10M	Front Face	27710	1	25	21.5	21.09	0.00	0.37	1.10	0.407	--	--
	LTE Band 30	QPSK10M	Rear Face	27710	1	25	21.5	21.09	-0.11	0.345	1.10	0.379	--	--
	LTE Band 30	QPSK10M	Left Side	27710	1	25	21.5	21.09	0.06	0.253	1.10	0.278	--	--
	LTE Band 30	QPSK10M	Top Side	27710	1	25	21.5	21.09	0.08	0.179	1.10	0.197	--	--
	LTE Band 30	QPSK10M	Front Face	27710	25	12	20.5	19.85	-0.07	0.348	1.16	0.404	--	--
	LTE Band 30	QPSK10M	Rear Face	27710	25	12	20.5	19.85	0.04	0.142	1.16	0.165	--	--
	LTE Band 30	QPSK10M	Left Side	27710	25	12	20.5	19.85	0.05	0.231	1.16	0.268	--	--
	LTE Band 30	QPSK10M	Top Side	27710	25	12	20.5	19.85	0.00	0.123	1.16	0.143	--	--
	LTE Band 66	QPSK20M	Front Face	132572	1	50	22.0	21.49	-0.11	0.47	1.12	0.529	--	--
26	LTE Band 66	QPSK20M	Rear Face	132572	1	50	22.0	21.49	-0.05	0.641	1.12	**0.721**	--	--
	LTE Band 66	QPSK20M	Left Side	132572	1	50	22.0	21.49	-0.08	0.311	1.12	0.350	--	--
	LTE Band 66	QPSK20M	Top Side	132572	1	50	22.0	21.49	0.07	0.229	1.12	0.258	--	--
	LTE Band 66	QPSK20M	Front Face	132572	50	0	21.0	20.32	0.09	0.365	1.17	0.427	--	--
	LTE Band 66	QPSK20M	Rear Face	132572	50	0	21.0	20.32	-0.06	0.539	1.17	0.630	--	--
	LTE Band 66	QPSK20M	Left Side	132572	50	0	21.0	20.32	-0.06	0.249	1.17	0.291	--	--
	LTE Band 66	QPSK20M	Top Side	132572	50	0	21.0	20.32	0.06	0.175	1.17	0.205	--	--

Plot No.	Band	Mode	Test Position	Channel	Duty Cycle	Duty Cycle Scaling Factor	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaling Factor	Scaled SAR-1g (W/kg)	P-Sensor	Note
	2.4GHz ISM	Bluetooth_DH5	Front Face	78	76%	1.32	6.0	5.41	0.03	0.0311	1.15	0.047	--	--
	2.4GHz ISM	Bluetooth_DH5	Rear Face	78	76%	1.32	6.0	5.41	-0.11	0.0406	1.15	0.061	--	--
	2.4GHz ISM	Bluetooth_DH5	Right Side	78	76%	1.32	6.0	5.41	0.07	0.012	1.15	0.018	--	--
35	2.4GHz ISM	Bluetooth_DH5	Top Side	78	76%	1.32	6.0	5.41	0.03	0.0508	1.15	**0.077**	--	--
	2.4GHz ISM	IEEE 802.11b	Front Face	13	100%	1.00	14.0	13.43	-0.17	0.145	1.14	0.165	--	--
	2.4GHz ISM	IEEE 802.11b	Rear Face	13	100%	1.00	14.0	13.43	0.08	0.155	1.14	0.177	--	--
	2.4GHz ISM	IEEE 802.11b	Right Side	13	100%	1.00	14.0	13.43	0.01	0.057	1.14	0.065	--	--
36	2.4GHz ISM	IEEE 802.11b	Top Side	13	100%	1.00	14.0	13.43	0.10	0.211	1.14	**0.241**	--	--
	U-NII-1	IEEE 802.11a	Front Face	44	96.18%	1.04	11.5	11.07	-0.10	0.0405	1.10	0.046	--	--
	U-NII-1	IEEE 802.11a	Rear Face	44	96.18%	1.04	11.5	11.07	-0.10	0.0418	1.10	0.048	--	--
	U-NII-1	IEEE 802.11a	Right Side	44	96.18%	1.04	11.5	11.07	0.01	0.052	1.10	0.060	--	--
37	U-NII-1	IEEE 802.11a	Top Side	44	96.18%	1.04	11.5	11.07	-0.16	0.123	1.10	**0.141**	--	--
	U-NII-2A	IEEE 802.11a	Front Face	64	96.18%	1.04	12.0	11.35	0.16	0.0448	1.16	0.054	--	--
	U-NII-2A	IEEE 802.11a	Rear Face	64	96.18%	1.04	12.0	11.35	-0.05	0.0653	1.16	0.079	--	--
	U-NII-2A	IEEE 802.11a	Right Side	64	96.18%	1.04	12.0	11.35	0.01	0.068	1.16	0.082	--	--
38	U-NII-2A	IEEE 802.11a	Top Side	64	96.18%	1.04	12.0	11.35	0.02	0.0864	1.16	**0.104**	--	--
	U-NII-2C	IEEE 802.11a	Front Face	140	96.18%	1.04	13.0	12.41	-0.10	0.0855	1.15	0.102	--	--
31	U-NII-2C	IEEE 802.11a	Rear Face	140	96.18%	1.04	13.0	12.41	-0.10	0.263	1.15	**0.313**	--	--
	U-NII-2C	IEEE 802.11a	Right Side	140	96.18%	1.04	13.0	12.41	0.02	0.159	1.15	0.189	--	--
	U-NII-2C	IEEE 802.11a	Top Side	140	96.18%	1.04	13.0	12.41	0.04	0.198	1.15	0.236	--	--
	U-NII-3	IEEE 802.11a	Front Face	157	96.18%	1.04	13.5	12.68	-0.10	0.0965	1.21	0.121	--	--
32	U-NII-3	IEEE 802.11a	Rear Face	157	96.18%	1.04	13.5	12.68	0.09	0.129	1.21	**0.162**	--	--
	U-NII-3	IEEE 802.11a	Right Side	157	96.18%	1.04	13.5	12.68	-0.10	0.0504	1.21	0.063	--	--
	U-NII-3	IEEE 802.11a	Top Side	157	96.18%	1.04	13.5	12.68	-0.06	0.122	1.21	0.153	--	--

4.5. SAR MEASUREMENT VARIABILITY

4.5.1. Repeated Measurement

According to KDB 865664 D01, SAR measurement variability was assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. Alternatively, if the highest measured SAR for both head and body tissue-equivalent media are ≤ 1.45 W/kg and the ratio of these highest SAR values, i.e., largest divided by smallest value, is ≤ 1.10, the highest SAR configuration for either head or body tissue-equivalent medium may be used to perform the repeated measurement. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR repeated measurement procedure:

1) When the highest measured SAR is < 0.80 W/kg, repeated measurement is not required.
2) When the highest measured SAR is >= 0.80 W/kg, repeat that measurement once.
3) If the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20, or when the original or repeated measurement is >= 1.45 W/kg, perform a second repeated measurement.
4) If the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20, and the original, first or second repeated measurement is >= 1.5 W/kg, perform a third repeated measurement.

Band	Mode	Test Position	Channel	Original Measured SAR-1g (W/kg)	1st Repeated SAR-1g (W/kg)	L/S Ratio	2nd Repeated SAR-1g (W/kg)	L/S Ratio	3rd Repeated SAR-1g (W/kg)	L/S Ratio
Head Exposure Condition										
PCS 1900	GPRS10	Right Cheek	810	0.877	0.872	1.0057	N/A	N/A	N/A	N/A

4.6. SIMULTANEOUS MULTI-BAND TRANSMISSION EVALUATION

4.6.1. Simultaneous Transmission SAR Test Exclusion Considerations

a) Sum of SAR

Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneous transmitting antenna. When the sum of SAR1g of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit (SAR1g 1.6 W/kg), the simultaneous transmission SAR is not required. When the sum of SAR1g is greater than the SAR limit (SAR1g 1.6 W/kg), SAR test exclusion is determined by the SPLSR.

b) SAR to Peak Location Separation Ratio

The simultaneous transmitting antennas in each operating mode and exposure condition combination are considered one pair at a time to determine the SPLSR.

$$SPLSR = (SAR_1 + SAR_2)^{1.5}/R_i$$

The ratio is rounded to two decimal digits, and must be ≤ 0.04 for all antenna pairs in the configuration to qualify for 1-g SAR test exclusion. When 10-g SAR applies, the ratio must be ≤ 0.10.
SAR_1 and SAR_2 are the highest reported or estimated SAR values for each antenna in the pair, and R_i is the separation distance in mm between the peak SAR locations for the antenna pair

$$peak\ location\ separation\ distance = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2 + (z_1 - z_2)^2}$$

Where $(x_1,\ y_1,\ z_1)$ and $(x_2,\ y_2,\ z_2)$ are the coordinates of the extrapolated peak SAR locations in the area or zoom scans.
When standalone test exclusion applies, SAR is estimated; the peak location is assumed to be at the feed-point or geometric center of the antenna. Due to curvatures on the SAM phantom, when SAR is estimated for one of the antennas in an antenna pair, the measured peak SAR location will be translated onto the test device to determine the peak location separation for the antenna pair.
When SAR is estimated for both antennas, the peak location separation should be determined by the closest physical separation of the antennas, according to the feed-point or geometric center of the antennas.

c) Volume Scan

When the SPLSR is <= 0.04 for 1-g SAR and <= 0.10 for 10-g SAR, the simultaneous transmission SAR is not required. Otherwise, the enlarged zoom scan and volume scan post-processing procedures will be performed.

4.6.2. Simultaneous Transmission Possibilities

The simultaneous transmission possibilities for this device are listed as below.

Simultaneous Transmission Configurations	Head (Voice / VoIP)	Body-worn (Voice / VoIP)	Hotspot (Data)
GSM (Voice / Data) + WLAN (Data)	Yes	Yes	Yes
WCDMA (Voice / Data) + WLAN (Data)	Yes	Yes	Yes
LTE (Data) + WLAN (Data)	Yes	Yes	Yes
GSM (Voice / Data) + BT (Data)	Yes	Yes	No
WCDMA (Voice / Data) + BT (Data)	Yes	Yes	No
LTE (Data) + BT (Data)	Yes	Yes	No
GSM (Voice / Data) + WLAN (Data) + BT (Data)	No	No	No
WCDMA (Voice / Data) + WLAN (Data) + BT (Data)	No	No	No
CDMA (Voice / Data) + WLAN (Data) + BT (Data)	No	No	No
LTE (Data) + WLAN (Data) + BT (Data)	No	No	No

Note:

1) The 2.4G WLAN and 5G WLAN cannot transmit simultaneously.
2) The WLAN and Bluetooth cannot transmit simultaneously, so there is no co-location test requirement for WLAN and Bluetooth.
3) Both GSM/WCDMA/CDMA and LTE can transmit through either antenna-0 or antenna-1. However, only one technology (GSM/WCDMA or LTE) can transmit from an antenna at a time, and the other technology transmits through the other antenna.

4.6.3. Max. Standalone SAR

Position		GSM		WCDMA			LTE				
		850	1900	Band II	Band IV	Band V	Band 2	Band 5	Band 12	Band 30	Band 66
Head	Right Cheek	0.277	**0.938**	**0.947**	**0.596**	0.157	**0.866**	0.213	0.174	**0.564**	**0.574**
	Right Tilted	0.330	0.492	0.460	0.365	0.108	0.391	0.111	0.093	0.445	0.381
	Left Cheek	**0.750**	0.506	0.404	0.346	**0.264**	0.383	**0.258**	**0.196**	0.340	0.339
	Left Tilted	0.372	0.230	0.202	0.175	0.127	0.330	0.119	0.116	0.331	0.378
Body-worn	Front Face	**0.572**	0.451	0.384	0.531	0.243	0.389	0.207	0.227	0.464	0.529
	Rear Face	0.554	**0.625**	**0.752**	**0.678**	**0.336**	**0.654**	**0.302**	**0.280**	**0.510**	**0.721**
Hotspot	Front Face	0.572	0.451	0.384	0.531	0.243	0.389	0.207	0.227	0.464	0.529
	Rear Face	0.554	**0.625**	**0.752**	**0.678**	**0.336**	**0.654**	**0.302**	0.280	**0.510**	**0.721**
	Left Side	**0.615**	0.382	0.350	0.293	0.183	0.312	0.181	**0.306**	0.335	0.350
	Right Side	-	-	-	-	-	-	-	-	-	-
	Top Side	-	0.268	0.258	0.194		0.259	-	-	0.197	0.258
	Bottom Side	0.406	-	-	-	0.127	-	0.132	0.065	-	-

Position		WLAN					BT
		2.4G	5.2G	5.3G	5.6G	5.8G	2.4G
Head	Right Cheek	0.274	0.308	0.378	**0.575**	0.586	0.104
	Right Tilted	0.361	**0.352**	**0.448**	0.543	**0.628**	0.131
	Left Cheek	0.668	0.267	0.301	0.343	0.421	**0.211**
	Left Tilted	**0.694**	0.245	0.321	0.414	0.499	0.203
Body-worn	Front Face	0.165	0.046	0.054	0.102	0.121	0.047
	Rear Face	**0.177**	**0.048**	**0.079**	**0.313**	**0.162**	**0.061**
Hotspot	Front Face	0.165	0.046	0.054	0.102	0.121	0.047
	Rear Face	0.177	0.048	0.079	**0.313**	**0.162**	0.061
	Left Side	-	-	-	-	-	-
	Right Side	0.065	0.06	0.082	0.189	0.063	0.018
	Top Side	**0.241**	**0.141**	**0.104**	0.236	0.153	**0.077**
	Bottom Side	-	-	-	-	-	-

4.6.4. Sum of SAR

WWAN + WLAN (DTS)

Position		Highest Simultaneous Transmission SAR	GSM		WCDMA			LTE				
			850	1900	Band II	Band IV	Band V	Band 2	Band 5	Band 12	Band 30	Band 66
Head	Right Cheek	1.418	0.551	1.212	1.221	0.87	0.431	1.14	0.487	0.448	0.838	0.848
	Right Tilted		0.691	0.853	0.821	0.726	0.469	0.752	0.472	0.454	0.806	0.742
	Left Cheek		1.418	1.174	1.072	1.014	0.932	1.051	0.926	0.864	1.008	1.007
	Left Tilted		1.066	0.924	0.896	0.869	0.821	1.024	0.813	0.81	1.025	1.072
Body-worn	Front Face	0.929	0.737	0.616	0.549	0.696	0.408	0.554	0.372	0.392	0.629	0.694
	Rear Face		0.731	0.802	0.929	0.855	0.513	0.831	0.479	0.457	0.687	0.898
Hotspot	Front Face	0.929	0.737	0.616	0.549	0.696	0.408	0.554	0.372	0.392	0.629	0.694
	Rear Face		0.731	0.802	0.929	0.855	0.513	0.831	0.479	0.457	0.687	0.898
	Left Side		0.615	0.382	0.35	0.293	0.183	0.312	0.181	0.306	0.335	0.35
	Right Side		0.065	0.065	0.065	0.065	0.065	0.065	0.065	0.065	0.065	0.065
	Top Side		0.241	0.509	0.499	0.435	0.241	0.5	0.241	0.241	0.438	0.499
	Bottom Side		0.406	--	--	--	0.127	--	0.132	0.065	--	--

WWAN + WLAN(NII)

Position		Highest Simultaneous Transmission SAR	GSM		WCDMA			LTE				
			850	1900	Band II	Band IV	Band V	Band 2	Band 5	Band 12	Band 30	Band 66
Head	Right Cheek	1.533	0.863	1.524	1.533	1.182	0.743	1.452	0.799	0.76	1.15	1.16
	Right Tilted		0.958	1.12	1.088	0.993	0.736	1.019	0.739	0.721	1.073	1.009
	Left Cheek		1.171	0.927	0.825	0.767	0.685	0.804	0.679	0.617	0.761	0.76
	Left Tilted		0.871	0.729	0.701	0.674	0.626	0.829	0.618	0.615	0.83	0.877
Body-worn	Front Face	1.065	0.693	0.572	0.505	0.652	0.364	0.51	0.328	0.348	0.585	0.65
	Rear Face		0.867	0.938	1.065	0.991	0.649	0.967	0.615	0.593	0.823	1.034
Hotspot	Front Face	1.065	0.693	0.572	0.505	0.652	0.364	0.51	0.328	0.348	0.585	0.65
	Rear Face		0.867	0.938	1.065	0.991	0.649	0.967	0.615	0.593	0.823	1.034
	Left Side		0.615	0.382	0.35	0.293	0.183	0.312	0.181	0.306	0.335	0.35
	Right Side		0.189	0.189	0.189	0.189	0.189	0.189	0.189	0.189	0.189	0.189
	Top Side		0.236	0.504	0.494	0.43	0.236	0.495	0.236	0.236	0.433	0.494
	Bottom Side		0.406	--	--	--	0.127	--	0.132	0.065	--	--

WWAN + BT (DSS)

Position		Highest Simultaneous Transmission SAR	GSM		WCDMA			LTE				
			850	1900	Band II	Band IV	Band V	Band 2	Band 5	Band 12	Band 30	Band 66
Head	Right Cheek	1.051	0.381	1.042	1.051	0.7	0.261	0.97	0.317	0.278	0.668	0.678
	Right Tilted		0.461	0.623	0.591	0.496	0.239	0.522	0.242	0.224	0.576	0.512
	Left Cheek		0.961	0.717	0.615	0.557	0.475	0.594	0.469	0.407	0.551	0.55
	Left Tilted		0.575	0.433	0.405	0.378	0.33	0.533	0.322	0.319	0.534	0.581
Body-worn	Front Face	0.813	0.619	0.498	0.431	0.578	0.29	0.436	0.254	0.274	0.511	0.576
	Rear Face		0.615	0.686	0.813	0.739	0.397	0.715	0.363	0.341	0.571	0.782
Hotspot	Front Face	0.813	0.619	0.498	0.431	0.578	0.29	0.436	0.254	0.274	0.511	0.576
	Rear Face		0.615	0.686	0.813	0.739	0.397	0.715	0.363	0.341	0.571	0.782
	Left Side		0.615	0.382	0.35	0.293	0.183	0.312	0.181	0.306	0.335	0.35
	Right Side		0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
	Top Side		0.077	0.345	0.335	0.271	0.077	0.336	0.077	0.077	0.274	0.335
	Bottom Side		0.406	--	--	--	0.127	--	0.132	0.065	--	--

*** End of Report ***

APPENDIX A. SAR PLOTS OF SYSTEM VERIFICATION

The plots for system verification with largest deviation for each SAR system combination are shown as follows.

APPENDIX B. SAR PLOTS OF SAR MEASUREMENT

The SAR plots for highest measured SAR in each exposure configuration, wireless mode and frequency band combination, and measured SAR > 1.5 W/kg are shown as follows.

APPENDIX C. CALIBRATION CERTIFICATE FOR PROBE AND DIPOLE

The calibration certificates are shown as follows.

APPENDIX D. PHOTOGRAPHS OF EUT AND SETUP

The photographs of EUT and setup are shown as follows.