Bluetooth						
Mode	GFSK			Pi/4DQPSK		
Channel	0	39	78	0	39	78
Frequency	2402	2441	2480	2402	2441	2480
Average Power (dBm)	5.97	5.96	6.50	5.82	5.92	6.33
Mode	8DPSK			BLE		
Channel	0	39	78	0	20	39
Frequency	2402	2441	2480	2402	2440	2480
Average Power (dBm)	6.18	6.17	**6.69**	/	/	/

Channel	Frequency (GHz)	Max. Tune-up Power (dBm)	Max. Power (mW)	Test distance (mm)	Result	Exclusion thresholds for 1-g SAR	Exclusion thresholds for 10-g SAR
78	2.480	7.00	5.01	5	1.58	3.0	7.5

Note

1. Per KDB 447498 D01v06, the 1-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 50 mm are determined by:
   [(*max. power of channel, including tune-up tolerance, mW*) / (*min. test separation distance, mm*)] · [√f(GHz)] ≤ 3.0 for 1-g SAR, where
   ·f(GHz) is the RF channel transmit frequency in GHz
   ·Power and distance are rounded to the nearest mW and mm before calculation
   ·The result is rounded to one decimal place for comparison
2. Base on the result of note1, RF exposure evaluation of BT is not required.
3. Per KDB 248227 D01 v02r02, choose the highest output power channel to test SAR and determine further SAR exclusion.
4. The output power of all data rate were prescan, just the worst case (the lowest data rate) of all mode were shown in report.

LTE Band 2

Conducted Power of LTE Band 2						
Bandwidth	Modulation	RB size	RB offset	Channel 18607	Channel 18900	Channel 19193
1.4MHz	QPSK	1	0.00	22.84	23.94	24.45
			3.00	22.88	24.30	24.68
			5.00	22.79	24.00	24.27
		3	0.00	23.08	24.19	24.77
			2.00	23.11	24.43	24.67
			3.00	23.04	24.33	24.37
		6	0.00	22.05	23.26	24.06
	16QAM	1	0.00	21.89	22.59	24.10
			3.00	22.13	22.60	23.85
			5.00	21.96	22.53	23.58
		3	0.00	22.03	22.86	23.92
			2.00	22.07	22.93	23.87
			3.00	22.10	22.94	23.80
		6	0.00	21.00	22.06	22.96
Bandwidth	Modulation	RB size	RB offset	Channel 18615	Channel 18900	Channel 19185
3MHz	QPSK	1	0.00	23.19	24.01	24.80
			7.00	23.21	24.37	24.91
			14.00	23.29	24.39	24.06
		8	0.00	22.11	23.07	23.85
			4.00	22.05	23.12	23.72
			7.00	22.03	23.14	23.72
		15	0.00	22.07	23.16	23.77
	16QAM	1	0.00	22.52	22.75	23.64
			7.00	22.67	23.21	23.60
			14.00	22.29	22.88	23.19
		8	0.00	21.32	21.93	22.93
			4.00	21.36	21.97	22.93
			7.00	21.34	21.99	22.48
		15	0.00	21.29	22.07	22.78

Conducted Power of LTE Band 2						
Bandwidth	Modulation	RB size	RB offset	Channel 18625	Channel 18900	Channel 19175
5MHz	QPSK	1	0.00	22.95	23.78	24.60
			12.00	23.26	24.33	24.71
			24.00	23.16	24.11	23.74
		12	0.00	22.02	23.13	23.77
			6.00	22.09	23.17	23.78
			13.00	22.13	23.25	23.65
		25	0.00	22.02	23.22	23.69
	16QAM	1	0.00	21.91	22.77	23.71
			12.00	22.38	23.35	23.58
			24.00	21.80	23.04	23.10
		12	0.00	20.83	21.76	22.84
			6.00	20.83	21.86	22.81
			13.00	20.86	21.95	22.41
		25	0.00	21.25	22.05	22.83
Bandwidth	Modulation	RB size	RB offset	Channel 18650	Channel 18900	Channel 19150
10MHz	QPSK	1	0.00	23.10	24.14	24.09
			24.00	23.55	24.43	25.32
			49.00	22.99	24.42	23.63
		25	0.00	22.13	23.06	23.83
			12.00	22.17	23.22	23.79
			25.00	22.21	23.30	23.76
		50	0.00	22.23	23.15	23.79
	16QAM	1	0.00	22.46	22.75	23.11
			25.00	22.80	22.91	24.40
			49.00	22.53	22.97	22.74
		25	0.00	21.15	22.18	22.83
			13.00	21.20	22.36	22.78
			25.00	21.18	22.52	22.67
		50	0.00	21.25	22.09	22.64

Conducted Power of LTE Band 2						
Bandwidth	Modulation	RB size	RB offset	Channel 18675	Channel 18900	Channel 19125
15MHz	QPSK	1	0.00	23.27	23.50	23.77
			37.00	23.44	24.53	25.04
			74.00	22.63	24.46	23.32
		36	0.00	22.22	23.03	23.82
			18.00	22.29	23.17	23.81
			38.00	22.31	23.35	23.84
		75	0.00	22.20	23.17	23.78
	16QAM	1	0.00	22.75	22.58	22.99
			37.00	23.27	23.25	24.28
			74.00	22.17	22.97	22.67
		36	0.00	21.17	22.02	22.84
			18.00	21.25	22.27	22.82
			38.00	21.27	22.43	22.85
		75	0.00	21.14	22.00	22.68
Bandwidth	Modulation	RB size	RB offset	Channel 18700	Channel 18900	Channel 19100
20MHz	QPSK	1	0.00	22.88	23.03	24.31
			49.00	23.43	**24.75**	24.60
			99.00	23.00	24.72	23.54
		50	0.00	22.24	23.04	23.76
			25.00	22.28	**23.23**	23.81
			50.00	22.50	23.46	23.82
		100	0.00	22.35	23.21	23.73
	16QAM	1	0.00	22.18	22.38	23.27
			49.00	22.27	23.19	23.49
			99.00	22.03	22.93	22.98
		50	0.00	21.40	21.82	22.84
			25.00	21.45	22.23	22.93
			50.00	21.61	22.48	22.83
		100	0.00	21.38	22.16	22.62

LTE Band 4

Conducted Power of LTE Band 4						
Bandwidth	Modulation	RB size	RB offset	Channel 19957	Channel 20175	Channel 20393
1.4MHz	QPSK	1	0.00	22.54	23.87	24.12
			3.00	22.84	24.03	24.57
			5.00	21.36	23.47	24.36
		3	0.00	23.04	24.15	24.15
			2.00	23.06	24.38	24.26
			3.00	23.01	24.12	24.74
		6	0.00	22.11	23.26	23.45
	16QAM	1	0.00	22.01	22.45	24.12
			3.00	22.12	22.54	23.25
			5.00	21.95	22.54	23.15
		3	0.00	22.04	22.74	23.77
			2.00	21.88	22.26	23.15
			3.00	22.10	22.15	23.15
		6	0.00	21.01	22.02	22.06
Bandwidth	Modulation	RB size	RB offset	Channel 19965	Channel 20175	Channel 20385
3MHz	QPSK	1	0.00	23.19	23.05	21.17
			7.00	23.14	24.18	20.86
			14.00	23.02	24.03	20.55
		8	0.00	22.14	23.15	20.24
			4.00	22.02	22.58	19.93
			7.00	22.18	22.41	19.62
		15	0.00	22.19	22.03	19.31
	16QAM	1	0.00	22.45	22.15	19.00
			7.00	22.34	24.15	19.84
			14.00	22.17	22.14	19.61
		8	0.00	22.02	21.59	19.39
			4.00	21.23	21.58	19.17
			7.00	22.02	21.99	22.48
		15	0.00	21.12	22.07	22.78

Conducted Power of LTE Band 4						
Bandwidth	Modulation	RB size	RB offset	Channel 19975	Channel 20175	Channel 20375
5MHz	QPSK	1	0.00	22.95	23.78	24.6
			12.00	22.48	24.33	24.71
			24.00	22.05	24.11	23.74
		12	0.00	22.14	23.13	23.77
			6.00	23.48	23.17	23.78
			13.00	22.13	23.25	23.65
		25	0.00	22.02	23.22	23.69
	16QAM	1	0.00	21.91	22.77	23.71
			12.00	22.38	23.35	23.58
			24.00	21.89	23.04	23.10
		12	0.00	20.83	21.76	22.84
			6.00	20.83	21.86	22.81
			13.00	20.86	21.95	22.41
		25	0.00	21.25	22.05	22.83
Bandwidth	Modulation	RB size	RB offset	Channel 20000	Channel 20175	Channel 20350
10MHz	QPSK	1	0.00	23.10	24.14	24.09
			24.00	23.55	23.59	25.32
			49.00	22.99	24.2	23.63
		25	0.00	22.13	24.8	23.83
			12.00	22.17	23.58	23.79
			25.00	22.21	23.3	23.76
		50	0.00	22.23	23.15	23.79
	16QAM	1	0.00	22.46	22.75	23.11
			24.00	22.8	22.91	24.4
			49.00	22.53	22.97	23.88
		25	0.00	21.15	22.18	23.91
			12.00	21.20	22.36	23.95
			25.00	21.18	22.52	23.98
		50	0.00	21.25	22.09	24.01

Conducted Power of LTE Band 4						
Bandwidth	Modulation	RB size	RB offset	Channel 20025	Channel 20175	Channel 20325
15MHz	QPSK	1	0.00	24.04	23.50	23.77
			37.00	24.07	24.53	25.04
			74.00	22.63	24.15	23.32
		36	0.00	22.22	22.05	23.82
			18.00	22.29	23.69	23.81
			39.00	22.31	23.35	23.84
		75	0.00	22.14	23.17	23.78
	16QAM	1	0.00	22.05	22.61	22.99
			37.00	21.96	23.25	24.28
			74.00	21.87	23.01	22.67
		36	0.00	21.78	22.01	22.84
			18.00	21.7	22.27	22.82
			39.00	21.27	22.43	22.85
		75	0.00	21.14	22.00	22.68
Bandwidth	Modulation	RB size	RB offset	Channel 20050	Channel 20175	Channel 20300
20MHz	QPSK	1	0.00	22.88	23.12	**25.15**
			49.00	23.43	23.14	24.60
			99.00	23.21	23.05	23.54
		50	0.00	23.30	22.78	**23.76**
			25.00	23.38	22.58	23.70
			50.00	23.47	23.01	24.12
		100	0.00	23.55	23.54	23.87
	16QAM	1	0.00	23.64	24.15	23.14
			49.00	23.72	23.02	23.25
			99.00	23.80	22.93	22.78
		50	0.00	23.89	21.82	21.58
			25.00	23.97	22.23	22.75
			50.00	24.06	22.48	22.36
		100	0.00	22.25	22.16	22.98

LTE Band 5

Conducted Power of LTE Band 5						
Bandwidth	Modulation	RB size	RB offset	Channel 20407	Channel 20525	Channel 20643
1.4MHz	QPSK	1	0.00	23.67	23.70	23.42
			3.00	24.02	23.76	23.47
			5.00	23.84	23.73	23.35
		3	0.00	23.69	23.86	23.67
			2.00	23.76	24.03	23.67
			3.00	23.75	23.89	23.66
		6	0.00	22.74	22.88	22.80
	16QAM	1	0.00	22.66	22.65	22.39
			2.00	23.00	22.71	22.52
			5.00	22.95	22.61	22.39
		3	0.00	22.81	23.04	22.83
			1.00	22.81	23.05	22.84
			2.00	22.87	22.96	22.70
		6	0.00	21.85	21.96	21.79
Bandwidth	Modulation	RB size	RB offset	Channel 20415	Channel 20525	Channel 20635
3MHz	QPSK	1	0.00	23.73	23.73	23.66
			7.00	24.01	24.06	23.73
			14.00	23.77	23.88	23.51
		8	0.00	21.70	22.84	22.90
			4.00	22.58	22.83	22.68
			7.00	21.64	22.93	22.66
		15	0.00	21.67	22.85	22.69
	16QAM	1	0.00	22.50	22.69	22.56
			7.00	22.46	23.05	22.56
			14.00	22.32	22.63	22.30
		8	0.00	22.19	21.73	21.99
			4.00	20.97	21.96	21.87
			7.00	21.80	21.82	21.79
		15	0.00	22.17	21.78	21.87

Conducted Power of LTE Band 5						
Bandwidth	Modulation	RB size	RB offset	Channel 20425	Channel 20525	Channel 20625
5MHz	QPSK	1	0.00	23.69	23.35	23.47
			12.00	24.55	24.08	23.61
			24.00	23.73	23.73	23.37
		12	0.00	22.75	22.77	22.81
			6.00	22.82	22.88	22.77
			13.00	22.73	22.81	22.56
		25	0.00	22.73	22.84	22.74
	16QAM	1	0.00	23.00	22.46	22.66
			12.00	23.00	22.95	22.86
			24.00	22.28	22.54	22.03
		12	0.00	21.73	21.54	21.79
			6.00	21.77	21.69	21.79
			13.00	21.78	21.64	21.45
		25	0.00	21.90	21.81	21.63
Bandwidth	Modulation	RB size	RB offset	Channel 20450	Channel 20525	Channel 20600
10MHz	QPSK	1	0.00	23.73	23.79	23.77
			24.00	23.93	24.08	**24.13**
			49.00	23.66	23.78	23.53
		25	0.00	21.81	22.82	**22.87**
			12.00	22.90	22.93	22.83
			25.00	21.90	22.91	22.63
		50	0.00	21.84	22.85	22.75
	16QAM	1	0.00	21.50	22.51	22.65
			24.00	22.71	22.70	22.93
			49.00	22.50	22.49	22.03
		25	0.00	22.00	21.80	21.95
			12.00	21.12	22.14	21.83
			25.00	21.07	22.09	21.64
		50	0.00	21.75	21.79	21.68

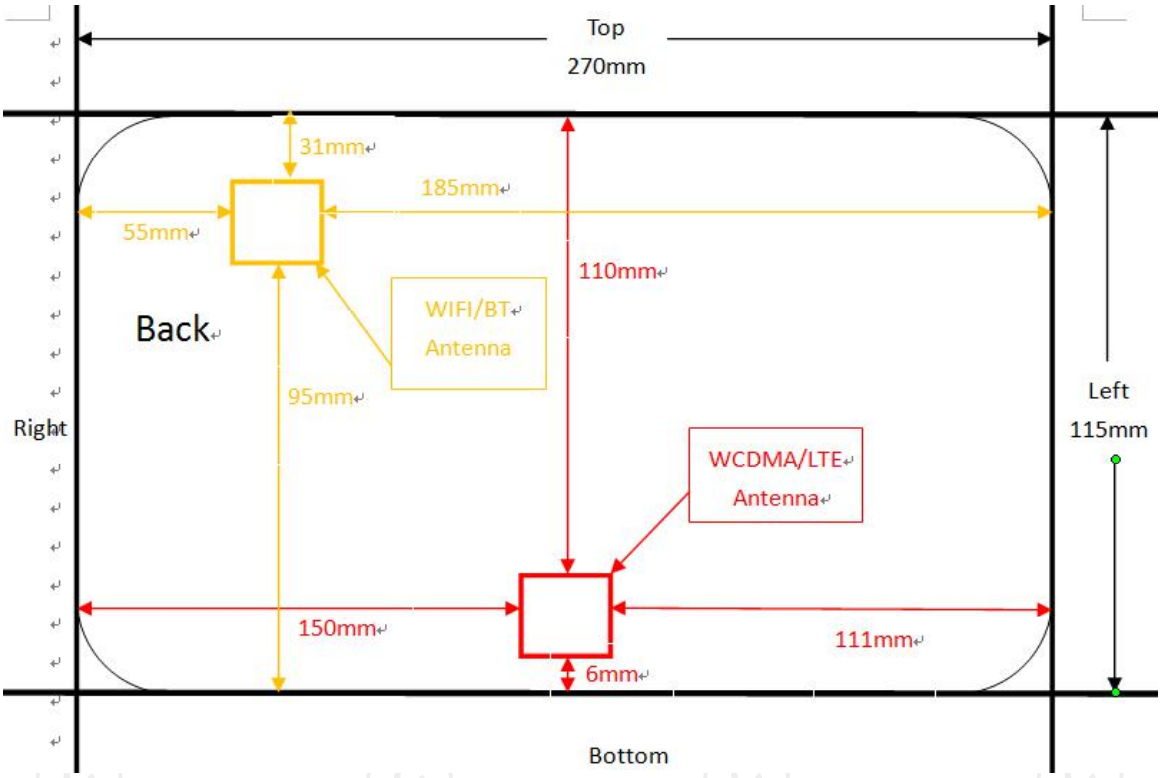
LTE Band 7

Conducted Power of LTE Band 7						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20775	21100	21425
5MHz	QPSK	1	0.00	21.35	22.79	23.46
			13.00	21.53	23.10	23.58
			24.00	21.39	22.89	22.40
		12	0.00	20.65	22.08	22.72
			6.00	20.63	22.07	22.75
			13.00	20.63	21.99	22.72
		25	0.00	20.54	22.02	22.70
	16QAM	1	0.00	20.28	21.87	22.58
			13.00	20.77	22.47	22.66
			24.00	20.42	21.78	21.92
		12	0.00	19.47	21.03	21.86
			6.00	19.47	21.08	21.85
			13.00	19.48	20.88	21.59
		25	0.00	19.61	21.21	21.83
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20800	21100	21400
10MHz	QPSK	1	0.00	21.48	22.88	23.03
			25.00	21.97	23.10	23.93
			49.00	21.96	22.40	22.22
		25	0.00	20.70	21.97	22.65
			13.00	20.82	22.02	22.64
			25.00	20.97	21.95	22.69
		50	0.00	20.79	22.04	22.66
	16QAM	1	0.00	21.02	21.86	22.17
			25.00	21.78	22.05	22.44
			49.00	21.48	21.43	21.59
		25	0.00	19.73	21.12	21.95
			13.00	19.87	21.10	21.88
			25.00	20.01	20.98	21.68
		50	0.00	19.86	21.01	21.71

Conducted Power of LTE Band 7						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20825	21100	21375
15MHz	QPSK	1	0.00	21.50	22.65	21.86
			38.00	22.18	22.96	23.85
			74.00	22.42	21.72	21.97
		36	0.00	20.75	22.01	22.54
			18.00	20.94	22.07	22.65
			39.00	21.10	22.06	22.66
		75	0.00	20.87	22.08	22.70
	16QAM	1	0.00	20.83	22.13	21.03
			38.00	22.01	22.54	22.95
			74.00	22.18	21.02	21.33
		36	0.00	19.72	21.05	21.65
			18.00	19.91	21.14	21.94
			39.00	20.06	21.00	21.75
		75	0.00	19.93	21.15	21.54
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20850	21100	21350
20MHz	QPSK	1	0.00	20.60	22.80	20.47
			50.00	22.14	22.94	**22.97**
			99.00	22.43	21.06	21.53
		50	0.00	20.77	21.89	22.26
			25.00	21.10	22.08	**22.65**
			50.00	21.32	22.07	22.83
		100	0.00	21.05	22.05	22.61
	16QAM	1	0.00	19.90	21.91	19.83
			50.00	21.07	22.06	22.33
			99.00	21.31	20.44	20.95
		50	0.00	19.79	20.93	21.52
			25.00	20.29	21.03	21.75
			50.00	20.53	20.88	21.91
		100	0.00	20.09	21.10	21.57

9. Exposure Position Consideration

9.1. EUT Antenna Location



9.2. Test Position Consideration

Test Positions						
Mode	**Back**	**Front**	**Top Side**	**Bottom Side**	**Right Side**	**Left Side**
GSM/WCDMA/CDMA /LTE	Yes	Yes	**No**	Yes	**No**	**No**
WIFI/BT	Yes	Yes	**No**	**No**	**No**	**No**

Note:

1. KDB 447498 D01v06, particular DUT edges were not required to be evaluated for SAR if the antenna-to-edge distance is greater than 2.5cm.

10. SAR Test Results Summary

10.1. Body-Worn 1g SAR Data

Band	Mode	Test Position with 10mm	CH.	Freq. (MHz)	Ave. Power (dBm)	Tune-Up Limit (dBm)	Power Drift (%)	Meas. SAR1g (W/kg)	Scaling Factor	Reported SAR1g (W/kg)	Limit (W/Kg)
WCDMA Band II	RMC	Front	9538	1907.60	23.30	23.50	-1.82	0.20	1.047	0.21	
		Back	9538	1907.60	23.30	23.50	1.43	0.34	1.047	**0.36**	
WCDMA Band IV	RMC	Front	1312	1712.40	23.27	23.50	-2.98	0.36	1.054	0.38	
		Back	1312	1712.40	23.27	23.50	0.33	0.55	1.054	**0.58**	
WCDMA Band V	RMC	Front	4132	826.40	24.30	24.50	-0.15	0.13	1.047	0.14	
		Back	4132	826.40	24.30	24.50	-0.92	0.21	1.047	**0.22**	
2.4G	802.11g	Front	1	2412	16.14	16.50	-1.62	0.13	1.086	0.14	
		Back	1	2412	16.14	16.50	1.01	0.22	1.086	**0.24**	

Band	Mode	Test Position with 10mm	CH.	Freq. (MHz)	RB allocation	RB offset	Ave. Power (dBm)	Tune-Up Limit (dBm)	Power Drift (%)	Meas. SAR1g (W/kg)	Scaling Factor	Reported SAR1g (W/kg)
LTE Band 2	QPSK (20MHz)	Front	18900	1880	1	49	24.75	25.00	0.41	0.23	1.059	0.24
					50	25	23.25	23.50	-0.62	0.21	1.059	0.22
		Back	18900	1880	1	49	24.75	25.00	-2.77	0.37	1.059	**0.39**
					50	25	23.25	23.50	0.67	0.35	1.059	0.37
LTE Band 4	QPSK (20MHz)	Front	20300	1745	1	0	25.15	25.50	2.41	0.19	1.084	0.21
					50	0	23.76	24.00	-1.20	0.17	1.057	0.18
		Back	20300	1745	1	0	25.15	25.50	1.27	0.31	1.084	**0.34**
					50	0	23.76	24.00	2.44	0.29	1.057	0.31
LTE Band 5	QPSK (10MHz)	Front	20600	844	1	24	24.13	24.50	2.07	0.16	1.089	0.17
					25	0	22.87	23.00	-1.34	0.14	1.030	0.14
		Back	20600	844	1	24	24.13	24.50	-1.16	0.23	1.089	**0.25**
					25	0	22.87	23.00	2.81	0.21	1.030	0.22
LTE Band 7	QPSK (20MHz)	Front	21350	2560	1	50	22.97	23.00	1.06	0.17	1.007	0.17
					50	25	22.65	23.00	1.66	0.15	1.084	0.16
		Back	21350	2560	1	50	22.97	23.00	-1.37	0.25	1.007	**0.25**
					50	25	22.65	23.00	2.64	0.23	1.084	0.25
					50	0	22.61	23.00	2.06	0.13	1.094	0.14

Note:

1. Per KDB 447498 D01 v06, for each exposure position, if the highest output power channel Reported SAR ≤ 0.8W/kg, other channels SAR testing is not necessary.
2. Per KDB 447498 D01 v06, body-worn use is evaluated with the device positioned at 10 mm from a flat phantom filled with head tissue-equivalent medium.
3. Per KDB 447498 D01 v06, the report SAR is measured SAR value adjusted for maximum tune-up tolerance. Scaling Factor=10^[(tune-up limit power(dBm) - Ave.power power (dBm))/10], where tune-up limit is the maximum rated power among all production units.
   Reported SAR(W/kg)=Measured SAR (W/kg)*Scaling Factor.
4. Per KDB865664D01 v01r04 perform a second repeated measurement only the ratio of largest to smallest SAR for the original and first repeated measurement is >1.20 or when the original or repeated measurement is ⩾1.45W/kg.
5. Perform a second measurement only if the original, first and second repeated measurement is ⩾1.5w/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurement is >1.20.

10.2. Hotspot 1g SAR Data

Band	Mode	Test Position with10mm	CH.	Freq. (MHz)	Ave. Power (dBm)	Tune-Up Limit (dBm)	Power Drift (%)	Meas. SAR1g (W/kg)	Scaling Factor	Reported SAR1g (W/kg)	Limit (W/Kg)
WCDMA Band II	RMC	Front	9538	1907.6	23.30	23.50	2.55	0.23	1.047	0.24	
		Back	9538	1907.6	23.30	23.50	-0.83	0.35	1.047	**0.37**	
		Bottom	9538	1907.6	23.30	23.50	-2.69	0.03	1.047	0.03	
WCDMA Band IV	RMC	Front	1312	1712.4	23.27	23.50	2.09	0.37	1.054	0.39	
		Back	1312	1712.4	23.27	23.50	-1.31	0.56	1.054	**0.59**	
		Bottom	1312	1712.4	23.27	23.50	-2.66	0.02	1.054	0.02	
WCDMA Band V	RMC	Front	1312	1712.4	23.27	23.50	-0.64	0.16	1.054	0.17	
		Back	1312	1712.4	23.27	23.50	2.28	0.23	1.054	**0.24**	
		Bottom	1312	1712.4	23.27	23.50	-3.04	0.02	1.054	0.02	
2.4G	802.11b	Front	1	2412	16.14	16.50	2.11	0.15	1.086	0.16	
		Back	1	2412	16.14	16.50	-4.11	0.24	1.086	**0.26**	

Band	Mode	Test Position with 10mm	CH.	Freq. (MHz)	RB allocation	RB offset	Ave. Power (dBm)	Tune-Up Limit (dBm)	Power Drift (%)	Meas. SAR1g (W/kg)	Scaling Factor	Reported SAR1g (W/kg)
LTE Band 2	QPSK (20MHz)	Front	18900	1880	1	49	24.75	25.00	1.61	0.25	1.059	0.26
					50	25	23.25	23.50	-2.66	0.23	1.059	0.24
		Back	18900	1880	1	49	24.75	25.00	1.03	0.41	1.059	**0.43**
					50	25	23.25	23.50	-2.60	0.39	1.059	0.41
		Bottom	18900	1880	1	49	24.75	25.00	4.09	0.03	1.059	0.03
					50	25	23.25	23.50	1.16	0.01	1.059	0.01
LTE Band 4	QPSK (20MHz)	Front	20300	1745	1	0	25.15	25.50	-1.24	0.19	1.084	0.21
					50	0	23.76	24.00	2.10	0.16	1.057	0.17
		Back	20300	1745	1	0	25.15	25.50	-1.15	0.39	1.084	**0.42**
					50	0	23.76	24.00	-3.99	0.36	1.057	0.38
		Bottom	20300	1745	1	0	25.15	25.50	4.13	0.02	1.084	0.02
					50	0	23.76	24.00	-2.40	0.01	1.057	0.01
LTE Band 5	QPSK (10MHz)	Front	20600	844	1	24	24.13	24.50	2.64	0.12	1.089	0.13
					25	0	22.87	23.00	-2.97	0.09	1.030	0.09
		Back	20600	844	1	24	24.13	24.50	-1.16	0.23	1.089	**0.25**
					25	0	22.87	23.00	0.91	0.21	1.030	0.22
		Bottom	20600	844	1	24	24.13	24.50	-1.05	0.03	1.089	0.03
					25	0	22.87	23.00	0.63	0.02	1.030	0.02
LTE Band 7	QPSK (5MHz)	Front	21350	2560	1	50	22.97	23.00	0.26	0.18	1.007	0.18
					50	25	22.65	23.00	1.62	0.16	1.084	0.17
		Back	21350	2560	1	50	22.97	23.00	-1.18	0.27	1.007	**0.27**
					50	25	22.65	23.00	-0.51	0.25	1.084	0.27
		Bottom	21350	2560	1	50	22.97	23.00	-2.30	0.02	1.007	0.02
					50	25	22.65	23.00	2.33	0.01	1.084	0.01
					50	0	22.61	23.00	-3.65	0.01	1.094	0.01

Note:

1. Per KDB 447498 D01 v06, for each exposure position, if the highest output power channel Reported SAR ≤ 0.8W/kg, other channels SAR testing is not necessary.
2. Per KDB 447498 D01 v06, body-worn with hotspot use is evaluated with the device positioned at 10 mm from a flat phantom filled with head tissue-equivalent medium.
3. Per KDB 447498 D01 v06, the report SAR is measured SAR value adjusted for maximum tune-up tolerance. Scaling Factor=10^[(tune-up limit power(dBm) - Ave. power (dBm))/10], where tune-up limit is the maximum rated power among all production units.
   Reported SAR(W/kg)=Measured SAR (W/kg)*Scaling Factor.
4. Per KDB865664D01 v01r04 perform a second repeated measurement only the ratio of largest to smallest SAR for the original and first repeated measurement is >1.20 or when the original or repeated measurement is ⩾1.45W/kg.
5. Perform a second measurement only if the original, first and second repeated measurement is ⩾1.5w/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurement is >1.20.

10.3. Simultaneous Transmission Conclusion

Multi-Band Simultaneous Transmission Considerations

According to FCC KDB Publication 447498 D01v05r02, transmitters are considered to be transmitting simultaneously when there is overlapping transmission, with the exception of transmissions during network hand-offs with maximum hand-off duration less than 30 seconds. Possible transmission paths for the EUT are shown in below Figure and are color-coded to indicate communication modes which share the same path. Modes which share the same transmission path cannot transmit simultaneously with one another.

Simultaneous Transmission Paths

Simultaneous Transmission Procedures

This device contains transmitters that may operate simultaneously. Therefore simultaneous transmission analysis is required. Per FCC KDB 447498 D01v05r02, simultaneous transmission SAR test exclusion may be applied when the sum of the 1-g SAR for all the simultaneous transmitting antennas in a specific a physical test configuration is ≤ 1.6 W/kg. When standalone SAR is not required to be measured, per FCC KDB 447498 D01v05r02 4.3.2.2), the following equation must be used to estimate the standalone 1g SAR and 10g extremity SAR for simultaneous transmission assessment involving that transmitter.

$$\text{Estimated SAR} = \frac{\sqrt{f(GHz)}}{7.5(18.75)} \cdot \frac{\text{Max. power of channel, mW}}{\text{Min. Separation Distance, mm}}$$

Mode	Max. tune-up Power (dBm)	Exposure Position	Head	Body -worn
		Test Distance (mm)	5	5
BT	7.00	Estimated SAR (W/kg)	/	0.21

Note:

1. When the minimum *test separation distance* is < 5 mm, a distance of 5 mm according is applied to determine estimated SAR.
2. (max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f(GHz)/x] W/kg for test separation distances ≤ 5 mm; where x = 7.5 for 1-g SAR, and x = 18.75 for 10-g SAR.
3. Next to the mouth exposure requires 1-g SAR, and the wrist-worn condition requires 10-g extremity SAR.

Simultaneous Transmission Possibilities

The Simultaneous Transmission Possibilities of this device are as below:

NO.	Configuration	Head	Body-Worn	Hotspot
1	GSM850/1900(Voice)+WIFI(2.4)	NO	NO	NO
2	GPRS 850/1900(DATA)+WIFI(2.4)	NO	NO	NO
3	WCDMA+ WIFI(2.4)	NO	YES	YES
4.	LTE+WIFI(2.4)	NO	YES	YES
5.	GSM850/1900(Voice)+BT	NO	NO	NO
6	GPRS/EDGE 850/1900(DATA)+BT	NO	NO	NO
7.	WCDMA+ BT	NO	YES	YES
8.	LTE+BT	NO	YES	YES

10.4. SAR Simultaneous Transmission Analysis

Band	Test Position	Scaled SAR			Σ SAR (W/kg)	SPLSR	Remark
		Body-Worn	WIFI 2.4G	BT			
WCDMA Band II	Front	0.21	0.14	0.21	0.42	N/A	N/A
	Back	**0.36**	**0.24**	0.21	0.60	N/A	N/A
WCDMA Band IV	Front	0.38	0.14	0.21	0.49	N/A	N/A
	Back	**0.58**	**0.24**	0.21	**0.82**	N/A	N/A
WCDMA Band V	Front	0.14	0.14	0.21	0.35	N/A	N/A
	Back	**0.22**	**0.24**	0.21	0.46	N/A	N/A

Band	Test Position	RB allocation	Scaled			Σ SAR (W/kg)	SPLSR	Remark
			Body-Worn	WIFI 2.4G	Bluetooth			
LTE Band 2 QPSK (20MHz)	Front	1	0.24	0.14	0.21	0.45	N/A	N/A
		50	0.22	0.14	0.21	0.43	N/A	N/A
	Back	1	**0.39**	**0.24**	0.21	0.63	N/A	N/A
		50	0.37	**0.24**	0.21	0.61	N/A	N/A
LTE Band 4 QPSK (20MHz)	Front	1	0.21	0.14	0.21	0.42	N/A	N/A
		50	0.18	0.14	0.21	0.39	N/A	N/A
	Back	1	**0.34**	**0.24**	0.21	0.58	N/A	N/A
		50	0.31	**0.24**	0.21	0.55	N/A	N/A
LTE Band 5 QPSK (10MHz)	Front	1	0.17	0.14	0.21	0.38	N/A	N/A
		25	0.14	0.14	0.21	0.35	N/A	N/A
	Back	1	**0.25**	**0.24**	0.21	0.49	N/A	N/A
		25	0.22	**0.24**	0.21	0.46	N/A	N/A
LTE Band 7 QPSK (20MHz)	Front	1	0.17	0.14	0.21	0.38	N/A	N/A
		50	0.16	0.14	0.21	0.37	N/A	N/A
	Back	1	**0.25**	**0.24**	0.21	0.49	N/A	N/A
		50	0.25	**0.24**	0.21	0.49	N/A	N/A

Band	Test Position	Scaled SAR		Σ SAR (W/kg)	SPLSR	Remark
		Hotspot	WIFI 2.4G			
WCDMA Band II	Front	0.24	0.16	0.40	N/A	N/A
	Back	**0.37**	**0.26**	0.63	N/A	N/A
	Bottom	0.03	/	0.03	N/A	N/A
WCDMA Band IV	Front	0.39	0.16	0.55	N/A	N/A
	Back	**0.59**	**0.26**	**0.85**	N/A	N/A
	Bottom	0.02	/	0.02	N/A	N/A
WCDMA Band V	Front	0.17	0.16	0.33	N/A	N/A
	Back	**0.24**	**0.26**	0.50	N/A	N/A
	Bottom	0.02	/	0.02	N/A	N/A

Band	Test Position	RB allocation	Scaled		Σ SAR (W/kg)	SPLSR	Remark
			Hotspot	WIFI2.4G			
LTE Band 2 QPSK (20MHz)	Front	1	0.26	0.16	0.42	N/A	N/A
		50	0.24	0.16	0.40	N/A	N/A
	Back	1	**0.43**	**0.26**	0.69	N/A	N/A
		50	0.41	**0.26**	0.67	N/A	N/A
	Bottom	1	0.03	/	0.03	N/A	N/A
		50	0.01	/	0.01	N/A	N/A
LTE Band 4 QPSK (20MHz)	Front	1	0.21	0.16	0.37	N/A	N/A
		50	0.17	0.16	0.33	N/A	N/A
	Back	1	**0.42**	**0.26**	0.68	N/A	N/A
		50	0.38	**0.26**	0.64	N/A	N/A
	Bottom	1	0.02	/	0.02	N/A	N/A
		50	0.01	/	0.01	N/A	N/A

LTE Band 5 QPSK (10MHz)	Front	1	0.13	0.16	0.29	N/A	N/A
		25	0.09	0.16	0.25	N/A	N/A
	Back	1	**0.25**	**0.26**	0.51	N/A	N/A
		25	0.22	**0.26**	0.48	N/A	N/A
	Bottom	1	0.03	/	0.03	N/A	N/A
		25	0.02	/	0.02	N/A	N/A
LTE Band 7 QPSK (20MHz)	Front	1	0.18	0.16	0.34	N/A	N/A
		50	0.17	0.16	0.33	N/A	N/A
	Back	1	**0.27**	**0.26**	0.53	N/A	N/A
		50	0.27	**0.26**	0.53	N/A	N/A
	Bottom	1	0.02	/	0.02	N/A	N/A
		50	0.01	/	0.01	N/A	N/A
		50	0.01	/	0.01	N/A	N/A

Simultaneous Transmission Conclusion

The above numerical summed SAR results for all the case simultaneous transmission conditions were below the SAR limit. Therefore, the above analysis is sufficient to determine that simultaneous transmission cases will not exceed the SAR limit and therefore measured volumetric simultaneous SAR summation is not required per FCC KDB Publication 447498 D01v05r02.

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10.5. Measurement Uncertainty (450MHz-3GHz)

UNCERTAINTY EVALUATION FOR HEADSET SAR									
Uncertainty Component	Description	Uncertainty Value(%)	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. 1g(%)	Std. Unc. 10g(%)	v
Measurement system									
Probe calibration	7.2.1	5.8	N	1	1	1	5.8	5.8	∞
Axial isotropy	7.2.1.1	3.5	R	$\sqrt{3}$	$(1-C_p)^{1/2}$	$(1-C_p)^{1/2}$	1.43	1.43	∞
Hemispherical isotropy	7.2.1.1	5.9	R	$\sqrt{3}$	$\sqrt{C_p}$	$\sqrt{C_p}$	2.41	2.41	∞
Boundary Effects	7.2.1.4	1.00	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	7.2.1.2	4.70	R	$\sqrt{3}$	1	1	2.71	2.71	∞
System detection limits	7.2.1.2	1	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Modulation Response	7.2.1.3	3	N	1	1	1	3.00	3.00	∞
Readout Electronics	7.2.1.5	0.5	N	1	1	1	0.50	0.50	∞
Response Time	7.2.1.6	0	R	$\sqrt{3}$	1	1	0.00	0.00	∞
Integration Time	7.2.1.7	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
RF Ambient Conditions-Noise	7.2.3.7	3	R	$\sqrt{3}$	1	1	1.73	1.73	∞
RF Ambient Conditions-Reflection	7.2.3.7	3	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe positioned mechanical Tolerance	7.2.2.1	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Probe positioning with respect to phantom shell	7.2.2.3	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Extrapolation interpolation and integration algorithms for Max.SAR evaluation	7.2.4	2.3	R	1	1	1	1.33	1.33	∞
Test sample related									
Test sample positioning	7.2.2.4.4	2.6	N	1	1	1	2.60	2.60	∞
Device holder uncertainty	7.2.2.4.2 7.2.2.4.3	3	N	1	1	1	3.00	3.00	∞
output power variation-SAR drift measurement	7.2.3.6	5	R	$\sqrt{3}$	1	1	2.89	2.89	∞
SAR scaling	7.2.5	2	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Phantom and tissue parameters									
Phantom uncertainty (shape and thickness tolerances)	7.2.2.2	4	R	$\sqrt{3}$	1	1	2.31	2.31	∞
uncertainty in SAR correction for deviation (in permittivity and conductivity)	7.2.6	2	N	1	1	0.84	2.00	1.68	∞
Liquid conductivity (temperature uncertainty)	7.2.3.5	2.5	N	1	0.78	0.71	1.95	1.78	∞
Liquid conductivity -measurement uncertainty	7.2.3.3	4	N	1	0.23	0.26	0.92	1.04	∞
Liquid permittivity (temperature uncertainty)	7.2.3.5	2.5	N	1	0.78	0.71	1.95	1.78	∞
Liquid permittivity measurement uncertainty	7.2.3.4	5	N	1	0.23	0.26	1.15	1.30	∞
Combined standard uncertainty			RSS				10.83	10.54	
Expanded uncertainty (95%CONFIDENCEINTERVAL			k				21.26	21.08	