

10. Tissue Dielectric Properties

IEEE Std 1528-2003 Table 2

Target Frequency (MHz)	Head	
	ϵ_r	σ (S/m)
300	45.3	0.87
450	43.5	0.87
835	41.5	0.90
900	41.5	0.97
1450	40.5	1.20
1800 – 2000	40.0	1.40
2450	39.2	1.80
2600	39.0	1.96
3000	38.5	2.40

KDB 865664 D01 SAR Measurement 100MHz to 6GHz v01r01

Target Frequency (MHz)	Head		Body	
	ϵ_r	σ (S/m)	ϵ_r	σ (S/m)
150	52.3	0.76	61.9	0.80
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
835	41.5	0.90	55.2	0.97
900	41.5	0.97	55.0	1.05
915	41.5	0.98	55.0	1.06
1450	40.5	1.20	54.0	1.30
1610	40.3	1.29	53.8	1.40
1800 – 2000	40.0	1.40	53.3	1.52
2450	39.2	1.80	52.7	1.95
3000	38.5	2.40	52.0	2.73
5000	36.2	4.45	49.3	5.07
5100	36.1	4.55	49.1	5.18
5200	36.0	4.66	49.0	5.30
5300	35.9	4.76	48.9	5.42
5400	35.8	4.86	48.7	5.53
5500	35.6	4.96	48.6	5.65
5600	35.5	5.07	48.5	5.77
5700	35.4	5.17	48.3	5.88
5800	35.3	5.27	48.2	6.00

10.1. Composition of Ingredients for the Tissue Material Used in the SAR Tests

The following tissue formulations are provided for reference only as some of the parameters have not been thoroughly verified. The composition of ingredients may be modified accordingly to achieve the desired target tissue parameters required for routine SAR evaluation.

Ingredients (% by weight)	Frequency (MHz)									
	450		835		915		1900		2450	
Tissue Type	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body
Water	38.56	51.16	41.45	52.4	41.05	56.0	54.9	40.4	62.7	73.2
Salt (NaCl)	3.95	1.49	1.45	1.4	1.35	0.76	0.18	0.5	0.5	0.04
Sugar	56.32	46.78	56.0	45.0	56.5	41.76	0.0	58.0	0.0	0.0
HEC	0.98	0.52	1.0	1.0	1.0	1.21	0.0	1.0	0.0	0.0
Bactericide	0.19	0.05	0.1	0.1	0.1	0.27	0.0	0.1	0.0	0.0
Triton X-100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.8	0.0
DGBE	0.0	0.0	0.0	0.0	0.0	0.0	44.92	0.0	0.0	26.7
Dielectric Constant	43.42	58.0	42.54	56.1	42.0	56.8	39.9	54.0	39.8	52.5
Conductivity (S/m)	0.85	0.83	0.91	0.95	1.0	1.07	1.42	1.45	1.88	1.78

Salt: 99+% Pure Sodium Chloride Sugar: 98+% Pure Sucrose
 Water: De-ionized, 16 MΩ+ resistivity HEC: Hydroxyethyl Cellulose
 DGBE: 99+% Di(ethylene glycol) butyl ether, [2-(2-butoxyethoxy)ethanol]
 Triton X-100 (ultra pure): Polyethylene glycol mono [4-(1,1, 3, 3-tetramethylbutyl)phenyl]ether

Simulating Liquids for 5 GHz, Manufactured by SPEAG

Ingredients	(% by weight)
Water	78
Mineral oil	11
Emulsifiers	9
Additives and Salt	2

10.2. Tissue Dielectric Parameter Check Results

The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within ± 2°C of the temperature when the tissue parameters are characterized.

The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements. The parameters should be re-measured after each 3 – 4 days of use; or earlier if the dielectric parameters can become out of tolerance; for example, when the parameters are marginal at the beginning of the measurement series.

Tissue dielectric parameters were measured at the low, middle and high frequency of each operating frequency range of the test device.

Tissue Dielectric Parameter Check Results (continued)

Date	Freq. (MHz)	Liquid Parameters	Measured	Target	Delta (%)	Limit ±(%)
2013/8/5	Body 1800	Relative Permittivity (ϵ_r):	51.17	53.30	-4.00	5
		Conductivity (σ):	1.45	1.52	-4.29	5
	Body 1850	Relative Permittivity (ϵ_r):	51.04	53.30	-4.24	5
		Conductivity (σ):	1.50	1.52	-1.25	5
	Body 1910	Relative Permittivity (ϵ_r):	50.93	53.30	-4.45	5
		Conductivity (σ):	1.57	1.52	3.05	5
2013/8/5	Body 900	Relative Permittivity (ϵ_r):	52.67	55.00	-4.24	5
		Conductivity (σ):	1.01	1.05	-4.18	5
	Body 820	Relative Permittivity (ϵ_r):	53.41	55.28	-3.38	5
		Conductivity (σ):	0.92	0.97	-4.75	5
	Body 850	Relative Permittivity (ϵ_r):	53.13	55.16	-3.68	5
		Conductivity (σ):	0.96	0.99	-3.24	5
2013/8/6	Body 900	Relative Permittivity (ϵ_r):	54.18	55.00	-1.50	5
		Conductivity (σ):	1.03	1.05	-2.14	5
	Body 820	Relative Permittivity (ϵ_r):	55.03	55.28	-0.45	5
		Conductivity (σ):	0.94	0.97	-2.45	5
	Body 850	Relative Permittivity (ϵ_r):	54.72	55.16	-0.79	5
		Conductivity (σ):	0.98	0.99	-0.98	5
2013/8/6	Body 1800	Relative Permittivity (ϵ_r):	51.85	53.30	-2.73	5
		Conductivity (σ):	1.54	1.52	1.23	5
	Body 1710	Relative Permittivity (ϵ_r):	52.18	53.54	-2.54	5
		Conductivity (σ):	1.44	1.46	-1.45	5
	Body 1755	Relative Permittivity (ϵ_r):	52.00	53.43	-2.68	5
		Conductivity (σ):	1.49	1.49	-0.13	5
2013/8/7	Body 900	Relative Permittivity (ϵ_r):	54.01	55.00	-1.81	5
		Conductivity (σ):	1.03	1.05	-1.79	5
	Body 824	Relative Permittivity (ϵ_r):	54.75	55.28	-0.95	5
		Conductivity (σ):	0.95	0.97	-1.64	5
	Body 849	Relative Permittivity (ϵ_r):	54.54	55.16	-1.12	5
		Conductivity (σ):	0.98	0.99	-0.67	5
2013/8/7	Body 900	Relative Permittivity (ϵ_r):	56.52	55.00	2.76	5
		Conductivity (σ):	1.06	1.05	1.34	5
	Body 820	Relative Permittivity (ϵ_r):	57.39	55.28	3.83	5
		Conductivity (σ):	0.97	0.97	0.39	5
	Body 850	Relative Permittivity (ϵ_r):	57.04	55.16	3.42	5
		Conductivity (σ):	1.01	0.99	1.90	5
2013/8/8	Body 750	Relative Permittivity (ϵ_r):	55.63	56.35	-1.27	5
		Conductivity (σ):	0.94	0.92	1.91	5
	Body 777	Relative Permittivity (ϵ_r):	55.34	56.27	-1.66	5
		Conductivity (σ):	0.96	0.93	3.68	5
	Body 787	Relative Permittivity (ϵ_r):	55.23	56.24	-1.80	5
		Conductivity (σ):	0.97	0.93	4.25	5

Date	Freq. (MHz)	Liquid Parameters	Measured	Target	Delta (%)	Limit ±(%)
2013/8/8	Body 900	Relative Permittivity (ϵ_r):	56.79	55.00	3.25	5
		Conductivity (σ):	1.00	1.05	-4.68	5
	Body 820	Relative Permittivity (ϵ_r):	57.46	55.28	3.96	5
		Conductivity (σ):	0.92	0.97	-4.52	5
	Body 850	Relative Permittivity (ϵ_r):	57.23	55.16	3.75	5
		Conductivity (σ):	0.95	0.99	-3.40	5
2013/8/9	Body 1800	Relative Permittivity (ϵ_r):	51.55	53.30	-3.28	5
		Conductivity (σ):	1.46	1.52	-3.80	5
	Body 1850	Relative Permittivity (ϵ_r):	51.46	53.30	-3.45	5
		Conductivity (σ):	1.52	1.52	-0.25	5
	Body 1910	Relative Permittivity (ϵ_r):	51.29	53.30	-3.77	5
		Conductivity (σ):	1.58	1.52	3.97	5
2013/8/10	Body 1800	Relative Permittivity (ϵ_r):	52.79	53.30	-0.95	5
		Conductivity (σ):	1.47	1.52	-3.47	5
	Body 1710	Relative Permittivity (ϵ_r):	53.08	53.54	-0.86	5
		Conductivity (σ):	1.39	1.46	-4.97	5
	Body 1755	Relative Permittivity (ϵ_r):	53.05	53.43	-0.72	5
		Conductivity (σ):	1.43	1.49	-4.04	5
	Body 1850	Relative Permittivity (ϵ_r):	52.74	53.30	-1.06	5
		Conductivity (σ):	1.54	1.52	1.11	5
	Body 1910	Relative Permittivity (ϵ_r):	52.68	53.30	-1.17	5
		Conductivity (σ):	1.60	1.52	4.96	5
2013/8/11	Body 1800	Relative Permittivity (ϵ_r):	52.61	53.30	-1.29	5
		Conductivity (σ):	1.46	1.52	-3.74	5
	Body 1850	Relative Permittivity (ϵ_r):	52.56	53.30	-1.38	5
		Conductivity (σ):	1.53	1.52	0.62	5
	Body 1910	Relative Permittivity (ϵ_r):	52.47	53.30	-1.55	5
		Conductivity (σ):	1.59	1.52	4.64	5

Date	Freq. (MHz)	Liquid Parameters		Measured	Target	Delta (%)	Limit ±(%)	
2013/8/12	Body 1800	e'	52.6337	Relative Permittivity (ϵ_r):	52.63	53.30	-1.25	5
		e"	14.5756	Conductivity (σ):	1.46	1.52	-4.03	5
	Body 1710	e'	52.8864	Relative Permittivity (ϵ_r):	52.89	53.54	-1.23	5
		e"	14.5260	Conductivity (σ):	1.38	1.46	-5.50	5
	Body 1755	e'	52.8280	Relative Permittivity (ϵ_r):	52.83	53.43	-1.12	5
		e"	14.5256	Conductivity (σ):	1.42	1.49	-4.82	5
	Body 1850	e'	52.5836	Relative Permittivity (ϵ_r):	52.58	53.30	-1.34	5
		e"	14.8253	Conductivity (σ):	1.53	1.52	0.33	5
	Body 1910	e'	52.4954	Relative Permittivity (ϵ_r):	52.50	53.30	-1.51	5
		e"	14.9334	Conductivity (σ):	1.59	1.52	4.34	5
2013/8/13	Body 750	e'	55.7490	Relative Permittivity (ϵ_r):	55.75	56.35	-1.06	5
		e"	22.8353	Conductivity (σ):	0.95	0.92	3.73	5
	Body 704	e'	56.1809	Relative Permittivity (ϵ_r):	56.18	56.49	-0.54	5
		e"	23.1838	Conductivity (σ):	0.91	0.90	0.45	5
	Body 716	e'	56.0537	Relative Permittivity (ϵ_r):	56.05	56.45	-0.70	5
		e"	23.0941	Conductivity (σ):	0.92	0.91	1.35	5
2013/8/13	Body 900	e'	52.4269	Relative Permittivity (ϵ_r):	52.43	55.00	-4.68	5
		e"	20.1637	Conductivity (σ):	1.01	1.05	-3.90	5
	Body 820	e'	53.1872	Relative Permittivity (ϵ_r):	53.19	55.28	-3.78	5
		e"	20.3838	Conductivity (σ):	0.93	0.97	-4.03	5
	Body 850	e'	52.9228	Relative Permittivity (ϵ_r):	52.92	55.16	-4.05	5
		e"	20.3175	Conductivity (σ):	0.96	0.99	-2.72	5
2013/8/14	Body 1800	e'	53.3909	Relative Permittivity (ϵ_r):	53.39	53.30	0.17	5
		e"	14.4883	Conductivity (σ):	1.45	1.52	-4.60	5
	Body 1850	e'	53.2306	Relative Permittivity (ϵ_r):	53.23	53.30	-0.13	5
		e"	14.6638	Conductivity (σ):	1.51	1.52	-0.76	5
	Body 1915	e'	53.0174	Relative Permittivity (ϵ_r):	53.02	53.30	-0.53	5
		e"	14.8494	Conductivity (σ):	1.58	1.52	4.02	5
2013/8/15	Body 1800	e'	55.3147	Relative Permittivity (ϵ_r):	55.31	53.30	3.78	5
		e"	14.5298	Conductivity (σ):	1.45	1.52	-4.33	5
	Body 1710	e'	51.8157	Relative Permittivity (ϵ_r):	51.82	53.54	-3.21	5
		e"	14.7132	Conductivity (σ):	1.40	1.46	-4.39	5
	Body 1755	e'	51.5867	Relative Permittivity (ϵ_r):	51.59	53.42	-3.43	5
		e"	14.7950	Conductivity (σ):	1.44	1.49	-3.21	5
	Body 1850	e'	55.2310	Relative Permittivity (ϵ_r):	55.23	53.30	3.62	5
		e"	14.8407	Conductivity (σ):	1.53	1.52	0.43	5
	Body 1915	e'	55.1352	Relative Permittivity (ϵ_r):	55.14	53.30	3.44	5
		e"	14.9553	Conductivity (σ):	1.59	1.52	4.77	5

11. System Performance Check

SAR system verification is required to confirm measurement accuracy, according to the tissue dielectric media, probe calibration points and other system operating parameters required for measuring the SAR of a test device. The system verification must be performed for each frequency band and within the valid range of each probe calibration point required for testing the device. The same SAR probe(s) and tissue-equivalent media combinations used with each specific SAR system for system verification must be used for device testing. When multiple probe calibration points are required to cover substantially large transmission bands, independent system verifications are required for each probe calibration point. A system verification must be performed before each series of SAR measurements using the same probe calibration point and tissue-equivalent medium. Additional system verification should be considered according to the conditions of the tissue-equivalent medium and measured tissue dielectric parameters, typically every three to four days when the liquid parameters are remeasured or sooner when marginal liquid parameters are used at the beginning of a series of measurements.

11.1. System Performance Check Measurement Conditions

- The measurements were performed in the flat section of the TWIN SAM or ELI phantom, shell thickness: 2.0 ± 0.2 mm (bottom plate) filled with Body or Head simulating liquid of the following parameters.
- The depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm ± 0.5 cm for SAR measurements.
- The DASY system with an E-Field Probe was used for the measurements.
- The dipole was mounted on the small tripod so that the dipole feed point was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10 mm (above 3GHz), 12 mm (1GHz to 3GHz) and 15 mm (below 1 GHz) from dipole center to the simulating liquid surface.
- The coarse grid with a grid spacing of 12 mm (1GHz to 3GHz) and 15 mm (below 1GHz) was aligned with the dipole.
 For 5 GHz band - The coarse grid with a grid spacing of 10 mm was aligned with the dipole.
- Special 7x7x7 (below 3 GHz) and/or 8x8x7 (above 3 GHz) fine cube was chosen for the cube.
- Distance between probe sensors and phantom surface was set to 3 mm.
 For 5 GHz band - Distance between probe sensors and phantom surface was set to 2.5 mm
- The dipole input power (forward power) was 100 mW(For 5GHz band) or 250 mW(For other band).
- The results are normalized to 1 W input power.
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11.2. Reference SAR Values for System Performance Check

The reference SAR values can be obtained from the calibration certificate of system validation dipoles

System Dipole	Serial No.	Cal. Date	Freq. (MHz)	Target SAR Values (mW/g)		
				1g/10g	Head	Body
D750v3	1058	05/10/2012	750	1g	8.44	8.88
				10g	5.53	5.84
D900v2	155	12/06/2010	900	1g	10.8	11.0
				10g	6.92	7.08
D1800v2	5d043	12/09/2010	1900	1g	38.4	37.4
				10g	20.2	19.9

11.3. System Performance Check Results

The 1-g and 10-g SAR measured with a reference dipole, using the required tissue-equivalent medium at the test frequency, must be within 10% of the manufacturer calibrated dipole SAR target.

Date Tested	System Dipole		T.S. Liquid	Measured Results		Target (Ref. Value)	Delta $\pm 10\%$	
	Type	Serial #		Zoom Scan	Normalize to 1 W			
8/5/2013	D1800V2	2d040	Body	1g	9.33	37.3	37.4	-0.21
				10g	4.99	20.0	19.9	0.30
8/5/2013	D900V2	155	Body	1g	2.52	10.08	11.00	-8.36
				10g	1.64	6.56	7.08	-7.34
8/6/2013	D900V2	155	Body	1g	2.52	10.08	11.00	-8.36
				10g	1.64	6.56	7.08	-7.34
8/6/2013	D1800V2	2d040	Body	1g	10.20	40.8	37.4	9.09
				10g	5.43	21.7	19.9	9.15
8/7/2013	D900V2	155	Body	1g	2.62	10.48	11.00	-4.73
				10g	1.69	6.76	7.08	-4.52
8/7/2013	D900V2	155	Body	1g	2.60	10.40	11.00	-5.45
				10g	1.69	6.76	7.08	-4.52
8/8/2013	D750V3	1058	Body	1g	2.00	8.0	8.88	-9.91
				10g	1.33	5.32	5.84	-8.90
8/8/2013	D900V2	155	Body	1g	2.49	9.96	11.00	-9.45
				10g	1.63	6.52	7.08	-7.91
8/9/2013	D1800V2	2d040	Body	1g	9.83	39.3	37.4	5.13
				10g	5.24	21.0	19.9	5.33
8/10/2013	D1800V2	2d040	Body	1g	9.57	38.3	37.4	2.35
				10g	5.12	20.5	19.9	2.91
8/11/2013	D1800V2	2d040	Body	1g	9.31	37.2	37.4	-0.43
				10g	4.92	19.7	19.9	-1.11
8/12/2013	D1800V2	2d040	Body	1g	10.10	40.4	37.4	8.02
				10g	5.33	21.3	19.9	7.14
8/13/2013	D750V3	1058	Body	1g	2.06	8.2	8.88	-7.21
				10g	1.37	5.48	5.84	-6.16
8/13/2013	D900V2	155	Body	1g	2.49	9.96	11.00	-9.45
				10g	1.62	6.48	7.08	-8.47
8/14/2013	D1800V2	2d040	Body	1g	9.69	38.76	38.1	1.73
				10g	5.14	20.56	19.8	3.84
8/15/2013	D1800V2	2d040	Body	1g	9.76	39.04	38.1	2.47
				10g	5.20	20.80	19.8	5.05

12. SAR Test Results

12.1. Standalone SAR Test Exclusion Considerations

Standalone SAR test exclusion was based upon the following criteria:

1. According to KDB 447498 § 4.1.5 if the antenna is at close proximity to user then the outer surface of the DUT should be treated as the radiating surface. The test separation distance is then determined by the smallest distance between the outer surface of the device and the user. For the purposes of this report close proximity has been defined as closer than 50 mm. For antennas <50 mm from the rear or edge the separation distance used for the SAR exclusion calculations is 0mm.
2. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.
3. If the antenna to DUT adjacent edge or bottom separation distance is >50mm the actual antenna to user separation distance is used to determine SAR exclusion and estimated SAR value
4. Reduced power does not apply for edges 2, 3, 4 and Rear.

12.1.1. SAR Test Exclusion Calculations for antennas <50mm to adjacent edges

Antenna	Tx	Frequency (MHz)	Output power		Separation distances (mm)							Calculated Threshold Value						
			dBm	mW	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Edge 4 45 degree tilt	Front	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Edge 4 45 degree tilt	Front
Full Power 3G - distances include sensor triggering distance for edge 1 (16mm)																		
3G Main	GSM850	848.8	27.5	560	0	16	200.6	210.9	0	140		103.2	103.2	> 50 mm	> 50 mm	103.2	> 50 mm	N/A
3G Main	GSM1900	1909.8	24.5	281	0	16	200.6	210.9	0	140		77.7	77.7	> 50 mm	> 50 mm	77.7	> 50 mm	N/A
3G Main	WCDMA V	846.6	24.0	251	0	16	200.6	210.9	0	140		46.2	46.2	> 50 mm	> 50 mm	46.2	> 50 mm	N/A
3G Main	WCDMA IV	1752.6	24.0	251	0	16	200.6	210.9	0	140		66.5	66.5	> 50 mm	> 50 mm	66.5	> 50 mm	N/A
3G Main	WCDMA II	1907.6	24.0	251	0	16	200.6	210.9	0	140		69.3	69.3	> 50 mm	> 50 mm	69.3	> 50 mm	N/A
3G Main	CDMA BC0	848.3	25.0	316	0	16	200.6	210.9	0	140		58.2	58.2	> 50 mm	> 50 mm	58.2	> 50 mm	N/A
3G Main	CDMA BC1	1908.8	25.0	316	0	16	200.6	210.9	0	140		87.3	87.3	> 50 mm	> 50 mm	87.3	> 50 mm	N/A
3G Main	CDMA BC10	822.75	25.0	316	0	16	200.6	210.9	0	140		57.3	57.3	> 50 mm	> 50 mm	57.3	> 50 mm	N/A
3G Main	LTE 2	1909.2	24.0	251	0	16	200.6	210.9	0	140		69.4	69.4	> 50 mm	> 50 mm	69.4	> 50 mm	N/A
3G Main	LTE 4	1754.2	24.0	251	0	16	200.6	210.9	0	140		66.5	66.5	> 50 mm	> 50 mm	66.5	> 50 mm	N/A
3G Main	LTE 5	848.2	24.0	251	0	16	200.6	210.9	0	140		46.2	46.2	> 50 mm	> 50 mm	46.2	> 50 mm	N/A
3G Main	LTE 13	784.5	24.0	251	0	16	200.6	210.9	0	140		44.5	44.5	> 50 mm	> 50 mm	44.5	> 50 mm	N/A
3G Main	LTE 17	713.5	24.0	251	0	16	200.6	210.9	0	140		42.4	42.4	> 50 mm	> 50 mm	42.4	> 50 mm	N/A
3G Main	LTE 25	1914.2	24.0	251	0	16	200.6	210.9	0	140		69.5	69.5	> 50 mm	> 50 mm	69.5	> 50 mm	N/A
Reduction Power 3G																		
3G Main	GSM850	848.8	23.5	223		0						N/A	41.1	N/A	N/A	N/A	N/A	N/A
3G Main	GSM1900	1909.8	18.3	67		0						N/A	18.5	N/A	N/A	N/A	N/A	N/A
3G Main	WCDMA V	846.6	19.5	89		0						N/A	16.4	N/A	N/A	N/A	N/A	N/A
3G Main	WCDMA IV	1752.6	18.6	72		0						N/A	19.1	N/A	N/A	N/A	N/A	N/A
3G Main	WCDMA II	1907.6	16.1	41		0						N/A	11.3	N/A	N/A	N/A	N/A	N/A
3G Main	CDMA BC0	848.3	19.7	93		0						N/A	17.1	N/A	N/A	N/A	N/A	N/A
3G Main	CDMA BC1	1908.8	15.5	35		0						N/A	9.7	N/A	N/A	N/A	N/A	N/A
3G Main	CDMA BC10	822.75	19.5	89		0						N/A	16.1	N/A	N/A	N/A	N/A	N/A
3G Main	LTE 2	1909.2	15.9	39		0						N/A	10.8	N/A	N/A	N/A	N/A	N/A
3G Main	LTE 4	1754.2	18.2	66		0						N/A	17.5	N/A	N/A	N/A	N/A	N/A
3G Main	LTE 5	848.2	20.3	107		0						N/A	19.7	N/A	N/A	N/A	N/A	N/A
3G Main	LTE 13	784.5	20.7	117		0						N/A	20.7	N/A	N/A	N/A	N/A	N/A
3G Main	LTE 17	713.5	20.7	117		0						N/A	19.8	N/A	N/A	N/A	N/A	N/A
3G Main	LTE 25	1914.2	15.6	36		0						N/A	10.0	N/A	N/A	N/A	N/A	N/A

Note(s):

1. According to KDB 447498, if the calculated threshold value is >3 then SAR testing is required.

Conclusion:

As the calculated threshold value is >3 SAR testing is required for the Edge1 at full and reduced power. Testing is required for Rear and Edge 4 at full power.

12.1.2. SAR Test Exclusion Calculations for antennas >50mm to adjacent edges

Antenna	Tx	Frequency (MHz)	Output power		Separation distances (mm)						Calculated Threshold Value							
			dBm	mW	Bottom	Edge 1	Edge 2	Edge 3	Edge 4	Edge 4 45 degree tilt	Front	Bottom	Edge 1	Edge 2	Edge 3	Edge 4	Edge 4 45 degree tilt	Front
Full Power 3G - distances include sensor triggering distance for edge 1 (16mm)																		
3G Main	GSM850	848.8	27.5	560	0	16	200.6	210.9	0	140		< 50 mm	< 50 mm	1015.0	1073.3	< 50 mm	672.1	N/A
3G Main	GSM1900	1909.8	24.5	281	0	16	200.6	210.9	0	140		< 50 mm	< 50 mm	1614.5	1717.5	< 50 mm	1008.5	N/A
3G Main	WCDMA V	846.6	24.0	251	0	16	200.6	210.9	0	140		< 50 mm	< 50 mm	1013.0	1071.1	< 50 mm	671.0	N/A
3G Main	WCDMA IV	1752.6	24.0	251	0	16	200.6	210.9	0	140		< 50 mm	< 50 mm	1619.3	1722.3	< 50 mm	1013.3	N/A
3G Main	WCDMA II	1907.6	24.0	251	0	16	200.6	210.9	0	140		< 50 mm	< 50 mm	1614.6	1717.6	< 50 mm	1008.6	N/A
3G Main	CDMA BC0	848.3	25.0	316	0	16	200.6	210.9	0	140		< 50 mm	< 50 mm	1014.6	1072.8	< 50 mm	671.8	N/A
3G Main	CDMA BC1	1908.8	25.0	316	0	16	200.6	210.9	0	140		< 50 mm	< 50 mm	1614.6	1717.6	< 50 mm	1008.6	N/A
3G Main	CDMA BC10	822.75	25.0	316	0	16	200.6	210.9	0	140		< 50 mm	< 50 mm	991.4	1047.9	< 50 mm	659.0	N/A
3G Main	LTE 2	1909.2	24.0	251	0	16	200.6	210.9	0	140		< 50 mm	< 50 mm	1614.6	1717.6	< 50 mm	1008.6	N/A
3G Main	LTE 4	1754.2	24.0	251	0	16	200.6	210.9	0	140		< 50 mm	< 50 mm	1619.3	1722.3	< 50 mm	1013.3	N/A
3G Main	LTE 5	848.2	24.0	251	0	16	200.6	210.9	0	140		< 50 mm	< 50 mm	1014.5	1072.7	< 50 mm	671.8	N/A
3G Main	LTE 13	784.5	24.0	251	0	16	200.6	210.9	0	140		< 50 mm	< 50 mm	957.0	1010.9	< 50 mm	640.1	N/A
3G Main	LTE 17	713.5	24.0	251	0	16	200.6	210.9	0	140		< 50 mm	< 50 mm	893.9	942.9	< 50 mm	605.7	N/A
3G Main	LTE 25	1914.2	24.0	251	0	16	200.6	210.9	0	140		< 50 mm	< 50 mm	1614.4	1717.4	< 50 mm	1008.4	N/A
Reduction Power 3G																		
3G Main	GSM850	848.8	23.5	223		0						N/A	< 50 mm	N/A	N/A	N/A	N/A	N/A
3G Main	GSM1900	1909.8	18.3	67		0						N/A	< 50 mm	N/A	N/A	N/A	N/A	N/A
3G Main	WCDMA V	846.6	19.5	89		0						N/A	< 50 mm	N/A	N/A	N/A	N/A	N/A
3G Main	WCDMA IV	1752.6	18.6	72		0						N/A	< 50 mm	N/A	N/A	N/A	N/A	N/A
3G Main	WCDMA II	1907.6	16.1	41		0						N/A	< 50 mm	N/A	N/A	N/A	N/A	N/A
3G Main	CDMA BC0	848.3	19.7	93		0						N/A	< 50 mm	N/A	N/A	N/A	N/A	N/A
3G Main	CDMA BC1	1908.8	15.5	35		0						N/A	< 50 mm	N/A	N/A	N/A	N/A	N/A
3G Main	CDMA BC10	822.75	19.5	89		0						N/A	< 50 mm	N/A	N/A	N/A	N/A	N/A
3G Main	LTE 2	1909.2	15.9	39		0						N/A	< 50 mm	N/A	N/A	N/A	N/A	N/A
3G Main	LTE 4	1754.2	18.2	66		0						N/A	< 50 mm	N/A	N/A	N/A	N/A	N/A
3G Main	LTE 5	848.2	20.3	107		0						N/A	< 50 mm	N/A	N/A	N/A	N/A	N/A
3G Main	LTE 13	784.5	20.7	117		0						N/A	< 50 mm	N/A	N/A	N/A	N/A	N/A
3G Main	LTE 17	713.5	20.7	117		0						N/A	< 50 mm	N/A	N/A	N/A	N/A	N/A
3G Main	LTE 25	1914.2	15.6	36		0						N/A	< 50 mm	N/A	N/A	N/A	N/A	N/A

Note(s):

- According to KDB 447498, if the calculated Power threshold is less than the output power then SAR testing is required.

Conclusion:

As the calculated Power Threshold is greater than the DUT output power for Edge2, Edge3 and Edge 4 45 degree tilt, SAR testing is not required

12.2. Estimated SAR for Simultaneous Transmission SAR Analysis

Considerations for using estimated SAR values:

1. According to KDB 447498 § 4.1.5 if the antenna is at close proximity to user then the outer surface of the DUT should be treated as the radiating surface. The test separation distance is then determined by the smallest distance between the outer surface of the device and the user. For the purposes of this report close proximity has been defined as closer than 50 mm. For antennas <50 mm from the rear or edge the separation distance used for the estimated SAR calculations is 0mm.
2. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.
3. Output power is the maximum rated power (including tune-up or manufacturing tolerances) and includes source-based averaging.
4. If the antenna separation distance is > 50mm then the estimated SAR value is 0.4 W/Kg.
5. Formulas round separation distance to nearest mm and power to nearest mW before calculating estimated SAR

12.2.1. Estimated SAR for WWAN

Antenna	Tx	Frequency (MHz)	Output power		Separation distances (mm)							Estimated SAR Value						
			dBm	mW	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Edge 4 45 degree tilt	Front	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Edge 4 45 degree tilt	Front
Full Power 3G - distances include sensor triggering distance for edge 1 (18mm)																		
3G Main	GSM850	848.8	27.5	560	0	16	200.6	210.9	0	140		Measure	Measure	>200 mm	>200 mm	Measure	0.400	N/A
3G Main	GSM1900	1909.8	24.5	281	0	16	200.6	210.9	0	140		Measure	Measure	>200 mm	>200 mm	Measure	0.400	N/A
3G Main	WCDMA V	846.6	24.0	251	0	16	200.6	210.9	0	140		Measure	Measure	>200 mm	>200 mm	Measure	0.400	N/A
3G Main	WCDMA IV	1752.6	24.0	251	0	16	200.6	210.9	0	140		Measure	Measure	>200 mm	>200 mm	Measure	0.400	N/A
3G Main	WCDMA II	1907.6	24.0	251	0	16	200.6	210.9	0	140		Measure	Measure	>200 mm	>200 mm	Measure	0.400	N/A
3G Main	CDMA BC0	848.3	25.0	316	0	16	200.6	210.9	0	140		Measure	Measure	>200 mm	>200 mm	Measure	0.400	N/A
3G Main	CDMA BC1	1908.8	25.0	316	0	16	200.6	210.9	0	140		Measure	Measure	>200 mm	>200 mm	Measure	0.400	N/A
3G Main	CDMA BC10	822.75	25.0	316	0	16	200.6	210.9	0	140		Measure	Measure	>200 mm	>200 mm	Measure	0.400	N/A
3G Main	LTE 2	1909.2	24.0	251	0	16	200.6	210.9	0	140		Measure	Measure	>200 mm	>200 mm	Measure	0.400	N/A
3G Main	LTE 4	1754.2	24.0	251	0	16	200.6	210.9	0	140		Measure	Measure	>200 mm	>200 mm	Measure	0.400	N/A
3G Main	LTE 5	848.2	24.0	251	0	16	200.6	210.9	0	140		Measure	Measure	>200 mm	>200 mm	Measure	0.400	N/A
3G Main	LTE 13	784.5	24.0	251	0	16	200.6	210.9	0	140		Measure	Measure	>200 mm	>200 mm	Measure	0.400	N/A
3G Main	LTE 17	713.5	24.0	251	0	16	200.6	210.9	0	140		Measure	Measure	>200 mm	>200 mm	Measure	0.400	N/A
3G Main	LTE 25	1914.2	24.0	251	0	16	200.6	210.9	0	140		Measure	Measure	>200 mm	>200 mm	Measure	0.400	N/A
Reduction Power 3G																		
3G Main	GSM850	848.8	23.5	223		0						N/A	Measure	>200 mm	>200 mm	N/A	N/A	N/A
3G Main	GSM1900	1909.8	18.3	67		0						N/A	Measure	>200 mm	>200 mm	N/A	N/A	N/A
3G Main	WCDMA V	846.6	19.5	89		0						N/A	Measure	>200 mm	>200 mm	N/A	N/A	N/A
3G Main	WCDMA IV	1752.6	18.6	72		0						N/A	Measure	>200 mm	>200 mm	N/A	N/A	N/A
3G Main	WCDMA II	1907.6	16.1	41		0						N/A	Measure	>200 mm	>200 mm	N/A	N/A	N/A
3G Main	CDMA BC0	848.3	19.7	93		0						N/A	Measure	>200 mm	>200 mm	N/A	N/A	N/A
3G Main	CDMA BC1	1908.8	15.5	35		0						N/A	Measure	>200 mm	>200 mm	N/A	N/A	N/A
3G Main	CDMA BC10	822.75	19.5	89		0						N/A	Measure	>200 mm	>200 mm	N/A	N/A	N/A
3G Main	LTE 2	1909.2	15.9	39		0						N/A	Measure	>200 mm	>200 mm	N/A	N/A	N/A
3G Main	LTE 4	1754.2	18.2	66		0						N/A	Measure	>200 mm	>200 mm	N/A	N/A	N/A
3G Main	LTE 5	848.2	20.3	107		0						N/A	Measure	>200 mm	>200 mm	N/A	N/A	N/A
3G Main	LTE 13	784.5	20.7	117		0						N/A	Measure	>200 mm	>200 mm	N/A	N/A	N/A
3G Main	LTE 17	713.5	20.7	117		0						N/A	Measure	>200 mm	>200 mm	N/A	N/A	N/A
3G Main	LTE 25	1914.2	15.6	36		0						N/A	Measure	>200 mm	>200 mm	N/A	N/A	N/A

Notes:

Since the distance from Edge2 and Edge3 of WWAN antenna to DUT is >200mm, it corresponds to MPE calculation. Refer to section 14 Transmitters used in mobile exposure conditions for simultaneous transmission operations.

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12.3. GSM850

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Edge 1	0	GPRS 2 Slots	128	824.2	26.2	26.03	0.958	0.996	1	
			190	836.6	26.2	25.95	0.867	0.918	2	
			251	848.8	26.2	25.86	0.920	0.995	3	

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Rear	0	GPRS 2 Slots	128	824.2	33.5	32.02	0.480	0.675	4	
			190	836.6	33.5	31.96	0.588	0.838	5	
			251	848.8	33.5	31.90	0.545	0.788	6	
Edge 1	16	GPRS 2 Slots	128	824.2	33.5	32.02	0.817	1.149	7	
			190	836.6	33.5	31.96	0.831	1.185	8	
			251	848.8	33.5	31.90	0.893	1.291	9	
Edge 4	0	GPRS 2 Slots	128	824.2	33.5	32.02				1
			190	836.6	33.5	31.96	0.285	0.406	10	
			251	848.8	33.5	31.90				1

Note(s):

According to KDB 447498 D01 General RF Exposure Guidance v05, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is.

1. ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
2. ≤ 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
3. ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

12.4. GSM1900

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Edge 1	0	GPRS 2 Slots	512	1850.2	21.6	20.60	0.586	0.738	1	
			661	1880.0	21.6	20.79	0.871	1.050	2	
			810	1909.8	21.6	20.80	1.130	1.359	3	

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Rear	0	GPRS 2 Slots	128	1850.2	30.5	28.88				
			190	1880.0	30.5	29.20	0.128	0.173	4	1
			251	1909.8	30.5	29.31				
Edge 1	16	GPRS 2 Slots	128	1850.2	30.5	28.88				
			190	1880.0	30.5	29.20	0.474	0.639	5	1
			251	1909.8	30.5	29.31				
Edge 4	0	GPRS 2 Slots	128	1850.2	30.5	28.88				
			190	1880.0	30.5	29.20	0.353	0.476	6	1
			251	1909.8	30.5	29.31				

Note(s):

According to KDB 447498 D01 General RF Exposure Guidance v05, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is.

1. ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
2. ≤ 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
3. ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

12.5. W-CDMA Band V

Test mode reduction considerations

Per KDB 941225 D01, Body SAR is not required for handsets with HSPA capabilities when the maximum average output of each RF channel with HSUPA/HSDPA active is less than ¼ dB higher than that measured without HSUPA/HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2kbps RMC is ≤ 75% of the SAR limit.

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Edge 1	0	Rel 99 RMC 12.2 kbps	4132	826.4	19.5	19.32	1.06	1.10	1	
			4183	836.6	19.5	19.34	0.938	0.973	2	
			4233	846.6	19.5	19.40	0.936	0.958	3	

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Rear	0	Rel 99 RMC 12.2 kbps	4132	826.4	24.0	22.86				1
			4183	836.6	24.0	22.92	0.219	0.281	4	
			4233	846.6	24.0	22.86				1
Edge 1	16	Rel 99 RMC 12.2 kbps	4132	826.4	24.0	22.86				1
			4183	836.6	24.0	22.92	0.515	0.660	5	
			4233	846.6	24.0	22.86				1
Edge 4	0	Rel 99 RMC 12.2 kbps	4132	826.4	24.0	22.86				1
			4183	836.6	24.0	22.92	0.190	0.244	6	
			4233	846.6	24.0	22.86				1

Note(s):

According to KDB 447498 D01 General RF Exposure Guidance v05, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is.

- ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
- ≤ 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
- ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

12.6. W-CDMA Band IV

Test mode reduction considerations

Per KDB 941225 D01, Body SAR is not required for handsets with HSPA capabilities when the maximum average output of each RF channel with HSUPA/HSDPA active is less than ¼ dB higher than that measured without HSUPA/HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2kbps RMC is ≤ 75% of the SAR limit

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Edge 1	0	Rel 99 RMC 12.2 kbps	1312	1712.4	18.6	17.67	0.813	1.007	1	
			1413	1732.6	18.6	17.57	0.866	1.098	2	1
			1513	1752.6	18.6	17.69	0.967	1.192	3	

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Rear	0	Rel 99 RMC 12.2 kbps	1312	1712.4	24.0	23.17				
			1413	1732.6	24.0	23.16	0.314	0.381	4	1
			1513	1752.6	24.0	23.18				
Edge 1	16	Rel 99 RMC 12.2 kbps	1312	1712.4	24.0	23.17				
			1413	1732.6	24.0	23.16	0.339	0.411	5	1
			1513	1752.6	24.0	23.18				
Edge 4	0	Rel 99 RMC 12.2 kbps	1312	1712.4	24.0	23.17				
			1413	1732.6	24.0	23.16	0.349	0.423	6	1
			1513	1752.6	24.0	23.18				

Note(s):

According to KDB 447498 D01 General RF Exposure Guidance v05, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is.

1. ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
2. ≤ 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
3. ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

The maximum SAR value of WCDMA Band IV is Repeated SAR. Please refer to Section 12.18.

12.7. W-CDMA Band II

Test mode reduction considerations

Per KDB 941225 D01, Body SAR is not required for handsets with HSPA capabilities when the maximum average output of each RF channel with HSUPA/HSDPA active is less than ¼ dB higher than that measured without HSUPA/HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2kbps RMC is ≤ 75% of the SAR limit.

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Edge 1	0	Rel 99 RMC 12.2 kbps	9262	1852.4	16.1	15.26	0.764	0.927	1	
			9400	1880.0	16.1	14.87	0.833	1.106	2	
			9538	1907.6	16.1	14.64	0.939	1.314	3	

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Rear	0	Rel 99 RMC 12.2 kbps	9262	1852.4	24.0	23.21	0.225	0.270	4	
			9400	1880.0	24.0	23.10				1
			9538	1907.6	24.0	23.24				1
Edge 1	16	Rel 99 RMC 12.2 kbps	9262	1852.4	24.0	23.21	0.512	0.614	5	
			9400	1880.0	24.0	23.10				1
			9538	1907.6	24.0	23.24				1
Edge 4	0	Rel 99 RMC 12.2 kbps	9262	1852.4	24.0	23.21	0.428	0.513	6	
			9400	1880.0	24.0	23.10				1
			9538	1907.6	24.0	23.24				1

Note(s):

According to KDB 447498 D01 General RF Exposure Guidance v05, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is.

- ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
- ≤ 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
- ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

12.8. CDMA Band 0

Test mode reduction considerations

Per KDB 941225 D01, Body SAR is not required for handsets with HSPA capabilities when the maximum average output of each RF channel with HSUPA/HSDPA active is less than ¼ dB higher than that measured without HSUPA/HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2kbps RMC is ≤ 75% of the SAR limit.

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-Up Limit	Meas.	Meas.	Scaled		
Edge 1	0	1xRTT (RC3 SO32)	1013	824.7	19.7	19.44	0.996	1.057	1	
			384	836.52	19.7	19.17	1.010	1.141	2	
			777	848.31	19.7	19.16	0.953	1.079	3	
		1xEVDO Rel. 0	1013	824.7	19.7	19.34	0.807	0.877	4	
			384	836.52	19.7	19.05	0.707	0.821	5	
			777	848.31	19.7	19.00	0.767	0.901	6	

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-Up Limit	Meas.	Meas.	Scaled		
Rear	0	1xRTT (RC3 SO32)	1013	824.7	25.0	23.62				1
			384	836.52	25.0	23.64	0.366	0.501	7	
			777	848.31	25.0	23.33				1
		1xEVDO Rel. 0	1013	824.7	25.0	23.43				1
			384	836.52	25.0	23.41	0.351	0.506	8	
			777	848.31	25.0	23.24				1
Edge 1	16	1xRTT (RC3 SO32)	1013	824.7	25.0	23.62				1
			384	836.52	25.0	23.64	0.556	0.760	9	
			777	848.31	25.0	23.33				1
		1xEVDO Rel. 0	1013	824.7	25.0	23.43				1
			384	836.52	25.0	23.41	0.529	0.763	10	
			777	848.31	25.0	23.24				1
Edge 4	0	1xRTT (RC3 SO32)	1013	824.7	25.0	23.62				1
			384	836.52	25.0	23.64	0.201	0.275	11	
			777	848.31	25.0	23.33				1
		1xEVDO Rel. 0	1013	824.7	25.0	23.43				1
			384	836.52	25.0	23.41	0.197	0.284	12	
			777	848.31	25.0	23.24				1

Note(s):

According to KDB 447498 D01 General RF Exposure Guidance v05, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is.

- ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
- ≤ 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
- ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

12.9. CDMA Band 1

Test mode reduction considerations

Per KDB 941225 D01, Body SAR is not required for handsets with HSPA capabilities when the maximum average output of each RF channel with HSUPA/HSDPA active is less than ¼ dB higher than that measured without HSUPA/HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2kbps RMC is ≤ 75% of the SAR limit.

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-Up Limit	Meas.	Meas.	Scaled		
Edge 1	0	1xRTT (RC3 SO32)	25	1851.25	15.5	15.12	0.912	0.995	1	
			600	1880	15.5	15.49	1.250	1.253	2	
			1175	1908.75	15.5	15.24	0.998	1.060	3	
		1xEVDO Rel. 0	25	1851.25	15.5	15.44	1.030	1.044	4	
			600	1880	15.5	15.36	1.190	1.229	5	
			1175	1908.75	15.5	15.11	0.965	1.056	6	

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-Up Limit	Meas.	Meas.	Scaled		
Rear	0	1xRTT (RC3 SO32)	25	1851.25	25.0	24.00				1
			600	1880	25.0	23.87	0.187	0.243	7	
			1175	1908.75	25.0	23.88				1
		1xEVDO Rel. 0	25	1851.25	25.0	23.93				1
			600	1880	25.0	23.80	0.178	0.235	8	
			1175	1908.75	25.0	23.85				1
Edge 1	16	1xRTT (RC3 SO32)	25	1851.25	25.0	24.00	0.636	0.801	9	
			600	1880	25.0	23.87	0.809	1.049	10	
			1175	1908.75	25.0	23.88	0.684	0.885	11	
		1xEVDO Rel. 0	25	1851.25	25.0	23.93	0.627	0.802	12	
			600	1880	25.0	23.80	0.801	1.056	13	
			1175	1908.75	25.0	23.85	0.789	1.028	14	
Edge 4	0	1xRTT (RC3 SO32)	25	1851.25	25.0	24.00				1
			600	1880	25.0	23.87	0.266	0.345	15	
			1175	1908.75	25.0	23.88				1
		1xEVDO Rel. 0	25	1851.25	25.0	23.93				1
			600	1880	25.0	23.80	0.269	0.355	16	
			1175	1908.75	25.0	23.85				1

Note(s):

According to KDB 447498 D01 General RF Exposure Guidance v05, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is.

- ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
- ≤ 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
- ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

12.10. CDMA Band 10

Test mode reduction considerations

Per KDB 941225 D01, Body SAR is not required for handsets with HSPA capabilities when the maximum average output of each RF channel with HSUPA/HSDPA active is less than ¼ dB higher than that measured without HSUPA/HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2kbps RMC is ≤ 75% of the SAR limit.

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-Up Limit	Meas.	Meas.	Scaled		
Edge 1	0	1xRTT (RC3 SO32)	450	817.25	19.5	19.05	0.840	0.932	1	
			560	820	19.5	19.11	0.868	0.950	2	
			670	822.75	19.5	18.90	0.901	1.034	3	
		1xEVDO Rel. 0	450	817.25	19.5	18.84				1
			560	820	19.5	18.99	0.704	0.792	4	
			670	822.75	19.5	18.80				1

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-Up Limit	Meas.	Meas.	Scaled		
Rear	0	1xRTT (RC3 SO32)	450	817.25	25.0	23.52				1
			560	820	25.0	23.45	0.378	0.540	5	
			670	822.75	25.0	23.48				1
		1xEVDO Rel. 0	450	817.25	25.0	23.31				1
			560	820	25.0	23.25	0.336	0.503	6	
			670	822.75	25.0	23.22				1
Edge 1	16	1xRTT (RC3 SO32)	450	817.25	25.0	23.52				1
			560	820	25.0	23.45	0.409	0.584	7	
			670	822.75	25.0	23.48				1
		1xEVDO Rel. 0	450	817.25	25.0	23.31				1
			560	820	25.0	23.25	0.445	0.666	8	
			670	822.75	25.0	23.22				1
Edge 4	0	1xRTT (RC3 SO32)	450	817.25	25.0	23.52				1
			560	820	25.0	23.45	0.199	0.284	9	
			670	822.75	25.0	23.48				1
		1xEVDO Rel. 0	450	817.25	25.0	23.31				1
			560	820	25.0	23.25	0.214	0.320	10	
			670	822.75	25.0	23.22				1

Note(s):

According to KDB 447498 D01 General RF Exposure Guidance v05, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is.

- ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
- ≤ 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
- ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

12.11. LTE Band 2

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Edge 1	0	QPSK	18700	1860	1	49	15.9	15.78	0.748	0.769	1	1
			18900	1880	1	49	15.9	15.77				
			19100	1900	1	99	15.9	15.76				
			18900	1880	50	24	15.9	15.69	0.502	0.527	2	1
			18700	1860	50	49	15.9	15.64				
			19100	1900	50	24	15.9	15.65				
			18700	1860	100	0	15.9	15.61	0.797	0.852	3	1

Note(s):

- Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
 - Beginning with QPSK modulation at the largest channel bandwidth, testing for 1 RB allocation configurations is initially performed for the channel/RB offset combination with the highest output power among 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is < 0.8 W/kg, no further assessment is required for 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is > 0.8 W/kg, the remaining channels are evaluated using the RB offset with the highest output power within the respective channels.
 - For all reported SAR that is > 1.45 W/kg, SAR, SAR is required for the remaining RB offset configurations of the same channel.
 - The same procedures apply to QPSK 50% RB allocation configurations at the largest channel bandwidth.
 - Testing for 100% RB allocation configurations at the largest channel bandwidth is performed for the channel, across low, mid and high, with the highest output power, when the highest reported SAR for either 1 RB or 50% RB is ≥ 0.8 W/kg, or when the maximum output power among 100% RB allocation configurations is greater than the maximum output power among either 1 RB or 50% RB allocation configurations.
 - Testing for the remaining channels in 100% RB allocation configurations is required only when reported SAR for the initial 100% RB allocation configuration is > 1.45 W/kg.
 - Testing for higher order modulations (16-QAM or 64-QAM) is required only when the highest reported SAR for QPSK is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of QPSK.
 - Testing for the other channel bandwidths is required only when the highest reported SAR for the highest channel bandwidth is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of the highest channel bandwidth.
- Plot numbers correspond to the numbers found in the footnotes of Appendix 15.10 "SAR Test Plots for LTE Band 2"

LTE Band 2 Continued

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Rear	0	QPSK	19100	1900	1	99	24.0	22.89	0.065	0.084	4	1
			18700	1860	1	49	24.0	22.86				
			18900	1880	1	0	24.0	22.69				
			19100	1900	50	24	24.0	21.76	0.053	0.089	5	1
			18700	1860	50	49	24.0	21.72				
			18900	1880	50	49	24.0	21.60				
			18900	1880	100	0	24.0	21.64				
Edge 1	16	QPSK	19100	1900	1	99	24.0	22.89	0.467	0.603	6	1
			18700	1860	1	49	24.0	22.86				
			18900	1880	1	0	24.0	22.69				
			19100	1900	50	24	24.0	21.76	0.356	0.596	7	1
			18700	1860	50	49	24.0	21.72				
			18900	1880	50	49	24.0	21.60				
			18900	1880	100	0	24.0	21.64				
Edge 4	0	QPSK	19100	1900	1	99	24.0	22.89	0.153	0.198	8	1
			18700	1860	1	49	24.0	22.86				
			18900	1880	1	0	24.0	22.69				
			19100	1900	50	24	24.0	21.76	0.157	0.263	9	1
			18700	1860	50	49	24.0	21.72				
			18900	1880	50	49	24.0	21.60				
			18900	1880	100	0	24.0	21.64				

Note(s):

- Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
 - Beginning with QPSK modulation at the largest channel bandwidth, testing for 1 RB allocation configurations is initially performed for the channel/RB offset combination with the highest output power among 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is < 0.8 W/kg, no further assessment is required for 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is > 0.8 W/kg, the remaining channels are evaluated using the RB offset with the highest output power within the respective channels.
 - For all reported SAR that is > 1.45 W/kg, SAR, SAR is required for the remaining RB offset configurations of the same channel.
 - The same procedures apply to QPSK 50% RB allocation configurations at the largest channel bandwidth.
 - Testing for 100% RB allocation configurations at the largest channel bandwidth is performed for the channel, across low, mid and high, with the highest output power, when the highest reported SAR for either 1 RB or 50% RB is ≥ 0.8 W/kg, or when the maximum output power among 100% RB allocation configurations is greater than the maximum output power among either 1 RB or 50% RB allocation configurations.
 - Testing for the remaining channels in 100% RB allocation configurations is required only when reported SAR for the initial 100% RB allocation configuration is > 1.45 W/kg.
 - Testing for higher order modulations (16-QAM or 64-QAM) is required only when the highest reported SAR for QPSK is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of QPSK.
 - Testing for the other channel bandwidths is required only when the highest reported SAR for the highest channel bandwidth is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of the highest channel bandwidth.
- Plot numbers correspond to the numbers found in the footnotes of Appendix 15.10 "SAR Test Plots for LTE Band 2"

12.12. LTE Band 4

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Edge 1	0	QPSK	20050	1720	1	99	18.2	17.67	0.786	0.888	1	1
			20175	1732.5	1	0	18.2	17.51	0.756	0.886	2	1
			20300	1745	1	99	18.2	17.44	0.869	1.035	3	1
			20300	1745	50	49	18.2	17.55	0.884	1.027	4	1
			20050	1720	50	49	18.2	17.46	0.757	0.898	5	1
			20175	1732.5	50	49	18.2	17.51	0.892	1.046	6	1
			20175	1732.5	100	0	18.2	17.44	0.860	1.024	7	1

Note(s):

- Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
 - Beginning with QPSK modulation at the largest channel bandwidth, testing for 1 RB allocation configurations is initially performed for the channel/RB offset combination with the highest output power among 1 RB allocation configurations.
 - o When the reported SAR for the initial measurement is < 0.8 W/kg, no further assessment is required for 1 RB allocation configurations.
 - o When the reported SAR for the initial measurement is > 0.8 W/kg, the remaining channels are evaluated using the RB offset with the highest output power within the respective channels.
 - o For all reported SAR that is > 1.45 W/kg, SAR, SAR is required for the remaining RB offset configurations of the same channel.
 - The same procedures apply to QPSK 50% RB allocation configurations at the largest channel bandwidth.
 - Testing for 100% RB allocation configurations at the largest channel bandwidth is performed for the channel, across low, mid and high, with the highest output power, when the highest reported SAR for either 1 RB or 50% RB is ≥ 0.8 W/kg, or when the maximum output power among 100% RB allocation configurations is greater than the maximum output power among either 1 RB or 50% RB allocation configurations.
 - o Testing for the remaining channels in 100% RB allocation configurations is required only when reported SAR for the initial 100% RB allocation configuration is > 1.45 W/kg.
 - Testing for higher order modulations (16-QAM or 64-QAM) is required only when the highest reported SAR for QPSK is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of QPSK.
 - Testing for the other channel bandwidths is required only when the highest reported SAR for the highest channel bandwidth is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of the highest channel bandwidth.
- Plot numbers correspond to the numbers found in the footnotes of Appendix 15.11 "SAR Test Plots for LTE Band 4"

LTE Band 4 Continued

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Rear	0	QPSK	20175	1732.5	1	99	24.0	22.62	0.202	0.278	8	1
			20050	1720	1	99	24.0	22.57				
			20300	1745	1	99	24.0	22.53				
			20175	1732.5	50	24	24.0	21.58	0.158	0.276	9	1
			20050	1720	50	49	24.0	21.43				
			20300	1745	50	49	24.0	21.44				
			20175	1732.5	100	0	24.0	21.47				
Edge 1	16	QPSK	20175	1732.5	1	99	24.0	22.62	0.252	0.346	10	1
			20050	1720	1	99	24.0	22.57				
			20300	1745	1	99	24.0	22.53				
			20175	1732.5	50	24	24.0	21.58	0.180	0.314	11	1
			20050	1720	50	49	24.0	21.43				
			20300	1745	50	49	24.0	21.44				
			20175	1732.5	100	0	24.0	21.47				
Edge 4	0	QPSK	20175	1732.5	1	99	24.0	22.62	0.292	0.401	12	1
			20050	1720	1	99	24.0	22.57				
			20300	1745	1	99	24.0	22.53				
			20175	1732.5	50	24	24.0	21.58	0.254	0.443	13	1
			20050	1720	50	49	24.0	21.43				
			20300	1745	50	49	24.0	21.44				
			20175	1732.5	100	0	24.0	21.47				

Note(s):

- Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
 - Beginning with QPSK modulation at the largest channel bandwidth, testing for 1 RB allocation configurations is initially performed for the channel/RB offset combination with the highest output power among 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is < 0.8 W/kg, no further assessment is required for 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is > 0.8 W/kg, the remaining channels are evaluated using the RB offset with the highest output power within the respective channels.
 - For all reported SAR that is > 1.45 W/kg, SAR, SAR is required for the remaining RB offset configurations of the same channel.
 - The same procedures apply to QPSK 50% RB allocation configurations at the largest channel bandwidth.
 - Testing for 100% RB allocation configurations at the largest channel bandwidth is performed for the channel, across low, mid and high, with the highest output power, when the highest reported SAR for either 1 RB or 50% RB is ≥ 0.8 W/kg, or when the maximum output power among 100% RB allocation configurations is greater than the maximum output power among either 1 RB or 50% RB allocation configurations.
 - Testing for the remaining channels in 100% RB allocation configurations is required only when reported SAR for the initial 100% RB allocation configuration is > 1.45 W/kg.
 - Testing for higher order modulations (16-QAM or 64-QAM) is required only when the highest reported SAR for QPSK is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of QPSK.
 - Testing for the other channel bandwidths is required only when the highest reported SAR for the highest channel bandwidth is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of the highest channel bandwidth.
- Plot numbers correspond to the numbers found in the footnotes of Appendix 15.11 "SAR Test Plots for LTE Band 4"

12.13. LTE Band 5

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Edge 1	0	QPSK	20600	844	1	24	20.3	19.44	0.948	1.156	1	1
			20450	829	1	24	20.3	19.13	0.878	1.149	2	1
			20525	836.5	1	0	20.3	19.31	0.912	1.145	3	1
			20525	836.5	25	12	20.3	19.35	0.939	1.169	4	1
			20450	829	25	24	20.3	19.30	0.903	1.137	5	1
			20600	844	25	12	20.3	19.32	0.933	1.169	6	1
			20450	829	50	0	20.3	19.38	0.895	1.106	7	1

Note(s):

1. Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
 - Beginning with QPSK modulation at the largest channel bandwidth, testing for 1 RB allocation configurations is initially performed for the channel/RB offset combination with the highest output power among 1 RB allocation configurations.
 - o When the reported SAR for the initial measurement is < 0.8 W/kg, no further assessment is required for 1 RB allocation configurations.
 - o When the reported SAR for the initial measurement is > 0.8 W/kg, the remaining channels are evaluated using the RB offset with the highest output power within the respective channels.
 - o For all reported SAR that is > 1.45 W/kg, SAR, SAR is required for the remaining RB offset configurations of the same channel.
 - The same procedures apply to QPSK 25% RB allocation configurations at the largest channel bandwidth.
 - Testing for 50% RB allocation configurations at the largest channel bandwidth is performed for the channel, across low, mid and high, with the highest output power, when the highest reported SAR for either 1 RB or 25% RB is \geq 0.8 W/kg, or when the maximum output power among 50% RB allocation configurations is greater than the maximum output power among either 1 RB or 25% RB allocation configurations.
 - o Testing for the remaining channels in 50% RB allocation configurations is required only when reported SAR for the initial 50% RB allocation configuration is > 1.45 W/kg.
 - Testing for higher order modulations (16-QAM or 64-QAM) is required only when the highest reported SAR for QPSK is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of QPSK.
 - Testing for the other channel bandwidths is required only when the highest reported SAR for the highest channel bandwidth is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of the highest channel bandwidth.
2. Plot numbers correspond to the numbers found in the footnotes of Appendix 15.12 "SAR Test Plots for LTE Band 5 "

LTE Band 5 Continued

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Rear	0	QPSK	20450	829	1	49	24.0	22.14	0.263	0.404	8	1
			20525	836.5	1	24	24.0	22.09				
			20600	844	1	24	24.0	21.08				
			20450	829	25	0	24.0	21.08	0.219	0.429	9	1
			20525	836.5	25	24	24.0	21.06				
			20450	829	25	12	24.0	21.08				
			20450	829	50	0	24.0	21.05				
Edge 1	16	QPSK	20450	829	1	49	24.0	22.14	0.309	0.474	10	1
			20525	836.5	1	24	24.0	22.09				
			20600	844	1	24	24.0	21.08				
			20450	829	25	0	24.0	21.08	0.249	0.488	11	1
			20525	836.5	25	24	24.0	21.06				
			20450	829	25	12	24.0	21.08				
			20450	829	50	0	24.0	21.05				
Edge 4	0	QPSK	20450	829	1	49	24.0	22.14	0.125	0.192	12	1
			20525	836.5	1	24	24.0	22.09				
			20600	844	1	24	24.0	21.08				
			20450	829	25	0	24.0	21.08	0.103	0.202	13	1
			20525	836.5	25	24	24.0	21.06				
			20450	829	25	12	24.0	21.08				
			20450	829	50	0	24.0	21.05				

Note(s):

- Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
 - Beginning with QPSK modulation at the largest channel bandwidth, testing for 1 RB allocation configurations is initially performed for the channel/RB offset combination with the highest output power among 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is < 0.8 W/kg, no further assessment is required for 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is > 0.8 W/kg, the remaining channels are evaluated using the RB offset with the highest output power within the respective channels.
 - For all reported SAR that is > 1.45 W/kg, SAR, SAR is required for the remaining RB offset configurations of the same channel.
 - The same procedures apply to QPSK 25% RB allocation configurations at the largest channel bandwidth.
 - Testing for 50% RB allocation configurations at the largest channel bandwidth is performed for the channel, across low, mid and high, with the highest output power, when the highest reported SAR for either 1 RB or 25% RB is ≥ 0.8 W/kg, or when the maximum output power among 50% RB allocation configurations is greater than the maximum output power among either 1 RB or 25% RB allocation configurations.
 - Testing for the remaining channels in 50% RB allocation configurations is required only when reported SAR for the initial 50% RB allocation configuration is > 1.45 W/kg.
 - Testing for higher order modulations (16-QAM or 64-QAM) is required only when the highest reported SAR for QPSK is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of QPSK.
 - Testing for the other channel bandwidths is required only when the highest reported SAR for the highest channel bandwidth is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of the highest channel bandwidth.
- Plot numbers correspond to the numbers found in the footnotes of Appendix 15.12 "SAR Test Plots for LTE Band 5"

12.14. LTE Band 13

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Edge 1	0	QPSK	23230	782	1	24	20.7	19.84	0.922	1.124	1	1
			23230	782	25	24	20.7	20.12	0.962	1.099	2	1
			23230	782	50	0	20.7	19.73	0.948	1.185	3	1

Note(s):

1. Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
 - Beginning with QPSK modulation at the largest channel bandwidth, testing for 1 RB allocation configurations is initially performed for the channel/RB offset combination with the highest output power among 1 RB allocation configurations.
 - o When the reported SAR for the initial measurement is < 0.8 W/kg, no further assessment is required for 1 RB allocation configurations.
 - o When the reported SAR for the initial measurement is > 0.8 W/kg, the remaining channels are evaluated using the RB offset with the highest output power within the respective channels.
 - o For all reported SAR that is > 1.45 W/kg, SAR, SAR is required for the remaining RB offset configurations of the same channel.
 - The same procedures apply to QPSK 25% RB allocation configurations at the largest channel bandwidth.
 - Testing for 50% RB allocation configurations at the largest channel bandwidth is performed for the channel, across low, mid and high, with the highest output power, when the highest reported SAR for either 1 RB or 25% RB is \geq 0.8 W/kg, or when the maximum output power among 50% RB allocation configurations is greater than the maximum output power among either 1 RB or 25% RB allocation configurations.
 - o Testing for the remaining channels in 50% RB allocation configurations is required only when reported SAR for the initial 50% RB allocation configuration is > 1.45 W/kg.
 - Testing for higher order modulations (16-QAM or 64-QAM) is required only when the highest reported SAR for QPSK is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of QPSK.
 - Testing for the other channel bandwidths is required only when the highest reported SAR for the highest channel bandwidth is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of the highest channel bandwidth.
2. Plot numbers correspond to the numbers found in the footnotes of Appendix 15.13 "SAR Test Plots for LTE Band 13"

LTE Band 13 Continued

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Rear	0	QPSK	23230	782	1	24	24.0	22.40	0.144	0.208	4	1
			23230	782	25	12	24.0	21.43	0.107	0.193	5	1
			23230	782	50	0	24.0	21.32				
Edge 1	16	QPSK	23230	782	1	24	24.0	22.40	0.266	0.384	6	1
			23230	782	25	12	24.0	21.43	0.219	0.396	7	1
			23230	782	50	0	24.0	21.32				
Edge 4	0	QPSK	23230	782	1	24	24.0	22.40	0.204	0.295	8	1
			23230	782	25	12	24.0	21.43	0.160	0.289	9	1
			23230	782	50	0	24.0	21.32				

Note(s):

- Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
 - Beginning with QPSK modulation at the largest channel bandwidth, testing for 1 RB allocation configurations is initially performed for the channel/RB offset combination with the highest output power among 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is < 0.8 W/kg, no further assessment is required for 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is > 0.8 W/kg, the remaining channels are evaluated using the RB offset with the highest output power within the respective channels.
 - For all reported SAR that is > 1.45 W/kg, SAR, SAR is required for the remaining RB offset configurations of the same channel.
 - The same procedures apply to QPSK 25% RB allocation configurations at the largest channel bandwidth.
 - Testing for 50% RB allocation configurations at the largest channel bandwidth is performed for the channel, across low, mid and high, with the highest output power, when the highest reported SAR for either 1 RB or 25% RB is \geq 0.8 W/kg, or when the maximum output power among 50% RB allocation configurations is greater than the maximum output power among either 1 RB or 25% RB allocation configurations.
 - Testing for the remaining channels in 50% RB allocation configurations is required only when reported SAR for the initial 50% RB allocation configuration is > 1.45 W/kg.
 - Testing for higher order modulations (16-QAM or 64-QAM) is required only when the highest reported SAR for QPSK is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of QPSK.
 - Testing for the other channel bandwidths is required only when the highest reported SAR for the highest channel bandwidth is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of the highest channel bandwidth.
- Plot numbers correspond to the numbers found in the footnotes of Appendix 15.13 "SAR Test Plots for LTE Band 13"

12.15. LTE Band 17

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Edge 1	0	QPSK	23800	711	1	24	20.7	19.98	0.985	1.163	1	1
			23780	709	1	24	20.7	19.85	1.000	1.216	2	1
			23790	710	1	24	20.7	19.97	1.020	1.207	3	1
			23790	710	25	0	20.7	19.91	1.010	1.211	4	1
			23780	709	25	24	20.7	19.80	0.999	1.229	5	1
			23800	711	25	24	20.7	19.87	0.963	1.166	6	1
			23800	711	50	0	20.7	19.85	0.965	1.174	7	1

Note(s):

- Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
 - Beginning with QPSK modulation at the largest channel bandwidth, testing for 1 RB allocation configurations is initially performed for the channel/RB offset combination with the highest output power among 1 RB allocation configurations.
 - o When the reported SAR for the initial measurement is < 0.8 W/kg, no further assessment is required for 1 RB allocation configurations.
 - o When the reported SAR for the initial measurement is > 0.8 W/kg, the remaining channels are evaluated using the RB offset with the highest output power within the respective channels.
 - o For all reported SAR that is > 1.45 W/kg, SAR, SAR is required for the remaining RB offset configurations of the same channel.
 - The same procedures apply to QPSK 25% RB allocation configurations at the largest channel bandwidth.
 - Testing for 50% RB allocation configurations at the largest channel bandwidth is performed for the channel, across low, mid and high, with the highest output power, when the highest reported SAR for either 1 RB or 25% RB is \geq 0.8 W/kg, or when the maximum output power among 50% RB allocation configurations is greater than the maximum output power among either 1 RB or 25% RB allocation configurations.
 - o Testing for the remaining channels in 50% RB allocation configurations is required only when reported SAR for the initial 50% RB allocation configuration is > 1.45 W/kg.
 - Testing for higher order modulations (16-QAM or 64-QAM) is required only when the highest reported SAR for QPSK is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of QPSK.
 - Testing for the other channel bandwidths is required only when the highest reported SAR for the highest channel bandwidth is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of the highest channel bandwidth.
- Plot numbers correspond to the numbers found in the footnotes of Appendix 15.14 "SAR Test Plots for LTE Band 17"

LTE Band 17 Continued

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Rear	0	QPSK	23780	709	1	24	24.0	22.49	0.283	0.401	8	1
			23790	710	1	24	24.0	22.30				
			23800	711	1	0	24.0	22.21				
			23790	710	25	0	24.0	21.42	0.206	0.373	9	1
			23780	709	25	0	24.0	21.34				
			23800	711	25	0	24.0	21.32				
			23790	710	50	0	24.0	21.22				
Edge 1	16	QPSK	23780	709	1	24	24.0	22.49	0.209	0.296	10	1
			23790	710	1	24	24.0	22.30				
			23800	711	1	0	24.0	22.21				
			23790	710	25	0	24.0	21.42	0.172	0.312	11	1
			23780	709	25	0	24.0	21.34				
			23800	711	25	0	24.0	21.32				
			23790	710	50	0	24.0	21.22				
Edge 4	0	QPSK	23780	709	1	24	24.0	22.49	0.183	0.259	12	1
			23790	710	1	24	24.0	22.30				
			23800	711	1	0	24.0	22.21				
			23790	710	25	0	24.0	21.42	0.143	0.259	13	1
			23780	709	25	0	24.0	21.34				
			23800	711	25	0	24.0	21.32				
			23790	710	50	0	24.0	21.22				

Note(s):

- Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
 - Beginning with QPSK modulation at the largest channel bandwidth, testing for 1 RB allocation configurations is initially performed for the channel/RB offset combination with the highest output power among 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is < 0.8 W/kg, no further assessment is required for 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is > 0.8 W/kg, the remaining channels are evaluated using the RB offset with the highest output power within the respective channels.
 - For all reported SAR that is > 1.45 W/kg, SAR, SAR is required for the remaining RB offset configurations of the same channel.
 - The same procedures apply to QPSK 25% RB allocation configurations at the largest channel bandwidth.
 - Testing for 50% RB allocation configurations at the largest channel bandwidth is performed for the channel, across low, mid and high, with the highest output power, when the highest reported SAR for either 1 RB or 25% RB is \geq 0.8 W/kg, or when the maximum output power among 50% RB allocation configurations is greater than the maximum output power among either 1 RB or 25% RB allocation configurations.
 - Testing for the remaining channels in 50% RB allocation configurations is required only when reported SAR for the initial 50% RB allocation configuration is > 1.45 W/kg.
 - Testing for higher order modulations (16-QAM or 64-QAM) is required only when the highest reported SAR for QPSK is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of QPSK.
 - Testing for the other channel bandwidths is required only when the highest reported SAR for the highest channel bandwidth is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of the highest channel bandwidth.
- Plot numbers correspond to the numbers found in the footnotes of Appendix 15.14 "SAR Test Plots for LTE Band 17"

12.16. LTE Band 25

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Edge 1	0	QPSK	26140	1860	1	49	15.6	15.11	0.814	0.911	1	1
			26365	1882.5	1	0	15.6	14.88	0.886	1.046	2	1
			26590	1905	1	99	15.6	14.83	1.000	1.194	3	1
			26590	1905	50	49	15.6	15.26	0.962	1.040	4	1
			26140	1860	50	49	15.6	14.98	0.817	0.942	5	1
			26365	1882.5	50	24	15.6	15.04	0.900	1.024	6	1
			26590	1905	100	0	15.6	14.93	0.985	1.149	7	1

Note(s):

- Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
 - Beginning with QPSK modulation at the largest channel bandwidth, testing for 1 RB allocation configurations is initially performed for the channel/RB offset combination with the highest output power among 1 RB allocation configurations.
 - o When the reported SAR for the initial measurement is < 0.8 W/kg, no further assessment is required for 1 RB allocation configurations.
 - o When the reported SAR for the initial measurement is > 0.8 W/kg, the remaining channels are evaluated using the RB offset with the highest output power within the respective channels.
 - o For all reported SAR that is > 1.45 W/kg, SAR, SAR is required for the remaining RB offset configurations of the same channel.
 - The same procedures apply to QPSK 50% RB allocation configurations at the largest channel bandwidth.
 - Testing for 100% RB allocation configurations at the largest channel bandwidth is performed for the channel, across low, mid and high, with the highest output power, when the highest reported SAR for either 1 RB or 50% RB is ≥ 0.8 W/kg, or when the maximum output power among 100% RB allocation configurations is greater than the maximum output power among either 1 RB or 50% RB allocation configurations.
 - o Testing for the remaining channels in 100% RB allocation configurations is required only when reported SAR for the initial 100% RB allocation configuration is > 1.45 W/kg.
 - Testing for higher order modulations (16-QAM or 64-QAM) is required only when the highest reported SAR for QPSK is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of QPSK.
 - Testing for the other channel bandwidths is required only when the highest reported SAR for the highest channel bandwidth is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of the highest channel bandwidth.
- Plot numbers correspond to the numbers found in the footnotes of Appendix 15.15 "SAR Test Plots for LTE Band 25"

LTE Band 25 Continued

Usage Scenario: Proximity Sensor Deactivated, Full Power Operation

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Rear	0	QPSK	26590	1905	1	99	24.0	22.68	0.158	0.214	8	1
			26140	1860	1	49	24.0	22.56				
			26365	1882.5	1	99	24.0	22.64				
			26140	1860	50	24	24.0	21.62	0.136	0.235	9	1
			26365	1882.5	50	24	24.0	21.54				
			26590	1905	50	49	24.0	21.58				
Edge 1	16	QPSK	26590	1905	1	99	24.0	22.68	0.521	0.706	10	1
			26140	1860	1	49	24.0	22.56				
			26365	1882.5	1	99	24.0	22.64				
			26140	1860	50	24	24.0	21.62	0.314	0.543	11	1
			26365	1882.5	50	24	24.0	21.54				
			26590	1905	50	49	24.0	21.58				
Edge 4	0	QPSK	26590	1905	1	99	24.0	22.68	0.193	0.262	12	1
			26140	1860	1	49	24.0	22.56				
			26365	1882.5	1	99	24.0	22.64				
			26140	1860	50	24	24.0	21.62	0.232	0.401	13	1
			26365	1882.5	50	24	24.0	21.54				
			26590	1905	50	49	24.0	21.58				
			26590	1905	100	0	24.0	21.66				

Note(s):

- Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
 - Beginning with QPSK modulation at the largest channel bandwidth, testing for 1 RB allocation configurations is initially performed for the channel/RB offset combination with the highest output power among 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is < 0.8 W/kg, no further assessment is required for 1 RB allocation configurations.
 - When the reported SAR for the initial measurement is > 0.8 W/kg, the remaining channels are evaluated using the RB offset with the highest output power within the respective channels.
 - For all reported SAR that is > 1.45 W/kg, SAR, SAR is required for the remaining RB offset configurations of the same channel.
 - The same procedures apply to QPSK 50% RB allocation configurations at the largest channel bandwidth.
 - Testing for 100% RB allocation configurations at the largest channel bandwidth is performed for the channel, across low, mid and high, with the highest output power, when the highest reported SAR for either 1 RB or 50% RB is ≥ 0.8 W/kg, or when the maximum output power among 100% RB allocation configurations is greater than the maximum output power among either 1 RB or 50% RB allocation configurations.
 - Testing for the remaining channels in 100% RB allocation configurations is required only when reported SAR for the initial 100% RB allocation configuration is > 1.45 W/kg.
 - Testing for higher order modulations (16-QAM or 64-QAM) is required only when the highest reported SAR for QPSK is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of QPSK.
 - Testing for the other channel bandwidths is required only when the highest reported SAR for the highest channel bandwidth is > 1.45 W/Kg or if its output power is more than 0.5 dB higher than that of the highest channel bandwidth.
- Plot numbers correspond to the numbers found in the footnotes of Appendix 15.15 "SAR Test Plots for LTE Band 25"

12.17. Summary of Highest SAR Values

Results for the highest measured SAR values in each frequency band and mode

Technology Band	Test Configuration		Mode	Dist. (mm)	Freq. (MHz)	dBm	1g/SAR (w/KG)
	Exposure	Position					
GSM 850	Body	Edge 1 (Prox on)	GPRS 2 Slot	0	848.8	25.86	0.920
GSM 1900	Body	Edge 1 (Prox on)	GPRS 2 slot	0	1909.8	20.80	1.130
W-CDMA Band V	Body	Edge 1 (Prox on)	Rel 99 RMC 12.2kbps	0	826.4	19.32	1.06
W-CDMA Band IV	Body	Edge 1 (Prox on)	Rel 99 RMC 12.2kbps	0	1752.6	17.69	0.967
W-CDMA Band II	Body	Edge 1 (Prox off)	Rel 99 RMC 12.2kbps	0	1907.6	14.64	0.939
CDMA BC0	Body	Edge 1 (Prox on)	1xRTT (RC3 SO32)	0	836.52	19.17	1.010
CDMA BC1	Body	Edge 1 (Prox on)	1xRTT (RC3 SO32)	0	1880.0	15.49	1.250
CDMA BC 10	Body	Edge 1 (Prox on)	1xRTT (RC3 SO32)	0	822.75	18.90	0.901
LTE Band 2	Body	Edge 1 (Prox on)	20 MHz(QPSK) RB 100/0	0	1860	15.61	0.797
LTE Band 4	Body	Edge 1 (Prox on)	20 MHz(QPSK) RB 50/49	0	1732.5	17.51	0.892
LTE Band 5	Body	Edge 1 (Prox on)	10 MHz (QPSK) RB 1/24	0	844	19.44	0.948
LTE Band 13	Body	Edge 1 (Prox on)	10 MHZ (QPSK) RB 25/24	0	782	20.12	0.962
LTE Band 17	Body	Edge 1 (Prox on)	10 MHz (QPSK) RB 1/24	0	710	19.97	1.020
LTE Band 25	Body	Edge 1 (Prox on)	20 MHz(QPSK) RB 1/99	0	1905	14.83	1.000

12.18. SAR Measurement Variability and Uncertainty

In accordance with published RF Exposure KDB procedure 865664 D01 SAR measurement 100 MHz to 6 GHz v01. 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.

- 1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.
- 2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
- 3) Perform a second repeated measurement only 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 (~ 10% from the 1-g SAR limit).
- 4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

Wireless Technologies	Test Configuration		Mode	Dist. (mm)	Ch #.	Freq. (MHz)	Meas. SAR (W/kg)		Largest to Smallest SAR Ratio	Plot No.
	Exposure	Position					Original	Repeated		
LTE band 17	Body	Edge 1 Prox. On	10 MHz (QPSK) 1/24	0	23790	710.0	1.020	1.020	1.00	1
W-CDMA Band V	Body	Edge 1 Prox. On	Rel 99 RMC 12.2kbps	0	4132	826.4	1.060	1.030	1.03	2
W-CDMA Band IV	Body	Edge 1 Prox. On	Rel 99 RMC 12.2kbps	0	1513	1752.6	0.967	0.977	0.99	3
CDMA BC1	Body	Edge 1 Prox. On	1xRTT (RC3 SO32)	0	600	1880.0	1.25	1.18	1.06	4

Note(s):

- Second Repeated Measurement is not required since the ratio of the largest to smallest SAR for the original and first repeated measurement is not > 1.20.

Repeated SAR value is larger than Original SAR value, and scaled Repeated SAR is the maximum value in the mode of WCDMA Band IV. Please refer to the following for details.

Usage Scenario: Proximity Sensor Activated, Reduced Power Operation

Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Edge 1	0	Rel 99 RMC 12.2 kbps	1513	1752.6	18.6	17.69	0.977	1.205	3	

13. Simultaneous Transmission SAR Analysis

All Wi-Fi 1-g SAR values were taken from results recorded in SAR report 33LE0029-HO-A-R1, submitted under FCC ID ACJ9TGWL13A.

All Simultaneous Transmission SAR analysis applies scaling in accordance with the scaled values documented in this report (for the WWAN radios) and the aforementioned SAR report (33LE0029-HO-A-R1) with scaling applied (for the WLAN radios).

13.1. Sum of the SAR for GSM & Wi-Fi 2.4 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	GSM850	GSM1900	WiFi 2.4 GHz Main	WiFi 2.4 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.838		0.021		0.210	1.069
	0.838			0.017		0.855
		0.173	0.021		0.210	0.404
		0.173		0.017		0.190
Rear, Wi-Fi 2 Tx	0.838		0.021	0.017		0.876
		0.173	0.021	0.017		0.211
Edge 1, Wi-Fi 1 Tx 16mm → w/WWAN Full Power	1.291		1.149			2.440
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction		1.359	1.149			2.508
Edge 4, Wi-Fi 1 Tx	0.406		0.400		0.210	1.016
		0.476	0.400		0.210	1.086
	0.406			0.138		0.544
		0.476		0.138		0.614
Edge 4, Wi-Fi 2 Tx	0.406		0.400	0.138		0.944
		0.476	0.400	0.138		1.014

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 2.4GHz Main	GSM850				
1	Edge 1	1.149	1.291	2.440	134	0.028	1

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 2.4GHz Main	PCS1900				
2	Edge 1	1.149	1.359	2.508	123.9	0.032	2

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.2. Sum of the SAR for W-CDMA Band V, IV & Wi-Fi 2.4 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	WCDMA V	WCDMA IV	WiFi 2.4 GHz Main	WiFi 2.4 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.281		0.021		0.210	0.512
	0.281			0.017		0.298
		0.381	0.021		0.210	0.612
		0.381		0.017		0.398
Rear, Wi-Fi 2 Tx	0.281		0.021	0.017		0.319
		0.381	0.021	0.017		0.419
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.1		1.149			2.249
		1.205	1.149			2.354
Edge 4, Wi-Fi 1 Tx	0.406		0.400		0.210	1.016
		0.476	0.400		0.210	1.086
	0.244			0.138		0.382
		0.423		0.138		0.561
Edge 4, Wi-Fi 2 Tx	0.244		0.400	0.138		0.782
		0.423	0.400	0.138		0.961

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 2.4GHz Main	WCDMA band V				
3	Edge 1	1.149	1.100	2.249	130.0	0.026	3

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 2.4GHz Main	WCDMA band IV				
4	Edge 1	1.149	1.205	2.354	123.9	0.029	4

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.3. Sum of the SAR for W-CDMA Band II & Wi-Fi 2.4 GHz Band

Test Position	Data				Σ 1-g SAR (mW/g)
	WCDMA II	WiFi 2.4 GHz Main	WiFi 2.4 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.270	0.021		0.210	0.501
	0.270		0.017		0.287
Rear, Wi-Fi 2 Tx	0.270	0.021	0.017		0.308
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.314	1.149			2.463
Edge 4, Wi-Fi 1 Tx	0.513	0.400		0.210	1.123
	0.513		0.138		0.651
Edge 4, Wi-Fi 2 Tx	0.513	0.400	0.138		1.051

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 2.4GHz Main	WCDMA band II				
5	Edge 1	1.149	1.314	2.463	122.4	0.032	5

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.4. Sum of the SAR for CDMA BC0 & Wi-Fi 2.4 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 2.4 GHz Main	WiFi 2.4 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.501		0.021		0.210	0.732
	0.501			0.017		0.518
		0.506	0.021		0.210	0.737
		0.506		0.017		0.523
Rear, Wi-Fi 2 Tx	0.501		0.021	0.017		0.539
		0.506	0.021	0.017		0.544
Edge 1, Wi-Fi 1 Tx 0mm → w/MWWAN Power Reduction	1.141		1.149			2.290
		0.901	1.149			2.050
Edge 4, Wi-Fi 1 Tx	0.275		0.400		0.210	0.885
		0.284	0.400		0.210	0.894
	0.275			0.138		0.413
		0.284		0.138		0.422
Edge 4, Wi-Fi 2 Tx	0.275		0.400	0.138		0.813
		0.284	0.400	0.138		0.822

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 2.4GHz Main	CDMA BC0 1xRTT				
6	Edge 1	1.149	1.141	2.290	130.0	0.027	6

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 2.4GHz Main	CDMA BC0 EVDO				
7	Edge 1	1.149	0.901	2.050	135.9	0.022	7

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.5. Sum of the SAR for CDMA BC1 & Wi-Fi 2.4 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 2.4 GHz Main	WiFi 2.4 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.243		0.021		0.210	0.474
	0.243			0.017		0.260
		0.235	0.021		0.210	0.466
		0.235		0.017		0.252
Rear, Wi-Fi 2 Tx	0.243		0.021	0.017		0.281
		0.235	0.021	0.017		0.273
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.253		1.149			2.402
		1.229	1.149			2.378
Edge 4, Wi-Fi 1 Tx	0.345		0.400		0.210	0.955
		0.355	0.400		0.210	0.965
	0.345			0.138		0.483
		0.355		0.138		0.493
Edge 4, Wi-Fi 2 Tx	0.345		0.400	0.138		0.883
		0.355	0.400	0.138		0.893

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 2.4GHz Main	CDMA BC1 1xRTT				
8	Edge 1	1.149	1.253	2.402	123.9	0.030	8

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 2.4GHz Main	CDMA BC1 EVDO				
9	Edge 1	1.149	1.229	2.378	122.4	0.030	9

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.6. Sum of the SAR for CDMA BC10 & Wi-Fi 2.4 GHz Bands.

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 2.4 GHz Main	WiFi 2.4 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.540		0.021		0.210	0.771
	0.540			0.017		0.557
		0.503	0.021		0.210	0.734
		0.503		0.017		0.520
Rear, Wi-Fi 2 Tx	0.540		0.021	0.017		0.578
		0.503	0.021	0.017		0.541
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.034		1.149			2.183
		0.792	1.149			1.941
Edge 4, Wi-Fi 1 Tx	0.284		0.400		0.210	0.894
		0.320	0.400		0.210	0.930
	0.284			0.138		0.422
		0.320		0.138		0.458
Edge 4, Wi-Fi 2 Tx	0.284		0.400	0.138		0.822
		0.320	0.400	0.138		0.858

Note(s):

- Bluetooth and Wi-Fi Aux cannot simultaneously transmit
- Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 2.4GHz Main	CDMA BC10 1xRTT				
10	Edge 1	1.149	1.034	2.183	134.5	0.024	10

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 2.4GHz Main	CDMA BC10 EVDO				
11	Edge 1	1.149	0.792	1.941	137.4	0.020	11

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.7. Sum of the SAR for LTE Bands 2 and 4 & Wi-Fi 2.4 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 2	LTE Band 4	WiFi 2.4 GHz Main	WiFi 2.4 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.089		0.021		0.210	0.320
	0.089			0.017		0.106
		0.278	0.021		0.210	0.509
		0.278		0.017		0.295
Rear, Wi-Fi 2 Tx	0.089		0.021	0.017		0.127
		0.235	0.021	0.017		0.273
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	0.852		1.149			2.001
		1.046	1.149			2.195
Edge 4, Wi-Fi 1 Tx	0.263		0.400		0.210	0.873
		0.443	0.400		0.210	1.053
	0.263			0.138		0.401
		0.443		0.138		0.581
Edge 4, Wi-Fi 2 Tx	0.263		0.400	0.138		0.801
		0.443	0.400	0.138		0.981

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 2.4GHz Main	LTE Band 2				
12	Edge 1	1.149	0.852	2.001	125.4	0.023	12

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 2.4GHz Main	LTE Band 4				
13	Edge 1	1.149	1.046	2.195	125.7	0.026	13

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.8. Sum of the SAR for LTE Bands 5 and 13 & Wi-Fi 2.4 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 5	LTE Band 13	WiFi 2.4 GHz Main	WiFi 2.4 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.429		0.021		0.210	0.660
	0.429			0.017		0.446
		0.208	0.021		0.210	0.439
		0.208		0.017		0.225
Rear, Wi-Fi 2 Tx	0.429		0.021	0.017		0.467
		0.208	0.021	0.017		0.246
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.169		1.149			2.318
		1.185	1.149			2.334
Edge 4, Wi-Fi 1 Tx	0.202		0.400		0.210	0.812
		0.289	0.400		0.210	0.899
	0.202			0.138		0.340
		0.289		0.138		0.427
Edge 4, Wi-Fi 2 Tx	0.202		0.400	0.138		0.740
		0.289	0.400	0.138		0.827

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 2.4GHz Main	LTE Band 5				
14	Edge 1	1.149	1.169	2.318	137.4	0.026	14

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 2.4GHz Main	LTE Band 13				
15	Edge 1	1.149	1.185	2.334	139.0	0.026	15

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.9. Sum of the SAR for LTE Bands 17 and 25 & Wi-Fi 2.4 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 17	LTE Band 25	WiFi 2.4 GHz Main	WiFi 2.4 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.401		0.021		0.210	0.632
	0.401			0.017		0.418
		0.235	0.021		0.210	0.466
		0.235		0.017		0.252
Rear, Wi-Fi 2 Tx	0.401		0.021	0.017		0.439
		0.235	0.021	0.017		0.273
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.229		1.149			2.378
		1.194	1.149			2.343
Edge 4, Wi-Fi 1 Tx	0.259		0.400		0.210	0.869
		0.401	0.400		0.210	1.011
	0.259			0.138		0.397
		0.401		0.138		0.539
Edge 4, Wi-Fi 2 Tx	0.259		0.400	0.138		0.797
		0.401	0.400	0.138		0.939

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 2.4GHz Main	LTE Band 17				
16	Edge 1	1.149	1.229	2.378	139.0	0.026	16

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 2.4GHz Main	LTE Band 25				
17	Edge 1	1.149	1.194	2.343	126.9	0.028	17

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.10. Sum of the SAR for GSM & Wi-Fi 5.2 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	GSM850	GSM1900	WiFi 5.2 GHz Main	WiFi 5.2 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.838		0.028		0.210	1.076
	0.838			0.193		1.031
		0.173	0.028		0.210	0.411
		0.173		0.193		0.366
Rear, Wi-Fi 2 Tx	0.838		0.028	0.193		1.059
		0.173	0.028	0.193		0.394
Edge 1, Wi-Fi 1 Tx 16mm → w/WWAN Full Power	1.291		0.486			1.777
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction		1.359	0.486			1.845
Edge 4, Wi-Fi 1 Tx	0.406		0.400		0.210	1.016
		0.476	0.400		0.210	1.086
	0.406			0.573		0.979
Edge 4, Wi-Fi 2 Tx		0.476		0.573		1.049
	0.406		0.400	0.573		1.379
		0.476	0.400	0.573		1.449

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.2GHz Main	GSM850				
1	Edge 1	0.486	1.291	1.777	142.6	0.017	1

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.2GHz Main	PCS1900				
2	Edge 1	0.486	1.359	1.845	132.6	0.019	2

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.11. Sum of the SAR for W-CDMA Bands V and IV & Wi-Fi 5.2 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	WCDMA V	WCDMA IV	WiFi 5.2 GHz Main	WiFi 5.2 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.281		0.028		0.210	0.519
	0.281			0.193		0.474
		0.381	0.028		0.210	0.619
		0.381		0.193		0.574
Rear, Wi-Fi 2 Tx	0.281		0.028	0.193		0.502
		0.381	0.028	0.193		0.602
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.10		0.486			1.586
		1.205	0.486			1.691
Edge 4, Wi-Fi 1 Tx	0.244		0.400		0.210	0.854
		0.423	0.400		0.210	1.033
	0.244			0.573		0.817
		0.423		0.573		0.996
Edge 4, Wi-Fi 2 Tx	0.244		0.400	0.573		1.217
		0.423	0.400	0.573		1.396

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.2GHz Main	WCDMA band IV				
3	Edge 1	0.486	1.205	1.691	132.7	0.017	3

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.12. Sum of the SAR for W-CDMA Band II & Wi-Fi 5.2 GHz Band

Test Position	Data				Σ 1-g SAR (mW/g)
	WCDMA II	WiFi 5.2 GHz Main	WiFi 5.2 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.270	0.028		0.210	0.508
	0.270		0.193		0.463
Rear, Wi-Fi 2 Tx	0.270	0.028	0.193		0.491
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.314	0.486			1.800
Edge 4, Wi-Fi 1 Tx	0.513	0.400		0.210	1.123
	0.513		0.573		1.086
Edge 4, Wi-Fi 2 Tx	0.513	0.400	0.573		1.486

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.2GHz Main	WCDMA band II				
4	Edge 1	0.486	1.314	1.800	131.1	0.018	4

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.13. Sum of the SAR for CDMA BC0 & Wi-Fi 5.2GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 5.2 GHz Main	WiFi 5.2 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.501		0.028		0.210	0.739
	0.501			0.193		0.694
		0.506	0.028		0.210	0.744
		0.506		0.193		0.699
Rear, Wi-Fi 2 Tx	0.501		0.028	0.193		0.722
		0.506	0.028	0.193		0.727
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.141		0.486			1.627
		0.901	0.486			1.387
Edge 4, Wi-Fi 1 Tx	0.275		0.400		0.210	0.885
		0.284	0.400		0.210	0.894
	0.275			0.573		0.848
		0.284		0.573		0.857
Edge 4, Wi-Fi 2 Tx	0.275		0.400	0.573		1.248
		0.284	0.400	0.573		1.257

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.2GHz Main	CDMA BC0 1xRTT				
5	Edge 1	0.486	1.141	1.627	138.6	0.015	5

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.14. Sum of the SAR for CDMA BC1 & Wi-Fi5.2GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 5.2 GHz Main	WiFi 5.2 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.243		0.028		0.210	0.481
	0.243			0.193		0.436
		0.235	0.028		0.210	0.473
		0.235		0.193		0.428
Rear, Wi-Fi 2 Tx	0.243		0.028	0.193		0.464
		0.235	0.028	0.193		0.456
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.253		0.486			1.739
		1.229	0.486			1.715
Edge 4, Wi-Fi 1 Tx	0.345		0.400		0.210	0.955
		0.355	0.400		0.210	0.965
	0.345			0.573		0.918
		0.355		0.573		0.928
Edge 4, Wi-Fi 2 Tx	0.345		0.400	0.573		1.318
		0.355	0.400	0.573		1.328

Note(s):

- Bluetooth and Wi-Fi Aux cannot simultaneously transmit
- Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.2GHz Main	CDMA BC1 1xRTT				
6	Edge 1	0.486	1.253	1.739	132.6	0.017	6

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.2GHz Main	CDMA BC1 EVDO				
7	Edge 1	0.486	1.229	1.715	131.2	0.017	7

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.15. Sum of the SAR for CDMA BC10 & Wi-Fi 5.2GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 5.2 GHz Main	WiFi 5.2 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.540		0.028		0.210	0.778
	0.540			0.193		0.733
		0.503	0.028		0.210	0.741
		0.503		0.193		0.696
Rear, Wi-Fi 2 Tx	0.540		0.028	0.193		0.761
		0.503	0.028	0.193		0.724
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.034		0.486			1.520
		0.792	0.486			1.278
Edge 4, Wi-Fi 1 Tx	0.284		0.400		0.210	0.894
		0.320	0.400		0.210	0.930
	0.284			0.573		0.857
		0.320		0.573		0.893
Edge 4, Wi-Fi 2 Tx	0.284		0.400	0.573		1.257
		0.320	0.400	0.573		1.293

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.16. Sum of the SAR for LTE Bands 2 and 4 & Wi-Fi 5.2 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 2	LTE Band 4	WiFi 5.2 GHz Main	WiFi 5.2 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.089		0.028		0.210	0.327
	0.089			0.193		0.282
		0.278	0.028		0.210	0.516
		0.278		0.193		0.471
Rear, Wi-Fi 2 Tx	0.089		0.028	0.193		0.310
		0.278	0.028	0.193		0.499
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	0.852		0.486			1.338
		1.046	0.486			1.532
Edge 4, Wi-Fi 1 Tx	0.263		0.400		0.210	0.873
		0.443	0.400		0.210	1.053
	0.263			0.573		0.836
		0.443		0.573		1.016
Edge 4, Wi-Fi 2 Tx	0.263		0.400	0.573		1.236
		0.443	0.400	0.573		1.416

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.17. Sum of the SAR for LTE Bands 5 and 13 & Wi-Fi 5.2 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 5	LTE Band 13	WiFi 5.2 GHz Main	WiFi 5.2 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.429		0.028		0.210	0.667
	0.429			0.193		0.622
		0.208	0.028		0.210	0.446
		0.208		0.193		0.401
Rear, Wi-Fi 2 Tx	0.429		0.028	0.193		0.650
		0.208	0.028	0.193		0.429
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.169		0.486			1.655
		1.185	0.486			1.671
Edge 4, Wi-Fi 1 Tx	0.202		0.400		0.210	0.812
		0.295	0.400		0.210	0.905
	0.202			0.573		0.775
		0.295		0.573		0.868
Edge 4, Wi-Fi 2 Tx	0.202		0.400	0.573		1.175
		0.295	0.400	0.573		1.268

Note(s):

- Bluetooth and Wi-Fi Aux cannot simultaneously transmit
- Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.2GHz Main	LTE Band 5				
8	Edge 1	0.486	1.169	1.655	146.1	0.015	8

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.2GHz Main	LTE Band 13				
9	Edge 1	0.486	1.185	1.671	147.5	0.015	9

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.18. Sum of the SAR for LTE Bands 17 and 25 & Wi-Fi 5.2 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 17	LTE Band 25	WiFi 5.2 GHz Main	WiFi 5.2 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.401		0.028		0.210	0.639
	0.401			0.193		0.594
		0.235	0.028		0.210	0.473
		0.235		0.193		0.428
Rear, Wi-Fi 2 Tx	0.401		0.028	0.193		0.622
		0.235	0.028	0.193		0.456
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.229		0.486			1.715
		1.194	0.486			1.680
Edge 4, Wi-Fi 1 Tx	0.259		0.400		0.210	0.869
		0.401	0.400		0.210	1.011
	0.259			0.573		0.832
		0.401		0.573		0.974
Edge 4, Wi-Fi 2 Tx	0.259		0.400	0.573		1.232
		0.401	0.400	0.573		1.374

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.2GHz Main	LTE Band 17				
10	Edge 1	0.486	1.229	1.715	147.6	0.015	10

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.2GHz Main	LTE Band 25				
11	Edge 1	0.486	1.194	1.680	135.6	0.016	11

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.19. Sum of the SAR for GSM & Wi-Fi 5.3 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	GSM850	GSM1900	WiFi 5.3 GHz Main	WiFi 5.3 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.838		0.027		0.210	1.075
	0.838			0.155		0.993
		0.173	0.027		0.210	0.410
		0.173		0.155		0.328
Rear, Wi-Fi 2 Tx	0.838		0.027	0.155		1.020
		0.173	0.027	0.155		0.355
Edge 1, Wi-Fi 1 Tx 16mm → w/WWAN Full Power	1.291		0.446			1.737
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction		1.359	0.446			1.805
Edge 4, Wi-Fi 1 Tx	0.406		0.400		0.210	1.016
		0.476	0.400		0.210	1.086
	0.406			0.395		0.801
		0.476		0.395		0.871
Edge 4, Wi-Fi 2 Tx	0.406		0.400	0.395		1.201
		0.476	0.400	0.395		1.271

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.3GHz Main	GSM850				
1	Edge 1	0.446	1.291	1.737	127.6	0.018	1

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.3GHz Main	PCS1900				
2	Edge 1	0.446	1.359	1.805	117.7	0.021	2

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.20. Sum of the SAR for W-CDMA Bands V and IV & Wi-Fi 5.3 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	WCDMA V	WCDMA IV	WiFi 5.3 GHz Main	WiFi 5.3 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.281		0.027		0.210	0.518
	0.281			0.155		0.436
		0.381	0.027		0.210	0.618
		0.381		0.155		0.536
Rear, Wi-Fi 2 Tx	0.281		0.027	0.155		0.463
		0.381	0.027	0.155		0.563
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.10		0.446			1.546
		1.205	0.446			1.651
Edge 4, Wi-Fi 1 Tx	0.244		0.400		0.210	0.854
		0.423	0.400		0.210	1.033
	0.244			0.395		0.639
		0.423		0.395		0.818
Edge 4, Wi-Fi 2 Tx	0.244		0.400	0.395		1.039
		0.423	0.400	0.395		1.218

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.3GHz Main	WCDMA band IV				
3	Edge 1	0.446	1.205	1.651	117.9	0.018	3

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.21. Sum of the SAR for W-CDMA Band II & Wi-Fi 5.3 GHz Band

Test Position	Data				Σ 1-g SAR (mW/g)
	WCDMA II	WiFi 5.3 GHz Main	WiFi 5.3 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.270	0.027		0.210	0.507
	0.270		0.155		0.425
Rear, Wi-Fi 2 Tx	0.270	0.027	0.155		0.452
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.314	0.446			1.760
Edge 4, Wi-Fi 1 Tx	0.513	0.400		0.210	1.123
	0.513		0.395		0.908
Edge 4, Wi-Fi 2 Tx	0.513	0.400	0.395		1.308

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.3GHz Main	WCDMA band II				
4	Edge 1	0.446	1.314	1.760	116.2	0.020	4

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.22. Sum of the SAR for CDMA BC0 & Wi-Fi 5.3GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 5.3 GHz Main	WiFi 5.3 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.501		0.027		0.210	0.738
	0.501			0.155		0.656
		0.506	0.027		0.210	0.743
		0.506		0.155		0.661
Rear, Wi-Fi 2 Tx	0.501		0.027	0.155		0.683
		0.506	0.027	0.155		0.688
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.141		0.446			1.587
		0.901	0.446			1.347
Edge 4, Wi-Fi 1 Tx	0.275		0.400		0.210	0.885
		0.284	0.400		0.210	0.894
	0.275			0.395		0.670
		0.284		0.395		0.679
Edge 4, Wi-Fi 2 Tx	0.275		0.400	0.395		1.070
		0.284	0.400	0.395		1.079

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.23. Sum of the SAR for CDMA BC1 & Wi-Fi5.3GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 5.3 GHz Main	WiFi 5.3 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.243		0.027		0.210	0.480
	0.243			0.155		0.398
		0.235	0.027		0.210	0.472
		0.235		0.155		0.390
Rear, Wi-Fi 2 Tx	0.243		0.027	0.155		0.425
		0.235	0.027	0.155		0.417
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.253		0.446			1.699
		1.229	0.446			1.675
Edge 4, Wi-Fi 1 Tx	0.345		0.400		0.210	0.955
		0.355	0.400		0.210	0.965
	0.345			0.395		0.740
		0.355		0.395		0.750
Edge 4, Wi-Fi 2 Tx	0.345		0.400	0.395		1.140
		0.355	0.400	0.395		1.150

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.3GHz Main	CDMA BC1 1xRTT				
5	Edge 1	0.446	1.253	1.699	117.7	0.019	5

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.3GHz Main	CDMA BC1 EVDO				
6	Edge 1	0.446	1.229	1.675	116.3	0.019	6

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.24. Sum of the SAR for CDMA BC10 & Wi-Fi 5.3GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 5.3 GHz Main	WiFi 5.3 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.540		0.027		0.210	0.777
	0.540			0.155		0.695
		0.503	0.027		0.210	0.740
		0.503		0.155		0.658
Rear, Wi-Fi 2 Tx	0.540		0.027	0.155		0.722
		0.503	0.027	0.155		0.685
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.034		0.446			1.480
		0.792	0.446			1.238
Edge 4, Wi-Fi 1 Tx	0.284		0.400		0.210	0.894
		0.320	0.400		0.210	0.930
	0.284			0.395		0.679
		0.320		0.395		0.715
Edge 4, Wi-Fi 2 Tx	0.284		0.400	0.395		1.079
		0.320	0.400	0.395		1.115

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.25. Sum of the SAR for LTE Bands 2 and 4 & Wi-Fi 5.3 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 2	LTE Band 4	WiFi 5.3 GHz Main	WiFi 5.3 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.089		0.027		0.210	0.326
	0.089			0.155		0.244
		0.278	0.027		0.210	0.515
		0.278		0.155		0.433
Rear, Wi-Fi 2 Tx	0.089		0.027	0.155		0.271
		0.278	0.027	0.155		0.460
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	0.852		0.446			1.298
		1.046	0.446			1.492
Edge 4, Wi-Fi 1 Tx	0.263		0.400		0.210	0.873
		0.443	0.400		0.210	1.053
	0.263			0.395		0.658
		0.443		0.395		0.838
Edge 4, Wi-Fi 2 Tx	0.263		0.400	0.395		1.058
		0.443	0.400	0.395		1.238

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.26. Sum of the SAR for LTE Bands 5 and 13 & Wi-Fi 5.3 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 5	LTE Band 13	WiFi 5.3 GHz Main	WiFi 5.3 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.429		0.027		0.210	0.666
	0.429			0.155		0.584
		0.208	0.027		0.210	0.445
		0.208		0.155		0.363
Rear, Wi-Fi 2 Tx	0.429		0.027	0.155		0.611
		0.208	0.027	0.155		0.390
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.169		0.446			1.615
		1.185	0.446			1.631
Edge 4, Wi-Fi 1 Tx	0.202		0.400		0.210	0.812
		0.295	0.400		0.210	0.905
	0.202			0.395		0.597
		0.295		0.395		0.690
Edge 4, Wi-Fi 2 Tx	0.202		0.400	0.395		0.997
		0.295	0.400	0.395		1.090

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.3GHz Main	LTE Band 5				
7	Edge 1	0.446	1.169	1.615	131.1	0.016	7

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.3GHz Main	LTE Band 13				
8	Edge 1	0.446	1.185	1.631	132.5	0.016	8

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.27. Sum of the SAR for LTE Bands 17 and 25 & Wi-Fi 5.3 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 17	LTE Band 25	WiFi 5.3 GHz Main	WiFi 5.3 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.401		0.027		0.210	0.638
	0.401			0.155		0.556
		0.235	0.027		0.210	0.472
		0.235		0.155		0.390
Rear, Wi-Fi 2 Tx	0.401		0.027	0.155		0.583
		0.235	0.027	0.155		0.417
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.229		0.446			1.675
		1.194	0.446			1.640
Edge 4, Wi-Fi 1 Tx	0.259		0.400		0.210	0.869
		0.401	0.400		0.210	1.011
	0.259			0.395		0.654
		0.401		0.395		0.796
Edge 4, Wi-Fi 2 Tx	0.259		0.400	0.395		1.054
		0.401	0.400	0.395		1.196

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.3GHz Main	LTE Band 17				
9	Edge 1	0.446	1.229	1.675	132.6	0.016	9

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.3GHz Main	LTE Band 25				
10	Edge 1	0.446	1.194	1.640	120.7	0.017	10

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.28. Sum of the SAR for GSM & Wi-Fi 5.5 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	GSM850	GSM1900	WiFi 5.5 GHz Main	WiFi 5.5 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.838		0.032		0.210	1.080
	0.838			0.133		0.971
		0.173	0.032		0.210	0.415
		0.173		0.133		0.306
Rear, Wi-Fi 2 Tx	0.838		0.032	0.133		1.003
		0.173	0.032	0.133		0.338
Edge 1, Wi-Fi 1 Tx 16mm → w/WWAN Full Power	1.291		0.992			2.283
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction		1.359	0.992			2.351
Edge 4, Wi-Fi 1 Tx	0.406		0.400		0.210	1.016
		0.476	0.400		0.210	1.086
	0.406			0.26		0.666
Edge 4, Wi-Fi 2 Tx		0.476		0.26		0.736
	0.406		0.400	0.26		1.066
		0.476	0.400	0.26		1.136

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.5GHz Main	GSM850				
1	Edge 1	0.992	1.291	2.283	124.6	0.028	1

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.5GHz Main	PCS1900				
2	Edge 1	0.992	1.359	2.351	114.6	0.031	2

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.29. Sum of the SAR for W-CDMA Bands V and IV & Wi-Fi 5.5 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	WCDMA V	WCDMA IV	WiFi 5.5 GHz Main	WiFi 5.5 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.281		0.032		0.210	0.523
	0.281			0.133		0.414
		0.381	0.032		0.210	0.623
		0.381		0.133		0.514
Rear, Wi-Fi 2 Tx	0.281		0.032	0.133		0.446
		0.381	0.032	0.133		0.546
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.10		0.992			2.092
		1.205	0.992			2.197
Edge 4, Wi-Fi 1 Tx	0.244		0.400		0.210	0.854
		0.423	0.400		0.210	1.033
	0.244			0.26		0.504
		0.423		0.26		0.683
Edge 4, Wi-Fi 2 Tx	0.244		0.400	0.26		0.904
		0.423	0.400	0.26		1.083

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.5GHz Main	WCDMA band V				
3	Edge 1	0.992	1.100	2.092	120.5	0.025	3

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.5GHz Main	WCDMA band IV				
4	Edge 1	0.992	1.205	2.197	114.6	0.028	4

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.30. Sum of the SAR for W-CDMA Band II & Wi-Fi 5.5 GHz Band

Test Position	Data				Σ 1-g SAR (mW/g)
	WCDMA II	WiFi 5.5 GHz Main	WiFi 5.5 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.270	0.032		0.210	0.512
	0.270		0.133		0.403
Rear, Wi-Fi 2 Tx	0.270	0.032	0.133		0.435
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.314	0.992			2.306
Edge 4, Wi-Fi 1 Tx	0.513	0.400		0.210	1.123
	0.513		0.26		0.773
Edge 4, Wi-Fi 2 Tx	0.513	0.400	0.26		1.173

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.5GHz Main	WCDMA band II				
5	Edge 1	0.992	1.314	2.306	113	0.031	5

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.31. Sum of the SAR for CDMA BC0 & Wi-Fi 5.5GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 5.5 GHz Main	WiFi 5.5 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.501		0.032		0.210	0.743
	0.501			0.133		0.634
		0.506	0.032		0.210	0.748
		0.506		0.133		0.639
Rear, Wi-Fi 2 Tx	0.501		0.032	0.133		0.666
		0.506	0.032	0.133		0.671
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.141		0.992			2.133
		0.901	0.992			1.893
Edge 4, Wi-Fi 1 Tx	0.275		0.400		0.210	0.885
		0.284	0.400		0.210	0.894
	0.275			0.26		0.535
		0.284		0.26		0.544
Edge 4, Wi-Fi 2 Tx	0.275		0.400	0.26		0.935
		0.284	0.400	0.26		0.944

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.5GHz Main	CDMA BC0 1xRTT				
6	Edge 1	0.992	1.141	2.133	120.5	0.026	6

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.5GHz Main	CDMA BC0 EVDO				
7	Edge 1	0.992	0.901	1.893	126.6	0.021	7

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.32. Sum of the SAR for CDMA BC1 & Wi-Fi5.5GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 5.5 GHz Main	WiFi 5.5 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.243		0.032		0.210	0.485
	0.243			0.133		0.376
		0.235	0.032		0.210	0.477
		0.235		0.133		0.368
Rear, Wi-Fi 2 Tx	0.243		0.032	0.133		0.408
		0.235	0.032	0.133		0.400
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.253		0.992			2.245
		1.229	0.992			2.221
Edge 4, Wi-Fi 1 Tx	0.345		0.400		0.210	0.955
		0.355	0.400		0.210	0.965
	0.345			0.26		0.605
		0.355		0.26		0.615
Edge 4, Wi-Fi 2 Tx	0.345		0.400	0.26		1.005
		0.355	0.400	0.26		1.015

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.5GHz Main	CDMA BC1 1xRTT				
8	Edge 1	0.992	1.253	2.245	114.5	0.029	8

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.5GHz Main	CDMA BC1 EVDO				
9	Edge 1	0.992	1.229	2.221	113.1	0.029	9

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.33. Sum of the SAR for CDMA BC10 & Wi-Fi 5.5GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 5.5 GHz Main	WiFi 5.5 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.540		0.032		0.210	0.782
	0.540			0.133		0.673
		0.503	0.032		0.210	0.745
		0.503		0.133		0.636
Rear, Wi-Fi 2 Tx	0.540		0.032	0.133		0.705
		0.503	0.032	0.133		0.668
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.034		0.992			2.026
		0.792	0.992			1.784
Edge 4, Wi-Fi 1 Tx	0.284		0.400		0.210	0.894
		0.320	0.400		0.210	0.930
	0.284			0.26		0.544
		0.320		0.26		0.580
Edge 4, Wi-Fi 2 Tx	0.284		0.400	0.26		0.944
		0.320	0.400	0.26		0.980

Note(s):

- Bluetooth and Wi-Fi Aux cannot simultaneously transmit
- Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.5GHz Main	CDMA BC10 1xRTT				
10	Edge 1	0.992	1.034	2.026	125.1	0.023	10

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.5GHz Main	CDMA BC10 EVDO				
11	Edge 1	0.992	0.792	1.784	128.1	0.019	11

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.34. Sum of the SAR for LTE Bands 2 and 4 & Wi-Fi 5.5 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 2	LTE Band 4	WiFi 5.5 GHz Main	WiFi 5.5 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.089		0.032		0.210	0.331
	0.089			0.133		0.222
		0.278	0.032		0.210	0.520
		0.278		0.133		0.411
Rear, Wi-Fi 2 Tx	0.089		0.032	0.133		0.254
		0.278	0.032	0.133		0.443
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	0.852		0.992			1.844
		1.046	0.992			2.038
Edge 4, Wi-Fi 1 Tx	0.263		0.400		0.210	0.873
		0.443	0.400		0.210	1.053
	0.263			0.26		0.523
		0.443		0.26		0.703
Edge 4, Wi-Fi 2 Tx	0.263		0.400	0.26		0.923
		0.443	0.400	0.26		1.103

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.5GHz Main	LTE Band 2				
12	Edge 1	0.992	0.852	1.844	116.1	0.022	12

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.5GHz Main	LTE Band 4				
13	Edge 1	0.992	1.046	2.038	116.5	0.025	13

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.35. Sum of the SAR for LTE Bands 5 and 13 & Wi-Fi 5.5 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 5	LTE Band 13	WiFi 5.5 GHz Main	WiFi 5.5 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.429		0.032		0.210	0.671
	0.429			0.133		0.562
		0.208	0.032		0.210	0.450
		0.208		0.133		0.341
Rear, Wi-Fi 2 Tx	0.429		0.032	0.133		0.594
		0.208	0.032	0.133		0.373
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.169		0.992			2.161
		1.185	0.992			2.177
Edge 4, Wi-Fi 1 Tx	0.202		0.400		0.210	0.812
		0.295	0.400		0.210	0.905
	0.202			0.26		0.462
		0.295		0.26		0.555
Edge 4, Wi-Fi 2 Tx	0.202		0.400	0.26		0.862
		0.295	0.400	0.26		0.955

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.5GHz Main	LTE Band 5				
14	Edge 1	0.992	1.169	2.161	128.0	0.025	14

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.5GHz Main	LTE Band 13				
15	Edge 1	0.992	1.185	2.177	129.5	0.025	15

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.36. Sum of the SAR for LTE Bands 17 and 25 & Wi-Fi 5.5 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 17	LTE Band 25	WiFi 5.5 GHz Main	WiFi 5.5 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.401		0.032		0.210	0.643
	0.401			0.133		0.534
		0.235	0.032		0.210	0.477
		0.235		0.133		0.368
Rear, Wi-Fi 2 Tx	0.401		0.032	0.133		0.566
		0.235	0.032	0.133		0.400
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN	1.229		0.992			2.221
		1.194	0.992			2.186
Edge 4, Wi-Fi 1 Tx	0.259		0.400		0.210	0.869
		0.401	0.400		0.210	1.011
	0.259			0.26		0.519
		0.401		0.26		0.661
Edge 4, Wi-Fi 2 Tx	0.259		0.400	0.26		0.919
		0.401	0.400	0.26		1.061

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.5GHz Main	LTE Band 17				
16	Edge 1	0.992	1.229	2.221	129.5	0.026	16

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.5GHz Main	LTE Band 25				
17	Edge 1	0.992	1.194	2.186	117.6	0.027	17

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.37. Sum of the SAR for GSM & Wi-Fi 5.8 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	GSM850	GSM1900	WiFi 5.8 GHz Main	WiFi 5.8 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.838		0.039		0.210	1.087
	0.838			0.122		0.960
		0.173	0.039		0.210	0.422
		0.173		0.122		0.295
Rear, Wi-Fi 2 Tx	0.838		0.039	0.122		0.999
		0.173	0.039	0.122		0.334
Edge 1, Wi-Fi 1 Tx 16mm → w/WWAN Full Power	1.291		0.874			2.165
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction		1.359	0.874			2.233
Edge 4, Wi-Fi 1 Tx	0.406		0.400		0.210	1.016
		0.476	0.400		0.210	1.086
	0.406			0.149		0.555
Edge 4, Wi-Fi 2 Tx		0.476		0.149		0.625
	0.406		0.400	0.149		0.955
		0.476	0.400	0.149		1.025

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.8GHz Main	GSM850				
1	Edge 1	0.874	1.291	2.165	128.7	0.025	1

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.8GHz Main	PCS1900				
2	Edge 1	0.874	1.359	2.233	118.6	0.028	2

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.38. Sum of the SAR for W-CDMA Bands V and IV & Wi-Fi 5.8 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	WCDMA V	WCDMA IV	WiFi 5.8 GHz Main	WiFi 5.8 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.281		0.039		0.210	0.530
	0.281			0.122		0.403
		0.381	0.039		0.210	0.630
		0.381		0.122		0.503
Rear, Wi-Fi 2 Tx	0.281		0.039	0.122		0.442
		0.381	0.039	0.122		0.542
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.1		0.874			1.974
		1.205	0.874			2.079
Edge 4, Wi-Fi 1 Tx	0.244		0.400		0.210	0.854
		0.423	0.400		0.210	1.033
	0.244			0.149		0.393
		0.423		0.149		0.572
Edge 4, Wi-Fi 2 Tx	0.244		0.400	0.149		0.793
		0.423	0.400	0.149		0.972

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.8GHz Main	WCDMA band V				
3	Edge 1	0.874	1.100	1.974	124.6	0.022	3

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.8GHz Main	WCDMA band IV				
4	Edge 1	0.874	1.205	2.079	118.5	0.025	4

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.39. Sum of the SAR for W-CDMA Band II & Wi-Fi 5.8 GHz Band

Test Position	Data				Σ 1-g SAR (mW/g)
	WCDMA II	WiFi 5.8 GHz Main	WiFi 5.8 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.270	0.039		0.210	0.519
	0.270		0.122		0.392
Rear, Wi-Fi 2 Tx	0.270	0.039	0.122		0.431
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.314	0.874			2.188
Edge 4, Wi-Fi 1 Tx	0.513	0.400		0.210	1.123
	0.513		0.149		0.662
Edge 4, Wi-Fi 2 Tx	0.513	0.400	0.149		1.062

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.8GHz Main	WCDMA band II				
5	Edge 1	0.874	1.314	2.188	117.1	0.028	5

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.40. Sum of the SAR for CDMA BC0 & Wi-Fi 5.8GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 5.8 GHz Main	WiFi 5.8 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.501		0.039		0.210	0.750
	0.501			0.122		0.623
		0.506	0.039		0.210	0.755
		0.506		0.122		0.628
Rear, Wi-Fi 2 Tx	0.501		0.039	0.122		0.662
		0.506	0.039	0.122		0.667
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.141		0.874			2.015
		0.901	0.874			1.775
Edge 4, Wi-Fi 1 Tx	0.275		0.400		0.210	0.885
		0.284	0.400		0.210	0.894
	0.275			0.149		0.424
		0.284		0.149		0.433
Edge 4, Wi-Fi 2 Tx	0.275		0.400	0.149		0.824
		0.284	0.400	0.149		0.833

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.8GHz Main	CDMA BC0 1xRTT				
6	Edge 1	0.874	1.141	2.015	124.6	0.023	6

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.8GHz Main	CDMA BC0 EVDO				
7	Edge 1	0.874	0.901	1.775	130.6	0.018	7

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.41. Sum of the SAR for CDMA BC1 & Wi-Fi5.8GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 5.8 GHz Main	WiFi 5.8 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.243		0.039		0.210	0.492
	0.243			0.122		0.365
		0.235	0.039		0.210	0.484
		0.235		0.122		0.357
Rear, Wi-Fi 2 Tx	0.243		0.039	0.122		0.404
		0.235	0.039	0.122		0.396
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.253		0.874			2.127
		1.229	0.874			2.103
Edge 4, Wi-Fi 1 Tx	0.345		0.400		0.210	0.955
		0.355	0.400		0.210	0.965
	0.345			0.149		0.494
		0.355		0.149		0.504
Edge 4, Wi-Fi 2 Tx	0.345		0.400	0.149		0.894
		0.355	0.400	0.149		0.904

Note(s):

- Bluetooth and Wi-Fi Aux cannot simultaneously transmit
- Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.8GHz Main	CDMA BC1 1xRTT				
8	Edge 1	0.874	1.253	2.127	118.6	0.026	8

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.8GHz Main	CDMA BC1 EVDO				
9	Edge 1	0.874	1.229	2.103	117.1	0.026	9

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.42. Sum of the SAR for CDMA BC10 & Wi-Fi 5.8GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	1xRTT	EVDO	WiFi 5.8 GHz Main	WiFi 5.8 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.540		0.039		0.210	0.789
	0.540			0.122		0.662
		0.503	0.039		0.210	0.752
		0.503		0.122		0.625
Rear, Wi-Fi 2 Tx	0.540		0.039	0.122		0.701
		0.503	0.039	0.122		0.664
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.034		0.874			1.908
		0.792	0.874			1.666
Edge 4, Wi-Fi 1 Tx	0.284		0.400		0.210	0.894
		0.320	0.400		0.210	0.930
	0.284			0.149		0.433
		0.320		0.149		0.469
Edge 4, Wi-Fi 2 Tx	0.284		0.400	0.149		0.833
		0.320	0.400	0.149		0.869

Note(s):

- Bluetooth and Wi-Fi Aux cannot simultaneously transmit
- Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.8GHz Main	CDMA BC10 1xRTT				
10	Edge 1	0.874	1.034	1.908	129.1	0.020	10

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.8GHz Main	CDMA BC10 EVDO				
11	Edge 1	0.874	0.792	1.666	132.1	0.016	11

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.43. Sum of the SAR for LTE Bands 2 and 4 & Wi-Fi 5.8 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 2	LTE Band 4	WiFi 5.8 GHz Main	WiFi 5.8 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.089		0.039		0.210	0.338
	0.089			0.122		0.211
		0.278	0.039		0.210	0.527
		0.278		0.122		0.400
Rear, Wi-Fi 2 Tx	0.089		0.039	0.122		0.250
		0.278	0.039	0.122		0.439
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	0.852		0.874			1.726
		1.046	0.874			1.920
Edge 4, Wi-Fi 1 Tx	0.263		0.400		0.210	0.873
		0.443	0.400		0.210	1.053
	0.263			0.149		0.412
		0.443		0.149		0.592
Edge 4, Wi-Fi 2 Tx	0.263		0.400	0.149		0.812
		0.443	0.400	0.149		0.992

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.8GHz Main	LTE Band 2				
12	Edge 1	0.874	0.852	1.726	120.0	0.019	12

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.8GHz Main	LTE Band 4				
13	Edge 1	0.874	1.046	1.920	120.2	0.022	13

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.44. Sum of the SAR for LTE Bands 5 and 13 & Wi-Fi 5.8 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 5	LTE Band 13	WiFi 5.8 GHz Main	WiFi 5.8 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.429		0.039		0.210	0.678
	0.429			0.122		0.551
		0.208	0.039		0.210	0.457
		0.208		0.122		0.330
Rear, Wi-Fi 2 Tx	0.429		0.039	0.122		0.590
		0.208	0.039	0.122		0.369
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.169		0.874			2.043
		1.185	0.874			2.059
Edge 4, Wi-Fi 1 Tx	0.202		0.400		0.210	0.812
		0.295	0.400		0.210	0.905
	0.202			0.149		0.351
		0.295		0.149		0.444
Edge 4, Wi-Fi 2 Tx	0.202		0.400	0.149		0.751
		0.295	0.400	0.149		0.844

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.8GHz Main	LTE Band 5				
14	Edge 1	0.874	1.169	2.043	132.1	0.022	14

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.8GHz Main	LTE Band 13				
15	Edge 1	0.874	1.185	2.059	133.7	0.022	15

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.45. Sum of the SAR for LTE Bands 17 and 25 & Wi-Fi 5.8 GHz Band

Test Position	Data					Σ 1-g SAR (mW/g)
	LTE Band 17	LTE Band 25	WiFi 5.8 GHz Main	WiFi 5.8 GHz Aux	Bluetooth	
Rear, Wi-Fi 1 Tx	0.401		0.039		0.210	0.650
	0.401			0.122		0.523
		0.235	0.039		0.210	0.484
		0.235		0.122		0.357
Rear, Wi-Fi 2 Tx	0.401		0.039	0.122		0.562
		0.235	0.039	0.122		0.396
Edge 1, Wi-Fi 1 Tx 0mm → w/WWAN Power Reduction	1.229		0.874			2.103
		1.194	0.874			2.068
Edge 4, Wi-Fi 1 Tx	0.259		0.400		0.210	0.869
		0.401	0.400		0.210	1.011
	0.259			0.149		0.408
		0.401		0.149		0.550
Edge 4, Wi-Fi 2 Tx	0.259		0.400	0.149		0.808
		0.401	0.400	0.149		0.950

Note(s):

1. Bluetooth and Wi-Fi Aux cannot simultaneously transmit
2. Values shaded green are estimated SAR

SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.8GHz Main	LTE Band 17				
16	Edge 1	0.874	1.229	2.103	133.6	0.023	16

Case #	Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Figure
		WiFi 5.8GHz Main	LTE Band 25				
17	Edge 1	0.874	1.194	2.068	121.5	0.024	17

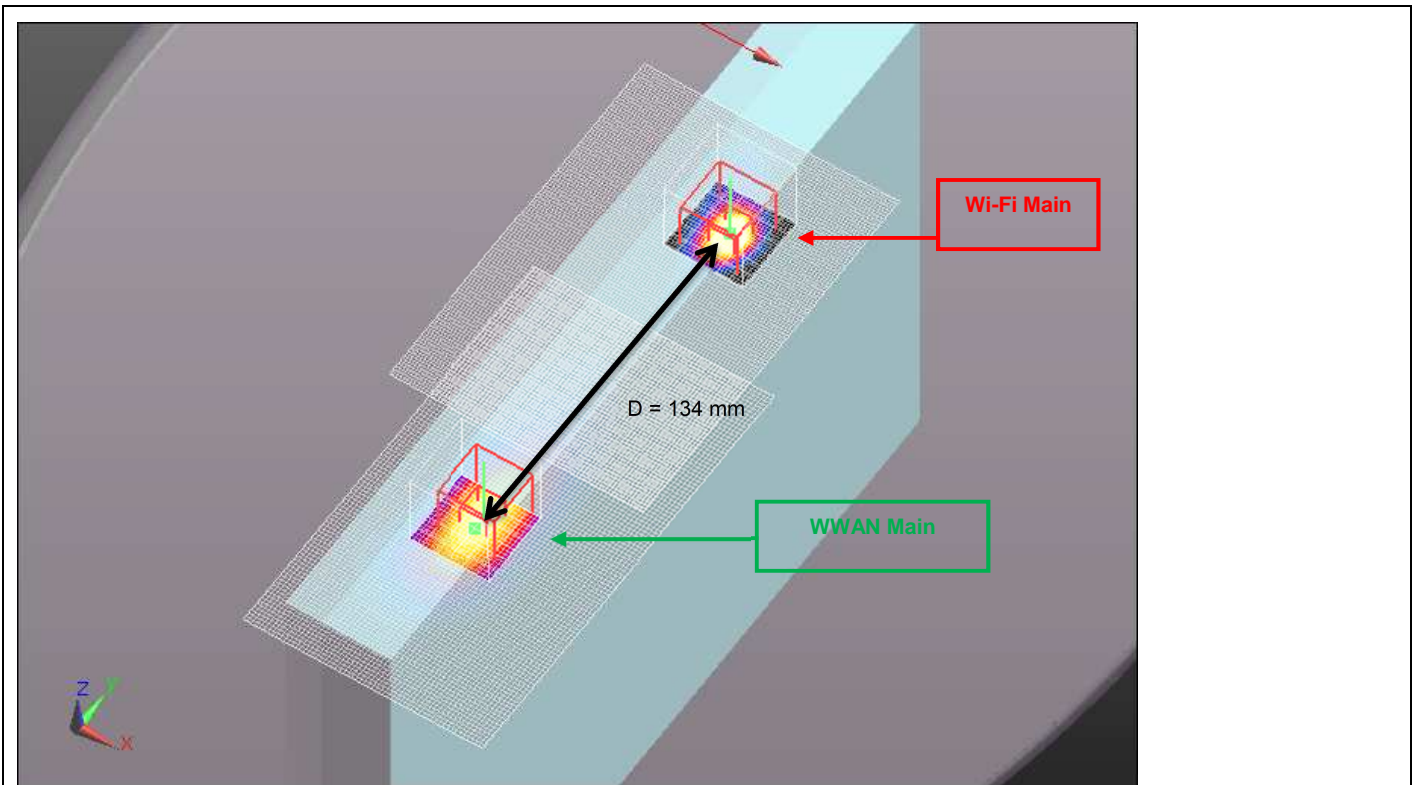
Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

13.46. Separation Distance Calculations and Figures

WLAN2.4GHz + WWAN

Figure (1)

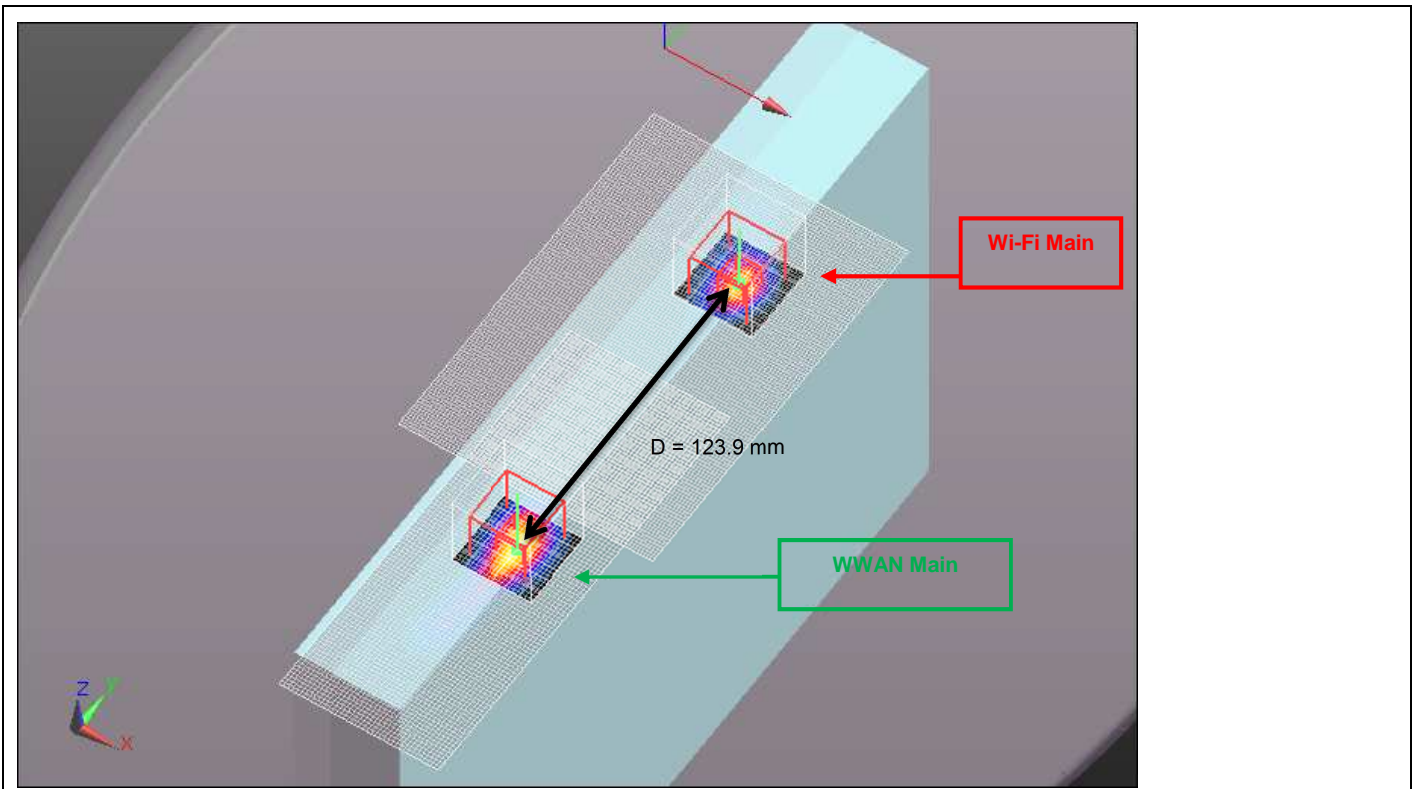


Mode	Peak SAR mW/g	X m	Y m	Z m
Wi-Fi Main 2.4 GHz	1.6	-0.0012	0.0444	-0.18
GSM850	1.13	-0.0045	-0.0895	-0.184
d: Calculated distance (mm)				
134.0				

The Peak Location Separation Distance is computed by using the formula below:

$$\text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$$

WLAN2.4GHz + WWAN
Figure (2)

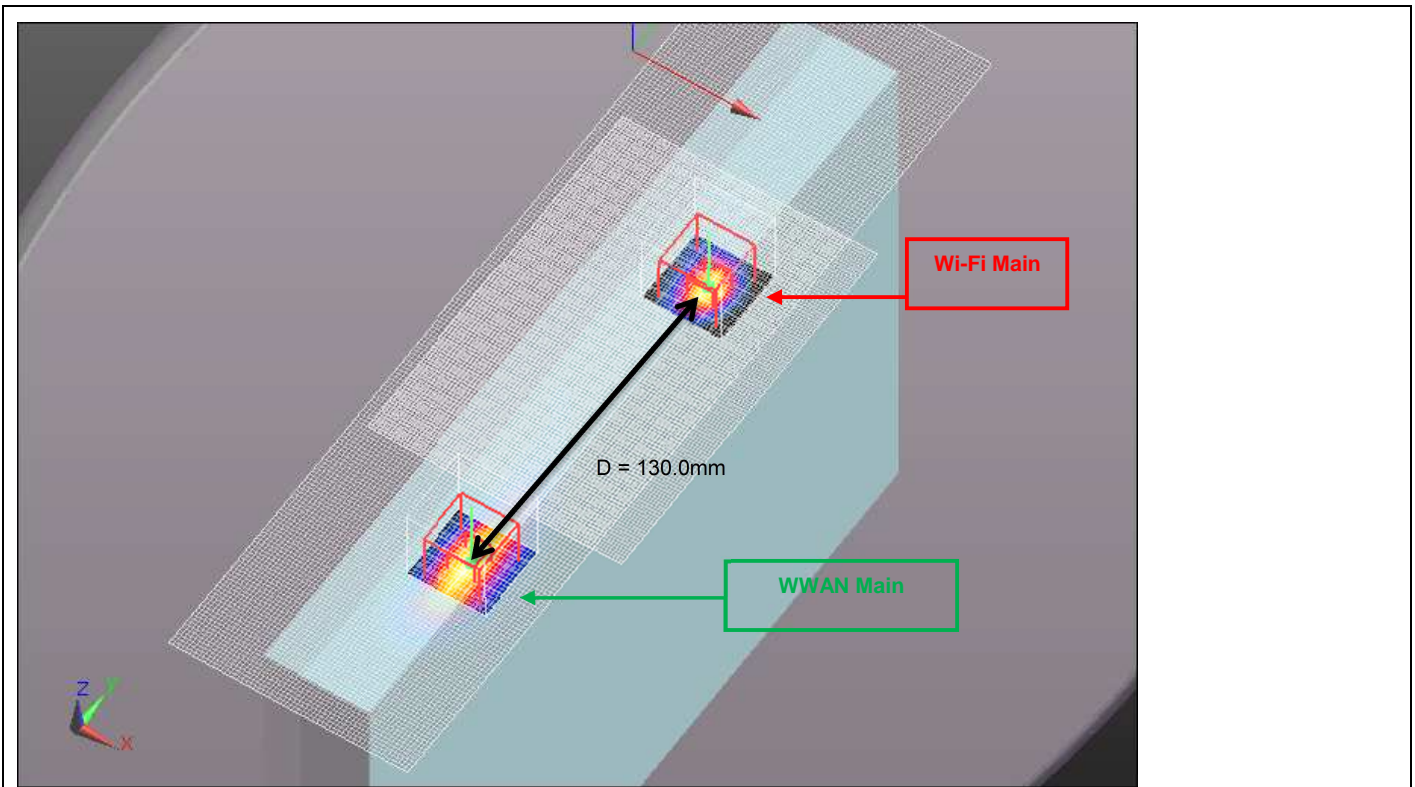


Mode	Peak SAR mW/g	X m	Y m	Z m
Wi-Fi Main 2.4 GHz	1.6	-0.0012	0.0444	-0.18
PCS1900	1.92	-0.002	-0.0795	-0.183
d: Calculated distance (mm)				
123.9				

The Peak Location Separation Distance is computed by using the formula below:

$$\text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$$

WLAN2.4GHz + WWAN
Figure (3)

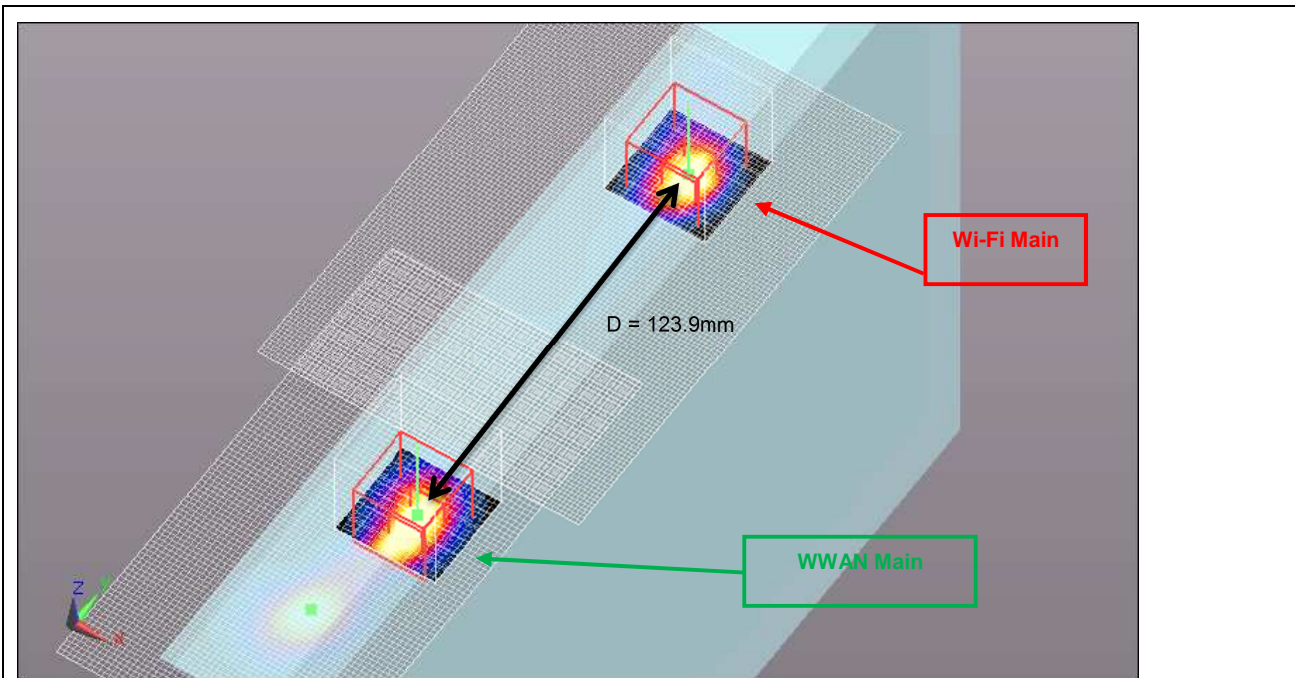


Mode	Peak SAR mW/g	X m	Y m	Z m
Wi-Fi Main 2.4 GHz	1.6	-0.0012	0.0444	-0.18
WCDMA Band V	1.62	-0.0035	-0.0855	-0.183

d: Calculated distance (mm)
130.0

The Peak Location Separation Distance is computed by using the formula below:
 $\text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

WLAN2.4GHz + WWAN
Figure (4)

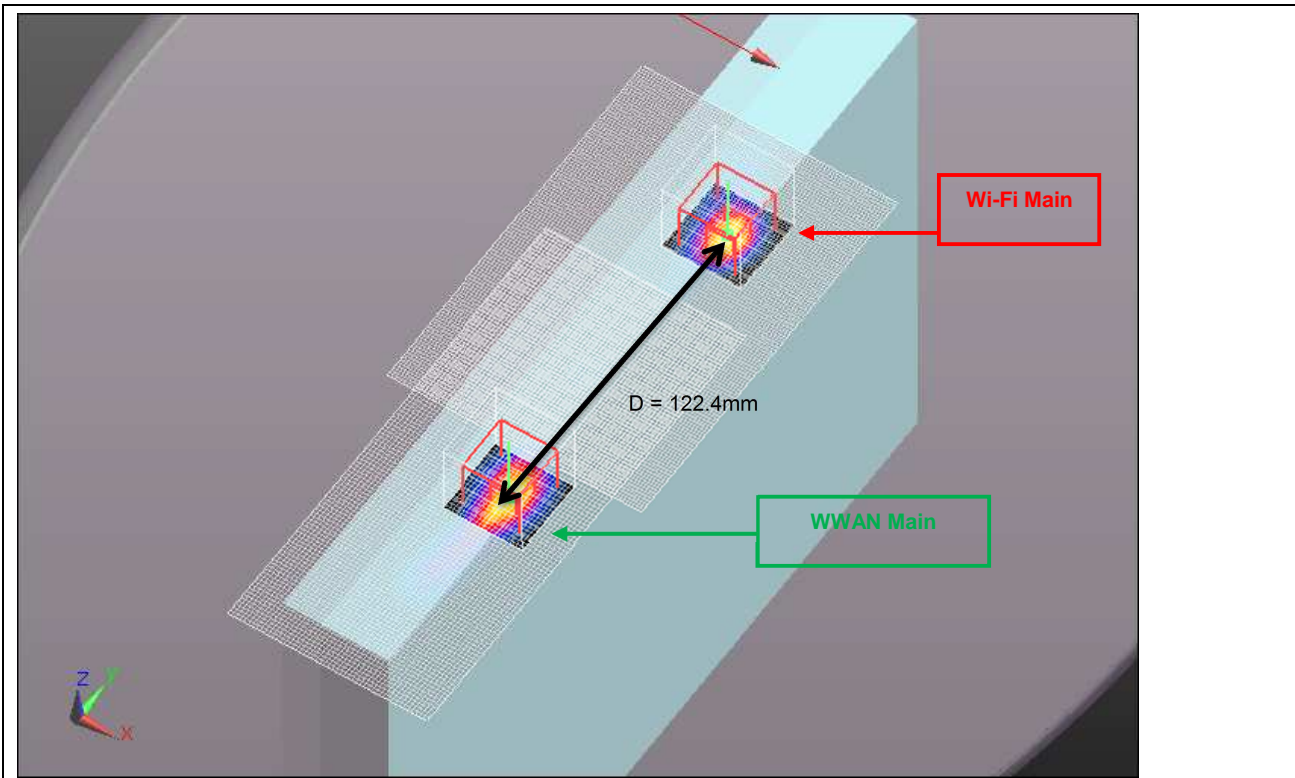


Mode	Peak SAR	X	Y	Z
	mW/g	m	m	m
Wi-Fi Main 2.4 GHz	1.6	-0.0012	0.0444	-0.18
WCDMA Band IV	1.79	0.001	-0.0795	-0.182

d: Calculated distance (mm)	
123.9	

The Peak Location Separation Distance is computed by using the formula below:
 $\text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

WLAN2.4GHz + WWAN
Figure (5)

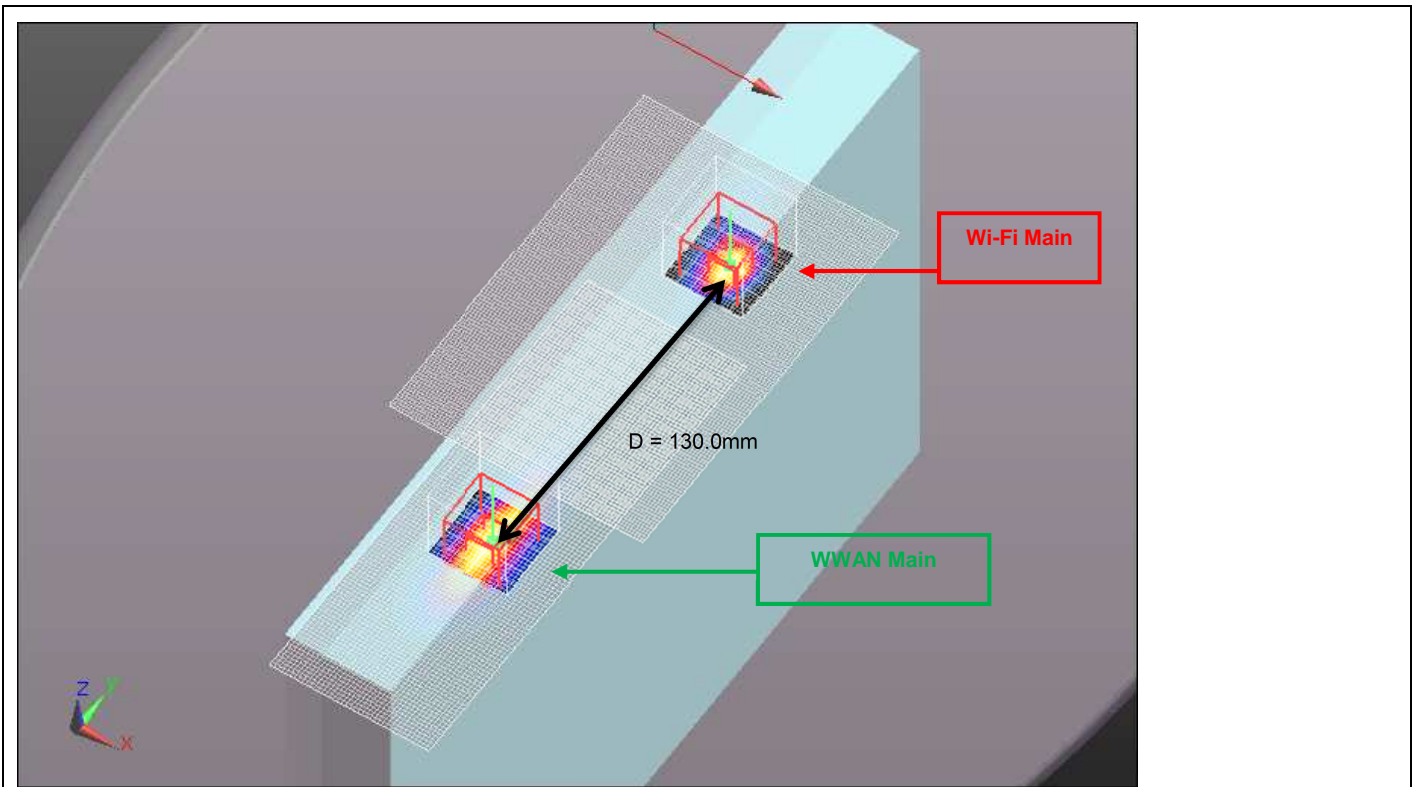


Mode	Peak SAR	X	Y	Z
	mW/g	m	m	m
Wi-Fi Main 2.4 GHz	1.6	-0.0012	0.0444	-0.18
WCDMA Band II	1.59	-0.002	-0.078	-0.182

d: Calculated distance (mm)
122.4

The Peak Location Separation Distance is computed by using the formula below:
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

WLAN2.4GHz + WWAN
Figure (6)

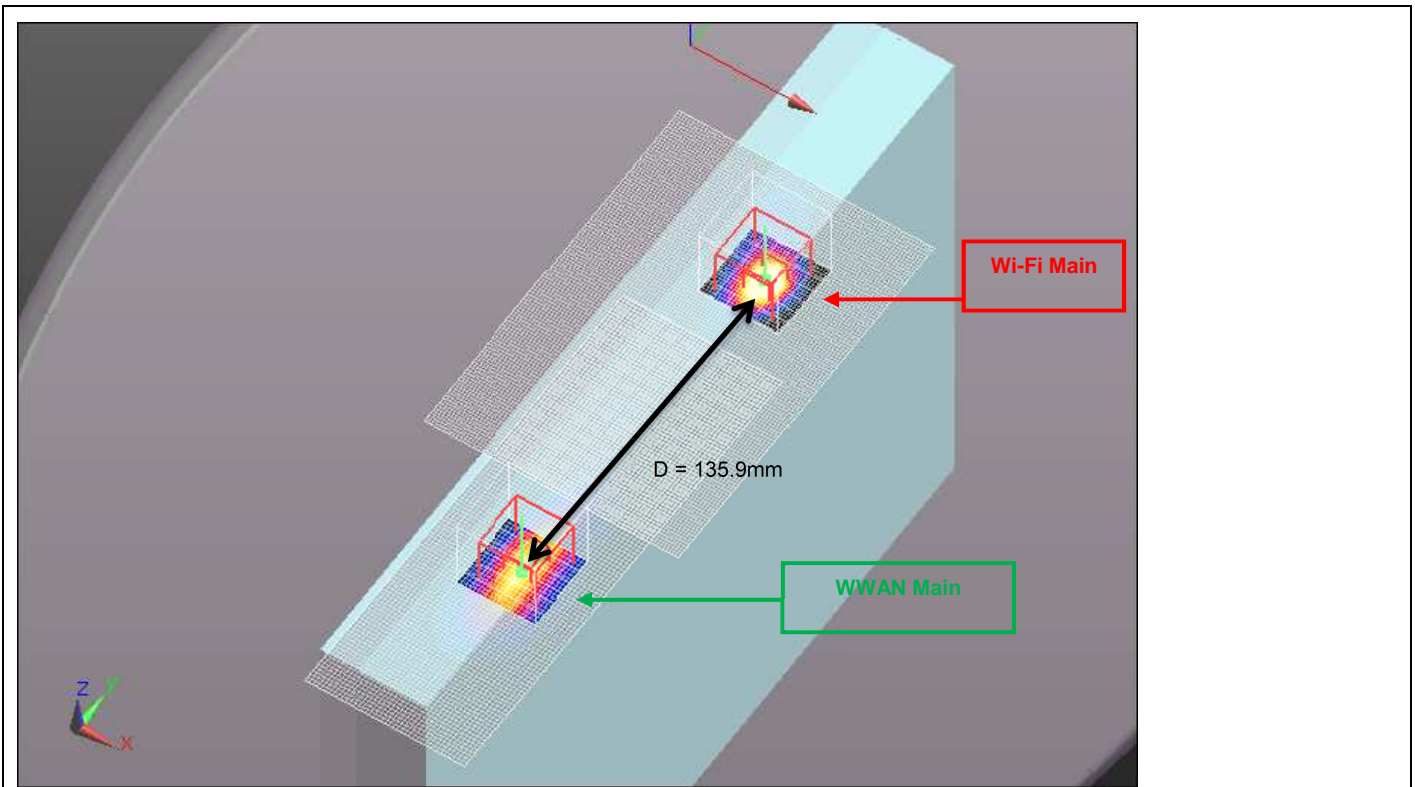


Mode	Peak SAR mW/g	X m	Y m	Z m
Wi-Fi Main 2.4 GHz	1.6	-0.0012	0.0444	-0.18
CDMA BC0 1xRTT	1.54	-0.0035	-0.0855	-0.183

d: Calculated distance (mm)
130.0

The Peak Location Separation Distance is computed by using the formula below:
 $\text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

WLAN2.4GHz + WWAN
Figure (7)

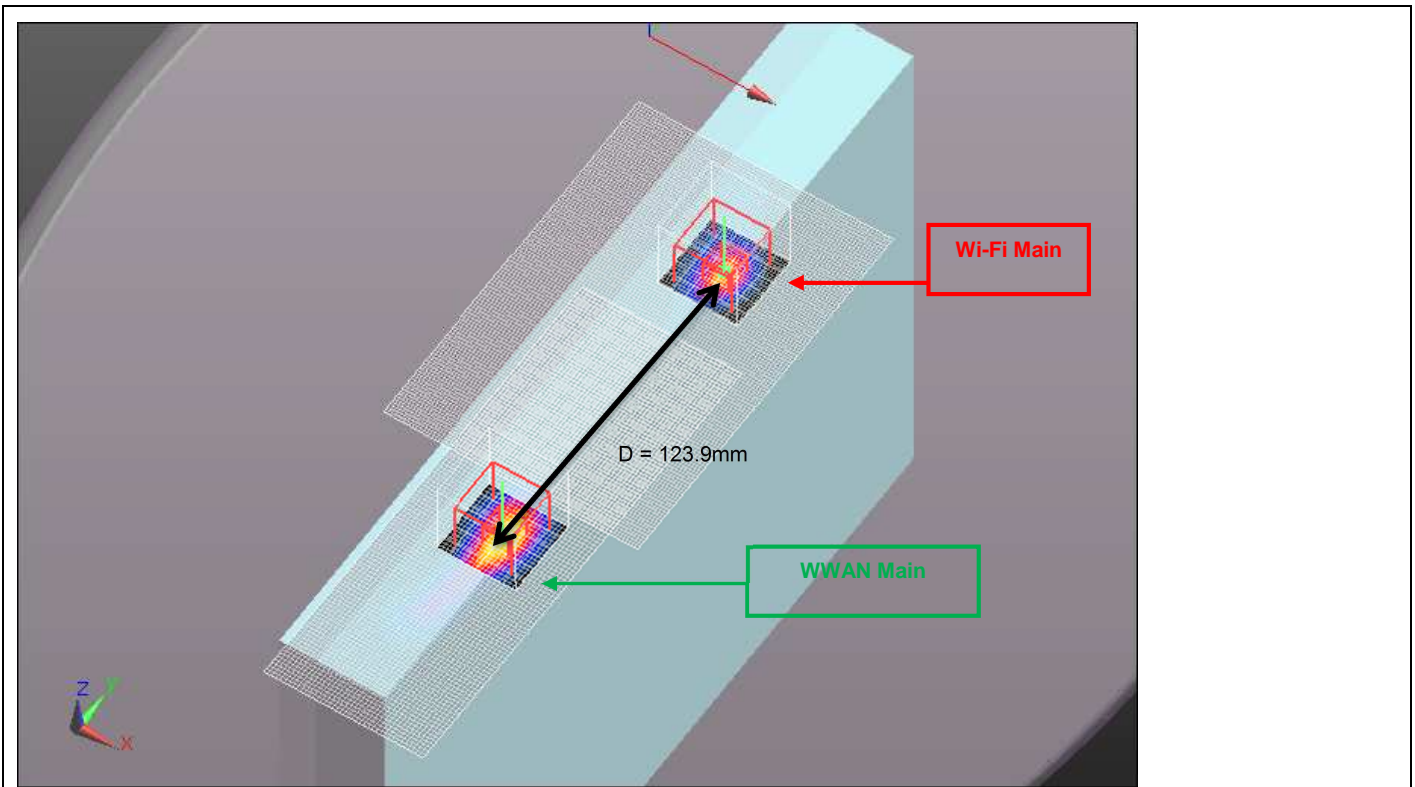


Mode	Peak SAR mW/g	X m	Y m	Z m
Wi-Fi Main 2.4 GHz	1.6	-0.0012	0.0444	-0.18
CDMA BC0 EVDO	1.17	-0.002	-0.0915	-0.183

d: Calculated distance (mm)
135.9

The Peak Location Separation Distance is computed by using the formula below:
 $\text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

WLAN2.4GHz + WWAN
Figure (8)

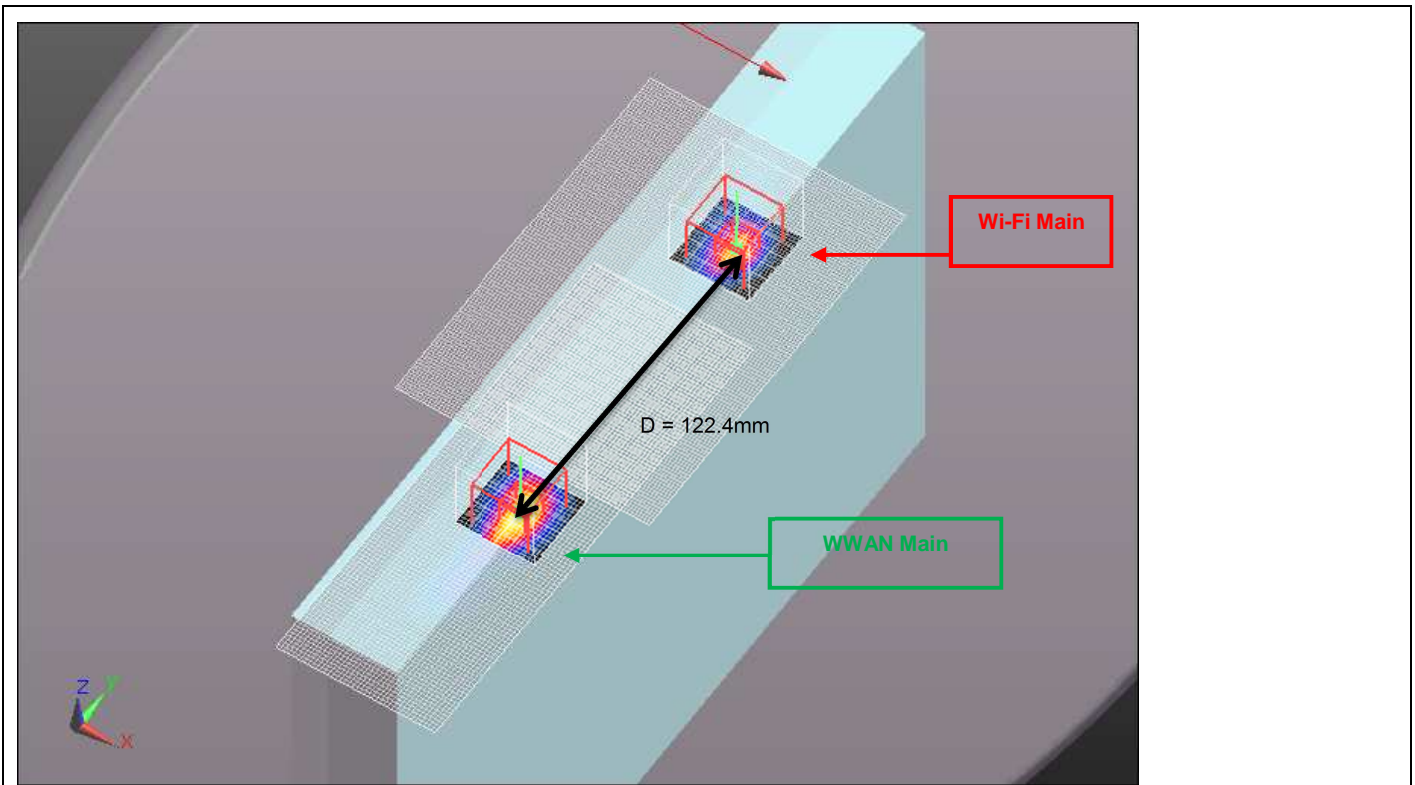


Mode	Peak SAR mW/g	X m	Y m	Z m
Wi-Fi Main 2.4 GHz	1.6	-0.0012	0.0444	-0.18
CDMA BC1 1xRTT	2.09	-0.002	-0.0795	-0.182

d: Calculated distance (mm)
123.9

The Peak Location Separation Distance is computed by using the formula below:
 $\text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

WLAN2.4GHz + WWAN
Figure (9)

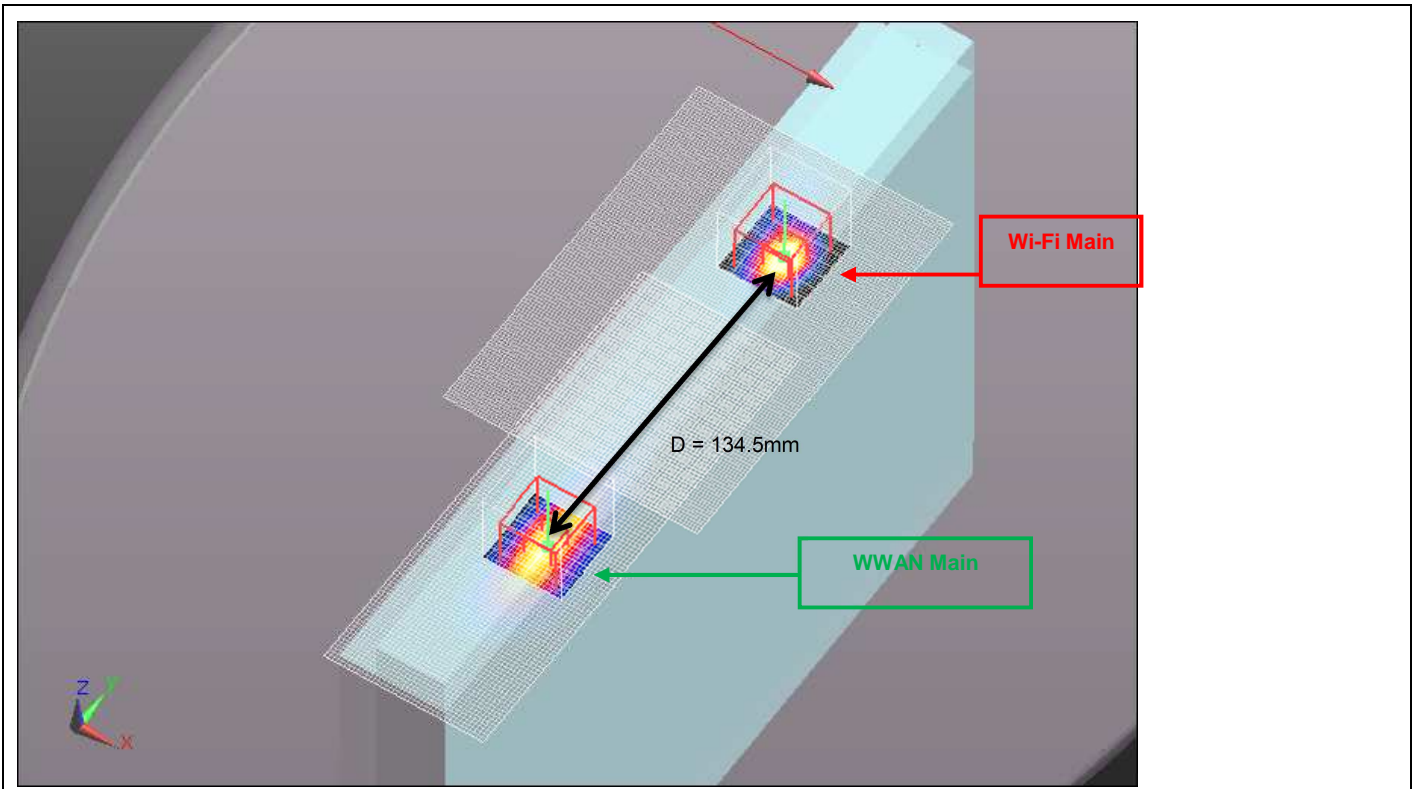


Mode	Peak SAR mW/g	X m	Y m	Z m
Wi-Fi Main 2.4 GHz	1.6	-0.0012	0.0444	-0.18
CDMA BC1 EVDO	2.01	-0.0005	-0.078	-0.183

d: Calculated distance (mm)
122.4

The Peak Location Separation Distance is computed by using the formula below:
 $\text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

WLAN2.4GHz + WWAN
Figure (10)

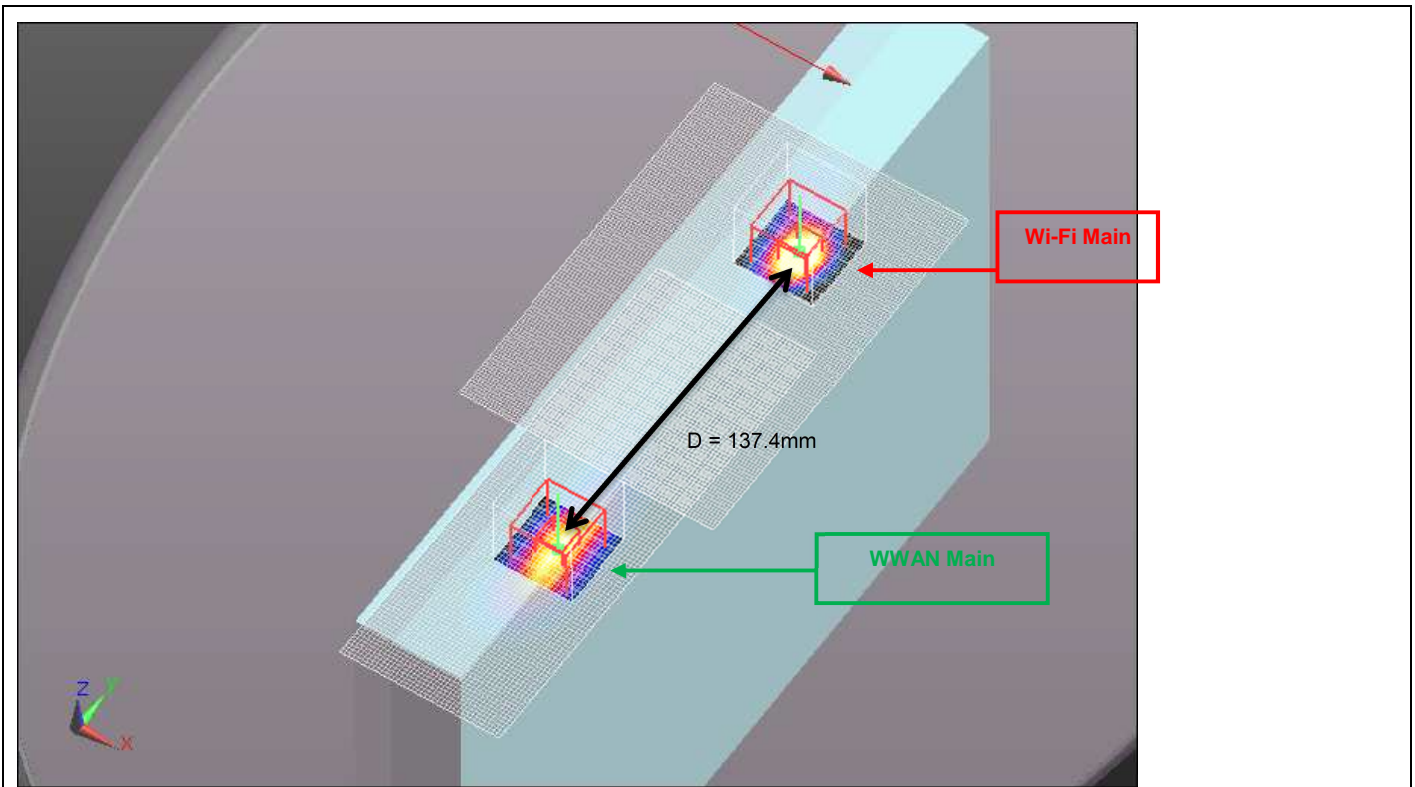


Mode	Peak SAR mW/g	X m	Y m	Z m
Wi-Fi Main 2.4 GHz	1.6	-0.0012	0.0444	-0.18
CDMA BC10 1xRTT	1.35	-0.0005	-0.09	-0.184

d: Calculated distance (mm)	
134.5	

The Peak Location Separation Distance is computed by using the formula below:
 $\text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

WLAN2.4GHz + WWAN
Figure (11)

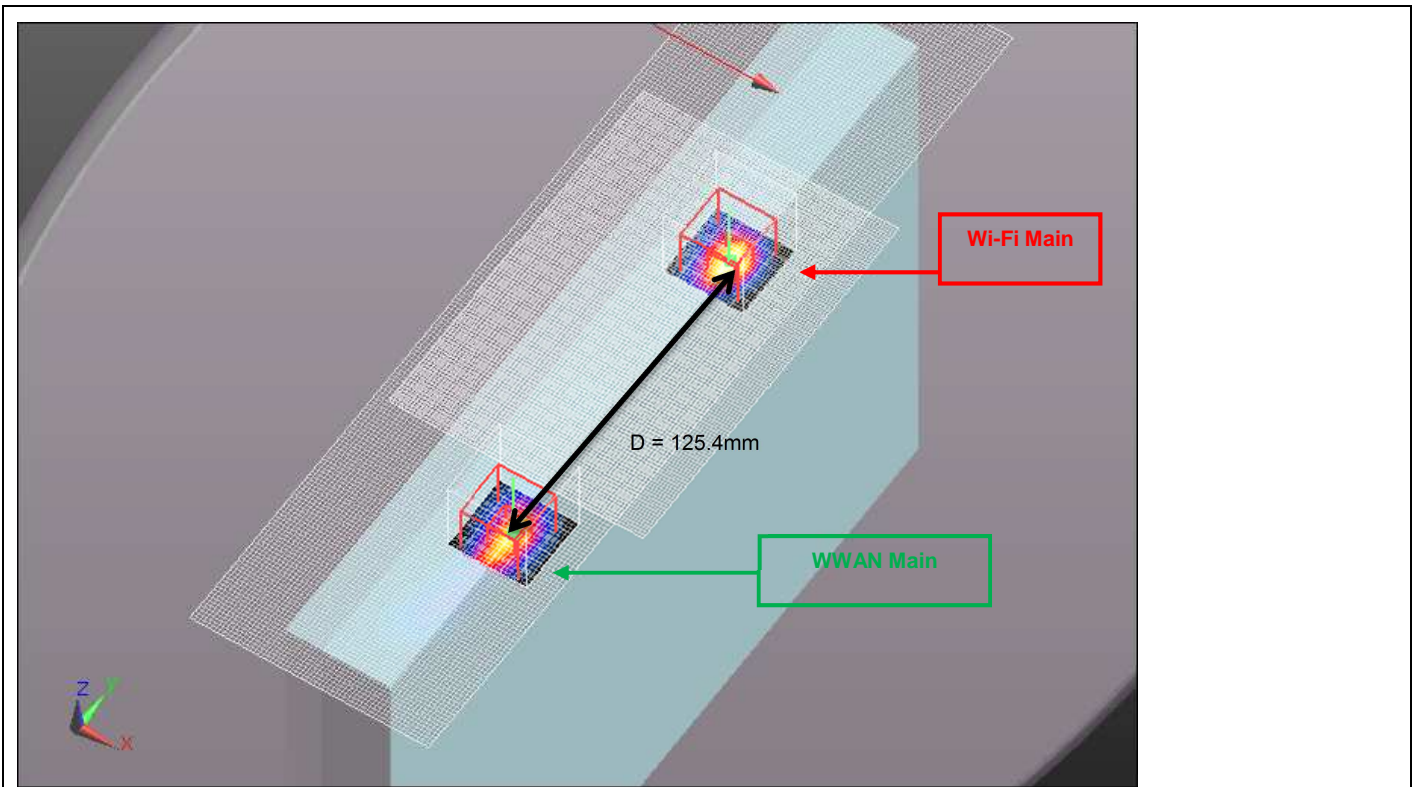


Mode	Peak SAR mW/g	X m	Y m	Z m
Wi-Fi Main 2.4 GHz	1.6	-0.0012	0.0444	-0.18
CDMA BC10 EVDO	1.08	-0.0005	-0.093	-0.183

d: Calculated distance (mm)
137.4

The Peak Location Separation Distance is computed by using the formula below:
 $\text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

WLAN2.4GHz + WWAN
Figure (12)

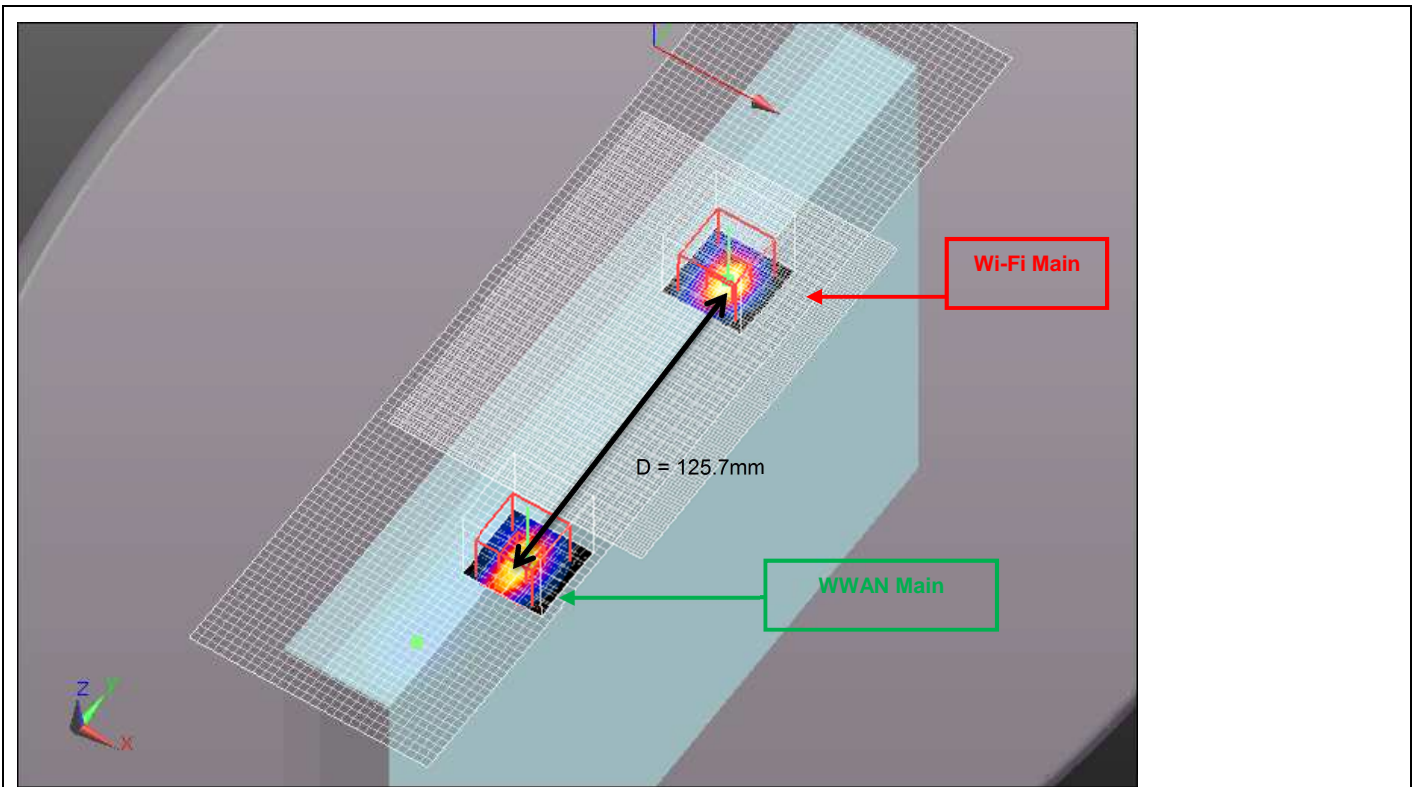


Mode	Peak SAR mW/g	X m	Y m	Z m
Wi-Fi Main 2.4 GHz	1.6	-0.0012	0.0444	-0.18
LTE Band 2	1.47	0.001	-0.081	-0.182

d: Calculated distance (mm)
125.4

The Peak Location Separation Distance is computed by using the formula below:
 $\text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

WLAN2.4GHz + WWAN
Figure (13)

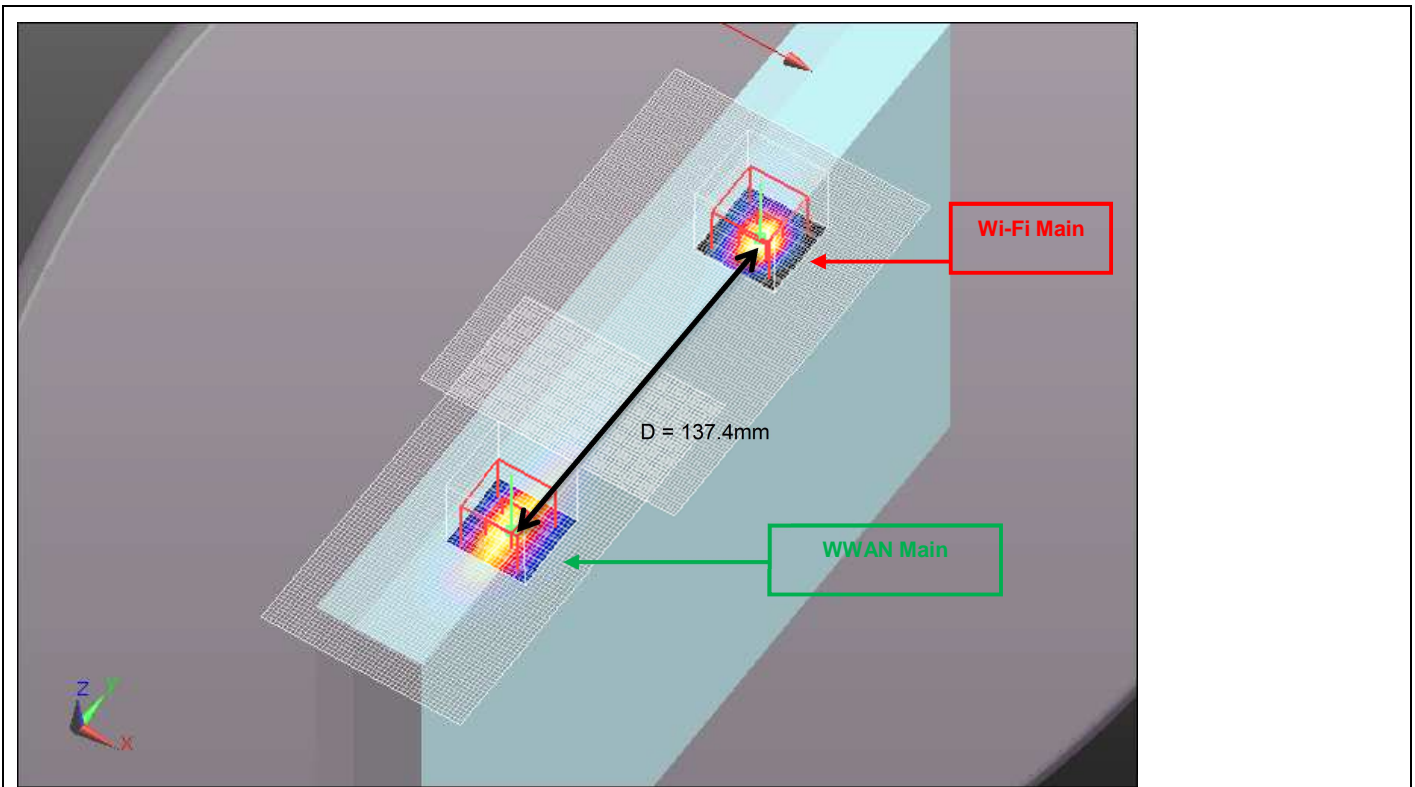


Mode	Peak SAR mW/g	X m	Y m	Z m
Wi-Fi Main 2.4 GHz	1.6	-0.0012	0.0444	-0.18
LTE Band 4	1.51	0.007	-0.081	-0.182

d: Calculated distance (mm)
125.7

The Peak Location Separation Distance is computed by using the formula below:
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

WLAN2.4GHz + WWAN
Figure (14)

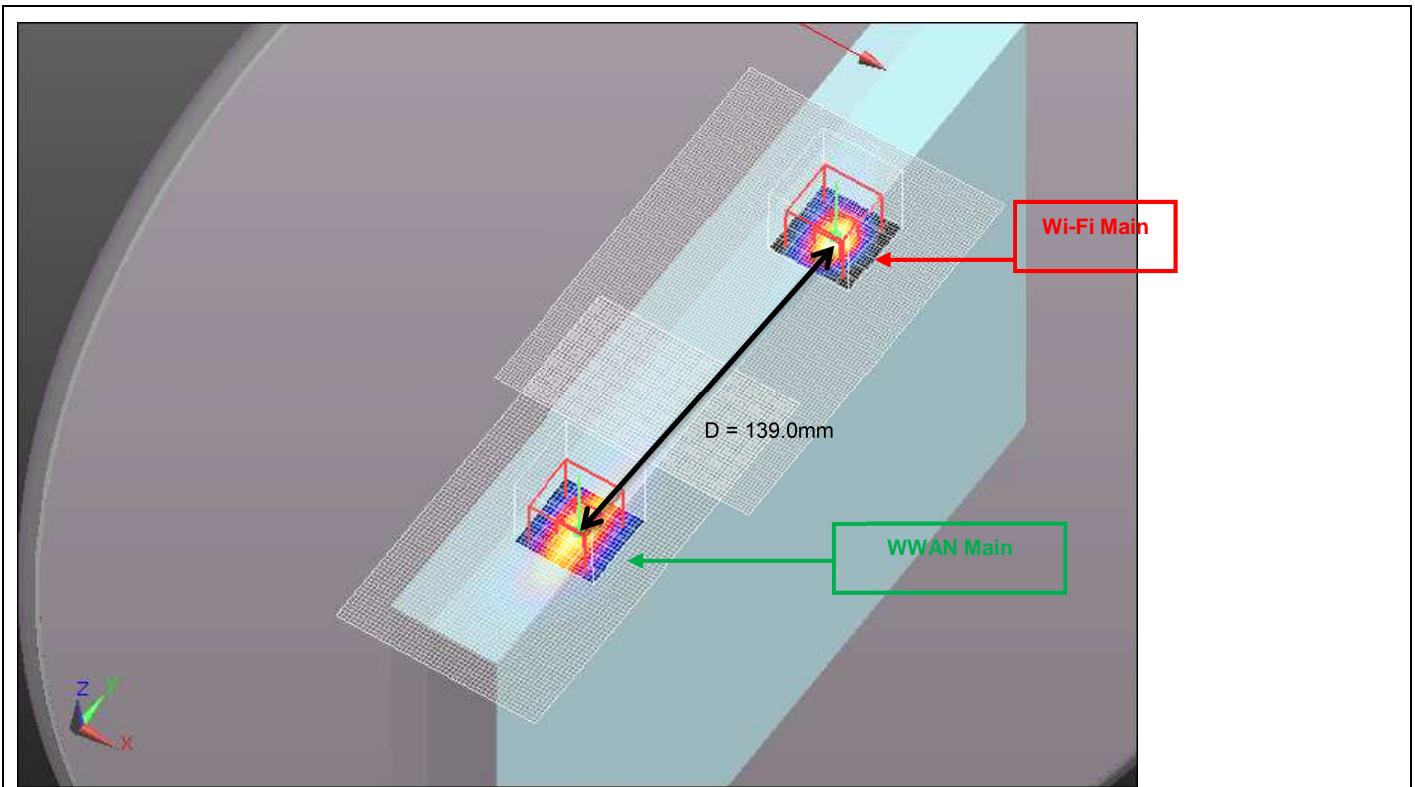


Mode	Peak SAR mW/g	X m	Y m	Z m
Wi-Fi Main 2.4 GHz	1.6	-0.0012	0.0444	-0.18
LTE Band 5	1.39	-0.0035	-0.093	-0.182

d: Calculated distance (mm)	
137.4	

The Peak Location Separation Distance is computed by using the formula below:
 $\text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

WLAN2.4GHz + WWAN
Figure (15)

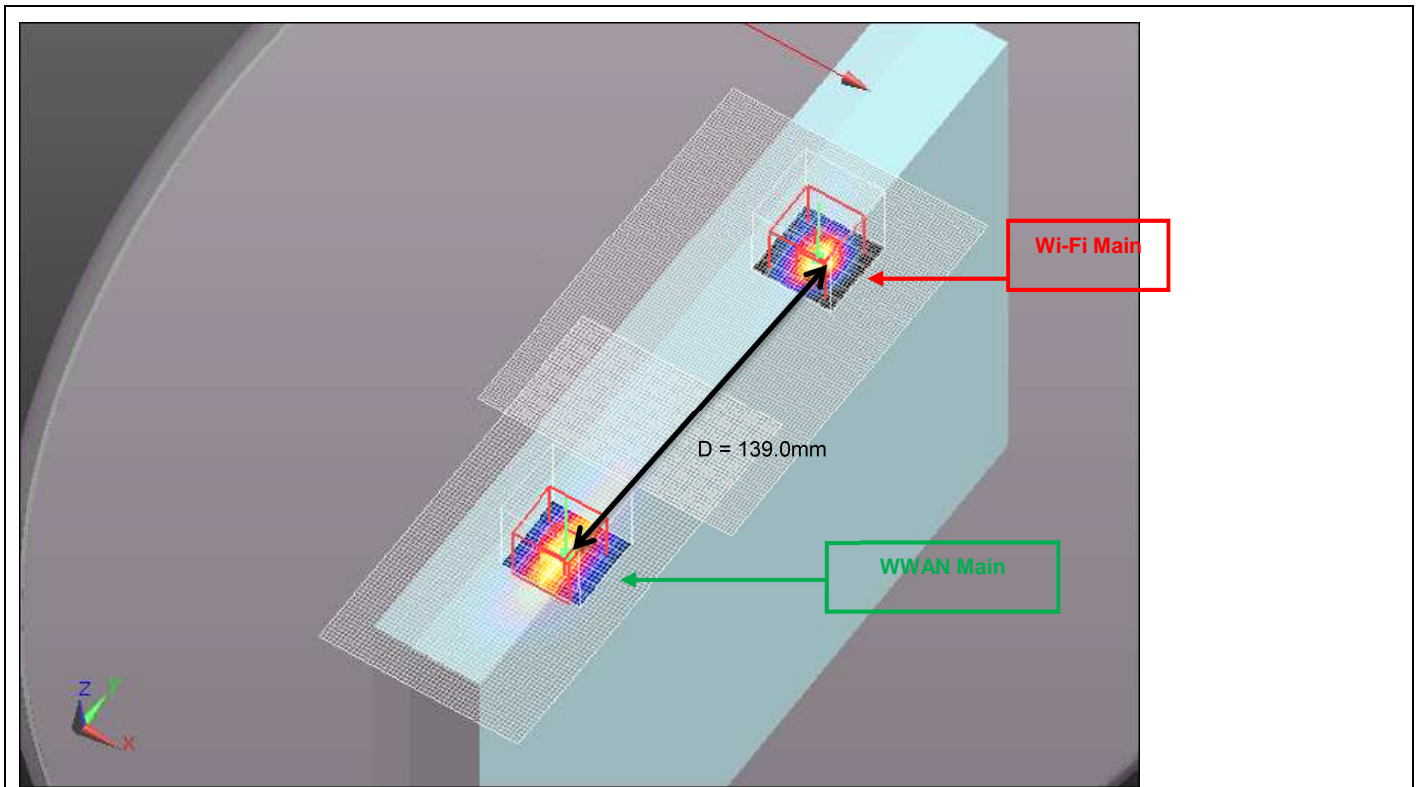


Mode	Peak SAR mW/g	X m	Y m	Z m
Wi-Fi Main 2.4 GHz	1.6	-0.0012	0.0444	-0.18
LTE Band 13	1.45	-0.005	-0.0945	-0.182

d: Calculated distance (mm)	
139.0	

The Peak Location Separation Distance is computed by using the formula below:
 $\text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

WLAN2.4GHz + WWAN
Figure (16)

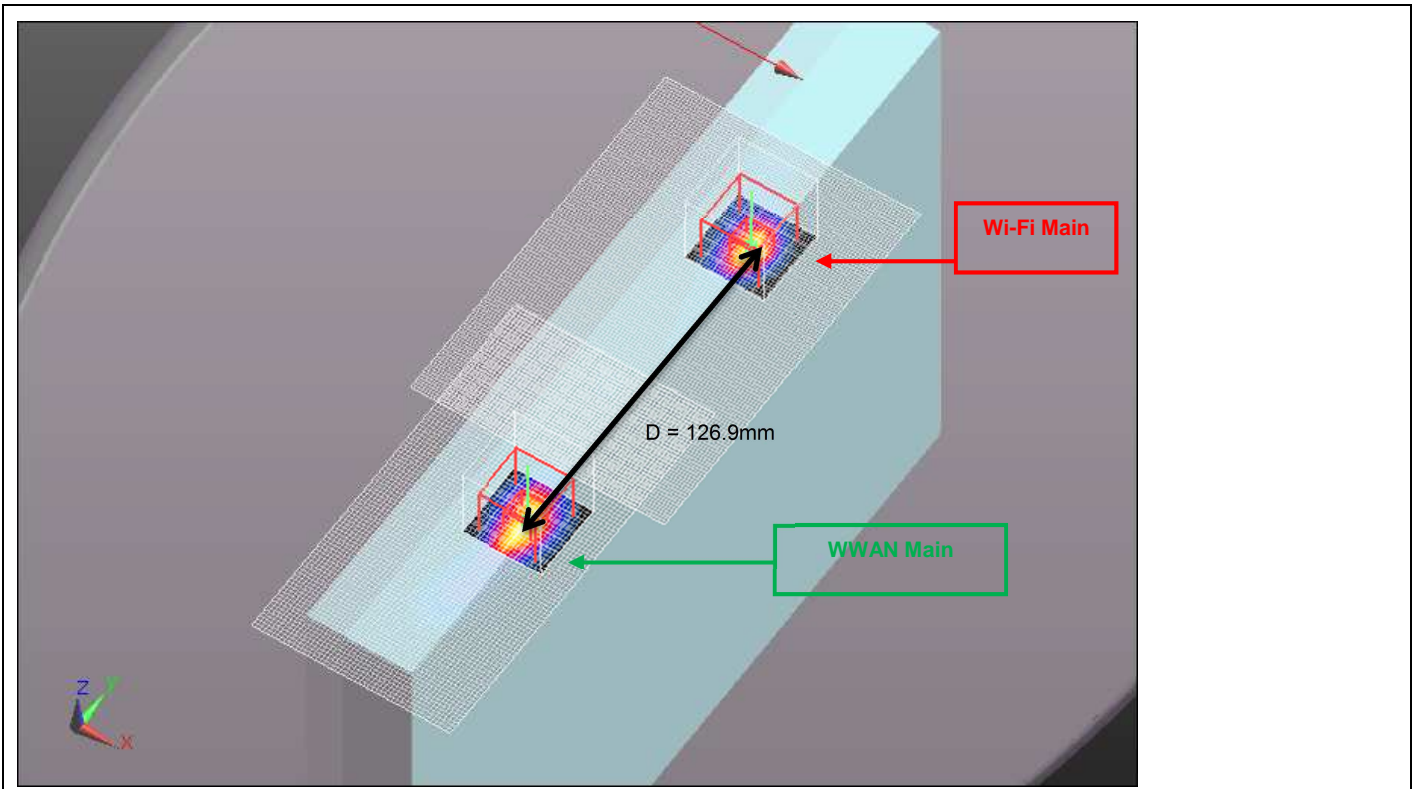


Mode	Peak SAR mW/g	X m	Y m	Z m
Wi-Fi Main 2.4 GHz	1.6	-0.0012	0.0444	-0.18
LTE Band 17	1.56	-0.0035	-0.0945	-0.183

d: Calculated distance (mm)
139.0

The Peak Location Separation Distance is computed by using the formula below:
 $\text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

WLAN2.4GHz + WWAN
Figure (17)



Mode	Peak SAR mW/g	X m	Y m	Z m
Wi-Fi Main 2.4 GHz	1.6	-0.0012	0.0444	-0.18
LTE Band 25	1.73	-0.0005	-0.0825	-0.182
d: Calculated distance (mm)				
126.9				

The Peak Location Separation Distance is computed by using the formula below:
 $\text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$