

13.14 Measurement Results (LTE Band 4 Hotspot SAR)

Frequency		Modula tion	Conducted Power (dBm)	Power Drift (dB)	Configuration	RB Size	RB Offset	Separation Distance	Measured SAR (mW/g)	Scaling Facor	Scaled SAR (mW/g)	MPR.	Plot No.
MHz	ch.												
1720.0	20050	QPSK	23.43	-0.017	Rear	1	0	1.0 cm	0.953	1.114	1.062	0	-
1720.0	20050	QPSK	21.84	-0.065	Rear	100	0	1.0 cm	0.636	1.276	0.812	1	-
1732.5	20175	QPSK	23.05	-0.009	Rear	1	99	1.0 cm	0.888	1.216	1.080	0	17
1745.0	20300	QPSK	23.10	-0.025	Rear	1	0	1.0 cm	0.891	1.202	1.071	0	-
1745.0	20300	QPSK	21.97	0.027	Rear	50	49	1.0 cm	0.599	1.239	0.742	1	-
1720.0	20050	QPSK	23.43	-0.015	Front	1	0	1.0 cm	0.863	1.114	0.962	0	-
1720.0	20050	QPSK	21.84	0.058	Front	100	0	1.0 cm	0.596	1.276	0.761	1	-
1732.5	20175	QPSK	23.05	-0.078	Front	1	99	1.0 cm	0.836	1.216	1.017	0	-
1745.0	20300	QPSK	23.10	0.073	Front	1	0	1.0 cm	0.841	1.202	1.011	0	-
1745.0	20300	QPSK	21.97	0.023	Front	50	49	1.0 cm	0.610	1.239	0.756	1	-
1720.0	20050	QPSK	23.43	-0.047	Right	1	0	1.0 cm	0.250	1.114	0.279	0	-
1745.0	20300	QPSK	21.97	0.053	Right	50	49	1.0 cm	0.192	1.239	0.238	1	-
1720.0	20050	QPSK	23.43	-0.011	Bottom	1	0	1.0 cm	0.631	1.114	0.703	0	-
1745.0	20300	QPSK	21.97	-0.109	Bottom	50	49	1.0 cm	0.482	1.239	0.597	1	-
ANSI/ IEEE C95.1 - 1992- Safety Limit								Body					
Spatial Peak								1.6 W/kg (mW/g)					
Uncontrolled Exposure/ General Population								Averaged over 1 gram					

NOTES:

- 1 The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supplement C [July 2001].
- 2 All modes of operation were investigated and the worst-case are reported.
- 3 Measured Depth of Simulating Tissue is 15.0 cm \pm 0.2 cm.
- 4 Tissue parameters and temperatures are listed on the SAR plot.
- 5 Battery Type Standard Extended Slim
Batteries are fully charged for all readings.
- 6 Test Signal Call Mode Manual Test cord Base Station Simulator
- 7 According to FCC KDB 941225 D05v02:
 - a. Per Section 5.2.1, SAR is required for QPSK 1 RB Allocation for the largest bandwidth
 - i. The required channel and offset combination with the highest maximum output power is required for SAR.
 - ii. When the reported SAR is \leq 0.8 W/kg, testing of the remaining RB offset configuration and required test channels is not required. Otherwise, SAR is required for the remaining required test channels using the RB offset configuration with highest output power for that channel.
 - iii. When the reported SAR for a required test channel is > 1.45 W/kg, SAR is required for all RB offset configuration for that channel.
 - b. Per Section 5.2.2, SAR is required for 50% RB allocation using the largest bandwidth following the same procedures outlined in Section 5.2.1.
 - c. Per Section 5.2.3, QPSK SAR is not required for the 100% allocation when the highest maximum output power for the 100% allocation is less than the highest maximum output power of the 1RB and 50% RB allocation and the reported SAR for the 1RB and 50% RB allocation is < 0.8 W/kg.
 - d. Per Section 5.2.4 and 5.3, SAR test for higher order modulations and lower bandwidths configurations are not required when the conducted power of the required test configuration determined by Sections 5.2.1 through 5.2.3 is less than or equal to 1/2 dB higher than the equivalent configuration using QPSK modulation and when the QPSK SAR for those configurations is < 1.45 W/kg.

13.16 Measurement Results (802.11b/g/n Hotspot SAR)

Frequency		Modulation	Conducted Power	Power Drift	Configuration	Data Rate	Separation Distance	Measured SAR (mW/g)	Scaling Factor	Scaled SAR (mW/g)	Plot No.
MHz	Ch		(dBm)	(dB)							
2.437	6	802.11b	15.94	-0.101	Rear	1Mbps	1.0 cm	0.068	1.276	0.087	-
			15.94	-0.034	Front	1Mbps	1.0 cm	0.095	1.276	0.121	18
			15.94	-0.087	Left	1Mbps	1.0 cm	0.076	1.276	0.097	-
			15.94	-0.035	Top	1Mbps	1.0 cm	0.056	1.276	0.071	-
ANSI/ IEEE C95.1 - 1992- Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Body 1.6 W/kg (mW/g) Averaged over 1 gram					

NOTES:

- 1 The test data reported are the worst-case SAR value with the antenna-body position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supplement C [July 2001].
- 2 All modes of operation were investigated and the worst-case are reported.
- 3 Measured Depth of Simulating Tissue is $15.0 \text{ cm} \pm 0.2 \text{ cm}$.
- 4 Tissue parameters and temperatures are listed on the SAR plot.
- 5 Battery Type Standard Extended Slim
Batteries are fully charged for all readings.
- 6 Test Signal Call Mode Manual Test code Base Station Simulator
- 7 IEEE 802.11g(including 802.11n) SAR testing is required when the conducted powers are equal to or greater than 0.25 dB Than the conducted powers in IEEE 802.11b.
- 8 For 2.4GHz WLAN, Highest average power channel for the lowest data rate was selected for SAR evaluation based on KDB 248227. Other channels are not necessary because 1g-average SAR < 0.8 W/Kg and peak SAR < 1.6W/Kg per KDB 248227.

13.17 Measurement Results (Body-worn SAR)

Frequency		Modulation	Conducted Power (dBm)	Power Drift (dB)	Configuration	Separation Distance	Measured SAR(mW/g)	Scaling Factor	Scaled SAR(mW/g)	Plot No.
MHz	Channel									
836.6	190	GSM850	32.10	0.020	Rear	1.0 cm	0.243	1.175	0.286	-
836.6	190	GSM850	32.10	-0.044	Front	1.0 cm	0.269	1.175	0.316	19
1880.0	661	GSM1900	30.36	-0.042	Rear	1.0 cm	0.327	1.081	0.354	-
1880.0	661	GSM1900	30.36	-0.108	Front	1.0 cm	0.356	1.081	0.385	20
836.6	4183	WCDMA850	24.05	-0.034	Rear	1.0 cm	0.464	1.161	0.539	-
836.6	4183	WCDMA850	24.05	-0.161	Front	1.0 cm	0.472	1.161	0.548	12
1712.4	1312	WCDMA1700	23.62	-0.125	Rear	1.0 cm	1.04	1.143	1.189	13
1732.4	1412	WCDMA1700	23.79	-0.024	Rear	1.0 cm	1.05	1.099	1.154	14
1752.6	1512	WCDMA1700	23.70	-0.053	Rear	1.0 cm	0.977	1.122	1.096	-
1712.4	1312	WCDMA1700	23.62	-0.045	Front	1.0 cm	1.01	1.143	1.154	-
1732.4	1412	WCDMA1700	23.79	0.020	Front	1.0 cm	0.982	1.099	1.079	-
1752.6	1512	WCDMA1700	23.70	-0.044	Front	1.0 cm	0.921	1.122	1.033	-
1880.0	9400	WCDMA1900	23.30	-0.080	Rear	1.0 cm	0.605	1.230	0.744	-
1880.0	9400	WCDMA1900	23.30	-0.086	Front	1.0 cm	0.649	1.230	0.798	15
709	23780	LTE Band 17	23.54	0.161	Rear	1.0 cm	0.306	1.086	0.332	-
709	23780	LTE Band 17	23.54	-0.084	Front	1.0 cm	0.351	1.086	0.381	16
1720.0	20050	LTE Band 4	23.05	-0.009	Rear	1.0 cm	0.888	1.216	1.080	17
1732.5	20175	LTE Band 4	23.05	-0.078	Front	1.0 cm	0.836	1.216	1.017	-
2437	6	802.11b (1Mbps)	15.94	-0.101	Rear	1.0 cm	0.068	1.276	0.087	-
2437	6	802.11b (1Mbps)	15.94	-0.034	Front	1.0 cm	0.095	1.276	0.121	18
ANSI/ IEEE C95.1 - 1992- Safety Limit							Body 1.6 W/kg (mW/g) Averaged over 1 gram			
Spatial Peak										
Uncontrolled Exposure/ General Population										

NOTES:

- The test data reported are the worst-case SAR value with the antenna-body position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supplement C [July 2001].
- All modes of operation were investigated and the worst-case are reported.
- Measured Depth of Simulating Tissue is 15.0 cm ± 0.2 cm.
- Tissue parameters and temperatures are listed on the SAR plot.
- According to KDB 447498, 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.
- Body-Worn accessory testing is typically associated with voice operation. Therefore, GSM voice was evaluated for body-worn SAR.

14. 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.

Frequency		Modulation	Battery	Configuration	Original SAR(mW/g)	Repeated SAR(mW/g)	Largest to Smallest SAR Ratio	Plot No.
MHz	Channel							
1 850.2	512	GSM1900	Standard	Front	1.19	1.12	1.063	21
1 720.0	20050	LTE Band 4	Standard	Right touch	1.29	1.28	1.008	22

Note(s):

1. 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.
2. Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg.

15. SAR Summation Scenario

	Position	Applicable Combination	Note
Simultaneous Transmission	Head	GSM 850 Voice + 2.4 GHz WiFi	WiFi Direct
		GSM 1900 Voice + 2.4 GHz WiFi	
		WCDMA850 Voice + 2.4 GHz WiFi	
		WCDMA1700 Voice + 2.4 GHz WiFi	
		WCDMA1900 Voice + 2.4 GHz WiFi	
		LTE Band 17 + 2.4 GHz WiFi	
		LTE Band 4 + 2.4 GHz WiFi	
	Hotspot	GPRS 850 Data + 2.4 GHz WiFi	WiFi Direct
		GPRS 1900 Data + 2.4 GHz WiFi	
		WCDMA850 Data + 2.4 GHz WiFi	
		WCDMA1700 Voice + 2.4 GHz WiFi	
		WCDMA1900 Voice + 2.4 GHz WiFi	
		LTE Band 17 + 2.4 GHz WiFi	
		LTE Band 4 + 2.4 GHz WiFi	
	Body-worn	GSM 850 Voice + 2.4 GHz WiFi	WiFi Direct
		GSM 1900 Voice + 2.4 GHz WiFi	
		WCDMA850 Voice + 2.4 GHz WiFi	
		WCDMA1700 Voice + 2.4 GHz WiFi	
		WCDMA1900 Voice + 2.4 GHz WiFi	
		LTE Band 17 + 2.4 GHz WiFi	
		LTE Band 4 + 2.4 GHz WiFi	
		GSM 850 Voice + 2.4 GHz Bluetooth	
		GSM 1900 Voice + 2.4 GHz Bluetooth	
		WCDMA850 Voice+ 2.4 GHz Bluetooth	
		WCDMA1700 Voice + 2.4 GHz Bluetooth	
		WCDMA1900 Voice + 2.4 GHz Bluetooth	

* BT and WLAN are not simultaneous transmission.

15.1 Simultaneous Transmission Summation for Head

Simultaneous Transmission Summation with Wifi

Band	configuration	Scaled SAR (W/kg)	2.4 GHz WIFI Scaled SAR (W/kg)	\sum 1-g SAR (W/kg)	Band	configuration	Scaled SAR (W/kg)	2.4 GHz WIFI Scaled SAR (W/kg)	\sum 1-g SAR (W/kg)
GSM850	Left Cheek	0.505	0.369	0.874	GSM 1900	Left Cheek	0.407	0.369	0.776
	Left Tilt	0.254	0.317	0.571		Left Tilt	0.110	0.317	0.427
	Right Cheek	0.317	0.592	0.909		Right Cheek	0.425	0.592	1.017
	Right Tilt	0.244	0.600	0.844		Right Tilt	0.172	0.600	0.772
WCDMA 850	Left Cheek	0.714	0.369	1.083	WCDMA 1700	Left Cheek	0.982	0.369	1.351
	Left Tilt	0.38	0.317	0.697		Left Tilt	0.338	0.317	0.655
	Right Cheek	0.433	0.592	1.025		Right Cheek	1.257	0.592	1.849 ⁽¹⁾
	Right Tilt	0.332	0.600	0.932		Right Tilt	0.401	0.600	1.001
WCDMA 1900	Left Cheek	0.956	0.369	1.325	LTE Band 17	Left Cheek	0.554	0.369	0.923
	Left Tilt	0.239	0.317	0.556		Left Tilt	0.277	0.317	0.594
	Right Cheek	0.978	0.592	1.570		Right Cheek	0.398	0.592	0.990
	Right Tilt	0.354	0.600	0.954		Right Tilt	0.296	0.600	0.896
LTE Band 4	Left Cheek	1.175	0.369	1.544					
	Left Tilt	0.433	0.317	0.750					
	Right Cheek	1.437	0.592	2.029 ⁽²⁾					
	Right Tilt	0.422	0.600	1.022					

Note:

(1),(2) are greater than 1.6 W/kg. SPLSR assessment is required. SPLSR Procedure is on section 15.4

15.2 Simultaneous Transmission Summation for Body-Worn

Simultaneous Transmission Summation with Wifi (1 cm)

Band	configuration	Scaled SAR (W/kg)	2.4 GHz WIFI Scaled SAR (W/kg)	Σ 1-g SAR (W/kg)
GSM 850	Rear	0.243	0.087	0.330
	Front	0.269	0.121	0.390
GSM 1900	Rear	0.354	0.087	0.441
	Front	0.385	0.121	0.506
WCDMA850	Rear	0.539	0.087	0.626
	Front	0.548	0.121	0.669
WCDMA1700	Rear	1.189	0.087	1.276
	Front	1.154	0.121	1.275
WCDMA1900	Rear	0.744	0.087	0.831
	Front	0.798	0.121	0.919
LTE Band 17	Rear	0.332	0.087	0.419
	Front	0.381	0.121	0.502
LTE Band 4	Rear	1.080	0.087	1.167
	Front	1.017	0.121	1.138

Simultaneous Transmission Summation with Bluetooth (1 cm)

Band	configuration	Scaled SAR (W/kg)	BT SAR (W/kg)	Σ 1-g SAR (W/kg)
GSM 850	Rear	0.243	0.07	0.313
	Front	0.269	0.07	0.339
GSM 1900	Rear	0.354	0.07	0.424
	Front	0.385	0.07	0.455
WCDMA850	Rear	0.539	0.07	0.609
	Front	0.548	0.07	0.618
WCDMA1700	Rear	1.189	0.07	1.259
	Front	1.154	0.07	1.224
WCDMA1900	Rear	0.744	0.07	0.814
	Front	0.798	0.07	0.868
LTE Band 17	Rear	0.332	0.07	0.402
	Front	0.381	0.07	0.451
LTE Band 4	Rear	1.08	0.07	1.150
	Front	1.017	0.07	1.087

15.3 Simultaneous Transmission Summation for Hotspot

Band	configuration	Scaled SAR (W/kg)	2.4 GHz WIFI Scaled SAR (W/kg)	\sum 1-g SAR (W/kg)	Band	configuration	Scaled SAR (W/kg)	2.4 GHz WIFI Scaled SAR (W/kg)	\sum 1-g SAR (W/kg)
GSM 850	Rear	0.758	0.087	0.845	GSM 1900	Rear	1.136	0.087	1.223
	Front	0.783	0.121	0.904		Front	1.417	0.121	1.538
	Left	0.742	0.097	0.839		Left		0.097	0.097
	Right			0		Right	0.65		0.650
	Bottom	0.271		0.271		Bottom	1.049		1.049
	Top		0.072	0.072		Top		0.072	0.072
WCDMA 850	Rear	0.539	0.087	0.626	WCDMA 1700	Rear	1.189	0.087	1.276
	Front	0.548	0.121	0.669		Front	1.154	0.121	1.275
	Left	0.43	0.097	0.527		Left		0.097	0.097
	Right			0		Right	0.406		0.406
	Bottom	0.139		0.139		Bottom	0.744		0.744
	Top		0.072	0.072		Top		0.072	0.072
WCDMA 1900	Rear	0.744	0.087	0.831	LTE Band 17	Rear	0.332	0.087	0.419
	Front	0.798	0.121	0.919		Front	0.381	0.121	0.502
	Left		0.097	0.097		Left	0.334	0.097	0.431
	Right	0.296		0.296		Right			0
	Bottom	0.583		0.583		Bottom	0.118		0.118
	Top		0.072	0.072		Top		0.072	0.072
LTE Band 4	Rear	1.080	0.087	1.167					
	Front	1.017	0.121	1.138					
	Left		0.097	0.097					
	Right	0.279		0.279					
	Bottom	0.703		0.703					
	Top		0.072	0.072					

15.4 SPLSR Evaluation and Analysis

Per FCC KDB Publication 447498 D01, when the sum of the standalone transmitters is more than 1.6 W/kg, the SAR sum to peak locations can be analyzed to determine SAR distribution overlaps. When the SAR peak to location ratio (shown below) for each pair of antennas is ≤ 0.04 , simultaneous SAR evaluation is not required. The distance between the transmitters was calculated using the following formula.

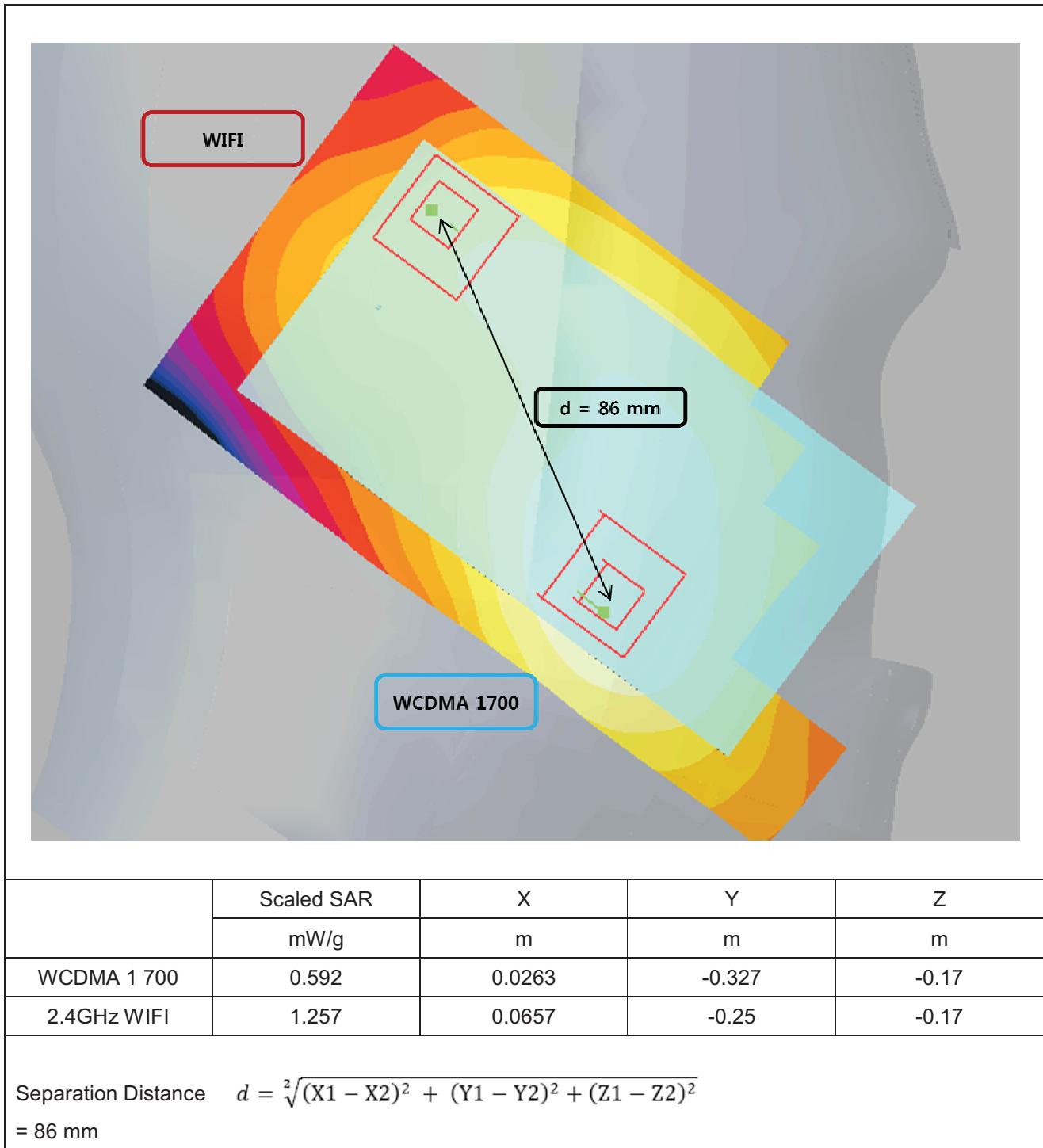
$$\text{Distance}_{\text{Tx1-Tx2}} = R_i = \sqrt{(X_1 - X_2)^2 + (Y_1 - Y_2)^2 + (Z_1 - Z_2)^2}$$

$$\text{SPLS Ratio} = \frac{(\text{SAR}_1 + \text{SAR}_2)^{1.5}}{R_i}$$

The sum of the standalone SAR values was above 1.6 W/kg for the Right Cheek side configuration with WCDMA 1700 antenna operating at limited output power with 2.4 GHz WiFi.

Case No.	Test Position	worst-case combination		Σ 1g SAR	3D distance (mm)	SPLSR	Figure
		WCDMA 1700	WiFi				
1	Right Touch	1.257	0.592	1.849	86	0.03	1

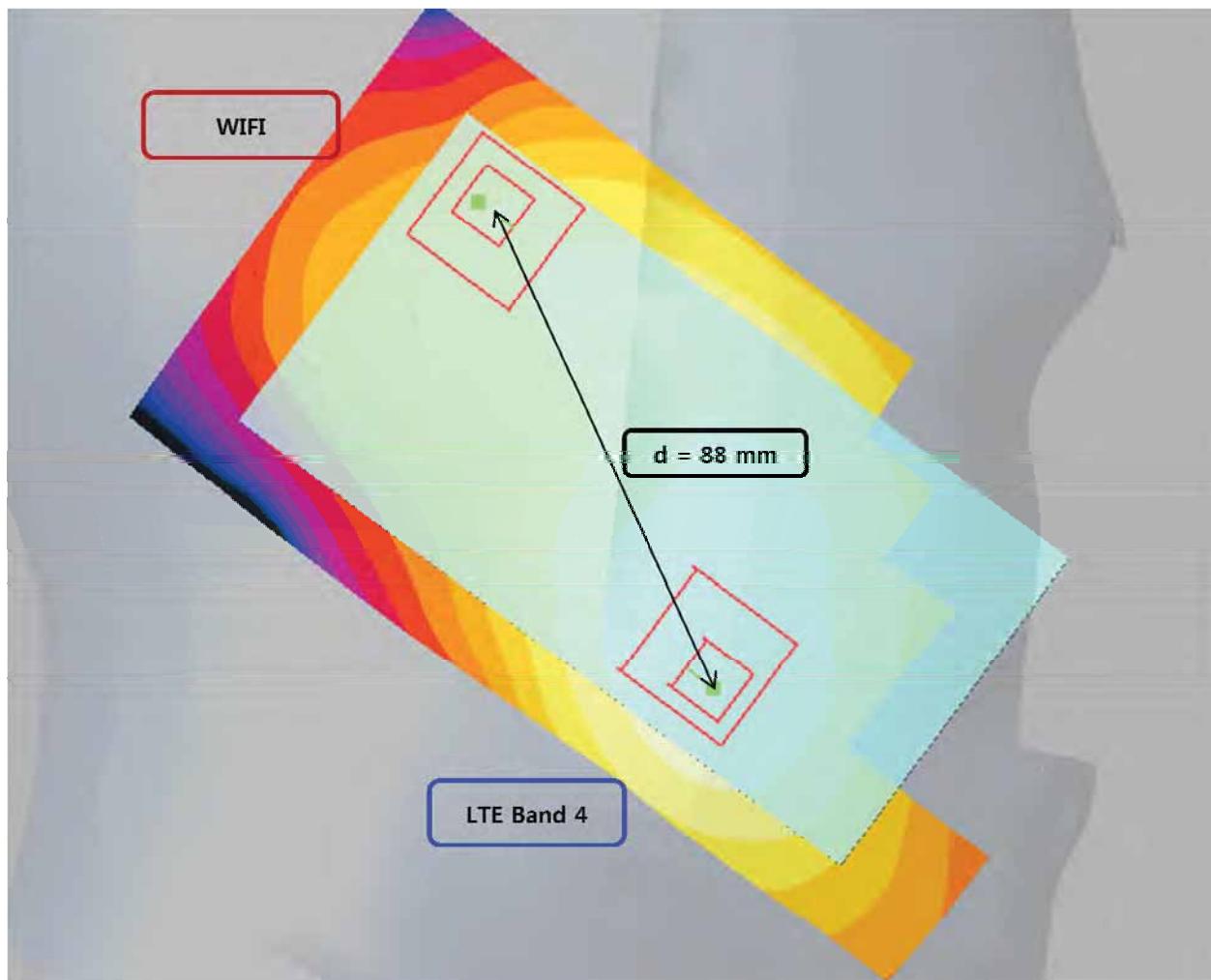
Figure. 1 (WCDMA1700 to 2.4GHz WIFI)



The sum of the standalone SAR values was above 1.6 W/kg for the Right Cheek side configuration with LTE Band 4 antenna operating at limited output power with 2.4 GHz WiFi.

Case No.	Test Position	worst-case combination		Σ 1g SAR	3D distance (mm)	SPLSR	Figure
		LTE Band 4	WiFi				
2	Right Touch	1.437	0.592	2.029	88	0.03	2

Figure. 2 (LTE Band 4 to 2.4GHz WIFI)



	Scaled SAR	X	Y	Z
	mW/g	m	m	m
LTE Band 4	0.592	0.0263	-0.327	-0.17
2.4GHz WIFI	1.257	0.0699	-0.251	-0.169

Separation Distance $d = \sqrt{(X_1 - X_2)^2 + (Y_1 - Y_2)^2 + (Z_1 - Z_2)^2}$
= 88 mm

15.5 Simultaneous Transmission Conclusion

The above numerical summed SAR results for all the worst-case simultaneous transmission conditions were below the SAR limit. Therefore, the above analysis is sufficient to determine that simultaneous transmission cases will not exceed the SAR limit. And therefore no measured volumetric simultaneous SAR summation is required per FCC KDB Publication 447498 D01v05

17. CONCLUSION

The SAR measurement indicates that the EUT complies with the RF radiation exposure limits of the ANSI/IEEE C95.1 1992.

These measurements are taken to simulate the RF effects exposure under worst-case conditions. Precise laboratory measures were taken to assure repeatability of the tests.

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Attachment 1. – SAR Test Plots

Test Laboratory: HCT CO., LTD
EUT Type: GSM/ WCDMA/ LTE Phone with Bluetooth/WLAN
Liquid Temperature: 21.4 °C
Ambient Temperature: 21.6 °C
Test Date: Jul.02, 2013
Plot NO. 1

DUT: C6522N; Type: bar;

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3
Medium parameters used (interpolated): $f = 836.6 \text{ MHz}$; $\sigma = 0.92 \text{ mho/m}$; $\epsilon_r = 40.4$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Left Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: EX3DV4 – SN3863; ConvF(9.3, 9.3, 9.3); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn446; Calibrated: 2013-01-16
- Phantom: SAM 835/900 MHz; Type: SAM
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Left Touch 190/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.457 mW/g

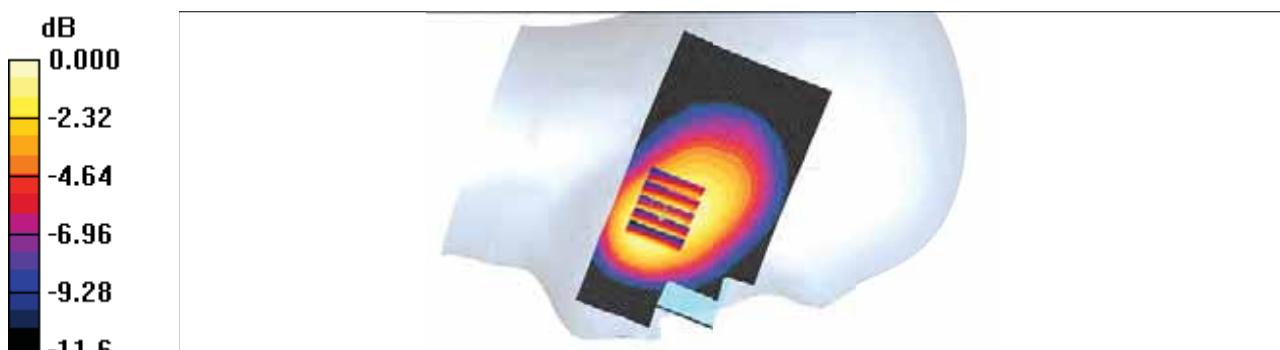
Left Touch 190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.98 V/m; Power Drift = 0.019 dB

Peak SAR (extrapolated) = 0.616 W/kg

SAR(1 g) = 0.430 mW/g; SAR(10 g) = 0.296 mW/g

Maximum value of SAR (measured) = 0.461 mW/g



0 dB = 0.461mW/g

Test Laboratory: HCT CO., LTD
EUT Type: GSM/ WCDMA/ LTE Phone with Bluetooth/WLAN
Liquid Temperature: 21.1 °C
Ambient Temperature: 21.3 °C
Test Date: Jul.04, 2013
Plot NO. 2

DUT: C6522N; Type: bar;

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3
Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.39 \text{ mho/m}$; $\epsilon_r = 39.8$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Right Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: EX3DV4 – SN3863; ConvF(8.22, 8.22, 8.22); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn446; Calibrated: 2013-01-16
- Phantom: 835/900 Phantom; Type: SAM;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Right touch 661/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.395 mW/g

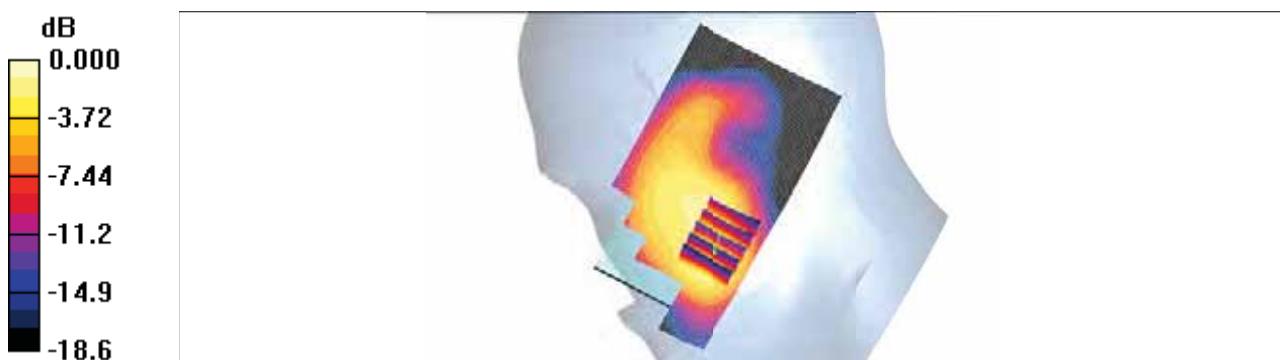
Right touch 661/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.75 V/m; Power Drift = 0.024 dB

Peak SAR (extrapolated) = 0.679 W/kg

SAR(1 g) = 0.393 mW/g; SAR(10 g) = 0.225 mW/g

Maximum value of SAR (measured) = 0.432 mW/g



0 dB = 0.432mW/g

Test Laboratory: HCT CO., LTD
EUT Type: GSM/ WCDMA/ LTE Phone with Bluetooth/WLAN
Liquid Temperature: 21.4 °C
Ambient Temperature: 21.6 °C
Test Date: Jul.02, 2013
Plot NO. 3

DUT: C6522N; Type: bar;

Communication System: WCDMA850; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.92$ mho/m; $\epsilon_r = 40.4$; $\rho = 1000$ kg/m³
Phantom section: Left Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

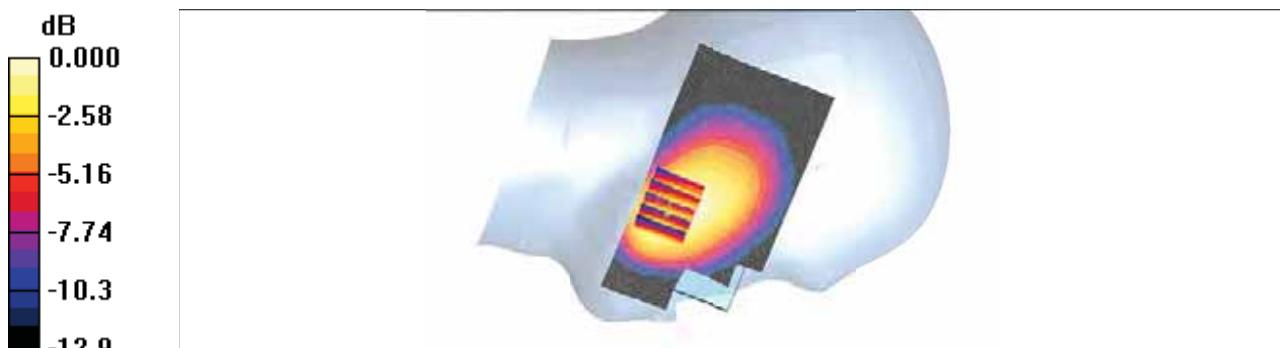
- Probe: EX3DV4 – SN3863; ConvF(9.3, 9.3, 9.3); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn446; Calibrated: 2013-01-16
- Phantom: SAM 835/900 MHz; Type: SAM;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Left Touch 4183/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.687 mW/g

Left Touch 4183/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.87 V/m; Power Drift = 0.017 dB
Peak SAR (extrapolated) = 0.883 W/kg

SAR(1 g) = 0.615 mW/g; SAR(10 g) = 0.422 mW/g
Maximum value of SAR (measured) = 0.653 mW/g



Test Laboratory: HCT CO., LTD
EUT Type: GSM/ WCDMA/ LTE Phone with Bluetooth/WLAN
Liquid Temperature: 21.6 °C
Ambient Temperature: 21.8 °C
Test Date: Jul.09, 2013
Plot NO. 4

DUT: C6522N; Type: bar;

Communication System: WCDMA IV; Frequency: 1712.4 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 1712.4$ MHz; $\sigma = 1.3$ mho/m; $\epsilon_r = 39.8$; $\rho = 1000$ kg/m³
Phantom section: Right Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: EX3DV4 – SN3863; ConvF(8.46, 8.46, 8.46); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn446; Calibrated: 2013-01-16
- Phantom: 835/900 Phantom; Type: SAM;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Right Touch 1312/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.17 mW/g

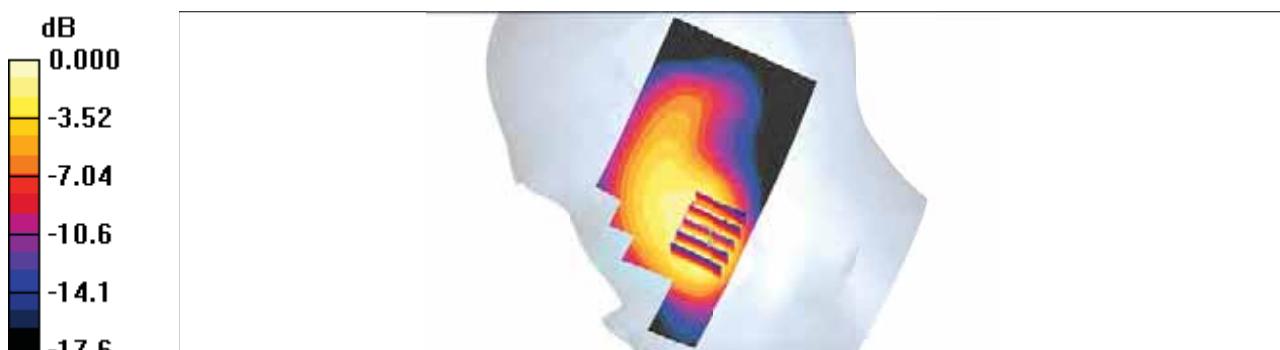
Right Touch 1312/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.2 V/m; Power Drift = 0.127 dB

Peak SAR (extrapolated) = 1.80 W/kg

SAR(1 g) = 1.1 mW/g; SAR(10 g) = 0.661 mW/g

Maximum value of SAR (measured) = 1.18 mW/g



0 dB = 1.18mW/g

Test Laboratory: HCT CO., LTD
EUT Type: GSM/ WCDMA/ LTE Phone with Bluetooth/WLAN
Liquid Temperature: 21.1 °C
Ambient Temperature: 21.3 °C
Test Date: Jul.04, 2013
Plot NO. 5

DUT: C6522N; Type: bar;

Communication System: WCDMA1900; Frequency: 1852.4 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 1852.4 \text{ MHz}$; $\sigma = 1.36 \text{ mho/m}$; $\epsilon_r = 40$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: EX3DV4 – SN3863; ConvF(8.22, 8.22, 8.22); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn446; Calibrated: 2013-01-16
- Phantom: 835/900 Phantom; Type: SAM;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Right touch 9262/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.790 mW/g

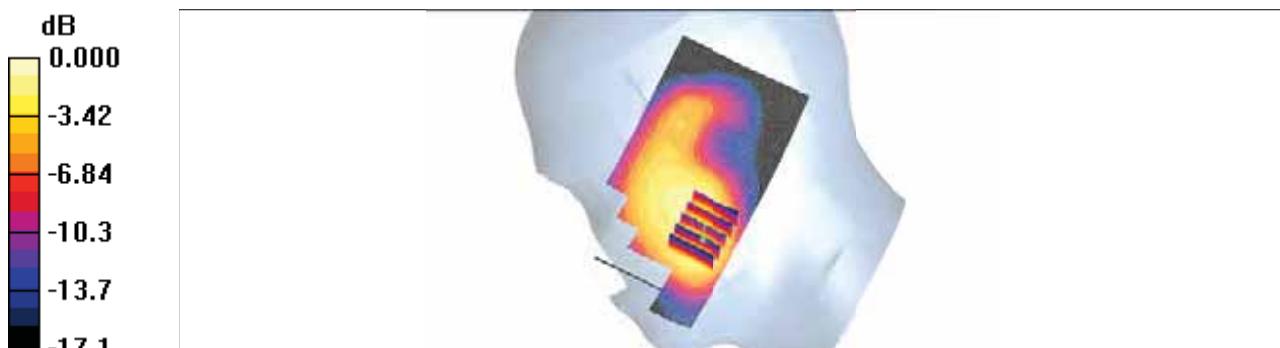
Right touch 9262/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.33 V/m; Power Drift = 0.077 dB

Peak SAR (extrapolated) = 1.25 W/kg

SAR(1 g) = 0.749 mW/g; SAR(10 g) = 0.446 mW/g

Maximum value of SAR (measured) = 0.820 mW/g



0 dB = 0.820mW/g

Test Laboratory: HCT CO., LTD
EUT Type: GSM/ WCDMA/ LTE Phone with Bluetooth/WLAN
Liquid Temperature: 21.5 °C
Ambient Temperature: 21.7 °C
Test Date: Jul.06, 2013
Plot NO. 6

DUT: C6522N; Type: bar;

Communication System: LTE 17; Frequency: 709 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 709 \text{ MHz}$; $\sigma = 0.877 \text{ mho/m}$; $\epsilon_r = 42.7$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Left Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: EX3DV4 – SN3863; ConvF(9.53, 9.53, 9.53); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn446; Calibrated: 2013-01-16
- Phantom: 1800/1900 Phantom; Type: SAM;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Left Touch QPSK 10MHz 1RB 49offset 23780ch/Area Scan (61x111x1):

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.566 mW/g

Left Touch QPSK 10MHz 1RB 49offset 23780ch/Zoom Scan (5x5x7)/Cube 0:

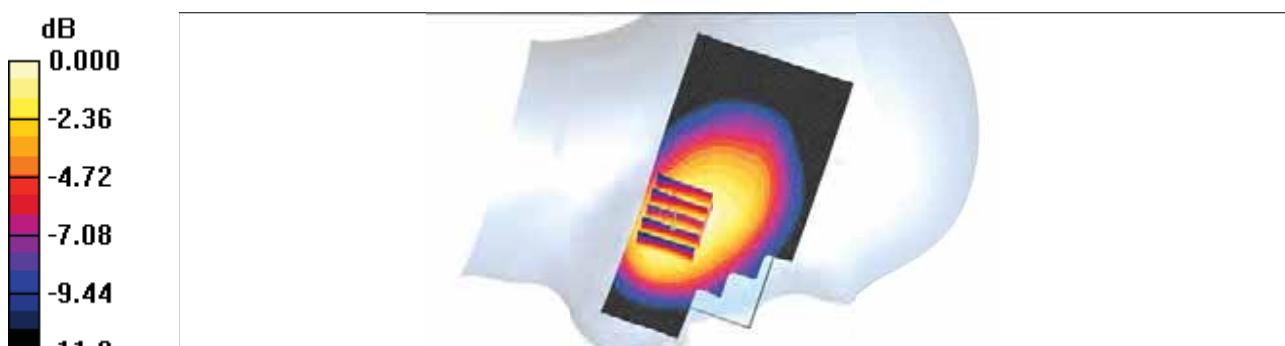
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.91 V/m; Power Drift = 0.143 dB

Peak SAR (extrapolated) = 0.719 W/kg

SAR(1 g) = 0.510 mW/g; SAR(10 g) = 0.357 mW/g

Maximum value of SAR (measured) = 0.542 mW/g



Test Laboratory: HCT CO., LTD
EUT Type: GSM/ WCDMA/ LTE Phone with Bluetooth/WLAN
Liquid Temperature: 21.6 °C
Ambient Temperature: 21.8 °C
Test Date: Jul.09, 2013
Plot NO. 7

DUT: C6522N; Type: bar;

Communication System: LTE Band 4; Frequency: 1720 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1720 \text{ MHz}$; $\sigma = 1.44 \text{ mho/m}$; $\epsilon_r = 55.2$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Right Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: EX3DV4 – SN3863; ConvF(7.8, 7.8, 7.8); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn446; Calibrated: 2013-01-16
- Phantom: 835/900 Phantom; Type: SAM;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Right touch QPSK 20MHz 1RB 0offset 20050/Area Scan (61x111x1):

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.33 mW/g

Right touch QPSK 20MHz 1RB 0offset 20050/Zoom Scan (5x5x7)/Cube 0:

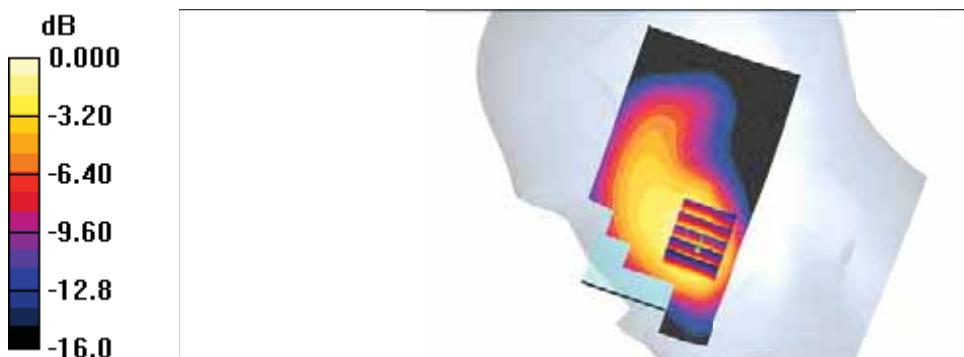
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.5 V/m; Power Drift = 0.003 dB

Peak SAR (extrapolated) = 2.09 W/kg

SAR(1 g) = 1.29 mW/g; SAR(10 g) = 0.777 mW/g

Maximum value of SAR (measured) = 1.41 mW/g



Test Laboratory: HCT CO., LTD
EUT Type: GSM/ WCDMA/ LTE Phone with Bluetooth/WLAN
Liquid Temperature: 21.3 °C
Ambient Temperature: 21.5 °C
Test Date: Jul.11, 2013
Plot NO. 8

DUT: C6522N; Type: bar;

Communication System: 2450MHz FCC; Frequency: 2437 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 2437 \text{ MHz}$; $\sigma = 1.79 \text{ mho/m}$; $\epsilon_r = 41.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: EX3DV4 – SN3863; ConvF(7.19, 7.19, 7.19); Calibrated: 2012-07-13
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn446; Calibrated: 2013-01-16
- Phantom: 835/900 Phamtom ; Type: SAM;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Right tilt 1Mbps 6ch/Area Scan (81x121x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.617 mW/g

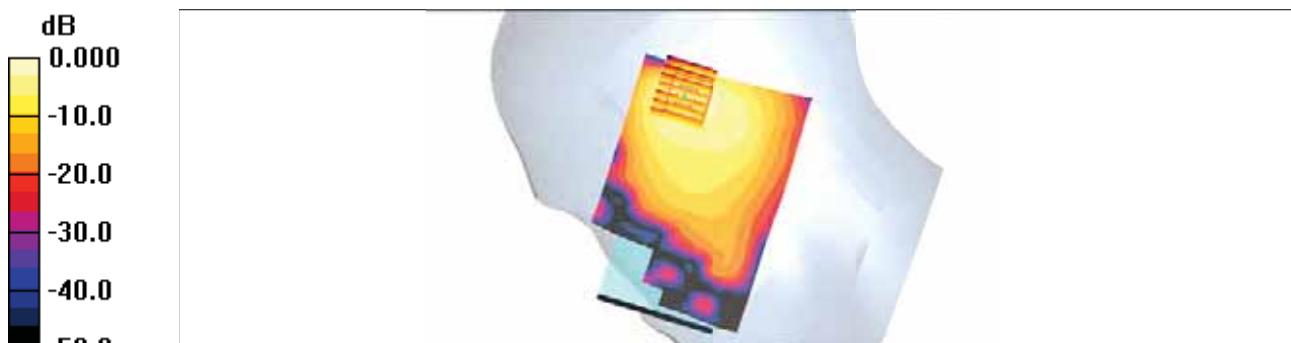
Right tilt 1Mbps 6ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.3 V/m; Power Drift = 0.041 dB

Peak SAR (extrapolated) = 1.02 W/kg

SAR(1 g) = 0.470 mW/g; SAR(10 g) = 0.217 mW/g

Maximum value of SAR (measured) = 0.534 mW/g



Test Laboratory: HCT CO., LTD
EUT Type: GSM/ WCDMA/ LTE Phone with Bluetooth/WLAN
Liquid Temperature: 21.2 °C
Ambient Temperature: 21.4 °C
Test Date: Jul.03, 2013
Plot NO. 9
Distance 10 mm

DUT: C6522N; Type: bar;

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:2.075
Medium parameters used (interpolated): $f = 836.6 \text{ MHz}$; $\sigma = 0.981 \text{ mho/m}$; $\epsilon_r = 56.9$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Center Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 – SN1798; ConvF(6.46, 6.46, 6.46); Calibrated: 2013-04-29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2013-02-21
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Body front 190 4Tx/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.591 mW/g

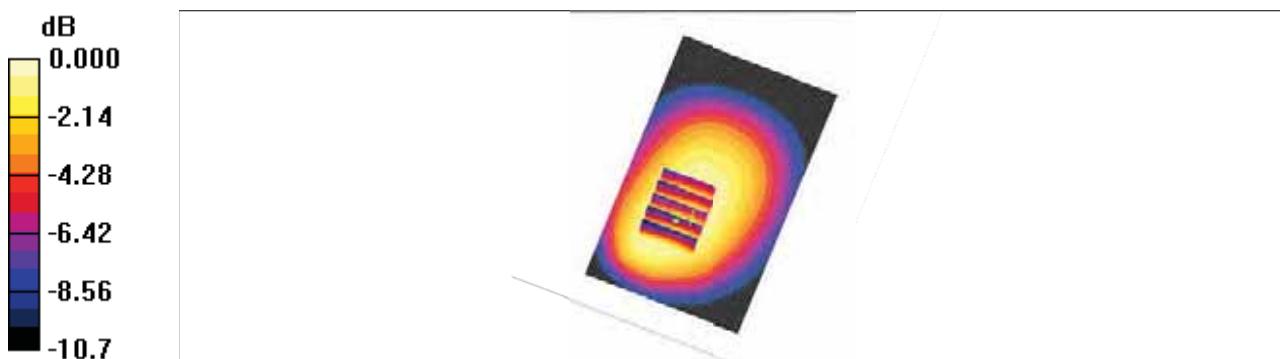
Body front 190 4Tx/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.1 V/m; Power Drift = 0.186 dB

Peak SAR (extrapolated) = 0.770 W/kg

SAR(1 g) = 0.590 mW/g; SAR(10 g) = 0.433 mW/g

Maximum value of SAR (measured) = 0.622 mW/g



0 dB = 0.622mW/g

Test Laboratory: HCT CO., LTD
EUT Type: GSM/ WCDMA/ LTE Phone with Bluetooth/WLAN
Liquid Temperature: 21.4 °C
Ambient Temperature: 21.6 °C
Test Date: Jul.05, 2013
Plot NO. 10
Distance 10 mm

DUT: C6522N; Type: bar;

Communication System: GSM 1900; Frequency: 1850.2 MHz; Duty Cycle: 1:2.075
Medium parameters used (interpolated): $f = 1850.2 \text{ MHz}$; $\sigma = 1.5 \text{ mho/m}$; $\epsilon_r = 52.3$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Center Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 – SN1798; ConvF(4.7, 4.7, 4.7); Calibrated: 2013-04-29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2013-02-21
- Phantom: Triple Flat Phantom 5.1C_20120905; Type: QD 000 P51 CA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Body front 512 4Tx/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.28 mW/g

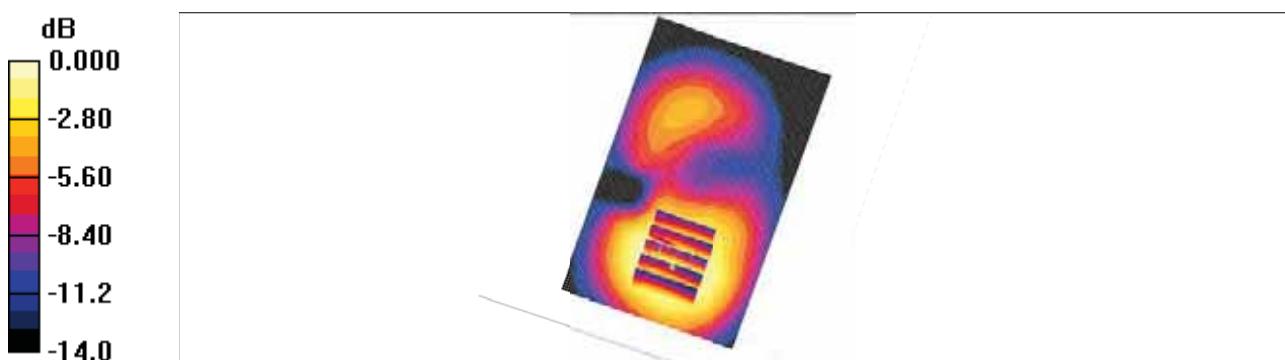
Body front 512 4Tx/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.5 V/m; Power Drift = -0.070 dB

Peak SAR (extrapolated) = 1.56 W/kg

SAR(1 g) = 1.19 mW/g; SAR(10 g) = 0.757 mW/g

Maximum value of SAR (measured) = 1.26 mW/g



0 dB = 1.26mW/g

Test Laboratory: HCT CO., LTD
EUT Type: GSM/ WCDMA/ LTE Phone with Bluetooth/WLAN
Liquid Temperature: 21.4 °C
Ambient Temperature: 21.6 °C
Test Date: Jul.05, 2013
Plot NO. 11
Distance 10 mm

DUT: C6522N; Type: bar;

Communication System: GSM 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:2.075
Medium parameters used: $f = 1910 \text{ MHz}$; $\sigma = 1.56 \text{ mho/m}$; $\epsilon_r = 52.2$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Center Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 – SN1798; ConvF(4.7, 4.7, 4.7); Calibrated: 2013-04-29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2013-02-21
- Phantom: Triple Flat Phantom 5.1C_20120905; Type: QD 000 P51 CA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Body front 810 4Tx/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.21 mW/g

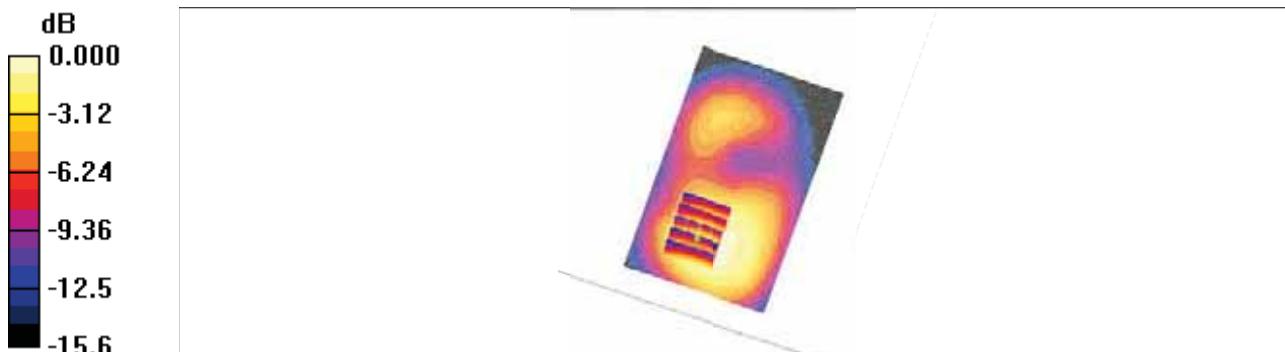
Body front 810 4Tx/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.7 V/m; Power Drift = 0.193 dB

Peak SAR (extrapolated) = 1.53 W/kg

SAR(1 g) = 1.1 mW/g; SAR(10 g) = 0.712 mW/g

Maximum value of SAR (measured) = 1.15 mW/g



0 dB = 1.15mW/g

Test Laboratory: HCT CO., LTD
EUT Type: GSM/ WCDMA/ LTE Phone with Bluetooth/WLAN
Liquid Temperature: 21.2 °C
Ambient Temperature: 21.4 °C
Test Date: Jul.03, 2013
Plot NO. 12
Distance 10 mm

DUT: C6522N; Type: bar;

Communication System: WCDMA850; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.981$ mho/m; $\epsilon_r = 56.9$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 – SN1798; ConvF(6.46, 6.46, 6.46); Calibrated: 2013-04-29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2013-02-21
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Body front 4183/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.494 mW/g

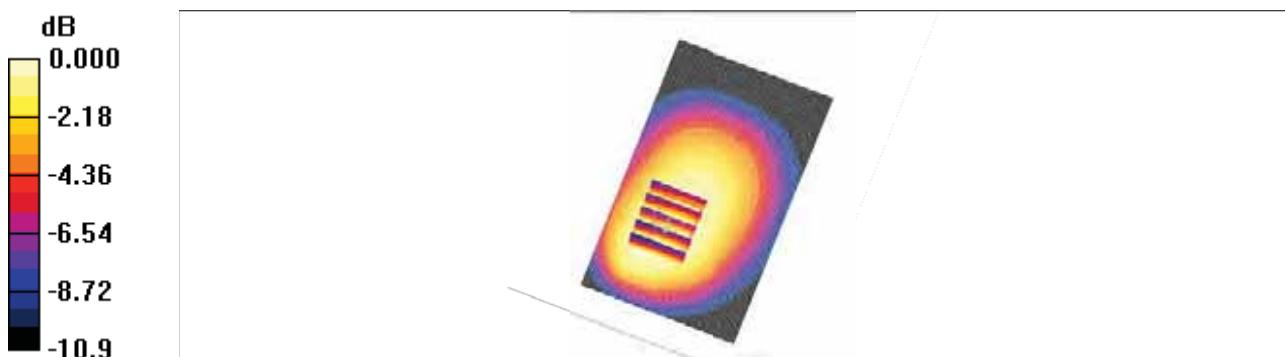
Body front 4183/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.65 V/m; Power Drift = -0.161 dB

Peak SAR (extrapolated) = 0.636 W/kg

SAR(1 g) = 0.472 mW/g; SAR(10 g) = 0.344 mW/g

Maximum value of SAR (measured) = 0.497 mW/g



0 dB = 0.497mW/g

Test Laboratory: HCT CO., LTD
EUT Type: GSM/ WCDMA/ LTE Phone with Bluetooth/WLAN
Liquid Temperature: 21.2 °C
Ambient Temperature: 21.4 °C
Test Date: Jul.10, 2013
Plot NO. 13
Distance 10 mm

DUT: C6522N; Type: bar;

Communication System: WCDMA IV; Frequency: 1712.4 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 1712.4$ MHz; $\sigma = 1.43$ mho/m; $\epsilon_r = 55.3$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 – SN1798; ConvF(4.93, 4.93, 4.93); Calibrated: 2013-04-29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2013-02-21
- Phantom: Triple Flat Phantom 5.1C_20120905; Type: QD 000 P51 CA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Body rear 1312/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.22 mW/g

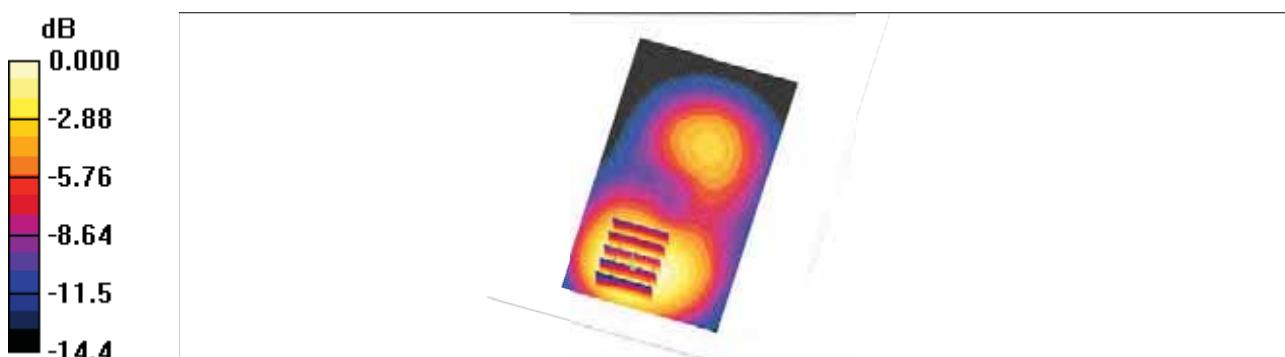
Body rear 1312/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.4 V/m; Power Drift = -0.125 dB

Peak SAR (extrapolated) = 1.42 W/kg

SAR(1 g) = 1.04 mW/g; SAR(10 g) = 0.695 mW/g

Maximum value of SAR (measured) = 1.11 mW/g



0 dB = 1.11mW/g

Test Laboratory: HCT CO., LTD
EUT Type: GSM/ WCDMA/ LTE Phone with Bluetooth/WLAN
Liquid Temperature: 21.2 °C
Ambient Temperature: 21.4 °C
Test Date: Jul.10, 2013
Plot NO. 14
Distance 10 mm

DUT: C6522N; Type: bar;

Communication System: WCDMA IV; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 1732.4$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 55.2$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 – SN1798; ConvF(4.93, 4.93, 4.93); Calibrated: 2013-04-29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2013-02-21
- Phantom: Triple Flat Phantom 5.1C_20120905; Type: QD 000 P51 CA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Body rear 1412/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.22 mW/g

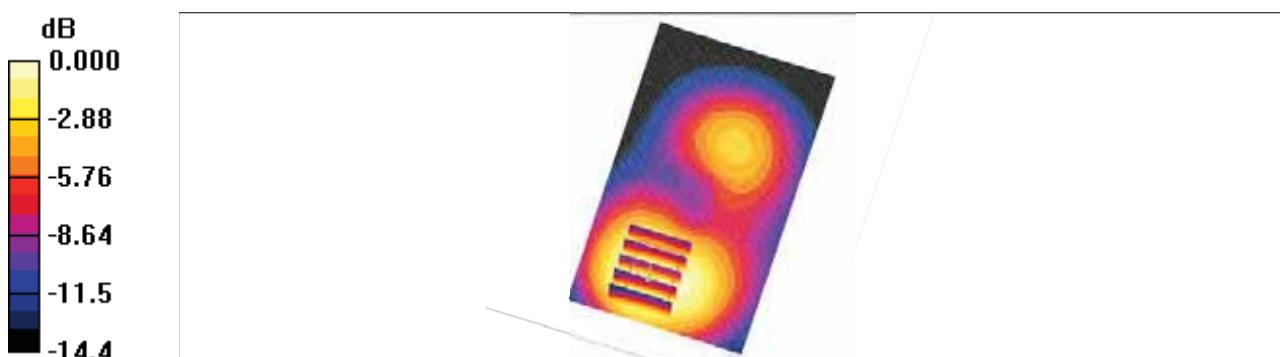
Body rear 1412/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.3 V/m; Power Drift = -0.024 dB

Peak SAR (extrapolated) = 1.43 W/kg

SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.700 mW/g

Maximum value of SAR (measured) = 1.12 mW/g



0 dB = 1.12mW/g

Test Laboratory: HCT CO., LTD
EUT Type: GSM/ WCDMA/ LTE Phone with Bluetooth/WLAN
Liquid Temperature: 21.4 °C
Ambient Temperature: 21.6 °C
Test Date: Jul.05, 2013
Plot NO. 15
Distance 10 mm

DUT: C6522N; Type: bar;

Communication System: WCDMA1900; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.53 \text{ mho/m}$; $\epsilon_r = 52.2$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Center Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 – SN1798; ConvF(4.7, 4.7, 4.7); Calibrated: 2013-04-29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn466; Calibrated: 2013-02-21
- Phantom: Triple Flat Phantom 5.1C_20120905; Type: QD 000 P51 CA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Body rear 9400/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.704 mW/g

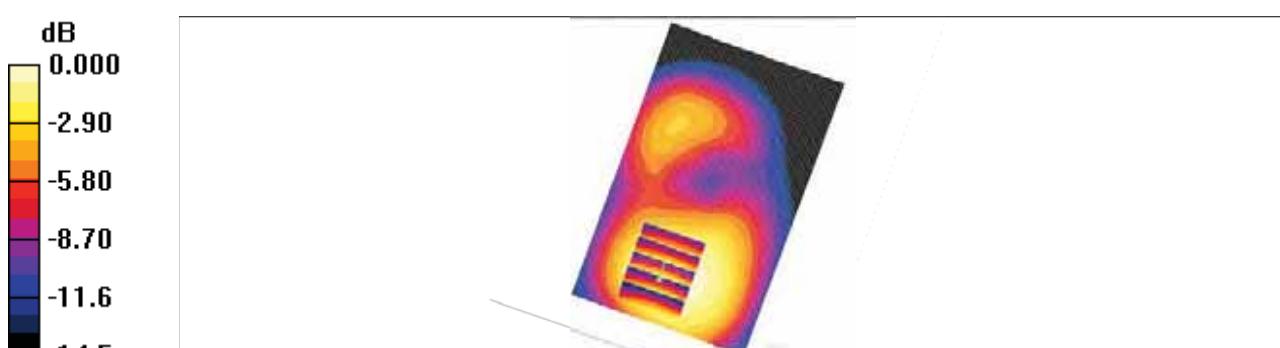
Body rear 9400/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.46 V/m; Power Drift = -0.086 dB

Peak SAR (extrapolated) = 0.899 W/kg

SAR(1 g) = 0.649 mW/g; SAR(10 g) = 0.426 mW/g

Maximum value of SAR (measured) = 0.704 mW/g



0 dB = 0.704mW/g