

FCC OET BULLETIN 65 SUPPLEMENT C 01-01 IEEE 1528:2003 RSS-102 Issue 4, March 2010,

(Class II Permissive Change)

SAR EVALUATION REPORT

For

Gobi3000 PCI Express Mini Card Tested inside of Fujitsu Tablet Slate PC (Q550) with Spacer

> MODEL: Gobi3000 (MC_8355) FCC ID: N7NMC8355 IC: 2417C-MC8355

REPORT NUMBER: 11U13746-16A ISSUE DATE: December 7, 2011

Prepared for

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Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
	November 21, 2011	Initial Issue	
Α	December 7, 2011	Updated report based on reviewer's comments: 1. Sec. 5: - Added Bluetooth information	Sunny Shih
		- Corrected reference UL CCS report form "11U13746-1C" to "11U13746-1C1 and Sec. 12"	
		2. Sec. 15: Added statement in regard to Bluetooth	

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1. Attestation of Test Results

Tested for:	Fujitsu Australia Ltd. 570 St Kilda Road Melbourne, Victoria 3004, Australia						
EUT description:	Gobi3000 PCI Expres Tested inside of Fujits	ss Mini Card su Tablet Slate PC (Q550) with Spacer					
Model number:	Gobi3000						
Device category:	Portable						
Exposure category:	General Population/U	ncontrolled Exposure					
Date tested:	November 7 - 9, 2011						
FCC / IC Rule Parts	Freq. Range [MHz]	Freq. Range [MHz] Highest 1-g SAR Limit (mW/g)					
22H / RSS-132	824 - 849						
24E / RSS-133	0.986 mW/g (CDMA2000 PCS) Position: Base/Lap Held						
27 / RSS-139	4740 4755						
(AWS)	1710 - 1755 0.569 mW/g (UMTS band IV) Position: Base/Lap Held						
Applicable Standards Test Results							
FCC OET Bulletin 65 Supplement C 01-01, IEEE STD 1528:2003 RSS-102 Issue 4, March 2010 Pass							

Compliance Certification Services, Inc. (UL CCS) tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL CCS based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL CCS will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government (NIST Handbook 150, Annex A). This report is written to support regulatory compliance of the applicable standards stated above.

IE III 000 B	T (15	
Approved & Released For UL CCS By	/:	:

Sunay Shih Down Chang

Sunny Shih Devin Chang
Engineering Team Leader EMC Engineer

Compliance Certification Services (UL CCS)

Compliance Certification Services (UL CCS)

2. Test Methodology

The tests documented in this report were performed as per Fujitsu test plan dated 5th Nov 2011 approved by FCC in a KDB inquiry.

This CIIPC submission is for Fujitsu slate PC Q550 with following inclusions:

- No Power reduction of WWAN
- Spacer attached to bottom surface of the slate
- New PCB Rev 5 for overall noise reduction.

3. Facilities and Accreditation

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

UL CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://www.ccsemc.com.

WWAN FCC ID: N7NMC8355 WWAN IC: 2417C-MC8355 4. Calibration and Uncertainly

4.1. Measuring Instrument Calibration

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

Name of Employment	Manufacture	Type/Madel Coriel No.		Cal. Due date			
Name of Equipment	Manufacturer	Type/Model	Serial No.	MM	DD	Year	
Robot - Six Axes	Stäubli	TX90 XL	N/A	N/A			
Robot Remote Control	Stäubli	CS8C	N/A			N/A	
DASY5 Measurement Server	SPEAG	SEUMS014AA	1064			N/A	
Probe Alignment Unit	SPEAG	LB5 / 80	N/A			N/A	
Oval Flat Phantom (ELI v5.0 (A))	SPEAG	QD OVA001 BB	1117			N/A	
Oval Flat Phantom (ELI v5.0 (B))	SPEAG	QD OVA001 BB	1121			N/A	
Dielectric Probe Kit	HP	85070C	N/A	N/A			
S-Parameter Network Analyzer	Agilent	8753ES-6	8753ES-6	11	22	2011	
Signal Generator	Agilent	8753ES-6	8753ES-6	11	22	2011	
E-Field Probe	SPEAG	EX3DV4	3686	1	24	2012	
Thermometer	ERTCO	639-1S	1718	7 19 2012		2012	
Data Acquisition Electronics	SPEAG	DAE4	1257	5	3	2012	
System Validation Dipole	SPEAG	D835V2	4d117	4	15	2012	
System Validation Dipole	SPEAG	D1750V2	1050	4	19	2012	
System Validation Dipole	SPEAG	D1900V2	5d140	4 18 2012		2012	
Amplifier	Mini-Circuits	ZVE-8G	90606	N/A			
Amplifier	Mini-Circuits	ZHL-42W	D072701-5	N/A			
Simulating Liquid	SPEAG	M1900	N/A	Within 24 hrs of first test			
Simulating Liquid	SPEAG	M1750	N/A	Within 24 hrs of first test			
Simulating Liquid	SPEAG	M835	N/A	Within 24 hrs of first test			

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4.2. Measurement Uncertainty

Measurement uncertainty for 300 MHz to 3 GHz averaged over 1 gram						
Component error, % Probe Distribution Divisor Sensitivity						
Measurement System						
Probe Calibration (k=1)	5.50	Normal	1	1	5.50	
Axial Isotropy	1.15	Rectangular	1.732	0.7071	0.47	
Hemispherical Isotropy		Rectangular	1.732	0.7071	0.94	
Boundary Effect		Rectangular	1.732	1	0.52	
Probe Linearity		Rectangular	1.732	1	1.99	
System Detection Limits	1.00	Rectangular	1.732	1	0.58	
Readout Electronics	0.30		1	1	0.30	
Response Time		Rectangular	1.732	1	0.46	
Integration Time		Rectangular	1.732	1	1.50	
RF Ambient Conditions - Noise		Rectangular	1.732	1	1.73	
RF Ambient Conditions - Reflections		Rectangular	1.732	1	1.73	
Probe Positioner Mechanical Tolerance		Rectangular	1.732	1	0.23	
Probe Positioning with respect to Phantom	2.90	Rectangular	1.732	1	1.67	
Extrapolation, Interpolation and Integration	1.00	Rectangular	1.732	1	0.58	
Test Sample Related						
Test Sample Positioning	2.90		1	1	2.90	
Device Holder Uncertainty	3.60	Normal	1	1	3.60	
Output Power Variation - SAR Drift	5.00	Rectangular	1.732	1	2.89	
Phantom and Tissue Parameters						
Phantom Uncertainty (shape and thickness)		Rectangular	1.732		2.31	
Liquid Conductivity - deviation from target		Rectangular	1.732	0.64	1.85	
Liquid Conductivity - measurement	2.99		1	0.64	1.91	
Liquid Permittivity - deviation from target		Rectangular	1.732	0.6	1.73	
Liquid Permittivity - measurement uncertainty	4.57		1	0.6	2.74	
		Combined Standard			10.01	
Expanded Uncertainty U, Coverage Factor = 2, > 95 % Confidence = 20.03 %						
Expanded Uncertainty U, Coverage Factor = 2, > 95 % Confidence = 1.59 d						

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5. Equipment Under Test

Gobi3000 PCI Express Mini Card Tested inside of Fujitsu Tablet Slate PC (Q550) with Spacer

Model Number: Gobi3000

Manufacturer: Sierra Wireless

UMTS bands: Band II, IV, V

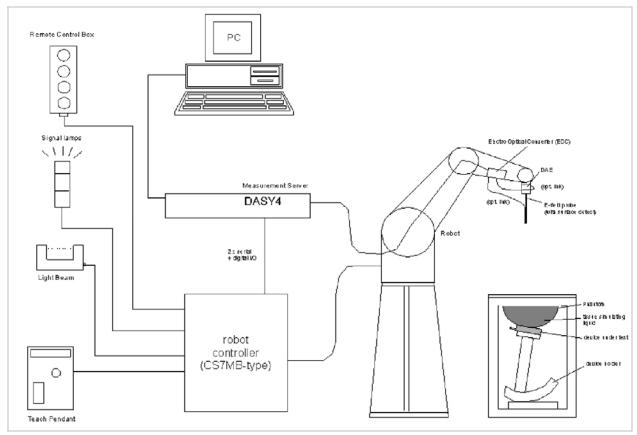
GSM / EDGE bands: 850 / 1900 MHz (GPRS Multi-slot class: Class 10)

1xEv-Do bands: BC0 850 MHz / BC1 1900 MHz

WWAN Module FCC ID: N7NMC8355
WLAN Module FCC ID: EJE-WL0025
Bluetooth Module FCC ID: QDS-BRCM1043

Diactooti i Modale i GO ib. Q	Bidetooti Woddie 1 CO ID. QDO BICOW1040				
Normal operation:	 Bottom face (Lap Held), and Edges: Multiple display orientations supporting both portrait and landscape configurations except Secondary Landscape 				
Simultaneous transmission:	WWAN can transmit simultaneously with Wi-Fi & Bluetooth				
Assessment for SAR evaluation for Simultaneous transmission:	 Refer to Sec. 15 for details of KDB 447498 Simultaneous Transmission SAR Evaluations. The Bluetooth's output power is ≤ 60/f_(GHz) mW, which stand-alone SAR evaluation is not required. Thus, simultaneous transmission SAR evaluation is not required. Bluetooth: Broadcom, FCC ID: QDS-BRCM1043, Max. power: 2.67 mW. 				
Antenna-to-antenna/user separation distances:	Refer to UL CCS report 11U13746-1C1 and Sec. 12 in this report				
Touch Panel	N-trig panel				

6. System Specifications



The DASY5 system for performing compliance tests consists of the following items:

- A standard high precision 6-axis robot (Stäubli RX family) with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- A dosimetric probe, i.e., an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
- A computer operating Windows 2000 or Windows XP.
- DASY software.
- Remote controls with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
- The SAM twin phantom enabling testing left-hand and right-hand usage.
- The device holder for handheld mobile phones.
- Tissue simulating liquid mixed according to the given recipes.
- Validation dipole kits allowing validating the proper functioning of the system.

7. Composition of Ingredients for Tissue Simulating Liquids

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					Frequen	cy (MHz)								
(% by weight)	45	50	83	35	9	15	19	00	24	50				
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 M Ω + 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

MSL/HSL750 (Body and Head liquids for 700 - 800 MHz)

moth total and the	OLITIOLITIES (Body and fread righted for 100 - 000 Militz)					
Item	Head Tissue Simulation Liquids HSL750					
	Muscle (body) Tissue Simulation Liquids HSL750					
Type No	SL AAH 075					
Manufacturer	SPEAG					
The item is composed of the	ne following ingredients:					
H ² O	Water, 35 – 58%					
Sucrese	Sugar, white, refined, 40-60%					
NaCl	Sodium Chloride, 0-6%					
Hydroxyethel-cellulsoe	Medium Viscosity (CAS# 9004-62-0), <0.3%					
Preventol-D7	Preservative: aqueous preparation, (CAS# 55965-84-9), containing 5-chloro-2-methyl-3(2H)-isothiazolone and 2-methyyl-3(2H)-isothiazolone, 0.1-0.7%					

MSL/HSL1750 (Body and Head liquids for 1700 - 1800 MHz)

13L/13L/1730 (Body and Flead liquids for 1700 - 1800 Miliz)					
Item	Head Tissue Simulation Liquids HSL1750				
	Muscle (body) Tissue Simulation Liquids HSL1750				
Type No	SL AAM 175				
Manufacturer	SPEAG				
The item is composed of the	e following ingredients:				
H ² O	Water, 52 – 75%				
C8H18O3	Diethylene glycol monobutyl ether (DGBE), 25-48%				
NaCl	Sodium Chloride, <1.0%				

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8. Simulating Liquid Parameters

The simulating liquids should be checked at the beginning of a series of SAR measurements to determine of the dielectric parameters are within the tolerances of the specified target values. For frequencies in 300 MHz to just under 2 GHz, the measured conductivity and relative permittivity should be within ± 5% of the target values. For frequencies in the range of 2–3 GHz and above the measured conductivity should be within ± 5% of the target values. The measured relative permittivity tolerance can be relaxed to no more than ± 10%.

Reference Values of Tissue Dielectric Parameters for Head and Body Phantom

The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in IEEE Standard 1528 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness variations in a human head. Other head and body tissue parameters that have not been specified in P1528 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equations and extrapolated according to the head parameters specified in IEEE Standard 1528.

Target Frequency (MHz)	He	ad	Во	Body		
ranget i requericy (ivii iz)	ε _r	σ (S/m)	ϵ_{r}	σ (S/m)		
150	52.3	0.76	61.9	0.8		
300	45.3	0.87	58.2	0.92		
450	43.5	0.87	56.7	0.94		
750	41.96	0.89	55.6	0.96		
835	41.5	0.9	55.2	0.97		
900	41.5	0.97	55	1.05		
915	41.5	0.98	55	1.06		
1450	40.5	1.2	54	1.3		
1610	40.3	1.29	53.8	1.4		
1750	40.08	1.37	53.44	1.49		
1800 – 2000	40	1.4	53.3	1.52		
2450	39.2	1.8	52.7	1.95		
3000	38.5	2.4	52	2.73		

 $(\varepsilon_r = \text{relative permittivity}, \sigma = \text{conductivity and } \rho = 1000 \text{ kg/m}^3)$

8.1. Simulating Liquid Check Results

Date	Freq.	(MHz)		Liqu	uid Parameters	Measured	Target	Delta (%)	Limit ±(%)	
	Body 835		e'	55.1590	Relative Permittivity (cr):	55.16	55.20	-0.07	5	
			e"	21.0510	Conductivity (σ):	0.98	0.97	0.76	5	
11/7/2011	Body	825	e'	55.2634	Relative Permittivity (ɛr):	55.26	55.26	0.01	5	
11///2011	Бойу	020	e"	21.0877	Conductivity (σ):	0.97	0.97	-0.15	5	
	Body	850	e'	55.0084	Relative Permittivity (ɛr):	55.01	55.16	-0.27	5	
	Dody	000	e"	20.9898	Conductivity (σ):	0.99	0.99	0.50	5	
	Body	1900	e'	50.9114	Relative Permittivity (cr):	50.91	53.30	-4.48	5	
	Войу	1900	e"	14.6600	Conductivity (σ):	1.55	1.52	1.89	5	
	Body	1850	e'	51.1287	Relative Permittivity (ɛr):	51.13	53.30	-4.07	5	
11/8/2011	Бойу	1030	e"	14.4588	Conductivity (σ):	1.49	1.52	-2.15	5	
11/0/2011	Dody 100	Body	1880	e'	50.9962	Relative Permittivity (ɛr):	51.00	53.30	-4.32	5
	Dody	y 1000		14.5844	Conductivity (σ):	1.52	1.52	0.30	5	
	Body	1910	e'	50.8633	Relative Permittivity (ɛr):	50.86	53.30	-4.57	5	
	Body	ay 1010	e"	14.6952	Conductivity (σ):	1.56	1.52	2.67	5	
	Body 1	1710	e'	52.7148	Relative Permittivity (cr):	52.71	53.54	-1.55	5	
	Dody	1710	e"	14.9126	Conductivity (σ):	1.42	1.46	-2.99	5	
	Body	1730	e'	52.6565	Relative Permittivity (cr):	52.66	53.49	-1.56	5	
11/8/2011	Dody	1730	e"	14.9652	Conductivity (σ):	1.44	1.47	-2.33	5	
11/0/2011	Body	1750	e'	52.5835	Relative Permittivity (cr):	52.58	53.44	-1.60	5	
	Dody	1730	e"	15.0169	Conductivity (σ):	1.46	1.49	-1.68	5	
	Body	1755	e'	52.5634	Relative Permittivity (cr):	52.56	53.43	-1.62	5	
	Dody	1700	e"	15.0335	Conductivity (σ):	1.47	1.49	-1.49	5	
	Body	835	e'	53.3550	Relative Permittivity (cr):	53.36	55.20	-3.34	5	
	Dody	000	e"	20.8331	Conductivity (σ):	0.97	0.97	-0.28	5	
11/9/2011	Body	825	e'	53.4614	Relative Permittivity (ɛr):	53.46	55.26	-3.25	5	
11/0/2011	Dody	020	e"	20.8677	Conductivity (σ):	0.96	0.97	-1.20	5	
	Body	850	e'	53.1981	Relative Permittivity (ɛr):	53.20	55.16	-3.55	5	
	Dody	000	e"	20.7813	Conductivity (σ):	0.98	0.99	-0.50	5	

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9. System Verification

The system performance check is performed prior to any usage of the system in order to verify SAR system measurement accuracy. The system performance check verifies that the system operates within its specifications of $\pm 10\%$.

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 DASY system with an E-Field Probe EX3DV4 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 1 GHz) and
 15 mm (below 1 GHz) from dipole center to the simulating liquid surface.
- The coarse grid with a grid spacing of 15 mm 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 fine cube was chosen for cube.
- Distance between probe sensors and phantom surface was set to 2.5 mm.
 The dipole input power (forward power) was 100 mW.
- The results are normalized to 1 W input power.

Reference SAR Values for HEAD & BODY-tissue from calibration certificate of SPEAG.

System	Cal. certificate #	Cal.	Cal. Freq.	SAR Avg (mW/g)			
validation dipole	Cai. Certificate #	date	(GHz)	Tissue:	Head	Body	
D835V2	D005) /0 4 1447 4/45 /44 0 005		1g SAR:	9.64	10.1		
D635V2	D835V2-4d117	4/15/11	0.835	10g SAR:	6.28	6.6	
D1750V2	D1750V2-1050	4/19/11	1.75	1g SAR:	36.8	36.4	
D1750V2				10g SAR:	19.6	19.4	
D1900V2	D1900V2-5d140	4/18/11	1.9	1g SAR:	41.6	41.2	
D1900V2	D 1900 v 2-50 140	4/10/11	1.9	10g SAR:	21.5	21.6	

9.1. System Check Results

System	Date Tested	Measured (N	ormalized to 1 W)	Target	Delta (%)	Tolerance	
validation dipole	Date Testeu	Tissue:	Body	raiget	Della (70)	(%)	
D835V2	11/07/11	1g SAR:	10.20	10.1	0.99	±10	
D033V2	11/07/11	10g SAR:	6.72	6.6	1.82	±10	
D1900V2	11/08/11	1g SAR:	44.0	41.2	6.80	±10	
D1900V2	11/06/11	10g SAR:	22.6	21.6	4.63] =10	
D1750V2	11/09/11	1g SAR:	39.0	36.4	7.14	.10	
D1750V2	11/08/11	10g SAR:	20.8	19.4	7.22	±10	
D835V2	11/09/11	1g SAR:	9.98	10.1	-1.19	.40	
D035V2		10g SAR:	6.56	6.6	-0.61	±10	

10. SAR Measurement Procedures

Step 1: Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The Minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. The minimum distance of probe sensors to surface is 2.1 mm. This distance cannot be smaller than the Distance of sensor calibration points to probe tip as defined in the probe properties.

Step 2: Area Scan

The Area Scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY5 software can find the maximum locations even in relatively coarse grids. When an Area Scan has measured all reachable points, it computes the field maximal found in the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE Standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan). If only one Zoom Scan follows the Area Scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of Zoom Scans has to be increased accordingly.

Step 3: Zoom Scan

Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. The Zoom Scan measures $\geq 5 \times 5 \times 7$ points within a cube whose base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the Zoom Scan evaluates the averaged SAR for 1 g and 10 g and displays these values next to the job's label.

Step 4: Power drift measurement

The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1.

Step 5: Z-Scan

The Z Scan measures points along a vertical straight line. The line runs along the Z-axis of a onedimensional grid. In order to get a reasonable extrapolation, the extrapolated distance should not be larger than the step size in Z-direction.

DATE: December 7, 2011

WWAN IC: 2417C-MC8355

11. RF Output Power Measurement

11.1. **GPRS & EGPRS**

GPRS (GMSK) - Coding Scheme: CS1

			Avg burst Pwr				
Band	Ch No.	f (MHz)	1 slot	Frame Avg Pwr	2 slot	Frame Avg Pwr	
	128	824.2	32.5	23.5	32.4	26.4	
GSM850	190	836.6	32.6	23.6	32.5	26.5	
	251	848.8	32.6	23.6	32.5	26.5	
	512	1850.2	29.9	20.9	29.5	23.5	
GSM1900	661	1880.0	29.7	20.7	29.2	23.2	
	810	1909.8	29.7	20.7	29.6	23.6	

EGPRS (8PSK) - Coding Scheme: MCS5

			Avg burst Pwr				
Band	Ch No.	f (MHz)	1 slot	Frame Avg Pwr	2 slot	Frame Avg Pwr	
	128	824.2	27.0	18.0	27.0	21.0	
GSM850	190	836.6	27.1	18.1	27.0	21.0	
	251	848.8	27.0	18.0	27.0	21.0	
	512	1850.2	25.7	16.7	25.8	19.8	
GSM1900	661	1880.0	25.1	16.1	26.0	20.0	
	810	1909.8	25.4	16.4	25.4	19.4	

Note: According to KDB 941225 D03 SAR Test Reduction GSM/GPRS/EDGE vo1, noted in the following sections indicated below may be considered to determine SAR test reduction requirements for devices operating in GSM/GPRS/EDGE modes to demonstrate RF exposure compliance.

- 1. Since the source-based time-averaged output power for EGPRS mode is lower than that in the GPRS mode, therefore Body SAR test reduction is applicable for this device.
- 2. Based on output power above and time slots, the following worst-case configurations were chosen for Body SAR testing.
 - a. GPRS850 2 time slots
 - b. GPRS1900 2 time slots

11.2. UMTS

RELEASE 99

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification. The EUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7).

	Mode	Rel99
	Subtest	-
	Loopback Mode	Test Mode 1
WCDMA Conoral Cottings	Rel99 RMC	12.2kbps RMC
WCDMA General Settings	Power Control Algorithm	Algorithm2
	βc/βd	8/15

Results

Rel 99 (12.2kbps RMC)

Band	Mode	UL Ch No.	f (MHz)	Avg Pwr (dBm)
	D-100	4132	826.4	23.6
UMTS band V	Rel 99 12.2kbps RMC	4182	836.0	23.7
	12.2Kbp3 KWO	4233	846.6	23.7
	D-100	1312	1712.4	23.8
UMTS band IV	Rel 99 12.2kps RMC	1427	1735.4	23.7
		1513	1754.0	23.7
UMTS band II	D-100	9262	1852.4	23.9
	Rel 99 12.2kbps RMC	9400	1880.0	24.0
	12.2Rbp3 RWO	9538	1907.6	24.2

HSDPA

The following 4 Sub-tests were completed according to Release 6 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

	Mode	Rel6 HSDPA	Rel6 HSDPA	Rel6 HSDPA	Rel6 HSDPA		
	Subtest	1	2	3	4		
	Loopback Mode	Test Mode 1					
	Rel99 RMC	12.2kbps RMC					
	HSDPA FRC	H-Set1					
14/00444	Power Control Algorithm	Algorithm 2					
WCDMA	βc	2/15	12/15	15/15	15/15		
General	βd	15/15	15/15	8/15	4/15		
Settings	Bd (SF)	64					
	βc/βd	2/15	12/15	15/8	15/4		
	βhs	4/15	24/15	30/15	30/15		
	MPR (dB)	0	0	0.5	0.5		
	D _{ACK}	8					
	D _{NAK}	8					
HSDPA	DCQI	8					
Specific	Ack-Nack repetition factor	3					
Settings	CQI Feedback (Table 5.2B.4)	4ms					
	CQI Repetition Factor (Table 5.2B.4)	2					
	Ahs =βhs/βc	30/15					

Results

Band	Mode	UL Ch No.	f (MHz)	Avg Pwr (dBm)
		4132	826.4	23.6
	Subtest 1	4182	836.0	23.7
		4233	846.6	23.6
		4132	826.4	23.6
	Subtest 2	4182	836.0	23.7
UMTS band V		4233	846.6	23.6
OWITS Darid V		4132	826.4	23.1
	Subtest 3	4182	836.0	23.2
		4233	846.6	23.0
		4132	826.4	23.0
	Subtest 4	4182	836.0	23.1
		4233	846.6	22.9
		4132	826.4	23.7
	Subtest 1	4182	836.4	23.8
		4233	846.6	23.7
		4132	826.4	23.7
	Subtest 2	4182	836.4	23.8
UMTS band IV		4233	846.6	23.7
OWITS DATIO IV		4132	826.4	23.2
	Subtest 3	4182	836.4	23.3
		4233	846.6	23.1
		4132	826.4	23.1
	Subtest 4	4182	836.4	23.2
		4233	846.6	23.0
		9262	1852.4	23.8
	Subtest 1	9400	1880.0	23.9
		9538	1907.6	23.4
		9262	1852.4	23.5
	Subtest 2	9400	1880.0	23.9
LIMTC band II		9538	1907.6	23.0
UMTS band II		9262	1852.4	23.3
	Subtest 3	9400	1880.0	23.4
		9538	1907.6	23.9
F		9262	1852.4	23.3
	Subtest 4	9400	1880.0	23.4
		9538	1907.6	22.9

Note: KDB 941225 D01 – Body SAR is not required for HSDPA when the maximum average output of each RF channel with HSDPA active is less than $\frac{1}{4}$ dB higher than that measured without HSDPA using 12.2 kbps RMC or the maximum SAR for 12.2 kbps RMC is < 75% (1.2 W/kg) of the SAR limit.

HSPA (HSDPA & HSUPA)

The following 5 Sub-tests were completed according to Release 6 procedures in section 5.2 of 3GPP

	Mode	Rel6 HSPA	Rel6 HSPA	Rel6 HSPA	Rel6 HSPA	Rel6 HSPA		
	Subtest	1	2	3	4	5		
	Loopback Mode	Test Mode 1						
	Rel99 RMC	12.2kbps RMC						
	HSDPA FRC	H-Set1						
	HSUPA Test	HSUPA Loopba	ack					
	Power Control Algorithm	Algorithm2						
MODIMA	βc	11/15	6/15	15/15	2/15	15/15		
WCDMA General	βd	15/15	15/15	9/15	15/15	15/15		
Settings	βec	209/225	12/15	30/15	2/15	24/15		
Settings	βc/βd	11/15	6/15	15/9	2/15	15/15		
	βhs	22/15	12/15	30/15	4/15	30/15		
				47/15				
	βed	1309/225	94/75	47/15	56/75	134/15		
	CM (dB)	1.0	3.0	2.0	3.0	1.0		
	MPR (dB)	0	2	1	2	0		
	DACK	8						
	DNAK	8						
HSDPA	DCQI	8						
Specific	Ack-Nack repetition factor	3						
Settings	CQI Feedback (Table 5.2B.4)	4ms						
	CQI Repetition Factor (Table 5.2B.4)	2						
	Ahs = βhs/βc	30/15						
	D E-DPCCH	6	8	8	5	7		
	DHARQ	0	0	0	0	0		
	AG Index	20	12	15	17	21		
	ETFCI (from 34.121 Table C.11.1.3)	75	67	92	71	81		
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9		
		E-TFCI 11			E-TFCI 11			
HSUPA		E-TFCI PO 4			E-TFCI PO 4			
Specific		E-TFCI 67			E-TFCI 67			
Settings		E-TFCI PO 18			E-TFCI PO 18			
	Reference E_TFCIs	E-TFCI 71			E-TFCI 71			
	Reference L_11 Cis	E-TFCI PO 23			E-TFCI PO 23			
		E-TFCI 75		E-TFCI 11	E-TFCI 75			
		E-TFCI PO 26		E-TFCI PO 4	E-TFCI PO 26			
		E-TFCI 81		E-TFCI 92	E-TFCI 81			
		E-TFCI PO 27		E-TFCI PO 18	E-TFCI PO 27			

Rel 6 HSDPA/HSUPA

Band	Mode	UL Ch No.	f (MHz)	Avg Pwr (dBm)
		4132	826.4	23.7
	Subtest 1	4182	836.0	23.8
		4233	846.6	23.5
		4132	826.4	21.9
	Subtest 2	4182	836.0	22.0
		4233	846.6	21.7
UMTS		4132	826.4	22.9
band V	Subtest 3	4182	836.0	23.0
band v		4233	846.6	22.7
		4132	826.4	22.0
	Subtest 4	4182	836.0	22.1
		4233	846.6	21.8
		4132	826.4	23.5
	Subtest 5	4182	836.0	23.6
		4233	846.6	23.7
		1312	1712.4	24.0
	Subtest 1	1412	1732.4	24.0
		1513	1754.0	23.9
		1312	1712.4	22.7
	Subtest 2	1412	1732.4	8.0
		1513	1754.0	22.6
LIMTO		1312	1712.4	23.0
UMTS	Subtest 3	1412	1732.4	23.1
band IV		1513	1754.0	23.0
		1312	1712.4	22.7
	Subtest 4	1412	1732.4	22.4
		1513	1754.0	22.5
		1312	1712.4	23.6
	Subtest 5	1412	1732.4	23.6
		1513	1754.0	23.7
		9262	1852.4	23.4
	Subtest 1	9400	1880.0	23.4
		9538	1907.6	23.2
		9262	1852.4	21.7
	Subtest 2	9400	1880.0	21.6
		9538	1907.6	21.4
LINATO		9262	1852.4	22.6
UMTS	Subtest 3	9400	1880.0	22.5
band II		9538	1907.6	22.4
		9262	1852.4	21.8
	Subtest 4	9400	1880.0	21.7
		9538	1907.6	21.5
		9262	1852.4	23.4
	Subtest 5	9400	1880.0	23.3
		9538	1907.6	23.2

Note: KDB 941225 D01, Body SAR is not required for device with HSPA capabilities when the maximum average output of each RF channel with HSUPA/HSDPA active is less than $\frac{1}{4}$ dB higher than that measured without HSUPA/HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2kbps RMC is \leq 75% of the SAR limit.

11.3. CDMA2000

1xRTT

Cellular Band

Radio	Comice Ontion	Avg Pwr (dBm)					
Configuration	Service Option (SO)	Ch.1013	Ch.384	Ch.777			
(RC)		824.7MHz	836.52 MHz	848.31 MHz			
RC1	55 (Loopback)	23.8	24.0	23.9			
RC3	55 (Loopback)	23.9	24.0	23.8			
KC3	32 (+ F-SCH)	23.8	24.0	23.8			

PCS Band

Radio	Sarvina Ontion	Avg Pwr (dBm)					
Configuration	Service Option (SO)	Ch.25	Ch.600	Ch.1175			
(RC)	(00)	1851.25 MHz	1880 MHz	1908.75 MHz			
RC1	55 (Loopback)	24.0	24.1	23.7			
RC3	55 (Loopback)	24.1	24.1	23.5			
KC3	32 (+ F-SCH)	24.1	24.1	23.5			

1xEv-Do Release 0 (Rel. 0)

Band	FTAP Rate	RTAP Rate	Channel	f (MHz)	Avg Pwr (dBm)
Cellular	307.2 kbps		1013	824.70	23.6
	(2 slot,	153.6 kbps	384	836.52	23.7
	QPSK)		777	848.31	23.6
	307.2 kbps		25	1851.25	23.9
PCS	(2 slot,	153.6 kbps	600	1880.00	24.1
	QPSK)		1175	1908.75	23.7

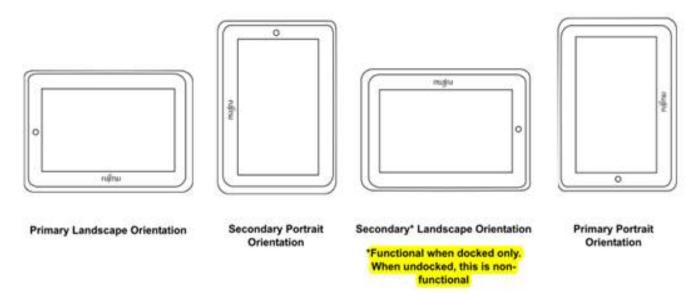
1xEv-Do Revision A (Rev. A)

Band	FTAP Rate	RTAP Rate	Channel	f (MHz)	Avg Pwr (dBm)
	307.2k,		1013	824.70	23.5
Cellular	QPSK/ ACK	4096	384	836.52	23.7
	channel is		777	848.31	23.5
	307.2k,		25	1851.25	23.9
PCS	QPSK/ ACK	4096	600	1880.00	24.0
	channel is		1175	1908.75	23.7

DATE: December 7, 2011

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12. Summary of Test Configurations



Configuration per Sec. 13 Figures	WWAN Tx Antenna-to- Edge/Surface distance	SAR Require	Comments
(1) Secondary Landscape	3.0 mm	No	SAR evaluation not performed with the EUT edge in direct contact with oval phantom flat section (0 mm separation) Disabled orientation
(2) Secondary Portrait	193.8 mm	No	SAR evaluation was not performed for this configuration as this was not the most conservative edge. Testing was as per KDB 447498 4) b) ii) (2)
(3) Primary Landscape	118 mm	No	SAR evaluation was not performed for this configuration as this was not the most conservative edge. Testing was as per KDB 447498 4) b) ii) (2)
(4) Primary Portrait	29.7 mm	Yes	SAR evaluation performed with the EUT edge in direct contact with oval phantom flat section (0 mm separation)
(5) Base (Back Surface/Lap Held)	3.0 mm + Spacer (8mm)	Yes	SAR evaluation performed with the EUT surface in direct contact with oval phantom flat section (0 mm separation).

13. Stand-alone SAR Test Results

13.1. GPRS850

Plot	Mode	ode Test config.		Freq.	SAR (mW/g)	Note
No.	Mode	rest comig.	Ch	(MHz)	1-g	10-g	Note
1	GPRS 2 slots	Base/ Lap held	128	824.4	0.706	0.424	
2	GPRS 2 slots	Base/ Lap held	190	836.6	0.888	0.523	
3,4	GPRS 2 slots	Base/ Lap held	251	848.8	1.070	0.627	
5	GPRS 2 slots	Primary Portrait	190	836.6	0.312	0.168	

13.2. GPRS1900

Plot	Mode	de Test config.		Freq.	SAR (mW/g)		Note
No.	ivioue	rest comig.	Ch	(MHz)	1-g	10-g	Note
1,2	GPRS 2 slots	Base/ Lap held	661	1880.0	0.618	0.337	
3	GPRS 2 slots	Primary Portrait	661	1880.0	0.274	0.141	

Notes:

1. SAR test was performed in the middle channel only as the measured level was < 50% of the SAR limit as stated in FCC "Public Notice DA 02-1438" by the SCC-34/SC-2. Testing in the low and high channel are optional.

13.3. UMTS FDD V

Plot	Plot Mode	Mode Test config		Freq.	SAR (mW/g)		Note
No.	ivioue	Test config. Ch (MHz	(MHz)	1-g	10-g	Note	
1,2	RMC 12.2kbps	Base/ Lap held	4183	836.6	0.777	0.439	
3	RMC 12.2kbps	Primary Portrait	4183	836.6	0.265	0.141	

13.4. UMTS FDD IV

Plot	Mode	Test config.		Freq.	SAR (mW/g)	Note
No.	IVIOGE	rest comig.	onfig. Ch (MHz)	(MHz)	1-g	10-g	Note
1,2	RMC 12.2kbps	Base/ Lap held	1427	1735.4	0.569	0.314	
3	RMC 12.2kbps	Primary Portrait	1427	1735.4	0.192	0.100	

13.5. UMTS FDD II

Plot	Mode	Mode Test config.	Ch	Freq.	SAR (mW/g)	Note
No.	IVIOGE	rest comig.	Cii	(MHz)	1-g	10-g	Note
1	RMC 12.2kbps	Base/ Lap held	9262	1852.4	0.882	0.480	
2	RMC 12.2kbps	Base/ Lap held	9400	1880.0	0.880	0.479	
3,4	RMC 12.2kbps	Base/ Lap held	9538	1907.6	0.985	0.530	
5	RMC 12.2kbps	Primary Portrait	9400	1880.0	0.402	0.204	

Notes:

1. SAR test was performed in the middle channel only as the measured level was < 50% of the SAR limit as stated in FCC "Public Notice DA 02-1438" by the SCC-34/SC-2. Testing in the low and high channel are optional.

13.6. CDMA2000 Cell(850)

Plot	ot Mode	Mode Test config.		Freq.	SAR (mW/g)		Note
No.	ivioue	rest comig.	fig. Ch (MHz)	(MHz)	1-g	10-g	Note
1,2	1xEv-Do Rel. 0	Base/ Lap held	384	836.5	0.686	0.398	
3	1xEv-Do Rel. 0	Primary Portrait	384	836.5	0.345	0.191	

13.7. CDMA2000 PCS(1900)

Plot	ot Mode Test config.		Ch	Freq.	SAR (mW/g)	Note
No.	Mode	rest comig.	Cii	(MHz)	1-g	10-g	Note
1	1xEv-Do Rel. 0	Base/ Lap held	25	1851.25	0.931	0.512	
2	1xEv-Do Rel. 0	Base/ Lap held	600	1880.0	0.860	0.470	
3,4	1xEv-Do Rel. 0	Base/ Lap held	1175	1908.75	0.986	0.531	
5	1xEv-Do Rel. 0	Primary Portrait	600	1880.0	0.315	0.163	

Notes:

1. SAR test was performed in the middle channel only as the measured level was < 50% of the SAR limit as stated in FCC "Public Notice DA 02-1438" by the SCC-34/SC-2. Testing in the low and high channel are optional.

14. Worst-case SAR Test Plots

Worst-case SAR Plot for Part 22

Date/Time: 11/7/2011 3:29:50 PM

Test Laboratory: UL CCS SAR Lab D

GSM850

Communication System: GSM850; Frequency: 848.8 MHz; Duty Cycle: 1:4

Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.991 mho/m; ε_r = 55; ρ = 1000 kg/m³

Phantom section: Flat Section

Room Ambient Temperature: 24.0 deg. C; Liquid Temperature: 23.0 deg. C

DASY4 Configuration:

- Area Scan setting Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Probe: EX3DV4 SN3686; ConvF(8.78, 8.78, 8.78); Calibrated: 1/24/2011
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1259; Calibrated: 5/3/2011
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BB; Serial: 1017
- Measurement SW: DASY4, V4.7 Build 80; Post processing SW: SEMCAD, V1.8 Build 186

Base_H ch_2 slot/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 1.20 mW/g

Base_H ch_2 slot/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

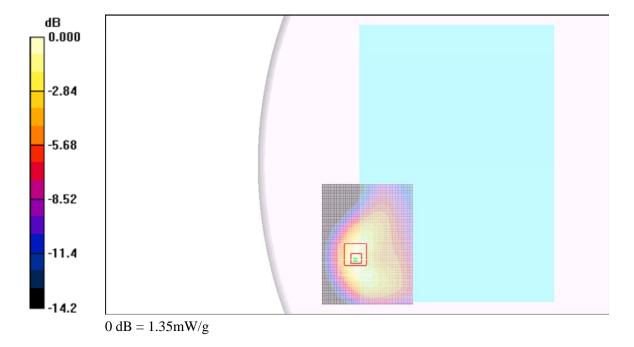
Reference Value = 35.0 V/m; Power Drift = -0.189 dB

Peak SAR (extrapolated) = 1.82 W/kg

SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.627 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 1.35 mW/g



Worst-case SAR Plot for Part 22 – Z plot

Date/Time: 11/7/2011 3:41:12 PM

DATE: December 7, 2011

WWAN IC: 2417C-MC8355

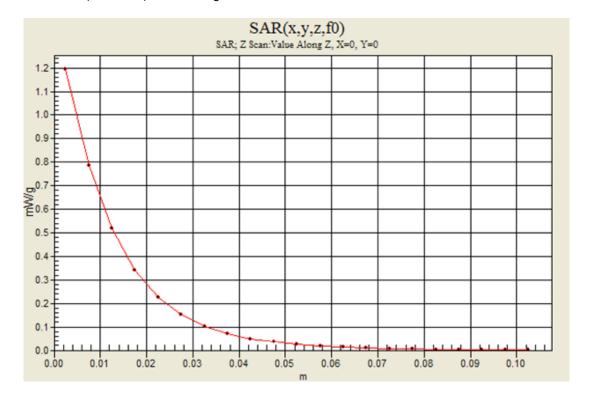
Test Laboratory: UL CCS SAR Lab D

GSM850

Communication System: GSM850; Frequency: 848.8 MHz; Duty Cycle: 1:4

Base_H ch_2 slot/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 1.19 mW/g



Worst-case SAR Plot for Part 24

Date/Time: 11/8/2011 2:42:29 PM

DATE: December 7, 2011 WWAN IC: 2417C-MC8355

Test Laboratory: UL CCS SAR Lab D

CDMA2000_1900MHz

Communication System: PCS1900; Frequency: 1908.75 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1908.75 MHz; $\sigma = 1.56 \text{ mho/m}$; $\varepsilon_r = 50.9$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Room Ambient Temperature: 24.0 deg. C; Liquid Temperature: 23.0 deg. C

DASY4 Configuration:

- Area Scan setting Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Probe: EX3DV4 SN3686; ConvF(6.99, 6.99, 6.99); Calibrated: 1/24/2011
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1259; Calibrated: 5/3/2011
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BB; Serial: 1017
- Measurement SW: DASY4, V4.7 Build 80; Post processing SW: SEMCAD, V1.8 Build 186

Base_H ch_/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 1.30 mW/g

Base_H ch_/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

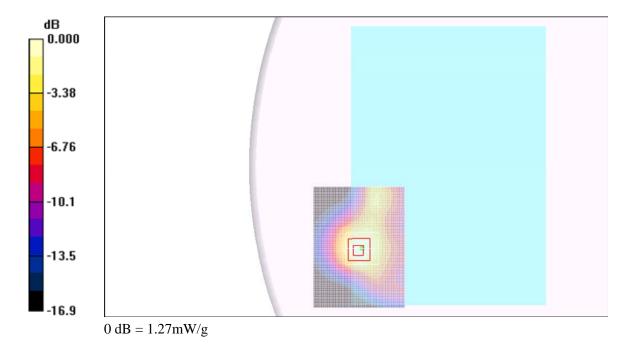
Reference Value = 28.7 V/m; Power Drift = 0.047 dB

Peak SAR (extrapolated) = 1.82 W/kg

SAR(1 g) = 0.986 mW/g; SAR(10 g) = 0.531 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 1.27 mW/g



Worst-case SAR Plot for Part 24 - Z plot

Date/Time: 11/8/2011 2:55:10 PM

DATE: December 7, 2011

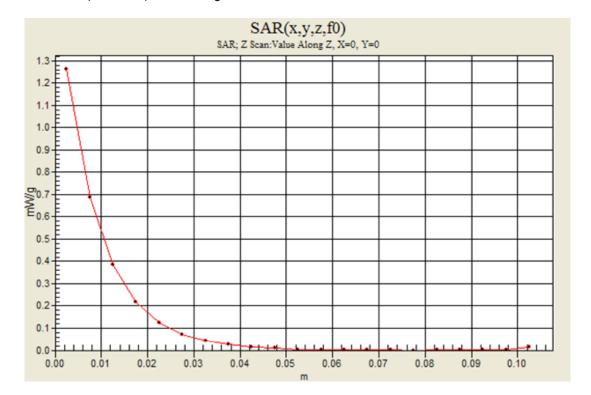
WWAN IC: 2417C-MC8355

Test Laboratory: UL CCS SAR Lab D

CDMA2000_1900MHz

Communication System: PCS1900; Frequency: 1908.75 MHz; Duty Cycle: 1:1

Base_H ch_/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm Info: Interpolated medium parameters used for SAR evaluation. Maximum value of SAR (measured) = 1.26 mW/g



Worst-case SAR Plot for Part 27

Date/Time: 11/8/2011 8:42:18 PM

DATE: December 7, 2011 WWAN IC: 2417C-MC8355

Test Laboratory: UL CCS SAR Lab D

UMTS BAND 4

Communication System: UMTS Band IV; Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.44 mho/m; ε_r = 52.6; ρ = 1000 kg/m³

Phantom section: Flat Section

Room Ambient Temperature: 24.0 deg. C; Liquid Temperature: 23.0 deg. C

DASY4 Configuration:

- Area Scan setting Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Probe: EX3DV4 SN3686; ConvF(7.28, 7.28, 7.28); Calibrated: 1/24/2011
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1259; Calibrated: 5/3/2011
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BB; Serial: 1017
- Measurement SW: DASY4, V4.7 Build 80; Post processing SW: SEMCAD, V1.8 Build 186

Base_M ch/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.743 mW/g

Base_M ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

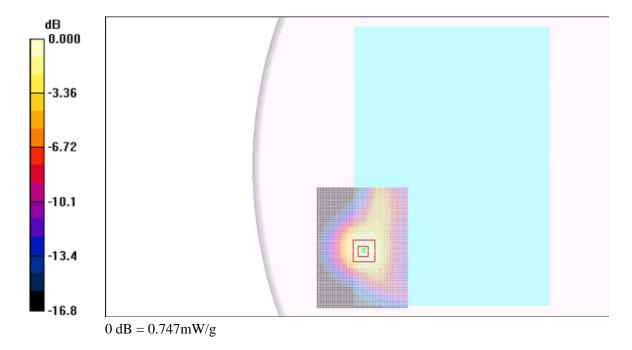
Reference Value = 22.6 V/m; Power Drift = -0.009 dB

Peak SAR (extrapolated) = 1.00 W/kg

SAR(1 g) = 0.569 mW/g; SAR(10 g) = 0.314 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.747 mW/g



Worst-case SAR Plot for Part 27 - Z plot

Date/Time: 11/8/2011 8:53:49 PM

DATE: December 7, 2011 WWAN IC: 2417C-MC8355

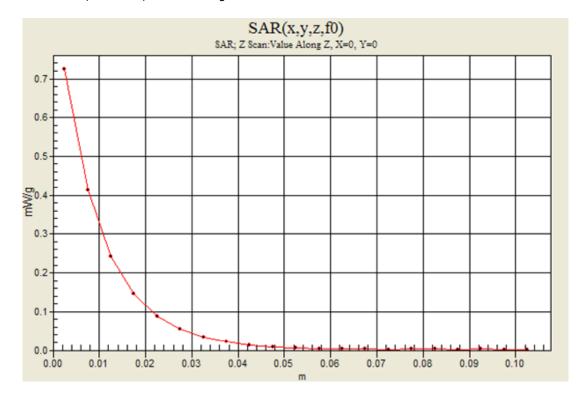
Test Laboratory: UL CCS SAR Lab D

UMTS BAND 4

Communication System: UMTS Band IV; Frequency: 1732.4 MHz; Duty Cycle: 1:1

Base_M ch/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.725 mW/g



15. Simultaneous Transmission SAR Analysis (KDB 447498)

The Bluetooth's output power is \leq 60/f(GHz) mW, which stand-alone SAR evaluation is not required. Thus, simultaneous transmission SAR evaluation is not required.

Simultaneous transmission was fully assessed in UL CCS report 11U13746-1C1.

Assessment in this report is restricted to calculating the sum of the 1g SARs using the Cellular data from this report and the Wi-Fi data from 11U13746-1C1. This provides an approximate comparison between the old and new versions of the Slate PC.

15.1. Simultaneous Transmission SAR Analysis: WWAN + WiFi 2.4 GHz

				Wi-Fi	∑1g SAR
Test Position	EUT	Band	Cellular	2.4 GHz	(W/kg)
5. Base	N-Trig	GSM850 GPRS 2 slot	1.070	0.864	1.934
5. Base	N-Trig	GSM1900 GPRS 2 slot	0.618	0.864	1.482
5. Base	N-Trig	UMTS Band V	0.777	0.864	1.641
5. Base	N-Trig	UMTS Band IV	0.569	0.864	1.433
5. Base	N-Trig	UMTS Band II	0.985	0.864	1.849
5. Base	N-Trig	CDMA2000 Cell 1x EV-DO (Release 0)	0.686	0.864	1.550
5. Base	N-Trig	CDMA2000 PCS 1x EV-DO (Release 0)	0.986	0.864	1.850

^{*}Antenna Pair SAR to Peak Location Separation Ratio ∑ 1-g SAR > 1.6 W/kg:

∑ 1-g SAR (W/kg)	Separation distance (cm) Cellular-to- WiFi antenna ¹	Antenna Pair SAR to Peak Location Separation Ratio
1.934	8	0.242
1.641	8	0.205
1.849	8	0.231
1.850	8	0.231

Notes:

- 1. This table indicates a very conservative estimate of the distance between peak SAR locations. Previous measurements exceeded 8 cm by at least 0.45 cm
- 2. Simultaneous transmission SAR evaluation is not required due to SAR to peak location separation ratios are less than 0.3.

15.2. Simultaneous Transmission – WWAN + WiFi 5 GHz

				Wi-Fi	∑1g SAR
Test Position	EUT	Band	Cellular	5 GHz	(W/kg)
5. Base	N-Trig	GSM850 GPRS 2 slot	1.070	0.402	1.472
5. Base	N-Trig	GSM1900 GPRS 2 slot	0.618	0.402	1.020
5. Base	N-Trig	UMTS Band V	0.777	0.402	1.179
5. Base	N-Trig	UMTS Band IV	0.569	0.402	0.971
5. Base	N-Trig	UMTS Band II	0.985	0.402	1.387
5. Base	N-Trig	CDMA2000 Cell 1x EV-DO (Release 0)	0.686	0.402	1.088
5. Base	N-Trig	CDMA2000 PCS 1x EV-DO (Release 0)	0.986	0.402	1.388

^{*}Antenna Pair SAR to Peak Location Separation Ratio ∑ 1-g SAR > 1.6 W/kg:

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16. Appendix

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