MOTOROLA

ACCREDITED
Certificate Number: 1449-01

FCC ID: AZ489FT5843
DECLARATION OF COMPLIANCE SAR ASSESSMENT Part 1 of 3

Government & Enterprise Mobility Solutions
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Date of Report: May 17, 2005
Report Revision: Rev. A
Report ID: FCC rpt_i930_Rev A_050517 SR2035

Responsible Engineer: Kim Uong (EME lead Eng.)
Date/s Tested: 4/9/05-5/4/05
Manufacturer/Location: Motorola - Plantation
Sector/Group/Div.: iDEN Subscriber
Date submitted for test: 3/28/05
DUT Description: i930; Tri-band GSM(Voice and GPRS Data) and dual band iDEN (Voice/WiDEN), GPS capable
Test TX mode(s): iDEN - 1:3, 1:6, 236:310, 81:120; GSM - 1:8, 1:4
Max. Power output: iDEN 800/900MHz - 0.640W pulsed avg., GSM 900 – 1.905W pulsed avg., GSM 1800/1900 – 0.962W
Nominal Power: iDEN 800/900MHz - 0.600W, GSM 900 1.5W; GSM1800/1900MHz - 0.750W
Tx Frequency Bands: iDEN - 806-825, 896-902MHz; GSM - 880.2-914.8MHz, 1710.2-1784.8MHz, 1850.2-1909.8MHz
Signaling type: TDMA: iDEN/WiDEN; GSM 1999 spec
Model(s) Tested: H72UAH9JR7AN
Model(s) Certified: H72UAH9JR7AN
Serial Number(s): 805AFC0016, 805AFC0013
Classification: General Population/Uncontrolled
Rule Part(s): 15
Approved Accessories:

Antenna(s):
8585524F01 (retractable ¼ wave antenna, 806-825MHz (-2.44dBd); 896-902MHz (-2.77dBd); 880-915Mhz (-0.6dBi); retractable ½ wave antenna, 1710-1785MHz (-0.12dBi); 1850-1910MHz (0.58dBi)

Battery(ies):
SNN5706B (Extra capacity Li Ion); SNN5685A (High performance battery); NTN2136A (Hi performance battery door); NTN2261A (Slim battery door)

Body worn accessory(ies):
NNTN4758A (Holster); NNTN4747A (Belt clip)

Audio/Data cable accessory(ies):
NNTN5006A (PTT headset earbud), NNTN5005A (PTT headset over head), NSN6066A (RSM), SYN8390B (Earbud w/ mic.), NTN8496A (Lightweight headset w/ mic), NNTN4033A (Privacy earbud w/ PTT), SYN7875C (Hearing aide neckloop), NNTN5004A (PTT headset over ear), NNTN5774A (Stereo headset), SYN8146C (Over the ear headset w/ boom mic) , NTN8513B (Lightweight headset), NNTN5211A (Surveillance earpiece); NKN6559A (USB data cable), NKN6560A (RS232 data cable), NNTN5405A (USB data cable w/ charging), NNTN5406A (RS232 data cable w/ charging), NNTN5491A (Keyboard), NNTN5863A (Keypad adapter), NNTN5494A (Gamer w/ keypad)

Max. Calc. 1-g/10-g Avg. SAR: 1.21/0.89 mW/g (Body)
Max. Calc. 1-g/10-g Avg. SAR: 0.07/0.05 mW/g (Face)
Max. Calc. 1-g/10-g Avg. SAR: 0.87/0.58 mW/g (Head)

Based on the information and the testing results provided herein, the undersigned certifies that when used as stated in the operating instructions supplied, said product complies with the national and international reference standards and guidelines listed in section 2.0 of this report. This report shall not be reproduced without written approval from an officially designated representative of the Motorola EME Laboratory.

This reporting format is consistent with the test report guidelines of the TIA TSB-150 December 2004
The results and statements contained in this report pertain only to the device(s) evaluated.

Ken Enger GEMS EME Lab Senior Resource Manager, Laboratory Director

Approval Date:

Certification Date: 5/12/05

Certification No.: L1050507P

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REVISION HISTORY

Date	Revision	Comments
5/12/05	O	Initial Prototype release
5/17/05	A	Report repartitioned to accommodate FCC file size requirements

1.0 Introduction and Overview

This report details the utilization, test setup, test equipment, and test results of the Specific Absorption Rate (SAR) measurements performed at the GEMS EME Test Lab for the model number H72UAH9JR7AN of FCC ID: AZ489FT5843. The results herein reflect initial prototype results.

The test results presented herein clearly demonstrate compliance with FCC General Population/Uncontrolled RF Exposure limits of **1.6 mW/g** per the requirements of 47 CFR 2.1093(d).

2.0 Reference Standards and Guidelines

This product is designed to comply with the following national and international standards and guidelines.

- United States Federal Communications Commission, Code of Federal Regulations; Rule Part 47CFR § 2.1093 sub-part J:1999
- Federal Communications Commission, “Evaluating Compliance with FCC Guidelines for Human Exposure to Radio frequency Electromagnetic Fields”, OET Bulletin 65, Supplement C (Edition 01-01), FCC, Washington, D.C.: June 2001.
- IEEE 1528, 2003 "Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques"
- American National Standards Institute (ANSI) / Institute of Electrical and Electronic Engineers (IEEE) C95. 1-1992
- Institute of Electrical and Electronic Engineers (IEEE) C95.1-1999 Edition
- International Commission on Non-Ionizing Radiation Protection (ICNIRP) 1998
- Ministry of Health (Canada) Safety Code 6. Limits of Human Exposure to Radio frequency Electromagnetic Fields in the Frequency Range from 3 kHz to 300 GHz, 1999
- Australian Communications Authority Radiocommunications (Electromagnetic Radiation - Human Exposure) Standard 2003
- ANATEL, Brazil Regulatory Authority, Resolution No. 303 of July 2, 2002 "Regulation of the limitation of exposure to electrical, magnetic, and electromagnetic fields in the radio frequency range between 9KHz and 300 GHz." and “Attachment to resolution # 303 from July 2, 2002”

2.1 SAR Limits

EXPOSURE LIMITS	SAR (W/kg)	
	(General Population / Uncontrolled Exposure Environment)	(Occupational / Controlled Exposure Environment)
Spatial Average - ANSI - (averaged over the whole body)	0.08	0.4
Spatial Peak - ANSI - (averaged over any 1-g of tissue)	1.60	8.0
Spatial Peak – ICNIRP/ANSI - (hands/wrists/feet/ankles averaged over 10-g)	4.0	20.0
Localized SAR - ICNIRP - (Head and Trunk 10-g)	2.0	10.0

3.0 Description of Device Under Test (DUT)

FCC ID: AZ489FT5843 is a world roaming Smart Phone incorporating iDEN and GSM technologies. This product is a digital multi-service data capable device that employs time division multiplexing transmission technology with a duty cycle ranging from 16.67% to 33.33% using M16-QAM modulation for voice or circuit data transmission. There is a Split 1:3 mode that operates using a 16.67% transmission duty cycle. Two 7.5ms pulses occur during the six time slots within the 90-msec frame format. This mode is available in both the 806-825MHz and 896-902MHz bands in the telephone interconnect mode only. Packet data transmission is supported in both bands up to a maximum duty cycle of 67.5% using quad QPSK modulation. This device incorporates WiDEN technology for both the 800 and 900MHz iDEN bands with a maximum transmission duty cycle of 236:310 (76.1%). WiDEN uses the standard iDEN modulation modes in 1 to 4 standard 25KHz iDEN channels. WiDEN25, 50, 75, and 100 uses 1, 2, 3, and 4 25KHz channels respectfully. The highest duty cycle is in the WiDEN 25KHz mode. This device is class 4 capable in the GSM 900MHz band and class 1 capable in the 1800 and 1900MHz bands. The GSM bands also supports GPRS class 10 functionality with 1:8 duty cycle in voice mode and 1:4 in packet data mode. No simultaneous transmissions are possible. Packet Data and WiDEN operations are possible with and without connection to an external data device, via a data cable. This device is also GPS capable.

This device will be marketed to and used by the general population. This device may be used while held against the head in voice mode, in front of the face in dispatch mode, and against the body in phone, dispatch, Data, and WiDEN modes.

The iDEN/WiDEN bands are 806-825 MHz and 896-902MHz. The GSM bands are 880.2-914.8MHz, 1710.2-1784.8MHz, and 1850.2-1909.8MHz. The rated conducted powers are 0.60 watts pulse average in the 806-825MHz and 896-902MHz bands, 1.5 watts in the GSM 900MHz band, 0.750 watts in the 1800/1900MHz bands. The maximum conducted output powers are 0.64 watts pulse average, 1.905 watts pulse average, and 0.962 watts pulse averaged respectively as defined by the upper limit of the production line final test station.

FCC ID: AZ489FT5843 is offered with the options and accessories listed on the coversheet of this report.

Test Output Power

A table of the characteristic power slump versus time is provided in Appendix F.

4.0 Description of Test System

4.1 Descriptions of Robotics/probes/Readout Electronics

The laboratory utilizes a Dosimetric Assessment System (DASY4™) S.A.R. measurement system Version 4.4 manufactured by Schmid & Partner Engineering AG (SPEAG™), of Zurich Switzerland. The test system consists of a Stäubli RX90L robot, DAE3V1, and ET3DV6 E-Field probes. Please reference the SPEAG user manual and application notes for detailed probe, robot, and S.A.R. computational procedures. Section 5.0 presents relevant test equipment information. Appendices B and C present the applicable calibration certificates. The E-field probe first scans a coarse grid over a large area inside the phantom in order to locate the interpolated maximum S.A.R. distribution. After the coarse scan measurement, the probe is automatically moved to a position at the interpolated maximum. The subsequent scan can directly use this position as reference for the cube evaluations.

4.2 Description of Phantom(s)

4.2.1 Flat Phantom

Phantom Type	Phantom Material	Phantom Dimensions (cm)	Support structure opening dimensions (cm)	Support structure material	Loss Tangent (wood)
Flat	High Density Polyethylene (HDPE)	80x30x20x0.2	68.58x20.32	Wood	< 0.05

4.2.2 SAM Phantom

Phantom Type	Material Parameters	Material Thickness (mm)	Support structure material	Loss Tangent (wood)
SAMTP1022/ SAMTP1208	200MHz -3GHz; Er = <5, Loss Tangent = <0.05	2mm +/- 0.2mm	Wood	< 0.05

4.3 Description of Equivalent tissues

Type of Simulated Tissue

The simulated tissue used is compliant to that specified in FCC Supplement C (Edition 01-01) to OET Bulletin 65 (Edition 97-01) and IEEE 1528, 2003 "Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques". The sugar based simulate tissue is produced by placing the correct measured amount of De-ionized water into a large container. Each of the dried ingredients are weighed and added to the water carefully to avoid clumping. If the solution has a high sugar concentration the water is pre-heated to aid in dissolving the ingredients. For Diacetin and Glycol based simulates, sugar and HEC ingredients are not needed. The solution is mixed thoroughly, covered, and allowed to sit overnight prior to use.

Simulated Tissue Composition

% of listed ingredients	900MHz		1800/1900MHz	
	Head	Body	Head	Body
Sugar	56.5	44.9	NA	NA
DGBE (Glycol)	NA	NA	NA	NA
Diacetin	NA	NA	51.5	34.75
De ionized -Water	40.95	53.06	47.92	64.66
Salt	1.45	0.94	0.48	0.49
HEC	1	1	NA	NA
Bact.	0.1	0.1	0.1	0.1

Reference section 6.1 for target parameters

5.0 Additional Test Equipment

Equipment Type	Model Number	Serial Number	Calibration Due Date
Power Meter	347B	3125U16028	11/1/2005
Power Meter	347B	3737U26425	9/29/2005
Sensor	8482B	3318A07392	11/22/2005
Sensor	8481H	2703A14631	9/29/2005
Power Meter	E4418B	GB40206480	11/22/2005
Sensor	8482B	3318A07546	9/27/2005
Directional Coupler (NARDA)	3020A	40295	18-Jul-06
Directional Coupler (NARDA)	3022	77114	27-Feb-06
Sig Gen	E4421B	RSHPBT02	11/3/2005
AMP (ComTech PST)	AR88258-10	M3Y6A00-1007	CNR
AMP (Amplifier Research)	1W1000	16625	CNR
Network Analyzer (HP)	8753D	3410A06417	7-Feb-06
Dielectric Probe Kit (HP)	85070C	US99360076	CNR
Dipole	D1800V2	278	11/18/05
Dipole	D900V2	85	19-Aug-05

6.0 SAR Measurement System Verification

The S.A.R. measurements were conducted with probe model/serial number ET3DV6/SN1383. The system performance check was conducted daily and within 24 hours prior to testing. DASY output files of the system performance test results and the probe/dipole calibration certificates are included in appendices B and C respectively. The table below summarizes the system performance check results normalized to 1W.
Dipole validation scans at the head from SPEAG are provided in APPENDIX D. The GEMS EME lab validated the dipole to the applicable IEEE system performance targets. Within the same day system validation was performed using FCC body tissue parameters to generate the system performance target values for body at the applicable frequency. The results of the GEMS EME system performance validation are provided herein.

6.1 Equivalent Tissue Test Results

Simulated tissue prepared for S.A.R. measurements is measured daily and within 24 hours prior to actual S.A.R. testing to verify that the tissue is within 5% of target parameters at the center of the transmit band. This measurement is done using the Agilent (HP) probe kit model 85070C and a HP8753D Network Analyzer.

Actual versus Target tissue parameters (4/9/05 – 5/4/05)

FCC Body				
Frequency (MHz)	Di-electric Constant Target	Di-electric Constant Meas. (Range)	Conductivity Target S/m	Conductivity Meas. (Range) S/m
900/899	55.0	52.5-53.6	1.05	1.04-1.05
813	55.3	53.5-54.5	0.97	0.94-0.96
1747	53.4	53.0-55.2	1.49	1.42-1.45
1800	53.3	52.9-55.1	1.52	1.47-1.51
1880	53.3	52.7-54.8	1.52	1.54-1.55

IEEE Head				
Frequency (MHz)	Di-electric Constant Target	Di-electric Constant Meas. (Range)	Conductivity Target S/m	Conductivity Meas. (Range) S/m
900/899	41.5	39.8-41.9	0.97	1.00-1.01
813	41.6	41.4-42.8	0.90	0.93-0.93
1747	40.1	38.9-39.2	1.37	1.31-1.31
1800	40.0	38.6-39.0	1.40	1.35-1.36
1880	40.0	38.5-38.7	1.40	1.42-1.43

6.2 System Check Test Results

Probe Serial #	Tissue Type	Probe Cal Date	Dipole Kit / Serial #	System Check Test Results when normalized to 1W (mW/g)	Reference S.A.R @ 1W (mW/g)	Test Date(s)
1383	FCC Body	2/24/05	SPEAG D900V2 /085	11.610 +/- 0.140	11.41 +/- 10%	4/14/05 – 5/3/04 7 test days
1383	FCC Body	2/24/05	SPEAG D1800V2 /278	37.26 +/- 1.190	36.48 +/- 10%	4/28/05 – 5/2/05 4 test days
1383	IEEE Head	2/24/05	SPEAG D900V2 /085	11.555 +/- 0.125	11.26 +/- 1-%	4/9/05 – 5/4/05 9 test days
1383	IEEE Head	2/24/05	SPEAG D1800V2 /278	37.13 +/- 0.740	38.10 +/- 10%	4/25/05 – 4/28/05 4 test days

Note: See APPENDIX D for an explanation of the reference S.A.R. targets stated above.
(System performance results reflects the median performance +/- ½ of the test date(s) performance ranges)

The DASY4™ system is operated per the instructions in the DASY4™ Users Manual. The complete manual is available directly from SPEAG™. All measurement equipment used to assess EME S.A.R. compliance was calibrated according to 17025 A2LA guidelines.

7.0 DUT Test Strategy and Methodology

7.1 DUT Configuration(s)

The DUT is a portable device with iDEN, WiDEN, and GSM transmission signaling operational at the body, head, and face using the offered accessories. The device is placed in the test positions presented in Appendix G.

Test Plan

All options and accessories listed on the cover page of this report were considered in order to develop the S.A.R. test plan for this product. S.A.R. measurements were performed using a flat phantom and a SAM phantom with the applicable simulated tissue to assess performance at the body, head, and face respectively using the relevant transmission modes.

Note that a coarse-to-cube approximation methodology was utilized to determine the worst-case S.A.R. performance configuration for each applicable body location. The test configurations that produced the highest S.A.R. results for each body position using the coarse-to-cube approximation methodology were assessed using the full DASY4™ coarse and 7x7x7 cube scans.
*Note also that due to limitations of the test mode script for WiDEN the actual tested duty cycle in this mode was 75%. The calculated results reflect an additional scaling up to 76.1%.

Assessments at the Head (Phone mode 1:3) **[Pages 12-13 of 41; Tables 1]**
- Assessment in the 896-902MHz band of offered batteries using applicable test configurations at the head.
- Assessment at the 896-902MHz band edges using the worst case configuration from above.
- Assessment in the 806-825MHz band using the worst case battery from above, using applicable test configurations at the head.
- Assessment at the 806-825MHz band edges.

Assessments at the Face (PTT mode 1:6) **[Page 14 of 41; Table 2]**
- Assessment in the 806-825MHz band of the worst case battery from the head assessment above with the flip opened and closed.
- Assessment in the 896-902MHz band of the worst case battery from the head assessment above with the flip closed.

Assessments at the Body (WiDEN mode 236:310 – *76.1%) **[Page 14-15 of 41; Table 3]**
- Assessment in the 806-825MHz and 896-902MHz bands of the offered batteries and body-worn accessories.
- Assessment of the offered data cable options in the worst case band from above.

Assessments at the Body (iDEN phone mode 1:3) **[Pages 15-17 of 41; Table 4]**
- Assessment in the 896-902MHz band of the offered audio accessories using the worst case battery and carry accessory from the above assessments at the body.
- Assessment in the 806-825MHz band using the worst case configuration from above.

Assessments at the Body (iDEN data mode 81:120) **[Pages 17 of 41; Table 5]**
- Assessment in the 806-825MHz and 896-902MHz bands using the overall worst case battery and body worn accessories from above.

Assessments at the Body (WiDEN mode 236:310 – *76.1%) **[Pages 17-18 of 41; Table 6]**
- Assessment at the 806-825MHz and 896-902MHz band edges using the overall worst case configuration from above.

Assessments at the Body 2.5cm (WiDEN mode 236:310 - 76%) **[Page 18 of 41; Table 7]**
- Assessment using the applicable worst case test configuration at the body overall from above with the back and front housing of the DUT separated 2.5cm from the phantom.

Assessments at the Head (GSM 900MHz Phone mode 1:8) **[Pages 18-19 of 41; Table 8]**

- Assessment in the 880.2-914.8MHz band of offered batteries using applicable test configurations at the head.
- Assessment at the 880.2-914.8MHz band edges using the worst case configuration from above.

Assessments at the Body (GSM 900MHz GPRS/Phone modes 1:4/1:8) **[Page 19-22 of 41; Tables 9]**

- Assessment in the 880.2-914.8MHz band of offered batteries and body worn accessories in GPRS 1:4 mode.
- Assessment at the 880.2-914.8MHz band using the worst case configuration from above along with the offered data cables in GPRS 1:4 mode.
- Assessment in the 880.2-914.8MHz band using worst case test configuration from above with the offered audio accessories in Phone 1:8 mode.
- Assessment at the 880.2-914.8MHz band edges using the overall worst case configuration from above (GPRS 1:4 mode).
- Assessment using the applicable worst case test configuration at the body overall from the GSM 900MHz tests above with the back and front housing of the DUT separated 2.5cm from the phantom (GPRS 1:4 mode).

Assessments at the Head (GSM 1800/1900MHz Phone mode 1:8) **[Pages 22-23 of 41; Tables 10/11]**

- Assessment in the 1850.2-1909.8MHz band of offered batteries using applicable test configurations at the head.
- Assessment at the 1850.2-1909.8MHz band edges using the worst case configuration from above.
- Assessment in the 1710.2-1784.8MHz band using the worst case battery from above, using applicable test configurations at the head.
- Assessment at the 1710.2-1784.8MHz band edges.

Assessments at the Body (GSM 1800/1900MHz GPRS/Phone modes 1:4/1:8)[Page 24-26 of 41; Tables 12/13/14]

- Assessment in the 1850.2-1909.8MHz band of offered batteries and body worn accessory in GPRS 1:4 mode.
- Assessment at the 1850.2-1909.8MHz band using the worst case configuration from above along with the offered data cables in GPRS 1:4 mode.
- Assessment in the 1850.2-1909.8MHz band using worst case test configuration from above with the offered audio accessories in Phone 1:8 mode.
- Assessment at the 1850.2-1909.8MHz band edges using the worst case configuration from above (GPRS 1:4 mode).
- Assessment in the 1710.2-1784.8MHz band of worst case test configuration from the GSM 1900 band tests above and without the data cable.
- Assessment using the applicable worst case test configuration at the body from the GSM 1800/1900MHz bands above with the back and front housing of the DUT separated 2.5cm from the phantom.

Shortened scan assessment at the Body [APPENDIX E Part 3 of 3]

- "Shortened" scans were performed using the battery and test configuration that produced the highest S.A.R. results from the 800/900MHz and 1800/1900MHz bands. Note that the shortened scan is obtained by first running a coarse scan to find the peak area and then, using a newly charged battery, a cube scan only was performed. The shortened scan represents the cube scan performance results.

7.2 Device Positioning Procedures

Reference Appendix G for photos of the DUT tested positions.

7.2.1 Body

The DUT was positioned in normal use configuration against the phantom with the offered body worn accessory.
The DUT was positioned with its' front and back sides separated 2.5cm from the phantom.

7.2.2 Head

The DUT was placed against the right and left heads of the SAM phantom in the cheek touch and tilt positions.

7.2.3 Face

The DUT was positioned with its' front side separated 2.5cm from the phantom with the flip opened and closed.

8.0 Environmental Test Conditions

The EME Laboratory ambient environment is well controlled resulting in very stable simulated tissue temperature and therefore stable dielectric properties. Simulated tissue temperature is measured prior to each scan to insure it is within +/ - 2°C of the temperature at which the dielectric properties were determined. The liquid depth within the phantom used for measurements was 15cm +/- 0.5cm. Additional precautions are routinely taken to ensure the stability of the simulated tissue such as covering the phantoms when scans are not actively in process in order to minimize evaporation. The lab environment is continuously monitored. The table below presents the range and average environmental conditions during the S.A.R. tests reported herein:

	Target	Measured
Ambient Temperature	20 - 25 ˚C	Range: 21.5-23.5˚C Avg. 22.45˚C
Relative Humidity	30 - 70 %	Range: 40.0-60% Avg. 54.0%
Tissue Temperature	NA	Range: 20.0-22.3˚C Avg. 21.19 ˚C

The EME Lab RF environment uses a Spectrum Analyzer to monitor for extraneous large signal RF contaminants that could possibly affect the test results. If such unwanted signals are discovered the S.A.R scans are repeated.

9.0 Test Results Summary

All S.A.R. results obtained by the tests described in Section 7.1 are listed below. As noted in section 7.1, a coarse-to-cube approximation methodology, was utilized to ascertain the worst-case test configuration for each body location. The worst case test configurations observed for each body location were then assessed using the full DASY4™ coarse and 7x7x7 cube methodology, and they are presented as bolded results. The associated S.A.R. plots are provided in APPENDIX E. Appendix E also presents shortened S.A.R. cube scans to assess the validity of the calculated results presented herein. Note: The results of the shortened cube scans presented in Appendix E demonstrate that the scaling methodology used to determine the calculated S.A.R. results presented herein are valid. *For WiDEN the device test script can only achieve a 75% duty cycle. Therefore the maximum calculated results are scaled up accordingly.

Table 1

Assessments at the Head (Phone mode 1:3) 806-825MHz; 896-902MHz												
Run Number/ SN	**Antenna Pos.**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
Assessments at the Head (Phone mode 1:3) 896-902MHz band												
Assessment at the left ear - antenna positions, offered batteries												
CM-LEAR-R2-050409-05/805AFC0016	In	899.66875	SNN5706B w/NTN2261A	Cheek touch	None	None	0.640	-0.0247	0.645	0.442	0.65	0.44
CM-LEAR-R2-050409-08/805AFC0016	Out	899.66875	SNN5706B w/NTN2261A	Cheek touch	None	None	0.634	-0.00053	0.534	0.365	0.54	0.37
CM-LEAR-R2-050409-09/805AFC0016	In	899.66875	SNN5685A w/NTN2136 MOTA	Cheek touch	None	None	0.629	0.00775	0.601	0.411	0.61	0.42
CM-LEAR-R2-050409-10/805AFC0016	Out	899.66875	SNN5685A w/NTN2136 MOTA	Cheek touch	None	None	0.632	-0.0713	0.504	0.349	0.52	0.36
CM-LEAR-R2-050409-11/805AFC0016	In	899.66875	SNN5706B w/NTN2261A	15◦ Tilt	None	None	0.626	-0.00163	0.220	0.157	0.23	0.16
CM-LEAR-R2-050409-12/805AFC0016	Out	899.66875	SNN5706B w/NTN2261A	15◦ Tilt	None	None	0.629	-0.0683	0.240	0.171	0.25	0.18
Assessment at the right ear - antenna positions, worst case battery												
CM-REAR-R2-050409-13/805AFC0016	In	899.66875	SNN5706B w/NTN2261A	Cheek touch	None	None	0.632	0.0218	0.683	0.468	0.69	0.47
CM-REAR-R2-050409-14/805AFC0016	Out	899.66875	SNN5706B w/NTN2261A	Cheek touch	None	None	0.631	0.0103	0.659	0.448	0.67	0.45
CM-REAR-R2-050409-15/805AFC0016	In	899.66875	SNN5706B w/NTN2261A	15◦ Tilt	None	None	0.630	-0.173	0.184	0.130	0.19	0.14
CM-REAR-R2-050409-16/805AFC0016	Out	899.66875	SNN5706B w/NTN2261A	15◦ Tilt	None	None	0.627	-0.131	0.191	0.134	0.20	0.14
****CM-REAR-R2-050409-17/805AFC0016**	**In**	**896.01875**	**SNN5706B w/NTN2261A**	**Cheek touch**	**None**	**None**	**0.634**	**-0.00399**	**0.699**	**0.475**	**0.71**	**0.48**

Table 1 (continued)

Assessments at the Head (Phone mode 1:3) 806-825MHz; 896-902MHz												
Run Number/ SN	**Antenna**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
Assessment at the right ear – band edges												
CM-REAR-R2-050409-18/805AFC0016	Out	896.01875	SNN5706B w/NTN2261A	Cheek touch	None	None	0.635	-0.0214	0.591	0.399	0.60	0.40
CM-REAR-R2-050409-19/805AFC0016	In	901.98125	SNN5706B w/NTN2261A	Cheek touch	None	None	0.629	0.00733	0.583	0.398	0.59	0.40
CM-REAR-R2-050409-20/805AFC0016	Out	901.98125	SNN5706B w/NTN2261A	Cheek touch	None	None	0.628	0.00896	0.526	0.360	0.54	0.37
Assessments at the Head (Phone mode 1:3) 806-825MHz band												
Assessment at the left ear - antenna positions, worst case battery												
CM-LEAR-R2-050411-02/805AFC0016	In	813.5125	SNN5706B w/NTN2261A	Cheek touch	None	None	0.636	0.0823	0.484	0.336	0.49	0.34
CM-LEAR-R2-050411-03/805AFC0016	Out	813.5125	SNN5706B w/NTN2261A	Cheek touch	None	None	0.634	-0.0238	0.607	0.421	0.62	0.43
CM-LEAR-R2-050411-04/805AFC0016	In	813.5125	SNN5706B w/NTN2261A	15◦ Tilt	None	None	0.637	-0.0428	0.183	0.131	0.19	0.13
CM-LEAR-R2-050411-05/805AFC0016	Out	813.5125	SNN5706B w/NTN2261A	15◦ Tilt	None	None	0.633	0.122	0.234	0.167	0.24	0.17
Assessment at the right ear - antenna positions, worst case battery												
CM-REAR-R2-050411-06/805AFC0016	In	813.5125	SNN5706B w/NTN2261A	Cheek touch	None	None	0.632	0.0176	0.499	0.342	0.51	0.35
***CM-REAR-R2-050411-07/805AFC0016**	**Out**	**813.5125**	**SNN5706B w/NTN2261A**	**Cheek touch**	**None**	**None**	**0.635**	**-0.0186**	**0.626**	**0.430**	**0.63**	**0.44**
CM-REAR-R2-050411-08/805AFC0016	In	813.5125	SNN5706B w/NTN2261A	15◦ Tilt	None	None	0.634	-0.145	0.196	0.141	0.20	0.15
CM-REAR-R2-050411-09/805AFC0016	Out	813.5125	SNN5706B w/NTN2261A	15◦ Tilt	None	None	0.633	-0.14	0.237	0.169	0.25	0.18
Assessment at the right ear – band edges												
CM-REAR-R2-050411-10/805AFC0016	In	806.0125	SNN5706B w/NTN2261A	Cheek touch	None	None	0.639	-0.0807	0.504	0.345	0.51	0.35
CM-REAR-R2-050411-11/805AFC0016	Out	806.0125	SNN5706B w/NTN2261A	Cheek touch	None	None	0.638	0.014	0.624	0.433	0.63	0.43
CM-REAR-R2-050411-12/805AFC0016	In	824.9875	SNN5706B w/NTN2261A	Cheek touch	None	None	0.618	0.0109	0.552	0.379	0.57	0.39
CM-REAR-R2-050411-13/805AFC0016	Out	824.9875	SNN5706B w/NTN2261A	Cheek touch	None	None	0.620	-0.0512	0.601	0.416	0.63	0.43
****Assessment with the worst case test configuration above using the full DASY 4 coarse and 7x7x7 cube scan measurements.**												
CM-REAR-R2-050413-04/805AFC0016	In	896.01875	SNN5706B w/NTN2261A	Cheek touch	None	None	0.628	-0.00169	0.665	0.464	0.68	0.47
CM-REAR-R2-050413-05/805AFC0016	Out	813.5125	SNN5706B w/NTN2261A	Cheek touch	None	None	0.610	0.6660	0.645	0.453	0.68	0.48

Table 2

DUT assessment at the Face; (iDEN 1:6 PTT mode) 806-825MHz and 896-902MHz bands												
Run Number/ SN	**Antenna**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
Assessment at the face in the 806-825MHz band – antenna positions and worst case battery – flip opened/closed												
CM-Face-R2-050411-14/805AFC0016	In	813.5125	SNN5706B w/NTN2261A	Front 2.5cm flip opened	None	None	0.632	0.0391	0.096	0.069	0.05	0.03
CM-Face-R2-050412-02/805AFC0016	In	813.5125	SNN5706B w/NTN2261A	Front 2.5cm flip closed	None	None	0.633	0.0219	0.122	0.087	0.06	0.04
****CM-Face-R2-050412-03/805AFC0016**	**Out**	**813.5125**	**SNN5706B w/NTN2261A**	**Front 2.5cm flip closed**	**None**	**None**	**0.635**	**-0.136**	**0.128**	**0.092**	**0.07**	**0.05**
Assessment at the face in the 896-902MHz band – antenna positions and worst case battery – flip closed												
CM-Face-R2-050412-06/805AFC0016	In	899.66875	SNN5706B w/NTN2261A	Front 2.5cm flip closed	None	None	0.630	0.11	0.127	0.092	0.06	0.05
CM-Face-R2-050412-07/805AFC0016	Out	899.66875	SNN5706B w/NTN2261A	Front 2.5cm flip closed	None	None	0.629	-0.0792	0.115	0.081	0.06	0.04
****CM-Face-R2-050412-08/805AFC0016**	**In**	**896.01875**	**SNN5706B w/NTN2261A**	**Front 2.5cm flip closed**	**None**	**None**	**0.627**	**-0.0447**	**0.139**	**0.098**	**0.07**	**0.05**
CM-Face-R2-050412-09/805AFC0016	In	901.98125	SNN5706B w/NTN2261A	Front 2.5cm flip closed	None	None	0.624	0.101	0.126	0.090	0.06	0.05
****Assessment with the worst case test configuration above using the full DASY 4 coarse and 7x7x7 cube scan measurements.**												
CM-Face-R2-050419-05/805AFC0016	Out	813.5125	SNN5706B w/NTN2261A	Front 2.5cm flip closed	None	None	0.638	0.0466	0.116	0.085	0.06	0.04
CM-Face-R2-050413-06/805AFC0016	In	896.01875	SNN5706B w/NTN2261A	Front 2.5cm flip closed	None	None	0.622	-0.0953	0.139	0.099	0.07	0.05

Table 3

DUT assessment at the Body; (WiDEN 236:310-76.1%* mode) 806-825MHz and 896-902MHz bands												
Run Number/ SN	**Antenna**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
Assessment at the body – antenna positions, offered body worn and battery accessories												
CM-Ab-R2-050413-07/805AFC0016	In	813.5125	SNN5706B w/NTN2261A MOTA	Against phantom	NNTN4747A	None	0.620	-0.0766	0.467	0.329	0.50	0.35
CM-Ab-R2-050413-08/805AFC0016	Out	813.5125	SNN5706B w/NTN2261A MOTA	Against phantom	NNTN4747A	None	0.622	-0.0584	0.563	0.385	0.60	0.41
CM-Ab-R2-050413-09/805AFC0016	In	813.5125	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	None	0.608	-0.0658	0.492	0.347	0.53	0.38
CM-Ab-R2-050413-10/805AFC0016	Out	813.5125	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	None	0.614	-0.324	0.810	0.568	0.92	0.65
CM-Ab-R2-050413-11/805AFC0016	In	813.5125	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4758A	None	0.616	-0.0825	0.696	0.486	0.75	0.52

Table 3 (Con't)

DUT assessment at the Body; (WiDEN 236:310-76.1%* mode) 806-825MHz and 896-902MHz bands												
Run Number/ SN	**Antenna**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
CM-Ab-R2-050413-12/805AFC0016	Out	813.5125	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4758A	None	0.614	-0.373	0.735	0.514	0.85	0.59
CM-Ab-R2-050414-02/805AFC0016	In	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	None	0.609	-0.0176	1.050	0.704	1.12	0.75
CM-Ab-R2-050414-03/805AFC0016	Out	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	None	0.608	-0.0853	0.992	0.684	1.08	0.75
Assessment at the body – antenna positions, offered data cables												
CM-Ab-R2-050414-04/805AFC0016	In	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5406A	0.630	-0.278	0.673	0.463	0.74	0.51
CM-Ab-R2-050414-05/805AFC0016	Out	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5406A	0.632	-0.105	0.687	0.479	0.72	0.50
CM-Ab-R2-050414-06/805AFC0016	In	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5405A	0.623	-0.144	0.637	0.424	0.69	0.46
CM-Ab-R2-050414-07/805AFC0016	Out	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5405A	0.627	-0.332	0.706	0.494	0.79	0.55
CM-Ab-R2-050414-08/805AFC0016	In	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NKN6560A	0.620	-0.296	0.597	0.406	0.67	0.46
CM-Ab-R2-050414-09/805AFC0016	Out	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NKN6560A	0.623	-0.0687	0.649	0.437	0.69	0.46
CM-Ab-R2-050414-10/805AFC0016	In	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NKN6559A	0.615	-0.273	0.722	0.473	0.81	0.53
CM-Ab-R2-050414-11/805AFC0016	Out	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NKN6559A	0.622	-0.286	0.792	0.549	0.88	0.61
CM-Ab-R2-050418-03/805AFC0016	In	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5491A	0.633	-0.219	0.870	0.596	0.94	0.64
CM-Ab-R2-050418-04/805AFC0016	Out	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5491A	0.632	-0.0944	0.838	0.588	0.88	0.62

Table 4

DUT assessment at the Body; (iDEN phone mode 1:3) 806-825MHz and 896-902MHz bands												
Run Number/ SN	**Antenna**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
Assessment at the body – audio accessories												
CM-Ab-R2-050414-12/805AFC0016	In	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5006A	0.617	-0.0313	0.376	0.265	0.39	0.28
CM-Ab-R2-050415-04/805AFC0016	Out	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5006A	0.634	0.00831	0.384	0.269	0.39	0.27
CM-Ab-R2-050415-05/805AFC0016	In	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5005A	0.628	0.00074	0.451	0.313	0.46	0.32

Table 4 (continued)

DUT assessment at the Body; (iDEN phone mode 1:3) 806-825MHz and 896-902MHz bands												
Run Number/ SN	**Antenna**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
Assessment at the body – audio accessories												
CM-Ab-R2-050415-06/805AFC0016	Out	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5005A	0.634	-0.00437	0.372	0.261	0.38	0.26
CM-Ab-R2-050415-07/805AFC0016	In	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NSN6066A	0.631	0.0767	0.319	0.224	0.32	0.23
CM-Ab-R2-050415-08/805AFC0016	Out	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NSN6066A	0.630	-0.0462	0.313	0.220	0.32	0.23
CM-Ab-R2-050415-09/805AFC0016	In	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	SYN8390B	0.630	-0.00483	0.400	0.281	0.41	0.29
CM-Ab-R2-050415-10/805AFC0016	Out	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	SYN8390B	0.629	-0.0278	0.371	0.259	0.38	0.27
CM-Ab-R2-050415-11/805AFC0016	In	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NTN8496A	0.630	-0.0019	0.391	0.273	0.40	0.28
CM-Ab-R2-050415-12/805AFC0016	Out	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NTN8496A	0.632	-0.0855	0.368	0.260	0.38	0.27
CM-Ab-R2-050415-13/805AFC0016	In	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN4033A	0.630	-0.00124	0.379	0.267	0.39	0.27
CM-Ab-R2-050415-14/805AFC0016	Out	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN4033A	0.629	0.134	0.361	0.251	0.37	0.26
CM-Ab-R2-050416-02/805AFC0016	In	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	SYN7875C	0.624	0.0461	0.385	0.270	0.39	0.28
CM-Ab-R2-050416-03/805AFC0016	Out	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	SYN7875C	0.627	0.0351	0.381	0.266	0.39	0.27
CM-Ab-R2-050416-04/805AFC0016	In	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5004A	0.618	-0.0146	0.424	0.296	0.44	0.31
CM-Ab-R2-050416-05/805AFC0016	Out	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5004A	0.627	-0.00242	0.378	0.262	0.39	0.27
CM-Ab-R2-050416-06/805AFC0016	In	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5774A	0.626	0.0139	0.352	0.246	0.36	0.25
CM-Ab-R2-050416-07/805AFC0016	Out	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5774A	0.629	0.029	0.293	0.206	0.30	0.21
CM-Ab-R2-050416-08/805AFC0016	In	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	SYN8146C	0.627	0.00	0.375	0.261	0.38	0.27
CM-Ab-R2-050416-09/805AFC0016	Out	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	SYN8146C	0.632	0.0562	0.374	0.262	0.38	0.27
CM-Ab-R2-050416-10/805AFC0016	In	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NTN8513B	0.630	-0.0194	0.407	0.280	0.42	0.29
CM-Ab-R2-050416-11/805AFC0016	Out	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NTN8513B	0.632	0.013	0.408	0.284	0.41	0.29
CM-Ab-R2-050416-12/805AFC0016	In	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5211A	0.631	0.00395	0.407	0.282	0.41	0.29

Table 4 (continued)

DUT assessment at the Body; (iDEN phone mode 1:3) 806-825MHz and 896-902MHz bands												
Run Number/ SN	**Antenna**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
Assessment at the body – audio accessories												
CM-Ab-R2-050416-13/805AFC0016	Out	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5211A	0.632	-0.0124	0.412	0.289	0.42	0.29
CM-Ab-R2-050416-14/805AFC0016	In	813.5125	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5005A	0.632	0.00304	0.219	0.153	0.22	0.15
CM-Ab-R2-050416-15/805AFC0016	Out	813.5125	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5005A	0.636	-0.0269	0.336	0.239	0.34	0.24

Table 5

DUT assessment at the Body; (iDEN 81:120 mode) 806-825MHz and 896-902MHz bands												
Run Number/ SN	**Antenna**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
Assessment at the body in the 806-825MHz band - worst case test configuration from above												
CM-Ab-R2-050416-16/805AFC0016	In	813.5125	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NONE	0.614	-0.0197	0.529	0.373	0.55	0.39
CM-Ab-R2-050416-17/805AFC0016	Out	813.5125	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NONE	0.616	-0.372	0.757	0.528	0.86	0.60
Assessment at the body in the 896-902 MHz band - worst case test configuration from above												
CM-Ab-R2-050418-05/805AFC0016	In	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NONE	0.610	-0.03	0.865	0.607	0.91	0.64
CM-Ab-R2-050418-06/805AFC0016	Out	899.66875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NONE	0.608	-0.00349	0.841	0.588	0.89	0.62

Table 6

DUT Band edges assessment at the Body; (WiDEN 236:310-76.1%* mode) 806-825MHz and 896-902MHz bands												
Run Number/ SN	**Antenna**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
Assessment at the body in the 806-825 MHz band edges – worst case configuration												
CM-Ab-R2-050416-18/805AFC0016	In	806.0125	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	None	0.625	-0.055	0.706	0.491	0.74	0.52
***CM-Ab-R2-050416-19/805AFC0016**	**Out**	**806.0125**	**SNN5685A w/NTN2136 MOTA**	**Against phantom**	**NNTN4747A**	**None**	**0.628**	**-0.259**	**0.861**	**0.599**	**0.95**	**0.66**
CM-Ab-R2-050416-20/805AFC0016	In	824.9875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	None	0.623	-0.0902	0.457	0.323	0.49	0.34
CM-Ab-R2-050416-21/805AFC0016	Out	824.9875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	None	0.624	-0.289	0.749	0.517	0.83	0.58
Assessment at the body in the 896-902 MHz band edges – worst case configuration												
***CM-Ab-R2-050418-07/805AFC0016**	**In**	**896.01875**	**SNN5685A w/NTN2136 MOTA**	**Against phantom**	**NNTN4747A**	**None**	**0.612**	**0.00565**	**1.070**	**0.723**	**1.14**	**0.77**
CM-Ab-R2-050418-08/805AFC0016	Out	896.01875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	None	0.615	-0.00521	1.050	0.719	1.11	0.76
CM-Ab-R2-050418-09/805AFC0016	In	901.98125	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	None	0.611	0.0394	0.888	0.619	0.94	0.66

Table 6 (continued)

DUT Band edges assessment at the Body; (WiDEN 236:310-76.1%* mode) 806-825MHz and 896-902MHz bands												
Run Number/ SN	Antenna	Freq. (MHz)	Battery	Test position	Carry Case	Additional attachments	Initial Power (W)	S.A.R. Drift (dB)	Meas. 1g-S.A.R. (mW/g)	Meas. 10g-S.A.R. (mW/g)	Max Calc. 1g-S.A.R. (mW/g)	Max Calc. 10g-S.A.R. (mW/g)
CM-Ab-R2-050418-10/805AFC0016	Out	901.98125	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	None	0.613	0.111	0.919	0.643	0.97	0.68
*Assessment with the worst case test configuration above using the full DASY 4 coarse and 7x7x7 cube scan measurements.												
CM-Ab-R2-050503-02/805AFC0016	Out	806.0125	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	None	0.625	-0.162	0.963	0.700	1.04	0.75
CM-Ab-R2-050419-02/805AFC0016	In	896.01875	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	None	0.617	-0.82	0.901	0.643	1.15	0.82

Table 7

DUT assessment at the Body; 2.5cm (WiDEN 236:310-76.1%* mode) 896-902MHz band												
Run Number/ SN	Antenna	Freq. (MHz)	Battery	Test position	Carry Case	Additional attachments	Initial Power (W)	S.A.R. Drift (dB)	Meas. 1g-S.A.R. (mW/g)	Meas. 10g-S.A.R. (mW/g)	Max Calc. 1g-S.A.R. (mW/g)	Max Calc. 10g-S.A.R. (mW/g)
Assessment at the body – front and back housing separated 2.5cm												
CM-Ab-R2-050418-12/805AFC0016	In	896.01875	SNN5685A w/NTN2136 MOTA	Back 2.5 cm	None	None	0.612	0.0349	0.919	0.633	0.98	0.67
CM-Ab-R2-050418-13/805AFC0016	In	896.01875	SNN5685A w/NTN2136 MOTA	Back 2.5 cm	None	NNTN5491A	0.611	-0.0217	0.742	0.517	0.79	0.55
CM-Ab-R2-050418-14/805AFC0016	In	896.01875	SNN5685A w/NTN2136 MOTA	Front 2.5cm	None	None	0.610	-0.00514	0.568	0.392	0.61	0.42

Table 8

Assessments at the Head (GSM mode 1:8) 880.2-914.8MHz band												
Run Number/ SN	Antenna Pos.	Freq. (MHz)	Battery	Test position	Carry Case	Additional attachments	Initial Power (W)	S.A.R. Drift (dB)	Meas. 1g-S.A.R. (mW/g)	Meas. 10g-S.A.R. (mW/g)	Max Calc. 1g-S.A.R. (mW/g)	Max Calc. 10g-S.A.R. (mW/g)
Assessment at the left ear - antenna positions, offered batteries												
CM-LEAR-R2-050420-04/805AFC0016	In	897.4000	SNN5706B w/NTN2261A	Cheek touch	None	None	1.960	-0.142	0.762	0.519	0.79	0.54
CM-LEAR-R2-050420-05/805AFC0016	Out	897.4000	SNN5706B w/NTN2261A	Cheek touch	None	None	1.960	-0.0703	0.605	0.415	0.61	0.42
CM-LEAR-R2-050421-02/805AFC0016	In	897.4000	SNN5685A w/NTN2136 MOTA	Cheek touch	None	None	1.980	-0.144	0.773	0.529	0.80	0.55
CM-LEAR-R2-050420-03/805AFC0016	Out	897.4000	SNN5685A w/NTN2136 MOTA	Cheek touch	None	None	1.950	-0.0930	0.610	0.420	0.62	0.43
CM-LEAR-R2-050420-07/805AFC0016	In	897.4000	SNN5685A w/NTN2136 MOTA	15◦ Tilt	None	None	1.950	0.0016	0.211	0.151	0.21	0.15
CM-LEAR-R2-050420-08/805AFC0016	Out	897.4000	SNN5685A w/NTN2136 MOTA	15◦ Tilt	None	None	1.950	0.0604	0.209	0.148	0.21	0.15
Assessment at the right ear - antenna positions, worst case battery												
CM-REAR-R2-050420-09/805AFC0016	In	897.4000	SNN5685A w/NTN2136 MOTA	Cheek touch	None	None	1.970	-0.0716	0.797	0.539	0.81	0.55
****CM-REAR-R2-050503-05/805AFC0013**	**In**	**897.4000**	**SNN5685A w/NTN2136 MOTA**	**Cheek touch**	**None**	**None**	**1.970**	**-0.130**	**0.922**	**0.624**	**0.95**	**0.64**

Table 8 (continued)

Assessments at the Head (GSM mode 1:8) 880.2-914.8MHz band												
Run Number/ SN	Antenna Pos.	Freq. (MHz)	Battery	Test position	Carry Case	Additional attachments	Initial Power (W)	S.A.R. Drift (dB)	Meas. 1g-S.A.R. (mW/g)	Meas. 10g-S.A.R. (mW/g)	Max Calc. 1g-S.A.R. (mW/g)	Max Calc. 10g-S.A.R. (mW/g)
Assessment at the right ear - antenna positions, worst case battery												
CM-REAR-R2-050420-10/805AFC0016	Out	897.4000	SNN5685A w/NTN2136 MOTA	Cheek touch	None	None	1.960	-0.0205	0.787	0.532	0.79	0.53
CM-REAR-R2-050420-11/805AFC0016	In	897.4000	SNN5685A w/NTN2136 MOTA	15◦ Tilt	None	None	1.960	-0.212	0.202	0.144	0.21	0.15
CM-REAR-R2-050420-12/805AFC0016	Out	897.4000	SNN5685A w/NTN2136 MOTA	15◦ Tilt	None	None	1.970	-0.11	0.197	0.141	0.20	0.14
Assessment at the right ear – band edges												
CM-REAR-R2-050420-13/805AFC0016	In	880.2000	SNN5685A w/NTN2136 MOTA	Cheek touch	None	None	1.850	-0.157	0.738	0.500	0.79	0.53
CM-REAR-R2-050420-14/805AFC0016	Out	880.2000	SNN5685A w/NTN2136 MOTA	Cheek touch	None	None	1.860	-0.0938	0.597	0.407	0.62	0.43
CM-REAR-R2-050420-15/805AFC0016	In	914.8000	SNN5685A w/NTN2136 MOTA	Cheek touch	None	None	1.940	-0.0926	0.577	0.389	0.59	0.40
CM-REAR-R2-050420-16/805AFC0016	Out	914.8000	SNN5685A w/NTN2136 MOTA	Cheek touch	None	None	1.930	-0.109	0.598	0.406	0.61	0.42
****Assessment with the worst case test configuration above using the full DASY 4 coarse and 7x7x7 cube scan measurements.**												
KU-REAR-R2-050504-02/805AFC0013	In	897.4000	SNN5685A w/NTN2136 MOTA	Cheek touch	None	None	1.990	-0.233	0.820	0.554	0.87	0.58

Table 9

Assessments at the Body (GSM modes: 1:4, 1:8) 880.2-914.8MHz band												
Run Number/ SN	Antenna	Freq. (MHz)	Battery	Test position	Carry Case	Additional attachments	Initial Power (W)	S.A.R. Drift (dB)	Meas. 1g-S.A.R. (mW/g)	Meas. 10g-S.A.R. (mW/g)	Max Calc. 1g-S.A.R. (mW/g)	Max Calc. 10g-S.A.R. (mW/g)
Assessment at the body (GSM 1:4 mode) – antenna positions, batteries, and body worn												
CM-Ab-R2-050421-05/805AFC0016	In	897.4000	SNN5706B w/NTN2261A	Against phantom	NNTN4747A	None	1.940	-0.138	1.040	0.723	1.07	0.75
CM-Ab-R2-050421-06/805AFC0016	Out	897.4000	SNN5706B w/NTN2261A	Against phantom	NNTN4747A	None	1.920	-0.186	0.914	0.637	0.95	0.66
CM-Ab-R2-050421-07/805AFC0016	In	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	None	1.930	-0.161	1.100	0.769	1.14	0.80
CM-Ab-R2-050421-08/805AFC0016	Out	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	None	1.870	-0.134	0.979	0.682	1.03	0.72
CM-Ab-R2-050421-09/805AFC0016	In	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4758A	None	1.940	-0.147	0.972	0.678	1.01	0.70
CM-Ab-R2-050421-10/805AFC0016	Out	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4758A	None	1.940	0.0402	0.784	0.546	0.78	0.55
****Assessment with the worst case test configuration above using the full DASY 4 coarse and 7x7x7 cube scan measurements.**												
CM-Ab-R2-050425-05//805AFC0016	In	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	None	1.910	-0.325	1.070	0.779	1.15	0.84
CM-Ab-R2-050503-08//805AFC0016 (Shortened scan)	In	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	None	1.880	-0.246	1.130	0.829	1.21	0.89

Table 9 (continued)

Assessments at the Body (GSM modes: 1:4, 1:8) 880.2-914.8MHz band												
Run Number/ SN	**Antenna**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
Assessments at the Body (GSM 1:4 mode) – offered data cables												
CM-Ab-R2-050421-11/805AFC0016	In	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5406A	1.930	-0.12	0.672	0.472	0.69	0.49
CM-Ab-R2-050421-12/805AFC0016	Out	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5406A	1.940	-0.0899	0.647	0.456	0.66	0.47
CM-Ab-R2-050421-13/805AFC0016	In	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5405A	1.890	-0.0737	0.668	0.467	0.68	0.48
CM-Ab-R2-050421-14/805AFC0016	Out	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5405A	1.900	-0.0619	0.643	0.450	0.65	0.46
CM-Ab-R2-050422-02/805AFC0016	In	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NKN6560A	1.840	-0.15	0.651	0.456	0.70	0.49
CM-Ab-R2-050422-03/805AFC0016	Out	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NKN6560A	1.830	-0.074	0.616	0.433	0.65	0.46
CM-Ab-R2-050422-04/805AFC0016	In	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NKN6559A	1.910	-0.0906	0.738	0.517	0.75	0.53
CM-Ab-R2-050422-05//805AFC0016	Out	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NKN6559A	1.920	-0.179	0.808	0.566	0.84	0.59
CM-Ab-R2-050422-06/805AFC0016	In	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5491A	1.910	-0.117	0.918	0.641	0.94	0.66
CM-Ab-R2-050422-07/805AFC0016	Out	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5491A	1.930	-0.113	0.831	0.582	0.85	0.60
Assessments at the Body (GSM 1:8 mode) – offered audio accessories												
CM-Ab-R2-050422-08/805AFC0016	In	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5006A	1.970	-0.0922	0.494	0.346	0.50	0.35
CM-Ab-R2-050422-09/805AFC0016	Out	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5006A	1.970	-0.256	0.395	0.277	0.42	0.29
CM-Ab-R2-050422-10/805AFC0016	In	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5005A	1.980	-0.109	0.492	0.343	0.50	0.35
CM-Ab-R2-050422-11/805AFC0016	Out	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5005A	1.950	-0.0974	0.456	0.318	0.47	0.33
CM-Ab-R2-050422-12/805AFC0016	In	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NSN6066A	1.940	-0.0757	0.375	0.263	0.38	0.27
CM-Ab-R2-050422-13/805AFC0016	Out	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NSN6066A	1.930	-0.0729	0.368	0.258	0.37	0.26
CM-Ab-R2-050422-14/805AFC0016	In	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	SYN8390B	1.960	-0.00427	0.547	0.382	0.55	0.38
CM-Ab-R2-050422-15/805AFC0016	Out	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	SYN8390B	1.940	-0.0805	0.521	0.366	0.53	0.37
CM-Ab-R2-050422-16/805AFC0016	In	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NTN8496A	1.930	-0.0846	0.515	0.357	0.53	0.36

Table 9 (continued)

Assessments at the Body (GSM modes: 1:4, 1:8) 880.2-914.8MHz band												
Run Number/ SN	**Antenna**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
Assessments at the Body (GSM 1:8 mode) – offered audio accessories												
CM-Ab-R2-050423-02/805AFC0016	Out	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NTN8496A	1.950	-0.11	0.506	0.354	0.52	0.36
CM-Ab-R2-050423-03/805AFC0016	In	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN4033A	1.910	-0.179	0.451	0.315	0.47	0.33
CM-Ab-R2-050423-04/805AFC0016	Out	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN4033A	1.910	-0.131	0.469	0.328	0.48	0.34
CM-Ab-R2-050423-05/805AFC0016	In	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	SYN7875C	1.910	-0.0389	0.537	0.376	0.54	0.38
CM-Ab-R2-050423-06/805AFC0016	Out	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	SYN7875C	1.900	-0.118	0.477	0.334	0.49	0.34
CM-Ab-R2-050423-07/805AFC0016	In	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5004A	1.910	-0.0671	0.470	0.329	0.48	0.33
CM-Ab-R2-050423-08/805AFC0016	Out	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5004A	1.910	-0.236	0.452	0.316	0.48	0.33
CM-Ab-R2-050423-09/805AFC0016	In	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5774A	1.930	-0.0649	0.511	0.355	0.52	0.36
CM-Ab-R2-050423-10/805AFC0016	Out	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5774A	1.920	-0.107	0.386	0.269	0.40	0.28
CM-Ab-R2-050423-11/805AFC0016	In	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	SYN8146C	1.950	-0.0956	0.555	0.386	0.57	0.39
CM-Ab-R2-050423-12/805AFC0016	Out	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	SYN8146C	1.970	-0.143	0.550	0.385	0.57	0.40
CM-Ab-R2-050423-13/805AFC0016	In	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NTN8513B	1.950	-0.113	0.662	0.461	0.68	0.47
CM-Ab-R2-050423-14/805AFC0016	Out	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NTN8513B	1.960	-0.183	0.551	0.385	0.57	0.40
CM-Ab-R2-050423-15/805AFC0016	In	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5211A	1.930	-0.164	0.578	0.403	0.60	0.42
CM-Ab-R2-050423-16/805AFC0016	Out	897.4000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5211A	1.940	-0.0463	0.533	0.374	0.54	0.38
Assessments at the Body (GSM 1:4 mode) – Band edges worst case configuration												
CM-Ab-R2-050423-17/805AFC0016	In	880.2000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	None	1.930	-0.11	1.040	0.730	1.07	0.75
***CM-Ab-R2-050423-18/805AFC0016**	**Out**	**880.2000**	**SNN5685A w/NTN2136 MOTA**	**Against phantom**	**NNTN4747A**	**None**	**1.970**	**-0.139**	**1.050**	**0.733**	**1.08**	**0.76**
CM-Ab-R2-050423-19/805AFC0016	In	914.8000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	None	1.920	-0.138	0.748	0.522	0.77	0.54
CM-Ab-R2-050423-20/805AFC0016	Out	914.8000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	None	1.950	-0.204	0.846	0.589	0.89	0.62

Table 9 (continued)

Assessments at the Body (GSM modes: 1:4, 1:8) 880.2-914.8 MHz band												
Run Number/ SN	**Antenna Pos.**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
Assessment at the body (GSM 1:4 mode) – front and back housing separated 2.5cm												
CM-Ab-R2-050425-02/805AFC0016	In	897.4000	SNN5685A w/NTN2136 MOTA	Back 2.5 cm	None	None	1.930	-0.222	0.983	0.688	1.03	0.72
CM-Ab-R2-050425-03/805AFC0016	In	897.4000	SNN5685A w/NTN2136 MOTA	Back 2.5 cm	None	NNTN5491A	1.940	-0.117	0.840	0.591	0.86	0.61
CM-Ab-R2-050425-04/805AFC0016	In	897.4000	SNN5685A w/NTN2136 MOTA	Front 2.5cm	None	None	1.940	-0.157	0.557	0.392	0.58	0.41

Table 10

Assessments at the Head (GSM mode 1:8) 1850.2-1909.8MHz band												
Run Number/ SN	**Antenna Pos.**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
Assessment at the left ear - antenna positions, offered batteries												
CM-LEAR-R2-050425-07/805AFC0016	In	1880.0000	SNN5706B w/NTN2261A	Cheek touch	None	None	0.998	-0.136	0.11	0.063	0.11	0.07
CM-LEAR-R2-050425-08/805AFC0016	Out	1880.0000	SNN5706B w/NTN2261A	Cheek touch	None	None	0.999	-0.0376	0.0267	0.0142	0.03	0.01
CM-LEAR-R2-050425-09/805AFC0016	In	1880.0000	SNN5685A w/NTN2136 MOTA	Cheek touch	None	None	0.976	-0.213	0.151	0.0851	0.16	0.09
CM-LEAR-R2-050425-10/805AFC0016	Out	1880.0000	SNN5685A w/NTN2136 MOTA	Cheek touch	None	None	0.974	-0.0411	0.0312	0.0174	0.03	0.02
CM-LEAR-R2-050425-11/805AFC0016	In	1880.0000	SNN5685A w/NTN2136 MOTA	15◦ Tilt	None	None	0.999	-0.136	0.0592	0.0331	0.06	0.03
CM-LEAR-R2-050425-12/805AFC0016	Out	1880.0000	SNN5685A w/NTN2136 MOTA	15◦ Tilt	None	None	0.997	-0.199	0.0337	0.0203	0.04	0.02
Assessment at the right ear - antenna positions, worst case battery												
CM-REAR-R2-050426-02/805AFC0016	In	1880.0000	SNN5685A w/NTN2136 MOTA	Cheek touch	None	None	0.997	0.0557	0.186	0.102	0.19	0.10
CM-REAR-R2-050426-03/805AFC0016	Out	1880.0000	SNN5685A w/NTN2136 MOTA	Cheek touch	None	None	0.995	0.00621	0.0423	0.0248	0.04	0.02
CM-REAR-R2-050426-04/805AFC0016	In	1880.0000	SNN5685A w/NTN2136 MOTA	15◦ Tilt	None	None	0.996	-0.38	0.0473	0.0291	0.05	0.03
CM-REAR-R2-050426-05/805AFC0016	Out	1880.0000	SNN5685A w/NTN2136 MOTA	15◦ Tilt	None	None	0.995	0.104	0.029	0.0178	0.03	0.02
Assessment at the right ear – band edges												
***CM-REAR-R2-050426-06/805AFC0016**	**In**	**1850.2000**	**SNN5685A w/NTN2136 MOTA**	**Cheek touch**	**None**	**None**	**0.971**	**0.0284**	**0.205**	**0.111**	**0.21**	**0.11**
CM-REAR-R2-050426-07/805AFC0016	Out	1850.2000	SNN5685A w/NTN2136 MOTA	Cheek touch	None	None	0.973	0.0315	0.0408	0.0237	0.04	0.02
CM-REAR-R2-050426-08/805AFC0016	In	1909.8000	SNN5685A w/NTN2136 MOTA	Cheek touch	None	None	0.986	-0.267	0.143	0.078	0.15	0.08
CM-REAR-R2-050426-09/805AFC0016	Out	1909.8000	SNN5685A w/NTN2136 MOTA	Cheek touch	None	None	0.988	-0.0477	0.0562	0.0328	0.06	0.03

Table 10 (continued)

Assessments at the Head (GSM mode 1:8) 1850.2-1909.8MHz band												
Run Number/ SN	**Antenna Pos.**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
***Assessment with the worst case test configuration above using the full DASY 4 coarse and 7x7x7 cube scan measurements.**												
CM-REAR-R2-050427-10/805AFC0016	In	1850.2000	SNN5685A w/NTN2136 MOTA	Cheek touch	None	None	0.950	-0.0451	0.219	0.124	0.22	0.13

Table 11

Assessments at the Head (GSM mode 1:8) 1710.2-1784.8MHz band												
Run Number/ SN	**Antenna Pos.**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
Assessment at the left ear - antenna positions, worst case battery												
CM-LEAR-R2-050426-14/805AFC0016	In	1747.6000	SNN5685A w/NTN2136 MOTA	Cheek touch	None	None	0.955	-0.157	0.199	0.111	0.21	0.12
CM-LEAR-R2-050427-02/805AFC0016	Out	1747.6000	SNN5685A w/NTN2136 MOTA	Cheek touch	None	None	0.950	-0.12	0.0604	0.0349	0.06	0.04
CM-LEAR-R2-050427-03/805AFC0016	In	1747.6000	SNN5685A w/NTN2136 MOTA	15◦ Tilt	None	None	0.969	-0.264	0.061	0.0358	0.06	0.04
CM-LEAR-R2-050427-04/805AFC0016	Out	1747.6000	SNN5685A w/NTN2136 MOTA	15◦ Tilt	None	None	0.964	-0.151	0.0579	0.0344	0.06	0.04
Assessment at the right ear – antenna positions w/ worst case battery												
CM-REAR-R2-050426-10/805AFC0016	In	1747.6000	SNN5685A w/NTN2136 MOTA	Cheek touch	None	None	0.952	-0.0179	0.212	0.121	0.22	0.12
CM-REAR-R2-050426-11/805AFC0016	Out	1747.6000	SNN5685A w/NTN2136 MOTA	Cheek touch	None	None	0.955	0.0776	0.0846	0.0488	0.09	0.05
CM-REAR-R2-050426-12/805AFC0016	In	1747.6000	SNN5685A w/NTN2136 MOTA	15◦ Tilt	None	None	0.962	-0.358	0.0489	0.0287	0.05	0.03
CM-REAR-R2-050426-13/805AFC0016	Out	1747.6000	SNN5685A w/NTN2136 MOTA	15◦ Tilt	None	None	0.959	-0.174	0.0373	0.0229	0.04	0.02
Assessment at the right ear – band edges												
CM-REAR-R2-050427-05/805AFC0016	In	1710.2000	SNN5685A w/NTN2136 MOTA	Cheek touch	None	None	0.944	-0.0299	0.192	0.108	0.20	0.11
CM-REAR-R2-050427-06/805AFC0016	Out	1710.2000	SNN5685A w/NTN2136 MOTA	Cheek touch	None	None	0.947	-0.115	0.137	0.0757	0.14	0.08
CM-REAR-R2-050427-07/805AFC0016	**In**	**1784.8000**	**SNN5685A w/NTN2136 MOTA**	**Cheek touch**	**None**	**None**	**0.944**	**-0.0421**	**0.238**	**0.133**	**0.24**	**0.14**
CM-REAR-R2-050427-08/805AFC0016	Out	1784.8000	SNN5685A w/NTN2136 MOTA	Cheek touch	None	None	0.960	-0.0048	0.0662	0.0384	0.07	0.04
****Assessment with the worst case test configuration above using the full DASY 4 coarse and 7x7x7 cube scan measurements.**												
CM-REAR-R2-050427-09/805AFC0016	In	1784.8000	SNN5685A w/NTN2136 MOTA	Cheek touch	None	None	0.953	-0.0956	0.245	0.144	0.25	0.15

Table 12

Assessments at the Body (GSM modes: 1:4, 1:8) 1850.2-1909.8MHz band												
Run Number/ SN	**Antenna**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
Assessments at the Body (GSM 1:4 mode) – offered body worn												
CM-Ab-R2-050428-03/805AFC0016	In	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	None	0.995	-0.123	0.419	0.206	0.43	0.21
CM-Ab-R2-050428-04/805AFC0016	Out	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	None	0.977	-0.119	0.158	0.0944	0.16	0.10
CM-Ab-R2-050428-05/805AFC0016	In	1880.0000	SNN5706B w/NTN2261A	Against phantom	NNTN4747A	None	0.970	0.0994	0.357	0.169	0.36	0.17
CM-Ab-R2-050428-07/805AFC0016	Out	1880.0000	SNN5706B w/NTN2261A	Against phantom	NNTN4747A	None	0.984	-0.22	0.136	0.0823	0.14	0.09
CM-Ab-R2-050428-08/805AFC0016	In	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4758A	None	0.990	-0.0109	0.215	0.126	0.22	0.13
CM-Ab-R2-050428-09/805AFC0016	Out	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4758A	None	0.987	-0.0891	0.0862	0.053	0.09	0.05
Assessments at the Body (GSM 1:4 mode) – offered data cables												
CM-Ab-R2-050428-10/805AFC0016	In	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5406A	0.962	-0.134	0.427	0.215	0.44	0.22
CM-Ab-R2-050428-12/805AFC0016	Out	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5406A	0.991	-0.155	0.209	0.124	0.22	0.13
CM-Ab-R2-050428-13/805AFC0016	In	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5405A	0.964	0.074	0.539	0.270	0.54	0.27
CM-Ab-R2-050428-14/805AFC0016	Out	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5405A	0.951	-0.126	0.203	0.121	0.21	0.13
CM-Ab-R2-050428-15/805AFC0016	In	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NKN6560A	0.980	-0.17	0.363	0.176	0.38	0.18
CM-Ab-R2-050428-16/805AFC0016	Out	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NKN6560A	0.982	-0.182	0.187	0.112	0.20	0.12
CM-Ab-R2-050429-02/805AFC0016	In	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NKN6559A	0.999	-0.0424	0.477	0.230	0.48	0.23
CM-Ab-R2-050429-03/805AFC0016	Out	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NKN6559A	0.992	-0.0593	0.192	0.115	0.19	0.12
***CM-Ab-R2-050429-04/805AFC0016**	**In**	**1880.0000**	**SNN5685A w/NTN2136 MOTA**	**Against phantom**	**NNTN4747A**	**NNTN5491A**	**0.942**	**-0.208**	**0.610**	**0.307**	**0.65**	**0.33**
CM-Ab-R2-050429-05/805AFC0016	Out	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5491A	0.958	-0.0644	0.215	0.129	0.22	0.13
****Assessment with the worst case test configuration above using the full DASY 4 coarse and 7x7x7 cube scan measurements.**												
CM-Ab-R2-050502-02/805AFC0016	In	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5491A	0.996	-0.654	0.613	0.331	0.71	0.38

Table 13

Assessments at the Body (GSM modes: 1:4, 1:8) 1850.2-1909.8MHz band												
Run Number/ SN	**Antenna**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
Assessments at the Body (GSM 1:8 mode) – offered audio accessories												
CM-Ab-R2-050429-06/805AFC0016	In	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5006A	0.962	-0.0568	0.237	0.111	0.24	0.11
CM-Ab-R2-050429-07/805AFC0016	Out	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5006A	0.957	-0.0294	0.0883	0.0531	0.09	0.05
CM-Ab-R2-050429-08/805AFC0016	In	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5005A	0.990	-0.0206	0.219	0.104	0.22	0.10
CM-Ab-R2-050429-09/805AFC0016	In	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NSN6066A	0.988	-0.0069	0.244	0.121	0.24	0.12
CM-Ab-R2-050429-10/805AFC0016	In	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	SYN8390B	0.980	-0.0728	0.242	0.117	0.25	0.12
CM-Ab-R2-050429-11/805AFC0016	In	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NTN8496A	0.973	-0.0305	0.216	0.103	0.22	0.10
CM-Ab-R2-050429-12/805AFC0016	In	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN4033A	0.987	-0.00267	0.223	0.107	0.22	0.11
CM-Ab-R2-050429-13/805AFC0016	In	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	SYN7875C	0.972	-0.032	0.207	0.101	0.21	0.10
CM-Ab-R2-050429-14/805AFC0016	In	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5004A	0.989	-0.0286	0.222	0.103	0.22	0.10
CM-Ab-R2-050429-15/805AFC0016	In	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5774A	0.987	-0.187	0.204	0.0971	0.21	0.10
CM-Ab-R2-050429-16/805AFC0016	In	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	SYN8146C	0.979	-0.0557	0.217	0.103	0.22	0.10
CM-Ab-R2-050429-17/805AFC0016	In	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NTN8513B	0.972	-0.05	0.234	0.111	0.24	0.11
CM-Ab-R2-050430-02/805AFC0016	In	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5211A	0.987	-0.0688	0.213	0.105	0.22	0.11
CM-Ab-R2-050430-03/805AFC0016	Out	1880.0000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	SYN8390B	0.999	-0.128	0.091	0.055	0.09	0.06
Assessments at the Body (GSM 1:4 mode) – band edges												
CM-Ab-R2-050430-05/805AFC0016	In	1850.2000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5491A	0.970	0.042	0.630	0.313	0.63	0.31
CM-Ab-R2-050430-06/805AFC0016	Out	1850.2000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5491A	0.977	-0.0986	0.148	0.089	0.15	0.09
CM-Ab-R2-050430-07/805AFC0016	In	1909.8000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5491A	0.980	0.147	0.606	0.288	0.61	0.29
CM-Ab-R2-050430-08/805AFC0016	Out	1909.8000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5491A	0.973	-0.0823	0.288	0.171	0.29	0.17

Table 14

Assessments at the Body (GSM GPRS mode 1:4) 1710.2-1784.8MHz band												
Run Number/ SN	**Antenna**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
Assessment at the body – antenna positions with worst case configuration from 1900 band												
CM-Ab-R2-050430-09/805AFC0016	In	1747.6000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5491A	0.952	-0.162	0.848	0.441	0.89	0.46
CM-Ab-R2-050430-10/805AFC0016	Out	1747.6000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5491A	0.950	-0.188	0.377	0.206	0.40	0.22
CM-Ab-R2-050430-11/805AFC0016	In	1710.2000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5491A	0.978	-0.164	0.716	0.381	0.74	0.40
CM-Ab-R2-050430-12/805AFC0016	Out	1710.2000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5491A	0.975	-0.0544	0.394	0.225	0.40	0.23
CM-Ab-R2-050430-13/805AFC0016	In	1784.8000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5491A	0.941	-0.0759	0.436	0.215	0.45	0.22
CM-Ab-R2-050430-14/805AFC0016	Out	1784.8000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	NNTN5491A	0.945	-0.162	0.288	0.147	0.30	0.16
Assessment at the body – w/o data cable												
****CM-Ab-R2-050502-03/805AFC0016**	**In**	**1747.6000**	**SNN5685A w/NTN2136 MOTA**	**Against phantom**	**NNTN4747A**	**None**	**0.981**	**-0.124**	**0.981**	**0.484**	**1.01**	**0.50**
CM-Ab-R2-050502-04/805AFC0016	Out	1747.6000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	None	0.959	-0.112	0.338	0.196	0.35	0.20
CM-Ab-R2-050502-05/805AFC0016	In	1710.2000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	None	0.978	-0.162	0.751	0.389	0.78	0.40
CM-Ab-R2-050502-06/805AFC0016	Out	1710.2000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	None	0.980	-0.213	0.537	0.301	0.56	0.32
CM-Ab-R2-050502-07/805AFC0016	In	1784.8000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	None	0.927	-0.0628	0.412	0.198	0.43	0.21
CM-Ab-R2-050502-08/805AFC0016	Out	1784.8000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	None	0.934	-0.241	0.291	0.152	0.32	0.17
Assessment at the body – front and back housing separated 2.5cm												
CM-Ab-R2-050502-10/805AFC0016	In	1747.6000	SNN5685A w/NTN2136 MOTA	Back 2.5 cm	None	None	0.984	-0.143	0.252	0.158	0.26	0.16
CM-Ab-R2-050430-15/805AFC0016	In	1747.6000	SNN5685A w/NTN2136 MOTA	Back 2.5 cm	None	NNTN5491A	0.954	-0.109	0.196	0.124	0.20	0.13
CM-Ab-R2-050502-11/805AFC0016	In	1747.6000	SNN5685A w/NTN2136 MOTA	Front 2.5cm	None	None	0.950	-0.0721	0.113	0.0711	0.12	0.07
****Assessment with the worst case test configuration above using the full DASY 4 coarse and 7x7x7 cube scan measurements.**												
CM-Ab-R2-050502-09/805AFC0016	In	1747.6000	SNN5685A w/NTN2136 MOTA	Against phantom	NNTN4747A	None	0.985	-0.303	1.010	0.534	1.08	0.57

9.1 Highest S.A.R. results calculation methodology

The calculated maximum 1-gram and 10-gram averaged S.A.R. results reported herein for the full DASY ™ coarse and 7x7x7 cube measurements are determined by scaling the measured S.A.R. to account for power leveling variations and power slump. For this device the Maximum Calculated 1-gram and 10-gram averaged peak S.A.R. is calculated using the following formula:

*For WiDEN the device test script can only achieve a 75% duty cycle. Therefore the maximum calculated results are scaled up by multiplying the results of the max calc. formula below by the ratio of (76.1/75).

Max. Calc. 1-g/10-g Avg. SAR = ((S.A.R. meas. / (10^(Pdrift/10)))*(Pmax/Pint))* DC%
P_{max} = Maximum Power (W)
P_{int} = Initial Power (W)
Pdrift = DASY drift results (dB) - (for conservative results positive drifts are not accounted for)
$SAR_{meas.}$ = Measured 1 gram averaged peak S.A.R. (mW/g)
DC % = Transmission mode duty cycle in % where applicable
Note that the use of the above formula should consider the relationship between the initial power, max power, and drift. Also, a 50% duty cycle is applied for PTT operation.

10.0 Conclusion

The highest Operational Maximum Calculated 1-gram and 10-gram average S.A.R. values found for FCC ID: AZ489FT5843 models H72UAH9JR7AN.

At the Body: 1-g Avg. = 1.21mW/g; 10-g Avg. = 0.89mW/g
At the Face: 1-g Avg. = 0.07mW/g; 10-g Avg. = 0.05mW/g
At the Head: 1-g Avg. = 0.87mW/g; 10-g Avg. = 0.58mW/g

These test results clearly demonstrate compliance with FCC General Population/Uncontrolled RF Exposure limits of **1.6mW/g** per the requirements of 47 CFR 2.1093(d).

APPENDIX A
Measurement Uncertainty

Table 1: Uncertainty Budget for Device Under Test: 75 – 3000 MHz

a	*b*	*c*	*d*	*e = f(d,k)*	*f*	*g*	*h = c x f / e*	*i = c x g / e*	*k*
Uncertainty Component	IEEE 1528 section	**Tol. (± %)**	**Prob Dist**	**Div.**	c_i **(1 g)**	c_i **(10 g)**	**1 g** u_i **(±%)**	**10 g** u_i **(±%)**	v_i
Measurement System									
Probe Calibration	E.2.1	4.8	N	1.00	1	1	4.8	4.8	∞
Axial Isotropy	E.2.2	4.7	R	1.73	0.707	0.707	1.9	1.9	∞
Hemispherical Isotropy	E.2.2	9.6	R	1.73	0.707	0.707	3.9	3.9	∞
Boundary Effect	E.2.3	1.0	R	1.73	1	1	0.6	0.6	∞
Linearity	E.2.4	4.7	R	1.73	1	1	2.7	2.7	∞
System Detection Limits	E.2.5	1.0	R	1.73	1	1	0.6	0.6	∞
Readout Electronics	E.2.6	1.0	N	1.00	1	1	1.0	1.0	∞
Response Time	E.2.7	0.8	R	1.73	1	1	0.5	0.5	∞
Integration Time	E.2.8	1.3	R	1.73	1	1	0.8	0.8	∞
RF Ambient Conditions - Noise	E.6.1	3.0	R	1.73	1	1	1.7	1.7	∞
RF Ambient Conditions - Reflections	E.6.1	0.0	R	1.73	1	1	0.0	0.0	∞
Probe Positioner Mech. Tolerance	E.6.2	1.0	R	1.73	1	1	0.6	0.6	∞
Probe Positioning w.r.t Phantom	E.6.3	4.0	R	1.73	1	1	2.3	2.3	∞
Max. SAR Evaluation (ext., int., avg.)	E.5	3.4	R	1.73	1	1	2.0	2.0	∞
Test sample Related									
Test Sample Positioning	E.4.2	3.4	N	1.00	1	1	3.4	3.4	29
Device Holder Uncertainty	E.4.1	3.8	N	1.00	1	1	3.8	3.8	8
SAR drift	6.6.2	5.0	R	1.73	1	1	2.9	2.9	∞
Phantom and Tissue Parameters									
Phantom Uncertainty	E.3.1	4.0	R	1.73	1	1	2.3	2.3	∞
Liquid Conductivity (target)	E.3.2	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Conductivity (measurement)	E.3.3	6.5	N	1.00	0.64	0.43	4.2	2.8	∞
Liquid Permittivity (target)	E.3.2	5.0	R	1.73	0.6	0.49	1.7	1.4	∞
Liquid Permittivity (measurement)	E.3.3	4.0	N	1.00	0.6	0.49	2.4	2.0	∞
Combined Standard Uncertainty			RSS				12	11	601
Expanded Uncertainty (95% CONFIDENCE LEVEL)			*k*=2				23	22	

Table 2: Uncertainty Budget for System Check: 75 – 3000 MHz

a	*b*	*c*	*d*	*e = f(d,k)*	*f*	*g*	*h = c x f / e*	*i = c x g / e*	*k*
Uncertainty Component	IEEE 1528 section	**Tol. (± %)**	**Prob. Dist.**	**Div.**	c_i **(1 g)**	c_i **(10 g)**	**1 g** u_i **(±%)**	**10 g** u_i **(±%)**	v_i
Measurement System									
Probe Calibration	E.2.1	4.8	N	1.00	1	1	4.8	4.8	∞
Axial Isotropy	E.2.2	4.7	R	1.73	1	1	2.7	2.7	∞
Spherical Isotropy	E.2.2	9.6	R	1.73	0	0	0.0	0.0	∞
Boundary Effect	E.2.3	1.0	R	1.73	1	1	0.6	0.6	∞
Linearity	E.2.4	4.7	R	1.73	1	1	2.7	2.7	∞
System Detection Limits	E.2.5	1.0	R	1.73	1	1	0.6	0.6	∞
Readout Electronics	E.2.6	1.0	N	1.00	1	1	1.0	1.0	∞
Response Time	E.2.7	0.8	R	1.73	1	1	0.5	0.5	∞
Integration Time	E.2.8	1.3	R	1.73	1	1	0.8	0.8	∞
RF Ambient Conditions - Noise	E.6.1	3.0	R	1.73	1	1	1.7	1.7	∞
RF Ambient Conditions - Reflections	E.6.1	0.0	R	1.73	1	1	0.0	0.0	∞
Probe Positioner Mechanical Tolerance	E.6.2	0.4	R	1.73	1	1	0.2	0.2	∞
Probe Positioning w.r.t. Phantom	E.6.3	1.4	R	1.73	1	1	0.8	0.8	∞
Max. SAR Evaluation (ext., int., avg.)	E.5	3.4	R	1.73	1	1	2.0	2.0	∞
Dipole									
Dipole Axis to Liquid Distance	8, E.4.2	2.0	R	1.73	1	1	1.2	1.2	∞
Input Power and SAR Drift Measurement	8, 6.6.2	5.0	R	1.73	1	1	2.9	2.9	∞
Phantom and Tissue Parameters									
Phantom Uncertainty	E.3.1	4.0	R	1.73	1	1	2.3	2.3	∞
Liquid Conductivity (target)	E.3.2	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Conductivity (measurement)	E.3.3	6.0	R	1.73	0.64	0.43	2.2	1.5	∞
Liquid Permittivity (target)	E.3.2	5.0	R	1.73	0.6	0.49	1.7	1.4	∞
Liquid Permittivity (measurement)	E.3.3	6.0	R	1.73	0.6	0.49	2.1	1.7	∞
Combined Standard Uncertainty			RSS				9	8	99999
Expanded Uncertainty (95% CONFIDENCE LEVEL)			*k*=2				17	17	

Notes for Tables 1 and 2
a) Column headings *a*-*k* are given for reference.
b) Tol. - tolerance in influence quantity.
c) Prob. Dist. – Probability distribution
d) N, R - normal, rectangular probability distributions
e) Div. - divisor used to translate tolerance into normally distributed standard uncertainty
f) *ci* - sensitivity coefficient that should be applied to convert the variability of the uncertainty component into a variability of SAR.
g) *ui* – SAR uncertainty
h) *vi* - degrees of freedom for standard uncertainty and effective degrees of freedom for the expanded uncertainty.

Appendix B
Probe Calibration Certification

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Federal Office of Metrology and Accreditation
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client **Motorola CGISS**

Certificate No: ET3-1383_Feb05

CALIBRATION CERTIFICATE

Object	ET3DV6 - SN:1383
Calibration procedure(s)	QA CAL-01.v5 Calibration procedure for dosimetric E-field probes
Calibration date:	February 24, 2005
Condition of the calibrated item	In Tolerance

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	5-May-04 (METAS, No. 251-00388)	May-05
Power sensor E4412A	MY41495277	5-May-04 (METAS, No. 251-00388)	May-05
Reference 3 dB Attenuator	SN: S5054 (3c)	10-Aug-04 (METAS, No. 251-00403)	Aug-05
Reference 20 dB Attenuator	SN: S5086 (20b)	3-May-04 (METAS, No. 251-00389)	May-05
Reference 30 dB Attenuator	SN: S5129 (30b)	10-Aug-04 (METAS, No. 251-00404)	Aug-05
Reference Probe ES3DV2	SN: 3013	7-Jan-05 (SPEAG, No. ES3-3013_Jan05)	Jan-06
DAE4	SN: 617	19-Jan-05 (SPEAG, No. DAE4-617_Jan05)	Jan-06

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092180	18-Sep-02 (SPEAG, in house check Oct-03)	In house check: Oct 05
RF generator HP 8648C	US3642U01700	4-Aug-99 (SPEAG, in house check Dec-03)	In house check: Dec-05
Network Analyzer HP 8753E	US37390585	18-Oct-01 (SPEAG, in house check Nov-04)	In house check: Nov 05

	Name	Function	Signature
Calibrated by:	Nico Vetterli	Laboratory Technician	N. Vetterli
Approved by:	Katja Pokovic	Technical Manager	

Issued: February 25, 2005

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Federal Office of Metrology and Accreditation
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., ϑ = 0 is normal to probe axis

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) CENELEC EN 50361, "Basic standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones (300 MHz - 3 GHz), July 2001

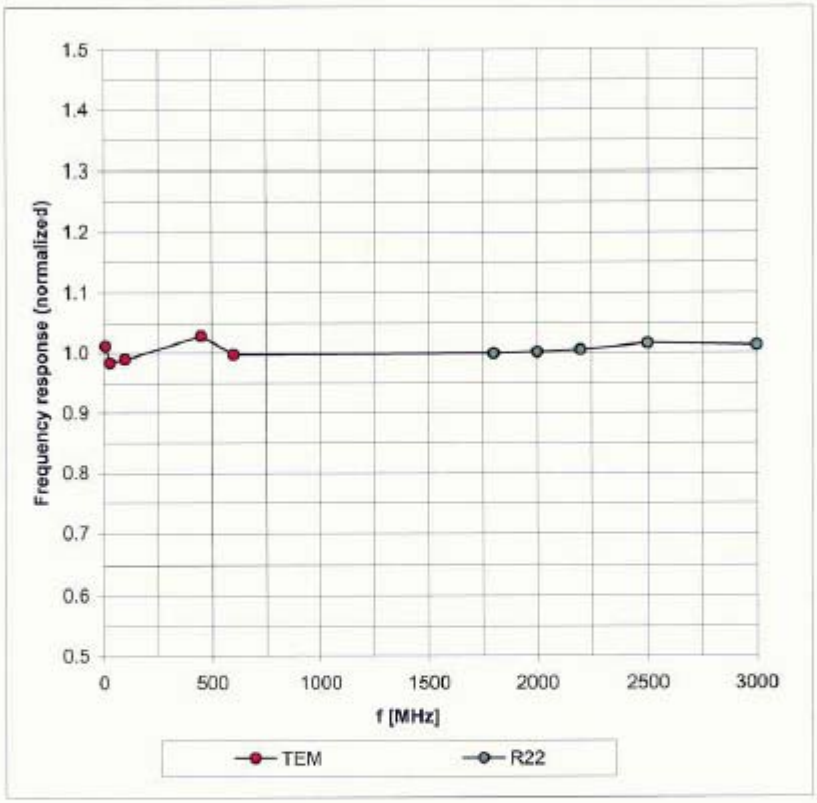
Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not effect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

ET3DV6 SN:1383 **February 24, 2005**

Frequency Response of E-Field

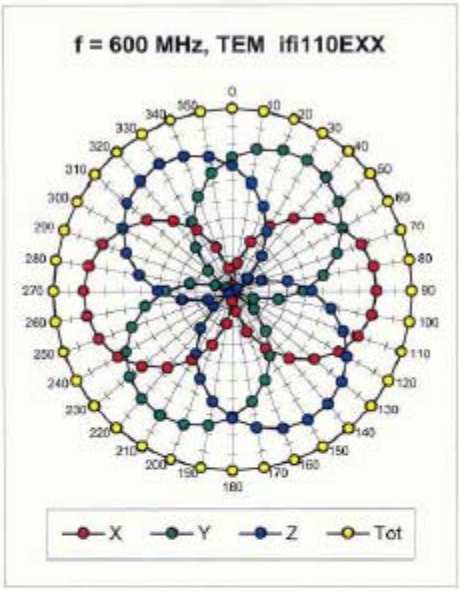
(TEM-Cell:ifi110 EXX, Waveguide: R22)

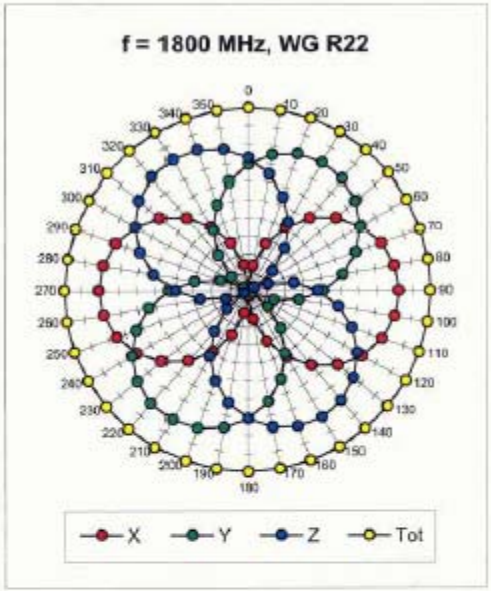


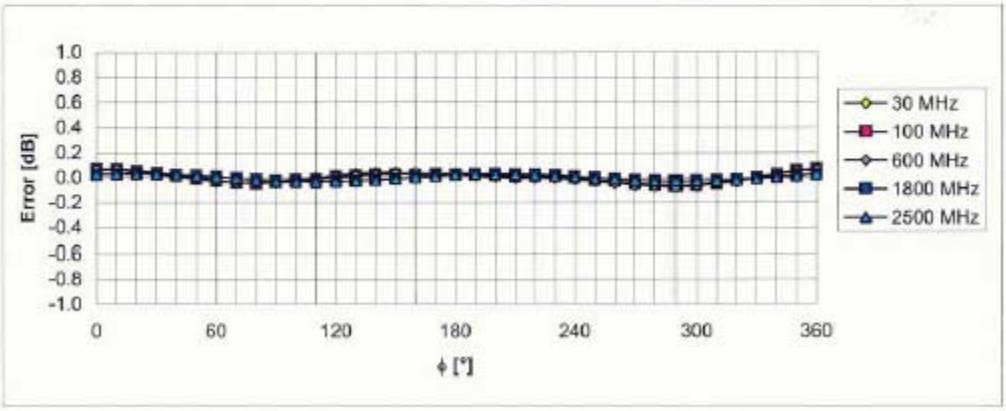
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

ET3DV6 SN:1383 **February 24, 2005**

Receiving Pattern (ϕ), ϑ = 0°





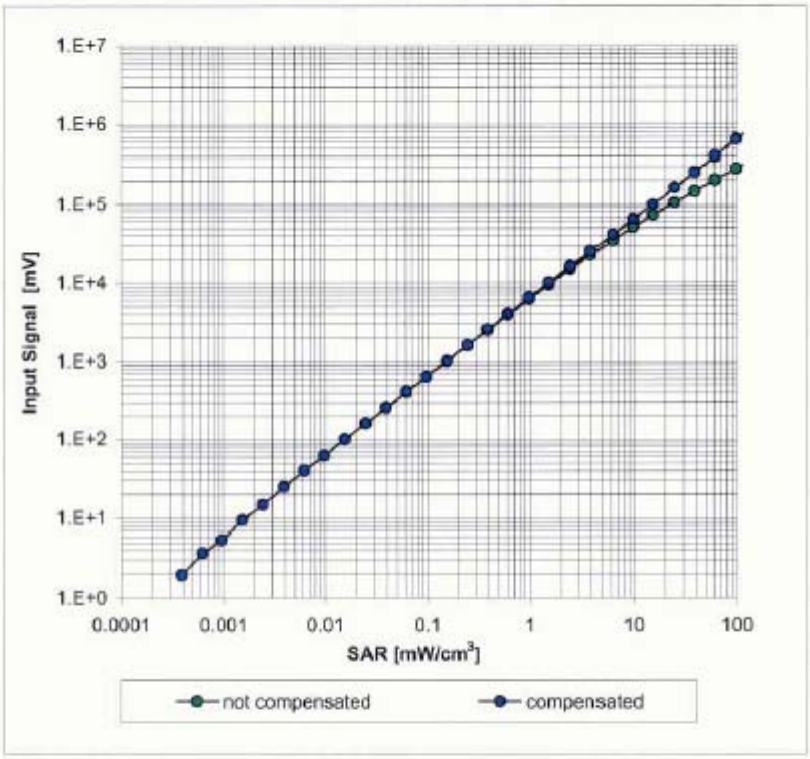


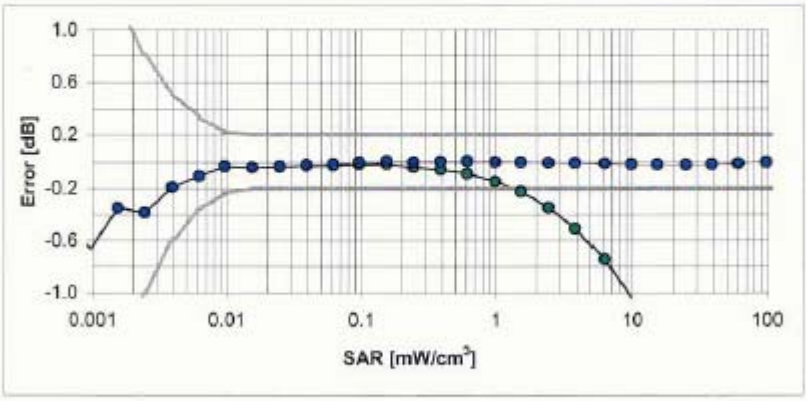
Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

ET3DV6 SN:1383 February 24, 2005

Dynamic Range f(SAR_{head})

(Waveguide R22, f = 1800 MHz)

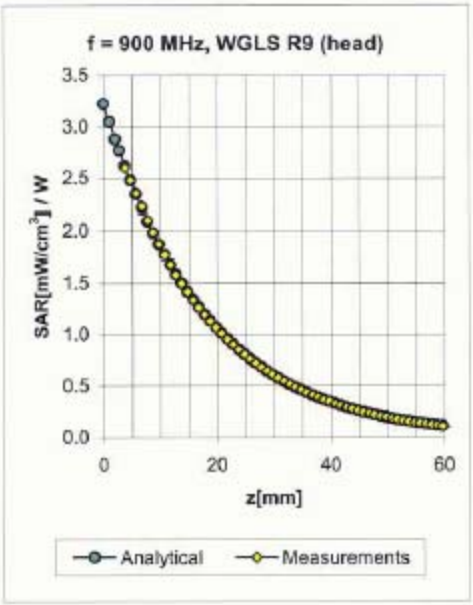


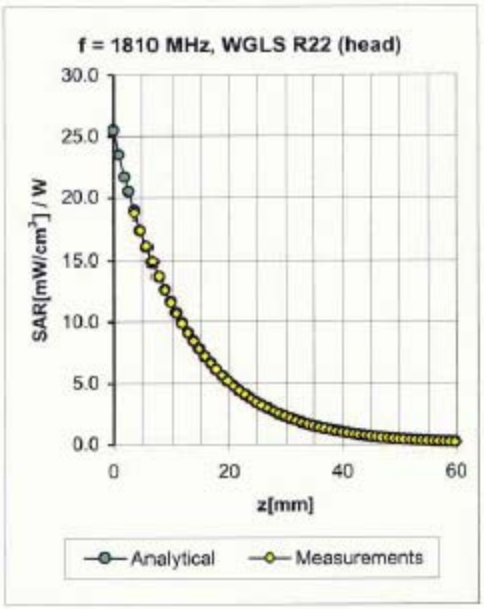


Uncertainty of Linearity Assessment: ± 0.6% (k=2)

ET3DV6 SN:1383 February 24, 2005

Conversion Factor Assessment





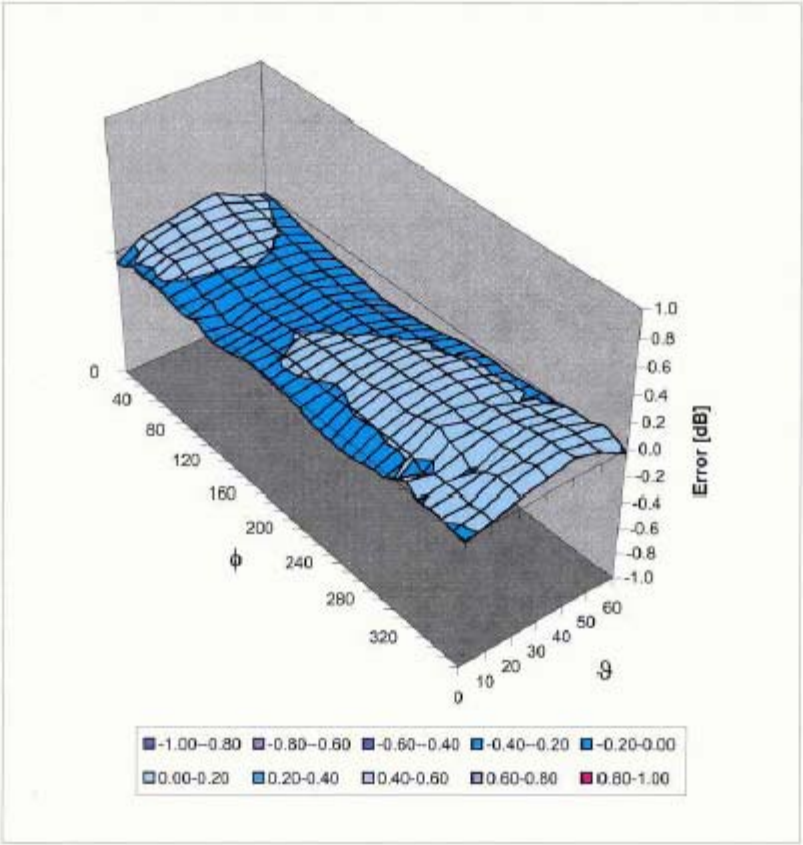
f [MHz]	Validity [MHz][C]	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
300	± 50 / ± 100	Head	45.3 ± 5%	0.87 ± 5%	0.13	1.55	7.96 ± 13.3% (k=2)
450	± 50 / ± 100	Head	43.5 ± 5%	0.87 ± 5%	0.12	1.15	7.26 ± 13.3% (k=2)
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	1.44	1.38	6.35 ± 11.0% (k=2)
1450	± 50 / ± 100	Head	40.5 ± 5%	1.20 ± 5%	1.03	1.72	5.69 ± 11.0% (k=2)
1810	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.76	2.16	5.26 ± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.87	2.04	4.59 ± 11.8% (k=2)
450	± 50 / ± 100	Body	56.7 ± 5%	0.94 ± 5%	0.09	1.13	7.05 ± 13.3% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	1.40	1.46	6.03 ± 11.0% (k=2)
1450	± 50 / ± 100	Body	54.0 ± 5%	1.30 ± 5%	0.88	2.03	5.22 ± 11.0% (k=2)
1810	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.73	2.47	4.71 ± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	1.05	1.71	4.34 ± 11.8% (k=2)

[C] The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

ET3DV6 SN:1383 February 24, 2005

Deviation from Isotropy in HSL

Error (ϕ, ϑ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

Schmid & Partner Engineering AG

s p e a g

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Additional Conversion Factors

for Dosimetric E-Field Probe

Type:	**ET3DV6**
Serial Number:	**1383**
Place of Assessment:	**Zurich**
Date of Assessment:	**February 28, 2005**
Probe Calibration Date:	**February 24, 2005**

Schmid & Partner Engineering AG hereby certifies that conversion factor(s) of this probe have been evaluated on the date indicated above. The assessment was performed using the FDTD numerical code SEMCAD of Schmid & Partner Engineering AG. Since the evaluation is coupled with measured conversion factors, it has to be recalculated yearly, i.e., following the re-calibration schedule of the probe. The uncertainty of the numerical assessment is based on the extrapolation from measured value at 900 MHz or at 1800 MHz.

Assessed by:

Schmid & Partner Engineering AG

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Dosimetric E-Field Probe ET3DV6 SN:1383

Conversion factor (± standard deviation)

150 MHz	*ConvF*	**8.6 ± 10%**	ε_r = **52.3** σ = **0.76 mho/m** (head tissue)
236 MHz	*ConvF*	**7.9 ± 10%**	ε_r = **48.2** σ = **0.82 mho/m** (head tissue)
784 MHz	*ConvF*	**6.6 ± 7%**	ε_r = **41.8** σ = **0.90 mho/m** (head tissue)

Important Note:

For numerically assessed probe conversion factors, parameters Alpha and Delta in the DASY software must have the following entries: Alpha = 0 and Delta = 1.

Please see also Section 4.7 of the DASY4 Manual.

Schmid & Partner Engineering AG

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info@speag.com, http://www.speag.com

Dosimetric E-Field Probe ET3DV6 SN:1383

Conversion factor (± standard deviation)

150 MHz	*ConvF*	**8.2 ± 10%**	ε_r = **61.9** σ = **0.80 mho/m** (body tissue)
236 MHz	*ConvF*	**7.9 ± 10%**	ε_r = **59.8** σ = **0.87 mho/m** (body tissue)
300 MHz	*ConvF*	**7.8 ± 9%**	ε_r = **58.2** σ = **0.92 mho/m** (body tissue)
350 MHz	*ConvF*	**7.6 ± 9%**	ε_r = **57.7** σ = **0.93 mho/m** (body tissue)
784 MHz	*ConvF*	**6.3 ± 7%**	ε_r = **55.4** σ = **0.97 mho/m** (body tissue)

Important Note:

For numerically assessed probe conversion factors, parameters Alpha and Delta in the DASY software must have the following entries: Alpha = 0 and Delta = 1.

Please see also Section 4.7 of the DASY4 Manual.

Appendix C
Dipole Calibration Certificates

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

Client **Motorola CGISS**

CALIBRATION CERTIFICATE

Object(s)	D900V2 - SN:085
Calibration procedure(s)	QA CAL-05.v2 Calibration procedure for dipole validation kits
Calibration date:	August 19, 2004
Condition of the calibrated item	In Tolerance (according to the specific calibration document)

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature 22 +/- 2 degrees Celsius and humidity < 75%.

Calibration Equipment used (M&TE critical for calibration)

Model Type	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM E442	GB37480704	6-Nov-03 (METAS, No. 252-0254)	Nov-04
Power sensor HP 8481A	US37292783	6-Nov-03 (METAS, No. 252-0254)	Nov-04
Power sensor HP 8481A	MY41092317	18-Oct-02 (Agilent, No. 20021018)	Oct-04
RF generator R&S SML-03	100698	27-Mar-2002 (R&S, No. 20-92389)	In house check: Mar-05
Network Analyzer HP 8753E	US37390585	18-Oct-01 (SPEAG, in house check Nov-03)	In house check: Oct 05

	Name	Function	Signature
Calibrated by:	Judith Mueller	Technician	
Approved by:	Katja Pokovic	Laboratory Director	

Date issued: August 25, 2004

This calibration certificate is issued as an intermediate solution until the accreditation process (based on ISO/IEC 17025 International Standard) for Calibration Laboratory of Schmid & Partner Engineering AG is completed.

1. Measurement Conditions

The measurements were performed in the half size flat phantom filled with **head simulating solution** of the following electrical parameters at 900 MHz:

Relative Dielectricity	**41.0** ± 5%
Conductivity	**0.97 mho/m** ± 5%

The DASY4 System with a dosimetric E-field probe ET3DV6 (SN:1507, Conversion factor 6.18 at 900 MHz) was used for the measurements.

The dipole was mounted on the small tripod so that the dipole feedpoint 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 15mm from dipole center to the solution surface. The included distance spacer was used during measurements for accurate distance positioning.

The coarse grid with a grid spacing of 15mm was aligned with the dipole. The 7x7x7 fine cube was chosen for cube integration.
The dipole input power (forward power) was 250mW ± 3 %. The results are normalized to 1W input power.

2. SAR Measurement with DASY4 System

Standard SAR-measurements were performed according to the measurement conditions described in section 1. The results (see figure supplied) have been normalized to a dipole input power of 1W (forward power). The resulting averaged SAR-values measured with the dosimetric probe ET3DV6 SN:1507 and applying the advanced extrapolation are:

averaged over 1 cm^3 (1 g) of tissue:	**11.0 mW/g** ± 16.8 % (k=2)[1]
averaged over 10 cm^3 (10 g) of tissue:	**7.04 mW/g** ± 16.2 % (k=2)[1]

3. Dipole Impedance and Return Loss

The impedance was measured at the SMA-connector with a network analyzer and numerically transformed to the dipole feedpoint. The transformation parameters from the SMA-connector to the dipole feedpoint are:

Electrical delay:	**1.392 ns**	(one direction)
Transmission factor:	**0.987**	(voltage transmission, one direction)

The dipole was positioned at the flat phantom sections according to section 1 and the distance spacer was in place during impedance measurements.

Feedpoint impedance at 900 MHz:	Re{Z} = **48.8 Ω**
	Im {Z} = **-6.6 Ω**
Return Loss at 900 MHz	**-22.7 dB**

4. Handling

Do not apply excessive force to the dipole arms, because they might bend. Bending of the dipole arms stresses the soldered connections near the feedpoint leading to a damage of the dipole.

5. Design

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

6. Power Test

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 900 MHz; Type: D900V2; Serial: D900V2 - SN085

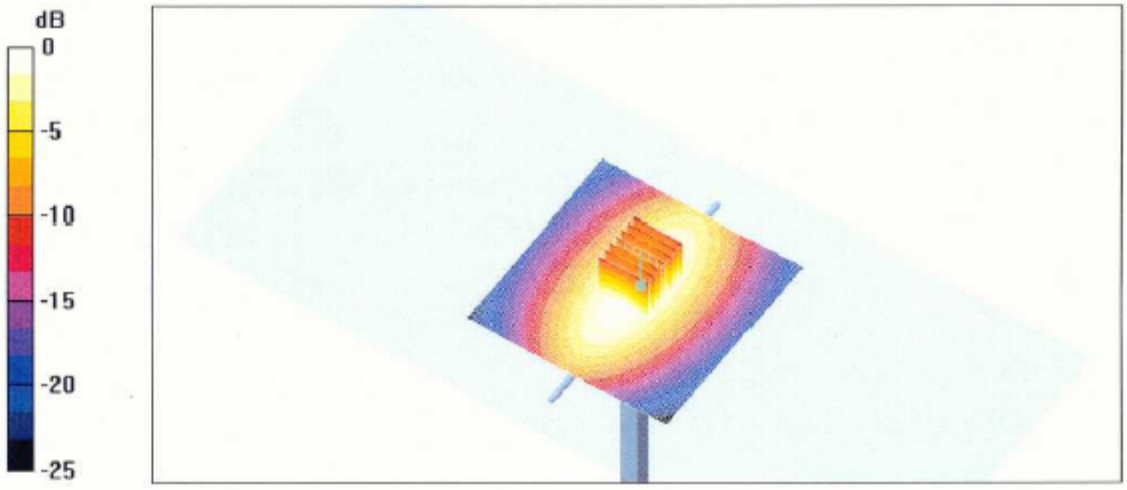
Communication System: CW-900; Frequency: 900 MHz;Duty Cycle: 1:1
Medium: HSL 900 MHz;
Medium parameters used: f = 900 MHz; σ = 0.97 mho/m; ε_r = 41; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1507; ConvF(6.18, 6.18, 6.18); Calibrated: 1/23/2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 7/22/2004
- Phantom: Flat Phantom half size; Type: QD000P49AA; Serial: SN:1001;
- Measurement SW: DASY4, V4.3 Build 16; Postprocessing SW: SEMCAD, V1.8 Build 123

Pin = 250 mW; d = 15 mm/Area Scan (81x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.93 mW/g

Pin = 250 mW; d = 15 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 57.2 V/m; Power Drift = -0.0 dB
Peak SAR (extrapolated) = 4.11 W/kg
SAR(1 g) = 2.74 mW/g; SAR(10 g) = 1.76 mW/g
Maximum value of SAR (measured) = 2.97 mW/g



0 dB = 2.97mW/g

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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Accreditation No.: SCS 108

Client **Motorola CGISS**

Certificate No: D1800V2-278_Nov04

CALIBRATION CERTIFICATE

Object	D1800V2 - SN: 278
Calibration procedure(s)	QA CAL-05.v6 Calibration procedure for dipole validation kits
Calibration date:	November 18, 2004
Condition of the calibrated item	In Tolerance

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM E442	GB37480704	12-Oct-04 (METAS, No. 251-00412)	Oct-05
Power sensor HP 8481A	US37292783	12-Oct-04 (METAS, No. 251-00412)	Oct-05
Reference 20 dB Attenuator	SN: 5086 (20g)	10-Aug-04 (METAS, No 251-00402)	Aug-05
Reference 10 dB Attenuator	SN: 5047.2 (10r)	10-Aug-04 (METAS, No 251-00402)	Aug-05
Reference Probe ET3DV6	SN 1507	26-Oct-04 (SPEAG, No. ET3-1507_Oct04)	Oct-05
DAE4	SN 601	22-Jul-04 (SPEAG, No. DAE4-601_Jul04)	Jul-05

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (SPEAG, in house check Oct-03)	In house check: Oct-05
RF generator R&S SML-03	100698	27-Mar-02 (SPEAG, in house check Dec-03)	In house check: Dec-05
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (SPEAG, in house check Nov-03)	In house check: Nov 04

	Name	Function	Signature
Calibrated by:	Mike Meili	Laboratory Technician	M. Meili
Approved by:	Katja Pokovic	Technical Manager	Pokovic Katja

Issued: November 24, 2004

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

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Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) CENELEC EN 50361, "Basic standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones (300 MHz - 3 GHz), July 2001
c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY4	V4.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Area Scan resolution	dx, dy = 15 mm	
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1800 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	39.4 ± 6 %	1.37 mho/m ± 6 %
Head TSL temperature during test	(21.7 ± 0.2) °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	condition	
SAR measured	250 mW input power	9.09 mW / g
SAR normalized	normalized to 1W	36.4 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**36.6 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	4.87 mW / g
SAR normalized	normalized to 1W	19.5 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**19.6 mW / g ± 16.5 % (k=2)**

[1] Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	47.2 Ω - 7.7 jΩ
Return Loss	- 21.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.199 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	November 25, 2000

DASY4 Validation Report for Head TSL

Date/Time: 11/18/04 13:19:59

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN278

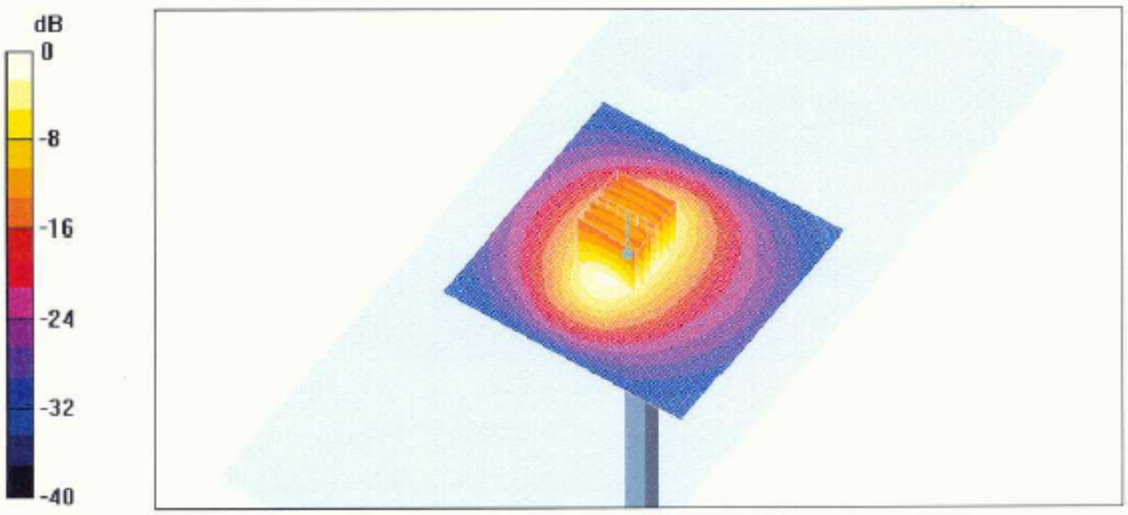
Communication System: CW-1800; Frequency: 1800 MHz;Duty Cycle: 1:1
Medium: HSL 1800 MHz;
Medium parameters used: f = 1800 MHz; σ = 1.37 mho/m; ε_r = 39.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1507; ConvF(5.07, 5.07, 5.07); Calibrated: 26.10.2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 22.07.2004
- Phantom: Flat Phantom quarter size -SN:1001; Type: QD000P50AA; Serial: SN:1001;
- Measurement SW: DASY4, V4.4 Build 3; Postprocessing SW: SEMCAD, V1.8 Build 130

Pin = 250 mW; d = 10 mm/Area Scan (81x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 10.6 mW/g

Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 78.7 V/m; Power Drift = 0.1 dB
Peak SAR (extrapolated) = 15.6 W/kg
SAR(1 g) = 9.09 mW/g; SAR(10 g) = 4.87 mW/g
Maximum value of SAR (measured) = 10.4 mW/g



0 dB = 10.4 mW/g