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FCC ID: AZ489FT5836
DECLARATION OF COMPLIANCE SAR ASSESSMENT Part 1 of 2

<p>Networks & Enterprise EME Test Laboratory 8000 West Sunrise Blvd Fort Lauderdale, FL. 33322</p>	<p>Date of Report: 06/09/06 Report Revision: Rev 0 Report ID: FCC rpt_ AAH25UCH6DU6AN_060609_SR3765</p>
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<p>Responsible Engineer: Stephen C. Whalen (Sr. Staff Eng.) Date/s Tested: 05/25/2006 – 06/02/2006 Manufacturer/Location: Motorola – Penang Sector/Group/Div.: NE/GTDG Date submitted for test: 05/02/06 DUT Description: MTX8250 LS 800 MHZ 2.5W 16 CH Test TX mode(s): CW Max. Power output: 2.95W (806-825MHz) & 2.40W (851-870MHz) Nominal Power: 2.5W (806-825MHz) & 2.0W (851-870MHz) Tx Frequency Bands: 806-825MHz & 851-870 MHz Signaling type: FM Model(s) Tested: AAH25UCH6DU6AN Model(s) Certified: AAH25UCH6DU6AN Serial Number(s): 672TA00010 Classification: Occupational/Controlled Rule Part(s): 90</p> <p>Approved Accessories: Antenna(s): PMAF4000A, 806-870MHz, Whip, 1/2 wave, -3dBd, PMAF4001A, 806-941MHz, Stubby, 1/4 wave, -0.15dBd Battery(ies): HNN9008A, NiMH High Capacity Battery, HNN9009A, NiMH Ultra High Capacity Battery, HNN9010A, NiMH Ultra High Capacity Battery Factory Mutual, HNN9011A, NiCd High Capacity Battery Factory Mutual, HNN9012A, NiCd High Capacity Battery, HNN9013D, Li Ion High Capacity Battery, PMNN4045BR, 1400MAH NIMH BATTERY (MAGONE) Body worn accessory(ies): HLN9952A, Belt Clip Carry Holder, HLN9652A, Plain, Belt Loop, Thin Battery, HLN9665A, Plain, Belt Loop, Std. Battery, HLN9670A, Plain, Swivel, Thin Battery, HLN9676A, Plain, Swivel, Std. Battery, HLN9677A, DTMF, Belt Loop, Thin Battery, HLN9689A, DTMF, Belt Loop, Std. Battery, HLN9690A, DTMF, Swivel, Thin Battery, HLN9694A, DTMF, Swivel, Std. Battery, HLN9701B, Plain, Belt Loop, Thin Battery, NTN8039B, Belt Swivel 2.5inch, HLN9714A, Spring Belt Clip, for 2.5inch belt width, HLN9844A, Spring Belt Clip, for 1.5inch belt width, HLN9945A, Limited Keypad, Hard Leather, W/Belt Loop, Thin Battery, HLN9946A, Limited Keypad, Hard Leather, W/Belt Loop, Std. Battery, HLN9955A, Limited Keypad, Hard Leather, W/Swivel, Thin Battery, HLN9998A, Limited Keypad, Hard Leather, W/Swivel, Std. Battery, NTN5243A, Carry Strap, RLN4815A, Fanny Pack Carry Accessory, Universal Radio Pack, PMLN4280A, Carry Case, Full Thin Leather Audio/Data cable accessory(ies): See section 3.0 for list of approved audio acc</p>	
<p>Max. Calc. 1-g Avg. = 6.40W/kg; 10-g Avg. = 4.64W/kg (Body) Max. Calc. 1-g Avg. = 3.18W/kg; 10-g Avg. = 2.33W/kg (Face)</p>	

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.

<p>Signature on file Ken Enger N&E EME Lab Senior Resource Manager, Laboratory Director,</p> <p>Approval Date: 06/09/06</p>	<p>Certification Date: 06/09/06</p> <p>Certification No.:</p>
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Report REVISION HISTORY

Date	Revision	Comments
06/09/06	O	Initial release

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 N&E EME Test Lab for the model number AAH25UCH6DU6AN of FCC ID: AZ489FT5836. The results herein reflect initial results.

The test results presented herein clearly demonstrate compliance with FCC Occupational/Controlled RF Exposure limits of **8.0 W/kg** per the requirements of 47 CFR 2.1093(d).

2.0 Referenced 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: AZ489FT5836 is a 800MHz portable two-way radio that operates using frequency modulation (FM) incorporating traditional simplex transmission protocol. This device uses removable antennas that are capable of transmitting within their respective ranges in the 806-870MHz bands. The nominal output power is 2.5W (806-825MHz) & 2.0W (851-870MHz) with maximum output powers of 2.95W (806-825MHz) & 2.40W (851-870MHz) as defined by the upper limit of the production line final test station. The intended operating positions are “at the face” with the DUT 1 to 2 inches from the mouth, and “at the body” by means of the offered body-worn accessories. Body-worn audio and PTT operation is accomplished by means of optional remote accessories that connect to the radio. This device will be marketed to and used by employees solely for occupational operations, such as public safety agencies, e.g. police, fire and emergency medical. User training is the responsibility of these agencies, which can be expected to employ the usage instructions, safety information and operational cautions set forth in the user's manual, instructional sessions or other means. Motorola also makes available to its customers training classes on the proper use of two-way radios and wireless data devices.

FCC ID: AZ489FT5836 is offered with the options and accessories listed on the coversheet of this report as well as the audio accessories listed below:

Audio Acc.:

- HMN9030A Remote Speaker Microphone with coil cord and swivel
- HMN9052E Remote Speaker Microphone, Standard
- HMN9053E Remote Speaker Microphone, Noise Cancelling
- RLN4885A Receive Only earbud for use with Remote Speaker Microphone
- RLN4941A Receive Only Earphone w/Translucent Tube for RSM
- ENMN4015A Lightweight Headset
- ENMN4012A Breeze Headset with PTT
- ENMN4011A Helmet Com
- ENMN4010A Noise Com
- ENMN4013A 1-Wire Flexible Ear Receiver
- ENMN4014A 3-Wire Min Lapel Kit, Black
- ENMN4016A Medium Weight Behind-the-head Headset with PTT

ENMN4017A	3-Wire Min Lapel Kit, Beige
RMN4019A	Medium Weight Headset, Over the Head
RMN4020B	Heavy Weight Headset, w/ boom microphone
PMMN4002B	Noise Cancelling Remote Speaker Microphone
PMLN4558A	Headset w/PTT/VOX Switch
PMMN4009A	Remote Speaker Microphone, MAG ONE
ENLN4135A	PTT Module
PMLN4418A	Ear Bud with PTT microphone
RMN4017A	Earpiece w/boom microphone, black
RMN4044A	Ear Microphone System, Push To Talk Only
RMN4048A	Temple Transducer, noise cancelling
WADN4190B	Flexible Ear Receiver
PMLN4557A	Earpiece with PTT Mic/Vox Switch
PMLN4556A	Ear Bud w/PTT Mic/Vox Switch
HMN9013A	Light Weight Headset with Swivel Boom Microphone (without VOX)
HMN9727B	Earpiece w/o Volume Control
HMN9752B	Earpiece w/ Volume Control
HMN9754D	Earpiece w/ Microphone & PTT
NTN1722A	Ear Microphone up to 100 db Noise Level
NTN1723A	Ear Microphone w/ Palm PTT up to 100 db Noise Level
NTN1724A	Ear Microphone w Ring PTT up to 100 db Noise Level
NMN6245A	Light Weight Headset
NMN6246B	Headset, Ultra-Light w/ Boom Microphone
NTN8370A	Headset Extreme Noise Reduction
NTN8371A	Headset Low Noise Reduction
RLN4760A	Earpiece Clear & Comfortable Small, Right Ear
RLN4761A	Earpiece Clear & Comfortable Medium, Right Ear
RLN4762A	Earpiece Clear & Comfortable Large, Right Ear
RLN4763A	Earpiece Clear & Comfortable Small, Left Ear
RLN4764A	Earpiece Clear & Comfortable Medium, Left Ear
RLN4765A	Earpiece Clear & Comfortable Large, Left Ear
RLN4922A	Complete Discrete Earpiece
AARMN4018B	Light Weight headset with Swivel Boom Microphone (in-line PTT)
AARMN4021A	Earpiece without Volume Control (Beige)
AARMN4022A	2 Wire Surveillance Earpiece with Microphone and PTT (Beige)
AARMN4028A	Earpiece w/ Standard Earphone - Black
AARMN4029A	2 Wire Ear piece W/Mic and PTT (Black)
AARMN4031B	Lightweight Headset w/Swivel Boom Mic
AZRMN4032A	Headset, Over the Head - Medium Weight
AARMN4045A	PTT & VOX Interface Module for Ear Microphone System
RMN4051B	Noise Cancelling Boom Mic Hardhat Mount
RMN4052B	Noise Cancelling Boom Mic w/ PTT
RMN4053A	Noise Cancelling Boom Mic w/ PTT Hardhat Mount
RMN4054B	Noise Cancelling Receive Only Headset Hardhat Mount
RMN4055B	Noise Cancelling Headset Receive Only Hardhat Mount
BDN6641A	High Noise Ear Microphone, grey (for noise levels up to 105 db)
BDN6646C	Ear Microphone System w/ PTT

BDN6647G	Medium Weight Single Speaker Headset with Boom Microphone
BDN6648C	Heavy Duty Headset with Noise Cancelling Boom Microphone
BDN6664A	Earpiece w/ Standard Earphone Beige
BDN6665A	Earpiece w/ Extra Loud Earphone Beige
BDN6666A	Earpiece w/ Volume Control Beige
BDN6667A	Earpiece Mic & PTT Combined Beige
BDN6668A	Earpiece Mic & PTT Seperate Beige
BDN6669A	Xtra Loud Earpiece, Mic & PTT Combined Beige
BDN6670A	Xtra Loud Earpiece, Mic & PTT Separate Beige
BDN6677A	Standard Ear Microphone, black (for noise levels up to 95 db)
BDN6678A	Standard Ear Microphone, beige (for noise levels up to 95 db)
BDN6719A	Flexible Ear Receiver Light Weight Black
BDN6720A	Flexible Ear Receiver
BDN6726A	Earpiece w/ Standard Earphone Black
BDN6727A	Earpiece w/ Extra Loud Earphone Black
BDN6728A	Earpiece w/ Volume Control Black
BDN6729A	Earpiece Mic & PTT Combined Black
BDN6730A	Earpiece Mic & PTT Seperate Black
BDN6731A	XL Earpiece, Mic & PTT Combined Black
BDN6732A	XL Earpiece, Mic & PTT Seperate Black
BDN6780A	Earpiece w/ PTT/Mini Microphone
BDN6781A	Earbud Single Speaker Black
NNTN4187A	CommPort Integrated Mic/Rcvr.
HLN9717A	3.5 mm Accessory Adaptor
HTN3000D	120V Rapid Rate Single Unit Charger US3 Prong
HLN9716C	Audio Accessory Adaptor ,Use w/GP300 Audio Accessories
RLN4939A	BONE VIBRATION HEADGEAR
0180358B38	Remote ring PTT
0180300E83	Remote button PTT
RKN4097A	In line PTT adaptor

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™) SAR measurement system Version 4.6 build 23 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 SAR 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 SAR 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)
NA	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	835	
	Head	Body
Sugar	57.0	44.9
DGBE (Glycol)	NA	NA
Diacetin	NA	NA
De ionized -Water	40.45	53.06
Salt	1.45	0.94
HEC	1.0	1.0
Bact.	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 (HP)	437B	3737U26425	11/30/2006
Power Meter (HP)	437B	3125U21972	11/30/2006
Power Sensor (HP)	8481H	2703A14631	4/17/2007
Power Sensor (HP)	8481H	2703A09635	5/26/2007
Bi-Directional Coupler (NARDA)	3020A	40296	11/17/2007
Signal Generator (HP)	E4438C	MY42082269	1/31/2007
Power Meter (Agilent)	E4418B	GB 40206480	11/30/2006
Power Sensor (Agilent)	8482B	3318A07546	10/6/2006
AMP (Amplifier Research)	10W1000	5924	CNR
Tissue Station			
Network Analyzer (HP)	8753D	3410A09135	2/22/2007
Dielectric Probe Kit (HP)	85070C	US99360076	CNR
Dipole			
Speag Dipole	D835V2	435	10/26/2006

6.0 SAR Measurement System Verification

The SAR measurements were conducted with probe model/serial number ET3DV6/SN1547. The system performance check was conducted daily and within 24 hours prior to testing. DASY output files of the probe/dipole calibration certificates and system performance test results are included in appendices B, C, D 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 N&E 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 N&E EME system performance validation are provided herein.

6.1 Equivalent Tissue Test Results

Simulated tissue prepared for SAR measurements is measured daily and within 24 hours prior to actual SAR 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.

Target versus Actual tissue parameters (05/25/06-06/02/06)

FCC Body				
Frequency (MHz)	Di-electric Constant Target	Di-electric Constant Meas. (Range)	Conductivity Target S/m	Conductivity Meas. (Range) S/m
815	55.3	53.3-54.0	0.97	0.95-0.95
835	55.2	53.1-53.7	0.97	0.97-0.98
860.5	55.1	52.9-53.5	1.00	1.00-1.00

IEEE Head				
Frequency (MHz)	Di-electric Constant Target	Di-electric Constant Meas. (Range)	Conductivity Target S/m	Conductivity Meas. (Range) S/m
815	41.6	43.1-43.6	0.90	0.93-0.93
835	41.5	42.2-42.9	0.90	0.94-0.94
860.5	41.5	41.9-43.1	0.93	0.96-0.97

6.2 System Check Test Results

Probe Serial #	Tissue Type	Probe Cal Date	Dipole Kit / Serial #	System Perf. Result when normalized to 1W (mW/g)	Reference S.A.R @ 1W (mW/g)	Test Date(s)
1547	FCC Body	10/25/05	SPEAG D835V2 /435	9.94 +/- 0.09	9.73 +/- 10%	05/25/06, 05/26/06 05/27/06 (3 test days)
1547	IEEE Head	10/25/05	SPEAG D835V2 /435	10.32 +/- 0.23	9.92 +/- 10%	05/28/06, 05/30/06 06/02/06 (3 test days)

Note: See APPENDIX D for an explanation of the reference SAR 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 SAR 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 FM transmission signaling operational at the body, 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 and section 3.0 of this report were considered in order to develop the SAR test plan for this product. SAR measurements were performed using a flat phantom with the applicable simulated tissue to assess performance at the body, and face respectively using the relevant transmission mode(s).

Note that a coarse-to-cube approximation methodology was utilized to determine the worst-case SAR performance configuration for each applicable body location. The test configurations that produced the highest SAR results for each body position using the coarse-to-cube approximation methodology were assessed using the full DAS4TM coarse and 7x7x7 cube scans.

Assessments at the Body [Pages 14-18 of 43; Table 1]

- Assessment of each offered antenna at their respective center frequencies per band.
- Assessment of each offered battery accessories with the worst case antenna from above.
- Assessment of the offered body worn accessories with the worst case configuration from above.
- Assessment of the relevant offered audio accessories with the worst case configuration from above.
- Assessment across the respective bands for each offered antenna using the worst case configuration overall from above.
- Assessment at 2.5cm separation distance with the applicable worst case configuration overall from above.

Assessments at the Face [Pages 19-21 of 43; Table 2]

- Assessment of each offered antenna at their respective center frequencies per band.
- Assessment of each offered battery accessories with the worst case antenna from above.
- Assessment of the applicable offered audio accessories with the worst case configuration from above.
- Assessment across the respective bands for each offered antenna using the worst case configuration overall from above.

Shortened scan assessment at the Body [\[APPENDIX E\]](#)

- A “shortened” scan was performed using the offered battery and test configuration that produced the highest SAR results overall. 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 housing separated 2.5cm from the phantom.

7.2.2 Head

NA

7.2.3 Face

The DUT was positioned with its’ front side separated 2.5cm from the phantom.

8.0 Environmental Test Conditions

The EME Laboratory’s 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 SAR tests reported herein:

	Target	Measured
Ambient Temperature	20 - 25 °C	Range: 21.7-22.7°C Avg. 22.1°C
Relative Humidity	30 - 70 %	Range: 46.1-57.4% Avg. 51.4%
Tissue Temperature	NA	Range: 20.5-21.4°C Avg. 21.0 °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 SAR 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 SAR plots are provided in APPENDIX E. Appendix E also presents shortened SAR 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 SAR results presented herein are valid.

Table 1

Assessment at the body												
Run Number / SN	Antenna	Test Freq (MHz)	Battery	Test Position	Carry Access.	Cable Access.	Init Pwr (W)	SAR Drift (dB)	Meas 1g SAR (mW/g)	Meas 10g SAR (mW/g)	Max Cal 1g SAR (mW/g)	Max Cal 10g SAR (mW/g)
Assessment of offered antennas												
JsT-Ab-060530-03 / 672TA00010	PMAF4001A	815.0	HNN9013D	Against Phantom	HLN9844A belt clip	HMN9053E RSM	3.08	-0.233	10.60	7.45	5.59	3.93
CM-Ab-060525-13 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	HMN9053E RSM	2.36	-0.224	11.10	7.70	5.94	4.12
CM-Ab-060525-14 / 672TA00010	PMAF4000A	815.0	HNN9013D	Against Phantom	HLN9844A belt clip	HMN9053E RSM	2.96	-0.582	3.61	2.57	2.06	1.47
CM-Ab-060525-15 / 672TA00010	PMAF4000A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	HMN9053E RSM	2.41	-0.408	1.71	1.21	0.94	0.66
Assessment of offered batteries												
MeC-AB-060525-16 / 672TA00010	PMAF4001A	860.5	HNN9008A	Against Phantom	HLN9844A belt clip	HMN9053E RSM	2.47	-0.810	5.82	4.05	3.51	2.44
MeC-AB-060525-21 / 672TA00010	PMAF4001A	860.5	HNN9009A	Against Phantom	HLN9844A belt clip	HMN9053E RSM	2.49	-0.507	5.52	3.88	3.10	2.18
MeC-AB-060525-20 / 672TA00010	PMAF4001A	860.5	HNN9010A	Against Phantom	HLN9844A belt clip	HMN9053E RSM	2.49	-0.269	6.19	4.34	3.29	2.31
MeC-AB-060525-17 / 672TA00010	PMAF4001A	860.5	HNN9011A	Against Phantom	HLN9844A belt clip	HMN9053E RSM	2.35	-0.071	5.49	3.85	2.85	2.00
MeC-AB-060525-18 / 672TA00010	PMAF4001A	860.5	HNN9012A	Against Phantom	HLN9844A belt clip	HMN9053E RSM	2.42	-0.124	3.47	2.43	1.79	1.25
MeC-AB-060525-19 / 672TA00010	PMAF4001A	860.5	PMNN4045BR	Against Phantom	HLN9844A belt clip	HMN9053E RSM	2.46	-0.369	4.27	3.01	2.32	1.64
Assessment of offered body-worn accessories												
JsT-Ab-060526-02 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9714A belt clip	HMN9053E RSM	2.47	-0.448	10.50	7.33	5.82	4.06
JsT-Ab-060526-03 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9952A belt clip holder with HLN9844A	HMN9053E RSM	2.46	-0.289	10.30	7.16	5.50	3.83
JsT-Ab-060526-04 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9677A DTMF belt loop	HMN9053E RSM	2.44	-0.285	7.86	5.53	4.20	2.95
JsT-Ab-060526-05 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9690A DTMF w/ NTN8039B belt swivel	HMN9053E RSM	2.48	-0.013	4.80	3.41	2.41	1.71
JsT-Ab-060526-06 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9701B nylon case	HMN9053E RSM	2.45	-0.261	7.89	5.55	4.19	2.95
JsT-Ab-060526-07 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	RLN4815A Fanny Pack	HMN9053E RSM	2.47	-0.256	8.09	5.66	4.29	3.00
JsT-Ab-060526-08 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	PMLN4280 A thin leather	HMN9053E RSM	2.48	-0.203	10.10	7.04	5.29	3.69
JsT-Ab-060526-09 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	NTN5243A carry strap w/ HLN9677A DTMF belt loop	HMN9053E RSM	2.45	-0.326	7.92	5.56	4.27	3.00

Table 1 continued

Assessment at the body

Run Number / SN	Antenna	Test Freq (MHz)	Battery	Test Position	Carry Access.	Cable Access.	Init Pwr (W)	SAR Drift (dB)	Meas 1g SAR (mW/g)	Meas 10g SAR (mW/g)	Max Cal 1g SAR (mW/g)	Max Cal 10g SAR (mW/g)
Assessment of offered audio accessories												
JsT-Ab-060526-10 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	HMN9052E RSM	2.47	-0.304	11.30	7.91	6.06	4.24
JsT-Ab-060526-11 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	HMN9030A RSM w/HLN9716C adaptor	2.45	-0.109	9.33	6.52	4.78	3.34
JsT-Ab-060526-12 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	BDN6646C ear mic w/PTT w/HLN9716C adaptor	2.42	-0.216	10.30	7.21	5.41	3.79
JsT-Ab-060526-13 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	BDN6647G headset w/boom mic w/HLN9716C adaptor	2.38	-0.179	9.60	6.69	5.04	3.52
JsT-Ab-060526-14 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	HMN9013A headset with boom mic w/HLN9716C adaptor	2.46	-0.109	9.36	6.53	4.80	3.35
CM-Ab-060526-15 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	BDN6648C headset w/boom mic w/HLN9716C adaptor	2.47	-0.197	10.40	7.31	5.44	3.82
CM-Ab-060526-16 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	HMN9754D earpiece w/mic & PTT w/HLN9716C adaptor	2.46	-0.262	10.40	7.26	5.52	3.86
CM-Ab-060526-17 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	NMN6245A headset w/HLN9717A adaptor	2.46	-0.235	10.30	7.16	5.44	3.78
CM-Ab-060526-18 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	NMN6246B headset w/boom mic. W/HLN9717 A adaptor	2.45	-0.226	10.10	7.09	5.32	3.73
CM-Ab-060526-19 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	BDN6729A earpiece w/mic & PTT w/HLN9717A adaptor	2.40	-0.277	10.70	7.44	5.70	3.96
CM-Ab-060526-20 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	BDN6730A earpiece w/mic & PTT w/HLN9717A adaptor	2.45	-0.306	11.00	7.67	5.90	4.11

Table 1 continued

Assessment at the body												
Run Number / SN	Antenna	Test Freq (MHz)	Battery	Test Position	Carry Access.	Cable Access.	Init Pwr (W)	SAR Drift (dB)	Meas 1g SAR (mW/g)	Meas 10g SAR (mW/g)	Max Cal 1g SAR (mW/g)	Max Cal 10g SAR (mW/g)
Assessment of offered audio accessories												
CM-Ab-060526-21 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	RMN4044A ear mic w/PTT w/BDN6641 A & 0180358B38	2.45	-0.321	11.20	7.79	6.03	4.19
CM-Ab-060526-22 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	HMN9053E RSM w/WADN419 0B	2.47	-0.334	11.90	8.35	6.43	4.51
*CM-Ab-060526-23 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	ENMN4011A Helmet Com w/RKN4097 A	2.47	-0.352	12.40	8.65	6.72	4.69
CM-Ab-060526-24 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	RLN4922A earpiece w/ENMN401 4A	2.46	-0.314	11.70	8.15	6.29	4.38
MeC-Ab-060526-25 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	ENMN4010A Noise Com	2.44	-0.318	11.30	7.87	6.08	4.23
MeC-Ab-060526-26 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	ENMN4015A Lightweight headset	2.45	-0.288	11.40	7.92	6.09	4.23
MeC-Ab-060526-27 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	ENMN4012A Headset w/PTT	2.45	-0.294	11.50	8.02	6.15	4.29
MeC-Ab-060526-28 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	ENMN4014A 3 wire lapel kit	2.41	-0.254	10.80	7.56	5.73	4.01
MeC-Ab-060526-29 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	RMN4020B headset w/boom mic	2.45	-0.255	10.90	7.63	5.78	4.05
ErC-Ab-060527-02 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	RMN4019A headset	2.48	-0.226	11.30	7.89	5.95	4.16
ErC-Ab-060527-03 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	PMMN4009A RSM	2.46	-0.301	11.40	7.94	6.11	4.25
ErC-Ab-060527-04 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	PMLN4418A Ear bud w/PTT	2.45	-0.261	11.10	7.77	5.89	4.13
ErC-Ab-060527-05 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	RMN4017A Earpiece w/boom mic	2.45	-0.347	11.30	7.90	6.12	4.28
ErC-Ab-060527-06 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	RMN4048A Temple Transducer	2.45	-0.345	11.70	8.15	6.33	4.41
ErC-Ab-060527-07 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	NTN1722A ear mic w/NLN9717A	2.44	-0.315	10.90	7.65	5.86	4.11

Table 1 continued

Assessment at the body												
Run Number / SN	Antenna	Test Freq (MHz)	Battery	Test Position	Carry Access.	Cable Access.	Init Pwr (W)	SAR Drift (dB)	Meas 1g SAR (mW/g)	Meas 10g SAR (mW/g)	Max Cal 1g SAR (mW/g)	Max Cal 10g SAR (mW/g)
Assessment of offered audio accessories												
ErC-Ab-060527-08 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	NTN1723A ear mic w/Palm PTT w/HLN9717A	2.47	-0.270	11.50	8.00	6.12	4.26
ErC-Ab-060527-09 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	NNTN4187A commport mic&rcvr w/HLN9717B	2.48	-0.194	10.40	7.25	5.44	3.79
ErC-Ab-060527-10 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	RMN4022A 2 wire surv. W/mic & PTT	2.45	-0.294	11.20	7.82	5.99	4.18
ErC-Ab-060527-11 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	RMN4051B boom mic hardhat w/RKN4097A	2.45	-0.299	11.70	8.15	6.27	4.37
ErC-Ab-060527-12 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	RMN4032A headset	2.46	-0.286	11.00	7.70	5.87	4.11
ErC-Ab-060527-13 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	RMN4018B headset w/boom mic & PTT	2.46	-0.221	10.80	7.56	5.68	3.98
ErC-Ab-060527-14 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	PMLN4556A Ear bud w/PTT mic/vox switch	2.47	-0.336	11.10	7.79	6.00	4.21
Assessment across frequency of each antenna												
ErC-Ab-060527-15 / 672TA00010	PMAF4000A	806.0	HNN9013D	Against Phantom	HLN9844A belt clip	ENMN4011A Helmet Com w/RKN4097A	3.00	-0.455	3.95	2.80	2.19	1.55
ErC-Ab-060527-16 / 672TA00010	PMAF4000A	815.0	HNN9013D	Against Phantom	HLN9844A belt clip	ENMN4011A Helmet Com w/RKN4097A	3.02	-0.530	3.83	2.72	2.16	1.54
ErC-Ab-060527-17 / 672TA00010	PMAF4000A	825.0	HNN9013D	Against Phantom	HLN9844A belt clip	ENMN4011A Helmet Com w/RKN4097A	3.05	-0.720	3.02	2.15	1.78	1.27
ErC-Ab-060527-18 / 672TA00010	PMAF4000A	851.0	HNN9013D	Against Phantom	HLN9844A belt clip	ENMN4011A Helmet Com w/RKN4097A	2.47	-0.569	1.87	1.33	1.07	0.76
ErC-Ab-060527-19 / 672TA00010	PMAF4000A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	ENMN4011A Helmet Com w/RKN4097A	2.47	-0.396	1.53	1.08	0.84	0.59
ErC-Ab-060527-20 / 672TA00010	PMAF4000A	870.0	HNN9013D	Against Phantom	HLN9844A belt clip	ENMN4011A Helmet Com w/RKN4097A	2.47	-0.297	1.34	0.94	0.72	0.51
ErC-Ab-060527-21 / 672TA00010	PMAF4001A	806.0	HNN9013D	Against Phantom	HLN9844A belt clip	ENMN4011A Helmet Com w/RKN4097A	3.00	-0.256	9.25	6.50	4.91	3.45

Table 1 continued

Assessment at the body

Run Number / SN	Antenna	Test Freq (MHz)	Battery	Test Position	Carry Access.	Cable Access.	Init Pwr (W)	SAR Drift (dB)	Meas 1g SAR (mW/g)	Meas 10g SAR (mW/g)	Max Cal 1g SAR (mW/g)	Max Cal 10g SAR (mW/g)
ErC-Ab-060527-22 / 672TA00010	PMAF4001A	815.0	HNN9013D	Against Phantom	HLN9844A belt clip	ENMN4011A Helmet Com w/RKN4097 A	3.03	-0.225	10.70	7.50	5.63	3.95
ErC-Ab-060527-23 / 672TA00010	PMAF4001A	825.0	HNN9013D	Against Phantom	HLN9844A belt clip	ENMN4011A Helmet Com w/RKN4097 A	3.02	-0.267	11.90	8.36	6.33	4.45
ErC-Ab-060527-24 / 672TA00010	PMAF4001A	851.0	HNN9013D	Against Phantom	HLN9844A belt clip	ENMN4011A Helmet Com w/RKN4097 A	2.47	-0.249	11.70	8.16	6.20	4.32
ErC-Ab-060527-25 / 672TA00010	PMAF4001A	870.0	HNN9013D	Against Phantom	HLN9844A belt clip	ENMN4011A Helmet Com w/RKN4097 A	2.47	-0.272	11.00	7.65	5.86	4.07
Assessment at 2.5cm												
ErC-Ab-060527-26 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	radio back ant. @ 2.5 cm	ENMN4011A Helmet Com w/RKN4097 A	2.48	-0.115	7.42	5.22	3.81	2.68
ErC-Ab-060527-27 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	radio back @ 2.5cm	ENMN4011A Helmet Com w/RKN4097 A	2.47	-0.106	4.75	3.36	2.43	1.72
ErC-Ab-060527-28 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	radio front @ 2.5cm	ENMN4011A Helmet Com w/RKN4097 A	2.47	-0.464	3.44	2.45	1.91	1.36
* Assessment with the worst case test configuration above using the full DASYS 4 coarse and 7x7x7 cube scan measurements.												
FULL SCAN MeC-AB-060527-31 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	ENMN4011A Helmet Com w/RKN4097 A	2.46	-0.619	11.10	8.04	6.40	4.64
* Assessment with the worst case test configuration above using the DASYS 4 shorten scan (5x5x7 cube scan) measurements.												
SHORT SCAN MeC-AB-060527-32 / 672TA00010	PMAF4001A	860.5	HNN9013D	Against Phantom	HLN9844A belt clip	ENMN4011A Helmet Com w/RKN4097 A	2.45	-0.102	11.80	8.52	6.04	4.36

Table 2

Assessment at the face												
Run Number / SN	Antenna	Test Freq (MHz)	Battery	Test Position	Carry Access.	Cable Access.	Init Pwr (W)	SAR Drift (dB)	Meas 1g SAR (mW/g)	Meas 10g SAR (mW/g)	Max Cal 1g SAR (mW/g)	Max Cal 10g SAR (mW/g)
Assessment of offered antennas												
MeC-FACE-060527-34 / 672TA00010	PMAF4001A	815.0	HNN9013D	DUT Front 2.5cm	None	None	3.06	-0.348	2.54	1.82	1.38	0.99
MeC-FACE-060527-35 / 672TA00010	PMAF4001A	860.5	HNN9013D	DUT Front 2.5cm	None	None	2.47	-0.245	4.73	3.36	2.50	1.78
MeC-FACE-060527-36 / 672TA00010	PMAF4000A	815.0	HNN9013D	DUT Front 2.5cm	None	None	3.04	-0.283	2.76	1.98	1.47	1.06
MeC-FACE-060527-37 / 672TA00010	PMAF4000A	860.5	HNN9013D	DUT Front 2.5cm	None	None	2.45	-0.207	1.37	0.98	0.72	0.51
Assessment of offered batteries												
MeC-FACE-060527-38 / 672TA00010	PMAF4001A	860.5	HNN9008A	DUT Front 2.5cm	None	None	2.53	-0.175	4.40	3.13	2.29	1.63
MeC-FACE-060527-39 / 672TA00010	PMAF4001A	860.5	HNN9009A	DUT Front 2.5cm	None	None	2.54	-0.182	4.23	3.01	2.21	1.57
MeC-FACE-060527-40 / 672TA00010	PMAF4001A	860.5	HNN9010A	DUT Front 2.5cm	None	None	2.53	-0.213	4.10	2.93	2.15	1.54
MeC-FACE-060527-41 / 672TA00010	PMAF4001A	860.5	HNN9011A	DUT Front 2.5cm	None	None	2.44	-0.238	3.96	2.82	2.09	1.49
MeC-FACE-060527-42 / 672TA00010	PMAF4001A	860.5	HNN9012A	DUT Front 2.5cm	None	None	2.48	-0.180	4.04	2.88	2.11	1.50
MeC-FACE-060527-43 / 672TA00010	PMAF4001A	860.5	PMNN4045BR	DUT Front 2.5cm	None	None	2.55	-0.174	4.46	3.18	2.32	1.65
Assessment of offered audio accessories												
MeC-FACE-060527-44 / 672TA00010	PMAF4001A	860.5	HNN9013D	DUT Front 2.5cm	None	BDN6665A earpiece w/HLN9717A adaptor	2.44	-0.094	2.78	1.99	1.42	1.02
MeC-FACE-060528-02 / 672TA00010	PMAF4001A	860.5	HNN9013D	DUT Front 2.5cm	None	BDN6666A earpiece w/vol control w/HLN9717A adaptor	2.49	-0.532	2.95	2.10	1.67	1.19
MeC-FACE-060528-03 / 672TA00010	PMAF4001A	860.5	HNN9013D	DUT Front 2.5cm	None	HMN9727B earpiece w/HLN9716C adaptor	2.47	-0.195	4.40	3.13	2.30	1.64

Table 2 continued

Assessment at the face												
Run Number / SN	Antenna	Test Freq (MHz)	Battery	Test Position	Carry Access.	Cable Access.	Init Pwr (W)	SAR Drift (dB)	Meas 1g SAR (mW/g)	Meas 10g SAR (mW/g)	Max Cal 1g SAR (mW/g)	Max Cal 10g SAR (mW/g)
Assessment of offered audio accessories												
MeC-FACE-060528-04 / 672TA00010	PMAF4001A	860.5	HNN9013D	DUT Front 2.5cm	None	HMN9752B earpiece w/volume cont. w/HLN9716C adaptor	2.48	-0.190	4.08	2.91	2.13	1.52
MeC-FACE-060528-05 / 672TA00010	PMAF4001A	860.5	HNN9013D	DUT Front 2.5cm	None	BDN6720A flex ear rec. w/HLN9716C adaptor	2.45	-0.171	3.98	2.84	2.07	1.48
MeC-FACE-060528-06 / 672TA00010	PMAF4001A	860.5	HNN9013D	DUT Front 2.5cm	None	RMN4054B headset hardhat w/HLN9717A adaptor	2.47	-0.205	4.05	2.89	2.12	1.51
MeC-FACE-060528-07 / 672TA00010	PMAF4001A	860.5	HNN9013D	DUT Front 2.5cm	None	RMN4055B Headset hardhat w/HLN9717A adaptor	2.48	-0.198	3.98	2.83	2.08	1.48
MeC-FACE-060528-08 / 672TA00010	PMAF4001A	860.5	HNN9013D	DUT Front 2.5cm	None	BDN6781A earbud w/HLN9717A adaptor	2.48	-0.123	2.90	2.07	1.49	1.06
MeC-FACE-060528-09 / 672TA00010	PMAF4001A	860.5	HNN9013D	DUT Front 2.5cm	None	ENMN4013A Flex. Ear rec.	2.49	-0.186	3.49	2.49	1.82	1.30
Assessment across frequency of each antenna												
MeC-FACE-060528-10 / 672TA00010	PMAF4000A	806.0	HNN9013D	DUT Front 2.5cm	None	None	2.98	-0.171	2.80	2.00	1.46	1.04
MeC-FACE-060527-36 / 672TA00010	PMAF4000A	815.0	HNN9013D	DUT Front 2.5cm	None	None	3.04	-0.283	2.76	1.98	1.47	1.06
MeC-FACE-060528-11 / 672TA00010	PMAF4000A	825.0	HNN9013D	DUT Front 2.5cm	None	None	3.04	-0.356	2.93	2.10	1.59	1.14
MeC-FACE-060528-12 / 672TA00010	PMAF4000A	851.0	HNN9013D	DUT Front 2.5cm	None	None	2.47	-0.307	1.79	1.27	0.96	0.68

Table 2 continued

Assessment at the face												
Run Number / SN	Antenna	Test Freq (MHz)	Battery	Test Position	Carry Access.	Cable Access.	Init Pwr (W)	SAR Drift (dB)	Meas 1g SAR (mW/g)	Meas 10g SAR (mW/g)	Max Cal 1g SAR (mW/g)	Max Cal 10g SAR (mW/g)
Assessment across frequency of each antenna												
MeC-FACE-060527-37 / 672TA00010	PMAF4000A	860.5	HNN9013D	DUT Front 2.5cm	None	None	2.45	-0.207	1.37	0.98	0.72	0.51
MeC-FACE-060528-13 / 672TA00010	PMAF4000A	870.0	HNN9013D	DUT Front 2.5cm	None	None	2.46	-0.141	1.21	0.86	0.62	0.44
MeC-FACE-060528-14 / 672TA00010	PMAF4001A	806.0	HNN9013D	DUT Front 2.5cm	None	None	3.00	-0.236	2.03	1.45	1.07	0.77
MeC-FACE-060527-34 / 672TA00010	PMAF4001A	815.0	HNN9013D	DUT Front 2.5cm	None	None	3.06	-0.348	2.54	1.82	1.38	0.99
MeC-FACE-060528-15 / 672TA00010	PMAF4001A	825.0	HNN9013D	DUT Front 2.5cm	None	None	3.09	-0.138	2.80	2.00	1.45	1.03
MeC-FACE-060528-16 / 672TA00010	PMAF4001A	851.0	HNN9013D	DUT Front 2.5cm	None	None	2.44	-0.080	3.55	2.54	1.81	1.29
MeC-FACE-060527-35 / 672TA00010	PMAF4001A	860.5	HNN9013D	DUT Front 2.5cm	None	None	2.47	-0.245	4.73	3.36	2.50	1.78
*MeC-FACE-060528-17 / 672TA00010	PMAF4001A	870.0	HNN9013D	DUT Front 2.5cm	None	None	2.43	-0.197	5.09	3.61	2.66	1.89
* Assessment with the worst case test configuration above using the full DASYS 4 coarse and 7x7x7 cube scan measurements.												
JsT-Face-060602-02 / 672TA00010	PMAF4001A	870.0	HNN9013D	DUT Front 2.5cm	None	None	2.52	-0.455	5.72	4.20	3.18	2.33
* Assessment with the worst case test configuration above using the DASYS 4 shorten scan (5x5x7 cube scan) measurements.												
JsT-Face-060602-03 / 672TA00010	PMAF4001A	870.0	HNN9013D	DUT Front 2.5cm	None	None	2.52	0.173	5.81	4.26	2.91	2.13

9.1 Highest SAR results calculation methodology

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

Max. Calc. 1-g/10-g Avg. SAR = ((SAR 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 SAR (mW/g)

DC % = Transmission mode duty cycle in % where applicable

50% duty cycle is applied for PTT operation.

10.0 Conclusion

The highest Operational Maximum Calculated 1-gram and 10-gram average SAR values found for FCC ID: AZ489FT5836 models AAH25UCH6DU6AN.

At the Body: 1-g Avg. = 6.40W/kg; 10-g Avg. = 4.64W/kg

At the Face: 1-g Avg. = 3.18W/kg; 10-g Avg. = 2.33W/kg

These test results clearly demonstrate compliance with FCC Occupational/Controlled RF Exposure limits of **8.0W/kg** per the requirements of 47 CFR 2.1093(d).

APPENDIX A
Measurement Uncertainty

Uncertainty Budget for Device Under Test, for 30 MHz to 3 GHz

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e = f(d,k)</i>	<i>f</i>	<i>g</i>	<i>h = c x f / e</i>	<i>i = c x g / e</i>	<i>k</i>
Uncertainty Component	IEEE 1528 section	Tol. (± %)	Prob Dist	Div.	<i>c_i</i> (1 g)	<i>c_i</i> (10 g)	1 g <i>u_i</i> (±%)	10 g <i>u_i</i> (±%)	<i>v_i</i>
Measurement System									
Probe Calibration	E.2.1	5.9	N	1.00	1	1	5.9	5.9	∞
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	0.3	N	1.00	1	1	0.3	0.3	∞
Response Time	E.2.7	1.1	R	1.73	1	1	0.6	0.6	∞
Integration Time	E.2.8	1.1	R	1.73	1	1	0.6	0.6	∞
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	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	∞
Test sample Related									
Test Sample Positioning	E.4.2	3.2	N	1.00	1	1	3.2	3.2	29
Device Holder Uncertainty	E.4.1	4.0	N	1.00	1	1	4.0	4.0	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	3.3	N	1.00	0.64	0.43	2.1	1.4	∞
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	1.9	N	1.00	0.6	0.49	1.1	0.9	∞
Combined Standard Uncertainty			RSS				11	11	411
Expanded Uncertainty (95% CONFIDENCE LEVEL)			<i>k</i> =2				22	22	

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Uncertainty Budget for System Validation (dipole & flat phantom) for 30 MHz to 3 GHz

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	$e = f(d,k)$	<i>f</i>	<i>g</i>	$h = c \times f / e$	$i = c \times g / e$	<i>k</i>
Uncertainty Component	IEEE 1528 section	Tol. (\pm %)	Prob. Dist.	Div.	c_i (1 g)	c_i (10 g)	1 g u_i (\pm %)	10 g u_i (\pm %)	v_i
Measurement System									
Probe Calibration	E.2.1	5.9	N	1.00	1	1	5.9	5.9	∞
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	0.3	N	1.00	1	1	0.3	0.3	∞
Response Time	E.2.7	1.1	R	1.73	1	1	0.6	0.6	∞
Integration Time	E.2.8	0.0	R	1.73	1	1	0.0	0.0	∞
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	3.3	R	1.73	0.64	0.43	1.2	0.8	∞
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	1.9	R	1.73	0.6	0.49	0.6	0.5	∞
Combined Standard Uncertainty			RSS				9	9	99999
Expanded Uncertainty (95% CONFIDENCE LEVEL)			$k=2$				18	17	

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Appendix B
Probe Calibration Certificates

Calibration Laboratory of
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Accreditation No.: **SCS 108**

Client **Motorola CGISS**

Certificate No: **ET3-1547_Oct05**

CALIBRATION CERTIFICATE

Object **ET3DV6 - SN:1547**

Calibration procedure(s) **QA CAL-01.v5 and QA CAL-12.v4
 Calibration procedure for dosimetric E-field probes**

Calibration date: **October 25, 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	3-May-05 (METAS, No. 251-00466)	May-06
Power sensor E4412A	MY41495277	3-May-05 (METAS, No. 251-00466)	May-06
Power sensor E4412A	MY41498087	3-May-05 (METAS, No. 251-00466)	May-06
Reference 3 dB Attenuator	SN: S5054 (3c)	11-Aug-05 (METAS, No. 251-00499)	Aug-06
Reference 20 dB Attenuator	SN: S5086 (20b)	3-May-05 (METAS, No. 251-00467)	May-06
Reference 30 dB Attenuator	SN: S5129 (30b)	11-Aug-05 (METAS, No. 251-00500)	Aug-06
Reference Probe ES3DV2	SN: 3013	7-Jan-05 (SPEAG, No. ES3-3013_Jan05)	Jan-06
DAE4	SN: 654	29-Nov-04 (SPEAG, No. DAE4-654_Nov04)	Nov-05
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
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

Calibrated by: **Nico Vetterli** (Name) **Laboratory Technician** (Function) *N. Vetterli* (Signature)

Approved by: **Katja Pokovic** (Name) **Technical Manager** (Function) *Katja Pokovic* (Signature)

Issued: October 25, 2005

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

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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
NORM _{x,y,z}	sensitivity in free space
ConF	sensitivity in TSL / NORM _{x,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., $\vartheta = 0$ is normal to probe axis

Calibration is Performed According to the Following Standards:

- 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
- 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:

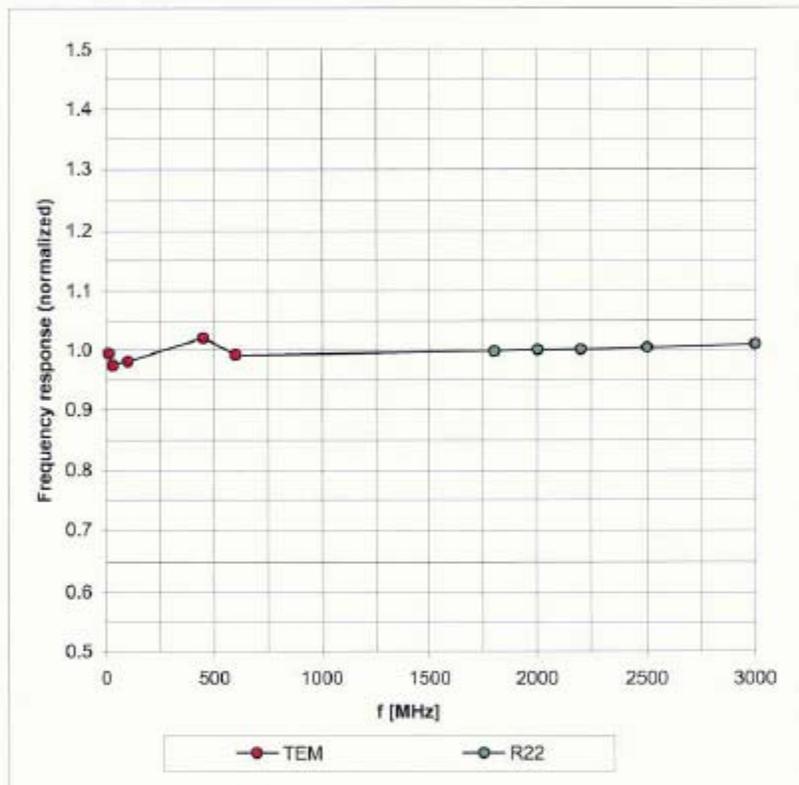
- NORM_{x,y,z}**: Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not effect the E^2 -field uncertainty inside TSL (see below *ConvF*).
- NORM(f)_{x,y,z}** = NORM_{x,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*.
- DCP_{x,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 $f \leq 800$ 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 NORM_{x,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:1547

October 25, 2005

Frequency Response of E-Field

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

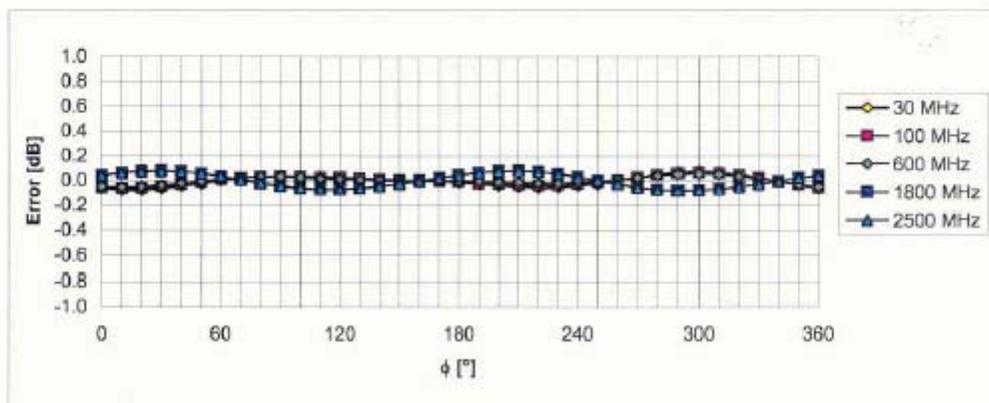
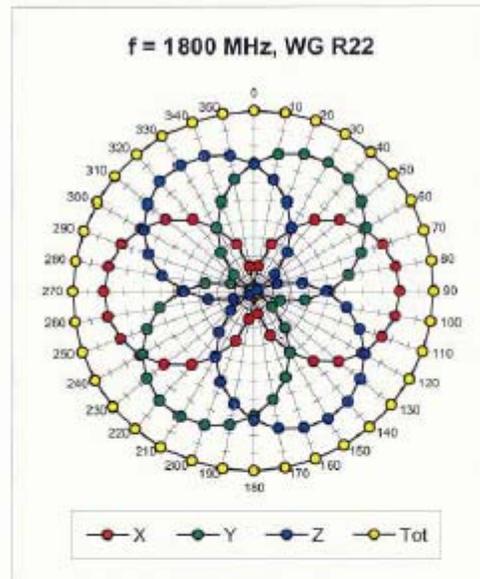
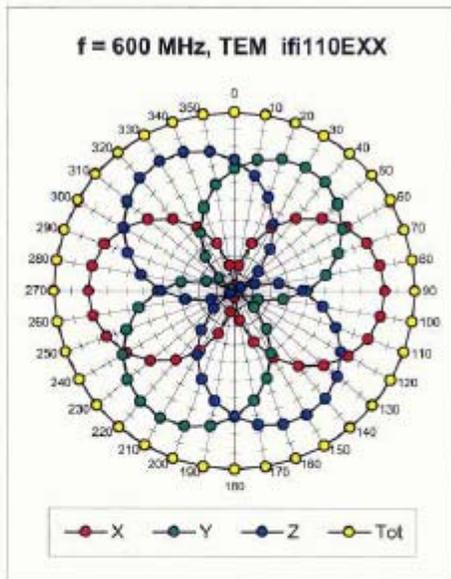


Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ (k=2)

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October 25, 2005

Receiving Pattern (ϕ), $\vartheta = 0^\circ$

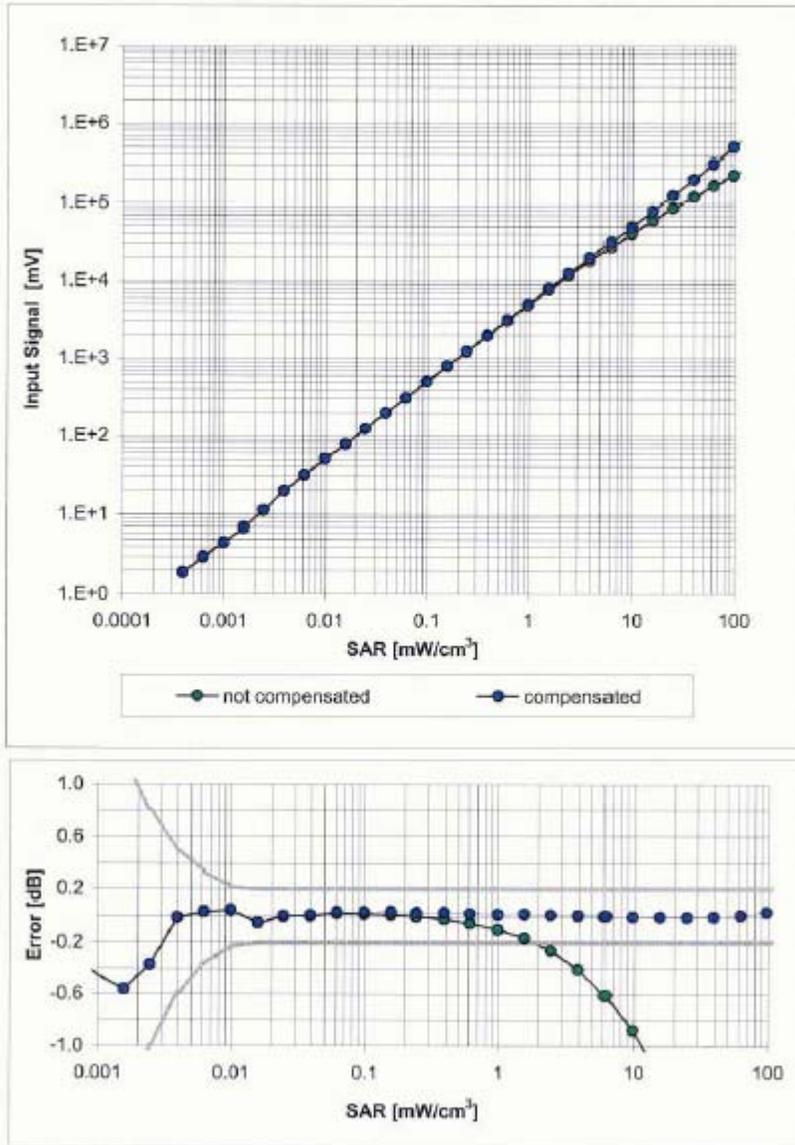


Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ (k=2)

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October 25, 2005

Dynamic Range $f(\text{SAR}_{\text{head}})$ (Waveguide R22, $f = 1800 \text{ MHz}$)

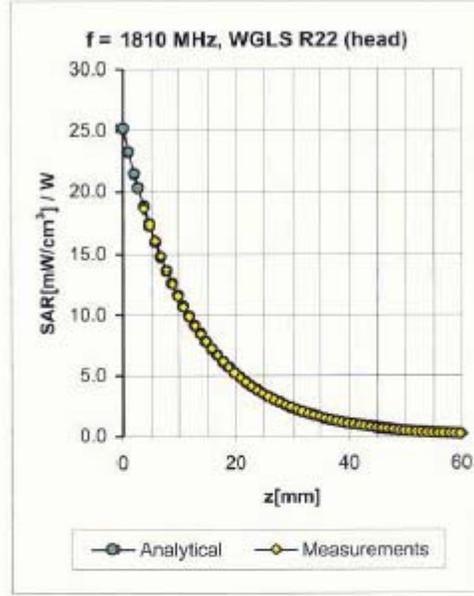
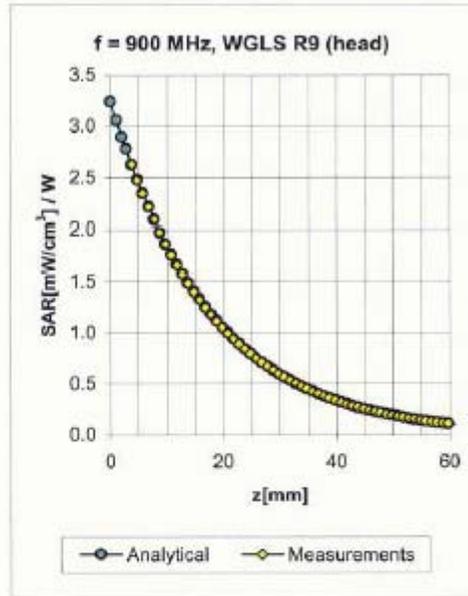


Uncertainty of Linearity Assessment: $\pm 0.6\%$ ($k=2$)

ET3DV6 SN:1547

October 25, 2005

Conversion Factor Assessment



f [MHz]	Validity [MHz] ^c	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
450	± 50 / ± 100	Head	43.5 ± 5%	0.87 ± 5%	0.03	2.20	6.54 ± 13.3% (k=2)
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	0.66	1.76	5.92 ± 11.0% (k=2)
1810	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.64	2.27	4.87 ± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.73	2.16	4.22 ± 11.8% (k=2)
450	± 50 / ± 100	Body	56.7 ± 5%	0.94 ± 5%	0.04	2.30	6.91 ± 13.3% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	0.55	1.98	5.82 ± 11.0% (k=2)
1810	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.60	2.66	4.36 ± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.86	1.76	4.15 ± 11.8% (k=2)

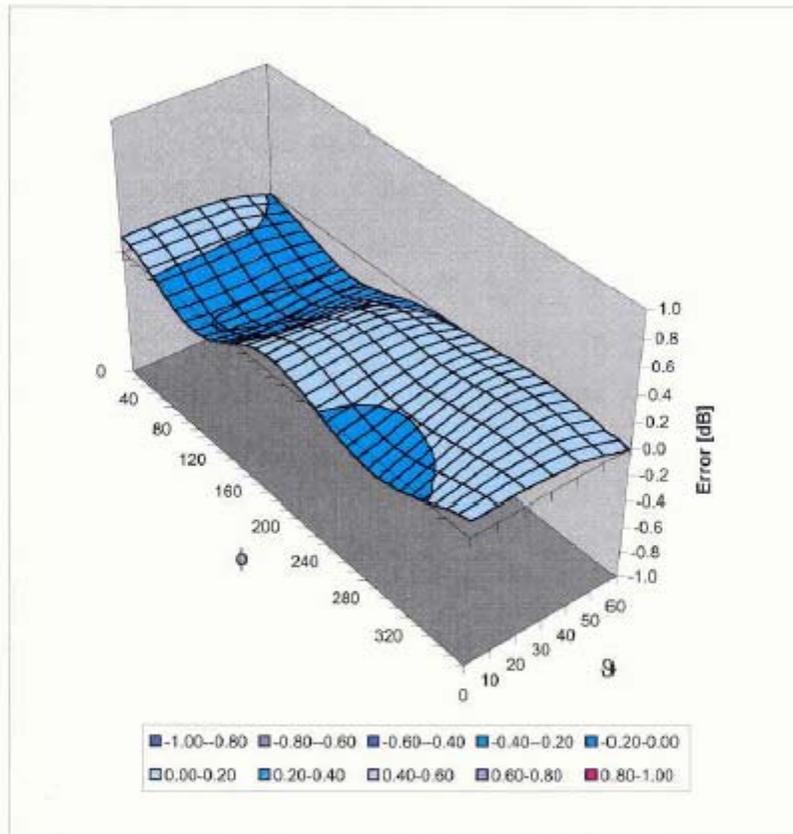
^c The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

ET3DV6 SN:1547

October 25, 2005

Deviation from Isotropy in HSL

Error (ϕ, θ), $f = 900$ MHz



Uncertainty of Spherical Isotropy Assessment: $\pm 2.6\%$ ($k=2$)

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

Additional Conversion Factors for Dosimetric E-Field Probe

Type:

ET3DV6

Serial Number:

1547

Place of Assessment:

Zurich

Date of Assessment:

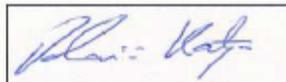
October 27, 2005

Probe Calibration Date:

October 25, 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

s p e a g

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

Dosimetric E-Field Probe ET3DV6 SN:1547

Conversion factor (\pm standard deviation)

150 MHz	<i>ConvF</i>	8.0 \pm 10 %	$\epsilon_r = 52.3$ $\sigma = 0.76$ mho/m (head tissue)
250 MHz	<i>ConvF</i>	7.3 \pm 10 %	$\epsilon_r = 47.6$ $\sigma = 0.83$ mho/m (head tissue)
300 MHz	<i>ConvF</i>	7.2 \pm 9 %	$\epsilon_r = 45.3$ $\sigma = 0.87$ mho/m (head tissue)
750 MHz	<i>ConvF</i>	6.2 \pm 7 %	$\epsilon_r = 41.9$ $\sigma = 0.89$ mho/m (head tissue)
150 MHz	<i>ConvF</i>	7.8 \pm 10 %	$\epsilon_r = 61.9$ $\sigma = 0.80$ mho/m (body tissue)
250 MHz	<i>ConvF</i>	7.4 \pm 10 %	$\epsilon_r = 59.4$ $\sigma = 0.88$ mho/m (body tissue)
300 MHz	<i>ConvF</i>	7.2 \pm 9 %	$\epsilon_r = 58.2$ $\sigma = 0.92$ mho/m (body tissue)
750 MHz	<i>ConvF</i>	6.0 \pm 7 %	$\epsilon_r = 55.5$ $\sigma = 0.96$ 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
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Accreditation No.: **SCS 108**

Client **Mot. CGISS**

Certificate No: **D835V2-435_Oct04/2**

CALIBRATION CERTIFICATE (Replacement of No: D835V2-435_Oct04)

Object: **D835V2 - SN: 435**

Calibration procedure(s): **QA CAL-05.v6
Calibration procedure for dipole validation kits**

Calibration date: **October 26, 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 1680	23-Feb-04 (SPEAG, No. ET3-1680_Feb04)	Feb-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

Calibrated by: **Name: Mike Meili, Function: Laboratory Technician, Signature: [Handwritten Signature]**

Approved by: **Name: Katja Pokovic, Function: Technical Manager, Signature: [Handwritten Signature]**

Issued: November 11, 2004

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S Swiss Calibration Service

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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 V4.9	
Distance Dipole Center - TSL	15 mm	with Spacer
Area Scan resolution	dx, dy = 15 mm	
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	41.8 ± 6 %	0.89 mho/m ± 6 %
Head TSL temperature during test	(22.0 ± 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	2.30 mW / g
SAR normalized	normalized to 1W	9.20 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	9.30 mW / g ± 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.51 mW / g
SAR normalized	normalized to 1W	6.04 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	6.10 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	51.0 Ω - 7.6 $j\Omega$
Return Loss	- 22.4 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.391 ns
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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	December 15, 2000

DASY4 Validation Report for Head TSL

Date/Time: 11/11/04 14:09:47

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN435

Communication System: CW-835; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL 835 MHz

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.89 \text{ mho/m}$; $\epsilon_r = 41.8$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1680; ConvF(6.4, 6.4, 6.4); Calibrated: 2/23/2004
- 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, V4.4 Build 3; Postprocessing SW: SEMCAD, V1.8 Build 130

Pin = 250 mW; d = 15 mm/Area Scan (81x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.44 mW/g

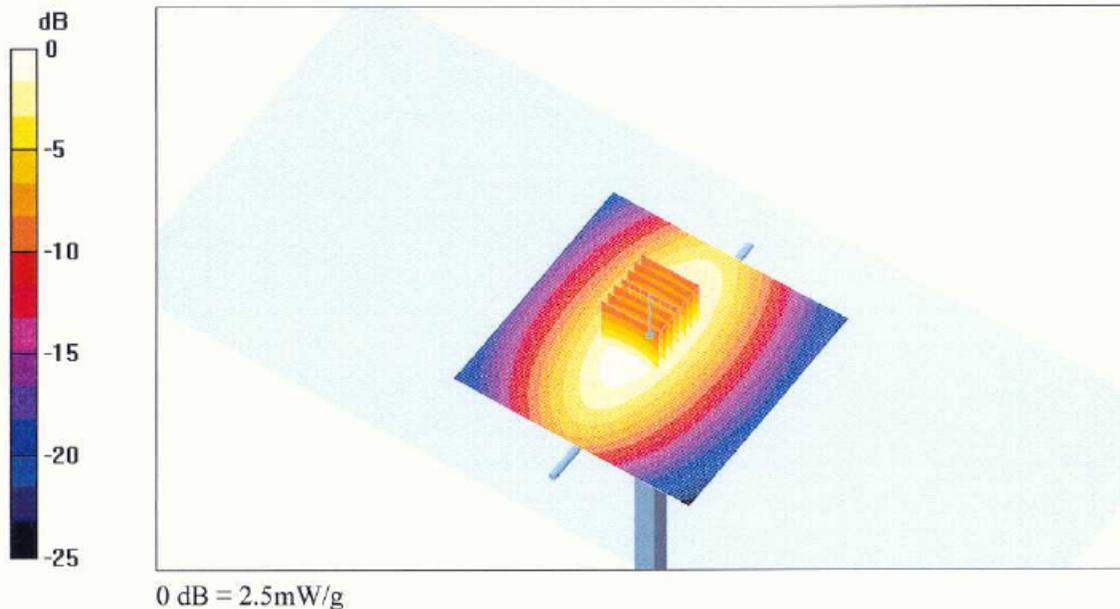
Pin = 250 mW; d = 15 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 52.7 V/m; Power Drift = 0.0 dB

Peak SAR (extrapolated) = 3.38 W/kg

SAR(1 g) = 2.3 mW/g; SAR(10 g) = 1.51 mW/g

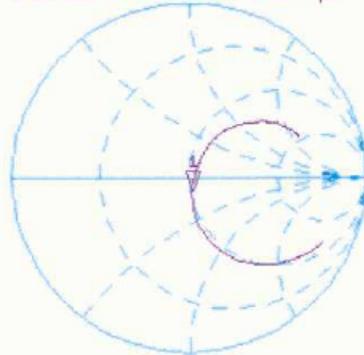
Maximum value of SAR (measured) = 2.5 mW/g



Impedance Measurement Plot for Head TSL

26 Oct 2004 09:48:13
[CH1] S11 1 U FS 1: 50.986 Ω -7.6445 Ω 24.933 pF 835.000 000 MHz

*
Del
Cor:



Avg
16

↑

CH2 S11 L06 5 dB/REF -20 dB 1:-22.371 dB 835.000 000 MHz

Cor:

Avg
16

↑

