MOTOROLA

A2LA ACCREDITED
TESTING CERT # 2518.01

DECLARATION OF COMPLIANCE SAR ASSESSMENT Part 1 of 3

Enterprise Mobility Solutions
EME Test Laboratory
8000 West Sunrise Blvd
Fort Lauderdale, FL. 33322.

Date of Report: 11/22/10
Report Revision: O
Report ID: SAR rpt_ H98UCD9PW5AN (MNUF1002A), H98UCD9PW5AN (MNUF1003A) Rev.O 101122_SR8654/SR8398

Responsible Engineer:	Michael Sailsman (Senior Staff Eng.)
Report Author:	Michael Sailsman (Senior Staff Eng.)
Date/s Tested:	9/14/10-11/14/10
Manufacturer/Location:	Motorola, Schaumburg
Sector/Group/Div.:	G&PS
Date submitted for test:	8/10/10
DUT Description:	764-775 MHz and 794-805 MHz at 2.5 W, 806-824 MHz and 851-870 MHz at 3 W, 6.25K/12.5K/25K, Basic Top Display Model. Capable of digital TDMA, analog FM and Bluetooth transmissions.
Test TX mode(s):	CW (PTT)
Max. Power output:	2.99 Watts (764-805 MHz); 3.6 Watts (806-870 MHz) 15.8 mW(BT)
Nominal Power:	2.5 Watts (764-805 MHz); 3.0 Watts (806-870 MHz) 10.00 mW(BT)
Tx Frequency Bands:	(764-805 MHz); (806-870 MHz); 2.402-2.480 GHz (BT)
Signaling type:	FM and TDMA; FHSS(BT)
Model(s) Tested:	H98UCD9PW5AN (MNUF1002A), H98UCD9PW5AN (MNUF1003A)
Model(s) Certified:	H98UCD9PW5AN (MNUF1003A)
Serial Number(s):	NUF1003A0048, NUF1002A0006
Classification:	Occupational/Controlled
FCC ID:	AZ489FT5863; Rule part 90 (764-824MHz; 851-869MHz); Rule part 15 (2402-2480MHz)
IC:	109U-89FT5863

* Refer to section 15 of part 1 for highest SAR summary results.

The test results clearly demonstrate compliance with FCC Occupational/Controlled RF Exposure limits of 8 W/kg averaged over 1 gram per the requirements of 47 CFR 2.1093(d). The 10 grams result is not applicable to FCC filing.
The test results clearly demonstrate compliance with ICNIRP (1998) Guidelines for limiting exposure in time-varying electric, magnetic, and electromagnetic fields (up to 300 GHz), Health Physics 74, 494-522 RF Exposure limits of 10 W/kg averaged over 10grams of contiguous tissue.

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 3.0 of this report. This report shall not be reproduced without written approval from an officially designated representative of the Motorola EME Laboratory.
I attest to the accuracy of the data and assume full responsibility for the completeness of these measurements. This reporting format is consistent with the suggested guidelines of the TIA TSB-150 December 2004. The results and statements contained in this report pertain only to the device(s) evaluated.

Signature on file
Deanna Zakharia
EMS EME Lab Senior Resource Manager, Laboratory Director

Approval Date: 11/22/10

Certification Date: 11/22/10

Certification No.:

Part 1 of 3

1.0 Introduction....4
2.0 Abbreviations / Definitions....4
3.0 Referenced Standards and Guidelines....4
4.0 SAR Limits....5
5.0 SAR Result Scaling Methodology....5
6.0 Description of Device Under Test (DUT)....6
7.0 Optional Accessories and Test Criteria....6
7.1 Antennas....7
7.2 Batteries....7
7.3 Body worn Accessories....7
7.4 Audio Accessories....8
8.0 Description of Test System....8
8.1 Description of Robotics/Probes/Readout Electronics....8
8.2 Description of Phantom(s)....9
8.2.1 Dual Flat Phantom....9
8.2.2 SAM Phantom....9
8.2.3 Elliptical Phantom....9
8.3 Description of Simulated Tissue....9
9.0 Additional Test Equipment....10
10.0 SAR Measurement System Verification....11
10.1 Equivalent Tissue Test Results....11
10.2 System Check Test Results....14
11.0 Environmental Test Conditions....15
12.0 DUT Test Methodology....16
12.1 Measurements....16
12.2 DUT Configuration(s)....16
12.3 DUT Positioning Procedures....16
12.3.1 Body....16
12.3.2 Head....16
12.3.3 Face....16
12.4 DUT Test Channels....16
12.5 DUT Test Plan....17
12.5.1 General Test Flowchart....18
13.0 DUT Test Data....21
13.1 764-765 MHz Test Data....21
13.2 794-824 MHz Test Data....30
13.3 851-870 MHz Test Data....39
13.4 Assessment at Body Bluetooth....48
13.5 Assessments at the Face Bluetooth....49
13.6 Assessments at the Body 764-775MHz band with Antenna NAF5085A and belt clip NTN8266B without audio accessory....49
13.7 Assessments at the Body 764-775MHz band with Antenna NAF5085A and other carry cases without audio accessory....50
13.8 Assessments at the Body 764-775MHz band with Antenna NAR6595A and belt clip NTN8266B without audio accessory....51
13.9 Assessments at the Body 764-775MHz band with Antenna NAR6595A

and other carry cases without audio accessory 52
13.10 Assessments at the Body 794-824MHz band with Antenna NAF5085A and belt clip NTN8266B without audio accessory 53
13.11 Assessments at the Body 794-824MHz band with Antenna NAF5085A and other carry cases without audio accessory 54
13.12 Assessments at the Body 794-824MHz band with Antenna NAR6595A and belt clip NTN8266B without audio accessory 55
13.13 Assessments at the Body 794-824MHz band with Antenna NAR6595A and other carry cases without audio accessory 56
13.14 Assessments at the Body 851-870MHz band with Antenna NAF5085A and belt clip NTN8266B without audio accessory 57
13.15 Assessments at the Body 851-870MHz band with Antenna NAF5085A and other carry cases without audio accessory 58
13.16 Assessments at the Body 851-870MHz band with Antenna NAR6595A and belt clip NTN8266B without audio accessory 59
13.17 Assessments at the Body 851-870MHz band with Antenna NAR6595A and other carry cases without audio accessory 60
13.18 Shorten Scan Assessment 61
14.0 Simultaneous Transmission Exclusion 61
15.0 Conclusion 61

APPENDICES
A Measurement Uncertainty 62
B Probe Calibration Certificates 67
C Dipole Calibration Certificates 108

Part 2 of 3
APPENDIX
D Test System Verification Scans 2

Part 3 of 3
E DUT Scans (Shortened Scan and Highest SAR configurations) 2
F DUT Scans 6
G DUT Supplementary Data (Power Slump) 73
H DUT Test Position Photos 84
I DUT and Body worn Accessory Photos 75

Report Revision History

Date	Revision	Comments
11/22/10	O	Initial release

1.0 Introduction

This report details the utilization, test setup, test equipment, and test results of the Specific Absorption Rate (SAR) measurements performed at the EMS EME Test Laboratory for model numbers H98UCD9PW5AN (MNUF1002A), H98UCD9PW5AN (MNUF1003A).

2.0 Abbreviations / Definitions

CNR: Calibration Not Required
CQPSK**:** Compatible Quadrature Phase-Shift Keying
CW: Continues Wave
DUT: Device Under Test
DC: Duty Cycle
FM: Frequency Modulation
NA: Not Applicable
PTT: Push to Talk
RSM: Remote Speaker Microphone
TDMA: Time Division Multiple Access
SAR: Specific Absorption Rate

Audio accessories: These accessories allow communication while the DUT is worn on the body.
Body worn accessories: These accessories allow the DUT to be worn on the body of the user.
Maximum Power: Defined as the upper limit of the production line final test station.

3.0 Referenced Standards and Guidelines

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

- IEC62209-1*(2005) Procedure to determine the specific absorption rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)
- 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 Electronics Engineers (IEEE) C95. 1-1992
- Institute of Electrical and Electronics Engineers (IEEE) C95.1-2005

- International Commission on Non-Ionizing Radiation Protection (ICNIRP) 1998
- Ministry of Health (Canada) Safety Code 6 (1999), Limits of Human Exposure to Radio frequency Electromagnetic Fields in the Frequency Range from 3 kHz to 300 GHz
- Australian Communications Authority Radio communications (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 9 kHz and 300 GHz." and "Attachment to resolution # 303 from July 2, 2002"
- IEC62209-2 Edition 1.0 2010-03, Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Human models, instrumentation, and procedures – Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz).

* The IEC62209-1 and IEEE 1528 are applicable for hand-held devices used in close proximity to the ear only.

4.0 SAR Limits

TABLE 1

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)	**1.6**	**8.0**
Spatial Peak – ICNIRP/ANSI - (hands/wrists/feet/ankles averaged over 10-g)	**4.0**	**20.0**
Spatial Peak - ICNIRP - (Head and Trunk 10-g)	**2.0**	**10.0**

5.0 SAR Result Scaling Methodology:

The calculated 1-gram and 10-gram averaged SAR results indicated as "Max Calc. 1g-SAR" and "Max Calc.10g-SAR" in the data tables is determined by scaling the measured SAR to account for power leveling variations and power slump. A table and graph of output power versus time is provided in APPENDIX H. For this device the "Max Calc. 1g-SAR" and "Max Calc.10g-SAR" are scaled using the following formula:

$$Max\_Calc = SAR\_meas \cdot 10^{\frac{-Drift}{10}} \cdot \frac{P\_\max}{P\_\text{int}} \cdot DC$$

P_max = Maximum Power (W)

P_int = Initial Power (W)
Drift = DASY drift results (dB)
SAR_meas = Measured 1-g or 10-g Avg. SAR (W/kg)
DC = Transmission mode duty cycle in % where applicable
50% duty cycle is applied for PTT operation
Note: for conservative results, the following are applied:
If P_int > P_max, then P_max/P_int = 1.
Drift = 1 for positive drift

Additional SAR scaling was applied using the methodologies outlined in FCC KDB450824 using tissue sensitivity values. SAR was scaled for conditions where the tissue permittivity was measured above the nominal target and for tissue conductivity that was measured below the nominal target.

6.0 Description of Device Under Test (DUT):

This device operates using TDMA and analog frequency modulation (FM) as well as TDMA signaling incorporating traditional simplex two-way radio transmission protocol.

Time Division Multiple Access (TDMA) is used to allocate portions of the RF signal by dividing time into two slots. Time allocation enables each unit to transmit its voice information without interference from other transmitting units. Transmission from a unit or base station is accommodated during two time-slot lengths of 30 milliseconds with frame length of 60 milliseconds. C4FM CQPSK modulation is used and includes 6.25KHz, 12.5kHz and 25KHz channel spacings. The TDMA technique requires sophisticated algorithms and a digital signal processor (DSP) to perform voice compressions/decompressions and RF modulation/demodulation. The maximum duty cycle for TDMA is 2:1 and is controlled by software. The FM signal is continuous. However, because of hand shaking or Push-To-Talk (PTT) between users and/or base stations a conservative 50% duty cycle is applied. The TDMA mode was not tested because its duty cycle is inherently 50% and would include an additional 50% duty cycle for PTT.

The model represented under this filing utilizes a removable antenna and is capable of transmitting in the 764-775 MHz, 794-805 MHz, 806-824 MHz, 851-870 MHz and 2.402-2.480 GHz bands. The nominal output power is 2.5 watts (764-805 MHz), 3.0 watts (806-870MHz) and 10mW (BT) with maximum output powers of 2.99 watts (764-805 MHz), 3.6 watts (806-870MHz) and 15.8mW (BT) respectively as defined by the upper limit of the production line final test station. The intended operating positions are “at the face” with the DUT at least 1 inch 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 are connected to the radio. This device supports operation with a wireless BT PTT audio accessory.

7.0 Optional Accessories and Test Criteria:

This device is offered with optional accessories. All accessories were individually evaluated during the test plan creation to determine if testing was required. The following sections identify the test criteria and details for each accessory category.

7.1 Antennas:

All offered antennas were tested. The table below lists the antennas and their descriptions.

TABLE 2

Antenna Models	Description	*Tested
NAR6595A	700/800 stubby; 764-870MHz; ¼ wave; -10dBd gain	Yes
NAF5085A	700/800/GPS whip; 764-870, 1575MHz; ¼ wave; -2dBd gain	Yes
84009370001	Internal speaker/mic/flex Bluetooth (2402-2481 MHz) ¼, -10dBd	Yes

Note: NAR6595A is applicable for the offered PSMs. NAF5085A is only applicable for the radio.
*Refer to Exhibit 7B for antenna separation distances**.**

7.2 Batteries:

All offered batteries were tested. The table below lists the batteries, and there descriptions.

TABLE 3

Battery Models	Description	*Tested	Comments
PMNN4403A	Impres Li Ion slim 2150mAh	Yes	Height = 85mm
NNTN7038A	Hi Cap Impres Li Ion 2900mAh	Yes	Height = 85mm

*Refer to Exhibit 7B for antenna separation distances**.**

7.3 Body worn Accessories:

All offered body worn accessories were tested. The table below lists the body worn accessories, and their descriptions.

TABLE 4

Body worn Models	Description	*Tested	Comments
NTN8266B	2.5” Belt Clip	Yes	NA
NTN5243A	Carry strap	Yes	Tested with PMLN5658A and PMLN5657A
PMLN5658A	Leather fixed belt loop works with 2150 and 2900 mAh Li Ion batteries	Yes	NA
PMLN5657A	Leather D ring swivel belt loop works with 2150 and 2900 mAh Li Ion batteries	Yes	NA

*Refer to Exhibit 7B for antenna separation distances**.**

7.4 Audio Accessories:

All audio accessories were tested. The table below lists the audio accessories and their descriptions. Exhibit 7B illustrates the test position of the audio accessory along with individual photos of the accessories.

TABLE 5

Audio Acc. Models	Description	Comments
PMMN4059A	PSM 18" IP55, 3.5mm jack TX/RX	Tested
PMMN4060A	PSM 24" IP55, 3.5mm jack TX/RX	Tested
PMMN4061A	PSM 30" IP55, 3.5mm jack TX/RX	Tested
HMN4104A	RSM - IMPRES Display Submersible RSM w/jack & Channel Selector	Tested

8.0 Description of Test System:

8.1 Descriptions of Robotics/Probes/Readout Electronics:

The laboratory utilizes a Dosimetric Assessment System (DASY4™) SAR measurement system Version 4.7 build 80 manufactured by Schmid & Partner Engineering AG (SPEAG™), of Zurich Switzerland. The test system consists of a Stäubli RX90L robot, DAE3, DAE4 and ES3DV3 E-field probe. 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 ISO/IEC 17025 A2LA guidelines. Section 9.0 presents additional 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.

8.2 Description of Phantom(s)

8.2.1 Dual Flat Phantom

Not Applicable

8.2.2 SAM Phantom

Not Applicable

8.2.3 Elliptical Flat Phantom

TABLE 6

Phantom ID (s)	Material Parameters	Phantom Dimensions LxWxD (mm)	Material Thickness (mm)	Support Structure Material	Loss Tangent (wood)
OVAL1020 OVAL1021 OVAL1018 OVAL1011 OVAL1016 OVAL1019	300MHz -6GHz; Er = 4+/- 1, Loss Tangent = ≤0.05	600x400x190	2mm +/- 0.2mm	Wood	< 0.05

8.3 Description 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 Std 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 simulated tissue used is also compliant to that specified in IEC62209-1 (2005) and adopted by CENELEC as EN62209-1 (2006).

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 similar type 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 (by mass)

TABLE 7

% of listed ingredients	835MHz		2450MHz	
	Head	Body	Head	Body
Sugar	57.0	44.9	NA	NA
Diacetin	0	0	51.0	34.5
De ionized -Water	40.45	53.06	48.75	65.20
Salt	1.45	0.94	0.15	0.20
HEC	1.0	1.0	NA	NA
Bact.	0.1	0.1	0.1	0.1

Reference section 10.1 for target parameters

9.0 Additional Test Equipment:

The table below lists additional test equipment used during the SAR assessment.

TABLE 8

Equipment Type	Model Number	Serial Number	Calibration Date	Calibration Due Date
Power Meter (HP)	E4418B	US39251266	2/23/2010	2/23/2011
Power Meter (Agilent)	E4419B	MY40330364	2/23/2010	2/23/2011
Power Meter (Agilent)	E4419B	MY45103725	4/19/2010	4/19/2011
Power Meter (Agilent)	E4418B	GB40206480	12/7/2009	12/7/2010
Power Meter (Agilent)	E4419B	MY50000505	9/2/2010	9/2/2011
Power Sensor (HP)	8481B	3318A10982	3/5/2010	3/5/2011
E-Series Avg. Power Sensor (Agilent)	E9301B	MY41495593	2/12/2010	2/12/2011
E-Series Avg. Power Sensor (Agilent)	E9301B	MY41495594	2/12/2010	2/12/2011
E-Series Avg. Power Sensor (Agilent)	E9301B	MY41495730	4/13/2010	4/13/2011
E-Series Avg. Power Sensor (Agilent)	E9301B	MY41495733	4/13/2010	4/13/2011
Power Sensor (Agilent)	8482B	3318A06773	5/7/2010	5/7/2011
Power Sensor (Agilent)	8481B	3318A10894	3/5/2010	3/5/2011
Bi-Directional Coupler (NARDA)	3020A	40296	2/5/2010	2/5/2012
Bi-Directional Coupler (NARDA)	3022	77115	3/3/2010	3/3/2012
Bi-Directional Coupler (NARDA)	3022	70181	11/13/2009	11/13/2011
Signal Generator (Agilent)	E4438C	MY42082269	2/18/2010	2/18/2012
Signal Generator (Agilent)	E4428C	MY47381119	1/14/2010	1/14/2012
Signal Generator (Agilent)	E4438C	MY42082269	2/18/2010	2/18/2012
AMP (Amplifier Research)	1W1000	16625	CNR	-
AMP (Amplifier Research)	10WD1000	28782	CNR	-
Dickson Temperature Recorder	TM125	1195889	2/16/2010	2/16/2011

TABLE 8 (Continued)

Equipment Type	Model Number	Serial Number	Calibration Date	Calibration Due Date
Omega Digital Thermometer with J Type TC Probe	HH202A	18800	11/10/2009	11/10/2010
Omega Digital Thermometer with J Type TC Probe	HH202A	18801	4/19/2010	4/19/2011
Omega Digital Thermometer with J Type TC Probe	HH202A	18812	3/24/2010	3/24/2011
Tissue Station				
Agilent PNA-L Network Analyzer	N5230A	MY45001092	6/10/2010	6/10/2011
Network Analyzer (HP)	8753D	3410A09135	2/23/2010	2/23/2011
Dielectric Probe Kit (HP)	85070C	US99360076	CNR	-
Dipole				
SPEAG Dipole	D835V2	435	9/22/2008	9/22/2010
SPEAG Dipole	D835V2	427	1/14/2010	1/14/2012
SPEAG Dipole	D2450V2	704	11/18/2008	11/28/2010
SPEAG Dipole	D2450V2	703	5/25/2010	5/25/2012

10.0 SAR Measurement System Verification:

The SAR measurements were conducted with probe model/serial number ES3DV3/SN3185 SN3147. 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.

Dipole validation scans using head tissue equivalent medium are provided in APPENDIX D. The EMS EME lab validated the dipole to the applicable IEEE 1528-2003 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 EMS EME system performance validation are provided herein.

10.1 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 applicable equipment indicated in section 9.0. The table below summarizes the measured tissue parameters used for the SAR assessment.

TABLE 9

Frequency (MHz)	Tissue Type	Conductivity Target & Range (S/m)	Dielectric Constant Target & Range	Conductivity Meas. (S/m)	Dielectric Constant Meas.	Tested Date
835	FCC Body	0.97 (0.92-1.02)	55.2 (52.44-57.96)	1.00	56.1	7/22/10
				1.00	55.8	7/23/10
				0.99	55.7	7/24/10
				0.99	54.9	7/26/10
				0.99	54.8	7/27/10
				0.99	54.9	7/28/10
				1.01	54.4	7/29/10
				1.01	54.2	7/30/10
				1.00	54.0	8/1/10
				1.01	53.7	8/2/10
				1.00	53.1	8/4/10
				0.97	52.8	10/1/10
				0.99	53.5	10/510
				0.99	52.9	10/7/10
				0.99	53.0	10/8/10
				0.98	52.8	10/20/10
				0.99	53.7	10/30/10
				1.00	54.1	10/31/10
				1.00	53.7	11/1/10
				1.01	54.2	11/3/10
				1.01	53.7	11/5/10
				1.00	53.5	11/6/10
				1.00	53.4	11/7/10
				1.01	54.8	11/12/10
				0.99	54.6	11/13/10
835	IEEE/IEC Head	0.90 (0.86-0.95)	41.5 (39.43-43.58)	0.91	42.4	7/31/10
				0.94	42.9	8/3/10
				0.94	42.0	8/12/10
				0.94	42.6	8/13/10
				0.92	42.5	8/17/10
				0.92	43.0	8/18/10
				0.93	42.0	11/4/10
769.5	FCC Body	0.96 (0.91-1.01)	55.5 (52.73-58.28)	0.93	54.3	7/31/10
				0.94	54.8	8/1/10
				0.94	54.5	8/2/10
				0.95	54.3	8/3/10
				0.92	53.7	10/8/10
				0.92	54.4	10/30/10
				0.93	54.2	11/06/10
				0.93	54.2	11/7/10
				0.93	53.3	11/13/10
				0.92	54.6	11/14/10
769.5	IEEE/ IEC Head	0.89 (0.85-0.93)	41.8 (39.7-43.9)	0.86	43.2	7/30/10
				0.86	43.3	7/31/10
				0.87	43.5	8/13/10
				0.86	43.3	8/17/10
				0.86	43.9	8/18/19

TABLE 9 (Continued)

Frequency (MHz)	Tissue Type	Conductivity Target & Range (S/m)	Dielectric Constant Target & Range	Conductivity Meas. (S/m)	Dielectric Constant Meas.	Tested Date
809	FCC Body	0.97 (0.92-1.02)	55.3 (52.54-58.07)	0.96	55.1	7/26/10
				0.95	55.0	7/27/10
				0.96	55.1	7/28/10
				0.98	54.6	7/29/10
				0.96	53.7	7/31/10
				0.96	53.3	8/4/10
				0.97	53.8	10/5/10
				0.96	53.2	10/7/10
				0.95	53.1	10/20/10
				0.97	54.1	10/29/10
				0.98	54.4	10/31/10
				0.97	54.0	11/1/10
				0.99	54.5	11/3/10
				0.99	53.9	11/5/10
				0.97	54.8	11/13/10
809	IEEE/ IEC Head	0.90 (0.86-0.95)	41.6 (39.52-43.68)	0.88	42.6	7/30/10
				0.88	42.7	7/31/10
				0.92	42.3	8/12/10
				0.89	42.8	8/17/10
				0.89	43.3	8/18/10
				0.88	42.6	10/1/10
				0.87	41.2	10/20/10
860.5	FCC Body	1.00 (0.95-1.05)	55.1 (52.35-57.86)	1.04	55.9	7/22/10
				1.03	55.7	7/23/10
				1.03	55.6	7/24/10
				1.02	54.7	7/26/10
				1.05	54.3	7/29/10
				1.03	53.3	7/31/10
				1.03	52.9	8/4/10
				1.02	53.5	10/29/10
				1.03	53.4	10/06/10
				1.02	53.4	10/30/10
				1.02	53.8	10/31/10
				1.01	53.1	11/04/10
				1.04	54.5	11/12/10
860.5	IEEE/ IEC Head	0.93 (0.88-0.98)	41.5 (39.43-43.58)	0.95	42.0	7/30/10
				0.94	42.1	7/31/10
				0.97	42.7	8/3/10
				0.97	41.7	8/12/10
				0.95	42.2	8/17/10

TABLE 9 (Continued)

Frequency (MHz)	Tissue Type	Conductivity Target & Range (S/m)	Dielectric Constant Target & Range	Conductivity Meas. (S/m)	Dielectric Constant Meas.	Tested Date
2450	FCC Body	1.95 (1.76-2.15)	52.7 (47.4-60.0)	1.98	52.5	9/29/10
				1.99	51.2	11/8/10
2450	IEEE/ IEC Head	1.80 (1.62-1.98)	39.2 (35.3-43.1)	1.85	37.9	9/29/10
2441	FCC Body	1.95 (1.76-2.15)	52.7 (47.4-60.0)	1.97	52.5	9/29/10
2441	IEEE/ IEC Head	1.80 (1.62-1.98)	39.2 (35.3-43.1)	1.84	38.0	9/29/10

10.2 System Check Test Results:

System performance checks were conducted each day during the SAR assessment. The results are normalized to 1W. APPENDIX D explains how the targets were set and includes DASY plots for each day during the SAR assessment. The table below summarizes the daily system check results used for the SAR assessment.

TABLE 10

Probe Serial #	Tissue Type	Probe Cal Date	Dipole Kit / Serial #	Reference SAR @ 1W (W/kg)	System Check Test Results when normalized to 1W (W/kg)	Tested Date
3185	FCC Body	11/23/09	SPEAG D835V2 /435	10.04+/- 10%	10.80	7/22/10
					10.16	7/23/10
					10.28	7/24/10
					9.64	7/26/10
					10.08	7/27/10
					10.08	7/28/10
					10.64	7/29/10
					10.56	7/30/10
					10.56	8/1/10
					10.60	8/2/10
					10.40	8/4/10
3185	IEEE/ IEC Head	11/23/09	SPEAG D835V2 /435	9.51 +/- 10%	10.28	7/31/10
					10.04	8/3/10
					9.44	8/12/10
					9.32	8/13/10
					9.16	8/17/10
					9.24	8/18/10
3185	FCC Body	11/23/09	SPEAG D835V2 /427	9.52 +/- 10%	9.32	10/1/10
					9.68	10/5/10
					9.00	10/6/10
					9.32	10/7/10

TABLE 10

Probe Serial #	Tissue Type	Probe Cal Date	Dipole Kit / Serial #	Reference SAR @ 1W (W/kg)	System Check Test Results when normalized to 1W (W/kg)	Tested Date
3163	FCC Body	4/23/10	SPEAG D835V2 /435	9.83 +/- 10%	9.32	10/20/10
3147	FCC Body	2/18/10	SPEAG D835V2 /427	9.52 +/- 10%	9.84	10/30/10
					9.96	10/31/10
					10.00	11/1/10
					10.00	11/3/10
					10.00	11/5/10
					10.08	11/6/10
					9.92	11/7/10
					10.08	11/12/10
					9.92	11/13/10
					9.84	11/14/10
3147	IEEE/ IEC Head	2/18/10	SPEAG D835V2 /427	9.63 +/- 10%	10.20	11/4/10
3147	IEEE/ IEC Head	2/18/10	SPEAG D2450V2/704	52.92 +/- 10%	53.60	9/29/10
3147	FCC Body	2/18/10	SPEAG D2450V2/703	55.27 +/- 10%	56.33	11/8/10

Note: See APPENDIX D for an explanation of the reference SAR targets stated above.

11.0 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^{o}C of the temperature at which the dielectric properties were determined. The liquid depth within the phantom used for measurements was at least 15cm. 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:

TABLE 11

	Target	Measured
Ambient Temperature	18 - 25 ˚C	Range: 20.8 -23˚C Avg. 21.7˚C
Relative Humidity	30 - 70 %	Range: 32.1 – 73.6% Avg. 54.9%
Tissue Temperature	NA	Range: 19.9-21.8˚C Avg. 21.12C

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 SAR scans are repeated.

12.0 DUT Test Methodology

12.1 Measurements

SAR measurements were performed using the DASY system described in section 8.0 using coarse and 5x5x7 zoom scan. Elliptical flat phantoms filled with applicable simulated tissue were used for body and face testing.

12.2 DUT Configuration(s)

The DUT is a portable device operational at the body and face as described in section 6.0 while using the applicable accessories listed in section 7.0. All accessories listed in section 7.0 of this report were used to test all possible accessory combinations.

12.3 DUT Positioning Procedures

The positioning of the device for each body location is described below and illustrated in APPENDIX H.

12.3.1 Body:

The DUT and PSM were positioned in the intended use configuration against the phantom with the offered body worn and audio accessories where applicable.
2.5cm testing performed herein is to satisfy the conditions previously noted in the user manual safety section.

12.3.2 Head:

Not applicable.

12.3.3 Face:

The DUT was positioned with its' front and back side separated 2.5cm from the phantom. Note that this product has two microphones, one on the front and one on the back of the DUT and therefore both sides were assessed. The offered PSMs were also tested with 2.5cm separation from the phantom.

12.4 DUT Test Channels:

The number of test channels was determined by the following equation.

$$N_c = 2 * roundup[10 * (f_{high} - f_{low}) / f_c] + 1$$

Where
N_c = Number of channels
F_{high} = Upper channel
F_{low} = Lower channel
F_c = Center channel

12.5 DUT Test Plan:

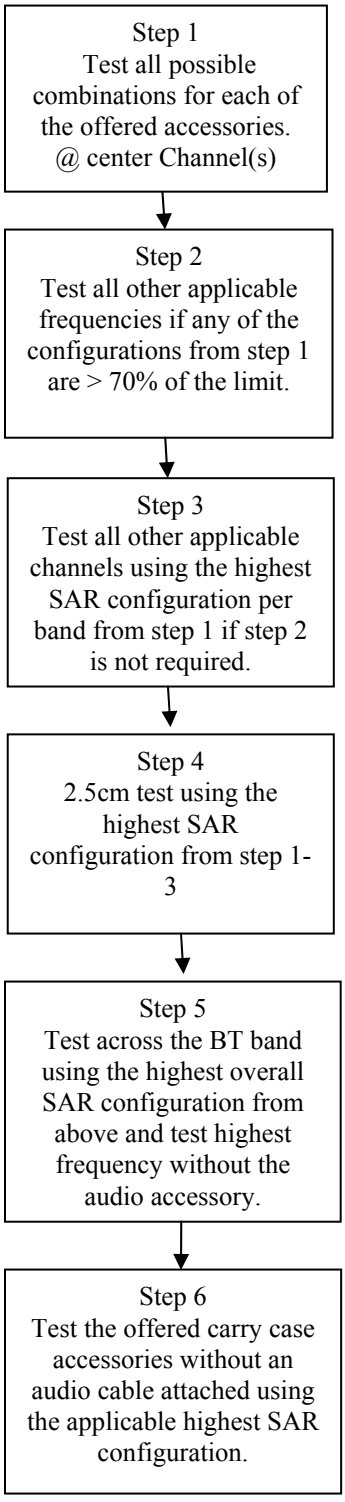
All modes of operation identified in section 6.0 were considered during the development of the test plan. The mode which presented the highest duty cycle, FM mode (CW) was chosen for SAR assessment.

Tests were performed in each band at the center frequency(s) for all possible combinations of offered accessories. All other applicable frequencies were tested for any configurations that were within 70% of the specification limit as recommended by the FCC. If the 70% threshold is not required then the highest SAR configurations from the center channel assessments were tested at all other applicable frequencies. Assessments at the face with the back of the DUT facing the phantom were performed using the highest SAR configuration for each offered antenna per band. Note that per FCC guidelines the 794-805MHz and 806-824MHz bands were assessed as one contiguous band with center frequency of 809MHz. Tests were also performed at the body and face using the highest configurations from the 7-800 MHz band at the low, mid, and high frequencies of the BT band. Tests at the body without the offered audio accessory are to satisfy intended use operation with a wireless BT headset. In some cases the initial power listed herein may exceed the reported maximum power due to software step size tuning limitations. However, the initial powers measured are not greater than the allowed 5% of the reported maximum power. BT tests were performed in CW mode and the final results were scaled to the max duty cycle of 76.1% noted in section 6.0. Note that test results that are outside the relevant FCC frequency allocations are presented herein in blue font.

12.5.1 General Test Flowchart

The following flowcharts identify the general approach to the test sequences for body and face positions.

DUT Body Test Methodology (General flowchart)



Flowchart Objectives Body

Step 1 - The objective is to determine the highest SAR configuration at the center channel(s) for all combinations of offered accessories at the body.

Step 2 – The objective is to determine the highest SAR configurations for all possible combinations of offered accessories.

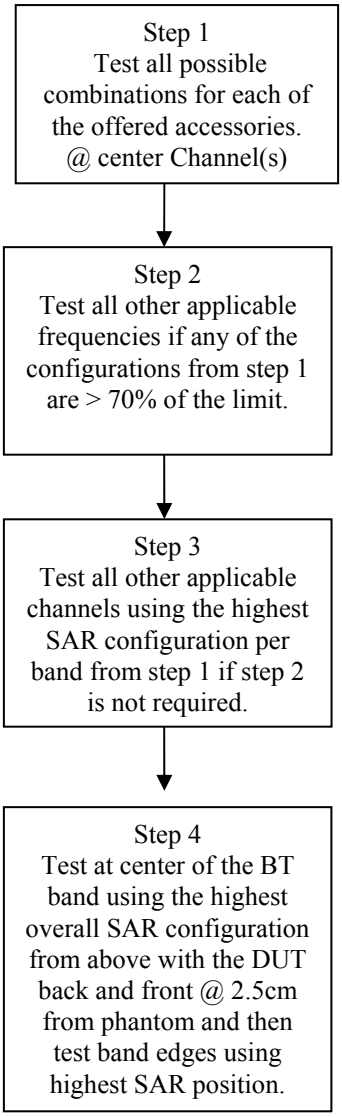
Step 3 - Determine the highest SAR performance across all applicable channels if the SAR results from Step 1 is below the recommended 70% threshold. Refer to sections 12.4 and 12.5 for additional channels test consideration details.

Step 4 - Determine the highest SAR performance at 2.5cm separation distance to satisfy the safety manuals guidelines for non approved body worn accessories.

Step 5 - Determine the highest SAR performance in the BT band at the body. Test without audio accessory is done to account for the intended use with a wireless BT PTT headset.

Step 6 - Determine the highest SAR performance in the 7-800 band at the body without an audio cable attached. Tests without audio accessory are done to account for the intended use with a wireless BT PTT headset.

DUT Face Test Methodology
(General flowchart)



Flowchart
Objectives Face

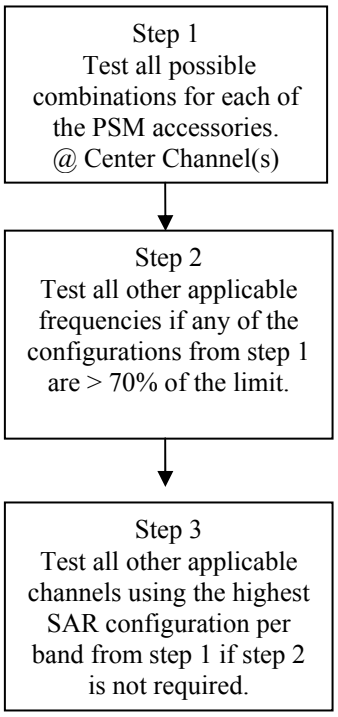
Step 1 - The objective is to determine the highest SAR configuration at the center channel(s) for all combinations of offered accessories at the face. Refer to sections 12.4 and 12.5 for additional channels test consideration details.

Step 2 – The objective is to determine the highest SAR configurations for all possible combinations of offered accessories. Refer to sections 12.4 and 12.5 for additional channels test consideration details.

Step 3 - Determine the highest SAR performance across all applicable channels if the SAR results from Step 2 is below the recommended 70% threshold. Refer to sections 12.4 and 12.5 for additional channels test consideration details.

Step 4 - Determine the highest SAR performance in the BT band at the face.

DUT PSM Body Test Methodology
(General flowchart)



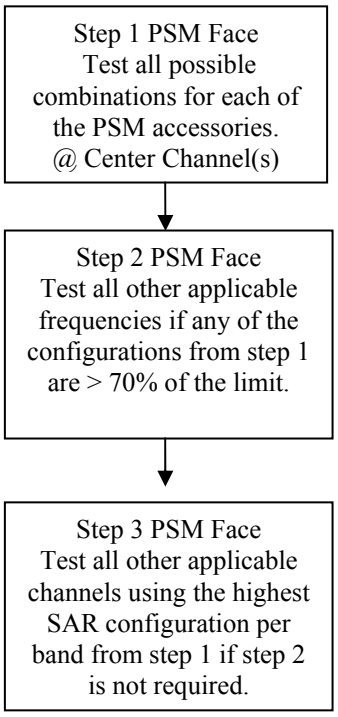
Flowchart
Objectives PSM Body

Step 1 - The objective is to determine the highest SAR configuration at the center channel(s) for all combinations of offered accessories at the body.

Step 2 – The objective is to determine the highest SAR configurations for all possible combinations of offered accessories. Refer to sections 12.4 and 12.5 for additional channels test consideration details.

Step 3 - Determine the highest SAR performance across all applicable channels if the SAR results from Step 1 is below the recommended 70% threshold. Refer to sections 12.4 and 12.5 for additional channels test consideration details.

DUT PSM Face Test Methodology
(General flowchart)



Flowchart
Objectives PSM Face

Step 1 - The objective is to determine the highest SAR configuration at the center channel(s) for all combinations of offered accessories at the face. Refer to sections 12.4 and 12.5 for additional channels test consideration details.

Step 2 – The objective is to determine the highest SAR configurations for all possible combinations of offered accessories. Refer to sections 12.4 and 12.5 for additional channels test consideration details.

Step 3 - Determine the highest SAR performance across all applicable channels if the SAR results from Step 1 is below the recommended 70% threshold. Refer to sections 12.4 and 12.5 for additional channels test consideration details.

13.0 DUT Test Data

13.1 764-775 MHz Test Data:

Assessments at the Body (CW mode):

Assessment of the offered antenna NAF5085A using body worn accessories NTN8266B, PMLN5658A and PMLN5657A, audio cable HMN4104A and batteries NNTN7038A and PMNN4403A at the center channel.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 1.0.

TABLE 12

Assessment of antenna NAF5085A with offered batteries, body worn and audio accessories (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
JsT-Ab-100801-09/NUF1003A0048	NAF5085A	NNTN7038A	NTN8266B	Against phantom	HMN4104A	769.000	3.07	-0.392	6.300	4.590	3.45	2.51
JsT-Ab-100801-12/NUF1003A0048	NAF5085A	NNTN7038A	PMLN5658A	Against phantom	HMN4104A	769.000	3.08	-0.373	2.560	1.900	1.39	1.04
CM-Ab-100801-15/NUF1003A0048	NAF5085A	NNTN7038A	PMLN5657A	Against phantom	HMN4104A	769.000	3.08	-0.274	1.870	1.390	1.00	0.74
JsT-Ab-100801-11/NUF1003A0048	NAF5085A	PMNN4403A	NTN8266B	Against phantom	HMN4104A	769.000	3.07	-0.404	6.380	4.660	**3.50**	2.56
JsT-Ab-100801-13/NUF1003A0048	NAF5085A	PMNN4403A	PMLN5658A	Against phantom	HMN4104A	769.000	3.08	-0.416	2.550	1.890	1.40	1.04
CM-Ab-100801-14/NUF1003A0048	NAF5085A	PMNN4403A	PMLN5657A	Against phantom	HMN4104A	769.000	3.07	-0.268	1.730	1.290	0.92	0.69

Assessments at the Body (CW mode):

Assessment at 2.5cm separation distance using the highest SAR configuration from the table above at the center channel per section 12.3.1.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 1.0.

TABLE 13

Assessment at 2.5cm separation. (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Ab-100801-17/NUF1003A0048	NAF5085A	PMNN4403A	None	DUT back 2.5cm	HMN4104A	769.000	3.09	-0.333	2.820	2.100	**1.52**	1.13
CM-Ab-100801-18/NUF1003A0048	NAF5085A	PMNN4403A	None	DUT front 2.5cm	HMN4104A	769.000	3.09	-0.378	2.530	1.890	1.38	1.03

Assessments at the Body (CW mode):

Assessment of offered antenna NAF5085A using body worn accessories NTN5243A and PMLN5657A along with offered batteries NNTN7038A and PMNN4403A at the center channel.

The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 1.0.

TABLE 14

Assessment of antenna NAF5085A with offered carry strap/body worn PMLN5657A, batteries and audio accessories. (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Ab-100801-19/NUF1003A0048	NAF5085A	NNTN7038A	NTN5243A/ PMLN5657A	DUT back against phantom	HMN4104A	769.000	3.07	-0.691	3.740	2.700	**2.19**	1.58
CM-Ab-100801-21/NUF1003A0048	NAF5085A	NNTN7038A	NTN5243A/ PMLN5657A	DUT accessory side against phantom	HMN4104A	769.000	3.08	-0.195	2.430	1.710	1.27	0.89
CM-Ab-100801-22/NUF1003A0048	NAF5085A	NNTN7038A	NTN5243A/ PMLN5657A	DUT PTT side against phantom	HMN4104A	769.000	3.09	-0.419	3.580	2.590	1.97	1.43
CM-Ab-100801-24/NUF1003A0048	NAF5085A	PMNN4403A	NTN5243A/ PMLN5657A	DUT back against phantom	HMN4104A	769.000	3.06	-0.302	3.810	2.790	2.04	1.50
JsT-Ab-100802-02/NUF1003A0048	NAF5085A	PMNN4403A	NTN5243A/ PMLN5657A	DUT accessory side against phantom	HMN4104A	769.000	3.07	-0.538	2.060	1.420	1.17	0.80
JsT-Ab-100802-03/NUF1003A0048	NAF5085A	PMNN4403A	NTN5243A/ PMLN5657A	DUT PTT side against phantom	HMN4104A	769.000	3.07	-0.177	2.950	2.130	1.54	1.11

Assessments at the Body (CW mode):

Assessment of offered antenna NAF5085A using body worn accessories NTN5243A and PMLN5658A along with offered batteries NNTN7038A and PMNN4403A at the center channel.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 1.0.

TABLE 15

Assessment of antenna NAF5085A with offered carry strap/body worn PMLN5658A, batteries and audio accessories. (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
JsT-Ab-100802-0/NUF1003A0048	NAF5085A	NNTN7038A	NTN5243A/ PMLN5658A	DUT back against phantom	HMN4104A	769.000	3.07	-0.254	2.330	1.730	1.24	0.92
JsT-Ab-100802-05/NUF1003A0048	NAF5085A	NNTN7038A	NTN5243A/ PMLN5658A	DUT accessory side against phantom	HMN4104A	769.000	3.08	-0.351	1.830	1.290	0.99	0.70
JsT-Ab-100802-06/NUF1003A0048	NAF5085A	NNTN7038A	NTN5243A/ PMLN5658A	DUT PTT side against phantom	HMN4104A	769.000	3.07	-0.266	2.830	1.990	1.50	1.06
JsT-Ab-100802-09/NUF1003A0048	NAF5085A	PMNN4403A	NTN5243A/ PMLN5658A	DUT back against phantom	HMN4104A	769.000	3.07	-0.351	2.310	1.720	1.25	0.93
JsT-Ab-100802-08/NUF1003A0048	NAF5085A	PMNN4403A	NTN5243A/ PMLN5658A	DUT accessory side against phantom	HMN4104A	769.000	3.07	-0.372	1.770	1.240	0.96	0.68
JsT-Ab-100802-07/NUF1003A0048	NAF5085A	PMNN4403A	NTN5243A/ PMLN5658A	DUT PTT side against phantom	HMN4104A	769.000	3.07	-0.218	3.070	2.140	**1.61**	1.13

Assessments at the Body (CW mode):

Assessment of other applicable frequencies using the highest SAR configuration from the tables above in accordance with sections 12.4 and 12.5.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 1.0.

TABLE 16

Assessment of other frequencies.												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
JsT-Ab-100802-10/NUF1003A0048	NAF5085A	PMNN4403A	NTN8266B	Against phantom	HMN4104A	764.0125	3.08	-0.264	7.140	5.230	**3.79**	2.78
JsT-Ab-100802-11/NUF1003A0048	NAF5085A	PMNN4403A	NTN8266B	Against phantom	HMN4104A	775.000	3.07	-0.470	5.510	4.020	3.07	2.24

Assessments at the Body (CW mode):

Assessment of the offered antenna NAR6595A using body worn accessories NTN8266B, PMLN5658A and PMLN5657A, audio cable HMN4104A and batteries NNTN7038A and PMNN4403A at the center channel. Other applicable frequencies tested in accordance with sections 12.4 and 12.5.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 1.0.

TABLE 17

Assessment of antenna NAR6595A with offered batteries, body worn and audio accessories (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
JsT-Ab-100802-12/NUF1003A0048	NAR6595A	NNTN7038A	NTN8266B	Against phantom	HMN4104A	769.000	3.08	-0.304	12.790	9.350	6.86	5.01
JsT-Ab-100802-14/NUF1003A0048	NAR6595A	NNTN7038A	PMLN5658A	Against phantom	HMN4104A	769.000	3.08	-0.261	6.050	4.480	3.21	2.38
CM-Ab-100802-15/NUF1003A0048	NAR6595A	NNTN7038A	PMLN5657A	Against phantom	HMN4104A	769.000	3.08	-0.262	3.730	2.780	1.98	1.48
JsT-Ab-100802-13/NUF1003A0048	NAR6595A	PMNN4403A	NTN8266B	Against phantom	HMN4104A	769.000	3.08	-0.319	12.990	9.500	6.99	5.11
CM-Ab-100802-16/NUF1003A0048	NAR6595A	PMNN4403A	PMLN5658A	Against phantom	HMN4104A	769.000	3.07	-0.272	5.720	4.240	3.04	2.26
CM-Ab-100802-17/NUF1003A0048	NAR6595A	PMNN4403A	PMLN5657A	Against phantom	HMN4104A	769.000	3.08	-0.308	4.050	3.030	2.17	1.63
Other Frequencies for configurations with SAR >5.6mW/g												
CM-Ab-100802-19/NUF1003A0048	NAR6595A	NNTN7038A	NTN8266B	Against phantom	HMN4104A	764.0125	3.08	-0.412	12.700	9.280	6.98	5.10
CM-Ab-100802-20/NUF1003A0048	NAR6595A	NNTN7038A	NTN8266B	Against phantom	HMN4104A	775.000	3.06	-0.270	12.200	8.030	6.49	4.27
CM-Ab-100802-22/NUF1003A0048	NAR6595A	PMNN4403A	NTN8266B	Against phantom	HMN4104A	764.0125	3.07	-0.168	13.400	8.680	6.96	4.51
CM-Ab-100802-24/NUF1003A0048	NAR6595A	PMNN4403A	NTN8266B	Against phantom	HMN4104A	775.000	3.07	-0.212	13.400	8.540	**7.04**	4.48

Assessments at the Body (CW mode):

Assessment at 2.5cm separation distance using the highest SAR configuration from the table above at the center channel per section 12.3.1.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 1.0.

TABLE 18

Assessment at 2.5cm separation. (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
JsT-Ab-100803-06/NUF1003A0048	NAR6595A	PMNN4403A	None	DUT back 2.5cm	HMN4104A	769.000	3.07	-0.298	5.300	3.950	**2.84**	2.12
JsT-Ab-100803-07/NUF1003A0048	NAR6595A	PMNN4403A	None	DUT front 2.5cm	HMN4104A	769.000	3.07	-0.147	4.870	3.670	2.52	1.90

Assessments at the Body (CW mode):

Assessment of offered antenna NAR6595A using body worn accessories NTN5243A and PMLN5657A along with offered batteries NNTN7038A and PMNN4403A at the center channel.

The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 1.0.

TABLE 19

Assessment of antenna NAR6595A with offered carry strap/body worn PMLN5657A, batteries and audio accessories. (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Ab-100803-15/NUF1003A0048	NAR6595A	NNTN7038A	NTN5243A/ PMLN5657A	DUT back against phantom	HMN4104A	769.000	3.07	0.151	9.780	7.270	4.89	3.64
CM-Ab-100803-16/NUF1003A0048	NAR6595A	NNTN7038A	NTN5243A/ PMLN5657A	DUT accessory side against phantom	HMN4104A	769.000	3.08	-0.0979	7.900	5.740	4.04	2.94
CM-Ab-100803-17/NUF1003A0048	NAR6595A	NNTN7038A	NTN5243A/ PMLN5657A	DUT PTT side against phantom	HMN4104A	769.000	3.08	-0.0356	8.750	6.280	4.41	3.17
CM-Ab-100803-18/NUF1003A0048	NAR6595A	PMNN4403A	NTN5243A/ PMLN5657A	DUT back against phantom	HMN4104A	769.000	3.07	-0.622	8.790	6.530	**5.07**	3.77
CM-Ab-100803-19/NUF1003A0048	NAR6595A	PMNN4403A	NTN5243A/ PMLN5657A	DUT accessory side against phantom	HMN4104A	769.000	3.08	0.0481	4.940	3.560	2.47	1.78
CM-Ab-100803-20/NUF1003A0048	NAR6595A	PMNN4403A	NTN5243A/ PMLN5657A	DUT PTT side against phantom	HMN4104A	769.000	3.08	-0.215	7.790	5.640	4.09	2.96

Assessments at the Body (CW mode):

Assessment of offered antenna NAR6595A using body worn accessories NTN5243A and PMLN5658A along with offered batteries NNTN7038A and PMNN4403A at the center channel.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 1.0.

TABLE 20

Assessment of antenna NAR6595A with offered carry strap/body worn PMLN5658A, batteries and audio accessories. (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
JsT-Ab-100803-08/NUF1003A0048	NAR6595A	NNTN7038A	NTN5243A/ PMLN5658A	DUT back against phantom	HMN4104A	769.000	3.07	-0.209	5.040	3.750	2.64	1.97
JsT-Ab-100803-09/NUF1003A0048	NAR6595A	NNTN7038A	NTN5243A/ PMLN5658A	DUT accessory side against phantom	HMN4104A	769.000	3.06	-0.218	5.370	3.810	2.82	2.00
CM-Ab-100803-10/ NUF1003A0048	NAR6595A	NNTN7038A	NTN5243A/ PMLN5658A	DUT PTT side against phantom	HMN4104A	769.000	3.07	-0.0577	7.660	5.380	3.88	2.73
CM-Ab-100803-11/NUF1003A0048	NAR6595A	PMNN4403A	NTN5243A/ PMLN5658A	DUT back against phantom	HMN4104A	769.000	3.07	-0.258	5.780	4.310	3.07	2.29
CM-Ab-100803-12/NUF1003A0048	NAR6595A	PMNN4403A	NTN5243A/ PMLN5658A	DUT accessory side against phantom	HMN4104A	769.000	3.06	-0.356	5.170	3.650	2.81	1.98
CM-Ab-100803-13/NUF1003A0048	NAR6595A	PMNN4403A	NTN5243A/ PMLN5658A	DUT PTT side against phantom	HMN4104A	769.000	3.06	-0.230	9.020	6.330	**4.76**	3.34

Assessments at the Body (CW mode):

Assessment of other applicable frequencies using the highest SAR configuration from the tables above in accordance with sections 12.4 and 12.5.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 1.0.

TABLE 21

Assessment of other frequencies.												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Ab-100802-22/ NUF1003A0048	NAR6595A	PMNN4403A	NTN8266B	Against phantom	HMN4104A	764.0125	3.07	-0.168	13.400	8.680	6.96	4.51
CM-Ab-100802-24/ NUF1003A0048	NAR6595A	PMNN4403A	NTN8266B	Against phantom	HMN4104A	775.000	3.07	-0.212	13.400	8.540	**7.04**	4.48

Note: Table 21 scans are the same as the frequency search scans in table 17 in accordance with section 12.5.

Assessments at the Body (CW mode):

Assessment of offered PSMs PMMN4059A, PMMN4060A, PMMN4061A and PSM belt clip 4205823V01 with antenna NAR6595A using offered batteries NNTN7038A and PMNN4403A at the center channel.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 1.0.

TABLE 22

Assessment of offered PSMs and belt clip with antenna NAR6595A using the offered batteries (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Ab-100731-26/ NUF1003A0048	NAR6595A	NNTN7038A	4205823V01 PSM belt clip	Against phantom	PMMN4059A	769.000	3.07	-0.174	3.450	2.160	**1.80**	1.12
JsT-Ab-100801-04/ NUF1003A0048	NAR6595A	NNTN7038A	4205823V01 PSM belt clip	Against phantom	PMMN4060A	769.000	3.08	-0.139	3.240	2.090	1.67	1.08
JsT-Ab-100801-06/ NUF1003A0048	NAR6595A	NNTN7038A	4205823V01 PSM belt clip	Against phantom	PMMN4061A	769.000	3.08	-0.156	3.460	2.240	1.79	1.16
JsT-Ab-100801-02/ NUF1003A0048	NAR6595A	PMNN4403A	4205823V01 PSM belt clip	Against phantom	PMMN4059A	769.000	3.08	-0.165	3.400	2.120	1.77	1.10
JsT-Ab-100801-03/ NUF1003A0048	NAR6595A	PMNN4403A	4205823V01 PSM belt clip	Against phantom	PMMN4060A	769.000	3.08	-0.160	3.240	2.090	1.68	1.08
JsT-Ab-100801-07/ NUF1003A0048	NAR6595A	PMNN4403A	4205823V01 PSM belt clip	Against phantom	PMMN4061A	769.000	3.07	-0.120	3.460	2.240	1.78	1.15

Assessments at the Body (CW mode):

Assessment of other applicable frequencies using the highest SAR configuration from the table above in accordance with sections 12.4 and 12.5.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 1.0.

TABLE 23

Assessment of other frequencies.												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
JsT-Ab-100803-04/ NUF1003A0048	NAR6595A	NNTN7038A	4205823V01 PSM belt clip	Against phantom	PMMN4059A	764.0125	3.07	-0.143	3.640	2.310	**1.88**	1.19
JsT-Ab-100803-05/ NUF1003A0048	NAR6595A	NNTN7038A	4205823V01 PSM belt clip	Against phantom	PMMN4059A	775.000	3.06	-0.134	3.370	2.040	1.74	1.05

Assessments at the Face (CW mode):

Assessment of the offered antenna NAF5085A using batteries NNTN7038A and PMNN4403A at the center channel.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 1.0.

TABLE 24

Assessment of antenna NAF5085A and offered batteries. (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
JsT-Face-100730-09/ NUF1003A0048	NAF5085A	NNTN7038A	None	DUT front 2.5cm	None	769.000	3.08	-0.274	2.250	1.640	1.20	0.87
JsT-Face-100730-10/ NUF1003A0048	NAF5085A	PMNN4403A	None	DUT front 2.5cm	None	769.000	3.08	-0.253	2.590	1.910	**1.37**	1.01

Assessments at the Face(CW mode):

Assessment of other applicable frequencies using the highest SAR configuration from the table above in accordance with sections 12.4 and 12.5. Assessment of DUT with back 2.5cm separation was also performed using the highest SAR configuration for this antenna.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 1.0.

TABLE 25

Assessment of other frequencies.												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
JsT-Face-100813-03/ NUF1003A0048	NAF5085A	PMNN4403A	None	DUT front 2.5cm	None	764.0125	3.07	-0.220	2.83	2.12	1.49	1.12
JsT-Face-100813-04/ NUF1003A0048	NAF5085A	PMNN4403A	None	DUT front 2.5cm	None	775.000	3.06	-0.258	2.51	1.87	1.33	0.992
CM-Face-100818-03/ NUF1003A0048	NAF5085A	PMNN4403A	None	DUT back 2.5cm	None	764.0125	3.05	-0.296	2.89	2.14	**1.55**	1.15

Assessments at the Face (CW mode):

Assessment of the offered antenna NAR6595A using batteries NNTN7038A and PMNN4403A at the center channel.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 1.0.

TABLE 26

Assessment of antenna NAR6595A and offered batteries. (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
JsT-Face-100730-11/ NUF1003A0048	NAR6595A	NNTN7038A	None	DUT front 2.5cm	None	769.000	3.07	-0.166	4.120	3.030	2.14	1.57
JsT-Face-100730-12/ NUF1003A0048	NAR6595A	PMNN4403A	None	DUT front 2.5cm	None	769.000	3.07	-0.134	4.540	3.350	**2.34**	1.73

Assessments at the Face (CW mode):

Assessment of other applicable frequencies using the highest SAR configuration from the table above in accordance with sections 12.4 and 12.5. Assessment of DUT with back 2.5cm separation was also performed using the highest SAR configuration for this antenna.

The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 1.0.

TABLE 27

Assessment of other frequencies.												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
JsT-Face-100813-05/ NUF1003A0048	NAR6595A	PMNN4403A	None	DUT front 2.5cm	None	764.0125	3.07	-0.181	4.80	3.58	2.50	1.87
JsT-Face-100813-06/ NUF1003A0048	NAR6595A	PMNN4403A	None	DUT front 2.5cm	None	775.0000	3.06	-0.157	4.79	3.56	2.48	1.85
CM-Face-100818-04/ NUF1003A0048	NAR6595A	PMNN4403A	None	DUT back 2.5cm	None	764.0125	3.04	-0.245	4.90	3.63	**2.59**	1.92

Assessments at the Face (CW mode):

Assessment of offered PSMs PMMN4059A, PMMN4060A, PMMN4061A and PSM belt clip 4205823V01 with antenna NAR6595A using offered batteries NNTN7038A and PMNN4403A at the center channel.

The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 1.0.

TABLE 28

Assessment of offered PSMs and belt clip with antenna NAR6595A using the offered batteries (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Face-100730-21/ NUF1003A0048	NAR6595A	NNTN7038A	None	PSM front 2.5cm	PMMN4059A	769.000	3.09	-0.420	1.070	0.772	0.59	0.43
CM-Face-100730-22/ NUF1003A0048	NAR6595A	NNTN7038A	None	PSM front 2.5cm	PMMN4060A	769.000	3.09	-0.140	1.520	1.090	**0.78**	0.56
CM-Face-100730-23/ NUF1003A0048	NAR6595A	NNTN7038A	None	PSM front 2.5cm	PMMN4061A	769.000	3.08	-0.132	1.280	0.922	0.66	0.48
CM-Face-100730-24/ NUF1003A0048	NAR6595A	PMNN4403A	None	PSM front 2.5cm	PMMN4059A	769.000	3.07	-0.107	1.260	0.915	0.65	0.47
CM-Face-100730-25/ NUF1003A0048	NAR6595A	PMNN4403A	None	PSM front 2.5cm	PMMN4060A	769.000	3.08	-0.106	1.210	0.868	0.62	0.44
CM-Face-100730-26/ NUF1003A0048	NAR6595A	PMNN4403A	None	PSM front 2.5cm	PMMN4061A	769.000	3.08	-0.0706	1.002	0.720	0.51	0.37

Assessments at the Face (CW mode):

Assessment of other applicable frequencies using the highest SAR configuration from the table above in accordance with sections 12.4 and 12.5.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 1.0.

TABLE 29

Assessment of other frequencies.												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
JsT-Face-100731-04/ NUF1003A0048	NAR6595A	NNTN7038A	None	PSM front 2.5cm	PMMN4060A	764.0125	3.09	-0.154	1.590	1.140	**0.82**	0.59
JsT-Face-100731-05/ NUF1003A0048	NAR6595A	NNTN7038A	None	PSM front 2.5cm	PMMN4060A	775.0000	3.08	-0.118	1.270	0.908	0.65	0.47

13.2 794-824 MHz Test Data:

Assessments at the Body (CW mode):

Assessment of the offered antenna NAF5085A using body worn accessories NTN8266B, PMLN5658A and PMLN5657A, audio cable HMN4104A and batteries NNTN7038A and PMNN4403A at the center channel.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 2.0.

TABLE 30

Assessment of antenna NAF5085A with offered batteries, body worn and audio accessories (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
JsT-Ab-100726-11/NUF1003A0048	NAF5085A	NNTN7038A	NTN8266B	Against phantom	HMN4104A	809.000	3.74	-0.293	3.540	2.580	1.89	1.38
JsT-Ab-100726-12/NUF1003A0048	NAF5085A	NNTN7038A	PMLN5658A	Against phantom	HMN4104A	809.000	3.74	-0.549	1.780	1.310	1.01	0.74
JsT-Ab-100726-13/NUF1003A0048	NAF5085A	NNTN7038A	PMLN5657A	Against phantom	HMN4104A	809.000	3.74	-0.335	1.120	0.835	0.60	0.45
CM-Ab-100726-15/NUF1003A0048	NAF5085A	PMNN4403A	NTN8266B	Against phantom	HMN4104A	809.000	3.74	-0.305	3.690	2.690	**1.98**	1.44
CM-Ab-100726-16/NUF1003A0048	NAF5085A	PMNN4403A	PMLN5658A	Against phantom	HMN4104A	809.000	3.73	-0.385	1.710	1.260	0.93	0.69
CM-Ab-100726-17/NUF1003A0048	NAF5085A	PMNN4403A	PMLN5657A	Against phantom	HMN4104A	809.000	3.76	-0.365	1.330	0.993	0.72	0.54

Assessments at the Body (CW mode):

Assessment at 2.5cm separation distance using the highest SAR configuration from the table above at the center channel per section 12.3.1.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 2.0.

TABLE 31

Assessment at 2.5cm separation. (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Ab-100726-18/NUF1003A0048	NAF5085A	PMNN4403A	None	DUT back w/ antenna 2.5cm	HMN4104A	809.000	3.75	-0.326	5.730	4.080	**3.09**	2.20
CM-Ab-100726-20/NUF1003A0048	NAF5085A	PMNN4403A	None	DUT front 2.5cm	HMN4104A	809.000	3.76	-0.833	1.550	1.150	0.94	0.70

Assessments at the Body (CW mode):

Assessment of offered antenna NAF5085A using body worn accessories NTN5243A and PMLN5657A along with offered batteries NNTN7038A and PMNN4403A at the center channel.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 2.0.

TABLE 32

Assessment of antenna NAF5085A with offered carry strap/body worn PMLN5657A, batteries and audio accessories. (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Ab-100726-21/NUF1003A0048	NAF5085A	NNTN7038A	NTN5243A/ PMLN5657A	DUT back against phantom	HMN4104A	809.000	3.74	-0.369	3.590	2.500	**1.95**	1.36
JsT-Ab-100727-02/NUF1003A0048	NAF5085A	NNTN7038A	NTN5243A/ PMLN5657A	DUT accessory side against phantom	HMN4104A	809.000	3.74	-0.0816	1.650	1.160	0.84	0.59
JsT-Ab-100727-03/NUF1003A0048	NAF5085A	NNTN7038A	NTN5243A/ PMLN5657A	DUT PTT side against phantom	HMN4104A	809.000	3.74	-0.454	3.210	2.180	1.78	1.21
JsT-Ab-100727-11/NUF1003A0048	NAF5085A	PMNN4403A	NTN5243A/ PMLN5657A	DUT back against phantom	HMN4104A	809.000	3.74	-0.0286	3.640	2.490	1.83	1.25
JsT-Ab-100727-04/NUF1003A0048	NAF5085A	PMNN4403A	NTN5243A/ PMLN5657A	DUT accessory side against phantom	HMN4104A	809.000	3.73	-0.525	1.330	0.948	0.75	0.53
JsT-Ab-100727-06/NUF1003A0048	NAF5085A	PMNN4403A	NTN5243A/ PMLN5657A	DUT PTT side against phantom	HMN4104A	809.000	3.73	-0.181	2.070	1.420	1.08	0.74

Assessments at the Body (CW mode):

Assessment of offered antenna NAF5085A using body worn accessories NTN5243A and PMLN5658A along with offered batteries NNTN7038A and PMNN4403A at the center channel.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 2.0.

TABLE 33

Assessment of antenna NAF5085A with offered carry strap/body worn PMLN5658A, batteries and audio accessories. (Center Channel)												
Run number/SN	Antenna	Battery	Carry Case	Test position	Additional attachments	Test Freq. (MHz)	Initial Power (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Meas. 10g-SAR (W/kg)	Max Calc.1g-SAR (W/kg)	Max Calc. 10g-SAR (W/kg)
JsT-Ab-100727-12/NUF1003A0048	NAF5085A	NNTN7038A	NTN5243A/ PMLN5658A	DUT back against phantom	HMN4104A	809.000	3.74	-0.416	1.470	1.080	0.81	0.59
JsT-Ab-100727-07/NUF1003A0048	NAF5085A	NNTN7038A	NTN5243A/ PMLN5658A	DUT accessory side against phantom	HMN4104A	809.000	3.75	-0.410	1.100	0.816	0.60	0.45
JsT-Ab-100727-08/NUF1003A0048	NAF5085A	NNTN7038A	NTN5243A/ PMLN5658A	DUT PTT side against phantom	HMN4104A	809.000	3.74	-0.360	1.900	1.330	**1.03**	0.72
CM-Ab-100727-13/NUF1003A0048	NAF5085A	PMNN4403A	NTN5243A/ PMLN5658A	DUT back against phantom	HMN4104A	809.000	3.75	-0.461	1.290	0.957	0.72	0.53
JsT-Ab-100727-09/NUF1003A0048	NAF5085A	PMNN4403A	NTN5243A/ PMLN5658A	DUT accessory side against phantom	HMN4104A	809.000	3.73	-0.386	0.981	0.733	0.54	0.40
JsT-Ab-100727-10/NUF1003A0048	NAF5085A	PMNN4403A	NTN5243A/ PMLN5658A	DUT PTT side against phantom	HMN4104A	809.000	3.73	-0.385	1.880	1.320	1.03	0.72

Assessments at the Body (CW mode):

Assessment of other applicable frequencies using the highest SAR configuration from the tables above in accordance with sections 12.4 and 12.5.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 2.0.

TABLE 34

Assessment of other frequencies.												
Run number/SN	Antenna	Battery	Carry Case	Test position	Additional attachments	Test Freq. (MHz)	Initial Power (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Meas. 10g-SAR (W/kg)	Max Calc.1g-SAR (W/kg)	Max Calc. 10g-SAR (W/kg)
MeC-AB-101005-06/NUF1003A0048	NAF5085A	PMNN4403A	None	DUT back w/ antenna 2.5cm	HMN4104A	794.0125	3.01	-0.256	4.36	3.16	2.31	1.68
CM-Ab-100727-14/NUF1003A0048	NAF5085A	PMNN4403A	None	DUT back w/ antenna 2.5cm	HMN4104A	806.0125	3.75	-0.321	6.550	4.620	**3.53**	2.49
CM-Ab-100727-15/NUF1003A0048	NAF5085A	PMNN4403A	None	DUT front 2.5cm	HMN4104A	823.9875	3.74	-0.281	6.200	4.390	3.31	2.34

Assessments at the Body (CW mode):

Assessment of the offered antenna NAR6595AA using body worn accessories NTN8266B, PMLN5658A and PMLN5657A, audio cable HMN4104A and batteries NNTN7038A and PMNN4403A at the center channel. Other applicable frequencies tested in accordance with sections 12.4 and 12.5.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 2.0.

TABLE 35

Assessment of antenna NAR6595A with offered batteries, body worn and audio accessories (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Ab-100728-06/NUF1003A0048	NAR6595A	NNTN7038A	NTN8266B	Against phantom	HMN4104A	809.000	3.72	-0.348	13.16	7.980	7.13	4.32
CM-Ab-100727-17/NUF1003A0048	NAR6595A	NNTN7038A	PMLN5658A	Against phantom	HMN4104A	809.000	3.75	-0.328	7.44	5.490	4.01	2.96
CM-Ab-100727-18/NUF1003A0048	NAR6595A	NNTN7038A	PMLN5657A	Against phantom	HMN4104A	809.000	3.76	-0.403	4.360	3.240	2.39	1.78
CM-Ab-100727-19/NUF1003A0048	NAR6595A	PMNN4403A	NTN8266B	Against phantom	HMN4104A	809.000	3.77	-0.676	13.04	7.790	**7.62**	4.55
CM-Ab-100727-20/NUF1003A0048	NAR6595A	PMNN4403A	PMLN5658A	Against phantom	HMN4104A	809.000	3.76	-0.418	6.33	4.680	3.48	2.58
CM-Ab-100727-21/NUF1003A0048	NAR6595A	PMNN4403A	PMLN5657A	Against phantom	HMN4104A	809.000	3.75	-0.331	4.30	3.210	2.32	1.73
Other Frequencies for configurations with SAR >5.6mW/g												
CM-Ab-100727-22/NUF1003A0048	NAR6595A	NNTN7038A	NTN8266B	Against phantom	HMN4104A	806.0125	3.76	-0.533	13.24	8.000	7.48	4.52
CM-Ab-100728-02/NUF1003A0048	NAR6595A	NNTN7038A	NTN8266B	Against phantom	HMN4104A	823.9875	3.72	-0.699	10.85	6.540	6.37	3.84
HvH-Ab-101007-07/NUF1003A0048	NAR6595A	PMNN4403A	NTN8266B	Against phantom	HMN4104A	794.0125	3.03	-0.322	12.56	7.92	6.76	4.26
CM-Ab-100728-04/NUF1003A0048	NAR6595A	PMNN4403A	NTN8266B	Against phantom	HMN4104A	806.0125	3.75	-0.531	13.47	8.470	7.61	4.79
CM-Ab-100728-05/NUF1003A0048	NAR6595A	PMNN4403A	NTN8266B	Against phantom	HMN4104A	823.9875	3.74	-0.652	10.65	6.440	6.19	3.74

Assessments at the Body (CW mode):

Assessment at 2.5cm separation distance using the highest SAR configuration from the table above at the center channel per section 12.3.1.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 2.0.

TABLE 36

Assessment at 2.5cm separation. (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Ab-100728-08/NUF1003A0048	NAR6595A	PMNN4403A	None	DUT back 2.5cm	HMN4104A	809.000	3.77	-0.218	5.690	4.230	**2.99**	2.22
CM-Ab-100728-09/NUF1003A0048	NAR6595A	PMNN4403A	None	DUT front 2.5cm	HMN4104A	809.000	3.74	-0.0892	5.380	4.020	2.75	2.05

Assessments at the Body (CW mode):

Assessment of offered antenna NAR6595A using body worn accessories NTN5243A and PMLN5657A along with offered batteries NNTN7038A and PMNN4403A at the center channel.

The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 2.0.

TABLE 37

Assessment of antenna NAR6595A with offered carry strap/body worn PMLN5657A, batteries and audio accessories. (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
JsT-Ab-100729-04/NUF1003A0048	NAR6595A	NNTN7038A	NTN5243A/ PMLN5657A	DUT back against phantom	HMN4104A	809.000	3.73	-0.570	7.580	5.100	**4.32**	2.91
JsT-Ab-100729-10/NUF1003A0048	NAR6595A	NNTN7038A	NTN5243A/ PMLN5657A	DUT accessory side against phantom	HMN4104A	809.000	3.76	-1.09	3.330	2.410	2.14	1.55
CM-Ab-100729-13/NUF1003A0048	NAR6595A	NNTN7038A	NTN5243A/ PMLN5657A	DUT PTT side against phantom	HMN4104A	809.000	3.73	-0.169	5.780	3.920	3.00	2.04
JsT-Ab-100729-05/NUF1003A0048	NAR6595A	PMNN4403A	NTN5243A/ PMLN5657A	DUT back against phantom	HMN4104A	809.000	3.75	-0.111	8.200	5.770	4.21	2.96
JsT-Ab-100729-11/NUF1003A0048	NAR6595A	PMNN4403A	NTN5243A/ PMLN5657A	DUT accessory side against phantom	HMN4104A	809.000	3.72	-0.673	3.280	2.370	1.91	1.38
CM-Ab-100729-14/NUF1003A0048	NAR6595A	PMNN4403A	NTN5243A/ PMLN5657A	DUT PTT side against phantom	HMN4104A	809.000	3.72	-0.445	5.860	4.250	3.25	2.35

Assessments at the Body (CW mode):

Assessment of offered antenna NAR6595A using body worn accessories NTN5243A and PMLN5658A along with offered batteries NNTN7038A and PMNN4403A at the center channel.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 2.0.

TABLE 38

Assessment of antenna NAR6595A with offered carry strap/body worn PMLN5658A, batteries and audio accessories. (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Ab-100728-10/NUF1003A0048	NAR6595A	NNTN7038A	NTN5243A/ PMLN5658A	DUT back against phantom	HMN4104A	809.000	3.74	-0.384	6.230	4.610	3.40	2.52
CM-Ab-100728-11/NUF1003A0048	NAR6595A	NNTN7038A	NTN5243A/ PMLN5658A	DUT accessory side against phantom	HMN4104A	809.000	3.74	-0.579	7.410	5.200	4.23	2.97
CM-Ab-100728-12/NUF1003A0048	NAR6595A	NNTN7038A	NTN5243A/ PMLN5658A	DUT PTT side against phantom	HMN4104A	809.000	3.72	-0.462	8.370	5.870	**4.65**	3.26
JsT-Ab-100729-02/NUF1003A0048	NAR6595A	PMNN4403A	NTN5243A/ PMLN5658A	DUT back against phantom	HMN4104A	809.000	3.72	-0.768	3.950	2.920	2.36	1.74
JsT-Ab-100729-06/NUF1003A0048	NAR6595A	PMNN4403A	NTN5243A/ PMLN5658A	DUT accessory side against phantom	HMN4104A	809.000	3.72	-0.318	5.380	3.760	2.89	2.02
JsT-Ab-100729-12/NUF1003A0048	NAR6595A	PMNN4403A	NTN5243A/ PMLN5658A	DUT PTT side against phantom	HMN4104A	809.000	3.72	-0.710	7.590	5.290	4.47	3.11

Assessments at the Body (CW mode):

Assessment of other applicable frequencies using the highest SAR configuration from the tables above in accordance with sections 12.4 and 12.5.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 2.0.

TABLE 39

Assessment of other frequencies.												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Ab-100728-04/NUF1003A0048	NAR6595A	PMNN4403A	NTN8266B	Against phantom	HMN4104A	806.0125	3.75	-0.531	13.470	8.470	**7.61**	4.79
CM-Ab-100728-05/NUF1003A0048	NAR6595A	PMNN4403A	NTN8266B	Against phantom	HMN4104A	823.9875	3.74	-0.652	10.650	6.440	6.19	3.74

Note: Table 39 scans are the same as the frequency search scans in table 35 in accordance with section 12.5.

Assessments at the Body (CW mode):

Assessment of offered PSMs PMMN4059A, PMMN4060A, PMMN4061A and PSM belt clip 4205823V01 with antenna NAR6595A using offered batteries NNTN7038A and PMNN4403A at the center channel.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 2.0.

TABLE 40

Assessment of offered PSMs and belt clip with antenna NAR6595A using the offered batteries (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Ab-100729-16/NUF1003A0048	NAR6595A	NNTN7038A	4205823V01 PSM belt clip	Against phantom	PMMN4059A	809.000	3.73	-0.446	2.490	1.530	1.38	0.85
CM-Ab-100729-17/NUF1003A0048	NAR6595A	NNTN7038A	4205823V01 PSM belt clip	Against phantom	PMMN4060A	809.000	3.74	-0.741	2.750	1.720	1.63	1.02
CM-Ab-100729-18/NUF1003A0048	NAR6595A	NNTN7038A	4205823V01 PSM belt clip	Against phantom	PMMN4061A	809.000	3.76	-0.770	3.350	2.150	**2.00**	1.28
CM-Ab-100729-19/NUF1003A0048	NAR6595A	PMNN4403A	4205823V01 PSM belt clip	Against phantom	PMMN4059A	809.000	3.74	-0.687	2.550	1.600	1.49	0.94
CM-Ab-100729-20/NUF1003A0048	NAR6595A	PMNN4403A	4205823V01 PSM belt clip	Against phantom	PMMN4060A	809.000	3.73	-0.849	2.530	1.580	1.54	0.96
CM-Ab-100729-21/NUF1003A0048	NAR6595A	PMNN4403A	4205823V01 PSM belt clip	Against phantom	PMMN4061A	809.000	3.75	-0.781	3.260	2.060	1.95	1.23

Assessments at the Body (CW mode):

Assessment of other applicable frequencies using the highest SAR configuration from the table above in accordance with sections 12.4 and 12.5.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 2.0.

TABLE 41

Assessment of other frequencies.												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
HvH-Ab-101020-02/NUF1003A0048	NAR6595A	NNTN7038A	4205823V01 PSM belt clip	Against phantom	PMMN4061A	794.0125	3.02	-0.0968	2.78	1.76	1.42	0.90
CM-Ab-100731-23/NUF1003A0048	NAR6595A	NNTN7038A	4205823V01 PSM belt clip	Against phantom	PMMN4061A	806.0125	3.73	-0.638	3.230	2.090	1.87	1.21
CM-Ab-100731-25/NUF1003A0048	NAR6595A	NNTN7038A	4205823V01 PSM belt clip	Against phantom	PMMN4061A	823.9875	3.75	-0.446	4.200	2.650	**2.33**	1.47

Assessments at the Face (CW mode):

Assessment of the offered antenna NAF5085A using batteries NNTN7038A and PMNN4403A at the center channel. Assessment of DUT with back 2.5cm separation was also performed using the highest SAR configuration for this antenna.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 2.0.

TABLE 42

Assessment of antenna NAF5085A and offered batteries. (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
JsT-Face-100730-07/NUF1003A0048	NAF5085A	NNTN7038A	None	DUT front 2.5cm	None	809.000	3.76	-0.373	2.190	1.590	1.19	0.87
JsT-Face-100730-08/NUF1003A0048	NAF5085A	PMNN4403A	None	DUT front 2.5cm	None	809.000	3.75	-0.498	2.390	1.730	**1.34**	0.97
CM-Face-100817-06/NUF1003A0048	NAF5085A	PMNN4403A	None	DUT back 2.5cm	None	809.000	3.71	-0.345	2.41	1.76	1.30	0.953

Assessments at the Face (CW mode):

Assessment of other applicable frequencies using the highest SAR configuration from the table above in accordance with sections 12.4 and 12.5.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 2.0.

TABLE 43

Assessment of other frequencies.												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Face-101001-14/NUF1003A0048	NAF5085A	PMNN4403A	None	DUT front 2.5cm	None	794.0125	3.00	-0.0871	1.87	1.35	0.95	0.69
CM-Face-100812-06/NUF1003A0048	NAF5085A	PMNN4403A	None	DUT front 2.5cm	None	806.0125	3.72	-0.352	1.96	1.43	1.06	0.775
CM-Face-100812-07/NUF1003A0048	NAF5085A	PMNN4403A	None	DUT front 2.5cm	None	823.9875	3.75	-0.240	2.24	1.63	**1.18**	0.861

Assessments at the Face (CW mode):

Assessment of the offered antenna NAR6595A using batteries NNTN7038A and PMNN4403A at the center channel.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 2.0.

TABLE 44

Assessment of antenna NAR6595A and offered batteries. (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
JsT-Face-100730-13/NUF1003A0048	NAR6595A	NNTN7038A	None	DUT front 2.5cm	None	809.000	3.76	-0.146	4.630	3.400	2.39	1.76
CM-Face-100730-14/NUF1003A0048	NAR6595A	PMNN4403A	None	DUT front 2.5cm	None	809.000	3.75	-0.129	5.08	3.73	**2.62**	1.92

Assessments at the Face (CW mode):

Assessment of other applicable frequencies using the highest SAR configuration from the table above in accordance with sections 12.4 and 12.5. Assessment of DUT with back 2.5cm separation was also performed using the highest SAR configuration for this antenna.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 2.0.

TABLE 45

Assessment of other frequencies.												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Face-101001-15/NUF1003A0048	NAR6595A	PMNN4403A	None	DUT front 2.5cm	None	794.0125	3.00	-0.145	4.39	3.26	2.27	1.69
CM-Face-100812-08/NUF1003A0048	NAR6595A	PMNN4403A	None	DUT front 2.5cm	None	806.0125	3.73	-0.173	5.62	4.17	**2.92**	2.17
CM-Face-100812-09/NUF1003A0048	NAR6595A	PMNN4403A	None	DUT front 2.5cm	None	823.9875	3.76	-0.328	4.94	3.65	2.66	1.97
CM-Face-100818-02/NUF1003A0048	NAR6595A	PMNN4403A	None	DUT back 2.5cm	None	806.0125	3.71	-0.224	5.47	4.05	2.88	2.13

Assessments at the Face (CW mode):

Assessment of offered PSMs PMMN4059A, PMMN4060A, PMMN4061A and PSM belt clip 4205823V01 with antenna NAR6595A using offered batteries NNTN7038A and PMNN4403A at the center channel.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 2.0.

TABLE 46

Assessment of offered PSMs and belt clip with antenna NAR6595A using the offered batteries (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Face-100730-15/NUF1003A0048	NAR6595A	NNTN7038A	None	PSM front 2.5cm	PMMN4059A	809.0000	3.75	-0.328	0.792	0.569	0.43	0.31
CM-Face-100730-16/NUF1003A0048	NAR6595A	NNTN7038A	None	PSM front 2.5cm	PMMN4060A	809.0000	3.76	-0.514	0.896	0.639	0.50	0.36
CM-Face-100730-17/NUF1003A0048	NAR6595A	NNTN7038A	None	PSM front 2.5cm	PMMN4061A	809.0000	3.75	-0.729	0.955	0.689	0.56	0.41
CM-Face-100730-19/NUF1003A0048	NAR6595A	PMNN4403A	None	PSM front 2.5cm	PMMN4059A	809.0000	3.79	-0.431	1.001	0.730	0.55	0.40
CM-Face-100730-18/NUF1003A0048	NAR6595A	PMNN4403A	None	PSM front 2.5cm	PMMN4060A	809.0000	3.78	-0.555	0.860	0.614	0.49	0.35
CM-Face-100730-20/NUF1003A0048	NAR6595A	PMNN4403A	None	PSM front 2.5cm	PMMN4061A	809.0000	3.76	-0.669	1.015	0.728	**0.59**	0.42

Assessments at the Face (CW mode):

Assessment of other applicable frequencies using the highest SAR configuration from the table above in accordance with sections 12.4 and 12.5.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 2.0.

TABLE 47

Assessment of other frequencies.												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
HvH-Face-101020-03/NUF1003A0048	NAR6595A	PMNN4403A	None	PSM front 2.5cm	PMMN4061A	794.0125	3.02	-0.173	0.976	0.704	0.51	0.37
JsT-Face-100731-02/NUF1003A0048	NAR6595A	PMNN4403A	None	PSM front 2.5cm	PMMN4061A	806.0125	3.74	-0.598	1.060	0.763	0.61	0.44
JsT-Face-100731-03/NUF1003A0048	NAR6595A	PMNN4403A	None	PSM front 2.5cm	PMMN4061A	823.9875	3.77	-0.518	1.190	0.852	**0.67**	0.48

13.3 851-870 MHz Test Data:

Assessments at the Body (CW mode):

Assessment of the offered antenna NAF5085A using body worn accessories NTN8266B, PMLN5658A and PMLN5657A, audio cable HMN4104A and batteries NNTN7038A and PMNN4403A at the center channel.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 3.0.

TABLE 48

Assessment of antenna NAF5085A with offered batteries, body worn and audio accessories (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Ab-100723-12/NUF1003A0048	NAF5085A	NNTN7038A	NTN8266B	Against phantom	HMN4104A	860.500	3.72	-0.261	4.900	2.970	2.60	1.58
CM-Ab-100722-03/NUF1003A0048	NAF5085A	NNTN7038A	PMLN5658A	Against phantom	HMN4104A	860.500	3.68	-0.307	1.590	1.130	0.85	0.61
CM-Ab-100722-04/NUF1003A0048	NAF5085A	NNTN7038A	PMLN5657A	Against phantom	HMN4104A	860.500	3.67	-0.441	1.050	0.746	0.58	0.41
CM-Ab-100723-13/NUF1003A0048	NAF5085A	PMNN4403A	NTN8266B	Against phantom	HMN4104A	860.500	3.74	-0.344	5.14	3.11	**2.78**	1.68
CM-Ab-100722-06/NUF1003A0048	NAF5085A	PMNN4403A	PMLN5658A	Against phantom	HMN4104A	860.500	3.73	-0.369	1.690	1.200	0.92	0.65
CM-Ab-100722-07/NUF1003A0048	NAF5085A	PMNN4403A	PMLN5657A	Against phantom	HMN4104A	860.500	3.71	-0.901	0.822	0.585	0.51	0.36

Assessments at the Body (CW mode):

Assessment at 2.5cm separation distance using the highest SAR configuration from the table above at the center channel per section 12.3.1.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 3.0.

TABLE 49

Assessment at 2.5cm separation. (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Ab-100723-14/NUF1003A0048	NAF5085A	PMNN4403A	None	DUT back 2.5cm	HMN4104A	860.500	3.73	-0.319	7.260	5.100	**3.91**	2.74
JsT-Ab-100723-03/NUF1003A0048	NAF5085A	PMNN4403A	None	DUT front 2.5cm	HMN4104A	860.500	3.71	-0.424	2.100	1.500	1.16	0.83

Assessments at the Body (CW mode):

Assessment of offered antenna NAF5085A using body worn accessories NTN5243A PMLN5657A along with offered batteries NNTN7038A and PMNN4403A at the center channel.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 3.0.

TABLE 50

Assessment of antenna NAF5085A with offered carry strap/body worn PMLN5657A, batteries and audio accessories. (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Ab-100723-17/NUF1003A0048	NAF5085A	NNTN7038A	NTN5243A/ PMLN5657A	DUT back against phantom	HMN4104A	860.500	3.75	-0.267	4.060	2.080	**2.16**	1.11
CM-Ab-100723-18/NUF1003A0048	NAF5085A	NNTN7038A	NTN5243A/ PMLN5657A	DUT accessory side against phantom	HMN4104A	860.500	3.75	-0.0748	1.790	1.260	0.91	0.64
JsT-Ab-100724-02/NUF1003A0048	NAF5085A	NNTN7038A	NTN5243A/ PMLN5657A	DUT PTT side against phantom	HMN4104A	860.500	3.76	-0.0941	2.450	1.690	1.25	0.86
JsT-Ab-100724-06/NUF1003A0048	NAF5085A	PMNN4403A	NTN5243A/ PMLN5657A	DUT back against phantom	HMN4104A	860.500	3.76	0.0345	3.330	2.330	1.67	1.17
JsT-Ab-100724-05/NUF1003A0048	NAF5085A	PMNN4403A	NTN5243A/ PMLN5657A	DUT accessory side against phantom	HMN4104A	860.500	3.75	-0.220	1.760	1.270	0.93	0.67
JsT-Ab-100724-03/NUF1003A0048	NAF5085A	PMNN4403A	NTN5243A/ PMLN5657A	DUT PTT side against phantom	HMN4104A	860.500	3.75	0.0636	1.770	1.250	0.89	0.63

Assessments at the Body (CW mode):

Assessment of offered antenna NAF5085A using body worn accessories NTN5243A and PMLN5658A along with offered batteries NNTN7038A and PMNN4403A at the center channel.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 3.0.

TABLE 51

Assessment of antenna NAF5085A with offered carry strap/body worn PMLN5658A, batteries and audio accessories. (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
JsT-Ab-100723-04/NUF1003A0048	NAF5085A	NNTN7038A	NTN5243A/ PMLN5658A	DUT back against phantom	HMN4104A	860.500	3.72	-0.0445	0.935	0.666	0.47	0.34
JsT-Ab-100723-05/NUF1003A0048	NAF5085A	NNTN7038A	NTN5243A/ PMLN5658A	DUT accessory side against phantom	HMN4104A	860.500	3.73	-0.297	1.210	0.831	0.65	0.44
CM-Ab-100723-15/NUF1003A0048	NAF5085A	NNTN7038A	NTN5243A/ PMLN5658A	DUT PTT side against phantom	HMN4104A	860.500	3.75	-0.185	2.700	1.870	**1.41**	0.98
JsT-Ab-100723-09/NUF1003A0048	NAF5085A	PMNN4403A	NTN5243A/ PMLN5658A	DUT back against phantom	HMN4104A	860.500	3.73	-0.173	1.230	0.859	0.64	0.45
JsT-Ab-100723-08/NUF1003A0048	NAF5085A	PMNN4403A	NTN5243A/ PMLN5658A	DUT accessory side against phantom	HMN4104A	860.500	3.73	-0.274	1.25	0.859	0.67	0.46
CM-Ab-100723-11/NUF1003A0048	NAF5085A	PMNN4403A	NTN5243A/ PMLN5658A	DUT PTT side against phantom	HMN4104A	860.500	3.73	-0.199	2.680	1.840	1.40	0.96

Assessments at the Body (CW mode):

Assessment of other applicable frequencies using the highest SAR configuration from the tables above in accordance with sections 12.4 and 12.5.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 3.0.

TABLE 52

Assessment of other frequencies.												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
JsT-Ab-100724-07/NUF1003A0048	NAF5085A	PMNN4403A	None	DUT back 2.5cm	HMN4104A	851.0125	3.74	-0.215	6.360	4.480	3.34	2.35
JsT-Ab-100724-08/NUF1003A0048	NAF5085A	PMNN4403A	None	DUT back 2.5cm	HMN4104A	869.9875	3.76	-0.290	7.290	5.110	**3.90**	2.73

Assessments at the Body (CW mode):

Assessment of the offered antenna NAR6595AA using body worn accessories NTN8266B, PMLN5658A and PMLN5657A, audio cable HMN4104A and batteries NNTN7038A and PMNN4403A at the center channel. Other applicable frequencies tested in accordance with sections 12.4 and 12.5.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 3.0.

TABLE 53

Assessment of antenna NAR6595A with offered batteries, body worn and audio accessories (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
JsT-Ab-100724-09/NUF1003A0048	NAR6595A	NNTN7038A	NTN8266B	Against phantom	HMN4104A	860.500	3.77	-0.326	9.640	5.720	5.20	3.08
JsT-Ab-100724-10/NUF1003A0048	NAR6595A	NNTN7038A	PMLN5658A	Against phantom	HMN4104A	860.500	3.77	-0.479	5.270	3.840	2.94	2.14
JsT-Ab-100724-11/NUF1003A0048	NAR6595A	NNTN7038A	PMLN5657A	Against phantom	HMN4104A	860.500	3.77	-0.425	2.980	2.210	1.64	1.22
CM-Ab-100724-12/NUF1003A0048	NAR6595A	PMNN4403A	NTN8266B	Against phantom	HMN4104A	860.500	3.75	-0.519	10.250	5.970	5.78	3.36
CM-Ab-100724-13/NUF1003A0048	NAR6595A	PMNN4403A	PMLN5658A	Against phantom	HMN4104A	860.500	3.75	-0.661	5.810	4.240	3.38	2.47
CM-Ab-100724-14/NUF1003A0048	NAR6595A	PMNN4403A	PMLN5657A	Against phantom	HMN4104A	860.500	3.75	-0.607	2.690	2.000	1.55	1.15
Assessment of other applicable frequencies for highest SAR configuration > 5.6mW/g												
CM-Ab-100804-02/NUF1003A0048	NAR6595A	PMNN4403A	NTN8266B	Against phantom	HMN4104A	851.0125	3.73	-0.487	11.100	6.370	**6.21**	3.56
CM-Ab-100804-03/NUF1003A0048	NAR6595A	PMNN4403A	NTN8266B	Against phantom	HMN4104A	869.9875	3.76	-0.361	10.200	5.840	5.54	3.17

Assessments at the Body (CW mode):

Assessment at 2.5cm separation distance using the highest SAR configuration from the table above at the center channel per section 12.3.1.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 3.0.

TABLE 54

Assessment at 2.5cm separation. (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Ab-100724-16/NUF1003A0048	NAR6595A	PMNN4403A	None	DUT back 2.5cm	HMN4104A	860.500	3.74	-0.529	4.670	3.440	**2.64**	1.94
CM-Ab-100724-17/NUF1003A0048	NAR6595A	PMNN4403A	None	DUT front 2.5cm	HMN4104A	860.500	3.76	-0.711	4.250	3.140	2.50	1.85

Assessments at the Body (CW mode):

Assessment of offered antenna NAR6595A using body worn accessories NTN5243A and PMLN5657A along with offered batteries NNTN7038A and PMNN4403A at the center channel.

The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 3.0.

TABLE 55

Assessment of antenna NAR6595A with offered carry strap/body worn PMLN5657A, batteries and audio accessories. (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
JsT-Ab-100726-09/NUF1003A0048	NAR6595A	NNTN7038A	NTN5243A/ PMLN5657A	DUT back against phantom	HMN4104A	860.500	3.74	-0.790	5.670	3.980	**3.40**	2.39
JsT-Ab-100726-04/NUF1003A0048	NAR6595A	NNTN7038A	NTN5243A/ PMLN5657A	DUT accessory side against phantom	HMN4104A	860.500	3.74	-0.332	3.160	2.240	1.71	1.21
JsT-Ab-100726-05/NUF1003A0048	NAR6595A	NNTN7038A	NTN5243A/ PMLN5657A	DUT PTT side against phantom	HMN4104A	860.500	3.74	-0.138	4.480	3.260	2.31	1.68
JsT-Ab-100726-10/NUF1003A0048	NAR6595A	PMNN4403A	NTN5243A/ PMLN5657A	DUT back against phantom	HMN4104A	860.500	3.73	-0.276	5.570	3.780	2.97	2.01
JsT-Ab-100726-07/NUF1003A0048	NAR6595A	PMNN4403A	NTN5243A/ PMLN5657A	DUT accessory side against phantom	HMN4104A	860.500	3.75	-0.519	2.270	1.640	1.28	0.92
JsT-Ab-100726-08/NUF1003A0048	NAR6595A	PMNN4403A	NTN5243A/ PMLN5657A	DUT PTT side against phantom	HMN4104A	860.500	3.73	-0.442	4.640	3.290	2.57	1.82

Assessments at the Body (CW mode):

Assessment of offered antenna NAR6595A using body worn accessories NTN5243A and PMLN5658A along with offered batteries NNTN7038A and PMNN4403A at the center channel.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 3.0.

TABLE 56

Assessment of antenna NAR6595A with offered carry strap/body worn PMLN5658A, batteries and audio accessories. (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Ab-100724-21/NUF1003A0048	NAR6595A	NNTN7038A	NTN5243A/ PMLN5658A	DUT back against phantom	HMN4104A	860.500	3.77	-0.637	3.570	2.610	2.07	1.51
CM-Ab-100724-22/NUF1003A0048	NAR6595A	NNTN7038A	NTN5243A/ PMLN5658A	DUT accessory side against phantom	HMN4104A	860.500	3.77	-0.672	5.200	3.600	**3.04**	2.10
CM-Ab-100724-23/NUF1003A0048	NAR6595A	NNTN7038A	NTN5243A/ PMLN5658A	DUT PTT side against phantom	HMN4104A	860.500	3.76	-0.359	5.340	3.700	2.90	2.01
CM-Ab-100724-24/NUF1003A0048	NAR6595A	PMNN4403A	NTN5243A/ PMLN5658A	DUT back against phantom	HMN4104A	860.500	3.77	-0.721	4.330	3.160	2.56	1.87
JsT-Ab-100726-02/NUF1003A0048	NAR6595A	PMNN4403A	NTN5243A/ PMLN5658A	DUT accessory side against phantom	HMN4104A	860.500	3.74	-0.454	3.470	2.390	1.93	1.33
JsT-Ab-100726-03/NUF1003A0048	NAR6595A	PMNN4403A	NTN5243A/ PMLN5658A	DUT PTT side against phantom	HMN4104A	860.500	3.74	-0.329	5.150	3.540	2.78	1.91

Assessments at the Body (CW mode):

Assessment of other applicable frequencies using the highest SAR configuration from the 851-870MHz band tables above in accordance with sections 12.4 and 12.5.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 3.0.

TABLE 57

Assessment of other frequencies.												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Ab-100804-02/NUF1003A0048	NAR6595A	PMNN4403A	NTN8266B	Against phantom	HMN4104A	851.0125	3.73	-0.487	11.100	6.370	**6.21**	3.56
CM-Ab-100804-03/NUF1003A0048	NAR6595A	PMNN4403A	NTN8266B	Against phantom	HMN4104A	869.9875	3.76	-0.361	10.200	5.840	5.54	3.17

Note: Table 57 scans are the same as the frequency search scans in table 53 in accordance with section 12.5.

Assessments at the Body (CW mode):

Assessment of offered PSMs PMMN4059A, PMMN4060A, PMMN4061A and PSM belt clip 4205823V01 with antenna NAR6595A using offered batteries NNTN7038A and PMNN4403A at the center channel.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 3.0.

TABLE 58

Assessment of offered PSMs and belt clip with antenna NAR6595A using the offered batteries (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Ab-100729-22/NUF1003A0048	NAR6595A	NNTN7038A	4205823V01 PSM belt clip	Against phantom	PMMN4059A	860.500	3.77	-0.685	3.620	2.140	2.12	1.25
CM-Ab-100729-23/NUF1003A0048	NAR6595A	NNTN7038A	4205823V01 PSM belt clip	Against phantom	PMMN4060A	860.500	3.76	-0.164	2.380	1.430	1.24	0.74
CM-Ab-100731-16/NUF1003A0048	NAR6595A	NNTN7038A	4205823V01 PSM belt clip	Against phantom	PMMN4061A	860.500	3.75	-0.875	2.770	1.700	1.69	1.04
CM-Ab-100731-17/NUF1003A0048	NAR6595A	PMNN4403A	4205823V01 PSM belt clip	Against phantom	PMMN4059A	860.500	3.77	-0.692	3.680	2.190	**2.16**	1.28
CM-Ab-100731-18/NUF1003A0048	NAR6595A	PMNN4403A	4205823V01 PSM belt clip	Against phantom	PMMN4060A	860.500	3.76	-0.194	2.340	1.510	1.22	0.79
CM-Ab-100731-19/NUF1003A0048	NAR6595A	PMNN4403A	4205823V01 PSM belt clip	Against phantom	PMMN4061A	860.500	3.76	-0.926	2.880	1.730	1.78	1.07

Assessments at the Body (CW mode):

Assessment of other applicable frequencies using the highest SAR configuration from the table above in accordance with sections 12.4 and 12.5.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 3.0.

TABLE 59

Assessment of other frequencies.												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Ab-100731-21/NUF1003A0048	NAR6595A	PMNN4403A	4205823V01 PSM belt clip	Against phantom	PMMN4059A	851.0125	3.75	-0.745	3.140	1.950	**1.86**	1.16
CM-Ab-100731-22/NUF1003A0048	NAR6595A	PMNN4403A	4205823V01 PSM belt clip	Against phantom	PMMN4059A	869.9875	3.75	-0.236	3.250	1.870	1.72	0.99

Assessments at the Face (CW mode):

Assessment of the offered antenna NAF5085A using batteries NNTN7038A and PMNN4403A at the center channel.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 3.0.

TABLE 60

Assessment of antenna NAF5085A and offered batteries. (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
JsT-Face-100730-03/NUF1003A0048	NAF5085A	NNTN7038A	None	DUT front 2.5cm	None	860.500	3.77	-0.443	2.390	1.730	1.32	0.96
JsT-Face-100730-04/NUF1003A0048	NAF5085A	PMNN4403A	None	DUT front 2.5cm	None	860.500	3.76	-0.510	2.890	2.080	**1.63**	1.17

Assessments at the Face (CW mode):

Assessment of other applicable frequencies using the highest SAR configuration from the table above in accordance with sections 12.4 and 12.5. Assessment of DUT with back 2.5cm separation was also performed using the highest SAR configuration for this antenna.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 3.0.

TABLE 61

Assessment of other frequencies.												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Face-100812-02/NUF1003A0048	NAF5085A	PMNN4403A	None	DUT front 2.5cm	None	851.0125	3.68	-0.278	3.23	2.31	**1.72**	1.23
CM-Face-100812-03/NUF1003A0048	NAF5085A	PMNN4403A	None	DUT front 2.5cm	None	869.9875	3.70	-0.279	2.97	2.13	1.58	1.14
JsT-Face-100817-04/NUF1003A0048	NAF5085A	PMNN4403A	None	DUT back 2.5cm	None	851.0125	3.68	-0.196	2.37	1.72	1.24	0.900

Assessments at the Face (CW mode):

Assessment of the offered antenna NAR6595A using batteries NNTN7038A and PMNN4403A at the center channel.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 3.0.

TABLE 62

Assessment of antenna NAR6595A and offered batteries. (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
JsT-Face-100730-05/NUF1003A0048	NAR6595A	NNTN7038A	None	DUT front 2.5cm	None	860.500	3.76	-0.552	3.710	2.700	2.11	1.53
JsT-Face-100730-06/NUF1003A0048	NAR6595A	PMNN4403A	None	DUT front 2.5cm	None	860.500	3.77	-0.578	4.110	2.990	**2.35**	1.71

Assessments at the Face (CW mode):

Assessment of other applicable frequencies using the highest SAR configuration from the table above in accordance with sections 12.4 and 12.5. Assessment of DUT with back 2.5cm separation was also performed using the highest SAR configuration for this antenna.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 3.0.

TABLE 63

Assessment of other frequencies.												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Face-100812-04/NUF1003A0048	NAR6595A	PMNN4403A	None	DUT front 2.5cm	None	851.0125	3.70	-0.461	4.57	3.36	2.54	1.87
CM-Face-100812-05/NUF1003A0048	NAR6595A	PMNN4403A	None	DUT front 2.5cm	None	869.9875	3.70	-0.419	4.65	3.40	2.56	1.87
CM-Face-100817-05/NUF1003A0048	NAR6595A	PMNN4403A	None	DUT back 2.5cm	None	869.9875	3.70	-0.500	4.76	3.49	**2.67**	1.96

Assessments at the Face (CW mode):

Assessment of offered PSMs PMMN4059A, PMMN4060A, PMMN4061A and PSM belt clip 4205823V01 with antenna NAR6595A using offered batteries NNTN7038A and PMNN4403A at the center channel.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 3.0.

TABLE 64

Assessment of offered PSMs and belt clip with antenna NAR6595A using the offered batteries (Center Channel)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
JsT-Face-100731-08/NUF1003A0048	NAR6595A	NNTN7038A	None	PSM front 2.5cm	PMMN4059A	860.500	3.77	-0.640	1.240	0.878	0.72	0.51
JsT-Face-100731-06/NUF1003A0048	NAR6595A	NNTN7038A	None	PSM front 2.5cm	PMMN4060A	860.500	3.78	-0.323	0.806	0.571	0.43	0.31
JsT-Face-100731-11/NUF1003A0048	NAR6595A	NNTN7038A	None	PSM front 2.5cm	PMMN4061A	860.500	3.78	-0.342	0.717	0.512	0.39	0.28
JsT-Face-100731-10/NUF1003A0048	NAR6595A	PMNN4403A	None	PSM front 2.5cm	PMMN4059A	860.500	3.78	-0.824	1.240	0.882	**0.75**	0.53
JsT-Face-100731-13/NUF1003A0048	NAR6595A	PMNN4403A	None	PSM front 2.5cm	PMMN4060A	860.500	3.78	-0.310	0.743	0.525	0.40	0.28
JsT-Face-100731-12/NUF1003A0048	NAR6595A	PMNN4403A	None	PSM front 2.5cm	PMMN4061A	860.500	3.78	-0.613	0.738	0.529	0.42	0.30

Assessments at the Face (CW mode):

Assessment of other applicable frequencies using the highest SAR configuration from the table above in accordance with sections 12.4 and 12.5.
The highest SAR results (bolded) from the tables below are included in APPENDIX F Section 3.0.

TABLE 65

Assessment of other frequencies.												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
JsT-Face-100803-02/NUF1003A0048	NAR6595A	PMNN4403A	None	PSM front 2.5cm	PMMN4059A	851.0125	3.75	-0.790	1.080	0.764	0.65	0.46
JsT-Face-100803-03/NUF1003A0048	NAR6595A	PMNN4403A	None	PSM front 2.5cm	PMMN4059A	869.9875	3.77	-0.337	1.270	0.892	**0.69**	0.48

13.4 Assessment at Body Bluetooth:

The DUT was tested across the BT band using the highest overall SAR configuration from tables 17 (764-775MHz band), 35 (794-824MHz bands) and 53 (851-870MHz band). Note that the highest SAR configuration is the same for each band. Test without the offered audio accessory using the highest configuration across the band reflects other intended user configuration.
The highest SAR results from the table below (bolded) are included in APPENDIX F Section 4.0.

TABLE 66

Assessments at the Body (76.1% DC)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
MeC-Ab-100929-08/ NUF1002A0006	84009370001	PMNN4403A	NTN8266B	Against Phantom	HMN4104A	2402	0.00924	-0.241	0.0025	0.0010	0.0035	0.0013
MeC-Ab-100929-07/ NUF1002A0006	84009370001	PMNN4403A	NTN8266B	Against Phantom	HMN4104A	2441	0.00969	-0.0176	0.0032	0.0013	0.0039	0.0016
MeC-Ab-100929-09/ NUF1002A0006	84009370001	PMNN4403A	NTN8266B	Against Phantom	HMN4104A	2480	0.00979	0.896	0.0022	0.0009	0.0027	0.0011
Test without audio accessory using highest SAR configuration above.												
CM-Ab-101108-02 /NUF1003A0094	84009370001	PMNN4403A	NTN8266B	Against Phantom	None	2441	0.00969	-0.624	0.00741	0.00509	**0.01**	0.01

13.5 Assessment at Face Bluetooth:

The DUT was tested across the BT band using the highest overall SAR configuration as reported in tables 17 (764-775MHz band), 35 (794-824MHz bands) and 53 (851-870MHz band). Note that the highest SAR configuration is the same for each band. Test without the offered audio accessory using the highest configuration across the band reflects other intended user configuration.
The highest SAR results from the table below (bolded) are included in APPENDIX F Section 5.0.

TABLE 67

Assessments at the Face (76.1% DC)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
MeC-Face-100929-02/ NUF1002A0006	84009370001	PMNN4403A	None	DUT front @ 2.5cm	None	2441	0.00969	-0.054	0.0019	0.0111	0.0024	0.0139
MeC-Face-100929-03/ NUF1002A0006	84009370001	PMNN4403A	None	DUT back @ 2.5cm	None	2441	0.00969	-0.520	0.0005	0.0001	0.0007	0.0002
MeC-Face-100929-05/ NUF1002A0006	84009370001	PMNN4403A	None	DUT front @ 2.5cm	None	2402	0.00924	0.173	0.0018	0.0106	**0.0024**	0.0138
MeC-Face-100929-06/ NUF1002A0006	84009370001	PMNN4403A	None	DUT front @ 2.5cm	None	2480	0.00979	0.053	0.0019	0.0109	0.0023	0.0134

13.6 Assessments at the Body 764-775MHz band with Antenna NAF5085A and belt clip NTN8266B without audio accessory:

The DUT was tested across all applicable frequencies using offered accessories NTN8266B belt clip, NAF5085A antenna and PMNN4403A and NNTN7038A batteries without an audio accessory attached using the test procedure and thresholds outlined in sections 12.4 and 12.5. Tests without the offered audio accessory reflects intended user configuration.
The highest SAR results from the table below (bolded) are included in APPENDIX F Section 6.0.

TABLE 68

Assessments at the Body (CW)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Ab-101113-14 /NUF1002A0006	NAF5085A	PMNN4403A	NTN8266B	Against Phantom	None	769.000	3.04	-0.312	7.33	5.42	3.94	2.91
CM-Ab-101113-16 /NUF1002A0006	NAF5085A	NNTN7038A	NTN8266B	Against Phantom	None	769.000	3.02	-0.224	7.29	5.38	3.84	2.83
Test at the other applicable frequencies with highest configuration from above												
CM-Ab-101113-18/ NUF1002A0006	NAF5085A	PMNN4403A	NTN8266B	Against Phantom	None	764.0125	3.03	-0.264	7.57	5.59	**4.02**	2.97
CM-Ab-101113-19/ NUF1002A0006	NAF5085A	PMNN4403A	NTN8266B	Against Phantom	None	775.000	3.03	-0.242	6.74	4.97	3.56	2.63

13.7 Assessments at the Body 764-775MHz band with antenna NAF5085A and other carry cases without audio accessory:

The DUT was tested across all applicable frequencies using offered accessories PMLN5658A, PMLN5657A, NTN5243A carry cases, NAF5085A antenna and PMNN4403A and NNTN7038A batteries without an audio accessory attached using the test procedure and thresholds outlined in sections 12.4 and 12.5. Test without the offered audio accessory reflects intended user configuration.
The highest SAR results from the table below (bolded) are included in APPENDIX F Section 7.0.

TABLE 69

Assessments at the Body (CW)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Ab-101106-02/ NUF1002A0006	NAF5085A	PMNN4403A	PMLN5658A	Against Phantom	None	769.000	3.10	-0.313	2.22	1.65	1.19	0.89
CM-Ab-101106-03/ NUF1002A0006	NAF5085A	NNTN7038A	PMLN5658A	Against Phantom	None	769.000	3.12	-0.289	2.33	1.73	1.25	0.92
CM-Ab-101106-04/ NUF1002A0006	NAF5085A	PMNN4403A	PMLN5657A	Against Phantom	None	769.000	3.12	-0.677	1.58	1.18	0.92	0.69
CM-Ab-101106-05/ NUF1002A0006	NAF5085A	NNTN7038A	PMLN5657A	Against Phantom	None	769.000	3.11	-0.195	1.81	1.36	0.95	0.71
CM-Ab-101106-06/ NUF1002A0006	NAF5085A	NNTN7038A	NTN5243A w/PMLN5657A	Back against phantom w/o loop	None	769.000	3.11	0.074	4.73	3.42	2.37	1.71
CM-Ab-101106-07/ NUF1002A0006	NAF5085A	PMNN4403A	NTN5243A w/PMLN5657A	Back against phantom w/o loop	None	769.000	3.10	-0.280	4.74	3.48	2.53	1.86
CM-Ab-101106-08/ NUF1002A0006	NAF5085A	NNTN7038A	NTN5243A w/PMLN5658A	Back against phantom	None	769.000	3.12	-0.266	2.42	1.80	1.29	0.96
CM-Ab-101106-09/ NUF1002A0006	NAF5085A	PMNN4403	NTN5243A w/PMLN5658A	Back against phantom	None	769.000	3.10	-0.286	2.34	1.74	1.25	0.93
Test at the other applicable frequencies with highest configuration from above												
CM-Ab-101106-10/ NUF1002A0006	NAF5085A	PMNN4403A	NTN8266B	Against Phantom	None	764.0125	3.13	-0.253	4.81	3.47	**2.55**	1.84
CM-Ab-101106-11/ NUF1002A0006	NAF5085A	PMNN4403A	NTN8266B	Against Phantom	None	775.000	3.11	-0.128	4.76	3.39	2.45	1.75

13.8 Assessments at the Body 764-775MHz band with antenna NAR6595A and belt clip NTN8266B without audio accessory:

The DUT was tested across all applicable frequencies using offered accessories NTN8266B belt clip, NAR6595A antenna, PMNN4403A and NNTN7038A batteries without an audio accessory attached using the test procedure and thresholds outlined in sections 12.4 and 12.5. Tests without the offered audio accessory reflects intended user configuration.
The highest SAR results from the table below (bolded) are included in APPENDIX F Section 8.0.

TABLE 70

Assessments at the Body (CW)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Ab-101113-20/ NUF1002A0006	NAR6595A	PMNN4403A	NTN8266B	Against Phantom	None	769.000	3.06	-0.427	13.07	9.64	**7.21**	5.32
Other applicable frequencies (results > 70% threshold)												
CM-Ab-101113-21/ NUF1002A0006	NAR6595A	PMNN4403A	NTN8266B	Against Phantom	None	764.0125	3.03	-0.253	13.07	9.62	6.93	5.10
HvH-Ab-101030-04/ NUF1002A0006	NAR6595A	PMNN4403A	NTN8266B	Against Phantom	None	775.000	3.09	-0.171	12.63	9.32	6.57	4.85
CM-Ab-101113-22/ NUF1002A0006	NAR6595A	NNTN7038A	NTN8266B	Against Phantom	None	769.000	3.03	-0.161	12.97	9.57	6.73	4.97
Other applicable frequencies (results > 70% threshold)												
CM-Ab-101113-23/ NUF1002A0006	NAR6595A	NNTN7038A	NTN8266B	Against Phantom	None	764.0125	3.02	-0.169	13.17	9.75	6.85	5.07
HvH-Ab-101114-02/ NUF1002A0006	NAR6595A	NNTN7038A	NTN8266B	Against Phantom	None	775.000	3.04	-0.101	13.05	9.62	6.68	4.92

13.9 Assessments at the Body 764-775MHz band with antenna NAR6595A and other carry cases without audio accessory:

The DUT was tested across all applicable frequencies using offered accessories PMLN5658A, PMLN5657A, NTN5243A carry cases, NAR6595A antenna and PMNN4403A and NNTN7038A batteries without an audio accessory attached using the test procedure and thresholds outlined in sections 12.4 and 12.5. Tests without the offered audio accessory reflects intended user configuration.
The highest SAR results from the table below (bolded) are included in APPENDIX F Section 9.0.

TABLE 71

Assessments at the Body (CW)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
CM-Ab-101106-12/ NUF1002A0006	NAR6595A	PMNN4403A	PMLN5658A	Against Phantom	None	769.00	3.11	-0.198	6.53	4.84	3.42	2.53
CM-Ab-101106-13/ NUF1002A0006	NAR6595A	NNTN7038A	PMLN5658A	Against Phantom	None	769.00	3.12	-0.182	7.18	5.33	3.74	2.78
CM-Ab-101106-14/ NUF1002A0006	NAR6595A	PMNN4403A	PMLN5657A	Against Phantom	None	769.00	3.11	-0.0623	4.09	3.08	2.07	1.56
CM-Ab-101107-02/ NUF1002A0006	NAR6595A	NNTN7038A	PMLN5657A	Against Phantom	None	769.00	3.11	-0.105	4.59	3.43	2.35	1.76
CM-Ab-101107-03/ NUF1002A0006	NAR6595A	NNTN7038A	NTN5243A w/PMLN5657A	Back against phantom w/o loop	None	769.00	3.11	-0.0148	10.14	7.55	5.09	3.79
CM-Ab-101107-06/ NUF1002A0006	NAR6595A	PMNN4403A	NTN5243A w/PMLN5657A	Back against phantom w/o loop	None	769.00	3.10	-0.148	10.02	7.48	5.18	3.87
CM-Ab-101107-07/ NUF1002A0006	NAR6595A	NNTN7038A	NTN5243A w/PMLN5658A	Back against phantom	None	769.00	3.11	-0.104	6.24	4.65	3.20	2.38
CM-Ab-101107-08/ NUF1002A0006	NAR6595A	PMNN4403A	NTN5243A w/PMLN5658A	Back against phantom	None	769.00	3.12	-0.174	5.97	4.43	3.11	2.31
Test at the other applicable frequencies with highest configuration from above												
CM-Ab-101107-09/ NUF1002A0006	NAR6595A	PMNN4403A	NTN5243A w/PMLN5657A	Back against phantom w/o loop	None	764.0125	3.13	-0.191	10.06	7.51	**5.26**	3.92
CM-Ab-101107-10/ NUF1002A0006	NAR6595A	PMNN4403A	NTN5243A w/PMLN5657A	Back against phantom w/o loop	None	775.000	3.12	-0.187	10.07	7.43	5.26	3.88

13.10 Assessments at the Body 794-824MHz band with Antenna NAF5085A and belt clip NTN8266B without audio accessory:

The DUT was tested across all applicable frequencies using offered accessories NTN8266B belt clip, NAF5085A antenna and PMNN4403A and NNTN7038A batteries without an audio accessory attached using the test procedure and thresholds outlined in sections 12.4 and 12.5. Test without the offered audio accessory reflects intended user configuration.
The highest SAR results from the table below (bolded) are included in APPENDIX F Section 10.0.

TABLE 72

Assessments at the Body (CW)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
MeC-Ab-101113-02/ NUF1002A0006	NAF5085A	PMNN4403A	NTN8266B	Against Phantom	None	809.000	3.75	-0.314	3.5	2.57	1.87	1.38
MeC-Ab-101113-04/ NUF1002A0006	NAF5085A	NNTN7038A	NTN8266B	Against Phantom	None	809.000	3.74	-0.240	3.46	2.57	1.83	1.36
Test at the other applicable frequencies with highest configuration from above												
MeC-Ab-101113-05/ NUF1002A0006	NAF5085A	PMNN4403A	NTN8266B	Against Phantom	None	794.0125	3.06	-0.201	4.69	3.47	**2.46**	1.82
MeC-Ab-101113-06/ NUF1002A0006	NAF5085A	PMNN4403A	NTN8266B	Against Phantom	None	823.9875	3.74	-0.263	3.85	2.82	2.05	1.50

13.11 Assessments at the Body 794-824MHz band with antenna NAF5085A and other carry cases without audio accessory:

The DUT was tested across all applicable frequencies using offered accessories PMLN5658A, PMLN5657A, NTN5243A carry cases, NAF5085A antenna and PMNN4403A and NNTN7038A batteries without an audio accessory attached using the test procedure and thresholds outlined in sections 12.4 and 12.5. Test without the offered audio accessory reflects intended user configuration.
The highest SAR results from the table below (bolded) are included in APPENDIX F Section 11.0.

TABLE 73

Assessments at the Body (CW)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
HvH-Ab-101031-09/ NUF1002A0006	NAF5085A	PMNN4403A	PMLN5658A	Against Phantom	None	809.000	3.76	-0.232	1.77	1.31	0.93	0.69
HvH-Ab-101031-10/ NUF1002A0006	NAF5085A	NNTN7038A	PMLN5658A	Against Phantom	None	809.000	3.76	-0.304	1.79	1.33	0.96	0.71
CM-Ab-101105-02/ NUF1002A0006	NAF5085A	PMNN4403A	PMLN5657A	Against Phantom	None	809.000	3.76	-0.0786	1.32	0.989	0.67	0.50
CM-Ab-101105-03/ NUF1002A0006	NAF5085A	NNTN7038A	PMLN5657A	Against Phantom	None	809.000	3.78	-0.0841	1.38	1.03	0.70	0.53
HvH-Ab-101101-03/ NUF1002A0006	NAF5085A	NNTN7038A	NTN5243A w/PMLN5657A	Back against phantom w/o loop	None	809.000	3.76	-0.159	3.95	2.91	2.05	1.51
HvH-Ab-101101-04/ NUF1002A0006	NAF5085A	PMNN4403A	NTN5243A w/PMLN5657A	Back against phantom w/o loop	None	809.000	3.77	-0.148	4.36	3.17	2.26	1.64
HvH-Ab-101101-05/ NUF1002A0006	NAF5085A	NNTN7038A	NTN5243A w/PMLN5658A	Back against phantom p	None	809.000	3.78	-0.269	1.52	1.12	0.81	0.60
HvH-Ab-101101-06/ NUF1002A0006	NAF5085A	PMNN4403A	NTN5243A w/PMLN5658A	Back against phantom	None	809.000	3.78	-0.409	1.50	1.11	0.82	0.61
Test at the other applicable frequencies with highest configuration from above												
HvH-Ab-101101-09/ NUF1002A0006	NAF5085A	PMNN4403A	NTN5243A w/PMLN5657A	Against Phantom	None	794.0125	3.12	-0.191	4.59	3.39	**2.40**	1.77
HvH-Ab-101101-10/ NUF1002A0006	NAF5085A	PMNN4403A	NTN5243A w/PMLN5657A	Against Phantom	None	823.9875	3.78	-0.213	4.20	3.09	2.21	1.62

13.12 Assessments at the Body 794-824MHz band with antenna NAR6595A and belt clip NTN8266B without audio accessory:

The DUT was tested across all applicable frequencies using offered accessories NTN8266B belt clip, NAR6595A antenna, PMNN4403A and NNTN7038A batteries without an audio accessory attached using the test procedure and thresholds outlined in sections 12.4 and 12.5. Tests without the offered audio accessory reflect intended user configuration.
The highest SAR results from the table below (bolded) are included in APPENDIX F Section 12.0.

TABLE 74

Assessments at the Body (CW)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
MeC-Ab-101006-07/ NUF1002A0006	NAR6595A	PMNN4403A	NTN8266B	Against Phantom	None	809.000	3.74	-1.10	11.2	6.76	**7.21**	4.35
Other applicable frequencies (results > 70% threshold)												
MeC-Ab-101113-07/ NUF1002A0006	NAR6595A	PMNN4403A	NTN8266B	Against Phantom	None	794.0125	3.10	-0.314	12.00	8.91	6.45	4.79
MeC-Ab-101113-08/ NUF1002A0006	NAR6595A	PMNN4403A	NTN8266B	Against Phantom	None	823.9875	3.73	-0.878	9.19	5.57	5.62	3.41
MeC-Ab-101113-11/ NUF1002A0006	NAR6595A	NNTN7038A	NTN8266B	Against Phantom	None	809.000	3.73	-0.795	10.50	7.75	6.30	4.65
Other applicable frequencies (results > 70% threshold)												
MeC-Ab-101113-10/ NUF1002A0006	NAR6595A	NNTN7038A	NTN8266B	Against Phantom	None	794.0125	3.07	-0.242	12.10	8.95	6.40	4.73
MeC-Ab-101113-13/ NUF1002A0006	NAR6595A	NNTN7038A	NTN8266B	Against Phantom	None	823.9875	3.73	-1.100	8.57	6.29	5.52	4.05

13.13 Assessments at the Body 794-824MHz band with antenna NAR6595A and other carry cases without audio accessory:

The DUT was tested across all applicable frequencies using offered accessories PMLN5658A, PMLN5657A, NTN5243A carry cases, NAR6595A antenna and PMNN4403A and NNTN7038A batteries without an audio accessory attached using the test procedure and thresholds outlined in sections 12.4 and 12.5. Tests without the offered audio accessory reflects intended user configuration.
The highest SAR results from the table below (bolded) are included in APPENDIX F Section 13.0.

TABLE 75

Assessments at the Body (CW)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
HvH-Ab-101101-11/ NUF1002A0006	NAR6595A	PMNN4403A	PMLN5658A	Against Phantom	None	809.000	3.78	-0.332	6.97	5.17	3.76	2.79
HvH-Ab-101101-12/ NUF1002A0006	NAR6595A	NNTN7038A	PMLN5658A	Against Phantom	None	809.000	3.77	-0.375	6.92	5.15	3.77	2.81
CM-Ab-101105-04/ NUF1002A0006	NAR6595A	PMNN4403A	PMLN5657A	Against Phantom	None	809.000	3.76	-0.449	4.74	3.54	2.63	1.96
CM-Ab-101105-05/ NUF1002A0006	NAR6595A	NNTN7038A	PMLN5657A	Against Phantom	None	809.000	3.78	-0.349	4.74	3.56	2.57	1.93
HvH-Ab-101103-03/ NUF1002A0006	NAR6595A	NNTN7038A	NTN5243A w/PMLN5657A	Back against phantom w/o loop	None	809.000	3.77	-0.739	8.93	6.60	5.29	3.91
HvH-Ab-101103-05/ NUF1002A0006	NAR6595A	PMNN4403A	NTN5243A w/PMLN5657A	Back against phantom w/o loop	None	809.000	3.77	-0.910	8.88	6.55	5.47	4.04
HvH-Ab-101103-06/ NUF1002A0006	NAR6595A	NNTN7038A	NTN5243A w/PMLN5658A	Back against phantom	None	809.000	3.78	-0.851	5.85	4.33	3.56	2.63
HvH-Ab-101103-07/ NUF1002A0006	NAR6595A	PMNN4403A	NTN5243A w/PMLN5658A	Back against phantom	None	809.000	3.78	-1.04	5.77	4.27	3.67	2.71
Test at the other applicable frequencies with highest configuration from above												
CM-Ab-101105-06/ NUF1002A0006	NAR6595A	PMNN4403A	NTN5243A w/PMLN5657A	Back against phantom w/o loop	None	794.0125	3.12	-0.275	11.1	8.20	**5.91**	4.37
CM-Ab-101105-08/ NUF1002A0006	NAR6595A	PMNN4403A	NTN5243A w/PMLN5657A	Back against phantom w/o loop	None	823.9875	3.77	-1.37	8.45	6.21	5.79	4.26

13.14 Assessments at the Body 851-870MHz band with Antenna NAF5085A and belt clip NTN8266B without audio accessory:

The DUT was tested across all applicable frequencies using offered accessories NTN8266B belt clip, NAF5085A antenna and PMNN4403A and NNTN7038A batteries without an audio accessory attached using the test procedure and thresholds outlined in sections 12.4 and 12.5. Tests without the offered audio accessory reflect intended user configuration.
The highest SAR results from the table below (bolded) are included in APPENDIX F Section 14.0.

TABLE 76

Assessments at the Body (CW)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
JsT-Ab-101112-02/ NUF1002A0006	NAF5085A	PMNN4403A	NTN8266B	Against Phantom	None	860.500	3.78	-0.141	4.75	3.44	2.45	1.78
MeC-Ab-101112-08/ NUF1002A0006	NAF5085A	NNTN7038A	NTN8266B	Against Phantom	None	860.500	3.77	-0.115	4.63	3.36	2.38	1.73
Test at the other applicable frequencies with highest configuration from above												
MeC-Ab-101112-09/ NUF1002A0006	NAF5085A	PMNN4403A	NTN8266B	Against Phantom	None	851.0125	3.76	-0.219	4.79	3.47	2.52	1.82
MeC-Ab-101112-10/ NUF1002A0006	NAF5085A	PMNN4403A	NTN8266B	Against Phantom	None	869.9875	3.78	-0.273	5.63	3.33	**3.00**	1.77

13.15 Assessments at the Body 851-870MHz band with antenna NAF5085A and other carry cases without audio accessory:

The DUT was tested across all applicable frequencies using offered accessories PMLN5658A, PMLN5657A, NTN5243A carry cases, NAF5085A antenna and PMNN4403A and NNTN7038A batteries without an audio accessory attached using the test procedure and thresholds outlined in section 12.5. Test without the offered audio accessory reflects intended user configuration.
The highest SAR results from the table below (bolded) are included in APPENDIX F Section 15.0.

TABLE 77

Assessments at the Body (CW)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
HvH-Ab-101030-06/ NUF1002A0006	NAF5085A	PMNN4403A	PMLN5658A	Against Phantom	None	860.500	3.78	-0.195	1.83	1.34	0.96	0.70
HvH-Ab-101030-07/ NUF1002A0006	NAF5085A	NNTN7038A	PMLN5658A	Against Phantom	None	860.500	3.77	-0.200	1.89	1.39	0.99	0.73
CM-Ab-101104-05/ NUF1002A0006	NAF5085A	PMNN4403A	PMLN5657A	Against Phantom	None	860.500	3.78	-0.0224	1.18	0.872	0.59	0.44
CM-Ab-101104-06/ NUF1002A0006	NAF5085A	NNTN7038A	PMLN5657A	Against Phantom	None	860.500	3.78	-0.0799	1.20	0.886	0.61	0.45
HvH-Ab-101030-10/ NUF1002A0006	NAF5085A	NNTN7038A	NTN5243A w/PMLN5657A	Back against phantom w/o loop	None	860.500	3.78	-0.231	5.74	4.04	3.03	2.13
HvH-Ab-101030-11/ NUF1002A0006	NAF5085A	PMNN4403A	NTN5243A w/PMLN5657A	Back against phantom w/o loop	None	860.500	3.77	-0.0935	7.62	4.75	**3.89**	2.43
HvH-Ab-101030-12/ NUF1002A0006	NAF5085A	NNTN7038A	NTN5243A w/PMLN5658A	Back against phantom	None	860.500	3.78	-0.144	1.53	1.12	0.79	0.58
HvH-Ab-101030-13/ NUF1002A0006	NAF5085A	PMNN4403A	NTN5243A w/PMLN5658A	Back against phantom	None	860.500	3.78	-0.234	1.51	1.11	0.80	0.59
Test at the other applicable frequencies with highest configuration from above												
HvH-Ab-101031-05/ NUF1002A0006	NAF5085A	PMNN4403A	NTN5243A w/PMLN5657A	Back against phantom w/o loop	None	851.0125	3.78	-0.0874	6.86	4.25	3.50	2.17
HvH-Ab-101031-06/ NUF1002A0006	NAF5085A	PMNN4403A	NTN5243A w/PMLN5657A	Back against phantom w/o loop	None	869.9875	3.78	0.00888	5.19	3.29	2.60	1.65

13.16 Assessments at the Body 851-870MHz band with antenna NAR6595A and belt clip NTN8266B without audio accessory:

The DUT was tested across all applicable frequencies using offered accessories NTN8266B belt clip, NAR6595A antenna, PMNN4403A and NNTN7038A batteries without an audio accessory attached using the test procedure and thresholds outlined in section 12.4 and 12.5. Tests without the offered audio accessory reflect intended user configuration.
The highest SAR results from the table below (bolded) are included in APPENDIX F Section 16.0.

TABLE 78

Assessments at the Body (CW)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
MeC-Ab-101112-11/ NUF1002A0006	NAR6595A	PMNN4403A	NTN8266B	Against Phantom	None	860.500	3.77	-0.459	9.66	5.69	5.37	3.16
MeC-Ab-101112-12/ NUF1002A0006	NAR6595A	NNTN7038A	NTN8266B	Against Phantom	None	860.500	3.78	-0.397	9.38	5.65	5.14	3.10
Other applicable frequencies												
MeC-Ab-101112-13/ NUF1002A0006	NAR6595A	PMNN4403A	NTN8266B	Against Phantom	None	851.0125	3.75	-0.670	9.80	5.91	**5.72**	3.45
MeC-Ab-101112-14/ NUF1002A0006	NAR6595A	PMNN4403A	NTN8266B	Against Phantom	None	869.9875	3.77	-0.370	9.49	5.54	5.17	3.02

13.17 Assessments at the Body 851-870MHz band with antenna NAR6595A and other carry cases without audio accessory:

The DUT was tested across all applicable frequencies using offered accessories PMLN5658A, PMLN5657A, NTN5243A carry cases, NAR6595A antenna and PMNN4403A and NNTN7038A batteries without an audio accessory attached using the test procedure and thresholds outlined in sections 12.4 and 12.5. Test without the offered audio accessory reflects intended user configuration.
The highest SAR results from the table below (bolded) are included in APPENDIX F Section 17.0.

TABLE 79

Assessments at the Body (CW)												
Run number/SN	**Antenna**	**Battery**	**Carry Case**	**Test position**	**Additional attachments**	**Test Freq. (MHz)**	**Initial Power (W)**	**SAR Drift (dB)**	**Meas. 1g-SAR (W/kg)**	**Meas. 10g-SAR (W/kg)**	**Max Calc.1g-SAR (W/kg)**	**Max Calc. 10g-SAR (W/kg)**
HvH-Ab-101030-16/ NUF1002A0006	NAR6595A	PMNN4403A	PMLN5658A	Against Phantom	None	860.500	3.78	-0.674	5.50	4.02	3.21	2.35
HvH-Ab-101030-17/ NUF1002A0006	NAR6595A	NNTN7038A	PMLN5658A	Against Phantom	None	860.500	3.77	-0.583	5.45	4.00	3.12	2.29
CM-Ab-101104-07/ NUF1002A0006	NAR6595A	PMNN4403A	PMLN5657A	Against Phantom	None	860.500	3.78	-0.320	3.11	2.28	1.67	1.23
CM-Ab-101104-08/ NUF1002A0006	NAR6595A	NNTN7038A	PMLN5657A	Against Phantom	None	860.500	3.78	-0.505	3.22	2.28	1.81	1.28
HvH-Ab-101030-20/ NUF1002A0006	NAR6595A	NNTN7038A	NTN5243A w/PMLN5657A	Back against phantom w/o loop	None	860.500	3.78	-0.757	8.69	5.68	**5.17**	3.38
HvH-Ab-101031-02/ NUF1002A0006	NAR6595A	PMNN4403A	NTN5243A w/PMLN5657A	Back against phantom w/o loop	None	860.500	3.77	-0.597	8.19	5.69	4.70	3.26
HvH-Ab-101031-03/ NUF1002A0006	NAR6595A	NNTN7038A	NTN5243A w/PMLN5658A	Back against phantom p	None	860.500	3.77	-0.684	4.47	3.27	2.62	1.91
HvH-Ab-101031-04/ NUF1002A0006	NAR6595A	PMNN4403A	NTN5243A w/PMLN5658A	Back against phantom	None	860.500	3.77	-0.705	4.39	3.21	2.58	1.89
Test at the other applicable frequencies with highest configuration from above												
HvH-Ab-101031-07/ NUF1002A0006	NAR6595A	NNTN7038A	NTN5243A w/PMLN5657A	Back against phantom w/o loop	None	851.0125	3.77	-0.631	8.62	5.85	4.98	3.38
HvH-Ab-101031-08/ NUF1002A0006	NAR6595A	NNTN7038A	NTN5243A w/PMLN5657A	Back against phantom w/o loop	None	869.9875	3.78	-0.423	8.43	5.41	4.65	2.98

13.18 Shorten Scan Assessment

Short scan assessment: A "shortened" scan was performed to validate the SAR drift of the full DASY4™ coarse and 5x5x7 zoom scans. Note that the shortened scan represents the zoom scan performance result; this is obtained by first running a coarse scan to find the peak area and then, using a newly charged battery, a 5x5x7 zoom scan only was performed. The results of the shortened cube scan presented in APPENDIX E demonstrate that the scaling methodology used to determine the calculated SAR results presented herein are valid. The both SAR results from the table below are provided in APPENDIX E.

TABLE 80

Run #/SN	Antenna	Battery	Carry Case	Test Position	Additional attachments	Test Freq. (MHz)	Initial Power (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Meas. 10g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Max Calc. 10g-SAR (W/kg)
Full scan												
CM-Ab-100727-19/NUF1003A0048	NAR6595A	PMNN4403A	NTN8266B	Against phantom	HMN4104A	809.000	3.77	-0.676	13.040	7.790	**7.62**	4.55
Shortened scan												
CM-Ab-100804-09/NUF1003A0048	NAR6595A	PMNN4403A	NTN8266B	Against phantom	HMN4104A	809.000	3.73	-0.201	13.6	8.12	7.12	4.25

14.0 Simultaneous Transmission Exclusion:

Simultaneous Transmission applies. See section 15.0.

15.0 Conclusion:

The highest Operational Maximum Calculated 1-gram and 10-gram average SAR values found for this filing: Models H98UCD9PW5AN (MNUF1002A) and H98UCD9PW5AN (MNUF1003A):

TABLE 81: FCC Part 90 RF Exposure Results

	Max Calc at Body (W/kg)		Max Calc at Face (W/kg)	
Frequency Range (MHz)	1g-SAR	10g-SAR	1g-SAR	10g-SAR
764 -775.00	7.21	4.35	2.50	1.87
794-824.00	7.62	4.55	2.92	2.17
851-869.00	6.21	3.56	2.54	1.87

TABLE 82: RF Exposure Results 869-870 MHz

	Max Calc at Body (W/kg)		Max Calc at Face (W/kg)	
Frequency Range (MHz)	1g-SAR	10g-SAR	1g-SAR	10g-SAR
869.00-879.00	5.54	3.17	2.67	1.96

The test results clearly demonstrate compliance with FCC Occupational/Controlled RF Exposure limits of **8 W/kg** per the requirements of 47 CFR 2.1093(d).

APPENDIX A
Measurement Uncertainty

The Measurement Uncertainty tables indicated in this APPENDIX are applicable to the DUT and Dipole test frequencies ranging from 100MHz to 800MHz and 800MHz to 3 GHz. The highest tolerance for the probe calibration uncertainty is indicated.

Table A1:

Uncertainty Budget for Device Under Test, for 100 MHz to 800 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	10.0	N	1.00	1	1	10.0	10.0	∞
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				14	13	965
Expanded Uncertainty (95% CONFIDENCE LEVEL)			k=2				27	27	

FCD-0558 Uncertainty Budget Rev.8

Table A2:

Uncertainty Budget for System Validation (dipole & flat phantom) for 300 MHz to 800 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	9.0	N	1.00	1	1	9.0	9.0	∞
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				11	11	99999
Expanded Uncertainty (95% CONFIDENCE LEVEL)			k=2				22	22	

FCD-0558 Uncertainty Budget Rev.8

Table A3:

Uncertainty Budget for System Validation (dipole & flat phantom) for 800 MHz to 3 GHz

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	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	

FCD-0558, Rev.7

Table A4:

Uncertainty Budget for Device Under Test, for 800 MHz to 3 GHz

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	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)			k=2				22	22	

FCD-0558, Rev.7

Notes for Tables 1, 2, 3 and 4
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 Certificates

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

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

Accredited by the Swiss Accreditation Service (SAS)
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: ES3-3185_Nov09

CALIBRATION CERTIFICATE

Object	ES3DV3 - SN:3185
Calibration procedure(s)	QA CAL-01.v6, QA CAL-12.v6, QA CAL-14.v3, QA CAL-23.v3 and QA CAL-25.v2 Calibration procedure for dosimetric E-field probes
Calibration date:	November 23, 2009

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 (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	1-Apr-09 (No. 217-01030)	Apr-10
Power sensor E4412A	MY41495277	1-Apr-09 (No. 217-01030)	Apr-10
Power sensor E4412A	MY41498087	1-Apr-09 (No. 217-01030)	Apr-10
Reference 3 dB Attenuator	SN: S5054 (3c)	31-Mar-09 (No. 217-01026)	Mar-10
Reference 20 dB Attenuator	SN: S5086 (20b)	31-Mar-09 (No. 217-01028)	Mar-10
Reference 30 dB Attenuator	SN: S5129 (30b)	31-Mar-09 (No. 217-01027)	Mar-10
Reference Probe ES3DV2	SN: 3013	2-Jan-09 (No. ES3-3013_Jan09)	Jan-10
DAE4	SN: 660	29-Sep-09 (No. DAE4-660_Sep09)	Sep-10

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-09)	In house check: Oct10

	Name	Function	Signature
Calibrated by:	Katja Pokovic	Technical Manager	
Approved by:	Niels Kuster	Quality Manager	

Issued: November 23, 2009

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

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

Accredited by the Swiss Accreditation Service (SAS)
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
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
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) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

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 with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- *Ax,y,z; Bx,y,z; Cx,y,z, VRx,y,z*: *A, B, C* are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.
- *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.

Probe ES3DV3

SN:3185

Manufactured:	March 25, 2008
Last calibrated:	November 18, 2008
Recalibrated:	November 23, 2009

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

DASY - Parameters of Probe: ES3DV3 SN:3185

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	1.36	1.27	1.11	± 10.1%
DCP (mV)[B]	93.1	92.7	92.9	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dBuV	C	VR mV	Unc[E] (k=2)
10000	CW	0.00	X	0.00	0.00	1.00	300	± 1.5%
			Y	0.00	0.00	1.00	300	
			Z	0.00	0.00	1.00	300	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

[A] The uncertainties of NormX,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).

[B] Numerical linearization parameter: uncertainty not required.

[E] Uncertainty is determined using the maximum deviation from linear response applying recatangular distribution and is expressed for the square of the field value.

DASY - Parameters of Probe: ES3DV3 SN:3185

Calibration Parameter Determined in Head Tissue Simulating Media

f [MHz]	Validity [MHz][C]	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth	Unc (k=2)
300	± 50 / ± 100	45.3 ± 5%	0.87 ± 5%	6.68	6.68	6.68	0.24	0.92	± 13.3%
450	± 50 / ± 100	43.5 ± 5%	0.87 ± 5%	6.08	6.08	6.08	0.22	1.49	± 13.3%
750	± 50 / ± 100	41.9 ± 5%	0.89 ± 5%	5.96	5.96	5.96	0.92	1.04	± 11.0%
900	± 50 / ± 100	41.5 ± 5%	0.97 ± 5%	5.63	5.63	5.63	0.64	1.21	± 11.0%
1810	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	4.83	4.83	4.83	0.41	1.71	± 11.0%
1950	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	4.65	4.65	4.65	0.55	1.44	± 11.0%
2300	± 50 / ± 100	39.5 ± 5%	1.67 ± 5%	4.53	4.53	4.53	0.40	1.83	± 11.0%
2450	± 50 / ± 100	39.2 ± 5%	1.80 ± 5%	4.22	4.22	4.22	0.41	1.87	± 11.0%
2600	± 50 / ± 100	39.0 ± 5%	1.96 ± 5%	4.17	4.17	4.17	0.44	1.89	± 11.0%
3500	± 50 / ± 100	37.9 ± 5%	2.91 ± 5%	3.99	3.99	3.99	0.85	1.21	± 13.1%
3700	± 50 / ± 101	37.7 ± 5%	3.12 ± 5%	3.64	3.64	3.64	0.85	1.21	± 13.1%

[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.

DASY - Parameters of Probe: ES3DV3 SN:3185

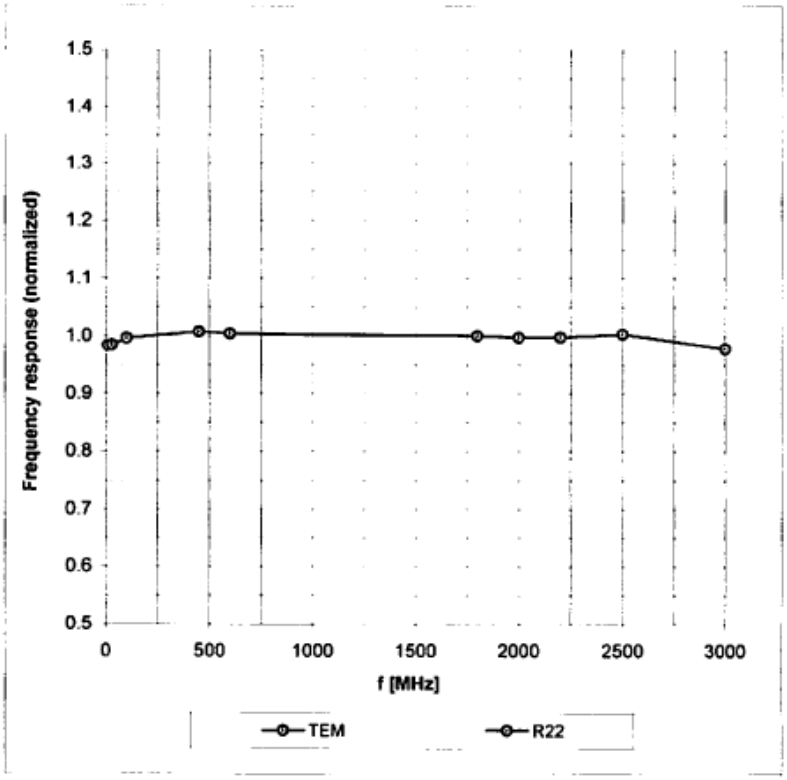
Calibration Parameter Determined in Body Tissue Simulating Media

f [MHz]	Validity [MHz][c]	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth	Unc (k=2)
450	± 50 / ± 100	56.7 ± 5%	0.94 ± 5%	6.55	6.55	6.55	0.17	1.00	± 13.3%
750	± 50 / ± 100	55.5 ± 5%	0.96 ± 5%	5.60	5.60	5.60	0.76	1.15	± 11.0%
900	± 50 / ± 100	55.0 ± 5%	1.05 ± 5%	5.48	5.48	5.48	0.94	1.10	± 11.0%
1810	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	4.57	4.57	4.57	0.29	2.39	± 11.0%
1950	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	4.52	4.52	4.52	0.30	2.70	± 11.0%
2300	± 50 / ± 100	52.8 ± 5%	1.85 ± 5%	4.21	4.21	4.21	0.46	1.74	± 11.0%
2450	± 50 / ± 100	52.7 ± 5%	1.95 ± 5%	4.02	4.02	4.02	0.58	1.44	± 11.0%
2600	± 50 / ± 100	52.5 ± 5%	2.16 ± 5%	3.92	3.92	3.92	0.82	1.20	± 11.0%
3500	± 50 / ± 100	51.3 ± 5%	3.31 ± 5%	3.33	3.33	3.33	0.90	1.32	± 13.1%
3700	± 50 / ± 101	51.0 ± 5%	3.55 ± 5%	3.26	3.26	3.26	0.90	1.46	± 13.1%

[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.

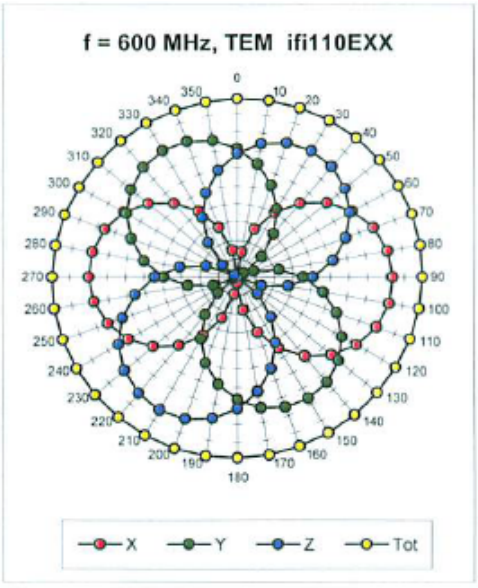
Frequency Response of E-Field

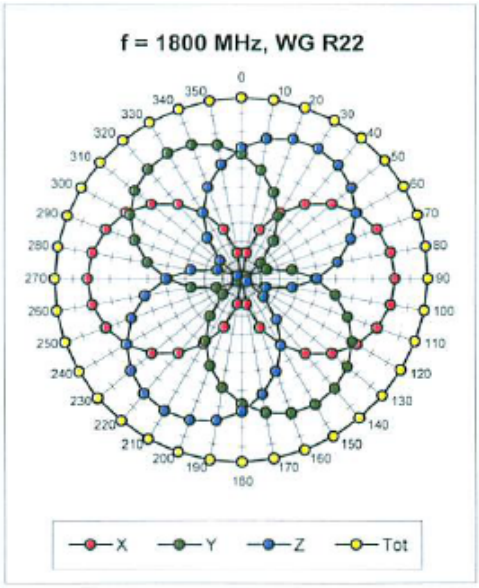
(TEM-Cell:ifi110 EXX, Waveguide: R22)

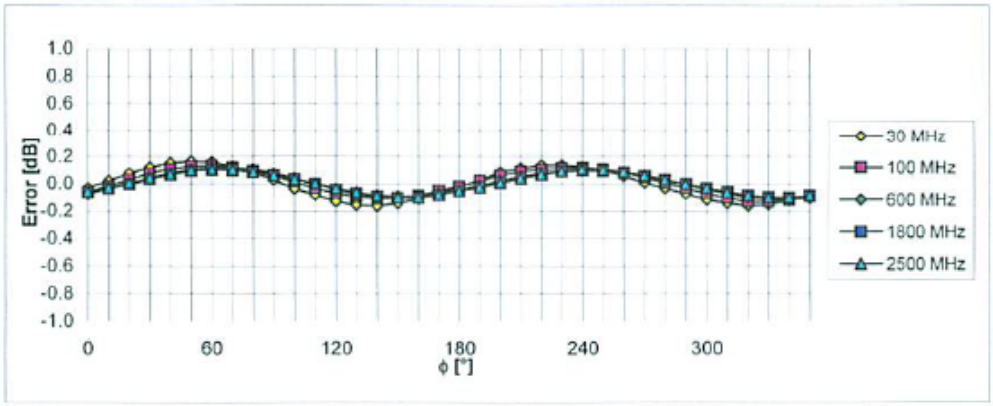


Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

Receiving Pattern (ϕ), ϑ = 0°



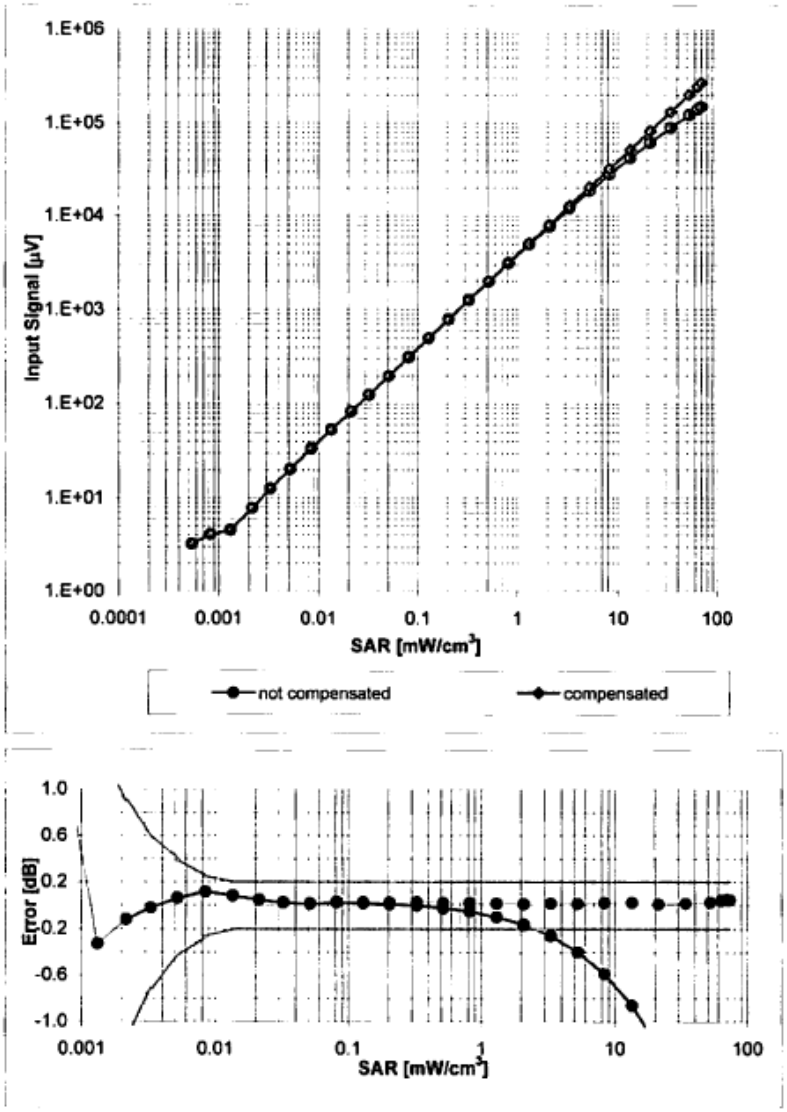




Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

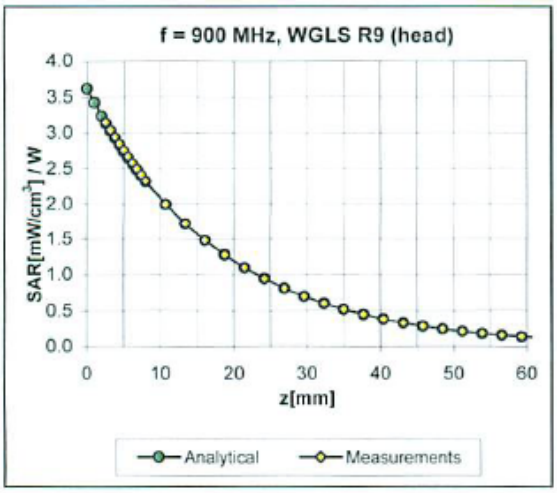
Dynamic Range f(SAR_{head})

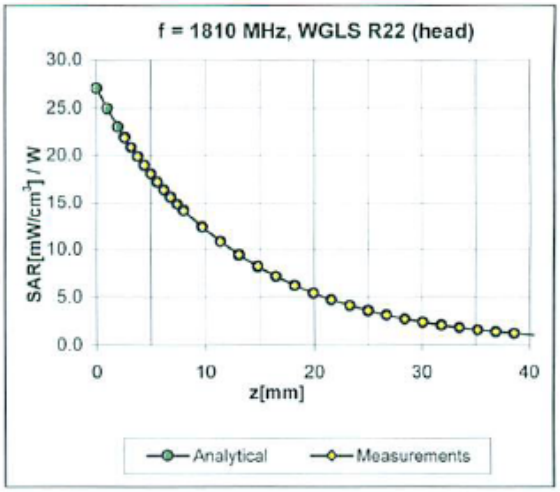
(Waveguide R22, f = 1800 MHz)



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

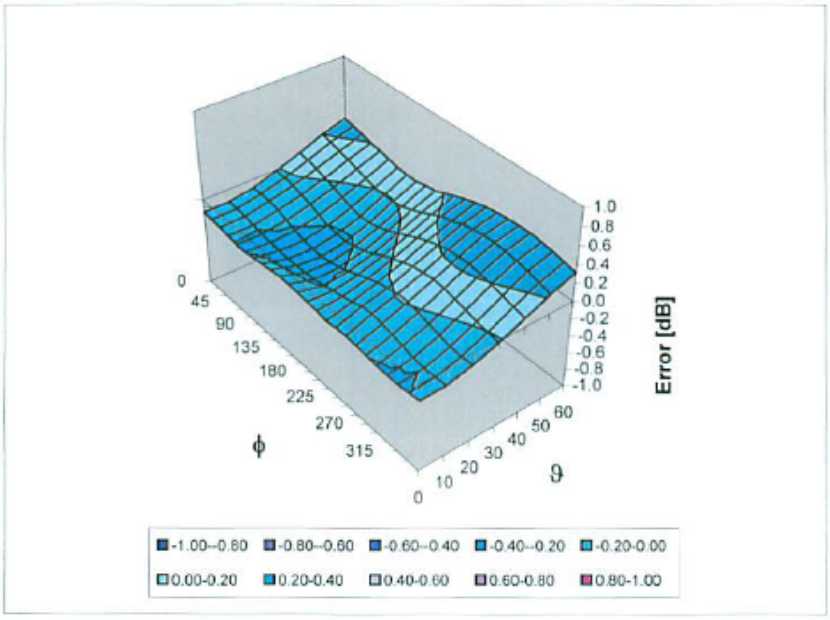
Conversion Factor Assessment





Deviation from Isotropy in HSL

Error (ϕ, ϑ), f = 900 MHz



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

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	Not applicable
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	4.0 mm
Probe Tip to Sensor X Calibration Point	2 mm
Probe Tip to Sensor Y Calibration Point	2 mm
Probe Tip to Sensor Z Calibration Point	2 mm
Recommended Measurement Distance from Surface	3 mm

Schmid & Partner Engineering AG

s p e a g

Zeughausstrasse 43, 8004 Zurich, Switzerland
Phone +41 44 245 9700, Fax +41 44 245 9779
info@speag.com, http://www.speag.com

Additional Conversion Factors

for Dosimetric E-Field Probe

Type:	**ES3DV3**
Serial Number:	**3185**
Place of Assessment:	**Zurich**
Date of Assessment:	**November 26, 2009**
Probe Calibration Date:	**November 23, 2009**

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 1810 MHz.

Assessed by:

Schmid & Partner Engineering AG

s p e a g

Zeughausstrasse 43, 8004 Zurich, Switzerland
Phone +41 44 245 9700, Fax +41 44 245 9779
info@speag.com, http://www.speag.com

Dosimetric E-Field Probe ES3DV3 SN:3185

Conversion factor (± standard deviation)

150 MHz	*ConvF*	**7.7 ± 10%**	ε_r = 52.3 σ = 0.76 mho/m (head tissue)
250 MHz	*ConvF*	**7.0 ± 10%**	ε_r = 47.6 σ = 0.83 mho/m (head tissue)
150 MHz	*ConvF*	**7.4 ± 10%**	ε_r = 61.9 σ = 0.80 mho/m (body tissue)
250 MHz	*ConvF*	**7.0 ± 10%**	ε_r = 59.4 σ = 0.88 mho/m (body tissue)
300 MHz	*ConvF*	**6.9 ± 9%**	ε_r = 58.2 σ = 0.92 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.

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

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

Accredited by the Swiss Accreditation Service (SAS)
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 EME**

Certificate No: **ES3-3163_Apr10**

CALIBRATION CERTIFICATE

Object	ES3DV3 - SN:3163
Calibration procedure(s)	QA CAL-01.v6, QA CAL-12.v6, QA CAL-14.v3, QA CAL-23.v3 and QA CAL-25.v2 Calibration procedure for dosimetric E-field probes
Calibration date:	April 23, 2010

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 (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	1-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41495277	1-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41498087	1-Apr-10 (No. 217-01136)	Apr-11
Reference 3 dB Attenuator	SN: S5054 (3c)	30-Mar-10 (No. 217-01159)	Mar-11
Reference 20 dB Attenuator	SN: S5086 (20b)	30-Mar-10 (No. 217-01161)	Mar-11
Reference 30 dB Attenuator	SN: S5129 (30b)	30-Mar-10 (No. 217-01160)	Mar-11
Reference Probe ES3DV2	SN: 3013	30-Dec-09 (No. ES3-3013_Dec09)	Dec-10
DAE4	SN: 660	29-Sep-09 (No. DAE4-660_Sep09)	Sep-10

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-09)	In house check: Oct10

	Name	Function	Signature
Calibrated by:	Katja Pokovic	Technical Manager	
Approved by:	Fin Bomholt	R&D Director	

Issued: April 27, 2010

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

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

Accredited by the Swiss Accreditation Service (SAS)
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
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
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) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

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 with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- *Ax,y,z; Bx,y,z; Cx,y,z, VRx,y,z: A, B, C* are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.
- *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.

Probe ES3DV3

SN:3163

Manufactured:	October 8, 2007
Last calibrated:	April 21, 2009
Recalibrated:	April 23, 2010

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

ES3DV3 SN:3163 April 23, 2010

DASY - Parameters of Probe: ES3DV3 SN:3163

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm (μV/(V/m)^2)[A]	1.33	1.16	1.06	± 10.1%
DCP (mV)[B]	93.5	93.1	93.3	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dBuV	C	VR mV	Unc[E] (k=2)
10000	CW	0.00	X	0.00	0.00	1.00	300.0	± 1.5%
			Y	0.00	0.00	1.00	300.0	
			Z	0.00	0.00	1.00	300.0	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

[A] The uncertainties of NormX,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).

[B] Numerical linearization parameter: uncertainty not required.

[E] Uncertainty is determined using the maximum deviation from linear response applying recatangular distribution and is expressed for the square of the field value.

DASY - Parameters of Probe: ES3DV3 SN:3163

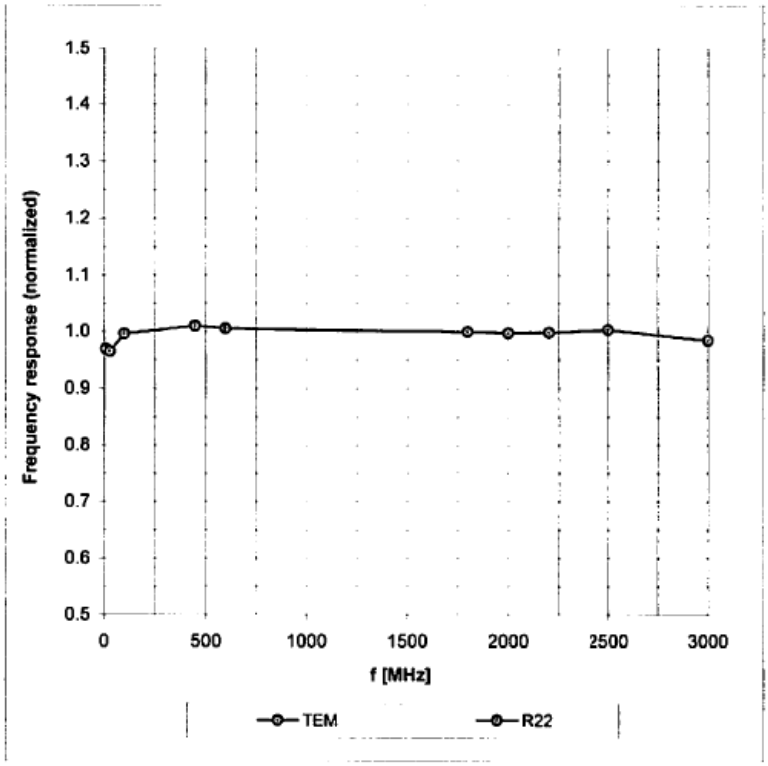
Calibration Parameter Determined in Head Tissue Simulating Media

f [MHz]	Validity [MHz][C]	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth	Unc (k=2)
450	± 50 / ± 100	43.5 ± 5%	0.87 ± 5%	6.37	6.37	6.37	0.14	1.67	± 13.3%
750	± 50 / ± 100	41.5 ± 5%	0.90 ± 5%	6.30	6.30	6.30	0.99	1.03	± 11.0%
900	± 50 / ± 100	41.5 ± 5%	0.97 ± 5%	5.93	5.93	5.93	0.90	1.08	± 11.0%
1810	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	5.01	5.01	5.01	0.46	1.54	± 11.0%
1950	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	4.83	4.83	4.83	0.36	1.76	± 11.0%
2300	± 50 / ± 100	39.5 ± 5%	1.67 ± 5%	4.65	4.65	4.65	0.45	1.69	± 11.0%
2450	± 50 / ± 100	39.2 ± 5%	1.80 ± 5%	4.38	4.38	4.38	0.39	1.88	± 11.0%
2600	± 50 / ± 100	39.0 ± 5%	1.96 ± 5%	4.29	4.29	4.29	0.47	1.72	± 11.0%
3500	± 50 / ± 100	37.9 ± 5%	2.91 ± 5%	4.00	4.00	4.00	0.90	1.19	± 13.1%
3700	± 50 / ± 100	37.7 ± 5%	3.12 ± 5%	3.58	3.58	3.58	0.90	1.50	± 13.1%

[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.

Frequency Response of E-Field

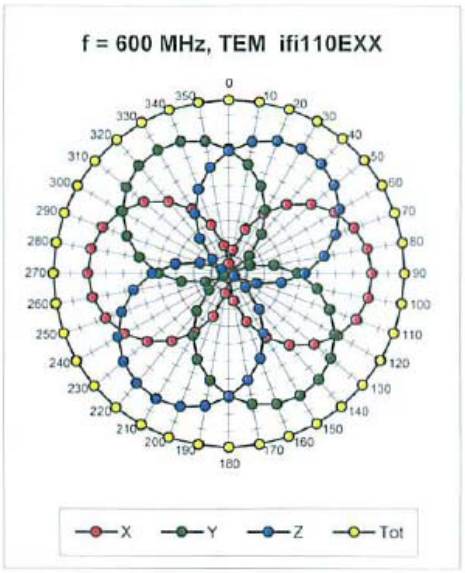
(TEM-Cell:ifi110 EXX, Waveguide: R22)

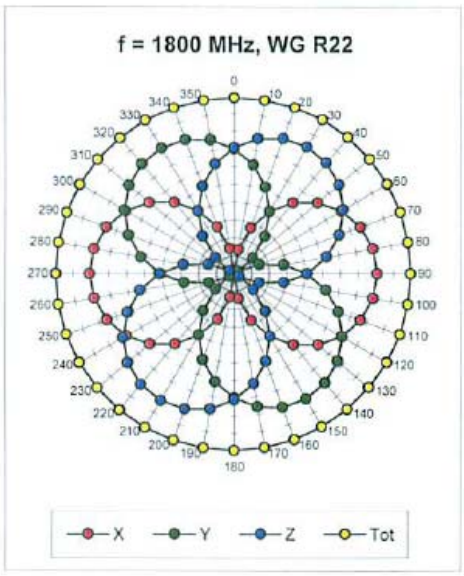


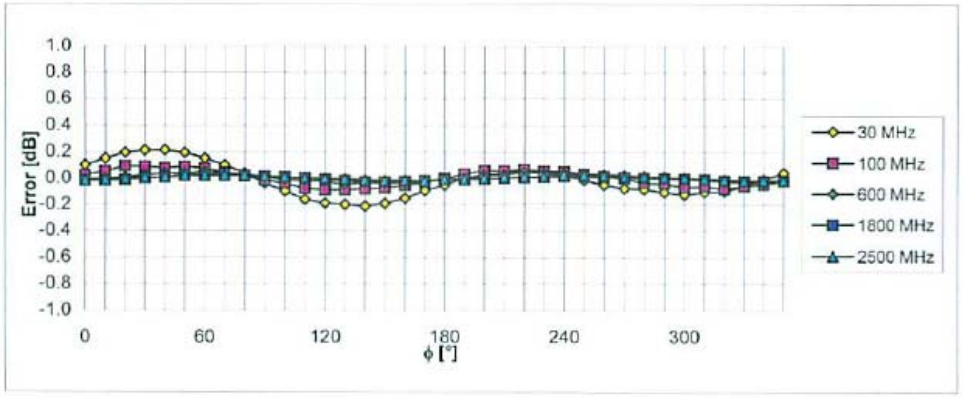
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

ES3DV3 SN:3163 April 23, 2010

Receiving Pattern (ϕ), ϑ = 0°



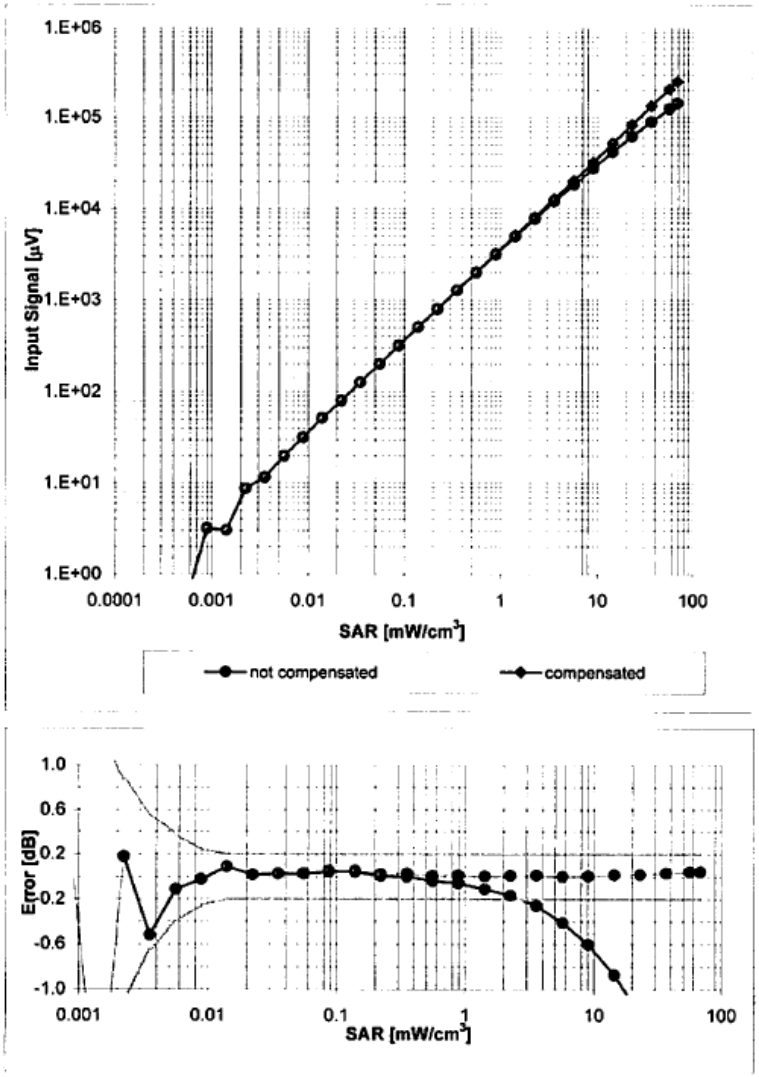




Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

Dynamic Range f(SAR_{head})

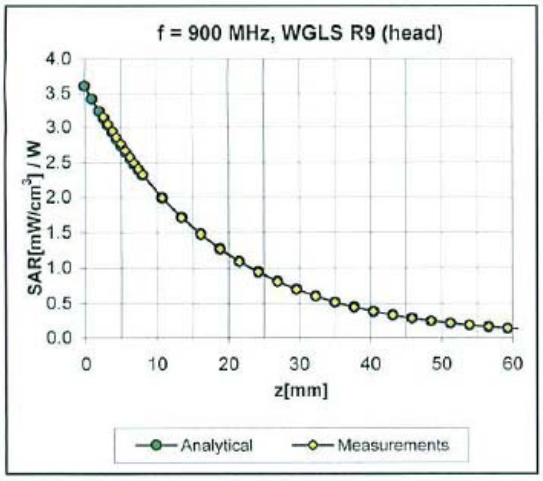
(Waveguide R22, f = 1800 MHz)

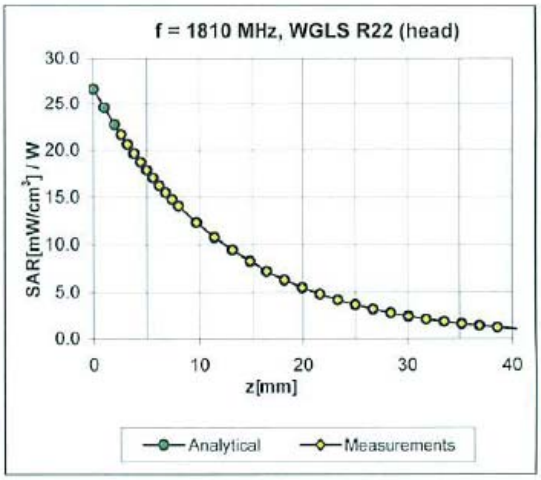


Uncertainty of Linearity Assessment: ± 0.6% (k=2)

ES3DV3 SN:3163 April 23, 2010

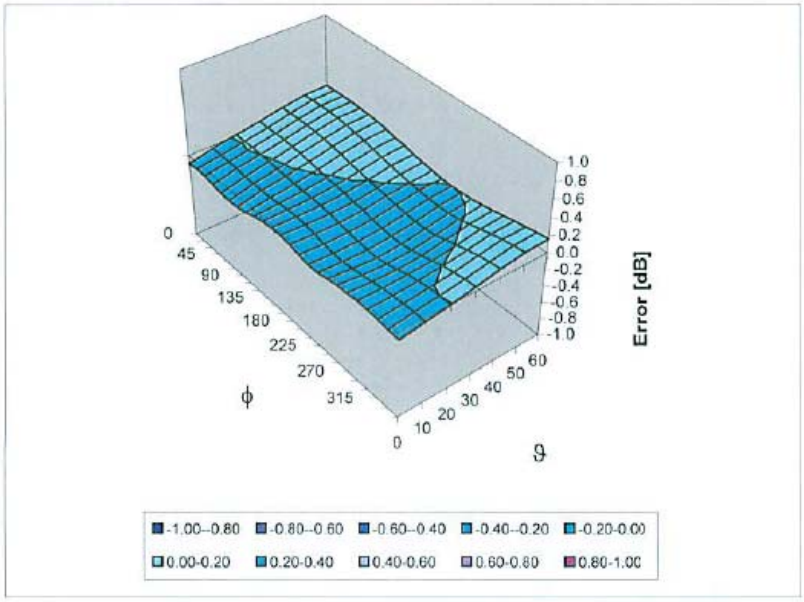
Conversion Factor Assessment





Deviation from Isotropy in HSL

Error (ϕ, ϑ), f = 900 MHz



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

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	Not applicable
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	4.0 mm
Probe Tip to Sensor X Calibration Point	2 mm
Probe Tip to Sensor Y Calibration Point	2 mm
Probe Tip to Sensor Z Calibration Point	2 mm
Recommended Measurement Distance from Surface	3 mm

Schmid & Partner Engineering AG

s p e a g

Zeughausstrasse 43, 8004 Zurich, Switzerland
Phone +41 44 245 9700, Fax +41 44 245 9779
info@speag.com, http://www.speag.com

Additional Conversion Factors

for Dosimetric E-Field Probe

Type:	**ES3DV3**
Serial Number:	**3163**
Place of Assessment:	**Zurich**
Date of Assessment:	**April 28, 2010**
Probe Calibration Date:	**April 23, 2010**

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 1810 MHz.

Assessed by:

Schmid & Partner Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland
Phone +41 44 245 9700, Fax +41 44 245 9779
info@speag.com, http://www.speag.com

s p e a g

Dosimetric E-Field Probe ES3DV3 SN:3163

Conversion factor (± standard deviation)

150 MHz	*ConvF*	8.1 ± 10%	ε_r = 52.3 σ = 0.76 mho/m (head tissue)
250 MHz	*ConvF*	7.5 ± 10%	ε_r = 47.6 σ = 0.83 mho/m (head tissue)
300 MHz	*ConvF*	7.2 ± 9%	ε_r = 45.3 σ = 0.87 mho/m (head tissue)
150 MHz	*ConvF*	7.8 ± 10%	ε_r = 61.9 σ = 0.80 mho/m (body tissue)
250 MHz	*ConvF*	7.4 ± 10%	ε_r = 59.4 σ = 0.88 mho/m (body tissue)
300 MHz	*ConvF*	7.2 ± 9%	ε_r = 58.2 σ = 0.92 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.

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

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

Accredited by the Swiss Accreditation Service (SAS)
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 EME**

Certificate No: **ES3-3147_Feb10**

CALIBRATION CERTIFICATE

Object	ES3DV3 - SN:3147
Calibration procedure(s)	QA CAL-01.v6, QA CAL-12.v6, QA CAL-14.v3, QA CAL-23.v3 and QA CAL-25.v2 Calibration procedure for dosimetric E-field probes
Calibration date:	February 18, 2010

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 (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	1-Apr-09 (No. 217-01030)	Apr-10
Power sensor E4412A	MY41495277	1-Apr-09 (No. 217-01030)	Apr-10
Power sensor E4412A	MY41498087	1-Apr-09 (No. 217-01030)	Apr-10
Reference 3 dB Attenuator	SN: S5054 (3c)	31-Mar-09 (No. 217-01026)	Mar-10
Reference 20 dB Attenuator	SN: S5086 (20b)	31-Mar-09 (No. 217-01028)	Mar-10
Reference 30 dB Attenuator	SN: S5129 (30b)	31-Mar-09 (No. 217-01027)	Mar-10
Reference Probe ES3DV2	SN: 3013	30-Dec-09 (No. ES3-3013_Dec09)	Dec-10
DAE4	SN: 660	29-Sep-09 (No. DAE4-660_Sep09)	Sep-10

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-09)	In house check: Oct10

	Name	Function	Signature
Calibrated by:	Katja Pokovic	Technical Manager	
Approved by:	Niels Kuster	Quality Manager	

Issued: February 19, 2010

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

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

Accredited by the Swiss Accreditation Service (SAS)
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
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
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) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

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 with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- *Ax,y,z; Bx,y,z; Cx,y,z, VRx,y,z: A, B, C* are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.
- *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.

Probe ES3DV3

SN:3147

Manufactured:	July 12, 2007
Last calibrated:	February 13, 2009
Recalibrated:	February 18, 2010

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

ES3DV3 SN:3147 February 18, 2010

DASY - Parameters of Probe: ES3DV3 SN:3147

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	1.25	1.22	1.20	± 10.1%
DCP (mV)[B]	90.7	94.9	92.9	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dBuV	C	VR mV	Unc[E] (k=2)
10000	CW	0.00	X	0.00	0.00	1.00	300.0	± 1.5%
			Y	0.00	0.00	1.00	300.0	
			Z	0.00	0.00	1.00	300.0	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

[A] The uncertainties of NormX,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).

[B] Numerical linearization parameter: uncertainty not required.

[E] Uncertainty is determined using the maximum deviation from linear response applying recatangular distribution and is expressed for the square of the field value.

ES3DV3 SN:3147 February 18, 2010

DASY - Parameters of Probe: ES3DV3 SN:3147

Calibration Parameter Determined in Head Tissue Simulating Media

f [MHz]	Validity [MHz][C]	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth	Unc (k=2)
300	± 50 / ± 100	45.3 ± 5%	0.87 ± 5%	6.79	6.79	6.79	0.23	0.86	± 13.3%
450	± 50 / ± 100	43.5 ± 5%	0.87 ± 5%	6.43	6.43	6.43	0.23	1.45	± 13.3%
750	± 50 / ± 100	41.5 ± 5%	0.90 ± 5%	6.24	6.24	6.24	0.64	1.19	± 11.0%
900	± 50 / ± 100	41.5 ± 5%	0.97 ± 5%	5.85	5.85	5.85	0.70	1.14	± 11.0%
1810	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	5.06	5.06	5.06	0.42	1.80	± 11.0%
1950	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	4.81	4.81	4.81	0.44	1.69	± 11.0%
2300	± 50 / ± 100	39.5 ± 5%	1.67 ± 5%	4.68	4.68	4.68	0.40	1.85	± 11.0%
2450	± 50 / ± 100	39.2 ± 5%	1.80 ± 5%	4.42	4.42	4.42	0.40	2.06	± 11.0%
2600	± 50 / ± 100	39.0 ± 5%	1.96 ± 5%	4.29	4.29	4.29	0.48	1.71	± 11.0%
3500	± 50 / ± 100	37.9 ± 5%	2.91 ± 5%	4.09	4.09	4.09	1.00	1.23	± 13.1%
3700	± 50 / ± 100	37.7 ± 5%	3.12 ± 5%	3.68	3.68	3.68	1.00	1.30	± 13.1%

[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.

DASY - Parameters of Probe: ES3DV3 SN:3147

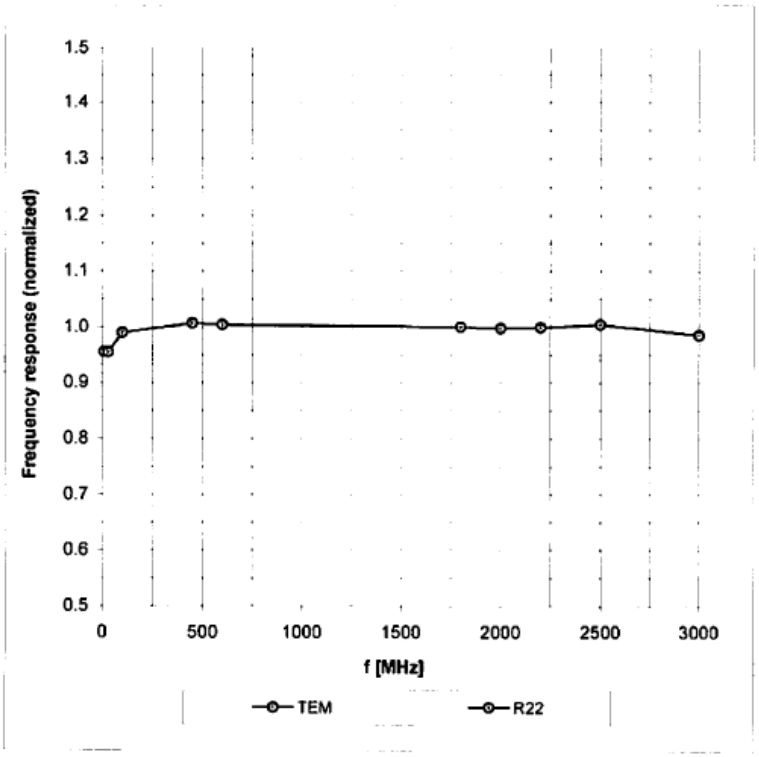
Calibration Parameter Determined in Body Tissue Simulating Media

f [MHz]	Validity [MHz][C]	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth Unc (k=2)
450	± 50 / ± 100	56.7 ± 5%	0.94 ± 5%	6.82	6.82	6.82	0.10	2.74 ± 13.3%
750	± 50 / ± 100	55.5 ± 5%	0.96 ± 5%	5.95	5.95	5.95	0.78	1.14 ± 11.0%
900	± 50 / ± 100	55.0 ± 5%	1.05 ± 5%	5.81	5.81	5.81	0.88	1.13 ± 11.0%
1810	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	4.90	4.90	4.90	0.28	2.75 ± 11.0%
1950	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	4.75	4.75	4.75	0.42	1.98 ± 11.0%
2300	± 50 / ± 100	52.8 ± 5%	1.85 ± 5%	4.33	4.33	4.33	0.45	1.82 ± 11.0%
2450	± 50 / ± 100	52.7 ± 5%	1.95 ± 5%	4.18	4.18	4.18	0.70	1.29 ± 11.0%
2600	± 50 / ± 100	52.5 ± 5%	2.16 ± 5%	4.07	4.07	4.07	0.87	1.15 ± 11.0%
3500	± 50 / ± 100	51.3 ± 5%	3.31 ± 5%	3.50	3.50	3.50	1.00	1.38 ± 13.1%
3700	± 50 / ± 100	51.0 ± 5%	3.55 ± 5%	3.38	3.38	3.38	0.64	1.93 ± 13.1%

[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.

Frequency Response of E-Field

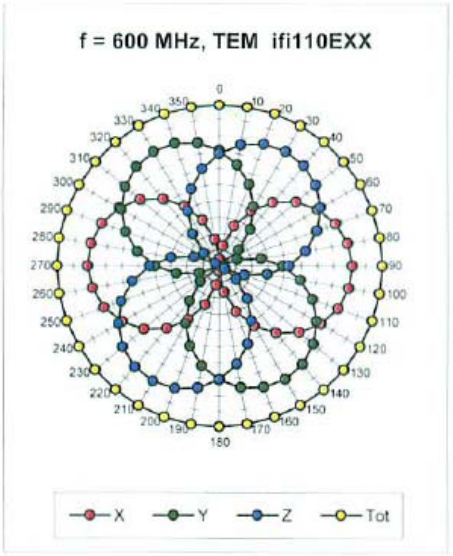
(TEM-Cell:ifi110 EXX, Waveguide: R22)

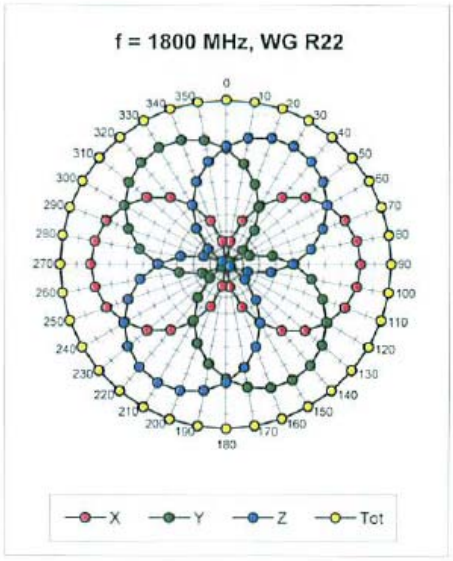


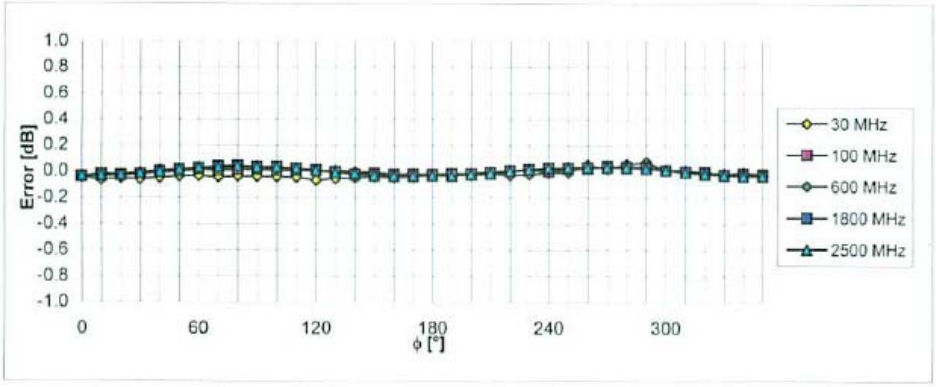
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

ES3DV3 SN:3147 February 18, 2010

Receiving Pattern (ϕ), ϑ = 0°



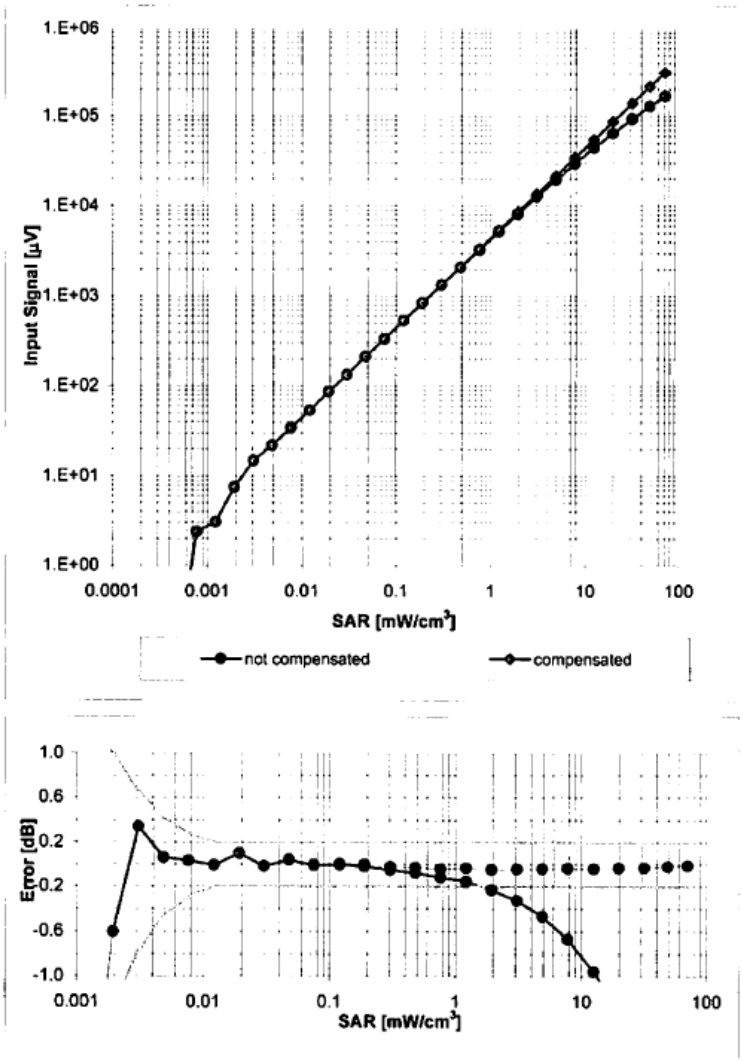




Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

Dynamic Range f(SAR_{head})

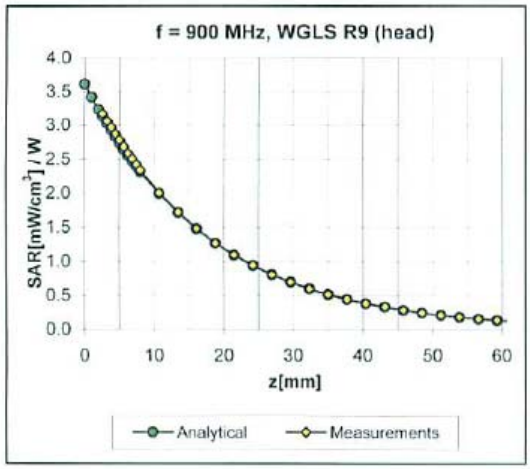
(Waveguide R22, f = 1800 MHz)

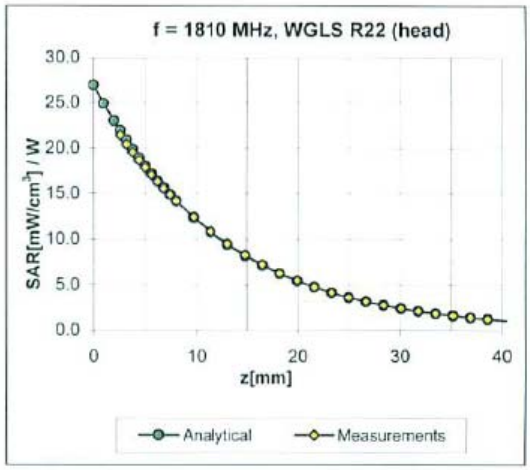


Uncertainty of Linearity Assessment: ± 0.6% (k=2)

ES3DV3 SN:3147 February 18, 2010

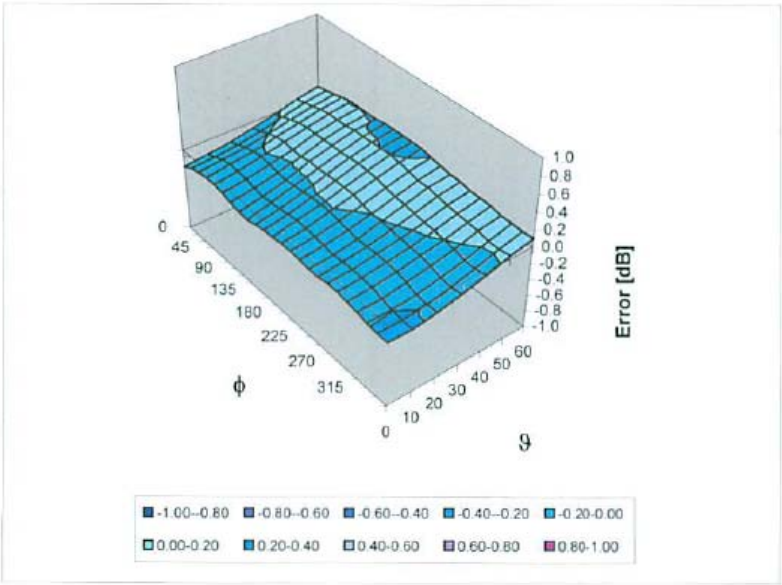
Conversion Factor Assessment





Deviation from Isotropy in HSL

Error (ϕ, ϑ), f = 900 MHz



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

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	Not applicable
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	4.0 mm
Probe Tip to Sensor X Calibration Point	2 mm
Probe Tip to Sensor Y Calibration Point	2 mm
Probe Tip to Sensor Z Calibration Point	2 mm
Recommended Measurement Distance from Surface	3 mm

Schmid & Partner Engineering AG
s p e a g
Zeughausstrasse 43, 8004 Zurich, Switzerland
Phone +41 44 245 9700, Fax +41 44 245 9779
info@speag.com, http://www.speag.com

Additional Conversion Factors

for Dosimetric E-Field Probe

Type:	**ES3DV3**
Serial Number:	**3147**
Place of Assessment:	**Zurich**
Date of Assessment:	**February 22, 2010**
Probe Calibration Date:	**February 18, 2010**

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 1810 MHz.

Assessed by:

Schmid & Partner Engineering AG

s p e a g

Zeughausstrasse 43, 8004 Zurich, Switzerland
Phone +41 44 245 9700, Fax +41 44 245 9779
info@speag.com, http://www.speag.com

Dosimetric E-Field Probe ES3DV3 SN:3147

Conversion factor (± standard deviation)

150 MHz	*ConvF*	8.0 ± 10%	ε_r = 52.3 σ = 0.76 mho/m (head tissue)
250 MHz	*ConvF*	7.2 ± 10%	ε_r = 47.6 σ = 0.83 mho/m (head tissue)
150 MHz	*ConvF*	7.7± 10%	ε_r = 61.9 σ = 0.80 mho/m (body tissue)
250 MHz	*ConvF*	7.3 ± 10%	ε_r = 59.4 σ = 0.88 mho/m (body tissue)
300 MHz	*ConvF*	7.1 ± 9%	ε_r = 58.2 σ = 0.92 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

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

Accredited by the Swiss Accreditation Service (SAS)
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: **D835V2-435_Sep08**

CALIBRATION CERTIFICATE

Object	D835V2 - SN: 435
Calibration procedure(s)	QA CAL-05.v7 Calibration procedure for dipole validation kits
Calibration date:	September 22, 2008
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 (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	04-Oct-07 (No. 217-00736)	Oct-08
Power sensor HP 8481A	US37292783	04-Oct-07 (No. 217-00736)	Oct-08
Reference 20 dB Attenuator	SN: 5086 (20g)	01-Jul-08 (No. 217-00864)	Jul-09
Type-N mismatch combination	SN: 5047.2 / 06327	01-Jul-08 (No. 217-00867)	Jul-09
Reference Probe ES3DV2	SN: 3025	28-Apr-08 (No. ES3-3025_Apr08)	Apr-09
DAE4	SN: 601	14-Mar-08 (No. DAE4-601_Mar08)	Mar-09

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-07)	In house check: Oct-09
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-07)	In house check: Oct-08

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: September 22, 2008

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

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

Accredited by the Swiss Accreditation Service (SAS)
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
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) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
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) DASY4/5 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	DASY5	V5.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V4.9	
Distance Dipole Center - TSL	15 mm	with Spacer
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	40.2 ± 6 %	0.88 mho/m ± 6 %
Head TSL temperature during test	(22.5 ± 0.2) °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.39 mW / g
SAR normalized	normalized to 1W	9.56 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**9.51 mW /g ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.57 mW / g
SAR normalized	normalized to 1W	6.28 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**6.24 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	50.0 Ω -8.9 jΩ
Return Loss	- 21.0 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.392 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	December 15, 2000

DASY5 Validation Report for Head TSL

Date/Time: 22.09.2008 10:19:42

Test Laboratory: SPEAG, Zurich, Switzerland

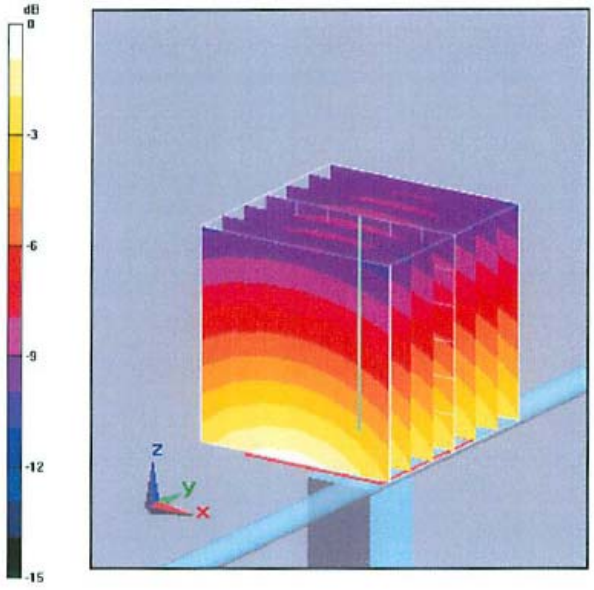
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:435

Communication System: CW-835; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL 900 MHz
Medium parameters used: f = 835 MHz; σ = 0.901 mho/m; ε_r = 41.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

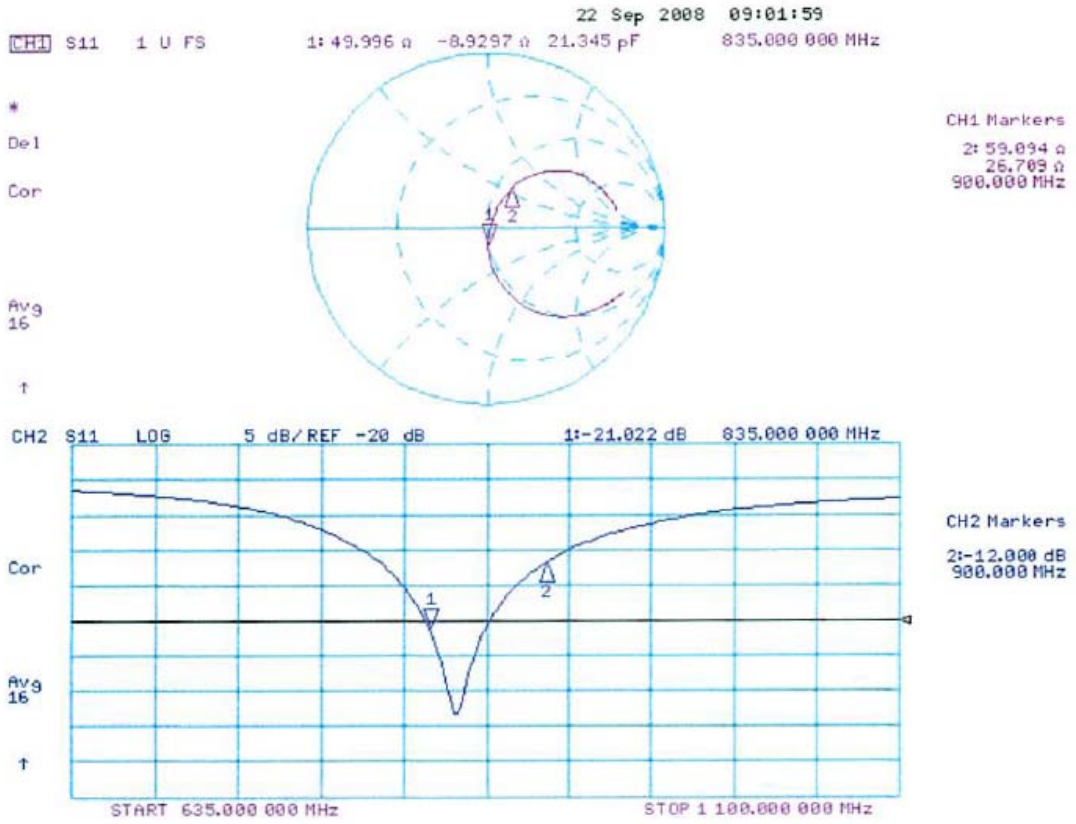
- Probe: ES3DV2 - SN3025; ConvF(5.97, 5.97, 5.97); Calibrated: 28.04.2008
- Sensor-Surface: 3.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 14.03.2008
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY5, V5.0 Build 119; SEMCAD X Version 13.2 Build 87

Pin=250mW; dip=15mm; dist=3.4mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 56 V/m; Power Drift = 0.020 dB
Peak SAR (extrapolated) = 3.48 W/kg
SAR(1 g) = 2.39 mW/g; SAR(10 g) = 1.57 mW/g
Maximum value of SAR (measured) = 2.69 mW/g



0 dB = 2.69mW/g

Impedance Measurement Plot for Head TSL



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

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

Accredited by the Swiss Accreditation Service (SAS)
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 EME

Certificate No: D835V2-427_Jan10

CALIBRATION CERTIFICATE

Object	D835V2 - SN: 427
Calibration procedure(s)	QA CAL-05.v7 Calibration procedure for dipole validation kits
Calibration date:	January 14, 2010

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 (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Reference 20 dB Attenuator	SN: 5086 (20g)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV3	SN: 3205	26-Jun-09 (No. ES3-3205_Jun09)	Jun-10
DAE4	SN: 601	07-Mar-09 (No. DAE4-601_Mar09)	Mar-10

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-09)	In house check: Oct-10

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: January 18, 2010

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

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

Accredited by the Swiss Accreditation Service (SAS)
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
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) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
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) DASY4/5 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	DASY5	V5.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V4.9	
Distance Dipole Center - TSL	15 mm	with Spacer
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	22.2 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	41.4 ± 6 %	0.89 mho/m ± 6 %
Head TSL temperature during test	(21.5 ± 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	2.39 mW / g
SAR normalized	normalized to 1W	9.56 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**9.63 mW /g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.56 mW / g
SAR normalized	normalized to 1W	6.24 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**6.27 mW /g ± 16.5 % (k=2)**

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.2 Ω - 2.7 jΩ
Return Loss	- 30.6 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.423 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	September 20, 2000

DASY5 Validation Report for Head TSL

Date/Time: 11.01.2010 11:14:03

Test Laboratory: SPEAG, Zurich, Switzerland

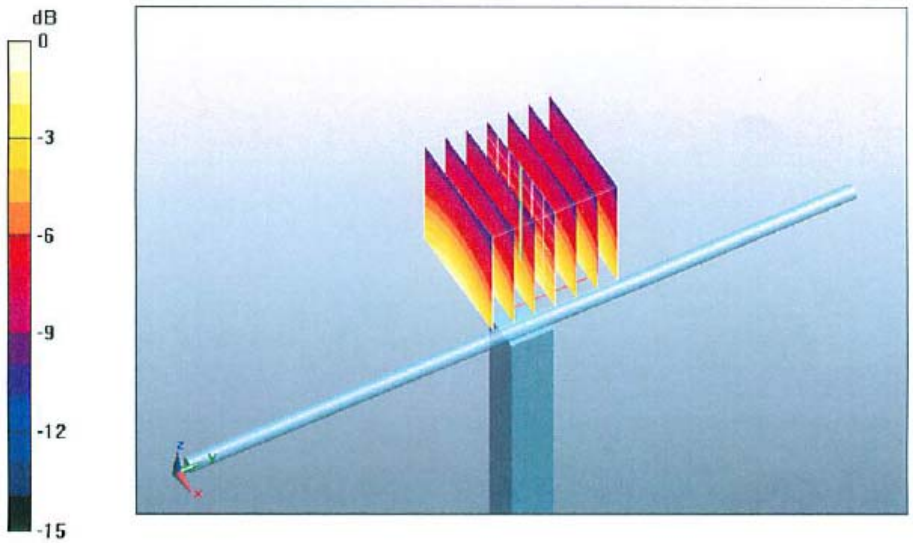
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:427

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL900
Medium parameters used: f = 835 MHz; σ = 0.89 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

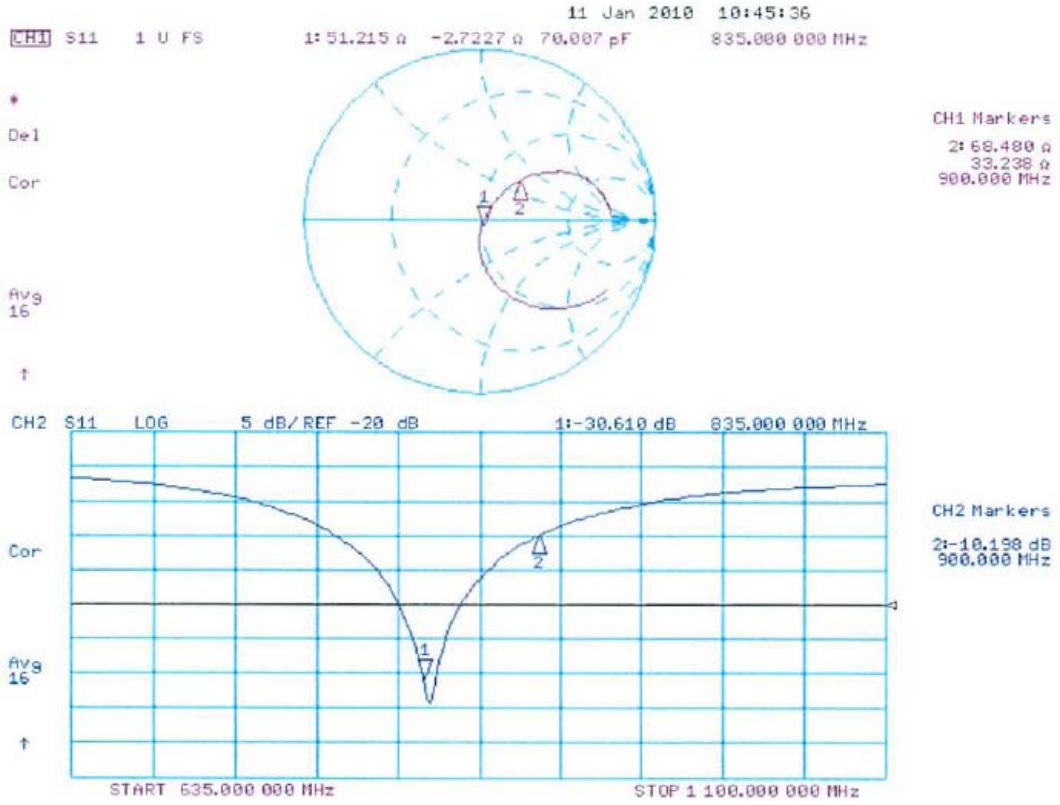
- Probe: ES3DV3 - SN3205; ConvF(6.04, 6.04, 6.04); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Pin=250 mW /d=15mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 57.4 V/m; Power Drift = 0.022 dB
Peak SAR (extrapolated) = 3.58 W/kg
SAR(1 g) = 2.39 mW/g; SAR(10 g) = 1.56 mW/g
Maximum value of SAR (measured) = 2.77 mW/g



0 dB = 2.77mW/g

Impedance Measurement Plot for Head TSL



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

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

Accredited by the Swiss Accreditation Service (SAS)
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 EME**

Certificate No: **D2450V2-703_May10**

CALIBRATION CERTIFICATE

Object: D2450V2 - SN: 703

Calibration procedure(s): QA CAL-05.v7
Calibration procedure for dipole validation kits

Calibration date: May 25, 2010

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 (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Reference 20 dB Attenuator	SN: 5086 (20g)	30-Mar-10 (No. 217-01158)	Mar-11
Type-N mismatch combination	SN: 5047.2 / 06327	30-Mar-10 (No. 217-01162)	Mar-11
Reference Probe ES3DV3	SN: 3205	30-Apr-10 (No. ES3-3205_Apr10)	Apr-11
DAE4	SN: 601	02-Mar-10 (No. DAE4-601_Mar10)	Mar-11

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-09)	In house check: Oct-10

	Name	Function	Signature
Calibrated by:	Claudio Leubler	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: May 26, 2010

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

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

Accredited by the Swiss Accreditation Service (SAS)
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
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) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
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) DASY4/5 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	DASY5	V5.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V4.9	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	39.0 ± 6 %	1.76 mho/m ± 6 %
Head TSL temperature during test	(21.5 ± 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	12.9 mW / g
SAR normalized	normalized to 1W	51.6 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**52.1 mW /g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.03 mW / g
SAR normalized	normalized to 1W	24.1 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**24.2 mW /g ± 16.5 % (k=2)**

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	53.8 Ω + 3.0 jΩ
Return Loss	- 26.6 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.148 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	March 22, 2001

DASY5 Validation Report for Head TSL

Date/Time: 25.05.2010 13:55:49

Test Laboratory: SPEAG, Zurich, Switzerland

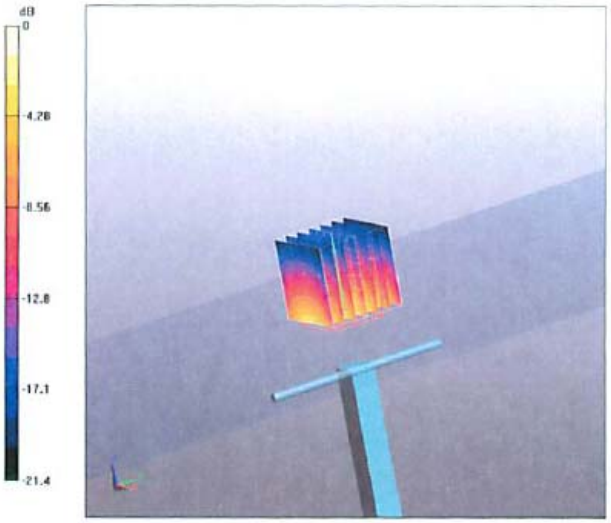
DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:703

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: HSL U11 BB
Medium parameters used: f = 2450 MHz; σ = 1.76 mho/m; ε_r = 39; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

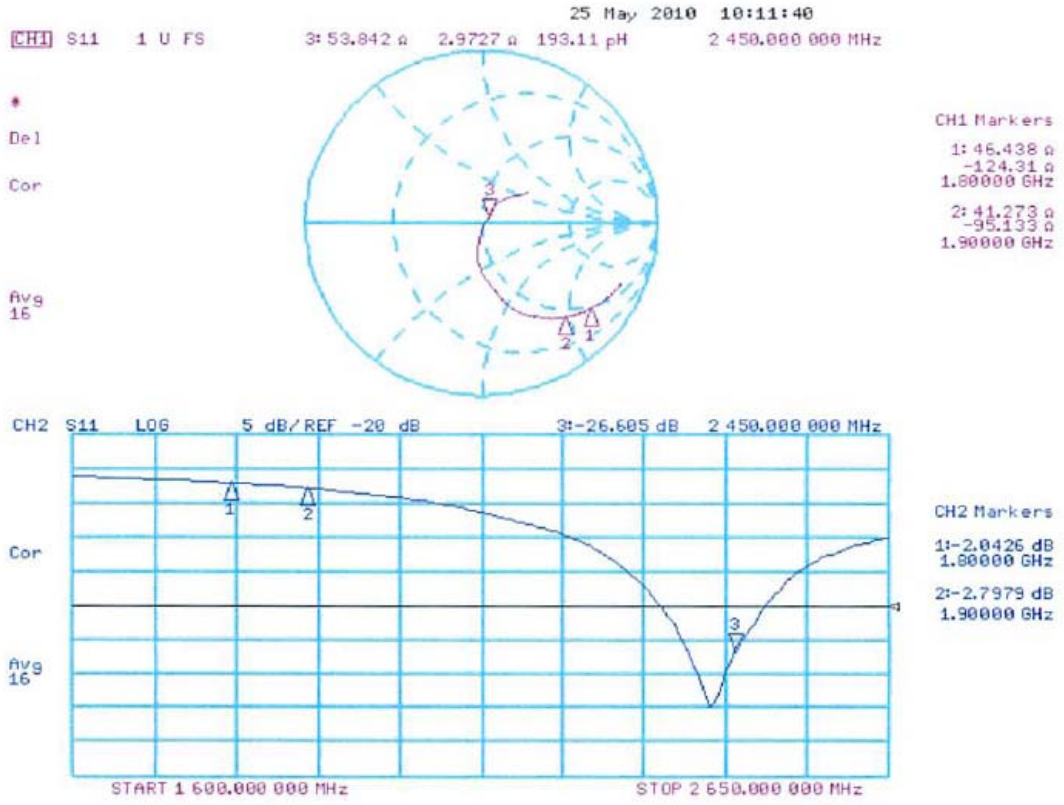
- Probe: ES3DV3 - SN3205; ConvF(4.53, 4.53, 4.53); Calibrated: 30.04.2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.03.2010
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 61

Head/d=10mm, Pin=250 mW, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 101.4 V/m; Power Drift = 0.026 dB
Peak SAR (extrapolated) = 26.2 W/kg
SAR(1 g) = 12.9 mW/g; SAR(10 g) = 6.03 mW/g
Maximum value of SAR (measured) = 16.8 mW/g



0 dB = 16.8mW/g

Impedance Measurement Plot for Head TSL



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

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

Accredited by the Swiss Accreditation Service (SAS)
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: **D2450V2-704_Nov08**

CALIBRATION CERTIFICATE

Object	D2450V2 - SN: 704
Calibration procedure(s)	QA CAL-05.v7 Calibration procedure for dipole validation kits
Calibration date:	November 18, 2008
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 (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	04-Oct-07 (No. 217-00736)	Oct-08
Power sensor HP 8481A	US37292783	04-Oct-07 (No. 217-00736)	Oct-08
Reference 20 dB Attenuator	SN: S5086 (20g)	01-Jul-08 (No. 217-00864)	Jul-09
Type-N mismatch combination	SN: 5047.2 / 06327	01-Jul-08 (No. 217-00867)	Jul-09
Reference Probe ES3DV2	SN: 3025	28-Apr-08 (No. ES3-3025_Apr08)	Apr-09
DAE4	SN: 601	14-Mar-08 (No. DAE4-601_Mar08)	Mar-09

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-07)	In house check: Oct-09
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-08)	In house check: Oct-09

	Name	Function	Signature
Calibrated by:	Claudio Leubler	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: November 18, 2008

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

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

Accredited by the Swiss Accreditation Service (SAS)
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
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) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
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) DASY4/5 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	DASY5	V5.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	38.4 ± 6 %	1.84 mho/m ± 6 %
Head TSL temperature during test	(22.0 ± 0.2) °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.5 mW / g
SAR normalized	normalized to 1W	54.0 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**52.9 mW /g ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.30 mW / g
SAR normalized	normalized to 1W	25.2 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**24.9 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	53.7 Ω + 0.8 jΩ
Return Loss	- 28.8 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.153 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	March 22, 2001

DASY5 Validation Report for Head TSL

Date/Time: 18.11.2008 12:27:36

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN704

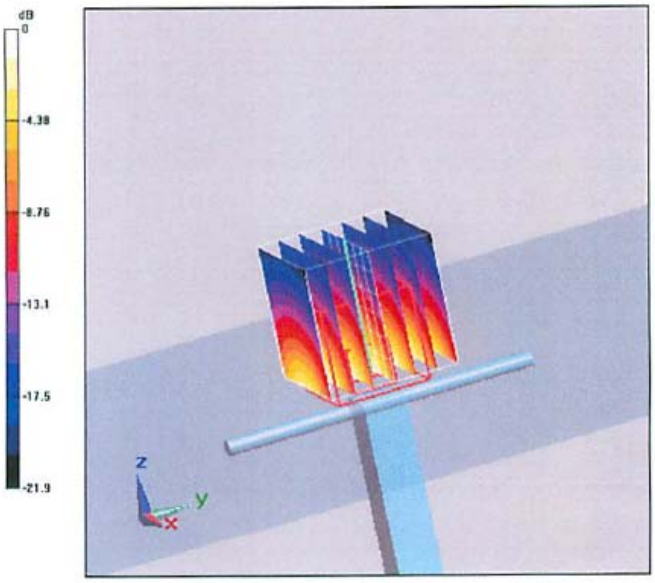
Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: HSL U10 BB
Medium parameters used: f = 2450 MHz; σ = 1.84 mho/m; ε_r = 38.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV2 - SN3025; ConvF(4.4, 4.4, 4.4); Calibrated: 28.04.2008
- Sensor-Surface: 3.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 14.03.2008
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 96.3 V/m; Power Drift = 0.028 dB
Peak SAR (extrapolated) = 28.4 W/kg
SAR(1 g) = 13.5 mW/g; SAR(10 g) = 6.3 mW/g
Maximum value of SAR (measured) = 16.3 mW/g



0 dB = 16.3mW/g

Impedance Measurement Plot for Head TSL