



MOTOROLA



TESTING CERT # 2518.01

FCC ID: IHDP56KY1

DECLARATION OF COMPLIANCE SAR ASSESSMENT Part 1 of 1

Enterprise Mobility Solutions
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Date of Report: 03/11/2010
Report Revision: 0
Report ID: SAR PCII rpt_H88XAH6JR2AN_Rev
 O_03112010_SR8082

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Date/s Tested: 03/01/10 - 03/03/10
Manufacturer/Location: China
Sector/Group/Div.: iDEN Mobile Devices
Date submitted for test: 02/10/10
DUT Description: TDMA: 236:310 WiDEN (76.1%), 81:120, 2:6, 1:12, and 1:6; M64QAM, M16QAM, and QPSK Modulations; 0.6 W Pulse Avg; MOTotalk: 114:120 8FSK; 0.85 W nominal (GPS and Bluetooth Capable).
Test TX mode(s): Data 236:310, MOTotalk:114:120 and BT: CW
Max. Power output: 0.64 W pulsed average conducted power (iDEN/WiDEN); 0.891 W (MOTotalk); 0.0025 W (Bluetooth)
Nominal Power: 0.60 W pulsed average conducted power (iDEN); 0.85 W (MOTotalk); 0.001 W (Bluetooth)
Tx Frequency Bands: 806-825, 896-902 MHz (iDEN); 902-928 MHz (MOTotalk); 2.402-2.480 GHz (Bluetooth)
Signaling type: TDMA: QPSK, M16-QAM, M64-QAM; FHSS: 8FSK (PTT); BT
Model(s) Tested: H88XAH6JR2AN
Model(s) Certified: H88XAH6JR2AN
Serial Number(s): 364VLC2HZS
Classification: General Population/Uncontrolled
Rule Part(s): 15 & 90



Max. Calc. : 1-g Avg. SAR: 1.28 W/kg (Body); 10-g Avg. SAR: 0.92 W/kg (Body)

The test results clearly demonstrate compliance with FCC General Population/Uncontrolled RF Exposure limits of 1.6 W/kg averaged over 1 gram per the requirements of 47 CFR 2.1093(d).
 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 2.0 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 – Kim Uong for Deanna Zakharia
Deanna Zakharia
EMS EME Lab Senior Resource Manager,
Laboratory Director

Approval Date: 03/11/2010

Certification Date: 03/11/2010

Certification No.: L1100305

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Report Revision History

Date	Revision	Comments
03/11/2010	O	Permissive Change Type II

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 number H88XAH6JR2AN and FCC ID: IHDP56KY1. The results herein reflect pilot PCII test results for newly added body worn holster NNTN7898A. All other accessories used in this report were already included during the original filing.

2.0 Abbreviations / Definitions

BT: Bluetooth
CNR: Calibration Not Required
DUT: Device Under Test
FHSS: Frequency Hopping Spread Spectrum
FSK: Frequency Shift Keying
iDEN: Integrated Dispatch Enhanced Network
ISM: Industrial, Scientific and Medical
NA: Not Applicable
PTT: Push to Talk
QPSK: Quadrature Phase-Shift Keying
QAM: Quadrature Amplitude Modulation
SMR: Specialized Mobile Radio
SAR: Specific Absorption Rate
TDMA: Time Division Multiple Access

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 9kHz and 300 GHz." and "Attachment to resolution # 303 from July 2, 2002"
 - Draft of IEC62209-2 Ed.1, Human Exposure to Radio Frequency Fields from Handheld and Body-Mounted Wireless Communication Devices – Human models, Instrumentation, and Procedures Part 2: Procedure to determine the specific absorption rate (SAR) for mobile wireless communication devices used in close proximity to the human body (frequency range of 30MHz to 6GHz), revised on Oct 3, 2008.
- * The IEC62209-1 and IEEE1528 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 G. For this device the “Max Calc. 1g-SAR” and “Max Calc.10g-SAR” are scaled using the following formula:

$$Max_Calc = SAR_meas \cdot 10^{\frac{-Drift}{10}} \cdot \frac{P_max}{P_int} \cdot DC$$

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)

FCC ID: IHDP56KY1 model H88XAH6JR2AN is a digital multi-service data capable devices that employs time division multiplexing with duty cycles of 16.67% for Voice (Dispatch), 16.67% (1:6) or 33.00%(1:3) for Interconnect or Circuit Data, 67.5% (81:120) for Packet Data and 76.1% (236:310) for WiDEN. Possible modulation formats are QPSK, M16-QAM, or M64-QAM. All voice modes employ M16-QAM modulation, and are interleaved as 1:6 (for Dispatch PTT or Interconnect) or 1:3 (maximum for Interconnect). Split 1:3 Interconnect is operated at a 16.67% duty cycle, but because there will be two pulses in each 90-msec frame, the overall interleave is 2:6. Data transmissions employ QPSK, M16-QAM, and M64-QAM modulations, and have a maximum duty cycle of 67.50% (Packet Data) to a maximum of 76.1% for WiDEN mode. Packet Data and WiDEN operations are possible with-and-without connection to an external data device (via a data cable or Bluetooth link). All iDEN modes (Interconnect, Dispatch, and Data) are available in both the 800 and 900 MHz SMR bands, and are also supported in the Narrowband PCS. This device also possesses MOTOtalk, which is a Part 15 service, employing Frequency Hopping Spread Spectrum technology in the 900 MHz ISM band. MOTOtalk emissions have a duty cycle of 95.0% (114:120), and uses 8FSK modulation. Only dispatch (i.e. PTT) operation is possible when operating in this mode. The unit may be used at the abdomen in this mode (with applicable audio accessories) or held in front of the face. The low-audio earpiece mode has been locked out in software. There is no simultaneous operation with iDEN modes.

This device also incorporates a Class 2 Bluetooth (BT) device which is a Frequency Hopping Spread Spectrum (FHSS) technology with a 76.5% maximum duty cycle. Bluetooth is a short range wireless protocol used for communication between users. Users link to each other through an Ad-Hock network of pico-nets. The pico-net is the basic communication cell, which is formed by a "master" and up to 7 "slaves." There is simultaneous transmission between BT and iDEN or MOTOtalk in the body position only.

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

FCC ID: IHDP56KY1 is capable of operating in the 806-825 MHz and 896-902MHz bands for iDEN modes, 902-928MHz band for MOTotalk mode and 2.402-2.480GHz band for BT. The nominal conducted power is 0.60 watts pulsed averaged in 806-825MHz and 896-902MHz bands, 0.850 watts in the MOTotalk band and 0.001 watts in the BT band. The maximum conducted output power is 0.640 watts pulsed average, 0.891 watts and 0.0025 watts respectively as defined by the upper limit of the production line final test station.

7.0 Optional Accessories and Test Criteria

FCC ID: IHDP56KY1 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

The table below summarizes the antennas, antenna descriptions, test status and separation distances.

TABLE 2

Antenna Models	Description	Tested	* Separation distances between DUT and phantom surface for given test configurations		
			Body Test Configuration		Face Test Configuration DUT @ 2.5cm
			Tested Carry Accessories	2.5cm Assessment DUT @ 2.5cm	
85009260001	Internal ¼ wave, 806-825MHz (-1.3dBi), 896-902MHz (0.04dBi), 902-928MHz (0.06dBi)	Yes	11-15mm	NA	NA
85009258001	Internal ¼ wave 2.402-2.481GHz (-1.0dBi)	Yes	11-15mm	NA	NA

* The 1st number indicates the minimum separation distance that was measured at the bottom of the holster while the second number reflects the separation distance measured at the top of the holster. Refer to APPENDIX H for illustration of distances.

7.2 Battery

The table below identifies the battery used for the PCII testing. The table includes the battery description and test status.

TABLE 3

Battery Models	Description	Tested	Comments
SNN5795A	Li Ion BK60 Standard battery	Yes	This battery was used to satisfy PCII testing requirements. Requires battery cover NTN2565XXXXA

7.3 Body worn Accessory

The body worn accessory was tested. The table below lists the body worn, description, test status and separation distances.

TABLE 4

Body worn Models	Description	Tested	* Separation distances between DUT and phantom surface. (mm)	Comments
NNTN7898A	Holster	Yes	11-15mm	NA

* The 1st number indicates the minimum separation distance that was measured at the bottom of the holster while the second number reflects the separation distance measured at the top of the holster. Refer to APPENDIX H for illustration of distances.

7.4 Audio/Data Cable Accessory

The table below identifies the audio accessory used for the PCII testing. The table includes the audio accessory description and test status.

TABLE 5

Audio Acc. Models	Description	Tested	Comments
Headsets w/ Microphone (Applicable for Body testing only)			
NNTN5211B	2-wire surveillance headset (iDEN), PTT	Yes	This audio was used to satisfy PCII testing requirements for MOTotalk band.

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, 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

TABLE 6

Phantom ID (s)	Material Parameters	Phantom Dimensions LxWxD (mm)	Material Thickness (mm)	Support Structure Material	Loss Tangent (wood)
DUAL1002	200MHz -6GHz; Er < 5, Loss Tangent = <0.05	205x390x180	2mm +/- 0.2mm	Wood	< 0.05

8.2.2 SAM Phantom

Not applicable

8.2.3 Elliptical Flat Phantom

TABLE 7

Phantom ID (s)	Material Parameters	Phantom Dimensions LxWxD (mm)	Material Thickness (mm)	Support Structure Material	Loss Tangent (wood)
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 8

% of listed ingredients	835MHz		900MHz		2450MHz	
	Head	Body	Head	Body	Head	Body
Sugar	57.0	44.9	56.5	44.9	0	0
Diacetin	0	0	0	0	51.0	34.5
De ionized -Water	40.45	53.06	40.95	53.06	48.75	65.2
Salt	1.45	0.94	1.45	0.94	0.15	0.20
HEC	1.0	1.0	1.0	1.0	0	0
Bact.	0.1	0.1	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 9

Equipment Type	Model	Serial	Calibration Due
Power Meter(Agilent)	E4418B	GB40206553	4/16/2010
Power Meter(Agilent)	E4419B	MY40330364	2/23/2011
Power Sensor (HP)	8482B	3318A06773	5/6/2010
Power Sensor (HP)	8481B	3318A10894	3/19/2010
Power Sensor (Agilent)	E9301B	MY41495593	2/12/2011

TABLE 9 continued

Equipment Type	Model	Serial	Calibration Due
Power Sensor (Agilent)	E9301B	MY41495594	2/12/2011
Bi-Directional Coupler (NARDA)	3020A	40296	2/5/2012
Bi-Directional Coupler (NARDA)	3022	77115	3/20/2010
Bi-Directional Coupler (NARDA)	3022	70181	11/13/2011
Signal Generator (HP)	E4421B	US39270649	8/12/2010
Signal Generator (Agilent)	E4438C	MY42082269	2/18/2012
Comtech PST	AR88258-10	M3Y6A00-1007	NCR
Dickson Temperature Recorder	TM320	7081356	8/19/2010
Dickson Temperature Recorder	TM125	1195889	2/16/2011
Omega Digital Thermometer with J Type TC Probe	HH202A	18801	4/1/2010
Omega Digital Thermometer with J Type TC Probe	HH202A	18800	11/10/2010
Omega Digital Thermometer with J Type TC Probe	HH202A	18812	5/22/2010
Agilent PNA-L Network Analyzer	N5230A	MY45001092	5/22/2010
Dielectric Probe Kit (HP)	85070C	US99360076	CNR
Speag	D900V2	85	8/25/2010
Speag	D2450V2	704	11/18/2010

10.0 SAR Measurement System Verification

The SAR measurements were conducted with probe model/serial number ES3DV3/SN3185. 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 the allowed tolerance (+/- 5% or 10%) 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 10

Frequency (MHz)	Tissue Type	Conductivity Target & Range (S/m)	Dielectric Constant Target & Range	Conductivity Meas. (S/m)	Dielectric Constant Meas.	Tested Date
815.5	FCC Body	0.97 (0.92-1.01)	55.3 (52.5-58.0)	0.97	54.7	03/01/10
899	FCC Body	1.05 (0.99-1.10)	55.0 (52.3-57.7)	1.06	53.9	03/01/10
				10.5	53.1	03/03/10
900	FCC Body	1.05 (0.99-1.10)	55.0 (52.3-57.7)	1.06	53.9	03/01/10
900	IEEE/ IEC Head	0.97 (0.92-1.01)	41.5 (39.4-43.5)	0.96	40.0	03/03/10
915	FCC Body	1.06 (1.00-1.11)	55.0 (52.3-57.7)	1.08	53.7	03/01/10
2441	FCC Body	1.94 (1.84-2.03)	52.7 (47.4-57.9)	1.94	49.2	03/02/10
2450	FCC Body	1.95 (1.85-2.04)	52.7 (47.4-57.9)	1.95	49.2	03/02/10

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 11

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	IEEE/ IEC Head	11/23/09	SPEAG D900V2 /085	11.07+/- 10%	11.80	03/03/10
3185	FCC Body	11/23/09	SPEAG D900V2 /085	11.92 +/- 10%	12.32	03/01/10
3185	FCC Body	11/23/09	SPEAG D2450V2 /704	55.27+/- 10%	54.33	03/02/10

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

11.0 Environmental Test Conditions

The EME Laboratory ambient environment is well controlled resulting in very stable simulated tissue temperature and therefore stable dielectric properties. Simulated tissue temperature is measured prior to each scan to insure it is within +/- 2°C of the temperature at which the dielectric properties were determined. The liquid depth within the phantom used for measurements was 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 12

	Target	Measured
Ambient Temperature	18 - 25 °C	Range: 21.4-22.0°C Avg. 21.8°C
Relative Humidity	30 - 70 %	Range: 37.0-66.5% Avg. 47.5%
Tissue Temperature	NA	Range: 20.3-21.3°C Avg. 20.7°C

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

12.0 DUT Test Methodology

Testing was done using the highest report body configurations for each band from the original filing.

12.1 Measurements

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

12.2 DUT Configuration(s)

The DUT is a portable device with iDEN (QPSK, M16-QAM, M64-QAM), MOTOtalk and BT signaling operational at the relevant body, head and face as described in section 6.0 while using the applicable accessories listed in section 7.0.

12.3 Device 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 was positioned in the newly added holster which was placed against the phantom.

12.3.2 Head

NA

12.3.3 Face

NA

12.4 DUT Test Plan

The modes of operation identified in section 6.0 were used to develop the test plan using the highest duty cycle where applicable. All accessories listed in section 7.0 of this report were evaluated and only those identified for testing were used to develop the SAR test plan for this product.

13.0 DUT Test Data

13.1 806-825MHz Band Test Data

Assessments at the Body (236:310 Data mode)

Assessment of the offered body worn accessory; The newly offered holster was tested. These tests were conducted across the band with the device in holster NNTN7898A while positioned against the phantom with battery SNN5795A and without a data cable. The highest SAR result from the table below is provided in APPENDIX F section 1.0 – 806-825MHz Band Assessment of the offered body worn accessory.

TABLE 13

806-825MHz Band Assessments at Body (236:310 data mode) – Assessment of offered body worn across the band												
Run Number/ SN	Antenna	Freq. (MHz)	Battery	Test position	Carry Case	Additional attachments	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-100301-02 / 364VLC2HZS	85009260001 (internal)	806.0125	SNN5795A w/ NTN2565xxxA	Against phantom	NNTN7898A	None	0.646	-0.458	0.912	0.675	1.03	0.76
HvH-Ab-100301-03 / 364VLC2HZS	85009260001 (internal)	815.5125	SNN5795A w/ NTN2565xxxA	Against phantom	NNTN7898A	None	0.643	-0.546	0.867	0.632	1.00	0.73
HvH-Ab-100301-04 / 364VLC2HZS	85009260001 (internal)	824.9875	SNN5795A w/ NTN2565xxxA	Against phantom	NNTN7898A	None	0.646	-0.357	0.784	0.571	0.86	0.63

13.2 896-902MHz Band Test Data

Assessments at the Body (236:310 data mode)

Assessment of the offered body worn accessory; The newly offered holster was tested. These tests were conducted across the band with the device in holster NNTN7898A while positioned against the phantom with battery SNN5795A and without a data cable. The highest SAR result from the table below is provided in APPENDIX E – Highest Body SAR Configuration Result.

TABLE 14

896-902MHz Band Assessments at Body (236:310 data mode) – Assessment of offered body worn across the band												
Run Number/ SN	Antenna	Freq. (MHz)	Battery	Test position	Carry Case	Additional attachments	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-100301-05 / 364VLC2HZS	85009260001 (internal)	896.0187 5	SNN5795A w/ NTN2565xxxA	Against phantom	NNTN7898A	None	0.638	-0.482	1.060	0.761	1.21	0.87
HvH-Ab-100301-06 / 364VLC2HZS	85009260001 (internal)	898.9937 5	SNN5795A w/ NTN2565xxxA	Against phantom	NNTN7898A	None	0.641	-0.678	1.060	0.763	1.26	0.90
HvH-Ab-100301-07 / 364VLC2HZS	85009260001 (internal)	901.9812 5	SNN5795A w/ NTN2565xxxA	Against phantom	NNTN7898A	None	0.641	-0.613	1.020	0.743	1.19	0.87

13.3 MOTotalk Band Test Data

Assessments at the Body (114:120 mode)

Assessment of the offered body worn accessory; The newly offered holster was tested. These tests were conducted across the band with the device in holster NNTN7898A while positioned against the phantom with battery SNN5795A and audio cable NNTN5211B. The highest SAR result from the table below is provided in APPENDIX F section 2.0 – 902-928MHz Band Assessment of the offered body worn accessory.

TABLE 15

902-928MHz Band Assessments at Body (114:120 mode) – Assessment of offered body worn across the band												
Run Number/ SN	Antenna	Freq. (MHz)	Battery	Test position	Carry Case	Additional attachments	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-100301-08 / 364VLC2HZS	85009260001 (internal)	902.525	SNN5795A w/ NTN2565xxx A	Against phantom	NNTN7898A	NNTN5211B 2-wire Surveillance Headset	0.891	-0.064	2.130	1.540	1.08	0.78
HvH-Ab-100301-09 / 364VLC2HZS	85009260001 (internal)	915.525	SNN5795A w/ NTN2565xxx A	Against phantom	NNTN7898A	NNTN5211B 2-wire Surveillance Headset	0.898	-0.023	1.940	1.390	0.98	0.70
HvH-Ab-100301-10 / 364VLC2HZS	85009260001 (internal)	927.475	SNN5795A w/ NTN2565xxx A	Against phantom	NNTN7898A	NNTN5211B 2-wire Surveillance Headset	0.887	-0.043	1.780	1.270	0.90	0.64

13.4 BT Band Test Data

Assessments at the Body (CW mode)

Assessment of the offered body worn accessory; The newly offered holster was tested. These tests were conducted across the band with the device in holster NNTN7898A while positioned against the phantom with battery SNN5795A and without a data cable. The highest SAR result from the table below is provided in APPENDIX F section 3.0 – 2402-2480MHz Band Assessment of the offered body worn accessory.

TABLE 16

2402-2480MHz Band Assessments at Body (CW mode) – Assessment of offered body worn across the band												
Run Number/ SN	Antenna	Freq. (MHz)	Battery	Test position	Carry Case	Additional attachments	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-100302-02 / 364VLC2HZS	85009258001 (internal)	2402	SNN5793A w/ NTN2566xxx A	Against phantom	NNTN7898A	None	0.002	0.165	0.006	0.004	0.006	0.004
HvH-Ab-100302-03 / 364VLC2HZS	85009258001 (internal)	2441	SNN5793A w/ NTN2566xxx A	Against phantom	NNTN7898A	None	0.001	0.308	0.005	0.003	0.007	0.004
HvH-Ab-100302-04 / 364VLC2HZS	85009258001 (internal)	2481	SNN5793A w/ NTN2566xxx A	Against phantom	NNTN7898A	None	0.001	0.504	0.003	0.002	0.004	0.002

13.5 Shorten Scan Assessment

Short scan assessment of the overall SAR highest configuration (896-902MHz Band Assessment TABLE 14 pg15); A “shortened” scan was performed, using the test configuration and unit that produced the highest SAR results overall (in bold with *) below, 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 highest SAR result from the table below is provided in APPENDIX E – Shortened Scan Results.

TABLE 17

Shorten Scan Assessment at the Body – 236:310 phone mode												
Run Number/ SN	Antenna	Freq. (MHz)	Battery	Test position	Carry Case	Additional attachments	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-100301-06 / 364VLC2HZS	85009260001 (internal)	898.993 75	SNN5795A w/ NTN2565xxx A	Against phantom	NNTN7898A	None	0.641	-0.678	1.060	0.763	1.26	0.90
Short Scan *HvH-Ab-100303-02 / 364VLC2HZS	85009260001 (internal)	898.993 75	SNN5795A w/ NTN2565xxx A	Against phantom	NNTN7898A	None	0.642	-0.475	1.120	0.811	1.27	0.92

14.0 Simultaneous Transmission

iDEN and BT simultaneous transmission Per FCC KDB648474 (v01r05) section 4, simultaneous transmission.

The sum of the 1-g SAR measured for all simultaneous transmitting antennas is less than the SAR limit, SAR evaluation for simultaneous transmission is not required for all transmitters and antennas. The sum of the highest applicable SAR per antenna for each body position is summarized below. (Refer to APPENDIX I for antenna separation distance.)

Body - iDEN + BT

Sum of Max. Calc.: 1-g Avg. SAR $1.268\text{mW/g} + 0.007\text{mW/g} = 1.28\text{mW/g}$

Sum of Max. Calc.: 10-g Avg. SAR $0.918\text{mW/g} + 0.004\text{mW/g} = 0.92\text{mW/g}$

15.0 Conclusion

The highest Operational Maximum Calculated 1-gram and 10-gram average SAR values found for FCC ID: IHDP56KY1 model H88XAH6JR2AN.

Highest stand alone results per body position;

Max. Calc. : 1-g Avg. SAR: 1.27 W/kg (Body); 10-g Avg. SAR: 0.92 W/kg (Body)

Highest simultaneous results per body position;

Max. Calc. : 1-g Avg. SAR: 1.28 W/kg (Body); 10-g Avg. SAR: 0.92 W/kg (Body)

The test results clearly demonstrate compliance with FCC General Population/Uncontrolled RF Exposure limits of **1.6 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 ranging from 800MHz to 3GHz, and for Dipole test frequency ranging from 800MHz to 3GHz. Therefore, the highest tolerance for the probe calibration uncertainty is indicated.

Table 1A
Uncertainty Budget for Device Under Test, for 800 MHz to 3 GHz

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	$e = f(d,k)$	<i>f</i>	<i>g</i>	$h = c \times f / e$	$i = c \times g / e$	<i>k</i>
Uncertainty Component	IEEE 1528 section	Tol. (± %)	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	

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Table 2A

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

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e = f(d,k)</i>	<i>f</i>	<i>g</i>	<i>h = c x f / e</i>	<i>i = c x g / e</i>	<i>k</i>
Uncertainty Component	IEEE 1528 section	Tol. (± %)	Prob. Dist.	Div.	<i>c_i</i> (1 g)	<i>c_i</i> (10 g)	1 g <i>u_i</i> (±%)	10 g <i>u_i</i> (±%)	<i>v_i</i>
Measurement System									
Probe Calibration	E.2.1	5.9	N	1.00	1	1	5.9	5.9	∞
Axial Isotropy	E.2.2	4.7	R	1.73	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)			<i>k</i> =2				18	17	

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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) *c_i* - sensitivity coefficient that should be applied to convert the variability of the uncertainty component into a variability of SAR.
- g) *u_i* – SAR uncertainty
- h) *v_i* - 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
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: **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

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

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



S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
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
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,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:

- *NORM_{x,y,z}*: Assessed for E-field polarization θ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). *NORM_{x,y,z}* are only intermediate values, i.e., the uncertainties of *NORM_{x,y,z}* does not effect the E²-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)_{x,y,z}* = *NORM_{x,y,z}* * *frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCP_{x,y,z}*: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- *A_{x,y,z}*; *B_{x,y,z}*; *C_{x,y,z}*; *VR_{x,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 *NORM_{x,y,z}* * *ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

ES3DV3 SN:3185

November 23, 2009

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!)

ES3DV3 SN:3185

November 23, 2009

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 E²-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:3185

November 23, 2009

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.

ES3DV3 SN:3185

November 23, 2009

DASY - Parameters of Probe: ES3DV3 SN:3185

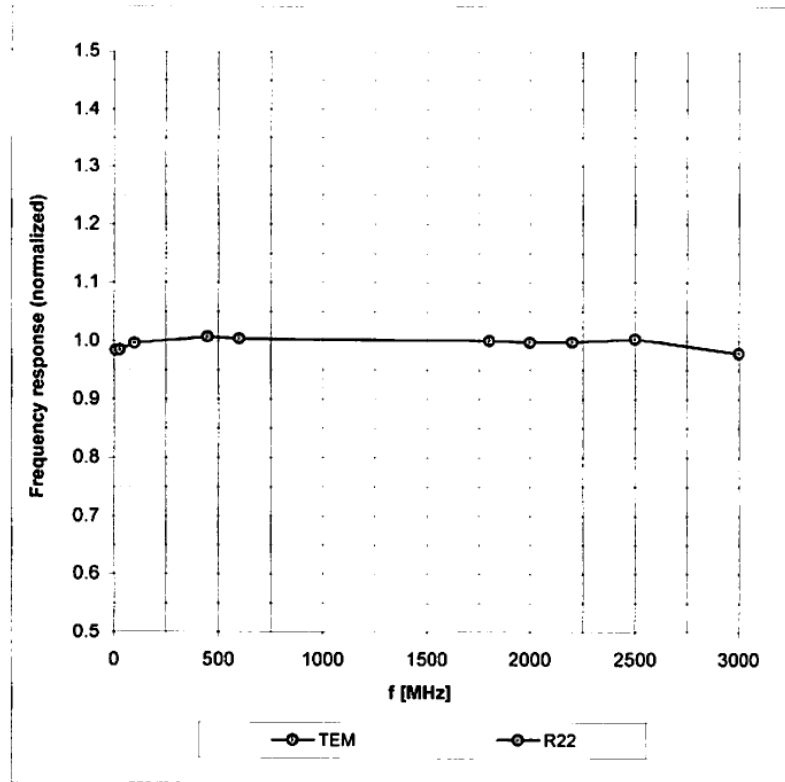
Calibration Parameter Determined in Body Tissue Simulating Media

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.

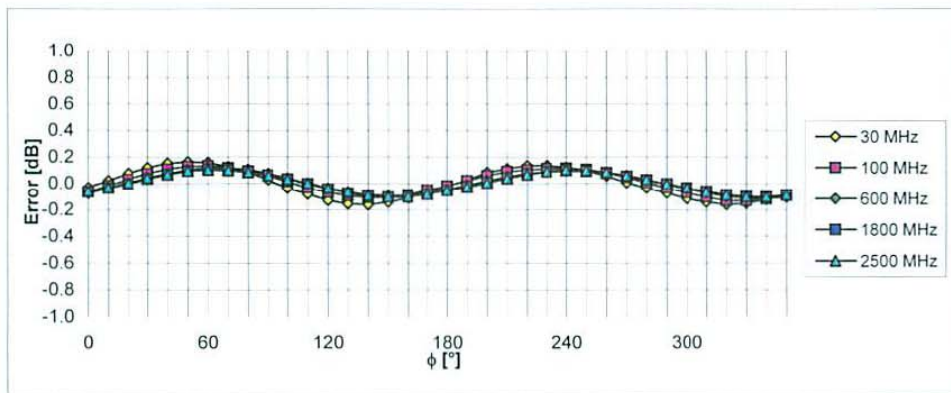
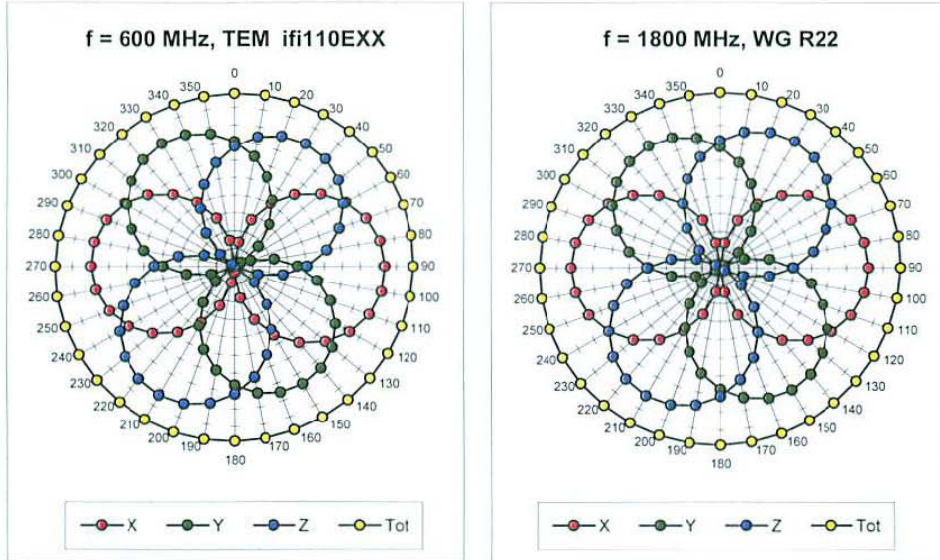
Frequency Response of E-Field

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



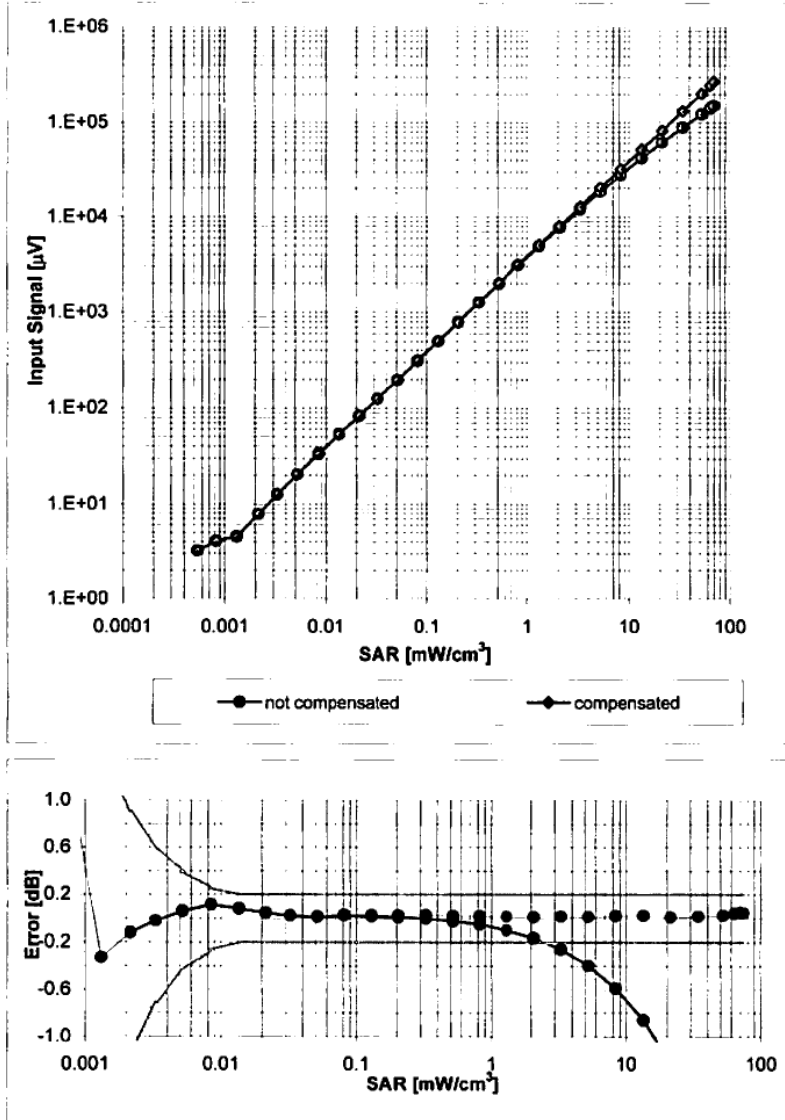
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

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



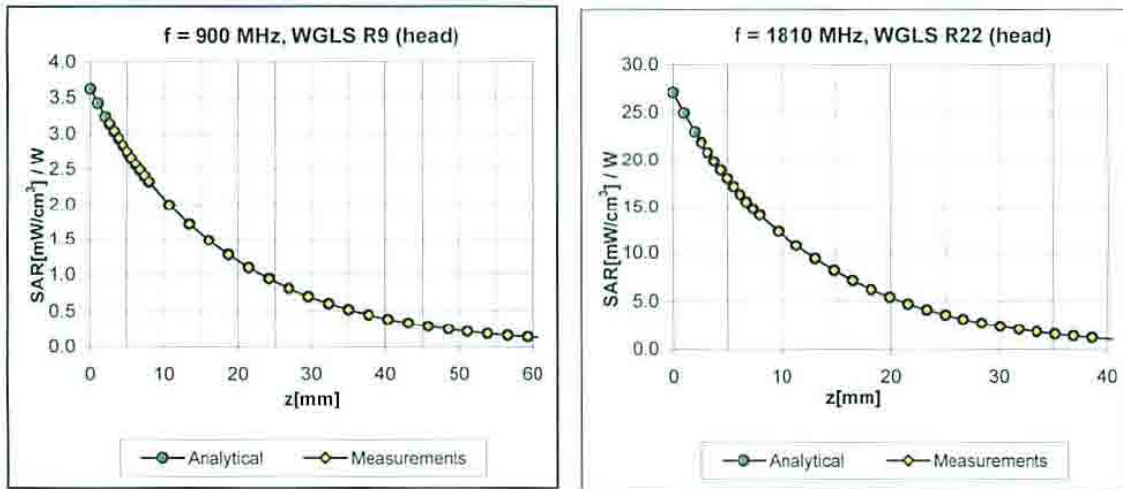
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ (k=2)

Dynamic Range f(SAR_{head}) (Waveguide R22, f = 1800 MHz)



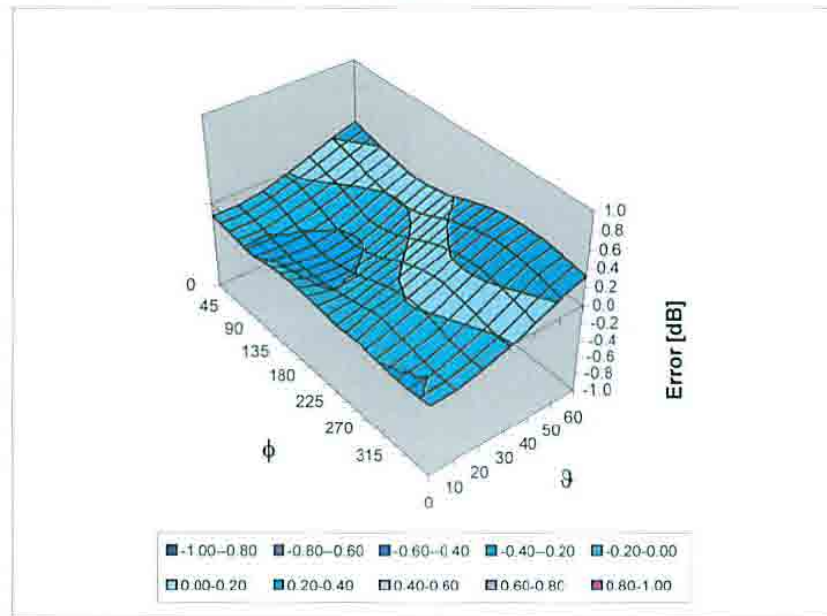
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment



Deviation from Isotropy in HSL

Error (ϕ, θ), f = 900 MHz



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

ES3DV3 SN:3185

November 23, 2009

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

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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

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Dosimetric E-Field Probe ES3DV3 SN:3185

Conversion factor (\pm standard deviation)

150 MHz	<i>ConvF</i>	7.7 \pm 10%	$\epsilon_r = 52.3$ $\sigma = 0.76$ mho/m (head tissue)
250 MHz	<i>ConvF</i>	7.0 \pm 10%	$\epsilon_r = 47.6$ $\sigma = 0.83$ mho/m (head tissue)
150 MHz	<i>ConvF</i>	7.4 \pm 10%	$\epsilon_r = 61.9$ $\sigma = 0.80$ mho/m (body tissue)
250 MHz	<i>ConvF</i>	7.0 \pm 10%	$\epsilon_r = 59.4$ $\sigma = 0.88$ mho/m (body tissue)
300 MHz	<i>ConvF</i>	6.9 \pm 9%	$\epsilon_r = 58.2$ $\sigma = 0.92$ 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.

Note: The standard deviation for each Conversion factor stated in above numerical assessments were taken at k = 1.

APPENDIX C
Dipole Calibration Certificates

**Calibration Laboratory of
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Zeughausstrasse 43, 8004 Zurich, Switzerland



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **Motorola CGISS**

Certificate No: **D900V2-085_Aug08**

CALIBRATION CERTIFICATE

Object **D900V2 - SN: 085**

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

Calibration date: **August 25, 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

Calibrated by: **Name: Jeton Kastrati, Function: Laboratory Technician, Signature: [Signature]**

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

Issued: August 26, 2008

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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:

- 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
- 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
- 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:

- 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	900 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	0.97 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	39.5 ± 6 %	0.93 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	2.64 mW / g
SAR normalized	normalized to 1W	10.6 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	10.5 mW / g ± 17.0 % (k=2)

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.71 mW / g
SAR normalized	normalized to 1W	6.84 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	6.78 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	50.5 Ω - 6.0 j Ω
Return Loss	- 24.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.390 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: 25.08.2008 11:33:53

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 900 MHz; Type: D900V2; Serial: D900V2 - SN:085

Communication System: CW-900; Frequency: 900 MHz; Duty Cycle: 1:1

Medium: HSL 900 MHz

Medium parameters used: $f = 900$ MHz; $\sigma = 0.93$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV2 - SN3025; ConvF(5.78, 5.78, 5.78); 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

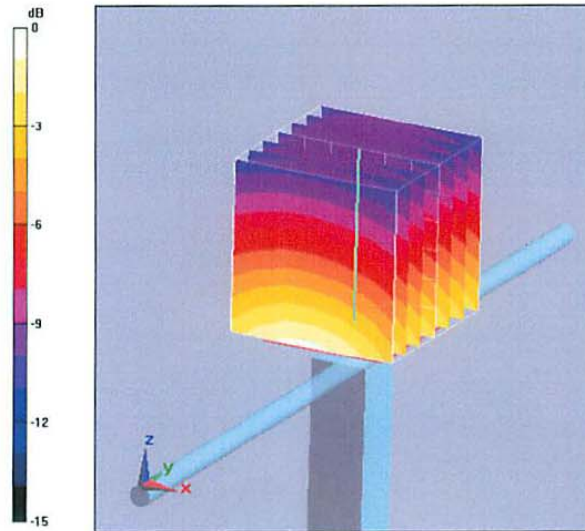
Pin=250mW; dip=15mm; dist=3.4mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 57.6 V/m; Power Drift = 0.032 dB

Peak SAR (extrapolated) = 3.92 W/kg

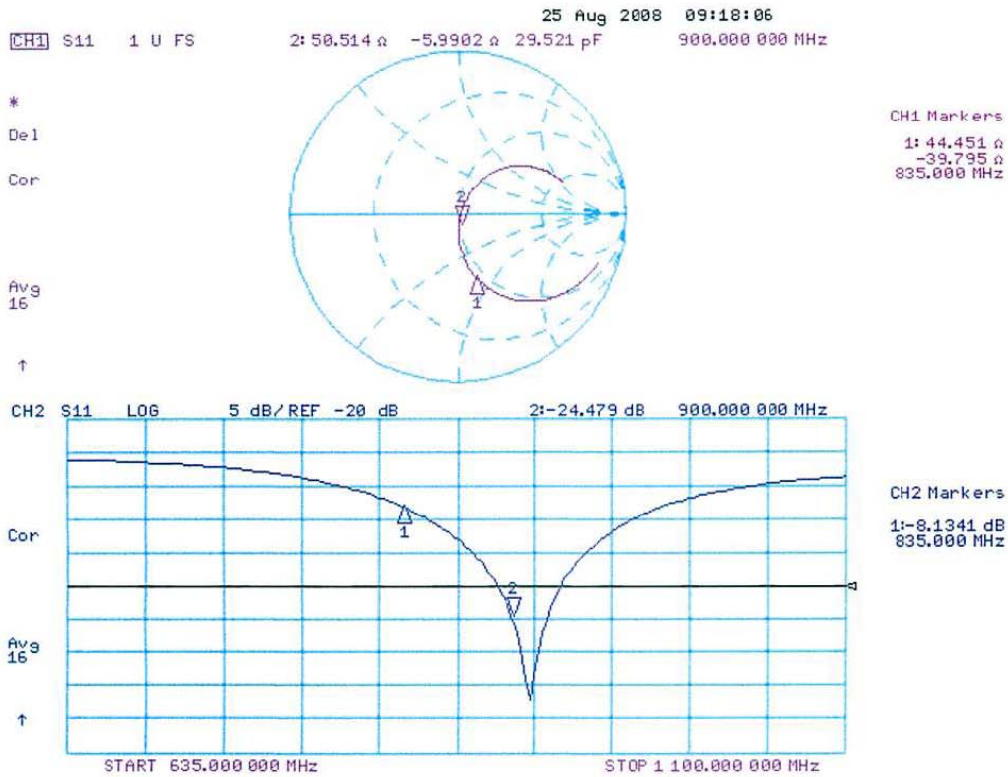
SAR(1 g) = 2.64 mW/g; SAR(10 g) = 1.71 mW/g

Maximum value of SAR (measured) = 2.97 mW/g



0 dB = 2.97mW/g

Impedance Measurement Plot for Head TSL



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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

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Accreditation No.: **SCS 108**

Glossary:

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

Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- b) 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 $j\Omega$
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: $f = 2450 \text{ MHz}$; $\sigma = 1.84 \text{ mho/m}$; $\epsilon_r = 38.4$; $\rho = 1000 \text{ kg/m}^3$

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:

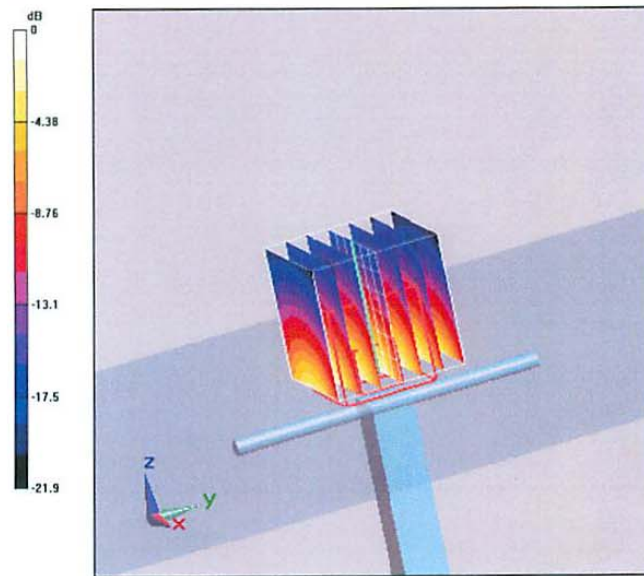
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 96.3 V/m; Power Drift = 0.028 dB

Peak SAR (extrapolated) = 28.4 W/kg

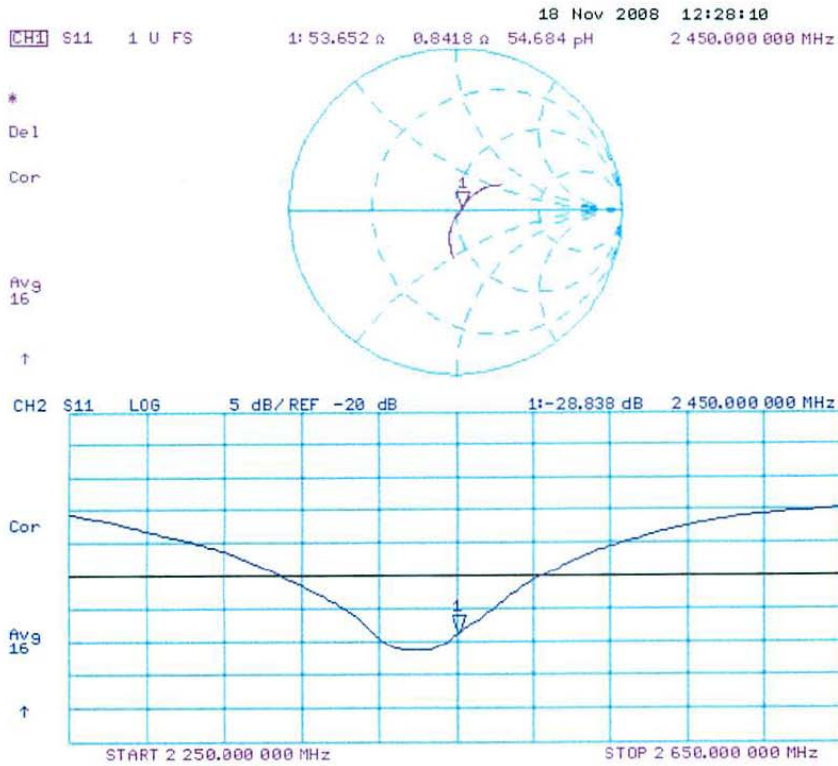
SAR(1 g) = 13.5 mW/g; SAR(10 g) = 6.3 mW/g

Maximum value of SAR (measured) = 16.3 mW/g



0 dB = 16.3mW/g

Impedance Measurement Plot for Head TSL



Appendix D Test System Verification Scans

The SAR result indicated on the Manufacture's Calibrated certificate for dipoles D900V2 S/N 085 and D2450V2 S/N 704 were not used due to the following:

-- The IEEE1528-2003 and the FCC OET-65 Supplement C, System Verification section indicated that "The measured 1-g SAR should be within 10% of the expected target values specified for the specific phantom and RF source used in the system verification measurement."

-- SPEAG calibration certificate indicates that the allowed tolerance for the dipoles is higher than +/- 10% (e.g. 10.5 +/-17.0% at k=2 for the D900V2 S/N 085 and 52.9 +/-17.0% at k=2 for the D2450V2 S/N 704)

-- The allowed tolerance for the probes is also higher than +/- 10% (e.g. 11.0% at k=2 at 900MHz and 2450MHz for the probe being used to assess this product).

Due to probe, dipole and system tolerances noted above, the lab averages dipole results across multiple probes to establish a set of averaged targets for each dipole using the following procedure:

- The System Validation was conducted per IEEE1528-2003 and the latest draft of IEC62209-2 (10/3/08) standards using the simulated head tissue and multiple probes that are available and applicable for the dipole under test to verify the System Validation. Results for this dipole are within the measurement system uncertainty of the reference SAR values indicated within the latest draft of IEC62209-2 (10/3/08) when using flat phantom with 2mm thickness is used. These results then are averaged and used as the target for the daily system performance check when the simulated head tissue is used.
- The dipole targets for the body are set immediately following the same process noted above. Since there is no standard referencing the SAR values for the System Validation using the simulated body tissue, the compliant System Validation results using the simulated head tissue are used to justify the use of the System Validation results using the simulated body tissue due to the same setup except for the simulated tissue type.

The targets set in this report were conducted following the above process.

Note that the targets set for the tested dipole, when using the simulated head tissue, meets the requirement for the system validation per IEEE1528-2003, the latest draft of IEC62209-2 (10/3/08) standard, and the difference between this result and the result from the manufacture's dipole calibration certificate is 1.53% for 900 and 9.16% for 2450, which is well within the measurement uncertainty of the measurement system at k=2.

To assess the isotropic characteristics of the measurement probe, a probe rotation was performed using the "Rotation (1D)" function in the DASY software with a measured isotropy tolerance of +/- 0.5dB.

Motorola Enterprise Mobility Solutions EME Laboratory

Date/Time: 3/1/2010 11:24:50 AM

Robot# / Run#: DASY4-FL-1 / HvH-SYSP-900B-100301-01
Phantom# / Tissue Temp.: OVAL1019 / 21.1 (C)
Dipole Model# / Serial#: D900V2 / 085
TX Freq. / Start power: 900 (MHz) / 250 (mW)

Target: 11.92 mW/g (1g)
Calculated: 12.32 mW/g (1g)
Percent from Target (+/-): 3.4 % (1g)
Rotation (1D): 0.17 dB

Note: The measured SAR results, when applicable, are scaled according to FCC KDB450824. These scaled SAR results are shown below as Calculated.

Calculated: 3.08 mW/g (1g); 1.99 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(5.48, 5.48, 5.48)

Electronics: DAE3 Sn374, Calibrated: 1/15/2010

Duty Cycle: 1:1, Medium parameters used: f = 900 MHz; $\sigma = 1.06$ mho/m; $\epsilon_r = 53.9$; $\rho = 1000$ kg/m³

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid:

dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 56.7 V/m; Power Drift = -0.00902 dB

Peak SAR (extrapolated) = 4.59 W/kg

SAR(1 g) = 3.08 mW/g; SAR(10 g) = 1.99 mW/g

Maximum value of SAR (measured) = 3.33 mW/g

System Performance Check/Dipole Area Scan 2 (41x81x1): Measurement grid: dx=15mm,

dy=15mm

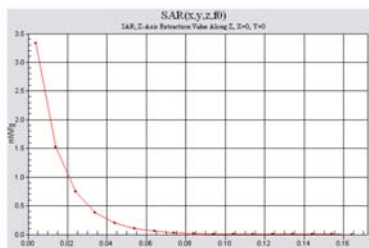
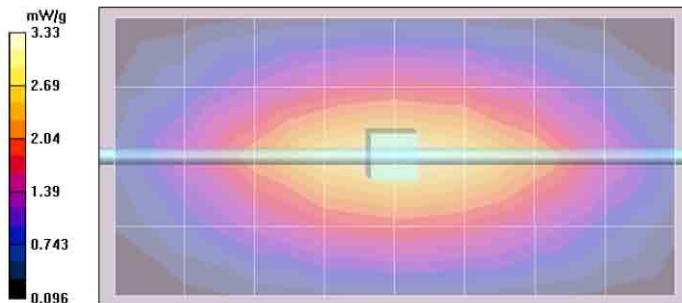
Reference Value = 56.7 V/m; Power Drift = -0.00902 dB

Motorola Fast SAR: SAR(1 g) = 3.09 mW/g; SAR(10 g) = 2.06 mW/g

Maximum value of SAR (interpolated) = 3.33 mW/g

System Performance Check/Z-Axis Retraction (1x1x17): Measurement grid: dx=20mm, dy=20mm,

dz=10mm, Maximum value of SAR (measured) = 3.33 mW/g



Motorola Enterprise Mobility Solutions EME Laboratory

Date/Time: 3/2/2010 6:42:47 AM

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-2450B-100302-01
Phantom# / Tissue Temp.: DUAL1002 Side A / 21.3 (C)
Dipole Model# / Serial#: D2450V2 / 704
TX Freq. / Start power: 2450 (MHz) / 30 (mW)

Target: 55.27 mW/g (1g)
Calculated: 54.33 mW/g (1g)
Percent from Target (+/-): 1.7 % (1g)
Rotation (1D): 0.2 dB

Note: The measured SAR results, when applicable, are scaled according to FCC KDB450824. These scaled SAR results are shown below as Calculated.

Calculated: 1.63 mW/g (1g); 0.765 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(4.02, 4.02, 4.02)

Electronics: DAE3 Sn374, Calibrated: 1/15/2010

Duty Cycle: 1:1, Medium parameters used: f = 2450 MHz; $\sigma = 1.95$ mho/m; $\epsilon_r = 49.2$; $\rho = 1000$ kg/m³

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid:

dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 30.2 V/m; Power Drift = 0.0038 dB

Peak SAR (extrapolated) = 3.31 W/kg

SAR(1 g) = 1.63 mW/g; SAR(10 g) = 0.765 mW/g

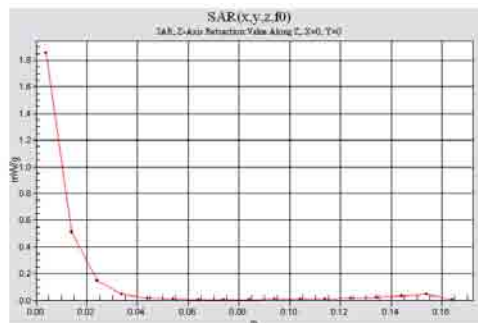
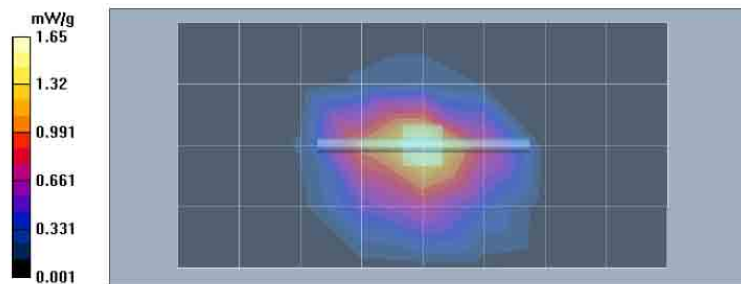
Maximum value of SAR (measured) = 1.82 mW/g

System Performance Check/Dipole Area Scan 2 (5x9x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 1.65 mW/g

System Performance Check/Z-Axis Retraction (1x1x17): Measurement grid: dx=20mm, dy=20mm,

dz=10mm, Maximum value of SAR (measured) = 1.85 mW/g



Motorola Enterprise Mobility Solutions EME Laboratory

Date/Time: 3/3/2010 8:34:31 AM

Robot# / Run#: DASY4-FL-1 / JsT-SYSP-900H-100303-01
Phantom# / Tissue Temp.: SAMTP1022 / 21.3 (C)
Dipole Model# / Serial#: D900V2 / 085
TX Freq. / Start power: 900 (MHz) / 250 (mW)

Target: 11.07 mW/g (1g)
Calculated: 11.80 mW/g (1g)
Percent from Target (+/-): 6.6 % (1g)
Rotation (1D): 0.17 dB

Note: The measured SAR results, when applicable, are scaled according to FCC KDB450824. These scaled SAR results are shown below as Calculated.

Calculated: 2.95 mW/g (1g); 1.89 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(5.63, 5.63, 5.63)

Electronics: DAE3 Sn374, Calibrated: 1/15/2010

Duty Cycle: 1:1, Medium parameters used: f = 900 MHz; $\sigma = 0.96$ mho/m; $\epsilon_r = 40$; $\rho = 1000$ kg/m³

System Performance Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0: Measurement grid:

dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 58.2 V/m; Power Drift = -0.00854 dB

Peak SAR (extrapolated) = 4.47 W/kg

SAR(1 g) = 2.93 mW/g; SAR(10 g) = 1.88 mW/g

Maximum value of SAR (measured) = 3.17 mW/g

System Performance Check/Dipole Area Scan 2 (41x81x1): Measurement grid: dx=15mm,

dy=15mm

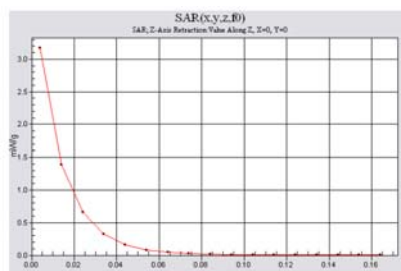
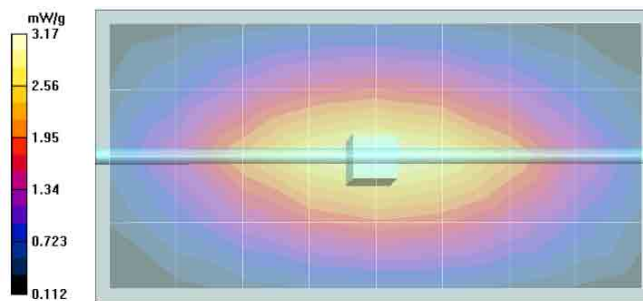
Reference Value = 58.2 V/m; Power Drift = -0.00854 dB

Motorola Fast SAR: SAR(1 g) = 2.95 mW/g; SAR(10 g) = 1.97 mW/g

Maximum value of SAR (interpolated) = 3.17 mW/g

System Performance Check/Z-Axis Retraction (1x1x17): Measurement grid: dx=20mm, dy=20mm,

dz=10mm, Maximum value of SAR (measured) = 3.17 mW/g



DIPOLE SAR TARGET - HEAD

Date: 12/29/09 Frequency (MHz): 900
 Lab Location: FL08-G&PS Mixture Type: IEEE Head
 DAE Serial #: 401 Ambient Temp.(°C): 22

Tissue Characteristics
 Permittivity: 39.8 Phantom Type/SN: OVAL1021
 Conductivity: 0.96 Distance (mm): 15
 Tissue Temp.(°C): 19.9

Reference Source: Dipole Power to Dipole: 250 mW
 Reference SN: 85

Target 1g-SAR Value (mW/g, normalized to 1.0 W):

10.9

Difference from Target

1.53% (1g-SAR)

New Target:

Average 1g-SAR Value (mW/g): **11.07**

Passes K=2

Percent Difference From Target (MUST be within k=2 Uncertainty):

Probe SN #s	1g-SAR (Cube)	Diff from Ave	Robot
3163	11.12	0.5%	R3
3147	11.12	0.5%	R3
3185	10.96	-1.0%	R3
Average	11.0667	New Measured SAR Value	

(normalized to 1.0 W)

Test performed by: Ed Church Initial: E.C.

DIPOLE SAR TARGET - BODY

Date: 12/29/09 Frequency (MHz): 900
 Lab Location: FL08-G&PS Mixture Type: Body
 DAE Serial #: 401 Ambient Temp.(°C): 22

Tissue Characteristics
 Permittivity: 52.8 Phantom Type/SN: OVAL1019
 Conductivity: 1.07 Distance (mm): 15
 Tissue Temp.(°C): 20.5

Reference Source: Dipole Power to Dipole: 250 mW
 Reference SN: 85

New Target:

Average Measured SAR Value: 11.92 mW/g(1g avg.),

Probe SN #s	1-G Cube	Diff from Ave	Robot
3185	12.08	1.3%	R3
3147	11.76	-1.3%	R3
3163	11.92	0.0%	R3
Average		New Measured SAR Value	

(normalized to 1.0 W)

Test performed by: Ed Church Initial: EC

DIPOLE SAR TARGET - HEAD

Date: 12/28/09 Frequency (MHz): 2450
 Lab Location: FL08-G&PS Mixture Type: IEEE Head
 DAE Serial #: 363 Ambient Temp.(°C): 21.8

Tissue Characteristics
 Permittivity: 36.6 Phantom Type/SN: DUAL1003 SIDE B
 Conductivity: 1.87 Distance (mm): 10
 Tissue Temp.(°C): 21.3

Reference Source: Dipole Power to Dipole: 50 mW
 Reference SN: 704

Target 1g-SAR Value (mW/g, normalized to 1.0 W):

52.4

Difference from Target

9.16% (1g-SAR)

New Target:

Average 1g-SAR Value (mW/g): **57.20**

Passes K=2

Percent Difference From Target (MUST be within k=2 Uncertainty):

Probe SN #s	1g-SAR (Cube)	Diff from Ave	Robot
3147	58.20	1.7%	R2
3163	56.80	-0.7%	R2
3185	56.60	-1.0%	R2
Average	57.2000	New Measured SAR Value	

(normalized to 1.0 W)

Test performed by: C. Miller Initial: 

DIPOLE SAR TARGET - BODY

Date: 12/28/09 Frequency (MHz): 2450
 Lab Location: FL08-G&PS Mixture Type: Body
 DAE Serial #: 363 Ambient Temp.(°C): 21.9

Tissue Characteristics
 Permittivity: 51.2 Phantom Type/SN: DUAL1003 SIDE A
 Conductivity: 2.02 Distance (mm): 10
 Tissue Temp.(°C): 20.9

Reference Source: Dipole Power to Dipole: 50 mW
 Reference SN: 704

New Target:

Average Measured SAR Value: 55.27 mW/g(1g avg.),

Probe SN #s	1-G Cube	Diff from Ave	Robot
3147	58.20	5.3%	R2
3163	54.80	-0.8%	R2
3185	52.80	-4.5%	R2
Average		New Measured SAR Value	

(normalized to 1.0 W)

Test performed by: C. Miller Initial: 

Appendix E
DUT Scans (Shortened Scan and Highest SAR configurations)

Shortened Scan Result
(Section 13.5 Table 17)
Motorola Enterprise Mobility Solutions EME Laboratory
Date/Time: 3/3/2010 9:57:25 AM

Robot# / Run#: DASY4-FL-1 / HvH-Ab-100303-02
 Phantom# / Tissue Temp.: OVAL1019 / 20.5 (C)
 DUT Model# / Serial#: H88XAH6JR2AN / 364VLC2HZS
 Antenna / TX Freq.: 85009260001(Internal) / 898.99375 (MHz)
 Battery: SNN5795A w/ NTN2565xxxxA
 Carry Acc. / Cable Acc.: NNTN7898A / None
 Start Power: .642 (W)

Note: The measured SAR results, when applicable, are scaled according to FCC KDB450824. These scaled SAR results are shown below as Calculated.

Calculated: 1.12 mW/g (1g); .811 mW/g (10g)

Comments: Shortened scan.

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(5.48, 5.48, 5.48)

Electronics: DAE3 Sn374, Calibrated: 1/15/2010

Duty Cycle: 1:1.33, Medium parameters used: $f = 899$ MHz; $\sigma = 1.05$ mho/m; $\epsilon_r = 53.1$; $\rho = 1000$ kg/m³

Ab Scan/5x5x7 Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 33.0 V/m; Power Drift = -0.475 dB

Peak SAR (extrapolated) = 1.49 W/kg

SAR(1 g) = 1.12 mW/g; SAR(10 g) = 0.811 mW/g

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

Ab Scan/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 32.9 V/m; Power Drift = -0.249 dB

Motorola Fast SAR: SAR(1 g) = 1.15 mW/g; SAR(10 g) = 0.801 mW/g

Maximum value of SAR (interpolated) = 1.22 mW/g

Ab Scan/Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm

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

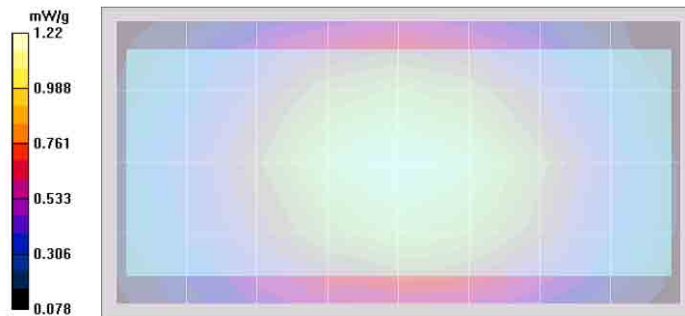
Shortened scan reflect highest SAR producing configuration; approximate run time 7 minutes.

Representative zoom scan approximate run time was 15 minutes

“Shortened” scan max calculated SAR using SAR drift: 1-g Avg. = 1.27 mW/g; 10-g Avg. = 0.92 mW/g

Zoom scan max calculated SAR using SAR drift: 1-g Avg. = 1.26 mW/g; 10-g Avg. = 0.90 mW/g

(see part 1 of 1 section 13.5 run # HvH-Ab-100301-06)



Highest Body SAR Configuration Result
(Section 13.5 Table 17)
Motorola Enterprise Mobility Solutions EME Laboratory
Date/Time: 3/1/2010 2:40:14 PM

Robot# / Run#: DASY4-FL-1 / HvH-Ab-100301-06
 Phantom# / Tissue Temp.: OVAL1019 / 20.5 (C)
 DUT Model# / Serial#: H88XAH6JR2AN / 364VLC2HZS
 Antenna / TX Freq.: 85009260001(Internal) / 898.99375 (MHz)
 Battery: SNN5795A w/ NTN2565xxxxA
 Carry Acc. / Cable Acc.: NNTN7898A / None
 Start Power: .641 (W)

Note: The measured SAR results, when applicable, are scaled according to FCC KDB450824. These scaled SAR results are shown below as Calculated.

Calculated: 1.06 mW/g (1g); .763 mW/g (10g)

Comments: Full scan.

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(5.48, 5.48, 5.48)

Electronics: DAE3 Sn374, Calibrated: 1/15/2010

Duty Cycle: 1:1.33, Medium parameters used: f = 899 MHz; $\sigma = 1.06$ mho/m; $\epsilon_r = 53.9$; $\rho = 1000$ kg/m³

Ab Scan/5x5x7 Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 33.1 V/m; Power Drift = -0.678 dB

Peak SAR (extrapolated) = 1.43 W/kg

SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.763 mW/g

Maximum value of SAR (measured) = 1.14 mW/g

Ab Scan/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

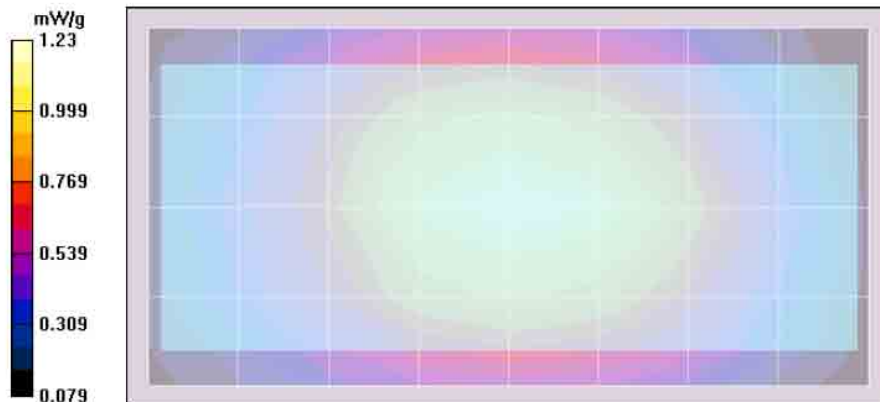
Reference Value = 33.1 V/m; Power Drift = -0.393 dB

Motorola Fast SAR: SAR(1 g) = 1.16 mW/g; SAR(10 g) = 0.809 mW/g

Maximum value of SAR (interpolated) = 1.23 mW/g

Ab Scan/Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm

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



Appendix F DUT Scans

Section 1.0
806-825MHz Band Assessment of the offered body worn accessory
(Section 13.1 Table 13)

Motorola Enterprise Mobility Solutions EME Laboratory

Date/Time: 3/1/2010 12:25:26 PM

Robot# / Run#: DASY4-FL-1 / HvH-Ab-100301-02
Phantom# / Tissue Temp.: OVAL1019 / 20.8 (C)
DUT Model# / Serial#: H88XAH6JR2AN / 364VLC2HZS
Antenna / TX Freq.: 85009260001(Internal) / 806.0125 (MHz)
Battery: SNN5795A w/ NTN2565xxxA
Carry Acc. / Cable Acc.: NNTN7898A / None
Start Power: .646 (W)

Note: The measured SAR results, when applicable, are scaled according to FCC KDB450824. These scaled SAR results are shown below as Calculated.

Calculated: .912 mW/g (1g); .675 mW/g (10g)

Comments: Full scan.

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(5.48, 5.48, 5.48)

Electronics: DAE3 Sn374, Calibrated: 1/15/2010

Duty Cycle: 1:1.33, Medium parameters used: f = 815.5 MHz; sigma = 0.97 mho/m; epsilon_r = 54.7; rho = 1000 kg/m3

Ab Scan/5x5x7 Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 31.7 V/m; Power Drift = -0.458 dB

Peak SAR (extrapolated) = 1.19 W/kg

SAR(1 g) = 0.912 mW/g; SAR(10 g) = 0.675 mW/g

Maximum value of SAR (measured) = 0.967 mW/g

Ab Scan/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 31.7 V/m; Power Drift = -0.147 dB

Motorola Fast SAR: SAR(1 g) = 0.991 mW/g; SAR(10 g) = 0.699 mW/g

Maximum value of SAR (interpolated) = 1.05 mW/g

Ab Scan/Volume 2D Scan (41x41x1): Measurement grid: dx=7.5mm, dy=7.5mm, dz=1mm

Reference Value = 31.7 V/m; Power Drift = -0.243 dB

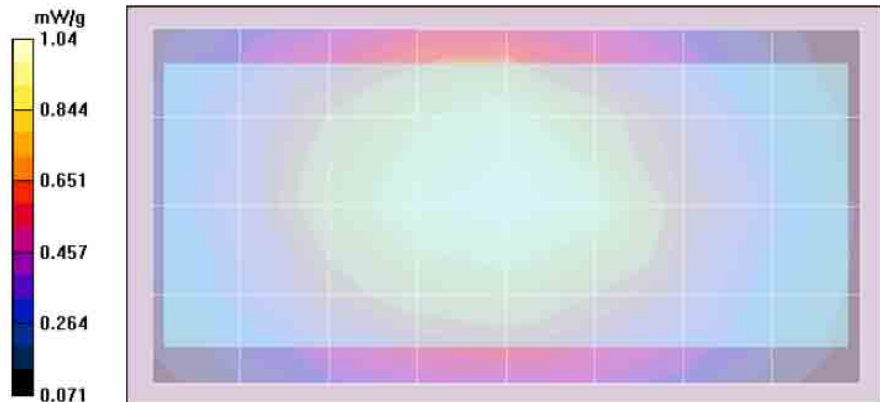
Peak SAR (extrapolated) = 1.01 W/kg

Motorola Fast SAR: SAR(1 g) = 0.940 mW/g; SAR(10 g) = 0.670 mW/g

Maximum value of SAR (interpolated) = 1.01 mW/g

Ab Scan/Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm

Maximum value of SAR (measured) = 0.917 mW/g



Section 2.0
902-928MHz Band Assessment of the offered body worn accessory
(Section 13.3 Table 15)

Motorola Enterprise Mobility Solutions EME Laboratory

Date/Time: 3/1/2010 3:22:37 PM

Robot# / Run#: DASY4-FL-1 / HvH-Ab-100301-08
 Phantom# / Tissue Temp.: OVAL1019 / 20.3 (C)
 DUT Model# / Serial#: H88XAH6JR2AN / 364VLC2HZS
 Antenna / TX Freq.: 85009260001(Internal) / 902.5250 (MHz)
 Battery: SNN5795A w/ NTN2565xxxA
 Carry Acc. / Cable Acc.: NNTN7898A / NNTN5211B
 Start Power: .891 (W)

Note: The measured SAR results, when applicable, are scaled according to FCC KDB450824. These scaled SAR results are shown below as Calculated.

Calculated: 2.13 mW/g (1g); 1.54 mW/g (10g)

Comments: Full scan.

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(5.48, 5.48, 5.48)

Electronics: DAE3 Sn374, Calibrated: 1/15/2010

Duty Cycle: 1:1.05, Medium parameters used: f = 915 MHz; $\sigma = 1.08$ mho/m; $\epsilon_r = 53.7$; $\rho = 1000$ kg/m³

Ab Scan/5x5x7 Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 44.3 V/m; Power Drift = -0.0637 dB

Peak SAR (extrapolated) = 2.81 W/kg

SAR(1 g) = 2.13 mW/g; SAR(10 g) = 1.54 mW/g

Maximum value of SAR (measured) = 2.25 mW/g

Ab Scan/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

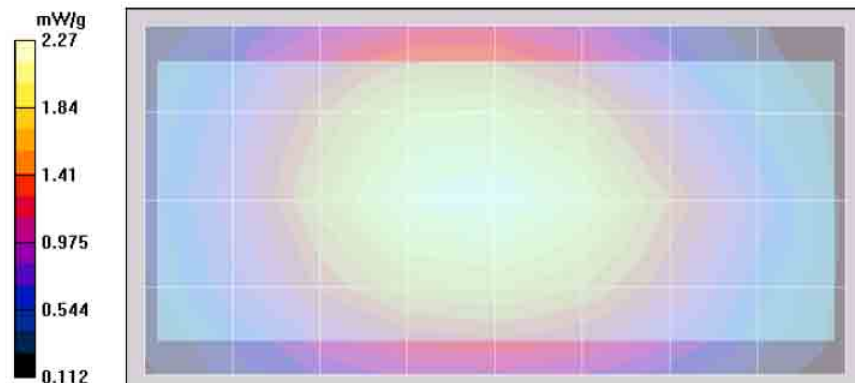
Reference Value = 44.3 V/m; Power Drift = -0.076 dB

Motorola Fast SAR: SAR(1 g) = 2.15 mW/g; SAR(10 g) = 1.51 mW/g

Maximum value of SAR (interpolated) = 2.28 mW/g

Ab Scan/Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm

Maximum value of SAR (measured) = 2.26 mW/g



Section 3.0
902-928MHz Band Assessment of the offered body worn accessory
(Section 13.4 Table 16)

Motorola Enterprise Mobility Solutions EME Laboratory

Date/Time: 3/2/2010 9:19:31 AM

Robot# / Run#: DASY4-FL-1 / HvH-Ab-100302-03
Phantom# / Tissue Temp.: DUAL1002 Side A / 21.2 (C)
DUT Model# / Serial#: H88XAH6JR2AN / 364VLC2HZS
Antenna / TX Freq.: 85009258001(Internal) / 2441 (MHz)
Battery: SNN5793A w/ NTN2566xxxA
Carry Acc. / Cable Acc.: NNTN7898A / None
Start Power: .00146 (W)

Note: The measured SAR results, when applicable, are scaled according to FCC KDB450824. These scaled SAR results are shown below as Calculated.

Calculated: .00512 mW/g (1g); .00288 mW/g (10g)

Comments:

Probe: ES3DV3 - SN3185, Calibrated: 11/23/2009, ConvF(4.02, 4.02, 4.02)
Electronics: DAE3 Sn374, Calibrated: 1/15/2010
Duty Cycle: 1:1, Medium parameters used: f = 2441 MHz; sigma = 1.94 mho/m; epsilon_r = 49.2; rho = 1000 kg/m3

Ab Scan/5x5x7 Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 1.62 V/m; Power Drift = 0.308 dB

Peak SAR (extrapolated) = 0.008 W/kg

SAR(1 g) = 0.00512 mW/g; SAR(10 g) = 0.00288 mW/g

Warning: Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.

Maximum value of SAR (measured) = 0.006 mW/g

Ab Scan/Area Scan (101x61x1): Measurement grid: dx=15mm, dy=15mm

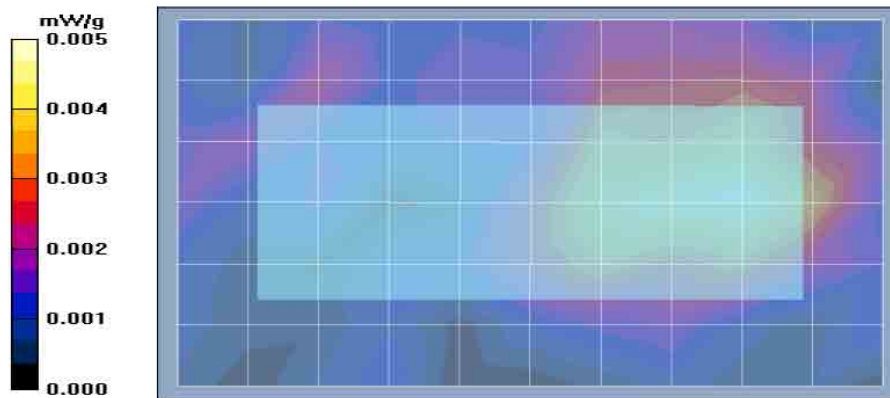
Reference Value = 1.62 V/m; Power Drift = 0.462 dB

Motorola Fast SAR: SAR(1 g) = 0.00485 mW/g; SAR(10 g) = 0.00262 mW/g

Maximum value of SAR (interpolated) = 0.005 mW/g

Ab Scan/Z-Axis Scan (1x1x17): Measurement grid: dx=20mm, dy=20mm, dz=10mm

Maximum value of SAR (measured) = 0.020 mW/g



APPENDIX G
DUT Supplementary Data (Power slump)

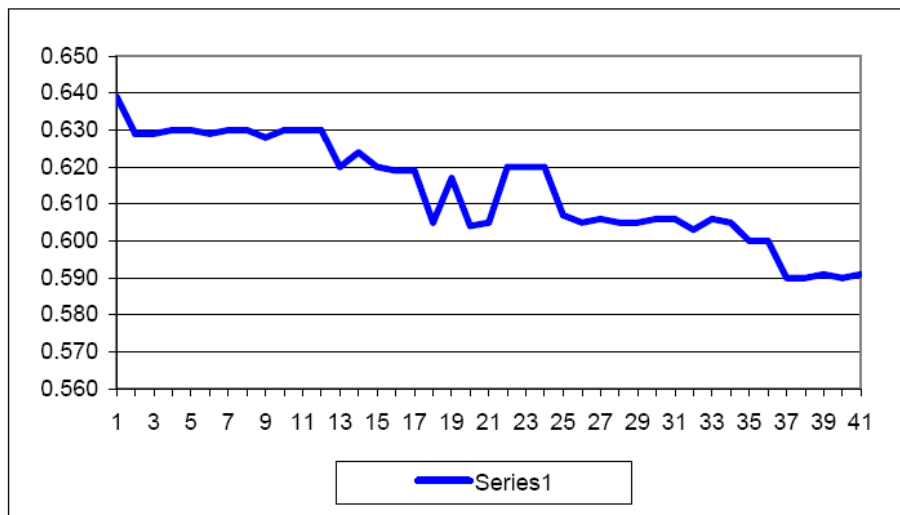
Model # H88XAH6JR2AN
Serial # 364VLC2HZS

Battery SNN5795A
Frequency 898.99375
Date 3/9/2010

Transmit Mode WiDEN
Audio Accessory NONE
Technician C. Miller

TX TIME **Measured Power**
 (minutes) (Watts)

0.0	0.639
1.0	0.629
2.0	0.629
3.0	0.630
4.0	0.630
5.0	0.629
6.0	0.630
7.0	0.630
8.0	0.628
9.0	0.630
10.0	0.630
11.0	0.630
12.0	0.620
13.0	0.624
14.0	0.620
15.0	0.619
16.0	0.619
17.0	0.605
18.0	0.617
19.0	0.604
20.0	0.605
21.0	0.620
22.0	0.620
23.0	0.620
24.0	0.607
25.0	0.605
26.0	0.606
27.0	0.605
28.0	0.605
29.0	0.606
30.0	0.606
31.0	0.603
32.0	0.606
33.0	0.605
34.0	0.600
35.0	0.600
36.0	0.590
37.0	0.590
38.0	0.591
39.0	0.590
40.0	0.591

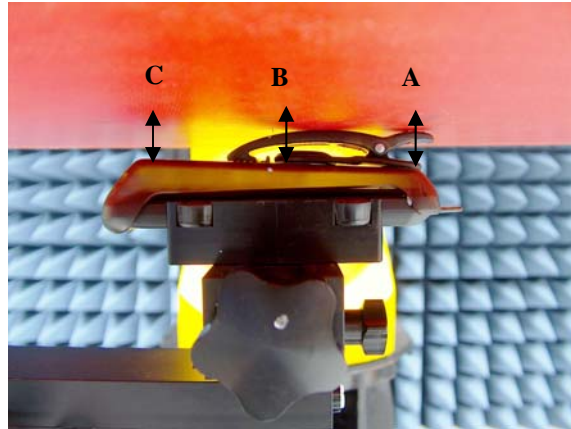


Appendix H
DUT Test Position Photos

1.0 Highest Body SAR Test Position

1.1 Body

DUT w/ holster NNTN7898A against the phantom using the offered battery SNN5793A, battery cover NTN2566xxxA without any attached data/audio cable accessory. Same position with audio accessory NNTN5211B.



Distance A – 15 mm
Distance B – 13 mm
Distance C – 11 mm

Appendix I
DUT and Body worn Accessory Photos

1.0 DUT and Accessory Photos

The purpose of this section is to illustrate the DUT and offered body worn accessory. The sample that was used in the following photos represents the product used to obtain the results presented herein.



Front view of DUT



Back view of Holster NNTN7898A & DUT



Front view of Holster NNTN7898A & DUT



Side view of Holster NNTN7898A & DUT

2.0 BT and iDEN or MOTotalk Simultaneous Transmission Considerations

Pursuant to FCC KDB 648474 Practice

2.1 Locations of Antenna



The closest distance between the main antenna and the BT antenna is 10.04 mm

2.2 Operating modes

Device Operating Mode	Remarks
iDEN SMR	Can operate simultaneously with Bluetooth, but <i>not</i> with MOTotalk.
MOTotalk	Can operate simultaneously with Bluetooth, but <i>not</i> with iDEN.
Bluetooth	Can operate simultaneously with MOTotalk or iDEN.

Note: The iDEN and MOTotalk share the same antenna, and cannot operate simultaneously