

 <b>MOTOROLA</b>	 <b>ACCREDITED</b> Certificate Number: 2518.01
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**FCC ID: AZ489FT3814**  
**DECLARATION OF COMPLIANCE SAR ASSESSMENT Part 3 of 3**

<b>Networks &amp; Enterprise</b> <b>EME Test Laboratory</b> <b>8000 West Sunrise Blvd</b> <b>Fort Lauderdale, FL. 33322</b>	<b>Date of Report:</b> 10/18/2006 <b>Report Revision:</b> 0 <b>Report ID:</b> XTS4000_Rev O_061018 SR4417
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<p><b>Responsible Engineer:</b> Stephen C. Whalen Sr. Staff EME Eng.  <b>Date/s Tested:</b> 9/21/06-10/2/06  <b>Manufacturer/Location:</b> Motorola – Schaumburg IL  <b>Sector/Group/Div.:</b> Networks and Enterprises  <b>Date submitted for test:</b> 9/18/2006  <b>DUT Description:</b> XTS 4000 PORTABLE ASTRO DIGITAL 136-174MHZ 1-2W  <b>Test TX mode(s):</b> FM APCO 25  <b>Max. Power output:</b> 2.8W  <b>Nominal Power:</b> 2 Watts, conducted, constant envelope (APCO)  <b>Tx Frequency Bands:</b> 136-174 MHz  <b>Signaling type:</b> FM APCO 25  <b>Model(s) Tested:</b> H18KCN9PW9AN  <b>Model(s) Certified:</b> H18KCN9PW9AN  <b>Serial Number(s):</b> 687T000506  <b>Classification:</b> Occupational/Controlled  <b>Rule Part(s):</b> 90</p> <p><b>Antenna(s):</b>                  NAD6583A retractable (162-174 MHz ¼ wave -13.3 dBi), NAD6582A retractable (136-151 MHz ¼ wave -13.3 dBi),                  NAD6581A retractable (145-166 MHz ¼ wave -13.3 dBi)</p> <p><b>Battery(ies):</b>                  NNTN6944A Li Ion</p> <p><b>Body worn accessory(ies):</b>                  NNTN6946A leather pouch, NNTN6945A plastic holster</p> <p><b>Audio accessory(ies):</b>                  SYN8390B Ear Piece, NNTN5006BP Ear Piece, NNTN5211A Ear Piece</p> <p style="text-align: center;"><b>Max. Calc. : 1-g Avg. SAR: 0.37W/kg (Body); 10-g Avg. SAR: 0.19W/kg (Body)</b>  <b>Max. Calc. : 1-g Avg. SAR: 0.17W/kg (Face); 10-g Avg. SAR: 0.13W/kg (Face)</b>  <b>Max. Calc. : 1-g Avg. SAR: 1.64W/kg (Head); 10-g Avg. SAR: 0.71W/kg (Head)</b></p>	
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Based on the information and the testing results provided herein, the undersigned certifies that when used as stated in the operating instructions supplied, said product complies with the national and international reference standards and guidelines listed in section 2.0 of this report. This report shall not be reproduced without written approval from an officially designated representative of the Motorola EME Laboratory.

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

<b>signature on file</b> <b>Ken Enger N&amp;E EME Lab Senior Resource Manager,</b> <b>Laboratory Director,</b>  <b>Approval Date: 10/20/06</b>	<b>Certification Date:</b> <input type="checkbox"/>  <b>Certification No.:</b> <input type="checkbox"/>
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**Appendix E**  
**DUT Scans (Shortened Scans and Highest SAR configurations)**

### Shortened Scan Results

#### Motorola NE EME Laboratory

DUT: XTS4000; Date/Time: 9/30/2006 12:47:11 AM  
 Run #: MeC-Rear-060929-21 Sim. Tissue Temp: 20.5 (C)  
 Robot #: GEMS-3 Phantom #: SAMTP1209  
 Model #: H18KCN9PW9AN SN: 687T000506  
 Antenna: NAD6581A Out TX Freq: 145.025 MHz  
 Battery: NNTN6944A Start power: 2.74 W  
 Carry acc.: None Audio/Data acc.: None

Comments: Touch Position, SHORTEN SCAN

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

Representative "normal" scan run time was 22 minutes

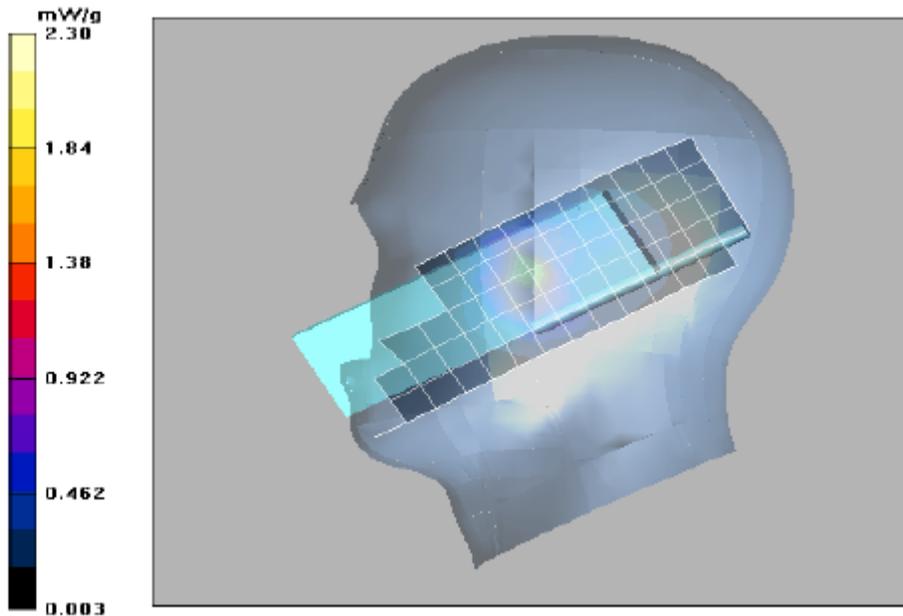
"Shortened" scan max calculated SAR using SAR drift: 1-g Avg. = 1.14mW/g; 10-g Avg. = 0.51mW/g

"Normal" scan max calculated SAR using SAR drift: 1-g Avg. = 1.64mW/g; 10-g Avg. = 0.71mW/g

(see part 1 of 3 section 9.0 run # JsT-REAR-060925-06)

Probe: ET3DV6 - SN1384, Calibrated: 5/30/2006, ConvF(8.3, 8.3, 8.3)  
 Duty Cycle: 1:1, Medium: 155 MHz Head, Medium parameters used:  $f = 155$  MHz;  $\sigma = 0.74$  mho/m;  $\epsilon_r = 54.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
 Electronics: DAE3 Sn363, Calibrated: 5/17/2006

**Right Ear - Touch position/5x5x7 Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm  
 Reference Value = 28.2 V/m; Power Drift = 0.0583 dB  
 Peak SAR (extrapolated) = 8.58 W/kg  
 SAR(1 g) = 2.23 mW/g; SAR(10 g) = 0.989 mW/g  
 Maximum value of SAR (measured) = 2.26 mW/g



### Highest SAR Configurations Results

#### Motorola NE EME Laboratory

DUT: XTS4000; Date/Time: 9/25/2006 12:25:30 PM  
 Run #: JsT-Rear-060925-06 Sim. Tissue Temp: 21.1 (C)  
 Robot #: GEMS-3 Phantom #: SAMTP1209  
 Model #: H18KCN9PW9AN SN: 687T000506  
 Antenna: NAD6581A Out TX Freq: 145.025 MHz  
 Battery: NNTN6944A Start power: 2.74 W  
 Carry acc.: None Audio/Data acc.: None

Comments: Full Scan; Touch  
 Probe: ET3DV6 - SN1384, Calibrated: 5/30/2006, ConvF(8.3, 8.3, 8.3)  
 Duty Cycle: 1:1, Medium: 155 MHz Head, Medium parameters used:  $f = 155$  MHz;  $\sigma = 0.73$  mho/m;  $\epsilon_r = 53.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
 Electronics: DAE3 Sn363, Calibrated: 5/17/2006

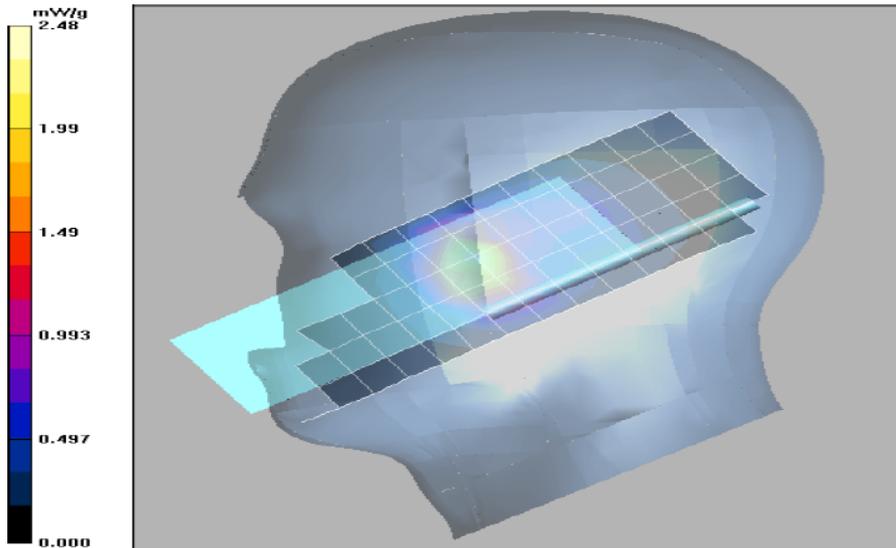
**Right Ear - Touch position/7x7x7 Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 33.8 V/m; Power Drift = -0.460 dB  
 Peak SAR (extrapolated) = 12.1 W/kg  
 SAR(1 g) = 2.88 mW/g; SAR(10 g) = 1.25 mW/g  
 Maximum value of SAR (measured) = 2.79 mW/g

**Right Ear - Touch position/Area Scan (51x151x1):** Measurement grid: dx=15mm, dy=15mm

Reference Value = 33.8 V/m; Power Drift = -0.460 dB  
 Motorola Fast SAR: SAR(1 g) = 2.26 mW/g; SAR(10 g) = 1.49 mW/g  
 Maximum value of SAR (interpolated) = 2.59 mW/g

**Right Ear - Touch position/Z Scan (1x1x17):** Measurement grid: dx=20mm, dy=20mm, dz=10mm  
 Maximum value of SAR (measured) = 2.32 mW/g



**Motorola NE EME Laboratory**

**DUT: XTS4000**; Date/Time: 9/29/2006 7:17:32 PM

Run #: MeC-Face-060929-15

Sim. Tissue Temp: 21.1 (C)

Robot #: GEMS-3

Phantom #: 80602002B-S13

Model #: H18KCN9PW9AN

SN: 687T000506

Antenna: NAD6581A Out

TX Freq: 155.525 MHz

Battery: NNTN6944A

Start power: 2.75 W

Carry acc.: None

Audio/Data acc.: None

Comments: Flip closed and unit front @ 2.5cm, FULL SCAN

Probe: ET3DV6 - SN1384, Calibrated: 5/30/2006, ConvF(8.3, 8.3, 8.3)

Duty Cycle: 1:1, Medium: 155 MHz Head, Medium parameters used:  $f = 155 \text{ MHz}$ ;  $\sigma = 0.73 \text{ mho/m}$ ;  $\epsilon_r = 52.4$ ;  $\rho = 1000 \text{ kg/m}^3$

Electronics: DAE3 Sn363, Calibrated: 5/17/2006

**Face Template/7x7x7 Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 21.1 V/m; Power Drift = -0.509 dB

Peak SAR (extrapolated) = 0.450 W/kg

SAR(1 g) = 0.297 mW/g; SAR(10 g) = 0.225 mW/g

Maximum value of SAR (measured) = 0.306 mW/g

**Face Template/Area Scan (51x151x1):** Measurement grid: dx=15mm, dy=15mm

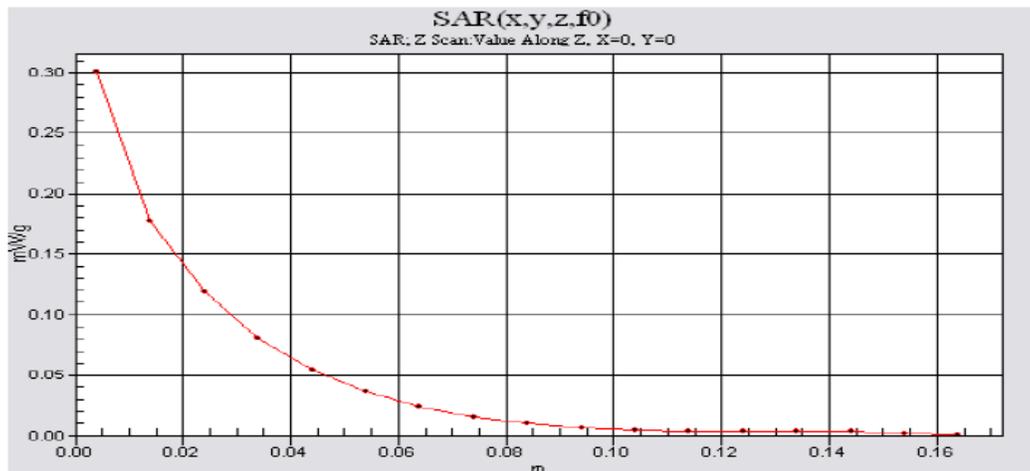
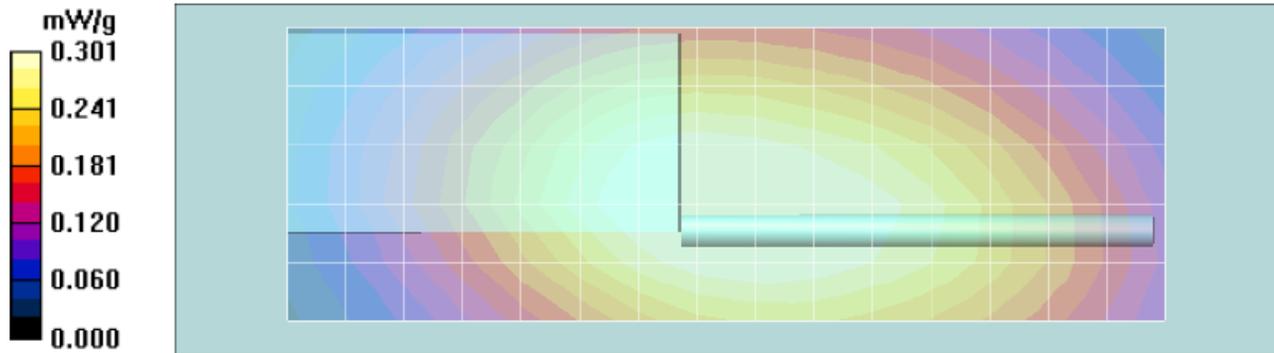
Reference Value = 21.1 V/m; Power Drift = -0.509 dB

Motorola Fast SAR: SAR(1 g) = 0.305 mW/g; SAR(10 g) = 0.233 mW/g

Maximum value of SAR (interpolated) = 0.319 mW/g

**Face Template/Z Scan (1x1x17):** Measurement grid: dx=20mm, dy=20mm, dz=10mm

Maximum value of SAR (measured) = 0.301 mW/g



Motorola NE EME Laboratory

DUT: XTS4000; Date/Time: 9/28/2006 1:54:01 PM

Run #: JsT-Ab-060928-09	Sim. Tissue Temp: 20.3 (C)
Robot #: GEMS-3	Phantom #: 80602002A-S1
Model #: H18KCN9PW9AN	SN: 687T000506
Antenna: NAD6583A Out	TX Freq: 168.025 MHz
Battery: NNTN6944A	Start power: 2.68 W
Carry acc.: NNTN6946A	Audio/Data acc.: NNTN5211A

Comments: Full Scan

Probe: ET3DV6 - SN1384, Calibrated: 5/30/2006, ConvF(7.9, 7.9, 7.9)

Duty Cycle: 1:1, Medium: 155 MHz FCC Body, Medium parameters used:  $f = 155 \text{ MHz}$ ;  $\sigma = 0.8 \text{ mho/m}$ ;  $\epsilon_r = 61.8$ ;  $\rho = 1000 \text{ kg/m}^3$

Electronics: DAE3 Sn363, Calibrated: 5/17/2006

**Ab Template/7x7x7 Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 20.6 V/m; Power Drift = -0.933 dB

Peak SAR (extrapolated) = 1.95 W/kg

SAR(1 g) = 0.578 mW/g; SAR(10 g) = 0.292 mW/g

Maximum value of SAR (measured) = 0.560 mW/g

**Ab Template/Area Scan (51x141x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

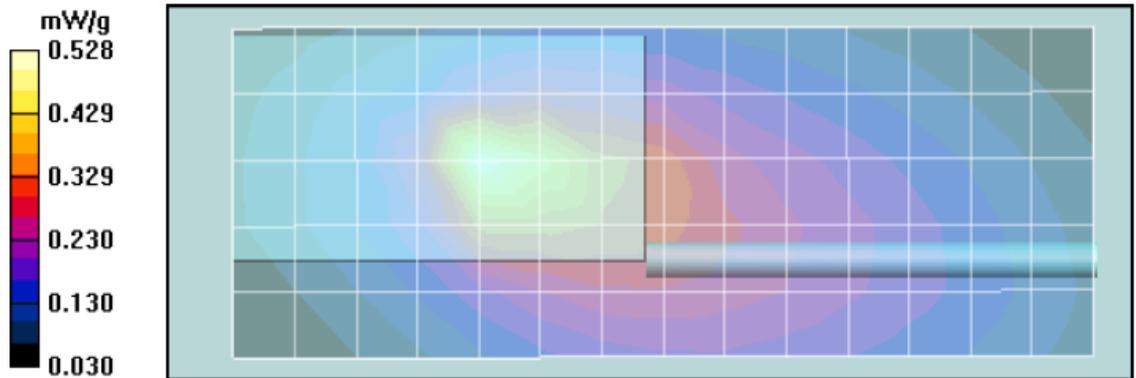
Reference Value = 20.6 V/m; Power Drift = -0.933 dB

Motorola Fast SAR: SAR(1 g) = 0.495 mW/g; SAR(10 g) = 0.328 mW/g

Maximum value of SAR (interpolated) = 0.566 mW/g

**Ab Template/Z Scan (1x1x17):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$ ,  $dz=10\text{mm}$

Maximum value of SAR (measured) = 0.550 mW/g



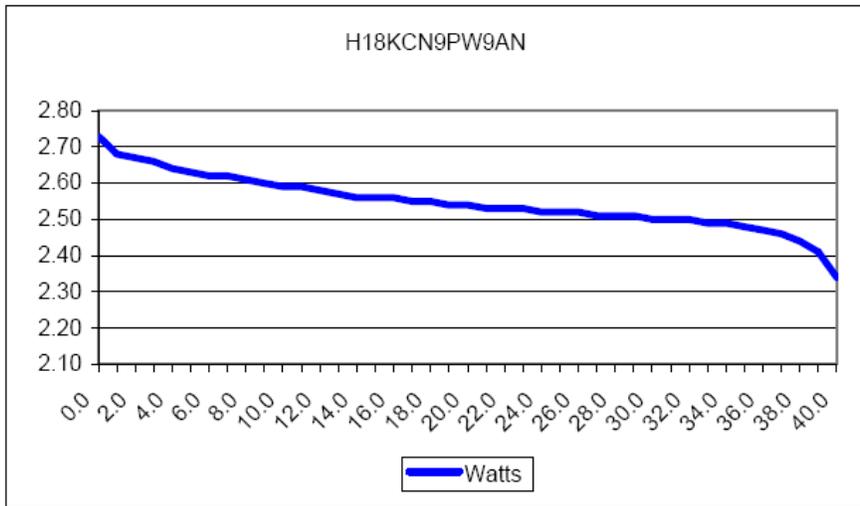
**APPENDIX F**  
**DUT Supplementary Data (Power slump)**

**Model #H18KCN9PW9AN**  
**Serial #687T000506**

<b>Battery</b>	#NNTN6944A	<b>Transmit Mode</b>	CW
<b>Frequency</b>	145.025 MHz	<b>Audio Accessory</b>	None
<b>Date</b>	10/2/2006		

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

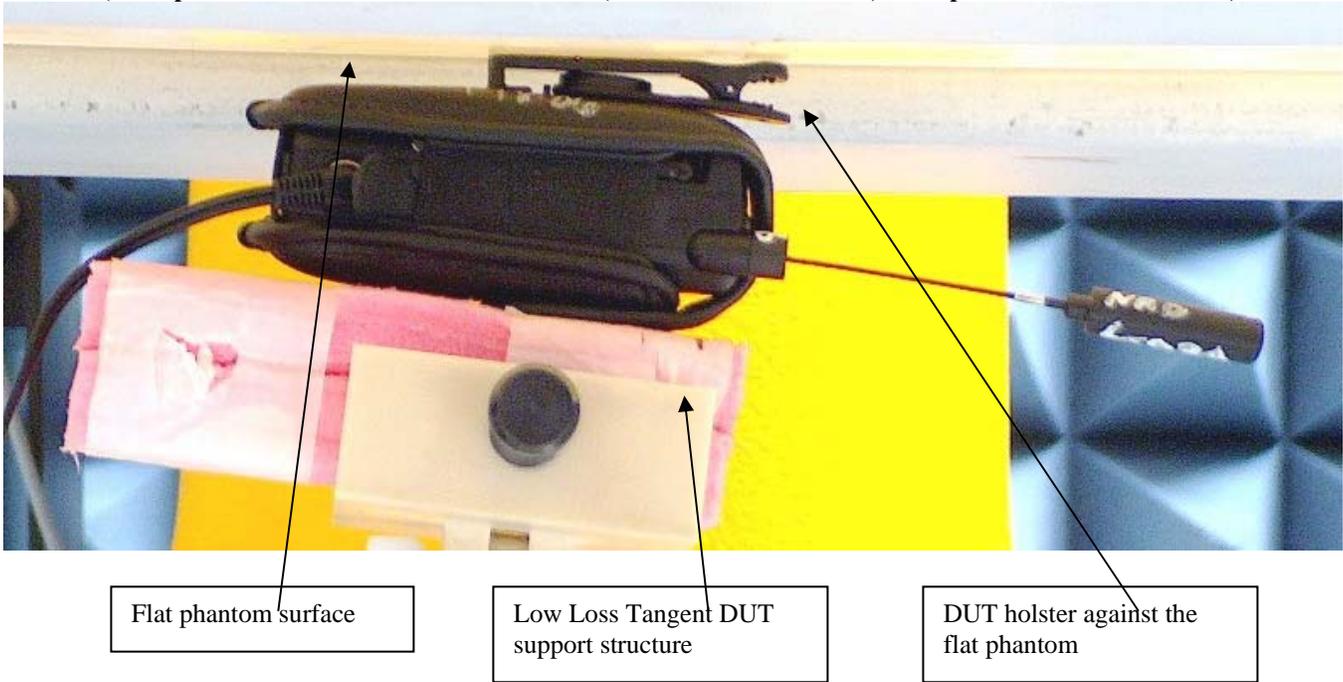
0.0	2.73
1.0	2.68
2.0	2.67
3.0	2.66
4.0	2.64
5.0	2.63
6.0	2.62
7.0	2.62
8.0	2.61
9.0	2.60
10.0	2.59
11.0	2.59
12.0	2.58
13.0	2.57
14.0	2.56
15.0	2.56
16.0	2.56
17.0	2.55
18.0	2.55
19.0	2.54
20.0	2.54
21.0	2.53
22.0	2.53
23.0	2.53
24.0	2.52
25.0	2.52
26.0	2.52
27.0	2.51
28.0	2.51
29.0	2.51
30.0	2.50
31.0	2.50
32.0	2.50
33.0	2.49
34.0	2.49
35.0	2.48
36.0	2.47
37.0	2.46
38.0	2.44
39.0	2.41
40.0	2.34



**Appendix G**  
**DUT Test Position Photos**

**Figure 1: Highest SAR Test Position (Body)**

**DUT w/ leather holster against the phantom; worst case audio accessory attached, and antenna extended (same position used for all offered antennas (extended and retracted) and optional audio accessories)**



**Figure 2: Highest SAR Test Position (face)**

**DUT flip closed w/ front side separated 2.5cm from the phantom (same position used for all offered antennas extended and retracted)**



**Figure 3: Highest SAR Test Position (Head)**  
**DUT at the right ear in cheek touch position.**  
**(same position used for all offered antennas extended and retracted)**



**Figure 4: Body Assessment**  
**DUT w/ plastic holster against the phantom with offered audio accessory.**  
**(same position used for antenna extended)**



**Figure 5: Body Assessment**  
**DUT w/ back side wit antenna separated 2.5cm from the phantom with offered audio accessory.**  
**(same position used for antenna retracted)**



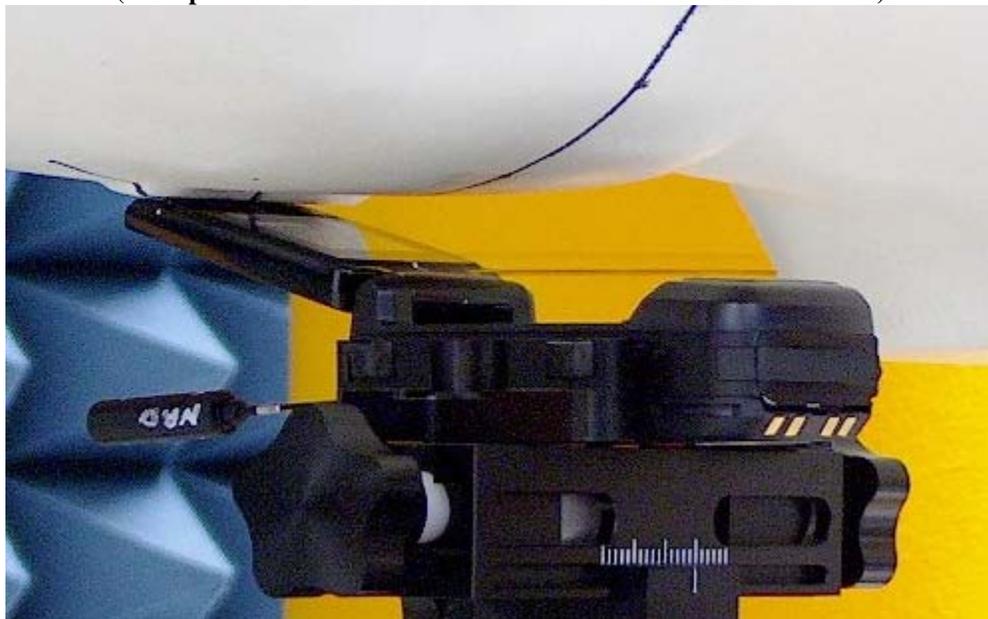
**Figure 6: Body Assessment**  
**DUT w/ front side separated 2.5cm from the phantom with offered audio accessory.**  
**(same position used for antenna retracted)**



**Figure 7: Face Assessment**  
**DUT Flip opened w/ front side separated 2.5cm from the phantom.**  
**(same position used for all offered antennas extended and retracted)**



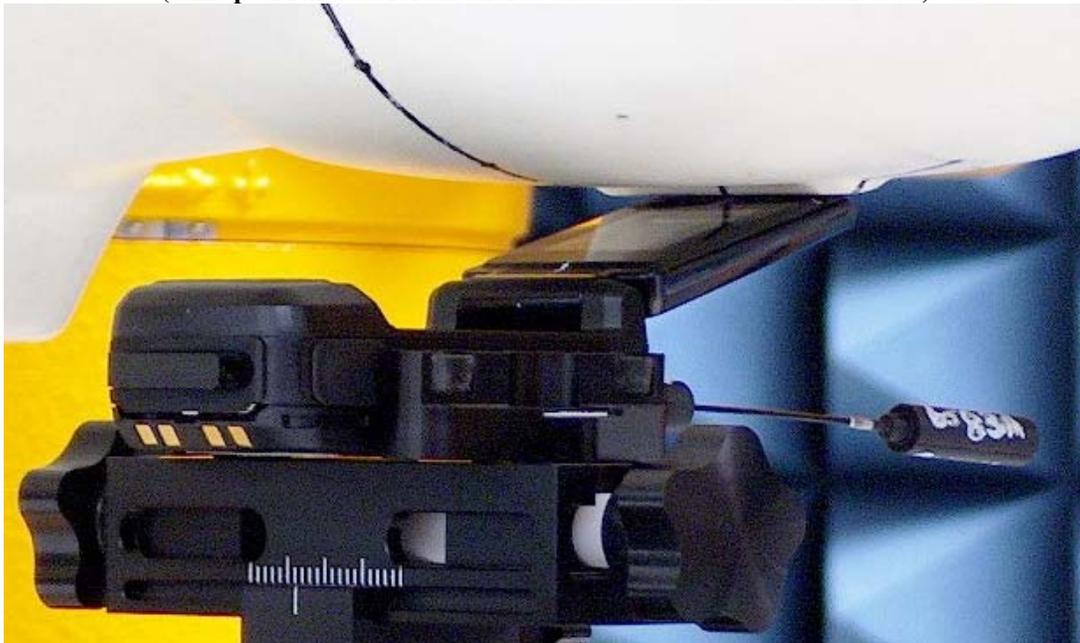
**Figure 8: Assessment at the Head**  
**DUT at the right ear in tilt position.**  
**(same position used for all offered antennas extended and retracted)**



**Figure 9: Assessment at the Head  
DUT at the left ear in cheek touch position.  
(same position used for all offered antennas extended and retracted)**



**Figure 10: Assessment at the Head  
DUT at the left ear in tilt position.  
(same position used for all offered antennas extended and retracted)**



**Appendix H**  
**DUT and Body worn Accessory Photos**

The purpose of this appendix is to illustrate the offered body-worn carry accessory(ies). The sample that was used in the following photos represents the product used to obtain the results presented herein.



**Photo 1.**  
Model NNTN6945A  
Front View



**Photo 2.**  
Model NNTN6945A  
Back View



**Photo 3.**  
Model NNTN6945A  
Side View



**Photo 4.**  
Model NNTN6946A  
Front View



**Photo 5.**  
Model NNTN6946A  
Back View



**Photo 6.**  
Model NNTN6946A  
Side View

## **Appendix I**

### **DUT Antenna Separation Distances and Offered Accessory Test Status**

The following table(s) summarizes the separation distances and test status provided by each of the applicable body-worn and audio accessory(ies):

<b>Carry Case Models</b>	<b>Tested ?</b>	<b>Min. Separation distances between DUT antenna and phantom surface. (mm)</b>	<b>Comments</b>
NNTN6946A	Yes	37-62	NA
NNTN6945A	Yes	38-59	NA

<b>Audio Acc. Models</b>	<b>Tested ?</b>	<b>Separation distances between DUT antenna and phantom surface. (mm)</b>	<b>Comments</b>
SYN8390B	Yes	NA	NA
NNTN5006BP	Yes	NA	NA
NNTN5211A	Yes	NA	NA