

 MOTOROLA	 Certificate Number: 2518.01
FCC ID: AZ489FT4826 DECLARATION OF COMPLIANCE SAR ASSESSMENT Part 3 of 3	
Networks & Enterprise EME Test Laboratory 8000 West Sunrise Blvd Fort Lauderdale, FL. 33322	Date of Report: September 15, 2006 Report Revision: O Report ID: FCC rpt_MTX900_Rev_O_0609015_SR4244
Responsible Engineer: Stephen C. Whalen (SR Staff EME Eng.) Date/s Tested: 7/28/2006-8/8/2006 Manufacturer/Location: Motorola – Penang Sector/Group/Div.: N&E/GTDG Date submitted for test: 7/27/2006 DUT Description: UHF 1 403-470 MHz 4W; Trunking Popular w/o Keypad & Display Test TX mode(s): CW Max. Power output: 5.3W Nominal Power: 4W Tx Frequency Bands: 403-470 MHz. Signaling type: FM Model(s) Tested: PMUE1678B Model(s) Certified: PMUE1678B Serial Number(s): 004TGL1003 Classification: Occupational/Controlled Rule Part(s): 90 Approved Accessories: Antenna(s): PMAE4002A (Stubby 403-433 MHz ¼ wave, -4.5 dBi); PMAE4003A (Stubby 430-470 MHz ¼ wave, -4.5dBi); NAE6483AR (Whip 403-520 MHz ¼ wave, -2 dBi). Battery(ies): HNN9008C (NiMH High Capacity Battery); HNN9009A (NiMH Ultra High Capacity Battery); HNN9010B (NiMH Ultra High Capacity Battery Factory Mutual); HNN9011B (NiCd High Capacity Battery Factory Mutual); HNN9012B (NiCd High Capacity Battery); HNN9013D (Li Ion High Capacity Battery). Body worn accessory(ies): HLN9670A (Leather Case, Thin Battery w/Swivel); HLN9676A (Leather Case, Std. Battery w/Swivel); HLN9714A (Belt Clip); HLN9952A (Belt Clip Carry Holder); HLN9677A (Leather DTMF Case, Thin Battery w/Belt Loop); HLN9689A (Leather DTMF Case, Std. battery w/Belt Loop); HLN9690A (Leather DTMF Case, Thin Battery w/Swivel); HLN9694A (Leather DTMF Case, Std. Battery w/Swivel); HLN9701B (Hard Nylon Case, Belt loop, D-ring, (for all battery sizes)); HLN9652A (Leather Case, Thin Battery w/Belt Loop); HLN9665A (Leather Case, Std. Battery w/Belt Loop). Audio accessory(ies): See section 3.0 for list of approved audio acc. Max. Calc. : 1-g Avg. SAR: 5.54 W/kg (Body); 10-g Avg. SAR: 4.00 W/kg (Body) Max. Calc. : 1-g Avg. SAR: 4.06 W/kg (Face); 10-g Avg. SAR: 3.05 W/kg (Face) 	
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.	
Signature on file Ken Enger N&E EME Lab Senior Resource Manager, Laboratory Director, Approval Date: 9/15/2006	Certification Date: Certification No.:

Appendix E

DUT Scans (Shortened Scans and Highest SAR configurations)

Shortened Scan Results

DUT: WARIS; Date/Time: 7/31/2006 11:33:17 PM

Run #: CM-Ab-060731-10

Robot #: GEMS-1

Model #: PMUE1678B

Antenna: PMAE4003A

Battery: HNN9009A

Carry acc.: HLN9714A

Comments: Shorten scan

Sim. Tissue Temp: 21.4 (C)

Phantom #: 80302002A-S7

SN: 004TGL1003

TX Freq: 450.00 MHz

Start power: 5.55 W

Audio/Data acc.: HMN9052E

Probe: ET3DV6 - SN1383, Calibrated: 2/22/2006, ConvF(7.12, 7.12, 7.12)

Duty Cycle: 1:1, Medium: Body 436.5, Medium parameters used: $f = 436.5$ MHz; $\sigma = 0.93$ mho/m; $\epsilon_r = 56.7$; $\rho = 1000$ kg/m³

Electronics: DAE3 Sn406, Calibrated: 11/21/2005

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

Reference Value = 107.9 V/m; Power Drift = -0.313 dB

Peak SAR (extrapolated) = 13.5 W/kg

SAR(1 g) = 10.3 mW/g; SAR(10 g) = 7.43 mW/g

Maximum value of SAR (measured) = 10.9 mW/g

Comments: Short Scan at the body w/ body worn accessory against phantom

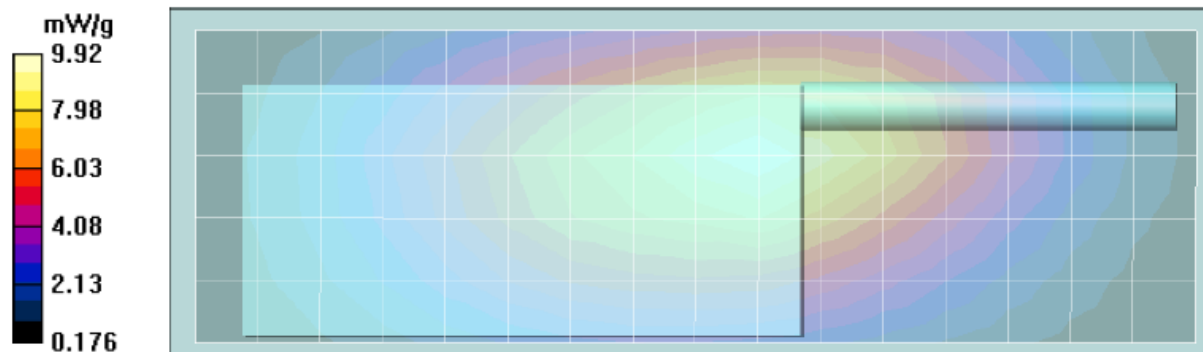
Shortened scan reflect highest S.A.R. producing configuration; Run time 8 minutes.

Representative "normal" scan run time was 28 minutes

"Shortened" scan max calculated S.A.R. using S.A.R. drift: 1-g Avg. = 5.53mW/g; 10-g Avg. = 3.99mW/g

"Normal" scan max calculated S.A.R. using S.A.R. drift: 1-g Avg. = 5.29mW/g; 10-g Avg. = 3.83mW/g

(see part 1 of 3 section 9.0 run # CM-Ab-060731-09)



DUT: WARIS; Date/Time: 8/3/2006 7:00:02 PM

Run #: CM-Face-060803-06

Sim. Tissue Temp: 21.6 (C)

Robot #: GEMS-1

Phantom #: 80302002B-S8

Model #: PMUE1678B

SN: 004TGL1003

Antenna: PMAE4003A

TX Freq: 450.000 MHz

Battery: HNN9013D

Start power: 5.39 W

Carry acc.: None

Audio/Data acc.: None

Comments: Shorten scan

Probe: ET3DV6 - SN1383, Calibrated: 2/22/2006, ConvF(6.74, 6.74, 6.74)

Duty Cycle: 1:1, Medium: 436.5 IEEE Head, Medium parameters used: $f = 436.5$ MHz; $\sigma = 0.85$ mho/m; $\epsilon_r = 44.2$; $\rho = 1000$ kg/m³

Electronics: DAE3 Sn406, Calibrated: 11/21/2005

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

Reference Value = 101.1 V/m; Power Drift = -0.205 dB

Peak SAR (extrapolated) = 9.97 W/kg

SAR(1 g) = 7.75 mW/g; SAR(10 g) = 5.82 mW/g

Maximum value of SAR (measured) = 8.15 mW/g

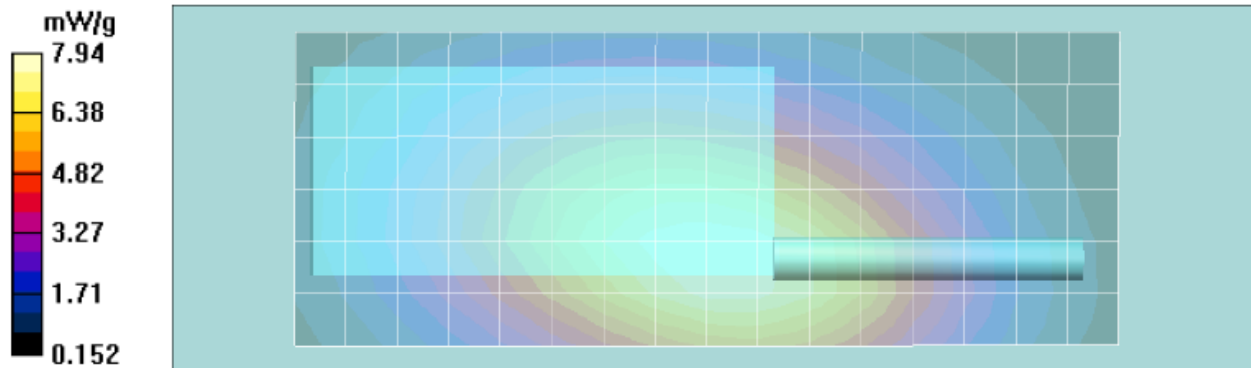
Comments: Short Scan at the face

Shortened scan reflect highest S.A.R. producing configuration; Run time 8 minutes.

Representative "normal" scan run time was 28 minutes

"Shortened" scan max calculated S.A.R. using S.A.R. drift: 1-g Avg. = 4.06mW/g; 10-g Avg. = 3.05mW/g

"Normal" scan max calculated S.A.R. using S.A.R. drift: 1-g Avg. = 4.03mW/g; 10-g Avg. = 3.02mW/g
(see part 1 of 3 section 9.0 run # CM-Face-060803-04)



Highest SAR Configurations Results

Motorola GEMS EME Laboratory
DUT: WARIS;Date/Time: 7/31/2006 11:04:14 PM

Run #: CM-Ab-060731-09

Sim. Tissue Temp: 21.4 (C)

Robot #: GEMS-1

Phantom #: 80302002A-S7

Model #: PMUE1678B

SN: 004TGL1003

Antenna: PMAE4003A

TX Freq: 450.00 MHz

Battery: HNN9009A

Start power: 5.54 W

Carry acc.: HLN9714A

Audio/Data acc.: HMN9052E

Comments:

Probe: ET3DV6 - SN1383, Calibrated: 2/22/2006, ConvF(7.12, 7.12, 7.12),

 Duty Cycle: 1:1, Medium: Body 436.5, Medium parameters used: $f = 436.5$ MHz; $\sigma = 0.93$ mho/m; $\epsilon_r = 56.7$; $\rho = 1000$ kg/m³;

Electronics: DAE3 Sn406, Calibrated: 11/21/2005

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

Reference Value = 108.8 V/m; Power Drift = -0.807 dB

Peak SAR (extrapolated) = 11.7 W/kg

SAR(1 g) = 8.79 mW/g; SAR(10 g) = 6.36 mW/g

Maximum value of SAR (measured) = 9.34 mW/g

Ab Scan/Area Scan (51x161x1): Measurement grid: dx=15mm, dy=15mm

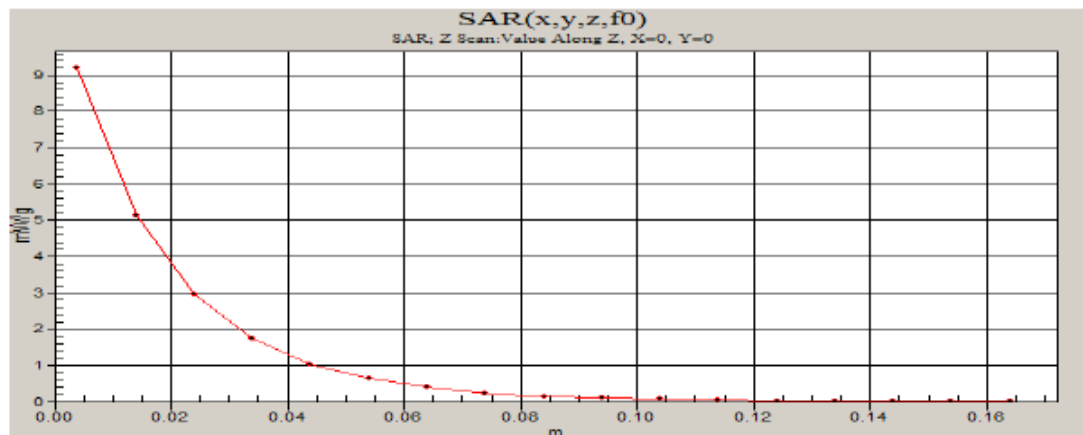
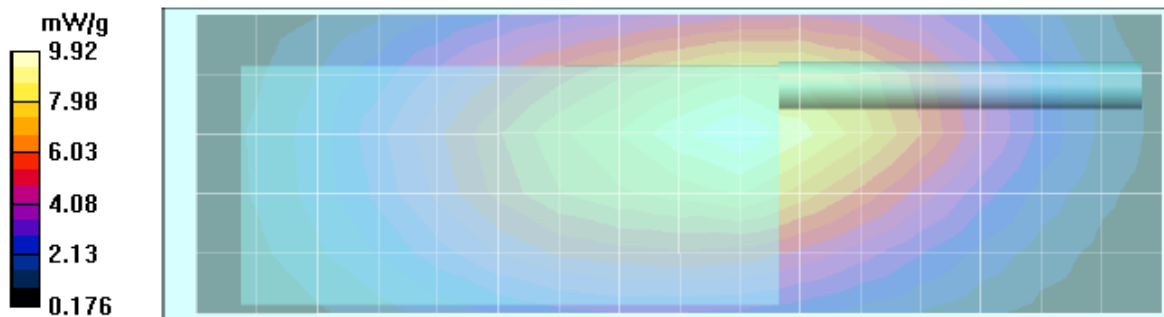
Reference Value = 108.8 V/m; Power Drift = -0.807 dB

Motorola Fast SAR: SAR(1 g) = 9.35 mW/g; SAR(10 g) = 6.77 mW/g

Maximum value of SAR (interpolated) = 9.92 mW/g

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

Maximum value of SAR (measured) = 9.20 mW/g



DUT: WARIS; Date/Time: 8/3/2006 5:47:36 PM

Run #: CM-Face-060803-04

Robot #: GEMS-1

Model #: PMUE1678B

Antenna: PMAE4003A

Battery: HNN9013D

Carry acc.: None

Comments:

Sim. Tissue Temp: 21.7 (C)

Phantom #: 80302002B-S8

SN: 004TGL1003

TX Freq: 450.000 MHz

Start power: 5.44 W

Audio/Data acc.: None

Probe: ET3DV6 - SN1383, Calibrated: 2/22/2006, ConvF(6.74, 6.74, 6.74)

Duty Cycle: 1:1, Medium: 436.5 IEEE Head, Medium parameters used: $f = 436.5$ MHz; $\sigma = 0.85$ mho/m; $\epsilon_r = 44.2$; $\rho = 1000$ kg/m³

Electronics: DAE3 Sn406, Calibrated: 11/21/2005

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

Reference Value = 99.4 V/m; Power Drift = -0.495 dB

Peak SAR (extrapolated) = 9.32 W/kg

SAR(1 g) = 7.2 mW/g; SAR(10 g) = 5.39 mW/g

Maximum value of SAR (measured) = 7.55 mW/g

Face Scan/Area Scan (61x161x1): Measurement grid: dx=15mm, dy=15mm

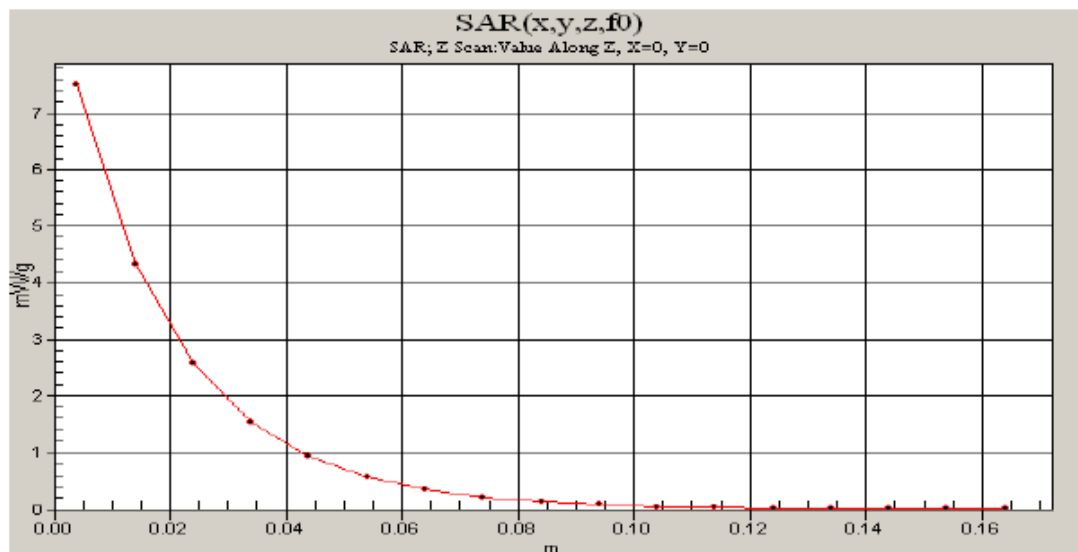
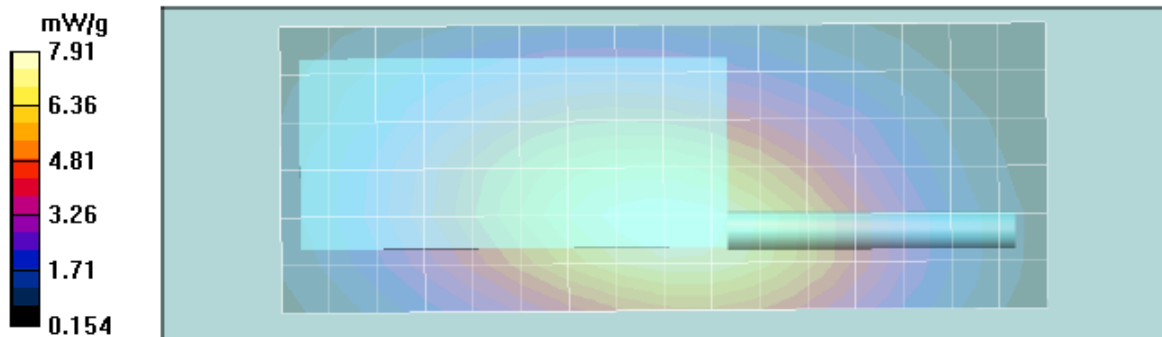
Reference Value = 99.4 V/m; Power Drift = -0.495 dB

Motorola Fast SAR: SAR(1 g) = 7.59 mW/g; SAR(10 g) = 5.63 mW/g

Maximum value of SAR (interpolated) = 7.97 mW/g

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

Maximum value of SAR (measured) = 7.50 mW/g

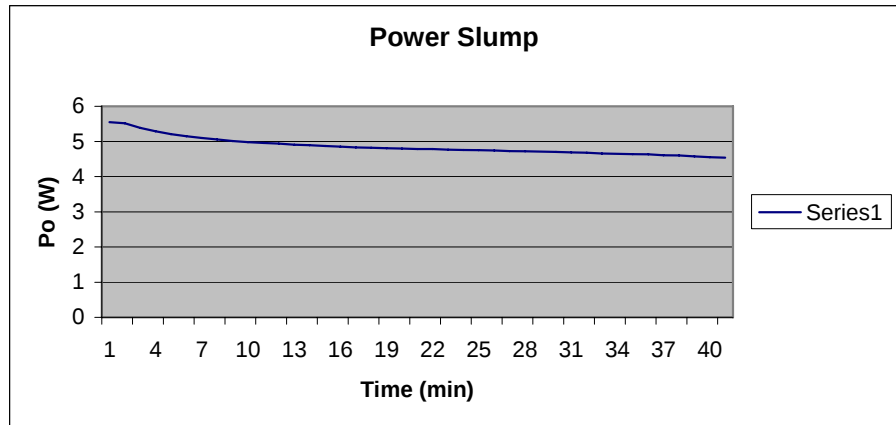


APPENDIX F
DUT Supplementary Data (Power slump)

POWER SLUMP

Model PMUE1678B, Serial # 004TGL1003; Battery HNN9009A; CW Mode; Frequency 450.000 MHz; Audio: HMN9052E

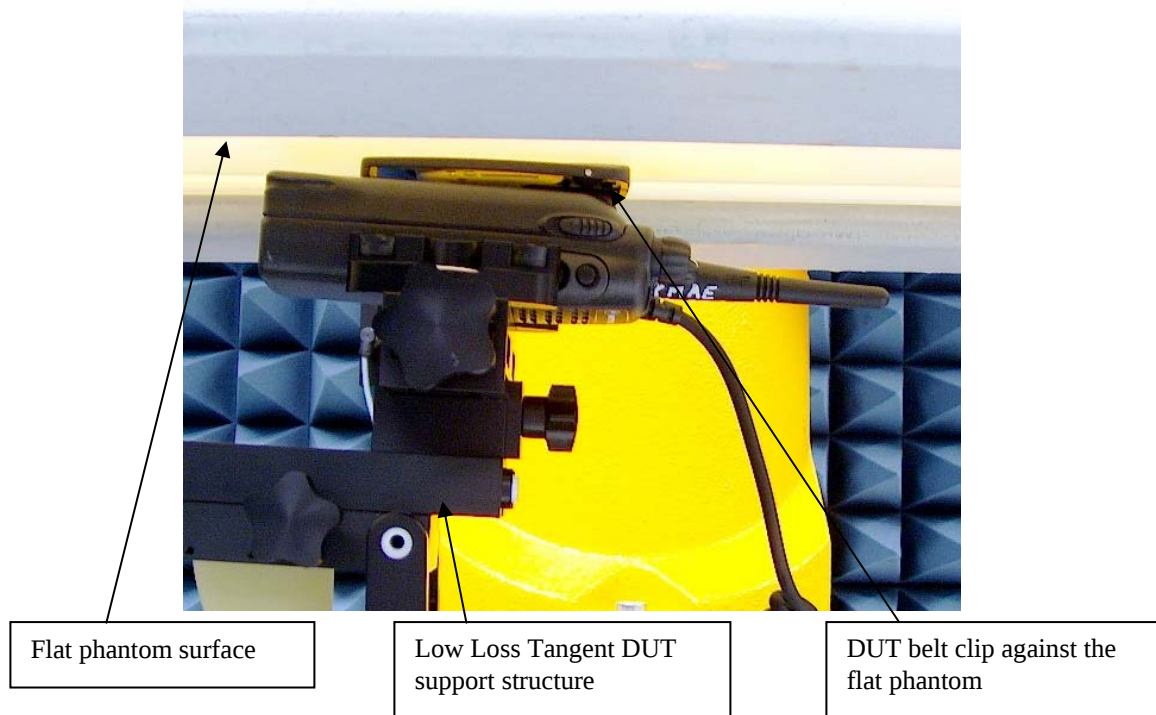
TIME (min)	POWER (W)
Start	5.55
1	5.52
2	5.38
3	5.29
4	5.21
5	5.15
6	5.10
7	5.06
8	5.01
9	4.98
10	4.96
11	4.94
12	4.91
13	4.89
14	4.87
15	4.85
16	4.83
17	4.82
18	4.81
19	4.80
20	4.78
21	4.78
22	4.77
23	4.76
24	4.75
25	4.74
26	4.73
27	4.72
28	4.71
29	4.70
30	4.69
31	4.68
32	4.66
33	4.65
34	4.64
35	4.63
36	4.61
37	4.60
38	4.58
39	4.55
40	4.54



Appendix G

DUT Test Position Photos

**Figure 1: Highest S.A.R. Test Position (Body); Antenna model PMAE4003A
DUT w/belt clip model HLN9714A against the phantom; worst case audio acc. model HMN9052E attached
(same position used for other offered antenna and all other applicable audio accessories)**



**Figure 2: Highest S.A.R. Test Position (face); Antenna PMAE4003A
DUT front side separated 2.5cm from the phantom (same position used for other offered antenna, all other applicable
audio accessories, as well as without any audio accessory)**



Figure 3: Body Assessment
DUT back housing w/ antenna separated 2.5cm from the phantom
Worst case audio acc. Model HMN9052E attached



Figure 4: Body Assessment
DUT w/ front housing separated 2.5cm from the phantom
Worst case audio acc. Model HMN9052E attached



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 HLN9670A
Back View



Photo 2.
Model HLN9670A
Front View



Photo 3.
Model HLN9670A
Side View



Photo 4.
Model HLN9676A
Back View



Photo 5.
Model HLN9676A
Front View



Photo 6.
Model HLN9676A
Side View



Photo 7.
Model HLN9701B
Back View

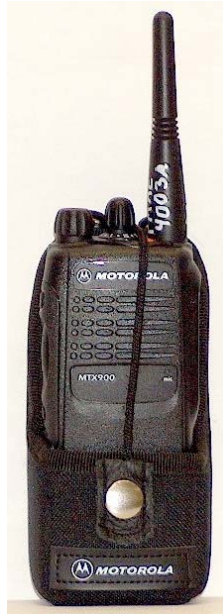


Photo 8.
Model HLN9701B
Front View



Photo 9.
Model HLN9701B
Side View



Photo 10.
Model HLN9714A
Back View



Photo 11.
Model HLN9714A
Side View



Photo 12.
Model HLN9952A
w/HLN9714A
Back View



Photo 13.
Model HLN9952A
w/HLN9714A
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 accessory(ies):

Carry Case Models	Tested ?	Min. Separation distances between DUT antenna and phantom surface. (mm)	Comments
HLN9670A	No	NA	similar to HLN9676A
HLN9676A	Yes	56-76	NA
HLN9714A	Yes	28-38	NA
HLN9952A	Yes	33-45	tested w/HLN9714A
HLN9677A	No	NA	similar to HLN9652A except for cutout
HLN9689A	No	NA	similar to HLN9665A except for cutout
HLN9690A	No	NA	similar HLN9670A except for cutout
HLN9694A	No	NA	similar HLN9676A except for cutout
HLN9701B	Yes	43-58	NA
HLN9652A	No	NA	similar to HLN9665
HLN9665A	Yes	39-49	NA

Audio Acc. Models	Tested ?	Separation distances between DUT antenna and phantom surface. (mm)	Comments
AAHMN9052E	Yes	NA	NA
AAHMN9053E	Yes	NA	NA
NTN1722A	Yes	NA	NA
NTN1723A	Yes	NA	NA
NTN1724A	Yes	NA	NA
AARMN4019A	Yes	NA	NA
AARMN4018B	Yes	NA	NA
AARMN4031B	No	NA	similar to ENMN4015A
AARMN4017A	Yes	NA	NA
AARMN4032A	Yes	NA	NA
AARMN4022A	Yes	NA	NA
AARMN4029A	No	NA	similar to AARMN4022A
AARMN4021A	No	NA	similar to AARMN4022A
AARMN4028A	No	NA	similar to AARMN4022A
RLN4941A	No	NA	Receive only - attaches to RSM
RLN4922A	No	NA	Receive only - attaches to AARMN4022A