



12<sup>th</sup> August 2004

Diane Poole  
Equipment Authorization Branch  
Federal Communications Commission Laboratory  
7435 Oakland Mills Road  
Columbia, MD 21046

Re: Form 731 Confirmation Number: EA786736 with FCC ID: ABZ99FT3039.

Dear Miss Poole;

Motorola Inc, herein submits its response to the 6<sup>th</sup> August 2004 request for information in Correspondence Number 27355.

Q1) Please provide sister SAR plots associated with the shortened scan time plots provided. Also, please confirm the overlay of the device for the body worn case with hotspot in lower left corner.

R1) Presented below are the requested "sister" SAR plots for the worse case test configurations at the body and face. The overlay of the device for the body worn case is here by confirmed. Note that the exhibited primary and secondary peaks along the bottom of the device for the body assessment is a result of the two metal rivets located on the carry case making direct contact with the phantom. Please reference Figure 1 in part 1 of 2, as well as Photo 17 in Appendix E of part 2 of 2 of the submitted report.

Run #: Ab-R1-040520-07

Model #: PMUD1985A SN: 018BBCD001

TX Freq: 136 MHz; Sim Tissue Temp: 20.3 (Celsius)

Antenna: HAD9338AR; Battery Kit: NNTN4496AR

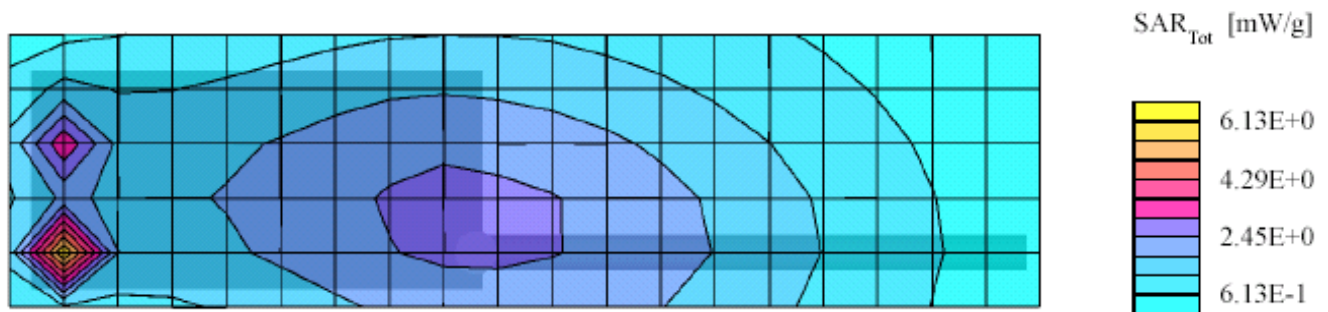
Start Power: 6.43 W

CARRY Acc: RLN5498A w/ 3" Belt Loop; Audio Acc.: HMN9030A

Flat Phantom; Device Section; Position: (90°,90°);

Probe: ET3DV6 - SN1547(Cal Date 09-23-2003); ConvF(7.80,7.80,7.80); Probe cal date: 19/09/03; Crest factor: 1.0; FCC Body 150 MHz:  $\sigma = 0.80$  mho/m  $\epsilon = 60.6$   $\rho = 1.00$  g/cm<sup>3</sup>; DAE3: 374 DAE Cal Date: 03/23/2004; Cube 5x5x7: SAR (1g): 5.78 mW/g, SAR (10g): 2.12 mW/g \* Max outside, (Worst-case extrapolation) Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 64.5, 10.5, 4.7

Power drift: -0.77 dB



Run #: Face-R1-040520-20

Model #: PMUD1985A SN: 018BBCD001

TX Freq: 136 MHz; Sim Tissue Temp: 20.2 (Celsius)

Antenna: PMAD4014A; Battery Kit: NNTN4852A

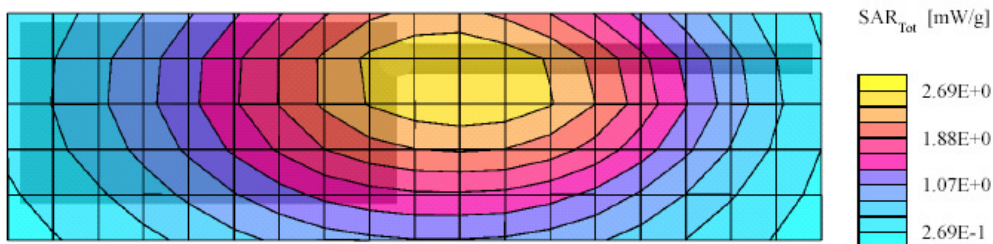
Start Power: 6.39 W

CARRY Acc: None; Audio Acc: None

Flat Phantom; Device Section; Position: (90°,90°);

Probe: ET3DV6 - SN1547(Cal Date 09-23-2003); ConvF(8.70,8.70,8.70); Probe cal date: 19/09/03; Crest factor: 1.0; IEEE Head 150 MHz:  $\sigma = 0.76$  mho/m  $\epsilon = 53.0$   $\rho = 1.00$  g/cm<sup>3</sup>; DAE3: 374 DAE Cal Date: 03/23/2004; Cube 5x5x7: SAR (1g): 2.61 mW/g, SAR (10g): 1.99 mW/g \* Max outside, (Worst-case extrapolation) Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 21.0, 148.5, 4.7

Power drift: -0.71 dB



Q2) Please discuss reasons for lower SAR in 2.5 cm gap and carrying case HLN6602A where distances to body appears much lower than other configurations. Please provide additional SAR for carrying case HLN6602A with sampling of other antenna including PMAD4014A if applicable. Please use worse case audio accessory.

R2) All assessments with the offered body worn accessories (except for chest pack model HLN6602A) exhibited SAR peaks around the body of the device. The actual SAR peak locations are determined by the location of metal components on the body worn accessories and their proximity to the phantom. The Peak SAR for the 2.5cm assessment is located on both the base of the antenna and the body of the device. The characteristics of the HLN6602A chest pack is such that the DUT's antenna is held in place by a strap that bends the antenna tip towards the user's chest, and as shown in the scans presented herein, changes the location of the peak SAR to the tip of the antenna. The above facts indicates that the peak SAR locations and results are affected by where metal components are located on the body worn accessories, the spatial distance without the use of body worn accessories, as well as the proximity of the antenna to the user's body when used with specific body worn accessories. Presented below are the requested additional SAR assessments with body worn accessory model HLN6602A along with each of the offered antennas not previously tested with this accessory. Also presented are the test position photos for each assessment

**Assessment #1**

Run #: EC-Ab-R1-040811-04

Model #: PMUD1985A SN: 018BBCD001

TX Freq: 136 MHz; Sim Tissue Temp: 19.5 (Celsius)

Antenna: PMAD4014A; Battery Kit: NNTN4496AR

Start Power: 5.97 W

CARRY Acc.: HLN6602A; Audio Acc: HMN9030A

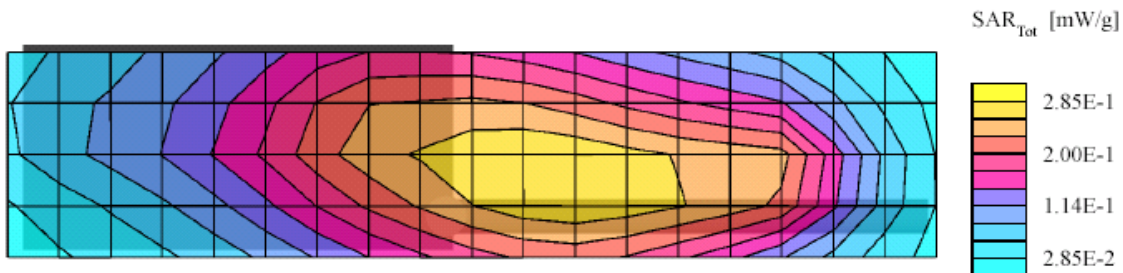
Flat Phantom; Device Section; Position: (90°,90°);

Probe: ET3DV6 - SN1384(Cal Date 27 May 04); ConvF(8.20,8.20,8.20); Probe cal date:

27/5/04; Crest factor: 1.0; FCC Body 150 MHz:  $\sigma = 0.78$  mho/m  $\epsilon = 60.4$   $\rho = 1.00$ g/cm<sup>3</sup>; DAE3: 363 DAE Cal Date: 05/26/2004 Cube 5x5x7: SAR (1g): 0.295 mW/g, SAR (10g): 0.218 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 37.5, 160.5, 4.7

Power Drift: 0.14 dB



**Assessment #2**

Run #: EC-Ab-R1-040811-03

Model #: PMUD1985A SN: 018BBCD001

TX Freq: 148 MHz; Sim Tissue Temp: 19.5 (Celsius)

Antenna: NAD6579A; Battery Kit: NNTN4496AR

Start Power: 5.79 W

CARRY Acc: HLN6602A; Audio #: HMN9030A

Flat Phantom; Device Section; Position: (90°,90°);

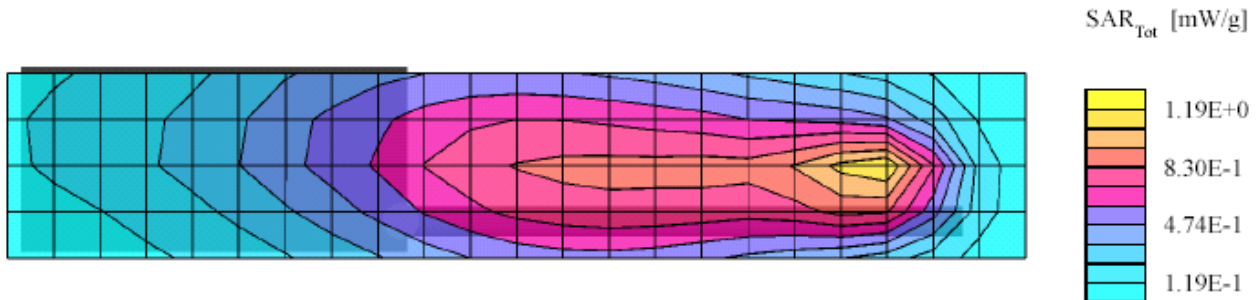
Probe: ET3DV6 - SN1384(Cal Date 27 May 04); ConvF(8.20,8.20,8.20); Probe cal date:

27/5/04; Crest factor: 1.0; FCC Body 150 MHz:  $\sigma = 0.78$  mho/m  $\epsilon = 60.4$   $\rho = 1.00$ g/cm<sup>3</sup>; DAE3: 363 DAE Cal Date: 05/26/2004 Cube 5x5x7: SAR (1g): 1.20 mW/g, SAR

(10g): 0.688 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 33.0, 280.5, 4.7

Power Drift: -0.55 dB



**Assessment #3**

Run #: EC-Ab-R1-040811-06

Model #: PMUD1985A SN: 018BBCD001

TX Freq: 136 MHz; Sim Tissue Temp: 19.6 (Celsius)

Antenna: PMAD4012A; Battery Kit: NNTN4496AR

Start Power: 5.92 W

CARRY Acc: HLN6602A; Audio Acc: HMN9030A

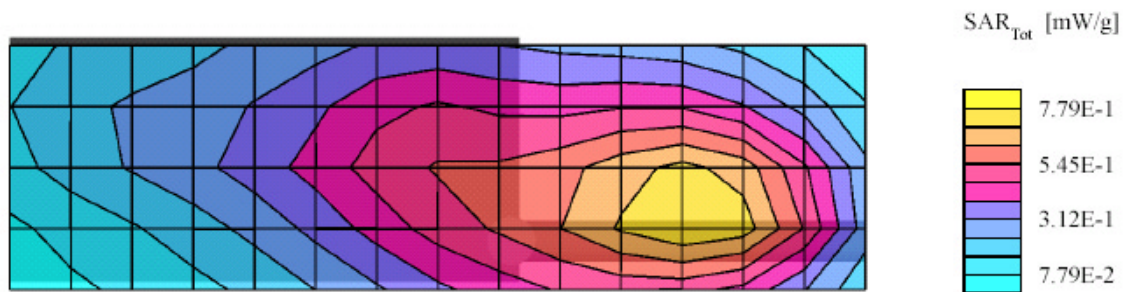
Flat Phantom; Device Section; Position: (90°,90°);

Probe: ET3DV6 - SN1384(Cal Date 27 May 04); ConvF(8.20,8.20,8.20); Probe cal date:

27/5/04; Crest factor: 1.0; FCC Body 150 MHz:  $\sigma = 0.78$  mho/m  $\epsilon = 60.4$   $\rho = 1.00$ g/cm<sup>3</sup>; DAE3: 363 DAE Cal Date: 05/26/2004 Cube 5x5x7: SAR (1g): 0.802 mW/g, SAR (10g): 0.532 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 40.5, 168.0, 4.7

Power Drift: -0.80 dB



**Assessment #4**

Run #: EC-Ab-R1-040811-07

Model #: PMUD1985A SN: 018BBCD001

TX Freq: 146 MHz; Sim Tissue Temp: 19.6 (Celsius)

Antenna: HAD9742A; Battery Kit: NNTN4496AR

Start Power: 5.80 W

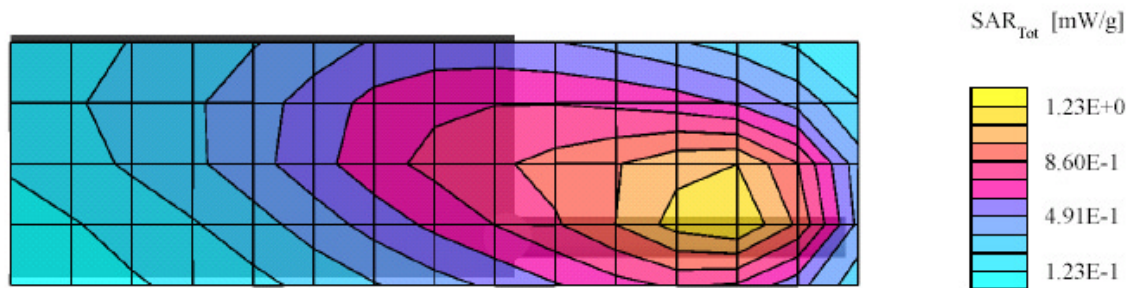
CARRY Acc: HLN6602A; Audio Acc: HMN9030A

Flat Phantom; Device Section; Position: (90°,90°);

Probe: ET3DV6 - SN1384(Cal Date 27 May 04); ConvF(8.20,8.20,8.20); Probe cal date: 27/5/04; Crest factor: 1.0; FCC Body 150 MHz:  $\sigma = 0.78$  mho/m  $\epsilon = 60.4$   $\rho = 1.00$ g/cm<sup>3</sup>; DAE3: 363 DAE Cal Date: 05/26/2004 Cube 5x5x7: SAR (1g): 1.26 mW/g, SAR (10g): 0.808 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 40.5, 177.0, 4.7

Power Drift: -0.78 dB



**Assessment #4**

Run #: EC-Ab-R1-040811-08

Model #: PMUD1985A SN: 018BBCD001

TX Freq: 162 MHz; Sim Tissue Temp: 19.6 (Celsius)

Antenna: NAD6502AR; Battery Kit: NNTN4496AR

Start Power: 5.88 W

CARRY Acc: HLN6602A; Audio Acc: HMN9030A

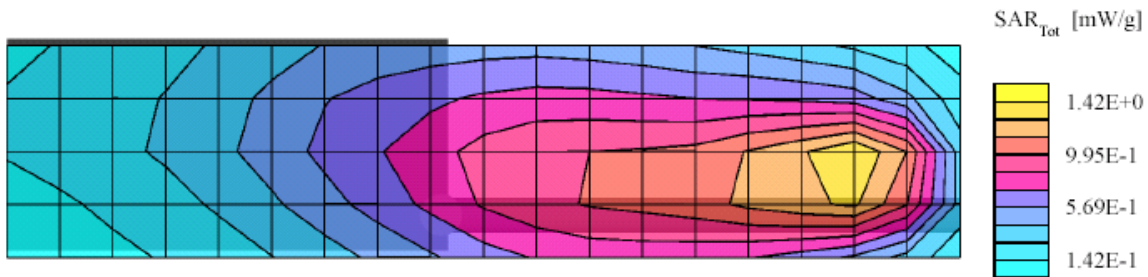
Flat Phantom; Device Section; Position: (90°,90°);

Probe: ET3DV6 - SN1384(Cal Date 27 May 04); ConvF(8.20,8.20,8.20); Probe cal date:

27/5/04; Crest factor: 1.0; FCC Body 150 MHz:  $\sigma = 0.78$  mho/m  $\epsilon = 60.4$   $\rho = 1.00$ g/cm<sup>3</sup>; DAE3: 363 DAE Cal Date: 05/26/2004 Cube 5x5x7: SAR (1g): 1.55 mW/g, SAR

(10g): 0.915 mW/g \* Max outside, (Worst-case extrapolation) Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0; Max at 36.0, 240.0, 4.7

Power Drift: -0.34 dB



**System performance Assessment 8/11/04**

Run #: Sys Perf-R1-040811-01

Model #: D300V2 SN: 1001

TX Freq: 300 MHz; Sim Tissue Temp: 19.7 (Celsius)

Start Power; 250mW

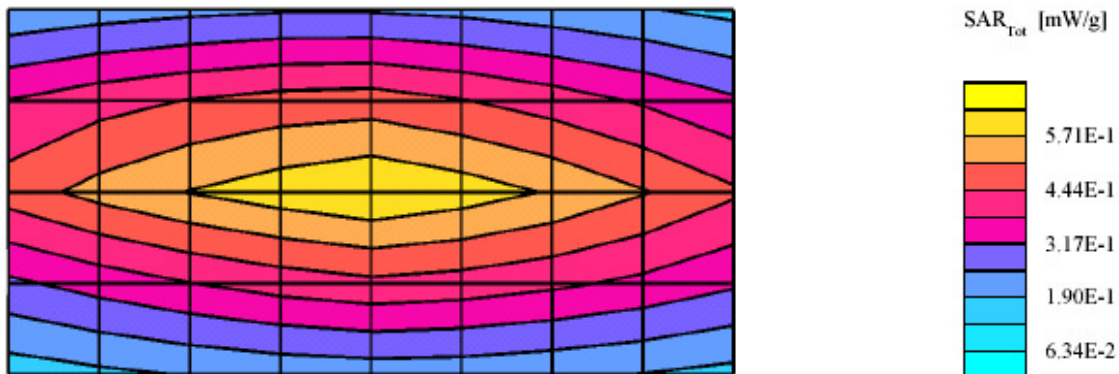
SAR target at 1W is 2.72 mW/g (1g avg, including drift)

SAR target at 1W is 1.83 mW/g (10g avg, including drift)

SAR calculated at 1W is 2.53 mW/g (1g avg). Percent from target (including drift) is - 8.01 %

SAR calculated at 1W is 1.71 mW/g (10g avg). Percent from target (including drift) is - 7.96 %

Flat Phantom; Device Probe: ET3DV6 - SN1384(Cal Date 27 May 04);Probe Cal Date: 27/5/04ConvF(8.00,8.00,8.00); Crest factor: 1.0; FCC Body 300 MHz:  $\sigma = 0.88$  mho/m  $\epsilon = 56.7$   $\rho = 1.00$  g/cm<sup>3</sup>; DAE3: SN363 DAE Cal Date: 05/26/2004 Cubes (2): Peak: 0.959 mW/g  $\pm$  0.01 dB, SAR (1g): 0.631 mW/g  $\pm$  0.00 dB, SAR (10g): 0.427 mW/g  $\pm$  0.00 dB, (Worst-case extrapolation) Penetration depth: 13.6 (11.9, 15.7) [mm]  
Power drift: -0.01 dB



Please contact me at (954) 723-5793 if you require any additional information.

Sincerely,

/s/ **Mike Ramnath (signed)**

Manager, Regulatory Compliance

Email: [Mike.Ramnath@motorola.com](mailto:Mike.Ramnath@motorola.com)