

October 30, 2000

Federal Communications Commission
Equipment Approval Services
7435 Oakland Mills Road
Columbia, MD 21046
Attn: Errol Chang / Kwok Chan

SUBJECT: HANWHA CORPORATION
FCC ID: OCCHWC-3000
731 Confirmation No.: EA98931
Correspondence Ref. No.: 16825

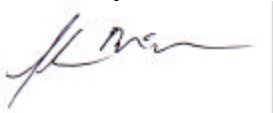
Dear Errol / Kwok:

On behalf of Hanwha Corporation is an amendment in response to your e-mail dated October 27, 2000 requesting additional information for the above-referenced application.

1. Attached is the body-worn SAR data for antenna-retracted configuration.
2. For future SAR measurement filings we will use the latest tissue parameter values proposed by the standards committees. Please note that we have two additional applications currently pending at the Commission using a 0.8 S/m conductivity for head SAR (EA99003, EA99106).

If you have any further questions regarding the above, please do not hesitate to contact me.

Sincerely,



Shawn McMillen
General Manager
Celltech Research Inc.
Testing & Engineering Lab

cc: Hanwha Corporation

MEASUREMENT SUMMARY

BODY SAR MEASUREMENTS

Frequency (MHz)	Channel	Modulation	Conducted Power (dBm)	Separation Distance (cm)	Antenna Position	SAR (w/kg)
824.04	991	Unmodulated Carrier	24.1	1.0	Retracted	0.894
836.49	383	Unmodulated Carrier	25.0	1.0	Retracted	1.01
848.97	799	Unmodulated Carrier	25.3	1.0	Retracted	0.541
824.70	1013	CDMA	24.0	1.0	Retracted	0.761
835.89	363	CDMA	24.0	1.0	Retracted	0.839
848.31	777	CDMA	24.0	1.0	Retracted	0.580
Mixture Type: Muscle Dielectric Constant: 56.1 Conductivity: 0.95		ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population BODY: 1.6 W/kg (averaged over 1 gram)				

Notes:

1. All modes of operation were investigated and the worst-case SAR levels are reported.
2. The SAR values found were below the maximum limit of 1.6 w/kg.
3. The worst-case body SAR value found was 1.01 w/kg (unmodulated carrier), and 0.839 w/kg (CDMA mode).
4. The EUT was tested for body SAR with a separation distance of 1.0cm between the back of the phone and the outer surface of the phantom without the use of a belt-clip/body-holster.
5. The EUT was tested using the standard battery, which is the only battery option for this handset.

HANWHA FCC ID: OCCHWC-3000

Generic Twin Phantom; Flat Section; Position: (270°,270°);
Probe: ET3DV6 - SN1387; ConvF(6.43,6.43,6.43); Crest factor: 1.0;

Muscle 835 MHz: $\sigma = 0.95$ mho/m $\epsilon_r = 56.1$ $\rho = 1.00$ g/cm³

Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0

Cube 5x5x7

SAR (1g): 0.894 mW/g, SAR (10g): 0.582 mW/g

Separation Distance 1.0cm

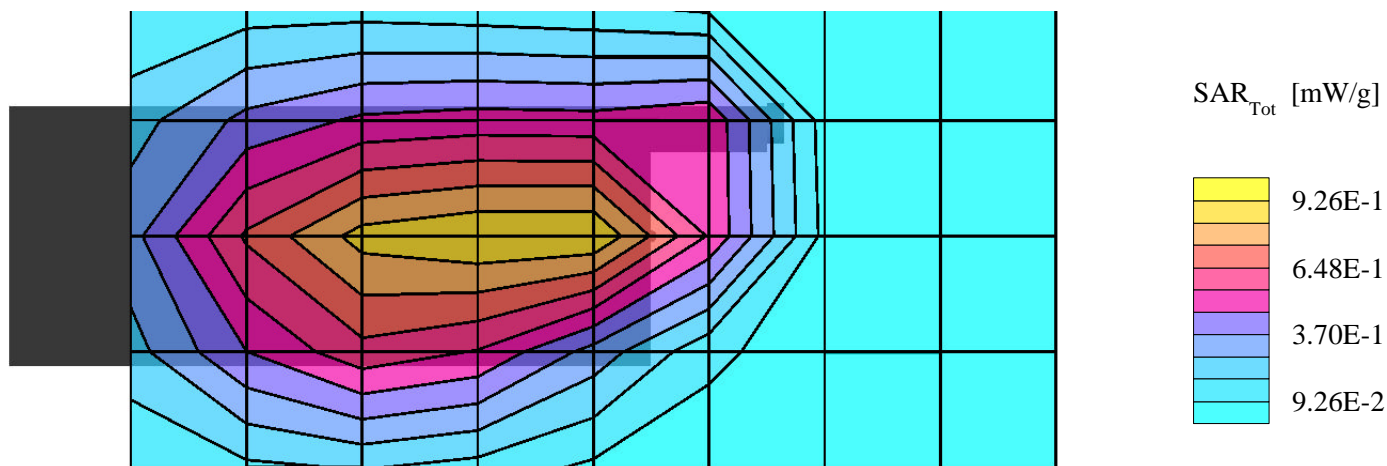
Hanwha Dual Mode Model HWC-3000

Unmodulated Carrier-Antenna In

Channel 991 [824.04MHz]

Conducted Power 24.1dBm

Test Date: Oct 30, 2000



HANWHA FCC ID: OCCHWC-3000

Generic Twin Phantom; Flat Section; Position: (270°,270°);
Probe: ET3DV6 - SN1387; ConvF(6.43,6.43,6.43); Crest factor: 1.0;

Muscle 835 MHz: $\sigma = 0.95$ mho/m $\epsilon_r = 56.1$ $\rho = 1.00$ g/cm³

Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0

Cube 5x5x7

SAR (1g): 1.01 mW/g, SAR (10g): 0.698 mW/g

Separation Distance 1.0cm

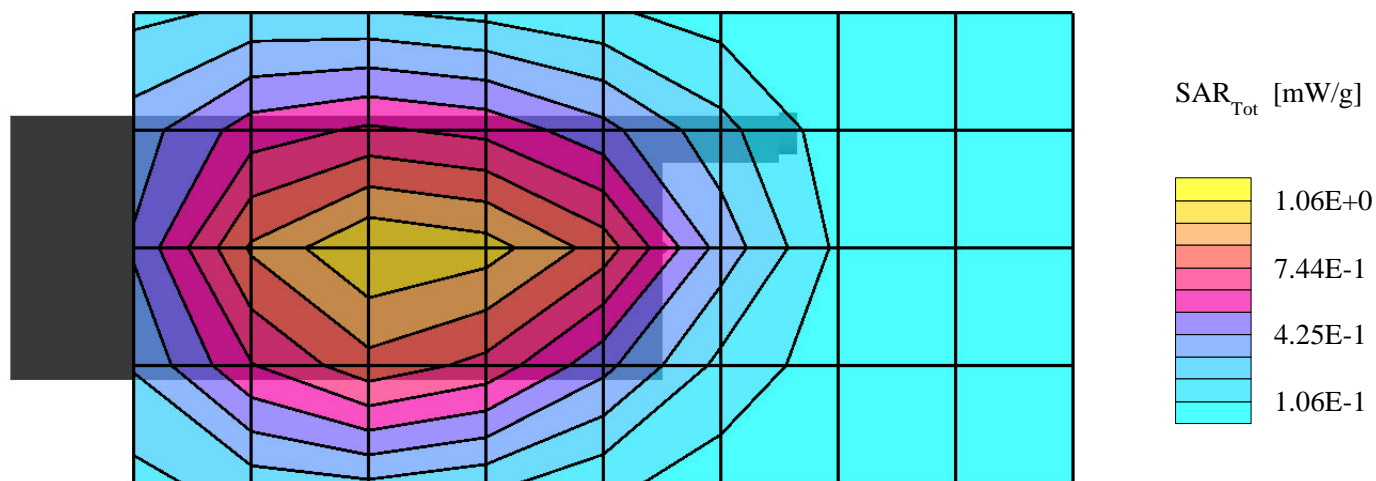
Hanwha Dual Mode Model HWC-3000

Unmodulated Carrier - Antenna In

Channel 383 [836.49MHz]

Conducted Power 25.0dBm

Test Date: Oct 30, 2000



HANWHA FCC ID: OCCHWC-3000

Generic Twin Phantom; Flat Section; Position: (270°,270°);
Probe: ET3DV6 - SN1387; ConvF(6.43,6.43,6.43); Crest factor: 1.0;

Muscle 835 MHz: $\sigma = 0.95$ mho/m $\epsilon_r = 56.1$ $\rho = 1.00$ g/cm³

Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0

Cube 5x5x7

SAR (1g): 0.541 mW/g, SAR (10g): 0.375 mW/g

Separation Distance 1.0cm

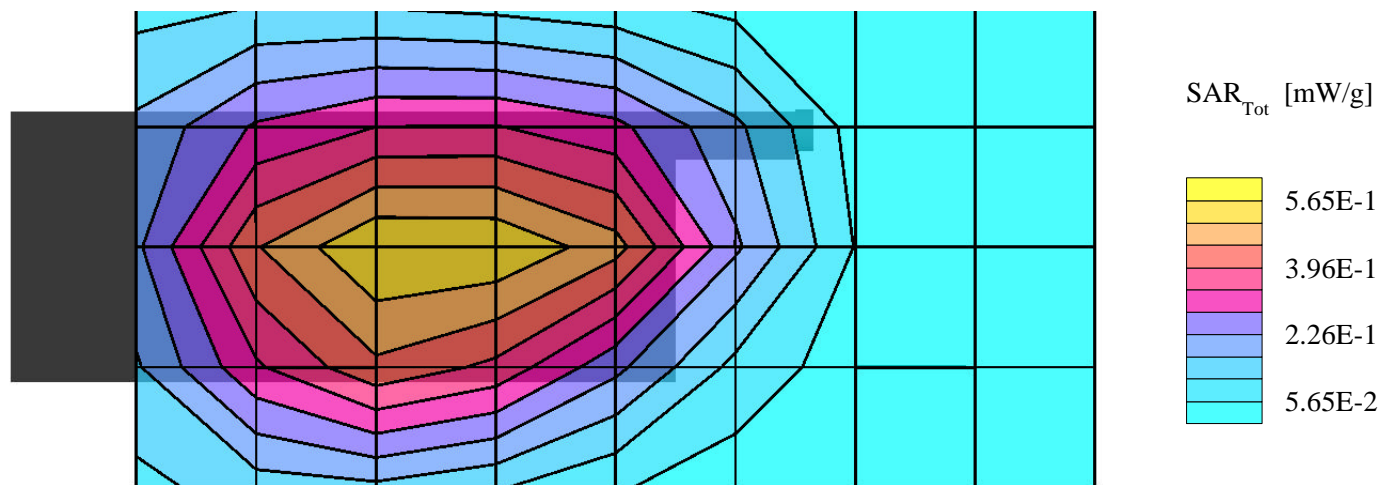
Hanwha Dual Mode Model HWC-3000

Unmodulated Carrier - Antenna In

Channel 799 [848.97MHz]

Conducted Power 25.3dBm

Test Date: Oct 30, 2000



HANWHA FCC ID: OCCHWC-3000

Generic Twin Phantom; Flat Section; Position: (270°,270°);
Probe: ET3DV6 - SN1387; ConvF(6.43,6.43,6.43); Crest factor: 1.0;

Muscle 835 MHz: $\sigma = 0.95$ mho/m $\epsilon_r = 56.1$ $\rho = 1.00$ g/cm³

Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0

Cube 5x5x7

SAR (1g): 0.761 mW/g, SAR (10g): 0.515 mW/g

Separation Distance 1.0cm

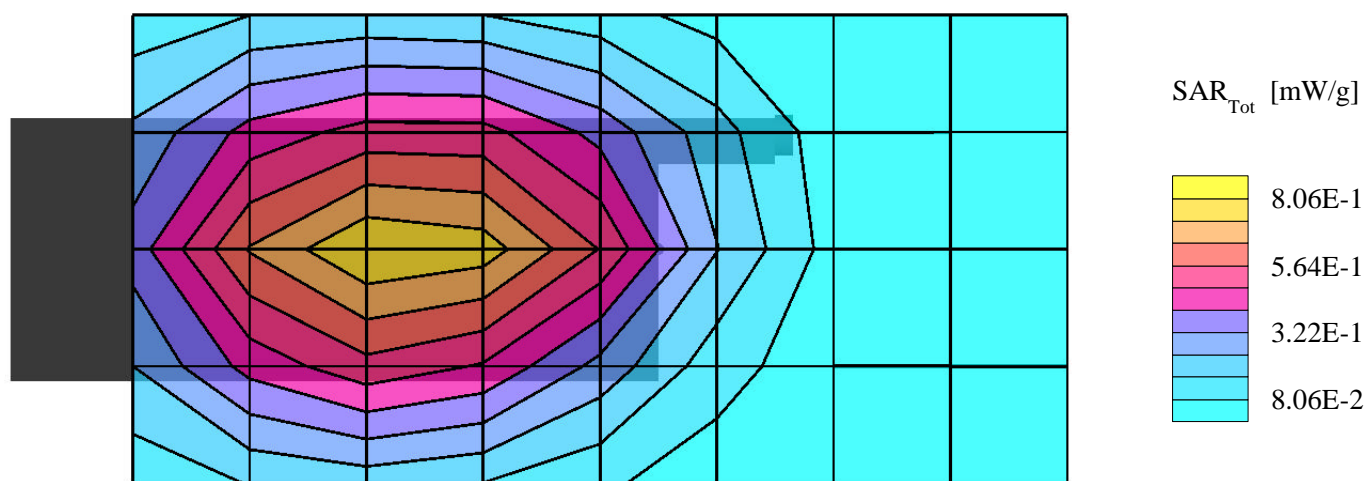
Hanwha Dual Mode Model HWC-3000

CDMA Mode - Antenna In

Channel 1013 [824.70MHz]

Conducted Power 24.0dBm

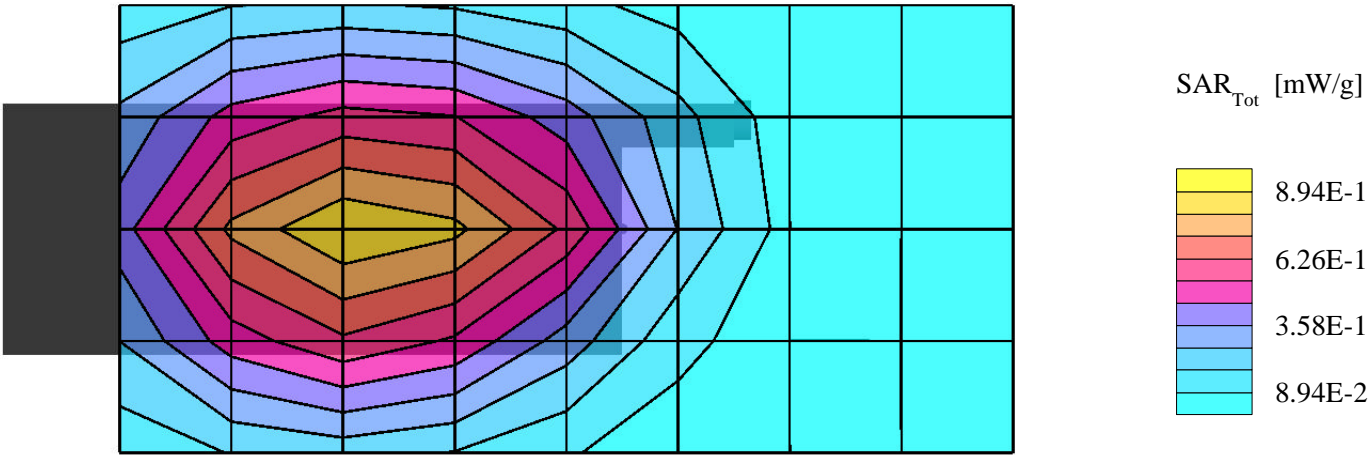
Test Date: Oct 30, 2000



HANWHA FCC ID: OCCHWC-3000

Generic Twin Phantom; Flat Section; Position: (270°,270°);
Probe: ET3DV6 - SN1387; ConvF(6.43,6.43,6.43); Crest factor: 1.0;
Muscle 835 MHz: $\sigma = 0.95 \text{ mho/m}$ $\epsilon_r = 56.1$ $\rho = 1.00 \text{ g/cm}^3$
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Cube 5x5x7
SAR (1g): 0.839 mW/g, SAR (10g): 0.574 mW/g

Separation Distance 1.0cm
Hanwha Dual Mode Model HWC-3000
CDMA Mode - Antenna In
Channel 363 [835.89MHz]
Conducted Power 24.0dBm
Test Date: Oct 30, 2000



HANWHA FCC ID: OCCHWC-3000

Generic Twin Phantom; Flat Section; Position: (270°,270°);
Probe: ET3DV6 - SN1387; ConvF(6.43,6.43,6.43); Crest factor: 1.0;

Muscle 835 MHz: $\sigma = 0.95$ mho/m $\epsilon_r = 56.1$ $\rho = 1.00$ g/cm³

Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0

Cube 5x5x7

SAR (1g): 0.580 mW/g, SAR (10g): 0.398 mW/g

Separation Distance 1.0cm

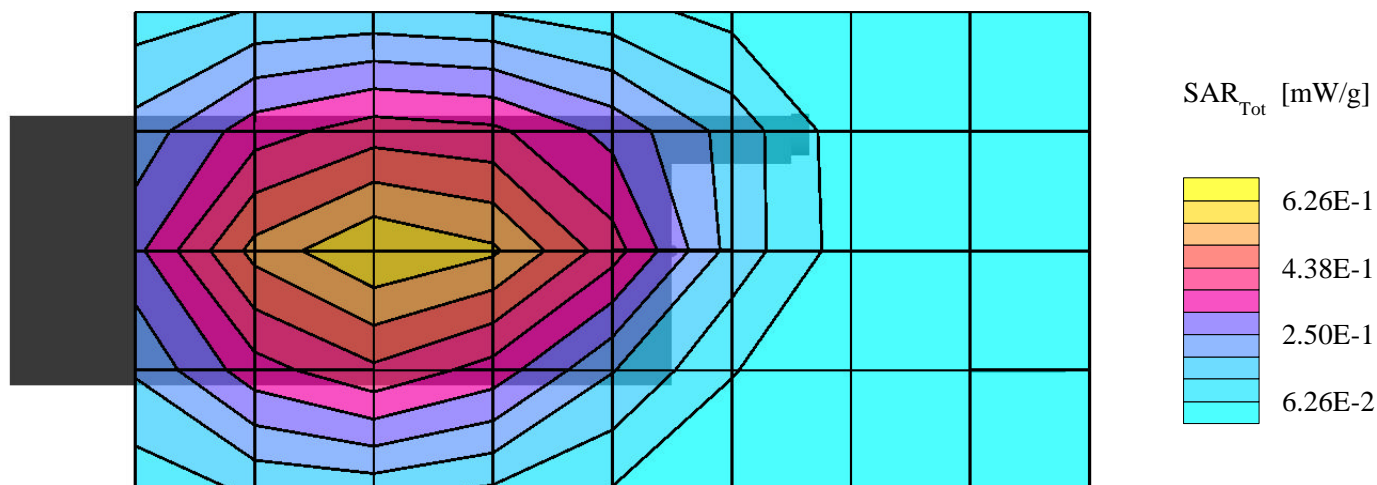
Hanwha Dual Mode Model HWC-3000

CDMA Mode - Antenna In

Channel 777 [848.31MHz]

Conducted Power 24.0dBm

Test Date: Oct 30, 2000



Dipole 835 MHz

Generic Twin Phantom; Flat Section; Position: (90°,90°);
Probe: ET3DV6 - SN1387; ConvF(6.43,6.43,6.43); Crest factor: 1.0;

Brain 835 MHz: $\sigma = 0.80$ mho/m $\epsilon_r = 44.2$ $\rho = 1.00$ g/cm³

Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0

Cube 5x5x7

SAR (1g): 2.10 mW/g, SAR (10g): 1.38 mW/g

Date Tested: Oct 30, 2000

