



MOTOROLA

March 3, 2003

Supplement to SAR Test Report for Motorola portable cellular phone (FCC ID IHDT56CL1)

Prepared by:

Steven Hauswirth

Motorola Personal Communications Sector Product Safety & Compliance Laboratory

Libertyville, Illinois

Summary of FCC request for additional information

There was a request for additional information regarding Motorola's SAR Test Report for Motorola portable cellular phone (FCC ID IHDT56CL1). The requested information is addressed below in the same numbering sequence received.

1) Please revise the Body-worn statement in the users manual. The submitted statements could easily be misunderstood by a user to suggest that there are Motorola accessories tested for this device. This device was tested without any body-worn accessories.

Response: The previously agreed upon body-worn language is attached. Please see Appendix 1.

2) The probe conversion factor used for 1900 MHZ Body measurements is not consistent with Supplement C procedures. Please describe what action will be taken to bring your procedures into compliance. When will this action be made by?

Response: The calibration certificate for the probe utilized (probe SN1522), page 2 of 8 shows that the conversion factor for 1800MHz & 1900MHz head is 3.4. This is the value that was used for testing in the original filing. Since simulated tissue targets are the same for both 1800 & 1900 MHz head and the conversion factor for both 1800 & 1900 MHz head is the same, it is also true for body-worn that both 1800 & 1900 MHz share the same conversion factor ('3.1' for Probe SN1522) since they share the same simulated tissue targets. This is demonstrated in all newly calibrated probes from SPEAG. These new calibration sheets show that the 1800MHz & 1900MHz body do share the common conversion factor. *The manufacturer of the probes (SPEAG) agrees with this use of the 1800MHz body-worn conversion factor.* They have updated our calibration sheet to reflect that the 1800MHz body worn conversion factor can also be used for the 1900MHz body worn. Please see appendix 2.

3) Please explain the large change in 900 MHZ system verification target value from the original data provided by the manufacturer i.e.10.16 vice 11.4 W/kg.

Response: The original calibration was performed by the dipole manufacturer before the new tissue values were introduced by FCC in the OET65 Supplement C. In particular, the conductivity of the tissue simulating liquid target at 900 MHz changed to 0.97 S/m. Motorola has defined an internal transfer calibration procedure that relies on a primary reference dipole calibrated by the manufacturer. The enclosed certificate reports the tissue conductivity employed to calibrate the primary reference as 0.95 S/m, which explains why the SAR went roughly 10% up. The secondary dipole SAR is compared with the primary dipole SAR. If the difference is less than 3% (power measurement uncertainty) then the primary dipole SAR is assigned as target to the secondary dipole. If the difference is larger than that, then the secondary dipole target is determined by

scaling the primary dipole SAR of a factor equal to the ratio between the two SAR measurements. In this case, the certificate shows that the difference is 1.2%, so the primary dipole SAR is assigned as target to the secondary dipole.

4) Support data for 1900 MHZ system verification target value. A large difference from measured value and P1528 target value was noted. Please justify correct operation of system.

Response: The daily system verification was performed at 1800MHz. The 1800MHz target given in P1528 for system verification is 38.1 W/kg. Our dipole characterization sheets are utilizing a target of 39.3 W/kg. This is a difference of 3.1%. This is within the 10% variation allowed in P1528.

Appendix 1

Modified Body-Worn Language in User's Manual

Safety and General Information

IMPORTANT INFORMATION ON SAFE AND EFFICIENT OPERATION.
READ THIS INFORMATION BEFORE USING YOUR PHONE.

The information provided in this document supersedes the general safety information in user guides published prior to December 1, 2002.

Exposure To Radio Frequency (RF) Energy

Your phone contains a transmitter and a receiver. When it is ON, it receives and transmits RF energy. When you communicate with your phone, the system handling your call controls the power level at which your phone transmits.

Your Motorola phone is designed to comply with local regulatory requirements in your country concerning exposure of human beings to RF energy.

Operational Precautions

To assure optimal phone performance and make sure human exposure to RF energy is within the guidelines set forth in the relevant standards, always adhere to the following procedures.

External Antenna Care

Use only the supplied or Motorola-approved replacement antenna. Unauthorized antennas, modifications, or attachments could damage the phone.

Do NOT hold the external antenna when the phone is IN USE. Holding the external antenna affects call quality and may cause the phone to operate at a higher power level than needed. In addition, use of unauthorized antennas may result in non-compliance with the local regulatory requirements in your country.

Phone Operation

When placing or receiving a phone call, hold your phone as you would a wireline telephone.

Body-Worn Operation

To maintain compliance with RF energy exposure guidelines, if you wear a phone on your body when transmitting, always place the phone in a Motorola-supplied or approved clip, holder, holster, case, or body harness for this phone, if available. Use of accessories not approved by Motorola may exceed RF energy exposure guidelines. If you do not use one of the body-worn accessories approved or supplied by Motorola, and are not using the phone held in the normal use position, ensure the phone and its antenna are at least 1 inch (2.5centimeters) from your body when transmitting.

Data Operation

When using any data feature of the phone, with or without an accessory cable, position the phone and its antenna at least 1 inch (2.5centimeters) from your body.

Approved Accessories

Use of accessories not approved by Motorola, including but not limited to batteries and antenna, may cause your phone to exceed RF energy exposure guidelines. For a list of approved Motorola accessories, visit our website at www.Motorola.com.

RF Energy Interference/Compatibility

Note: Nearly every electronic device is susceptible to RF energy interference from external sources if inadequately shielded, designed, or otherwise configured for RF energy compatibility. In some circumstances your phone may cause interference.

Facilities

Turn off your phone in any facility where posted notices instruct you to do so. These facilities may include hospitals or health care facilities that may be using equipment that is sensitive to external RF energy.

Appendix 2

New Probe Calibration Sheet Supplied by SPEAG

Additional Conversion Factors for Dosimetric E-Field Probe

Type:	ET3DV6R
Serial Number:	1522
Place of Assessment:	Zurich
Date of Assessment:	May 8, 2002
Probe Calibration Date:	April 25, 2002

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 1800 MHz.

Assessed by:

Dosimetric E-Field Probe ET3DV6R SN:1522

Conversion factor (\pm standard deviation)

835 MHz	ConvF	4.6 \pm 8%	$\square = 41.5 \pm 5\%$ $\square = 0.90 \pm 5\%$ mho/m (head tissue)
1950 MHz	ConvF	3.2 \pm 8%	$\square = 40.0 \pm 5\%$ $\square = 1.40 \pm 5\%$ mho/m (head tissue)
835 MHz	ConvF	4.4 \pm 8%	$\square = 55.2 \pm 5\%$ $\square = 0.97 \pm 5\%$ mho/m (body tissue)
900 MHz	ConvF	4.3 \pm 8%	$\square = 55.0 \pm 5\%$ $\square = 1.05 \pm 5\%$ mho/m (body tissue)
1800 MHz 1900 MHz	ConvF	3.1 \pm 8%	$\square = 53.3 \pm 5\%$ $\square = 1.52 \pm 5\%$ mho/m (body tissue)
1950 MHz	ConvF	3.0 \pm 8%	$\square = 53.3 \pm 5\%$ $\square = 1.52 \pm 5\%$ mho/m (body tissue)