



MOTOROLA

Date: December 15, 2003

Subject: Request for additional information (FCC ID: IHDT56CL1)

Reference:

Application Received	12/23/2002
Correspondence Reference Number:	230108.IHD
Confirmation Number:	TC1413
Date of Original Email:	01/08/2003

Prepared by:

Steven Hauswirth
Motorola Personal Communications Sector Product Safety Laboratory
Harvard, Illinois

Andrew Bachler, Principal Staff Engineer
Motorola Personal Communications Sector
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 IHDT56CM1). The requested information is addressed below in the same numbering sequence received.

1) Please provide the max SAR plots for both the Cellular/PCS band with C332 housing. The max. SAR data for the PCS band (15deg tilt position) does not agree with the extrapolated value (page 8 - Exhibit 11). Please clarify.

Response: The original filing had a typo in the extrapolated SAR value for the C332 housing in the PCS band, channel 25, 15° Tilt Position. The tables for the C332 have been corrected and are shown below. The Max SAR plots are included in Appendix 1.

f (MHz)	Description	Conducted Output Power (dBm)	C332 (Cheek / Touch Position)									
			Left Head					Right Head				
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Amb. Temp (°C)	Simulate Temp (°C)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Amb. Temp (°C)	Simulate Temp (°C)
Digital 800 MHz	Channel 1013	24.97	1.11	-0.23	1.17	23	22.2	0.942	-0.19	0.98	23	22.2
	Channel 384	24.97	0.892	0.27	0.89	23	22.2	0.838	-0.19	0.88	23	22.2
	Channel 777	25.05	0.904	-0.26	0.96	23	22.2	0.737	-0.35	0.80	23	22.2
Digital 1900 MHz	Channel 25	24.75										
	Channel 600	24.61	0.71	-0.16	0.74	23	-0.16	0.612	-0.1	0.63	23	21.0
	Channel 1175	24.70										

Table 3: SAR measurement results for the portable cellular telephone FCC ID IHDT56CL1 at highest possible output power. Measured against the head in the Cheek/Touch Position.

f (MHz)	Description	Conducted Output Power (dBm)	C332 (15° Tilt Position)									
			Left Head					Right Head				
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Amb. Temp (°C)	Simulate Temp (°C)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Amb. Temp (°C)	Simulate Temp (°C)
Digital 800 MHz	Channel 1013	24.97	1.16	-0.07	1.18	23	22.2	0.943	-0.14	0.97	23	21.8
	Channel 384	24.97	1.13	0.12	1.13	23	22.2	0.854	0.20	0.85	23	21.5
	Channel 777	25.05	0.953	-0.26	1.01	23	22.2	0.798	0.03	0.80	23	21.6
Digital 1900 MHz	Channel 25	24.75	1.15	-0.03	1.16	23	21.0					
	Channel 600	24.61	0.81	-0.15	0.84	23	22.1	0.658	-0.03	0.66	23	21.0
	Channel 1175	24.70	1.06	-0.11	1.09	23	21.0					

Table 4: SAR measurement results for the portable cellular telephone FCC ID IHDT56CL1 at highest possible output power. Measured against the left head in the 15° Tilt Position.

2) Please provide justification for the probe conversion factor used for 1900 MHz Body measurements per OET 65 Supp. C.

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. This is demonstrated by the conversion factor for Probe 1522 at 1950MHz body-worn is $3.0 \pm 8\%$.

3) Please provide SAR evaluation for the speaker phone mode. Please revise the user manual and provide users clear instruction of how to maintain compliance with FCC RF exposure limits while using this mode.

Response: The phone does not contain an internal loud speaker. Speaker mode is limited to handsfree operation with an external speakerphone accessory (handsfree car kit accessory).

4) Please detail how the speaker phone mode could be used in a portable configuration. Is the phone expected to be used in a "held to face" position? If so please provide SAR data for this position.

Response: A "held to face" position is not applicable for this phone, It does not contain an internal loud speaker. However, it can be operated in a handsfree mobile configuration when connected to an appropriate car kit.

5) 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. Please also address the metallic component issue. Please revise accordingly.

Response: The body-worn statement has been updated in the user manual. Please see Appendix 2.

6) The two statements contained in the confidential filing of Exhibit 12 Operational Description (ESN Exh. 12I and E911 Exh. 12K only) will be uploaded as NOT CONFIDENTIAL as part of the Attestation Statements to avoid FCC requests for these documents (ESN Protection and 911 Call Processing). Please confirm.

Response: Yes, Motorola confirms.

Appendix 1

Max SAR Plots for Phone with C332 Housing

s/n: 770472co

Ch# 1013 / Pwr Step: 02 / Type of Modulation: cdma 800 / Battery Model #: snn5725

DEVICE POSITION (cheek or rotated): cheek / Phone with C332 Housing

R3 Sugar TP-1157 SAM (rev. 4) 26Apr02 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 825 MHz

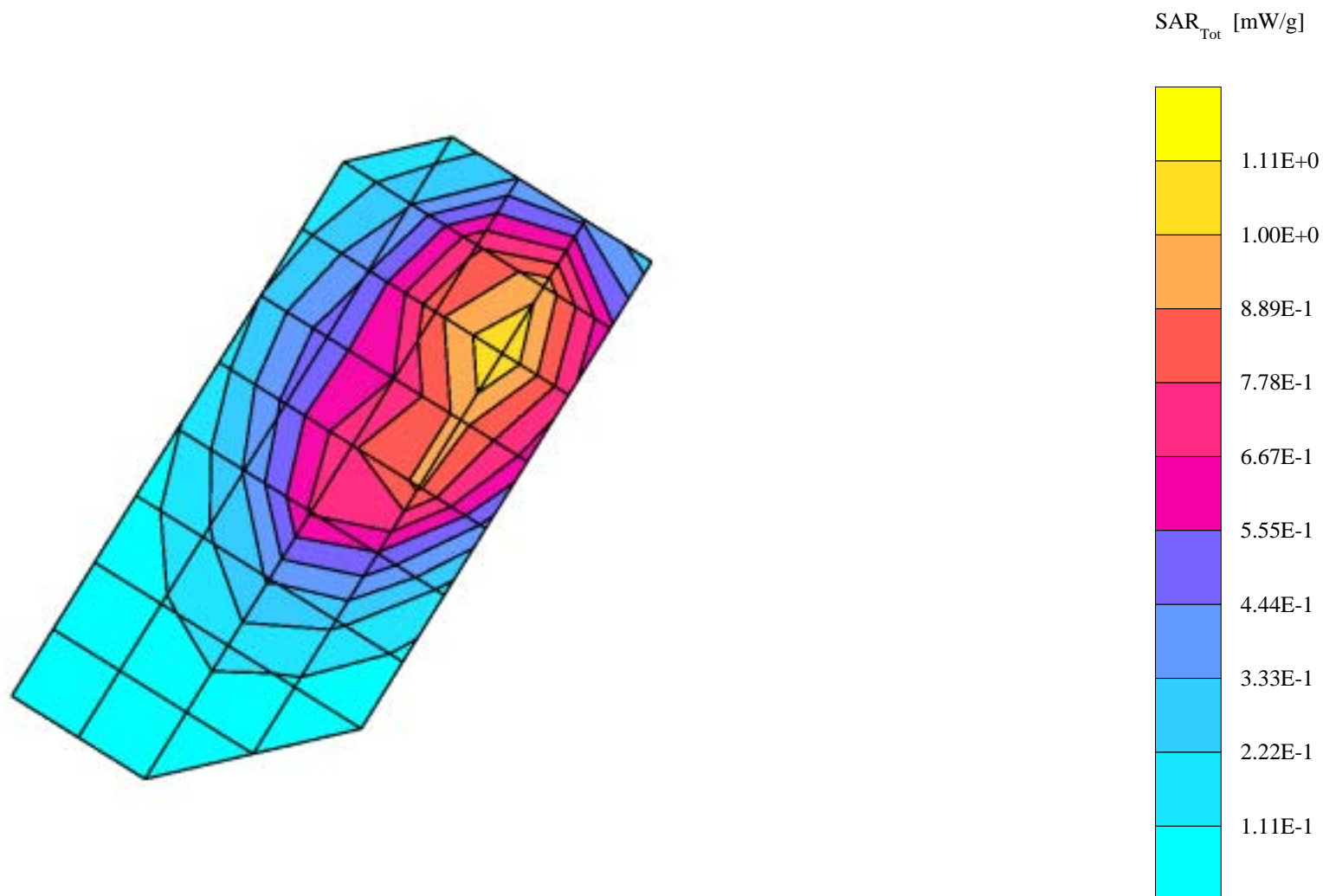
Probe: ET3DV6R - SN1522 - IEEE Head; ConvF(4.60,4.60,4.60); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.91$ mho/m $\epsilon_r = 40.9$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 1.11 mW/g, SAR (10g): 0.715 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0

Penetration depth: 12.1 (11.4, 13.2) [mm]

Powerdrift: -0.23 dB



s/n: 770472co

Ch# 1013 / Pwr Step: 02 / Type of Modulation: cdma 800/ Battery Model #: snn5725

DEVICE POSITION (cheek or rotated): tilted / Phone with C332 Housing

R3 Sugar TP-1157 SAM (rev. 4) 26Apr02 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 825 MHz

Probe: ET3DV6R - SN1522 - IEEE Head; ConvF(4.60,4.60,4.60); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.91$ mho/m $\epsilon_r = 40.9$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 1.16 mW/g, SAR (10g): 0.712 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0

Penetration depth: 11.3 (10.7, 12.0) [mm]

Powerdrift: -0.07 dB



s/n: 770472C0

Ch#600 / Pwr Step: Always up / Type of Modulation: 1900 CDMA / Battery Model #: SNN5725A

DEVICE POSITION (cheek or rotated): Check / Phone with C332 Housing

R3 Gycol TP-1157 (rev. 4) 26Apr02 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 1880 MHz

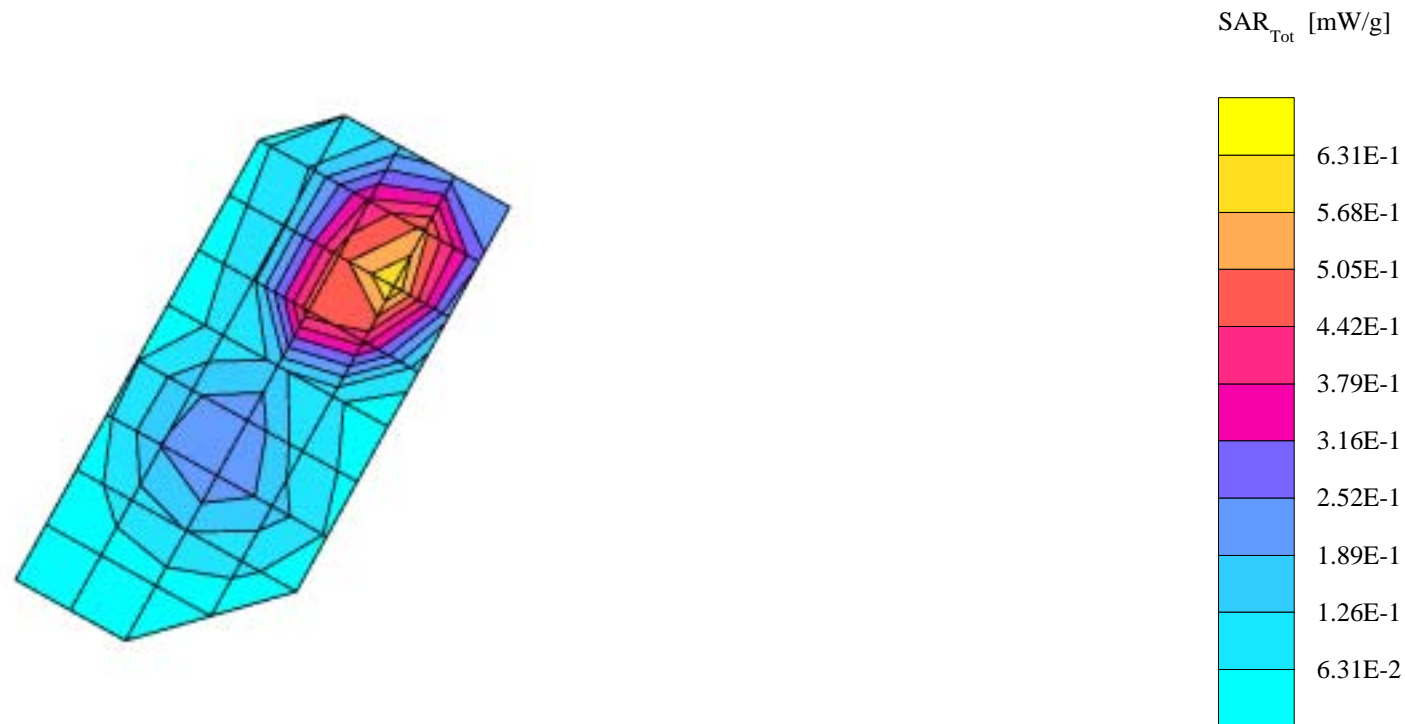
Probe: ET3DV6R - SN1522 - IEEE Head; ConvF(3.40,3.40,3.40); Crest factor: 1.0; 1880 MHz Head & Body: $\sigma = 1.46$ mho/m $\epsilon_r = 39.3$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 0.710 mW/g, SAR (10g): 0.386 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0

Penetration depth: 10.0 (9.3, 10.9) [mm]

Powerdrift: -0.16 dB



s/n: 770472C0

Ch# 25 Pwr Step: ALWAYS UP / Type of Modulation: 1900 CDMA / Battery Model #: SNN5725A

DEVICE POSITION: 15* Tilt / Phone with C332 Housing

R3 Gycol TP-1157 (rev. 4) 26Apr02 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 1851 MHz

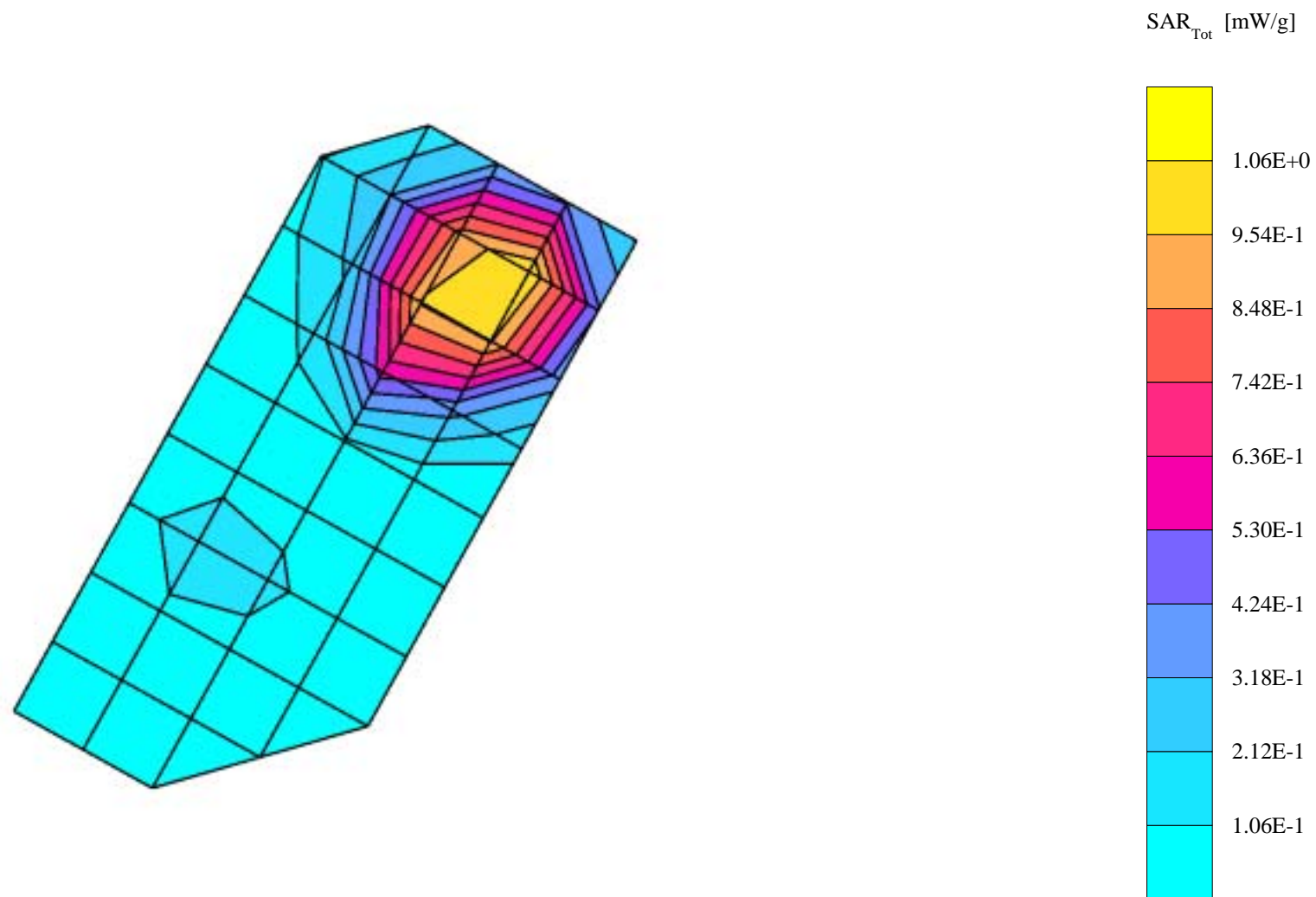
Probe: ET3DV6R - SN1522 - IEEE Head; ConvF(3.40,3.40,3.40); Crest factor: 1.0; 1880 MHz Head & Body: $\sigma = 1.45$ mho/m $\epsilon_r = 38.5$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 1.15 mW/g, SAR (10g): 0.666 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0

Penetration depth: 9.9 (9.3, 10.8) [mm]

Powerdrift: -0.03 dB



Appendix 2

User Manual Page Containing New Body-Worn Language

Safety and General Information (DRAFT)

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, where 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 (2.5 centimeters) 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 (2.5 centimeters) 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.

Aircraft

When instructed to do so, turn off your phone when on board an aircraft. Any use of a phone must be in accordance with applicable regulations per airline crew instructions.

Medical Devices

Pacemakers

Pacemaker manufacturers recommend that a minimum separation of 6 inches (15 centimeters) be maintained between a handheld wireless phone and a pacemaker.

Persons with pacemakers should:

- ALWAYS keep the phone more than 6 inches (15 centimeters) from your pacemaker when the phone is turned ON.
- NOT carry the phone in the breast pocket.
- Use the ear opposite the pacemaker to minimize the potential for interference.
- Turn OFF the phone immediately if you have any reason to suspect that interference is taking place.

Hearing Aids

Some digital wireless phones may interfere with some hearing aids. In the event of such interference, you may want to consult your hearing aid manufacturer to discuss alternatives.

Other Medical Devices

If you use any other personal medical device, consult the manufacturer of your device to determine if it is adequately shielded from RF energy. Your physician may be able to assist you in obtaining this information.

Use While Driving

Check the laws and regulations on the use of phones in the area where you drive. Always obey them.

When using your phone while driving, please:

- Give full attention to driving and to the road.
- Use hands-free operation, if available.

- Pull off the road and park before making or answering a call if driving conditions so require.

Responsible driving best practices may be found in the “Wireless Phone Safety Tips” at the end of this manual and at the Motorola website:

www.Motorola.com/callsmart.

Operational Warnings

For Vehicles With an Air Bag

Do not place a phone in the area over an air bag or in the air bag deployment area. Air bags inflate with great force. If a phone is placed in the air bag deployment area and the air bag inflates, the phone may be propelled with great force and cause serious injury to occupants of the vehicle.

Potentially Explosive Atmospheres

Turn off your phone prior to entering any area with a potentially explosive atmosphere, unless it is a phone type especially qualified for use in such areas and certified as “Intrinsically Safe.” Do not remove, install, or charge batteries in such areas. Sparks in a potentially explosive atmosphere can cause an explosion or fire resulting in bodily injury or even death.

Note: The areas with potentially explosive atmospheres referred to above include fueling areas such as below decks on boats, fuel or chemical transfer or storage facilities, areas where the air contains chemicals or particles, such as grain, dust, or metal powders. Areas with potentially explosive atmospheres are often but not always posted.

Blasting Caps and Areas






To avoid possible interference with blasting operations, turn OFF your phone when you are near electrical blasting caps, in a blasting area, or in areas posted “Turn off electronic devices.” Obey all signs and instructions.

Batteries

Batteries can cause property damage and/or bodily injury such as burns if a conductive material such as jewelry, keys, or beaded chains touch exposed terminals. The conductive material may complete an electrical circuit (short circuit) and become quite hot. Exercise care in handling any charged battery, particularly when placing it inside a pocket, purse, or

other container with metal objects. **Use only Motorola original batteries and chargers.**

Your battery or phone may contain symbols, defined as follows:

Symbol	Definition
	Important safety information will follow.
	Your battery or phone should not be disposed of in a fire.
	Your battery or phone may require recycling in accordance with local laws. Contact your local regulatory authorities for more information.
	Your battery or phone should not be thrown in the trash.
	Your phone contains an internal lithium ion battery.