Overview

Radio frequency (RF) exposure from a mobile phone is typically localised depending on where the phone is placed. Exposure guidelines for mobile phones specify the maximum level of RF energy that can be absorbed by the head or body with a large safety margin.

The unit of measurement for the amount of RF energy absorbed by the body is the Specific Absorption Rate or SAR. Measurement of SAR is used for compliance of mobile phones, walkie talkies, or when working very close to transmitting antennas. SAR is expressed in units of watts per kilogram (W/kg).

The maximum SAR level for a mobile phone used against the head or body in accordance with the ICNIRP International guidelines is 2W/kg (using 10gm averaging mass). Mobile phones are tested for SAR compliance at the highest certified power level in laboratory conditions.

Note: The international standard IEC62209.2 specifying the procedures for body worn SAR testing is scheduled for publication in 2009. Prior to this, manufacturers when testing for body worn SAR used the procedures specified by the US FCC.

Some countries, such as Bolivia, Canada, South Korea and the US, have adopted slightly different localized SAR limits for the head and trunk - 1.6 W/kg (using 1gm average mass).

Some mobile phones are designed to have a small minimum separation from the body when in use, typically 15 – 25mm depending on the phone. This is to ensure the phone operates more efficiently and also meets the SAR requirements.

A mobile phone can always be used up against the head without separation. This is because the antenna in the phone is designed to be far enough away from the head to meet the SAR requirements.

Click here to view the mobile phone SAR measurements video

More information...