

Ericsson
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Why you shouldn't compare SAR values

The SAR (Specific Absorption Rate) value that is provided with new mobile phones is the highest value obtained during extensive and conservative measurements of the specific phone model. The real life SAR value in normal use will be significantly lower.

There are several reasons why the real life SAR is lower than the provided value:

1. The provided value corresponds to tests at the highest possible output power. In real life, the phone is only using the power that is needed to reach a base station.
2. The phone is further reducing the transmitted power, and thereby the SAR, when the user is listening and not talking. This is not taken into account in the test.
3. SAR varies with the different frequency channels and bands that the phone uses. The provided value corresponds to the frequency giving the maximum SAR.
4. Different ways of holding the phone give different SAR. The maximum value corresponds to a holding position giving a conservative test result.

This means that the real life SAR value is different for different users and dependent on the location of the user and on the network properties. These differences are much bigger than the small variations in maximum SAR of different phone models. Typical real life SAR values can be as low as a few percent of the provided value.

So why is SAR measured?

The manufacturer measures SAR values as a part of the product approval procedure. Mobile phones use low levels of radio waves to send and receive speech, text messages, pictures and other data. Mobile phone products are designed and tested to meet safety guidelines set by authorities in different parts of the world. The test is a standardized method to measure SAR with the purpose to verify that the radio wave exposure always is below the safety guidelines. The SAR limit is set about 50 times lower than the level above which health effects may occur. Consequently, there is no difference in safety below the SAR limit, and no reason to compare SAR values for different phone models.

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