携帯電話の比吸収率（SAR）について / Specific Absorption Rate (SAR) of Mobile Phones

1. F-03F の SAR / About SAR of F-03F

（日本語）

この機種【F-03F】の携帯電話機は、国が定めた電波の人体吸収に関する技術基準および電波防護の国際ガイドラインに適合しています。

この携帯電話機は、国が定めた電波の人体吸収に関する技術基準(※1)ならびに、これと同等な国際ガイドラインが推奨する電波防護の許容値を遵守するよう設計されています。この国際ガイドラインは世界保健機関（WHO）と協力関係にある国際非電離放射線防護委員会（ICNIRP）が定めたものであり、その許容値は使用者の年齢や健康状況に関係なく十分な安全率を含んでいます。

国の技術基準および国際ガイドラインは電波防護の許容値を人体に吸収される電波の平均エネルギー量を表す比吸収率（SAR：Specific Absorption Rate）で定めており、携帯電話機に対する SAR の許容値は 2.0W/kg です。この携帯電話機の側頭部における SAR の最大値は **0.709W/kg**(※2)、身体に装着した場合の SAR の最大値は **0.55W/kg**(※3)です。個々の製品によって SAR に多少の差異が生じることもありますが、いずれも許容値を満足しています。

携帯電話機は、携帯電話基地局との通信に必要な最低限の送信電力になるよう設計されているため、実際に通話等を行っている状態では、通常 SAR はより小さい値となります。一般的には、基地局からの距離が近いほど、携帯電話機の出力は小さくなります。

この携帯電話機は、側頭部以外の位置でも使用可能です。キャリングケース等のアクセサリをご使用するなどして、身体から 1.5 センチ以上離し、かつその間に金属(部分)が含まれないようにしてください。このことにより、本携帯電話機が国の技術基準および電波防護の国際ガイドラインに適合していることを確認しています。

世界保健機関は、『携帯電話が潜在的な健康リスクをもたらすかどうかを評価するために、これまで 20 年以上にわたって多数の研究が行われてきました。今日まで、携帯電話使用によって生じるとされる、いかなる健康影響も確立されていません。』と表明しています。
さらに詳しい情報をお知りになりたい場合には世界保健機関のホームページをご参照ください。
http://www.who.int/docstore/peh-emf/publications/facts_press/fact_japanese.htm

SAR について、さらに詳しい情報をお知りになりたい方は、下記のホームページをご参照ください。
総務省のホームページ　http://www.tele.soumu.go.jp/j/sys/ele/index.htm
一般社団法人電波産業会のホームページ　http://www.arib-emf.org/01denpa/denpa02-02.html
富士通のホームページ　http://www.fmworld.net/product/phone/sar/

※1　技術基準については、電波法関連省令（無線設備規則第 14 条の 2）で規定されています。
※2　同時に使用可能な無線機能を持つ携帯電話機本体を側頭部でご使用になる場合の SAR 測定法については、平成 27 年 7 月に、諮問第 118 号に関して情報通信審議会情報通信技術分科会より一部答申がなされており、これに基づいて評価した場合においても SAR が許容値を満足していることを確認しています。

※3　同時に使用可能な無線機能を持つ携帯電話機本体を側頭部以外でご使用になる場合の SAR 測定法については、平成 23 年 10 月に、諮問第 118 号に関して情報通信審議会情報通信技術分科会より一部答申がなされています。Xi／FOMA と同時に使用可能な無線機能を含みません。製造メーカーにて取得されたものです。

(In English)

This model [F-03F] mobile phone complies with Japanese technical regulations and international guidelines regarding exposure to radio waves.

This mobile phone was designed in observance of Japanese technical regulations regarding exposure to radio waves (*1) and limits to exposure to radio waves recommended by a set of equivalent international guidelines. This set of international guidelines was set out by the International Commission on Non-Ionizing Radiation Protection (ICNIRP), which is in collaboration with the World Health Organization (WHO), and the permissible limits include a substantial safety margin designed to assure the safety of all persons, regardless of age and health condition.

The technical regulations and international guidelines set out limits for radio waves as the Specific Absorption Rate, or SAR, which is the value of absorbed energy in any 10 grams of tissue over a 6-minute period. The SAR limit for mobile phones is 2.0 W/kg. The highest SAR value for this mobile phone when tested for use at the ear is **0.709 W/kg** (*2) and when worn on the body is **0.55 W/kg** (*3). There may be slight differences between the SAR levels for each product, but they all satisfy the limit.

The actual SAR of this mobile phone while operating can be well below that indicated above. This is due to automatic changes to the power level of the device to ensure it only uses the minimum required to reach the network. Therefore in general, the closer you are to a base station, the lower the power output of the device.

This mobile phone can be used in positions other than against your ear. Please keep the mobile phone farther than 1.5 cm away from your body by using such as a carrying case or a wearable accessory without including any metals. This mobile phone satisfies the technical regulations and international guidelines.

The World Health Organization has stated that "a large number of studies have been performed over the last two decades to assess whether mobile phones pose a potential health risk. To date, no adverse health effects have been established as being caused by mobile phone use."

Please refer to the WHO website if you would like more detailed information.
http://www.who.int/docstore/peh-emf/publications/facts_press/fact_english.htm

Please refer to the websites listed below if you would like more detailed information regarding SAR.
Ministry of Internal Affairs and Communications Website: http://www.tele.soumu.go.jp/e/sys/ele/index.htm
Association of Radio Industries and Businesses Website: http://www.arib-emf.org/01denpa/denpa02-02.html (in Japanese only)
FUJITSU LIMITED Website: http://www.fmworld.net/product/phone/sar/ (in Japanese only)

*1 Technical regulations are defined by the Ministerial Ordinance Related to Radio Law (Article 14-2 of Radio Equipment Regulations).

*2 In regards to methods of measuring SAR when using mobile phones having multiple wireless devices to be able to function simultaneously at the ear, in July of 2015, a portion of advisory 118 was reported on based upon the Information and Communications Council. SAR value when evaluated based on the report is also under the SAR limit.

*3 In regards to methods of measuring SAR when using mobile phones having multiple wireless devices to be able to function simultaneously in positions other than against the ear, in October of 2011, a portion of advisory 118 was reported on based upon the Information and Communications Council. Not including other radio systems that can be simultaneously used with Xi/FOMA. The SAR value was evaluated by the manufacturer of the mobile terminal.

2. About SAR of F-03F for FCC RF exposure requirements

FCC RF Exposure Information

This model phone meets the U.S. Government's requirements for exposure to radio waves.
This model phone contains a radio transmitter and receiver. This model phone is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy as set by the FCC of the U.S. Government. These limits are part of comprehensive guidelines and establish permitted levels of RF energy for the general population. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies.
The exposure standard for wireless mobile phones employs a unit of measurement known as the Specific Absorption Rate (SAR). The SAR limit set by the FCC is 1.6 W/kg. Tests for SAR are conducted using standard operating positions as accepted by the FCC with the phone transmitting at its highest certified power level in all tested frequency bands. Although the SAR is determined at the highest certified power level, the actual SAR level of the phone while operating can be well below the maximum value. This is because the phone is designed to operate at multiple power levels so as to use only the power required to reach the network. In general, the closer you are to a wireless base station antenna, the lower the power output level of the phone.
Before a phone model is available for sale to the public, it must be tested and certified to prove to the FCC that it does not exceed the limit established by the U.S. government-adopted requirement for safe exposure. The tests are performed on position and locations (for example, at the ear and worn on the body) as required by FCC for each model. The highest SAR value for this model phone as reported to the FCC, when tested for use at the ear, is **0.92 W/kg**, and when worn on the body, is **0.99 W/kg**. (Body-worn measurements differ among phone models, depending upon available accessories and FCC requirements).
While there may be differences between the SAR levels of various phones and at various positions, they all meet the U.S. government requirements.
The FCC has granted an Equipment Authorization for this model phone with all reported SAR levels evaluated as in compliance with the FCC RF exposure guidelines. SAR information on this model phone is on file with the FCC and can be found under the Equipment Authorization Search section at http://transition.fcc.gov/oet/ea/fccid/ (please search on FCC ID **VQK-F03F**).
For body worn operation, this phone has been tested and meets the FCC RF exposure guidelines. Please use an accessory designated for this product or an accessory which contains no metal and which positions the handset a minimum of 1.5 cm from the body.

* In the United States, the SAR limit for wireless mobile phones used by the general public is 1.6 Watts/kg (W/kg), averaged over one gram of tissue. SAR values may vary depending upon national reporting requirements and the network band.

3. About SAR of F-03F for EU RF exposure requirements

Declaration of Conformity

The product "F-03F" is declared to conform with the essential requirements of European Union Directive 1999/5/EC Radio and Telecommunications Terminal Equipment Directive 3.1(a), 3.1(b) and 3.2. The Declaration of Conformity can be found on http://www.fmworld.net/product/phone/doc/ (in Japanese only).

This mobile phone complies with the EU requirements for exposure to radio waves.
Your mobile phone is a radio transceiver, designed and manufactured not to exceed the SAR* limits** for exposure to radio-frequency (RF) energy, which SAR* value, when tested for compliance against the standard was **0.740 W/kg** for HEAD. While there may be differences between the SAR* levels of various phones and at various positions, they all meet*** the EU requirements for RF exposure.

* The exposure standard for mobile phones employs a unit of measurement known as the Specific Absorption Rate, or SAR.
** The SAR limit for mobile phones used by the public is 2.0 watts/kilogram (W/Kg) averaged over ten grams of tissue, recommended by The Council of the European Union. The limit incorporates a substantial margin of safety to give additional protection for the public and to account for any variations in measurements.
*** Tests for SAR have been conducted using standard operation positions with the phone transmitting at its highest certified power level in all tested frequency bands. Although the SAR is determined at the highest certified power level, the actual SAR level of the phone while operating can be well below the maximum value. This is because the phone is designed to operate at multiple power levels so as to use only the power required to reach the network. In general, the closer you are to a base station antenna, the lower the power output.