

ICS 17.240
CCS L 06



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 28446.1-2012

Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices -- Human models, instrumentation, and procedures -- Part 1: Procedure to determine the specific absorption rate (SAR) for hand-held devices used in
clo

手持和身体佩戴使用的无线通信设备对人体的电磁照射 人体模型、仪器和规程
第1部分：靠近耳边使用的手持式无线通信设备的SAR评估规程（频率范围300M
Hz~3GHz）

(English Translation)

Issued on: June 29, 2012

Implemented on: October 1, 2012

Issued by: Standardization Administration of China

Table of Contents

Introduction	
1 Scope	
2 Normative references	
3 Terms and definitions	
4 Symbols and abbreviations	
4.1 8 physical	
4.2 Constant	
9 4.3 Acronym	
5 Measurement System Specification	
5.1 General requirements	
5.2 Model Specifications (shell and liquid)	
5.3 SAR measurement equipment specifications	
13 5.4 Scanning System Specifications	
5.5 Equipment specifications jig	
5.6 Measurement of liquid dielectric properties	
6 SAR assessment procedures	
6.1 Preparation for measurement	
17 Measuring 6.2 to be executed	
6.3 Measurement procedure	
Post-processing of the measured data 6.4 SAR	
7 Evaluation of Uncertainty	
7.1 General considerations	
7.2 Uncertainty components distribution	
7.3 Evaluation of Uncertainty	
8 Requires measurement report	
8.1 Overview	
8.2 Measurement report content should be recorded in	
Appendix A (normative) model Specifications	
Calibration and Uncertainty Appendix B (normative) evaluation of the measuring instrument	
Processing and Evaluation of Uncertainty Appendix C (normative) after	
Annex D (normative appendix) SAR measurement system verification system	

Annex E (informative) inter-laboratory comparison

Defined in Appendix F (informative) model coordinate system and the coordinate system of the device under test

Annex G (informative) Calibration dipole

Appendix H (informative) flat model

Foreword

GB/T 28446 "hand-held and body-worn wireless communication devices use electromagnetic radiation on the human body mannequins, instruments and procedures" points into two parts.

--- Part 1. close to the hand-held wireless communication devices use at the ear of the SAR assessment procedures (frequency range 300MHz ~ 3GHz);

--- Part 2. hand-held and body-worn device in human head and evaluate SAR procedures within the body (frequency range of 300MHz ~ 6GHz).

This is Part 1 GB/T 28446 in.

Rules in this section in accordance with GB/T 1.1-2009 given draft.

This section is GB 21288-2007 standard measurement method "local mobile phone electromagnetic radiation exposure limits," the.

This section uses the translation method identical with IEC 62209-1:2005 electricity "Handheld and wireless communication devices use a body-worn on the human body Magnetic irradiation Human models, instrumentation, and procedures - Part 1. close to the hand-held wireless communication devices use at the ear of the SAR assessment procedures (frequency Frequency range 300MHz ~ 3GHz) ".

This part made the following editorial changes.

--- For ease of reading, increase the number of formulas in the text.

This part of the National human exposure related to electric, magnetic and electromagnetic field evaluation method Standardization Technical Working Group and centralized.

This section drafted by. China Institute of Metrology, Telecommunications Research Institute of the Ministry of Industry and Information Technology, Qingdao Haier Communications Limited.

1 Scope

This section GB/T 28446 provisions emission portion near the handheld wireless communication device ear of specific absorption rate when using Review Estimation

procedures. This section applies to any electromagnetic fields in the frequency range 300MHz ~ 3GHz transmitting devices, such as mobile phones, cordless Telephone.

The purpose of this section is to demonstrate how to measure the SAR value of the device under test according to the corresponding limit.

2 Normative references

The following documents for the application of this Act is essential. For dated references, only the dated edition applies to this article Member. For undated references, the latest edition (including any amendments) applies to this document.

ISO/IEC Guide.1995 Evaluation and Expression of Uncertainty in Measurement (Guidetotheexpressionofuncertaintyinmeas-urement) ISO/IEC 17025:1999 Testing and Calibration Laboratory Accreditation Standards (Generalrequirementsforthecompetenceof testingandcalibrationlaboratories)

3 Terms and Definitions

The following terms and definitions apply to this document.

Attenuation coefficient attenuationcoefficient Mathematics is used to indicate the attenuation factor affected the human head or body tissue resulting from the presence of the source and the particular point.

Time average absorbed power average (temporal) absorbedpower Time average absorbed power value according to equation (1) is given by.

$P_{avg} = \frac{1}{t_2 - t_1} \int_{t_1}^{t_2} P(t) dt$ (1) where.

P_{avg} --- average power in watts (W);

--- Initial time T_1 of electromagnetic radiation, in seconds (S);

Deadline t_2 --- electromagnetic radiation, in seconds (s);

$t_2 - t_1$ --- electromagnetic radiation time in seconds (S);

$P(t)$ --- instantly absorbed power in watts (W).

GB/T 28446.1-2012/IEC 62209-1:2005