Doc No. : LITD 09 (25164) WC
Draft IS/IEC/IEEE 63195-2: 2022
April 2024

BUREAU OF INDIAN STANDARDS

DRAFT FOR COMMENTS ONLY

मसौदा भारतीय मानक मस्तिष्क और शरीर के निकट वायरलेस उपकरणों से रेडियो फ्रीक्वेंसी क्षेत्रों के संपर्क में आने वाले मानव के शक्ति घनत्व का आकलन (फ़्रीक्वेंसी रेंज 6 गीगाहर्ट्ज़ से 300 गीगाहर्ट्ज़) भाग 2 कम्प्यूटेशनल प्रक्रिया

Draft Indian Standard

Assessment of Power Density of Human Exposure to Radio Frequency Fields from Wireless Devices in Close Proximity to the Head and Body (Frequency Range of 6 Ghz to 300 Ghz) – Part 2 Computational Procedure

ICS 17.220.20

LITD 09 Electromagnetic Compatibility Sectional Committee	**Last Date for Comments:** 05 June 2024.

NATIONAL FOREWORD
(Formal clauses will be added later)

This Draft Indian Standard (Part 2) which is identical with IEC/IEEE 63195-2:2022 Assessment of power density of human exposure to radio frequency fields from wireless devices in close proximity to the head and body (frequency range of 6 GHz to 300 GHz) - Part 2: Computational procedure' issued by the International Electrotechnical Commission (IEC) *will be* adopted by the Bureau of Indian Standards on the recommendation of the Electromagnetic Compatibility Sectional Committee (LITD 09) and approval of the Electronics and Information Technology Division Council.

The text of IEC Standard *will be* approved as suitable for publication as an Indian Standard without deviations. Certain conventions are however not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appears referring to this standard, they should be read as 'Indian Standard'.

b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards, which are to be substituted in their respective places, are listed below along with their degree of equivalence for the editions indicated. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies:

International Standards	Corresponding Indian Standards	Degree of Equivalence
IEC/IEEE 63195-1:2022 Assessment of power density of human exposure to radio frequency fields from wireless devices in close proximity to the head and body (frequency range of 6 GHz to 300 GHz) – Part 1: Measurement procedure	IS/IEC/IEEE 63195-1:2022, Assessment of power density of human exposure to radio frequency fields from wireless devices in close proximity to the head and body (frequency range of 6 GHz to 300 GHz) – Part 1: Measurement procedure (Under Development as Doc.No. LITD 09 (25163).	Identical

The technical committee has reviewed the provisions of the following International Standard referred in this adopted draft standard and has decided that it is acceptable for use in conjunction with this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies:

International Standards	*Title*
IEC/IEEE 62704-1:2017	Determining the peak spatial-average specific absorption rate (SAR) in the human body from wireless communications devices, 30 MHz to 6 GHz – Part 1: General requirements for using the finite difference time-domain (FDTD) method for SAR calculations
IEC/IEEE 62704-4:2020	Determining the peak spatial-average specific absorption rate (SAR) in the human body from wireless communications devices, 30 MHz to 6 GHz – Part 4: General requirements for using the finite element method for SAR calculations
IEEE Std 145	IEEE Standard for Definitions of Terms for Antennas

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2:2022 'Rules for rounding off numerical values *(Second Revision)*'. The number of significant places retained in the rounded off value should be same as that of the specified value in this standard.

SCOPE OF IEC/IEEE 63195-2: 2022

"This document specifies computational procedures for conservative and reproducible computations of power density (PD) incident to a human head or body due to radiofrequency (RF) electromagnetic field (EMF) transmitting devices. The computational procedures described are finite-difference time-domain (FDTD) and finite element methods (FEM), which are computational techniques that can be used to determine electromagnetic quantities by solving Maxwell's equations within a specified computational uncertainty. The procedures specified here apply to exposure evaluations for a significant majority of the population during the use of hand-held and body-worn RF transmitting devices. The methods apply to devices that can feature single or multiple transmitters or antennas, and that can be operated with their radiating part or parts at distances up to 200 mm from a human head or body.

This document can be employed to determine conformity with any applicable maximum PD requirements of different types of RF transmitting devices used in close proximity to the head and body, including those combined with other RF transmitting or non-transmitting devices or accessories (e.g. belt-clip), or embedded in garments. The overall applicable frequency range of these protocols and procedures is from 6 GHz to 300 GHz.

The RF transmitting device categories covered in this document include but are not limited to mobile telephones, radio transmitters in personal computers, desktop and laptop devices, and multi-band and multi-antenna devices.

The procedures of this document do not apply to PD evaluation of electromagnetic fields emitted or altered by devices or objects intended to be implanted in the body.

NOTE For the evaluation of the combined exposure from simultaneous transmitters operating on frequencies below 6 GHz, the relevant standards for SAR computation are IEC/IEEE 62704-1:2017 and IEC/IEEE 62704-4:2020."

Note: - The Technical content of this document has not been enclosed as these are identical with the corresponding IEC Standard. For details please refer to IEC/IEEE 63195-2:2022 or kindly contact.

Head,
Electronics & IT Department
Bureau of Indian Standards
9, B.S. Zafar Marg,
New Delhi-110002
Email: hlitd@bis.gov.in, litd9@bis.gov.in
Tele: 011-23608451