

BUREAU OF INDIAN STANDARDS

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**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
(फ्रीक्वेंसी रेंज 6 गीगाहर्ट्ज़ से 300 गीगाहर्ट्ज़) -
भाग 1 मापन 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 1 Measurement Procedure*

ICS 17.220.20

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NATIONAL FOREWORD

(Formal clauses will be added later)

This Draft Indian Standard (Part 1) which is identical with 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' 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 62209-1528:2020 Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Part 1528: Human models, instrumentation, and procedures (Frequency range of 4 MHz to 10 GHz).	IS/IEC/IEEE 62209-1528:2020 'Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-worn wireless communication devices - Human models, instrumentation and procedures (Frequency range of 4 MHz to 10 GHz) (Under Development as Doc.No. LITD 09 (24959).	Identical

IEC/IEEE	63195-2:2022	IS/IEC/IEEE	63195-2:2022	Identical
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.		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 (Under Development as Doc.No. LITD 09 (25164).		

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 63195-1: 2022

“This document specifies protocols and test procedures for repeatable and reproducible measurements of power density (PD) that provide conservative estimates of exposure incident to a human head or body due to radio-frequency (RF) electromagnetic field (EMF) transmitting communication devices, with a specified measurement uncertainty. These protocols and procedures apply for exposure evaluations of a significant majority of the population during the use of hand-held and body-worn RF transmitting communication devices. The methods apply for devices that can feature single or multiple transmitters or antennas, and can be operated with their radiating structure(s) at distances up to 200 mm from a human head or body.

The methods of this document can be used to determine conformity with applicable maximum PD requirements of different types of RF transmitting communication devices being used in close proximity to the head and body, including if 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 communication 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.

NOTE 1 System validation tests are specified in Annex B for 10 GHz, 30 GHz, 60 GHz, and 90 GHz to cover the frequency range from 6 GHz to 110 GHz. Additional validation antennas to cover the frequency range up to 300 GHz will be developed in a future revision of this document. Further discussion on rationales is given in Annex I.

NOTE 2 The protocols and test procedures in this document can be adapted to evaluate exposure also due to non-communication types of devices operating in close proximity to the head and body, but these devices are not in the scope of this document.

NOTE 3 For the assessment of the combined exposure from simultaneous transmitters operating on frequencies below 6 GHz, the relevant standards for SAR measurements are IEC/IEEE 62209-1528:2020 and IEC/IEEE 62209-3:2019.

NOTE 4 Between 6 GHz and 10 GHz, the scopes of this document and IEC/IEEE 62209 1528:2020 overlap. According to ICNIRP [2] guidelines and IEEE ICES C95.1 [3] standard, power density is the conformity metric in this frequency range. SAR can be used as conformity metric if local regulatory requirements allow it. (E.g. in case where a single transmit band includes test channels at both below and above 6 GHz).

The procedures of this document do not apply for EMF measurements of devices or objects intended to be implanted in the body.”

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 63195-1:2022 or kindly contact.

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