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STANDARDS
Australia



Technical Report

**Case studies supporting IEC 62232
— Determination of RF field strength,
power density and SAR in the vicinity of
radiocommunication base stations for the
purpose of evaluating human exposure**



SA TR IEC 62669:2020

This Australian Technical Report was prepared by TE-007, Human Exposure to Electromagnetic Fields. It was approved on behalf of the Council of Standards Australia on 26 August 2020.

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The following are represented on Committee TE-007:

- Australian Centre for Radiofrequency Bioeffects Research
- Australian Communications and Media Authority
- Australian Industry Group
- Australian Mobile Telecommunications Association
- Australian Radiation Protection and Nuclear Safety Agency
- Commercial Radio Australia
- Communications, Electrical and Plumbing Union — Electrical Trades Division
- Department of Defence (Australian Government)
- Engineers Australia
- National Measurement Institute

Additional Interests

- Telstra Corporation

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Preface

This Technical Report was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee TE-007, Human Exposure to Electromagnetic Fields.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Technical Report as an Australian Technical Report rather than an Australian/New Zealand Technical Report.

The objective of this document is to present a series of case studies in which electromagnetic (EM) fields are evaluated in accordance with AS IEC 62232:2018. The case studies presented in this document involve intentionally radiating base stations (BS). The BS transmit on one or more antennas using one or more frequencies in the range 110 MHz to 100 GHz and RF exposure assessments take into account the contribution of ambient sources at least in the 100 kHz to 300 GHz frequency range.

Each case study has been chosen to illustrate a typical BS evaluation scenario and employs the methods detailed in AS IEC 62232:2018. The case studies are provided for guidance only and are not a substitute for a thorough understanding of the requirements of AS IEC 62232:2018. Based on the lessons learned from each case study, recommendations about RF assessment topics to be considered in the next revision of AS IEC 62232 are proposed. The methodologies and approaches described in this document are useful for the assessment of early 5G products introduced for consumer trials or deployments.

This document provides background and a rationale for applying a compliance approach based on the actual maximum transmitted power or EIRP. Guidance for collecting and analysing information about the transmitted power of a base station and evaluating its actual maximum RF exposure based on modelling studies or measurement studies on operational sites (in networks, sub-networks or field trials) is also presented.

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