## Australian/New Zealand Standard<sup>™</sup>

## **Radiofrequency fields**

Part 2: Principles and methods of measurement and computation—3 kHz to 300 GHz





#### AS/NZS 2772.2:2011

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee TE-007, Human Exposure to Electromagnetic Fields. It was approved on behalf of the Council of Standards Australia on 2 May 2011 and on behalf of the Council of Standards New Zealand on 19 April 2011. This Standard was published on 23 May 2011.

The following are represented on Committee TE-007:

Australian Centre for Radiofrequency Bioeffects Research Australian Mobile Telecommunications Association Australian Radiation protection and Nuclear Safety Agency Department of Defence (Australia) **EMC** Technologies **Engineers** Australia Kordia Solutions Kordia (New Zealand) Local Government New Zealand Ministry of Economic Development (New Zealand) National Measurement Institute National Radiation Laboratory New Zealand New Zealand Institute of Occupational and Environmental Medicine Office of the Australian Safety and Compensation Council Swinburne University of Technology Telecom New Zealand **Telstra** Corporation Wireless Institute Australia

#### Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at www.saiglobal.com.au or Standards New Zealand web site at www.standards.co.nz and looking up the relevant Standard in the on-line catalogue.

For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia or Standards New Zealand at the address shown on the back cover.

This Standard was issued in draft form for comment as DR AS/NZS 2772.2.

## Australian/New Zealand Standard™

## **Radiofrequency fields**

# Part 2: Principles and methods of measurement and computation—3 kHz to 300 GHz

Originated in Australia as AS 2772.2—1988. Jointly revised and designated as AS/NZS 2772.2:2011.

COPYRIGHT

© Standards Australia Limited/Standards New Zealand

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher, unless otherwise permitted under the Copyright Act 1968 (Australia) or the Copyright Act 1994 (New Zealand).

Jointly published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001 and by Standards New Zealand, Private Bag 2439, Wellington 6140

2

#### PREFACE

This Standard was prepared by the joint Standards Australia/Standards New Zealand Committee TE-007, Human Exposure to Electromagnetic Fields, to supersede AS 2772.2—1988, *Radiofrequency radiation*, Part 2: *Principles and methods of measurement*—300 kHz to 100 GHz.

The objective of the Standard is to specify commonly accepted processes for assessing compliance with the exposure limits of RF safety standards such as ARPANSA Standard RPS3 and New Zealand Standard NZS 2772.1. It includes methodologies for reliably assessing human exposures to radiofrequency (RF) electromagnetic fields by measurement or computation, which form part of any compliance assessment.

The term 'informative' has been used in this Standard to define the application of the appendix to which it applies. An 'informative' appendix is only for information and guidance.

### CONTENTS

FOREW	ORD	5
SECTIO	N 1 SCOPE AND GENERAL	
1.1	SCOPE	6
1.2	REFERENCED DOCUMENTS	
1.3	DEFINITIONS	
1.4	ACRONYMS AND SYMBOLS	15
SECTIO	N 2 SUMMARY OF PROVISIONS	16
SECTIO	N 3 GENERAL ASSESSMENT PROCESSES	
3.1	GENERAL	
3.2	ASSESSOR COMPETENCY	
3.3	ASSESSMENT PROCESS OVERVIEW	
3.4	DEFINITION OF ASSESSMENT TASK	18
3.5	DETERMINATION OF SOURCE AND PHYSICAL ENVIRONMENT	
	CHARACTERISTICS	19
3.6	DETERMINATION OF APPLICABLE EXPOSURE LIMITS	19
3.7	PRELIMINARY ASSESSMENT	20
3.8	CHOICE OF ASSESSMENT METHOD (MEASUREMENT OR	
	COMPUTATION)	
3.9	ASSESSMENT BY MEASUREMENT	21
3.10	ASSESSMENT BY COMPUTATION	23
3.11	REPORTING OF RESULTS	24
SECTIO	N 4 POST-PROCESSING	
4.1	GENERAL	26
4.2	SPATIAL AVERAGING	
4.3	SIMULTANEOUS EXPOSURE TO MULTIPLE FREQUENCY FIELDS	
4.4	EXTRAPOLATION	
1.1		
SECTIO	N 5 CALIBRATION AND VALIDATION	
5.1	GENERAL	28
5.2	TEST INSTRUMENT CALIBRATION REQUIREMENTS	
5.3	CALIBRATION LABORATORY REQUIREMENTS	28
5.4	RECOMMENDED INTERVALS OF CALIBRATION	29
5.5	PERIODIC CHECKING OF INSTRUMENTATION	29
5.6	VALIDATION OF COMPUTATIONAL TOOLS	
5.7	CHECKING AND REVERIFICATION OF COMPUTATIONAL TOOLS	30
SECTIO	N 6 UNCERTAINTY ESTIMATION	
6.1	REQUIREMENT FOR UNCERTAINTY ANALYSIS	
6.2	REPORTING OF ASSESSMENT RESULTS AND UNCERTAINTY	
5.2	ANALYSES	31
6.3	THE ROLE OF UNCERTAINTY IN COMPLIANCE ASSESSMENTS	



This is a free preview. Purchase the entire publication at the link below:

**Product Page** 

S Looking for additional Standards? Visit Intertek Inform Infostore

> Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation