

EXPLANATORY STATEMENT

Issued by the Australian Communications and Media Authority

Radiocommunications (Electromagnetic Radiation — Human Exposure) Standard 2014

Purpose

The Australian Communications and Media Authority (the ACMA) has made the *Radiocommunications (Electromagnetic Radiation — Human Exposure) Standard 2014* (the Instrument). The Instrument replaces the *Radiocommunications (Electromagnetic Radiation — Human Exposure) Standard 2003* (the 2003 Standard) without making any significant changes to the regulatory arrangements created by the 2003 Standard.

The ACMA has made the Instrument as the 2003 Standard was due to “sunset” (i.e. be automatically repealed) on 1 October 2015, in accordance with Part 6 of the *Legislative Instruments Act 2003* (the LIA).

Legislative provisions

The ACMA made the Instrument under subsection 162(1) of the *Radiocommunications Act 1992* (the Act) which provides that the ACMA may, by written instrument, make standards for the performance of specified devices.

The Instrument is a legislative instrument for the purposes of the *Legislative Instruments Act 2003* (the LIA).

Background

The 2003 Standard, made under subsection 162(1) of the Act, was due to be automatically repealed under section 50 of the LIA on 1 October 2015.

Following review, and consultation as outlined below, the ACMA formed the view that the 2003 Standard was operating effectively and efficiently, and continued to form a necessary and useful part of the legislative framework. Accordingly, the ACMA has remade the 2003 Standard by making the Instrument without any significant changes so that its ongoing effect is preserved.

Operation

The ACMA has responsibility for the regulation of customer equipment, customer cabling and specified devices in Australia under the Act and the *Telecommunications Act 1997*. These regimes cover aspects of devices related to the radiocommunications, electromagnetic energy (EME) (also known as electromagnetic radiation (EMR)), electromagnetic compatibility (EMC) and telecommunications functions of a device.

Through the use of mandatory technical standards, the EME arrangements set out protection levels that limit the exposure to EME from radiocommunications transmitters. By imposing requirements on manufacturers and importers (suppliers) of devices that are capable of producing EME, the regulatory arrangements are intended to protect the health and safety of people who operate, work on, use, or are likely to be affected by the operation of such devices.

The Instrument specifies EME exposure limits for mobile and portable radiocommunications transmitters and the test method a supplier must follow to determine the specific absorption rate (SAR) or radiofrequency (RF) fields associated with a device. The Instrument adopts the EME exposure limits specified in the Australian Radiation Protection and Nuclear Safety

Agency (ARPANSA) *Radiation Protection Standard for Maximum Exposure Levels to Radiofrequency Fields – 3 kHz to 300 GHz* (the ARPANSA Standard).

Unlike the 2003 Standard, the Instrument also incorporates test procedures for simultaneous multi-band transmission in devices used in close proximity to the ear. This ensures the SAR measurement procedure reflects current best international practice and provides accurate information regarding exposure to EME from a mobile or wireless device under all possible transmission modes. This is the only notable change from the 2003 Standard.

Current generation mobile and wireless products (such as smart phones) have the capacity to simultaneously transmit on two or more different frequency bands (known as simultaneous multi-band transmission). There was a disparity between this technical capability of mobile and wireless technologies and the SAR test procedures set out in the 2003 Standard, as the test procedures for simultaneous multi-band transmission applied under the 2003 Standard to hand-held and body-worn devices only (excluding devices used in close proximity to the ear).

The Instrument references the following standards that provide an appropriate testing methodology for the device under test:

- > *IEC 62209-1 – 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 close proximity to the ear (frequency range of 300 MHz to 3 GHz)* (IEC 62209-1).
- > *IEC 62209-2 – Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices—Human models, instrumentation, and procedures—Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)* (IEC 62209-2).
- > *EN 62209-1 – 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 close proximity to the ear (frequency range of 300 MHz to 3 GHz)* (EN 62209-1). EN 62209-1 is a European Union harmonised standard based on IEC 62209-1.
- > *EN 62209-2 – Human exposure to radio frequency fields from handheld and body-mounted wireless communication devices — Human models, instrumentation, and procedures — Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)* (EN 62209-2). EN 62209-2 is a European Union harmonised standard based on IEC 62209-2.

IEC 62209-2 and EN 62209-2 include test procedures for simultaneous multi-band transmission. IEC 62209-1 and EN 62209-1 do not currently include these test procedures. That is, devices that are designed to be used in close proximity to the ear and that operate in multi-band transmission mode are not required to be tested in that mode, whereas body-worn devices that operate in multi-band transmission mode are required to be so tested.

IEC 62209-1 (and consequently EN 62209-1) is currently under revision and the amendments in consideration include test procedures for simultaneous multi-band transmission. The Instrument references IEC 62209-1, IEC 62209-2, EN 62209-1 and EN 62209-2, without publication dates, to ensure that any revisions to the standards are immediately reflected in the ACMA arrangements.

However, to provide certainty, as an interim measure requirements for simultaneous multi-band transmission testing of hand-held devices used in close proximity to the ear are incorporated in the Instrument.

Consultation

Subsection 163(1) of the Act requires that before the ACMA makes a standard the ACMA must, so far as is practicable, try to ensure that interested persons have had an adequate opportunity to comment on the proposed standard and that due consideration has been given to any comments made.

Subsection 17(1) of the LIA requires that, before the ACMA makes a legislative instrument, it must be satisfied that any consultation that the ACMA considers is appropriate and reasonably practicable to undertake, has been undertaken.

Between 20 March and 2 May 2014, the ACMA conducted a public consultation process and made a draft of the Instrument available on the ACMA website. A consultation paper was also published on the ACMA website explaining the sunseting process and the ACMA's preliminary view that the existing arrangements should be continued and be remade without any significant changes (except as to simultaneous multi-band transmission testing). Interested parties were notified of the release of the consultation paper and invited to comment.

The ACMA received 22 submissions in response to the consultation paper and these were considered when making the Instrument.

Regulation impact

The Office of Best Practice Regulation (OBPR) has considered the matter and formed the opinion that making the Instrument is minor or machinery in nature. Accordingly, OBPR advised that no further analysis (in the form of a Regulation Impact Statement) was required. The OBPR exemption number is 16157.

Detailed description of the Instrument

Details of the instrument are in Attachment A.

Documents Incorporated in this Instrument by Reference

The Instrument incorporates the following documents by reference, or otherwise refers to them:

- > *Radiocommunications Act 1992*
- > *Legislative Instruments Act 2003*
- > *Radiocommunications (Electromagnetic Radiation - Human Exposure) Standard 2003*
- > *the ARPANSA Standard*
- > *AS/NZS 2772.2 Radiofrequency fields Part 2: Principles and methods of measurement and computation – 3 kHz to 300 GHz*
- > *EN 62209-1*
- > *EN 62209-2*
- > *IEC 62209-1*
- > *IEC 62209-2*

Acts and legislative instruments mentioned above can be found on the Australian Government's ComLaw website (<http://www.comlaw.gov.au/>).

The ARPANSA Standard can be obtained from the Australian Radiation Protection and Nuclear Safety Agency website (<http://www.arpansa.gov.au>).

Copies of the standards mentioned above can be obtained from the SAI Global Limited website (<http://www.saiglobal.com>).

Statement of compatibility with human rights

In accordance with Part 3 of the *Human Rights (Parliamentary Scrutiny) Act 2011*, the ACMA has prepared a Statement of Compatibility with Human Rights (the Statement of Compatibility) to consider the human rights implications of the Instrument. The Statement of Compatibility prepared for the Instrument is provided in Attachment B.

Attachment A

Detailed description of the Instrument

Section 1 Name of Standard

Section 1 provides that the name of the instrument is the *Radiocommunications (Electromagnetic Radiation — Human Exposure) Standard 2014*.

Section 2 Commencement

Section 2 provides that the Instrument commences on the day after it is registered on the Federal Register of Legislative Instruments.

Section 3 Revocation

Section 3 revokes the *Radiocommunications (Electromagnetic Radiation — Human Exposure) Standard 2003* (the 2003 Standard).

Section 4 Object of the Standard

Section 4 describes the objects of the Instrument. The Instrument regulates the performance of particular radio transmitters with the purpose of protecting the health and safety of persons who may be exposed to electromagnetic radiation from transmitters.

Section 5 Definitions

Section 5 defines terms used throughout the Instrument.

The Instrument provides that where the Instrument references another document or publication such references include that document or publication as in force from time to time. This is to ensure that the Instrument does not have to be amended each time a referenced document is amended. However, this does not apply to the ARPANSA Standard. The Instrument adopts the ARPANSA Standard as in force at the date the Instrument commenced. If there are any variations to the ARPANSA Standard, the ACMA will have to amend the Instrument in order to incorporate those variations.

In addition, section 5 provides that where a term is defined in the ARPANSA Standard and also used in the Instrument but not defined by the Instrument, the definition in the ARPANSA Standard will apply.

A key new term in the Instrument is *simultaneous multi-band transmission mode* which means an operating mode allowing the device to transmit on more than one frequency band simultaneously.

Section 6 Application of Standard: general

Section 6 describes the radio transmitters to which the Instrument applies. The Instrument applies to radiocommunications transmitters consisting of mobile equipment with an integral antenna that are capable of operating in the frequency band 100 kHz to 300 GHz (inclusive); and that are not intended to be used as an Emergency Position Indicating Radio Beacon (EPIRB) or distress beacon.

Radio transmitters or weapons systems operated by the Australian Defence Force and equipment used by law enforcement agencies are excluded from the Instrument.

Section 7 Transitional arrangements for one year after commencement of the Standard

Section 7 provides that radio transmitters manufactured or imported not later than 12 months after the commencement of the Instrument are taken to comply with the Instrument if they comply with the 2003 Standard. This section also provides that radio transmitters that have been altered or modified in a material respect after its manufacture or importation, but not later than 12 months after the commencement of the Instrument, will be taken to comply with the Instrument if the device complies with the 2003 Standard.

Section 8 Performance standards

Subsection 8(1) prescribes the standard of performance for a transmitter that is an “aware user device”. An “aware user device” is one that is hand-held or body-worn, that operates on a “push-to-talk” basis and is intended for a particular use. An example of an “aware user device” is a citizens’ band radio device.

The standard for the aware user device is that the transmitter, when used in its normal position of use, must not expose the user to EME that exceeds the basic restrictions (as set out in the ARPANSA Standard) for occupational exposure limits. Such transmitters are not usually used by members of the general public but rather by persons who have been made aware of, or instructed on, the safe operation of transmitters. Emergency services personnel and amateur radio operators may be included in this group.

Subsection 8(2) prescribes the standard of performance for a transmitter that is a “non-aware user device” (that is, any device that is not an aware user device). The standard is that the transmitter, when used in its normal position of use, must not expose the user to EME that exceeds the basic restrictions (as set out in the ARPANSA Standard) for general public exposure limits. Such transmitters include mobile cellular handsets and radio-controlled toys readily available to the general public.

Subsection 8(3) prescribes that if a transmitter is capable of operating in simultaneous multi-band transmission mode, it must meet the performance standards required in section 8 while operating in that mode. Such transmitters include mobile and wireless products such as smart phones.

Section 9 Measurement methods for performance standards: aware user device or non aware user device in close proximity to the human ear

Section 9 prescribes measurement methods for determining compliance with section 8 for transmitters used near the side of the head, such as mobile telephone handsets.

Measurements must be made using the test methods identified in IEC 62209-1 or EN 62209-1. This ensures that Australia is aligned with a common international practice and provides a choice of test methodologies for suppliers to demonstrate compliance for transmitters used in close proximity to the ear.

The Instrument requires that if a device is designed or intended by the supplier to be used in close proximity to the ear; and if IEC 62209-1 or EN 62209-1 does not include a methodology for measurement in multi-band transmission mode, the device must be tested using the test methodology described in IEC 62209-2 or EN 62209-2.

Section 10 Measurement methods for performance standards: aware user device or non-aware user device 20cm or less from the human body

Section 10 prescribes measurement methods for determining compliance with section 8 for transmitters used within 20cm of the human body (not including transmitters to which section 9 applies).

Measurements must be made using the test methods identified in IEC 62209-2 or EN 62209-2.

Section 11 Assessment methods for performance standards: aware user devices and non aware user devices more than 20cm from the human body

Section 11 prescribes assessment methods for determining compliance with section 8 for transmitters used at distances greater than 20cm from the human body.

Assessments must be made using the test methods identified in AS/NZS 2772.2. AS/NZS 2772.2 prescribes the method of test for such devices and is limited to the frequency range 300 kHz to 100 GHz.

Attachment B

Statement of Compatibility with Human Rights

Prepared in accordance with Part 3 of the Human Rights (Parliamentary Scrutiny) Act 2011

Radiocommunications (Electromagnetic Radiation — Human Exposure) Standard 2014

This legislative instrument is compatible with the human rights and freedoms recognised or declared in the international instruments listed in section 3 of the *Human Rights (Parliamentary Scrutiny) Act 2011*.

Overview of the Legislative Instrument

The *Radiocommunications (Electromagnetic Radiation — Human Exposure) Standard 2014* replaces the *Radiocommunications (Electromagnetic Radiation — Human Exposure) Standard 2003* made under subsection 162(1) of the *Radiocommunications Act 1992*. It sets standards for particular radiocommunications transmitters to be met, in relation to human exposure to electromagnetic energy.

Human rights implications

The Instrument does not engage any of the applicable rights or freedoms.

Conclusion

The Instrument is compatible with human rights as it does not raise any human rights issues.

Australian Communications and Media Authority