

EXPLANATORY STATEMENT

Issued by the Australian Communications and Media Authority

Radiocommunications Advisory Guidelines (Additional Device Boundary Criteria – 1800 MHz Lower Band) 2012

Radiocommunications Act 1992

Purpose

The purpose of the *Radiocommunications Advisory Guidelines (Additional Device Boundary Criteria – 1800 MHz Lower Band) 2012* (the Advisory Guidelines) is to provide information and assist in the protection of radiocommunications receivers operated under the spectrum licences in the 1800 MHz Lower band from high sited radiocommunications transmitters operating under either a spectrum licence or an apparatus licence issued on or after 18 June 2013.

Legislative Provisions

Under section 262 of the *Radiocommunications Act 1992* (the Act), the Australian Communications and Media Authority (the ACMA) may make advisory guidelines about any aspect of radiocommunication or radio emissions.

Subsection 262(2) of the Act provides a non-exhaustive list of examples of the matters about which advisory guidelines may be made, one of which is 'interference with radiocommunications'.

The Advisory Guidelines are a legislative instrument under the *Legislative Instruments Act 2003*.

Background

The 15 year spectrum licences in the 1710-1785 MHz (1800 MHz Lower band) and 1805-1880 MHz band (1800 MHz Upper band) were issued in two tranches, the first in 1998 and the second in 2000.

A spectrum licence permits a licensee, subject to specified conditions, to operate radiocommunications devices within a particular spectrum space, defined by a frequency band and a geographic area. Interference occurring between adjacent spectrum licences consists of in-band interference across the geographic boundaries, and out-of-band interference across the frequency boundaries. Interference can also occur between spectrum licensed services and services operating under apparatus and class licensing arrangements respectively.

The Act provides a number of means by which the ACMA may manage interference resulting from operation of a radiocommunications transmitter under a spectrum licence. One of these includes the ability to make advisory guidelines under section 262 of the Act about interference.

The *Radiocommunications Advisory Guidelines (Protection of Mobile Base Receivers – 1800 MHz Lower Band) 1999* (the 1999 Guidelines) made under section 262 of the Act provide guidance to assist with the protection of radiocommunications receivers operating in the 1800 MHz Lower band (1710 -1785 MHz). Similarly, the *Radiocommunications Advisory Guidelines (Protection of Apparatus-licensed and Class-licensed Receivers – 1800 MHz Band) 1999* and the *Radiocommunications Advisory Guidelines (Managing Interference from Apparatus-licensed and Class-licensed Transmitters – 1800 MHz Band) 1999* made under section 262 of the Act deal with managing interference in other specific circumstances.

Current spectrum licences in the 1800 MHz band will expire on 17 June 2013 (for licences issued in 1998) and on 3 May 2015 (for licences issued in 2000). To prepare for the re-issue and/or re-allocation of spectrum licences in the 1800 MHz band, the ACMA conducted a review of the 1800 MHz spectrum licensing technical framework. The aim of the review was to:

- > ensure flexibility so that a range of modern technologies can be used in the band, with a particular focus on International Mobile Telecommunications (IMT) technologies;
- > provide conditions that enable continued usage of existing network technologies in the band;
- > provide interference management within the 1800 MHz band, and in adjacent bands; and
- > address deficiencies that have come to light during the current licence period.

The review recommended that the 1999 Guidelines be amended to account for the modernisation of mobile communications technologies that have occurred since the publication of 1999 Guidelines, as well as to allow for developments that may be expected to take place in the next spectrum licence period.

The Advisory Guidelines are one of a set of legal instruments being made by the ACMA to vary the spectrum licensing technical framework applicable to the 1800 MHz band according to the review recommendations. The Advisory Guidelines revoke the 1999 Guidelines and implement the review recommendations. The ACMA will also make the *Radiocommunications Advisory Guidelines (Managing Interference from Spectrum Licensed Transmitters – 1800 MHz Band) 2012*, *Radiocommunications Advisory Guidelines (Managing Interference to Spectrum Licensed Receivers – 1800 MHz Band) 2012* and the *Radiocommunications (Unacceptable Levels of Interference – 1800 MHz Band) Determination 2012*. These instruments will replace the current instruments.

Operation

The Advisory Guidelines aim to provide guidance on the management of interference to radiocommunications receivers operating under spectrum licences in the 1800 MHz Lower band from

high sited radiocommunications transmitters operating under an apparatus licence or spectrum licence also in the 1800 MHz Lower band.

The Advisory Guidelines should be used by holders of spectrum and apparatus licenses in the planning of services or the resolution of interference. The ACMA also takes the Advisory Guidelines into account when determining whether a spectrum licensee is causing interference to a licensed radiocommunications receiver that is operating in accordance with its licence conditions.

Consultation

The ACMA has consulted extensively with stakeholders about the review of the spectrum licensing technical framework for the 1800 MHz band.

In July 2011, the ACMA established an advisory body known as a Technical Liaison Group (TLG) to support the review of the technical framework in the 1800 MHz band. Incumbent and prospective licensees for the 1800 MHz band were invited to participate in the TLG process.

The TLG was tasked to consider and provide advice to the ACMA on technical aspects required for the development or review of the technical framework for the 1800 MHz band. This included consideration of:

- > the core conditions of the spectrum licence in accordance with section 66 of the Act;
- > the unacceptable levels of interference determination made under subsection 145(4) of the Act for the 1800 MHz band;
- > the radiocommunications advisory guidelines made under section 262 of the Act for the 1800 MHz band;
- > the draft spectrum licence; and
- > the minimum contiguous bandwidth for spectrum licences in the 1800 MHz band.

The ACMA developed three discussion papers which outlined the proposed approach to the spectrum licensing framework for the 1800 MHz band. These papers were provided for comment by the ACMA to TLG members and are available on the ACMA website at: <http://www.acma.gov.au>.

The ACMA took into account the views expressed by TLG members when preparing the draft Advisory Guidelines. The draft Advisory Guidelines were available for public comment from 27 June 2012 to 27 July 2012 in order to give TLG members, as well as other interested parties, a further opportunity to comment on the draft technical framework instruments before the final instruments were made by the ACMA.

There were 2 submissions received during public consultation regarding the revised technical framework. These submissions provided no comment regarding the draft Advisory Guidelines .

Regulatory Impact

Prior to releasing the draft Advisory Guidelines, the ACMA consulted with the Office of Best Practice Regulation (the OBPR) on the requirement for a Regulation Impact Statement (RIS) for this legislative instrument. The OBPR advised that the Advisory Guidelines do not warrant the preparation of a RIS because it is likely to have only minor and machinery impacts. The reference for the OBPR's assessment is ID 14048.

Documents Incorporated by Reference

The Advisory Guidelines incorporate the following documents by reference:

- > *Radiocommunications Advisory Guidelines (Managing Interference to Spectrum Licensed Receivers – 1800 MHz Band) 2012*, which is a legislative instrument made by the ACMA. Copies are available from the comlaw website at www.comlaw.gov.au.
- > International Telecommunication Union Radiocommunications Section (ITU-R) Recommendation P.526: *Propagation by diffraction* published by the ITU. ITU-R Recommendations are available from the ITU website at <http://www.itu.int>.
- > DEM-9S, which is the latest 9-second Digital Elevation Model (DEM) referenced in the Geocentric Datum of Australia 1994 (GDA94) titled "*GEODATA 9 Second Digital Elevation Model (DEM-9S) Version 3*" (Australia and New Zealand Land Information Council unique identifier ANZCW0703011541). The model contains modelled terrain height information for Australia, and is published by Geoscience Australia. Copies of the DEM-9S can be obtained from the Geoscience Australia website at www.ga.gov.au.

Detailed Description of the Instrument

Details of the instrument are set out in **Attachment A**.

Statement of compatibility with human rights

Subsection 9(1) of the *Human Rights (Parliamentary Scrutiny) Act 2011* requires the rule maker in relation to a legislative instrument to which section 42 (disallowance) of the *Legislative Instruments Act 2003* applies to cause a statement of compatibility to be prepared in respect of that legislative instrument. This statement is **Attachment B**.

ATTACHMENT A**DETAILS OF THE RADIOCOMMUNICATIONS ADVISORY GUIDELINES (ADDITIONAL DEVICE BOUNDARY CRITERIA – 1800 MHz LOWER BAND) 2012****Section 1 – Name of Advisory Guidelines**

This section provides that the name of the Advisory Guidelines is the *Radiocommunications Advisory Guidelines (Additional Device Boundary Criteria – 1800 MHz Lower Band) 2012*.

Section 2 - Commencement

This section states that the Advisory Guidelines commence on 18 June 2013.

Section 3 – Revocation

This section revokes the *Radiocommunications Advisory Guidelines (Protection of Mobile Base Receivers – 1800 MHz Lower Band) 1999*.

Section 4 – Purpose and application

This section states that the purpose of the Advisory Guidelines is to provide guidance for the protection of radiocommunications receivers operated under spectrum licences in the 1800 MHz Lower band from high sited radiocommunications transmitters operating under either a spectrum licence or an apparatus licence which is issued on or after 18 June 2013.

This section also indicates that the Advisory Guidelines should be referred to in the planning of services in the 1800 MHz band and the resolution of any interference dispute that may arise between spectrum licensees and any licensees in adjacent licence areas and bands.

Section 5 – Interpretation

This section provides definitions for the terms used in the Advisory Guidelines. The section also states that unless a contrary intention appears, terms used in the Advisory Guidelines have the same meaning as in the *Radiocommunications (Unacceptable Levels of Interference – 1800 MHz Band) Determination 2012* (section 145 Determination) or in the Act.

Part 1 Background

This Part provides some basic information about spectrum licences and the modes of interference occurring across frequency boundaries and geographical boundaries. It describes the components of the 1800 MHz technical framework that are used to manage interference, which consist of:

- core conditions applying to spectrum licences and made in accordance with section 66 of the Act;

- the applicable determination on unacceptable levels of interference made in accordance with section 145 of the Act; and
- the advisory guidelines on managing interference to and from spectrum licensed services in specific circumstances made in accordance with section 262 of the Act.

It also noted that the Advisory Guidelines have been made to assist in the management of interference to radiocommunications receivers operating in the 1800 MHz Lower band.

Part 2 – Co-existence arrangements in the 1800 MHz Lower band

This Part explains the need for additional interference management requirements in the 1800 MHz Lower band.

Frequency division duplex (FDD) arrangements have been adopted in areas of high mobile use. These areas are set out in Schedule 4 of the section 145 Determination. The core conditions as well as deployment constraints and device boundary criteria defined in the section 145 Determination were developed to manage interference for FDD operation.

In outside areas of high mobile use (in regional areas of Australia), a mix of operations is allowed. These arrangements were originally created to support the ongoing use of point-to-point links in these areas. They have been carried across into the revised technical framework for the 1800 MHz band. In order to manage in-band interference from high sited radiocommunications transmitters into adjacent area spectrum and apparatus licences, the additional device boundary criterion has been developed.

The Advisory Guidelines acknowledge that there may be some reduction in the utility of spectrum in areas where both high sited radiocommunications transmitters and radiocommunications receivers are deployed in close proximity and adjacent frequencies. Guidance on how to manage out-of-band interference in this scenario is provided in Part 4 of the Advisory Guidelines.

Part 3 – Managing interference inside areas of high mobile use

This Part explains how interference caused by high sited transmitters operating in the 1800 MHz Lower band is managed inside areas of high mobile use.

Out-of-band interference in areas of high mobile use is managed by adherence to the core conditions of the licence and deployment constraints set out in the section 145 Determination.

In-band interference from radiocommunications transmitters operated under an adjacent area spectrum or apparatus licence is managed by:

- the device boundary criteria specified in the section 145 Determination for low sited radiocommunications transmitters; and

- the additional device boundary criteria specified in Schedule 1 to the Advisory Guidelines for high sited radiocommunications transmitters.

The effect of the additional device boundary criteria is to limit how close to the geographical boundary of a licence a high sited transmitter can be deployed. This helps to control the level of emissions leaving the geographic area of a licence. Typically, a radiocommunications transmitter adhering to the additional device boundary criteria will not be able to be deployed as close to a geographical boundary as a radiocommunications transmitter adhering to the device boundary criteria defined in the section 145 Determination.

Part 4 – Managing interference outside areas of high mobile use

This Part explains how interference caused by high sited transmitters operating in the 1800 MHz Lower band is managed outside areas of high mobile use.

Radiocommunications receivers operating under a spectrum licence are afforded protection from out-of-band interference described in the *Radiocommunications Advisory Guidelines (Managing Interference to Spectrum Licensed Receivers – 1800 MHz Band) 2012*. In this case interference is managed on a first in time basis. Therefore, prior to deploying services a licensee may be required to negotiate with affected licensees or employ other techniques. This could include the use of guard bands and/or fixing additional radiofrequency filtering on equipment.

Part 5 – Application of the Additional Device Boundary Criteria

This Part explains when the additional device boundary criteria are applied for fixed transmitters operating under either a spectrum licence or apparatus licence.

For fixed transmitters operating under a spectrum licence, it is only intended that the additional device boundary criteria apply when they are high sited, operate in the 1800 MHz Lower band and are within 200 km of the geographical boundary of a licence. This implies that under the typical deployment and operation of FDD services, the additional device boundary criteria would not be applied.

For fixed transmitters operating under an apparatus licence, it is only intended that the additional device boundary criteria apply when the transmitter is high sited, operates co-channel to a spectrum licence space in the 1800 MHz Lower band and is within 200 km of a licence geographical boundary. Apparatus licences issued before 18 June 2013 will not be required to adhere to the additional device boundary criteria. Fixed transmitters operating under these licences would have undergone frequency assignment either:

- before the 1800 MHz band was re-allocated by the Minister for spectrum licensing; or
- using the *Radiocommunications Advisory Guidelines (Protection of Mobile Base Receivers – 1800 MHz Lower Band) 1999* which the Advisory Guidelines revoke.

The Part also details the instances where the licensee of a fixed transmitter will be taken to not comply with the additional device boundary criterion. These are scenarios where the licensee owns the adjacent spectrum licence area or there is written agreement from all affected licensees to exceed the additional device boundary criterion for the transmitter.

Schedule 1 – Additional device boundary criterion

This Schedule defines the additional device boundary criterion and specifies the steps to be followed in calculating it. This involves the calculation of the Horizontally Radiated Power (HRP), and the High Site-High Site Propagation Loss (Lb).

Statement of Compatibility with Human Rights

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

Radiocommunications Advisory Guidelines (Additional Device Boundary Criteria – 1800 MHz Lower Band) 2012

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

Section 262 of the *Radiocommunications Act 1992* (the Act) permits the Australian Communications and Media Authority (the ACMA) to make advisory guidelines about any aspect of radiocommunication or radio emissions.

The purpose of the *Radiocommunications Advisory Guidelines (Additional Device Boundary Criteria – 1800 MHz Lower Band) 2012* (the Advisory Guidelines) is to provide information and assist in the protection of radiocommunications receivers operated under spectrum licences in the 1800 MHz Lower band from high sited radiocommunications transmitters operating under either a spectrum licence or an apparatus licence.

Subsection 9(1) of the *Human Rights (Parliamentary Scrutiny) Act 2011* requires the rule-maker in relation to a legislative instrument to which section 42 (disallowance) of the *Legislative Instruments Act 2003* applies to cause a statement of compatibility to be prepared in respect of that legislative instrument.

The Advisory Guidelines are a legislative instrument subject to disallowance under section 42 of the *Legislative Instruments Act 2003*.

Human Rights Implications

The Advisory Guidelines do not engage any of the applicable rights or freedoms.

Conclusion

The Advisory Guidelines are compatible with human rights as they do not raise any human rights issues.