**EXPLANATORY STATEMENT**

Issued by the Australian Communications and Media Authority

*Radiocommunications Advisory Guidelines (Managing Interference from Spectrum Licensed Transmitters – 3.4 GHz Band) 2015*

*Radiocommunications Act 1992*

**Purpose**

The purpose of the *Radiocommunications Advisory Guidelines (Managing Interference from Spectrum Licensed Transmitters – 3.4 GHz Band) 2015* (**the Advisory Guidelines**) is to provide guidance to assist in the protection of radiocommunications receivers operating under apparatus or class licences from interference caused by radiocommunications transmitters operating under spectrum licences in the 3.4 GHz band in adjacent geographic areas, or adjacent frequency bands. These guidelines also provide guidance on managing interference across the geographical boundaries of spectrum licences issued in the 3.4 GHz band.

The Advisory Guidelines are designed to be used by operators of spectrum licensed services and apparatus licensed services in the planning of services or in the resolution of interference.

**Legislative Provisions**

These Advisory Guidelines have been made by the Australian Communications and Media Authority in accordance with section 262 of the *Radiocommunications Act 1992* (**the Act**) and in accordance with subsection 33(3) of the *Acts Interpretation Act 1901* (**the AI Act**).

Under section 262 of 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’.

Subsection 33(3) of the AI Act relevantly provides that where an Act confers a power to make a legislative instrument, the power shall be construed as including a power exercisable in the like manner and subject to the like conditions (if any) to repeal, rescind, revoke, amend or vary any such instrument.

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

**Background**

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 can occur between spectrum licensed services and services operating under apparatus and class licensing arrangements in adjacent areas and or frequencies.

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, including the ability to make advisory guidelines under section 262 of the Act. The *Radiocommunications Advisory Guidelines (Managing Interference to Apparatus Licensed Receivers — 3.4 GHz Band) 2000* (**the 2000 Guidelines**)made under section 262 of the Act previously provided guidance to assist with the protection of radiocommunications receivers operating under other licences from spectrum licensed radiocommunications transmitters operating in the 3.4 GHz band.

Current spectrum licences in the 3.4 GHz band will expire on 13 December 2015. To prepare for the re-issue and/or re-allocation of spectrum licences in the 3.4 GHz band, the ACMA conducted a review of the 3.4 GHz 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 3.4 GHz band, and in adjacent bands; and
* address deficiencies that have come to light during the current licence period.

The review recommended that the 2000 Guidelines be amended to account for the modernisation of mobile communications technologies that has occurred since the 2000 Guidelines were made, 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 made by the ACMA to vary the technical framework applicable to the 3.4 GHz band according to the review recommendations. The Advisory Guidelines revoke the 2000 Guidelines and implement the review recommendations. The ACMA has also made the *Radiocommunications Advisory Guidelines (Managing Interference to Spectrum Licensed Receivers - 3.4 GHz Band) 2015* and the *Radiocommunications (Unacceptable Levels of Interference – 3.4 GHz Band) Determination 2015*.

**Operation**

The Advisory Guidelines aim to manage the potential for unwanted emissions, blocking and intermodulation products caused by radiocommunications transmitters operating under a spectrum licence interfering with radiocommunications receivers in the circumstances specified in Parts 2, 3, 4, 5, 6 and 7 of the Advisory Guidelines. Further, the Advisory Guidelines provide advice regarding the management of interference across the geographical boundaries of 3.4 GHz spectrum licences (Part 8). Operators of spectrum licensed and apparatus licensed services should use the Advisory Guidelines 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 3.4 GHz band.

In July 2014, the ACMA established an advisory body known as a Technical Liaison Group (**TLG**) to support the review of the technical framework in the 3.4 GHz band. Incumbent and prospective licensees for the 3.4 GHz band were invited to participate in the TLG process. The TLG’s role was to consider and provide advice to the ACMA on technical aspects required for the development or review of the technical framework.

The ACMA developed a discussion paper which outlined the proposed approach to the spectrum licensing framework for the 3.4 GHz band. This paper was provided for comment by the ACMA to TLG members and is available on the ACMA website at [www.acma.gov.au](http://www.acma.gov.au).

The ACMA took into account the views expressed by TLG members when preparing the Advisory Guidelines. The draft Advisory Guidelines were also available for public comment from 18 December 2014 to 6 February 2015 in order to give all interested parties a further opportunity to comment on the draft instrument.

There were five submissions received during public consultation regarding the revised technical framework. As a result of the public consultation changes were made to Part 4 and Part 5 of the draft Advisory Guidelines. The changes to Part 4 where made to clarify the obligations of spectrum licensees in relation managing interference with secondary fixed satellite services. The changes to Part 5 were made to require licensees only to implement stricter out-of-band emission limits if and when required to facilitate compatibility with services operated under other licences.

**Regulatory Impact Statement**

Prior to releasing the draft Advisory Guidelines for comment, 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 the instrument is likely to have only minor and machinery impacts. The reference for the OBPR’s assessment is ID 18035.

**Documents Incorporated by Reference**

The Advisory Guidelines incorporate the following documents by reference:

* The Radio Regulations published by the International Telecommunication Union (ITU), as in force from time to time. Copies of the Radio Regulations can be obtained at [www.itu.int](http://www.itu.int).
* The *Radiocommunications Assignment and Licensing Instruction No. FX 3 - Microwave Fixed Services Frequency Coordination* (RALI FX 3) published by the ACMA, as in existence from time to time.[[1]](#footnote-1)
* The *Radiocommunications Assignment and Licensing Instruction No. FX 14, Point to Multipoint Fixed Services in Specified Parts of the 3.4 – 3.59 GHz Band* (RALI FX14)*,* published by the ACMA, as in existence from time to time.
* The *Australian Radiofrequency Spectrum Plan 2013*, made by the ACMA, as in force from time to time.
* The *Radiocommunications (Interpretation) Determination 2015*, made by the ACMA, as in force from time to time.[[2]](#footnote-2)
* The *Radiocommunications (Unacceptable Levels of Interference – 3.4 GHz Band) Determination 2015,* made by the ACMA, as in force from time to time.
* The *Radiocommunications Advisory Guidelines (Managing Interference to Spectrum Licenced Receivers – 3.4 GHz Band) 2015*, made by the ACMA, as in force from time to time.
* The *Radiocommunications Assignment and Licensing Instruction No. FX 19, Frequency Coordination and Licensing Procedures for Apparatus Licensed Broadband Wireless Access Services in the 1900-1920, 2010-2025 and the 3575-3700 MHz Bands* (RALI FX19), published by the ACMA, as in existence from time to time.
* The *Radiocommunications Assignment and Licensing Instruction No. MS 39, Frequency Coordination and Licensing Procedures for Apparatus Licensed Public Telecommunications Services in the 3400-3425 MHz & 3492.5-3542.5 MHz Bands* (RALI MS 39) published by the ACMA, as in existence from time to time.
* The following documents published by the ITU Radiocommunications Sector and available on the ITU website at [www.itu.int](http://www.itu.int):
  1. Recommendation ITU-R P.1144 *Guide to the application of the propagation methods of Radiocommunications Study Group 3*
  2. Recommendation ITU-R SF.1006 *Determination of the interference potential between earth stations of the fixed-satellite service and stations in the fixed service*
  3. Recommendation ITU-R P.452 *Prediction procedure for the evaluation of interference between stations on the surface of the Earth at frequencies above about 0.1 GHz*
  4. Recommendation ITU-R S.456 *Reference radiation pattern of earth station antennas in the fixed-satellite service for use in coordination and interference assessment in the frequency range from 2 to 31 GHz*
  5. Recommendation ITU-R P.526-13 *Propagation by diffraction*

**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 LI Act applies to cause a statement of compatibility to be prepared in respect of that legislative instrument. That statement is in Attachment A.

**Detailed Description of the Instrument**

**Part 1 - Introduction**

**Section 1.1 – Name of Advisory Guidelines**

This section provides that the name of the Advisory Guidelines is the *Radiocommunications Advisory Guidelines (Managing Interference from Spectrum Licensed Transmitters – 3.4 GHz Band) 2015*.

**Section 1.2 – Commencement**

This section provides that the Advisory Guidelines commence on 14 December 2015.

**Section 1.3 – Revocation**

This section revokes the *Radiocommunications Advisory Guidelines (Managing Interference to Apparatus Licensed Receivers — 3.4 GHz Band) 2000*.

**Section 1.4 – Purpose of these guidelines**

This section states that the purpose of the Advisory Guidelines is to manage interference to radiocommunications receivers operating under another licence that is adjacent (in frequency or area) to a 3.4 GHz band spectrum licence. The guidelines also provide guidance on managing interference across the geographical boundaries of 3.4 GHz spectrum licences. The Advisory Guidelines should be referred to in the planning of services in the 3.4 GHz band as well as in the settling of any interference dispute that may arise between spectrum licensees and any licensees in adjacent licence areas and bands.

**Section 1.5 – Interpretation**

This section defines terms used in the Advisory Guidelines. Unless the contrary appears, terms used in the Advisory Guidelines that are defined in the *Radiocommunications (Unacceptable Levels of Interference – 3.4 GHz Band) Determination 2015*, (**subsection 145(4) determination**), the *Radiocommunications (Interpretation) Determination 2015* or the Act have the same meaning as in those instruments.

**Part 2 - Background**

This Part provides background information about the 3.4 GHz spectrum licence band. A radiocommunications transmitter operating under a spectrum licence may cause interference by way of unwanted emissions and blocking. Part 2 outlines what Parts 3-8 of the Advisory Guidelines address. Part 2 also refers to ITU-R Recommendation P.1144 “*Guide to the application of the propagation methods of Radiocommunications Study Group 3*”. This recommendation provides a guide on the application of various propagation methods developed internationally by the ITU-R. It is recommended that consideration be given to this recommendation when choosing a propagation model to assess interference.

**Part 3 – Point-to-point fixed service receivers**

**Section 3.1 – Background and Section 3.2 – Protection requirements**

Section 3.1 provides background information on point-to-point fixed service receivers operating in bands adjacent to the 3.4 GHz band. A reference to RALI FX 3 is made for guidance on channel arrangements and frequency assignment criteria for point-to-point fixed services. Since RALI FX 3 is under constant review licensees are advised to consult the most current version when planning systems and managing interference.

Section 3.2 provides that point-to-point fixed services are to be provided protection on a first-in-time coordinated basis. This means fixed service receivers that are licensed in the Register of Radiocommunications Licences (the **Register**) established under section 143 of the Act, before a radiocommunications transmitters operated under a 3.4 GHz band spectrum licence, are afforded the protection specified in RALI FX3.

**Part 4 – Fixed satellite service Earth receive stations**

**Section 4.1 – Background, Section 4.2 – Protection requirements – FSS Earth receive stations operating in the 3400-3600 MHz band and Section 4.3 – Protection requirements – FSS Earth receive stations operating in the 3600-4200 MHz band**

Section 4.1 outlines the frequencies of operation and status of the Fixed satellite service (FSS) in the 3400-4200 MHz as defined in the Australian Radiofrequency Spectrum Plan prepared under subsection 30(1) of the Act.

Section 4.2 explains the protection requirements for FSS Earth receive stations operating in the 3400-3600 MHz band. It also states that, before registering devices, 3.4 GHz band spectrum licensees are required to notify the licensee of an FSS Earth receive station if coordination indicates that interference may occur. There is a note that encourages spectrum licensees to work with incumbent FSS licensees to resolve any interference issues.

Section 4.3 explains the protection requirements for FSS Earth receive stations operating in the 3600-4200 MHz band. This includes minimum levels of radiofrequency (RF) filtering at different frequency offsets that FSS Earth station receivers can be assumed to have when assessing receiver blocking. Information is also provided on the propagation model and a reference antenna radiation pattern to use in interference assessments.

**Part 5 – Broadband wireless access (BWA) service**

**Section 5.1 – Background and Section 5.2 – Protection requirements**

Section 5.1 provides information on fixed and mobile broadband wireless access services that are authorised in the 3400-3700 MHz band. The relevant Radiocommunications Assignment and Licensing Instructions that apply to these services are also referenced.

Section 5.2 explains the protection requirements for BWA services operating in the 3400-3700 MHz band. It also explains that licensees are only required to implement stricter out-of-band emission limits when it would facilitate compatibility with services operated under other licences. These stricter out-of-band emission limits are defined in Schedule 3 of the *Radiocommunications Advisory Guidelines (Managing Interference to Spectrum Licensed Receivers — 3.4 GHz Band) 2015*. There is a note that provides background for the implementation of this requirement.

**Part 6 – Radiolocation service**

**Section 6.1 – Background and Section 6.2 – Protection requirements**

Section 6.1 notes the frequencies of operation and status of Radiolocation services in the 3300-3600 MHz band as defined in the Australian Radiofrequency Spectrum Plan prepared under subsection 30(1) of the Act.

Section 6.2 provides that radiocommunications transmitters operated under a spectrum licence in the 3.4 GHz band in accordance with the conditions of the licence are not taken to cause unacceptable interference to radiolocation services operating in the 3300-3400 MHz or 3400-3600 MHz bands.

**Part 7 – Class licensed services**

**Section 7.1 – Background and Section 7.2 – Protection requirements**

Section 7.1 states that the *Radiocommunications (Overseas Amateurs Visiting Australia) Class Licence 2008* and the *Radiocommunications (Low Interference Potential Devices) Class Licence 2000* permit the operation of a number of different types of radiocommunications transmitters in the 3400-3600 MHz band. Devices operated under these class licences must not cause interference to other services and are not offered protection from other services.

Section 7.2 provides that a spectrum licensed transmitter operating in the 3.4 GHz band will not be taken to cause unacceptable interference to a device operating under the LIPD class licence if it is operated in accordance with the conditions of the spectrum licence.

**Part 8 – Adjacent area spectrum licensed receivers**

**Section 8.1 - Background and Section 8.2 – Recommended preliminary coordination procedures**

Section 8.1 provides background information on the primary mechanism for managing interference across spectrum licence geographical boundaries, which is through the subsection 145(4) determination. The unacceptable level of interference specified in that determination controls levels of emissions across a geographical boundary. Since Time Division Duplex technologies are considered the most likely to be deployed in the 3.4 GHz band, it is noted that at times it may be necessary for licensees operating radiocommunications transmitters in the 3.4 GHz band to negotiate with adjacent area spectrum licensees when deploying services in order to avoid causing harmful interference.

In order to best manage interference across geographical boundaries it is recommended that when planning services, spectrum licensees operating radiocommunications transmitters in the 3.4 GHz band should, in addition to meeting the requirements of the subsection 145(4) determination, coordinate with services that are registered in the Register and operating under spectrum licences in geographic areas adjacent to their licence area to avoid harmful interference. If this preliminary coordination indicates interference may occur, it is recommended that licensees either replan their systems or negotiate with the affected spectrum licensees to find a resolution.

**ATTACHMENT A**

**Statement of Compatibility with Human Rights**

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

***Radiocommunications Advisory Guidelines (Managing Interference from Spectrum Licensed Transmitters – 3.4 GHz Band) 2015***

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

The purpose of the *Radiocommunications Advisory Guidelines (Managing Interference from Spectrum Licensed Transmitters – 3.4 GHz Band) 2015* (the Advisory Guidelines) is to provide information and guidance to assist with the management of interference to radiocommunications receivers operating under apparatus, class and spectrum licences in or adjacent to the 3.4 GHz band caused by radiocommunications transmitters operating under spectrum licences issued for the 3.4 GHz band.

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* (the LIA) applies to cause a statement of compatibility with human rights to be prepared in respect of that legislative instrument.

The Advisory Guidelines are a legislative instrument that is subject to disallowance under section 42 of the LIA.

**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.

1. Copies of each RALI may be obtained from the ACMA’s website at [www.acma.gov.au](http://www.acma.gov.au). [↑](#footnote-ref-1)
2. All Commonwealth Acts and legislative instruments are available on the ComLaw website at [www.comlaw.gov.au](http://www.comlaw.gov.au). [↑](#footnote-ref-2)