



Radiocommunications Advisory Guidelines (Protection of Non-Spectrum-Licensed Receivers — 27 GHz Band) 2000

as amended

made under section 262 of the

Radiocommunications Act 1992

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taking into account amendments up to *Radiocommunications Advisory Guidelines
(Protection of Non-Spectrum-Licensed Receivers — 27 GHz Band) Amendment 2002
(No. 1)*

Prepared by the Office of Legislative Drafting and Publishing,
Attorney-General's Department, Canberra

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Section 1.4

Background

Interference resulting from operation of a transmitter under a spectrum licence is managed using a number of tools provided by the *Radiocommunications Act 1992*. These tools are:

- the core conditions in all spectrum licences (see section 66 of the Act), about:
 - emission limits outside the area; and
 - emission limits outside the band;
- other conditions in the spectrum licence (see section 71 of the Act);
- the determination under section 145 of the Act about what constitutes unacceptable interference;
- advisory guidelines made under section 262 of the Act, about managing interference in specific circumstances.

The following advisory guidelines under section 262 of the Act have been made for the management and settlement of interference caused by transmitters operated under a 27 GHz spectrum licence to receivers operating otherwise than under a spectrum licence.

Part 1 Introduction

1.1 Title [see Note 1]

These guidelines are the *Radiocommunications Advisory Guidelines (Protection of Non-Spectrum-Licensed Receivers — 27 GHz Band) 2000*.

1.2 Commencement

These guidelines commence on 21 September 2000.

1.3 Purpose of these guidelines

The purpose of these guidelines is to provide information on the protection requirements for receivers operated otherwise than under a spectrum licence from transmitters operating under a 27 GHz spectrum licence.

1.4 Principles of protection requirements

There is little technical information available on the protection requirements for services identified in this guideline because the services are not yet fully developed. When developed, the protection requirements are likely to relate to:

- maximum aggregate power spectral density levels;
- maximum equivalent isotropically radiated power density levels;
- protection ratios (co-channel, adjacent channel and image channel).

Section 1.5

1.5 Interpretation

- (1) In these guidelines, unless the contrary intention appears:

Act means the *Radiocommunications Act 1992*.

Spectrum Plan means the Australian Radiofrequency Spectrum Plan made on 17 December 1998, copies of which are available from the ACA.

non-spectrum-licensed, for a receiver or a service, means a receiver or service operated in spectrum space by a person:

- (a) who does not hold a spectrum licence for that space; and
- (b) who is not authorised under section 68 of the Act to operate radiocommunications in that space.

27 GHz band means the frequency band 26.5 GHz – 27.5 GHz.

- (2) A term used in these Guidelines that is defined in the Spectrum Plan has the same meaning as in the Plan.
- (3) In these guidelines, the range of numbers that identifies a frequency band includes the higher, but not the lower, number.

Note 1 A number of expressions used in these Guidelines are defined in the Act, including:

spectrum licence.

Note 2 The following expressions used in these Guidelines are defined in the *Spectrum Plan*:

Earth-exploration-satellite service	fixed service
fixed-satellite service	inter-satellite service
Mobile service	

Part 2 Non-spectrum-licensed receivers in and adjacent to the 27 GHz Band

Fixed service receivers

2.1 Background

The Spectrum Plan allocates the 25.5 GHz to 26.5 GHz band to the fixed service on a primary basis. This band is adjacent to the 27 GHz band. The ACA has not yet developed protection requirements for non-spectrum-licensed fixed services in this band. It is the ACA's practice to develop protection requirements in consultation with industry. The requirements are usually based on internationally accepted ITU Recommendations.

2.2 Protection requirements

In planning for the operation of any transmitters under a 27 GHz spectrum licence, spectrum licensees should pay regard to any protection requirements that the ACA may specify for receivers of any non-spectrum-licensed fixed services that are operating in the 25.5 to 26.5 GHz band.

Note The 27.5 to 28.35 GHz band, adjacent to the 27 GHz band, has been allocated using spectrum licensing as part of the 28–31 GHz spectrum licence allocation.

Fixed-satellite service satellite receivers

2.3 Background

The Spectrum Plan allocates the 27 GHz to 29.1 GHz band to the fixed-satellite (earth-to-space) service on a primary basis. This band overlaps the 27 GHz band. There are no known satellite receivers in the fixed-satellite (earth-to-space) services operating in this band. However, global fixed-satellite services may operate in this band in the future.

General requirements for the protection of fixed satellite services are specified in ITU Radio Regulations Chapter SVI, Article S21 *Terrestrial and Space Services sharing Frequency Bands above 1 GHz*. Additional protection requirements for satellite receivers in the fixed-satellite (earth-to-space) service are usually developed by the ITU and specified in ITU Recommendations.

2.4 Protection requirements

In planning for the operation of any transmitter under a spectrum licence, spectrum licensees should pay regard to protection requirements specified in ITU Recommendations, that have been prepared by the ITU, for satellite receivers of any fixed-satellite (earth-to-space) services that are operating in the 27 to 27.5 GHz band.

Section 2.5**Inter-satellite service satellite receivers****2.5 Background**

The Spectrum Plan allocates the 25.5 GHz to 27.5 GHz band to the inter-satellite service on a primary basis. This band overlaps the 27 GHz band. A number of space agencies are planning to operate inter-satellite services in this band in the future.

2.6 Protection requirements

In planning for the operation of transmitters under a spectrum licence, spectrum licensees should pay regard to all protection requirements specified by the ITU for satellite receivers in the Inter-satellite service. Some protection requirements are set out in the following ITU Recommendations:

- ITU-R SA.609: Protection Criteria for Telecommunication Links for Manned and Unmanned near-Earth Research Satellites.
- ITU-R SA.1155: Protection Criteria Related to the Operation of Data Relay Satellite Systems.
- ITU-R F.1249: Maximum Equivalent Isotropically Radiated Power of Transmitting Stations in the Fixed Service Operating in the Frequency Band 25.25 – 27.5 GHz Shared with the Inter-Satellite Service.
- ITU-R F.1509: Technical and operational Requirements that Facilitate Sharing Between Point to Multipoint Systems in the Fixed Service and the Inter-Satellite Service in the Band 25.25 – 27.5 GHz.

Mobile service receivers**2.7 Background**

The Spectrum Plan allocates the 25.5 GHz to 26.5 GHz band to the mobile service on a primary basis. This band is adjacent to the 27 GHz band. There are no known mobile services operating in this band in Australia. The ACA has not yet developed protection requirements. However, mobile services may operate in this band in the future. It is the ACA's practice to develop protection requirements in consultation with industry. The requirements are usually based on internationally accepted ITU Recommendations.

2.8 Protection requirements

In planning for the operation of transmitters under a spectrum licence, spectrum licensees should pay regard to the protection requirements, when specified by the ACA, for receivers of any non-spectrum-licensed mobile services that are operating in the 25.5 to 26.5 GHz band.

Section 2.10**Earth-exploration-satellite service earth station receivers****2.9 Background**

The Spectrum Plan allocates the 25.5 GHz to 27 GHz band to the earth-exploration-satellite service (space to earth) on a primary basis. This band overlaps the 27 GHz band. There are no known earth station receivers in the earth-exploration-satellite service operating in this band. However, earth-exploration-satellite services may operate in this band in the future.

Earth-exploration-satellite earth stations may be established for scientific purposes. Protection requirements for earth-exploration-satellite earth stations operating in this band have not been developed. Protection requirements for the Earth-exploration-satellite service are usually developed by the ITU and specified in ITU Recommendations.

2.10 Protection requirements

In planning for the operation of transmitters under a spectrum licence, spectrum licensees should pay regard to the protection requirements specified in ITU Recommendations, for receivers in the Earth-exploration-satellite service operating in the 25.5 to 27 GHz band.

Some background information can be found in ITU Recommendation ITU-R SA.1278 (1997) Feasibility of Sharing between the Earth-Exploration-Satellite service (space to Earth) and the Fixed, Inter-Satellite, and Mobile services in the band 25.5 – 27.0 GHz.

Table of Instruments

Notes to the *Radiocommunications Advisory Guidelines (Protection of Non-Spectrum-Licensed Receivers — 27 GHz Band) 2000*

Note 1

The *Radiocommunications Advisory Guidelines (Protection of Non-Spectrum-Licensed Receivers — 27 GHz Band) 2000* (in force under section 262 of the *Radiocommunications Act 1992*) as shown in this compilation is amended as indicated in the Tables below.

Table of Instruments

Title	Date made	Date of commencement	Application, saving or transitional provisions
<i>Radiocommunications Advisory Guidelines (Protection of Non-Spectrum-Licensed Receivers — 27 GHz Band) 2000</i>	21 Sept 2000	21 Sept 2000	
<i>Radiocommunications Advisory Guidelines (Protection of Non-Spectrum-Licensed Receivers — 27 GHz Band) Amendment 2002 (No. 1)</i>	28 Nov 2002	28 Nov 2002	—

Table of Amendments

Table of Amendments

ad. = added or inserted am. = amended rep. = repealed rs. = repealed and substituted

Provision affected	How affected
Background note.....	am. 2002 No. 1
S. 2.6.....	am. 2002 No. 1
