



Radiocommunications Advisory Guidelines (Managing Interference to Spectrum Licensed Receivers — 850/900 MHz Band) 2021

The Australian Communications and Media Authority makes the following guidelines under section 262 of the *Radiocommunications Act 1992*.

Dated: 19 August 2021

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Australian Communications and Media Authority

Part 1 Preliminary

1 Name

These are the *Radiocommunications Advisory Guidelines (Managing Interference to Spectrum Licensed Receivers – 850/900 MHz Band) 2021*.

2 Commencement

This instrument commences at the start of the day after the day it is registered on the Federal Register of Legislation.

Note: The Federal Register of Legislation may be accessed free of charge at www.legislation.gov.au.

3 Revocation

The *Radiocommunications Advisory Guidelines (Managing Interference to Spectrum Licence Receivers – 800 MHz Band) 2012* (F2012L01774) are revoked.

4 Authority

This instrument is made under section 262 of the *Radiocommunications Act 1992*.

5 Definitions

(1) In this instrument:

850 MHz band means the following frequency bands:

- (a) 814 MHz to 845 MHz;
- (b) 859 MHz to 890 MHz.

900 MHz band means the following frequency bands:

- (a) 890 MHz to 915 MHz; and
- (b) 935 MHz to 960 MHz.

Act means the *Radiocommunications Act 1992*.

adjacent channel, in relation to a particular channel, means a channel with a centre frequency offset on either side of the assigned channel frequency of the particular channel by a specific frequency relation.

adjacent channel selectivity, in relation to a radiocommunications receiver, means a measure of the receiver's ability to receive a wanted signal without exceeding a specified degradation in output quality due to the presence of an unwanted signal from an adjacent channel.

adjacent spectrum licence, in relation to a spectrum licence, means another spectrum licence that has either a common frequency boundary or a common geographic boundary adjacent to that licence.

blocking, in relation to a radiocommunications receiver operating on a particular channel, means a measure of the ability of the receiver to receive a wanted signal in the presence of a high power unwanted signal on frequencies other than those of the adjacent channels to the particular channel.

emission buffer zone, in relation to a spectrum licence, means a zone along the frequency or geographic boundary specified in a spectrum licence where emission levels

of radiocommunications transmitters are reduced to ensure that significant levels of emissions stay within the geographic area and frequencies of the licence.

in-band means, for a radiocommunications device operated under a spectrum licence or apparatus licence, frequencies within which the device is authorised to operate.

intermodulation response rejection, in relation to a radiocommunications receiver, means a measure of the ability of the receiver to receive a wanted signal in the presence of two or more unwanted signals with a specific amplitude and frequency relationship to the wanted signal.

mobile transmitter means a radiocommunications transmitter that is only designed or intended for use while in motion or during halts at unspecified points on land or sea.

out-of-band means, for a radiocommunications device operated under a spectrum licence or apparatus licence, a frequency on which the device is not authorised to operate.

RALI FX 22 means the Radiocommunications Assignment and Licensing Instruction FX 22 *Frequency assignment requirements for the fixed service in the 800 MHz band*, published by the ACMA.

Note: RALI FX 22 is available, free of charge, on the ACMA website at www.acma.gov.au.

RALI LM 8 means the Radiocommunications Assignment and Licensing Instruction LM 8 *Frequency Assignment Requirements for the Land Mobile Service*, published by the ACMA.

Note: RALI LM 8 is available, free of charge, on the ACMA website at www.acma.gov.au.

spectrum space means a three-dimensional space consisting of a frequency band and geographic area.

unwanted emissions, in relation to a spectrum licence, means any radio emission (whether an out-of-band emission or a spurious emission) outside the lower frequency limit and upper frequency limit specified in a spectrum licence.

unwanted signal means any radio emission from any radiocommunications transmitter that is not communicating with the radiocommunications receiver used for a service protected by this instrument.

wanted signal means a radio emission from a radiocommunications transmitter designed for communication between the transmitter and a radiocommunications receiver used for a service protected by this instrument.

Note: A number of other expressions used in this instrument are defined in the Act, including the following:

- (a) ACMA;
- (b) apparatus licence;
- (c) class licence;
- (d) core condition;
- (e) frequency band;
- (f) interference;
- (g) radiocommunications device;
- (h) radiocommunications receiver;
- (i) radiocommunications transmitter;
- (j) Register; and
- (k) spectrum licence.

- (2) Unless the contrary intention appears, terms used in this instrument that are defined in the *Radiocommunications (Unacceptable Levels of Interference — 850/900 MHz Band) Determination 2021* have the same meaning as in that determination.

Note: The following terms that are used in this instrument are defined in the *Radiocommunications (Unacceptable Levels of Interference — 850/900 MHz Band) Determination 2021*:

- (a) 850/900 MHz band;
- (b) centre frequency;
- (c) device boundary;
- (d) device boundary criterion;
- (e) fixed receiver; and
- (f) geographic area.

- (3) Unless the contrary intention appears, terms used in this instrument that are defined in:
- (a) the *Radiocommunications (Interpretation) Determination 2015*; or
 - (b) if another instrument replaces that determination – that other instrument;
- have the same meaning as in that determination or instrument.

Note: The following terms that are used in this instrument are defined in Schedule 1 to the *Radiocommunications (Interpretation) Determination 2015*:

- (a) land mobile service; and
- (b) spurious emission.

- (4) In this instrument, unless otherwise specified, a reference to part of the spectrum or a frequency band includes all frequencies that are greater than but not including the lower frequency, up to and including the higher frequency.

6 References to other instruments

In this instrument, unless the contrary intention appears:

- (a) a reference to any other legislative instrument is a reference to that other legislative instrument as in force from time to time; and
- (b) a reference to any other kind of instrument is a reference to that other instrument as in force or existence from time to time.

Note 1: For references to Commonwealth Acts, see section 10 of the *Acts Interpretation Act 1901*; and see also subsection 13(1) of the *Legislation Act 2003* for the application of the *Acts Interpretation Act 1901* to legislative instruments.

Note 2: All Commonwealth Acts and legislative instruments are registered on the Federal Register of Legislation.

Note 3: See section 314A of the Act.

Part 2 Overview

7 Background

- (1) A spectrum licence authorises operation of radiocommunications devices in a frequency band and in a geographic area, as specified in the relevant licence. Interference may occur between adjacent spectrum licences, and may include:
 - (a) in-band interference, across the geographic area; and
 - (b) out-of-band interference, across the frequency bands.
- (2) The interference is managed by creating emission buffer zones along the boundaries of the geographic area and frequency bands specified in the spectrum licence. This is achieved through the application of:
 - (a) core licence conditions that all spectrum licences are subject to under section 66 of the Act, including both:
 - (i) emission limits outside the geographic area;
 - (ii) emission limits outside the frequency band; and
 - (b) the *Radiocommunications (Unacceptable Levels of Interference — 850/900 MHz Band) Determination 2021* about what are unacceptable levels of interference for the registration of radiocommunications devices under a spectrum licence; and
 - (c) advisory guidelines made under section 262 of the Act, which guide decisions about managing interference in specified circumstances.

8 Purpose

- (1) The purpose of this instrument is to:
 - (a) manage in-band and out-of-band interference by providing compatibility requirements for registered fixed receivers operated under a spectrum licence issued for the 850/900 MHz band; and
 - (b) provide protection to radiocommunications receivers operated under spectrum licences issued for the 850/900 MHz band from interference caused by radiocommunications transmitters operated under an apparatus licence, class licence, or spectrum licence;
 - (c) set out minimum receiver performance requirements that the ACMA will assume are met by a radiocommunications receiver, when considering whether to provide protection to the receiver in accordance with this instrument, so that the onus of managing interference is not solely placed upon the operator of radiocommunications transmitters.
- (2) This instrument should be used by operators of spectrum licensed services, class licensed services and apparatus licensed services in the planning of services or in the resolution of interference with radiocommunications under spectrum licences in the 850/900 MHz band.
- (3) The ACMA will consider this instrument to determine whether a radiocommunications receiver operated under a spectrum licence in the 850/900 MHz band is affected by interference from a radiocommunications transmitter operated under an apparatus licence, class licence or spectrum licence, where there are no other interference protection arrangements between the relevant parties.
- (4) This instrument does not prevent a spectrum licensee negotiating other interference protection arrangements with another licensee.

Part 3 Managing interference from other services

9 In-band interference

- (1) In-band interference caused to a radiocommunications receiver operated under a spectrum licence in the 850/900 MHz band by a radiocommunications transmitter operated under an adjacent spectrum licence, is managed by:
 - (a) imposing the core conditions in section 66 of the Act on each spectrum licence; and
 - (b) the device boundary criteria and deployment constraints specified in the *Radiocommunications (Unacceptable Levels of Interference — 850/900 MHz Band) Determination 2021*.
- (2) In-band interference caused to a radiocommunications receiver operated under a spectrum licence in the 850/900 MHz band by:
 - (a) a radiocommunications transmitter operated under an apparatus licence issued on or after 18 June 2013, in the 825 MHz to 845 MHz and 870 MHz to 890 MHz frequency bands; or
 - (b) a radiocommunications transmitter operated under an apparatus licence, issued after the commencement of the *Radiocommunications Spectrum Marketing Plan (850/900 MHz Band) 2021*, in the 814 MHz to 825 MHz, 859 MHz to 915 MHz and 935 MHz to 960 MHz frequency bands;is managed as if the transmitter were operated under a spectrum licence. The device boundary criteria mentioned in paragraph 9(1)(b) are taken to be applicable to an apparatus-licensed radiocommunications transmitter mentioned in paragraph (a) or (b). Spectrum licensed receivers should be afforded the same level of in-band protection from new apparatus-licensed radiocommunications transmitters as they would be afforded from radiocommunications transmitters operated under an adjacent spectrum licence.
- (3) The device boundary criteria mentioned in paragraph 9(1)(b) incorporate emission limits that provide protection from in-band interference in the geographic area of a spectrum licence.

10 Out-of-band interference

- (1) Out-of-band interference is difficult to predict because the levels and frequencies of unwanted emissions depend on the geographic and spectral proximity of radiocommunications transmitters and radiocommunications receivers. Out-of-band interference:
 - (a) can extend for many megahertz outside the upper and lower frequency limits of a spectrum licence;
 - (b) is dependent on the performance of the radiocommunications receiver, as well as the levels of the radiocommunications transmitter emissions; and
 - (c) can be difficult to model accurately.
- (2) Emission limits are also used to manage out-of-band interference, but these do not provide protection along the frequency boundaries of a spectrum licence throughout the entire geographic area. Because of the nature of out-of-band interference, emission limits cannot be used to provide protection from out-of-band interference for devices that are located near each other.

Example: Devices that are located near each other include devices located at multi-operator sites.

- (3) Emission limits are not the sole mechanism used to manage out-of-band interference for devices in close proximity, because the interference modelling inaccuracy would require large probability margins to be added to those limits. Large probability margins would place severe constraints on the use of the spectrum because the upper and lower frequency limits of a spectrum licence extend throughout the geographic area. Emission limits to manage out-of-band interference throughout the geographic area cannot be used, because they would lead to a severe loss of utility of the spectrum on both sides of the frequency limits.
- (4) To avoid large probability margins, out-of-band interference is managed through interference management procedures based on a compatibility requirement for radiocommunications receivers. A minimum level of receiver performance is specified in Part 4 in conjunction with the compatibility requirement because the performance level of receivers:
 - (a) affects the level of interference; and
 - (b) can vary for receivers operating under spectrum licences.

Note: The minimum level of receiver performance is specified in Part 4. The compatibility requirement is set out in Part 5.

11 Recording radiocommunications receiver details in the Register

A radiocommunications receiver operated under a spectrum licence must be recorded in the Register to be afforded protection under this instrument.

12 Mobile devices

The compatibility requirement specified in Part 5 does not apply to mobile radiocommunications receivers operated under a spectrum licence in the 850/900 MHz band because the transient nature of these devices prevents the use of this requirement as an interference management procedure.

13 Apparatus licensed services near the 850 MHz band

A spectrum licensed radiocommunications base station, and mobile receivers, operated in the 850 MHz band generally use near-or-adjacent frequencies to those that may be used by apparatus licensed:

- (a) base transmitters of trunked land mobile services (*TLMS*) in the frequency range 851 MHz to 854 MHz; and
- (b) fixed service transmitters in the frequency range 845 MHz to 851 MHz.

Note 1: For TLMS mentioned in paragraph 13(a), see RALI LM 8. With respect to existing 850 MHz base station registered receivers, new assignments for TLMS transmitters should satisfy the compatibility requirement specified in this instrument.

Note 2: For fixed service transmitters mentioned in paragraph 13(b) and their coordination requirements with 850 MHz base station receivers, see RALI FX 22.

14 Spectrum licensed services near the 850 MHz band

- (1) Spectrum licensed radiocommunications mobile receivers operated in the 850 MHz band generally use near-or-adjacent frequencies to other spectrum licensed mobile transmitters operated under 900 MHz band spectrum licences.
- (2) As mentioned in section 12, the transient nature of mobile devices makes it difficult to codify practical interference mitigation measures in these guidelines, and since mobile devices are not registered they are not afforded protection from other services.

15 Apparatus licensed transmitters near the 900 MHz band

Apparatus licensed aeronautical navigation services are operated in the 960 MHz to 1215 MHz frequency range, above the 900 MHz spectrum licensed band upper boundary at 960 MHz. Immediately adjacent to or near-adjacent to the 960 MHz boundary, these services are limited to the operation of distance measuring equipment (DME) and tactical air navigation (TACAN) systems. As mobile receivers operating in the upper segment of the 900 MHz band are not registered, they are not afforded any protection from aeronautical services; however, this is not expected to cause any issues because both mobile and aeronautical services have operated on either side of the 960 MHz boundary for many years.

16 Spectrum licensed transmitters near the 900 MHz band

Background

- (1) Spectrum licensed base station radiocommunications receivers that are operated in the 900 MHz band use near-or-adjacent frequencies to base station radiocommunications transmitters operated under spectrum licences in the 850 MHz band.
- (2) Despite anything else in this section, negotiation between spectrum licensees is the preferred method to optimise spectrum utility and access either side of 890 MHz.

Coordination of 900 MHz base station receivers with 850 MHz base station transmitters

- (3) Base station radiocommunications receivers operated under a spectrum licence in the 900 MHz band (**900 MHz base station receivers**) will generally only be given protection from registered base station radiocommunications transmitters operated under a spectrum licence in the 850 MHz band (**850 MHz base station transmitters**) in the circumstances set out in either subsection (4) or subsection (5), and not in the circumstances set out in subsection (6).
- (4) A 900 MHz base station receiver will generally be given protection from an 850 MHz base station transmitter:
 - (a) where the 900 MHz base station receiver is operated above the restricted segment; and
 - (b) in relation to unwanted signal levels from the 850 MHz base station transmitter exceeding the protection criterion; and
 - (c) where the 900 MHz base station receiver satisfies the selectivity requirement.
- (5) A 900 MHz base station receiver will generally be given protection from an 850 MHz base station transmitter:
 - (a) where the 900 MHz base station receiver was registered before the 850 MHz base station transmitter; and
 - (b) either:
 - (i) the licensee of the spectrum licence that authorises operation of the 850 MHz base station transmitter has not given notice to the licensee of the spectrum licence that authorises operation of the 900 MHz base station receiver in accordance with subsection (9); or
 - (ii) otherwise – during the notification window for the receiver in relation to the transmitter.
- (6) A 900 MHz base station receiver will generally not be given protection from an 850 MHz base station transmitter:
 - (a) where the 850 MHz base station transmitter was registered before the 900 MHz base station receiver; and

- (b) either:
 - (i) the licensee of the spectrum licence that authorises operation of the 900 MHz base station receiver has not given notice to the licensee of the spectrum licence that authorises operation of the 850 MHz base station transmitter in accordance with subsection (9); or
 - (ii) otherwise – during the notification window for the transmitter in relation to the receiver.

Coordination of 900 MHz base station receivers with existing 850 MHz base station transmitters

- (7) Coordination of a new 900 MHz base station receiver with an 850 MHz base station transmitter that is already registered may occur by:
 - (a) applying the protection criterion above the restricted segment; and
 - (b) taking into account the details of the transmitter in the Register.
- (8) For the purposes of subsection (7), if information about the out-of-band emissions of the 850 MHz base station transmitter is not available, assume there is an adjacent-channel leakage ratio of at least 100 dB below the transmitter's in-channel power.

Notification of intention to register a device

- (9) A spectrum licensee (***the second licensee***) who intends to register a radiocommunications device (***the new device***) under their licensee must, before giving the ACMA details of the new device for registration on the Register, give notice of the new station to a spectrum licensee (***the first licensee***) where:
 - (a) the first licensee has already registered a radiocommunications device under a spectrum licence in the 850 MHz band or the 900 MHz band (***the existing device***); and
 - (b) either:
 - (i) the new device does not meet the protection criterion; or
 - (ii) the new device would be located within 800 metres of the first device.
- (10) If the second licensee gives notice under subsection (9) in relation to an 850 MHz base station transmitter intended to be registered, subject to any agreement between the first licensee and the second licensee to manage adjacent band interference:
 - (a) the second licensee, must ensure, by the end of the notification window, that the transmitter either:
 - (i) satisfies the protection criterion; or
 - (ii) has an adjacent-channel leakage ratio of at least 100 dB below the transmitter's in-channel power; and
 - (b) a 900 MHz band base station receiver will generally not receive protection from the registering 850 MHz transmitter unless the receiver satisfies the selectivity requirement by the end of the notification window.

Note: If paragraph 10(a) is not met, the ACMA will have regard to first-in-time status of registrations when deciding whether to enter a device on the Register, in line with its normal practice. The ACMA may also have regard to which parties have borne the costs of acting in accordance with this section when deciding on whether protection is to be afforded to a 900 MHz base station receiver.

Definitions

(11) In this section:

notification window, for a radiocommunications device in relation to a second radiocommunications device, means the three month period commencing on the day the spectrum licensee authorised to operate the device receives notification under subsection (9) about the second radiocommunications device.

protection criterion means -102dBm/(5MHz) in any 5 MHz block of the 900 MHz base station receiver's channel, other than within the restricted segment.

restricted segment means the part of the spectrum above 890 MHz and below 892.5 MHz

Note The ACMA is allocating spectrum licences in the 850/900 MHz band in a way that will allow the 850 MHz band to be downshifted by 1 MHz, making its upper boundary 889 MHz, before 17 June 2028. This is expected to partially alleviate coexistence problems between 850 MHz and 900 MHz services operating either side of 890 MHz. This instrument assumes the downshift has not occurred. More information about the ACMA's policy for the downshift can be found, free of charge, on the ACMA's website: www.acma.gov.au in the paper *The ACMA's long-term strategy for the 803-960 MHz band decision paper*.

selectivity requirement: see subsection (12).

(12) In this section, a 900 MHz base station receiver meets the **selectivity requirement** if the components of the receiver system (including the radio unit and external filters) have a combined filter response that provides at least 102 dB of attenuation for frequencies below 890 MHz.

17 Class licensed services near the 900 MHz band

The *Radiocommunications (Low Interference Potential Devices) Class Licence 2015* authorises ubiquitous, uncoordinated operation by a range of radiocommunications transmitters in the frequency range 915 MHz to 935 MHz. This class licence prescribes operating conditions, including transmission limits and references to applicable equipment standards, that enable coexistence with other services.

Part 4 Minimum level of receiver performance

18 Notional receiver performance

- (1) The level of interference caused by unwanted emissions depends on the interference susceptibility of a radiocommunications receiver and the level of the unwanted signal. Emission levels from radiocommunications transmitters should not have to be reduced below a point where the performance of the radiocommunications receiver is the main cause of the problem.
- (2) A notional receiver performance level is set out in Schedule 1 and is to be used when setting a compatibility requirement for a radiocommunications receiver. A receiver should meet the notional receiver performance level to gain protection from interference from a radiocommunications transmitter specified in this instrument.

Part 5 Compatibility requirement

19 Compatibility

If a fixed radiocommunications transmitter is operated under an apparatus licence or is registered under a spectrum licence, the licensee of that licence should ensure that the transmitter meets the compatibility requirements set out in Schedule 2, in relation to a fixed radiocommunications receiver protected by this instrument, if the receiver:

- (a) has the notional level of performance set out in Schedule 1;
- (b) is registered in the Register, before:
 - (i) if the fixed radiocommunications transmitter is operated under an apparatus licence – the date of issue of the apparatus licence the transmitter is operated under; or
 - (ii) if the fixed radiocommunications transmitter is registered in relation to a spectrum licence – the date of registration of the transmitter in relation to the spectrum licence; and
- (c) operates under a spectrum licence in the 814 MHz to 845 MHz or 890 MHz to 915 MHz frequency ranges.

Note: An example of a fixed radiocommunications transmitter operated under an apparatus licence or registered in relation to a spectrum licence is a base station transmitter in the 850 MHz band. Such a fixed transmitter may cause interference to a base station receiver in the 900 MHz band.

Schedule 1 Notional receiver performance level

(subsection 18(2) and paragraph 19(1)(a))

1 Performance parameters

- (1) The notional level of performance for a radiocommunications receiver operated under a spectrum licence in the 850/900 MHz band in relation to an unwanted signal from a radiocommunications transmitter operated under an apparatus licence, relates to:
 - (a) adjacent channel selectivity;
 - (b) receiver intermodulation response rejection; and
 - (c) receiver blocking.
- (2) This level of performance is taken to be a notional level of performance with reference to a radiocommunications receiver sensitivity level of:
 - (a) -96 dBm measured within a 5 MHz rectangular bandwidth that is within the frequency band of the spectrum licence, for a receiver with a bandwidth of less than 20 MHz; and
 - (b) -89 dBm measured within a 20 MHz rectangular bandwidth that is within the frequency band of the spectrum licence, for a receiver with a bandwidth equal to or greater than 20 MHz.
- (3) A notional radiofrequency selectivity for the radiocommunications receiver (between the antenna and the antenna connector of the equipment) may be assumed to be at least equal to:
 - (a) $2 + 60 \cdot \log_{10}[1+(2 \cdot \text{FreqOffset}/5)^{1.5}]$ dB for $\text{FreqOffset} \leq 2.5$ MHz;
 - (b) $2 + 60 \cdot \log_{10}[1+(2 \cdot \text{FreqOffset}/5)^2]$ dB for $2.5 < \text{FreqOffset} \leq 9$ MHz; and
 - (c) 70dB for $\text{FreqOffset} > 9$ MHz;where **FreqOffset** is the smallest frequency difference between either the upper or lower limits of the frequency band of the spectrum licence under which the receiver operates and any frequency outside that frequency band.
- (4) For the purposes of verifying these performance parameters of the notional radiocommunications receiver, the comparison of the sensitivity level and the unwanted signal is defined at the antenna connector port of the receiver unit. In this way, the performance of the entire receiving system, including the receiver unit and external filters, is taken into account.
- (5) All frequency offsets are specified with reference to the upper and lower limits of the frequency bands of the spectrum licence under which the receiver operates.

2 Adjacent channel selectivity

An adjacent channel selectivity of greater than or equal to the following relative figures for respective channel bandwidths is required:

Receiver Occupied Bandwidth	Frequency offsets from the upper and lower frequency limit of the spectrum licence receiver	Minimum relative adjacent channel selectivity (dB)
< 20 MHz	≤ 5 MHz	44 dB
≥ 20 MHz	≤ 20 MHz	37 dB

Source: 3GPP TS 38.104 V17.0.0 (2020-12) Tables 7.2.2-1-1, 7.4.1.2-1, 7.4.1.2-2

Note: The values in the table above are the ratio between the received unwanted signal power in the adjacent (interferer's) channel and the receiver's sensitivity level.

3 Receiver intermodulation response rejection

A receiver intermodulation response rejection greater than or equal to the following values for each out-of-band signal is required:

Receiver Occupied Bandwidth	Frequency offsets from the upper and lower frequency limit of the spectrum licence receiver	Intermodulation performance requirement (dB)
< 20 MHz	≥ 5 MHz	44 dB
≥ 20 MHz		37 dB

Source: 3GPP TS 38.104 V17.0.0 (2020-12) Tables 7.7.2-1 & 7.2.2.-2

Note: The values in the table above are the ratio between the received unwanted signal power at the defined frequency offset and the receiver's sensitivity level.

4 Receiver blocking

- (1) At frequencies in:
- (a) for radiocommunications receivers operating in 814 MHz to 845 MHz – the frequency range 794 MHz to 869 MHz;
 - (b) for radiocommunications receivers operating in 890 MHz to 915 MHz – the frequency range 860 MHz to 935 MHz;
- a receiver blocking level greater than or equal to the following figures above the sensitivity level for interfering signals in the frequency ranges set out below is required:

Receiver Occupied Bandwidth	Frequency offsets from the upper and lower frequency limit of the spectrum licence receiver	Minimum blocking requirement (dB)
< 20 MHz	> 5 MHz	53
≥ 20 MHz	> 20 MHz	46

Source: 3GPP TS 38.104 V17.0.0 (2020-12) Tables 7.4.2.2-1 & 7.2.2-2

Note: The values in the table above are the ratio between the received unwanted signal power at the defined frequency offset and the receiver's sensitivity level.

- (2) At frequencies in the frequency range 1 MHz to 12750 MHz, excluding frequencies ranges to which subclause 4(1) applies, the receiver blocking requirement is a total mean power of -15 dBm.

5 Receiver antenna and feeder losses

The antenna gain and feeder loss recorded for a radiocommunications receiver in the Register should be used for coordination. If an antenna gain or feeder loss is not available in the Register, then an antenna gain (including losses) of 13 dBi in all directions applies.

Schedule 2 Compatibility requirement

(section 19)

- (1) For the purpose of assessing compatibility with other radiocommunications services, the performance of a fixed radiocommunications receiver operated under a spectrum licence in the 850/900 MHz band is a maximum unwanted signal level of -108 dBm per 5 MHz, not exceeded for more than 5% of any 1 hour period.
- (2) Logarithmic scaling should be used to find the appropriate level in alternative bandwidths.