



Radiocommunications Licence Conditions (Fixed Licence) Determination 2015

Radiocommunications Act 1992

The AUSTRALIAN COMMUNICATIONS AND MEDIA AUTHORITY makes this Determination under paragraph 107(1)(f) of the *Radiocommunications Act 1992*.

Dated 4th September 2015

Chris Chapman
[signed]
Member

Richard Bean
[signed]
Member/~~General Manager~~

Part 1 Preliminary

1 Name of Determination

This Determination is the *Radiocommunications Licence Conditions (Fixed Licence) Determination 2015*.

1A Commencement

This Determination commences on the day after it is registered.

Note All legislative instruments and compilations are registered on the Federal Register of Legislative Instruments kept under the *Legislative Instruments Act 2003*. See <http://www.frli.gov.au>.

1B Revocation

The *Radiocommunications Licence Conditions (Fixed Licence) Determination 1997* [F2005B01176] is revoked.

2 Scope

- (1) This Determination sets out the conditions to which a fixed licence is subject in the following manner:
 - (a) every fixed licence (point to point station) is subject to the conditions in Part 2;
 - (b) every fixed licence (point to multipoint station) that is not referred to in paragraph (ba) or (bc) is subject to the conditions in Part 3;
 - (ba) every fixed licence (point to multipoint station) used in the provision of distance education services is subject to the conditions in Part 3A;

Note 1 Distance education services are also known as the *School of the Air*.

Note 2 These licences may also be subject to the conditions in Parts 3B and 3C (see section 11A).

- (bc) every fixed licence (point to multipoint station) for a station that operates in the 1 GHz to 275 GHz frequency band is subject to the conditions in Part 3E;
 - (c) every fixed licence (sound outside broadcast station) is subject to the condition in Part 4;
 - (d) every fixed licence (television outside broadcast station) is subject to the condition in Part 5;
 - (e) every fixed licence (television outside broadcast network station) is subject to the condition in Part 6;
 - (f) every fixed licence (television outside broadcast system station) is subject to the condition in Part 7.
- (2) However, if a condition in this Determination is inconsistent with a condition specified in the licence, the condition specified in the licence applies.

3 Interpretation

- (1) In this Determination:

base station means the point to multipoint station to which a licence relates that is established at a fixed location mentioned in the licence.

bit error ratio means the ratio of the number of bit errors to the total number of bits transmitted in a given time interval.

conducted spurious power means the power of conducted spurious radio frequency signals generated from components and wiring in a transmitter or receiver and conducted to the input terminals of the transmitter or receiver.

duty cycle means the ratio of the period of time a transmitter is transmitting in a given period of time to the given period of time.

fixed licence (point to multipoint station) means a fixed licence authorising the holder to operate a point to multipoint station.

fixed licence (point to point station) means a fixed licence authorising the holder to operate a point to point station.

fixed licence (sound outside broadcast station) means a fixed licence authorising the holder to operate a sound outside broadcast station.

fixed licence (television outside broadcast network station) means a fixed licence authorising the holder to operate a television outside broadcast network station.

fixed licence (television outside broadcast station) means a fixed licence authorising the holder to operate a television outside broadcast station.

fixed licence (television outside broadcast system station) means a fixed licence authorising the holder to operate a television outside broadcast system station.

licence means:

- (a) a fixed licence (point to multipoint station); or
- (b) a fixed licence (point to point station); or
- (c) a fixed licence (sound outside broadcast station); or
- (d) a fixed licence (television outside broadcast network station); or
- (e) a fixed licence (television outside broadcast station); or
- (f) a fixed licence (television outside broadcast system station).

licensee means:

- (a) the holder of a licence; or
- (b) a person authorised by the holder of a licence to operate a fixed station under the licence.

maximum beamwidth of antenna in E-plane means the angle between the half power points of an antenna measured in the plane of the electric field.

MF or HF band means the frequency bands consisting of medium frequencies and high frequencies.

mid band gain means the antenna gain in the centre of the frequency band of operation.

minimum front/back ratio means the minimum ratio of the maximum directivity of an antenna in the forward direction to its directivity in a specified backward direction.

remote control station means a fixed station established at a fixed location to achieve remote control of a base station and a supplementary base station (if any).

remote station means a fixed station that communicates with a base station or a supplementary base station (if any).

supplementary base station means a point to multipoint station used with a base station to communicate with at least 1 remote station.

VHF band means the frequency bands consisting of very high frequencies.

Note 1 In accordance with paragraph 13(1)(b) of the *Legislative Instruments Act 2003*, other expressions in this Determination have the same meaning as in the Act, including:

- ACMA
- Australia
- frequency band
- import

Note 2 In accordance with section 64 of the *Australian Communications and Media Authority Act 2005*, other expressions in this Determination have the same meaning as in the *Radiocommunications (Interpretation) Determination 2015*, including:

- Act
 - fixed station
 - harmful interference
 - high frequency or HF
 - medium frequency or MF
 - point to multipoint station
 - point to point station
 - sound outside broadcast station
 - station
 - television outside broadcast network
 - television outside broadcast network station
 - television outside broadcast station
 - television outside broadcast system station
 - very high frequency or VHF
- (2) In this Determination, unless otherwise specified, the range of numbers that identifies a frequency band includes the higher, but not the lower, number.

Part 2 Conditions for fixed licence (point to point station)

4 Conditions

For paragraph 107(1)(f) of the Act, every fixed licence (point to point station) is subject to the conditions in this Part.

5 Technical performance of antenna

- (1) If the licensee operates a point to point station to transmit on a frequency mentioned in column 2 of an item in Schedule 1, the licensee must operate the station using:
- (a) the antenna specified in the licence; or
 - (b) if no antenna is specified in the licence — an antenna that complies with the requirements mentioned in columns 3, 4 and 5 of the item.

Note The requirements in columns 3, 4 and 5 of the items in Schedule 1 are minimum requirements only. Every licensee is encouraged to use an antenna exceeding those requirements if possible.

- (2) If the licensee operates a point to point station to transmit on a frequency that is not mentioned in column 2 of an item in Schedule 1, the licensee must operate the station using:
- (a) the antenna specified in the licence; or
 - (b) if no antenna is specified in the licence — an antenna that can be used in operating the station without causing harmful interference to a service provided by another station.

Part 3 Conditions for fixed licences (point to multipoint station), except licences for stations used to provide distance education services or stations that operate in the 1 GHz to 275 GHz frequency band

6 Conditions

- (1) Subject to subsection (2), for paragraph 107(1)(f) of the Act, every fixed licence (point to multipoint station) is subject to the conditions in this Part.
- (2) Subsection (1) does not apply to a fixed licence (point to multipoint station) that authorises the operation of:
 - (a) a station used to provide distance education services; or
 - (b) a station that operates in the 1 GHz to 275 GHz frequency band.

7 Restrictions on communications

The licensee of a fixed licence (point to multipoint station) must operate a fixed station only to communicate with other stations to which the licence relates.

8 Supplementary base stations

If the licensee operates a supplementary base station, the licensee:

- (a) must not operate the station if its operation causes harmful interference to a service provided by another station; and
- (b) must operate the station to transmit only using the receive or transmit frequencies specified on the licence for the base station; and
- (c) must operate the station only to overcome deficiencies within the coverage area of the base station; and
- (d) must not operate the station to extend the coverage area of the base station.

9 Remote stations

- (1) For a remote station, the licensee:
 - (a) must not operate the station if its operation causes harmful interference to a service provided by another station; and
 - (b) must operate the station to transmit to the base station or supplementary base station (if any) using the receive or transmit frequencies specified in the licence for the base station.
- (2) The licensee must not operate a remote station for data transmission, telecommand or telemetry if:
 - (a) the duty cycle of the station is more than 1 in 30; or
 - (b) the duration of a transmission from the station is more than 2 seconds;
or

- (c) the minimum repetition interval of the station is less than 10 seconds.
- (3) If the licensee operates a remote station for data transmission, telecommand or telemetry in accordance with column 2 of an item in Schedule 2, the licensee must operate the station using the transmitter output power mentioned in column 3 of the item.
- (4) The licensee may operate a remote station for purposes other than data transmission, telecommand or telemetry if it is operated:
 - (a) using the maximum transmitter output power specified in the licence; or
 - (b) if no power is specified on the licence — using a maximum transmitter output power of 1 watt at the antenna input.
- (5) If a remote station is located in a central business district of a city or town, the licensee:
 - (a) must not locate the antenna of the station more than 30 metres above the average surrounding ground level; and
 - (b) must fit a device between the transmitter and the antenna that provides intermodulation performance equivalent to, or better than, the intermodulation performance achieved by a 20 dB in-line attenuator.

10 Remote control stations

- (1) If the licensee operates a remote control station, the licensee:
 - (a) must not operate the station if its operation causes harmful interference to a service provided by another station; and
 - (b) must operate the station to transmit to the base station or supplementary base station (if any) using the receive or transmit frequencies specified in the licence for the base station; and
 - (c) must not operate the station unless it is operated using a maximum transmitter output power not exceeding 1 watt at the antenna input.
- (2) If the licensee operates a remote control station for data transmission, telecommand or telemetry, the licensee must operate the station using a transmitter output power that does not exceed the power necessary to achieve a wanted receive signal level of 10 dB above the input signal level required to achieve a bit error ratio of 1 in 1000 at the base station.
- (3) If a remote control station is located in a central business district of a city or town, the licensee:
 - (a) must not locate the antenna of the station more than 30 metres above the average surrounding ground level; and
 - (b) must fit a device between the transmitter and the antenna that provides intermodulation performance equivalent to, or better than, the intermodulation performance achieved by a 20 dB in-line attenuator.

11 Short range communications

- (1) This section applies if a licensee of a fixed licence (point to multipoint station) operates a fixed station to communicate with another station not more than 100 metres from it.
- (2) The licensee must operate the fixed station:
 - (a) in a manner that ensures that any transmitter or receiver conducted spurious power is less than minus 45 dBm; and
 - (b) using an external antenna located not more than 10 metres above ground level; and
 - (c) in a manner that ensures that the transmitter noise power does not exceed minus 60 dBm in a 10 kHz bandwidth at an offset that is at least 300 kHz from the frequency specified on the licence.
- (3) If the licensee operates the fixed station in a temperature range of 0–40 degrees Celsius (inclusive), the licensee must operate the station using adjacent channel power not exceeding minus 30 dBm in a 10 kHz bandwidth that is centred in the upper or lower 12.5 kHz channel adjoining the bandwidth specified on the licence.

Part 3A Conditions for fixed licences (point to multipoint station) used to provide distance education services

11A Conditions

For paragraph 107(1)(f) of the Act, every fixed licence (point to multipoint station) for a station used to provide distance education services is subject to:

- (a) the conditions in this Part; and
- (b) if a condition in Part 3B or 3C is applicable to the licence – that condition.

11B Transmitter output power

The licensee of a fixed licence (point to multipoint station) must not operate a station authorised under the licence at a transmitter output power greater than the power sufficient to achieve efficient communications.

11C Restrictions on communications

The licensee of a fixed licence (point to multipoint station) must only operate a fixed station authorised under the licence:

- (a) to communicate with other stations to which the licence relates; or
- (b) if no other satisfactory means of communication is available, to transmit or receive messages in relation to distress or emergency situations.

11D Call signs

When operating a station authorised under a fixed licence (point to multipoint station), the licensee must:

- (a) use:
 - (i) the call sign allocated by the ACMA; or
 - (ii) another form of identification that clearly identifies the station; and
- (b) transmit the call sign or form of identification at the start of each transmission or series of transmissions.

Part 3B Conditions for fixed licences (point to multipoint station) MF or HF stations

11E Technical performance of base stations operating in the MF or HF bands

- (1) Subsection (2) applies to a base station authorised under a fixed licence (point to multipoint station) if the station:
 - (a) is operating in the MF or HF bands; and
 - (b) is operating single sideband suppressed carrier radiotelephony equipment.
- (2) The station must comply with the requirements of any applicable standard made under section 162 of the Act as in force at the time when:
 - (a) if the station was manufactured in Australia — the day it was manufactured;
 - (b) if the station was manufactured overseas and imported — the day it was imported;
 - (c) if the station was altered or modified in a material respect in Australia — the day it was altered or modified.

11F Technical performance of remote stations operating in the MF or HF bands

- (1) Subsection (2) applies to a remote station authorised under a fixed licence (point to multipoint station) if the station:
 - (a) is operating in the MF or HF bands; and
 - (b) is operating single sideband suppressed carrier radiotelephony equipment.
- (2) The station must comply with the requirements of any applicable standard made under section 162 of the Act as in force at the time when:
 - (a) if the station was manufactured in Australia — the day it was manufactured;
 - (b) if the station was manufactured overseas and imported — the day it was imported;

- (c) if the station was altered or modified in a material respect in Australia — the day it was altered or modified.

11G Transmitter output power for remote stations operating in the MF or HF bands

- (1) Subsection (2) applies to a remote station authorised under a fixed licence (point to multipoint station) if the station:
 - (a) is operating in the MF or HF bands; and
 - (b) is operating single sideband suppressed carrier radiotelephony equipment.
- (2) The station must not be operated using transmitter output power of more than 100 watts pX.

11H Additional conditions for remote stations operating in the MF or HF bands

- (1) Subsection (2) applies to a remote station authorised under a fixed licence (point to multipoint station) if the station:
 - (a) is operating in the MF or HF bands; and
 - (b) is operating single sideband suppressed carrier radiotelephony equipment.
- (2) The station must not be operated:
 - (a) if its operation causes harmful interference to a service provided by another station; or
 - (b) to transmit to the base station unless it uses a frequency specified in the licence for the base station.

Part 3C Conditions for fixed licences (point to multipoint station) VHF stations

11I Technical performance for base stations operating in the VHF bands

- (1) Subsection (2) applies to a base station authorised under a fixed licence (point to multipoint station) if the station:
 - (a) is operating in the VHF bands; and
 - (b) is operating VHF radiotelephony equipment.
- (2) The station must comply with the requirements of any applicable standard made under section 162 of the Act as in force at the time when:
 - (a) if the station was manufactured in Australia — the day it was manufactured;
 - (b) if the station was manufactured overseas and imported — the day it was imported;
 - (c) if the station was altered or modified in a material respect in Australia — the day it was altered or modified.

11J Supplementary base stations operating in the VHF bands

- (1) Subsection (2) applies to a supplementary base station authorised under a fixed licence (point to multipoint station) if the station:
 - (a) is operating in the VHF bands; and
 - (b) is operating VHF radiotelephony equipment.
- (2) The station must not be operated:
 - (a) if its operation causes harmful interference to a service provided by another station; and
 - (b) unless it uses a frequency specified in the licence for the base station; and
 - (c) unless it is used to overcome a deficiency within the coverage area of the base station.

11K Additional conditions for remote stations operating in the VHF bands

- (1) Subsections (2) and (3) apply to a remote station authorised under a fixed licence (point to multipoint station) if the station:
 - (a) is operating in the VHF bands; and
 - (b) is operating VHF radiotelephony equipment.
- (2) The station must not be operated if its operation causes harmful interference to a service provided by another station.
- (3) The station must not transmit to a base station or supplementary base station (if any) unless the transmission uses a frequency specified in the licence for the base station.

11L Remote control stations operating in the VHF bands

- (1) Subsections (2) and (3) apply to a remote control station authorised under a fixed licence (point to multipoint station) if the station:
 - (a) is operating in the VHF bands; and
 - (b) is operating VHF radiotelephony equipment.
- (2) The station must not be operated:
 - (a) if its operation causes harmful interference to a service provided by another station; and
 - (b) unless it uses a frequency specified in the licence for the base station; and
 - (c) if the maximum transmitter output power exceeds 1 watt at the antenna input.
- (3) If the station is located in a town:
 - (a) the antenna of the station must not be more than 30 metres above the average surrounding ground level; and

- (b) a device must be fitted between the transmitter and the antenna that provides intermodulation performance equivalent to, or better than, the intermodulation performance achieved by a 20 dB in-line attenuator.

Part 3E Conditions for fixed licences (point to multipoint station) for stations that operate in the 1 GHz to 275 GHz frequency band

11R Conditions

For paragraph 107(1)(f) of the Act, every fixed licence (point to multipoint station) for a station that operates in the 1 GHz to 275 GHz frequency band is subject to the conditions in this Part.

11S Remote stations

If the station is a remote station, the licensee:

- (a) must not operate the station if its operation causes harmful interference to a service provided by another station; and
- (b) must operate the station to transmit to the base station using the receive or transmit frequencies specified in the licence for the base station.

11T Adjacent channel interference

- (1) If the station is a base station that operates using time division duplex in either the 1900 MHz to 1920 MHz band or the 3400 MHz to 3700 MHz band, the licensee:
 - (a) must not cause harmful interference to a base station receiver operating on an adjacent channel that:
 - (i) operates using time division duplex; and
 - (ii) is operated in accordance with its licence; and
 - (b) cannot claim protection from harmful interference caused by a base station operating on an adjacent channel that:
 - (i) operates using time division duplex; and
 - (ii) is operated in accordance with its licence.
- (2) The licensee is taken to have complied with subsection (1) in relation to another licensee if the licensee:
 - (a) align transmission and reception timing as soon as practicable to avoid the interference; or
 - (b) make other arrangements that avoid the interference.
- (3) In this section:
 - adjacent channel*, in relation to a licence, means a frequency band that:
 - (a) is within the 1 GHz to 275 GHz frequency band; and
 - (b) is immediately adjacent to the frequency band to which the licence relates.

11U Transmit power control

The licensee must use transmit power control on each station that is authorised to be operated under the licence.

Part 4 Condition for fixed licence (sound outside broadcast station)

12 Condition

For paragraph 107(1)(f) of the Act, every fixed licence (sound outside broadcast station) is subject to the condition in this Part.

13 Harmful interference

The licensee must not operate a sound outside broadcast station if its operation causes harmful interference to a service provided by another station.

Note All licensees of sound outside broadcast stations operating in the same coverage area share the frequencies specified in their licence.

Part 5 Condition for fixed licence (television outside broadcast station)

14 Condition

For paragraph 107(1)(f) of the Act, every fixed licence (television outside broadcast station) is subject to the condition in this Part.

15 Harmful interference

The licensee must not operate a television outside broadcast station if its operation causes harmful interference to a service provided by another station.

Note The licensee may operate one television outside broadcast station under the licence, in the area specified in the licence.

Part 6 Condition for fixed licence (television outside broadcast network station)

16 Condition

For paragraph 107(1)(f) of the Act, every fixed licence (television outside broadcast network station) is subject to the condition in this Part.

17 Harmful interference

The licensee must not operate a television outside broadcast network station if its operation causes harmful interference to a service provided by another station.

Note The licensee may operate one or more television outside broadcast network stations under the licence.

Part 7 Condition for fixed licence (television outside broadcast system station)

21 Condition

For paragraph 107(1)(f) of the Act, every fixed licence (television outside broadcast system station) is subject to the condition in this Part.

22 Harmful interference

The licensee must not operate a television outside broadcast system station if its operation causes harmful interference to a service provided by another station.

Note The licensee may operate one or more television outside broadcast system stations under the licence, in the area specified in the licence.

Schedule 1 Requirements for the antenna of a point to point station

(section 5)

Column 1 Item no.	Column 2 Frequency of point to point station (MHz)	Column 3 Maximum beamwidth of antenna in E-plane (degrees)	Column 4 Minimum front/back ratio of antenna (dB)	Column 5 Mid band gain of antenna (dBi)	Column 6 Example of suitable antenna
1	148-174	44	20	12	6 element Yagi antenna
2	403-520	36	17	13	9 element Yagi antenna
3	820-960	30	20	16	15 element Yagi antenna

Note The maximum beamwidth of an antenna is measured between the 3 dB points.

Schedule 2 Transmitter power levels for a remote station

(subsection 9 (3))

Column 1 Item no.	Column 2 Operation of station	Column 3 Power levels
1	The station is operated to transmit on the frequency band 451.5-452.5 MHz or 853.5-854.0 MHz	Transmitter output power must not exceed 5 watts at the antenna input
3	The station is operated to transmit on any other frequency band	Transmitter output power must not exceed 1 watt at the antenna input
