



Radiocommunications Licence Conditions (Amateur 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: 29 June 2015

Richard Bean
[signed]
Member

Brendan Byrne
[signed]
~~Member~~ /General Manager

Australian Communications and Media Authority

Section 1

Part 1 Preliminary**1 Name of Determination**

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

1A Commencement

This Determination commences on the day after it is registered.

Note All legislative instruments must be registered on the Federal Register of Legislative Instruments required to be maintained under the *Legislative Instruments Act 2003*.

1B Revocation

The *Radiocommunications Licence Conditions (Amateur Licence) Determination No. 1 of 1997* [F2005B01164] is revoked.

2 Scope

- (1) This Determination sets out conditions to which an amateur licence is subject in the following manner:
 - (a) every amateur licence is subject to the conditions in Part 2;
 - (b) every amateur licence (amateur advanced station) is also subject to the conditions in section 11A, section 11B and Part 3;
 - (c) every amateur licence (amateur standard station) is also subject to the conditions in section 11A, section 11B and Part 5;
 - (d) every amateur licence (amateur foundation station) is also subject to the conditions in Part 6;
 - (e) every amateur licence (amateur beacon station) is also subject to the conditions in Part 8;
 - (f) every amateur licence (amateur repeater station) is also subject to the conditions in section 11A and Part 9.
- (2) Subject to subsection (3), if a condition in this Determination is inconsistent with a condition specified in the licence, the condition specified in the licence applies.
- (3) If a condition specified in the licence is inconsistent with subsection 8 (1A), that subsection applies.

3 Interpretation

- (1) In this Determination, unless the contrary intention appears:

amateur licence (amateur advanced station) means an amateur licence that authorises the holder to operate an amateur advanced station.

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amateur licence (amateur beacon station) means an amateur licence that authorises the holder to operate an amateur beacon station.

amateur licence (amateur foundation station) means an amateur licence that authorises the holder to operate an amateur foundation station.

amateur licence (amateur repeater station) means an amateur licence that authorises the holder to operate an amateur repeater station.

amateur licence (amateur standard station) means an amateur licence that authorises the holder to operate an amateur standard station.

ASMG means the *Australian Spectrum Map Grid 2012*, published by the ACMA and existing from time to time.

Note The ASMG can be accessed on the ACMA website: <http://www.acma.gov.au>.

ASMG block means a grouping of ASMG cells, identified by an HCIS identifier.

Note In the ASMG, these blocks are identified by the terms HCIS Levels 2, 3 and 4.

ASMG cell means a five minute of arc square cell in the ASMG, identified by an HCIS identifier.

Note In the ASMG, these cells are identified by the term HCIS Level 1.

call sign, in relation to a station, means the sequence of letters and numbers specified in the licence that authorises operation of the station as the call sign for stations authorised by the licence.

emergency services means services provided by an organisation established in a State or Territory, or by the Commonwealth, for purposes that include the provision of services during an emergency.

emission mode has the meaning given by Schedule 1.

Note Schedule 1 sets out the symbols used to describe the components of each emission mode, and is based on information in Section III of Article 2 (Designation of Emission) of the Radio Regulations.

HCIS identifier means a unique identifier used to describe a geographic area in the ASMG.

licence means:

- (a) an amateur licence (amateur advanced station); or
- (b) an amateur licence (amateur beacon station); or
- (c) an amateur licence (amateur foundation station); or
- (d) an amateur licence (amateur repeater station); or
- (e) an amateur licence (amateur standard station);

as the context requires.

licensee means:

- (a) the holder of a licence; or
- (b) a person authorised under section 114 of the Act by the holder of the licence to operate a station under the licence.

manually operated morse key means:

- (a) a straight or up-and-down morse key; or

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- (b) a manually operated mechanical automatic or semi-automatic “bug” style morse key;

but does not include a key that is part of a keyboard.

necessary bandwidth, for a class of emission that is subject to specified conditions, means the minimum frequency band required to ensure the transmission of information at the rate, and with the quality, required by those conditions.

operate has the meaning given in subsection (1A).

public telecommunications network means a telecommunications network used to supply a carriage service to the public.

Note See also subsection (1B).

pX means peak envelope power.

pY means mean power.

qualified person means a person who holds an overseas qualification equivalent to the certificate of proficiency for a qualified operator.

repeater input, in relation to an amateur repeater station, means the frequency on which the station is authorised to receive transmissions from another amateur station.

repeater link means a radiocommunication link used solely for intercommunication between two amateur repeater stations.

repeater output, in relation to an amateur repeater station, means the frequency on which the station is authorised to transmit to another amateur station.

Timor Non Directional Beacon Area means the geographic area that is within that part of the circle, specified below, that is within Australia:

the circle with a radius of 2000 kilometres whose centre is located at latitude 10° 37' 21" south, longitude 126° 2' 0" east.

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 (see section 5)
- certificate of proficiency (see section 5)
- frequency band (see section 5)
- qualified operator (see section 5)
- radiocommunication (see section 6)
- radiocommunications device (see section 7)
- radio emission (see section 8)
- spectrum plan (see section 5)
- transmitter (see section 8)

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 (see section 4)
- amateur advanced station (see Schedule 1)

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- amateur beacon station (see Schedule 1)
- amateur foundation station (see Schedule 1)
- amateur frequencies (see Schedule 1)
- amateur licence (see Schedule 1)
- amateur repeater station (see Schedule 1)
- amateur-satellite service (see Schedule 1)
- amateur service (see Schedule 1)
- amateur station (see Schedule 1)
- carriage service (see Schedule 1)
- communication (see Schedule 1)
- EIRP (see Schedule 1)
- harmful interference (see Schedule 1)
- intercommunication (see Schedule 1)
- PMTS Class B (see Schedule 1)
- Radio Regulations (see Schedule 1)
- space station (see Schedule 1)
- spurious emissions (see Schedule 1)
- telecommunications network (see Schedule 1)

(1A) In this Determination, unless the contrary intention appears, ***operate***, in relation to a station, means take an action to control the operation of the station or of a transmitter that is part of the station, other than:

- (a) in relation to an amateur standard station or an amateur advanced station — an action taken by a person who is not a qualified operator or a qualified person, that is done in the presence of and under the supervision of a qualified operator or qualified person, to activate by switch or voice a microphone connected to a transmitter, when the operation of the transmitter:
 - (i) is limited to causing the transmitter to transmit or to cease to transmit; and
 - (ii) is otherwise controlled by the qualified operator or qualified person; or
- (b) in relation to an amateur standard station or an amateur advanced station — an action taken by a person who is not a qualified operator or a qualified person, that is done in the presence of and under the supervision of a qualified operator or qualified person, to control the operation of a transmitter while being trained or examined for the purpose of becoming a qualified operator; or
- (c) in relation to an amateur standard station or an amateur advanced station — an action taken by a person who is not a qualified operator or a qualified person, to activate by switch or voice a microphone connected to a transmitter through a public telecommunications network if:
 - (i) the action is limited to causing the transmitter to transmit or to cease to transmit; and

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- (ii) the operation of the transmitter is otherwise controlled by a qualified operator or qualified person present at the transmitter; or
- (d) in relation to an amateur standard station or an amateur advanced station (*the retransmitting station*) which receives radio signals from a second amateur station and automatically retransmits those signals — an action taken by the operator of the second amateur station if that action causes the retransmitting station’s transmitter only to transmit or to cease to transmit; or
- (e) in relation to an amateur standard station or an amateur advanced station (*the retransmitting station*) which receives signals through a public telecommunications network from a second amateur station and automatically retransmits those signals — an action taken by the operator of the second amateur station if that action causes the retransmitting station’s transmitter only to transmit or to cease to transmit; or
- (f) in relation to an amateur repeater station (*the retransmitting station*):
 - (i) which receives radio signals from a second amateur station and automatically retransmits those signals; or
 - (ii) which is connected to a public telecommunications network which receives signals from a second amateur station and automatically retransmits those signals;an action taken by the operator of the second amateur station that causes the retransmitting station’s transmitter only to transmit or to cease to transmit.

Note 1 The operation of transmitters used to transmit signals to amateur stations that receive radio signals and automatically retransmit those signals remains subject to the provisions of this Determination.

Note 2 A person who takes an action to control the operation of a station, or a transmitter that is part of a station, used to transmit signals to stations mentioned in paragraphs (d), (e) and (f), operates the first transmitter.

- (1B) A public telecommunications network is taken to be used to supply a carriage service to the public if the circumstances set out in section 44 of the *Telecommunications Act 1997* apply to a network unit (within the meaning given by Part 2 of the *Telecommunications Act 1997*) in the network.

Note Section 44 of the *Telecommunications Act 1997* sets out the circumstances in which a network unit is taken to be used to supply a carriage service to the public for the purposes of section 42 of that Act.

- (2) Unless the contrary intention appears, in this Determination, a frequency band described using two frequencies starts immediately above the lower frequency and ends at the higher frequency.
- (3) In this Determination, latitude and longitude are measured with reference to the geodetic datum designated as the “Australian Geodetic Datum (AGD66)” gazetted in the *Gazette* on 6 October 1966.

Note More information on the Australian Geodetic Datum is available from the Geoscience Australia website: <http://www.ga.gov.au>.

- (4) A reference in this Determination to another instrument made under the Act is a reference to the instrument as in force or existing from time to time.

Part 2 Conditions for every amateur licence

4 Conditions

Every amateur licence is subject to the conditions in this Part relating to the operation of any amateur station under the licence by the licensee.

5 Communication by an amateur station

- (1) The licensee must not solicit a message that is to be transmitted on behalf of another person unless the message relates to a disaster.
- (2) The licensee must not transmit a message on behalf of another person:
- (a) enabling any person to obtain a financial gain or other reward, directly or indirectly; or
 - (b) relating to the commercial or financial affairs of any person.

Note Subject to subsections (1) and (2), a licensee may transmit messages on behalf of a third party to an amateur station, including an amateur station in a foreign country. The laws of that country may apply to the licensee in respect of that transmission.

- (3) The licensee must not transmit a message to an amateur station in a foreign country if the purpose of the transmission would be inconsistent with the table of frequency band allocations in the spectrum plan or a footnote to that table.

6 Use of an amateur station

The licensee must not:

- (a) use an amateur station for any purpose other than the following purposes:
- (i) self training in radiocommunications; or
 - (ii) intercommunication; or
 - (iii) technical investigations into radiocommunications; or
 - (iv) transmitting news and information services related to the operation of amateur stations, as a means of facilitating intercommunication;
- (b) use an amateur station for financial gain or for the purpose of obtaining financial gain;
- (c) transmit:
- (i) a message that is, or includes, an advertisement; or
 - (ii) any form of entertainment.

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7 Interference

The licensee must not operate an amateur station if its operation causes harmful interference to radiocommunication.

7A Spurious emission limits for an amateur station

- (1) The licensee must not operate an amateur station if the emissions of the station include spurious emissions that are not attenuated below the power of the wanted emission supplied to the antenna transmission line by:
 - (a) for frequencies less than 30 MHz — the lesser of:
 - (i) $43 + 10 \log(\text{PEP})$ dB; and
 - (ii) 50 dB; or
 - (b) for frequencies equal to or greater than 30 MHz — the lesser of:
 - (i) $43 + 10 \log(P)$ dB; and
 - (ii) 70 dB.

- (2) In subsection (1):

P means mean power in watts supplied to the antenna transmission line.

PEP means peak envelope power in watts supplied to the antenna transmission line.

8 Operation of an amateur station*Call signs*

- (1A) For the purposes of this section, the licensee of an amateur station (other than an amateur beacon station or amateur repeater station) may, on the following days, substitute the prefix letters VK in the call sign of the station with the prefix letters AX:
 - (a) 26 January;
 - (b) 25 April;
 - (c) 17 May.

Example If the call sign specified in the licensee's licence is VK1ZZZ, the licensee may use the call sign AX1ZZZ on the days mentioned in paragraphs (a) to (c) above.

Note 26 January is Australia Day, 25 April is Anzac Day and 17 May is World Telecommunication Day.

- (1) Subject to subsection (2A), if the licensee makes a single transmission from an amateur station (other than an amateur beacon station or amateur repeater station), the licensee must transmit the call sign of any station being called, or communicated with, followed by the call sign of the licensee's amateur station:
 - (a) at the beginning of the transmission;
 - (b) at the end of the transmission;
 - (c) if the transmission lasts more than 10 minutes — at least once during each period of 10 minutes, or part thereof, in the transmission;

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by voice (using the English language), by visual image or by an internationally recognised code.

- (2) Subject to subsection (2A), if the licensee makes a series of transmissions from an amateur station (other than an amateur beacon station or amateur repeater station) to a station with which communications have been established, the licensee must transmit the call sign of the station being called, or communicated with, followed by the call sign of the licensee's amateur station:
- (a) at the beginning of the series of transmissions;
 - (b) at the end of the series of transmissions;
 - (c) if the series of transmissions lasts more than 10 minutes — at least once during each period of 10 minutes, or part thereof, in the course of the series;

by voice (using the English language), by visual image or by an internationally recognised code.

(2A) If:

- (a) there are two or more qualified operators participating in emergency services operations or training exercises for emergency services; and
- (b) two or more of those qualified operators are operating stations (***the group of stations***) for the purposes of those operations or exercises;

for transmissions relating to those operations or exercises the licensee must ensure that arrangements are in place for at least one station in the group of stations to transmit the call signs of all of the stations in the group of stations:

- (c) at the beginning of a transmission, or series of transmissions;
- (d) at the end of a transmission or series of transmissions;
- (e) if a transmission or series of transmissions lasts for more than 30 minutes — at least once during each period of 30 minutes, or part thereof, of the transmission or series of transmissions;

by voice (using the English language), by visual image or by an internationally recognised code.

Other matters

- (3) Subject to subsection (3A), the licensee must not operate an amateur station unless:
- (a) the content of the signal is intelligible; or
 - (b) if the content of the signal is unintelligible – the signal is transmitted for the purposes of conducting a brief test or making an adjustment to the station.
- (3A) The licensee must not operate an amateur station to transmit signals that are encoded for the purpose of obscuring the meaning of the signals, except for:
- (a) signals exchanged between an amateur station and a space station in an amateur-satellite service for the purpose of controlling the operation of the space station; and

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- (b) signals exchanged between an amateur station and an unattended amateur station for the purpose of controlling the operation of the unattended amateur station; and
 - (c) intercommunications when participating in emergency services operations or training exercises related to emergency services.
- (4) The licensee must not operate an amateur station if its operation causes interference to radiocommunications due to transmissions that:
- (a) vary from a frequency on which the station is authorised to operate; or
 - (b) have key impact emissions as a side effect of Morse code transmission; or
 - (c) contain harmonics; or
 - (d) causes an emission outside the necessary bandwidth of the transmission.
- (5) The licensee must take measures that are reasonably practicable to erect, fix, place and use an amateur station in a way that avoids interference to the efficient and convenient working of other stations.
- (6) If the licensee proposes to use an amateur station to retransmit a transmission originating from another amateur station (*second station*), the licensee must:
- (a) obtain the consent of the licensee making the transmission from the second station to retransmit the transmission; and
 - (b) transmit the second station's call sign at the beginning and the end of each transmission; and
 - (c) indicate, as part of the transmission, that it is primarily a retransmission of a transmission of another amateur station.

8A Transmission on authorised frequency bands

- (1) The licensee must not operate an amateur station to transmit a signal to another amateur station, through an amateur repeater station, unless the licensee is authorised under the licence to transmit on the repeater output of the amateur repeater station.
- (2) The licensee must not operate an amateur station to transmit a signal to another amateur station, through two or more amateur repeater stations (*interim stations*) that are capable of transmitting to one or more of the interim stations unless the licensee is authorised under its licence to use the repeater output of each of the interim stations.
- (3) The licensee must not operate an amateur station to transmit a signal to a second amateur station through a third amateur station that is not an amateur repeater station unless the licensee is authorised under the licence to transmit on the third amateur station's transmission frequency.

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- (4) The licensee must not operate an amateur station to transmit a signal to another amateur station, through two or more other amateur stations that are not amateur repeater stations (*interim stations*), unless the licensee is authorised under its licence to transmit on the transmission frequency of each of the interim stations.

9 Control of equipment at an amateur station

- (1) The licensee must ensure that an amateur station is operated at all times by a qualified operator or qualified person in attendance at the site of the amateur station, unless the station is:
- an amateur repeater station;
 - an amateur beacon station;
 - an amateur station using automatic mode;
 - an amateur station using computer controlled mode; or
 - an amateur station at an isolated location.

Example for paragraph (c)

An amateur station using automatic mode may be using packet mode (a method of originating, storing and forwarding digital information transmitted by a radiocommunications device) or radioteletype mode (a method of originating and receiving digital information transmitted by a radiocommunications device).

Example for paragraph (d)

An amateur station using computer controlled mode may be using packet mode or radioteletype mode.

- (2) The licensee must ensure that at all times when an amateur station is operated unattended:
- a timer is fitted to the station to cause its automatic shutdown if a malfunction causes an unintended transmission of more than 10 minutes' duration; and
 - a transmission from the station can be terminated promptly if the transmission causes interference to another service.

Note For details of the classes of transmitter licences for transmitters that must be operated by qualified operators, see *Radiocommunications (Qualified Operators) Determination 2005*.

10 Portable operation of an amateur station

The licensee must not operate an amateur station at a location not mentioned in the licence for the station for a continuous period longer than:

- if the station is an amateur beacon station or an amateur repeater station —7 days; or
- in any other case —4 months.

Note If the licensee intends to operate an amateur station at a location not mentioned in the licence for a continuous period longer than the relevant period mentioned in section 10, the licensee should ask the ACMA to consider changing the location mentioned in the licence to the new location, by varying the conditions of the licence under section 111 of the Act.

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Part 2A **Conditions for amateur licence
(amateur standard station), amateur
licence (amateur advanced station)
and amateur licence (amateur repeater
station)****11** **Conditions**

- (1) Every licence for a station to which section 11A applies is subject to the additional condition in that section relating to the operation by the licensee under the licence of the station.
- (2) Every licence for a station to which section 11B applies is subject to the additional condition in that section relating to the operation by the licensee under the licence of the station.

11A **Restrictions on connection to a public telecommunications network**

- (1) This section applies to:
 - (a) an amateur licence (amateur standard station);
 - (b) an amateur licence (amateur advanced station); and
 - (c) an amateur licence (amateur repeater station).
- (2) The licensee must not, directly or indirectly, connect the station to a public telecommunications network, unless the licensee has implemented reasonable measures to ensure that only appropriately licensed persons access the station to transmit a signal to another amateur station.
- (3) In this section:

appropriately licensed person means a person holding a licence that authorises that person to operate a station using the frequency and emission mode of the station being accessed.

Note A licensee who operates a station connected to the public telecommunications network is not required to authorise other persons to operate the station for the purpose of accessing the station.

11B **Restrictions on connection from a public telecommunications network**

- (1) This subsection applies to:
 - (a) an amateur licence (amateur standard station); and
 - (b) an amateur licence (amateur advanced station).
- (2) If:
 - (a) a person is using a thing (*the item*) that is connected to a public telecommunications network; and

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- (b) the licensee connects the item to a station authorised by the licence, whether manually or automatically;

the licensee must advise the person:

- (c) that the person's communications may be overheard or received by other persons; and
- (d) to disconnect the item if the person does not wish to continue with the connection of the item to the station.

Note It is an offence, under subsection 7 (1) of the *Telecommunications (Interception and Access) Act 1979* to intercept a communication passing over a telecommunications system. Under subsection 6 (1) of that Act, interception of a communication passing over a telecommunications system consists of listening to or recording, by any means, such a communication in its passage over that telecommunications system without the knowledge of the person making the communication. Under subsection 5 (1) of that Act, a "telecommunications system" is that part of a telecommunications network that is within Australia.

Part 3 **Conditions for amateur licence (amateur advanced station)**

12 **Conditions**

Every amateur licence (amateur advanced station) is subject to the additional conditions in this Part relating to the operation by the licensee under the licence of the station.

13 **Permitted frequency bands**

The licensee must only operate an amateur advanced station on a frequency that:

- (a) is within in a frequency band mentioned in column 1 of an item in the table in Part 1 of Schedule 2;
- (b) if a transmission made using the station would occur in an area specified in column 1 of an item in the table in Part 2 of Schedule 2 – is not within the frequency range specified in column 2 of the item.

14 **Emissions from an amateur advanced station**

The licensee must not operate an amateur advanced station on a frequency in a frequency band mentioned in column 1 of an item in the table in Part 1 of Schedule 2 unless:

- (a) the station is operated using an emission mode mentioned in column 2 of the item; and
- (b) the transmission remains entirely within that frequency band.

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15 Operating an amateur advanced station in the frequency band 50 MHz to 52 MHz

- (1) This section applies to the operation of an amateur advanced station in the frequency band 50.000 MHz to 52.000 MHz (*the 50-52 MHz band*).
- (2) The licensee must not operate the station if it causes interference to the reception of the transmissions of a service that is specified to be a primary service for the 50-52 MHz band in the spectrum plan.

15AA Operating an amateur advanced station in the frequency bands 3.400 GHz to 3.425 GHz or 3.4925 GHz to 3.5425 GHz

If the licensee operates an amateur advanced station in the frequency band 3.400 GHz to 3.425 GHz, or the frequency band 3.4925 GHz to 3.5425 GHz, the licensee must not operate the station in an ASMG block specified in Schedule 4A if a PMTS Class B licence authorises the use of a transmitter in that block.

Note The Register of Radiocommunications Licences established under section 143 of the Act includes details of all apparatus licences issued, including PMTS Class B licences. The ACMA may also publish information about PMTS Class B licences operated in these bands on the amateur licence pages of its website: <http://www.acma.gov.au>.

15A Operating an amateur advanced station in the frequency bands 3.425 GHz to 3.4425 GHz or 3.475 GHz to 3.4925 GHz

If the licensee operates an amateur advanced station in the frequency band 3.425 GHz to 3.4425 GHz, or the frequency band 3.475 GHz to 3.4925 GHz, the licensee must not operate the station in a designated area described in Schedule 5.

15B Operating an amateur advanced station in the frequency bands 3.4425 GHz to 3.475 GHz or 3.5425 GHz to 3.575 GHz

If the licensee operates an amateur advanced station in the frequency band 3.4425 GHz to 3.475 GHz, or the frequency band 3.5425 GHz to 3.575 GHz, the licensee must not operate the station in a designated area described in Schedule 6.

15C Operating an amateur advanced station in the frequency band 135.7 kHz to 137.8 kHz

If a licensee operates an amateur advanced station in the frequency band 135.7 kHz to 137.8 kHz, an antenna used with, or as a part of, the station must not have a radiated power of more than 1 watt pX EIRP.

Section 25**15D Operating an amateur advanced station in the frequency band 472 kHz to 479 kHz**

If a licensee operates an amateur advanced station in the frequency band 472 kHz to 479 kHz, an antenna used with, or as a part of, the station must not have a radiated power of more than 5 watts pX EIRP.

16 Transmitter output power

- (1) Without limitation to sections 15 and 15C, the licensee must not operate an amateur advanced station, using a transmitter output power of more than 400 watts pX, if the emission mode of the station includes:
 - (a) C3F; or
 - (b) J3E; or
 - (c) R3E.
- (2) Without limitation to sections 15 and 15C, the licensee must not operate an amateur advanced station, with an emission mode not mentioned in subsection (1), using a transmitter output power of more than 120 watts pY.

Part 5 Conditions for amateur licence (amateur standard station)**22 Conditions**

Every amateur licence (amateur standard station) is subject to the additional conditions in this Part relating to the operation by the licensee under the licence of the station.

23 Permitted frequency bands

The licensee must operate an amateur standard station to transmit only on a frequency in a frequency band mentioned in an item in Schedule 3.

24 Emissions from an amateur standard station

The licensee must not operate an amateur standard station in a frequency band mentioned in column 1 of an item in Schedule 3 unless:

- (a) the station is operated using an emission mode mentioned in column 2 of the item; and
- (b) the transmission remains entirely within that frequency band mentioned in the item.

25 Transmitter output power

- (1) The licensee must not operate an amateur standard station, using a transmitter output power of more than 100 watts pX, if the emission mode of the station includes:
 - (a) J3E; or

30 Transmitter output power

The licensee must not operate an amateur foundation station using a transmitter output power of more than 10 watts pX.

Part 8 Conditions for amateur licence (amateur beacon station)**35 Conditions**

Every amateur licence (amateur beacon station) is subject to the additional conditions in this Part relating to the operation of any amateur beacon station under the licence by the licensee.

36 Operating an amateur beacon station in the frequency band 50 MHz to 52 MHz

- (1) This section applies to the operation of an amateur beacon station in the frequency band 50.000 MHz to 52.000 MHz (*the 50-52 MHz band*).
- (2) The licensee must not operate the station if it causes interference to the reception of the transmissions of a service that is specified to be a primary service for the 50-52 MHz band in the spectrum plan.

37 Call sign

The licensee must operate an amateur beacon station by transmitting the station's call sign at least once in each 10 minute period of operation, or part thereof, of the station.

Part 9 Conditions for amateur licence (amateur repeater station)**38 Conditions**

Every amateur licence (amateur repeater station) is subject to the additional conditions in this Part relating to the operation of any amateur repeater station under the licence by the licensee.

39 Operation of an amateur repeater station

- (1) The licensee must not operate an amateur repeater station unless it is operated only:
 - (a) to receive signals and retransmit those signals; or
 - (b) to transmit a signal that identifies the station.

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- (2) The licensee must not operate an amateur repeater station unless the station is incapable of transmitting a signal in the absence of a received signal.

Note The ACMA will generally not afford interference protection to the licensee of an amateur licence (amateur repeater station) in relation to interference caused by the operation of a device to which the *Radiocommunications (Low Interference Potential Devices) Class Licence 2015* applies, including interference caused as a result of a breach of paragraph 4(1)(b) of that Class Licence.

40 Repeater links

- (1) The licensee must operate a repeater link for an amateur repeater station only if:
- (a) a signal is being retransmitted from the station to another amateur repeater station; or
 - (b) the operation is to make a transmission that identifies the station.
- (2) The licensee must operate a repeater link for an amateur repeater station by transmitting the station's call sign at least once in each period of 10 minutes of operation, or part thereof, of the repeater link.

41 Transmission on authorised frequency bands

The licensee must not operate an amateur repeater station to transmit a signal from an amateur station other than the amateur repeater station (*originating station*) to another amateur station if the originating station is not authorised by its licence to use the repeater output of the amateur repeater station.

Note The holder of an amateur licence (amateur repeater station) is not required to authorise other persons to operate the station for the purpose of accessing the amateur repeater station.

42 Access control system

- (1) The licensee must operate an amateur repeater station using an access control system described in subsection (3) if:
- (a) another amateur station (*the originating station*) transmits a signal to the amateur repeater station; and
 - (b) the amateur repeater station uses a repeater output that:
 - (i) is not the same frequency as the amateur repeater station's repeater input; and
 - (ii) is a frequency on which the originating station is not permitted to transmit a signal.
- (2) The licensee must operate an amateur repeater station (*the receiving repeater station*) using an access control system described in subsection (3) if:
- (a) an amateur station (*the originating station*) transmits a signal to another amateur repeater station (*the transmitting repeater station*);

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- (b) the transmitting repeater station transmits that signal to the receiving repeater station, either directly or through one or more other amateur repeater stations; and
 - (c) the receiving repeater station uses a repeater output on a frequency on which the originating station is not permitted to transmit a signal.
- (3) For the purposes of subsections (1) and (2), an access control system must:
- (a) be one of the following systems:
 - (i) a tone burst system that has a frequency of 1750 Hz;
 - (ii) a continuous tone coded squelch system that uses the frequencies set out in Part 1 of Schedule 4;
 - (iii) a dual tone multi frequency system that uses the frequencies set out for digits in Part 2 of Schedule 4;
 - (iv) a system that uses any other readily available code or signal; and
 - (b) when used with an amateur repeater station, prevent transmission by the station on the repeater output when access control signals corresponding to a system referred to in paragraph (a) are not received.

43 Operating an amateur repeater station in the frequency band 50 MHz to 52 MHz

- (1) This section applies to the operation of an amateur repeater station in the frequency band 50.000 MHz to 52.000 MHz (*the 50-52 MHz band*).
- (2) The licensee must not operate the station if it causes interference to the reception of the transmissions of a service that is specified to be a primary service for the 50-52 MHz band in the spectrum plan.

44 Call sign

The licensee must operate an amateur repeater station by transmitting the station's call sign at least once in each period of 10 minutes of operation, or part thereof, of the station.

Schedule 1 Emission modes

(section 3)

1 Emission modes

- (1) For the purposes of this Determination, the *emission mode* of a transmission made by an amateur station is set out in a sequence of numbers and letters representing (in order) the following components (each a *component*):
- (a) the necessary bandwidth of the transmission;
 - (b) the modulation of the main carrier of the transmission;
 - (c) the nature of the signal or signals modulating the main carrier of the transmission;
 - (d) the kind of information to be transmitted using the station.

Example An emission mode of 10K0R1F comprises the following components:

- (a) a necessary bandwidth of 10 kHz (represented by the “10K0”);
 - (b) the main carrier of the transmission is amplitude modulated and uses a single-sideband, reduced or variable-level carrier (represented by the “R”);
 - (c) the signal modulating the main carrier is a single channel containing quantized or digital information without the use of a modulating subcarrier (represented by the “1”); and
 - (d) the station may transmit television (video) (represented by the “F”).
- (2) For the purposes of paragraph (1)(a), the necessary bandwidth component of an emission mode:
- (a) is represented in the emission mode for a particular transmission by (in order):
 - (i) a number (*number*);
 - (ii) a letter in an item in column 1 of Table 1 (*the relevant item*); and
 - (iii) if the number followed by the letter does not form a sequence of at least four symbols (omitting any punctuation) – as many zeroes as is necessary to form a sequence of four symbols; and
 - (b) is, for that transmission, the number of units of frequency mentioned in column 2 of the relevant item.

Table 1 – Necessary bandwidth component

	<i>Column 1</i>	<i>Column 2</i>
<i>Item</i>	Symbol	Units
1	H	Hertz
2	K	Kilohertz
3	M	Megahertz

Example 1 A necessary bandwidth of 200 Hz is represented in an emission mode as 200H.

Example 2 A necessary bandwidth of 4 kHz is represented in an emission mode as 4K00.

Example 3 A necessary bandwidth of 2.5 MHz is represented in an emission mode as 2.5M0.

- (3) For the purposes of paragraph (1)(b), the modulation of the main carrier component of an emission mode:
- is represented in the emission mode for a particular transmission by a letter in an item in column 1 of Table 2; and
 - is, for that transmission, the modulation mentioned in column 2 of that item.

Table 2 – Modulation component

	<i>Column 1</i>	<i>Column 2</i>
<i>Item</i>	Symbol	Modulation
1	A	Main carrier: (a) is amplitude modulated; and (b) uses double-sideband
2	H	Main carrier: (a) is amplitude modulated; and (b) uses single-sideband, full carrier
3	R	Main carrier: (a) is amplitude modulated; and (b) uses a single-sideband, reduced or variable-level carrier
4	J	Main carrier: (a) is amplitude modulated; and (b) uses a single-sideband, suppressed carrier
5	B	Main carrier: (a) is amplitude modulated; and (b) uses independent sideband
6	C	Main carrier: (a) is amplitude modulated; and (b) uses vestigial sideband

	Column 1	Column 2
Item	Symbol	Modulation
7	F	Main carrier: (a) is angle modulated; and (b) uses frequency modulation
8	G	Main carrier: (a) is angle modulated; and (b) uses phase modulation

- (4) For the purposes of paragraph (1)(c), the component for the nature of the signal or signals modulating the main carrier of transmissions (***signal nature component***) of an emission mode:
- is represented in the emission mode for a particular transmission by a number in an item in column 1 of Table 3; and
 - is, for that transmission, the signal nature mentioned in column 2 of that item.

Table 3 – Signal nature component

	Column 1	Column 2
Item	Symbol	Signal nature
1	1	Signal modulating the main carrier is a single channel containing quantized or digital information without the use of a modulating subcarrier
2	2	Signal modulating the main carrier is a single channel containing quantized or digital information with the use of a modulating subcarrier
3	3	Signal modulating the main carrier is a single channel containing analog information
4	8	Signal modulating the main carrier is 2 or more channels containing analog information

- (5) For the purposes of paragraph (1)(d), the component for the kind of information to be transmitted (***information nature component***) of an emission mode:
- is represented in the emission mode for a particular transmission by a letter in an item in column 1 of Table 4; and
 - is, for that transmission, the information nature mentioned in column 2 of that item.

Table 4 – Information nature component

	<i>Column 1</i>	<i>Column 2</i>
<i>Item</i>	Symbol	Information nature
1	A	Telegraphy for aural reception
2	B	Telegraphy for automatic reception
3	C	Facsimile transmission
4	D	Data transmission, telemetry or telecommand
5	E	Telephony
6	F	Television (video)
7	W	A combination of any of the kinds of information described in the previous items

Schedule 2 Permitted frequencies and emission modes (amateur advanced station)

(sections 13 and 14)

Part 1 Permitted frequencies and emission modes

	<i>Column 1</i>	<i>Column 2</i>
<i>Item</i>	Frequency band	Permitted emission modes
<i>1A</i>	135.7 kHz–137.8 kHz [see note 5] 472 kHz–479 kHz [see note 6]	Any emission mode with a necessary bandwidth no greater than 2.1 kHz
<i>1</i>	1.800 MHz–1.875 MHz 3.500 MHz–3.700 MHz 3.776 MHz–3.800 MHz 7.000 MHz–7.300 MHz 10.100 MHz–10.150 MHz 14.000 MHz–14.350 MHz 18.068 MHz–18.168 MHz 21.000 MHz–21.450 MHz 24.890 MHz–24.990 MHz	Any emission mode with a necessary bandwidth no greater than 8 kHz
<i>2</i>	28.000 MHz–29.700 MHz	Any emission mode with a necessary bandwidth no greater than 16 kHz
<i>3</i>	50.000 MHz–54.000 MHz 144.000 MHz–148.000 MHz	Any emission mode with a necessary bandwidth no greater than 100 kHz

4	430.000 MHz–450.000 MHz	Any emission mode
	1 240.000 MHz–1 300.000 MHz	
	2 300.000 MHz–2 302.000 MHz	
	2 400.000 MHz–2 450.000 MHz	
	3.300 GHz–3.425 GHz [see note 2]	
	3.425 GHz–3.4425 GHz [see note 3]	
	3.4425 GHz–3.475 GHz [see note 4]	
	3.475 GHz–3.4925 GHz [see note 3]	
	3.4925 GHz–3.5425 GHz [see note 2]	
	3.5425 GHz–3.575 GHz [see note 4]	
	3.575 GHz–3.600 GHz	
	5.650 GHz–5.850 GHz	
	10.000 GHz–10.500 GHz	
	24.000 GHz–24.250 GHz	
	47.000 GHz–47.200 GHz	
	76.000 GHz–81.000 GHz	
	122.250 GHz–123.000 GHz	
	134.000 GHz–141.000 GHz	
	241.000 GHz–250.000 GHz	

Part 2 Excluded frequency ranges

	<i>Column 1</i>	<i>Column 2</i>
<i>Item</i>	Area of operation	Excluded frequency range
1	Timor Non Directional Beacon Area	472 kHz–479 kHz

Note 1 Operating restrictions imposed under sections 15 and 16 are not affected by the operation of this Schedule.

Note 2 The operation of an amateur advanced station in the bands 3.400 GHz–3.425 GHz and 3.4925 GHz–3.5425 GHz is subject to the limitation mentioned in section 15AA.

Note 3 The operation of an amateur advanced station in the bands 3.425 GHz–3.4425 GHz and 3.475 GHz–3.4925 GHz is subject to the limitation mentioned in section 15A.

Note 4 The operation of an amateur advanced station in the bands 3.4425 GHz–3.475 GHz and 3.5425 GHz–3.575 GHz is subject to the limitation mentioned in section 15B.

Note 5 The operation of an amateur advanced station in the band 135.7 kHz–137.8 kHz is subject to the limitation mentioned in section 15C.

Note 6 The operation of an amateur advanced station in the band 472 kHz–479 kHz is subject to the limitation mentioned in section 15D.

Schedule 3 Permitted frequencies and emission modes (amateur standard station)

(sections 23 and 24)

<i>Item</i>	<i>Column 1</i> Frequency band	<i>Column 2</i> Permitted emission modes
1	3.500 MHz–3.700 MHz 7.000 MHz–7.300 MHz 14.000 MHz–14.350 MHz 21.000 MHz–21.450 MHz	Any emission mode with a necessary bandwidth no greater than 8 kHz
2	28.000 MHz–29.700 MHz 52.000 MHz–54.000 MHz 144.000 MHz–148.000 MHz 430.000 MHz–450.000 MHz 1 240.000 MHz–1 300.000 MHz 2 400.000 MHz–2 450.000 MHz 5.650 GHz–5.850 GHz	Any emission mode with a necessary bandwidth no greater than 16 kHz

Schedule 3A Permitted frequencies and emission modes (amateur foundation station)

(sections 27 and 29)

	<i>Column 1</i>	<i>Column 2</i>
<i>Item</i>	Frequency band	Permitted emission modes
<i>1</i>	3.500 MHz–3.700 MHz	200HA1A
	7.000 MHz–7.300 MHz	8K00A3E
	21.000 MHz–21.450 MHz	4K00J3E
<i>2</i>	28.000 MHz–29.700 MHz	200HA1A
	144.000 MHz–148.000 MHz	8K00A3E
	430.000 MHz–450.000 MHz	4K00J3E
		16K0F3E
		16K0G3E

Schedule 4 Access control systems (amateur repeater station)

(subsection 42 (3))

Part 1 Continuous tone coded squelch system

67.0 Hz	79.7 Hz	94.8 Hz	114.8 Hz	141.3 Hz	167.9 Hz
69.0 Hz	82.5 Hz	100.0 Hz	118.8 Hz	146.2 Hz	173.8 Hz
71.9 Hz	85.4 Hz	103.5 Hz	123.0 Hz	151.2 Hz	179.9 Hz
74.4 Hz	88.5 Hz	107.2 Hz	131.8 Hz	156.7 Hz	186.2 Hz
77.0 Hz	91.5 Hz	110.9 Hz	136.5 Hz	162.2 Hz	192.8 Hz

Part 2 Dual tone multi frequency

		Digit		
	697	1	2	3
Low	770	4	5	6
Tone (Hz)	852	7	8	9
	942	*	0	#
High Tone (Hz)		1209	1336	1477

Schedule 4A 3.4 GHz bands — HCIS identifiers for section 15AA

(section 15AA)

1 HCIS identifiers for section 15AA

For the purposes of section 15AA of this Determination, the ASMG blocks in column 2 are specified.

Column 1 Area Name	Column 2 ASMG blocks
Adelaide	IW2, IW3, IW5, IW6, IW7, IW8, IW9, JW1, JW4, IV8K, IV8L, IV8N, IV8O, IV8P, IV9I, IV9J, IV9K, IV9L, IV9M, IV9N, IV9O, IV9P, IW1P, IW4D, IW4H, IW4K, IW4L, IW4N, IW4O, IW4P, JW2A, JW2B, JW2E, JW2F, JW2G, JW2I, JW2J, JW2K, JW2M, JW2N, JW2O, JW5A, JW5B, JW5C, JW5E, JW5F, JW5I, JW5J, JW5M, JW7A, JW7B, JW7C, JW7D, JW7E, JW7F, JW7G, JW7I, JV7M, JV7N, JV7O, JV7P, JV8M
Brisbane	NT6, NT8, NT9, NU3, NU2B, NU2C, NU2D, NU2F, NU2G, NU2H, NU2L, NT4G, NT4H, NT4K, NT4L, NT4O, NT4P, NT5D, NT5E, NT5F, NT5G, NT5H, NT5I, NT5J, NT5K, NT5L, NT5M, NT5N, NT5O, NT5P, NT7C, NT7D, NT7G, NT7H, NT7K, NT7L, NT7O, NT7P
Canberra/ Sydney	MW, MV6, MV9, NV4, NV5, NV7, NW1, MV2P, MV3L, MV3M, MV3N, MV3O, MV3P, MV5D, MV5H, MV5L, MV5P, MV8D, MV8H, MV8J, MV8K, MV8L, MV8N, MV8O, MV8P, MX1C, MX1D, MX1H, MX2A, MX2B, MX2C, MX2D, MX2E, MX2F, MX2G, MX2H, MX3A, MX3B, MX3C, MX3D, MX3E, MX3F, MX3G, MX3H, NV1I, NV1J, NV1K, NV1L, NV1M, NV1N, NV1O, NV1P, NV2I, NV2J, NV2K, NV2L, NV2M, NV2N, NV2O, NV2P, NV3I, NV3J, NV3K, NV3L, NV3M, NV3N, NV3O, NV3P
Melbourne	KX2, KX3, KX5, KX6, KX8, KX9, LX1, LX4, LX7, LX8, KW8H, KW8I, KW8J, KW8K, KW8L, KW8M, KW8N, KW8O, KW8P, KW9E, KW9F, KW9G, KW9H, KW9I, KW9J, KW9K, KW9L, KW9M, KW9N, KW9O, KW9P, KX1P, KX4D, KX4H, KX4L, KX4P, LW7I, LW7J, LW7M, LW7N, LW7O, LW7P, LX2E, LX2I, LX2M, LX2N, LX2O, LX5A, LX5B, LX5C, LX5D, LX5E, LX5F, LX5G, LX5H, LX5I, LX5J, LX5K, LX5L, LX5M, LX5N, LX5O, LX5P

Column 1 Area Name	Column 2 ASMG blocks
Perth/WA	AU9, AV9, AW3, BU7, BU8, BV1, BV2, BV4, BV5, BV7, BV8, BW1, BW2, BW5, AU6I, AU6J, AU6K, AU6L, AU6M, AU6N, AU6O, AU6P, BU4H, BU4I, BU4J, BU4K, BU4L, BU4M, BU4N, BU4O, BU4P, BU5E, BU5F, BU5G, BU5H, BU5I, BU5J, BU5K, BU5L, BU5M, BU5N, BU5O, BU5P, BU9A, BU9B, BU9E, BU9F, BU9I, BU9J, BU9M, BU9N, BV3A, BV3B, BV3E, BV3F, BV3I, BV3J, BV3M, BV3N, BV6A, BV6B, BV6E, BV6F, BV6I, BV6J, BV6M, BV6N, BV9A, BV9B, BV9E, BV9F, BV9I, BV9J, BV9M, BV9N, BW3A

Note 1 Column 1 is included for information only.

Note 2 This Schedule specifies ASMG blocks using Level 2 and Level 3 HCIS identifiers.

Schedule 5 3.4 GHz bands — designated areas for section 15A

(section 15A)

Description of designated areas

A designated area is an area bounded by a notional line starting at the intersection of the first map grid coordinates listed in a following table and passing sequentially through the intersections of each following set of coordinates in the table to the point where the line started.

Table 1 — Adelaide

° ‘ ‘ East	° ‘ ‘ South	° ‘ ‘ East	° ‘ ‘ South	° ‘ ‘ East	° ‘ ‘ South
138 05 0	34 20 0	139 00 0	34 55 0	138 05 0	35 30 0
139 05 0	34 20 0	139 00 0	35 30 0	138 05 0	34 20 0
139 05 0	34 55 0				

Table 2 — Albury

° ‘ ‘ East	° ‘ ‘ South	° ‘ ‘ East	° ‘ ‘ South	° ‘ ‘ East	° ‘ ‘ South
146 35 0	35 45 0	147 15 0	36 30 0	146 35 0	35 45 0
147 15 0	35 45 0	146 35 0	36 30 0		

Table 3 — Brisbane

° ‘ ‘ East	° ‘ ‘ South	° ‘ ‘ East	° ‘ ‘ South	° ‘ ‘ East	° ‘ ‘ South
152 30 0	26 50 0	152 50 0	28 20 0	151 35 0	27 15 0
154 00 0	26 50 0	152 50 0	28 05 0	152 30 0	27 15 0
154 00 0	28 35 0	152 30 0	28 05 0	152 30 0	26 50 0
153 05 0	28 35 0	152 30 0	27 55 0		
153 05 0	28 20 0	151 35 0	27 55 0		

Table 4 — Cairns

° ‘ ‘ East	° ‘ ‘ South	° ‘ ‘ East	° ‘ ‘ South	° ‘ ‘ East	° ‘ ‘ South
145 20 0	16 30 0	146 00 0	17 10 0	145 20 0	16 30 0
146 00 0	16 30 0	145 20 0	17 10 0		

Table 5 — Canberra

° ‘ ‘ East	° ‘ ‘ South	° ‘ ‘ East	° ‘ ‘ South	° ‘ ‘ East	° ‘ ‘ South
148 45 0	34 50 0	149 30 0	35 50 0	148 45 0	34 50 0
149 30 0	34 50 0	148 45 0	35 50 0		

Table 6 — Hobart

° ‘ ‘ East	° ‘ ‘ South	° ‘ ‘ East	° ‘ ‘ South	° ‘ ‘ East	° ‘ ‘ South
146 45 0	42 20 0	148 00 0	43 35 0	146 45 0	42 20 0
148 00 0	42 20 0	146 45 0	43 35 0		

Table 7 — Launceston

° ‘ ‘ East	° ‘ ‘ South	° ‘ ‘ East	° ‘ ‘ South	° ‘ ‘ East	° ‘ ‘ South
146 30 0	41 00 0	147 30 0	41 40 0	146 30 0	41 00 0
147 30 0	41 00 0	146 30 0	41 40 0		

Table 8 — Melbourne

° ‘ ‘ East	° ‘ ‘ South	° ‘ ‘ East	° ‘ ‘ South	° ‘ ‘ East	° ‘ ‘ South
143 55 0	36 20 0	145 20 0	37 30 0	145 25 0	38 45 0
144 40 0	36 20 0	145 20 0	37 35 0	144 00 0	38 45 0
144 40 0	37 20 0	145 35 0	37 35 0	144 00 0	37 55 0
145 05 0	37 20 0	145 35 0	37 45 0	143 30 0	37 55 0
145 05 0	37 25 0	145 45 0	37 45 0	143 30 0	37 10 0
145 15 0	37 25 0	145 45 0	38 15 0	143 55 0	37 10 0
145 15 0	37 30 0	145 25 0	38 15 0	143 55 0	36 20 0

Table 9 — Perth

° ‘ ‘ East	° ‘ ‘ South	° ‘ ‘ East	° ‘ ‘ South	° ‘ ‘ East	° ‘ ‘ South
115 00 0	31 25 0	116 30 0	32 50 0	115 00 0	31 25 0
116 30 0	31 25 0	115 00 0	32 50 0		

Table 10 — Rockhampton

° ‘ ‘ East	° ‘ ‘ South	° ‘ ‘ East	° ‘ ‘ South	° ‘ ‘ East	° ‘ ‘ South
150 00 0	23 00 0	151 00 0	23 45 0	150 00 0	23 00 0
151 00 0	23 00 0	150 00 0	23 45 0		

Table 11 — Sydney

° ‘ “ East	° ‘ “ South	° ‘ “ East	° ‘ “ South	° ‘ “ East	° ‘ “ South
151 05 0	32 35 0	150 30 0	34 50 0	150 00 0	33 20 0
153 00 0	32 35 0	150 30 0	34 35 0	150 55 0	33 20 0
153 00 0	33 00 0	150 20 0	34 35 0	150 55 0	33 05 0
152 00 0	33 00 0	150 20 0	34 00 0	151 05 0	33 05 0
152 00 0	34 50 0	150 00 0	34 00 0	151 05 0	32 35 0

Table 12 — Townsville

° ‘ “ East	° ‘ “ South	° ‘ “ East	° ‘ “ South	° ‘ “ East	° ‘ “ South
146 20 0	18 55 0	147 10 0	19 00 0	146 20 0	18 55 0
147 00 0	18 55 0	147 10 0	19 40 0		
147 00 0	19 00 0	146 20 0	19 40 0		

Schedule 6 3.4 GHz bands — designated areas for section 15B

(section 15B)

Description of designated areas

A designated area is an area bounded by a notional line starting at the intersection of the first map grid coordinates listed in a following table and passing sequentially through the intersections of each following set of coordinates in the table to the point where the line started.

° ‘ “ East	° ‘ “ South	° ‘ “ East	° ‘ “ South	° ‘ “ East	° ‘ “ South
142 00 0	10 00 0	151 00 0	35 00 0	129 00 0	33 00 0
143 00 0	10 00 0	151 00 0	38 00 0	125 00 0	33 00 0
143 00 0	11 00 0	149 00 0	38 00 0	125 00 0	34 00 0
144 00 0	11 00 0	149 00 0	44 00 0	124 00 0	34 00 0
144 00 0	14 00 0	145 00 0	44 00 0	124 00 0	35 00 0
146 00 0	14 00 0	145 00 0	42 00 0	119 00 0	35 00 0
146 00 0	16 00 0	144 00 0	42 00 0	119 00 0	36 00 0
147 00 0	16 00 0	144 00 0	41 00 0	116 00 0	36 00 0
147 00 0	19 00 0	143 00 0	41 00 0	116 00 0	35 00 0
149 00 0	19 00 0	143 00 0	39 00 0	114 00 0	35 00 0
149 00 0	20 00 0	140 00 0	39 00 0	114 00 0	33 00 0
150 00 0	20 00 0	140 00 0	38 00 0	115 00 0	33 00 0
150 00 0	21 00 0	139 00 0	38 00 0	115 00 0	31 00 0
151 00 0	21 00 0	139 00 0	37 00 0	148 00 0	31 00 0
151 00 0	23 00 0	136 00 0	37 00 0	148 00 0	22 00 0
152 00 0	23 00 0	136 00 0	36 00 0	145 00 0	22 00 0
152 00 0	24 00 0	135 00 0	36 00 0	145 00 0	19 00 0
154 00 0	24 00 0	135 00 0	34 00 0	142 00 0	19 00 0
154 00 0	32 00 0	134 00 0	34 00 0	142 00 0	10 00 0
153 00 0	32 00 0	134 00 0	33 00 0		
153 00 0	33 00 0	132 00 0	33 00 0		
152 00 0	33 00 0	132 00 0	32 00 0		
152 00 0	35 00 0	129 00 0	32 00 0		